

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B01 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	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	16.68	16.60	16.60	1.57	3.83
				16.68	16.60	16.60	1.57	3.83

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.69

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 5C1

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

Dead Load Moment 389.1
Superimposed Dead Load Moment 229.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3301.0C	-1686.0	2586.3	-1908.3C	2168.3	-1667.8	1618.6	-1838.9
OPER	5501.7C	-2810.0	4310.5	-3180.6C	3613.9	-2779.7	2697.6	-3064.8

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	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	515.07	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.50	999.00	1.87	999.00	HS 37.35	67.2
5C1	5.40	999.00	4.03	999.00	0.00	161.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 (-)	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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B01
Check Point I. D. 1.474Dead Load Moment 389.1
Superimposed Dead Load Moment 229.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 972.6	44633.2	-1354.4	2564.2	-1354.4	44015.0	-1972.6	1946.0	-1
OPER 287.6	73976.5	-2669.5	3861.5	-2669.5	73358.3	-3287.6	3243.3	-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	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	515.07	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	50.78	999.00	2.24	999.00	HS 44.91	80.8
5C1	109.56	999.00	4.84	999.00	0.00	193.7

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B02 Symmetry:

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

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	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	121.2	121.2	33.330	0.0
1	P	5.417	0.0	0.0	0.000	21.6
1	P	12.417	0.0	0.0	0.000	17.5
1	P	19.417	0.0	0.0	0.000	19.5
1	P	26.417	0.0	0.0	0.000	19.5
1	P	33.420	0.0	0.0	0.000	21.6

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			
Fy (reinf.)	40000.	40000.	0.	0.
f'c (conc.)	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					
36.7	33.34	0.940	bott	16.45	16.70	16.70	1.68	3.89
				16.89	16.70	16.70	1.68	3.89

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2891.40	3794.29	7.46	0.00	0.00	0.000	5818.55

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 613.1
 Superimposed Dead Load Moment 548.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3491.1C	-1803.5	2693.0	-2075.3C	1988.5	-2084.3	1374.5	-2293.3
OPER	5818.6C	-3005.8	4488.3	-3458.8C	3314.2	-3473.8	2290.9	-3822.2

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.13	999.00	1.47	HS 29.47	53.0
5C1	4.70	999.00	3.25	0.00	129.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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.	361.8	-278.3	278.3
OPER	603.0	-463.9	463.9

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B02
Check Point I. D. 1.474Dead Load Moment 613.1
Superimposed Dead Load Moment 548.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 369.0	35598.1	-1248.7	2789.8	-1207.3	34436.5	-2410.3	1628.1	-2
OPER 948.3	58555.8	-2855.6	3875.2	-2786.7	57394.1	-4017.2	2713.6	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	36.91	999.00	1.75	999.00	HS 34.90	62.8
5C1	81.33	999.00	3.85	999.00	0.00	153.8

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 25.00

Comments:

Member I. D. B03 Symmetry:

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

Range Length -- Non-Composite:

Span No.	Range No.	Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	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	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	18.6
1	P	12.417	0.0	0.0	0.000	15.0
1	P	19.417	0.0	0.0	0.000	16.8
1	P	26.417	0.0	0.0	0.000	16.8
1	P	33.420	0.0	0.0	0.000	18.6

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.50	16.60	16.60	1.57	3.86
				16.86	16.60	16.60	1.57	3.86

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5499.29

Mu (pier)	TOP Ms (pier)	A_FAC	Mu (pier)	BOTTOM 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 5C1

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

Dead Load Moment 610.5
 Superimposed Dead Load Moment 476.7

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.	3299.6C	-1682.9	2530.0	-1924.0C	1885.8	-1946.9	1293.8	-2132.4
OPER	5499.3C	-2804.9	4216.6	-3206.7C	3143.0	-3244.8	2156.3	-3553.9

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.02	999.00	1.39	999.00	HS 27.74	49.9
5C1	4.45	999.00	3.06	999.00	0.00	122.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 (-)	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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B03
Check Point I. D. 1.474Dead Load Moment 610.5
Superimposed Dead Load Moment 476.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 219.5	42363.0	-1163.9	2610.7	-1132.3	41275.8	-2251.1	1523.5	-2
OPER 699.2	69880.2	-2664.6	3626.4	-2612.0	68793.0	-3751.8	2539.2	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	44.24	999.00	1.63	999.00	HS 32.66	58.8
5C1	97.48	999.00	3.60	999.00	0.00	143.9

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B04 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.68	16.60	16.60	1.57	3.83
				16.68	16.60	16.60	1.57	3.83

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.69

Mu (pier)	TOP Ms (pier)	A_FAC	Mu (pier)	BOTTOM 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 5C1

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

Dead Load Moment 697.5
 Superimposed Dead Load Moment 494.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3301.0C	-1686.0	2586.3	-1908.3C	1823.9	-2012.3	1274.1	-2183.3
OPER	5501.7C	-2810.0	4310.5	-3180.6C	3039.8	-3353.8	2123.5	-3638.9

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.96	999.00	1.37	999.00	HS 27.32	49.2
5C1	4.31	999.00	3.01	999.00	0.00	120.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B04
Check Point I. D. 1.474Dead Load Moment 697.5
Superimposed Dead Load Moment 494.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 317.0	37975.0	-1124.8	2677.0	-1124.8	36782.7	-2317.0	1484.8	-2
OPER 861.7	62496.8	-2669.5	3666.9	-2669.5	61304.6	-3861.7	2474.6	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	39.43	999.00	1.59	999.00	HS 31.83	57.3
5C1	86.87	999.00	3.51	999.00	0.00	140.3

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B05 Symmetry:

Span Length:	Span 1	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	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.1
1	P	12.417	0.0	0.0	0.000	15.5
1	P	19.417	0.0	0.0	0.000	17.3
1	P	26.417	0.0	0.0	0.000	17.3
1	P	33.420	0.0	0.0	0.000	19.1

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.77	16.60	16.60	1.57	3.84
				16.59	16.60	16.60	1.57	3.84

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	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
n= 8	81.10	81.10	18.34	18.16	18538.9	18538.9
3n= 24	234.01	234.01	1.62	34.88	54660.6	18538.9
	132.07	132.07	8.47	28.03	39508.3	18538.9

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.67

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 5C1

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

Dead Load Moment 609.7
 Superimposed Dead Load Moment 490.0

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.	3301.0C	-1667.8	2585.9	-1900.6C	1879.4	-1942.8	1329.3	-2121.8
OPER	5501.7C	-2779.7	4309.8	-3167.6C	3132.4	-3238.0	2215.5	-3536.3

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	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	2.02	999.00	1.42	999.00	HS 28.50	51.3
5C1	4.44	999.00	3.14	999.00	0.00	125.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load	Superimposed Dead Load
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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B05
Check Point I. D. 1.474Dead Load Moment 609.7
Superimposed Dead Load Moment 490.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 260.1	39595.8	-1144.6	2667.8	-1160.4	38496.0	-2244.3	1568.1	-2
OPER 766.8	65259.8	-2640.8	3713.2	-2667.1	64160.1	-3740.5	2613.5	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	41.26	999.00	1.68	999.00	HS 33.62	60.5
5C1	90.92	999.00	3.70	999.00	0.00	148.1

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 25.00

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	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.2
1	P	12.417	0.0	0.0	0.000	15.5
1	P	19.417	0.0	0.0	0.000	17.4
1	P	26.417	0.0	0.0	0.000	17.4
1	P	33.420	0.0	0.0	0.000	19.2

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.82	16.60	16.60	1.57	3.85
				16.54	16.60	16.60	1.57	3.85

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.62

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 5C1

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

Dead Load Moment 609.7
Superimposed Dead Load Moment 491.5

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.	3301.0C	-1658.8	2584.7	-1896.1C	1878.5	-1936.7	1327.5	-2119.3
OPER	5501.6C	-2764.6	4307.8	-3160.2C	3130.8	-3227.9	2212.5	-3532.2

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.01	999.00	1.42	HS 28.46	51.2
5C1	4.44	999.00	3.13	0.00	125.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 (-)	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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B06
Check Point I. D. 1.474Dead Load Moment 609.7
Superimposed Dead Load Moment 491.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 261.5	39723.0	-1135.3	2667.8	-1160.2	38621.7	-2236.6	1566.5	-2
OPER 769.1	65470.7	-2626.4	3712.1	-2667.8	64369.5	-3727.7	2610.9	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	41.40	999.00	1.68	999.00	HS 33.58	60.5
5C1	91.21	999.00	3.70	999.00	0.00	148.0

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B07 Symmetry:

Span Length:	Span 1	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	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.1
1	P	12.417	0.0	0.0	0.000	15.5
1	P	19.417	0.0	0.0	0.000	17.3
1	P	26.417	0.0	0.0	0.000	17.3
1	P	33.420	0.0	0.0	0.000	19.1

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.85	16.60	16.60	1.57	3.86
				16.51	16.60	16.60	1.57	3.86

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	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
n= 8	80.50	80.50	18.42	18.08	18471.1	18471.1
3n= 24	233.41	233.41	1.61	34.89	54633.2	18471.1
	131.47	131.47	8.47	28.03	39506.9	18471.1

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.56

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 5C1

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

Dead Load Moment 609.7
 Superimposed Dead Load Moment 490.0

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.	3300.9C	-1654.6	2583.3	-1893.8C	1879.4	-1932.6	1327.4	-2116.6
OPER	5501.6C	-2757.6	4305.5	-3156.3C	3132.3	-3220.9	2212.3	-3527.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating Value	Load Capacity (tons)
HS20	2.02	999.00	1.42	HS 28.46	51.2
5C1	4.44	999.00	3.13	0.00	125.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B07
Check Point I. D. 1.474Dead Load Moment 609.7
Superimposed Dead Load Moment 490.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 261.2	39890.8	-1132.0	2666.7	-1161.5	38791.1	-2231.7	1567.0	-2
OPER 768.7	65751.5	-2619.7	3711.3	-2669.0	64651.8	-3719.4	2611.6	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	41.58	999.00	1.68	999.00	HS 33.59	60.5
5C1	91.61	999.00	3.70	999.00	0.00	148.0

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B08 Symmetry:

Span Length:	Span 1	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	131.7	131.7	33.330	0.0
1	P	5.417	0.0	0.0	0.000	19.3
1	P	12.417	0.0	0.0	0.000	15.6
1	P	19.417	0.0	0.0	0.000	17.5
1	P	26.417	0.0	0.0	0.000	17.5
1	P	33.420	0.0	0.0	0.000	19.3

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.85	16.60	16.60	1.57	3.86
				16.51	16.60	16.60	1.57	3.86

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

Effective Slab Width	Effective Slab Thick.	Effective Dist. to Top of Beam	Negative Moment Area	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
n= 8	80.50	80.50	18.42	18.08	18471.1	18471.1
3n= 24	233.41	233.41	1.61	34.89	54633.2	18471.1
	131.47	131.47	8.47	28.03	39506.9	18471.1

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.56

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 5C1

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

Dead Load Moment 609.7
Superimposed Dead Load Moment 494.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3300.9C	-1654.6	2583.3	-1893.8C	1876.5	-1935.4	1324.5	-2119.4
OPER	5501.6C	-2757.6	4305.5	-3156.3C	3127.5	-3225.7	2207.5	-3532.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.01	999.00	1.42	HS 28.39	51.1
5C1	4.43	999.00	3.13	0.00	125.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B08
Check Point I. D. 1.474Dead Load Moment 609.7
Superimposed Dead Load Moment 494.8

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. 264.1	39874.6	-1130.0	2668.3	-1159.6	38770.1	-2234.5	1563.8	-2
OPER 773.5	65721.4	-2619.7	3710.8	-2669.0	64616.9	-3724.2	2606.3	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber		Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	41.56	999.00	1.68	999.00	HS 33.52	60.3
5C1	91.56	999.00	3.69	999.00	0.00	147.7

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B09 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.33	16.60	16.60	1.57	3.87
				17.03	16.60	16.60	1.57	3.87

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5497.10

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 5C1

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

Dead Load Superimposed Dead Load
Moment Moment
609.7 476.7

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.	3298.3C	-1674.0	2478.8	-1938.6C	1885.3	-1939.5	1254.9	-2143.1
OPER	5497.1C	-2790.0	4131.4	-3231.1C	3142.1	-3232.6	2091.5	-3571.9

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	2.02	999.00	1.35	999.00	HS 26.90 48.4
5C1	4.45	999.00	2.96	999.00	0.00 118.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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.	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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B09
Check Point I. D. 1.474Dead Load Moment 609.7
Superimposed Dead Load Moment 476.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 182.3	44856.1	-1155.7	2559.9	-1095.8	43769.6	-2242.1	1473.5	-2
OPER 637.1	74035.8	-2650.5	3542.2	-2550.7	72949.4	-3736.9	2455.8	-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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	46.92	999.00	1.58	999.00	HS 31.59	56.9
5C1	103.37	999.00	3.48	999.00	0.00	139.2

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B10 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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					
36.7	33.34	0.940	bott	16.67	16.70	16.70	1.68	3.86
				16.67	16.70	16.70	1.68	3.86

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2891.40	3794.29	7.46	0.00	0.00	0.000	5824.37

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Superimposed Dead Load
 Moment Moment
 702.2 548.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3494.6C	-1810.6	2766.1	-2054.5C	1937.7	-2143.2	1377.3	-2330.8
OPER	5824.4C	-3017.6	4610.1	-3424.1C	3229.5	-3572.0	2295.5	-3884.7

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.08	999.00	1.48	HS 29.53	53.1
5C1	4.58	999.00	3.25	0.00	130.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B10
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.	361.8	-278.3	278.3
OPER	603.0	-463.9	463.9

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B10
Check Point I. D. 1.474Dead Load Moment 702.2
Superimposed Dead Load Moment 548.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 470.5	32378.0	-1219.7	2867.7	-1219.7	31127.2	-2470.5	1616.9	-2
OPER 117.5	53129.4	-2866.7	3945.6	-2866.7	51878.7	-4117.5	2694.8	-4

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	932.91 R	717.62	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	705.70 R	542.85	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	33.37	999.00	1.73	999.00	HS 34.66	62.4
5C1	73.51	999.00	3.82	999.00	0.00	152.7

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Floor Beam Spacing 25.00

Comments:

Member I. D. B11 Symmetry:

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

Range Length -- Non-Composite:

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

Range Length -- Composite:

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

Superimposed Dead Load:

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
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	16.68	16.60	16.60	1.57	3.83
				16.68	16.60	16.60	1.57	3.83

Hybrid Section Properties:

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

Composite Structural Steel Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

Composite Compact Values

C steel	C slab	aa	Af Fy	C'	ybar	Mu
2694.37	3794.29	6.80	0.00	0.00	0.000	5501.69

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 5C1

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

Dead Load Moment 389.1
Superimposed Dead Load Moment 229.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	3301.0C	-1686.0	2586.3	-1908.3C	2168.3	-1667.8	1618.6	-1838.9
OPER	5501.7C	-2810.0	4310.5	-3180.6C	3613.9	-2779.7	2697.6	-3064.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	515.07	28.42	0.0	0.00	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.50	999.00	1.87	37.35	67.2
5C1	5.40	999.00	4.03	0.00	161.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B11
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	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. B11
Check Point I. D. 1.474Dead Load Moment 389.1
Superimposed Dead Load Moment 229.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 972.6	44633.2	-1354.4	2564.2	-1354.4	44015.0	-1972.6	1946.0	-1
OPER 287.6	73976.5	-2669.5	3861.5	-2669.5	73358.3	-3287.6	3243.3	-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	866.70 R	666.69	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00
OPER	5C1	669.59 R	515.07	28.42	0.0	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	50.78	999.00	2.24	999.00	HS 44.91	80.8
5C1	109.56	999.00	4.84	999.00	0.00	193.7

BRIDGE / MEMBER DATA

Structure I. D. HAM500

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

Live Load Distribution Factor 0.0

Second Live Load Dist. Factor 0.0

Comments:

Member I. D. S01 Symmetry:

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

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

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

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

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

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

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

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

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	5C1	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
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	2.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	35.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.100Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	2.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.200

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.5

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	5.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	35.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
2.8	28.5

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	5.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.300

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.300Dead Load Moment 3.5
Superimposed Dead Load Moment 35.6

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	7.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.300Dead Load Moment 3.5
Superimposed Dead Load Moment 35.6

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	7.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.400

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

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

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 3.7
 Superimposed Dead Load Moment 38.0

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	10.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	35.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
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 (-)	Capacity for LL+I (+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.3	132.4

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.400Dead Load Moment 3.7
Superimposed Dead Load Moment 38.0

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. 224.3	216.0	-182.7	216.0	-182.7	174.3	-224.3	174.3	-
OPER 373.9	332.2	-332.2	332.2	-332.2	290.5	-373.9	290.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.500

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

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

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.500Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	12.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	35.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.500Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	12.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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
5C1	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. 1.600

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 2.8
 Superimposed Dead Load Moment 28.1

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	15.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	35.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
2.8	28.1

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.700

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 1.7
 Superimposed Dead Load Moment 15.9

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	17.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	35.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.700Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

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. 209.9	206.4	-192.3	206.4	-192.3	188.8	-209.9	188.8	-
OPER 349.8	332.2	-332.2	332.2	-332.2	314.6	-349.8	314.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	17.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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 top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.800

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	2.861	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.2
OPER	359.7C	-319.4	319.4	-359.7C	360.7	-318.4	320.4	-358.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	20.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	35.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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. 198.7	198.9	-199.7	198.9	-199.7	199.9	-198.7	199.9	-
OPER 331.2	332.2	-332.2	332.2	-332.2	333.2	-331.2	333.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	20.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 1.900

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	2.861	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -22.8

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	22.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	35.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 1.900Dead Load Moment -2.0
Superimposed Dead Load Moment -22.8

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	22.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 2.000

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment Superimposed Dead Load Moment
 -4.5 -49.4

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	60.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	15.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-49.4

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	60.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -49.4

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	60.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	15.00	0.00	
OPER	5C1	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	

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
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-49.4

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	60.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 2.100

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.14	28.67	28.67	1.699
			999999.000
			106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-26.5

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	27.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	15.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S01
 Check Point I. D. 2.100
 HS20 5C1

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-26.5

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	27.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 2.200

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment Superimposed Dead Load Moment
-1.0 -8.5

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	30.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	15.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	6.3

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-8.5

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	163.8	-171.4	163.8	-171.4	173.4	-161.9	173.4	-
161.9								
OPER	279.4	-279.4	279.4	-279.4	288.9	-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	0.00 R	0.00	0.00	0.0	0.00	0.00	30.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.14	28.67	28.67	1.699
			999999.000
			106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	177.5	-164.1	158.3	-183.3
OPER	300.6C	-268.7	268.7	-300.6C	295.8	-273.5	263.8	-305.5

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	32.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.300Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	32.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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
5C1	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. 2.400

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	35.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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 (-)	for LL+I (+)
INV.	90.8	-71.4	68.2
OPER	151.3	-119.0	113.7

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	35.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 1.2
 Superimposed Dead Load Moment 17.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	37.50	
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	15.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00 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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 0.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment Superimposed Dead Load Moment

1.2 17.0

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	37.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	0.00
OPER	5C1	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		Load Capacity (tons)	
	top fiber	bottom fiber	top fiber	bottom fiber
HS20	999.00	999.00	999.00	999.00
5C1	999.00	999.00	999.00	999.00

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.29	28.67	28.67	1.699
			999999.000
			114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	40.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	60.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.9	70.8
OPER	151.3	-114.8	117.9

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.600Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

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. 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 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 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 2.700

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.29	28.67	28.67	1.699
			999999.000
			114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	42.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	60.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	42.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	60.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 2.800

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	45.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	60.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-5.3	0.0

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	45.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	60.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 2.900

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment Superimposed Dead Load Moment
 -1.3 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.2	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.6	286.7	-282.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	47.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	60.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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	-65.2	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 2.900Dead Load Moment -1.3
Superimposed Dead Load Moment -16.7

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	47.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	60.00	0.00
OPER	5C1	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
5C1	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. 3.000

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -37.0

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	15.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	60.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	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 5C1

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

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	-63.9	63.7
OPER	151.3	-106.6	106.1

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	60.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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. S01
Check Point I. D. 3.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Superimposed Dead Load
 Moment Moment
 -2.9 -37.0

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	15.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	60.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	15.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	60.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 3.100

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-15.8

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

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	52.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	40.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.6

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.100Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 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	0.00 R	0.00	0.00	0.0	0.00	0.00	52.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	40.00	0.00
OPER	5C1	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
5C1	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. 3.200

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 0.1
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	-161.7	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	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	55.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	40.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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	-73.5	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.200Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

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

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	55.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	40.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 3.300

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Dead Load Moment 1.0
 Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-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	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	57.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	40.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

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

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

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.300Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

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. 175.7	173.0	-162.3	173.0	-162.3	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

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

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.400Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	167.8	-173.7	148.6	-192.9
OPER	300.6C	-268.7	268.7	-300.6C	279.7	-289.6	247.7	-321.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	60.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	40.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 3.400Dead 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 68.7
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating Shear

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.400Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

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. 180.2	176.0	-159.3	176.0	-159.3	155.1	-180.2	155.1	-
OPER 300.3	279.4	-279.4	279.4	-279.4	258.5	-300.3	258.5	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber	Rating bottom fiber	Factor	Rating Value	Load Capacity (tons)
	+bend	-bend	+bend -bend		
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.500

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.500Dead Load Moment 1.7
Superimposed Dead Load Moment 21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	166.5	-175.1	147.3	-194.3
OPER	300.6C	-268.7	268.7	-300.6C	277.4	-291.9	245.4	-323.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	62.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	85.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.500Dead Load Moment 1.7
Superimposed Dead Load Moment 21.5

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. 181.6	176.9	-158.4	176.9	-158.4	153.7	-181.6	153.7	-
OPER 302.6	279.4	-279.4	279.4	-279.4	256.2	-302.6	256.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 3.600

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.600

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

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.600Dead Load Moment 1.5
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.3	149.1	-192.5
OPER	300.6C	-268.7	268.7	-300.6C	280.5	-288.8	248.5	-320.8

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	65.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	85.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.5	71.2
OPER	151.3	-114.1	118.6

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.600Dead Load Moment 1.5
Superimposed Dead Load Moment 18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.5	-179.7	155.5	-
OPER 299.6	279.4	-279.4	279.4	-279.4	259.2	-299.6	259.2	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	65.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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. S01
Check Point I. D. 3.700

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.2	-168.4	154.0	-187.6
OPER	300.6C	-268.7	268.7	-300.6C	288.7	-280.6	256.7	-312.6

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	67.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.2	72.4
OPER	151.3	-112.1	120.7

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.700Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.8	172.4	-162.9	172.4	-162.9	160.5	-174.8	160.5	-
OPER 291.4	279.4	-279.4	279.4	-279.4	267.4	-291.4	267.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	67.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00
OPER	5C1	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
5C1	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. 3.800

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.800

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 3.800

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	70.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	85.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.7
OPER	151.3	-110.0	122.8

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.800

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	70.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 3.900

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 3.900

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.4	-149.2	173.2	-168.4
OPER	300.6C	-268.7	268.7	-300.6C	320.6	-248.7	288.6	-280.7

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	72.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	85.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.9
OPER	151.3	-107.9	124.8

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 3.900Dead Load Moment -1.5
Superimposed Dead Load Moment -18.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.7	159.7	-175.6	159.7	-175.6	179.6	-155.7	179.6	-
OPER 259.4	279.4	-279.4	279.4	-279.4	299.4	-259.4	299.4	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	72.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00
OPER	5C1	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
5C1	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. 4.000

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	110.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	85.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.5	63.6
OPER	151.3	-105.8	106.0

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.000Dead Load Moment -3.3
Superimposed Dead Load Moment -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00
OPER	5C1	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
5C1	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. 4.000

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

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

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

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

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.000

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

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

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

Non Compact Values (N)

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

ASD/LFD Shear Values

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

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

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

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	110.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	85.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

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

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.7	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.5	63.6
OPER	151.3	-105.8	106.0

Live Load Effect

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

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

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

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

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

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	85.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 4.100

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

Non-Composite Structural Steel Section Properties:

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

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.100

Dead Load Moment Superimposed Dead Load Moment
-1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.5	-149.1	173.3	-168.2
OPER	300.6C	-268.7	268.7	-300.6C	320.9	-248.4	288.9	-280.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	77.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	65.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 4.100

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.6	0.0 7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.100Dead Load Moment -1.6
Superimposed Dead Load Moment -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.5	159.5	-175.7	159.5	-175.7	179.8	-155.5	179.8	-
OPER 259.2	279.4	-279.4	279.4	-279.4	299.6	-259.2	299.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.200

	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. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 4.200

Dead Load Superimposed Dead Load
 Moment Moment
 -0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.6	-160.0	162.4	-179.2
OPER	300.6C	-268.7	268.7	-300.6C	302.6	-266.7	270.6	-298.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	80.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	65.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 4.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.200

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.8	-166.5	168.8	-
OPER 277.4	279.4	-279.4	279.4	-279.4	281.4	-277.4	281.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	80.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	65.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	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. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 4.300

Dead Load Moment 0.8
 Superimposed Dead Load Moment 10.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.9	154.5	-187.1
OPER	300.6C	-268.7	268.7	-300.6C	289.5	-279.8	257.5	-311.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	82.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	65.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.6	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.300Dead Load Moment 0.8
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	bottom fi	
INV. 174.3	172.1	-163.2	172.1	-163.2	160.9	-174.3	160.9	-
OPER 290.6	279.4	-279.4	279.4	-279.4	268.2	-290.6	268.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 4.400

Dead Load Moment 1.4
 Superimposed Dead Load Moment 17.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.6	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.7	249.6	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	85.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	65.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 4.400

Dead Load	Superimposed Dead Load
Shear	(-) 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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.400Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

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. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 4.500

Dead Load Moment 1.6
 Superimposed Dead Load Moment 20.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.3	-174.3	148.1	-193.5
OPER	300.6C	-268.7	268.7	-300.6C	278.8	-290.5	246.8	-322.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	87.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
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	-116.4	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.500Dead Load Moment 1.6
Superimposed Dead Load Moment 20.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.8	176.4	-158.9	176.4	-158.9	154.5	-180.8	154.5	-
OPER 301.3	279.4	-279.4	279.4	-279.4	257.5	-301.3	257.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	87.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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
5C1	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. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.600Dead Load Moment 1.4
Superimposed Dead Load Moment 17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.8	149.6	-192.0
OPER	300.6C	-268.7	268.7	-300.6C	281.3	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	90.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	110.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 4.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.600

Dead Load Moment Superimposed Dead Load Moment

1.4 17.9

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.4	-159.9	175.4	-159.9	156.1	-179.2	156.1	-
OPER 298.7	279.4	-279.4	279.4	-279.4	260.1	-298.7	260.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	90.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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		Load Capacity (tons)	
	top fiber	bottom fiber	top fiber	bottom fiber
HS20	999.00	999.00	999.00	999.00
5C1	999.00	999.00	999.00	999.00

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 4.700

Dead Load Moment 0.8
 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	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	92.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.700

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	92.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.800

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	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	95.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00		
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		

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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 4.800

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	-66.1	73.5
OPER	151.3	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.800Dead Load Moment -0.1
Superimposed Dead Load Moment -1.2

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. 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	0.00 R	0.00	0.00	0.0	0.00	0.00	95.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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 top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.5	172.8	-168.7
OPER	300.6C	-268.7	268.7	-300.6C	320.1	-249.2	288.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	97.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	110.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.3	-108.1	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 4.900Dead Load Moment -1.5
Superimposed Dead Load Moment -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	97.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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
5C1	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. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.000

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	135.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	110.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	135.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.000

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	135.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	110.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.4

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	135.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	110.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	+bend	-bend		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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. S01
Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	102.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	90.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.100Dead Load Moment -1.5
Superimposed Dead Load Moment -17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 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	0.00 R	0.00	0.00	0.0	0.00	0.00	102.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	90.00	0.00
OPER	5C1	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
5C1	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. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.200

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	105.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	90.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 5.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.200Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

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. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.300

Dead Load Moment 0.9
 Superimposed Dead Load Moment 10.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.3	-168.2	154.1	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	288.9	-280.4	256.9	-312.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	107.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	90.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.300

Dead Load	Superimposed Dead Load
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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.300Dead Load Moment 0.9
Superimposed Dead Load Moment 10.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.7	172.3	-162.9	172.3	-162.9	160.6	-174.7	160.6	-
OPER 291.2	279.4	-279.4	279.4	-279.4	267.6	-291.2	267.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	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	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.400

Dead Load Moment 1.4
 Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.6	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	110.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	90.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 5.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.400Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

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. 179.4	175.5	-159.8	175.5	-159.8	155.9	-179.4	155.9	-
OPER 299.0	279.4	-279.4	279.4	-279.4	259.8	-299.0	259.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	167.1	-174.5	147.9	-193.7
OPER	300.6C	-268.7	268.7	-300.6C	278.4	-290.9	246.5	-322.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	112.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	135.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.500Dead Load Moment 1.6
Superimposed Dead Load Moment 20.6

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. 181.0	176.5	-158.8	176.5	-158.8	154.3	-181.0	154.3	-
OPER 301.6	279.4	-279.4	279.4	-279.4	257.2	-301.6	257.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.600

Dead Load Moment 1.4
 Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.2	-320.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	115.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	135.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.600

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	-68.6	71.1
OPER	151.3	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.600Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

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. 179.3	175.4	-159.8	175.4	-159.8	155.9	-179.3	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	135.00	0.00
OPER	5C1	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 top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	117.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	135.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	117.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	135.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.800

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	120.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	135.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.800

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	120.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	135.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.2	-149.4	173.0	-168.6
OPER	300.6C	-268.7	268.7	-300.6C	320.3	-249.0	288.3	-281.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	122.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	135.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 5.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 5.900Dead Load Moment -1.5
Superimposed Dead Load Moment -18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.9	159.8	-175.5	159.8	-175.5	179.4	-155.9	179.4	-
OPER 259.8	279.4	-279.4	279.4	-279.4	299.0	-259.8	299.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	122.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	135.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -39.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.2	-135.4	187.0	-154.6
OPER	300.6C	-268.7	268.7	-300.6C	343.6	-225.6	311.7	-257.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	90.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	115.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-39.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.8	150.4	-184.8	150.4	-184.8	193.4	-141.8	193.4	-
OPER 236.4	279.4	-279.4	279.4	-279.4	322.4	-236.4	322.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	90.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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 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. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-39.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.2	-135.4	187.0	-154.6
OPER	300.6C	-268.7	268.7	-300.6C	343.6	-225.6	311.7	-257.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	90.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	115.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-39.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.8	150.4	-184.8	150.4	-184.8	193.4	-141.8	193.4	-
OPER 236.4	279.4	-279.4	279.4	-279.4	322.4	-236.4	322.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	90.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.2	-149.4	173.0	-168.6
OPER	300.6C	-268.7	268.7	-300.6C	320.3	-249.0	288.3	-281.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	127.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	115.00	0.00	
OPER	5C1	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	

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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.8
OPER	151.3	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.100Dead Load Moment -1.5
Superimposed Dead Load Moment -18.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.9	159.8	-175.5	159.8	-175.5	179.4	-155.9	179.4	-
OPER 259.8	279.4	-279.4	279.4	-279.4	299.0	-259.8	299.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	127.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 6.200

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	130.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	115.00	0.00	
OPER	5C1	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	

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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.3	-122.6	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.200Dead Load Moment -0.1
Superimposed Dead Load Moment -1.3

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. 166.8	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
OPER 278.0	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	130.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	0.00
OPER	5C1	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 top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	132.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	115.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.3
OPER	151.3	-120.6	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	132.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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. S01
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 6.400

Dead Load Moment 1.4
 Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.7	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.2	-320.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	135.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	115.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.5	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

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. 179.3	175.4	-159.8	175.4	-159.8	155.9	-179.3	155.9	-
OPER 298.9	279.4	-279.4	279.4	-279.4	259.9	-298.9	259.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 6.500

Dead Load Moment 1.6
 Superimposed Dead Load Moment 20.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.1	-174.5	147.9	-193.7
OPER	300.6C	-268.7	268.7	-300.6C	278.4	-290.9	246.5	-322.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	137.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	115.00	0.00	
OPER	5C1	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	0.00

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.500Dead Load Moment 1.6
Superimposed Dead Load Moment 20.6

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. 181.0	176.5	-158.8	176.5	-158.8	154.3	-181.0	154.3	-
OPER 301.6	279.4	-279.4	279.4	-279.4	257.2	-301.6	257.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.6	-172.9	149.5	-192.1
OPER	300.6C	-268.7	268.7	-300.6C	281.1	-288.2	249.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	140.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	160.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 18.1

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. 179.4	175.5	-159.8	175.5	-159.8	155.9	-179.4	155.9	-
OPER 299.0	279.4	-279.4	279.4	-279.4	259.8	-299.0	259.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 6.700

Dead Load Moment Superimposed Dead Load Moment
 0.9 10.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.3	-168.2	154.1	-187.4
OPER	300.6C	-268.7	268.7	-300.6C	288.9	-280.4	256.9	-312.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	142.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	160.00	0.00	
OPER	5C1	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	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.700

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.700Dead Load Moment 0.9
Superimposed Dead Load Moment 10.9

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. 174.7	172.3	-162.9	172.3	-162.9	160.6	-174.7	160.6	-
OPER 291.2	279.4	-279.4	279.4	-279.4	267.6	-291.2	267.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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. S01
Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.800

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	145.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	160.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.800

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	top fiber	-bend	bottom fi	
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	145.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	160.00	0.00
OPER	5C1	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 top fiber		Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 6.900

Dead Load Moment Superimposed Dead Load Moment
 -1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.6	172.8	-168.8
OPER	300.6C	-268.7	268.7	-300.6C	320.0	-249.3	288.0	-281.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	147.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	160.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 6.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-7.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.0	159.9	-175.4	159.9	-175.4	179.3	-156.0	179.3	-
OPER 260.0	279.4	-279.4	279.4	-279.4	298.8	-260.0	298.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	147.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	160.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.86		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 7.000

Dead Load Superimposed Dead Load
 Moment Moment
 -3.2 -39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	115.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	140.00	0.00	
OPER	5C1	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	

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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	115.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	140.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.0	-135.6	186.8	-154.8
OPER	300.6C	-268.7	268.7	-300.6C	343.3	-226.0	311.3	-258.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	115.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	140.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.3	-106.0	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 142.0	150.6	-184.7	150.6	-184.7	193.2	-142.0	193.2	-
OPER 236.7	279.4	-279.4	279.4	-279.4	322.1	-236.7	322.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	115.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	140.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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. S01
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.0	-149.5	172.8	-168.7
OPER	300.6C	-268.7	268.7	-300.6C	320.1	-249.2	288.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	152.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	140.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 7.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.3	-124.6	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.100Dead Load Moment -1.5
Superimposed Dead Load Moment -17.9

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. 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. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 7.200

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	0.00	R	0.00	0.00	0.0	0.00	0.00	155.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	140.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.1
OPER	151.3	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.200

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	0.00 R	0.00	0.00	0.0	0.00	0.00	155.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	140.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.300

Dead Load Moment 0.8
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	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	157.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	140.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.300

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

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. 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.	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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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. 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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 7.400

Dead Load Moment 1.4
 Superimposed Dead Load Moment 17.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.8	149.6	-192.0
OPER	300.6C	-268.7	268.7	-300.6C	281.3	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	160.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	140.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 7.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.3	-118.4	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.400Dead Load Moment 1.4
Superimposed Dead Load Moment 17.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.4	-159.9	175.4	-159.9	156.1	-179.2	156.1	-
OPER 298.7	279.4	-279.4	279.4	-279.4	260.1	-298.7	260.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	160.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	140.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 20.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	167.3	-174.3	148.1	-193.5
OPER	300.6C	-268.7	268.7	-300.6C	278.8	-290.5	246.8	-322.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	162.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	140.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 7.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.8
OPER	151.3	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.500Dead Load Moment 1.6
Superimposed Dead Load Moment 20.3

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend
INV.	176.4	-158.9	176.4	-158.9
180.8				
OPER	279.4	-279.4	279.4	-279.4
301.3				

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	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber	Rating bottom fiber	Factor	Rating Value	Load Capacity (tons)
	+bend	-bend	+bend -bend		
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.600Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.6	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.7	249.6	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	165.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	185.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 7.600

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.600Dead Load Moment 1.4
Superimposed Dead Load Moment 17.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	165.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	185.00	0.00
OPER	5C1	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
5C1	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. 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. S01
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 7.700

Dead Load Moment Superimposed Dead Load Moment
 0.8 10.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.9	154.5	-187.1
OPER	300.6C	-268.7	268.7	-300.6C	289.5	-279.8	257.5	-311.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	167.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	185.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.3	-3.9
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.3
OPER	151.3	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	160.9	-174.3	160.9	-
OPER 290.6	279.4	-279.4	279.4	-279.4	268.2	-290.6	268.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	167.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	185.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 7.800

Dead Load Superimposed Dead Load
 Moment Moment
 -0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.6	-160.0	162.4	-179.2
OPER	300.6C	-268.7	268.7	-300.6C	302.6	-266.7	270.6	-298.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	170.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	185.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.3	-110.1	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.800

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.8	-166.5	168.8	-
OPER 277.4	279.4	-279.4	279.4	-279.4	281.4	-277.4	281.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	170.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	185.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 7.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
 -1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.5	-149.1	173.3	-168.2
OPER	300.6C	-268.7	268.7	-300.6C	320.9	-248.4	288.9	-280.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	172.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	185.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 7.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.8
OPER	151.3	-108.0	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 7.900Dead Load Moment -1.6
Superimposed Dead Load Moment -18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.5	159.5	-175.7	159.5	-175.7	179.8	-155.5	179.8	-
OPER 259.2	279.4	-279.4	279.4	-279.4	299.6	-259.2	299.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	172.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	185.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		28.42		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	140.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	165.00	0.00	
OPER	5C1	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	

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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.5
OPER	151.3	-106.0	105.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.000Dead Load Moment -3.3
Superimposed Dead Load Moment -40.3

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. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	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. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
 -3.3 -40.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	206.6	-135.0	187.4	-154.2
OPER	300.6C	-268.7	268.7	-300.6C	344.3	-225.0	312.3	-257.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	140.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	165.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.5
OPER	151.3	-106.0	105.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.4	150.2	-185.1	150.2	-185.1	193.9	-141.4	193.9	-
OPER 235.7	279.4	-279.4	279.4	-279.4	323.1	-235.7	323.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	140.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	165.00	0.00
OPER	5C1	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
5C1	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. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.100

Dead Load Superimposed Dead Load
 Moment Moment
 -1.5 -18.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	192.4	-149.2	173.2	-168.4
OPER	300.6C	-268.7	268.7	-300.6C	320.6	-248.7	288.6	-280.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	177.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	165.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 8.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.9	64.8
OPER	151.3	-124.8	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.100Dead Load Moment -1.5
Superimposed Dead Load Moment -18.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.7	159.7	-175.6	159.7	-175.6	179.6	-155.7	179.6	-
OPER 259.4	279.4	-279.4	279.4	-279.4	299.4	-259.4	299.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	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	999.00	999.00	999.00	999.00	HS 999.00
5C1	999.00	999.00	999.00	999.00	0.00

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.2	-160.3	162.0	-179.5
OPER	300.6C	-268.7	268.7	-300.6C	302.1	-267.2	270.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	180.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	165.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 8.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	66.0
OPER	151.3	-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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.200

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	167.1	-168.2	167.1	-168.2	168.5	-166.8	168.5	-
166.8								
OPER	279.4	-279.4	279.4	-279.4	280.8	-278.0	280.8	-
278.0								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	180.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	165.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.300

Dead Load Moment 0.9
 Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.2	-168.4	154.0	-187.6
OPER	300.6C	-268.7	268.7	-300.6C	288.7	-280.6	256.7	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	182.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	165.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.2
OPER	151.3	-120.7	112.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.300Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

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. 174.8	172.4	-162.9	172.4	-162.9	160.5	-174.8	160.5	-
OPER 291.4	279.4	-279.4	279.4	-279.4	267.4	-291.4	267.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber	Rating bottom fiber	Factor top fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.400

Dead Load Moment 1.5
 Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.3	-173.3	149.1	-192.5
OPER	300.6C	-268.7	268.7	-300.6C	280.5	-288.8	248.5	-320.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	185.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	165.00	0.00	
OPER	5C1	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	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.400Dead Load Moment 1.5
Superimposed Dead Load Moment 18.7

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
	+bend	-bend	+bend	-bend
INV. 179.7	175.7	-159.6	175.7	-159.6
OPER 299.6	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	0.00 R	0.00	0.00	0.00	185.00	
		0.00 R	0.00	0.00	0.00	165.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.00	0.00	
		0.00 R	0.00	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	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 8.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.500

Dead Load Moment 1.7
 Superimposed Dead Load Moment 21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	166.5	-175.1	147.3	-194.3
OPER	300.6C	-268.7	268.7	-300.6C	277.4	-291.9	245.4	-323.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	187.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	165.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.500

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.500Dead Load Moment 1.7
Superimposed Dead Load Moment 21.5

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. 181.6	176.9	-158.4	176.9	-158.4	153.7	-181.6	153.7	-
OPER 302.6	279.4	-279.4	279.4	-279.4	256.2	-302.6	256.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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. 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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.600

Dead Load Moment 1.6
 Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.8	-173.7	148.6	-192.9
OPER	300.6C	-268.7	268.7	-300.6C	279.7	-289.6	247.7	-321.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	190.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	210.00	0.00	
OPER	5C1	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	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.600

Dead Load Moment	Superimposed Dead Load Moment
1.6	19.3

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	176.0	-159.3	176.0	-159.3	155.1	-180.2	155.1	-
180.2								
OPER	279.4	-279.4	279.4	-279.4	258.5	-300.3	258.5	-
300.3								

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	0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	210.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 8.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.700

Dead Load Moment 1.0
 Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-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	0.00	R	0.00	0.00	0.0	0.00	0.00	192.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	210.00	0.00	
OPER	5C1	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	

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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.700

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	-112.4	120.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.700Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

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. 175.7	173.0	-162.3	173.0	-162.3	159.6	-175.7	159.6	-
OPER 292.9	279.4	-279.4	279.4	-279.4	265.9	-292.9	265.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	28.67	28.67	1.699	999999.000	114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.800

Dead Load Moment 0.1
 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	-161.7	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	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	195.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	210.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.800

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	73.5
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.800Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	168.0	-167.3	168.0	-167.3	167.2	-168.1	167.2	-
OPER 280.2	279.4	-279.4	279.4	-279.4	278.6	-280.2	278.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	195.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	210.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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 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. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 8.900

Dead Load Moment Superimposed Dead Load Moment
 -1.2 -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.6	-151.0	171.4	-170.2
OPER	300.6C	-268.7	268.7	-300.6C	317.6	-251.7	285.6	-283.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	197.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	210.00	0.00	
OPER	5C1	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	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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
 Member I. D. S01
 Check Point I. D. 8.900
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.6 -7.6 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.9	74.7
OPER	151.3	-108.2	124.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 8.900Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

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. 157.4	160.8	-174.4	160.8	-174.4	177.8	-157.4	177.8	-
OPER 262.4	279.4	-279.4	279.4	-279.4	296.4	-262.4	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	197.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	210.00	0.00
OPER	5C1	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 top fiber		Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	28.67	28.67	1.699
			999999.000
			114.938

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		30.17		103.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	235.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	190.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.7	63.9
OPER	151.3	-106.1	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -37.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.4	-137.2	185.2	-156.4
OPER	300.6C	-268.7	268.7	-300.6C	340.6	-228.7	308.6	-260.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	235.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	190.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-9.5	9.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	63.9
OPER	151.3	-106.1	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.4	279.4	-279.4	279.4	-279.4	319.4	-239.4	319.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.29	28.67	28.67	1.699
			999999.000
			114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.2	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.6	286.7	-282.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	202.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	190.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.5	65.2
OPER	151.3	-124.1	108.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.8	160.4	-174.8	160.4	-174.8	178.4	-156.8	178.4	-
OPER 261.4	279.4	-279.4	279.4	-279.4	297.4	-261.4	297.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	202.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.200

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	205.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	190.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 9.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.200Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

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. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	205.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	0.00
OPER	5C1	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 top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 9.300

Dead Load Moment 0.7
 Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.4	154.9	-186.6
OPER	300.6C	-268.7	268.7	-300.6C	290.2	-279.1	258.2	-311.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	207.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	190.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.3	-120.0	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.300Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.9	171.8	-163.5	171.8	-163.5	161.4	-173.9	161.4	-
OPER 289.8	279.4	-279.4	279.4	-279.4	269.0	-289.8	269.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	207.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.29	28.67	28.67	1.699	999999.000	114.362

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.3	-171.3	151.1	-190.5
OPER	300.6C	-268.7	268.7	-300.6C	283.8	-285.5	251.8	-317.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	210.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	190.00	0.00	
OPER	5C1	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	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 9.400Dead 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 68.9
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.400

Dead Load Moment Superimposed Dead Load Moment

1.1 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.8	174.4	-160.9	174.4	-160.9	157.5	-177.8	157.5	-
OPER 296.3	279.4	-279.4	279.4	-279.4	262.5	-296.3	262.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	210.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	0.00
OPER	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 9.500

	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. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.500Dead Load Moment 1.2
Superimposed Dead Load Moment 17.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	212.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 9.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-0.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.5	70.1
OPER	151.3	-115.8	116.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.500Dead Load Moment 1.2
Superimposed Dead Load Moment 17.0

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. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.600Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.9	-169.6	152.7	-188.8
OPER	300.6C	-268.7	268.7	-300.6C	286.5	-282.7	254.6	-314.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	215.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.2	71.4
OPER	151.3	-113.7	119.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.600Dead Load Moment 0.8
Superimposed Dead Load Moment 13.3

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. 176.1	173.3	-162.0	173.3	-162.0	159.2	-176.1	159.2	-
OPER 293.5	279.4	-279.4	279.4	-279.4	265.3	-293.5	265.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.14	28.67	28.67	1.699
			999999.000
			106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.700

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	177.5	-164.1	158.3	-183.3
OPER	300.6C	-268.7	268.7	-300.6C	295.8	-273.5	263.8	-305.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	217.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.7
OPER	151.3	-111.6	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.700Dead Load Moment 0.1
Superimposed Dead Load Moment 4.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.6	169.6	-165.7	169.6	-165.7	164.7	-170.6	164.7	-
OPER 284.3	279.4	-279.4	279.4	-279.4	274.5	-284.3	274.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	217.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	0.00
OPER	5C1	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
5C1	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. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.800

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	186.1	-155.5	166.9	-174.7
OPER	300.6C	-268.7	268.7	-300.6C	310.2	-259.1	278.2	-291.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	220.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.800

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-8.5

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	163.8	-171.4	163.8	-171.4	173.4	-161.9	173.4	-
161.9								
OPER	279.4	-279.4	279.4	-279.4	288.9	-269.9	288.9	-
269.9								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Truck	Live Load Moment	Loc. of Ax.	Lane Live Load Moment	Loc. of Conc.				
Typ.	Veh.	w/imp.	w/o imp.	Front Wheel	Dis.	w/imp.	w/o imp.	Load 1	Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	220.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.14	28.67	28.67	1.699
			999999.000
			106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-26.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	197.8	-143.7	178.6	-162.9
OPER	300.6C	-268.7	268.7	-300.6C	329.7	-239.6	297.7	-271.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	222.50		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.7	-8.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.5	75.1
OPER	151.3	-107.5	125.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-26.5

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	156.0	-179.3	156.0	-179.3	185.1	-150.2	185.1	-
150.2								
OPER	279.4	-279.4	279.4	-279.4	308.5	-250.3	308.5	-
250.3								

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	0.00 R	0.00	0.00	0.0	0.00	0.00	222.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.14	28.67	28.67	1.699	999999.000	106.847

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		23.59		105.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	248.1	-128.9	193.5	-183.5
OPER	359.7C	-268.7	268.7	-359.7C	413.5	-214.8	322.5	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	190.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-8.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-63.3	71.8
OPER	172.1	-105.4	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.14	35.20	35.20	2.861
			999999.000
			136.964

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.000

Dead Load Moment Superimposed Dead Load Moment
-4.5 -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	248.1	-128.9	193.5	-183.5
OPER	359.7C	-268.7	268.7	-359.7C	413.5	-214.8	322.5	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	190.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	235.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-10.1	11.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-63.3	71.8
OPER	172.1	-105.4	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 135.3	146.1	-189.2	146.1	-189.2	199.9	-135.3	199.9	-
OPER 225.6	279.4	-279.4	279.4	-279.4	333.2	-225.6	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	190.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 10.100

Dead Load Moment Superimposed Dead Load Moment
 -2.0 -22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	230.7	-176.8	206.5	-200.9
OPER	359.7C	-319.4	319.4	-359.7C	384.5	-294.6	344.2	-334.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	227.50		
		0.00	R	0.00	0.00	0.0	0.00	0.00	215.00	0.00	
OPER	5C1	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	

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
5C1	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 5C1

Member I. D. S01
Check Point I. D. 10.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.9	0.0	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-85.8	73.1
OPER	172.1	-142.9	121.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.100

Dead Load Moment	Superimposed Dead Load Moment
-2.0	-22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 184.5	189.4	-209.2	189.4	-209.2	214.2	-184.5	214.2	-
OPER 307.4	332.2	-332.2	332.2	-332.2	357.0	-307.4	357.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	227.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.200

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.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.2
OPER	359.7C	-319.4	319.4	-359.7C	360.7	-318.4	320.4	-358.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	230.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	215.00	0.00	
OPER	5C1	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	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.7	0.0	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.5	74.3
OPER	172.1	-140.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.200Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

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. 198.7	198.9	-199.7	198.9	-199.7	199.9	-198.7	199.9	-
OPER 331.2	332.2	-332.2	332.2	-332.2	333.2	-331.2	333.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	230.00
		0.00 R	0.00	0.00	0.0	0.00	215.00
OPER	5C1	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 top fiber	Rating bottom fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.300Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.3	-202.2	181.1	-226.4
OPER	359.7C	-319.4	319.4	-359.7C	342.1	-337.0	301.8	-377.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	232.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	215.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-83.2	75.6
OPER	172.1	-138.7	126.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.300Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.9	206.4	-192.3	206.4	-192.3	188.8	-209.9	188.8	-
OPER 349.8	332.2	-332.2	332.2	-332.2	314.6	-349.8	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	232.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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
5C1	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. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		50.67		101.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 10.400

Dead Load Moment Superimposed Dead Load Moment
 2.8 28.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.3	-210.2	173.1	-234.4
OPER	359.7C	-319.4	319.4	-359.7C	328.8	-350.3	288.5	-390.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	235.00		
		0.00	R	0.00	0.00	0.0	0.00	0.00	215.00	0.00	
OPER	5C1	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	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S01
Check Point I. D. 10.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.0	76.9
OPER	172.1	-136.7	128.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.400Dead Load Moment 2.8
Superimposed Dead Load Moment 28.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 217.9	211.7	-187.0	211.7	-187.0	180.8	-217.9	180.8	-
OPER 363.1	332.2	-332.2	332.2	-332.2	301.3	-363.1	301.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	235.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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	top fiber -bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.500Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.0	168.3	-239.2
OPER	359.7C	-319.4	319.4	-359.7C	320.7	-358.4	280.4	-398.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	237.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	215.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.7	78.1
OPER	172.1	-134.6	130.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.500

Dead Load Moment	Superimposed Dead Load Moment
3.5	35.5

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	214.9	-183.7	214.9	-183.7	175.9	-222.7	175.9	-
222.7								
OPER	332.2	-332.2	332.2	-332.2	293.2	-371.2	293.2	-
371.2								

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	0.00 R	0.00	0.00	0.0	0.00	0.00	237.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 38.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	190.8	-216.6	166.7	-240.8
OPER	359.7C	-319.4	319.4	-359.7C	318.0	-361.1	277.8	-401.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	240.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	215.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.600

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.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 38.0

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. 224.3	216.0	-182.7	216.0	-182.7	174.3	-224.3	174.3	-
OPER 373.9	332.2	-332.2	332.2	-332.2	290.5	-373.9	290.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00
		0.00 R	0.00	0.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.700Dead Load Moment 3.5
Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	192.4	-215.1	168.2	-239.3
OPER	359.7C	-319.4	319.4	-359.7C	320.6	-358.5	280.3	-398.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	242.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	215.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.700

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.	103.3	-78.2	80.7
OPER	172.1	-130.3	134.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.700

Dead Load Moment	Superimposed Dead Load Moment
3.5	35.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.8	215.0	-183.7	215.0	-183.7	175.9	-222.8	175.9	-
OPER 371.3	332.2	-332.2	332.2	-332.2	293.1	-371.3	293.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	0.00 R	0.00	0.00	0.0	0.00	0.00	242.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.800Dead Load Moment 2.8
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	197.0	-210.4	172.9	-234.6
OPER	359.7C	-319.4	319.4	-359.7C	328.4	-350.7	288.1	-391.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	245.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	215.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.9	81.9
OPER	172.1	-128.2	136.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.800

Dead Load Moment	Superimposed Dead Load Moment
2.8	28.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.1	211.8	-186.8	211.8	-186.8	180.5	-218.1	180.5	-
OPER 363.5	332.2	-332.2	332.2	-332.2	300.9	-363.5	300.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	245.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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. 10.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	204.8	-202.6	180.7	-226.8
OPER	359.7C	-319.4	319.4	-359.7C	341.4	-337.7	301.2	-378.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	247.50		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	215.00	0.00	
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00		
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.7	83.2
OPER	172.1	-126.1	138.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 210.3	206.6	-192.0	206.6	-192.0	188.4	-210.3	188.4	-
OPER 350.5	332.2	-332.2	332.2	-332.2	313.9	-350.5	313.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	0.00 R	0.00	0.00	0.0	0.00	0.00	247.50	
		0.00 R	0.00	0.00	0.0	0.00	0.00	215.00	0.00
OPER	5C1	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
5C1	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. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S01
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
 Check Point I. D. 11.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 11.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.4	79.9
OPER	172.1	-124.0	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S01
Check Point I. D. 11.000Dead 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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	5C1	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
5C1	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 10

Live Load Distribution Factor 0.143

Second Live Load Dist. Factor 0.143

Comments:

Member I. D. S02 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Length -- Non-Composite:		Section		Section	Hinge Location	
Span No.	Range No.	Range Length	Left	Right	Variation	No. 1 No. 2
1	1	25.000	1	0		0.0 0.0
2	1	25.000	2	0		0.0 0.0
3	1	25.000	2	0		0.0 0.0
4	1	25.000	2	0		0.0 0.0
5	1	25.000	2	0		0.0 0.0
6	1	25.000	2	0		0.0 0.0
7	1	25.000	2	0		0.0 0.0
8	1	25.000	2	0		0.0 0.0
9	1	25.000	2	0		0.0 0.0
10	1	25.000	1	0		0.0 0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	0.000	615.0	615.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	615.0	615.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	615.0	615.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 1.000
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.7 0.0 6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-83.6	75.3
OPER	172.1	-139.3	125.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.30	4.01	-0.23	3.08	-0.30	3.09	-0.23	2.38
OPER	5C1	-0.26	3.15	-0.20	2.42	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	278.62	18.79	HS 375.88	676.6
5C1	539.01	39.87	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	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	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.100

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	8.37 L	6.44	-11.50	0.0	5.23	4.02	2.50			
		-0.78 R	-0.60	58.00	0.0	-0.58	-0.44	35.00	0.00		
OPER	5C1	6.65 R	5.12	18.50	0.0	0.00	0.00	0.00			
		-0.69 R	-0.53	47.00	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	24.70	256.46	21.82	287.34	HS 436.31	785.4
5C1	51.82	482.53	45.77	540.61	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.100

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.6	0.0 4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.5	76.3
OPER	172.1	-137.5	127.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.37	3.35	-0.28	2.58	-0.40	2.65	-0.30	2.04
OPER	5C1	-0.46	2.66	-0.36	2.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	208.49	22.80	HS 455.89	820.6
5C1	297.95	47.82	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.100Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	8.37 L	6.44	-11.50	0.0	5.23	4.02	2.50	
		-0.78 R	-0.60	58.00	0.0	-0.58	-0.44	35.00	0.00
OPER	5C1	6.65 R	5.12	18.50	0.0	0.00	0.00	0.00	
		-0.69 R	-0.53	47.00	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	22.73	266.26	22.73	266.26	HS 454.63	818.3
5C1	47.69	500.96	47.69	500.96	0.00	999.0

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	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.200

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	13.62 L	10.48	-9.00	0.0	8.93	6.87	5.00			
		-1.57 R	-1.20	58.00	0.0	-1.16	-0.89	35.00	0.00		
OPER	5C1	10.97 R	8.44	21.00	0.0	0.00	0.00	0.00			
		-1.39 R	-1.07	47.00	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	14.71	132.36	12.94	147.80	HS 258.69
5C1	30.44	249.03	26.77	278.07	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.4	0.0 3.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-81.5	77.4
OPER	172.1	-135.8	128.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.73	2.72	-0.57	2.10	-0.72	2.23	-0.55	1.72
OPER	5C1	-0.71	2.19	-0.55	1.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	110.92	28.40	HS 999.00	999.0
5C1	191.14	58.78	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.200Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	13.62 L	10.48	-9.00	0.0	8.93	6.87	5.00	
		-1.57 R	-1.20	58.00	0.0	-1.16	-0.89	35.00	0.00
OPER	5C1	10.97 R	8.44	21.00	0.0	0.00	0.00	0.00	
		-1.39 R	-1.07	47.00	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	13.50	137.26	13.50	137.26	HS 269.95	485.9
5C1	27.93	258.25	27.93	258.25	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.300Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.06 L	12.35	-6.50	0.0	11.40	8.77	7.50			
		-2.35 R	-1.81	58.00	0.0	-1.73	-1.33	35.00	0.00		
OPER	5C1	13.15 R	10.12	23.50	0.0	0.00	0.00	0.00			
		-2.08 R	-1.60	47.00	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	12.23	89.89	10.73	100.19	HS 214.56	386.2
5C1	24.89	169.13	21.83	188.49	0.00	873.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.5	78.4
OPER	172.1	-134.1	130.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.09	2.14	-0.84	1.65	-1.06	1.84	-0.81	1.42
OPER	5C1	-1.06	1.75	-0.81	1.35	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	73.74	36.61	HS 999.00	999.0
5C1	126.96	74.50	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.300Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

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. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	16.06 L	12.35	-6.50	0.0	11.40	8.77
		-2.35 R	-1.81	58.00	0.0	-1.73	-1.33
OPER	5C1	13.15 R	10.12	23.50	0.0	0.00	0.00
		-2.08 R	-1.60	47.00	0.0	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	11.20	93.16	11.20	93.16	403.4
5C1	22.80	175.28	22.80	175.28	912.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.400

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.09 L	12.38	-4.00	0.0	12.44	9.57	10.00			
		-3.13 R	-2.41	58.00	0.0	-2.31	-1.78	35.00	0.00		
OPER	5C1	13.81 R	10.62	22.00	0.0	0.00	0.00	0.00			
		-2.77 R	-2.13	47.00	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	12.13	67.84	10.62	75.56	HS 212.50	382.5
5C1	23.55	127.63	20.64	142.15	0.00	825.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.0	0.0 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.43	1.61	-1.10	1.24	-1.40	1.48	-1.08	1.14
OPER	5C1	-1.38	1.37	-1.06	1.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	55.37	49.36	HS 999.00	999.0
5C1	95.95	96.89	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.400Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.09 L	12.38	-4.00	0.0	12.44	9.57	10.00	
		-3.13 R	-2.41	58.00	0.0	-2.31	-1.78	35.00	0.00
OPER	5C1	13.81 R	10.62	22.00	0.0	0.00	0.00	0.00	
		-2.77 R	-2.13	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.10	70.29	11.10	70.29	HS 222.03	399.7
5C1	21.56	132.24	21.56	132.24	0.00	862.4

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	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
 Check Point I. D. 1.500

Dead Load Moment 3.5
 Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.18 L	11.67	-15.50	0.0	12.40	9.54	12.50			
		-3.91 R	-3.01	58.00	0.0	-2.89	-2.22	35.00	0.00		
OPER	5C1	13.50 R	10.38	24.50	0.0	0.00	0.00	0.00			
		-3.47 R	-2.67	47.00	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	12.94	53.94	11.35	HS 227.00	408.6
5C1	24.25	101.49	21.27	0.00	850.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-1.6
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.7	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.88	1.21	-1.45	0.93	-1.74	1.14	-1.34	0.88
OPER	5C1	-1.68	1.05	-1.29	0.81	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	41.59	66.27	HS 999.00	999.0
5C1	77.61	127.86	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.500Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	15.18 L	11.67	-15.50	0.0	12.40	9.54	12.50	
		-3.91 R	-3.01	58.00	0.0	-2.89	-2.22	35.00	0.00
OPER	5C1	13.50 R	10.38	24.50	0.0	0.00	0.00	0.00	
		-3.47 R	-2.67	47.00	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	11.85	55.90	11.85	55.90	HS 237.10	426.8
5C1	22.22	105.18	22.22	105.18	0.00	888.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.600

Dead Load Moment 2.8
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.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.41 L	11.08	-13.00	0.0	11.12	8.56	15.00			
		-4.70 R	-3.61	58.00	0.0	-3.47	-2.67	35.00	0.00		
OPER	5C1	12.34 L	9.49	3.00	0.0	0.00	0.00	0.00			
		-4.16 R	-3.20	47.00	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	13.91	44.09	12.24	49.23	HS 244.72	440.5
5C1	27.08	82.95	23.81	92.63	0.00	952.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.3	81.6
OPER	172.1	-128.8	135.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.28	0.76	-1.75	0.59	-2.09	0.84	-1.60	0.65
OPER	5C1	-1.97	0.78	-1.52	0.60	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	33.95	96.61	HS 999.00	999.0
5C1	65.39	173.37	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.600Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

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. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	14.41 L	11.08	-13.00	0.0	11.12	8.56	15.00	
		-4.70 R	-3.61	58.00	0.0	-3.47	-2.67	35.00	0.00
OPER	5C1	12.34 L	9.49	3.00	0.0	0.00	0.00	0.00	
		-4.16 R	-3.20	47.00	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	12.77	45.72	12.77	45.72	HS 255.36	459.6
5C1	24.85	86.02	24.85	86.02	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.700

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.45 L	9.58	-10.50	0.0	9.00	6.92	17.50			
		-5.48 R	-4.21	58.00	0.0	-4.23	-3.25	35.00	85.00		
OPER	5C1	10.14 R	7.80	64.50	0.0	0.00	0.00	0.00			
		-4.85 R	-3.73	47.00	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	16.63	36.58	14.69	40.99	HS 293.81
5C1	34.03	68.82	30.06	77.12	0.00 528.9 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-4.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.6
OPER	172.1	-127.1	137.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.92	0.38	-2.24	0.29	-2.42	0.58	-1.86	0.45
OPER	5C1	-2.32	0.54	-1.79	0.41	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.15	142.35	HS 523.04	941.5
5C1	54.69	256.19	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.700Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.45 L	9.58	-10.50	0.0	9.00	6.92	17.50	
		-5.48 R	-4.21	58.00	0.0	-4.23	-3.25	35.00	85.00
OPER	5C1	10.14 R	7.80	64.50	0.0	0.00	0.00	0.00	
		-4.85 R	-3.73	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.31	37.98	15.31	37.98	HS 306.13	551.0
5C1	31.32	71.46	31.32	71.46	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.800

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.800

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.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.00 L	6.16	-8.00	0.0	5.95	4.58	20.00			
		-6.26 R	-4.82	58.00	0.0	-4.83	-3.72	35.00	85.00		
OPER	5C1	7.33 R	5.64	67.00	0.0	0.00	0.00	0.00			
		-5.55 R	-4.27	47.00	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	27.03	30.53	24.01 34.39	HS 480.21	864.4
5C1	49.21	57.45	43.71 64.71	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 1.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.7 -6.3 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-75.2	83.6
OPER	172.1	-125.4	139.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.53	0.12	-2.72	0.09	-2.75	0.35	-2.11	0.27
OPER	5C1	-2.72	0.31	-2.09	0.24	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.31	236.28	HS 426.17	767.1
5C1	46.17	442.56	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.800

Dead Load Moment Superimposed Dead Load Moment

0.1 -0.9

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	8.00 L	6.16	-8.00	0.0	5.95	4.58	20.00	
		-6.26 R	-4.82	58.00	0.0	-4.83	-3.72	35.00	85.00
OPER	5C1	7.33 R	5.64	67.00	0.0	0.00	0.00	0.00	
		-5.55 R	-4.27	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	24.97	31.76	24.97	31.76	HS 499.37	898.9
5C1	45.46	59.75	45.46	59.75	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.28	35.20	35.20	2.861	999999.000	122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.900

Dead Load Moment Superimposed Dead Load Moment
-2.0 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	1.57 R	1.21	88.00	0.0	2.95	2.27	22.50			
		-7.76 L	-5.97	16.00	0.0	-7.24	-5.57	35.00	10.00		
OPER	5C1	3.68 R	2.83	69.50	0.0	0.00	0.00	0.00			
		-6.51 L	-5.01	-11.00	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	77.21	23.11	69.03	26.23	HS 462.29
5C1	103.32	45.94	92.37	52.13	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.9	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.2	84.7
OPER	172.1	-123.6	141.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.09	0.08	-3.15	0.06	-3.05	0.17	-2.35	0.13
OPER	5C1	-3.08	0.12	-2.37	0.10	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.13	504.28	HS 362.62	652.7
5C1	40.11	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 1.900Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	1.57 R	1.21	88.00	0.0	2.95	2.27	22.50	
		-7.76 L	-5.97	16.00	0.0	-7.24	-5.57	35.00	10.00
OPER	5C1	3.68 R	2.83	69.50	0.0	0.00	0.00	0.00	
		-6.51 L	-5.01	-11.00	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	71.63	24.10	71.63	24.10	HS 482.05	867.7
5C1	95.85	47.90	95.85	47.90	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
 Check Point I. D. 2.000

Dead Load Superimposed Dead Load
 Moment Moment
 -4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00			
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00	35.00		
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00			
		-9.21 L	-7.09	-6.00	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	98.74	10.34	89.59	11.82	HS 206.88
5C1	211.95	24.34	192.30	27.82	0.00 973.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.09	4.37	-3.15	3.36	-3.05	3.31	-2.35	2.54
OPER	5C1	-3.08	3.36	-2.37	2.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.93	14.73	HS 294.64	530.3
5C1	35.67	32.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00	
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00	35.00
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00	
		-9.21 L	-7.09	-6.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	92.67	10.84	92.67	10.84	HS 216.80	390.2
5C1	198.90	25.51	198.90	25.51	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	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. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00			
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00		35.00	
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00			
		-9.21 L	-7.09	-6.00	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	98.74	10.34	89.59	11.82	HS 206.88
5C1	211.95	24.34	192.30	27.82	0.00 973.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-9.4	8.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.59	4.37	-3.53	3.36	-3.34	3.31	-2.57	2.54
OPER	5C1	-3.42	3.36	-2.63	2.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.93	14.73	HS 294.64	530.3
5C1	35.67	32.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00	
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00	35.00
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00	
		-9.21 L	-7.09	-6.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	92.67	10.84	92.67	10.84	HS 216.80	390.2
5C1	198.90	25.51	198.90	25.51	0.00	999.0

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	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. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.100

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	1.90 R	1.46	55.50	0.0	2.69	2.07	27.50			
		-8.50 R	-6.54	34.00	0.0	-7.33	-5.64	15.00	37.50		
OPER	5C1	2.69 R	2.07	78.50	0.0	0.00	0.00	0.00			
		-6.88 L	-5.29	-3.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	72.46	17.27	65.32	19.52	HS 345.33	621.6
5C1	120.67	35.53	108.78	40.18	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.7	0.0
	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.2	65.4
OPER	151.3	-123.7	109.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.79	-0.29	2.91	-0.37	2.99	-0.29	2.30
OPER	5C1	-0.40	2.94	-0.30	2.26	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	198.01	17.29	HS 345.72	622.3
5C1	312.49	37.04	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.100

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	1.90 R	1.46	55.50	0.0	2.69	2.07	27.50	
		-8.50 R	-6.54	34.00	0.0	-7.33	-5.64	15.00	37.50
OPER	5C1	2.69 R	2.07	78.50	0.0	0.00	0.00	0.00	
		-6.88 L	-5.29	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	67.72	18.02	67.72	18.02	HS 360.50	648.9
5C1	112.78	37.10	112.78	37.10	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.32 R	5.63	58.00	0.0	5.11	3.93	30.00			
		-6.96 L	-5.36	-8.00	0.0	-4.69	-3.60	15.00	47.50		
OPER	5C1	5.81 R	4.47	81.00	0.0	0.00	0.00	0.00			
		-5.61 L	-4.31	3.00	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	25.30	22.46	22.68	25.22	HS 449.21	808.6
5C1	53.13	46.48	47.63	52.18	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-122.0	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.19	-0.29	2.46	-0.52	2.64	-0.40	2.03
OPER	5C1	-0.59	2.52	-0.46	1.94	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	139.54	20.81	HS 416.26	749.3
5C1	205.75	44.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.200

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	7.32 R	5.63	58.00	0.0	5.11	3.93	30.00	
		-6.96 L	-5.36	-8.00	0.0	-4.69	-3.60	15.00	47.50
OPER	5C1	5.81 R	4.47	81.00	0.0	0.00	0.00	0.00	
		-5.61 L	-4.31	3.00	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	23.56	23.39	23.56	23.39	HS 467.73	841.9
5C1	49.48	48.40	49.48	48.40	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.300

Dead Load Moment Superimposed Dead Load Moment

0.1 3.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.73 R	8.25	60.50	0.0	7.74	5.95	32.50			
		-5.78 L	-4.45	-8.00	0.0	-4.08	-3.14	15.00		0.00	
OPER	5C1	8.36 R	6.43	48.50	0.0	0.00	0.00	0.00			
		-4.98 L	-3.83	4.00	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	16.60	28.29	14.81	31.61	HS 296.15	533.1
5C1	35.50	54.69	31.67	61.11	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.300Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.4 0.0 3.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	-0.54	2.59	-0.42	1.99	-0.81	2.27	-0.62	1.75
OPER	5C1	-0.82	2.10	-0.63	1.62	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	89.33	26.10	HS 522.01	939.6
5C1	146.13	53.44	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.300Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	10.73 R	8.25	60.50	0.0	7.74	5.95	32.50
		-5.78 L	-4.45	-8.00	0.0	-4.08	-3.14	15.00
OPER	5C1	8.36 R	6.43	48.50	0.0	0.00	0.00	0.00
		-4.98 L	-3.83	4.00	0.0	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	15.41	29.41	15.41	29.41
5C1	32.96	56.85	32.96	56.85

HS 308.17
0.00554.7
999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.07 R	9.29	63.00	0.0	9.36	7.20	35.00			
		-4.60 L	-3.54	-8.00	0.0	-3.56	-2.74	15.00	0.00		
OPER	5C1	10.14 R	7.80	47.00	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	5.50	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	14.36	36.57	12.78	40.74	HS 255.51	459.9
5C1	28.51	61.66	25.35	68.70	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.2	0.0 2.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.2	68.5
OPER	151.3	-118.6	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.12	2.13	-0.86	1.64	-1.13	1.90	-0.87	1.46
OPER	5C1	-1.08	1.79	-0.83	1.37	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	63.02	32.22	HS 999.00	999.0
5C1	109.45	63.94	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.07 R	9.29	63.00	0.0	9.36	7.20
		-4.60 L	-3.54	-8.00	0.0	-3.56	-2.74
OPER	5C1	10.14 R	7.80	47.00	0.0	0.00	0.00
		-4.55 L	-3.50	5.50	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	13.31	37.97	13.31	37.97
5C1	26.42	64.03	26.42	64.03

HS 266.20
0.00479.2
999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.80	L	9.08	23.50	0.0	10.05	7.73	37.50		
		-3.42	L	-2.63	-8.00	0.0	-3.04	-2.34	15.00	0.00	
OPER	5C1	10.72	R	8.25	88.50	0.0	0.00	0.00	0.00		
		-4.30	L	-3.31	6.50	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	14.52	49.84	12.89	55.46	HS 257.81	464.1
5C1	26.65	65.91	23.66	73.34	0.00	946.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 0.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	-1.64	1.66	-1.26	1.28	-1.48	1.53	-1.14	1.17
OPER	5C1	-1.37	1.46	-1.05	1.12	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.85	41.80	HS 999.00	999.0
5C1	85.46	79.38	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.500

Dead Load Moment Superimposed Dead Load Moment

1.2 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.80 L	9.08	23.50	0.0	10.05	7.73	37.50	
		-3.42 L	-2.63	-8.00	0.0	-3.04	-2.34	15.00	0.00
OPER	5C1	10.72 R	8.25	88.50	0.0	0.00	0.00	0.00	
		-4.30 L	-3.31	6.50	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	13.44	51.73	13.44	51.73	HS 268.74	483.7
5C1	24.66	68.41	24.66	68.41	0.00	986.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.600

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.05 L	9.27	12.00	0.0	9.54	7.34	40.00			
		-3.77 R	-2.90	83.00	0.0	-3.33	-2.56	60.00	0.00		
OPER	5C1	10.48 L	8.06	28.00	0.0	0.00	0.00	0.00			
		-4.27 R	-3.28	69.50	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	14.28	44.98	12.69	50.07	HS 253.73	456.7
5C1	27.36	66.19	24.31	73.68	0.00	972.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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 (-)	for LL+I (+)
INV.	90.8	-69.0	70.6
OPER	151.3	-115.1	117.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.10	1.14	-1.61	0.88	-1.85	1.18	-1.42	0.91
OPER	5C1	-1.68	1.18	-1.29	0.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.95	60.01	HS 999.00	999.0
5C1	68.62	99.56	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.600

Dead Load Moment Superimposed Dead Load Moment

1.1 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.05 L	9.27	12.00	0.0	9.54	7.34	40.00	
		-3.77 R	-2.90	83.00	0.0	-3.33	-2.56	60.00	0.00
OPER	5C1	10.48 L	8.06	28.00	0.0	0.00	0.00	0.00	
		-4.27 R	-3.28	69.50	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	13.22	46.69	13.22	46.69	HS 264.44	476.0
5C1	25.33	68.71	25.33	68.71	0.00	999.0

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 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. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.78 L	8.29	14.50	0.0	8.09	6.22	42.50			
		-4.75 R	-3.65	83.00	0.0	-3.76	-2.89	60.00	0.00		
OPER	5C1	9.05 R	6.96	89.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	71.00	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	16.26	35.04	14.48	39.08	HS 289.52
5C1	32.29	60.88	28.75	67.90	0.00 521.1 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-2.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.0	71.6
OPER	151.3	-113.4	119.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.57	0.57	-1.97	0.44	-2.22	0.85	-1.71	0.66
OPER	5C1	-2.06	0.91	-1.58	0.70	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.51	83.90	HS 530.31	954.6
5C1	55.08	130.77	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.78 L	8.29	14.50	0.0	8.09	6.22	42.50	
		-4.75 R	-3.65	83.00	0.0	-3.76	-2.89	60.00	0.00
OPER	5C1	9.05 R	6.96	89.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	71.00	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	15.07	36.40	15.07	36.40	HS 301.48	542.7
5C1	29.94	63.24	29.94	63.24	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.800

	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. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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 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	7.44 L	5.72	17.00	0.0	5.67	4.36	45.00			
		-5.72 R	-4.40	83.00	0.0	-4.42	-3.40	60.00	110.00		
OPER	5C1	6.81 R	5.24	92.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.87	72.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	24.33	28.05	21.75	31.40	HS 435.03	783.0
5C1	44.32	53.12	39.62	59.47	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 2.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.4 -4.3 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.6
OPER	151.3	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.17	0.46	-2.44	0.35	-2.59	0.57	-1.99	0.44
OPER	5C1	-2.46	0.66	-1.89	0.51	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.14	127.94	HS 422.83	761.1
5C1	45.42	183.38	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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.	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	7.44 L	5.72	17.00	0.0	5.67	4.36	45.00	
		-5.72 R	-4.40	83.00	0.0	-4.42	-3.40	60.00	110.00
OPER	5C1	6.81 R	5.24	92.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.87	72.00	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	22.62	29.18	22.62	29.18	HS 452.36	814.2
5C1	41.20	55.26	41.20	55.26	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	2.06 L	1.58	19.50	0.0	3.19	2.45	47.50	
		-7.38 L	-5.68	41.00	0.0	-6.67	-5.13	60.00	37.50
OPER	5C1	3.53 R	2.72	94.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	74.50	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	59.43	20.63	53.41	23.23	HS 412.56	742.6
5C1	89.35	43.38	80.29	48.84	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-5.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.6
OPER	151.3	-110.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.76	0.47	-2.89	0.36	-2.94	0.44	-2.26	0.34
OPER	5C1	-2.86	0.44	-2.20	0.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.55	155.63	HS 351.00	631.8
5C1	38.44	280.32	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 2.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.06 L	1.58	19.50	0.0	3.19	2.45	47.50	
		-7.38 L	-5.68	41.00	0.0	-6.67	-5.13	60.00	37.50
OPER	5C1	3.53 R	2.72	94.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	55.43	21.50	55.43	21.50	HS 430.03	774.1
5C1	83.33	45.21	83.33	45.21	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50	L	1.92	-8.00	0.0	2.23	1.72	15.00		
		-12.31	L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00	
OPER	5C1	1.93	L	1.48	-34.50	0.0	0.00	0.00	0.00		
		-7.44	L	-5.72	45.50	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	80.06	11.48	72.38	13.04	HS 229.70	413.5
5C1	173.25	31.70	156.64	36.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.000

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	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.76	4.32	-2.89	3.32	-2.94	3.29	-2.26	2.53
OPER	5C1	-2.86	3.24	-2.20	2.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.06	15.00	HS 299.92	539.9
5C1	33.38	33.30	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.000Dead Load Moment -2.9
Superimposed Dead Load Moment -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.50 L	1.92	-8.00	0.0	2.23	1.72	15.00	
		-12.31 L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00
OPER	5C1	1.93 L	1.48	-34.50	0.0	0.00	0.00	0.00	
		-7.44 L	-5.72	45.50	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	74.96	12.01	74.96	12.01	HS 240.17	432.3
5C1	162.22	33.14	162.22	33.14	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50	L	1.92	-8.00	0.0	2.23	1.72	15.00		
		-12.31	L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00	
OPER	5C1	1.93	L	1.48	-34.50	0.0	0.00	0.00	0.00		
		-7.44	L	-5.72	45.50	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	80.06	11.48	72.38	13.04	HS 229.70	413.5
5C1	173.25	31.70	156.64	36.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.3	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.31	4.32	-3.32	3.32	-3.27	3.29	-2.51	2.53
OPER	5C1	-3.24	3.24	-2.50	2.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.06	15.00	HS 299.92	539.9
5C1	33.38	33.30	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.000Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.50 L	1.92	-8.00	0.0	2.23	1.72	15.00	
		-12.31 L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00
OPER	5C1	1.93 L	1.48	-34.50	0.0	0.00	0.00	0.00	
		-7.44 L	-5.72	45.50	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	74.96	12.01	74.96	12.01	HS 240.17	432.3
5C1	162.22	33.14	162.22	33.14	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.100

Dead Load Moment Superimposed Dead Load Moment
-1.2 -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.02 R	1.55	80.50	0.0	3.25	2.50	52.50			
		-7.34 R	-5.65	59.00	0.0	-6.62	-5.09	40.00	62.50		
OPER	5C1	3.67 L	2.82	5.50	0.0	0.00	0.00	0.00			
		-5.82 L	-4.48	25.50	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	58.12	20.81	52.21	23.42	HS 416.13	749.0
5C1	85.74	43.72	77.03	49.21	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.28
OPER	5C1	-0.40	2.86	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	182.86	17.46	HS 349.24	628.6
5C1	310.84	38.30	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.100Dead Load Moment Superimposed Dead Load Moment
-1.2 -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.02 R	1.55	80.50	0.0	3.25	2.50	52.50	
		-7.34 R	-5.65	59.00	0.0	-6.62	-5.09	40.00	62.50
OPER	5C1	3.67 L	2.82	5.50	0.0	0.00	0.00	0.00	
		-5.82 L	-4.48	25.50	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	54.19	21.68	54.19	21.68	HS 433.69	780.6
5C1	79.95	45.56	79.95	45.56	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.200Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 R	5.71	83.00	0.0	5.63	4.33	55.00			
		-5.67 L	-4.36	17.00	0.0	-4.13	-3.18	40.00		72.50	
OPER	5C1	6.90 L	5.31	8.00	0.0	0.00	0.00	0.00			
		-5.01 L	-3.86	28.00	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	24.24	28.51	21.65	31.89	HS 433.03
5C1	43.45	53.71	38.82	60.08	0.00 779.5 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.200

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	111.4

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	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.01
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	130.26	21.02	HS 420.48	756.9
5C1	204.15	45.19	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.200Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	7.43 R	5.71	83.00	0.0	5.63	4.33	55.00	
		-5.67 L	-4.36	17.00	0.0	-4.13	-3.18	40.00	72.50
OPER	5C1	6.90 L	5.31	8.00	0.0	0.00	0.00	0.00	
		-5.01 L	-3.86	28.00	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	22.52	29.64	22.52	29.64	HS 450.39	810.7
5C1	40.37	55.85	40.37	55.85	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.300Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.81 R	8.32	85.50	0.0	8.18	6.29	57.50			
		-4.71 L	-3.62	17.00	0.0	-3.64	-2.80	40.00	0.00		
OPER	5C1	9.12 L	7.02	10.50	0.0	0.00	0.00	0.00			
		-4.53 L	-3.48	29.00	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	16.07	35.67	14.29	39.75	HS 285.86	514.6
5C1	31.74	61.77	28.23	68.84	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.300

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	67.8
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	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.13	26.35	HS 527.10	948.8
5C1	144.72	54.75	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.300Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

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. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.81 R	8.32	85.50	0.0	8.18	6.29
		-4.71 L	-3.62	17.00	0.0	-3.64	-2.80
OPER	5C1	9.12 L	7.02	10.50	0.0	0.00	0.00
		-4.53 L	-3.48	29.00	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	14.89	37.04	14.89	37.04	HS 297.79	536.0
5C1	29.41	64.15	29.41	64.15	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.400

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.13 R	9.33	88.00	0.0	9.71	7.47	60.00			
		-3.74 L	-2.88	17.00	0.0	-3.21	-2.47	40.00	0.00		
OPER	5C1	10.51 R	8.08	72.00	0.0	0.00	0.00	0.00			
		-4.22 L	-3.25	30.50	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	14.01	45.84	12.43	50.97	HS 248.64	447.6
5C1	26.96	67.72	23.92	75.30	0.00	956.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.400Dead 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	-1.12	2.10	-0.86	1.61	-1.17	1.87	-0.90	1.44
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.76	32.80	HS 999.00	999.0
5C1	108.39	68.18	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.400Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.13 R	9.33	88.00	0.0	9.71	7.47	60.00	
		-3.74 L	-2.88	17.00	0.0	-3.21	-2.47	40.00	0.00
OPER	5C1	10.51 R	8.08	72.00	0.0	0.00	0.00	0.00	
		-4.22 L	-3.25	30.50	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	12.96	47.56	12.96	47.56	HS 259.27	466.7
5C1	24.94	70.27	24.94	70.27	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.500

Dead Load Moment Superimposed Dead Load Moment

1.7 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.84 R	9.11	76.50	0.0	10.32	7.93	62.50			
		-2.81 R	-2.16	108.00	0.0	-2.79	-2.14	85.00	0.00		
OPER	5C1	10.80 L	8.31	11.50	0.0	0.00	0.00	0.00			
		-4.09 R	-3.15	93.50	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	14.26	61.57	12.63	68.41	HS 252.69
5C1	26.06	70.35	23.10	78.16	0.00 454.8 924.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 (-)	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	-1.64	1.64	-1.26	1.26	-1.52	1.51	-1.17	1.16
OPER	5C1	-1.37	1.37	-1.06	1.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.51	42.55	HS 999.00	999.0
5C1	84.68	84.99	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.500

Dead Load Moment Superimposed Dead Load Moment

1.7 17.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.84 R	9.11	76.50	0.0	10.32	7.93	62.50	
		-2.81 R	-2.16	108.00	0.0	-2.79	-2.14	85.00	0.00
OPER	5C1	10.80 L	8.31	11.50	0.0	0.00	0.00	0.00	
		-4.09 R	-3.15	93.50	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	13.18	63.87	13.18	63.87	HS 263.57	474.4
5C1	24.09	72.97	24.09	72.97	0.00	963.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.04	28.67	28.67	1.699
			999999.000
			101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.600Dead 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 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	12.14 L	9.34	37.00	0.0	9.70	7.46	65.00	
		-3.78 R	-2.91	108.00	0.0	-3.26	-2.51	85.00	0.00
OPER	5C1	10.51 L	8.08	53.00	0.0	0.00	0.00	0.00	
		-4.23 R	-3.26	94.50	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	14.04	45.31	12.46	50.39	HS 249.16
5C1	27.03	67.41	23.99	74.97	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-1.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.89
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.73	61.40	HS 999.00	999.0
5C1	68.04	108.90	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.600

Dead Load Moment Superimposed Dead Load Moment

1.5 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
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	12.14 L	9.34	37.00	0.0	9.70	7.46	65.00	
		-3.78 R	-2.91	108.00	0.0	-3.26	-2.51	85.00	0.00
OPER	5C1	10.51 L	8.08	53.00	0.0	0.00	0.00	0.00	
		-4.23 R	-3.26	94.50	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	12.99	47.01	12.99	47.01	HS 259.79	467.6
5C1	25.01	69.95	25.01	69.95	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.04	28.67	28.67	1.699
			999999.000
			101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.700Dead Load Moment 0.9
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	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	39.50	0.0	8.16	6.28	67.50			
		-4.75 R	-3.65	108.00	0.0	-3.73	-2.87	85.00	0.00		
OPER	5C1	9.06 R	6.97	114.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	16.13	35.17	14.35	39.21	516.7
5C1	32.11	61.26	28.58	68.30	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.3	-3.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.7	72.0
OPER	151.3	-112.8	119.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.26	0.83	-1.74	0.64
OPER	5C1	-2.06	0.83	-1.59	0.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.31	86.31	HS 526.13	947.0
5C1	54.65	145.37	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.700Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	39.50	0.0	8.16	6.28	67.50	
		-4.75 R	-3.65	108.00	0.0	-3.73	-2.87	85.00	0.00
OPER	5C1	9.06 R	6.97	114.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	96.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.95	36.53	14.95	36.53	HS 298.99	538.2
5C1	29.76	63.63	29.76	63.63	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.800

	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. S02
Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.04	28.67	28.67	1.699
			999999.000
			101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.44 L	5.72	42.00	0.0	5.66	4.35	70.00			
		-5.72 R	-4.40	108.00	0.0	-4.43	-3.41	85.00	135.00		
OPER	5C1	6.81 R	5.24	117.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	97.00	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	24.36	28.03	21.78	31.39	HS 435.53	783.9
5C1	44.35	53.09	39.65	59.44	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	73.0
OPER	151.3	-111.1	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.28	-2.63	0.55	-2.02	0.42
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.98	132.90	HS 419.66	755.4
5C1	45.09	205.09	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.44 L	5.72	42.00	0.0	5.66	4.35	70.00	
		-5.72 R	-4.40	108.00	0.0	-4.43	-3.41	85.00	135.00
OPER	5C1	6.81 R	5.24	117.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	97.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.64	29.16	22.64	29.16	HS 452.87	815.2
5C1	41.23	55.22	41.23	55.22	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.04	28.67	28.67	1.699
			999999.000
			101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	2.03 L	1.56	44.50	0.0	3.14	2.41	72.50			
		-7.38 L	-5.68	66.00	0.0	-6.77	-5.21	85.00	62.50		
OPER	5C1	3.52 R	2.71	119.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	99.50	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	60.66	20.50	54.55	23.10	HS 410.07
5C1	90.00	43.09	80.92	48.56	0.00 738.1 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.3
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.6	74.0
OPER	151.3	-109.4	123.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.98	0.39	-2.29	0.30
OPER	5C1	-2.87	0.39	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.43	188.69	HS 348.51	627.3
5C1	38.18	312.77	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.03 L	1.56	44.50	0.0	3.14	2.41	72.50	
		-7.38 L	-5.68	66.00	0.0	-6.77	-5.21	85.00	62.50
OPER	5C1	3.52 R	2.71	119.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	56.60	21.38	56.60	21.38	HS 427.54	769.6
5C1	83.97	44.93	83.97	44.93	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00			
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00		
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	80.00	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	98.30	11.32	88.96	12.88	HS 226.43
5C1	210.99	31.22	190.94	35.51	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.98	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.96	14.97	HS 299.26	538.7
5C1	33.16	33.19	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00	
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	80.00	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	92.10	11.84	92.10	11.84	HS 236.89	426.4
5C1	197.68	32.66	197.68	32.66	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00			
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00		
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	80.00	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	98.30	11.32	88.96	12.88	HS 226.43	407.6
5C1	210.99	31.22	190.94	35.51	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.9	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.30	-2.54	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.96	14.97	HS 299.26	538.7
5C1	33.16	33.19	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00	
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	80.00	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	92.10	11.84	92.10	11.84	HS 236.89	426.4
5C1	197.68	32.66	197.68	32.66	0.00	999.0

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 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. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.100

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	2.03 R	1.56	105.50	0.0	3.18	2.44	77.50	
		-7.38 R	-5.67	84.00	0.0	-6.78	-5.21	65.00	87.50
OPER	5C1	3.52 L	2.71	30.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	50.50	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	59.97	20.49	53.93	23.09	HS 409.86	737.7
5C1	90.25	43.07	81.15	48.54	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 4.100
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.6 0.0 6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.98	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	185.17	17.44	HS 348.75	627.8
5C1	311.32	38.20	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.100Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	2.03 R	1.56	105.50	0.0	3.18	2.44	77.50	
		-7.38 R	-5.67	84.00	0.0	-6.78	-5.21	65.00	87.50
OPER	5C1	3.52 L	2.71	30.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	50.50	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	55.96	21.37	55.96	21.37	HS 427.34	769.2
5C1	84.21	44.91	84.21	44.91	0.00	999.0

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 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. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 R	5.72	108.00	0.0	5.57	4.28	80.00			
		-5.72 L	-4.40	42.00	0.0	-4.46	-3.43	65.00	15.00		
OPER	5C1	6.80 L	5.23	33.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.87	53.00	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	24.40	27.99	21.82	31.35	HS 436.29
5C1	44.45	53.02	39.74	59.37	0.00 785.3 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.200

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.5	0.0
	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.55	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	131.41	21.00	HS 419.92	755.9
5C1	204.37	45.11	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.43 R	5.72	108.00	0.0	5.57	4.28	80.00	
		-5.72 L	-4.40	42.00	0.0	-4.46	-3.43	65.00	15.00
OPER	5C1	6.80 L	5.23	33.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.87	53.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.68	29.12	22.68	29.12	HS 453.64	816.5
5C1	41.32	55.15	41.32	55.15	0.00	999.0

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 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. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.300

Dead Load Moment	Superimposed Dead Load Moment
0.8	8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	110.50	0.0	8.13	6.26	82.50			
		-4.75 L	-3.65	42.00	0.0	-3.75	-2.89	65.00	0.00		
OPER	5C1	9.05 L	6.97	35.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	54.00	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	16.17	35.09	14.39	39.13	HS 287.82	518.1
5C1	32.19	61.12	28.66	68.15	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 4.300
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.3 0.0 3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.9	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.66	26.32	HS 526.43	947.6
5C1	144.86	54.68	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	110.50	0.0	8.13	6.26	82.50	
		-4.75 L	-3.65	42.00	0.0	-3.75	-2.89	65.00	0.00
OPER	5C1	9.05 L	6.97	35.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	54.00	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	14.99	36.45	14.99	36.45	HS 299.74	539.5
5C1	29.84	63.48	29.84	63.48	0.00	999.0

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 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. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	113.00	0.0	9.67	7.44	85.00			
		-3.78 L	-2.91	42.00	0.0	-3.30	-2.54	65.00	0.00		
OPER	5C1	10.51 R	8.08	97.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	55.50	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	14.08	45.17	12.50	50.24	HS 250.05
5C1	27.11	67.15	24.07	74.71	0.00 962.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.7
OPER	151.3	-118.2	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.89	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.05	32.75	HS 999.00	999.0
5C1	108.50	68.08	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.400Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 R	9.34	113.00	0.0	9.67	7.44	85.00	
		-3.78 L	-2.91	42.00	0.0	-3.30	-2.54	65.00	0.00
OPER	5C1	10.51 R	8.08	97.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	55.50	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	13.03	46.87	13.03	46.87	HS 260.68	469.2
5C1	25.09	69.69	25.09	69.69	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.500

Dead Load Moment 1.6
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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.85 R	9.11	101.50	0.0	10.29	7.91	87.50			
		-2.81 R	-2.16	133.00	0.0	-2.85	-2.19	110.00	0.00		
OPER	5C1	10.76 R	8.28	138.50	0.0	0.00	0.00	0.00			
		-4.10 R	-3.15	118.50	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	14.31	60.33	12.69	67.06	HS 253.79	456.8
5C1	26.26	69.97	23.28	77.77	0.00	931.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.56	42.49	HS 999.00	999.0
5C1	84.77	84.62	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.85 R	9.11	101.50	0.0	10.29	7.91	87.50	
		-2.81 R	-2.16	133.00	0.0	-2.85	-2.19	110.00	0.00
OPER	5C1	10.76 R	8.28	138.50	0.0	0.00	0.00	0.00	
		-4.10 R	-3.15	118.50	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	13.23	62.60	13.23	62.60	HS 264.68	476.4
5C1	24.28	72.59	24.28	72.59	0.00	971.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.600Dead 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	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	62.00	0.0	9.68	7.45	90.00			
		-3.78 R	-2.91	133.00	0.0	-3.30	-2.54	110.00	0.00		
OPER	5C1	10.51 L	8.08	78.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	119.50	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	14.07	45.18	12.49	50.26	HS 249.88	449.8
5C1	27.10	67.18	24.05	74.73	0.00	962.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.600

Dead Load	Superimposed Dead Load
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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.44	0.90
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.77	60.87	HS 999.00	999.0
5C1	68.12	108.43	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.600Dead Load Moment 1.4
Superimposed Dead Load Moment 14.5

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. 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.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2	
INV.	HS20	12.14 L	9.34	62.00	0.0	9.68	7.45	90.00
		-3.78 R	-2.91	133.00	0.0	-3.30	-2.54	110.00
OPER	5C1	10.51 L	8.08	78.00	0.0	0.00	0.00	0.00
		-4.24 R	-3.26	119.50	0.0	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	13.02	46.89	13.02	46.89	468.9
5C1	25.08	69.72	25.08	69.72	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	64.50	0.0	8.15	6.27	92.50			
		-4.75 R	-3.65	133.00	0.0	-3.75	-2.88	110.00	0.00		
OPER	5C1	9.06 R	6.97	139.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	121.00	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	16.15	35.12	14.37	39.16	HS 287.43	517.4
5C1	32.14	61.17	28.61	68.21	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.700

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	-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	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.34	85.32	HS 526.76	948.2
5C1	54.72	144.79	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	64.50	0.0	8.15	6.27	92.50	
		-4.75 R	-3.65	133.00	0.0	-3.75	-2.88	110.00	0.00
OPER	5C1	9.06 R	6.97	139.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	121.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.97	36.48	14.97	36.48	HS 299.35	538.8
5C1	29.80	63.54	29.80	63.54	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
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 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	181.1	-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	7.44 L	5.72	67.00	0.0	5.66	4.36	95.00			
		-5.72 R	-4.40	133.00	0.0	-4.43	-3.41	110.00	160.00		
OPER	5C1	6.81 R	5.24	142.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	122.00	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	24.35	28.04	21.77	31.39	HS 435.44
5C1	44.34	53.10	39.64	59.45	0.00 783.8 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.9
OPER	151.3	-111.3	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.01	130.67	HS 420.18	756.3
5C1	45.14	204.29	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.44 L	5.72	67.00	0.0	5.66	4.36	95.00	
		-5.72 R	-4.40	133.00	0.0	-4.43	-3.41	110.00	160.00
OPER	5C1	6.81 R	5.24	142.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	122.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.64	29.17	22.64	29.17	HS 452.78	815.0
5C1	41.22	55.23	41.22	55.23	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
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. S02
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	69.50	0.0	3.16	2.43	97.50			
		-7.38 L	-5.68	91.00	0.0	-6.76	-5.20	110.00		87.50	
OPER	5C1	3.52 R	2.71	144.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	124.50	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	60.10	20.54	54.03	23.14	HS 410.81	739.5
5C1	89.88	43.17	80.81	48.64	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.45	183.82	HS 348.97	628.1
5C1	38.23	311.24	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 L	1.56	69.50	0.0	3.16	2.43	97.50	
		-7.38 L	-5.68	91.00	0.0	-6.76	-5.20	110.00	87.50
OPER	5C1	3.52 R	2.71	144.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	56.07	21.41	56.07	21.41	HS 428.28	770.9
5C1	83.86	45.01	83.86	45.01	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00			
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00		90.00	
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	105.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	96.49	11.36	87.30	12.92	HS 227.23	409.0
5C1	210.48	31.36	190.43	35.65	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.97	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	14.98	HS 299.61	539.3
5C1	33.21	33.20	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00	
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00	90.00
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	105.00	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	90.39	11.88	90.39	11.88	HS 237.69	427.8
5C1	197.17	32.80	197.17	32.80	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00			
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00		90.00	
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	105.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	96.49	11.36	87.30	12.92	HS 227.23	409.0
5C1	210.48	31.36	190.43	35.65	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.29	3.30	-2.53	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	14.98	HS 299.61	539.3
5C1	33.21	33.20	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00	
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00	90.00
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	105.00	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	90.39	11.88	90.39	11.88	HS 237.69	427.8
5C1	197.17	32.80	197.17	32.80	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	130.50	0.0	3.22	2.47	102.50			
		-7.38 R	-5.68	109.00	0.0	-6.76	-5.20	90.00	112.50		
OPER	5C1	3.52 L	2.71	55.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	75.50	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	59.07	20.55	53.11	23.15	HS 410.91	739.6
5C1	89.88	43.18	80.80	48.65	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	183.98	17.44	HS 348.90	628.0
5C1	311.21	38.22	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 R	1.56	130.50	0.0	3.22	2.47	102.50	
		-7.38 R	-5.68	109.00	0.0	-6.76	-5.20	90.00	112.50
OPER	5C1	3.52 L	2.71	55.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	55.11	21.42	55.11	21.42	HS 428.39	771.1
5C1	83.85	45.02	83.85	45.02	0.00	999.0

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 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. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	7.44 R	5.72	133.00	0.0	5.60	4.31	105.00			
		-5.72 L	-4.40	67.00	0.0	-4.42	-3.40	90.00	40.00		
OPER	5C1	6.81 L	5.24	58.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	78.00	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	24.34	28.05	21.76	31.41	HS 435.26
5C1	44.33	53.12	39.63	59.47	0.00 783.5 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	130.77	21.00	HS 420.09	756.2
5C1	204.29	45.13	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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.	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	7.44 R	5.72	133.00	0.0	5.60	4.31	105.00	
		-5.72 L	-4.40	67.00	0.0	-4.42	-3.40	90.00	40.00
OPER	5C1	6.81 L	5.24	58.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	78.00	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	22.63	29.18	22.63	29.18	HS 452.60	814.7
5C1	41.21	55.26	41.21	55.26	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.300

Dead Load Moment 0.9
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	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	135.50	0.0	8.16	6.28	107.50			
		-4.75 L	-3.65	67.00	0.0	-3.74	-2.88	90.00	0.00		
OPER	5C1	9.06 L	6.97	60.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	79.00	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	16.14	35.15	14.36	39.19	HS 287.25	517.0
5C1	32.12	61.21	28.59	68.24	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 5.300
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.3 0.0 3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.37	26.33	HS 526.65	948.0
5C1	144.81	54.70	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.300Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	10.82 R	8.32	135.50	0.0	8.16	6.28	107.50	
		-4.75 L	-3.65	67.00	0.0	-3.74	-2.88	90.00	0.00
OPER	5C1	9.06 L	6.97	60.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	79.00	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	14.96	36.50	14.96	36.50
5C1	29.78	63.57	29.78	63.57

HS 299.16
0.00538.5
999.0

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 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. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.400

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	138.00	0.0	9.70	7.46	110.00			
		-3.78 L	-2.91	67.00	0.0	-3.29	-2.53	90.00		0.00	
OPER	5C1	10.51 R	8.08	122.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	80.50	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	14.06	45.22	12.48	50.30	HS 249.66	449.4
5C1	27.08	67.23	24.03	74.78	0.00	961.2

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S02
Check Point I. D. 5.400

HS20 5C1

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	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.90	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.90	32.76	HS 999.00	999.0
5C1	108.45	68.11	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.400

Dead Load Moment Superimposed Dead Load Moment

1.4 14.7

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 R	9.34	138.00	0.0	9.70	7.46	110.00	
		-3.78 L	-2.91	67.00	0.0	-3.29	-2.53	90.00	0.00
OPER	5C1	10.51 R	8.08	122.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	80.50	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	13.01	46.92	13.01	46.92	HS 260.28	468.5
5C1	25.05	69.77	25.05	69.77	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	11.85 L	9.11	98.50	0.0	10.30	7.92	112.50	
		-2.81 R	-2.16	158.00	0.0	-2.84	-2.19	135.00	0.00
OPER	5C1	10.76 R	8.28	163.50	0.0	0.00	0.00	0.00	
		-4.10 R	-3.15	143.50	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	14.30	60.55	12.68	67.30	HS 253.50	456.3
5C1	26.23	70.03	23.26	77.83	0.00	930.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 (-)	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	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.54	42.50	HS 999.00	999.0
5C1	84.73	84.66	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	11.85 L	9.11	98.50	0.0	10.30	7.92	112.50	
		-2.81 R	-2.16	158.00	0.0	-2.84	-2.19	135.00	0.00
OPER	5C1	10.76 R	8.28	163.50	0.0	0.00	0.00	0.00	
		-4.10 R	-3.15	143.50	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	13.22	62.82	13.22	62.82	HS 264.39	475.9
5C1	24.26	72.65	24.26	72.65	0.00	970.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.600

	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. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.600

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	87.00	0.0	9.69	7.46	115.00			
		-3.78 R	-2.91	158.00	0.0	-3.30	-2.54	135.00	0.00		
OPER	5C1	10.51 L	8.08	103.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	144.50	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	14.07	45.21	12.49	50.29	HS 249.71	449.5
5C1	27.08	67.22	24.04	74.77	0.00	961.5

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 5.600
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -1.6 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.89
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.76	60.96	HS 999.00	999.0
5C1	68.09	108.47	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.600Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 L	9.34	87.00	0.0	9.69	7.46	115.00	
		-3.78 R	-2.91	158.00	0.0	-3.30	-2.54	135.00	0.00
OPER	5C1	10.51 L	8.08	103.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	144.50	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	13.02	46.92	13.02	46.92	HS 260.34	468.6
5C1	25.06	69.76	25.06	69.76	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	89.50	0.0	8.16	6.27	117.50			
		-4.75 R	-3.65	158.00	0.0	-3.75	-2.88	135.00	0.00		
OPER	5C1	9.06 R	6.97	164.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	146.00	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	16.14	35.13	14.37	39.17	HS 287.37	517.3
5C1	32.14	61.18	28.61	68.22	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.3	-3.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.7	71.9
OPER	151.3	-112.9	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.33	85.48	HS 526.54	947.8
5C1	54.69	144.84	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	89.50	0.0	8.16	6.27	117.50	
		-4.75 R	-3.65	158.00	0.0	-3.75	-2.88	135.00	0.00
OPER	5C1	9.06 R	6.97	164.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	146.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.96	36.49	14.96	36.49	HS 299.29	538.7
5C1	29.79	63.55	29.79	63.55	0.00	999.0

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 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. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.800

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.44 L	5.72	92.00	0.0	5.66	4.35	120.00			
		-5.72 R	-4.40	158.00	0.0	-4.43	-3.41	135.00	185.00		
OPER	5C1	6.81 R	5.24	167.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	147.00	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	24.36	28.03	21.78 31.39	HS 435.53	784.0
5C1	44.35	53.09	39.65 59.44	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 5.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -4.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.00	131.02	HS 420.01	756.0
5C1	45.12	204.33	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.800

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

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. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.44 L	5.72	92.00	0.0	5.66	4.35	120.00	
		-5.72 R	-4.40	158.00	0.0	-4.43	-3.41	135.00	185.00
OPER	5C1	6.81 R	5.24	167.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	147.00	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	22.64	29.16	22.64	29.16	HS 452.88	815.2
5C1	41.23	55.22	41.23	55.22	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	2.03 L	1.56	94.50	0.0	3.16	2.43	122.50			
		-7.38 L	-5.68	116.00	0.0	-6.76	-5.20	135.00	112.50		
OPER	5C1	3.52 R	2.71	169.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	149.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	60.25	20.53	54.17	23.13	HS 410.54	739.0
5C1	89.93	43.14	80.86	48.61	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.44	184.44	HS 348.82	627.9
5C1	38.21	311.27	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 5.900Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.03 L	1.56	94.50	0.0	3.16	2.43	122.50	
		-7.38 L	-5.68	116.00	0.0	-6.76	-5.20	135.00	112.50
OPER	5C1	3.52 R	2.71	169.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	149.50	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	56.22	21.40	56.22	21.40	HS 428.01	770.4
5C1	83.90	44.98	83.90	44.98	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00			
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00		135.00	
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	130.00	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	97.00	11.35	87.77	12.90	HS 226.95
5C1	210.67	31.32	190.62	35.62	0.00 408.5 999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 6.000
 HS20 5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.97	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	14.98	HS 299.54	539.2
5C1	33.19	33.19	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00	
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00	135.00
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	130.00	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	90.87	11.87	90.87	11.87	HS 237.41	427.3
5C1	197.35	32.76	197.35	32.76	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00			
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00		135.00	
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	130.00	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	97.00	11.35	87.77	12.90	408.5
5C1	210.67	31.32	190.62	35.62	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.30	-2.54	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	14.98	HS 299.54	539.2
5C1	33.19	33.19	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00	
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00	135.00
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	130.00	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	90.87	11.87	90.87	11.87	HS 237.41	427.3
5C1	197.35	32.76	197.35	32.76	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	155.50	0.0	3.21	2.47	127.50			
		-7.38 R	-5.68	134.00	0.0	-6.77	-5.21	115.00	137.50		
OPER	5C1	3.52 L	2.71	80.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	100.50	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	59.24	20.53	53.26	23.13	HS 410.53
5C1	89.93	43.14	80.85	48.61	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	184.44	17.44	HS 348.82	627.9
5C1	311.27	38.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.100Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.03 R	1.56	155.50	0.0	3.21	2.47	127.50
		-7.38 R	-5.68	134.00	0.0	-6.77	-5.21	115.00
OPER	5C1	3.52 L	2.71	80.50	0.0	0.00	0.00	0.00
		-5.85 L	-4.50	100.50	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	55.27	21.40	55.27	21.40	HS 428.01	770.4
5C1	83.90	44.98	83.90	44.98	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.44 R	5.72	158.00	0.0	5.60	4.31	130.00			
		-5.72 L	-4.40	92.00	0.0	-4.43	-3.41	115.00	65.00		
OPER	5C1	6.81 L	5.24	83.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	103.00	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	24.36	28.03	21.78 31.39	HS 435.53	784.0
5C1	44.35	53.09	39.65 59.44	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	131.02	21.00	HS 420.01	756.0
5C1	204.33	45.12	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.200Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.44 R	5.72	158.00	0.0	5.60	4.31	130.00	
		-5.72 L	-4.40	92.00	0.0	-4.43	-3.41	115.00	65.00
OPER	5C1	6.81 L	5.24	83.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	103.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.64	29.16	22.64	29.16	HS 452.87	815.2
5C1	41.23	55.22	41.23	55.22	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	160.50	0.0	8.16	6.27	132.50			
		-4.75 L	-3.65	92.00	0.0	-3.75	-2.88	115.00	0.00		
OPER	5C1	9.06 L	6.97	85.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	104.00	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	16.14	35.13	14.37	39.17	HS 287.37	517.3
5C1	32.14	61.18	28.60	68.22	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.48	26.33	HS 526.54	947.8
5C1	144.83	54.69	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	160.50	0.0	8.16	6.27	132.50	
		-4.75 L	-3.65	92.00	0.0	-3.75	-2.88	115.00	0.00
OPER	5C1	9.06 L	6.97	85.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	104.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.96	36.49	14.96	36.49	HS 299.29	538.7
5C1	29.79	63.55	29.79	63.55	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.400

Dead Load Moment Superimposed Dead Load Moment

1.4 14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14	R	9.34	163.00	0.0	9.69	7.46	135.00		
		-3.78	L	-2.91	92.00	0.0	-3.30	-2.54	115.00	0.00	
OPER	5C1	10.51	R	8.08	147.00	0.0	0.00	0.00	0.00		
		-4.24	L	-3.26	105.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	14.07	45.21	12.49	50.29	HS 249.71	449.5
5C1	27.08	67.22	24.04	74.77	0.00	961.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 (-)	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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.89	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.96	32.76	HS 999.00	999.0
5C1	108.47	68.09	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 R	9.34	163.00	0.0	9.69	7.46	135.00	
		-3.78 L	-2.91	92.00	0.0	-3.30	-2.54	115.00	0.00
OPER	5C1	10.51 R	8.08	147.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	105.50	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	13.02	46.92	13.02	46.92	HS 260.34	468.6
5C1	25.06	69.76	25.06	69.76	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.993

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.500

Dead Load Moment	Superimposed Dead Load Moment
1.6	16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	11.85 L	9.11	123.50	0.0	10.30	7.92	137.50	
		-2.81 L	-2.16	92.00	0.0	-2.84	-2.19	115.00	0.00
OPER	5C1	10.76 L	8.28	86.50	0.0	0.00	0.00	0.00	
		-4.10 L	-3.15	106.50	0.0	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	14.30	60.55	12.68	67.30	HS 253.50	456.3
5C1	26.23	70.03	23.26	77.83	0.00	930.3

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 6.500
 HS20 5C1

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	-116.4	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	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.55	42.50	HS 999.00	999.0
5C1	84.75	84.64	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	11.85 L	9.11	123.50	0.0	10.30	7.92	137.50	
		-2.81 L	-2.16	92.00	0.0	-2.84	-2.19	115.00	0.00
OPER	5C1	10.76 L	8.28	86.50	0.0	0.00	0.00	0.00	
		-4.10 L	-3.15	106.50	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	13.22	62.82	13.22	62.82	HS 264.39	475.9
5C1	24.26	72.65	24.26	72.65	0.00	970.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.600

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	112.00	0.0	9.70	7.46	140.00			
		-3.78 R	-2.91	183.00	0.0	-3.29	-2.53	160.00	0.00		
OPER	5C1	10.51 L	8.08	128.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	169.50	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	14.06	45.22	12.48	50.30	HS 249.66	449.4
5C1	27.08	67.23	24.03	74.78	0.00	961.2

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 6.600
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -1.6 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.9
OPER	151.3	-114.6	118.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.90
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.76	60.90	HS 999.00	999.0
5C1	68.11	108.45	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 L	9.34	112.00	0.0	9.70	7.46	140.00	
		-3.78 R	-2.91	183.00	0.0	-3.29	-2.53	160.00	0.00
OPER	5C1	10.51 L	8.08	128.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	169.50	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	13.01	46.92	13.01	46.92	HS 260.28	468.5
5C1	25.05	69.77	25.05	69.77	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.700Dead Load Moment 0.9
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	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	114.50	0.0	8.16	6.28	142.50			
		-4.75 R	-3.65	183.00	0.0	-3.74	-2.88	160.00	0.00		
OPER	5C1	9.06 R	6.97	189.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	171.00	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	16.14	35.15	14.36	39.19	HS 287.25	517.0
5C1	32.12	61.21	28.59	68.24	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.700

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/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.33	85.37	HS 526.64	948.0
5C1	54.70	144.81	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.700Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	10.82 L	8.32	114.50	0.0	8.16	6.28	142.50	
		-4.75 R	-3.65	183.00	0.0	-3.74	-2.88	160.00	0.00
OPER	5C1	9.06 R	6.97	189.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	171.00	0.0	0.00	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	14.96	36.50	HS 299.17	538.5
5C1	29.78	63.57	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.800

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	7.44 L	5.72	117.00	0.0	5.67	4.36	145.00			
		-5.72 R	-4.40	183.00	0.0	-4.42	-3.40	160.00	210.00		
OPER	5C1	6.81 R	5.24	192.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	172.00	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	24.34	28.05	21.76	31.41	HS 435.26
5C1	44.33	53.12	39.63	59.47	0.00 783.5 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.00	130.77	HS 420.09	756.2
5C1	45.13	204.29	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.800

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.	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	7.44 L	5.72	117.00	0.0	5.67	4.36	145.00	
		-5.72 R	-4.40	183.00	0.0	-4.42	-3.40	160.00	210.00
OPER	5C1	6.81 R	5.24	192.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	172.00	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	22.63	29.18	22.63	29.18	HS 452.61	814.7
5C1	41.21	55.26	41.21	55.26	0.00	999.0

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	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. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	119.50	0.0	3.16	2.43	147.50			
		-7.38 L	-5.68	141.00	0.0	-6.75	-5.19	160.00		137.50	
OPER	5C1	3.52 R	2.71	194.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	174.50	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	60.08	20.55	54.01	23.15	HS 410.91	739.6	
5C1	89.88	43.18	80.80	48.65	0.00	999.0	

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.44	183.98	HS 348.90	628.0
5C1	38.22	311.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 6.900Dead Load Moment -1.5
Superimposed Dead Load Moment -14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
OPER 263.4	279.4	-279.4	279.4	-279.4	295.4	-263.4	295.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 L	1.56	119.50	0.0	3.16	2.43	147.50	
		-7.38 L	-5.68	141.00	0.0	-6.75	-5.19	160.00	137.50
OPER	5C1	3.52 R	2.71	194.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	174.50	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	56.05	21.42	56.05	21.42	HS 428.39	771.1
5C1	83.85	45.02	83.85	45.02	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	101.077

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		15.03		106.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.000

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00			
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00		160.00	
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	145.00	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	96.49	11.36	87.30	12.92	409.0
5C1	209.72	31.36	189.74	35.65	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.97	3.29	-2.29	2.53
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	14.98	HS 299.61	539.3
5C1	33.20	33.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00	
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00	160.00
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	145.00	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	90.39	11.88	90.39	11.88	HS 237.68	427.8
5C1	196.46	32.80	196.46	32.80	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00			
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00		160.00	
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	145.00	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	96.49	11.36	87.30	12.92	409.0
5C1	209.72	31.36	189.74	35.65	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.29	-2.54	2.53
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.98	14.98	HS 299.61	539.3
5C1	33.20	33.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00	
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00	160.00
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	145.00	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	90.39	11.88	90.39	11.88	HS 237.68	427.8
5C1	196.46	32.80	196.46	32.80	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	180.50	0.0	3.22	2.47	152.50			
		-7.38 R	-5.68	159.00	0.0	-6.76	-5.20	140.00	162.50		
OPER	5C1	3.52 L	2.71	105.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	125.50	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	59.10	20.54	53.13	23.14	HS 410.81
5C1	89.88	43.17	80.80	48.64	0.00 739.5 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	183.82	17.45	HS 348.97	628.1
5C1	311.24	38.23	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
158.0								
OPER	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-
263.3								

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	2.03 R	1.56	180.50	0.0	3.22	2.47	152.50	
		-7.38 R	-5.68	159.00	0.0	-6.76	-5.20	140.00	162.50
OPER	5C1	3.52 L	2.71	105.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	125.50	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	55.14	21.41	55.14	21.41	HS 428.28	770.9
5C1	83.85	45.01	83.85	45.01	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.02	28.67	28.67	1.699
			999999.000
			100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	181.1	-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 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	7.44 R	5.72	183.00	0.0	5.60	4.31	155.00			
		-5.72 L	-4.40	117.00	0.0	-4.43	-3.41	140.00	90.00		
OPER	5C1	6.81 L	5.24	108.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	128.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	24.35	28.04	21.77	31.39	HS 435.44	783.8
5C1	44.34	53.10	39.64	59.45	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.5	0.0 4.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.5	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	130.67	21.01	HS 420.18	756.3
5C1	204.29	45.14	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
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	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.44 R	5.72	183.00	0.0	5.60	4.31	155.00	
		-5.72 L	-4.40	117.00	0.0	-4.43	-3.41	140.00	90.00
OPER	5C1	6.81 L	5.24	108.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	128.00	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	22.64	29.17	22.64	29.17	HS 452.78	815.0
5C1	41.22	55.23	41.22	55.23	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	185.50	0.0	8.15	6.27	157.50			
		-4.75 L	-3.65	117.00	0.0	-3.75	-2.88	140.00	0.00		
OPER	5C1	9.06 L	6.97	110.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	129.00	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	16.15	35.12	14.37	39.16	HS 287.43	517.4
5C1	32.14	61.17	28.61	68.21	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.32	26.34	HS 526.76	948.2
5C1	144.79	54.72	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	185.50	0.0	8.15	6.27	157.50	
		-4.75 L	-3.65	117.00	0.0	-3.75	-2.88	140.00	0.00
OPER	5C1	9.06 L	6.97	110.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	129.00	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	14.97	36.48	14.97	36.48	HS 299.35	538.8
5C1	29.80	63.54	29.80	63.54	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.02	28.67	28.67	1.699	999999.000	100.727

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.400

Dead Load Moment Superimposed Dead Load Moment

1.4 14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	188.00	0.0	9.68	7.45	160.00			
		-3.78 L	-2.91	117.00	0.0	-3.30	-2.54	140.00		0.00	
OPER	5C1	10.51 R	8.08	172.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	130.50	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	14.07	45.18	12.49	50.26	HS 249.88
5C1	27.10	67.18	24.05	74.73	0.00 449.8 962.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.90	1.44
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.87	32.77	HS 999.00	999.0
5C1	108.43	68.12	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.400

Dead Load Moment Superimposed Dead Load Moment

1.4 14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.2	174.0	-161.3	174.0	-161.3	158.1	-177.2	158.1	-
OPER 295.3	279.4	-279.4	279.4	-279.4	263.5	-295.3	263.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 R	9.34	188.00	0.0	9.68	7.45	160.00	
		-3.78 L	-2.91	117.00	0.0	-3.30	-2.54	140.00	0.00
OPER	5C1	10.51 R	8.08	172.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	130.50	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	13.02	46.89	13.02	46.89	HS 260.51	468.9
5C1	25.08	69.72	25.08	69.72	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.500

Dead Load Moment 1.6
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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.85 L	9.11	148.50	0.0	10.29	7.91	162.50			
		-2.81 L	-2.16	117.00	0.0	-2.85	-2.19	140.00	0.00		
OPER	5C1	10.76 L	8.28	111.50	0.0	0.00	0.00	0.00			
		-4.10 L	-3.15	131.50	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	14.31	60.33	12.69	67.06	HS 253.79	456.8
5C1	26.26	69.97	23.28	77.77	0.00	931.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.500

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	-69.8	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	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.53	42.51	HS 999.00	999.0
5C1	84.71	84.67	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.500

Dead Load Moment Superimposed Dead Load Moment

1.6 16.5

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. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.85 L	9.11	148.50	0.0	10.29	7.91	162.50	
		-2.81 L	-2.16	117.00	0.0	-2.85	-2.19	140.00	0.00
OPER	5C1	10.76 L	8.28	111.50	0.0	0.00	0.00	0.00	
		-4.10 L	-3.15	131.50	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	13.23	62.60	13.23	62.60	HS 264.68	476.4
5C1	24.28	72.59	24.28	72.59	0.00	971.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.01	28.67	28.67	1.699
			999999.000
			100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	137.00	0.0	9.67	7.44	165.00			
		-3.78 R	-2.91	208.00	0.0	-3.30	-2.54	185.00	0.00		
OPER	5C1	10.51 L	8.08	153.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	194.50	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	14.08	45.17	12.50	50.24	HS 250.05	450.1
5C1	27.11	67.16	24.07	74.71	0.00	962.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.600

Dead Load	Superimposed Dead Load
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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.89
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.75	61.05	HS 999.00	999.0
5C1	68.08	108.50	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.600

Dead Load Moment Superimposed Dead Load Moment

1.4 14.4

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 L	9.34	137.00	0.0	9.67	7.44	165.00	
		-3.78 R	-2.91	208.00	0.0	-3.30	-2.54	185.00	0.00
OPER	5C1	10.51 L	8.08	153.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	194.50	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	13.03	46.87	13.03	46.87	HS 260.68	469.2
5C1	25.09	69.69	25.09	69.69	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.01	28.67	28.67	1.699
			999999.000
			100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	139.50	0.0	8.13	6.26	167.50			
		-4.75 R	-3.65	208.00	0.0	-3.75	-2.89	185.00	0.00		
OPER	5C1	9.05 R	6.97	214.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	196.00	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	16.17	35.09	14.39	39.13	HS 287.82	518.1
5C1	32.19	61.12	28.66	68.15	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.700

Dead Load	Superimposed Dead Load
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	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.32	85.66	HS 526.43	947.6
5C1	54.68	144.87	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	10.82 L	8.32	139.50	0.0	8.13	6.26	167.50	
		-4.75 R	-3.65	208.00	0.0	-3.75	-2.89	185.00	0.00
OPER	5C1	9.05 R	6.97	214.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	196.00	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	14.99	36.45	14.99	36.45	HS 299.74	539.5
5C1	29.84	63.48	29.84	63.48	0.00	999.0

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	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. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.800

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	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 L	5.72	142.00	0.0	5.63	4.33	170.00			
		-5.72 R	-4.40	208.00	0.0	-4.46	-3.43	185.00	235.00		
OPER	5C1	6.80 R	5.23	217.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.87	197.00	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	24.40	27.99	21.82	31.35	HS 436.29
5C1	44.45	53.02	39.74	59.37	0.00 785.3 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.55	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.00	131.41	HS 419.92	755.9
5C1	45.11	204.37	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.800

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	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.43 L	5.72	142.00	0.0	5.63	4.33	170.00	
		-5.72 R	-4.40	208.00	0.0	-4.46	-3.43	185.00	235.00
OPER	5C1	6.80 R	5.23	217.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.87	197.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.68	29.12	22.68	29.12	HS 453.64	816.5
5C1	41.32	55.15	41.32	55.15	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
-1.6 -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	144.50	0.0	3.12	2.40	172.50			
		-7.38 L	-5.67	166.00	0.0	-6.77	-5.21	185.00	162.50		
OPER	5C1	3.52 R	2.71	219.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	199.50	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	61.01	20.49	54.86	23.09	HS 409.86
5C1	90.25	43.07	81.15	48.54	0.00 737.7 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.98	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.44	185.17	HS 348.75	627.8
5C1	38.20	311.32	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 7.900

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 L	1.56	144.50	0.0	3.12	2.40	172.50	
		-7.38 L	-5.67	166.00	0.0	-6.77	-5.21	185.00	162.50
OPER	5C1	3.52 R	2.71	219.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	56.92	21.37	56.92	21.37	HS 427.34	769.2
5C1	84.21	44.91	84.21	44.91	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		14.66		106.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00			
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00		
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	170.00	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	98.29	11.32	88.96	12.88	226.43
5C1	210.98	31.22	190.94	35.51	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.98	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.97	14.96	HS 299.26	538.7
5C1	33.19	33.16	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00	
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	170.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	92.09	11.84	92.09	11.84	HS 236.89	426.4
5C1	197.67	32.66	197.67	32.66	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
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. S02
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.01	28.67	28.67	1.699	999999.000	100.479

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00			
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00		
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	170.00	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	98.29	11.32	88.96	12.88	226.43
5C1	210.98	31.22	190.94	35.51	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.30	-2.54	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.97	14.96	HS 299.26	538.7
5C1	33.19	33.16	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00	
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	170.00	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	92.09	11.84	92.09	11.84	HS 236.89	426.4
5C1	197.67	32.66	197.67	32.66	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	205.50	0.0	3.19	2.45	177.50			
		-7.38 R	-5.68	184.00	0.0	-6.77	-5.21	165.00	187.50		
OPER	5C1	3.52 L	2.71	130.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	150.50	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	59.64	20.50	53.63	23.10	HS 410.07
5C1	90.00	43.09	80.92	48.56	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.3	109.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.28	2.90	-0.39	2.98	-0.30	2.29
OPER	5C1	-0.39	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	188.69	17.43	HS 348.52	627.3
5C1	312.77	38.18	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.100Dead Load Moment -1.5
Superimposed Dead Load Moment -15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.7	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	2.03 R	1.56	205.50	0.0	3.19	2.45	177.50	
		-7.38 R	-5.68	184.00	0.0	-6.77	-5.21	165.00	187.50
OPER	5C1	3.52 L	2.71	130.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	150.50	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	55.65	21.38	55.65	21.38	HS 427.54	769.6
5C1	83.97	44.93	83.97	44.93	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.200

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.44 R	5.72	208.00	0.0	5.60	4.31	180.00			
		-5.72 L	-4.40	142.00	0.0	-4.43	-3.41	165.00	115.00		
OPER	5C1	6.81 L	5.24	133.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	153.00	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	24.36	28.03	21.78	31.39	HS 435.53
5C1	44.35	53.09	39.65	59.44	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.7
OPER	151.3	-121.6	111.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.18	-0.28	2.44	-0.55	2.63	-0.42	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	132.90	20.98	HS 419.66	755.4
5C1	205.09	45.09	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.200

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	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.44 R	5.72	208.00	0.0	5.60	4.31	180.00	
		-5.72 L	-4.40	142.00	0.0	-4.43	-3.41	165.00	115.00
OPER	5C1	6.81 L	5.24	133.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	153.00	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	22.64	29.16	22.64	29.16	HS 452.87	815.2
5C1	41.23	55.22	41.23	55.22	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.300

Dead Load Moment 0.9
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	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	210.50	0.0	8.16	6.28	182.50			
		-4.75 L	-3.65	142.00	0.0	-3.73	-2.87	165.00	0.00		
OPER	5C1	9.06 L	6.97	135.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	154.00	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	16.13	35.17	14.35	39.21	HS 287.07	516.7
5C1	32.11	61.26	28.58	68.30	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.3	-119.9	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.83	2.26	-0.64	1.74
OPER	5C1	-0.83	2.06	-0.63	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	86.31	26.31	HS 526.13	947.0
5C1	145.37	54.65	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.300Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	210.50	0.0	8.16	6.28	182.50
		-4.75 L	-3.65	142.00	0.0	-3.73	-2.87	165.00
OPER	5C1	9.06 L	6.97	135.50	0.0	0.00	0.00	0.00
		-4.55 L	-3.50	154.00	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	14.95	36.53	14.95	36.53	HS 298.99	538.2
5C1	29.76	63.63	29.76	63.63	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.400

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	12.14 R	9.34	213.00	0.0	9.70	7.46	185.00			
		-3.78 L	-2.91	142.00	0.0	-3.26	-2.51	165.00	0.00		
OPER	5C1	10.51 R	8.08	197.00	0.0	0.00	0.00	0.00			
		-4.23 L	-3.26	155.50	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	14.04	45.31	12.46	50.39	HS 249.16	448.5
5C1	27.03	67.41	23.99	74.97	0.00	959.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.89	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.40	32.73	HS 999.00	999.0
5C1	108.90	68.04	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.400Dead 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	12.14 R	9.34	213.00	0.0	9.70	7.46	185.00	
		-3.78 L	-2.91	142.00	0.0	-3.26	-2.51	165.00	0.00
OPER	5C1	10.51 R	8.08	197.00	0.0	0.00	0.00	0.00	
		-4.23 L	-3.26	155.50	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	12.99	47.01	12.99	47.01	HS 259.79	467.6
5C1	25.01	69.95	25.01	69.95	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.877

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.500

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.84 L	9.11	173.50	0.0	10.32	7.93	187.50			
		-2.81 L	-2.16	142.00	0.0	-2.79	-2.14	165.00	0.00		
OPER	5C1	10.80 R	8.31	238.50	0.0	0.00	0.00	0.00			
		-4.09 L	-3.15	156.50	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	14.26	61.57	12.63	68.41	HS 252.69	454.8
5C1	26.06	70.35	23.10	78.16	0.00	924.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.500

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	-1.64	1.64	-1.26	1.26	-1.51	1.52	-1.16	1.17
OPER	5C1	-1.37	1.37	-1.05	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.60	42.46	HS 999.00	999.0
5C1	85.09	84.58	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.500

Dead Load Moment Superimposed Dead Load Moment

1.7 17.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.84 L	9.11	173.50	0.0	10.32	7.93	187.50	
		-2.81 L	-2.16	142.00	0.0	-2.79	-2.14	165.00	0.00
OPER	5C1	10.80 R	8.31	238.50	0.0	0.00	0.00	0.00	
		-4.09 L	-3.15	156.50	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	13.18	63.87	13.18	63.87	HS 263.57	474.4
5C1	24.09	72.97	24.09	72.97	0.00	963.8

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.600

Dead Load Moment Superimposed Dead Load Moment
1.6 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.13 L	9.33	162.00	0.0	9.71	7.47	190.00			
		-3.74 R	-2.88	233.00	0.0	-3.21	-2.47	210.00	0.00		
OPER	5C1	10.51 L	8.08	178.00	0.0	0.00	0.00	0.00			
		-4.22 R	-3.25	219.50	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	14.01	45.84	12.43	50.97	HS 248.64	447.6
5C1	26.96	67.72	23.92	75.30	0.00	956.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.8
OPER	151.3	-114.7	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.87	1.17	-1.44	0.90
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.80	60.76	HS 999.00	999.0
5C1	68.18	108.39	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.600Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.13 L	9.33	162.00	0.0	9.71	7.47	190.00	
		-3.74 R	-2.88	233.00	0.0	-3.21	-2.47	210.00	0.00
OPER	5C1	10.51 L	8.08	178.00	0.0	0.00	0.00	0.00	
		-4.22 R	-3.25	219.50	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	12.96	47.56	12.96	47.56	HS 259.27	466.7
5C1	24.94	70.27	24.94	70.27	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.700

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.81 L	8.32	164.50	0.0	8.18	6.29	192.50			
		-4.71 R	-3.62	233.00	0.0	-3.64	-2.80	210.00	0.00		
OPER	5C1	9.12 R	7.02	239.50	0.0	0.00	0.00	0.00			
		-4.53 R	-3.48	221.00	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	16.07	35.67	14.29	39.75	514.6
5C1	31.74	61.77	28.23	68.84	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.700

Dead Load	Superimposed Dead Load
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	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.35	85.13	HS 527.10	948.8
5C1	54.75	144.73	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.700Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	10.81 L	8.32	164.50	0.0	8.18	6.29	192.50
		-4.71 R	-3.62	233.00	0.0	-3.64	-2.80	210.00
OPER	5C1	9.12 R	7.02	239.50	0.0	0.00	0.00	0.00
		-4.53 R	-3.48	221.00	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	14.89	37.04	14.89	37.04	HS 297.79	536.0
5C1	29.41	64.15	29.41	64.15	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.800

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 L	5.71	167.00	0.0	5.69	4.38	195.00			
		-5.67 R	-4.36	233.00	0.0	-4.13	-3.18	210.00	177.50		
OPER	5C1	6.90 R	5.31	242.00	0.0	0.00	0.00	0.00			
		-5.01 R	-3.86	222.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	24.24	28.51	21.65	31.89	433.03
5C1	43.45	53.71	38.82	60.08	779.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-4.6
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.01	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.02	130.26	HS 420.48	756.9
5C1	45.19	204.15	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.800Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	7.43 L	5.71	167.00	0.0	5.69	4.38	195.00	
		-5.67 R	-4.36	233.00	0.0	-4.13	-3.18	210.00	177.50
OPER	5C1	6.90 R	5.31	242.00	0.0	0.00	0.00	0.00	
		-5.01 R	-3.86	222.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.52	29.64	22.52	29.64	HS 450.40	810.7
5C1	40.38	55.85	40.38	55.85	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.06	28.67	28.67	1.699
			999999.000
			102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.900

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	2.02 L	1.55	169.50	0.0	3.19	2.46	197.50			
		-7.34 L	-5.65	191.00	0.0	-6.61	-5.09	210.00	187.50		
OPER	5C1	3.67 R	2.82	244.50	0.0	0.00	0.00	0.00			
		-5.82 R	-4.48	224.50	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	59.09	20.81	53.09	23.42	HS 416.13	749.0
5C1	85.74	43.72	77.03	49.21	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-6.1
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.9
OPER	151.3	-109.7	123.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.28	0.31
OPER	5C1	-2.86	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.46	182.86	HS 349.24	628.6
5C1	38.30	310.84	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 8.900Dead Load Moment -1.2
Superimposed Dead Load Moment -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.02 L	1.55	169.50	0.0	3.19	2.46	197.50	
		-7.34 L	-5.65	191.00	0.0	-6.61	-5.09	210.00	187.50
OPER	5C1	3.67 R	2.82	244.50	0.0	0.00	0.00	0.00	
		-5.82 R	-4.48	224.50	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	55.10	21.68	55.10	21.68	HS 433.70	780.7
5C1	79.95	45.56	79.95	45.56	0.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
 Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.06	28.67	28.67	1.699
			999999.000
			102.940

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		16.14		106.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00			
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00	210.00		
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00			
		-7.44 R	-5.72	204.50	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	80.06	11.48	72.38	13.04	HS 229.70
5C1	173.25	31.70	156.64	36.00	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.000

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	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.31	-2.90	3.32	-2.97	3.27	-2.28	2.51
OPER	5C1	-2.86	3.24	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.00	15.06	HS 299.92	539.9
5C1	33.30	33.38	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00	
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00	210.00
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00	
		-7.44 R	-5.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	74.96	12.01	74.96	12.01	HS 240.17	432.3
5C1	162.22	33.14	162.22	33.14	0.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00			
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00		210.00	
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00			
		-7.44 R	-5.72	204.50	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	80.06	11.48	72.38	13.04	HS 229.70	413.5
5C1	173.25	31.70	156.64	36.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.7	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.31	-3.32	3.32	-3.29	3.27	-2.53	2.51
OPER	5C1	-3.24	3.24	-2.49	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.00	15.06	HS 299.92	539.9
5C1	33.30	33.38	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00	
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00	210.00
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00	
		-7.44 R	-5.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	74.96	12.01	74.96	12.01	HS 240.17	432.3
5C1	162.22	33.14	162.22	33.14	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	2.06 R	1.58	230.50	0.0	3.24	2.49	202.50			
		-7.38 R	-5.68	209.00	0.0	-6.68	-5.14	190.00	212.50		
OPER	5C1	3.53 L	2.72	155.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	175.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	58.45	20.63	52.52	23.23	HS 412.56	742.6
5C1	89.34	43.38	80.29	48.84	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.0
OPER	151.3	-122.7	110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.46	3.76	-0.35	2.89	-0.44	2.94	-0.34	2.26
OPER	5C1	-0.44	2.86	-0.34	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	161.69	17.55	HS 351.00	631.8
5C1	280.32	38.44	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.06 R	1.58	230.50	0.0	3.24	2.49	202.50	
		-7.38 R	-5.68	209.00	0.0	-6.68	-5.14	190.00	212.50
OPER	5C1	3.53 L	2.72	155.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	54.51	21.50	54.51	21.50	HS 430.03	774.0
5C1	83.33	45.21	83.33	45.21	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.200

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	7.44 R	5.72	233.00	0.0	5.60	4.31	205.00			
		-5.72 L	-4.40	167.00	0.0	-4.42	-3.40	190.00	140.00		
OPER	5C1	6.81 L	5.24	158.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.87	178.00	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	24.33	28.05	21.75	31.40	HS 435.03
5C1	44.32	53.12	39.62	59.47	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.200

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.4	0.0 4.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.6	67.0
OPER	151.3	-121.1	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.46	3.17	-0.35	2.44	-0.57	2.59	-0.44	1.99
OPER	5C1	-0.66	2.46	-0.51	1.89	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	127.94	21.14	HS 422.83	761.1
5C1	183.38	45.42	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.200

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	7.44 R	5.72	233.00	0.0	5.60	4.31	205.00	
		-5.72 L	-4.40	167.00	0.0	-4.42	-3.40	190.00	140.00
OPER	5C1	6.81 L	5.24	158.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.87	178.00	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	22.62	29.18	22.62	29.18	HS 452.36	814.2
5C1	41.20	55.26	41.20	55.26	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.300Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.78 R	8.29	235.50	0.0	8.09	6.22	207.50			
		-4.75 L	-3.65	167.00	0.0	-3.76	-2.89	190.00	0.00		
OPER	5C1	9.05 L	6.96	160.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	179.00	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	16.26	35.04	14.48	39.08	HS 289.52	521.1
5C1	32.29	60.88	28.75	67.90	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	2.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.6	68.0
OPER	151.3	-119.4	113.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.57	2.57	-0.44	1.97	-0.85	2.22	-0.66	1.71
OPER	5C1	-0.91	2.06	-0.70	1.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	83.90	26.51	HS 530.31	954.6
5C1	130.77	55.08	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.300Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.78 R	8.29	235.50	0.0	8.09	6.22	207.50	
		-4.75 L	-3.65	167.00	0.0	-3.76	-2.89	190.00	0.00
OPER	5C1	9.05 L	6.96	160.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	179.00	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	15.07	36.40	15.07	36.40	HS 301.48	542.7
5C1	29.94	63.24	29.94	63.24	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.94	28.67	28.67	1.699
			999999.000
			96.985

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.05 R	9.27	238.00	0.0	9.54	7.34	210.00			
		-3.77 L	-2.90	167.00	0.0	-3.33	-2.56	190.00	0.00		
OPER	5C1	10.48 R	8.06	222.00	0.0	0.00	0.00	0.00			
		-4.27 L	-3.28	180.50	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	14.28	44.98	12.69	50.07	HS 253.73	456.7
5C1	27.36	66.19	24.31	73.68	0.00	972.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.1	0.0 1.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-70.6	69.0
OPER	151.3	-117.7	115.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-1.14	2.10	-0.88	1.61	-1.18	1.85	-0.91	1.42
OPER	5C1	-1.18	1.68	-0.91	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.01	32.95	HS 999.00	999.0
5C1	99.56	68.62	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.400

Dead Load Moment Superimposed Dead Load Moment

1.1 12.8

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.05 R	9.27	238.00	0.0	9.54	7.34	210.00	
		-3.77 L	-2.90	167.00	0.0	-3.33	-2.56	190.00	0.00
OPER	5C1	10.48 R	8.06	222.00	0.0	0.00	0.00	0.00	
		-4.27 L	-3.28	180.50	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	13.22	46.69	13.22	46.69	HS 264.44	476.0
5C1	25.33	68.71	25.33	68.71	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.500

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	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.80 R	9.08	226.50	0.0	10.05	7.73	212.50			
		-3.42 R	-2.63	258.00	0.0	-3.04	-2.34	235.00	0.00		
OPER	5C1	10.72 L	8.25	161.50	0.0	0.00	0.00	0.00			
		-4.30 R	-3.31	243.50	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	14.52	49.84	12.89	55.46	HS 257.81	464.1
5C1	26.65	65.91	23.66	73.34	0.00	946.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-0.4
	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.6	70.1
OPER	151.3	-116.0	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.66	1.64	-1.28	1.26	-1.53	1.48	-1.17	1.14
OPER	5C1	-1.46	1.37	-1.12	1.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	41.85	42.81	HS 999.00	999.0
5C1	79.47	85.37	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.500Dead Load Moment 1.2
Superimposed Dead Load Moment 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	11.80 R	9.08	226.50	0.0	10.05	7.73	212.50	
		-3.42 R	-2.63	258.00	0.0	-3.04	-2.34	235.00	0.00
OPER	5C1	10.72 L	8.25	161.50	0.0	0.00	0.00	0.00	
		-4.30 R	-3.31	243.50	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	13.44	51.73	13.44	51.73
5C1	24.66	68.41	24.66	68.41

HS 268.74
0.00483.7
986.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.600

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.07 L	9.29	187.00	0.0	9.36	7.20	215.00			
		-4.60 R	-3.54	258.00	0.0	-3.56	-2.74	235.00	0.00		
OPER	5C1	10.14 L	7.80	203.00	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	244.50	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	14.36	36.57	12.78	40.74	HS 255.51	459.9
5C1	28.51	61.66	25.35	68.70	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.600

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	71.2
OPER	151.3	-114.2	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.13	1.12	-1.64	0.86	-1.90	1.13	-1.46	0.87
OPER	5C1	-1.74	1.08	-1.34	0.83	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.22	63.02	HS 999.00	999.0
5C1	65.72	109.45	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.600Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.07 L	9.29	187.00	0.0	9.36	7.20	215.00
		-4.60 R	-3.54	258.00	0.0	-3.56	-2.74	235.00
OPER	5C1	10.14 L	7.80	203.00	0.0	0.00	0.00	0.00
		-4.55 R	-3.50	244.50	0.0	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	13.31	37.97	13.31	37.97
5C1	26.42	64.03	26.42	64.03

HS 266.20 479.2
0.00 999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.700

Dead Load Moment 0.1
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	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.73 L	8.25	189.50	0.0	7.74	5.95	217.50			
		-5.78 R	-4.45	258.00	0.0	-4.08	-3.14	235.00	0.00		
OPER	5C1	8.36 L	6.43	201.50	0.0	0.00	0.00	0.00			
		-4.98 R	-3.83	246.00	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	16.60	28.29	14.81	31.61	HS 296.15	533.1
5C1	35.50	54.69	31.67	61.11	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.5	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.59	0.54	-1.99	0.42	-2.27	0.81	-1.75	0.62
OPER	5C1	-2.10	0.82	-1.62	0.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.10	89.33	HS 522.01	939.6
5C1	53.44	146.13	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.700Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	10.73 L	8.25	189.50	0.0	7.74	5.95	217.50	
		-5.78 R	-4.45	258.00	0.0	-4.08	-3.14	235.00	0.00
OPER	5C1	8.36 L	6.43	201.50	0.0	0.00	0.00	0.00	
		-4.98 R	-3.83	246.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.41	29.41	15.41	29.41	HS 308.17	554.7
5C1	32.96	56.85	32.96	56.85	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.800

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.32 L	5.63	192.00	0.0	5.18	3.98	220.00			
		-6.96 R	-5.36	258.00	0.0	-4.69	-3.60	235.00	202.50		
OPER	5C1	5.81 L	4.47	169.00	0.0	0.00	0.00	0.00			
		-5.61 R	-4.32	247.50	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	25.30	22.46	22.68	25.22	HS 449.21
5C1	53.13	46.46	47.63	52.16	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.800

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	-3.19	0.37	-2.46	0.29	-2.64	0.52	-2.03	0.40
OPER	5C1	-2.52	0.59	-1.94	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.81	139.54	HS 416.26	749.3
5C1	44.00	205.74	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.800Dead Load Moment -1.0
Superimposed Dead Load Moment -6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	7.32 L	5.63	192.00	0.0	5.18	3.98	220.00	
		-6.96 R	-5.36	258.00	0.0	-4.69	-3.60	235.00	202.50
OPER	5C1	5.81 L	4.47	169.00	0.0	0.00	0.00	0.00	
		-5.61 R	-4.32	247.50	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	23.56	23.39	23.56	23.39	HS 467.73	841.9
5C1	49.48	48.38	49.48	48.38	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.699	999999.000	94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.900

Dead Load Moment Superimposed Dead Load Moment
-2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	1.90 L	1.46	194.50	0.0	2.64	2.03	222.50			
		-8.50 L	-6.54	216.00	0.0	-7.33	-5.64	235.00	212.50		
OPER	5C1	2.69 L	2.07	171.50	0.0	0.00	0.00	0.00			
		-6.88 R	-5.29	253.50	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	73.93	17.27	66.64	19.52	HS 345.33	621.6
5C1	120.67	35.54	108.79	40.18	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.900

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
-0.7	-6.6
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.1	123.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	0.39	-2.91	0.30	-2.99	0.37	-2.30	0.29
OPER	5C1	-2.94	0.40	-2.26	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.29	189.74	HS 345.72	622.3
5C1	37.04	312.48	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	1.90 L	1.46	194.50	0.0	2.64	2.03	222.50	
		-8.50 L	-6.54	216.00	0.0	-7.33	-5.64	235.00	212.50
OPER	5C1	2.69 L	2.07	171.50	0.0	0.00	0.00	0.00	
		-6.88 R	-5.29	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	69.09	18.02	69.09	18.02	HS 360.50	648.9
5C1	112.78	37.10	112.78	37.10	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.699
			999999.000
			94.596

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		10.20		107.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00			
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00		
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00			
		-9.21 R	-7.09	256.00	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	115.64	10.41	89.59	14.64	HS 208.18
5C1	248.21	24.34	192.30	34.23	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	4.59	-2.91	3.53	-2.99	3.34	-2.30	2.57
OPER	5C1	-2.94	3.42	-2.26	2.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	15.93	HS 297.00	534.6
5C1	32.17	35.67	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
	+bend	-bend	+bend	-bend
INV. 141.0	149.9	-185.4	149.9	-185.4
OPER 235.0	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	2.10 L	1.61	167.00	0.0	1.55	1.19
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00
		-9.21 R	-7.09	256.00	0.0	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	92.67	10.91	92.67	HS 218.16	392.7
5C1	198.90	25.51	198.90	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	35.20	35.20	2.861	999999.000	121.259

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00			
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00		
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00			
		-9.21 R	-7.09	256.00	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	115.64	10.41	89.59	14.64	HS 208.18
5C1	248.21	24.34	192.30	34.23	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-8.1	9.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.34	4.59	-3.34	3.53	-3.31	3.34	-2.54	2.57
OPER	5C1	-3.34	3.42	-2.57	2.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	15.93	HS 297.00	534.6
5C1	32.17	35.67	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00	
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00	
		-9.21 R	-7.09	256.00	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	92.67	10.91	92.67	10.91	HS 218.16	392.7
5C1	198.90	25.51	198.90	25.51	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.100

Dead Load Moment	Superimposed Dead Load Moment
-2.0	-18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	1.57 L	1.21	162.00	0.0	3.01	2.31	227.50	
		-7.76 R	-5.97	234.00	0.0	-7.24	-5.57	215.00	240.00
OPER	5C1	3.68 L	2.83	180.50	0.0	0.00	0.00	0.00	
		-6.51 R	-5.01	261.00	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	75.81	23.11	67.78	26.23	HS 462.29	832.1
5C1	103.32	45.94	92.37	52.13	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.100

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.9	0.0 7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.7	74.2
OPER	172.1	-141.1	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.08	4.09	-0.06	3.15	-0.17	3.05	-0.13	2.35
OPER	5C1	-0.12	3.08	-0.10	2.37	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	504.28	18.13	HS 362.62	652.7
5C1	999.00	40.11	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.100Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	1.57 L	1.21	162.00	0.0	3.01	2.31	227.50	
		-7.76 R	-5.97	234.00	0.0	-7.24	-5.57	215.00	240.00
OPER	5C1	3.68 L	2.83	180.50	0.0	0.00	0.00	0.00	
		-6.51 R	-5.01	261.00	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	70.33	24.10	70.33	24.10	HS 482.05	867.7
5C1	95.85	47.90	95.85	47.90	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.200

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.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.00 R	6.16	258.00	0.0	5.95	4.58	230.00			
		-6.26 L	-4.82	192.00	0.0	-4.83	-3.72	215.00	165.00		
OPER	5C1	7.33 L	5.64	183.00	0.0	0.00	0.00	0.00			
		-5.55 L	-4.27	203.00	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	27.03	30.53	24.01	34.39	480.21
5C1	49.21	57.45	43.71	64.71	0.00

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S02
 Check Point I. D. 10.200
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.7 0.0 6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-83.6	75.2
OPER	172.1	-139.4	125.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.12	3.53	-0.09	2.72	-0.35	2.75	-0.27	2.11
OPER	5C1	-0.31	2.72	-0.24	2.09	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	236.28	21.31	HS 426.17	767.1
5C1	442.55	46.17	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.200Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	8.00 R	6.16	258.00	0.0	5.95	4.58	230.00	
		-6.26 L	-4.82	192.00	0.0	-4.83	-3.72	215.00	165.00
OPER	5C1	7.33 L	5.64	183.00	0.0	0.00	0.00	0.00	
		-5.55 L	-4.27	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	24.97	31.76	24.97	31.76	HS 499.37	898.9
5C1	45.46	59.75	45.46	59.75	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	35.20	2.861
			999999.000
			122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.300

Dead Load Superimposed Dead Load
Moment Moment
1.7 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.45 R	9.58	260.50	0.0	9.00	6.92	232.50			
		-5.48 L	-4.21	192.00	0.0	-4.23	-3.25	215.00		165.00	
OPER	5C1	10.14 L	7.80	185.50	0.0	0.00	0.00	0.00			
		-4.85 L	-3.73	203.00	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	16.63	36.58	14.69	40.99	HS 293.81
5C1	34.03	68.82	30.06	77.12	0.00 528.9 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.300

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.5	0.0 4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.6	76.3
OPER	172.1	-137.7	127.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.38	2.92	-0.29	2.24	-0.58	2.42	-0.45	1.86
OPER	5C1	-0.54	2.32	-0.41	1.79	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	142.35	26.15	HS 523.04	941.5
5C1	256.19	54.69	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.300Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.45 R	9.58	260.50	0.0	9.00	6.92	232.50	
		-5.48 L	-4.21	192.00	0.0	-4.23	-3.25	215.00	165.00
OPER	5C1	10.14 L	7.80	185.50	0.0	0.00	0.00	0.00	
		-4.85 L	-3.73	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.31	37.98	15.31	37.98	HS 306.12	551.0
5C1	31.32	71.46	31.32	71.46	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.28	35.20	2.861	122.594

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		34.53		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.400

Dead Load Moment 2.8
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.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.41 R	11.08	263.00	0.0	11.12	8.56	235.00			
		-4.70 L	-3.61	192.00	0.0	-3.47	-2.67	215.00	0.00		
OPER	5C1	12.34 R	9.49	247.00	0.0	0.00	0.00	0.00			
		-4.16 L	-3.20	203.00	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	13.91	44.09	12.24	49.23	HS 244.72
5C1	27.08	82.95	23.81	92.63	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.6	77.3
OPER	172.1	-135.9	128.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.76	2.28	-0.59	1.75	-0.84	2.09	-0.65	1.60
OPER	5C1	-0.78	1.97	-0.60	1.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	96.61	33.95	HS 999.00	999.0
5C1	173.37	65.39	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.400Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	14.41 R	11.08	263.00	0.0	11.12	8.56	235.00	
		-4.70 L	-3.61	192.00	0.0	-3.47	-2.67	215.00	0.00
OPER	5C1	12.34 R	9.49	247.00	0.0	0.00	0.00	0.00	
		-4.16 L	-3.20	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.77	45.72	12.77	45.72	HS 255.36	459.6
5C1	24.85	86.02	24.85	86.02	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.500

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.500

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.18 R	11.67	265.50	0.0	12.40	9.54	237.50			
		-3.91 L	-3.01	192.00	0.0	-2.89	-2.22	215.00	0.00		
OPER	5C1	13.50 L	10.38	225.50	0.0	0.00	0.00	0.00			
		-3.47 L	-2.67	203.00	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	12.94	53.94	11.35	60.12	HS 226.99	408.6
5C1	24.25	101.49	21.27	113.11	0.00	850.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.5	78.3
OPER	172.1	-134.2	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.21	1.88	-0.93	1.45	-1.14	1.74	-0.88	1.34
OPER	5C1	-1.05	1.68	-0.81	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	66.33	41.55	HS 999.00	999.0
5C1	127.99	77.54	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.500Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	15.18 R	11.67	265.50	0.0	12.40	9.54	237.50	
		-3.91 L	-3.01	192.00	0.0	-2.89	-2.22	215.00	0.00
OPER	5C1	13.50 L	10.38	225.50	0.0	0.00	0.00	0.00	
		-3.47 L	-2.67	203.00	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	11.85	55.90	11.85	55.90	HS 237.10	426.8
5C1	22.22	105.18	22.22	105.18	0.00	888.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.09 R	12.38	254.00	0.0	12.44	9.57	240.00			
		-3.13 L	-2.41	192.00	0.0	-2.31	-1.78	215.00	0.00		
OPER	5C1	13.81 L	10.62	228.00	0.0	0.00	0.00	0.00			
		-2.77 L	-2.13	203.00	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	12.13	67.84	10.62	75.56	HS 212.50	382.5
5C1	23.55	127.63	20.64	142.15	0.00	825.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.600

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.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.61	1.43	-1.24	1.10	-1.48	1.40	-1.14	1.08
OPER	5C1	-1.37	1.38	-1.05	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	49.36	55.37	HS 999.00	999.0
5C1	96.89	95.95	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.09 R	12.38	254.00	0.0	12.44	9.57	240.00	
		-3.13 L	-2.41	192.00	0.0	-2.31	-1.78	215.00	0.00
OPER	5C1	13.81 L	10.62	228.00	0.0	0.00	0.00	0.00	
		-2.77 L	-2.13	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.10	70.29	11.10	70.29	HS 222.03	399.7
5C1	21.56	132.24	21.56	132.24	0.00	862.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.700

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.06 R	12.35	256.50	0.0	11.40	8.77	242.50			
		-2.35 L	-1.81	192.00	0.0	-1.73	-1.33	215.00	0.00		
OPER	5C1	13.15 L	10.12	226.50	0.0	0.00	0.00	0.00			
		-2.08 L	-1.60	203.00	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	12.23	89.89	10.73	100.18	HS 214.56	386.2
5C1	24.89	169.13	21.83	188.49	0.00	873.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-1.5
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.6	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.14	1.09	-1.65	0.84	-1.84	1.06	-1.42	0.81
OPER	5C1	-1.75	1.06	-1.35	0.81	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	36.61	73.74	HS 999.00	999.0
5C1	74.50	126.96	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.700Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	16.06 R	12.35	256.50	0.0	11.40	8.77	242.50	
		-2.35 L	-1.81	192.00	0.0	-1.73	-1.33	215.00	0.00
OPER	5C1	13.15 L	10.12	226.50	0.0	0.00	0.00	0.00	
		-2.08 L	-1.60	203.00	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	11.20	93.16	11.20	93.16	HS 224.11	403.4
5C1	22.80	175.27	22.80	175.27	0.00	912.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.800

Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.62 R	10.48	259.00	0.0	8.93	6.87	245.00			
		-1.57 L	-1.20	192.00	0.0	-1.16	-0.89	215.00	0.00		
OPER	5C1	10.97 L	8.44	229.00	0.0	0.00	0.00	0.00			
		-1.39 L	-1.07	203.00	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	14.71	132.36	12.94	147.80	HS 258.69	465.6
5C1	30.44	249.03	26.77	278.08	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.4	81.5
OPER	172.1	-128.9	135.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.72	0.73	-2.10	0.57	-2.23	0.72	-1.72	0.55
OPER	5C1	-2.19	0.71	-1.69	0.55	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	28.40	110.92	HS 999.00	999.0
5C1	58.78	191.14	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.800Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	13.62 R	10.48	259.00	0.0	8.93	6.87	245.00	
		-1.57 L	-1.20	192.00	0.0	-1.16	-0.89	215.00	0.00
OPER	5C1	10.97 L	8.44	229.00	0.0	0.00	0.00	0.00	
		-1.39 L	-1.07	203.00	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	13.50	137.26	13.50	137.26	HS 269.95	485.9
5C1	27.93	258.25	27.93	258.25	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.900

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.37 R	6.44	261.50	0.0	5.23	4.02	247.50			
		-0.78 L	-0.60	192.00	0.0	-0.58	-0.44	215.00	0.00		
OPER	5C1	6.65 L	5.12	231.50	0.0	0.00	0.00	0.00			
		-0.69 L	-0.53	203.00	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	24.70	256.46	21.82	287.34	HS 436.31	785.4
5C1	51.82	482.52	45.77	540.60	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.5
OPER	172.1	-127.2	137.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.35	0.37	-2.58	0.28	-2.65	0.40	-2.04	0.30
OPER	5C1	-2.66	0.46	-2.05	0.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.80	208.48	HS 455.89	820.6
5C1	47.82	297.95	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 10.900

Dead Load Moment Superimposed Dead Load Moment

1.6 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	8.37 R	6.44	261.50	0.0	5.23	4.02	247.50	
		-0.78 L	-0.60	192.00	0.0	-0.58	-0.44	215.00	0.00
OPER	5C1	6.65 L	5.12	231.50	0.0	0.00	0.00	0.00	
		-0.69 L	-0.53	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.73	266.26	22.73	266.26	HS 454.63	818.3
5C1	47.69	500.95	47.69	500.95	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S02
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 11.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 11.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.3	79.9
OPER	172.1	-125.5	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.01	0.00	-3.08	0.00	-3.09	0.30	-2.38	0.23
OPER	5C1	-3.15	0.00	-2.42	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.79	270.16	HS 375.88	676.6
5C1	39.87	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S02
Check Point I. D. 11.000Dead 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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	5C1	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		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.0
5C1	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 10

Live Load Distribution Factor 0.143

Second Live Load Dist. Factor 0.143

Comments:

Member I. D. S03 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Length -- Non-Composite:		Section		Section	Hinge Location	
Span No.	Range No.	Range Length	Left	Right	Variation	No. 1 No. 2
1	1	25.000	1	0		0.0 0.0
2	1	25.000	2	0		0.0 0.0
3	1	25.000	2	0		0.0 0.0
4	1	25.000	2	0		0.0 0.0
5	1	25.000	2	0		0.0 0.0
6	1	25.000	2	0		0.0 0.0
7	1	25.000	2	0		0.0 0.0
8	1	25.000	2	0		0.0 0.0
9	1	25.000	2	0		0.0 0.0
10	1	25.000	1	0		0.0 0.0

Superimposed Dead Load:		Dist. from Left Supp.	Distributed Load (lbs/ft)		Concentrated Load (kips)
Span No.	Load Type		Left	Right	
1	W	0.000	688.0	688.0	25.000 0.0
1	P	12.500	0.0	0.0	0.000 0.1
2	W	0.000	688.0	688.0	25.000 0.0
2	P	12.500	0.0	0.0	0.000 0.1
3	W	0.000	688.0	688.0	25.000 0.0
3	P	12.500	0.0	0.0	0.000 0.1
4	W	0.000	688.0	688.0	25.000 0.0
4	P	12.500	0.0	0.0	0.000 0.1
5	W	0.000	688.0	688.0	25.000 0.0
5	P	12.500	0.0	0.0	0.000 0.1
6	W	0.000	688.0	688.0	25.000 0.0
6	P	12.500	0.0	0.0	0.000 0.1
7	W	0.000	688.0	688.0	25.000 0.0
7	P	12.500	0.0	0.0	0.000 0.1
8	W	0.000	688.0	688.0	25.000 0.0
8	P	12.500	0.0	0.0	0.000 0.1

9	W	0.000	688.0	688.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	688.0	688.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
 Check Point I. D. 1.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.00	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.7	0.0	6.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.0	74.9
OPER	172.1	-140.0	124.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.30	4.01	-0.23	3.08	-0.30	3.09	-0.23	2.38
OPER	5C1	-0.26	3.15	-0.20	2.42	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	280.07	18.68	HS 373.71	672.7
5C1	541.81	39.64	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	5C1	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.100

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.8	-201.6	181.7	-225.8
OPER	359.7C	-319.4	319.4	-359.7C	343.0	-336.1	302.8	-376.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.37 L	6.44	-11.50	0.0	5.23	4.02	2.50			
		-0.78 R	-0.60	58.00	0.0	-0.58	-0.44	35.00	0.00		
OPER	5C1	6.65 R	5.12	18.50	0.0	0.00	0.00	0.00			
		-0.69 R	-0.53	47.00	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	24.59	257.68	21.70	288.55	HS 434.04
5C1	51.58	484.81	45.53	542.90	0.00 781.3 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.9	76.0
OPER	172.1	-138.1	126.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.35	-0.28	2.58	-0.40	2.65	-0.30	2.04
OPER	5C1	-0.46	2.66	-0.36	2.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	209.31	22.70	HS 453.95	817.1
5C1	299.13	47.62	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.100Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.3	206.0	-192.7	206.0	-192.7	189.3	-209.3	189.3	-
OPER 348.9	332.2	-332.2	332.2	-332.2	315.5	-348.9	315.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	8.37 L	6.44	-11.50	0.0	5.23	4.02	2.50	
		-0.78 R	-0.60	58.00	0.0	-0.58	-0.44	35.00	0.00
OPER	5C1	6.65 R	5.12	18.50	0.0	0.00	0.00	0.00	
		-0.69 R	-0.53	47.00	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	22.62	267.48	22.62	267.48
5C1	47.45	503.24	47.45	503.24

HS 452.36
0.00814.2
999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.200

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.7	-208.8	174.5	-232.9
OPER	359.7C	-319.4	319.4	-359.7C	331.1	-348.0	290.9	-388.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	13.62 L	10.48	-9.00	0.0	8.93	6.87	5.00			
		-1.57 R	-1.20	58.00	0.0	-1.16	-0.89	35.00	0.00		
OPER	5C1	10.97 R	8.44	21.00	0.0	0.00	0.00	0.00			
		-1.39 R	-1.07	47.00	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	14.59	133.40	12.81	148.84	HS 256.30	461.3
5C1	30.19	250.99	26.52	280.03	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.4	0.0
	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-81.7	77.1
OPER	172.1	-136.2	128.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.73	2.72	-0.57	2.10	-0.72	2.23	-0.55	1.72
OPER	5C1	-0.71	2.19	-0.55	1.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	111.21	28.32	HS 999.00	999.0
5C1	191.65	58.61	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.200Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.5	210.7	-187.9	210.7	-187.9	182.2	-216.5	182.2	-
OPER 360.8	332.2	-332.2	332.2	-332.2	303.6	-360.8	303.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	13.62 L	10.48	-9.00	0.0	8.93	5.00	
		-1.57 R	-1.20	58.00	0.0	-1.16	35.00	0.00
OPER	5C1	10.97 R	8.44	21.00	0.0	0.00	0.00	
		-1.39 R	-1.07	47.00	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	13.38	138.30	13.38	138.30	HS 267.56	481.6
5C1	27.69	260.20	27.69	260.20	0.00	999.0

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	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.300

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.06 L	12.35	-6.50	0.0	11.40	8.77	7.50			
		-2.35 R	-1.81	58.00	0.0	-1.73	-1.33	35.00	0.00		
OPER	5C1	13.15 R	10.12	23.50	0.0	0.00	0.00	0.00			
		-2.08 R	-1.60	47.00	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	12.11	90.76	10.60	HS 212.03	381.7
5C1	24.63	170.76	21.57	0.00	862.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.6	78.3
OPER	172.1	-134.3	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.09	2.14	-0.84	1.65	-1.06	1.84	-0.81	1.42
OPER	5C1	-1.06	1.75	-0.81	1.35	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	73.84	36.56	HS 999.00	999.0
5C1	127.13	74.40	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.300Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	16.06 L	12.35	-6.50	0.0	11.40	8.77	7.50	
		-2.35 R	-1.81	58.00	0.0	-1.73	-1.33	35.00	0.00
OPER	5C1	13.15 R	10.12	23.50	0.0	0.00	0.00	0.00	
		-2.08 R	-1.60	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.08	94.03	11.08	94.03	HS 221.58	398.8
5C1	22.54	176.90	22.54	176.90	0.00	901.8

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	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.400

Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	193.0	-214.5	168.8	-238.7
OPER	359.7C	-319.4	319.4	-359.7C	321.6	-357.5	281.3	-397.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.09 L	12.38	-4.00	0.0	12.44	9.57	10.00			
		-3.13 R	-2.41	58.00	0.0	-2.31	-1.78	35.00	0.00		
OPER	5C1	13.81 R	10.62	22.00	0.0	0.00	0.00	0.00			
		-2.77 R	-2.13	47.00	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	11.99	68.53	10.49	76.25	HS 209.81	377.7
5C1	23.29	128.93	20.37	143.45	0.00	815.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-1.43	1.61	-1.10	1.24	-1.40	1.48	-1.08	1.14
OPER	5C1	-1.38	1.37	-1.06	1.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	55.37	49.36	HS 999.00	999.0
5C1	95.94	96.89	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.400Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.2	214.6	-184.1	214.6	-184.1	176.5	-222.2	176.5	-
OPER 370.3	332.2	-332.2	332.2	-332.2	294.1	-370.3	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.09 L	12.38	-4.00	0.0	12.44	9.57	10.00	
		-3.13 R	-2.41	58.00	0.0	-2.31	-1.78	35.00	0.00
OPER	5C1	13.81 R	10.62	22.00	0.0	0.00	0.00	0.00	
		-2.77 R	-2.13	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	10.97	70.98	10.97	70.98	HS 219.34	394.8
5C1	21.30	133.54	21.30	133.54	0.00	852.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.500

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.18 L	11.67	-15.50	0.0	12.40	9.54	12.50			
		-3.91 R	-3.01	58.00	0.0	-2.89	-2.22	35.00	0.00		
OPER	5C1	13.50 R	10.38	24.50	0.0	0.00	0.00	0.00			
		-3.47 R	-2.67	47.00	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	12.81	54.46	11.22	60.63	HS 224.34
5C1	24.00	102.46	21.02	114.08	0.00 840.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.3	80.6
OPER	172.1	-130.5	134.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-1.88	1.21	-1.45	0.93	-1.74	1.14	-1.34	0.88
OPER	5C1	-1.68	1.05	-1.29	0.81	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	41.53	66.36	HS 999.00	999.0
5C1	77.50	128.04	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.500Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	15.18 L	11.67	-15.50	0.0	12.40	9.54	12.50	
		-3.91 R	-3.01	58.00	0.0	-2.89	-2.22	35.00	0.00
OPER	5C1	13.50 R	10.38	24.50	0.0	0.00	0.00	0.00	
		-3.47 R	-2.67	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.72	56.42	11.72	56.42	HS 234.44	422.0
5C1	21.97	106.15	21.97	106.15	0.00	878.6

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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.600

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	198.9	-208.6	174.7	-232.8
OPER	359.7C	-319.4	319.4	-359.7C	331.4	-347.7	291.2	-387.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.41 L	11.08	-13.00	0.0	11.12	8.56	15.00			
		-4.70 R	-3.61	58.00	0.0	-3.47	-2.67	35.00	0.00		
OPER	5C1	12.34 L	9.49	3.00	0.0	0.00	0.00	0.00			
		-4.16 R	-3.20	47.00	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	13.80	44.43	12.12	49.58	HS 242.50	436.5
5C1	26.86	83.59	23.60	93.27	0.00	943.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.4	-3.6
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.1	81.8
OPER	172.1	-128.4	136.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.28	0.76	-1.75	0.59	-2.09	0.84	-1.60	0.65
OPER	5C1	-1.97	0.78	-1.52	0.60	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	33.85	96.88	HS 999.00	999.0
5C1	65.20	173.85	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.600Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.3	210.6	-188.0	210.6	-188.0	182.4	-216.3	182.4	-
OPER 360.5	332.2	-332.2	332.2	-332.2	303.9	-360.5	303.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	14.41 L	11.08	-13.00	0.0	11.12	8.56	15.00	
		-4.70 R	-3.61	58.00	0.0	-3.47	-2.67	35.00	0.00
OPER	5C1	12.34 L	9.49	3.00	0.0	0.00	0.00	0.00	
		-4.16 R	-3.20	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.66	46.06	12.66	46.06	HS 253.14	455.7
5C1	24.63	86.66	24.63	86.66	0.00	985.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.700

Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	206.2	-201.3	182.0	-225.4
OPER	359.7C	-319.4	319.4	-359.7C	343.6	-335.5	303.4	-375.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.45 L	9.58	-10.50	0.0	9.00	6.92	17.50			
		-5.48 R	-4.21	58.00	0.0	-4.23	-3.25	35.00	85.00		
OPER	5C1	10.14 R	7.80	64.50	0.0	0.00	0.00	0.00			
		-4.85 R	-3.73	47.00	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	16.56	36.74	14.62	41.15	HS 292.36	526.2
5C1	33.88	69.13	29.91	77.43	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-5.3
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.9	82.9
OPER	172.1	-126.5	138.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.92	0.38	-2.24	0.29	-2.42	0.58	-1.86	0.45
OPER	5C1	-2.32	0.54	-1.79	0.41	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.04	142.93	HS 520.77	937.4
5C1	54.45	257.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.700Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.9	205.7	-192.9	205.7	-192.9	189.7	-208.9	189.7	-
OPER 348.2	332.2	-332.2	332.2	-332.2	316.2	-348.2	316.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.45 L	9.58	-10.50	0.0	9.00	6.92	17.50	
		-5.48 R	-4.21	58.00	0.0	-4.23	-3.25	35.00	85.00
OPER	5C1	10.14 R	7.80	64.50	0.0	0.00	0.00	0.00	
		-4.85 R	-3.73	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.23	38.14	15.23	38.14	HS 304.67	548.4
5C1	31.17	71.77	31.17	71.77	0.00	999.0

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	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	35.20	35.20	2.861	999999.000	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.800

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.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.6	-318.5	320.3	-358.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.00 L	6.16	-8.00	0.0	5.95	4.58	20.00			
		-6.26 R	-4.82	58.00	0.0	-4.83	-3.72	35.00	85.00		
OPER	5C1	7.33 R	5.64	67.00	0.0	0.00	0.00	0.00			
		-5.55 R	-4.27	47.00	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	27.04	30.52	24.02	34.38	480.36
5C1	49.22	57.43	43.72	64.69	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.8	84.1
OPER	172.1	-124.6	140.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.53	0.12	-2.72	0.09	-2.75	0.35	-2.11	0.27
OPER	5C1	-2.72	0.31	-2.09	0.24	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.18	237.52	HS 423.67	762.6
5C1	45.90	444.89	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.800

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. 198.8	199.0	-199.7	199.0	-199.7	199.9	-198.8	199.9	-
OPER 331.3	332.2	-332.2	332.2	-332.2	333.1	-331.3	333.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	8.00 L	6.16	-8.00	0.0	5.95	4.58	20.00	
		-6.26 R	-4.82	58.00	0.0	-4.83	-3.72	35.00	85.00
OPER	5C1	7.33 R	5.64	67.00	0.0	0.00	0.00	0.00	
		-5.55 R	-4.27	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	24.98	31.75	24.98	31.75	HS 499.52	899.1
5C1	45.47	59.74	45.47	59.74	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	2.861	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.900

Dead Load Moment	Superimposed Dead Load Moment
-2.0	-20.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	229.4	-178.1	205.2	-202.2
OPER	359.7C	-319.4	319.4	-359.7C	382.3	-296.8	342.1	-337.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	1.57 R	1.21	88.00	0.0	2.95	2.27	22.50			
		-7.76 L	-5.97	16.00	0.0	-7.24	-5.57	35.00	10.00		
OPER	5C1	3.68 R	2.83	69.50	0.0	0.00	0.00	0.00			
		-6.51 L	-5.01	-11.00	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	77.65	22.95	69.47	26.06	HS 458.95	826.1
5C1	103.90	45.61	92.96	51.80	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.9	-8.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-73.6	85.2
OPER	172.1	-122.7	142.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.09	0.08	-3.15	0.06	-3.05	0.17	-2.35	0.13
OPER	5C1	-3.08	0.12	-2.37	0.10	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.00	507.56	HS 359.93	647.9
5C1	39.81	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 1.900

Dead Load Moment	Superimposed Dead Load Moment
-2.0	-20.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 185.7	190.3	-208.4	190.3	-208.4	212.9	-185.7	212.9	-
OPER 309.6	332.2	-332.2	332.2	-332.2	354.8	-309.6	354.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	1.57 R	1.21	88.00	0.0	2.95	2.27	22.50	
		-7.76 L	-5.97	16.00	0.0	-7.24	-5.57	35.00	10.00
OPER	5C1	3.68 R	2.83	69.50	0.0	0.00	0.00	0.00	
		-6.51 L	-5.01	-11.00	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	72.07	23.93	72.07	23.93	HS 478.71	861.7
5C1	96.43	47.57	96.43	47.57	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	2.861	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	209.9	-131.7	190.7	-150.9
OPER	300.6C	-268.7	268.7	-300.6C	349.8	-219.5	317.8	-251.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00			
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00		35.00	
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00			
		-9.21 L	-7.09	-6.00	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	100.08	10.13	90.93	11.60	HS 202.56
5C1	214.82	23.83	195.18	27.31	0.00 364.6 953.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-8.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-72.5	63.9
OPER	151.3	-120.8	106.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.09	4.37	-3.15	3.36	-3.05	3.31	-2.35	2.54
OPER	5C1	-3.08	3.36	-2.37	2.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.78	14.60	HS 292.01	525.6
5C1	35.34	31.71	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00	
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00	35.00
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00	
		-9.21 L	-7.09	-6.00	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	94.01	10.62	94.01	10.62	HS 212.47	382.4
5C1	201.78	25.00	201.78	25.00	0.00	999.0

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	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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.91	28.67	28.67	1.699	999999.000	95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	209.9	-131.7	190.7	-150.9
OPER	300.6C	-268.7	268.7	-300.6C	349.8	-219.5	317.8	-251.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00			
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00		35.00	
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00			
		-9.21 L	-7.09	-6.00	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	100.08	10.13	90.93	11.60	HS 202.56	364.6
5C1	214.82	23.83	195.18	27.31	0.00	953.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-10.4	9.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-72.5	63.9
OPER	151.3	-120.8	106.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.59	4.37	-3.53	3.36	-3.34	3.31	-2.57	2.54
OPER	5C1	-3.42	3.36	-2.63	2.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	15.78	14.60	HS 292.01	525.6
5C1	35.34	31.71	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-44.7

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
138.2								
OPER	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-
230.3								

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	2.10 R	1.61	83.00	0.0	1.55	1.19	60.00	
		-13.01 L	-10.00	4.50	0.0	-11.99	-9.22	15.00	35.00
OPER	5C1	1.63 R	1.25	109.50	0.0	0.00	0.00	0.00	
		-9.21 L	-7.09	-6.00	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	94.01	10.62	94.01	10.62	HS 212.47	382.4
5C1	201.78	25.00	201.78	25.00	0.00	999.0

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 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. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.100

Dead Load Moment Superimposed Dead Load Moment
-2.6 -24.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.3	-145.2	177.1	-164.4
OPER	300.6C	-268.7	268.7	-300.6C	327.2	-242.1	295.2	-274.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	1.90 R	1.46	55.50	0.0	2.69	2.07	27.50			
		-8.50 R	-6.54	34.00	0.0	-7.33	-5.64	15.00	37.50		
OPER	5C1	2.69 R	2.07	78.50	0.0	0.00	0.00	0.00			
		-6.88 L	-5.29	-3.50	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	73.02	17.09	65.88	HS 341.78	615.2
5C1	121.60	35.17	109.72	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.7	0.0
	7.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.7	65.0
OPER	151.3	-124.4	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.79	-0.29	2.91	-0.37	2.99	-0.29	2.30
OPER	5C1	-0.40	2.94	-0.30	2.26	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	199.25	17.16	HS 343.26	617.9
5C1	314.45	36.78	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.100

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-24.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	157.0	-178.3	157.0	-178.3	183.6	-151.7	183.6	-
151.7								
OPER	279.4	-279.4	279.4	-279.4	306.0	-252.8	306.0	-
252.8								

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	1.90 R	1.46	55.50	0.0	2.69	2.07	27.50	
		-8.50 R	-6.54	34.00	0.0	-7.33	-5.64	15.00	37.50
OPER	5C1	2.69 R	2.07	78.50	0.0	0.00	0.00	0.00	
		-6.88 L	-5.29	-3.50	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	68.28	17.85	68.28	17.85	HS 356.95	642.5
5C1	113.71	36.73	113.71	36.73	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-1.0 -7.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.6	-155.9	166.4	-175.1
OPER	300.6C	-268.7	268.7	-300.6C	309.4	-259.9	277.4	-291.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.32 R	5.63	58.00	0.0	5.11	3.93	30.00			
		-6.96 L	-5.36	-8.00	0.0	-4.69	-3.60	15.00	47.50		
OPER	5C1	5.81 R	4.47	81.00	0.0	0.00	0.00	0.00			
		-5.61 L	-4.31	3.00	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	25.37	22.39	22.74	25.15	HS 447.83
5C1	53.27	46.34	47.76	52.04	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.1
OPER	151.3	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.37	3.19	-0.29	2.46	-0.52	2.64	-0.40	2.03
OPER	5C1	-0.59	2.52	-0.46	1.94	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	140.22	20.70	HS 414.03	745.3
5C1	206.75	43.77	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.200Dead Load Moment -1.0
Superimposed Dead Load Moment -7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.4	164.1	-171.1	164.1	-171.1	172.9	-162.4	172.9	-
OPER 270.6	279.4	-279.4	279.4	-279.4	288.2	-270.6	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	7.32 R	5.63	58.00	0.0	5.11	3.93	30.00	
		-6.96 L	-5.36	-8.00	0.0	-4.69	-3.60	15.00	47.50
OPER	5C1	5.81 R	4.47	81.00	0.0	0.00	0.00	0.00	
		-5.61 L	-4.31	3.00	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	23.62	23.32	23.62	23.32	HS 466.35	839.4
5C1	49.61	48.25	49.61	48.25	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.300

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	177.7	-163.8	158.6	-183.0
OPER	300.6C	-268.7	268.7	-300.6C	296.2	-273.1	264.3	-305.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.73 R	8.25	60.50	0.0	7.74	5.95	32.50			
		-5.78 L	-4.45	-8.00	0.0	-4.08	-3.14	15.00	0.00		
OPER	5C1	8.36 R	6.43	48.50	0.0	0.00	0.00	0.00			
		-4.98 L	-3.83	4.00	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	16.57	28.34	14.78	31.66	HS 295.64	532.2
5C1	35.44	54.78	31.61	61.20	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.4	0.0
	4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.2
OPER	151.3	-120.7	112.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.54	2.59	-0.42	1.99	-0.81	2.27	-0.62	1.75
OPER	5C1	-0.82	2.10	-0.63	1.62	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	89.64	26.00	HS 520.10	936.2
5C1	146.63	53.24	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.300Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.3	169.4	-165.9	169.4	-165.9	165.0	-170.3	165.0	-
OPER 283.8	279.4	-279.4	279.4	-279.4	275.0	-283.8	275.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.73 R	8.25	60.50	0.0	7.74	5.95	32.50	
		-5.78 L	-4.45	-8.00	0.0	-4.08	-3.14	15.00	0.00
OPER	5C1	8.36 R	6.43	48.50	0.0	0.00	0.00	0.00	
		-4.98 L	-3.83	4.00	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	15.38	29.45	15.38	29.45	HS 307.66	553.8
5C1	32.90	56.94	32.90	56.94	0.00	999.0

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 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. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.400

Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.7	-168.9	153.5	-188.1
OPER	300.6C	-268.7	268.7	-300.6C	287.8	-281.5	255.8	-313.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.07 R	9.29	63.00	0.0	9.36	7.20	35.00			
		-4.60 L	-3.54	-8.00	0.0	-3.56	-2.74	15.00	0.00		
OPER	5C1	10.14 R	7.80	47.00	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	5.50	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	14.30	36.73	12.71	40.91	HS 254.26	457.7
5C1	28.39	61.94	25.23	68.97	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.3	68.4
OPER	151.3	-118.8	113.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-1.12	2.13	-0.86	1.64	-1.13	1.90	-0.87	1.46
OPER	5C1	-1.08	1.79	-0.83	1.37	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	63.14	32.16	HS 999.00	999.0
5C1	109.67	63.81	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.4	172.8	-162.5	172.8	-162.5	159.9	-175.4	159.9	-
OPER 292.3	279.4	-279.4	279.4	-279.4	266.5	-292.3	266.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.07 R	9.29	63.00	0.0	9.36	7.20	35.00	
		-4.60 L	-3.54	-8.00	0.0	-3.56	-2.74	15.00	0.00
OPER	5C1	10.14 R	7.80	47.00	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	5.50	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	13.25	38.14	13.25	38.14	HS 264.95	476.9
5C1	26.29	64.30	26.29	64.30	0.00	999.0

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 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. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.500

Dead Load Moment 1.2
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	170.4	-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	11.80	L	9.08	23.50	0.0	10.05	7.73	37.50		
		-3.42	L	-2.63	-8.00	0.0	-3.04	-2.34	15.00	0.00	
OPER	5C1	10.72	R	8.25	88.50	0.0	0.00	0.00	0.00		
		-4.30	L	-3.31	6.50	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	14.44	50.12	12.81	55.74	HS 256.18	461.1
5C1	26.50	66.28	23.51	73.72	0.00	940.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 0.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.2	69.5
OPER	151.3	-116.9	115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.64	1.66	-1.26	1.28	-1.48	1.53	-1.14	1.17
OPER	5C1	-1.37	1.46	-1.05	1.12	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.87	41.79	HS 999.00	999.0
5C1	85.50	79.35	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.500

Dead Load Moment Superimposed Dead Load Moment

1.2 15.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 177.6	174.3	-161.0	174.3	-161.0	157.7	-177.6	157.7	-
OPER 296.0	279.4	-279.4	279.4	-279.4	262.8	-296.0	262.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.80 L	9.08	23.50	0.0	10.05	7.73	37.50	
		-3.42 L	-2.63	-8.00	0.0	-3.04	-2.34	15.00	0.00
OPER	5C1	10.72 R	8.25	88.50	0.0	0.00	0.00	0.00	
		-4.30 L	-3.31	6.50	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	13.35	52.01	13.35	52.01	HS 267.11	480.8
5C1	24.51	68.78	24.51	68.78	0.00	980.6

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 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. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.600Dead Load Moment 1.1
Superimposed Dead Load Moment 14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.1	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.2	-284.1	253.3	-316.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.05 L	9.27	12.00	0.0	9.54	7.34	40.00			
		-3.77 R	-2.90	83.00	0.0	-3.33	-2.56	60.00	0.00		
OPER	5C1	10.48 L	8.06	28.00	0.0	0.00	0.00	0.00			
		-4.27 R	-3.28	69.50	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	14.20	45.22	12.61	50.31	HS 252.25
5C1	27.22	66.54	24.17	74.03	0.00 454.1 966.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.0	70.7
OPER	151.3	-114.9	117.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.10	1.14	-1.61	0.88	-1.85	1.18	-1.42	0.91
OPER	5C1	-1.68	1.18	-1.29	0.91	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.91	60.08	HS 999.00	999.0
5C1	68.54	99.68	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.600Dead Load Moment 1.1
Superimposed Dead Load Moment 14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	173.8	-161.5	173.8	-161.5	158.4	-176.9	158.4	-
OPER 294.8	279.4	-279.4	279.4	-279.4	264.0	-294.8	264.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.05 L	9.27	12.00	0.0	9.54	7.34	40.00	
		-3.77 R	-2.90	83.00	0.0	-3.33	-2.56	60.00	0.00
OPER	5C1	10.48 L	8.06	28.00	0.0	0.00	0.00	0.00	
		-4.27 R	-3.28	69.50	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	13.15	46.93	13.15	46.93	HS 262.95	473.3
5C1	25.19	69.06	25.19	69.06	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.700Dead 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	10.78 L	8.29	14.50	0.0	8.09	6.22	42.50			
		-4.75 R	-3.65	83.00	0.0	-3.76	-2.89	60.00	0.00		
OPER	5C1	9.05 R	6.96	89.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	71.00	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	16.20	35.16	14.42	39.20	HS 288.49	519.3
5C1	32.19	61.08	28.65	68.11	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-3.1
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.8	71.8
OPER	151.3	-113.1	119.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.57	0.57	-1.97	0.44	-2.22	0.85	-1.71	0.66
OPER	5C1	-2.06	0.91	-1.58	0.70	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.44	84.13	HS 528.82	951.9
5C1	54.92	131.12	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.9	171.4	-163.9	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.78 L	8.29	14.50	0.0	8.09	6.22	42.50	
		-4.75 R	-3.65	83.00	0.0	-3.76	-2.89	60.00	0.00
OPER	5C1	9.05 R	6.96	89.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	71.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.02	36.51	15.02	36.51	HS 300.45	540.8
5C1	29.84	63.44	29.84	63.44	0.00	999.0

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 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. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	181.1	-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	7.44 L	5.72	17.00	0.0	5.67	4.36	45.00			
		-5.72 R	-4.40	83.00	0.0	-4.42	-3.40	60.00	110.00		
OPER	5C1	6.81 R	5.24	92.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.87	72.00	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	24.34	28.04	21.76	31.39	HS 435.19
5C1	44.33	53.10	39.63	59.45	0.00 783.3 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.4	-4.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.17	0.46	-2.44	0.35	-2.59	0.57	-1.99	0.44
OPER	5C1	-2.46	0.66	-1.89	0.51	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.05	128.47	HS 420.94	757.7
5C1	45.22	184.13	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.800Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 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	7.44 L	5.72	17.00	0.0	5.67	4.36	45.00	
		-5.72 R	-4.40	83.00	0.0	-4.42	-3.40	60.00	110.00
OPER	5C1	6.81 R	5.24	92.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.87	72.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.63	29.17	22.63	29.17	HS 452.52	814.5
5C1	41.21	55.24	41.21	55.24	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.06 L	1.58	19.50	0.0	3.19	2.45	47.50			
		-7.38 L	-5.68	41.00	0.0	-6.67	-5.13	60.00		37.50	
OPER	5C1	3.53 R	2.72	94.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	74.50	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	59.73	20.50	53.71	23.10	HS 409.99	738.0	
5C1	89.79	43.10	80.74	48.57	0.00	999.0	

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.900

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	123.4

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	-3.76	0.47	-2.89	0.36	-2.94	0.44	-2.26	0.34
OPER	5C1	-2.86	0.44	-2.20	0.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.44	156.50	HS 348.82	627.9
5C1	38.21	281.88	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 2.900Dead Load Moment -1.3
Superimposed Dead Load Moment -15.1

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. 157.8	161.1	-174.2	161.1	-174.2	177.5	-157.8	177.5	-
OPER 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.06 L	1.58	19.50	0.0	3.19	2.45	47.50	
		-7.38 L	-5.68	41.00	0.0	-6.67	-5.13	60.00	37.50
OPER	5C1	3.53 R	2.72	94.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	74.50	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	55.73	21.37	55.73	21.37	HS 427.46	769.4
5C1	83.78	44.94	83.78	44.94	0.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50	L	1.92	-8.00	0.0	2.23	1.72	15.00		
		-12.31	L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00	
OPER	5C1	1.93	L	1.48	-34.50	0.0	0.00	0.00	0.00		
		-7.44	L	-5.72	45.50	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	80.90	11.31	73.22	12.87		HS 226.27	407.3
5C1	175.08	31.23	158.46	35.53		0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.000

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	64.2
OPER	151.3	-107.4	107.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.76	4.32	-2.89	3.32	-2.94	3.29	-2.26	2.53
OPER	5C1	-2.86	3.24	-2.20	2.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.94	14.87	HS 297.42	535.4
5C1	33.11	33.03	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.50 L	1.92	-8.00	0.0	2.23	1.72	15.00	
		-12.31 L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00
OPER	5C1	1.93 L	1.48	-34.50	0.0	0.00	0.00	0.00	
		-7.44 L	-5.72	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	75.80	11.84	75.80	11.84	HS 236.74	426.1
5C1	164.05	32.67	164.05	32.67	0.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50	L	1.92	-8.00	0.0	2.23	1.72	15.00		
		-12.31	L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00	
OPER	5C1	1.93	L	1.48	-34.50	0.0	0.00	0.00	0.00		
		-7.44	L	-5.72	45.50	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	80.90	11.31	73.22	12.87		HS 226.27	407.3
5C1	175.08	31.23	158.46	35.53		0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-8.2	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.5	64.2
OPER	151.3	-107.4	107.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.31	4.32	-3.32	3.32	-3.27	3.29	-2.51	2.53
OPER	5C1	-3.24	3.24	-2.50	2.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.94	14.87	HS 297.42	535.4
5C1	33.11	33.03	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.50 L	1.92	-8.00	0.0	2.23	1.72	15.00	
		-12.31 L	-9.47	29.50	0.0	-11.16	-8.59	60.00	40.00
OPER	5C1	1.93 L	1.48	-34.50	0.0	0.00	0.00	0.00	
		-7.44 L	-5.72	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	75.80	11.84	75.80	11.84	HS 236.74	426.1
5C1	164.05	32.67	164.05	32.67	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.100

Dead Load Moment Superimposed Dead Load Moment
-1.2 -14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.7	-151.9	170.5	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.2	-253.1	284.2	-285.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.02 R	1.55	80.50	0.0	3.25	2.50	52.50			
		-7.34 R	-5.65	59.00	0.0	-6.62	-5.09	40.00	62.50		
OPER	5C1	3.67 L	2.82	5.50	0.0	0.00	0.00	0.00			
		-5.82 L	-4.48	25.50	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	58.39	20.68	52.49	23.30	HS 413.69
5C1	86.15	43.46	77.43	48.95	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.3	65.4
OPER	151.3	-123.8	108.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.28
OPER	5C1	-0.40	2.86	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	183.92	17.35	HS 346.95	624.5
5C1	312.65	38.05	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.100Dead Load Moment -1.2
Superimposed Dead Load Moment -14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.3	161.4	-173.8	161.4	-173.8	177.0	-158.3	177.0	-
OPER 263.9	279.4	-279.4	279.4	-279.4	294.9	-263.9	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.02 R	1.55	80.50	0.0	3.25	52.50
		-7.34 R	-5.65	59.00	0.0	-6.62	40.00
OPER	5C1	3.67 L	2.82	5.50	0.0	0.00	0.00
		-5.82 L	-4.48	25.50	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	54.47	21.56	431.25	776.3
5C1	80.36	45.30	0.00	999.0

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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.200

Dead Load Moment 0.1
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	299.9	-269.4	267.9	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 R	5.71	83.00	0.0	5.63	4.33	55.00			
		-5.67 L	-4.36	17.00	0.0	-4.13	-3.18	40.00	72.50		
OPER	5C1	6.90 L	5.31	8.00	0.0	0.00	0.00	0.00			
		-5.01 L	-3.86	28.00	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	24.23	28.51	21.65	31.90	HS 432.92	779.3
5C1	43.44	53.72	38.81	60.10	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.01
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	130.84	20.92	HS 418.46	753.2
5C1	205.05	44.98	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.200Dead Load Moment 0.1
Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.4	167.9	-167.4	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.43 R	5.71	83.00	0.0	5.63	4.33	55.00	
		-5.67 L	-4.36	17.00	0.0	-4.13	-3.18	40.00	72.50
OPER	5C1	6.90 L	5.31	8.00	0.0	0.00	0.00	0.00	
		-5.01 L	-3.86	28.00	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	22.51	29.65	22.51	29.65	HS 450.28	810.5
5C1	40.36	55.86	40.36	55.86	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.300

	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. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.300

Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.0	-168.5	153.8	-187.7
OPER	300.6C	-268.7	268.7	-300.6C	288.4	-280.9	256.4	-312.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.81 R	8.32	85.50	0.0	8.18	6.29	57.50			
		-4.71 L	-3.62	17.00	0.0	-3.64	-2.80	40.00	0.00		
OPER	5C1	9.12 L	7.02	10.50	0.0	0.00	0.00	0.00			
		-4.53 L	-3.48	29.00	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	16.00	35.82	14.23	39.90	HS 284.56	512.2
5C1	31.61	62.03	28.10	69.10	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.300

Dead Load	Superimposed Dead Load
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	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.38	26.27	HS 525.45	945.8
5C1	145.15	54.58	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.300Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.0	172.5	-162.7	172.5	-162.7	160.3	-175.0	160.3	-
OPER 291.7	279.4	-279.4	279.4	-279.4	267.1	-291.7	267.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.81 R	8.32	85.50	0.0	8.18	6.29	57.50	
		-4.71 L	-3.62	17.00	0.0	-3.64	-2.80	40.00	0.00
OPER	5C1	9.12 L	7.02	10.50	0.0	0.00	0.00	0.00	
		-4.53 L	-3.48	29.00	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	14.82	37.19	14.82	37.19	HS 296.48	533.7
5C1	29.28	64.41	29.28	64.41	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.400

Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.8	249.5	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.13 R	9.33	88.00	0.0	9.71	7.47	60.00			
		-3.74 L	-2.88	17.00	0.0	-3.21	-2.47	40.00	0.00		
OPER	5C1	10.51 R	8.08	72.00	0.0	0.00	0.00	0.00			
		-4.22 L	-3.25	30.50	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	13.92	46.14	12.34	51.26	HS 246.83
5C1	26.79	68.16	23.74	75.73	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.400

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.1	0.0	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.7
OPER	151.3	-118.2	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.17	1.87	-0.90	1.44
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.85	32.75	HS 999.00	999.0
5C1	108.55	68.08	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.400

Dead Load Moment Superimposed Dead Load Moment

1.6 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.13 R	9.33	88.00	0.0	9.71	7.47	60.00	
		-3.74 L	-2.88	17.00	0.0	-3.21	-2.47	40.00	0.00
OPER	5C1	10.51 R	8.08	72.00	0.0	0.00	0.00	0.00	
		-4.22 L	-3.25	30.50	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	12.87	47.86	12.87	47.86	HS 257.46	463.4
5C1	24.77	70.70	24.77	70.70	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.500

Dead Load Moment 1.7
Superimposed Dead Load Moment 19.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	167.6	-174.0	148.4	-193.1
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.84 R	9.11	76.50	0.0	10.32	7.93	62.50			
		-2.81 R	-2.16	108.00	0.0	-2.79	-2.14	85.00	0.00		
OPER	5C1	10.80 L	8.31	11.50	0.0	0.00	0.00	0.00			
		-4.09 R	-3.15	93.50	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	14.15	62.00	12.53	68.84	HS 250.63	451.1
5C1	25.87	70.84	22.91	78.66	0.00	916.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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	-1.64	1.64	-1.26	1.26	-1.52	1.51	-1.17	1.16
OPER	5C1	-1.37	1.37	-1.06	1.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.51	42.55	HS 999.00	999.0
5C1	84.67	85.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.500

Dead Load Moment Superimposed Dead Load Moment

1.7 19.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.4	176.2	-159.1	176.2	-159.1	154.9	-180.4	154.9	-
OPER 300.7	279.4	-279.4	279.4	-279.4	258.1	-300.7	258.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.84 R	9.11	76.50	0.0	10.32	7.93	62.50	
		-2.81 R	-2.16	108.00	0.0	-2.79	-2.14	85.00	0.00
OPER	5C1	10.80 L	8.31	11.50	0.0	0.00	0.00	0.00	
		-4.09 R	-3.15	93.50	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	13.08	64.30	13.08	64.30	HS 261.52	470.7
5C1	23.91	73.47	23.91	73.47	0.00	956.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.600

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	-172.3	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	37.00	0.0	9.70	7.46	65.00			
		-3.78 R	-2.91	108.00	0.0	-3.26	-2.51	85.00	0.00		
OPER	5C1	10.51 L	8.08	53.00	0.0	0.00	0.00	0.00			
		-4.23 R	-3.26	94.50	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	13.95	45.59	12.37	50.67	HS 247.41
5C1	26.86	67.83	23.82	75.39	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-1.9
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.3	-114.3	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.89
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.67	61.50	HS 999.00	999.0
5C1	67.93	109.08	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.600Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 L	9.34	37.00	0.0	9.70	7.46	65.00	
		-3.78 R	-2.91	108.00	0.0	-3.26	-2.51	85.00	0.00
OPER	5C1	10.51 L	8.08	53.00	0.0	0.00	0.00	0.00	
		-4.23 R	-3.26	94.50	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	12.90	47.29	12.90	47.29	HS 258.04	464.5
5C1	24.84	70.37	24.84	70.37	0.00	999.0

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	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. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.06	28.67	28.67	1.699
			999999.000
			103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.8	-167.7	154.7	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.5	257.8	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	39.50	0.0	8.16	6.28	67.50			
		-4.75 R	-3.65	108.00	0.0	-3.73	-2.87	85.00	0.00		
OPER	5C1	9.06 R	6.97	114.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	96.00	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	16.07	35.30	14.30	39.34	HS 285.90	514.6
5C1	31.99	61.49	28.46	68.53	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.700

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/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.26	0.83	-1.74	0.64
OPER	5C1	-2.06	0.83	-1.59	0.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.22	86.58	HS 524.37	943.9
5C1	54.47	145.83	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.700Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	39.50	0.0	8.16	6.28	67.50	
		-4.75 R	-3.65	108.00	0.0	-3.73	-2.87	85.00	0.00
OPER	5C1	9.06 R	6.97	114.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	96.00	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	14.89	36.66	14.89	36.66	HS 297.82	536.1
5C1	29.65	63.86	29.65	63.86	0.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	7.44 L	5.72	42.00	0.0	5.66	4.35	70.00			
		-5.72 R	-4.40	108.00	0.0	-4.43	-3.41	85.00	135.00		
OPER	5C1	6.81 R	5.24	117.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	97.00	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	24.37	28.02	21.79	31.38	HS 435.72
5C1	44.37	53.06	39.67	59.41	0.00 784.3 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-5.3
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.3	73.3
OPER	151.3	-110.5	122.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.28	-2.63	0.55	-2.02	0.42
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.88	133.52	HS 417.54	751.6
5C1	44.86	206.04	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	7.44 L	5.72	42.00	0.0	5.66	4.35	70.00	
		-5.72 R	-4.40	108.00	0.0	-4.43	-3.41	85.00	135.00
OPER	5C1	6.81 R	5.24	117.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	97.00	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	22.65	29.15	22.65	29.15	HS 453.06	815.5
5C1	41.25	55.20	41.25	55.20	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.3	-150.2	172.1	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	318.9	-250.4	286.9	-282.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	44.50	0.0	3.14	2.41	72.50			
		-7.38 L	-5.68	66.00	0.0	-6.77	-5.21	85.00	62.50		
OPER	5C1	3.52 R	2.71	119.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	99.50	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	61.00	20.36	54.88	22.96	HS 407.23
5C1	90.49	42.79	81.42	48.26	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 3.900
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.6 -7.1 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.2	74.4
OPER	151.3	-108.7	124.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.98	0.39	-2.29	0.30
OPER	5C1	-2.87	0.39	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.31	189.82	HS 346.15	623.1
5C1	37.92	314.65	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 3.900Dead Load Moment -1.5
Superimposed Dead Load Moment -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.7	160.3	-174.9	160.3	-174.9	178.6	-156.7	178.6	-
OPER 261.2	279.4	-279.4	279.4	-279.4	297.6	-261.2	297.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.03 L	1.56	44.50	0.0	3.14	2.41	72.50	
		-7.38 L	-5.68	66.00	0.0	-6.77	-5.21	85.00	62.50
OPER	5C1	3.52 R	2.71	119.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	99.50	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	56.94	21.24	56.94	21.24	HS 424.70	764.5
5C1	84.47	44.63	84.47	44.63	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00			
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00		
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	80.00	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	99.41	11.14	90.07	12.69	HS 222.70	400.9
5C1	213.39	30.70	193.34	35.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.000

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	64.1
OPER	151.3	-106.8	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.98	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.84	14.85	HS 296.69	534.0
5C1	32.88	32.90	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00	
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	80.00	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	93.21	11.66	93.21	11.66	HS 233.16	419.7
5C1	200.08	32.15	200.08	32.15	0.00	999.0

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	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. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00			
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00		
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	80.00	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	99.41	11.14	90.07	12.69	222.70
5C1	213.39	30.70	193.34	35.00	0.00

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 5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.8	8.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.8	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.30	-2.54	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.84	14.85	HS 296.69	534.0
5C1	32.88	32.90	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.000Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.05 R	1.58	133.00	0.0	2.04	1.57	110.00	
		-12.33 L	-9.48	54.50	0.0	-11.34	-8.72	85.00	65.00
OPER	5C1	1.60 R	1.23	159.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	80.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	93.21	11.66	93.21	11.66	HS 233.16	419.7
5C1	200.08	32.15	200.08	32.15	0.00	999.0

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 Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.100

Dead Load Moment Superimposed Dead Load Moment
-1.6 -16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.5	-150.1	172.3	-169.3
OPER	300.6C	-268.7	268.7	-300.6C	319.1	-250.2	287.1	-282.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	105.50	0.0	3.18	2.44	77.50			
		-7.38 R	-5.67	84.00	0.0	-6.78	-5.21	65.00	87.50		
OPER	5C1	3.52 L	2.71	30.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	50.50	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	60.31	20.35	54.26	22.95	406.98
5C1	90.75	42.77	81.65	48.24	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.3
OPER	151.3	-124.0	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.98	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	186.27	17.32	HS 346.42	623.5
5C1	313.17	37.95	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.100

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.5	160.2	-175.0	160.2	-175.0	178.7	-156.5	178.7	-
OPER 260.9	279.4	-279.4	279.4	-279.4	297.9	-260.9	297.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 R	1.56	105.50	0.0	3.18	2.44	77.50	
		-7.38 R	-5.67	84.00	0.0	-6.78	-5.21	65.00	87.50
OPER	5C1	3.52 L	2.71	30.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	56.29	21.22	56.29	21.22	HS 424.46	764.0
5C1	84.71	44.60	84.71	44.60	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.200

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 R	5.72	108.00	0.0	5.57	4.28	80.00			
		-5.72 L	-4.40	42.00	0.0	-4.46	-3.43	65.00	15.00		
OPER	5C1	6.80 L	5.23	33.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.87	53.00	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	24.41	27.98	21.83	31.33	436.56
5C1	44.47	52.98	39.77	59.33	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.3	66.4
OPER	151.3	-122.1	110.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.55	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	132.00	20.89	HS 417.84	752.1
5C1	205.30	44.89	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.200

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.43 R	5.72	108.00	0.0	5.57	4.28	80.00	
		-5.72 L	-4.40	42.00	0.0	-4.46	-3.43	65.00	15.00
OPER	5C1	6.80 L	5.23	33.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.87	53.00	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	22.69	29.10	22.69	29.10	HS 453.90	817.0
5C1	41.35	55.12	41.35	55.12	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.03	28.67	28.67	1.699
			999999.000
			101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.5	-278.8	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	110.50	0.0	8.13	6.26	82.50			
		-4.75 L	-3.65	42.00	0.0	-3.75	-2.89	65.00	0.00		
OPER	5C1	9.05 L	6.97	35.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	54.00	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	16.11	35.21	14.34	39.25	HS 286.72	516.1
5C1	32.08	61.33	28.55	68.37	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.92	26.24	HS 524.71	944.5
5C1	145.31	54.50	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.300Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.7	171.7	-163.6	171.7	-163.6	161.5	-173.7	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	110.50	0.0	8.13	6.26	82.50
		-4.75 L	-3.65	42.00	0.0	-3.75	-2.89	65.00
OPER	5C1	9.05 L	6.97	35.50	0.0	0.00	0.00	0.00
		-4.55 L	-3.50	54.00	0.0	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	14.93	36.57	14.93	36.57
5C1	29.74	63.70	29.74	63.70

HS 298.64 537.6
0.00 999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.400

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	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.2	-286.1	251.2	-318.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	113.00	0.0	9.67	7.44	85.00			
		-3.78 L	-2.91	42.00	0.0	-3.30	-2.54	65.00	0.00		
OPER	5C1	10.51 R	8.08	97.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	55.50	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	14.00	45.43	12.42	50.51	HS 248.39	447.1
5C1	26.95	67.55	23.91	75.10	0.00	956.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.6
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.89	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.15	32.70	HS 999.00	999.0
5C1	108.67	67.97	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.400Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.7	174.6	-160.7	157.2	-178.1	157.2	-
OPER 296.8	279.4	-279.4	279.4	-279.4	262.0	-296.8	262.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 R	9.34	113.00	0.0	9.67	7.44	85.00	
		-3.78 L	-2.91	42.00	0.0	-3.30	-2.54	65.00	0.00
OPER	5C1	10.51 R	8.08	97.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	55.50	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	12.95	47.14	12.95	47.14	HS 259.02	466.2
5C1	24.93	70.09	24.93	70.09	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.4	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.85 R	9.11	101.50	0.0	10.29	7.91	87.50			
		-2.81 R	-2.16	133.00	0.0	-2.85	-2.19	110.00	0.00		
OPER	5C1	10.76 R	8.28	138.50	0.0	0.00	0.00	0.00			
		-4.10 R	-3.15	118.50	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	14.21	60.74	12.59	HS 251.85	453.3
5C1	26.08	70.43	23.11	0.00	924.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 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	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.56	42.49	HS 999.00	999.0
5C1	84.77	84.62	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.500Dead Load Moment 1.6
Superimposed Dead Load Moment 18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.7	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
OPER 299.4	279.4	-279.4	279.4	-279.4	259.4	-299.4	259.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.85 R	9.11	101.50	0.0	10.29	7.91	87.50	
		-2.81 R	-2.16	133.00	0.0	-2.85	-2.19	110.00	0.00
OPER	5C1	10.76 R	8.28	138.50	0.0	0.00	0.00	0.00	
		-4.10 R	-3.15	118.50	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	13.14	63.00	13.14	63.00	HS 262.74	472.9
5C1	24.10	73.06	24.10	73.06	0.00	964.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.600

Dead Load Moment 1.4
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	169.8	-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	12.14 L	9.34	62.00	0.0	9.68	7.45	90.00			
		-3.78 R	-2.91	133.00	0.0	-3.30	-2.54	110.00	0.00		
OPER	5C1	10.51 L	8.08	78.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	119.50	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	13.99	45.45	12.41	50.53	HS 248.20	446.8
5C1	26.93	67.58	23.89	75.14	0.00	955.7

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 4.600
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -1.8 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.44	0.90
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.72	60.96	HS 999.00	999.0
5C1	68.01	108.60	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.600Dead Load Moment 1.4
Superimposed Dead Load Moment 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 297.0	279.4	-279.4	279.4	-279.4	261.8	-297.0	261.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 L	9.34	62.00	0.0	9.68	7.45	90.00	
		-3.78 R	-2.91	133.00	0.0	-3.30	-2.54	110.00	0.00
OPER	5C1	10.51 L	8.08	78.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	119.50	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	12.94	47.16	12.94	47.16	HS 258.83	465.9
5C1	24.91	70.12	24.91	70.12	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	64.50	0.0	8.15	6.27	92.50			
		-4.75 R	-3.65	133.00	0.0	-3.75	-2.88	110.00	0.00		
OPER	5C1	9.06 R	6.97	139.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	121.00	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	16.09	35.25	14.31	39.29	HS 286.30	515.3
5C1	32.03	61.40	28.50	68.43	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.700

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	-67.6	72.1
OPER	151.3	-112.6	120.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.25	85.58	HS 525.07	945.1
5C1	54.54	145.23	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.8	-163.4	171.8	-163.4	161.3	-174.0	161.3	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	64.50	0.0	8.15	6.27	92.50	
		-4.75 R	-3.65	133.00	0.0	-3.75	-2.88	110.00	0.00
OPER	5C1	9.06 R	6.97	139.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	121.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.91	36.61	14.91	36.61	HS 298.22	536.8
5C1	29.69	63.76	29.69	63.76	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.800

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	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.44 L	5.72	67.00	0.0	5.66	4.36	95.00			
		-5.72 R	-4.40	133.00	0.0	-4.43	-3.41	110.00	160.00		
OPER	5C1	6.81 R	5.24	142.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	122.00	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	24.36	28.03	21.78	31.38	435.62
5C1	44.36	53.08	39.66	59.43	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-5.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.91	131.25	HS 418.13	752.6
5C1	44.92	205.20	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.800Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.1	-168.1	167.1	-168.1	168.4	-166.9	168.4	-
OPER 278.1	279.4	-279.4	279.4	-279.4	280.7	-278.1	280.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	7.44 L	5.72	67.00	0.0	5.66	4.36	95.00	
		-5.72 R	-4.40	133.00	0.0	-4.43	-3.41	110.00	160.00
OPER	5C1	6.81 R	5.24	142.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	122.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.65	29.16	22.65	29.16	HS 452.97	815.3
5C1	41.24	55.21	41.24	55.21	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -16.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.5	171.8	-169.7
OPER	300.6C	-268.7	268.7	-300.6C	318.4	-250.9	286.4	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	69.50	0.0	3.16	2.43	97.50			
		-7.38 L	-5.68	91.00	0.0	-6.76	-5.20	110.00	87.50		
OPER	5C1	3.52 R	2.71	144.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	124.50	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	60.43	20.40	54.36	HS 408.04	734.5
5C1	90.37	42.88	81.29	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.3
OPER	151.3	-108.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.33	184.91	HS 346.66	624.0
5C1	37.97	313.08	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 4.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.5	-174.7	160.5	-174.7	178.3	-157.0	178.3	-
OPER 261.6	279.4	-279.4	279.4	-279.4	297.2	-261.6	297.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 L	1.56	69.50	0.0	3.16	2.43	97.50	
		-7.38 L	-5.68	91.00	0.0	-6.76	-5.20	110.00	87.50
OPER	5C1	3.52 R	2.71	144.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	56.40	21.28	56.40	21.28	HS 425.52	765.9
5C1	84.34	44.72	84.34	44.72	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00			
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00	90.00		
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	105.00	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	97.56	11.18	88.37	12.74	223.58
5C1	212.83	30.85	192.78	35.15	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-107.0	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.97	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.86	14.85	HS 297.08	534.7
5C1	32.93	32.92	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.000Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00	
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00	90.00
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	105.00	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	91.46	11.70	91.46	11.70	HS 234.04	421.3
5C1	199.51	32.30	199.51	32.30	0.00	999.0

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	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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.04	28.67	28.67	1.699
			999999.000
			101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00			
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00	90.00		
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	105.00	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	97.56	11.18	88.37	12.74	223.58
5C1	212.83	30.85	192.78	35.15	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.6	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-107.0	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.29	3.30	-2.53	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.86	14.85	HS 297.08	534.7
5C1	32.93	32.92	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.000Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.05 R	1.58	158.00	0.0	2.09	1.61	135.00	
		-12.33 L	-9.48	79.50	0.0	-11.32	-8.71	110.00	90.00
OPER	5C1	1.60 R	1.23	184.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	105.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	91.46	11.70	91.46	11.70	HS 234.04	421.3
5C1	199.51	32.30	199.51	32.30	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	130.50	0.0	3.22	2.47	102.50			
		-7.38 R	-5.68	109.00	0.0	-6.76	-5.20	90.00	112.50		
OPER	5C1	3.52 L	2.71	55.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	75.50	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	59.39	20.41	53.42	23.01	408.15
5C1	90.36	42.89	81.28	48.36	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.100

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.6	0.0 6.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.4	65.3
OPER	151.3	-123.9	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	185.06	17.33	HS 346.57	623.8
5C1	313.05	37.97	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.6	-174.7	160.6	-174.7	178.3	-157.0	178.3	-
OPER 261.7	279.4	-279.4	279.4	-279.4	297.1	-261.7	297.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 R	1.56	130.50	0.0	3.22	2.47	102.50	
		-7.38 R	-5.68	109.00	0.0	-6.76	-5.20	90.00	112.50
OPER	5C1	3.52 L	2.71	55.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	55.43	21.28	55.43	21.28	HS 425.63	766.1
5C1	84.33	44.73	84.33	44.73	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.05	28.67	28.67	1.699
			999999.000
			102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	181.1	-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	7.44 R	5.72	133.00	0.0	5.60	4.31	105.00			
		-5.72 L	-4.40	67.00	0.0	-4.42	-3.40	90.00	40.00		
OPER	5C1	6.81 L	5.24	58.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	78.00	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	24.35	28.04	21.77	31.40	HS 435.42
5C1	44.34	53.10	39.64	59.45	0.00 783.8 999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 5.200
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.5 0.0 5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	131.36	20.90	HS 418.03	752.5
5C1	205.21	44.91	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	7.44 R	5.72	133.00	0.0	5.60	4.31	105.00	
		-5.72 L	-4.40	67.00	0.0	-4.42	-3.40	90.00	40.00
OPER	5C1	6.81 L	5.24	58.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	78.00	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	22.64	29.17	22.64	29.17	HS 452.77	815.0
5C1	41.22	55.24	41.22	55.24	0.00	999.0

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 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. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.05	28.67	28.67	1.699
			999999.000
			102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.300

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.6	154.8	-186.8
OPER	300.6C	-268.7	268.7	-300.6C	289.9	-279.4	257.9	-311.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	135.50	0.0	8.16	6.28	107.50			
		-4.75 L	-3.65	67.00	0.0	-3.74	-2.88	90.00	0.00		
OPER	5C1	9.06 L	6.97	60.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	79.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	16.08	35.28	14.31	39.32	515.0
5C1	32.01	61.44	28.48	68.47	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.63	26.25	HS 524.95	944.9
5C1	145.25	54.53	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.300Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.1	171.9	-163.4	171.9	-163.4	161.2	-174.1	161.2	-
OPER 290.1	279.4	-279.4	279.4	-279.4	268.7	-290.1	268.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	135.50	0.0	8.16	6.28	107.50	
		-4.75 L	-3.65	67.00	0.0	-3.74	-2.88	90.00	0.00
OPER	5C1	9.06 L	6.97	60.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	79.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.90	36.63	14.90	36.63	HS 298.01	536.4
5C1	29.67	63.80	29.67	63.80	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.05	28.67	28.67	1.699
			999999.000
			102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	138.00	0.0	9.70	7.46	110.00			
		-3.78 L	-2.91	67.00	0.0	-3.29	-2.53	90.00	0.00		
OPER	5C1	10.51 R	8.08	122.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	80.50	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	13.98	45.49	12.40	50.57	HS 247.96	446.3
5C1	26.91	67.64	23.87	75.19	0.00	954.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.90	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.99	32.71	HS 999.00	999.0
5C1	108.62	68.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.400Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.4	174.8	-160.5	174.8	-160.5	156.9	-178.4	156.9	-
OPER 297.3	279.4	-279.4	279.4	-279.4	261.5	-297.3	261.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	12.14 R	9.34	138.00	0.0	9.70	7.46	110.00	
		-3.78 L	-2.91	67.00	0.0	-3.29	-2.53	90.00	0.00
OPER	5C1	10.51 R	8.08	122.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	80.50	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	12.93	47.20	12.93	47.20	HS 258.59	465.5
5C1	24.89	70.18	24.89	70.18	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.2	-173.4	149.0	-192.6
OPER	300.6C	-268.7	268.7	-300.6C	280.3	-289.0	248.3	-321.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.85 L	9.11	98.50	0.0	10.30	7.92	112.50			
		-2.81 R	-2.16	158.00	0.0	-2.84	-2.19	135.00	0.00		
OPER	5C1	10.76 R	8.28	163.50	0.0	0.00	0.00	0.00			
		-4.10 R	-3.15	143.50	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	14.20	60.96	12.58	HS 251.53	452.8
5C1	26.05	70.50	23.08	0.00	923.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

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 for LL+I (-)	(+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.54	42.50	HS 999.00	999.0
5C1	84.73	84.66	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.500Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

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. 179.9	175.8	-159.5	175.8	-159.5	155.4	-179.9	155.4	-
OPER 299.8	279.4	-279.4	279.4	-279.4	259.0	-299.8	259.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.85 L	9.11	98.50	0.0	10.30	7.92
		-2.81 R	-2.16	158.00	0.0	-2.84	-2.19
OPER	5C1	10.76 R	8.28	163.50	0.0	0.00	0.00
		-4.10 R	-3.15	143.50	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	13.12	63.23	13.12	63.23	HS 262.42	472.4
5C1	24.08	73.12	24.08	73.12	0.00	963.0

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 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. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	87.00	0.0	9.69	7.46	115.00			
		-3.78 R	-2.91	158.00	0.0	-3.30	-2.54	135.00	0.00		
OPER	5C1	10.51 L	8.08	103.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	144.50	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	13.98	45.48	12.40	50.56	HS 248.02	446.4
5C1	26.92	67.62	23.87	75.17	0.00	954.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-1.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.89
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.70	61.05	HS 999.00	999.0
5C1	67.98	108.64	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.600Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.8	-160.5	174.8	-160.5	157.0	-178.3	157.0	-
OPER 297.2	279.4	-279.4	279.4	-279.4	261.6	-297.2	261.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 L	9.34	87.00	0.0	9.69	7.46	115.00	
		-3.78 R	-2.91	158.00	0.0	-3.30	-2.54	135.00	0.00
OPER	5C1	10.51 L	8.08	103.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	144.50	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	12.93	47.19	12.93	47.19	HS 258.65	465.6
5C1	24.90	70.16	24.90	70.16	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.5	154.8	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	89.50	0.0	8.16	6.27	117.50			
		-4.75 R	-3.65	158.00	0.0	-3.75	-2.88	135.00	0.00		
OPER	5C1	9.06 R	6.97	164.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	146.00	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	16.08	35.26	14.31	39.30	HS 286.23	515.2
5C1	32.02	61.41	28.49	68.44	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.700

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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.24	85.75	HS 524.83	944.7
5C1	54.51	145.28	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.700Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.9	-163.4	171.9	-163.4	161.3	-174.0	161.3	-
OPER 290.0	279.4	-279.4	279.4	-279.4	268.8	-290.0	268.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	89.50	0.0	8.16	6.27	117.50	
		-4.75 R	-3.65	158.00	0.0	-3.75	-2.88	135.00	0.00
OPER	5C1	9.06 R	6.97	164.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	146.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.91	36.62	14.91	36.62	HS 298.15	536.7
5C1	29.68	63.77	29.68	63.77	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.800

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	7.44 L	5.72	92.00	0.0	5.66	4.35	120.00			
		-5.72 R	-4.40	158.00	0.0	-4.43	-3.41	135.00	185.00		
OPER	5C1	6.81 R	5.24	167.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	147.00	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	24.37	28.02	21.79	31.38	435.72
5C1	44.37	53.06	39.67	59.41	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.90	131.61	HS 417.94	752.3
5C1	44.90	205.25	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.800

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.	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	7.44 L	5.72	92.00	0.0	5.66	4.35	120.00	
		-5.72 R	-4.40	158.00	0.0	-4.43	-3.41	135.00	185.00
OPER	5C1	6.81 R	5.24	167.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	147.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.65	29.15	22.65	29.15	HS 453.07	815.5
5C1	41.25	55.20	41.25	55.20	0.00	999.0

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	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. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.1	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.7	286.6	-282.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	94.50	0.0	3.16	2.43	122.50			
		-7.38 L	-5.68	116.00	0.0	-6.76	-5.20	135.00	112.50		
OPER	5C1	3.52 R	2.71	169.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	149.50	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	60.58	20.39	54.50	22.99	HS 407.74
5C1	90.42	42.85	81.34	48.32	0.00 733.9 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-7.0
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.33	185.54	HS 346.50	623.7
5C1	37.96	313.12	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 5.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-16.4

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	160.5	-174.8	160.5	-174.8	178.4	-156.9	178.4	-
156.9								
OPER	279.4	-279.4	279.4	-279.4	297.3	-261.5	297.3	-
261.5								

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	2.03 L	1.56	94.50	0.0	3.16	2.43	122.50	
		-7.38 L	-5.68	116.00	0.0	-6.76	-5.20	135.00	112.50
OPER	5C1	3.52 R	2.71	169.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	149.50	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	56.54	21.26	56.54	21.26	HS 425.22	765.4
5C1	84.39	44.69	84.39	44.69	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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 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. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.9	-137.7	184.7	-156.8
OPER	300.6C	-268.7	268.7	-300.6C	339.9	-229.4	307.9	-261.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00			
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00		135.00	
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	130.00	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	98.09	11.16	88.86	12.72	223.28
5C1	213.03	30.81	192.99	35.11	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.97	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	14.85	HS 297.01	534.6
5C1	32.91	32.91	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-36.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.1	151.9	-183.3	151.9	-183.3	191.2	-144.1	191.2	-
OPER 240.2	279.4	-279.4	279.4	-279.4	318.6	-240.2	318.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00	
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00	135.00
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	130.00	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	91.96	11.69	91.96	11.69	HS 233.74	420.7
5C1	199.72	32.26	199.72	32.26	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -36.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.9	-137.7	184.7	-156.8
OPER	300.6C	-268.7	268.7	-300.6C	339.9	-229.4	307.9	-261.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00			
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00	135.00		
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00			
		-7.45 R	-5.73	130.00	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	98.09	11.16	88.86	12.72	223.28
5C1	213.03	30.81	192.99	35.11	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.7	8.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.30	-2.54	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	14.85	HS 297.01	534.6
5C1	32.91	32.91	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.1	151.9	-183.3	151.9	-183.3	191.2	-144.1	191.2	-
OPER 240.2	279.4	-279.4	279.4	-279.4	318.6	-240.2	318.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	67.00	0.0	2.08	1.60	90.00	
		-12.33 R	-9.48	145.50	0.0	-11.33	-8.72	115.00	135.00
OPER	5C1	1.60 L	1.23	40.50	0.0	0.00	0.00	0.00	
		-7.45 R	-5.73	130.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	91.96	11.69	91.96	11.69	HS 233.74	420.7
5C1	199.72	32.26	199.72	32.26	0.00	999.0

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 Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.1	-150.4	172.0	-169.6
OPER	300.6C	-268.7	268.7	-300.6C	318.6	-250.7	286.6	-282.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	2.03 R	1.56	155.50	0.0	3.21	2.47	127.50	
		-7.38 R	-5.68	134.00	0.0	-6.77	-5.21	115.00	137.50
OPER	5C1	3.52 L	2.71	80.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	100.50	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	59.57	20.39	53.59	22.99	HS 407.74
5C1	90.42	42.85	81.34	48.31	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.3
OPER	151.3	-124.0	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	185.54	17.33	HS 346.50	623.7
5C1	313.12	37.96	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.100Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.9	160.5	-174.8	160.5	-174.8	178.4	-156.9	178.4	-
OPER 261.5	279.4	-279.4	279.4	-279.4	297.3	-261.5	297.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	2.03 R	1.56	155.50	0.0	3.21	2.47	127.50	
		-7.38 R	-5.68	134.00	0.0	-6.77	-5.21	115.00	137.50
OPER	5C1	3.52 L	2.71	80.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	100.50	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	55.60	21.26	55.60	21.26	HS 425.22	765.4
5C1	84.39	44.69	84.39	44.69	0.00	999.0

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 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. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	7.44 R	5.72	158.00	0.0	5.60	4.31	130.00			
		-5.72 L	-4.40	92.00	0.0	-4.43	-3.41	115.00	65.00		
OPER	5C1	6.81 L	5.24	83.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	103.00	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	24.37	28.02	21.79	31.38	HS 435.72	784.3
5C1	44.37	53.06	39.67	59.41	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.1	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	131.61	20.90	HS 417.94	752.3
5C1	205.26	44.90	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	7.44 R	5.72	158.00	0.0	5.60	4.31	130.00	
		-5.72 L	-4.40	92.00	0.0	-4.43	-3.41	115.00	65.00
OPER	5C1	6.81 L	5.24	83.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	103.00	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	22.65	29.15	22.65	29.15	HS 453.06	815.5
5C1	41.25	55.20	41.25	55.20	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.5	154.8	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	160.50	0.0	8.16	6.27	132.50			
		-4.75 L	-3.65	92.00	0.0	-3.75	-2.88	115.00	0.00		
OPER	5C1	9.06 L	6.97	85.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	104.00	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	16.08	35.26	14.31	HS 286.23	515.2
5C1	32.02	61.41	28.49	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.5
OPER	151.3	-120.2	112.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.75	26.24	HS 524.83	944.7
5C1	145.28	54.51	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.9	-163.4	171.9	-163.4	161.3	-174.0	161.3	-
OPER 290.0	279.4	-279.4	279.4	-279.4	268.8	-290.0	268.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	160.50	0.0	8.16	6.27	132.50	
		-4.75 L	-3.65	92.00	0.0	-3.75	-2.88	115.00	0.00
OPER	5C1	9.06 L	6.97	85.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	104.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.91	36.62	14.91	36.62	HS 298.15	536.7
5C1	29.68	63.77	29.68	63.77	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	163.00	0.0	9.69	7.46	135.00			
		-3.78 L	-2.91	92.00	0.0	-3.30	-2.54	115.00	0.00		
OPER	5C1	10.51 R	8.08	147.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	105.50	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	13.98	45.48	12.40	50.56	HS 248.02	446.4
5C1	26.92	67.62	23.87	75.17	0.00	954.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.89	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.05	32.70	HS 999.00	999.0
5C1	108.64	67.98	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.3	174.8	-160.5	174.8	-160.5	157.0	-178.3	157.0	-
OPER 297.2	279.4	-279.4	279.4	-279.4	261.6	-297.2	261.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 R	9.34	163.00	0.0	9.69	7.46	135.00	
		-3.78 L	-2.91	92.00	0.0	-3.30	-2.54	115.00	0.00
OPER	5C1	10.51 R	8.08	147.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	105.50	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	12.93	47.19	12.93	47.19	HS 258.65	465.6
5C1	24.90	70.16	24.90	70.16	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.192

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.2	-173.4	149.0	-192.6
OPER	300.6C	-268.7	268.7	-300.6C	280.3	-289.0	248.3	-321.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.85	L	9.11	123.50	0.0	10.30	7.92	137.50		
		-2.81	L	-2.16	92.00	0.0	-2.84	-2.19	115.00	0.00	
OPER	5C1	10.76	L	8.28	86.50	0.0	0.00	0.00	0.00		
		-4.10	L	-3.15	106.50	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	14.20	60.96	12.58	67.71	HS 251.53	452.8
5C1	26.05	70.50	23.08	78.30	0.00	923.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.0	0.0
	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.55	42.49	HS 999.00	999.0
5C1	84.75	84.64	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.500

Dead Load Moment Superimposed Dead Load Moment

1.6 18.7

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 179.9	175.8	-159.5	175.8	-159.5	155.4	-179.9	155.4	-
OPER 299.8	279.4	-279.4	279.4	-279.4	259.0	-299.8	259.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.85 L	9.11	123.50	0.0	10.30	7.92	137.50	
		-2.81 L	-2.16	92.00	0.0	-2.84	-2.19	115.00	0.00
OPER	5C1	10.76 L	8.28	86.50	0.0	0.00	0.00	0.00	
		-4.10 L	-3.15	106.50	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	13.12	63.23	13.12	63.23	HS 262.42	472.4
5C1	24.08	73.12	24.08	73.12	0.00	963.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.05	28.67	28.67	1.699
			999999.000
			102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.600

Dead Load Moment Superimposed Dead Load Moment

1.4 16.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.7	-171.9	150.5	-191.1
OPER	300.6C	-268.7	268.7	-300.6C	282.8	-286.5	250.8	-318.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	112.00	0.0	9.70	7.46	140.00			
		-3.78 R	-2.91	183.00	0.0	-3.29	-2.53	160.00	0.00		
OPER	5C1	10.51 L	8.08	128.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	169.50	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	13.98	45.49	12.40	50.57	HS 247.96
5C1	26.91	67.64	23.87	75.19	0.00 954.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-1.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.4	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.90
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.71	60.99	HS 999.00	999.0
5C1	68.00	108.62	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 16.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.4	174.8	-160.5	174.8	-160.5	156.9	-178.4	156.9	-
OPER 297.3	279.4	-279.4	279.4	-279.4	261.5	-297.3	261.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 L	9.34	112.00	0.0	9.70	7.46	140.00	
		-3.78 R	-2.91	183.00	0.0	-3.29	-2.53	160.00	0.00
OPER	5C1	10.51 L	8.08	128.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	169.50	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	12.93	47.20	12.93	47.20	HS 258.59	465.5
5C1	24.89	70.18	24.89	70.18	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.0	-167.6	154.8	-186.8
OPER	300.6C	-268.7	268.7	-300.6C	289.9	-279.4	257.9	-311.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	114.50	0.0	8.16	6.28	142.50			
		-4.75 R	-3.65	183.00	0.0	-3.74	-2.88	160.00	0.00		
OPER	5C1	9.06 R	6.97	189.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	171.00	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	16.08	35.28	14.31	39.32	515.0
5C1	32.01	61.44	28.48	68.47	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
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	-112.6	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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.25	85.63	HS 524.95	944.9
5C1	54.53	145.25	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.700Dead Load Moment 0.9
Superimposed Dead Load Moment 9.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.1	171.9	-163.4	171.9	-163.4	161.2	-174.1	161.2	-
OPER 290.1	279.4	-279.4	279.4	-279.4	268.7	-290.1	268.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 L	8.32	114.50	0.0	8.16	6.28	142.50	
		-4.75 R	-3.65	183.00	0.0	-3.74	-2.88	160.00	0.00
OPER	5C1	9.06 R	6.97	189.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	171.00	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	14.90	36.63	14.90	36.63	HS 298.01	536.4
5C1	29.67	63.80	29.67	63.80	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.800Dead Load Moment -0.1
Superimposed Dead Load Moment -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	7.44 L	5.72	117.00	0.0	5.67	4.36	145.00			
		-5.72 R	-4.40	183.00	0.0	-4.42	-3.40	160.00	210.00		
OPER	5C1	6.81 R	5.24	192.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.88	172.00	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	24.35	28.04	21.77	31.40	HS 435.43	783.8
5C1	44.34	53.10	39.64	59.45	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.2
OPER	151.3	-110.7	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.90	131.36	HS 418.03	752.5
5C1	44.91	205.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.800

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	7.44 L	5.72	117.00	0.0	5.67	4.36	145.00	
		-5.72 R	-4.40	183.00	0.0	-4.42	-3.40	160.00	210.00
OPER	5C1	6.81 R	5.24	192.00	0.0	0.00	0.00	0.00	
		-5.04 R	-3.88	172.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	22.64	29.17	22.64	29.17	HS 452.77	815.0
5C1	41.22	55.24	41.22	55.24	0.00	999.0

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 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. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.6	171.8	-169.8
OPER	300.6C	-268.7	268.7	-300.6C	318.3	-251.0	286.3	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 L	1.56	119.50	0.0	3.16	2.43	147.50			
		-7.38 L	-5.68	141.00	0.0	-6.75	-5.19	160.00	137.50		
OPER	5C1	3.52 R	2.71	194.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	174.50	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	60.40	20.41	54.33	23.01	408.15
5C1	90.36	42.89	81.28	48.36	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	123.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.33	185.06	HS 346.57	623.8
5C1	37.97	313.05	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 6.900Dead Load Moment -1.5
Superimposed Dead Load Moment -16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.6	-174.7	160.6	-174.7	178.3	-157.0	178.3	-
OPER 261.7	279.4	-279.4	279.4	-279.4	297.1	-261.7	297.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	2.03 L	1.56	119.50	0.0	3.16	2.43	147.50	
		-7.38 L	-5.68	141.00	0.0	-6.75	-5.19	160.00	137.50
OPER	5C1	3.52 R	2.71	194.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	174.50	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	56.37	21.28	56.37	21.28	HS 425.63	766.1
5C1	84.33	44.73	84.33	44.73	0.00	999.0

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 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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.05	28.67	28.67	1.699	999999.000	102.287

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	390.83	109.1
bott	22.62		17.56		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00			
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00		160.00	
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	145.00	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	97.56	11.18	88.37	12.74	223.58
5C1	212.06	30.85	192.08	35.15	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.2	64.2
OPER	151.3	-106.9	107.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.97	3.29	-2.29	2.53
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	14.86	HS 297.07	534.7
5C1	32.92	32.93	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.000Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00	
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00	160.00
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	145.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	91.46	11.70	91.46	11.70	HS 234.04	421.3
5C1	198.79	32.30	198.79	32.30	0.00	999.0

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 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. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.000

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -35.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	203.7	-137.8	184.5	-157.0
OPER	300.6C	-268.7	268.7	-300.6C	339.6	-229.7	307.6	-261.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00			
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00		160.00	
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	145.00	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	97.56	11.18	88.37	12.74	223.58
5C1	212.06	30.85	192.08	35.15	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.6	8.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.2
OPER	151.3	-106.9	107.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.29	-2.54	2.53
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	14.86	HS 297.07	534.7
5C1	32.92	32.93	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.000Dead Load Moment -3.2
Superimposed Dead Load Moment -35.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 144.3	152.1	-183.2	152.1	-183.2	191.0	-144.3	191.0	-
OPER 240.5	279.4	-279.4	279.4	-279.4	318.3	-240.5	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.05 L	1.58	92.00	0.0	2.09	1.61	115.00	
		-12.33 L	-9.48	129.50	0.0	-11.32	-8.71	140.00	160.00
OPER	5C1	1.60 R	1.23	234.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	145.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	91.46	11.70	91.46	11.70	HS 234.04	421.3
5C1	198.79	32.30	198.79	32.30	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.0	-150.5	171.8	-169.7
OPER	300.6C	-268.7	268.7	-300.6C	318.4	-250.9	286.4	-282.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	180.50	0.0	3.22	2.47	152.50			
		-7.38 R	-5.68	159.00	0.0	-6.76	-5.20	140.00	162.50		
OPER	5C1	3.52 L	2.71	105.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	125.50	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	59.42	20.40	53.45	23.00	408.04
5C1	90.36	42.88	81.29	48.35	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.3	65.3
OPER	151.3	-123.9	108.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.29	2.90	-0.40	2.97	-0.31	2.29
OPER	5C1	-0.40	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	184.91	17.33	HS 346.66	624.0
5C1	313.08	37.97	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.100Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.0	160.5	-174.7	160.5	-174.7	178.3	-157.0	178.3	-
OPER 261.6	279.4	-279.4	279.4	-279.4	297.2	-261.6	297.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	2.03 R	1.56	180.50	0.0	3.22	2.47	152.50	
		-7.38 R	-5.68	159.00	0.0	-6.76	-5.20	140.00	162.50
OPER	5C1	3.52 L	2.71	105.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	125.50	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	55.46	21.28	55.46	21.28	HS 425.52	765.9
5C1	84.34	44.72	84.34	44.72	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.04	28.67	28.67	1.699
			999999.000
			101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.200

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	162.0	-179.6
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.44 R	5.72	183.00	0.0	5.60	4.31	155.00			
		-5.72 L	-4.40	117.00	0.0	-4.43	-3.41	140.00		90.00	
OPER	5C1	6.81 L	5.24	108.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	128.00	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	24.36	28.03	21.78	31.38	HS 435.62
5C1	44.36	53.08	39.66	59.43	0.00 784.1 999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.4
OPER	151.3	-122.0	110.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.18	-0.29	2.44	-0.56	2.62	-0.43	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	131.25	20.91	HS 418.13	752.6
5C1	205.20	44.92	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.200

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.	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	7.44 R	5.72	183.00	0.0	5.60	4.31	155.00	
		-5.72 L	-4.40	117.00	0.0	-4.43	-3.41	140.00	90.00
OPER	5C1	6.81 L	5.24	108.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	128.00	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	22.65	29.16	22.65	29.16	HS 452.96	815.3
5C1	41.24	55.21	41.24	55.21	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.1	-167.5	154.9	-186.7
OPER	300.6C	-268.7	268.7	-300.6C	290.1	-279.2	258.1	-311.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	185.50	0.0	8.15	6.27	157.50			
		-4.75 L	-3.65	117.00	0.0	-3.75	-2.88	140.00	0.00		
OPER	5C1	9.06 L	6.97	110.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	129.00	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	16.09	35.25	14.31	39.29	HS 286.30	515.3
5C1	32.03	61.40	28.50	68.43	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.1	67.6
OPER	151.3	-120.2	112.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.84	2.25	-0.65	1.73
OPER	5C1	-0.83	2.06	-0.64	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	85.58	26.25	HS 525.07	945.1
5C1	145.23	54.54	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.300Dead Load Moment 0.8
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.0	171.8	-163.4	171.8	-163.4	161.3	-174.0	161.3	-
OPER 289.9	279.4	-279.4	279.4	-279.4	268.9	-289.9	268.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	185.50	0.0	8.15	6.27	157.50	
		-4.75 L	-3.65	117.00	0.0	-3.75	-2.88	140.00	0.00
OPER	5C1	9.06 L	6.97	110.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	129.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	14.91	36.61	14.91	36.61	HS 298.22	536.8
5C1	29.69	63.76	29.69	63.76	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.04	28.67	28.67	1.699	999999.000	101.925

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.400

Dead Load Moment 1.4
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	169.8	-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	12.14 R	9.34	188.00	0.0	9.68	7.45	160.00			
		-3.78 L	-2.91	117.00	0.0	-3.30	-2.54	140.00	0.00		
OPER	5C1	10.51 R	8.08	172.00	0.0	0.00	0.00	0.00			
		-4.24 L	-3.26	130.50	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	13.99	45.45	12.41	50.53	HS 248.20	446.8
5C1	26.93	67.58	23.89	75.13	0.00	955.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.90	1.44
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.96	32.72	HS 999.00	999.0
5C1	108.60	68.01	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.400

Dead Load Moment Superimposed Dead Load Moment

1.4 16.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.2	174.7	-160.6	174.7	-160.6	157.1	-178.2	157.1	-
OPER 297.0	279.4	-279.4	279.4	-279.4	261.8	-297.0	261.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 R	9.34	188.00	0.0	9.68	7.45	160.00	
		-3.78 L	-2.91	117.00	0.0	-3.30	-2.54	140.00	0.00
OPER	5C1	10.51 R	8.08	172.00	0.0	0.00	0.00	0.00	
		-4.24 L	-3.26	130.50	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	12.94	47.16	12.94	47.16	HS 258.83	465.9
5C1	24.91	70.12	24.91	70.12	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.4	-173.2	149.2	-192.4
OPER	300.6C	-268.7	268.7	-300.6C	280.6	-288.7	248.6	-320.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.85 L	9.11	148.50	0.0	10.29	7.91	162.50			
		-2.81 L	-2.16	117.00	0.0	-2.85	-2.19	140.00	0.00		
OPER	5C1	10.76 L	8.28	111.50	0.0	0.00	0.00	0.00			
		-4.10 L	-3.15	131.50	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	14.21	60.74	12.59	67.47	HS 251.85	453.3
5C1	26.08	70.43	23.11	78.24	0.00	924.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.500Dead 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 -69.8 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	-1.64	1.64	-1.26	1.26	-1.51	1.51	-1.16	1.16
OPER	5C1	-1.37	1.37	-1.06	1.06	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.53	42.51	HS 999.00	999.0
5C1	84.71	84.68	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.500

Dead Load Moment	Superimposed Dead Load Moment
1.6	18.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	175.7	-159.6	175.7	-159.6	155.6	-179.7	155.6	-
179.7								
OPER	279.4	-279.4	279.4	-279.4	259.4	-299.4	259.4	-
299.4								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	11.85 L	9.11	148.50	0.0	10.29	7.91	162.50	
		-2.81 L	-2.16	117.00	0.0	-2.85	-2.19	140.00	0.00
OPER	5C1	10.76 L	8.28	111.50	0.0	0.00	0.00	0.00	
		-4.10 L	-3.15	131.50	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	13.14	63.00	13.14	63.00	HS 262.74	472.9
5C1	24.10	73.06	24.10	73.06	0.00	964.2

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.600

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	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.2	-286.1	251.2	-318.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	137.00	0.0	9.67	7.44	165.00			
		-3.78 R	-2.91	208.00	0.0	-3.30	-2.54	185.00	0.00		
OPER	5C1	10.51 L	8.08	153.00	0.0	0.00	0.00	0.00			
		-4.24 R	-3.26	194.50	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	14.00	45.43	12.42	50.51	HS 248.39	447.1
5C1	26.96	67.55	23.91	75.10	0.00	956.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.600

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	118.3

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	-2.10	1.12	-1.61	0.86	-1.88	1.16	-1.45	0.89
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.70	61.15	HS 999.00	999.0
5C1	67.97	108.67	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.600Dead Load Moment 1.4
Superimposed Dead Load Moment 16.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.1	174.6	-160.7	174.6	-160.7	157.2	-178.1	157.2	-
OPER 296.8	279.4	-279.4	279.4	-279.4	262.0	-296.8	262.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.14 L	9.34	137.00	0.0	9.67	7.44	165.00	
		-3.78 R	-2.91	208.00	0.0	-3.30	-2.54	185.00	0.00
OPER	5C1	10.51 L	8.08	153.00	0.0	0.00	0.00	0.00	
		-4.24 R	-3.26	194.50	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	12.95	47.14	12.95	47.14	HS 259.02	466.2
5C1	24.93	70.09	24.93	70.09	0.00	999.0

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 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. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.3	-167.3	155.1	-186.5
OPER	300.6C	-268.7	268.7	-300.6C	290.5	-278.8	258.5	-310.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 L	8.32	139.50	0.0	8.13	6.26	167.50			
		-4.75 R	-3.65	208.00	0.0	-3.75	-2.89	185.00	0.00		
OPER	5C1	9.05 R	6.97	214.50	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	196.00	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	16.11	35.21	14.34	39.25	HS 286.73	516.1
5C1	32.08	61.33	28.55	68.37	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.700

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	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.24	85.92	HS 524.71	944.5
5C1	54.50	145.31	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.700Dead Load Moment 0.8
Superimposed Dead Load Moment 9.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.7	171.7	-163.6	171.7	-163.6	161.5	-173.7	161.5	-
OPER 289.6	279.4	-279.4	279.4	-279.4	269.2	-289.6	269.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	10.82 L	8.32	139.50	0.0	8.13	6.26	167.50	
		-4.75 R	-3.65	208.00	0.0	-3.75	-2.89	185.00	0.00
OPER	5C1	9.05 R	6.97	214.50	0.0	0.00	0.00	0.00	
		-4.55 R	-3.50	196.00	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	14.93	36.57	14.93	36.57	HS 298.64	537.6
5C1	29.74	63.70	29.74	63.70	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.800

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	181.5	-160.1	162.3	-179.3
OPER	300.6C	-268.7	268.7	-300.6C	302.5	-266.8	270.5	-298.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 L	5.72	142.00	0.0	5.63	4.33	170.00			
		-5.72 R	-4.40	208.00	0.0	-4.46	-3.43	185.00	235.00		
OPER	5C1	6.80 R	5.23	217.00	0.0	0.00	0.00	0.00			
		-5.04 R	-3.87	197.00	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	24.41	27.98	21.83	31.33	HS 436.56	785.8
5C1	44.47	52.98	39.77	59.34	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.4	73.3
OPER	151.3	-110.6	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.55	-2.02	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.89	132.00	HS 417.84	752.1
5C1	44.89	205.30	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.800Dead Load Moment -0.2
Superimposed Dead Load Moment -1.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.5	166.9	-168.4	166.9	-168.4	168.7	-166.5	168.7	-
OPER 277.6	279.4	-279.4	279.4	-279.4	281.2	-277.6	281.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.43 L	5.72	142.00	0.0	5.63	4.33	170.00
		-5.72 R	-4.40	208.00	0.0	-4.46	-3.43	185.00
OPER	5C1	6.80 R	5.23	217.00	0.0	0.00	0.00	0.00
		-5.04 R	-3.87	197.00	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	22.69	29.10	22.69	29.10	HS 453.90	817.0
5C1	41.35	55.12	41.35	55.12	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
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	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. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.900

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-16.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.5	-150.1	172.3	-169.3
OPER	300.6C	-268.7	268.7	-300.6C	319.1	-250.2	287.1	-282.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	2.03 L	1.56	144.50	0.0	3.12	2.40	172.50			
		-7.38 L	-5.67	166.00	0.0	-6.77	-5.21	185.00	162.50		
OPER	5C1	3.52 R	2.71	219.50	0.0	0.00	0.00	0.00			
		-5.85 R	-4.50	199.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	61.35	20.35	55.20	22.95	HS 406.98	732.6
5C1	90.75	42.77	81.65	48.24	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-7.0
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.3	74.4
OPER	151.3	-108.8	124.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.98	0.40	-2.29	0.31
OPER	5C1	-2.87	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.32	186.27	HS 346.42	623.5
5C1	37.95	313.17	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 7.900

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.5	160.2	-175.0	160.2	-175.0	178.7	-156.5	178.7	-
OPER 260.9	279.4	-279.4	279.4	-279.4	297.9	-260.9	297.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.03 L	1.56	144.50	0.0	3.12	2.40	172.50	
		-7.38 L	-5.67	166.00	0.0	-6.77	-5.21	185.00	162.50
OPER	5C1	3.52 R	2.71	219.50	0.0	0.00	0.00	0.00	
		-5.85 R	-4.50	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	57.26	21.22	57.26	21.22	HS 424.46	764.0
5C1	84.71	44.60	84.71	44.60	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.16		106.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00			
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00		
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	170.00	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	99.41	11.14	90.07	12.69	222.70
5C1	213.38	30.70	193.34	35.00	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.32	-2.90	3.32	-2.98	3.30	-2.29	2.54
OPER	5C1	-2.87	3.25	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	14.84	HS 296.69	534.0
5C1	32.90	32.88	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-36.5

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
143.7								
OPER	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-
239.5								

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	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00	
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	170.00	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	93.21	11.66	93.21	11.66	HS 233.16	419.7
5C1	200.07	32.15	200.07	32.15	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.03	28.67	28.67	1.699	999999.000	101.648

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -36.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	204.3	-137.3	185.1	-156.5
OPER	300.6C	-268.7	268.7	-300.6C	340.5	-228.8	308.5	-260.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00			
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00		
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00			
		-7.45 L	-5.73	170.00	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	99.41	11.14	90.07	12.69	HS 222.70
5C1	213.38	30.70	193.34	35.00	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-8.7	8.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.1	64.1
OPER	151.3	-106.9	106.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.32	-3.32	3.32	-3.30	3.30	-2.54	2.54
OPER	5C1	-3.25	3.25	-2.50	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.85	14.84	HS 296.69	534.0
5C1	32.90	32.88	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.000Dead Load Moment -3.3
Superimposed Dead Load Moment -36.5

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. 143.7	151.7	-183.6	151.7	-183.6	191.6	-143.7	191.6	-
OPER 239.5	279.4	-279.4	279.4	-279.4	319.3	-239.5	319.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.05 L	1.58	117.00	0.0	2.04	1.57	140.00	
		-12.33 R	-9.48	195.50	0.0	-11.34	-8.72	165.00	185.00
OPER	5C1	1.60 L	1.23	90.50	0.0	0.00	0.00	0.00	
		-7.45 L	-5.73	170.00	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	93.21	11.66	93.21	11.66	HS 233.16	419.7
5C1	200.07	32.15	200.07	32.15	0.00	999.0

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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.06	28.67	28.67	1.699
			999999.000
			103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	191.3	-150.2	172.1	-169.4
OPER	300.6C	-268.7	268.7	-300.6C	318.9	-250.4	286.9	-282.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.03 R	1.56	205.50	0.0	3.19	2.45	177.50			
		-7.38 R	-5.68	184.00	0.0	-6.77	-5.21	165.00	187.50		
OPER	5C1	3.52 L	2.71	130.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	150.50	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	59.97	20.36	53.96	22.96	HS 407.23
5C1	90.49	42.79	81.42	48.26	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.4	65.2
OPER	151.3	-124.1	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.37	3.77	-0.28	2.90	-0.39	2.98	-0.30	2.29
OPER	5C1	-0.39	2.87	-0.30	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	189.83	17.31	HS 346.15	623.1
5C1	314.65	37.92	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.100Dead Load Moment -1.5
Superimposed Dead Load Moment -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 156.7	160.3	-174.9	160.3	-174.9	178.6	-156.7	178.6	-
OPER 261.2	279.4	-279.4	279.4	-279.4	297.6	-261.2	297.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.03 R	1.56	205.50	0.0	3.19	2.45	177.50	
		-7.38 R	-5.68	184.00	0.0	-6.77	-5.21	165.00	187.50
OPER	5C1	3.52 L	2.71	130.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	150.50	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	55.98	21.24	55.98	21.24	HS 424.70	764.5
5C1	84.46	44.63	84.46	44.63	0.00	999.0

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	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.200

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	7.44 R	5.72	208.00	0.0	5.60	4.31	180.00			
		-5.72 L	-4.40	142.00	0.0	-4.43	-3.41	165.00	115.00		
OPER	5C1	6.81 L	5.24	133.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.88	153.00	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	24.37	28.02	21.79	31.38	HS 435.72	784.3
5C1	44.37	53.06	39.67	59.41	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.3	66.3
OPER	151.3	-122.2	110.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.37	3.18	-0.28	2.44	-0.55	2.63	-0.42	2.02
OPER	5C1	-0.59	2.46	-0.46	1.90	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	133.51	20.88	HS 417.54	751.6
5C1	206.04	44.86	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.200

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	7.44 R	5.72	208.00	0.0	5.60	4.31	180.00	
		-5.72 L	-4.40	142.00	0.0	-4.43	-3.41	165.00	115.00
OPER	5C1	6.81 L	5.24	133.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.88	153.00	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	22.65	29.15	22.65	29.15	HS 453.06	815.5
5C1	41.25	55.20	41.25	55.20	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.300Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	173.8	-167.7	154.7	-186.9
OPER	300.6C	-268.7	268.7	-300.6C	289.7	-279.5	257.8	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.82 R	8.32	210.50	0.0	8.16	6.28	182.50			
		-4.75 L	-3.65	142.00	0.0	-3.73	-2.87	165.00	0.00		
OPER	5C1	9.06 L	6.97	135.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	154.00	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	16.07	35.30	14.30	39.34	HS 285.90	514.6
5C1	31.99	61.49	28.46	68.53	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.2	67.5
OPER	151.3	-120.3	112.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.55	2.57	-0.42	1.98	-0.83	2.26	-0.64	1.74
OPER	5C1	-0.83	2.06	-0.63	1.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	86.58	26.22	HS 524.37	943.9
5C1	145.83	54.47	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.300Dead Load Moment 0.9
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.2	172.0	-163.3	172.0	-163.3	161.1	-174.2	161.1	-
OPER 290.3	279.4	-279.4	279.4	-279.4	268.5	-290.3	268.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.82 R	8.32	210.50	0.0	8.16	6.28	182.50	
		-4.75 L	-3.65	142.00	0.0	-3.73	-2.87	165.00	0.00
OPER	5C1	9.06 L	6.97	135.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	154.00	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	14.89	36.66	14.89	36.66	HS 297.82	536.1
5C1	29.65	63.86	29.65	63.86	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.400

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	-172.3	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	213.00	0.0	9.70	7.46	185.00			
		-3.78 L	-2.91	142.00	0.0	-3.26	-2.51	165.00	0.00		
OPER	5C1	10.51 R	8.08	197.00	0.0	0.00	0.00	0.00			
		-4.23 L	-3.26	155.50	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	13.95	45.59	12.37	50.67	HS 247.41	445.3
5C1	26.86	67.83	23.82	75.39	0.00	952.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.2	0.0 1.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	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	-1.12	2.10	-0.86	1.61	-1.16	1.88	-0.89	1.45
OPER	5C1	-1.09	1.68	-0.84	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	61.50	32.67	HS 999.00	999.0
5C1	109.08	67.93	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.400Dead Load Moment 1.5
Superimposed Dead Load Moment 16.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 R	9.34	213.00	0.0	9.70	7.46	185.00	
		-3.78 L	-2.91	142.00	0.0	-3.26	-2.51	165.00	0.00
OPER	5C1	10.51 R	8.08	197.00	0.0	0.00	0.00	0.00	
		-4.23 L	-3.26	155.50	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	12.90	47.29	12.90	47.29	HS 258.04	464.5
5C1	24.84	70.37	24.84	70.37	0.00	999.0

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	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.06	28.67	28.67	1.699	999999.000	103.089

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.500

Dead Load Moment 1.7
Superimposed Dead Load Moment 19.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	167.6	-174.0	148.4	-193.1
OPER	300.6C	-268.7	268.7	-300.6C	279.4	-289.9	247.4	-321.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.84 L	9.11	173.50	0.0	10.32	7.93	187.50			
		-2.81 L	-2.16	142.00	0.0	-2.79	-2.14	165.00	0.00		
OPER	5C1	10.80 R	8.31	238.50	0.0	0.00	0.00	0.00			
		-4.09 L	-3.15	156.50	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	14.15	62.00	12.53	68.84	HS 250.63	451.1
5C1	25.87	70.84	22.91	78.66	0.00	916.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.500

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	-1.64	1.64	-1.26	1.26	-1.51	1.52	-1.16	1.17
OPER	5C1	-1.37	1.37	-1.05	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	42.60	42.46	HS 999.00	999.0
5C1	85.10	84.58	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.500

Dead Load Moment Superimposed Dead Load Moment

1.7 19.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 180.4	176.2	-159.1	176.2	-159.1	154.9	-180.4	154.9	-
OPER 300.7	279.4	-279.4	279.4	-279.4	258.1	-300.7	258.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.84 L	9.11	173.50	0.0	10.32	7.93	187.50	
		-2.81 L	-2.16	142.00	0.0	-2.79	-2.14	165.00	0.00
OPER	5C1	10.80 R	8.31	238.50	0.0	0.00	0.00	0.00	
		-4.09 L	-3.15	156.50	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	13.08	64.30	13.08	64.30	HS 261.52	470.7
5C1	23.91	73.47	23.91	73.47	0.00	956.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	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. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.600

Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.9	-172.7	149.7	-191.8
OPER	300.6C	-268.7	268.7	-300.6C	281.5	-287.8	249.5	-319.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.13 L	9.33	162.00	0.0	9.71	7.47	190.00			
		-3.74 R	-2.88	233.00	0.0	-3.21	-2.47	210.00	0.00		
OPER	5C1	10.51 L	8.08	178.00	0.0	0.00	0.00	0.00			
		-4.22 R	-3.25	219.50	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	13.92	46.14	12.34	51.26	HS 246.83	444.3
5C1	26.79	68.16	23.74	75.73	0.00	949.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.600

Dead Load	Superimposed Dead Load
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	-114.6	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	-2.10	1.12	-1.61	0.86	-1.87	1.17	-1.44	0.90
OPER	5C1	-1.68	1.09	-1.29	0.84	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.75	60.85	HS 999.00	999.0
5C1	68.08	108.55	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.600Dead Load Moment 1.6
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.1	175.3	-160.0	175.3	-160.0	156.2	-179.1	156.2	-
OPER 298.5	279.4	-279.4	279.4	-279.4	260.3	-298.5	260.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.13 L	9.33	162.00	0.0	9.71	7.47	190.00	
		-3.74 R	-2.88	233.00	0.0	-3.21	-2.47	210.00	0.00
OPER	5C1	10.51 L	8.08	178.00	0.0	0.00	0.00	0.00	
		-4.22 R	-3.25	219.50	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	12.87	47.86	12.87	47.86	HS 257.46	463.4
5C1	24.77	70.70	24.77	70.70	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.700Dead Load Moment 1.0
Superimposed Dead Load Moment 11.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.0	-168.5	153.8	-187.7
OPER	300.6C	-268.7	268.7	-300.6C	288.4	-280.9	256.4	-312.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.81 L	8.32	164.50	0.0	8.18	6.29	192.50			
		-4.71 R	-3.62	233.00	0.0	-3.64	-2.80	210.00	0.00		
OPER	5C1	9.12 R	7.02	239.50	0.0	0.00	0.00	0.00			
		-4.53 R	-3.48	221.00	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	16.00	35.82	14.23	39.90	HS 284.56	512.2
5C1	31.61	62.03	28.10	69.10	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.700

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	72.0
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	-2.57	0.55	-1.98	0.42	-2.25	0.84	-1.73	0.65
OPER	5C1	-2.06	0.83	-1.59	0.64	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.27	85.38	HS 525.45	945.8
5C1	54.58	145.15	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.700

Dead Load Moment Superimposed Dead Load Moment

1.0 11.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.0	172.5	-162.7	172.5	-162.7	160.3	-175.0	160.3	-
OPER 291.7	279.4	-279.4	279.4	-279.4	267.1	-291.7	267.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.81 L	8.32	164.50	0.0	8.18	6.29	192.50	
		-4.71 R	-3.62	233.00	0.0	-3.64	-2.80	210.00	0.00
OPER	5C1	9.12 R	7.02	239.50	0.0	0.00	0.00	0.00	
		-4.53 R	-3.48	221.00	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	14.82	37.19	14.82	37.19	HS 296.48	533.7
5C1	29.28	64.41	29.28	64.41	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive 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. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.800Dead Load Moment 0.1
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	299.9	-269.4	267.9	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.43 L	5.71	167.00	0.0	5.69	4.38	195.00			
		-5.67 R	-4.36	233.00	0.0	-4.13	-3.18	210.00	177.50		
OPER	5C1	6.90 R	5.31	242.00	0.0	0.00	0.00	0.00			
		-5.01 R	-3.86	222.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	24.23	28.51	21.65	31.90	432.92
5C1	43.44	53.72	38.81	60.10	779.3

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 8.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -5.1 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.5	73.2
OPER	151.3	-110.8	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.18	0.37	-2.44	0.29	-2.62	0.56	-2.01	0.43
OPER	5C1	-2.46	0.59	-1.90	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.92	130.84	HS 418.46	753.2
5C1	44.98	205.05	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.800Dead Load Moment 0.1
Superimposed Dead Load Moment 0.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.1	167.9	-167.4	167.9	-167.4	167.2	-168.1	167.2	-
OPER 280.1	279.4	-279.4	279.4	-279.4	278.7	-280.1	278.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	7.43 L	5.71	167.00	0.0	5.69	4.38	195.00	
		-5.67 R	-4.36	233.00	0.0	-4.13	-3.18	210.00	177.50
OPER	5C1	6.90 R	5.31	242.00	0.0	0.00	0.00	0.00	
		-5.01 R	-3.86	222.00	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	22.51	29.65	22.51	29.65	HS 450.28	810.5
5C1	40.37	55.86	40.37	55.86	0.00	999.0

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	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. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.09	28.67	28.67	1.699
			999999.000
			104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.900

Dead Load Moment Superimposed Dead Load Moment
-1.2 -14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.7	-151.9	170.5	-171.1
OPER	300.6C	-268.7	268.7	-300.6C	316.2	-253.1	284.2	-285.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.02 L	1.55	169.50	0.0	3.19	2.46	197.50			
		-7.34 L	-5.65	191.00	0.0	-6.61	-5.09	210.00		187.50	
OPER	5C1	3.67 R	2.82	244.50	0.0	0.00	0.00	0.00			
		-5.82 R	-4.48	224.50	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	59.37	20.68	53.37	23.30	HS 413.69	744.6	
5C1	86.15	43.46	77.43	48.95	0.00	999.0	

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.900

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	-108.9	123.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	0.39	-2.90	0.30	-2.97	0.40	-2.28	0.31
OPER	5C1	-2.86	0.40	-2.20	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.35	183.92	HS 346.95	624.5
5C1	38.05	312.65	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 8.900Dead Load Moment -1.2
Superimposed Dead Load Moment -14.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.3	161.4	-173.8	161.4	-173.8	177.0	-158.3	177.0	-
OPER 263.9	279.4	-279.4	279.4	-279.4	294.9	-263.9	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	2.02 L	1.55	169.50	0.0	3.19	2.46	197.50	
		-7.34 L	-5.65	191.00	0.0	-6.61	-5.09	210.00	187.50
OPER	5C1	3.67 R	2.82	244.50	0.0	0.00	0.00	0.00	
		-5.82 R	-4.48	224.50	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	55.38	21.56	55.38	21.56	HS 431.25	776.3
5C1	80.36	45.30	80.36	45.30	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.09	28.67	28.67	1.699	999999.000	104.271

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		18.78		105.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00			
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00		210.00	
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00			
		-7.44 R	-5.72	204.50	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	80.90	11.31	73.22	12.87	407.3
5C1	175.08	31.23	158.46	35.53	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.2	64.5
OPER	151.3	-107.1	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.77	4.31	-2.90	3.32	-2.97	3.27	-2.28	2.51
OPER	5C1	-2.86	3.24	-2.20	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.87	14.94	HS 297.42	535.4
5C1	33.03	33.11	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00	
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00	210.00
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00	
		-7.44 R	-5.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	75.80	11.84	75.80	11.84	HS 236.74	426.1
5C1	164.05	32.67	164.05	32.67	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -33.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.3	-139.3	183.1	-158.5
OPER	300.6C	-268.7	268.7	-300.6C	337.1	-232.2	305.1	-264.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00			
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00	210.00		
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00			
		-7.44 R	-5.72	204.50	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	80.90	11.31	73.22	12.87	407.3
5C1	175.08	31.23	158.46	35.53	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-8.6	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.2	64.5
OPER	151.3	-107.1	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.32	4.31	-3.32	3.32	-3.29	3.27	-2.53	2.51
OPER	5C1	-3.24	3.24	-2.49	2.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.87	14.94	HS 297.42	535.4
5C1	33.03	33.11	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-33.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 145.8	153.1	-182.2	153.1	-182.2	189.5	-145.8	189.5	-
OPER 243.0	279.4	-279.4	279.4	-279.4	315.8	-243.0	315.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.50 R	1.92	258.00	0.0	2.23	1.72	235.00	
		-12.31 R	-9.47	220.50	0.0	-11.16	-8.59	190.00	210.00
OPER	5C1	1.93 R	1.48	284.50	0.0	0.00	0.00	0.00	
		-7.44 R	-5.72	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	75.80	11.84	75.80	11.84	HS 236.74	426.1
5C1	164.05	32.67	164.05	32.67	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.100

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	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.06 R	1.58	230.50	0.0	3.24	2.49	202.50			
		-7.38 R	-5.68	209.00	0.0	-6.68	-5.14	190.00	212.50		
OPER	5C1	3.53 L	2.72	155.50	0.0	0.00	0.00	0.00			
		-5.85 L	-4.50	175.50	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	58.74	20.50	52.82	23.10	HS 409.99
5C1	89.79	43.10	80.73	48.57	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.100

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	-123.4	109.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.46	3.76	-0.35	2.89	-0.44	2.94	-0.34	2.26
OPER	5C1	-0.44	2.86	-0.34	2.20	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	162.59	17.44	HS 348.82	627.9
5C1	281.88	38.21	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.100

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 262.9	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.06 R	1.58	230.50	0.0	3.24	2.49	202.50	
		-7.38 R	-5.68	209.00	0.0	-6.68	-5.14	190.00	212.50
OPER	5C1	3.53 L	2.72	155.50	0.0	0.00	0.00	0.00	
		-5.85 L	-4.50	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	54.81	21.37	54.81	21.37	HS 427.46	769.4
5C1	83.78	44.94	83.78	44.94	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.200

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	7.44 R	5.72	233.00	0.0	5.60	4.31	205.00			
		-5.72 L	-4.40	167.00	0.0	-4.42	-3.40	190.00	140.00		
OPER	5C1	6.81 L	5.24	158.00	0.0	0.00	0.00	0.00			
		-5.04 L	-3.87	178.00	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	24.34	28.04	21.76 31.39	HS 435.19	783.3
5C1	44.33	53.10	39.63 59.45	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 9.200
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.4 0.0 4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.6	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.46	3.17	-0.35	2.44	-0.57	2.59	-0.44	1.99
OPER	5C1	-0.66	2.46	-0.51	1.89	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	128.47	21.05	HS 420.94	757.7
5C1	184.13	45.22	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.200

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	top fiber	bottom fi	top fiber	bottom fi
bend	+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	7.44 R	5.72	233.00	0.0	5.60	4.31	205.00	
		-5.72 L	-4.40	167.00	0.0	-4.42	-3.40	190.00	140.00
OPER	5C1	6.81 L	5.24	158.00	0.0	0.00	0.00	0.00	
		-5.04 L	-3.87	178.00	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	22.63	29.17	22.63	29.17	HS 452.52	814.5
5C1	41.21	55.24	41.21	55.24	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.96	28.67	28.67	1.699
			999999.000
			98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.300Dead 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	10.78 R	8.29	235.50	0.0	8.09	6.22	207.50			
		-4.75 L	-3.65	167.00	0.0	-3.76	-2.89	190.00	0.00		
OPER	5C1	9.05 L	6.96	160.50	0.0	0.00	0.00	0.00			
		-4.55 L	-3.50	179.00	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	16.20	35.16	14.42	39.20	HS 288.49	519.3
5C1	32.19	61.08	28.65	68.11	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.300

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
0.2	0.0
	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.8	67.8
OPER	151.3	-119.7	113.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-0.57	2.57	-0.44	1.97	-0.85	2.22	-0.66	1.71
OPER	5C1	-0.91	2.06	-0.70	1.58	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	84.13	26.44	HS 528.82	951.9
5C1	131.12	54.92	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.300Dead 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	-163.9	171.4	-163.9	162.0	-173.3	162.0	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.78 R	8.29	235.50	0.0	8.09	6.22	207.50	
		-4.75 L	-3.65	167.00	0.0	-3.76	-2.89	190.00	0.00
OPER	5C1	9.05 L	6.96	160.50	0.0	0.00	0.00	0.00	
		-4.55 L	-3.50	179.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.02	36.51	15.02	36.51	HS 300.45	540.8
5C1	29.84	63.44	29.84	63.44	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.96	28.67	28.67	1.699	999999.000	98.162

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
 Check Point I. D. 9.400

Dead Load Moment 1.1
 Superimposed Dead Load Moment 14.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	171.1	-170.4	152.0	-189.6
OPER	300.6C	-268.7	268.7	-300.6C	285.2	-284.1	253.3	-316.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.05 R	9.27	238.00	0.0	9.54	7.34	210.00			
		-3.77 L	-2.90	167.00	0.0	-3.33	-2.56	190.00	0.00		
OPER	5C1	10.48 R	8.06	222.00	0.0	0.00	0.00	0.00			
		-4.27 L	-3.28	180.50	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	14.20	45.22	12.61	50.31	HS 252.25	454.0
5C1	27.22	66.54	24.17	74.03	0.00	966.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.1	0.0 1.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-70.7	69.0
OPER	151.3	-117.8	114.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-1.14	2.10	-0.88	1.61	-1.18	1.85	-0.91	1.42
OPER	5C1	-1.18	1.68	-0.91	1.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	60.08	32.91	HS 999.00	999.0
5C1	99.68	68.54	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.400

Dead Load Moment Superimposed Dead Load Moment

1.1 14.3

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	173.8	-161.5	173.8	-161.5	158.4	-176.9	158.4	-
OPER 294.8	279.4	-279.4	279.4	-279.4	264.0	-294.8	264.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.05 R	9.27	238.00	0.0	9.54	7.34	210.00	
		-3.77 L	-2.90	167.00	0.0	-3.33	-2.56	190.00	0.00
OPER	5C1	10.48 R	8.06	222.00	0.0	0.00	0.00	0.00	
		-4.27 L	-3.28	180.50	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	13.15	46.93	13.15	46.93	HS 262.95	473.3
5C1	25.19	69.06	25.19	69.06	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.500

Dead Load Moment 1.2
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	170.4	-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	11.80 R	9.08	226.50	0.0	10.05	7.73	212.50			
		-3.42 R	-2.63	258.00	0.0	-3.04	-2.34	235.00	0.00		
OPER	5C1	10.72 L	8.25	161.50	0.0	0.00	0.00	0.00			
		-4.30 R	-3.31	243.50	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	14.44	50.12	12.81	55.74	HS 256.18	461.1
5C1	26.50	66.28	23.51	73.72	0.00	940.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-0.4	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.6	70.1
OPER	151.3	-115.9	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-1.66	1.64	-1.28	1.26	-1.53	1.48	-1.17	1.14
OPER	5C1	-1.46	1.37	-1.12	1.05	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	41.83	42.82	HS 999.00	999.0
5C1	79.44	85.40	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.500

Dead Load Moment Superimposed Dead Load Moment

1.2 15.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.7	-177.6	157.7	-
OPER 296.0	279.4	-279.4	279.4	-279.4	262.8	-296.0	262.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.80 R	9.08	226.50	0.0	10.05	7.73	212.50	
		-3.42 R	-2.63	258.00	0.0	-3.04	-2.34	235.00	0.00
OPER	5C1	10.72 L	8.25	161.50	0.0	0.00	0.00	0.00	
		-4.30 R	-3.31	243.50	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	13.35	52.01	13.35	52.01	HS 267.11	480.8
5C1	24.51	68.78	24.51	68.78	0.00	980.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.91	28.67	28.67	1.699	999999.000	95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.600

Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.7	-168.9	153.5	-188.1
OPER	300.6C	-268.7	268.7	-300.6C	287.8	-281.5	255.8	-313.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.07 L	9.29	187.00	0.0	9.36	7.20	215.00			
		-4.60 R	-3.54	258.00	0.0	-3.56	-2.74	235.00	0.00		
OPER	5C1	10.14 L	7.80	203.00	0.0	0.00	0.00	0.00			
		-4.55 R	-3.50	244.50	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	14.30	36.73	12.71	HS 254.26	457.7
5C1	28.39	61.94	25.23	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.600

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
-0.2	-2.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.4	71.3
OPER	151.3	-113.9	118.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-2.13	1.12	-1.64	0.86	-1.90	1.13	-1.46	0.87
OPER	5C1	-1.74	1.08	-1.34	0.83	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	32.16	63.14	HS 999.00	999.0
5C1	65.59	109.67	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.600Dead Load Moment 0.8
Superimposed Dead Load Moment 12.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 175.4	172.8	-162.5	172.8	-162.5	159.9	-175.4	159.9	-
OPER 292.3	279.4	-279.4	279.4	-279.4	266.5	-292.3	266.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.07 L	9.29	187.00	0.0	9.36	7.20	215.00
		-4.60 R	-3.54	258.00	0.0	-3.56	-2.74	235.00
OPER	5C1	10.14 L	7.80	203.00	0.0	0.00	0.00	0.00
		-4.55 R	-3.50	244.50	0.0	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	13.25	38.14	13.25	38.14
5C1	26.29	64.30	26.29	64.30

HS 264.95 476.9
0.00 999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.700Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	177.7	-163.8	158.6	-183.0
OPER	300.6C	-268.7	268.7	-300.6C	296.2	-273.1	264.3	-305.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	10.73 L	8.25	189.50	0.0	7.74	5.95	217.50			
		-5.78 R	-4.45	258.00	0.0	-4.08	-3.14	235.00	0.00		
OPER	5C1	8.36 L	6.43	201.50	0.0	0.00	0.00	0.00			
		-4.98 R	-3.83	246.00	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	16.57	28.34	14.78	31.66	HS 295.64	532.2
5C1	35.44	54.78	31.61	61.20	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.2	72.4
OPER	151.3	-112.0	120.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.59	0.54	-1.99	0.42	-2.27	0.81	-1.75	0.62
OPER	5C1	-2.10	0.82	-1.62	0.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	26.00	89.64	HS 520.10	936.2
5C1	53.24	146.63	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.700Dead Load Moment 0.1
Superimposed Dead Load Moment 4.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.3	169.4	-165.9	169.4	-165.9	165.0	-170.3	165.0	-
OPER 283.8	279.4	-279.4	279.4	-279.4	275.0	-283.8	275.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	10.73 L	8.25	189.50	0.0	7.74	5.95	217.50	
		-5.78 R	-4.45	258.00	0.0	-4.08	-3.14	235.00	0.00
OPER	5C1	8.36 L	6.43	201.50	0.0	0.00	0.00	0.00	
		-4.98 R	-3.83	246.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.38	29.45	15.38	29.45	HS 307.66	553.8
5C1	32.90	56.94	32.90	56.94	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.800

Dead Load Moment Superimposed Dead Load Moment
-1.0 -7.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.6	-155.9	166.4	-175.1
OPER	300.6C	-268.7	268.7	-300.6C	309.4	-259.9	277.4	-291.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	7.32 L	5.63	192.00	0.0	5.18	3.98	220.00			
		-6.96 R	-5.36	258.00	0.0	-4.69	-3.60	235.00	202.50		
OPER	5C1	5.81 L	4.47	169.00	0.0	0.00	0.00	0.00			
		-5.61 R	-4.32	247.50	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	25.37	22.39	22.74	25.15	HS 447.83
5C1	53.27	46.32	47.76	52.02	0.00 999.0

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-5.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.5
OPER	151.3	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-3.19	0.37	-2.46	0.29	-2.64	0.52	-2.03	0.40
OPER	5C1	-2.52	0.59	-1.94	0.46	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.70	140.22	HS 414.03	745.3
5C1	43.77	206.75	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.800Dead Load Moment -1.0
Superimposed Dead Load Moment -7.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.4	164.1	-171.1	164.1	-171.1	172.9	-162.4	172.9	-
OPER 270.6	279.4	-279.4	279.4	-279.4	288.2	-270.6	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	7.32 L	5.63	192.00	0.0	5.18	3.98	220.00	
		-6.96 R	-5.36	258.00	0.0	-4.69	-3.60	235.00	202.50
OPER	5C1	5.81 L	4.47	169.00	0.0	0.00	0.00	0.00	
		-5.61 R	-4.32	247.50	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	23.62	23.32	23.62	23.32	HS 466.35	839.4
5C1	49.61	48.23	49.61	48.23	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
 Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.91	28.67	28.67	1.699	999999.000	95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-24.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	196.3	-145.2	177.1	-164.4
OPER	300.6C	-268.7	268.7	-300.6C	327.2	-242.1	295.2	-274.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	1.90 L	1.46	194.50	0.0	2.64	2.03	222.50			
		-8.50 L	-6.54	216.00	0.0	-7.33	-5.64	235.00	212.50		
OPER	5C1	2.69 L	2.07	171.50	0.0	0.00	0.00	0.00			
		-6.88 R	-5.29	253.50	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	74.50	17.09	67.22	19.35	HS 341.78	615.2
5C1	121.61	35.17	109.72	39.82	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 9.900
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.7 -7.4 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	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	-3.79	0.39	-2.91	0.30	-2.99	0.37	-2.30	0.29
OPER	5C1	-2.94	0.40	-2.26	0.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.16	190.93	HS 343.26	617.9
5C1	36.78	314.45	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-24.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	157.0	-178.3	157.0	-178.3	183.6	-151.7	183.6	-
151.7								
OPER	279.4	-279.4	279.4	-279.4	306.0	-252.8	306.0	-
252.8								

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	1.90 L	1.46	194.50	0.0	2.64	2.03	222.50	
		-8.50 L	-6.54	216.00	0.0	-7.33	-5.64	235.00	212.50
OPER	5C1	2.69 L	2.07	171.50	0.0	0.00	0.00	0.00	
		-6.88 R	-5.29	253.50	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	69.66	17.85	69.66	17.85	HS 356.95	642.5
5C1	113.71	36.73	113.71	36.73	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.91	28.67	28.67	1.699
			999999.000
			95.462

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		12.29		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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	245.3	-131.7	190.7	-186.3
OPER	359.7C	-268.7	268.7	-359.7C	408.8	-219.5	317.8	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00			
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00		
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00			
		-9.21 R	-7.09	256.00	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	116.98	10.19	90.93	14.42	HS 203.83
5C1	251.09	23.83	195.18	33.72	0.00 366.9 953.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-7.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-63.9	72.5
OPER	172.1	-106.4	120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.79	4.59	-2.91	3.53	-2.99	3.34	-2.30	2.57
OPER	5C1	-2.94	3.42	-2.26	2.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.72	15.78	HS 294.35	529.8
5C1	31.89	35.34	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-44.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.2	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
OPER 230.3	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00	
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00	
		-9.21 R	-7.09	256.00	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	94.00	10.69	94.00	10.69	HS 213.81	384.9
5C1	201.78	25.00	201.78	25.00	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.91	35.20	35.20	2.861	999999.000	122.370

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -44.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	245.3	-131.7	190.7	-186.3
OPER	359.7C	-268.7	268.7	-359.7C	408.8	-219.5	317.8	-310.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00			
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00		
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00			
		-9.21 R	-7.09	256.00	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	116.98	10.19	90.93	14.42	HS 203.83
5C1	251.09	23.83	195.18	33.72	0.00 366.9 953.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-9.1	10.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-63.9	72.5
OPER	172.1	-106.4	120.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.34	4.59	-3.34	3.53	-3.31	3.34	-2.54	2.57
OPER	5C1	-3.34	3.42	-2.57	2.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.72	15.78	HS 294.35	529.8
5C1	31.89	35.34	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-44.7

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	148.0	-187.3	148.0	-187.3	197.1	-138.2	197.1	-
138.2								
OPER	279.4	-279.4	279.4	-279.4	328.5	-230.3	328.5	-
230.3								

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	2.10 L	1.61	167.00	0.0	1.55	1.19	190.00	
		-12.92 R	-9.94	246.50	0.0	-11.99	-9.22	235.00	215.00
OPER	5C1	1.63 L	1.25	140.50	0.0	0.00	0.00	0.00	
		-9.21 R	-7.09	256.00	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	94.00	10.69	94.00	10.69	HS 213.81	384.9
5C1	201.78	25.00	201.78	25.00	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
2.30	35.20	35.20	2.861	999999.000	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.100

Dead Load Moment Superimposed Dead Load Moment
-2.0 -20.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	229.4	-178.1	205.2	-202.2
OPER	359.7C	-319.4	319.4	-359.7C	382.3	-296.8	342.1	-337.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	1.57 L	1.21	162.00	0.0	3.01	2.31	227.50			
		-7.76 R	-5.97	234.00	0.0	-7.24	-5.57	215.00	240.00		
OPER	5C1	3.68 L	2.83	180.50	0.0	0.00	0.00	0.00			
		-6.51 R	-5.01	261.00	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	76.24	22.95	68.21	26.06	HS 458.95	826.1
5C1	103.90	45.61	92.96	51.79	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 10.100
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.9 0.0 8.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-85.2	73.6
OPER	172.1	-142.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.08	4.09	-0.06	3.15	-0.17	3.05	-0.13	2.35
OPER	5C1	-0.12	3.08	-0.10	2.37	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	507.56	18.00	HS 359.93	647.9
5C1	999.00	39.81	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.100

Dead Load Moment	Superimposed Dead Load Moment
-2.0	-20.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 185.7	190.3	-208.4	190.3	-208.4	212.9	-185.7	212.9	-
OPER 309.6	332.2	-332.2	332.2	-332.2	354.8	-309.6	354.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	1.57 L	1.21	162.00	0.0	3.01	2.31	227.50	
		-7.76 R	-5.97	234.00	0.0	-7.24	-5.57	215.00	240.00
OPER	5C1	3.68 L	2.83	180.50	0.0	0.00	0.00	0.00	
		-6.51 R	-5.01	261.00	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	70.76	23.93	70.76	23.93	HS 478.70	861.7
5C1	96.43	47.57	96.43	47.57	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.200

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.	215.8C	-191.7	191.7	-215.8C	216.4	-191.1	192.2	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.6	-318.5	320.3	-358.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.00 R	6.16	258.00	0.0	5.95	4.58	230.00			
		-6.26 L	-4.82	192.00	0.0	-4.83	-3.72	215.00	165.00		
OPER	5C1	7.33 L	5.64	183.00	0.0	0.00	0.00	0.00			
		-5.55 L	-4.27	203.00	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	27.04	30.52	24.02	34.38	HS 480.36	864.6
5C1	49.22	57.43	43.72	64.69	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S03
 Check Point I. D. 10.200
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.7 0.0 7.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.1	74.8
OPER	172.1	-140.1	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-0.12	3.53	-0.09	2.72	-0.35	2.75	-0.27	2.11
OPER	5C1	-0.31	2.72	-0.24	2.09	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	237.52	21.18	HS 423.67	762.6
5C1	444.89	45.90	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.200

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. 198.8	199.0	-199.7	199.0	-199.7	199.9	-198.8	199.9	-
OPER 331.3	332.2	-332.2	332.2	-332.2	333.1	-331.3	333.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	8.00 R	6.16	258.00	0.0	5.95	4.58	230.00	
		-6.26 L	-4.82	192.00	0.0	-4.83	-3.72	215.00	165.00
OPER	5C1	7.33 L	5.64	183.00	0.0	0.00	0.00	0.00	
		-5.55 L	-4.27	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	24.98	31.75	24.98	31.75	HS 499.51	899.1
5C1	45.47	59.74	45.47	59.74	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	2.861	123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.300

Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	206.2	-201.3	182.0	-225.4
OPER	359.7C	-319.4	319.4	-359.7C	343.6	-335.5	303.4	-375.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.45 R	9.58	260.50	0.0	9.00	6.92	232.50			
		-5.48 L	-4.21	192.00	0.0	-4.23	-3.25	215.00	165.00		
OPER	5C1	10.14 L	7.80	185.50	0.0	0.00	0.00	0.00			
		-4.85 L	-3.73	203.00	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	16.56	36.74	14.62	41.15	HS 292.36	526.2
5C1	33.88	69.13	29.91	77.43	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-82.9	75.9
OPER	172.1	-138.2	126.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.38	2.92	-0.29	2.24	-0.58	2.42	-0.45	1.86
OPER	5C1	-0.54	2.32	-0.41	1.79	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	142.92	26.04	HS 520.77	937.4
5C1	257.21	54.45	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.300Dead Load Moment 1.7
Superimposed Dead Load Moment 14.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.9	205.7	-192.9	205.7	-192.9	189.7	-208.9	189.7	-
OPER 348.2	332.2	-332.2	332.2	-332.2	316.2	-348.2	316.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.45 R	9.58	260.50	0.0	9.00	6.92	232.50	
		-5.48 L	-4.21	192.00	0.0	-4.23	-3.25	215.00	165.00
OPER	5C1	10.14 L	7.80	185.50	0.0	0.00	0.00	0.00	
		-4.85 L	-3.73	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.23	38.14	15.23	38.14	HS 304.67	548.4
5C1	31.17	71.77	31.17	71.77	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
2.30	35.20	35.20	2.861
			999999.000
			123.917

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		38.90		103.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.400Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	198.9	-208.6	174.7	-232.8
OPER	359.7C	-319.4	319.4	-359.7C	331.4	-347.7	291.2	-387.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.41 R	11.08	263.00	0.0	11.12	8.56	235.00			
		-4.70 L	-3.61	192.00	0.0	-3.47	-2.67	215.00	0.00		
OPER	5C1	12.34 R	9.49	247.00	0.0	0.00	0.00	0.00			
		-4.16 L	-3.20	203.00	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	13.80	44.43	12.12	49.57	HS 242.50	436.5
5C1	26.86	83.59	23.60	93.27	0.00	943.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.4 0.0 3.6

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 103.3 -81.8 77.1
OPER 172.1 -136.3 128.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.76	2.28	-0.59	1.75	-0.84	2.09	-0.65	1.60
OPER	5C1	-0.78	1.97	-0.60	1.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	96.88	33.85	HS 999.00	999.0
5C1	173.85	65.20	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.400Dead Load Moment 2.8
Superimposed Dead Load Moment 25.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.3	210.6	-188.0	210.6	-188.0	182.4	-216.3	182.4	-
OPER 360.5	332.2	-332.2	332.2	-332.2	303.9	-360.5	303.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	14.41 R	11.08	263.00	0.0	11.12	8.56	235.00	
		-4.70 L	-3.61	192.00	0.0	-3.47	-2.67	215.00	0.00
OPER	5C1	12.34 R	9.49	247.00	0.0	0.00	0.00	0.00	
		-4.16 L	-3.20	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	12.66	46.06	12.66	46.06	HS 253.14	455.7
5C1	24.63	86.66	24.63	86.66	0.00	985.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.500

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.18 R	11.67	265.50	0.0	12.40	9.54	237.50			
		-3.91 L	-3.01	192.00	0.0	-2.89	-2.22	215.00	0.00		
OPER	5C1	13.50 L	10.38	225.50	0.0	0.00	0.00	0.00			
		-3.47 L	-2.67	203.00	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	12.81	54.46	11.22	60.63	HS 224.34	403.8
5C1	24.00	102.46	21.02	114.08	0.00	840.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.2 0.0 1.9

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 103.3 -80.6 78.2
OPER 172.1 -134.4 130.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-1.21	1.88	-0.93	1.45	-1.14	1.74	-0.88	1.34
OPER	5C1	-1.05	1.68	-0.81	1.29	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	66.42	41.49	HS 999.00	999.0
5C1	128.16	77.42	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.500Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend
INV. 220.7	213.6	-185.0	213.6	-185.0
OPER 367.9	332.2	-332.2	332.2	-332.2

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	15.18 R	11.67	265.50	0.0	12.40	9.54
		-3.91 L	-3.01	192.00	0.0	-2.89	-2.22
OPER	5C1	13.50 L	10.38	225.50	0.0	0.00	0.00
		-3.47 L	-2.67	203.00	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	11.72	56.42	11.72	56.42
5C1	21.97	106.15	21.97	106.15

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.600

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.600

Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	193.0	-214.5	168.8	-238.7
OPER	359.7C	-319.4	319.4	-359.7C	321.6	-357.5	281.3	-397.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.09 R	12.38	254.00	0.0	12.44	9.57	240.00			
		-3.13 L	-2.41	192.00	0.0	-2.31	-1.78	215.00	0.00		
OPER	5C1	13.81 L	10.62	228.00	0.0	0.00	0.00	0.00			
		-2.77 L	-2.13	203.00	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	11.99	68.53	10.49	76.25	HS 209.81	377.7
5C1	23.29	128.93	20.37	143.45	0.00	815.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.600

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.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	w/imp. (-)	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-1.61	1.43	-1.24	1.10	-1.48	1.40	-1.14	1.08
OPER	5C1	-1.37	1.38	-1.05	1.06	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	49.36	55.37	HS 999.00	999.0
5C1	96.89	95.94	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 34.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 222.2	214.6	-184.1	214.6	-184.1	176.5	-222.2	176.5	-
OPER 370.3	332.2	-332.2	332.2	-332.2	294.1	-370.3	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.09 R	12.38	254.00	0.0	12.44	9.57	240.00	
		-3.13 L	-2.41	192.00	0.0	-2.31	-1.78	215.00	0.00
OPER	5C1	13.81 L	10.62	228.00	0.0	0.00	0.00	0.00	
		-2.77 L	-2.13	203.00	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	10.97	70.98	10.97	70.98	HS 219.34	394.8
5C1	21.30	133.54	21.30	133.54	0.00	852.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.700

Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	194.4	-213.1	170.2	-237.2
OPER	359.7C	-319.4	319.4	-359.7C	324.0	-355.1	283.7	-395.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.06 R	12.35	256.50	0.0	11.40	8.77	242.50			
		-2.35 L	-1.81	192.00	0.0	-1.73	-1.33	215.00	0.00		
OPER	5C1	13.15 L	10.12	226.50	0.0	0.00	0.00	0.00			
		-2.08 L	-1.60	203.00	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	12.11	90.76	10.60	101.05	HS 212.03	381.7
5C1	24.63	170.76	21.57	190.12	0.00	862.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.3	80.6
OPER	172.1	-130.5	134.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.14	1.09	-1.65	0.84	-1.84	1.06	-1.42	0.81
OPER	5C1	-1.75	1.06	-1.35	0.81	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	36.56	73.84	HS 999.00	999.0
5C1	74.40	127.13	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.700Dead Load Moment 3.5
Superimposed Dead Load Moment 32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.7	213.6	-185.0	213.6	-185.0	177.9	-220.7	177.9	-
OPER 367.9	332.2	-332.2	332.2	-332.2	296.5	-367.9	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	16.06 R	12.35	256.50	0.0	11.40	8.77	242.50	
		-2.35 L	-1.81	192.00	0.0	-1.73	-1.33	215.00	0.00
OPER	5C1	13.15 L	10.12	226.50	0.0	0.00	0.00	0.00	
		-2.08 L	-1.60	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.08	94.03	11.08	94.03	HS 221.58	398.8
5C1	22.54	176.90	22.54	176.90	0.00	901.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.800

Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	198.7	-208.8	174.5	-232.9
OPER	359.7C	-319.4	319.4	-359.7C	331.1	-348.0	290.9	-388.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	13.62 R	10.48	259.00	0.0	8.93	6.87	245.00			
		-1.57 L	-1.20	192.00	0.0	-1.16	-0.89	215.00	0.00		
OPER	5C1	10.97 L	8.44	229.00	0.0	0.00	0.00	0.00			
		-1.39 L	-1.07	203.00	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	14.59	133.40	12.81	148.84	HS 256.30	461.3
5C1	30.19	250.99	26.52	280.03	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.1	81.7
OPER	172.1	-128.6	136.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.72	0.73	-2.10	0.57	-2.23	0.72	-1.72	0.55
OPER	5C1	-2.19	0.71	-1.69	0.55	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	28.32	111.21	HS 999.00	999.0
5C1	58.61	191.65	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.800Dead Load Moment 2.8
Superimposed Dead Load Moment 25.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 216.5	210.7	-187.9	210.7	-187.9	182.2	-216.5	182.2	-
OPER 360.8	332.2	-332.2	332.2	-332.2	303.6	-360.8	303.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	13.62 R	10.48	259.00	0.0	8.93	6.87	245.00	
		-1.57 L	-1.20	192.00	0.0	-1.16	-0.89	215.00	0.00
OPER	5C1	10.97 L	8.44	229.00	0.0	0.00	0.00	0.00	
		-1.39 L	-1.07	203.00	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	13.38	138.30	13.38	138.30	HS 267.56	481.6
5C1	27.69	260.20	27.69	260.20	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	205.8	-201.6	181.7	-225.8
OPER	359.7C	-319.4	319.4	-359.7C	343.0	-336.1	302.8	-376.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	8.37 R	6.44	261.50	0.0	5.23	4.02	247.50			
		-0.78 L	-0.60	192.00	0.0	-0.58	-0.44	215.00	0.00		
OPER	5C1	6.65 L	5.12	231.50	0.0	0.00	0.00	0.00			
		-0.69 L	-0.53	203.00	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	24.59	257.68	21.70	288.55	HS 434.04	781.3
5C1	51.58	484.80	45.53	542.89	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-5.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.0	82.9
OPER	172.1	-126.7	138.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.35	0.37	-2.58	0.28	-2.65	0.40	-2.04	0.30
OPER	5C1	-2.66	0.46	-2.05	0.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.70	209.31	HS 453.95	817.1
5C1	47.62	299.13	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 209.3	206.0	-192.7	206.0	-192.7	189.3	-209.3	189.3	-
OPER 348.9	332.2	-332.2	332.2	-332.2	315.5	-348.9	315.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	8.37 R	6.44	261.50	0.0	5.23	4.02	247.50	
		-0.78 L	-0.60	192.00	0.0	-0.58	-0.44	215.00	0.00
OPER	5C1	6.65 L	5.12	231.50	0.0	0.00	0.00	0.00	
		-0.69 L	-0.53	203.00	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	22.62	267.48	22.62	267.48	HS 452.36	814.2
5C1	47.45	503.23	47.45	503.23	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S03
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 11.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.00	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 11.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.9	79.9
OPER	172.1	-124.8	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.01	0.00	-3.08	0.00	-3.09	0.30	-2.38	0.23
OPER	5C1	-3.15	0.00	-2.42	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.68	270.16	HS 373.71	672.7
5C1	39.64	999.00	0.00	999.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S03
Check Point I. D. 11.000Dead 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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	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	5C1	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
5C1	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 10

Live Load Distribution Factor 0.857

Second Live Load Dist. Factor 0.857

Comments:

Member I. D. S04 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Length -- Non-Composite:		Section		Section	Hinge Location	
Span No.	Range No.	Range Length	Left	Right	Variation	No. 1 No. 2
1	1	25.000	1	0		0.0 0.0
2	1	25.000	2	0		0.0 0.0
3	1	25.000	2	0		0.0 0.0
4	1	25.000	2	0		0.0 0.0
5	1	25.000	2	0		0.0 0.0
6	1	25.000	2	0		0.0 0.0
7	1	25.000	2	0		0.0 0.0
8	1	25.000	2	0		0.0 0.0
9	1	25.000	2	0		0.0 0.0
10	1	25.000	1	0		0.0 0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)		Length	Concentrated Load (kips)
			Left	Right		
1	W	0.000	615.0	615.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1
2	W	0.000	615.0	615.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	615.0	615.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	615.0	615.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	615.0	615.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	615.0	615.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	615.0	615.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	615.0	615.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1

9	W	0.000	615.0	615.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	615.0	615.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
 Check Point I. D. 1.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.000

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.7	0.0
	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-83.6	75.3
OPER	172.1	-139.3	125.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-1.80	24.01	-1.38	18.47	-1.77	18.53	-1.36	14.26
OPER	5C1	-1.55	18.86	-1.19	14.51	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	46.49	3.14	HS 62.72	112.9	
5C1	89.94	6.65	0.00	266.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	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	5C1	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.100

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	50.17 L	38.59	-11.50	0.0	31.33	24.10	2.50			
		-4.69 R	-3.61	58.00	0.0	-3.46	-2.67	35.00	0.00		
OPER	5C1	39.85 R	30.66	18.50	0.0	0.00	0.00	0.00			
		-4.15 R	-3.20	47.00	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	4.12	42.79	3.64	47.94	HS 72.80	131.0
5C1	8.65	80.51	7.64	90.21	0.00	305.5

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 1.100
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.6 0.0 4.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-82.5	76.3
OPER	172.1	-137.5	127.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.21	20.07	-1.70	15.44	-2.37	15.90	-1.82	12.23
OPER	5C1	-2.77	15.94	-2.13	12.26	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	34.79	3.80	HS 76.07	136.9
5C1	49.72	7.98	0.00	319.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.100Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	50.17 L	38.59	-11.50	0.0	31.33	24.10	2.50	
		-4.69 R	-3.61	58.00	0.0	-3.46	-2.67	35.00	0.00
OPER	5C1	39.85 R	30.66	18.50	0.0	0.00	0.00	0.00	
		-4.15 R	-3.20	47.00	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	3.79	44.43	3.79	44.43	HS 75.86	136.5
5C1	7.96	83.59	7.96	83.59	0.00	318.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.200

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.200

Dead Load Moment Superimposed Dead Load Moment
2.8 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	81.61 L	62.78	-9.00	0.0	53.54	41.19	5.00			
		-9.38 R	-7.22	58.00	0.0	-6.93	-5.33	35.00	0.00		
OPER	5C1	65.73 R	50.56	21.00	0.0	0.00	0.00	0.00			
		-8.31 R	-6.39	47.00	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	2.45	22.09	2.16	43.17	77.7
5C1	5.08	41.55	4.47	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-81.5	77.4
OPER	172.1	-135.8	128.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.40	16.32	-3.39	12.56	-4.32	13.39	-3.32	10.30
OPER	5C1	-4.26	13.15	-3.28	10.11	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	18.51	4.74	HS 94.78	170.6
5C1	31.89	9.81	0.00	392.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.200Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	81.61 L	62.78	-9.00	0.0	53.54	41.19	5.00	
		-9.38 R	-7.22	58.00	0.0	-6.93	-5.33	35.00	0.00
OPER	5C1	65.73 R	50.56	21.00	0.0	0.00	0.00	0.00	
		-8.31 R	-6.39	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.25	22.90	2.25	22.90	HS 45.04	81.1
5C1	4.66	43.09	4.66	43.09	0.00	186.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.300

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.300

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 L	74.03	-6.50	0.0	68.33	52.56	7.50			
		-14.07 R	-10.82	58.00	0.0	-10.40	-8.00	35.00	0.00		
OPER	5C1	78.82 R	60.63	23.50	0.0	0.00	0.00	0.00			
		-12.46 R	-9.59	47.00	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	2.04	15.00	1.79	HS 35.80	64.4
5C1	4.15	28.22	3.64	0.00	145.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.300Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.2 0.0 1.5

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-80.5	78.4
OPER	172.1	-134.1	130.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.54	12.83	-5.03	9.87	-6.33	11.04	-4.87	8.49
OPER	5C1	-6.33	10.51	-4.87	8.08	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	12.30	6.11	HS 122.18	219.9
5C1	21.18	12.43	0.00	497.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.300Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

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. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	96.23 L	74.03	-6.50	0.0	68.33	52.56	7.50	
		-14.07 R	-10.82	58.00	0.0	-10.40	-8.00	35.00	0.00
OPER	5C1	78.82 R	60.63	23.50	0.0	0.00	0.00	0.00	
		-12.46 R	-9.59	47.00	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	1.87	15.55	1.87	15.55	HS 37.39	67.3
5C1	3.81	29.25	3.81	29.25	0.00	152.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.400

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	96.43 L	74.18	-4.00	0.0	74.58	57.37	10.00			
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00		
OPER	5C1	82.75 R	63.66	22.00	0.0	0.00	0.00	0.00			
		-16.62 R	-12.78	47.00	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	2.02	11.32	1.77	12.61	HS 35.46	63.8
5C1	3.93	21.30	3.44	23.72	0.00	137.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.0	0.0 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.60	9.64	-6.61	7.42	-8.38	8.86	-6.44	6.81
OPER	5C1	-8.27	8.19	-6.36	6.30	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	9.24	8.24	HS 164.72	296.5
5C1	16.01	16.17	0.00	640.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.400Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.43 L	74.18	-4.00	0.0	74.58	57.37	10.00	
		-18.76 R	-14.43	58.00	0.0	-13.86	-10.66	35.00	0.00
OPER	5C1	82.75 R	63.66	22.00	0.0	0.00	0.00	0.00	
		-16.62 R	-12.78	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.85	11.73	1.85	11.73	HS 37.05	66.7
5C1	3.60	22.07	3.60	22.07	0.00	143.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.73	35.20	35.20	2.861	999999.000	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.500

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	90.95 L	69.96	-15.50	0.0	74.30	57.15	12.50			
		-23.45 R	-18.04	58.00	0.0	-17.33	-13.33	35.00	0.00		
OPER	5C1	80.89 R	62.22	24.50	0.0	0.00	0.00	0.00			
		-20.77 R	-15.98	47.00	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	2.16	9.00	1.89	10.03	HS 37.88	68.2
5C1	4.05	16.93	3.55	18.87	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.500

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.	103.3	-78.4	80.5
OPER	172.1	-130.7	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-11.30	7.28	-8.69	5.60	-10.44	6.86	-8.03	5.28
OPER	5C1	-10.09	6.28	-7.76	4.83	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.94	11.06	HS 138.80	249.8
5C1	12.95	21.33	0.00	518.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.500Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	90.95 L	69.96	-15.50	0.0	74.30	57.15	12.50	
		-23.45 R	-18.04	58.00	0.0	-17.33	-13.33	35.00	0.00
OPER	5C1	80.89 R	62.22	24.50	0.0	0.00	0.00	0.00	
		-20.77 R	-15.98	47.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	9.33	1.98	9.33	HS 39.56	71.2
5C1	3.71	17.55	3.71	17.55	0.00	148.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.73	35.20	35.20	2.861
			999999.000
			93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.600

Dead Load Moment 2.8
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.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.35 L	66.42	-13.00	0.0	66.65	51.27	15.00			
		-28.14 R	-21.65	58.00	0.0	-20.79	-15.99	35.00	0.00		
OPER	5C1	73.95 L	56.88	3.00	0.0	0.00	0.00	0.00			
		-24.93 R	-19.17	47.00	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	2.32	7.36	2.04	8.22	HS 40.83	73.5
5C1	4.52	13.84	3.97	15.46	0.00	158.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.3	81.6
OPER	172.1	-128.8	135.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.64	4.57	-10.49	3.51	-12.50	5.06	-9.61	3.89
OPER	5C1	-11.81	4.70	-9.08	3.61	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.66	16.12	HS 113.31	204.0
5C1	10.91	28.93	0.00	436.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.600Dead Load Moment 2.8
Superimposed Dead Load Moment 22.8

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	86.35 L	66.42	-13.00	0.0	66.65	51.27	15.00	
		-28.14 R	-21.65	58.00	0.0	-20.79	-15.99	35.00	0.00
OPER	5C1	73.95 L	56.88	3.00	0.0	0.00	0.00	0.00	
		-24.93 R	-19.17	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity	
	top fiber	bottom fiber	Value	(tons)
HS20	2.13	7.63	42.61	76.7
5C1	4.15	14.35	0.00	165.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.73	35.20	35.20	2.861	999999.000	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.700

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	74.63 L	57.40	-10.50	0.0	53.95	41.50	17.50			
		-32.83 R	-25.25	58.00	0.0	-25.35	-19.50	35.00	85.00		
OPER	5C1	60.78 R	46.75	64.50	0.0	0.00	0.00	0.00			
		-29.08 R	-22.37	47.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.78	6.10	2.45	6.84	HS 49.03	88.2
5C1	5.68	11.48	5.02	12.87	0.00	200.7

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 1.700
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -4.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-76.3	82.6
OPER	172.1	-127.1	137.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-17.47	2.26	-13.44	1.74	-14.51	3.48	-11.16	2.67
OPER	5C1	-13.93	3.22	-10.71	2.48	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.36	23.75	HS 87.28	157.1	
5C1	9.12	42.75	0.00	365.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.700Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	74.63 L	57.40	-10.50	0.0	53.95	41.50	17.50	
		-32.83 R	-25.25	58.00	0.0	-25.35	-19.50	35.00	85.00
OPER	5C1	60.78 R	46.75	64.50	0.0	0.00	0.00	0.00	
		-29.08 R	-22.37	47.00	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	2.55	6.34	2.55	6.34	HS 51.08	91.9
5C1	5.23	11.92	5.23	11.92	0.00	209.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.73	35.20	2.861	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.800

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.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	47.96 L	36.89	-8.00	0.0	35.65	27.42	20.00			
		-37.52 R	-28.86	58.00	0.0	-28.97	-22.28	35.00	85.00		
OPER	5C1	43.91 R	33.77	67.00	0.0	0.00	0.00	0.00			
		-33.24 R	-25.57	47.00	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	4.51	5.09	4.01	5.74	HS 80.13 144.2
5C1	8.21	9.59	7.29	10.80	0.00 291.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.2	83.6
OPER	172.1	-125.4	139.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.16	0.73	-16.27	0.56	-16.45	2.12	-12.66	1.63
OPER	5C1	-16.27	1.89	-12.52	1.45	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.56	39.43	HS 71.11	128.0	
5C1	7.70	73.85	0.00	308.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.800Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

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. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	47.96 L	36.89	-8.00	0.0	35.65	27.42	20.00	
		-37.52 R	-28.86	58.00	0.0	-28.97	-22.28	35.00	85.00
OPER	5C1	43.91 R	33.77	67.00	0.0	0.00	0.00	0.00	
		-33.24 R	-25.57	47.00	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	4.17	5.30	4.17	5.30	HS 83.33	150.0
5C1	7.59	9.97	7.59	9.97	0.00	303.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.73	35.20	35.20	2.861	999999.000	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.900

Dead Load Moment Superimposed Dead Load Moment
-2.0 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	9.42 R	7.24	88.00	0.0	17.70	13.62	22.50			
		-46.50 L	-35.77	16.00	0.0	-43.36	-33.36	35.00		10.00	
OPER	5C1	22.05 R	16.96	69.50	0.0	0.00	0.00	0.00			
		-39.00 L	-30.00	-11.00	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	12.88	3.86	11.52	4.38	77.14
5C1	17.24	7.67	15.41	8.70	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.9	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-74.2	84.7
OPER	172.1	-123.6	141.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.52	0.48	-18.86	0.37	-18.29	1.01	-14.07	0.77
OPER	5C1	-18.48	0.75	-14.21	0.58	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.03	84.14	HS 60.51	108.9	
5C1	6.69	188.47	0.00	267.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 1.900Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	9.42 R	7.24	88.00	0.0	17.70	13.62	22.50	
		-46.50 L	-35.77	16.00	0.0	-43.36	-33.36	35.00	10.00
OPER	5C1	22.05 R	16.96	69.50	0.0	0.00	0.00	0.00	
		-39.00 L	-30.00	-11.00	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	11.95	4.02	11.95	4.02	HS 80.44	144.8
5C1	15.99	7.99	15.99	7.99	0.00	319.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.73	35.20	35.20	2.861
			999999.000
			93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.57 R	9.67	83.00	0.0	9.28	7.14	60.00			
		-77.94 L	-59.95	4.50	0.0	-71.86	-55.28	15.00	35.00		
OPER	5C1	9.76 R	7.51	109.50	0.0	0.00	0.00	0.00			
		-55.20 L	-42.46	-6.00	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	16.48	1.73	14.95	1.97	HS 34.52
5C1	35.37	4.06	32.09	4.64	0.00 162.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.52	26.21	-18.86	20.16	-18.29	19.82	-14.07	15.24
OPER	5C1	-18.48	20.11	-14.21	15.47	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.66	2.46	HS 49.16	88.5
5C1	5.95	5.34	0.00	213.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.57 R	9.67	83.00	0.0	9.28	7.14	60.00	
		-77.94 L	-59.95	4.50	0.0	-71.86	-55.28	15.00	35.00
OPER	5C1	9.76 R	7.51	109.50	0.0	0.00	0.00	0.00	
		-55.20 L	-42.46	-6.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.46	1.81	15.46	1.81	HS 36.17	65.1
5C1	33.19	4.26	33.19	4.26	0.00	170.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.000

Dead Load Moment Superimposed Dead Load Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	207.0	-134.5	187.9	-153.7
OPER	300.6C	-268.7	268.7	-300.6C	345.1	-224.2	313.1	-256.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.57 R	9.67	83.00	0.0	9.28	7.14	60.00			
		-77.94 L	-59.95	4.50	0.0	-71.86	-55.28	15.00	35.00		
OPER	5C1	9.76 R	7.51	109.50	0.0	0.00	0.00	0.00			
		-55.20 L	-42.46	-6.00	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	16.48	1.73	14.95	1.97	HS 34.52
5C1	35.37	4.06	32.09	4.64	0.00 162.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-9.4	8.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-73.2	64.4
OPER	151.3	-121.9	107.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-27.53	26.21	-21.18	20.16	-20.00	19.82	-15.39	15.24
OPER	5C1	-20.49	20.11	-15.76	15.47	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.66	2.46	HS 49.16	88.5
5C1	5.95	5.34	0.00	213.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.57 R	9.67	83.00	0.0	9.28	7.14	60.00	
		-77.94 L	-59.95	4.50	0.0	-71.86	-55.28	15.00	35.00
OPER	5C1	9.76 R	7.51	109.50	0.0	0.00	0.00	0.00	
		-55.20 L	-42.46	-6.00	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	15.46	1.81	15.46	1.81	HS 36.17	65.1
5C1	33.19	4.26	33.19	4.26	0.00	170.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.55	28.67	28.67	1.699	999999.000	77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.100

Dead Load Moment Superimposed Dead Load Moment
-2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	11.39 R	8.76	55.50	0.0	16.12	12.40	27.50			
		-50.93 R	-39.18	34.00	0.0	-43.93	-33.79	15.00	37.50		
OPER	5C1	16.13 R	12.41	78.50	0.0	0.00	0.00	0.00			
		-41.25 L	-31.73	-3.50	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	12.09	2.88	10.90	3.26	57.62
5C1	20.14	5.93	18.15	6.70	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.7	0.0
	6.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.2	65.4
OPER	151.3	-123.7	109.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.25	22.69	-1.73	17.45	-2.25	17.90	-1.73	13.77
OPER	5C1	-2.37	17.65	-1.82	13.57	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	33.04	2.88	HS 57.69	103.8
5C1	52.14	6.18	0.00	247.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.100Dead Load Moment -2.6
Superimposed Dead Load Moment -21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.39 R	8.76	55.50	0.0	16.12	12.40	27.50	
		-50.93 R	-39.18	34.00	0.0	-43.93	-33.79	15.00	37.50
OPER	5C1	16.13 R	12.41	78.50	0.0	0.00	0.00	0.00	
		-41.25 L	-31.73	-3.50	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	11.30	3.01	11.30	3.01	HS 60.15	108.3
5C1	18.82	6.19	18.82	6.19	0.00	247.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	43.86 R	33.74	58.00	0.0	30.64	23.57	30.00			
		-41.74 L	-32.11	-8.00	0.0	-28.08	-21.60	15.00	47.50		
OPER	5C1	34.81 R	26.77	81.00	0.0	0.00	0.00	0.00			
		-33.61 L	-25.86	3.00	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	4.22	3.75	3.78	4.21	HS 74.96	134.9
5C1	8.87	7.76	7.95	8.71	0.00	310.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	5.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.2	66.5
OPER	151.3	-122.0	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.25	19.14	-1.73	14.72	-3.14	15.81	-2.42	12.16
OPER	5C1	-3.55	15.09	-2.73	11.60	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	23.28	3.47	HS 69.46	125.0	
5C1	34.33	7.34	0.00	293.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.200

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
162.9								
OPER	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-
271.4								

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	43.86 R	33.74	58.00	0.0	30.64	23.57	30.00	
		-41.74 L	-32.11	-8.00	0.0	-28.08	-21.60	15.00	47.50
OPER	5C1	34.81 R	26.77	81.00	0.0	0.00	0.00	0.00	
		-33.61 L	-25.86	3.00	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	3.93	3.90	3.93	3.90	HS 78.05	140.5
5C1	8.26	8.08	8.26	8.08	0.00	323.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.55	28.67	28.67	1.699	999999.000	77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.300

Dead Load Moment 0.1
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	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.28 R	49.45	60.50	0.0	46.37	35.67	32.50			
		-34.65 L	-26.65	-8.00	0.0	-24.44	-18.80	15.00	0.00		
OPER	5C1	50.09 R	38.53	48.50	0.0	0.00	0.00	0.00			
		-29.87 L	-22.98	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.77	4.72	2.47	49.42	88.9
5C1	5.92	9.13	5.28	0.00	211.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.4	0.0
	3.5

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	-3.26	15.49	-2.51	11.92	-4.84	13.60	-3.72	10.46
OPER	5C1	-4.93	12.61	-3.79	9.70	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.91	4.36	HS 87.10	156.8
5C1	24.38	8.92	0.00	356.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.300Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	64.28 R	49.45	60.50	0.0	46.37	35.67	32.50	
		-34.65 L	-26.65	-8.00	0.0	-24.44	-18.80	15.00	0.00
OPER	5C1	50.09 R	38.53	48.50	0.0	0.00	0.00	0.00	
		-29.87 L	-22.98	4.00	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	2.57	4.91	2.57	4.91	HS 51.42	92.6
5C1	5.50	9.49	5.50	9.49	0.00	220.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.400

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.35 R	55.65	63.00	0.0	56.09	43.14	35.00			
		-27.56 L	-21.20	-8.00	0.0	-21.34	-16.41	15.00	0.00		
OPER	5C1	60.76 R	46.74	47.00	0.0	0.00	0.00	0.00			
		-27.24 L	-20.95	5.50	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	2.40	6.10	2.13	6.80	HS 42.64	76.7
5C1	4.76	10.29	4.23	11.46	0.00	169.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	-71.2	68.5
OPER	151.3	-118.6	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-6.69	12.74	-5.14	9.80	-6.77	11.36	-5.21	8.74
OPER	5C1	-6.49	10.70	-4.99	8.23	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.52	5.38	HS 107.54	193.6
5C1	18.26	10.67	0.00	426.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.35 R	55.65	63.00	0.0	56.09	43.14	35.00	
		-27.56 L	-21.20	-8.00	0.0	-21.34	-16.41	15.00	0.00
OPER	5C1	60.76 R	46.74	47.00	0.0	0.00	0.00	0.00	
		-27.24 L	-20.95	5.50	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	2.22	6.34	2.22	6.34	HS 44.42	80.0
5C1	4.41	10.68	4.41	10.68	0.00	176.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.55	28.67	28.67	1.699	999999.000	77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	70.75 L	54.42	23.50	0.0	60.25	46.35	37.50			
		-20.47 L	-15.74	-8.00	0.0	-18.24	-14.03	15.00	0.00		
OPER	5C1	64.24 R	49.41	88.50	0.0	0.00	0.00	0.00			
		-25.79 L	-19.84	6.50	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	2.42	8.32	2.15	9.25	HS 43.02	77.4
5C1	4.45	11.00	3.95	12.24	0.00	157.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 0.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	-9.81	9.96	-7.55	7.67	-8.86	9.15	-6.82	7.04
OPER	5C1	-8.20	8.75	-6.31	6.73	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.15	6.97	HS 139.51	251.1
5C1	14.26	13.25	0.00	529.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.500

Dead Load Moment Superimposed Dead Load Moment

1.2 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	70.75 L	54.42	23.50	0.0	60.25	46.35	37.50	
		-20.47 L	-15.74	-8.00	0.0	-18.24	-14.03	15.00	0.00
OPER	5C1	64.24 R	49.41	88.50	0.0	0.00	0.00	0.00	
		-25.79 L	-19.84	6.50	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	2.24	8.63	2.24	8.63	HS 44.84	80.7
5C1	4.11	11.41	4.11	11.41	0.00	164.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.600

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.20 L	55.54	12.00	0.0	57.15	43.96	40.00			
		-22.59 R	-17.38	83.00	0.0	-19.95	-15.35	60.00	0.00		
OPER	5C1	62.80 L	48.31	28.00	0.0	0.00	0.00	0.00			
		-25.58 R	-19.68	69.50	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	2.38	7.51	2.12	42.34	76.2
5C1	4.57	11.04	4.06	0.00	162.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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 for LL+I (-)	(+)
INV.	90.8	-69.0	70.6
OPER	151.3	-115.1	117.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-12.56	6.84	-9.66	5.26	-11.07	7.05	-8.51	5.42
OPER	5C1	-10.05	7.08	-7.73	5.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.50	10.01	HS 109.96	197.9
5C1	11.45	16.61	0.00	458.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.600Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	72.20 L	55.54	12.00	0.0	57.15	43.96	40.00	
		-22.59 R	-17.38	83.00	0.0	-19.95	-15.35	60.00	0.00
OPER	5C1	62.80 L	48.31	28.00	0.0	0.00	0.00	0.00	
		-25.58 R	-19.68	69.50	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	2.21	7.79	2.21	7.79	HS 44.12	79.4
5C1	4.23	11.46	4.23	11.46	0.00	169.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
 Check Point I. D. 2.700

Dead Load Moment 0.7
 Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.61 L	49.70	14.50	0.0	48.46	37.27	42.50			
		-28.45 R	-21.88	83.00	0.0	-22.55	-17.35	60.00	0.00		
OPER	5C1	54.21 R	41.70	89.50	0.0	0.00	0.00	0.00			
		-27.29 R	-20.99	71.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.71	5.85	2.41	6.52	HS 48.31	87.0
5C1	5.39	10.16	4.80	11.33	0.00	191.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.0	71.6
OPER	151.3	-113.4	119.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.38	3.41	-11.83	2.63	-13.31	5.12	-10.24	3.93
OPER	5C1	-12.34	5.47	-9.49	4.21	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.42	14.00	HS 88.49	159.3	
5C1	9.19	21.82	0.00	367.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.61 L	49.70	14.50	0.0	48.46	37.27	42.50	
		-28.45 R	-21.88	83.00	0.0	-22.55	-17.35	60.00	0.00
OPER	5C1	54.21 R	41.70	89.50	0.0	0.00	0.00	0.00	
		-27.29 R	-20.99	71.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.52	6.07	2.52	6.07	HS 50.30	90.5
5C1	5.00	10.55	5.00	10.55	0.00	199.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	44.59 L	34.30	17.00	0.0	33.96	26.13	45.00			
		-34.31 R	-26.39	83.00	0.0	-26.51	-20.39	60.00	110.00		
OPER	5C1	40.80 R	31.38	92.00	0.0	0.00	0.00	0.00			
		-30.19 R	-23.22	72.00	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	4.06	4.68	3.63	5.24	HS 72.59	130.7
5C1	7.39	8.86	6.61	9.92	0.00	264.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-4.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.6
OPER	151.3	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.00	2.73	-14.61	2.10	-15.53	3.40	-11.94	2.62
OPER	5C1	-14.74	3.96	-11.34	3.04	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.53	21.35	HS 70.55	127.0	
5C1	7.58	30.60	0.00	303.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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.	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	44.59 L	34.30	17.00	0.0	33.96	26.13	45.00	
		-34.31 R	-26.39	83.00	0.0	-26.51	-20.39	60.00	110.00
OPER	5C1	40.80 R	31.38	92.00	0.0	0.00	0.00	0.00	
		-30.19 R	-23.22	72.00	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	3.77	4.87	3.77	4.87	HS 75.48	135.9
5C1	6.87	9.22	6.87	9.22	0.00	275.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.900

Dead Load Moment Superimposed Dead Load Moment
-1.3 -13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.32 L	9.48	19.50	0.0	19.09	14.68	47.50			
		-44.24 L	-34.03	41.00	0.0	-39.99	-30.76	60.00		37.50	
OPER	5C1	21.16 R	16.28	94.50	0.0	0.00	0.00	0.00			
		-35.06 R	-26.97	74.50	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	9.92	3.44	8.91	3.88	HS 68.84	123.9
5C1	14.91	7.24	13.40	8.15	0.00	289.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-5.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.6
OPER	151.3	-110.0	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.54	2.84	-17.34	2.18	-17.64	2.62	-13.57	2.02
OPER	5C1	-17.15	2.62	-13.19	2.02	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.93	25.97	HS 58.57	105.4	
5C1	6.41	46.78	0.00	256.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 2.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.32 L	9.48	19.50	0.0	19.09	14.68	47.50	
		-44.24 L	-34.03	41.00	0.0	-39.99	-30.76	60.00	37.50
OPER	5C1	21.16 R	16.28	94.50	0.0	0.00	0.00	0.00	
		-35.06 R	-26.97	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	9.25	3.59	9.25	3.59	HS 71.76	129.2
5C1	13.90	7.54	13.90	7.54	0.00	301.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.98 L	11.53	-8.00	0.0	13.37	10.29	15.00			
		-73.80 L	-56.77	29.50	0.0	-66.89	-51.45	60.00	40.00		
OPER	5C1	11.54 L	8.88	-34.50	0.0	0.00	0.00	0.00			
		-44.57 L	-34.28	45.50	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	13.36	1.92	12.08	2.18	38.33
5C1	28.91	5.29	26.14	6.01	0.00

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

Member I. D. S04
 Check Point I. D. 3.000

HS20 5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.7	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.54	25.89	-17.34	19.91	-17.64	19.71	-13.57	15.16
OPER	5C1	-17.15	19.43	-13.19	14.94	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.51	2.50	HS 50.05	90.1
5C1	5.57	5.56	0.00	222.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
147.9								
OPER	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-
246.5								

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	14.98 L	11.53	-8.00	0.0	13.37	10.29	15.00	
		-73.80 L	-56.77	29.50	0.0	-66.89	-51.45	60.00	40.00
OPER	5C1	11.54 L	8.88	-34.50	0.0	0.00	0.00	0.00	
		-44.57 L	-34.28	45.50	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	12.51	2.00	12.51	2.00	HS 40.08	72.1
5C1	27.07	5.53	27.07	5.53	0.00	221.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
 Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.98	L	11.53	-8.00	0.0	13.37	10.29	15.00		
		-73.80	L	-56.77	29.50	0.0	-66.89	-51.45	60.00	40.00	
OPER	5C1	11.54	L	8.88	-34.50	0.0	0.00	0.00	0.00		
		-44.57	L	-34.28	45.50	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	13.36	1.92	12.08	2.18	HS 38.33	69.0
5C1	28.91	5.29	26.14	6.01	0.00	211.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-7.3	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-65.0	64.8
OPER	151.3	-108.3	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.85	25.89	-19.89	19.91	-19.57	19.71	-15.06	15.16
OPER	5C1	-19.44	19.43	-14.96	14.94	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.51	2.50	HS 50.05	90.1
5C1	5.57	5.56	0.00	222.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.000Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
bend								
INV.	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
147.9								
OPER	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-
246.5								

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	14.98 L	11.53	-8.00	0.0	13.37	10.29	15.00	
		-73.80 L	-56.77	29.50	0.0	-66.89	-51.45	60.00	40.00
OPER	5C1	11.54 L	8.88	-34.50	0.0	0.00	0.00	0.00	
		-44.57 L	-34.28	45.50	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	12.51	2.00	12.51	2.00
5C1	27.07	5.53	27.07	5.53
HS	40.08	72.1	0.00	221.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.100

	Allowable stress (fs) (psi)			
RATIO/Inv.	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section
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. S04
Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.100

Dead Load Moment Superimposed Dead Load Moment
-1.2 -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.09 R	9.30	80.50	0.0	19.47	14.98	52.50			
		-44.00 R	-33.85	59.00	0.0	-39.66	-30.50	40.00		62.50	
OPER	5C1	21.99 L	16.92	5.50	0.0	0.00	0.00	0.00			
		-34.91 L	-26.85	25.50	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	9.70	3.47	8.71	3.91	HS 69.44	125.0
5C1	14.31	7.29	12.85	8.21	0.00	291.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.3	-123.1	109.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.23	22.58	-1.72	17.37	-2.42	17.78	-1.86	13.68
OPER	5C1	-2.37	17.16	-1.83	13.20	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	30.51	2.91	HS 58.27
5C1	51.87	6.39	0.00
			Load Capacity (tons)
			104.9
			255.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.100

Dead Load Moment	Superimposed Dead Load Moment
-1.2	-12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.09 R	9.30	80.50	0.0	19.47	14.98	52.50	
		-44.00 R	-33.85	59.00	0.0	-39.66	-30.50	40.00	62.50
OPER	5C1	21.99 L	16.92	5.50	0.0	0.00	0.00	0.00	
		-34.91 L	-26.85	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	9.04	3.62	9.04	3.62	HS 72.37	130.3
5C1	13.34	7.60	13.34	7.60	0.00	304.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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 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. S04
Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.200

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.51 R	34.24	83.00	0.0	33.72	25.94	55.00			
		-33.97 L	-26.13	17.00	0.0	-24.77	-19.06	40.00	72.50		
OPER	5C1	41.38 L	31.83	8.00	0.0	0.00	0.00	0.00			
		-30.05 L	-23.12	28.00	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	4.04	4.76	3.61	5.32	HS 72.26	130.1
5C1	7.25	8.96	6.48	10.03	0.00	259.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.200

Dead Load	Superimposed Dead Load
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	111.4

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	-2.23	19.04	-1.72	14.65	-3.35	15.67	-2.58	12.06
OPER	5C1	-3.56	14.77	-2.74	11.36	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	21.74	3.51	HS 70.16	126.3	
5C1	34.06	7.54	0.00	301.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.200Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	44.51 R	34.24	83.00	0.0	33.72	25.94	55.00	
		-33.97 L	-26.13	17.00	0.0	-24.77	-19.06	40.00	72.50
OPER	5C1	41.38 L	31.83	8.00	0.0	0.00	0.00	0.00	
		-30.05 L	-23.12	28.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.76	4.95	3.76	4.95	HS 75.15	135.3
5C1	6.74	9.32	6.74	9.32	0.00	269.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.300

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.80 R	49.85	85.50	0.0	49.03	37.71	57.50			
		-28.20 L	-21.69	17.00	0.0	-21.80	-16.77	40.00	0.00		
OPER	5C1	54.68 L	42.06	10.50	0.0	0.00	0.00	0.00			
		-27.14 L	-20.88	29.00	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	2.68	5.95	2.38	47.70	85.9
5C1	5.30	10.31	4.71	0.00	188.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.300

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	-3.31	15.42	-2.54	11.86	-5.06	13.46	-3.89	10.36
OPER	5C1	-4.96	12.37	-3.81	9.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.20	4.40	HS 87.95	158.3
5C1	24.15	9.14	0.00	365.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.300Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	64.80 R	49.85	85.50	0.0	49.03	37.71	57.50	
		-28.20 L	-21.69	17.00	0.0	-21.80	-16.77	40.00	0.00
OPER	5C1	54.68 L	42.06	10.50	0.0	0.00	0.00	0.00	
		-27.14 L	-20.88	29.00	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	2.48	6.18	2.48	6.18	HS 49.69	89.4
5C1	4.91	10.70	4.91	10.70	0.00	196.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.400

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.71 R	55.93	88.00	0.0	58.21	44.77	60.00			
		-22.43 L	-17.25	17.00	0.0	-19.24	-14.80	40.00	0.00		
OPER	5C1	62.98 R	48.45	72.00	0.0	0.00	0.00	0.00			
		-25.30 L	-19.46	30.50	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	2.34	7.65	2.07	41.49	74.7
5C1	4.50	11.30	3.99	0.00	159.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.400Dead 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	-6.72	12.58	-5.17	9.68	-6.98	11.22	-5.37	8.63
OPER	5C1	-6.52	10.09	-5.02	7.76	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.14	5.47	HS 109.47	197.0
5C1	18.09	11.38	0.00	455.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.400Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.71 R	55.93	88.00	0.0	58.21	44.77	60.00	
		-22.43 L	-17.25	17.00	0.0	-19.24	-14.80	40.00	0.00
OPER	5C1	62.98 R	48.45	72.00	0.0	0.00	0.00	0.00	
		-25.30 L	-19.46	30.50	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	2.16	7.94	2.16	7.94	HS 43.26	77.9
5C1	4.16	11.73	4.16	11.73	0.00	166.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.500

Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	70.98 R	54.60	76.50	0.0	61.82	47.55	62.50			
		-16.81 R	-12.93	108.00	0.0	-16.71	-12.85	85.00	0.00		
OPER	5C1	64.71 L	49.77	11.50	0.0	0.00	0.00	0.00			
		-24.53 R	-18.87	93.50	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	2.38	10.27	2.11	11.41	HS 42.16	75.9
5C1	4.35	11.74	3.85	13.04	0.00	154.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	-9.84	9.84	-7.57	7.57	-9.08	9.02	-6.98	6.94
OPER	5C1	-8.23	8.21	-6.33	6.32	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.09	7.10	HS 141.87	255.4
5C1	14.13	14.18	0.00	565.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.500

Dead Load Moment Superimposed Dead Load Moment

1.7 17.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	70.98 R	54.60	76.50	0.0	61.82	47.55	62.50	
		-16.81 R	-12.93	108.00	0.0	-16.71	-12.85	85.00	0.00
OPER	5C1	64.71 L	49.77	11.50	0.0	0.00	0.00	0.00	
		-24.53 R	-18.87	93.50	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	2.20	10.66	2.20	10.66	HS 43.98	79.2
5C1	4.02	12.18	4.02	12.18	0.00	160.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.600

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	72.73 L	55.95	37.00	0.0	58.16	44.73	65.00			
		-22.64 R	-17.42	108.00	0.0	-19.53	-15.02	85.00	0.00		
OPER	5C1	62.96 L	48.43	53.00	0.0	0.00	0.00	0.00			
		-25.37 R	-19.51	94.50	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	2.34	7.56	2.08	41.58	74.8
5C1	4.51	11.25	4.00	0.00	160.1

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 3.600
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -1.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.7	71.0
OPER	151.3	-114.5	118.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-12.58	6.73	-9.68	5.17	-11.28	6.93	-8.68	5.33
OPER	5C1	-10.08	6.51	-7.76	5.01	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.46	10.24	HS 109.22	196.6
5C1	11.35	18.17	0.00	454.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.600Dead Load Moment 1.5
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. 177.6	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.	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	72.73 L	55.95	37.00	0.0	58.16	44.73
		-22.64 R	-17.42	108.00	0.0	-19.53	-15.02
OPER	5C1	62.96 L	48.43	53.00	0.0	0.00	0.00
		-25.37 R	-19.51	94.50	0.0	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	2.17	7.84	2.17	7.84	HS 43.35	78.0
5C1	4.17	11.67	4.17	11.67	0.00	166.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.700

Dead Load Moment 0.9
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	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 L	49.87	39.50	0.0	48.92	37.63	67.50			
		-28.47 R	-21.90	108.00	0.0	-22.35	-17.20	85.00	0.00		
OPER	5C1	54.28 R	41.75	114.50	0.0	0.00	0.00	0.00			
		-27.24 R	-20.96	96.00	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	2.69	5.87	2.39	6.54	HS 47.90	86.2
5C1	5.36	10.22	4.77	11.40	0.00	190.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.700

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	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	-15.42	3.31	-11.86	2.55	-13.52	5.00	-10.40	3.84
OPER	5C1	-12.37	4.94	-9.52	3.80	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.39	14.40	HS 87.79	158.0	
5C1	9.12	24.26	0.00	364.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.700Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 L	49.87	39.50	0.0	48.92	37.63	67.50
		-28.47 R	-21.90	108.00	0.0	-22.35	-17.20	85.00
OPER	5C1	54.28 R	41.75	114.50	0.0	0.00	0.00	0.00
		-27.24 R	-20.96	96.00	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	2.49	6.09	2.49	6.09	HS 49.89	89.8
5C1	4.97	10.62	4.97	10.62	0.00	198.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.56 L	34.28	42.00	0.0	33.93	26.10	70.00			
		-34.30 R	-26.39	108.00	0.0	-26.56	-20.43	85.00	135.00		
OPER	5C1	40.79 R	31.38	117.00	0.0	0.00	0.00	0.00			
		-30.19 R	-23.22	97.00	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	4.06	4.68	3.63	5.24	HS 72.67	130.8
5C1	7.40	8.86	6.62	9.92	0.00	264.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-4.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	73.0
OPER	151.3	-111.1	121.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	2.21	-14.65	1.70	-15.73	3.29	-12.10	2.53
OPER	5C1	-14.77	3.55	-11.36	2.73	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.50	22.18	HS 70.02	126.0
5C1	7.52	34.22	0.00	300.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.800Dead Load Moment -0.1
Superimposed Dead Load Moment -1.1

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. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 L	34.28	42.00	0.0	33.93	26.10	70.00	
		-34.30 R	-26.39	108.00	0.0	-26.56	-20.43	85.00	135.00
OPER	5C1	40.79 R	31.38	117.00	0.0	0.00	0.00	0.00	
		-30.19 R	-23.22	97.00	0.0	0.00	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	3.78	4.87	75.57	136.0
5C1	6.88	9.21	0.00	275.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
 Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 L	9.35	44.50	0.0	18.80	14.46	72.50			
		-44.22 L	-34.02	66.00	0.0	-40.56	-31.20	85.00	62.50		
OPER	5C1	21.12 R	16.25	119.50	0.0	0.00	0.00	0.00			
		-35.07 R	-26.98	99.50	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	10.12	3.42	9.10	3.86	HS 68.42	123.2
5C1	15.02	7.19	13.50	8.10	0.00	287.6

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 3.900
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.6 -6.3 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.6	74.0
OPER	151.3	-109.4	123.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-22.58	2.31	-17.37	1.78	-17.84	2.35	-13.72	1.81
OPER	5C1	-17.17	2.36	-13.21	1.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.91	31.49	HS 58.15	104.7	
5C1	6.37	52.19	0.00	254.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 3.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
157.7								
OPER	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-
262.9								

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	12.15 L	9.35	44.50	0.0	18.80	14.46	72.50	
		-44.22 L	-34.02	66.00	0.0	-40.56	-31.20	85.00	62.50
OPER	5C1	21.12 R	16.25	119.50	0.0	0.00	0.00	0.00	
		-35.07 R	-26.98	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	9.44	3.57	9.44	3.57	HS 71.34	128.4
5C1	14.01	7.50	14.01	7.50	0.00	299.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.32 R	9.47	133.00	0.0	12.23	9.41	110.00			
		-73.89 L	-56.84	54.50	0.0	-67.97	-52.29	85.00	65.00		
OPER	5C1	9.56 R	7.36	159.50	0.0	0.00	0.00	0.00			
		-44.66 R	-34.35	80.00	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	16.40	1.89	14.84	2.15	HS 37.78	68.0
5C1	35.21	5.21	31.86	5.93	0.00	208.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	25.89	-17.37	19.91	-17.84	19.76	-13.72	15.20
OPER	5C1	-17.17	19.47	-13.21	14.98	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.94	89.9
5C1	5.53	5.54	0.00	221.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.32 R	9.47	133.00	0.0	12.23	9.41	110.00	
		-73.89 L	-56.84	54.50	0.0	-67.97	-52.29	85.00	65.00
OPER	5C1	9.56 R	7.36	159.50	0.0	0.00	0.00	0.00	
		-44.66 R	-34.35	80.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.37	1.98	15.37	1.98	HS 39.53	71.1
5C1	32.98	5.45	32.98	5.45	0.00	218.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.32 R	9.47	133.00	0.0	12.23	9.41	110.00			
		-73.89 L	-56.84	54.50	0.0	-67.97	-52.29	85.00	65.00		
OPER	5C1	9.56 R	7.36	159.50	0.0	0.00	0.00	0.00			
		-44.66 R	-34.35	80.00	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	16.40	1.89	14.84	2.15	HS 37.78
5C1	35.21	5.21	31.86	5.93	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.9	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.6	64.7
OPER	151.3	-107.7	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.89	25.89	-19.91	19.91	-19.77	19.76	-15.21	15.20
OPER	5C1	-19.47	19.47	-14.97	14.98	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.94	89.9
5C1	5.53	5.54	0.00	221.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.32 R	9.47	133.00	0.0	12.23	9.41	110.00	
		-73.89 L	-56.84	54.50	0.0	-67.97	-52.29	85.00	65.00
OPER	5C1	9.56 R	7.36	159.50	0.0	0.00	0.00	0.00	
		-44.66 R	-34.35	80.00	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	15.37	1.98	15.37	1.98	HS 39.53	71.1
5C1	32.98	5.45	32.98	5.45	0.00	218.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.100

Dead Load Superimposed Dead Load
Moment Moment
-1.6 -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 R	9.34	105.50	0.0	19.03	14.64	77.50			
		-44.21 R	-34.00	84.00	0.0	-40.60	-31.23	65.00	87.50		
OPER	5C1	21.08 L	16.21	30.50	0.0	0.00	0.00	0.00			
		-35.05 L	-26.97	50.50	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	10.01	3.42	9.00	68.39	123.1
5C1	15.06	7.19	13.54	0.00	287.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.23	22.58	-1.72	17.37	-2.39	17.83	-1.84	13.72
OPER	5C1	-2.37	17.18	-1.82	13.21	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	30.90	2.91	HS 58.19
5C1	51.95	6.37	0.00
			Load Capacity (tons)
			104.7
			255.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.100Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 R	9.34	105.50	0.0	19.03	14.64	77.50	
		-44.21 R	-34.00	84.00	0.0	-40.60	-31.23	65.00	87.50
OPER	5C1	21.08 L	16.21	30.50	0.0	0.00	0.00	0.00	
		-35.05 L	-26.97	50.50	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	3.57	9.34	3.57	HS 71.31	128.4
5C1	14.05	7.49	14.05	7.49	0.00	299.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.56 R	34.28	108.00	0.0	33.36	25.66	80.00			
		-34.30 L	-26.38	42.00	0.0	-26.72	-20.55	65.00	15.00		
OPER	5C1	40.76 L	31.35	33.00	0.0	0.00	0.00	0.00			
		-30.18 L	-23.22	53.00	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	4.07	4.67	3.64	5.23	HS 72.80	131.0
5C1	7.42	8.85	6.63	9.91	0.00	265.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	19.04	-1.72	14.65	-3.33	15.72	-2.56	12.10
OPER	5C1	-3.56	14.77	-2.74	11.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.93	3.50	HS 70.07	126.1
5C1	34.10	7.53	0.00	301.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 R	34.28	108.00	0.0	33.36	25.66	80.00	
		-34.30 L	-26.38	42.00	0.0	-26.72	-20.55	65.00	15.00
OPER	5C1	40.76 L	31.35	33.00	0.0	0.00	0.00	0.00	
		-30.18 L	-23.22	53.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.79	4.86	3.79	4.86	HS 75.69	136.2
5C1	6.89	9.20	6.89	9.20	0.00	275.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 R	49.87	110.50	0.0	48.73	37.49	82.50			
		-28.47 L	-21.90	42.00	0.0	-22.50	-17.31	65.00	0.00		
OPER	5C1	54.26 L	41.74	35.50	0.0	0.00	0.00	0.00			
		-27.24 L	-20.96	54.00	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	2.70	5.86	2.40	6.53	HS 48.03	86.4
5C1	5.37	10.20	4.78	11.37	0.00	191.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 3.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.9	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	15.42	-2.55	11.86	-5.03	13.51	-3.87	10.40
OPER	5C1	-4.96	12.37	-3.81	9.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.29	4.39	HS 87.84	158.1
5C1	24.17	9.12	0.00	365.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 R	49.87	110.50	0.0	48.73	37.49	82.50
		-28.47 L	-21.90	42.00	0.0	-22.50	-17.31	65.00
OPER	5C1	54.26 L	41.74	35.50	0.0	0.00	0.00	0.00
		-27.24 L	-20.96	54.00	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	2.50	6.08	2.50	6.08	HS 50.01	90.0
5C1	4.98	10.59	4.98	10.59	0.00	199.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.400

Dead Load Moment Superimposed Dead Load Moment
1.4 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 R	55.95	113.00	0.0	57.97	44.60	85.00			
		-22.64 L	-17.42	42.00	0.0	-19.79	-15.23	65.00	0.00		
OPER	5C1	62.96 R	48.43	97.00	0.0	0.00	0.00	0.00			
		-25.38 L	-19.52	55.50	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	2.35	7.54	2.09	8.38	HS 41.72
5C1	4.52	11.21	4.02	12.47	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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 68.7
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	-6.73	12.58	-5.17	9.68	-6.96	11.27	-5.35	8.67
OPER	5C1	-6.53	10.09	-5.02	7.76	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.19	5.47	HS 109.29	196.7
5C1	18.10	11.36	0.00	454.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.400

Dead Load Moment Superimposed Dead Load Moment

1.4 14.4

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.73 R	55.95	113.00	0.0	57.97	44.60	85.00	
		-22.64 L	-17.42	42.00	0.0	-19.79	-15.23	65.00	0.00
OPER	5C1	62.96 R	48.43	97.00	0.0	0.00	0.00	0.00	
		-25.38 L	-19.52	55.50	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	2.17	7.82	2.17	7.82	HS 43.50	78.3
5C1	4.19	11.63	4.19	11.63	0.00	167.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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. S04
Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.814

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.500

Dead Load Moment 1.6
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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	70.99 R	54.61	101.50	0.0	61.65	47.42	87.50			
		-16.82 R	-12.94	133.00	0.0	-17.09	-13.15	110.00	0.00		
OPER	5C1	64.48 R	49.60	138.50	0.0	0.00	0.00	0.00			
		-24.56 R	-18.90	118.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.39	10.07	2.12	11.19	HS 42.35	76.2
5C1	4.38	11.68	3.88	12.98	0.00	155.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	-9.84	9.84	-7.57	7.57	-9.06	9.07	-6.97	6.98
OPER	5C1	-8.23	8.23	-6.33	6.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.10	7.09	HS 141.79	255.2
5C1	14.15	14.12	0.00	564.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	70.99 R	54.61	101.50	0.0	61.65	47.42	87.50	
		-16.82 R	-12.94	133.00	0.0	-17.09	-13.15	110.00	0.00
OPER	5C1	64.48 R	49.60	138.50	0.0	0.00	0.00	0.00	
		-24.56 R	-18.90	118.50	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	2.21	10.44	2.21	10.44	HS 44.16	79.5
5C1	4.05	12.11	4.05	12.11	0.00	162.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.814

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.600

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	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 L	55.95	62.00	0.0	58.04	44.65	90.00			
		-22.65 R	-17.42	133.00	0.0	-19.78	-15.22	110.00	0.00		
OPER	5C1	62.97 L	48.44	78.00	0.0	0.00	0.00	0.00			
		-25.39 R	-19.53	119.50	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	2.35	7.54	2.09	41.70	75.1
5C1	4.52	11.21	4.01	0.00	160.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.600

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	-68.8	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	-12.58	6.73	-9.68	5.17	-11.26	6.98	-8.66	5.37
OPER	5C1	-10.09	6.53	-7.76	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.47	10.16	HS 109.36	196.8
5C1	11.37	18.09	0.00	454.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.600

Dead Load Moment Superimposed Dead Load Moment

1.4 14.5

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+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	72.73 L	55.95	62.00	0.0	58.04	44.65	90.00	
		-22.65 R	-17.42	133.00	0.0	-19.78	-15.22	110.00	0.00
OPER	5C1	62.97 L	48.44	78.00	0.0	0.00	0.00	0.00	
		-25.39 R	-19.53	119.50	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	2.17	7.82	2.17	7.82	HS 43.47	78.2
5C1	4.18	11.63	4.18	11.63	0.00	167.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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 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. S04
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.814

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	64.84 L	49.88	64.50	0.0	48.87	37.59	92.50			
		-28.48 R	-21.90	133.00	0.0	-22.47	-17.28	110.00	0.00		
OPER	5C1	54.28 R	41.75	139.50	0.0	0.00	0.00	0.00			
		-27.25 R	-20.96	121.00	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	2.69	5.86	2.40	6.53	HS 47.96	86.3
5C1	5.36	10.21	4.77	11.38	0.00	191.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.700

Dead Load	Superimposed Dead Load
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	-15.42	3.31	-11.86	2.55	-13.50	5.05	-10.38	3.88
OPER	5C1	-12.37	4.96	-9.52	3.81	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.39	14.24	HS 87.90	158.2	
5C1	9.13	24.16	0.00	365.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 L	49.88	64.50	0.0	48.87	37.59	92.50
		-28.48 R	-21.90	133.00	0.0	-22.47	-17.28	110.00
OPER	5C1	54.28 R	41.75	139.50	0.0	0.00	0.00	0.00
		-27.25 R	-20.96	121.00	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	2.50	6.09	2.50	6.09	HS 49.95	89.9
5C1	4.97	10.60	4.97	10.60	0.00	198.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.92	28.67	28.67	1.699	999999.000	95.814

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	181.1	-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	44.56 L	34.28	67.00	0.0	33.95	26.11	95.00			
		-34.30 R	-26.39	133.00	0.0	-26.55	-20.42	110.00	160.00		
OPER	5C1	40.79 R	31.38	142.00	0.0	0.00	0.00	0.00			
		-30.19 R	-23.22	122.00	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	4.06	4.68	3.63	5.24	72.66
5C1	7.40	8.86	6.61	9.92	0.00

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 4.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -4.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.9
OPER	151.3	-111.3	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-19.04	2.23	-14.65	1.72	-15.71	3.34	-12.08	2.57
OPER	5C1	-14.77	3.56	-11.36	2.74	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.51	21.80	HS 70.11	126.2	
5C1	7.53	34.09	0.00	301.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.800Dead Load Moment -0.1
Superimposed Dead Load Moment -1.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 L	34.28	67.00	0.0	33.95	26.11	95.00	
		-34.30 R	-26.39	133.00	0.0	-26.55	-20.42	110.00	160.00
OPER	5C1	40.79 R	31.38	142.00	0.0	0.00	0.00	0.00	
		-30.19 R	-23.22	122.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.78	4.87	3.78	4.87	HS 75.55	136.0
5C1	6.88	9.22	6.88	9.22	0.00	275.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 4.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.92	28.67	28.67	1.699	999999.000	95.814

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 L	9.34	69.50	0.0	18.95	14.57	97.50			
		-44.22 L	-34.02	91.00	0.0	-40.49	-31.15	110.00		87.50	
OPER	5C1	21.12 R	16.24	144.50	0.0	0.00	0.00	0.00			
		-35.07 R	-26.97	124.50	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	10.03	3.43	9.02	3.86	HS 68.55 123.4
5C1	15.00	7.20	13.48	8.12	0.00 288.1

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 4.900
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.6 -6.2 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	2.33	-17.37	1.79	-17.81	2.41	-13.70	1.85
OPER	5C1	-17.18	2.37	-13.21	1.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.91	30.67	HS 58.23	104.8	
5C1	6.38	51.93	0.00	255.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 4.900Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.0	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
OPER 263.3	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.15 L	9.34	69.50	0.0	18.95	14.57	97.50	
		-44.22 L	-34.02	91.00	0.0	-40.49	-31.15	110.00	87.50
OPER	5C1	21.12 R	16.24	144.50	0.0	0.00	0.00	0.00	
		-35.07 R	-26.97	124.50	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	9.36	3.57	9.36	3.57	HS 71.46	128.6
5C1	13.99	7.51	13.99	7.51	0.00	300.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.814

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.31 R	9.47	158.00	0.0	12.51	9.63	135.00			
		-73.89 L	-56.84	79.50	0.0	-67.83	-52.18	110.00		90.00	
OPER	5C1	9.56 R	7.36	184.50	0.0	0.00	0.00	0.00			
		-44.62 R	-34.33	105.00	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	16.10	1.90	14.57	2.15	37.92
5C1	35.12	5.23	31.78	5.95	0.00

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 5.000
 HS20 5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	25.89	-17.37	19.91	-17.81	19.75	-13.70	15.19
OPER	5C1	-17.18	19.47	-13.21	14.98	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.99	90.0
5C1	5.54	5.54	0.00	221.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.31 R	9.47	158.00	0.0	12.51	9.63	135.00	
		-73.89 L	-56.84	79.50	0.0	-67.83	-52.18	110.00	90.00
OPER	5C1	9.56 R	7.36	184.50	0.0	0.00	0.00	0.00	
		-44.62 R	-34.33	105.00	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	15.08	1.98	15.08	1.98	HS 39.66	71.4
5C1	32.90	5.47	32.90	5.47	0.00	218.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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 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. S04
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.794

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.31 R	9.47	158.00	0.0	12.51	9.63	135.00			
		-73.89 L	-56.84	79.50	0.0	-67.83	-52.18	110.00	90.00		
OPER	5C1	9.56 R	7.36	184.50	0.0	0.00	0.00	0.00			
		-44.62 R	-34.33	105.00	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	16.10	1.90	14.57	2.15	HS 37.92
5C1	35.12	5.23	31.78	5.95	0.00 68.2 209.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.89	25.89	-19.91	19.91	-19.74	19.75	-15.19	15.19
OPER	5C1	-19.47	19.47	-14.97	14.98	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.99	90.0
5C1	5.54	5.54	0.00	221.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.31 R	9.47	158.00	0.0	12.51	9.63	135.00	
		-73.89 L	-56.84	79.50	0.0	-67.83	-52.18	110.00	90.00
OPER	5C1	9.56 R	7.36	184.50	0.0	0.00	0.00	0.00	
		-44.62 R	-34.33	105.00	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	15.08	1.98	15.08	1.98	HS 39.66	71.4
5C1	32.90	5.47	32.90	5.47	0.00	218.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.794

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		24.97		104.8

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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 R	9.34	130.50	0.0	19.27	14.83	102.50			
		-44.22 R	-34.02	109.00	0.0	-40.49	-31.14	90.00	112.50		
OPER	5C1	21.11 L	16.24	55.50	0.0	0.00	0.00	0.00			
		-35.07 L	-26.97	75.50	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	9.86	3.43	8.86	3.86	HS 68.56	123.4
5C1	15.00	7.20	13.48	8.12	0.00	288.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	22.58	-1.72	17.37	-2.41	17.82	-1.85	13.71
OPER	5C1	-2.37	17.18	-1.82	13.21	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	30.70	2.91	HS 58.22	104.8
5C1	51.93	6.38	0.00	255.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
158.0								
OPER	279.4	-279.4	279.4	-279.4	295.4	-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	12.15 R	9.34	130.50	0.0	19.27	14.83	102.50	
		-44.22 R	-34.02	109.00	0.0	-40.49	-31.14	90.00	112.50
OPER	5C1	21.11 L	16.24	55.50	0.0	0.00	0.00	0.00	
		-35.07 L	-26.97	75.50	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	9.20	3.57	9.20	3.57	HS 71.48	128.7
5C1	13.99	7.51	13.99	7.51	0.00	300.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.794

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	44.56 R	34.28	133.00	0.0	33.57	25.82	105.00			
		-34.30 L	-26.39	67.00	0.0	-26.49	-20.38	90.00	40.00		
OPER	5C1	40.79 L	31.37	58.00	0.0	0.00	0.00	0.00			
		-30.19 L	-23.22	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	4.06	4.68	3.63	5.24	HS 72.63	130.7
5C1	7.40	8.86	6.61	9.92	0.00	264.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	19.04	-1.72	14.65	-3.34	15.72	-2.57	12.09
OPER	5C1	-3.56	14.77	-2.74	11.36	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	21.82	3.51	HS 70.10	126.2	
5C1	34.09	7.53	0.00	301.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.200

Dead Load Moment Superimposed Dead Load Moment

-0.1 -0.9

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+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	44.56 R	34.28	133.00	0.0	33.57	25.82	105.00	
		-34.30 L	-26.39	67.00	0.0	-26.49	-20.38	90.00	40.00
OPER	5C1	40.79 L	31.37	58.00	0.0	0.00	0.00	0.00	
		-30.19 L	-23.22	78.00	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	3.78	4.87	3.78	4.87	HS 75.52	135.9
5C1	6.88	9.22	6.88	9.22	0.00	275.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.794

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.300

Dead Load Moment 0.9
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	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 R	49.88	135.50	0.0	48.90	37.62	107.50			
		-28.48 L	-21.90	67.00	0.0	-22.42	-17.25	90.00	0.00		
OPER	5C1	54.28 L	41.75	60.50	0.0	0.00	0.00	0.00			
		-27.25 L	-20.96	79.00	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	2.69	5.86	2.40	47.93	86.3
5C1	5.36	10.21	4.77	0.00	190.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.300Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.3 0.0 3.1

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)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	-3.31	15.42	-2.55	11.86	-5.05	13.51	-3.88	10.39
OPER	5C1	-4.96	12.37	-3.81	9.52	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.24	4.39	HS 87.88	158.2
5C1	24.16	9.13	0.00	365.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.300Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 R	49.88	135.50	0.0	48.90	37.62	107.50	
		-28.48 L	-21.90	67.00	0.0	-22.42	-17.25	90.00	0.00
OPER	5C1	54.28 L	41.75	60.50	0.0	0.00	0.00	0.00	
		-27.25 L	-20.96	79.00	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	2.50	6.09	2.50	6.09	HS 49.92	89.9
5C1	4.97	10.61	4.97	10.61	0.00	198.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.794

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.97		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.400

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 R	55.95	138.00	0.0	58.11	44.70	110.00			
		-22.65 L	-17.42	67.00	0.0	-19.73	-15.18	90.00	0.00		
OPER	5C1	62.97 R	48.44	122.00	0.0	0.00	0.00	0.00			
		-25.39 L	-19.53	80.50	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	2.35	7.55	2.08	8.39	HS 41.66	75.0
5C1	4.52	11.22	4.01	12.48	0.00	160.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-6.73	12.58	-5.17	9.68	-6.97	11.27	-5.37	8.67
OPER	5C1	-6.53	10.09	-5.02	7.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.16	5.47	HS 109.34	196.8
5C1	18.10	11.36	0.00	454.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.400Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

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. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.73 R	55.95	138.00	0.0	58.11	44.70
		-22.65 L	-17.42	67.00	0.0	-19.73	-15.18
OPER	5C1	62.97 R	48.44	122.00	0.0	0.00	0.00
		-25.39 L	-19.53	80.50	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating top fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.17	7.83	2.17	7.83	HS 43.43	78.2
5C1	4.18	11.64	4.18	11.64	0.00	167.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.794

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.500

Dead Load Moment Superimposed Dead Load Moment
1.6 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	70.99 R	54.61	126.50	0.0	61.74	47.49	112.50			
		-16.82 R	-12.94	158.00	0.0	-17.05	-13.11	135.00	0.00		
OPER	5C1	64.48 R	49.60	163.50	0.0	0.00	0.00	0.00			
		-24.57 R	-18.90	143.50	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	2.38	10.10	2.12	11.23	HS 42.30	76.1
5C1	4.38	11.69	3.88	12.99	0.00	155.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.0	0.0
	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.3	-116.4	116.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.84	9.84	-7.57	7.57	-9.07	9.07	-6.98	6.97
OPER	5C1	-8.23	8.23	-6.33	6.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.10	7.09	HS 141.84	255.3
5C1	14.14	14.13	0.00	565.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	70.99 R	54.61	126.50	0.0	61.74	47.49	112.50	
		-16.82 R	-12.94	158.00	0.0	-17.05	-13.11	135.00	0.00
OPER	5C1	64.48 R	49.60	163.50	0.0	0.00	0.00	0.00	
		-24.57 R	-18.90	143.50	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	2.21	10.48	2.21	10.48	HS 44.12	79.4
5C1	4.05	12.12	4.05	12.12	0.00	161.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.30	18.30	10.47	10.47	1330.0	1330.0

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	390.83

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.600

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 L	55.95	87.00	0.0	58.10	44.69	115.00			
		-22.65 R	-17.42	158.00	0.0	-19.75	-15.19	135.00	0.00		
OPER	5C1	62.97 L	48.44	103.00	0.0	0.00	0.00	0.00			
		-25.39 R	-19.53	144.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.35	7.54	2.08	8.39	HS 41.67	75.0
5C1	4.52	11.22	4.01	12.48	0.00	160.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.600

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	-68.8	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	-12.58	6.73	-9.68	5.17	-11.27	6.97	-8.67	5.36
OPER	5C1	-10.09	6.53	-7.76	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.47	10.17	HS 109.31	196.8
5C1	11.36	18.10	0.00	454.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.600Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

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. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.73 L	55.95	87.00	0.0	58.10	44.69
		-22.65 R	-17.42	158.00	0.0	-19.75	-15.19
OPER	5C1	62.97 L	48.44	103.00	0.0	0.00	0.00
		-25.39 R	-19.53	144.50	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.17	7.83	2.17	7.83	HS 43.44	78.2
5C1	4.18	11.64	4.18	11.64	0.00	167.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 L	49.88	89.50	0.0	48.89	37.61	117.50			
		-28.48 R	-21.90	158.00	0.0	-22.46	-17.28	135.00	0.00		
OPER	5C1	54.28 R	41.76	164.50	0.0	0.00	0.00	0.00			
		-27.25 R	-20.96	146.00	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	2.69	5.86	2.40	6.54	HS 47.95	86.3
5C1	5.36	10.21	4.77	11.38	0.00	190.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.700

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	119.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.42	3.31	-11.86	2.55	-13.51	5.04	-10.39	3.88
OPER	5C1	-12.37	4.96	-9.52	3.81	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.39	14.26	HS 87.86	158.1	
5C1	9.13	24.17	0.00	365.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.700Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 L	49.88	89.50	0.0	48.89	37.61	117.50	
		-28.48 R	-21.90	158.00	0.0	-22.46	-17.28	135.00	0.00
OPER	5C1	54.28 R	41.76	164.50	0.0	0.00	0.00	0.00	
		-27.25 R	-20.96	146.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.50	6.09	2.50	6.09	HS 49.94	89.9
5C1	4.97	10.60	4.97	10.60	0.00	198.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.800

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.56 L	34.28	92.00	0.0	33.93	26.10	120.00			
		-34.30 R	-26.39	158.00	0.0	-26.56	-20.43	135.00	185.00		
OPER	5C1	40.79 R	31.38	167.00	0.0	0.00	0.00	0.00			
		-30.19 R	-23.22	147.00	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	4.06	4.68	3.63	5.24	HS 72.67	130.8
5C1	7.40	8.86	6.62	9.92	0.00	264.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	2.23	-14.65	1.72	-15.72	3.34	-12.09	2.57
OPER	5C1	-14.77	3.56	-11.36	2.74	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.50	21.86	HS 70.08	126.1	
5C1	7.53	34.10	0.00	301.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.800

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	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 L	34.28	92.00	0.0	33.93	26.10	120.00	
		-34.30 R	-26.39	158.00	0.0	-26.56	-20.43	135.00	185.00
OPER	5C1	40.79 R	31.38	167.00	0.0	0.00	0.00	0.00	
		-30.19 R	-23.22	147.00	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	3.78	4.87	3.78	4.87	HS 75.57	136.0
5C1	6.88	9.21	6.88	9.21	0.00	275.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 L	9.34	94.50	0.0	18.91	14.55	122.50			
		-44.22 L	-34.02	116.00	0.0	-40.54	-31.18	135.00	112.50		
OPER	5C1	21.11 R	16.24	169.50	0.0	0.00	0.00	0.00			
		-35.07 R	-26.97	149.50	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	10.05	3.42	9.04	3.86	HS 68.50
5C1	15.01	7.20	13.49	8.11	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	2.33	-17.37	1.79	-17.83	2.40	-13.71	1.85
OPER	5C1	-17.18	2.37	-13.21	1.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.91	30.78	HS 58.21	104.8	
5C1	6.38	51.94	0.00	255.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 5.900Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.15 L	9.34	94.50	0.0	18.91	14.55	122.50	
		-44.22 L	-34.02	116.00	0.0	-40.54	-31.18	135.00	112.50
OPER	5C1	21.11 R	16.24	169.50	0.0	0.00	0.00	0.00	
		-35.07 R	-26.97	149.50	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	9.38	3.57	9.38	3.57	HS 71.42	128.6
5C1	14.00	7.51	14.00	7.51	0.00	300.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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 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. S04
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.31 L	9.47	67.00	0.0	12.46	9.58	90.00			
		-73.89 R	-56.84	145.50	0.0	-67.92	-52.25	115.00	135.00		
OPER	5C1	9.56 L	7.35	40.50	0.0	0.00	0.00	0.00			
		-44.62 R	-34.32	130.00	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	16.19	1.89	14.65	2.15	37.87
5C1	35.15	5.23	31.81	5.94	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	25.89	-17.37	19.91	-17.83	19.76	-13.71	15.20
OPER	5C1	-17.18	19.47	-13.21	14.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.98	90.0
5C1	5.54	5.54	0.00	221.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.4	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
OPER 243.9	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.31 L	9.47	67.00	0.0	12.46	9.58	90.00	
		-73.89 R	-56.84	145.50	0.0	-67.92	-52.25	115.00	135.00
OPER	5C1	9.56 L	7.35	40.50	0.0	0.00	0.00	0.00	
		-44.62 R	-34.32	130.00	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	15.16	1.98	15.16	1.98	HS 39.61	71.3
5C1	32.93	5.47	32.93	5.47	0.00	218.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.7	-139.9	182.5	-159.1
OPER	300.6C	-268.7	268.7	-300.6C	336.1	-233.2	304.1	-265.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.31 L	9.47	67.00	0.0	12.46	9.58	90.00			
		-73.89 R	-56.84	145.50	0.0	-67.92	-52.25	115.00	135.00		
OPER	5C1	9.56 L	7.35	40.50	0.0	0.00	0.00	0.00			
		-44.62 R	-34.32	130.00	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	16.19	1.89	14.65	2.15	HS 37.87	68.2
5C1	35.15	5.23	31.81	5.94	0.00	209.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.8	107.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.89	25.89	-19.91	19.91	-19.76	19.76	-15.20	15.20
OPER	5C1	-19.47	19.47	-14.97	14.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.98	90.0
5C1	5.54	5.54	0.00	221.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.2

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I		top fiber		bottom fi	
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV.	153.5	-181.8	153.5	-181.8	188.9	-146.4	188.9	-
146.4								
OPER	279.4	-279.4	279.4	-279.4	314.9	-243.9	314.9	-
243.9								

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	12.31 L	9.47	67.00	0.0	12.46	9.58	90.00	
		-73.89 R	-56.84	145.50	0.0	-67.92	-52.25	115.00	135.00
OPER	5C1	9.56 L	7.35	40.50	0.0	0.00	0.00	0.00	
		-44.62 R	-34.32	130.00	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	15.16	1.98	15.16	1.98
5C1	32.93	5.47	32.93	5.47
HS	39.61	71.3	0.00	218.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.100

	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. S04
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -14.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.1	-151.5	170.9	-170.7
OPER	300.6C	-268.7	268.7	-300.6C	316.9	-252.4	284.9	-284.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 R	9.34	155.50	0.0	19.23	14.79	127.50			
		-44.22 R	-34.02	134.00	0.0	-40.56	-31.20	115.00	137.50		
OPER	5C1	21.12 L	16.24	80.50	0.0	0.00	0.00	0.00			
		-35.07 L	-26.97	100.50	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	9.89	3.42	8.89	3.86	HS 68.50
5C1	15.01	7.20	13.49	8.11	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	22.58	-1.72	17.37	-2.40	17.83	-1.85	13.71
OPER	5C1	-2.37	17.18	-1.82	13.21	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	30.78	2.91	HS 58.21	104.8	
5C1	51.94	6.38	0.00	255.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.100Dead Load Moment -1.5
Superimposed Dead Load Moment -14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.9	161.2	-174.1	161.2	-174.1	177.4	-157.9	177.4	-
OPER 263.2	279.4	-279.4	279.4	-279.4	295.6	-263.2	295.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.15 R	9.34	155.50	0.0	19.23	14.79	127.50	
		-44.22 R	-34.02	134.00	0.0	-40.56	-31.20	115.00	137.50
OPER	5C1	21.12 L	16.24	80.50	0.0	0.00	0.00	0.00	
		-35.07 L	-26.97	100.50	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	9.22	3.57	9.22	3.57	HS 71.42	128.6
5C1	14.00	7.51	14.00	7.51	0.00	300.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.56 R	34.28	158.00	0.0	33.54	25.80	130.00			
		-34.30 L	-26.39	92.00	0.0	-26.55	-20.42	115.00		65.00	
OPER	5C1	40.79 L	31.38	83.00	0.0	0.00	0.00	0.00			
		-30.19 L	-23.22	103.00	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	4.06	4.68	3.63	5.24	HS 72.67	130.8
5C1	7.40	8.86	6.62	9.92	0.00	264.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.7
OPER	151.3	-121.5	111.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	19.04	-1.72	14.65	-3.34	15.72	-2.57	12.09
OPER	5C1	-3.56	14.77	-2.74	11.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.86	3.50	HS 70.08	126.2
5C1	34.10	7.53	0.00	301.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.200

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.1

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. 166.9	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 R	34.28	158.00	0.0	33.54	25.80	130.00	
		-34.30 L	-26.39	92.00	0.0	-26.55	-20.42	115.00	65.00
OPER	5C1	40.79 L	31.38	83.00	0.0	0.00	0.00	0.00	
		-30.19 L	-23.22	103.00	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	3.78	4.87	3.78	4.87	HS 75.57	136.0
5C1	6.88	9.21	6.88	9.21	0.00	275.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.92	28.67	28.67	1.699	999999.000	95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.6	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.1	-310.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 R	49.88	160.50	0.0	48.89	37.61	132.50			
		-28.48 L	-21.90	92.00	0.0	-22.46	-17.28	115.00	0.00		
OPER	5C1	54.28 L	41.76	85.50	0.0	0.00	0.00	0.00			
		-27.25 L	-20.96	104.00	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	2.69	5.86	2.40	6.54	HS 47.95	86.3
5C1	5.36	10.21	4.77	11.38	0.00	190.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.7
OPER	151.3	-119.8	112.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	15.42	-2.55	11.86	-5.04	13.51	-3.88	10.39
OPER	5C1	-4.96	12.37	-3.81	9.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.26	4.39	HS 87.86	158.1
5C1	24.17	9.13	0.00	365.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.9	-173.4	161.9	-
OPER 289.0	279.4	-279.4	279.4	-279.4	269.8	-289.0	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 R	49.88	160.50	0.0	48.89	37.61	132.50	
		-28.48 L	-21.90	92.00	0.0	-22.46	-17.28	115.00	0.00
OPER	5C1	54.28 L	41.76	85.50	0.0	0.00	0.00	0.00	
		-27.25 L	-20.96	104.00	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	2.50	6.09	2.50	6.09	HS 49.94	89.9
5C1	4.97	10.60	4.97	10.60	0.00	198.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.922

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		25.34		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.400

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.0
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.6	-316.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 R	55.95	163.00	0.0	58.10	44.69	135.00			
		-22.65 L	-17.42	92.00	0.0	-19.75	-15.19	115.00	0.00		
OPER	5C1	62.97 R	48.44	147.00	0.0	0.00	0.00	0.00			
		-25.39 L	-19.53	105.50	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	2.35	7.54	2.08	41.67	75.0
5C1	4.52	11.22	4.01	0.00	160.4

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 6.400
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.2 0.0 1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-6.73	12.58	-5.17	9.68	-6.97	11.27	-5.36	8.67
OPER	5C1	-6.53	10.09	-5.02	7.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.17	5.47	HS 109.31	196.8
5C1	18.10	11.36	0.00	454.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 14.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	158.0	-177.3	158.0	-
OPER 295.5	279.4	-279.4	279.4	-279.4	263.3	-295.5	263.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.73 R	55.95	163.00	0.0	58.10	44.69	135.00	
		-22.65 L	-17.42	92.00	0.0	-19.75	-15.19	115.00	0.00
OPER	5C1	62.97 R	48.44	147.00	0.0	0.00	0.00	0.00	
		-25.39 L	-19.53	105.50	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	2.17	7.83	2.17	7.83	HS 43.44	78.2
5C1	4.18	11.64	4.18	11.64	0.00	167.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.500

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	169.3	-172.2	150.1	-191.4
OPER	300.6C	-268.7	268.7	-300.6C	282.2	-287.1	250.2	-319.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	70.99 L	54.61	123.50	0.0	61.74	47.49	137.50			
		-16.82 L	-12.94	92.00	0.0	-17.05	-13.11	115.00	0.00		
OPER	5C1	64.48 L	49.60	86.50	0.0	0.00	0.00	0.00			
		-24.57 L	-18.90	106.50	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	2.38	10.10	2.12	42.30	76.1
5C1	4.38	11.69	3.88	0.00	155.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.500

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	-116.4	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	-9.84	9.84	-7.57	7.57	-9.07	9.07	-6.97	6.98
OPER	5C1	-8.23	8.23	-6.33	6.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.10	7.09	HS 141.82	255.3
5C1	14.14	14.12	0.00	564.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	175.0	-160.3	175.0	-160.3	156.6	-178.7	156.6	-
OPER 297.8	279.4	-279.4	279.4	-279.4	261.0	-297.8	261.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	70.99 L	54.61	123.50	0.0	61.74	47.49	137.50	
		-16.82 L	-12.94	92.00	0.0	-17.05	-13.11	115.00	0.00
OPER	5C1	64.48 L	49.60	86.50	0.0	0.00	0.00	0.00	
		-24.57 L	-18.90	106.50	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	2.21	10.48	2.21	10.48	HS 44.12	79.4
5C1	4.05	12.12	4.05	12.12	0.00	161.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.600

Dead Load Moment 1.4
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	170.7	-170.9	151.5	-190.1
OPER	300.6C	-268.7	268.7	-300.6C	284.5	-284.8	252.5	-316.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 L	55.95	112.00	0.0	58.11	44.70	140.00			
		-22.65 R	-17.42	183.00	0.0	-19.73	-15.18	160.00	0.00		
OPER	5C1	62.97 L	48.44	128.00	0.0	0.00	0.00	0.00			
		-25.39 R	-19.53	169.50	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	2.35	7.55	2.08	8.39	HS 41.66	75.0
5C1	4.52	11.22	4.01	12.48	0.00	160.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.600

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	-68.8	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/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-12.58	6.73	-9.68	5.17	-11.27	6.97	-8.67	5.37
OPER	5C1	-10.09	6.53	-7.76	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.47	10.16	HS 109.34	196.8
5C1	11.36	18.10	0.00	454.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.600

Dead Load Moment Superimposed Dead Load Moment

1.4 14.7

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	174.1	-161.2	174.1	-161.2	157.9	-177.3	157.9	-
OPER 295.6	279.4	-279.4	279.4	-279.4	263.2	-295.6	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.73 L	55.95	112.00	0.0	58.11	44.70	140.00	
		-22.65 R	-17.42	183.00	0.0	-19.73	-15.18	160.00	0.00
OPER	5C1	62.97 L	48.44	128.00	0.0	0.00	0.00	0.00	
		-25.39 R	-19.53	169.50	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
HS20	2.17	7.83	2.17	7.83
5C1	4.18	11.64	4.18	11.64

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.700

	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. S04
Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.700

Dead Load Moment 0.9
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	174.6	-167.0	155.4	-186.2
OPER	300.6C	-268.7	268.7	-300.6C	291.0	-278.3	259.0	-310.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 L	49.88	114.50	0.0	48.90	37.62	142.50			
		-28.48 R	-21.90	183.00	0.0	-22.42	-17.25	160.00	0.00		
OPER	5C1	54.28 R	41.75	189.50	0.0	0.00	0.00	0.00			
		-27.25 R	-20.96	171.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.69	5.86	2.40	47.93	86.3
5C1	5.36	10.21	4.77	0.00	190.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.700

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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-15.42	3.31	-11.86	2.55	-13.51	5.05	-10.39	3.88
OPER	5C1	-12.37	4.96	-9.52	3.81	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.39	14.24	HS 87.88	158.2	
5C1	9.13	24.16	0.00	365.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.700Dead Load Moment 0.9
Superimposed Dead Load Moment 8.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.4	171.5	-163.8	171.5	-163.8	161.8	-173.4	161.8	-
OPER 289.1	279.4	-279.4	279.4	-279.4	269.7	-289.1	269.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 L	49.88	114.50	0.0	48.90	37.62	142.50
		-28.48 R	-21.90	183.00	0.0	-22.42	-17.25	160.00
OPER	5C1	54.28 R	41.75	189.50	0.0	0.00	0.00	0.00
		-27.25 R	-20.96	171.00	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	2.50	6.09	2.50	6.09	HS 49.92	89.9
5C1	4.97	10.61	4.97	10.61	0.00	198.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

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		24.90	
			109.1
			104.8

Braced Non Compact Values (B)

24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top 24.00	200.93	0.00
bott 24.00		0.00

Non Compact Values (N)

Cb	lambda	Rb	Mr	Lp	Lr
top 0.00	0.	0.000	0.00	0.0	0.00
bott 0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.800

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	44.56 L	34.28	117.00	0.0	33.96	26.12	145.00			
		-34.30 R	-26.39	183.00	0.0	-26.49	-20.38	160.00		210.00	
OPER	5C1	40.79 R	31.37	192.00	0.0	0.00	0.00	0.00			
		-30.19 R	-23.22	172.00	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	4.06	4.68	3.63	5.24	72.63
5C1	7.40	8.86	6.61	9.92	0.00

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 6.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -4.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-19.04	2.23	-14.65	1.72	-15.72	3.34	-12.09	2.57
OPER	5C1	-14.77	3.56	-11.36	2.74	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.51	21.82	HS 70.10	126.2	
5C1	7.53	34.09	0.00	301.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.800

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	44.56 L	34.28	117.00	0.0	33.96	26.12	145.00	
		-34.30 R	-26.39	183.00	0.0	-26.49	-20.38	160.00	210.00
OPER	5C1	40.79 R	31.37	192.00	0.0	0.00	0.00	0.00	
		-30.19 R	-23.22	172.00	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	3.78	4.87	3.78	4.87	HS 75.52	135.9
5C1	6.88	9.22	6.88	9.22	0.00	275.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.6	-252.7	284.6	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 L	9.34	119.50	0.0	18.95	14.58	147.50			
		-44.22 L	-34.01	141.00	0.0	-40.47	-31.13	160.00		137.50	
OPER	5C1	21.11 R	16.24	194.50	0.0	0.00	0.00	0.00			
		-35.07 R	-26.97	174.50	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	10.02	3.43	9.01	3.86	HS 68.57	123.4
5C1	15.00	7.20	13.48	8.12	0.00	288.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-22.58	2.33	-17.37	1.79	-17.82	2.41	-13.71	1.85
OPER	5C1	-17.18	2.37	-13.21	1.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.91	30.70	HS 58.22	104.8	
5C1	6.38	51.93	0.00	255.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	161.2	-174.0	161.2	-174.0	177.2	-158.0	177.2	-
158.0								
OPER	279.4	-279.4	279.4	-279.4	295.4	-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	12.15 L	9.34	119.50	0.0	18.95	14.58	147.50	
		-44.22 L	-34.01	141.00	0.0	-40.47	-31.13	160.00	137.50
OPER	5C1	21.11 R	16.24	194.50	0.0	0.00	0.00	0.00	
		-35.07 R	-26.97	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	9.35	3.57	9.35	3.57	HS 71.48	128.7
5C1	13.99	7.51	13.99	7.51	0.00	300.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.31 L	9.47	92.00	0.0	12.51	9.63	115.00			
		-73.89 L	-56.84	129.50	0.0	-67.83	-52.18	140.00		160.00	
OPER	5C1	9.60 R	7.38	234.50	0.0	0.00	0.00	0.00			
		-44.62 L	-34.33	145.00	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	16.10	1.90	14.57	2.15	HS	37.92	68.2
5C1	34.99	5.23	31.66	5.95		0.00	209.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	25.89	-17.37	19.91	-17.82	19.74	-13.71	15.19
OPER	5C1	-17.18	19.47	-13.21	14.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.99	90.0
5C1	5.54	5.54	0.00	221.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.000Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.31 L	9.47	92.00	0.0	12.51	9.63	115.00	
		-73.89 L	-56.84	129.50	0.0	-67.83	-52.18	140.00	160.00
OPER	5C1	9.60 R	7.38	234.50	0.0	0.00	0.00	0.00	
		-44.62 L	-34.33	145.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.08	1.98	15.08	1.98	HS 39.66	71.4
5C1	32.78	5.47	32.78	5.47	0.00	218.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.768

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -32.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	201.5	-140.1	182.3	-159.3
OPER	300.6C	-268.7	268.7	-300.6C	335.8	-233.5	303.8	-265.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.31	L	9.47	92.00	0.0	12.51	9.63	115.00		
		-73.89	L	-56.84	129.50	0.0	-67.83	-52.18	140.00	160.00	
OPER	5C1	9.60	R	7.38	234.50	0.0	0.00	0.00	0.00		
		-44.62	L	-34.33	145.00	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	16.10	1.90	14.57	2.15	HS 37.92	68.2
5C1	34.99	5.23	31.66	5.95	0.00	209.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.7	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.7
OPER	151.3	-107.9	107.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.89	25.89	-19.91	19.91	-19.75	19.74	-15.19	15.19
OPER	5C1	-19.47	19.47	-14.98	14.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.99	90.0
5C1	5.54	5.54	0.00	221.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-32.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.5	153.6	-181.7	153.6	-181.7	188.7	-146.5	188.7	-
OPER 244.2	279.4	-279.4	279.4	-279.4	314.6	-244.2	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.31 L	9.47	92.00	0.0	12.51	9.63	115.00	
		-73.89 L	-56.84	129.50	0.0	-67.83	-52.18	140.00	160.00
OPER	5C1	9.60 R	7.38	234.50	0.0	0.00	0.00	0.00	
		-44.62 L	-34.33	145.00	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	15.08	1.98	15.08	1.98	HS 39.66	71.4
5C1	32.78	5.47	32.78	5.47	0.00	218.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.788

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -14.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.0	-151.6	170.8	-170.8
OPER	300.6C	-268.7	268.7	-300.6C	316.7	-252.6	284.7	-284.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 R	9.34	180.50	0.0	19.27	14.82	152.50			
		-44.22 R	-34.02	159.00	0.0	-40.51	-31.16	140.00	162.50		
OPER	5C1	21.12 L	16.24	105.50	0.0	0.00	0.00	0.00			
		-35.07 L	-26.97	125.50	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	9.86	3.43	8.87	3.86	HS 68.55 123.4
5C1	15.00	7.20	13.48	8.12	0.00 288.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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 (-)	for LL+I (+)
INV.	90.8	-73.9	65.7
OPER	151.3	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	22.58	-1.72	17.37	-2.41	17.81	-1.85	13.70
OPER	5C1	-2.37	17.18	-1.82	13.21	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	30.67	2.91	HS 58.23
5C1	51.93	6.38	0.00
			Load Capacity (tons)
			104.8
			255.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-14.6

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	161.2	-174.1	161.2	-174.1	177.3	-158.0	177.3	-
158.0								
OPER	279.4	-279.4	279.4	-279.4	295.5	-263.3	295.5	-
263.3								

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	12.15 R	9.34	180.50	0.0	19.27	14.82	152.50	
		-44.22 R	-34.02	159.00	0.0	-40.51	-31.16	140.00	162.50
OPER	5C1	21.12 L	16.24	105.50	0.0	0.00	0.00	0.00	
		-35.07 L	-26.97	125.50	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	9.20	3.57	9.20	3.57	HS 71.46	128.6
5C1	13.99	7.51	13.99	7.51	0.00	300.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.788

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	181.1	-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	44.56 R	34.28	183.00	0.0	33.56	25.82	155.00			
		-34.30 L	-26.39	117.00	0.0	-26.54	-20.42	140.00		90.00	
OPER	5C1	40.79 L	31.38	108.00	0.0	0.00	0.00	0.00			
		-30.19 L	-23.22	128.00	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	4.06	4.68	3.63	5.24	HS 72.66	130.8
5C1	7.40	8.86	6.61	9.92	0.00	264.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.9	66.8
OPER	151.3	-121.5	111.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.23	19.04	-1.72	14.65	-3.34	15.71	-2.57	12.08
OPER	5C1	-3.56	14.77	-2.74	11.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.80	3.51	HS 70.11	126.2
5C1	34.09	7.53	0.00	301.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
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	-bend	+bend	-bend	+bend	-
INV. 166.9	167.2	-168.1	167.2	-168.1	168.3	-166.9	168.3	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 R	34.28	183.00	0.0	33.56	25.82	155.00	
		-34.30 L	-26.39	117.00	0.0	-26.54	-20.42	140.00	90.00
OPER	5C1	40.79 L	31.38	108.00	0.0	0.00	0.00	0.00	
		-30.19 L	-23.22	128.00	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	3.78	4.87	3.78	4.87	HS 75.55	136.0
5C1	6.88	9.22	6.88	9.22	0.00	275.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.788

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.7	-166.9	155.5	-186.1
OPER	300.6C	-268.7	268.7	-300.6C	291.1	-278.2	259.2	-310.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 R	49.88	185.50	0.0	48.87	37.59	157.50			
		-28.48 L	-21.90	117.00	0.0	-22.47	-17.28	140.00	0.00		
OPER	5C1	54.28 L	41.76	110.50	0.0	0.00	0.00	0.00			
		-27.25 L	-20.96	129.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.69	5.86	2.40	6.53	HS 47.96	86.3
5C1	5.36	10.21	4.77	11.38	0.00	191.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.3	0.0	3.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.9	67.8
OPER	151.3	-119.8	113.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	15.42	-2.55	11.86	-5.05	13.50	-3.88	10.38
OPER	5C1	-4.96	12.37	-3.81	9.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.24	4.39	HS 87.90	158.2
5C1	24.16	9.13	0.00	365.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.300Dead Load Moment 0.8
Superimposed Dead Load Moment 8.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.3	171.4	-163.8	171.4	-163.8	161.9	-173.3	161.9	-
OPER 288.9	279.4	-279.4	279.4	-279.4	269.9	-288.9	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 R	49.88	185.50	0.0	48.87	157.50	
		-28.48 L	-21.90	117.00	0.0	-22.47	140.00	0.00
OPER	5C1	54.28 L	41.76	110.50	0.0	0.00	0.00	
		-27.25 L	-20.96	129.00	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	2.50	6.09	2.50	6.09	HS 49.95	89.9
5C1	4.97	10.60	4.97	10.60	0.00	198.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.788

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		24.90		104.8

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.400

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	170.8	-170.8	151.6	-189.9
OPER	300.6C	-268.7	268.7	-300.6C	284.7	-284.6	252.7	-316.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 R	55.95	188.00	0.0	58.04	44.65	160.00			
		-22.65 L	-17.42	117.00	0.0	-19.78	-15.22	140.00	0.00		
OPER	5C1	62.97 R	48.44	172.00	0.0	0.00	0.00	0.00			
		-25.39 L	-19.53	130.50	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	2.35	7.54	2.09	8.39	HS 41.70	75.1
5C1	4.52	11.21	4.01	12.47	0.00	160.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-70.9	68.8
OPER	151.3	-118.1	114.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-6.73	12.58	-5.17	9.68	-6.98	11.26	-5.37	8.66
OPER	5C1	-6.53	10.09	-5.02	7.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.16	5.47	HS 109.36	196.8
5C1	18.09	11.37	0.00	454.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.400Dead 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	72.73 R	55.95	188.00	0.0	58.04	44.65	160.00	
		-22.65 L	-17.42	117.00	0.0	-19.78	-15.22	140.00	0.00
OPER	5C1	62.97 R	48.44	172.00	0.0	0.00	0.00	0.00	
		-25.39 L	-19.53	130.50	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	2.17	7.82	2.17	7.82	HS 43.47	78.2
5C1	4.18	11.63	4.18	11.63	0.00	167.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			95.788

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.500

Dead Load Moment 1.6
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	169.5	-172.1	150.3	-191.3
OPER	300.6C	-268.7	268.7	-300.6C	282.5	-286.8	250.5	-318.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	70.99	L	54.61	148.50	0.0	61.65	47.42	162.50		
		-16.82	L	-12.94	117.00	0.0	-17.09	-13.15	140.00	0.00	
OPER	5C1	64.48	L	49.60	111.50	0.0	0.00	0.00	0.00		
		-24.56	L	-18.90	131.50	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	2.39	10.07	2.12	11.19	HS 42.35	76.2
5C1	4.38	11.68	3.88	12.98	0.00	155.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.500

Dead Load	Superimposed Dead Load
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	-9.84	9.84	-7.57	7.57	-9.07	9.06	-6.98	6.97
OPER	5C1	-8.23	8.23	-6.33	6.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.10	7.09	HS 141.87	255.4
5C1	14.14	14.13	0.00	565.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.500Dead Load Moment 1.6
Superimposed Dead Load Moment 16.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.5	174.9	-160.4	174.9	-160.4	156.8	-178.5	156.8	-
OPER 297.5	279.4	-279.4	279.4	-279.4	261.3	-297.5	261.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	70.99 L	54.61	148.50	0.0	61.65	47.42	162.50	
		-16.82 L	-12.94	117.00	0.0	-17.09	-13.15	140.00	0.00
OPER	5C1	64.48 L	49.60	111.50	0.0	0.00	0.00	0.00	
		-24.56 L	-18.90	131.50	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	2.21	10.44	2.21	10.44	HS 44.16	79.5
5C1	4.05	12.11	4.05	12.11	0.00	162.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

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		26.07		104.6

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	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	170.9	-170.6	151.7	-189.8
OPER	300.6C	-268.7	268.7	-300.6C	284.9	-284.4	252.9	-316.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.73 L	55.95	137.00	0.0	57.97	44.60	165.00			
		-22.64 R	-17.42	208.00	0.0	-19.79	-15.23	185.00	0.00		
OPER	5C1	62.96 L	48.43	153.00	0.0	0.00	0.00	0.00			
		-25.38 R	-19.52	194.50	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	2.35	7.54	2.09	8.38	HS 41.72	75.1
5C1	4.52	11.21	4.02	12.47	0.00	160.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.600

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	-12.58	6.73	-9.68	5.17	-11.27	6.96	-8.67	5.35
OPER	5C1	-10.09	6.53	-7.76	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.47	10.19	HS 109.29	196.7
5C1	11.36	18.10	0.00	454.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.600Dead Load Moment 1.4
Superimposed Dead Load Moment 14.4

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. 177.1	173.9	-161.3	173.9	-161.3	158.2	-177.1	158.2	-
OPER 295.2	279.4	-279.4	279.4	-279.4	263.6	-295.2	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2	
INV.	HS20	72.73 L	55.95	137.00	0.0	57.97	44.60	165.00
		-22.64 R	-17.42	208.00	0.0	-19.79	-15.23	185.00
OPER	5C1	62.96 L	48.43	153.00	0.0	0.00	0.00	0.00
		-25.38 R	-19.52	194.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.17	7.82	2.17	7.82	HS 43.50	78.3
5C1	4.19	11.63	4.19	11.63	0.00	167.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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 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. S04
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	174.9	-166.7	155.7	-185.9
OPER	300.6C	-268.7	268.7	-300.6C	291.5	-277.8	259.5	-309.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 L	49.87	139.50	0.0	48.73	37.49	167.50			
		-28.47 R	-21.90	208.00	0.0	-22.50	-17.31	185.00	0.00		
OPER	5C1	54.26 R	41.74	214.50	0.0	0.00	0.00	0.00			
		-27.24 R	-20.96	196.00	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	2.70	5.86	2.40	6.53	HS 48.03	86.4
5C1	5.37	10.20	4.78	11.37	0.00	191.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.700

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	-15.42	3.31	-11.86	2.55	-13.51	5.03	-10.40	3.87
OPER	5C1	-12.37	4.96	-9.52	3.81	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.39	14.29	HS 87.84	158.1	
5C1	9.12	24.17	0.00	365.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 8.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.1	171.3	-164.0	171.3	-164.0	162.1	-173.1	162.1	-
OPER 288.6	279.4	-279.4	279.4	-279.4	270.2	-288.6	270.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load Moment w/imp.	Loc. of Ax. Front Wheel	Lane Live Load Moment w/imp.	Loc. of Conc. Load 1	Load 2			
INV.	HS20	64.84 L	49.87	139.50	0.0	48.73	37.49	167.50	
		-28.47 R	-21.90	208.00	0.0	-22.50	-17.31	185.00	0.00
OPER	5C1	54.26 R	41.74	214.50	0.0	0.00	0.00	0.00	
		-27.24 R	-20.96	196.00	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	2.50	6.08	2.50	6.08	HS 50.01	90.0
5C1	4.98	10.59	4.98	10.59	0.00	199.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.800

Dead Load Superimposed Dead Load
Moment Moment
-0.2 -1.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	181.4	-160.2	162.2	-179.4
OPER	300.6C	-268.7	268.7	-300.6C	302.3	-267.0	270.3	-299.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.56 L	34.27	142.00	0.0	33.75	25.96	170.00			
		-34.30 R	-26.38	208.00	0.0	-26.72	-20.55	185.00	235.00		
OPER	5C1	40.76 R	31.35	217.00	0.0	0.00	0.00	0.00			
		-30.18 R	-23.22	197.00	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	4.07	4.67	3.64	5.23	HS 72.80	131.0
5C1	7.42	8.85	6.63	9.91	0.00	265.3

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 7.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -4.7 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-66.7	72.9
OPER	151.3	-111.2	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-19.04	2.23	-14.65	1.72	-15.72	3.33	-12.10	2.56
OPER	5C1	-14.77	3.56	-11.36	2.74	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.50	21.93	HS 70.07	126.1	
5C1	7.53	34.10	0.00	301.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.800

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	-
INV. 166.6	167.0	-168.3	167.0	-168.3	168.6	-166.6	168.6	-
OPER 277.7	279.4	-279.4	279.4	-279.4	281.1	-277.7	281.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 L	34.27	142.00	0.0	33.75	25.96	170.00	
		-34.30 R	-26.38	208.00	0.0	-26.72	-20.55	185.00	235.00
OPER	5C1	40.76 R	31.35	217.00	0.0	0.00	0.00	0.00	
		-30.18 R	-23.22	197.00	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	3.79	4.86	3.79	4.86	HS 75.69	136.2
5C1	6.89	9.20	6.89	9.20	0.00	275.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 7.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.900

Dead Load Moment Superimposed Dead Load Moment
-1.6 -15.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.4	-151.2	171.2	-170.3
OPER	300.6C	-268.7	268.7	-300.6C	317.4	-251.9	285.4	-283.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.14 L	9.34	144.50	0.0	18.71	14.39	172.50			
		-44.21 L	-34.00	166.00	0.0	-40.58	-31.22	185.00	162.50		
OPER	5C1	21.07 R	16.21	219.50	0.0	0.00	0.00	0.00			
		-35.05 R	-26.97	199.50	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	10.18	3.42	9.15	3.85	HS 68.39
5C1	15.06	7.19	13.54	8.10	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.7	73.9
OPER	151.3	-109.5	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-22.58	2.33	-17.37	1.79	-17.83	2.39	-13.72	1.84
OPER	5C1	-17.18	2.37	-13.21	1.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.91	30.90	HS 58.19	104.7	
5C1	6.37	51.95	0.00	255.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 7.900Dead Load Moment -1.6
Superimposed Dead Load Moment -15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 157.6	161.0	-174.3	161.0	-174.3	177.7	-157.6	177.7	-
OPER 262.7	279.4	-279.4	279.4	-279.4	296.1	-262.7	296.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.14 L	9.34	144.50	0.0	18.71	14.39	172.50	
		-44.21 L	-34.00	166.00	0.0	-40.58	-31.22	185.00	162.50
OPER	5C1	21.07 R	16.21	219.50	0.0	0.00	0.00	0.00	
		-35.05 R	-26.97	199.50	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	9.50	3.57	9.50	3.57	HS 71.31	128.4
5C1	14.05	7.49	14.05	7.49	0.00	299.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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
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. S04
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.196

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.32 L	9.47	117.00	0.0	12.23	9.41	140.00			
		-73.89 R	-56.84	195.50	0.0	-67.97	-52.29	165.00	185.00		
OPER	5C1	9.56 L	7.36	90.50	0.0	0.00	0.00	0.00			
		-44.66 L	-34.35	170.00	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	16.40	1.89	14.84	2.15	HS 37.78	68.0
5C1	35.21	5.21	31.86	5.93	0.00	208.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	25.89	-17.37	19.91	-17.83	19.77	-13.72	15.21
OPER	5C1	-17.18	19.47	-13.21	14.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.94	89.9
5C1	5.54	5.53	0.00	221.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
146.0								
OPER	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-
243.4								

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	12.32 L	9.47	117.00	0.0	12.23	9.41	140.00	
		-73.89 R	-56.84	195.50	0.0	-67.97	-52.29	165.00	185.00
OPER	5C1	9.56 L	7.36	90.50	0.0	0.00	0.00	0.00	
		-44.66 L	-34.35	170.00	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	15.37	1.98	15.37	1.98	HS 39.53	71.1
5C1	32.98	5.45	32.98	5.45	0.00	218.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.000

	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. S04
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -32.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	202.0	-139.6	182.8	-158.8
OPER	300.6C	-268.7	268.7	-300.6C	336.7	-232.6	304.7	-264.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.32 L	9.47	117.00	0.0	12.23	9.41	140.00			
		-73.89 R	-56.84	195.50	0.0	-67.97	-52.29	165.00		185.00	
OPER	5C1	9.56 L	7.36	90.50	0.0	0.00	0.00	0.00			
		-44.66 L	-34.35	170.00	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	16.40	1.89	14.84	2.15	37.78
5C1	35.21	5.21	31.86	5.93	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-7.8	7.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.7	64.6
OPER	151.3	-107.8	107.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.89	25.89	-19.91	19.91	-19.76	19.77	-15.20	15.21
OPER	5C1	-19.47	19.47	-14.98	14.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.50	HS 49.94	89.9
5C1	5.54	5.53	0.00	221.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.000Dead Load Moment -3.3
Superimposed Dead Load Moment -32.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 146.0	153.2	-182.0	153.2	-182.0	189.3	-146.0	189.3	-
OPER 243.4	279.4	-279.4	279.4	-279.4	315.4	-243.4	315.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.32 L	9.47	117.00	0.0	12.23	9.41	140.00	
		-73.89 R	-56.84	195.50	0.0	-67.97	-52.29	165.00	185.00
OPER	5C1	9.56 L	7.36	90.50	0.0	0.00	0.00	0.00	
		-44.66 L	-34.35	170.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.37	1.98	15.37	1.98	HS 39.53	71.1
5C1	32.98	5.45	32.98	5.45	0.00	218.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -15.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	190.3	-151.3	171.1	-170.5
OPER	300.6C	-268.7	268.7	-300.6C	317.1	-252.2	285.2	-284.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.15 R	9.35	205.50	0.0	19.12	14.71	177.50			
		-44.22 R	-34.02	184.00	0.0	-40.58	-31.22	165.00	187.50		
OPER	5C1	21.12 L	16.25	130.50	0.0	0.00	0.00	0.00			
		-35.07 L	-26.98	150.50	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	9.95	3.42	8.95	3.86	HS 68.42
5C1	15.02	7.19	13.50	8.10	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.0	65.6
OPER	151.3	-123.3	109.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-2.21	22.58	-1.70	17.37	-2.35	17.84	-1.81	13.72
OPER	5C1	-2.36	17.17	-1.82	13.21	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	31.49	2.91	HS 58.15
5C1	52.19	6.37	0.00
			Load Capacity (tons)
			104.7
			254.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-15.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	161.0	-174.2	161.0	-174.2	177.5	-157.7	177.5	-
157.7								
OPER	279.4	-279.4	279.4	-279.4	295.9	-262.9	295.9	-
262.9								

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	12.15 R	9.35	205.50	0.0	19.12	14.71	177.50	
		-44.22 R	-34.02	184.00	0.0	-40.58	-31.22	165.00	187.50
OPER	5C1	21.12 L	16.25	130.50	0.0	0.00	0.00	0.00	
		-35.07 L	-26.98	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	9.29	3.57	9.29	3.57	HS 71.34	128.4
5C1	14.01	7.50	14.01	7.50	0.00	299.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.200

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	-160.5	161.9	-179.7
OPER	300.6C	-268.7	268.7	-300.6C	301.9	-267.4	269.9	-299.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.56 R	34.28	208.00	0.0	33.54	25.80	180.00			
		-34.30 L	-26.39	142.00	0.0	-26.55	-20.43	165.00	115.00		
OPER	5C1	40.79 L	31.38	133.00	0.0	0.00	0.00	0.00			
		-30.19 L	-23.22	153.00	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	4.06	4.68	3.63	5.24	HS 72.67	130.8
5C1	7.40	8.86	6.62	9.92	0.00	264.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	4.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.0	66.7
OPER	151.3	-121.6	111.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.21	19.04	-1.70	14.65	-3.29	15.73	-2.53	12.10
OPER	5C1	-3.55	14.77	-2.73	11.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	22.18	3.50	HS 70.02	126.0
5C1	34.22	7.52	0.00	300.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.200

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	167.2	-168.1	167.2	-168.1	168.4	-166.9	168.4	-
OPER 278.2	279.4	-279.4	279.4	-279.4	280.6	-278.2	280.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	44.56 R	34.28	208.00	0.0	33.54	25.80	180.00	
		-34.30 L	-26.39	142.00	0.0	-26.55	-20.43	165.00	115.00
OPER	5C1	40.79 L	31.38	133.00	0.0	0.00	0.00	0.00	
		-30.19 L	-23.22	153.00	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	3.78	4.87	3.78	4.87	HS 75.57	136.0
5C1	6.88	9.21	6.88	9.21	0.00	275.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.300

	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. S04
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.300

Dead Load Moment 0.9
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	-167.1	155.3	-186.3
OPER	300.6C	-268.7	268.7	-300.6C	290.8	-278.5	258.8	-310.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.84 R	49.87	210.50	0.0	48.92	37.63	182.50			
		-28.47 L	-21.90	142.00	0.0	-22.35	-17.20	165.00	0.00		
OPER	5C1	54.28 L	41.75	135.50	0.0	0.00	0.00	0.00			
		-27.24 L	-20.96	154.00	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	2.69	5.87	2.39	47.90	86.2
5C1	5.36	10.22	4.77	0.00	190.7

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S04
 Check Point I. D. 8.300
 HS20 5C1
 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	-72.0	67.7
OPER	151.3	-119.9	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.31	15.42	-2.55	11.86	-5.00	13.52	-3.84	10.40
OPER	5C1	-4.94	12.37	-3.80	9.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	14.40	4.39	HS 87.79	158.0
5C1	24.26	9.12	0.00	364.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.300Dead Load Moment 0.9
Superimposed Dead Load Moment 9.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.5	171.6	-163.7	171.6	-163.7	161.7	-173.5	161.7	-
OPER 289.2	279.4	-279.4	279.4	-279.4	269.6	-289.2	269.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.84 R	49.87	210.50	0.0	48.92	37.63	182.50
		-28.47 L	-21.90	142.00	0.0	-22.35	-17.20	165.00
OPER	5C1	54.28 L	41.75	135.50	0.0	0.00	0.00	0.00
		-27.24 L	-20.96	154.00	0.0	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	2.49	6.09	2.49	6.09
5C1	4.97	10.62	4.97	10.62

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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. S04
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.92	28.67	28.67	1.699
			999999.000
			96.088

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		26.07		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.400

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	72.73 R	55.95	213.00	0.0	58.16	44.73	185.00			
		-22.64 L	-17.42	142.00	0.0	-19.53	-15.02	165.00	0.00		
OPER	5C1	62.96 R	48.43	197.00	0.0	0.00	0.00	0.00			
		-25.37 L	-19.51	155.50	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	2.34	7.56	2.08	8.41	HS 41.58	74.8
5C1	4.51	11.25	4.00	12.51	0.00	160.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.0	68.7
OPER	151.3	-118.3	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-6.73	12.58	-5.17	9.68	-6.93	11.28	-5.33	8.68
OPER	5C1	-6.51	10.08	-5.01	7.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.24	5.46	HS 109.22	196.6
5C1	18.17	11.35	0.00	454.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.400

Dead Load Moment Superimposed Dead Load Moment

1.5 15.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.6	174.3	-161.0	174.3	-161.0	157.6	-177.6	157.6	-
OPER 296.1	279.4	-279.4	279.4	-279.4	262.7	-296.1	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.73 R	55.95	213.00	0.0	58.16	44.73	185.00	
		-22.64 L	-17.42	142.00	0.0	-19.53	-15.02	165.00	0.00
OPER	5C1	62.96 R	48.43	197.00	0.0	0.00	0.00	0.00	
		-25.37 L	-19.51	155.50	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	2.17	7.84	2.17	7.84	HS 43.35	78.0
5C1	4.17	11.67	4.17	11.67	0.00	166.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.500Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	168.8	-172.7	149.6	-191.9
OPER	300.6C	-268.7	268.7	-300.6C	281.4	-287.9	249.4	-319.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	70.98 L	54.60	173.50	0.0	61.82	47.55	187.50			
		-16.81 L	-12.93	142.00	0.0	-16.71	-12.85	165.00		0.00	
OPER	5C1	64.71 R	49.77	238.50	0.0	0.00	0.00	0.00			
		-24.53 L	-18.87	156.50	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	2.38	10.27	2.11	11.41	HS 42.16	75.9
5C1	4.35	11.74	3.85	13.04	0.00	154.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.500

Dead Load	Superimposed Dead Load
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/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-9.84	9.84	-7.57	7.57	-9.02	9.08	-6.94	6.98
OPER	5C1	-8.21	8.23	-6.32	6.33	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.11	7.09	HS 141.71	255.1
5C1	14.20	14.11	0.00	564.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.500Dead Load Moment 1.7
Superimposed Dead Load Moment 17.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 179.2	175.3	-159.9	175.3	-159.9	156.1	-179.2	156.1	-
OPER 298.6	279.4	-279.4	279.4	-279.4	260.2	-298.6	260.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	70.98 L	54.60	173.50	0.0	61.82	47.55	187.50	
		-16.81 L	-12.93	142.00	0.0	-16.71	-12.85	165.00	0.00
OPER	5C1	64.71 R	49.77	238.50	0.0	0.00	0.00	0.00	
		-24.53 L	-18.87	156.50	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	2.20	10.66	2.20	10.66	HS 43.98	79.2
5C1	4.02	12.18	4.02	12.18	0.00	160.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.600

Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	170.0	-171.6	150.8	-190.8
OPER	300.6C	-268.7	268.7	-300.6C	283.4	-285.9	251.4	-317.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.71 L	55.93	162.00	0.0	58.21	44.77	190.00			
		-22.43 R	-17.25	233.00	0.0	-19.24	-14.80	210.00	0.00		
OPER	5C1	62.98 L	48.45	178.00	0.0	0.00	0.00	0.00			
		-25.30 R	-19.46	219.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.34	7.65	2.07	8.51	HS 41.49	74.7
5C1	4.50	11.30	3.99	12.56	0.00	159.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.8	70.8
OPER	151.3	-114.7	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.58	6.72	-9.68	5.17	-11.22	6.98	-8.63	5.37
OPER	5C1	-10.09	6.52	-7.76	5.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.47	10.14	HS 109.47	197.0
5C1	11.38	18.09	0.00	455.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.600Dead Load Moment 1.6
Superimposed Dead Load Moment 15.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.0	174.6	-160.7	174.6	-160.7	157.3	-178.0	157.3	-
OPER 296.7	279.4	-279.4	279.4	-279.4	262.1	-296.7	262.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.71 L	55.93	162.00	0.0	58.21	44.77	190.00	
		-22.43 R	-17.25	233.00	0.0	-19.24	-14.80	210.00	0.00
OPER	5C1	62.98 L	48.45	178.00	0.0	0.00	0.00	0.00	
		-25.30 R	-19.46	219.50	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	2.16	7.94	2.16	7.94	HS 43.26	77.9
5C1	4.16	11.73	4.16	11.73	0.00	166.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.700

Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.7	-167.8	154.5	-187.0
OPER	300.6C	-268.7	268.7	-300.6C	289.6	-279.7	257.6	-311.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.80 L	49.85	164.50	0.0	49.03	37.71	192.50			
		-28.20 R	-21.69	233.00	0.0	-21.80	-16.77	210.00	0.00		
OPER	5C1	54.68 R	42.06	239.50	0.0	0.00	0.00	0.00			
		-27.14 R	-20.88	221.00	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	2.68	5.95	2.38	47.70	85.9
5C1	5.30	10.31	4.71	0.00	188.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.700

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	-15.42	3.31	-11.86	2.54	-13.46	5.06	-10.36	3.89
OPER	5C1	-12.37	4.96	-9.52	3.81	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.40	14.20	HS 87.95	158.3	
5C1	9.14	24.15	0.00	365.5	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.700Dead Load Moment 1.0
Superimposed Dead Load Moment 10.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.3	172.1	-163.2	172.1	-163.2	161.0	-174.3	161.0	-
OPER 290.5	279.4	-279.4	279.4	-279.4	268.3	-290.5	268.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	64.80 L	49.85	164.50	0.0	49.03	37.71	192.50	
		-28.20 R	-21.69	233.00	0.0	-21.80	-16.77	210.00	0.00
OPER	5C1	54.68 R	42.06	239.50	0.0	0.00	0.00	0.00	
		-27.14 R	-20.88	221.00	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	2.48	6.18	2.48	6.18	HS 49.69	89.4
5C1	4.91	10.70	4.91	10.70	0.00	196.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.800

Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	180.0	-161.6	160.8	-180.8
OPER	300.6C	-268.7	268.7	-300.6C	300.0	-269.3	268.0	-301.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	44.51 L	34.24	167.00	0.0	34.11	26.24	195.00			
		-33.97 R	-26.13	233.00	0.0	-24.78	-19.06	210.00	177.50		
OPER	5C1	41.38 R	31.83	242.00	0.0	0.00	0.00	0.00			
		-30.05 R	-23.12	222.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	4.04	4.76	3.61	72.26	130.1
5C1	7.25	8.96	6.48	0.00	259.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.8	72.8
OPER	151.3	-111.4	121.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-19.04	2.23	-14.65	1.72	-15.67	3.35	-12.06	2.58
OPER	5C1	-14.77	3.56	-11.36	2.74	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.51	21.74	HS 70.16	126.3
5C1	7.54	34.06	0.00	301.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.800Dead Load Moment 0.1
Superimposed Dead Load Moment 0.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 168.0	167.9	-167.4	167.9	-167.4	167.3	-168.0	167.3	-
OPER 280.0	279.4	-279.4	279.4	-279.4	278.8	-280.0	278.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	44.51 L	34.24	167.00	0.0	34.11	26.24	195.00	
		-33.97 R	-26.13	233.00	0.0	-24.78	-19.06	210.00	177.50
OPER	5C1	41.38 R	31.83	242.00	0.0	0.00	0.00	0.00	
		-30.05 R	-23.12	222.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.76	4.95	3.76	4.95	HS 75.15	135.3
5C1	6.74	9.32	6.74	9.32	0.00	269.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 8.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.900

Dead Load Moment Superimposed Dead Load Moment
-1.2 -12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	188.8	-152.8	169.6	-172.0
OPER	300.6C	-268.7	268.7	-300.6C	314.7	-254.6	282.7	-286.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	12.09 L	9.30	169.50	0.0	19.15	14.73	197.50	
		-44.00 L	-33.85	191.00	0.0	-39.64	-30.49	210.00	187.50
OPER	5C1	21.99 R	16.92	244.50	0.0	0.00	0.00	0.00	
		-34.91 R	-26.85	224.50	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	9.86	3.47	8.86	3.91	HS 69.44
5C1	14.31	7.29	12.85	8.21	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.900

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	73.9
OPER	151.3	-109.7	123.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-22.58	2.33	-17.37	1.79	-17.78	2.42	-13.68	1.86
OPER	5C1	-17.16	2.37	-13.20	1.83	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.91	30.51	HS 58.27	104.9	
5C1	6.39	51.87	0.00	255.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 8.900Dead Load Moment Superimposed Dead Load Moment
-1.2 -12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.2	162.0	-173.3	162.0	-173.3	176.1	-159.2	176.1	-
OPER 265.4	279.4	-279.4	279.4	-279.4	293.4	-265.4	293.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.09 L	9.30	169.50	0.0	19.15	14.73	197.50	
		-44.00 L	-33.85	191.00	0.0	-39.64	-30.49	210.00	187.50
OPER	5C1	21.99 R	16.92	244.50	0.0	0.00	0.00	0.00	
		-34.91 R	-26.85	224.50	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	9.19	3.62	9.19	3.62	HS 72.37	130.3
5C1	13.34	7.60	13.34	7.60	0.00	304.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
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. S04
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.87	28.67	28.67	1.699	999999.000	93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.98 R	11.53	258.00	0.0	13.37	10.29	235.00			
		-73.80 R	-56.77	220.50	0.0	-66.89	-51.45	190.00	210.00		
OPER	5C1	11.54 R	8.88	284.50	0.0	0.00	0.00	0.00			
		-44.57 R	-34.28	204.50	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	13.36	1.92	12.08	2.18	HS 38.33 69.0
5C1	28.91	5.29	26.14	6.01	0.00 211.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.000

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	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.58	25.85	-17.37	19.89	-17.78	19.57	-13.68	15.06
OPER	5C1	-17.16	19.44	-13.20	14.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.51	HS 50.04	90.1
5C1	5.56	5.57	0.00	222.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 147.9	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
OPER 246.5	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	14.98 R	11.53	258.00	0.0	13.37	10.29	235.00	
		-73.80 R	-56.77	220.50	0.0	-66.89	-51.45	190.00	210.00
OPER	5C1	11.54 R	8.88	284.50	0.0	0.00	0.00	0.00	
		-44.57 R	-34.28	204.50	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	12.51	2.00	12.51	2.00	HS 40.07	72.1
5C1	27.07	5.53	27.07	5.53	0.00	221.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.256

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -30.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	200.1	-141.4	181.0	-160.6
OPER	300.6C	-268.7	268.7	-300.6C	333.6	-235.7	301.6	-267.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.98 R	11.53	258.00	0.0	13.37	10.29	235.00			
		-73.80 R	-56.77	220.50	0.0	-66.89	-51.45	190.00	210.00		
OPER	5C1	11.54 R	8.88	284.50	0.0	0.00	0.00	0.00			
		-44.57 R	-34.28	204.50	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	13.36	1.92	12.08	2.18	38.33
5C1	28.91	5.29	26.14	6.01	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-7.7	7.3

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-64.8	65.0
OPER	151.3	-108.0	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.89	25.85	-19.91	19.89	-19.71	19.57	-15.16	15.06
OPER	5C1	-19.43	19.44	-14.94	14.96	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.50	2.51	HS 50.04	90.1
5C1	5.56	5.57	0.00	222.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-30.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	154.5	-180.8	154.5	-180.8	187.4	-147.9	187.4	-
147.9								
OPER	279.4	-279.4	279.4	-279.4	312.3	-246.5	312.3	-
246.5								

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	14.98 R	11.53	258.00	0.0	13.37	10.29	235.00	
		-73.80 R	-56.77	220.50	0.0	-66.89	-51.45	190.00	210.00
OPER	5C1	11.54 R	8.88	284.50	0.0	0.00	0.00	0.00	
		-44.57 R	-34.28	204.50	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	12.51	2.00	12.51	2.00	HS 40.07	72.1
5C1	27.07	5.53	27.07	5.53	0.00	221.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	189.3	-152.3	170.1	-171.5
OPER	300.6C	-268.7	268.7	-300.6C	315.5	-253.8	283.5	-285.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	12.32 R	9.48	230.50	0.0	19.41	14.93	202.50			
		-44.24 R	-34.03	209.00	0.0	-40.01	-30.78	190.00	212.50		
OPER	5C1	21.16 L	16.28	155.50	0.0	0.00	0.00	0.00			
		-35.06 L	-26.97	175.50	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	9.75	3.44	8.76	3.88	HS 68.84	123.9
5C1	14.91	7.24	13.40	8.15	0.00	289.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.100

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	-73.6	66.0
OPER	151.3	-122.7	110.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.73	22.54	-2.10	17.34	-2.62	17.64	-2.02	13.57
OPER	5C1	-2.62	17.15	-2.02	13.19	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	26.98	2.93	HS 58.57	105.4	
5C1	46.78	6.41	0.00	256.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 158.7	161.7	-173.6	161.7	-173.6	176.6	-158.7	176.6	-
OPER 264.5	279.4	-279.4	279.4	-279.4	294.3	-264.5	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	12.32 R	9.48	230.50	0.0	19.41	14.93	202.50	
		-44.24 R	-34.03	209.00	0.0	-40.01	-30.78	190.00	212.50
OPER	5C1	21.16 L	16.28	155.50	0.0	0.00	0.00	0.00	
		-35.06 L	-26.97	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	9.10	3.59	9.10	3.59	HS 71.75	129.2
5C1	13.90	7.54	13.90	7.54	0.00	301.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.200

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	44.59 R	34.30	233.00	0.0	33.58	25.83	205.00			
		-34.31 L	-26.39	167.00	0.0	-26.50	-20.39	190.00		140.00	
OPER	5C1	40.80 L	31.38	158.00	0.0	0.00	0.00	0.00			
		-30.19 L	-23.22	178.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	4.06	4.68	3.63	5.24	HS 72.59	130.7
5C1	7.39	8.86	6.61	9.92	0.00	264.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	4.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.6	67.0
OPER	151.3	-121.1	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.73	19.00	-2.10	14.61	-3.40	15.53	-2.62	11.94
OPER	5C1	-3.96	14.74	-3.04	11.34	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	21.35	3.53	HS 70.55	127.0
5C1	30.60	7.58	0.00	303.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.200

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	44.59 R	34.30	233.00	0.0	33.58	25.83	205.00	
		-34.31 L	-26.39	167.00	0.0	-26.50	-20.39	190.00	140.00
OPER	5C1	40.80 L	31.38	158.00	0.0	0.00	0.00	0.00	
		-30.19 L	-23.22	178.00	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	3.77	4.87	3.77	4.87	HS 75.48	135.9
5C1	6.87	9.22	6.87	9.22	0.00	275.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
 Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	175.3	-166.3	156.1	-185.5
OPER	300.6C	-268.7	268.7	-300.6C	292.1	-277.2	260.1	-309.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.61 R	49.70	235.50	0.0	48.46	37.27	207.50			
		-28.45 L	-21.88	167.00	0.0	-22.55	-17.35	190.00	0.00		
OPER	5C1	54.21 L	41.70	160.50	0.0	0.00	0.00	0.00			
		-27.29 L	-20.99	179.00	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	2.71	5.85	2.41	6.52	HS 48.31	87.0
5C1	5.39	10.16	4.80	11.33	0.00	191.9

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S04
Check Point I. D. 9.300

HS20 5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.2 0.0 2.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.6	68.0
OPER	151.3	-119.4	113.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.41	15.38	-2.63	11.83	-5.12	13.31	-3.93	10.24
OPER	5C1	-5.47	12.34	-4.21	9.49	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	14.00	4.42	HS 88.49	159.3	
5C1	21.82	9.19	0.00	367.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.300Dead Load Moment 0.7
Superimposed Dead Load Moment 7.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	171.1	-164.2	171.1	-164.2	162.5	-172.8	162.5	-
OPER 287.9	279.4	-279.4	279.4	-279.4	270.9	-287.9	270.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	64.61 R	49.70	235.50	0.0	48.46	37.27	207.50	
		-28.45 L	-21.88	167.00	0.0	-22.55	-17.35	190.00	0.00
OPER	5C1	54.21 L	41.70	160.50	0.0	0.00	0.00	0.00	
		-27.29 L	-20.99	179.00	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	2.52	6.07	2.52	6.07	HS 50.30	90.5
5C1	5.00	10.55	5.00	10.55	0.00	199.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.87	28.67	28.67	1.699
			999999.000
			93.500

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		17.76		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	172.0	-169.5	152.8	-188.7
OPER	300.6C	-268.7	268.7	-300.6C	286.7	-282.6	254.7	-314.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.20 R	55.54	238.00	0.0	57.15	43.96	210.00			
		-22.59 L	-17.38	167.00	0.0	-19.95	-15.35	190.00	0.00		
OPER	5C1	62.80 R	48.31	222.00	0.0	0.00	0.00	0.00			
		-25.58 L	-19.68	180.50	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	2.38	7.51	2.12	8.35	HS 42.34	76.2
5C1	4.57	11.04	4.06	12.30	0.00	162.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.1	0.0 1.2

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-70.6	69.0
OPER	151.3	-117.7	115.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-6.84	12.56	-5.26	9.66	-7.05	11.07	-5.42	8.51
OPER	5C1	-7.08	10.05	-5.45	7.73	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.01	5.50	HS 109.96	197.9
5C1	16.61	11.45	0.00	458.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.400Dead Load Moment 1.1
Superimposed Dead Load Moment 12.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.0	173.2	-162.1	173.2	-162.1	159.3	-176.0	159.3	-
OPER 293.3	279.4	-279.4	279.4	-279.4	265.5	-293.3	265.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	72.20 R	55.54	238.00	0.0	57.15	43.96	210.00	
		-22.59 L	-17.38	167.00	0.0	-19.95	-15.35	190.00	0.00
OPER	5C1	62.80 R	48.31	222.00	0.0	0.00	0.00	0.00	
		-25.58 L	-19.68	180.50	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	2.21	7.79	2.21	7.79	HS 44.12	79.4
5C1	4.23	11.46	4.23	11.46	0.00	169.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.55	28.67	28.67	1.699	999999.000	77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.500

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	171.4	-170.2	152.2	-189.4
OPER	300.6C	-268.7	268.7	-300.6C	285.6	-283.7	253.6	-315.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment 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	70.75 R	54.42	226.50	0.0	60.25	46.35	212.50			
		-20.47 R	-15.74	258.00	0.0	-18.24	-14.03	235.00	0.00		
OPER	5C1	64.24 L	49.41	161.50	0.0	0.00	0.00	0.00			
		-25.79 R	-19.84	243.50	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	2.42	8.32	2.15	9.25	HS 43.02	77.4
5C1	4.45	11.00	3.95	12.24	0.00	157.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-0.4	0.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.6	70.1
OPER	151.3	-116.0	116.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.96	9.81	-7.67	7.55	-9.15	8.86	-7.04	6.82
OPER	5C1	-8.75	8.20	-6.73	6.31	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.98	7.14	HS 139.66	251.4
5C1	13.26	14.24	0.00	530.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.500

Dead Load Moment Superimposed Dead Load Moment

1.2 13.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.7	173.7	-161.6	173.7	-161.6	158.6	-176.7	158.6	-
OPER 294.4	279.4	-279.4	279.4	-279.4	264.4	-294.4	264.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	70.75 R	54.42	226.50	0.0	60.25	46.35	212.50	
		-20.47 R	-15.74	258.00	0.0	-18.24	-14.03	235.00	0.00
OPER	5C1	64.24 L	49.41	161.50	0.0	0.00	0.00	0.00	
		-25.79 R	-19.84	243.50	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	2.24	8.63	2.24	8.63	HS 44.84	80.7
5C1	4.11	11.41	4.11	11.41	0.00	164.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.600

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.4C	-161.2	161.2	-180.4C	173.4	-168.2	154.2	-187.3
OPER	300.6C	-268.7	268.7	-300.6C	289.0	-280.3	257.0	-312.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	72.35 L	55.65	187.00	0.0	56.09	43.14	215.00			
		-27.56 R	-21.20	258.00	0.0	-21.34	-16.41	235.00	0.00		
OPER	5C1	60.76 L	46.74	203.00	0.0	0.00	0.00	0.00			
		-27.24 R	-20.95	244.50	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	2.40	6.10	2.13	42.64	76.7
5C1	4.76	10.29	4.23	0.00	169.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.600

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	71.2
OPER	151.3	-114.2	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-12.74	6.69	-9.80	5.14	-11.36	6.77	-8.74	5.21
OPER	5C1	-10.41	6.49	-8.01	4.99	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.38	10.52	HS 107.54	193.6
5C1	10.97	18.26	0.00	438.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.600Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 174.6	172.3	-163.0	172.3	-163.0	160.7	-174.6	160.7	-
OPER 291.0	279.4	-279.4	279.4	-279.4	267.8	-291.0	267.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	72.35 L	55.65	187.00	0.0	56.09	43.14	215.00
		-27.56 R	-21.20	258.00	0.0	-21.34	-16.41	235.00
OPER	5C1	60.76 L	46.74	203.00	0.0	0.00	0.00	0.00
		-27.24 R	-20.95	244.50	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	2.22	6.34	2.22	6.34	HS 44.42	80.0
5C1	4.41	10.68	4.41	10.68	0.00	176.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.700

Dead Load Moment 0.1
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	178.0	-163.6	158.8	-182.7
OPER	300.6C	-268.7	268.7	-300.6C	296.7	-272.6	264.7	-304.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.28 L	49.45	189.50	0.0	46.37	35.67	217.50			
		-34.65 R	-26.65	258.00	0.0	-24.44	-18.80	235.00	0.00		
OPER	5C1	50.09 L	38.53	201.50	0.0	0.00	0.00	0.00			
		-29.87 R	-22.98	246.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.77	4.72	2.47	5.28	HS 49.42	88.9
5C1	5.92	9.13	5.28	10.20	0.00	211.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.4	-3.5
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-67.5	72.2
OPER	151.3	-112.5	120.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-15.49	3.26	-11.92	2.51	-13.60	4.84	-10.46	3.72
OPER	5C1	-12.61	4.93	-9.70	3.79	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.36	14.91	HS 87.10	156.8	
5C1	8.92	24.38	0.00	356.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.700Dead Load Moment 0.1
Superimposed Dead Load Moment 3.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 170.0	169.2	-166.1	169.2	-166.1	165.3	-170.0	165.3	-
OPER 283.3	279.4	-279.4	279.4	-279.4	275.5	-283.3	275.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	64.28 L	49.45	189.50	0.0	46.37	35.67	217.50	
		-34.65 R	-26.65	258.00	0.0	-24.44	-18.80	235.00	0.00
OPER	5C1	50.09 L	38.53	201.50	0.0	0.00	0.00	0.00	
		-29.87 R	-22.98	246.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.57	4.91	2.57	4.91	HS 51.42	92.6
5C1	5.50	9.49	5.50	9.49	0.00	220.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.800

Dead Load Moment Superimposed Dead Load Moment
-1.0 -6.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	185.2	-156.4	166.0	-175.6
OPER	300.6C	-268.7	268.7	-300.6C	308.6	-260.7	276.6	-292.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	43.86 L	33.74	192.00	0.0	31.03	23.87	220.00			
		-41.74 R	-32.11	258.00	0.0	-28.09	-21.60	235.00	202.50		
OPER	5C1	34.81 L	26.77	169.00	0.0	0.00	0.00	0.00			
		-33.63 R	-25.87	247.50	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	4.22	3.75	3.78	4.21	HS 74.96	134.9
5C1	8.87	7.75	7.95	8.70	0.00	310.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.800

Dead Load	Superimposed Dead Load
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	-19.14	2.25	-14.72	1.73	-15.81	3.14	-12.16	2.42
OPER	5C1	-15.09	3.55	-11.60	2.73	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.47	23.28	HS 69.46
5C1	7.34	34.33	0.00
			Load Capacity (tons)
			125.0
			293.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.800

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-6.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 162.9	164.5	-170.8	164.5	-170.8	172.4	-162.9	172.4	-
OPER 271.4	279.4	-279.4	279.4	-279.4	287.4	-271.4	287.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	43.86 L	33.74	192.00	0.0	31.03	23.87	220.00	
		-41.74 R	-32.11	258.00	0.0	-28.09	-21.60	235.00	202.50
OPER	5C1	34.81 L	26.77	169.00	0.0	0.00	0.00	0.00	
		-33.63 R	-25.87	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	3.93	3.90	3.93	3.90	HS 78.05	140.5
5C1	8.26	8.07	8.26	8.07	0.00	322.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.55	28.67	28.67	1.699
			999999.000
			77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.900

Dead Load Moment Superimposed Dead Load Moment
-2.6 -21.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.4C	-161.2	161.2	-180.4C	194.8	-146.7	175.6	-165.9
OPER	300.6C	-268.7	268.7	-300.6C	324.7	-244.6	292.7	-276.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	11.39 L	8.76	194.50	0.0	15.79	12.15	222.50			
		-50.93 L	-39.18	216.00	0.0	-43.91	-33.78	235.00	212.50		
OPER	5C1	16.13 L	12.41	171.50	0.0	0.00	0.00	0.00			
		-41.25 R	-31.73	253.50	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	12.34	2.88	11.12	3.26	HS 57.62	103.7	
5C1	20.14	5.93	18.15	6.70	0.00	237.2	

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.4	74.2
OPER	151.3	-109.1	123.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.69	2.34	-17.45	1.80	-17.90	2.25	-13.77	1.73
OPER	5C1	-17.65	2.37	-13.57	1.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.88	31.66	HS 57.69	103.8	
5C1	6.18	52.14	0.00	247.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.6	-21.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.2	158.0	-177.3	158.0	-177.3	182.1	-153.2	182.1	-
OPER 255.3	279.4	-279.4	279.4	-279.4	303.5	-255.3	303.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	11.39 L	8.76	194.50	0.0	15.79	12.15	222.50	
		-50.93 L	-39.18	216.00	0.0	-43.91	-33.78	235.00	212.50
OPER	5C1	16.13 L	12.41	171.50	0.0	0.00	0.00	0.00	
		-41.25 R	-31.73	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.53	3.01	11.53	3.01	HS 60.15	108.3
5C1	18.82	6.19	18.82	6.19	0.00	247.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.24	8.24	0.62	1.77
21.0	19.76	0.400	bott	9.86	8.24	8.24	0.62	1.77

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	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. S04
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.40	24.64
bott	3.92	0.62	13.400	150.00	84.66		24.64

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.55	28.67	28.67	1.699	999999.000	77.316

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	390.83	109.1
bott	22.62		36.45		102.9

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.3

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.5	-40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck 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	12.57 L	9.67	167.00	0.0	9.28	7.14	190.00	
		-77.45 R	-59.58	246.50	0.0	-71.86	-55.28	235.00	215.00
OPER	5C1	9.76 L	7.51	140.50	0.0	0.00	0.00	0.00	
		-55.20 R	-42.46	256.00	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	19.30	1.74	14.95	2.44	HS 34.74	62.5
5C1	41.42	4.06	32.09	5.71	0.00	162.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-6.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-22.69	27.53	-17.45	21.18	-17.90	20.00	-13.77	15.39
OPER	5C1	-17.65	20.49	-13.57	15.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.48	2.66	HS 49.56	89.2
5C1	5.37	5.95	0.00	214.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.57 L	9.67	167.00	0.0	9.28	7.14	190.00	
		-77.45 R	-59.58	246.50	0.0	-71.86	-55.28	235.00	215.00
OPER	5C1	9.76 L	7.51	140.50	0.0	0.00	0.00	0.00	
		-55.20 R	-42.46	256.00	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	15.46	1.82	15.46	1.82	HS 36.40	65.5
5C1	33.19	4.26	33.19	4.26	0.00	170.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
127.0	127.0	127.0	127.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.55	35.20	35.20	2.861	999999.000	99.108

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.000

Dead Load Superimposed Dead Load
Moment Moment
-4.5 -40.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-161.2	161.2	-215.8C	242.5	-134.5	187.9	-189.1
OPER	359.7C	-268.7	268.7	-359.7C	404.1	-224.2	313.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.57 L	9.67	167.00	0.0	9.28	7.14	190.00			
		-77.45 R	-59.58	246.50	0.0	-71.86	-55.28	235.00	215.00		
OPER	5C1	9.76 L	7.51	140.50	0.0	0.00	0.00	0.00			
		-55.20 R	-42.46	256.00	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	19.30	1.74	14.95	2.44	HS 34.74
5C1	41.42	4.06	32.09	5.71	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-8.1	9.4

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-64.4	73.2
OPER	172.1	-107.4	121.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-26.00	27.53	-20.00	21.18	-19.82	20.00	-15.24	15.39
OPER	5C1	-20.00	20.49	-15.39	15.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.48	2.66	HS 49.56	89.2
5C1	5.37	5.95	0.00	214.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.000Dead Load Moment -4.5
Superimposed Dead Load Moment -40.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 141.0	149.9	-185.4	149.9	-185.4	194.3	-141.0	194.3	-
OPER 235.0	279.4	-279.4	279.4	-279.4	323.8	-235.0	323.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.57 L	9.67	167.00	0.0	9.28	7.14	190.00	
		-77.45 R	-59.58	246.50	0.0	-71.86	-55.28	235.00	215.00
OPER	5C1	9.76 L	7.51	140.50	0.0	0.00	0.00	0.00	
		-55.20 R	-42.46	256.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	15.46	1.82	15.46	1.82	HS 36.40	65.5
5C1	33.19	4.26	33.19	4.26	0.00	170.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.73	35.20	2.861	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.100

Dead Load Superimposed Dead Load
Moment Moment
-2.0 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	228.1	-179.4	203.9	-203.5
OPER	359.7C	-319.4	319.4	-359.7C	380.2	-298.9	339.9	-339.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	9.42 L	7.24	162.00	0.0	18.03	13.87	227.50			
		-46.50 R	-35.77	234.00	0.0	-43.38	-33.37	215.00	240.00		
OPER	5C1	22.05 L	16.96	180.50	0.0	0.00	0.00	0.00			
		-39.00 R	-30.00	261.00	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	12.65	3.86	11.31	4.38	HS 77.14	138.8
5C1	17.24	7.67	15.41	8.70	0.00	306.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.9	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-84.7	74.2
OPER	172.1	-141.1	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.48	24.52	-0.37	18.86	-1.01	18.29	-0.77	14.07
OPER	5C1	-0.75	18.48	-0.58	14.21	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	84.14	3.03	HS 60.51	108.9
5C1	188.47	6.69	0.00	267.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.100Dead Load Moment -2.0
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 187.0	191.1	-207.5	191.1	-207.5	211.6	-187.0	211.6	-
OPER 311.7	332.2	-332.2	332.2	-332.2	352.7	-311.7	352.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	9.42 L	7.24	162.00	0.0	18.03	13.87	227.50	
		-46.50 R	-35.77	234.00	0.0	-43.38	-33.37	215.00	240.00
OPER	5C1	22.05 L	16.96	180.50	0.0	0.00	0.00	0.00	
		-39.00 R	-30.00	261.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.73	4.02	11.73	4.02	HS 80.44	144.8
5C1	15.99	7.99	15.99	7.99	0.00	319.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.73	35.20	35.20	2.861	999999.000	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.200

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.	215.8C	-191.7	191.7	-215.8C	216.3	-191.2	192.1	-215.3
OPER	359.7C	-319.4	319.4	-359.7C	360.5	-318.6	320.2	-358.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	47.96 R	36.89	258.00	0.0	35.65	27.42	230.00			
		-37.52 L	-28.86	192.00	0.0	-28.97	-22.28	215.00	165.00		
OPER	5C1	43.91 L	33.77	183.00	0.0	0.00	0.00	0.00			
		-33.24 L	-25.57	203.00	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	4.51	5.09	4.01	5.74	HS 80.13 144.2
5C1	8.21	9.59	7.29	10.80	0.00 291.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.7	0.0	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-83.6	75.2
OPER	172.1	-139.4	125.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.73	21.16	-0.56	16.27	-2.12	16.45	-1.63	12.66
OPER	5C1	-1.89	16.27	-1.45	12.52	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	39.42	3.56	HS 71.11	128.0
5C1	73.85	7.70	0.00	308.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.200Dead Load Moment 0.1
Superimposed Dead Load Moment -0.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 198.8	199.0	-199.6	199.0	-199.6	199.8	-198.8	199.8	-
OPER 331.4	332.2	-332.2	332.2	-332.2	333.0	-331.4	333.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	47.96 R	36.89	258.00	0.0	35.65	27.42	230.00	
		-37.52 L	-28.86	192.00	0.0	-28.97	-22.28	215.00	165.00
OPER	5C1	43.91 L	33.77	183.00	0.0	0.00	0.00	0.00	
		-33.24 L	-25.57	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	4.17	5.30	4.17	5.30	HS 83.32	150.0
5C1	7.59	9.97	7.59	9.97	0.00	303.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.73	35.20	35.20	2.861	999999.000	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.300

Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	207.1	-200.4	182.9	-224.5
OPER	359.7C	-319.4	319.4	-359.7C	345.1	-334.0	304.9	-374.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	74.63 R	57.40	260.50	0.0	53.95	41.50	232.50			
		-32.83 L	-25.25	192.00	0.0	-25.35	-19.50	215.00	165.00		
OPER	5C1	60.78 L	46.75	185.50	0.0	0.00	0.00	0.00			
		-29.08 L	-22.37	203.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.78	6.10	2.45	6.84	HS 49.03	88.2
5C1	5.68	11.48	5.02	12.87	0.00	200.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.5	0.0	4.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-82.6	76.3
OPER	172.1	-137.7	127.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.26	17.47	-1.74	13.44	-3.48	14.51	-2.67	11.16
OPER	5C1	-3.22	13.93	-2.48	10.71	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.75	4.36	HS 87.28	157.1
5C1	42.75	9.12	0.00	365.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.300Dead Load Moment 1.7
Superimposed Dead Load Moment 12.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.0	205.1	-193.5	205.1	-193.5	190.6	-208.0	190.6	-
OPER 346.7	332.2	-332.2	332.2	-332.2	317.7	-346.7	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	74.63 R	57.40	260.50	0.0	53.95	41.50	232.50	
		-32.83 L	-25.25	192.00	0.0	-25.35	-19.50	215.00	165.00
OPER	5C1	60.78 L	46.75	185.50	0.0	0.00	0.00	0.00	
		-29.08 L	-22.37	203.00	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	2.55	6.34	2.55	6.34	HS 51.08	91.9
5C1	5.23	11.92	5.23	11.92	0.00	209.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.73	35.20	35.20	2.861
			999999.000
			93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		3.04		108.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.400

Dead Load Moment Superimposed Dead Load Moment
2.8 22.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.5	-207.0	176.3	-231.2
OPER	359.7C	-319.4	319.4	-359.7C	334.1	-345.0	293.8	-385.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.35 R	66.42	263.00	0.0	66.65	51.27	235.00			
		-28.14 L	-21.65	192.00	0.0	-20.79	-15.99	215.00	0.00		
OPER	5C1	73.95 R	56.88	247.00	0.0	0.00	0.00	0.00			
		-24.93 L	-19.17	203.00	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	2.32	7.36	2.04	8.22	HS 40.83	73.5
5C1	4.52	13.84	3.97	15.46	0.00	158.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.400

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.4	0.0
	3.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.3	-81.6	77.3
OPER	172.1	-135.9	128.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-4.57	13.64	-3.51	10.49	-5.06	12.50	-3.89	9.61
OPER	5C1	-4.70	11.81	-3.61	9.08	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.12	5.66	HS 113.31	204.0
5C1	28.93	10.91	0.00	436.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.400

Dead Load Moment	Superimposed Dead Load Moment
2.8	22.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.7	209.6	-189.1	209.6	-189.1	184.0	-214.7	184.0	-
OPER 357.8	332.2	-332.2	332.2	-332.2	306.6	-357.8	306.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.35 R	66.42	263.00	0.0	66.65	51.27	235.00	
		-28.14 L	-21.65	192.00	0.0	-20.79	-15.99	215.00	0.00
OPER	5C1	73.95 R	56.88	247.00	0.0	0.00	0.00	0.00	
		-24.93 L	-19.17	203.00	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	2.13	7.63	2.13	7.63	HS 42.61	76.7
5C1	4.15	14.35	4.15	14.35	0.00	165.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.73	35.20	35.20	2.861	999999.000	93.323

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.500

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.1	172.2	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.3	-351.8	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	90.95 R	69.96	265.50	0.0	74.30	57.15	237.50			
		-23.45 L	-18.04	192.00	0.0	-17.33	-13.33	215.00	0.00		
OPER	5C1	80.89 L	62.22	225.50	0.0	0.00	0.00	0.00			
		-20.77 L	-15.98	203.00	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	2.16	9.00	1.89	10.03	HS 37.88	68.2
5C1	4.05	16.93	3.55	18.87	0.00	142.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-80.5	78.3
OPER	172.1	-134.2	130.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-7.28	11.30	-5.60	8.69	-6.86	10.44	-5.28	8.03
OPER	5C1	-6.28	10.09	-4.83	7.76	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	11.07	6.93	HS 138.66	249.6
5C1	21.36	12.94	0.00	517.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.500Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.3	-186.4	212.3	-186.4	179.9	-218.7	179.9	-
OPER 364.6	332.2	-332.2	332.2	-332.2	299.8	-364.6	299.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	90.95 R	69.96	265.50	0.0	74.30	57.15	237.50	
		-23.45 L	-18.04	192.00	0.0	-17.33	-13.33	215.00	0.00
OPER	5C1	80.89 L	62.22	225.50	0.0	0.00	0.00	0.00	
		-20.77 L	-15.98	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.98	9.33	1.98	9.33	HS 39.56	71.2
5C1	3.71	17.55	3.71	17.55	0.00	148.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.600

Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	195.1	-212.3	171.0	-236.5
OPER	359.7C	-319.4	319.4	-359.7C	325.2	-353.9	284.9	-394.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.43 R	74.18	254.00	0.0	74.58	57.37	240.00			
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00	0.00		
OPER	5C1	82.75 L	63.66	228.00	0.0	0.00	0.00	0.00			
		-16.62 L	-12.78	203.00	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	2.02	11.32	1.77	12.61	HS 35.46	63.8
5C1	3.93	21.30	3.44	23.72	0.00	137.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.600

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.0	0.0 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.3	-79.4	79.4
OPER	172.1	-132.4	132.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.64	8.60	-7.42	6.61	-8.86	8.38	-6.81	6.44
OPER	5C1	-8.19	8.27	-6.30	6.36	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.24	9.24	HS 164.72	296.5
5C1	16.17	16.01	0.00	640.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 30.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 220.0	213.1	-185.5	213.1	-185.5	178.6	-220.0	178.6	-
OPER 366.7	332.2	-332.2	332.2	-332.2	297.7	-366.7	297.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.43 R	74.18	254.00	0.0	74.58	57.37	240.00
		-18.76 L	-14.43	192.00	0.0	-13.86	-10.66	215.00
OPER	5C1	82.75 L	63.66	228.00	0.0	0.00	0.00	0.00
		-16.62 L	-12.78	203.00	0.0	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	1.85	11.73	1.85	11.73
5C1	3.60	22.07	3.60	22.07

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.700

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.700

Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	196.4	-211.0	172.3	-235.2
OPER	359.7C	-319.4	319.4	-359.7C	327.4	-351.7	287.1	-392.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.23 R	74.03	256.50	0.0	68.33	52.56	242.50			
		-14.07 L	-10.82	192.00	0.0	-10.40	-8.00	215.00	0.00		
OPER	5C1	78.82 L	60.63	226.50	0.0	0.00	0.00	0.00			
		-12.46 L	-9.59	203.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.04	15.00	1.79	16.72	HS 35.80	64.4
5C1	4.15	28.22	3.64	31.45	0.00	145.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-1.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-78.4	80.5
OPER	172.1	-130.6	134.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.83	6.54	-9.87	5.03	-11.04	6.33	-8.49	4.87
OPER	5C1	-10.51	6.33	-8.08	4.87	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.11	12.30	HS 122.18	219.9
5C1	12.43	21.18	0.00	497.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.700Dead Load Moment 3.5
Superimposed Dead Load Moment 28.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 218.7	212.2	-186.4	212.2	-186.4	179.9	-218.7	179.9	-
OPER 364.5	332.2	-332.2	332.2	-332.2	299.9	-364.5	299.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	96.23 R	74.03	256.50	0.0	68.33	52.56	242.50	
		-14.07 L	-10.82	192.00	0.0	-10.40	-8.00	215.00	0.00
OPER	5C1	78.82 L	60.63	226.50	0.0	0.00	0.00	0.00	
		-12.46 L	-9.59	203.00	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	15.55	1.87	15.55	HS 37.39	67.3
5C1	3.81	29.25	3.81	29.25	0.00	152.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.800

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	0.00
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.20	35.20	2.861
			999999.000
			94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.800

Dead Load Moment Superimposed Dead Load Moment
2.8 23.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.8C	-191.7	191.7	-215.8C	200.3	-207.2	176.1	-231.3
OPER	359.7C	-319.4	319.4	-359.7C	333.8	-345.3	293.6	-385.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	81.61 R	62.78	259.00	0.0	53.54	41.19	245.00			
		-9.38 L	-7.22	192.00	0.0	-6.93	-5.33	215.00		0.00	
OPER	5C1	65.73 L	50.56	229.00	0.0	0.00	0.00	0.00			
		-8.31 L	-6.39	203.00	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	2.45	22.09	2.16	43.17	77.7
5C1	5.08	41.55	4.47	0.00	178.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-77.4	81.5
OPER	172.1	-128.9	135.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.32	4.40	-12.56	3.39	-13.39	4.32	-10.30	3.32
OPER	5C1	-13.15	4.26	-10.11	3.28	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.74	18.51	HS 94.78	170.6	
5C1	9.81	31.89	0.00	392.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.800Dead Load Moment 2.8
Superimposed Dead Load Moment 23.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	209.7	-189.0	209.7	-189.0	183.8	-214.8	183.8	-
OPER 358.0	332.2	-332.2	332.2	-332.2	306.4	-358.0	306.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	81.61 R	62.78	259.00	0.0	53.54	41.19	245.00	
		-9.38 L	-7.22	192.00	0.0	-6.93	-5.33	215.00	0.00
OPER	5C1	65.73 L	50.56	229.00	0.0	0.00	0.00	0.00	
		-8.31 L	-6.39	203.00	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	2.25	22.90	2.25	22.90	HS 45.04	81.1
5C1	4.66	43.09	4.66	43.09	0.00	186.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.900

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.900

Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.8C	-191.7	191.7	-215.8C	206.8	-200.7	182.6	-224.9
OPER	359.7C	-319.4	319.4	-359.7C	344.6	-334.5	304.4	-374.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	50.17 R	38.59	261.50	0.0	31.33	24.10	247.50			
		-4.69 L	-3.61	192.00	0.0	-3.47	-2.67	215.00	0.00		
OPER	5C1	39.85 L	30.66	231.50	0.0	0.00	0.00	0.00			
		-4.15 L	-3.20	203.00	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	4.12	42.79	3.64	47.94	HS 72.80	131.0
5C1	8.65	80.51	7.64	90.21	0.00	305.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-4.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-76.3	82.5
OPER	172.1	-127.2	137.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.07	2.21	-15.44	1.70	-15.90	2.37	-12.23	1.82
OPER	5C1	-15.94	2.77	-12.26	2.13	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	3.80	34.79	HS 76.07	136.9
5C1	7.98	49.72	0.00	319.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 13.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 208.4	205.3	-193.3	205.3	-193.3	190.3	-208.4	190.3	-
OPER 347.3	332.2	-332.2	332.2	-332.2	317.1	-347.3	317.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	50.17 R	38.59	261.50	0.0	31.33	24.10	247.50	
		-4.69 L	-3.61	192.00	0.0	-3.47	-2.67	215.00	0.00
OPER	5C1	39.85 L	30.66	231.50	0.0	0.00	0.00	0.00	
		-4.15 L	-3.20	203.00	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	3.79	44.43	3.79	44.43	HS 75.86	136.5
5C1	7.96	83.59	7.96	83.59	0.00	318.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 11.000

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.81
21.2	19.76	0.460	bott	9.86	8.30	8.30	0.74	1.81

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.50	21.50	10.60	10.60	1600.0	1600.0

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
151.0	151.0	151.0	151.0	467.60

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S04
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.210	0.01	0.01	43.43	21.66
bott	3.92	0.74	11.210	150.00	82.81		21.66

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.75	35.20	35.20	2.861	999999.000	94.285

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.60	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	172.1

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 11.000

Dead 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.	215.8C	-191.7	191.7	-215.8C	215.8	-191.7	191.7	-215.8
OPER	359.7C	-319.4	319.4	-359.7C	359.7	-319.4	319.4	-359.7

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
OPER	5C1	0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00
		0.00 R	0.00	0.00	0.00	0.0	0.00	0.00	0.00	0.00	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 11.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-6.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.3	-75.3	79.9
OPER	172.1	-125.5	133.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-24.01	0.00	-18.47	0.00	-18.53	1.77	-14.26	1.36
OPER	5C1	-18.86	0.00	-14.51	0.00	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.14	45.08	HS 62.72	112.9	
5C1	6.65	999.00	0.00	266.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S04
Check Point I. D. 11.000Dead 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. 199.3	199.3	-199.3	199.3	-199.3	199.3	-199.3	199.3	-
OPER 332.2	332.2	-332.2	332.2	-332.2	332.2	-332.2	332.2	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live Load 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	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	5C1	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
5C1	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 10

Live Load Distribution Factor 1.143

Second Live Load Dist. Factor 1.143

Comments:

Member I. D. S05 Symmetry:

Span Length:	Span 1 25.000	Span 2 25.000	Span 3 25.000	Span 4 25.000	Span 5 25.000
	Span 6 25.000	Span 7 25.000	Span 8 25.000	Span 9 25.000	Span 10 25.000

Range Span No.	Length Range No.	-- Non-Composite: Range Length	Section Left	Section Right	Section Variation	Hinge Location No. 1	Hinge Location No. 2
1	1	11.500	1	0		0.0	0.0
1	2	2.000	2	0		0.0	0.0
1	3	11.500	1	0		0.0	0.0
2	1	11.500	3	0		0.0	0.0
2	2	2.000	4	0		0.0	0.0
2	3	11.500	3	0		0.0	0.0
3	1	25.000	3	0		0.0	0.0
4	1	11.500	3	0		0.0	0.0
4	2	2.000	4	0		0.0	0.0
4	3	11.500	3	0		0.0	0.0
5	1	11.500	3	0		0.0	0.0
5	2	2.000	4	0		0.0	0.0
5	3	11.500	3	0		0.0	0.0
6	1	11.500	3	0		0.0	0.0
6	2	2.000	4	0		0.0	0.0
6	3	11.500	3	0		0.0	0.0
7	1	11.500	3	0		0.0	0.0
7	2	2.000	4	0		0.0	0.0
7	3	11.500	3	0		0.0	0.0
8	1	25.000	3	0		0.0	0.0
9	1	11.500	3	0		0.0	0.0
9	2	2.000	4	0		0.0	0.0
9	3	11.500	3	0		0.0	0.0
10	1	25.000	1	0		0.0	0.0

Superimposed Dead Load:

Span No.	Load Type	Dist. from Left Supp.	Distributed Load (lbs/ft)			Concentrated Load (kips)
			Left	Right	Length	
1	W	0.000	765.0	765.0	25.000	0.0
1	P	12.500	0.0	0.0	0.000	0.1

2	W	0.000	765.0	765.0	25.000	0.0
2	P	12.500	0.0	0.0	0.000	0.1
3	W	0.000	765.0	765.0	25.000	0.0
3	P	12.500	0.0	0.0	0.000	0.1
4	W	0.000	765.0	765.0	25.000	0.0
4	P	12.500	0.0	0.0	0.000	0.1
5	W	0.000	765.0	765.0	25.000	0.0
5	P	12.500	0.0	0.0	0.000	0.1
6	W	0.000	765.0	765.0	25.000	0.0
6	P	12.500	0.0	0.0	0.000	0.1
7	W	0.000	765.0	765.0	25.000	0.0
7	P	12.500	0.0	0.0	0.000	0.1
8	W	0.000	765.0	765.0	25.000	0.0
8	P	12.500	0.0	0.0	0.000	0.1
9	W	0.000	765.0	765.0	25.000	0.0
9	P	12.500	0.0	0.0	0.000	0.1
10	W	0.000	765.0	765.0	25.000	0.0
10	P	12.500	0.0	0.0	0.000	0.1

NOTE: All distances are shown in decimal feet, moments are shown in foot-kips, and shears are shown in kips. Section and section properties are shown as: in., in.**2, in.**3, and in.**4.

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.000

Dead 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.	215.6C	-188.8	188.8	-215.6C	215.6	-188.8	188.8	-215.6
OPER	359.4C	-314.7	314.7	-359.4C	359.4	-314.7	314.7	-359.4

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	5C1	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
5C1	999.00	999.00	999.00	999.00	0.00	999.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.000

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.7	0.0
	7.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.0	-84.3	74.3
OPER	171.7	-140.4	123.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.40	32.01	-1.85	24.62	-2.37	24.72	-1.82	19.01
OPER	5C1	-2.07	25.15	-1.59	19.35	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	35.09	2.32	HS 46.40	83.5
5C1	67.91	4.92	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
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. 196.4	196.4	-196.4	196.4	-196.4	196.4	-196.4	196.4	-
OPER 327.3	327.3	-327.3	327.3	-327.3	327.3	-327.3	327.3	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live 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	5C1	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
5C1	999.00	999.00	999.00	999.00	999.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.100

Dead Load Moment 1.6
Superimposed Dead Load Moment 16.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	204.7	-199.8	177.9	-226.6
OPER	359.4C	-314.7	314.7	-359.4C	341.2	-332.9	296.5	-377.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.89 L	51.45	-11.50	0.0	41.78	32.14	2.50			
		-6.27 R	-4.82	58.00	0.0	-4.64	-3.57	35.00	0.00		
OPER	5C1	53.14 R	40.88	18.50	0.0	0.00	0.00	0.00			
		-5.55 R	-4.27	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.06	31.88	2.66	36.17	HS 53.19	95.7
5C1	6.42	59.96	5.58	68.01	0.00	223.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-83.0	75.5
OPER	171.7	-138.4	125.9

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	-2.96	26.75	-2.27	20.58	-3.17	21.20	-2.44	16.31
OPER	5C1	-3.70	21.26	-2.84	16.35	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	26.21	2.82	56.45
5C1	37.41	5.92	0.00
			Load Capacity (tons)
			101.6
			236.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.100

Dead Load Moment	Superimposed Dead Load Moment
1.6	16.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 207.3	203.7	-189.1	203.7	-189.1	185.4	-207.3	185.4	-
OPER 345.5	327.3	-327.3	327.3	-327.3	309.0	-345.5	309.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.89 L	51.45	-11.50	0.0	41.78	32.14	2.50	
		-6.27 R	-4.82	58.00	0.0	-4.64	-3.57	35.00	0.00
OPER	5C1	53.14 R	40.88	18.50	0.0	0.00	0.00	0.00	
		-5.55 R	-4.27	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.77	33.09	2.77	33.09	HS 55.44	99.8
5C1	5.82	62.22	5.82	62.22	0.00	232.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.200

Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	196.9	-207.6	170.1	-234.4
OPER	359.4C	-314.7	314.7	-359.4C	328.2	-345.9	283.5	-390.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.81 L	83.70	-9.00	0.0	71.39	54.91	5.00			
		-12.53 R	-9.64	58.00	0.0	-9.27	-7.13	35.00	0.00		
OPER	5C1	87.63 R	67.41	21.00	0.0	0.00	0.00	0.00			
		-11.11 R	-8.54	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.81	16.57	1.56	18.71	HS 31.26	56.3
5C1	3.74	31.15	3.23	35.17	0.00	129.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-81.8	76.8
OPER	171.7	-136.3	128.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-5.88	21.76	-4.52	16.74	-5.76	17.86	-4.43	13.74
OPER	5C1	-5.69	17.53	-4.38	13.48	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	13.91	3.53	HS 70.55	127.0
5C1	23.95	7.30	0.00	292.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.200Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 215.1	208.9	-183.9	208.9	-183.9	177.6	-215.1	177.6	-
OPER 358.5	327.3	-327.3	327.3	-327.3	296.0	-358.5	296.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	108.81 L	83.70	-9.00	0.0	71.39	54.91	5.00	
		-12.53 R	-9.64	58.00	0.0	-9.27	-7.13	35.00	0.00
OPER	5C1	87.63 R	67.41	21.00	0.0	0.00	0.00	0.00	
		-11.11 R	-8.54	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.63	17.17	1.63	17.17	HS 32.65	58.8
5C1	3.38	32.28	3.38	32.28	0.00	135.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.300

Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	192.2	-212.2	165.4	-239.0
OPER	359.4C	-314.7	314.7	-359.4C	320.4	-353.7	275.7	-398.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.29 L	98.69	-6.50	0.0	91.09	70.07	7.50			
		-18.80 R	-14.46	58.00	0.0	-13.91	-10.70	35.00	0.00		
OPER	5C1	105.06 R	80.81	23.50	0.0	0.00	0.00	0.00			
		-16.66 R	-12.81	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.50	11.29	1.29	12.72	HS 25.79	46.4
5C1	3.05	21.23	2.62	23.92	0.00	105.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.300

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.0	-80.5	78.0
OPER	171.7	-134.2	130.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.73	17.11	-6.71	13.16	-8.44	14.72	-6.50	11.32
OPER	5C1	-8.45	14.01	-6.50	10.78	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	9.22	4.56	HS 91.23	164.2	
5C1	15.87	9.28	0.00	371.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.300Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 219.8	212.0	-180.8	212.0	-180.8	173.0	-219.8	173.0	-
OPER 366.3	327.3	-327.3	327.3	-327.3	288.3	-366.3	288.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.29 L	98.69	-6.50	0.0	91.09	70.07	7.50	
		-18.80 R	-14.46	58.00	0.0	-13.91	-10.70	35.00	0.00
OPER	5C1	105.06 R	80.81	23.50	0.0	0.00	0.00	0.00	
		-16.66 R	-12.81	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.35	11.69	1.35	11.69	HS 26.96	48.5
5C1	2.74	21.99	2.74	21.99	0.00	109.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.400

Dead Load Moment 3.6
Superimposed Dead Load Moment 37.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	190.7	-213.7	163.9	-240.6
OPER	359.4C	-314.7	314.7	-359.4C	317.9	-356.2	273.2	-400.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	128.52 L	98.86	-4.00	0.0	99.40	76.46	10.00			
		-25.06 R	-19.28	58.00	0.0	-18.54	-14.26	35.00	0.00		
OPER	5C1	110.30 R	84.84	22.00	0.0	0.00	0.00	0.00			
		-22.21 R	-17.09	47.00	0.0	0.00	0.00	0.00	0.00	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	1.48	8.53	1.27	9.60	HS 25.50	45.9
5C1	2.88	16.04	2.48	18.05	0.00	99.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
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.	103.0	-79.2	79.3
OPER	171.7	-132.1	132.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-11.47	12.85	-8.83	9.89	-11.18	11.80	-8.60	9.08
OPER	5C1	-11.04	10.91	-8.49	8.39	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.91	6.17	HS 123.37	222.1
5C1	11.96	12.11	0.00	478.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.400Dead Load Moment 3.6
Superimposed Dead Load Moment 37.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 221.3	213.0	-179.8	213.0	-179.8	171.4	-221.3	171.4	-
OPER 368.8	327.3	-327.3	327.3	-327.3	285.7	-368.8	285.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.52 L	98.86	-4.00	0.0	99.40	76.46	10.00	
		-25.06 R	-19.28	58.00	0.0	-18.54	-14.26	35.00	0.00
OPER	5C1	110.30 R	84.84	22.00	0.0	0.00	0.00	0.00	
		-22.21 R	-17.09	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.33	8.83	1.33	8.83	HS 26.68	48.0
5C1	2.59	16.60	2.59	16.60	0.00	103.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.34	8.30	8.30	0.74	1.87
21.2	19.72	0.460	bott	10.38	8.30	8.30	0.74	1.87

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
20.20	20.20	10.08	11.12	1462.8	1462.8

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
145.2	131.5	145.2	131.5	485.29

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	20.52
bott	4.15	0.74	11.220	150.00	80.23		22.82

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			105.568

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	485.29	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.500Dead Load Moment 3.4
Superimposed Dead Load Moment 35.4

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.	224.0C	-184.3	166.9	-224.0C	200.7	-207.6	143.6	-247.3
OPER	373.3C	-307.1	278.2	-373.3C	334.5	-346.0	239.3	-412.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.16 L	93.20	-15.50	0.0	98.99	76.15	12.50			
		-31.33 R	-24.10	58.00	0.0	-23.18	-17.83	35.00	0.00		
OPER	5C1	107.76 R	82.90	24.50	0.0	0.00	0.00	0.00			
		-27.76 R	-21.36	47.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.66	6.63	1.18	7.89	HS 23.70	42.7
5C1	3.10	12.46	2.22	14.84	0.00	88.8

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 1.500
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -2.0 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-78.0	80.5
OPER	171.7	-130.0	134.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-15.08	9.69	-11.60	7.46	-13.94	9.14	-10.72	7.03
OPER	5C1	-13.47	8.37	-10.36	6.44	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.17	8.31	HS 103.44	186.2
5C1	9.65	16.03	0.00	386.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.500Dead Load Moment 3.4
Superimposed Dead Load Moment 35.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 196.9	207.2	-176.1	189.1	-158.0	168.3	-214.9	150.3	-
OPER 328.1	319.4	-319.4	289.3	-289.3	280.6	-358.2	250.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	121.16 L	93.20	-15.50	0.0	98.99	76.15	12.50	
		-31.33 R	-24.10	58.00	0.0	-23.18	-17.83	35.00	0.00
OPER	5C1	107.76 R	82.90	24.50	0.0	0.00	0.00	0.00	
		-27.76 R	-21.36	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.39	6.86	1.24	6.28	HS 24.80	44.6
5C1	2.60	12.90	2.32	11.82	0.00	93.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	2.861	93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.600

Dead Load Moment 2.8
Superimposed Dead Load Moment 28.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	197.2	-207.3	170.4	-234.1
OPER	359.4C	-314.7	314.7	-359.4C	328.6	-345.4	283.9	-390.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.03 L	88.49	-13.00	0.0	88.80	68.31	15.00			
		-37.59 R	-28.92	58.00	0.0	-27.81	-21.39	35.00	0.00		
OPER	5C1	98.53 L	75.79	3.00	0.0	0.00	0.00	0.00			
		-33.32 R	-25.63	47.00	0.0	0.00	0.00	0.00	0.00	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	1.71	5.51	1.48	6.23	HS 29.62	53.3
5C1	3.34	10.37	2.88	11.71	0.00	115.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-76.7	81.8
OPER	171.7	-127.8	136.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-18.20	6.08	-14.00	4.68	-16.68	6.74	-12.83	5.19
OPER	5C1	-15.76	6.26	-12.12	4.82	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.21	12.14	HS 84.26	151.7	
5C1	8.11	21.78	0.00	324.5	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.600Dead Load Moment 2.8
Superimposed Dead Load Moment 28.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.8	208.7	-184.1	208.7	-184.1	177.9	-214.8	177.9	-
OPER 358.0	327.3	-327.3	327.3	-327.3	296.5	-358.0	296.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	115.03 L	88.49	-13.00	0.0	88.80	68.31	15.00	
		-37.59 R	-28.92	58.00	0.0	-27.81	-21.39	35.00	0.00
OPER	5C1	98.53 L	75.79	3.00	0.0	0.00	0.00	0.00	
		-33.32 R	-25.63	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.55	5.72	1.55	5.72	HS 30.93	55.7
5C1	3.01	10.75	3.01	10.75	0.00	120.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.700

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	205.2	-199.3	178.4	-226.1
OPER	359.4C	-314.7	314.7	-359.4C	342.0	-332.1	297.3	-376.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.40 L	76.46	-10.50	0.0	71.87	55.29	17.50			
		-43.86 R	-33.73	58.00	0.0	-33.91	-26.09	35.00	85.00		
OPER	5C1	80.94 R	62.26	64.50	0.0	0.00	0.00	0.00			
		-38.87 R	-29.90	47.00	0.0	0.00	0.00	0.00	0.00	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	2.06	4.54	1.79	5.16	HS 35.89	64.6
5C1	4.22	8.55	3.67	9.69	0.00	146.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-5.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-75.4	83.1
OPER	171.7	-125.7	138.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-23.31	3.01	-17.93	2.32	-19.36	4.63	-14.89	3.56
OPER	5C1	-18.58	4.29	-14.30	3.30	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.24	17.93	HS 64.72
5C1	6.77	32.26	0.00
			Load Capacity (tons)
			116.5
			270.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.700Dead Load Moment 1.7
Superimposed Dead Load Moment 15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 206.8	203.3	-189.4	203.3	-189.4	185.9	-206.8	185.9	-
OPER 344.7	327.3	-327.3	327.3	-327.3	309.8	-344.7	309.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	99.40 L	76.46	-10.50	0.0	71.87	55.29	17.50	
		-43.86 R	-33.73	58.00	0.0	-33.91	-26.09	35.00	85.00
OPER	5C1	80.94 R	62.26	64.50	0.0	0.00	0.00	0.00	
		-38.87 R	-29.90	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.87	4.72	1.87	4.72	HS 37.41	67.3
5C1	3.83	8.87	3.83	8.87	0.00	153.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.800

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.	215.6C	-188.8	188.8	-215.6C	216.3	-188.1	189.5	-215.0
OPER	359.4C	-314.7	314.7	-359.4C	360.5	-313.6	315.8	-358.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	63.82 L	49.09	-8.00	0.0	47.49	36.53	20.00			
		-50.12 R	-38.55	58.00	0.0	-38.76	-29.81	35.00		85.00	
OPER	5C1	58.49 R	44.99	67.00	0.0	0.00	0.00	0.00			
		-44.42 R	-34.17	47.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	3.39	3.75	2.97	59.38	106.9
5C1	6.16	7.06	5.40	0.00	216.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.800

Dead Load	Superimposed Dead Load
Shear (-) Shear	(+) Shear
-0.7	-7.8
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-74.2	84.3
OPER	171.7	-123.6	140.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-28.22	0.97	-21.71	0.74	-21.95	2.83	-16.88	2.17
OPER	5C1	-21.71	2.52	-16.70	1.94	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.63	29.83	HS 52.57	94.6
5C1	5.70	55.84	0.00	227.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.800Dead Load Moment 0.1
Superimposed Dead Load Moment -1.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 195.7	195.9	-196.8	195.9	-196.8	197.0	-195.7	197.0	-
OPER 326.2	327.3	-327.3	327.3	-327.3	328.4	-326.2	328.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	63.82 L	49.09	-8.00	0.0	47.49	36.53	20.00	
		-50.12 R	-38.55	58.00	0.0	-38.76	-29.81	35.00	85.00
OPER	5C1	58.49 R	44.99	67.00	0.0	0.00	0.00	0.00	
		-44.42 R	-34.17	47.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	3.09	3.90	3.09	3.90	HS 61.75	111.1
5C1	5.61	7.34	5.61	7.34	0.00	224.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 1.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.900

Dead Load Moment Superimposed Dead Load Moment
-1.9 -23.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	230.6	-173.9	203.8	-200.7
OPER	359.4C	-314.7	314.7	-359.4C	384.3	-289.8	339.6	-334.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	12.59 R	9.68	88.00	0.0	23.61	18.16	22.50			
		-62.16 L	-47.82	16.00	0.0	-58.12	-44.71	35.00	10.00		
OPER	5C1	29.39 R	22.61	69.50	0.0	0.00	0.00	0.00			
		-52.24 L	-40.18	-11.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.77	2.80	8.63	3.23	55.94
5C1	13.08	5.55	11.55	6.40	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.9	-9.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-72.9	85.6
OPER	171.7	-121.5	142.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.72	0.64	-25.17	0.50	-24.40	1.34	-18.77	1.03
OPER	5C1	-24.64	1.00	-18.96	0.77	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.23	63.79	HS 44.58	80.2
5C1	4.93	142.70	0.00	197.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 1.900Dead Load Moment -1.9
Superimposed Dead Load Moment -23.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.4	186.4	-206.3	186.4	-206.3	211.3	-181.4	211.3	-
OPER 302.4	327.3	-327.3	327.3	-327.3	352.2	-302.4	352.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.59 R	9.68	88.00	0.0	23.61	18.16	22.50	
		-62.16 L	-47.82	16.00	0.0	-58.12	-44.71	35.00	10.00
OPER	5C1	29.39 R	22.61	69.50	0.0	0.00	0.00	0.00	
		-52.24 L	-40.18	-11.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	8.95	2.92	8.95	2.92	HS 58.37	105.1
5C1	11.98	5.79	11.98	5.79	0.00	231.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.311

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.78		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.000

Dead Load Moment Superimposed Dead Load Moment
-4.4 -49.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	213.1	-126.1	190.8	-148.4
OPER	301.2C	-264.1	264.1	-301.2C	355.1	-210.2	318.0	-247.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00			
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00		35.00	
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00			
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.68	1.21	11.35	1.42	HS 24.21	43.6
5C1	27.22	2.84	24.37	3.35	0.00	113.7

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 2.000
 HS20 5C1

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.9	-1.1	-9.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-71.7	63.3
OPER	151.4	-119.5	105.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.72	34.96	-25.17	26.89	-24.40	26.43	-18.77	20.33
OPER	5C1	-24.64	26.82	-18.96	20.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	1.81	HS 36.22	65.2
5C1	4.37	3.93	0.00	157.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.000

Dead Load Moment	Superimposed Dead Load Moment
-4.4	-49.5

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. 132.4	143.2	-186.3	143.2	-186.3	197.1	-132.4	197.1	-
OPER 220.7	274.6	-274.6	274.6	-274.6	328.5	-220.7	328.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00	
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00	
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
bend	+bend	-bend	+bend	-bend		
HS20	11.73	1.27	11.73	1.27	HS 25.43	45.8
5C1	25.18	2.99	25.18	2.99	0.00	119.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	28.67	28.67	1.700
			999999.000
			86.765

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.000

Dead Load Superimposed Dead Load
Moment Moment
-4.4 -49.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	213.1	-126.1	190.8	-148.4
OPER	301.2C	-264.1	264.1	-301.2C	355.1	-210.2	318.0	-247.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00			
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00		35.00	
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00			
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.68	1.21	11.35	1.42	HS 24.21	43.6
5C1	27.22	2.84	24.37	3.35	0.00	113.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-1.1	0.8	-11.6	10.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-71.7	63.3
OPER	151.4	-119.5	105.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-36.73	34.96	-28.25	26.89	-26.68	26.43	-20.53	20.33
OPER	5C1	-27.33	26.82	-21.02	20.63	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.95	1.81	HS 36.22	65.2
5C1	4.37	3.93	0.00	157.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.000

Dead Load Moment	Superimposed Dead Load Moment
-4.4	-49.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 132.4	143.2	-186.3	143.2	-186.3	197.1	-132.4	197.1	-
OPER 220.7	274.6	-274.6	274.6	-274.6	328.5	-220.7	328.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.81 R	12.93	83.00	0.0	12.42	9.56	60.00	
		-104.15 L	-80.12	4.50	0.0	-96.15	-73.96	15.00	35.00
OPER	5C1	13.05 R	10.04	109.50	0.0	0.00	0.00	0.00	
		-73.91 L	-56.85	-6.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.73	1.27	11.73	1.27	HS 25.43	45.8
5C1	25.18	2.99	25.18	2.99	0.00	119.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.100

Dead Load Superimposed Dead Load
Moment Moment
-2.5 -26.7

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.	180.7C	-158.4	158.4	-180.7C	198.2	-140.9	176.0	-163.2
OPER	301.2C	-264.1	264.1	-301.2C	330.4	-234.9	293.3	-272.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.06 R	11.58	55.50	0.0	21.50	16.54	27.50			
		-68.11 R	-52.39	34.00	0.0	-58.92	-45.32	15.00	37.50		
OPER	5C1	21.50 R	16.54	78.50	0.0	0.00	0.00	0.00			
		-55.28 L	-42.52	-3.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.22	2.07	8.18	2.40	HS 41.38 74.5
5C1	15.37	4.25	13.64	4.92	0.00 170.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.7	0.0	8.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-75.2	64.5
OPER	151.4	-125.3	107.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.26	-2.30	23.28	-3.00	23.88	-2.30	18.37
OPER	5C1	-3.16	23.53	-2.43	18.10	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	25.09	2.13	HS 42.66	76.8
5C1	39.61	4.57	0.00	182.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.100

Dead Load Moment	Superimposed Dead Load Moment
-2.5	-26.7

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. 147.3	153.1	-176.5	153.1	-176.5	182.3	-147.3	182.3	-
OPER 245.4	274.6	-274.6	274.6	-274.6	303.8	-245.4	303.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	15.06 R	11.58	55.50	0.0	21.50	16.54	27.50	
		-68.11 R	-52.39	34.00	0.0	-58.92	-45.32	15.00	37.50
OPER	5C1	21.50 R	16.54	78.50	0.0	0.00	0.00	0.00	
		-55.28 L	-42.52	-3.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	8.48	2.16	8.48	2.16	HS 43.24	77.8
5C1	14.13	4.44	14.13	4.44	0.00	177.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.200

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.200

Dead Load Moment Superimposed Dead Load Moment
-1.0 -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.	180.7C	-158.4	158.4	-180.7C	186.5	-152.7	164.2	-174.9
OPER	301.2C	-264.1	264.1	-301.2C	310.8	-254.4	273.7	-291.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.37 R	44.90	58.00	0.0	40.81	31.40	30.00			
		-55.78 L	-42.91	-8.00	0.0	-37.59	-28.92	15.00		47.50	
OPER	5C1	46.35 R	35.65	81.00	0.0	0.00	0.00	0.00			
		-44.93 L	-34.56	1.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.19	2.74	2.81	3.14	HS 54.73
5C1	6.71	5.66	5.91	6.49	0.00 98.5
					226.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	6.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-73.9	65.8
OPER	151.4	-123.2	109.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.52	-2.30	19.63	-4.20	21.08	-3.23	16.22
OPER	5C1	-4.74	20.12	-3.65	15.47	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.62	2.58	HS 51.55	92.8
5C1	25.99	5.45	0.00	218.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.200

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-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. 159.0	160.9	-168.6	160.9	-168.6	170.6	-159.0	170.6	-
OPER 265.0	274.6	-274.6	274.6	-274.6	284.3	-265.0	284.3	-

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	58.37 R	44.90	58.00	0.0	40.81	31.40	30.00	
		-55.78 L	-42.91	-8.00	0.0	-37.59	-28.92	15.00	47.50
OPER	5C1	46.35 R	35.65	81.00	0.0	0.00	0.00	0.00	
		-44.93 L	-34.56	1.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.92	2.85	2.92	2.85	HS 57.01	102.6
5C1	6.13	5.90	6.13	5.90	0.00	235.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.300

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

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.	180.7C	-158.4	158.4	-180.7C	177.9	-161.3	155.6	-183.6
OPER	301.2C	-264.1	264.1	-301.2C	296.5	-268.8	259.3	-305.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.59 R	65.84	60.50	0.0	61.73	47.49	32.50			
		-46.29 L	-35.61	-8.00	0.0	-32.67	-25.13	15.00	0.00		
OPER	5C1	66.63 R	51.25	83.50	0.0	0.00	0.00	0.00			
		-39.88 L	-30.68	4.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.08	3.48	1.82	36.36	65.4
5C1	4.45	6.74	3.89	0.00	155.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.300

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	67.0
OPER	151.4	-121.2	111.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.36	20.66	-3.35	15.89	-6.46	18.14	-4.97	13.95
OPER	5C1	-6.58	16.82	-5.06	12.94	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	11.25	3.24	HS 64.88	116.8	
5C1	18.41	6.64	0.00	265.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.300Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.6	166.7	-162.9	166.7	-162.9	161.9	-167.6	161.9	-
OPER 279.4	274.6	-274.6	274.6	-274.6	269.9	-279.4	269.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	85.59 R	65.84	60.50	0.0	61.73	47.49	32.50	
		-46.29 L	-35.61	-8.00	0.0	-32.67	-25.13	15.00	0.00
OPER	5C1	66.63 R	51.25	83.50	0.0	0.00	0.00	0.00	
		-39.88 L	-30.68	4.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.89	3.62	1.89	3.62	HS 37.84	68.1
5C1	4.05	7.01	4.05	7.01	0.00	162.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.400

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.286

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.76		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.400

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	172.3	-166.8	150.1	-189.1
OPER	301.2C	-264.1	264.1	-301.2C	287.2	-278.0	250.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.30 R	74.08	63.00	0.0	74.65	57.42	35.00			
		-36.80 L	-28.31	-8.00	0.0	-28.51	-21.93	15.00	0.00		
OPER	5C1	80.88 R	62.21	47.00	0.0	0.00	0.00	0.00			
		-36.33 L	-27.94	5.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.79	4.53	1.56	5.14	56.1
5C1	3.55	7.65	3.09	8.68	123.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
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 (-)	for LL+I (+)
INV.	90.8	-71.5	68.3
OPER	151.4	-119.1	113.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.92	16.99	-6.86	13.07	-9.03	15.15	-6.95	11.65
OPER	5C1	-8.66	14.27	-6.66	10.98	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.91	4.02	HS 80.35	144.6
5C1	13.75	7.97	0.00	318.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.400Dead Load Moment 0.8
Superimposed Dead Load Moment 13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.2	170.4	-159.2	170.4	-159.2	156.4	-173.2	156.4	-
OPER 288.6	274.6	-274.6	274.6	-274.6	260.7	-288.6	260.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.30 R	74.08	63.00	0.0	74.65	57.42	35.00	
		-36.80 L	-28.31	-8.00	0.0	-28.51	-21.93	15.00	0.00
OPER	5C1	80.88 R	62.21	47.00	0.0	0.00	0.00	0.00	
		-36.33 L	-27.94	5.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.62	4.70	1.62	4.70	HS 32.48	58.5
5C1	3.22	7.94	3.22	7.94	0.00	128.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			108.692

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		18.20		106.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.500

Dead Load Moment 1.1
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.	188.8C	-153.8	136.7	-188.8C	178.0	-164.6	125.9	-199.7
OPER	314.7C	-256.3	227.8	-314.7C	296.7	-274.3	209.8	-332.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.10 L	72.38	23.50	0.0	80.16	61.66	37.50			
		-27.31 L	-21.01	-8.00	0.0	-24.34	-18.72	15.00	0.00		
OPER	5C1	85.46 R	65.73	88.50	0.0	0.00	0.00	0.00			
		-34.37 L	-26.44	6.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.89	6.03	1.34	26.76	48.2
5C1	3.47	7.98	2.45	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.500Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 0.5

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -70.2 69.5
OPER 151.4 -117.0 115.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.09	13.29	-10.07	10.22	-11.82	12.21	-9.10	9.39
OPER	5C1	-10.94	11.67	-8.41	8.98	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.37	5.23	HS 104.58	188.2
5C1	10.70	9.93	0.00	397.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.500

Dead Load Moment Superimposed Dead Load Moment

1.1 16.9

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	167.1	-152.7	149.4	-135.0	149.1	-170.7	131.3	-
OPER 255.0	266.5	-266.5	236.9	-236.9	248.5	-284.5	218.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	94.10 L	72.38	23.50	0.0	80.16	61.66	37.50	
		-27.31 L	-21.01	-8.00	0.0	-24.34	-18.72	15.00	0.00
OPER	5C1	85.46 R	65.73	88.50	0.0	0.00	0.00	0.00	
		-34.37 L	-26.44	6.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.58	6.25	1.40	5.60	HS 27.92	50.3
5C1	2.91	8.28	2.56	7.42	0.00	102.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.600

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	170.7	-168.5	148.4	-190.8
OPER	301.2C	-264.1	264.1	-301.2C	284.4	-280.8	247.3	-318.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.08 L	73.90	12.00	0.0	76.05	58.50	40.00			
		-30.07 R	-23.13	83.00	0.0	-26.58	-20.44	60.00	0.00		
OPER	5C1	83.58 L	64.29	28.00	0.0	0.00	0.00	0.00			
		-34.06 R	-26.20	69.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.78	5.60	1.54	6.34	HS 30.89	55.6
5C1	3.40	8.24	2.96	9.34	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.600

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	151.4	-114.9	118.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-16.75	9.12	-12.89	7.02	-14.76	9.41	-11.36	7.24
OPER	5C1	-13.41	9.45	-10.31	7.27	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	4.11	7.52	HS 82.31
5C1	8.57	12.48	0.00
			Load Capacity (tons)
			148.2
			342.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.600

Dead Load Moment Superimposed Dead Load Moment

1.1 15.7

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 174.8	171.5	-158.1	171.5	-158.1	154.7	-174.8	154.7	-
OPER 291.4	274.6	-274.6	274.6	-274.6	257.9	-291.4	257.9	-

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	96.08 L	73.90	12.00	0.0	76.05	58.50	40.00	
		-30.07 R	-23.13	83.00	0.0	-26.58	-20.44	60.00	0.00
OPER	5C1	83.58 L	64.29	28.00	0.0	0.00	0.00	0.00	
		-34.06 R	-26.20	69.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.61	5.81	1.61	5.82	HS 32.21	58.0
5C1	3.09	8.56	3.09	8.56	0.00	123.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.700

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	174.5	-164.6	152.2	-186.9
OPER	301.2C	-264.1	264.1	-301.2C	290.9	-274.4	253.7	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.99 L	66.14	14.50	0.0	64.49	49.61	42.50			
		-37.88 R	-29.14	83.00	0.0	-30.03	-23.10	60.00	0.00		
OPER	5C1	72.10 R	55.46	89.50	0.0	0.00	0.00	0.00			
		-36.32 R	-27.94	71.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.03	4.35	1.77	4.93	HS 35.41	63.7
5C1	4.03	7.55	3.52	8.58	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 2.700
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.2 -3.4 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.7	72.0
OPER	151.4	-112.8	120.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.51	4.55	-15.78	3.50	-17.76	6.83	-13.66	5.25
OPER	5C1	-16.46	7.31	-12.66	5.62	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.30	10.55	HS 66.01	118.8	
5C1	6.86	16.42	0.00	274.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.700Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.0	168.9	-160.6	168.9	-160.6	158.6	-171.0	158.6	-
OPER 285.0	274.6	-274.6	274.6	-274.6	264.3	-285.0	264.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	85.99 L	66.14	14.50	0.0	64.49	49.61	42.50	
		-37.88 R	-29.14	83.00	0.0	-30.03	-23.10	60.00	0.00
OPER	5C1	72.10 R	55.46	89.50	0.0	0.00	0.00	0.00	
		-36.32 R	-27.94	71.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.84	4.51	1.84	4.51	HS 36.88	66.4
5C1	3.66	7.84	3.67	7.84	0.00	146.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.800

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.	180.7C	-158.4	158.4	-180.7C	181.5	-157.7	159.2	-180.0
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.8	265.3	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.28 L	45.60	17.00	0.0	45.22	34.79	45.00			
		-45.69 R	-35.15	83.00	0.0	-35.33	-27.18	60.00	110.00		
OPER	5C1	54.28 R	41.75	92.00	0.0	0.00	0.00	0.00			
		-40.19 R	-30.92	72.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.06	3.45	2.68	3.94	HS 53.71 96.7
5C1	5.57	6.54	4.89	7.46	0.00 195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-5.3	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.5	73.3
OPER	151.4	-110.8	122.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.34	3.65	-19.49	2.81	-20.71	4.54	-15.93	3.49
OPER	5C1	-19.66	5.29	-15.12	4.07	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.62	16.13	HS 52.45	94.4	
5C1	5.64	23.08	0.00	225.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.800

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. 164.0	164.3	-165.3	164.3	-165.3	165.5	-164.0	165.5	-
OPER 273.4	274.6	-274.6	274.6	-274.6	275.9	-273.4	275.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.28 L	45.60	17.00	0.0	45.22	34.79	45.00	
		-45.69 R	-35.15	83.00	0.0	-35.33	-27.18	60.00	110.00
OPER	5C1	54.28 R	41.75	92.00	0.0	0.00	0.00	0.00	
		-40.19 R	-30.92	72.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.79	3.59	2.79	3.59	HS 55.84	100.5
5C1	5.08	6.80	5.08	6.80	0.00	203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 2.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	191.5	-147.6	169.3	-169.9
OPER	301.2C	-264.1	264.1	-301.2C	319.2	-246.1	282.1	-283.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.22 L	12.48	19.50	0.0	25.48	19.60	47.50			
		-58.99 L	-45.38	41.00	0.0	-53.53	-41.18	60.00	37.50		
OPER	5C1	28.16 R	21.66	94.50	0.0	0.00	0.00	0.00			
		-46.73 R	-35.95	74.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.52	2.50	6.64	2.88	HS 50.05	90.1
5C1	11.34	5.26	10.02	6.06	0.00	210.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-7.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.2	74.5
OPER	151.4	-108.7	124.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-30.06	3.80	-23.12	2.92	-23.53	3.52	-18.10	2.70
OPER	5C1	-22.87	3.51	-17.59	2.70	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.17	19.63	HS 43.39	78.1
5C1	4.75	35.33	0.00	190.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 2.900

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	157.6	-172.0	157.6	-172.0	175.6	-154.0	175.6	-
154.0								
OPER	274.6	-274.6	274.6	-274.6	292.6	-256.6	292.6	-
256.6								

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	16.22 L	12.48	19.50	0.0	25.48	19.60	47.50	
		-58.99 L	-45.38	41.00	0.0	-53.53	-41.18	60.00	37.50
OPER	5C1	28.16 R	21.66	94.50	0.0	0.00	0.00	0.00	
		-46.73 R	-35.95	74.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	6.89	2.61	6.89	2.61	HS 52.20	94.0
5C1	10.39	5.49	10.39	5.49	0.00	219.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.770

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.000Dead Load Moment Superimposed Dead Load Moment
-2.9 -37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.8
OPER	301.2C	-264.1	264.1	-301.2C	341.1	-224.1	304.0	-261.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.13	L	15.49	-8.00	0.0	17.97	13.82	15.00		
		-98.54	L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00	
OPER	5C1	15.53	L	11.95	-34.50	0.0	0.00	0.00	0.00		
		-59.39	L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	10.17	1.37	9.06	1.59	HS 27.30
5C1	21.97	3.77	19.58	4.40	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.000

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	63.7
OPER	151.4	-106.6	106.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.06	34.53	-23.12	26.56	-23.53	26.29	-18.10	20.22
OPER	5C1	-22.87	25.91	-17.59	19.93	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.86	1.85	HS 36.91	66.4
5C1	4.11	4.10	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.000Dead Load Moment Superimposed Dead Load Moment
-2.9 -37.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.8	148.8	-180.8	148.8	-180.8	188.7	-140.8	188.7	-
OPER 234.7	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00	
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00
OPER	5C1	15.53 L	11.95	-34.50	0.0	0.00	0.00	0.00	
		-59.39 L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.37	1.43	9.37	1.43	HS 28.58	51.4
5C1	20.26	3.95	20.26	3.95	0.00	158.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.000

Dead Load Superimposed Dead Load
Moment Moment
-2.9 -37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.8
OPER	301.2C	-264.1	264.1	-301.2C	341.1	-224.1	304.0	-261.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.13	L	15.49	-8.00	0.0	17.97	13.82	15.00		
		-98.54	L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00	
OPER	5C1	15.53	L	11.95	-34.50	0.0	0.00	0.00	0.00		
		-59.39	L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	10.17	1.37	9.06	1.59	HS 27.30	49.1
5C1	21.97	3.77	19.58	4.40	0.00	151.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	0.8	-9.1	9.5

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-64.0	63.7
OPER	151.4	-106.6	106.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.48	34.53	-26.53	26.56	-26.11	26.29	-20.08	20.22
OPER	5C1	-25.93	25.91	-19.95	19.93	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.86	1.85	HS 36.91	66.4
5C1	4.11	4.10	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.000Dead Load Moment Superimposed Dead Load Moment
-2.9 -37.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 140.8	148.8	-180.8	148.8	-180.8	188.7	-140.8	188.7	-
OPER 234.7	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	20.13 L	15.49	-8.00	0.0	17.97	13.82	15.00	
		-98.54 L	-75.80	29.50	0.0	-89.38	-68.76	60.00	40.00
OPER	5C1	15.53 L	11.95	-34.50	0.0	0.00	0.00	0.00	
		-59.39 L	-45.69	45.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	9.37	1.43	9.37	1.43	HS 28.58	51.4
5C1	20.26	3.95	20.26	3.95	0.00	158.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.100

Dead Load Moment Superimposed Dead Load Moment
-1.2 -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	190.9	-148.3	168.6	-170.5
OPER	301.2C	-264.1	264.1	-301.2C	318.2	-247.1	281.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.18 R	12.45	80.50	0.0	26.03	20.02	52.50			
		-58.87 R	-45.28	59.00	0.0	-53.04	-40.80	40.00		62.50	
OPER	5C1	29.47 L	22.67	5.50	0.0	0.00	0.00	0.00			
		-46.79 L	-35.99	25.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.34	2.52	6.48	2.90	90.7
5C1	10.80	5.28	9.54	6.07	211.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.7	65.0
OPER	151.4	-124.6	108.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.24	23.72	-2.49	18.24
OPER	5C1	-3.18	22.88	-2.44	17.60	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.05	2.16	HS 43.14	77.7
5C1	39.20	4.73	0.00	189.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.100Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.6	158.0	-171.6	158.0	-171.6	175.0	-154.6	175.0	-
OPER 257.7	274.6	-274.6	274.6	-274.6	291.6	-257.6	291.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.18 R	12.45	80.50	0.0	26.03	20.02	52.50	
		-58.87 R	-45.28	59.00	0.0	-53.04	-40.80	40.00	62.50
OPER	5C1	29.47 L	22.67	5.50	0.0	0.00	0.00	0.00	
		-46.79 L	-35.99	25.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.72	2.63	6.72	2.63	HS 52.52	94.5
5C1	9.90	5.51	9.90	5.51	0.00	220.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.200

Dead Load Moment 0.1
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.	180.7C	-158.4	158.4	-180.7C	180.2	-158.9	158.0	-181.2
OPER	301.2C	-264.1	264.1	-301.2C	300.4	-264.9	263.3	-302.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.42 R	45.71	83.00	0.0	45.04	34.64	55.00			
		-45.45 L	-34.96	17.00	0.0	-33.19	-25.53	40.00	72.50		
OPER	5C1	55.29 L	42.53	8.00	0.0	0.00	0.00	0.00			
		-40.24 L	-30.95	28.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.03	3.50	2.66	3.99	HS 53.17	95.7
5C1	5.43	6.58	4.76	7.51	0.00	190.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.4	0.0
	5.6

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.5	66.2
OPER	151.4	-122.5	110.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.48	20.91	-3.44	16.08
OPER	5C1	-4.77	19.69	-3.67	15.15	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.42	2.61	HS 52.13	93.8
5C1	25.71	5.60	0.00	224.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.200Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 165.3	165.1	-164.5	165.1	-164.5	164.3	-165.3	164.3	-
OPER 275.4	274.6	-274.6	274.6	-274.6	273.8	-275.4	273.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.42 R	45.71	83.00	0.0	45.04	34.64	55.00	
		-45.45 L	-34.96	17.00	0.0	-33.19	-25.53	40.00	72.50
OPER	5C1	55.29 L	42.53	8.00	0.0	0.00	0.00	0.00	
		-40.24 L	-30.95	28.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	2.77	3.64	2.77	3.64	HS 55.30	99.5
5C1	4.95	6.84	4.95	6.84	0.00	198.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.300

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	172.7	-166.5	150.4	-188.8
OPER	301.2C	-264.1	264.1	-301.2C	287.8	-277.5	250.7	-314.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 R	66.52	85.50	0.0	65.45	50.35	57.50			
		-37.73 L	-29.02	17.00	0.0	-29.22	-22.47	40.00	0.00		
OPER	5C1	73.00 L	56.15	10.50	0.0	0.00	0.00	0.00			
		-36.33 L	-27.94	29.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.00	4.41	1.74	HS 34.79	62.6
5C1	3.94	7.64	3.43	0.00	137.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 3.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-72.3	67.4
OPER	151.4	-120.4	112.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-4.41	20.57	-3.39	15.82	-6.75	17.96	-5.19	13.82
OPER	5C1	-6.62	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.71	3.28	HS 65.57	118.0
5C1	18.19	6.81	0.00	272.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.300

Dead Load Moment Superimposed Dead Load Moment

1.0 12.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 172.8	170.1	-159.4	170.2	-159.4	156.7	-172.8	156.7	-
OPER 288.1	274.6	-274.6	274.6	-274.6	261.2	-288.1	261.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	86.47 R	66.52	85.50	0.0	65.45	50.35	57.50	
		-37.73 L	-29.02	17.00	0.0	-29.22	-22.47	40.00	0.00
OPER	5C1	73.00 L	56.15	10.50	0.0	0.00	0.00	0.00	
		-36.33 L	-27.94	29.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.81	4.58	1.81	4.58	HS 36.25	65.2
5C1	3.58	7.93	3.58	7.93	0.00	143.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.400

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.20		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.400

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	168.2	-171.0	145.9	-193.2
OPER	301.2C	-264.1	264.1	-301.2C	280.3	-284.9	243.2	-322.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.00 R	74.61	88.00	0.0	77.70	59.77	60.00			
		-30.01 L	-23.09	17.00	0.0	-25.79	-19.84	40.00	0.00		
OPER	5C1	84.06 R	64.66	72.00	0.0	0.00	0.00	0.00			
		-33.86 L	-26.04	30.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.73	5.70	1.50	6.44	HS 30.09	54.2
5C1	3.34	8.42	2.89	9.51	0.00	115.7

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.1	0.0 1.8

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-71.0	68.7
OPER	151.4	-118.4	114.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.32	14.97	-7.17	11.52
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	7.62	4.09	HS 81.87
5C1	13.59	8.51	0.00
			Load Capacity (tons)
			147.4
			340.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.400Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	173.1	-156.4	173.1	-156.4	152.3	-177.3	152.3	-
OPER 295.5	274.6	-274.6	274.6	-274.6	253.8	-295.5	253.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	97.00 R	74.61	88.00	0.0	77.70	59.77	60.00	
		-30.01 L	-23.09	17.00	0.0	-25.79	-19.84	40.00	0.00
OPER	5C1	84.06 R	64.66	72.00	0.0	0.00	0.00	0.00	
		-33.86 L	-26.04	30.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.91	1.57	5.91	HS 31.39	56.5
5C1	3.02	8.73	3.02	8.73	0.00	120.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.84	28.67	28.67	1.700	999999.000	93.577

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.500

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	166.8	-172.3	144.5	-194.6
OPER	301.2C	-264.1	264.1	-301.2C	278.0	-287.2	240.9	-324.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.70 R	72.84	76.50	0.0	82.52	63.47	62.50			
		-22.50 R	-17.31	108.00	0.0	-22.40	-17.23	85.00	0.00		
OPER	5C1	86.36 L	66.43	11.50	0.0	0.00	0.00	0.00			
		-32.82 R	-25.25	93.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.76	7.66	1.53	8.65	HS 30.53	55.0
5C1	3.22	8.75	2.79	9.88	0.00	111.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	-0.1	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.8	69.9
OPER	151.4	-116.3	116.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.12	12.04	-9.32	9.26
OPER	5C1	-10.98	10.95	-8.45	8.43	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.33	HS 106.34	191.4
5C1	10.59	10.64	0.00	423.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.500Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 178.7	174.0	-155.5	174.0	-155.5	150.9	-178.7	150.9	-
OPER 297.8	274.6	-274.6	274.6	-274.6	251.5	-297.8	251.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	94.70 R	72.84	76.50	0.0	82.52	63.47	62.50	
		-22.50 R	-17.31	108.00	0.0	-22.40	-17.23	85.00	0.00
OPER	5C1	86.36 L	66.43	11.50	0.0	0.00	0.00	0.00	
		-32.82 R	-25.25	93.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.59	7.94	1.59	7.94	HS 31.87	57.4
5C1	2.91	9.07	2.91	9.07	0.00	116.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.600

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.	180.7C	-158.4	158.4	-180.7C	168.6	-170.5	146.4	-192.8
OPER	301.2C	-264.1	264.1	-301.2C	281.1	-284.2	243.9	-321.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.03 L	74.64	37.00	0.0	77.63	59.72	65.00			
		-30.30 R	-23.31	108.00	0.0	-26.18	-20.14	85.00	0.00		
OPER	5C1	84.03 L	64.64	53.00	0.0	0.00	0.00	0.00			
		-33.94 R	-26.11	94.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.74	5.63	1.51	6.36	HS 30.17	54.3
5C1	3.35	8.37	2.90	9.47	0.00	116.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.2	-2.1
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.5	71.2
OPER	151.4	-114.2	118.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.98	-12.91	6.90	-15.05	9.24	-11.58	7.11
OPER	5C1	-13.45	8.69	-10.35	6.68	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.08	7.70	HS 81.65	147.0
5C1	8.49	13.66	0.00	339.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.600Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

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. 176.9	172.8	-156.7	172.8	-156.7	152.7	-176.9	152.7	-
OPER 294.8	274.6	-274.6	274.6	-274.6	254.5	-294.8	254.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	97.03 L	74.64	37.00	0.0	77.63	59.72	65.00	
		-30.30 R	-23.31	108.00	0.0	-26.18	-20.14	85.00	0.00
OPER	5C1	84.03 L	64.64	53.00	0.0	0.00	0.00	0.00	
		-33.94 R	-26.11	94.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.57	5.84	1.57	5.84	HS 31.48	56.7
5C1	3.03	8.68	3.03	8.69	0.00	121.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.700

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.6	-165.6	151.3	-187.9
OPER	301.2C	-264.1	264.1	-301.2C	289.3	-276.0	252.2	-313.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.52 L	66.55	39.50	0.0	65.31	50.24	67.50			
		-38.10 R	-29.31	108.00	0.0	-29.96	-23.05	85.00	0.00		
OPER	5C1	72.46 R	55.74	114.50	0.0	0.00	0.00	0.00			
		-36.47 R	-28.05	96.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	4.35	1.75	4.93	HS 34.97	63.0
5C1	3.99	7.57	3.48	8.59	0.00	139.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.3	-4.0
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.4
OPER	151.4	-112.1	120.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-20.56	4.42	-15.82	3.40	-18.04	6.67	-13.88	5.13
OPER	5C1	-16.50	6.61	-12.69	5.08	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.27	10.86	HS 65.42	117.8	
5C1	6.80	18.28	0.00	271.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.700Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.9	169.5	-160.0	169.6	-160.0	157.6	-171.9	157.6	-
OPER 286.6	274.6	-274.6	274.6	-274.6	262.7	-286.6	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	86.52 L	66.55	39.50	0.0	65.31	50.24	67.50	
		-38.10 R	-29.31	108.00	0.0	-29.96	-23.05	85.00	0.00
OPER	5C1	72.46 R	55.74	114.50	0.0	0.00	0.00	0.00	
		-36.47 R	-28.05	96.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.82	4.51	1.82	4.51	HS 36.44	65.6
5C1	3.62	7.86	3.63	7.86	0.00	145.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.800

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.49 L	45.76	42.00	0.0	45.31	34.86	70.00			
		-45.90 R	-35.30	108.00	0.0	-35.60	-27.38	85.00	135.00		
OPER	5C1	54.50 R	41.92	117.00	0.0	0.00	0.00	0.00			
		-40.43 R	-31.10	97.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.05	3.43	2.68	3.92	96.4
5C1	5.55	6.50	4.87	7.41	194.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.0	73.7
OPER	151.4	-110.0	122.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.95	-19.54	2.27	-20.99	4.40	-16.14	3.38
OPER	5C1	-19.69	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.76	HS 52.00	93.6
5C1	5.59	25.83	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.800Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.7	-
OPER 273.2	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.49 L	45.76	42.00	0.0	45.31	34.86	70.00
		-45.90 R	-35.30	108.00	0.0	-35.60	-27.38	85.00
OPER	5C1	54.50 R	41.92	117.00	0.0	0.00	0.00	0.00
		-40.43 R	-31.10	97.00	0.0	0.00	0.00	0.00

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	2.79	3.57	2.79	3.57	HS 55.69	100.2
5C1	5.07	6.76	5.07	6.76	0.00	202.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 3.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.7	-146.5	170.4	-168.7
OPER	301.2C	-264.1	264.1	-301.2C	321.2	-244.1	284.1	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.26 L	12.51	44.50	0.0	25.13	19.33	72.50			
		-59.16 L	-45.51	66.00	0.0	-54.26	-41.74	85.00	62.50		
OPER	5C1	28.29 R	21.76	119.50	0.0	0.00	0.00	0.00			
		-47.00 R	-36.15	99.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.67	2.48	6.78	2.85	49.51
5C1	11.35	5.19	10.04	5.98	89.1
					207.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.8	74.9
OPER	151.4	-108.0	124.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	3.09	-23.17	2.37	-23.80	3.15	-18.31	2.42
OPER	5C1	-22.90	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.79	HS 43.03	77.5
5C1	4.72	39.46	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 3.900Dead Load Moment -1.5
Superimposed Dead Load Moment -18.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.8	156.8	-172.8	156.8	-172.8	176.8	-152.8	176.8	-
OPER 254.7	274.6	-274.6	274.6	-274.6	294.6	-254.7	294.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.26 L	12.51	44.50	0.0	25.13	19.33	72.50	
		-59.16 L	-45.51	66.00	0.0	-54.26	-41.74	85.00	62.50
OPER	5C1	28.29 R	21.76	119.50	0.0	0.00	0.00	0.00	
		-47.00 R	-36.15	99.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	7.03	2.58	7.03	2.58	HS 51.66	93.0
5C1	10.41	5.42	10.41	5.42	0.00	216.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.000

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.7	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.8	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00			
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00		
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00			
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.51	1.34	11.16	1.57	HS 26.81 48.3
5C1	26.80	3.70	23.92	4.32	0.00 148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-105.9	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.11	34.53	-23.17	26.56	-23.80	26.36	-18.31	20.27
OPER	5C1	-22.90	25.97	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00	
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00	
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.54	1.40	11.55	1.40	HS 28.09	50.6
5C1	24.74	3.88	24.74	3.88	0.00	155.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.351

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.7	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.8	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00			
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00		
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00			
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.51	1.34	11.16	1.57	HS 26.81 48.3
5C1	26.80	3.70	23.92	4.32	0.00 148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.7	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-105.9	106.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.37	26.36	-20.28	20.27
OPER	5C1	-25.96	25.97	-19.97	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.54 R	12.73	133.00	0.0	16.44	12.65	110.00	
		-98.65 L	-75.89	54.50	0.0	-90.84	-69.88	85.00	65.00
OPER	5C1	12.87 R	9.90	159.50	0.0	0.00	0.00	0.00	
		-59.57 L	-45.82	70.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.54	1.40	11.55	1.40	HS 28.09	50.6
5C1	24.74	3.88	24.74	3.88	0.00	155.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.100

Dead Load Moment Superimposed Dead Load Moment
-1.6 -18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.9	-146.3	170.6	-168.6
OPER	301.2C	-264.1	264.1	-301.2C	321.5	-243.8	284.3	-280.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.99 R	12.30	105.50	0.0	25.39	19.53	77.50			
		-58.95 R	-45.35	84.00	0.0	-54.36	-41.82	65.00	87.50		
OPER	5C1	28.04 L	21.57	30.50	0.0	0.00	0.00	0.00			
		-46.72 L	-35.94	50.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.60	2.48	6.72	2.86	HS 49.63
5C1	11.46	5.22	10.14	6.01	0.00 208.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.100

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.6	0.0 7.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-74.9	64.9
OPER	151.4	-124.8	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.21	23.79	-2.47	18.30
OPER	5C1	-3.18	22.91	-2.44	17.62	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.34	2.15	HS 43.07	77.5
5C1	39.26	4.72	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.100

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 152.6	156.7	-172.9	156.7	-172.9	176.9	-152.6	176.9	-
OPER 254.4	274.6	-274.6	274.6	-274.6	294.9	-254.4	294.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	15.99 R	12.30	105.50	0.0	25.39	19.53	77.50	
		-58.95 R	-45.35	84.00	0.0	-54.36	-41.82	65.00	87.50
OPER	5C1	28.04 L	21.57	30.50	0.0	0.00	0.00	0.00	
		-46.72 L	-35.94	50.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	6.97	2.59	6.97	2.59	HS 51.78	93.2
5C1	10.52	5.45	10.52	5.45	0.00	217.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.200

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.9	-157.2	159.7	-179.5
OPER	301.2C	-264.1	264.1	-301.2C	303.2	-262.1	266.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.24 R	45.57	108.00	0.0	44.41	34.16	80.00			
		-45.68 L	-35.14	42.00	0.0	-35.62	-27.40	65.00		15.00	
OPER	5C1	54.23 L	41.72	33.00	0.0	0.00	0.00	0.00			
		-40.18 L	-30.91	53.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.07	3.44	2.69	3.93	53.90
5C1	5.59	6.52	4.91	7.45	0.00

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 4.200
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.5 0.0 5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.7	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.44	20.98	-3.42	16.14
OPER	5C1	-4.77	19.70	-3.67	15.16	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.58	2.60	HS 52.04	93.7
5C1	25.74	5.59	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.200

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.6	164.0	-165.6	164.0	-165.6	166.0	-163.6	166.0	-
OPER 272.6	274.6	-274.6	274.6	-274.6	276.6	-272.6	276.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.24 R	45.57	108.00	0.0	44.41	34.16	80.00	
		-45.68 L	-35.14	42.00	0.0	-35.62	-27.40	65.00	15.00
OPER	5C1	54.23 L	41.72	33.00	0.0	0.00	0.00	0.00	
		-40.18 L	-30.91	53.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.80	3.58	2.80	3.58	HS 56.03	100.9
5C1	5.10	6.78	5.10	6.78	0.00	204.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.300

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	174.1	-165.1	151.8	-187.4
OPER	301.2C	-264.1	264.1	-301.2C	290.1	-275.1	253.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.29 R	66.37	110.50	0.0	64.86	49.89	82.50			
		-37.91 L	-29.16	42.00	0.0	-29.97	-23.05	65.00	0.00		
OPER	5C1	72.17 L	55.52	35.50	0.0	0.00	0.00	0.00			
		-36.26 L	-27.90	54.00	0.0	0.00	0.00	0.00	0.00	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	2.02	4.35	1.76	4.94	HS 35.19	63.3
5C1	4.02	7.59	3.51	8.61	0.00	140.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.3
OPER	151.4	-120.6	112.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.41	20.57	-3.39	15.82	-6.71	18.03	-5.16	13.87
OPER	5C1	-6.62	16.50	-5.09	12.70	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.78	3.27	HS 65.47	117.8
5C1	18.22	6.80	0.00	272.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.4	169.2	-160.4	169.2	-160.4	158.1	-171.4	158.1	-
OPER 285.7	274.6	-274.6	274.6	-274.6	263.6	-285.7	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	86.29 R	66.37	110.50	0.0	64.86	49.89	82.50	
		-37.91 L	-29.16	42.00	0.0	-29.97	-23.05	65.00	0.00
OPER	5C1	72.17 L	55.52	35.50	0.0	0.00	0.00	0.00	
		-36.26 L	-27.90	54.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.52	1.83	4.52	HS 36.65	66.0
5C1	3.65	7.88	3.65	7.88	0.00	146.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.461

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.84		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.400

Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	169.3	-169.8	147.1	-192.1
OPER	301.2C	-264.1	264.1	-301.2C	282.2	-283.1	245.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.78 R	74.45	113.00	0.0	77.15	59.35	85.00			
		-30.14 L	-23.19	42.00	0.0	-26.37	-20.28	65.00	0.00		
OPER	5C1	83.80 R	64.46	97.00	0.0	0.00	0.00	0.00			
		-33.79 L	-25.99	55.50	0.0	0.00	0.00	0.00	0.00	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	1.75	5.63	1.52	6.37	HS 30.39	54.7
5C1	3.37	8.38	2.92	9.48	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.400

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	68.6
OPER	151.4	-118.6	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.29	15.04	-7.14	11.57
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.66	4.09	HS 81.73	147.1	
5C1	13.61	8.49	0.00	339.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.400Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.2	172.4	-157.2	172.4	-157.2	153.4	-176.2	153.4	-
OPER 293.6	274.6	-274.6	274.6	-274.6	255.6	-293.6	255.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.78 R	74.45	113.00	0.0	77.15	59.35	85.00	
		-30.14 L	-23.19	42.00	0.0	-26.37	-20.28	65.00	0.00
OPER	5C1	83.80 R	64.46	97.00	0.0	0.00	0.00	0.00	
		-33.79 L	-25.99	55.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.59	5.84	1.59	5.84	HS 31.70	57.1
5C1	3.05	8.69	3.05	8.69	0.00	122.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 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	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			111.438

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		27.64		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 20.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	175.8	-166.8	123.6	-201.9
OPER	314.7C	-256.3	227.8	-314.7C	293.0	-278.0	206.1	-336.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.42 R	72.63	101.50	0.0	82.02	63.09	87.50			
		-22.44 R	-17.26	133.00	0.0	-22.81	-17.55	110.00	0.00		
OPER	5C1	85.78 R	65.99	138.50	0.0	0.00	0.00	0.00			
		-32.72 R	-25.17	118.50	0.0	0.00	0.00	0.00	0.00	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	7.31	1.31	8.85	HS 26.19	47.1
5C1	3.42	8.49	2.40	10.28	0.00	96.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
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	151.4	-116.5	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.08	12.11	-9.29	9.31
OPER	5C1	-10.98	10.99	-8.45	8.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.37	191.5
5C1	10.61	10.59	0.00	423.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.500Dead Load Moment 1.5
Superimposed Dead Load Moment 20.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.2	168.6	-151.2	150.9	-133.5	146.9	-173.0	129.1	-
OPER 258.7	266.5	-266.5	236.9	-236.9	244.8	-288.3	215.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	94.42 R	72.63	101.50	0.0	82.02	63.09	87.50
		-22.44 R	-17.26	133.00	0.0	-22.81	-17.55	110.00
OPER	5C1	85.78 R	65.99	138.50	0.0	0.00	0.00	0.00
		-32.72 R	-25.17	118.50	0.0	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.55	7.58	1.37	6.80	HS 27.35	49.2
5C1	2.85	8.81	2.51	7.91	0.00	100.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	169.2	-169.9	146.9	-192.2
OPER	301.2C	-264.1	264.1	-301.2C	282.0	-283.2	244.9	-320.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 L	74.47	62.00	0.0	77.26	59.43	90.00			
		-30.24 R	-23.26	133.00	0.0	-26.43	-20.33	110.00	0.00		
OPER	5C1	83.83 L	64.48	78.00	0.0	0.00	0.00	0.00			
		-33.85 R	-26.04	119.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.75	5.62	1.52	6.36	HS 30.36	54.6
5C1	3.36	8.37	2.92	9.47	0.00	116.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-1.9
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-68.6	71.1
OPER	151.4	-114.4	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.02	9.31	-11.55	7.16
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	4.09	7.64	81.78
5C1	8.50	13.61	0.00
			Load Capacity (tons)
			147.2
			340.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.600Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

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	172.4	-157.1	172.5	-157.1	153.3	-176.3	153.3	-
OPER 293.8	274.6	-274.6	274.6	-274.6	255.5	-293.8	255.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.81 L	74.47	62.00	0.0	77.26	59.43
		-30.24 R	-23.26	133.00	0.0	-26.43	-20.33
OPER	5C1	83.83 L	64.48	78.00	0.0	0.00	0.00
		-33.85 R	-26.04	119.50	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.58	5.83	1.58	5.83	HS 31.66	57.0
5C1	3.05	8.68	3.05	8.68	0.00	121.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	173.9	-165.3	151.6	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.8	-275.5	252.6	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 L	66.41	64.50	0.0	65.08	50.06	92.50			
		-38.03 R	-29.26	133.00	0.0	-30.04	-23.11	110.00	0.00		
OPER	5C1	72.24 R	55.57	139.50	0.0	0.00	0.00	0.00			
		-36.38 R	-27.98	121.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	4.35	1.76	4.93	HS 35.12	63.2
5C1	4.01	7.57	3.50	8.59	0.00	139.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.700

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	-67.4	72.3
OPER	151.4	-112.3	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-20.57	4.42	-15.82	3.40	-18.00	6.74	-13.85	5.18
OPER	5C1	-16.50	6.62	-12.69	5.09	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.28	10.73	HS 65.53
5C1	6.81	18.22	0.00
			Load Capacity (tons)
			118.0
			272.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.6	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.2	-286.1	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.33 L	66.41	64.50	0.0	65.08	92.50	
		-38.03 R	-29.26	133.00	0.0	-30.04	110.00	0.00
OPER	5C1	72.24 R	55.57	139.50	0.0	0.00	0.00	
		-36.38 R	-27.98	121.00	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	1.83	4.51	1.83	4.51	HS 36.58	65.9
5C1	3.64	7.86	3.64	7.86	0.00	145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.800

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.800

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 L	45.62	67.00	0.0	45.24	34.80	95.00			
		-45.83 R	-35.25	133.00	0.0	-35.54	-27.34	110.00	160.00		
OPER	5C1	54.34 R	41.80	142.00	0.0	0.00	0.00	0.00			
		-40.35 R	-31.04	122.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.06	3.44	2.69	3.92	53.73
5C1	5.57	6.51	4.89	7.43	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.800

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	-66.1	73.6
OPER	151.4	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.98	-19.54	2.29	-20.95	4.46	-16.12	3.43
OPER	5C1	-19.69	4.75	-15.15	3.66	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.60	16.48	HS 52.09	93.8	
5C1	5.60	25.79	0.00	223.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.800

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.7	-
163.9								
OPER	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-
273.2								

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	59.30 L	45.62	67.00	0.0	45.24	34.80	95.00	
		-45.83 R	-35.25	133.00	0.0	-35.54	-27.34	110.00	160.00
OPER	5C1	54.34 R	41.80	142.00	0.0	0.00	0.00	0.00	
		-40.35 R	-31.04	122.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	2.79	3.58	2.79	3.58	HS 55.87	100.6
5C1	5.08	6.77	5.08	6.77	0.00	203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.900

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 4.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.7	170.1	-169.0
OPER	301.2C	-264.1	264.1	-301.2C	320.7	-244.6	283.6	-281.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 L	12.35	69.50	0.0	25.30	19.46	97.50			
		-59.13 L	-45.49	91.00	0.0	-54.33	-41.79	110.00	87.50		
OPER	5C1	28.18 R	21.68	144.50	0.0	0.00	0.00	0.00			
		-46.96 R	-36.12	124.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	7.60	2.48	6.72	2.86	49.63
5C1	11.38	5.21	10.06	6.00	89.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.6	-7.7
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.4	-108.2	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.11	-23.17	2.39	-23.76	3.22	-18.28	2.47
OPER	5C1	-22.90	3.16	-17.62	2.43	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	2.15	23.26	HS 43.10
5C1	4.72	39.42	0.00
			Load Capacity (tons)
			77.6
			188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 4.900Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.5	-153.1	176.5	-
OPER 255.1	274.6	-274.6	274.6	-274.6	294.1	-255.1	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.05 L	12.35	69.50	0.0	25.30	19.46	97.50	
		-59.13 L	-45.49	91.00	0.0	-54.33	-41.79	110.00	87.50
OPER	5C1	28.18 R	21.68	144.50	0.0	0.00	0.00	0.00	
		-46.96 R	-36.12	124.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.97	2.59	6.97	2.59	HS 51.77	93.2
5C1	10.44	5.43	10.44	5.43	0.00	217.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00			
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00		
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00			
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.28	1.35	10.96	1.57	HS 26.90	48.4
5C1	26.76	3.71	23.87	4.33	0.00	148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.76	26.35	-18.28	20.27
OPER	5C1	-22.90	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	1.84	1.84	HS 36.86	66.4	
5C1	4.09	4.09	0.00	163.4	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00	
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00	
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
5C1	24.69	3.89	24.69	3.89	0.00	155.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00			
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00		90.00	
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00			
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.28	1.35	10.96	1.57	HS 26.90 48.4
5C1	26.76	3.71	23.87	4.33	0.00 148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.33	26.35	-20.26	20.27
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.4
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.53 R	12.71	158.00	0.0	16.80	12.92	135.00	
		-98.74 L	-75.96	79.50	0.0	-90.78	-69.83	110.00	90.00
OPER	5C1	12.85 R	9.89	184.50	0.0	0.00	0.00	0.00	
		-59.66 R	-45.89	105.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
5C1	24.69	3.89	24.69	3.89	0.00	155.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.8	170.1	-169.1
OPER	301.2C	-264.1	264.1	-301.2C	320.6	-244.6	283.5	-281.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.04 R	12.34	130.50	0.0	25.73	19.79	102.50			
		-59.12 R	-45.47	109.00	0.0	-54.32	-41.79	90.00	112.50		
OPER	5C1	28.14 L	21.65	55.50	0.0	0.00	0.00	0.00			
		-46.94 L	-36.11	75.50	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	7.48	2.48	6.61	49.66	89.4
5C1	11.39	5.21	10.07	0.00	208.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.4	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.23	23.78	-2.48	18.29
OPER	5C1	-3.18	22.91	-2.44	17.62	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.20	2.15	HS 43.09	77.6
5C1	39.26	4.72	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.100Dead Load Moment -1.5
Superimposed Dead Load Moment -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.4	-153.1	176.4	-
OPER 255.2	274.6	-274.6	274.6	-274.6	294.1	-255.2	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.04 R	12.34	130.50	0.0	25.73	19.79	102.50	
		-59.12 R	-45.47	109.00	0.0	-54.32	-41.79	90.00	112.50
OPER	5C1	28.14 L	21.65	55.50	0.0	0.00	0.00	0.00	
		-46.94 L	-36.11	75.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.86	2.59	6.86	2.59	HS 51.80	93.2
5C1	10.45	5.44	10.45	5.44	0.00	217.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.200

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.	180.7C	-158.4	158.4	-180.7C	181.5	-157.6	159.2	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.7	265.4	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 R	45.61	133.00	0.0	44.72	34.40	105.00			
		-45.82 L	-35.25	67.00	0.0	-35.45	-27.27	90.00	40.00		
OPER	5C1	54.31 L	41.78	58.00	0.0	0.00	0.00	0.00			
		-40.34 L	-31.03	78.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.06	3.44	2.68	3.93	HS 53.71	96.7
5C1	5.57	6.51	4.89	7.43	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.46	20.97	-3.43	16.13
OPER	5C1	-4.77	19.70	-3.67	15.15	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.60	HS 52.07	93.7
5C1	25.73	5.59	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.200

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. 164.0	164.3	-165.3	164.3	-165.3	165.6	-164.0	165.6	-
OPER 273.3	274.6	-274.6	274.6	-274.6	276.0	-273.3	276.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.30 R	45.61	133.00	0.0	44.72	34.40	105.00	
		-45.82 L	-35.25	67.00	0.0	-35.45	-27.27	90.00	40.00
OPER	5C1	54.31 L	41.78	58.00	0.0	0.00	0.00	0.00	
		-40.34 L	-31.03	78.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.79	3.58	2.79	3.58	HS 55.85	100.5
5C1	5.08	6.78	5.08	6.78	0.00	203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	173.7	-165.4	151.5	-187.7
OPER	301.2C	-264.1	264.1	-301.2C	289.6	-275.7	252.4	-312.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 R	66.41	135.50	0.0	65.12	50.09	107.50			
		-38.03 L	-29.25	67.00	0.0	-29.97	-23.06	90.00	0.00		
OPER	5C1	72.22 L	55.56	60.50	0.0	0.00	0.00	0.00			
		-36.38 L	-27.98	79.00	0.0	0.00	0.00	0.00	0.00	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	2.01	4.35	1.75	4.94	HS 35.09	63.2
5C1	4.01	7.58	3.49	8.60	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.4
OPER	151.4	-120.6	112.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-4.42	20.57	-3.40	15.82	-6.74	18.02	-5.18	13.86
OPER	5C1	-6.62	16.50	-5.10	12.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.74	3.28	HS 65.50	117.9
5C1	18.20	6.80	0.00	272.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

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. 171.8	169.4	-160.1	169.4	-160.1	157.8	-171.8	157.8	-
OPER 286.3	274.6	-274.6	274.6	-274.6	263.0	-286.3	263.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.33 R	66.41	135.50	0.0	65.12	50.09
		-38.03 L	-29.25	67.00	0.0	-29.97	-23.06
OPER	5C1	72.22 L	55.56	60.50	0.0	0.00	0.00
		-36.38 L	-27.98	79.00	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating top fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.83	4.52	1.83	4.52	HS 36.56	65.8
5C1	3.64	7.87	3.64	7.87	0.00	145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.124

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.64		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.4
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.5	244.6	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 R	74.47	138.00	0.0	77.36	59.51	110.00			
		-30.24 L	-23.26	67.00	0.0	-26.37	-20.29	90.00	0.00		
OPER	5C1	83.84 R	64.49	122.00	0.0	0.00	0.00	0.00			
		-33.87 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00	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	1.75	5.63	1.52	6.36	HS 30.33	54.6
5C1	3.36	8.37	2.92	9.47	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.400Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.1 0.0 1.9

Rat. Shear Capacity Available Capacity for LL+I
Veh. VU (-) (+)INV. 90.8 -71.1 68.6
OPER 151.4 -118.5 114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.03	-7.16	11.56
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.64	4.09	HS 81.76	147.2
5C1	13.60	8.50	0.00	340.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.400

Dead Load Moment Superimposed Dead Load Moment

1.4 18.0

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I					
	top fiber	bottom fiber	top fiber	bottom fi				
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.6	-157.0	153.1	-176.4	153.1	-
OPER 294.1	274.6	-274.6	274.6	-274.6	255.2	-294.1	255.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.81 R	74.47	138.00	0.0	77.36	59.51	110.00	
		-30.24 L	-23.26	67.00	0.0	-26.37	-20.29	90.00	0.00
OPER	5C1	83.84 R	64.49	122.00	0.0	0.00	0.00	0.00	
		-33.87 L	-26.05	80.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		Load Capacity (tons)	
	top fiber +bend	bottom fiber -bend	Rating Value	Load Capacity
HS20	1.58	5.84	31.63	56.9
5C1	3.04	8.68	0.00	121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	111.420

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		28.05		104.5

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.500Dead Load Moment 1.6
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.	188.8C	-153.8	136.7	-188.8C	175.6	-167.0	123.5	-202.1
OPER	314.7C	-256.3	227.8	-314.7C	292.7	-278.3	205.8	-336.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.43 R	72.64	126.50	0.0	82.16	63.20	112.50			
		-22.45 R	-17.27	158.00	0.0	-22.78	-17.52	135.00	0.00		
OPER	5C1	85.80 R	66.00	163.50	0.0	0.00	0.00	0.00			
		-32.77 R	-25.21	143.50	0.0	0.00	0.00	0.00	0.00	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	7.33	1.31	8.87	HS 26.15	47.1
5C1	3.41	8.49	2.40	10.28	0.00	95.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.0	0.0
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.4	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.10	12.10	-9.31	9.30
OPER	5C1	-10.99	10.99	-8.45	8.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.41	191.5
5C1	10.60	10.60	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.500Dead Load Moment 1.6
Superimposed Dead Load Moment 20.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.4	168.7	-151.1	151.0	-133.3	146.7	-173.1	128.9	-
OPER 259.0	266.5	-266.5	236.9	-236.9	244.5	-288.6	214.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	94.43 R	72.64	126.50	0.0	82.16	63.20	112.50	
		-22.45 R	-17.27	158.00	0.0	-22.78	-17.52	135.00	0.00
OPER	5C1	85.80 R	66.00	163.50	0.0	0.00	0.00	0.00	
		-32.77 R	-25.21	143.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.60	1.37	6.82	HS 27.31	49.1
5C1	2.85	8.81	2.50	7.90	0.00	100.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.600

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.3
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.4	244.7	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 L	74.47	87.00	0.0	77.35	59.50	115.00			
		-30.24 R	-23.26	158.00	0.0	-26.40	-20.31	135.00	0.00		
OPER	5C1	83.84 L	64.49	103.00	0.0	0.00	0.00	0.00			
		-33.87 R	-26.06	144.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.75	5.62	1.52	30.33	54.6
5C1	3.36	8.37	2.92	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.600

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	-68.6	71.1
OPER	151.4	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.30	-11.57	7.15
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.09	7.65	HS 81.74	147.1	
5C1	8.50	13.61	0.00	339.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.600Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.5	-157.0	153.2	-176.4	153.2	-
OPER 294.0	274.6	-274.6	274.6	-274.6	255.3	-294.0	255.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.81 L	74.47	87.00	0.0	77.35	59.50	115.00	
		-30.24 R	-23.26	158.00	0.0	-26.40	-20.31	135.00	0.00
OPER	5C1	83.84 L	64.49	103.00	0.0	0.00	0.00	0.00	
		-33.87 R	-26.06	144.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.83	1.58	5.83	HS 31.64	57.0
5C1	3.05	8.68	3.05	8.68	0.00	121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.700

Dead Load Moment 0.8
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.	180.7C	-158.4	158.4	-180.7C	173.8	-165.3	151.5	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.7	-275.6	252.6	-312.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 L	66.41	89.50	0.0	65.11	50.08	117.50			
		-38.03 R	-29.26	158.00	0.0	-30.03	-23.10	135.00	0.00		
OPER	5C1	72.24 R	55.57	164.50	0.0	0.00	0.00	0.00			
		-36.39 R	-27.99	146.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	4.35	1.75	4.93	HS 35.11	63.2
5C1	4.01	7.57	3.50	8.59	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.4	72.4
OPER	151.4	-112.3	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-20.57	4.42	-15.82	3.40	-18.02	6.73	-13.87	5.18
OPER	5C1	-16.50	6.62	-12.69	5.10	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.27	10.75	HS 65.49	117.9	
5C1	6.80	18.21	0.00	272.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.7	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.1	-286.1	263.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.33 L	66.41	89.50	0.0	65.11	50.08	117.50	
		-38.03 R	-29.26	158.00	0.0	-30.03	-23.10	135.00	0.00
OPER	5C1	72.24 R	55.57	164.50	0.0	0.00	0.00	0.00	
		-36.39 R	-27.99	146.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.83	4.51	1.83	4.51	HS 36.57	65.8
5C1	3.64	7.86	3.64	7.86	0.00	145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
 Check Point I. D. 5.800

Dead Load Moment Superimposed Dead Load Moment
 -0.1 -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.	180.7C	-158.4	158.4	-180.7C	181.6	-157.5	159.4	-179.8
OPER	301.2C	-264.1	264.1	-301.2C	302.7	-262.6	265.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 L	45.61	92.00	0.0	45.21	34.78	120.00			
		-45.83 R	-35.25	158.00	0.0	-35.54	-27.34	135.00	185.00		
OPER	5C1	54.34 R	41.80	167.00	0.0	0.00	0.00	0.00			
		-40.35 R	-31.03	147.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.06	3.44	2.69	3.92	53.74
5C1	5.57	6.51	4.89	7.43	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.97	4.45	-16.13	3.43
OPER	5C1	-19.70	4.77	-15.15	3.67	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.52	HS 52.06	93.7
5C1	5.59	25.74	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.800

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.2	-165.4	164.2	-165.4	165.7	-163.9	165.7	-
163.9								
OPER	274.6	-274.6	274.6	-274.6	276.1	-273.1	276.1	-
273.1								

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	59.30 L	45.61	92.00	0.0	45.21	34.78	120.00	
		-45.83 R	-35.25	158.00	0.0	-35.54	-27.34	135.00	185.00
OPER	5C1	54.34 R	41.80	167.00	0.0	0.00	0.00	0.00	
		-40.35 R	-31.03	147.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
bend	+bend	-bend	+bend	-bend		
HS20	2.79	3.58	2.79	3.58	HS 55.88	100.6
5C1	5.08	6.77	5.08	6.77	0.00	203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 5.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.900

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.5	-146.6	170.3	-168.9
OPER	301.2C	-264.1	264.1	-301.2C	320.9	-244.4	283.8	-281.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 L	12.34	94.50	0.0	25.26	19.43	122.50			
		-59.13 L	-45.49	116.00	0.0	-54.40	-41.84	135.00		112.50	
OPER	5C1	28.18 R	21.68	169.50	0.0	0.00	0.00	0.00			
		-46.95 R	-36.12	149.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.62	2.48	6.74	2.86	HS 49.59 89.3
5C1	11.39	5.20	10.07	5.99	0.00 208.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.4	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.22	-18.29	2.48
OPER	5C1	-22.90	3.18	-17.62	2.44	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.26	HS 43.08	77.5
5C1	4.72	39.27	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 5.900Dead Load Moment -1.5
Superimposed Dead Load Moment -18.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	156.9	-172.7	156.9	-172.7	176.6	-153.0	176.6	-
OPER 254.9	274.6	-274.6	274.6	-274.6	294.3	-254.9	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.05 L	12.34	94.50	0.0	25.26	19.43	122.50	
		-59.13 L	-45.49	116.00	0.0	-54.40	-41.84	135.00	112.50
OPER	5C1	28.18 R	21.68	169.50	0.0	0.00	0.00	0.00	
		-46.95 R	-36.12	149.50	0.0	0.00	0.00	0.00	0.00

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	6.99	2.59	6.99	2.59	HS 51.74	93.1
5C1	10.44	5.43	10.44	5.43	0.00	217.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.5	-132.6	184.3	-154.9
OPER	301.2C	-264.1	264.1	-301.2C	344.2	-221.0	307.1	-258.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00			
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00		
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00			
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.34	1.34	11.01	1.57	HS 26.86	48.3
5C1	26.78	3.71	23.89	4.33	0.00	148.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.35	-18.29	20.27
OPER	5C1	-22.90	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.3
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.8

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.	147.6	-182.0	147.6	-182.0	190.6	-139.0	190.6	-
139.0								
OPER	274.6	-274.6	274.6	-274.6	317.7	-231.6	317.7	-
231.6								

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	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00	
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00	
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	11.39	1.41	11.39	1.41	HS 28.14	50.7
5C1	24.72	3.88	24.72	3.88	0.00	155.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.5	-132.6	184.3	-154.9
OPER	301.2C	-264.1	264.1	-301.2C	344.2	-221.0	307.1	-258.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00			
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00		
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00			
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	12.34	1.34	11.01	1.57	HS 26.86	48.3
5C1	26.78	3.71	23.89	4.33	0.00	148.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.35	-20.27	20.27
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.3
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.000Dead Load Moment Superimposed Dead Load Moment
-3.2 -39.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.0	147.6	-182.0	147.6	-182.0	190.6	-139.0	190.6	-
OPER 231.6	274.6	-274.6	274.6	-274.6	317.7	-231.6	317.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.52 L	12.71	67.00	0.0	16.74	12.88	90.00	
		-98.75 R	-75.96	145.50	0.0	-90.90	-69.92	115.00	135.00
OPER	5C1	12.85 L	9.89	40.50	0.0	0.00	0.00	0.00	
		-59.63 R	-45.87	130.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.39	1.41	11.39	1.41	HS 28.14	50.7
5C1	24.72	3.88	24.72	3.88	0.00	155.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.100

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.100

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.5	-146.6	170.3	-168.9
OPER	301.2C	-264.1	264.1	-301.2C	320.9	-244.4	283.8	-281.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 R	12.34	155.50	0.0	25.69	19.76	127.50			
		-59.13 R	-45.49	134.00	0.0	-54.42	-41.86	115.00		137.50	
OPER	5C1	28.18 L	21.68	80.50	0.0	0.00	0.00	0.00			
		-46.95 L	-36.12	100.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	7.49	2.48	6.63	49.59	89.3
5C1	11.39	5.20	10.07	0.00	208.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.4	-124.7	108.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	30.12	-2.30	23.17	-3.22	23.78	-2.48	18.29
OPER	5C1	-3.18	22.90	-2.44	17.62	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.26	2.15	HS 43.08	77.5
5C1	39.27	4.72	0.00	188.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.100Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.0	156.9	-172.7	156.9	-172.7	176.6	-153.0	176.6	-
OPER 254.9	274.6	-274.6	274.6	-274.6	294.3	-254.9	294.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.05 R	12.34	155.50	0.0	25.69	19.76	127.50	
		-59.13 R	-45.49	134.00	0.0	-54.42	-41.86	115.00	137.50
OPER	5C1	28.18 L	21.68	80.50	0.0	0.00	0.00	0.00	
		-46.95 L	-36.12	100.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.87	2.59	6.87	2.59	HS 51.74	93.1
5C1	10.44	5.43	10.44	5.43	0.00	217.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -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.	180.7C	-158.4	158.4	-180.7C	181.6	-157.5	159.4	-179.8
OPER	301.2C	-264.1	264.1	-301.2C	302.7	-262.6	265.6	-299.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 R	45.61	158.00	0.0	44.70	34.38	130.00			
		-45.83 L	-35.25	92.00	0.0	-35.54	-27.34	115.00	65.00		
OPER	5C1	54.34 L	41.80	83.00	0.0	0.00	0.00	0.00			
		-40.35 L	-31.03	103.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	3.06	3.44	2.69	53.74	96.7
5C1	5.57	6.51	4.89	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.7	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.99	25.40	-2.30	19.54	-4.45	20.97	-3.43	16.13
OPER	5C1	-4.77	19.70	-3.67	15.15	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.52	2.60	HS 52.06	93.7
5C1	25.74	5.59	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.200

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.7	-163.9	165.7	-
OPER 273.1	274.6	-274.6	274.6	-274.6	276.1	-273.1	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.30 R	45.61	158.00	0.0	44.70	34.38	130.00	
		-45.83 L	-35.25	92.00	0.0	-35.54	-27.34	115.00	65.00
OPER	5C1	54.34 L	41.80	83.00	0.0	0.00	0.00	0.00	
		-40.35 L	-31.03	103.00	0.0	0.00	0.00	0.00	0.00

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	2.79	3.58	2.79	3.58	HS 55.88	100.6
5C1	5.08	6.77	5.08	6.77	0.00	203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.300

	Allowable stress (fs) (psi)			
RATIO/Inv.	0.00	0.00	0.00	
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.300

Dead Load Moment 0.8
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.	180.7C	-158.4	158.4	-180.7C	173.8	-165.3	151.5	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.7	-275.6	252.6	-312.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 R	66.41	160.50	0.0	65.11	50.08	132.50			
		-38.03 L	-29.26	92.00	0.0	-30.03	-23.10	115.00	0.00		
OPER	5C1	72.24 L	55.57	85.50	0.0	0.00	0.00	0.00			
		-36.39 L	-27.99	104.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	4.35	1.75	4.93	HS 35.11	63.2
5C1	4.01	7.57	3.50	8.59	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 3.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.4
OPER	151.4	-120.6	112.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-4.42	20.57	-3.40	15.82	-6.73	18.02	-5.18	13.87
OPER	5C1	-6.62	16.50	-5.10	12.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.75	3.28	HS 65.49	117.9
5C1	18.21	6.80	0.00	272.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.7	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.1	-286.1	263.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.33 R	66.41	160.50	0.0	65.11	50.08
		-38.03 L	-29.26	92.00	0.0	-30.03	-23.10
OPER	5C1	72.24 L	55.57	85.50	0.0	0.00	0.00
		-36.39 L	-27.99	104.00	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	1.83	4.51	1.83	4.51
5C1	3.64	7.86	3.64	7.86

HS 36.57 65.8
0.00 145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.234

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.05		104.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.400

Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.3
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.4	244.7	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 R	74.47	163.00	0.0	77.35	59.50	135.00			
		-30.24 L	-23.26	92.00	0.0	-26.40	-20.31	115.00	0.00		
OPER	5C1	83.84 R	64.49	147.00	0.0	0.00	0.00	0.00			
		-33.87 L	-26.06	105.50	0.0	0.00	0.00	0.00	0.00	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	1.75	5.62	1.52	6.36	HS 30.33	54.6
5C1	3.36	8.37	2.92	9.46	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.400

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	68.6
OPER	151.4	-118.5	114.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.30	15.04	-7.15	11.57
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.65	4.09	HS 81.74	147.1	
5C1	13.61	8.50	0.00	339.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.400Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.5	-157.0	153.2	-176.4	153.2	-
OPER 294.0	274.6	-274.6	274.6	-274.6	255.3	-294.0	255.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.81 R	74.47	163.00	0.0	77.35	59.50	135.00	
		-30.24 L	-23.26	92.00	0.0	-26.40	-20.31	115.00	0.00
OPER	5C1	83.84 R	64.49	147.00	0.0	0.00	0.00	0.00	
		-33.87 L	-26.06	105.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.58	5.83	1.58	5.83	HS 31.64	57.0
5C1	3.05	8.68	3.05	8.68	0.00	121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	111.421

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		27.65		104.6

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.500

Dead Load Moment 1.6
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.	188.8C	-153.8	136.7	-188.8C	175.6	-167.0	123.5	-202.1
OPER	314.7C	-256.3	227.8	-314.7C	292.7	-278.3	205.8	-336.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.43	L	72.64	123.50	0.0	82.16	63.20	137.50		
		-22.45	L	-17.27	92.00	0.0	-22.78	-17.52	115.00	0.00	
OPER	5C1	85.80	L	66.00	86.50	0.0	0.00	0.00	0.00		
		-32.77	L	-25.21	106.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	1.86	7.33	1.31	8.87	HS 26.15	47.1
5C1	3.41	8.49	2.40	10.28	0.00	95.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.0	0.0	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.8
OPER	151.4	-116.5	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.10	12.10	-9.30	9.31
OPER	5C1	-10.99	10.99	-8.45	8.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.39	191.5
5C1	10.60	10.60	0.00	423.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.500Dead Load Moment 1.6
Superimposed Dead Load Moment 20.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.4	168.7	-151.1	151.0	-133.3	146.7	-173.1	128.9	-
OPER 259.0	266.5	-266.5	236.9	-236.9	244.5	-288.6	214.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	94.43 L	72.64	123.50	0.0	82.16	63.20	137.50	
		-22.45 L	-17.27	92.00	0.0	-22.78	-17.52	115.00	0.00
OPER	5C1	85.80 L	66.00	86.50	0.0	0.00	0.00	0.00	
		-32.77 L	-25.21	106.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.60	1.37	6.82	HS 27.31	49.1
5C1	2.85	8.81	2.50	7.90	0.00	100.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
 Check Point I. D. 6.600

Dead Load Moment 1.4
 Superimposed Dead Load Moment 18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	169.1	-170.1	146.8	-192.4
OPER	301.2C	-264.1	264.1	-301.2C	281.8	-283.5	244.6	-320.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 L	74.47	112.00	0.0	77.36	59.51	140.00			
		-30.24 R	-23.26	183.00	0.0	-26.37	-20.29	160.00	0.00		
OPER	5C1	83.84 L	64.49	128.00	0.0	0.00	0.00	0.00			
		-33.87 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00	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	1.75	5.63	1.52	6.36	HS 30.33	54.6
5C1	3.36	8.37	2.92	9.47	0.00	116.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.600

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.1	-1.9
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.6	71.1
OPER	151.4	-114.3	118.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.03	9.31	-11.56	7.16
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.09	7.64	HS 81.76	147.2	
5C1	8.50	13.60	0.00	340.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.600Dead Load Moment 1.4
Superimposed Dead Load Moment 18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.4	172.5	-157.0	172.6	-157.0	153.1	-176.4	153.1	-
OPER 294.1	274.6	-274.6	274.6	-274.6	255.2	-294.1	255.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.81 L	74.47	112.00	0.0	77.36	59.51	140.00	
		-30.24 R	-23.26	183.00	0.0	-26.37	-20.29	160.00	0.00
OPER	5C1	83.84 L	64.49	128.00	0.0	0.00	0.00	0.00	
		-33.87 R	-26.05	169.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.58	5.84	1.58	5.84	HS 31.63	56.9
5C1	3.04	8.68	3.04	8.68	0.00	121.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	173.7	-165.4	151.5	-187.7
OPER	301.2C	-264.1	264.1	-301.2C	289.6	-275.7	252.4	-312.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 L	66.41	114.50	0.0	65.12	50.09	142.50			
		-38.03 R	-29.25	183.00	0.0	-29.97	-23.06	160.00	0.00		
OPER	5C1	72.22 R	55.56	189.50	0.0	0.00	0.00	0.00			
		-36.38 R	-27.98	171.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.01	4.35	1.75	35.09	63.2
5C1	4.01	7.58	3.49	0.00	139.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.700

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	-67.4	72.3
OPER	151.4	-112.3	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.42	-15.82	3.40	-18.02	6.74	-13.86	5.18
OPER	5C1	-16.50	6.62	-12.69	5.10	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.28	10.74	HS 65.50	117.9	
5C1	6.80	18.20	0.00	272.2	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.8	169.4	-160.1	169.4	-160.1	157.8	-171.8	157.8	-
OPER 286.3	274.6	-274.6	274.6	-274.6	263.0	-286.3	263.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.33 L	66.41	114.50	0.0	65.12	50.09	142.50	
		-38.03 R	-29.25	183.00	0.0	-29.97	-23.06	160.00	0.00
OPER	5C1	72.22 R	55.56	189.50	0.0	0.00	0.00	0.00	
		-36.38 R	-27.98	171.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.52	1.83	4.52	HS 36.56	65.8
5C1	3.64	7.87	3.64	7.87	0.00	145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.125

LFD - Moment Values

Compact Values (C)		M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
4110/ sqrt Fy	19230/ sqrt Fy			
top	22.62	105.86	0.00	391.56
bott	22.62		27.65	
				109.1
				104.4

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
					0.00
					0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.800

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.	180.7C	-158.4	158.4	-180.7C	181.5	-157.6	159.2	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.7	265.4	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.30 L	45.61	117.00	0.0	45.24	34.80	145.00			
		-45.82 R	-35.25	183.00	0.0	-35.45	-27.27	160.00	210.00		
OPER	5C1	54.31 R	41.78	192.00	0.0	0.00	0.00	0.00			
		-40.33 R	-31.03	172.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	3.06	3.44	2.69	53.71	96.7
5C1	5.57	6.51	4.89	0.00	195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.5	-5.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.97	4.46	-16.13	3.43
OPER	5C1	-19.70	4.77	-15.15	3.67	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.49	HS 52.07	93.7
5C1	5.59	25.73	0.00	223.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.800

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	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.2	-165.3	164.3	-165.3	165.6	-164.0	165.6	-
164.0								
OPER	274.6	-274.6	274.6	-274.6	276.0	-273.3	276.0	-
273.3								

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	59.30 L	45.61	117.00	0.0	45.24	34.80	145.00	
		-45.82 R	-35.25	183.00	0.0	-35.45	-27.27	160.00	210.00
OPER	5C1	54.31 R	41.78	192.00	0.0	0.00	0.00	0.00	
		-40.33 R	-31.03	172.00	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	2.79	3.58	2.79	3.58	HS 55.85	100.5
5C1	5.08	6.78	5.08	6.78	0.00	203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 6.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.900

Dead Load Superimposed Dead Load
Moment Moment
-1.5 -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.8	170.1	-169.1
OPER	301.2C	-264.1	264.1	-301.2C	320.6	-244.6	283.5	-281.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.04 L	12.34	119.50	0.0	25.30	19.46	147.50			
		-59.12 L	-45.47	141.00	0.0	-54.30	-41.77	160.00	137.50		
OPER	5C1	28.14 R	21.65	194.50	0.0	0.00	0.00	0.00			
		-46.94 R	-36.11	174.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.60	2.48	6.72	2.86	49.66
5C1	11.40	5.21	10.07	6.00	89.4
					208.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.8
OPER	151.4	-108.1	124.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.23	-18.29	2.48
OPER	5C1	-22.91	3.18	-17.62	2.44	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.20	HS 43.09	77.6
5C1	4.72	39.26	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 6.900

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-18.0

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.	157.0	-172.6	157.0	-172.6	176.4	-153.1	176.4	-
153.1								
OPER	274.6	-274.6	274.6	-274.6	294.1	-255.2	294.1	-
255.2								

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	16.04 L	12.34	119.50	0.0	25.30	19.46	147.50	
		-59.12 L	-45.47	141.00	0.0	-54.30	-41.77	160.00	137.50
OPER	5C1	28.14 R	21.65	194.50	0.0	0.00	0.00	0.00	
		-46.94 R	-36.11	174.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	6.97	2.59	6.97	2.59	HS 51.80	93.2
5C1	10.45	5.44	10.45	5.44	0.00	217.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.000

Dead Load Moment Superimposed Dead Load Moment
-3.2 -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53	L	12.71	92.00	0.0	16.80	12.92	115.00		
		-98.75	L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00	
OPER	5C1	12.85	L	9.89	65.50	0.0	0.00	0.00	0.00		
		-59.66	L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.28	1.35	10.96	1.57	HS 26.90
5C1	26.76	3.71	23.87	4.33	0.00

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.7
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.33	-18.29	20.26
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.4
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.53 L	12.71	92.00	0.0	16.80	12.92	115.00	
		-98.75 L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00
OPER	5C1	12.85 L	9.89	65.50	0.0	0.00	0.00	0.00	
		-59.66 L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
5C1	24.69	3.89	24.69	3.89	0.00	155.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.125

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.000

Dead Load Superimposed Dead Load
Moment Moment
-3.2 -39.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.4	-132.8	184.1	-155.1
OPER	301.2C	-264.1	264.1	-301.2C	343.9	-221.3	306.8	-258.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.53	L	12.71	92.00	0.0	16.80	12.92	115.00		
		-98.75	L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00	
OPER	5C1	12.85	L	9.89	65.50	0.0	0.00	0.00	0.00		
		-59.66	L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.28	1.35	10.96	1.57	HS 26.90 48.4
5C1	26.76	3.71	23.87	4.33	0.00 148.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.6	63.7
OPER	151.4	-106.1	106.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.35	26.33	-20.27	20.26
OPER	5C1	-25.96	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.86	66.4
5C1	4.09	4.09	0.00	163.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.000

Dead Load Moment	Superimposed Dead Load Moment
-3.2	-39.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 139.1	147.7	-181.9	147.7	-181.9	190.4	-139.1	190.4	-
OPER 231.9	274.6	-274.6	274.6	-274.6	317.4	-231.9	317.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.53 L	12.71	92.00	0.0	16.80	12.92	115.00	
		-98.75 L	-75.96	129.50	0.0	-90.78	-69.83	140.00	160.00
OPER	5C1	12.85 L	9.89	65.50	0.0	0.00	0.00	0.00	
		-59.66 L	-45.89	145.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.33	1.41	11.33	1.41	HS 28.18	50.7
5C1	24.69	3.89	24.69	3.89	0.00	155.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.0

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.4	-146.7	170.1	-169.0
OPER	301.2C	-264.1	264.1	-301.2C	320.7	-244.6	283.6	-281.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.05 R	12.35	180.50	0.0	25.73	19.79	152.50			
		-59.13 R	-45.49	159.00	0.0	-54.36	-41.81	140.00		162.50	
OPER	5C1	28.19 L	21.68	105.50	0.0	0.00	0.00	0.00			
		-46.96 L	-36.12	125.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.48	2.48	6.61	2.86	HS 49.63 89.3
5C1	11.38	5.21	10.06	6.00	0.00 208.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.6	0.0
	7.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.8	64.9
OPER	151.4	-124.7	108.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	30.12	-2.29	23.17	-3.22	23.76	-2.47	18.28
OPER	5C1	-3.16	22.90	-2.43	17.62	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.26	2.15	HS 43.10	77.6
5C1	39.42	4.72	0.00	188.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.100Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.0

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 153.1	157.0	-172.6	157.0	-172.6	176.5	-153.1	176.5	-
OPER 255.1	274.6	-274.6	274.6	-274.6	294.1	-255.1	294.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.05 R	12.35	180.50	0.0	25.73	19.79	152.50	
		-59.13 R	-45.49	159.00	0.0	-54.36	-41.81	140.00	162.50
OPER	5C1	28.19 L	21.68	105.50	0.0	0.00	0.00	0.00	
		-46.96 L	-36.12	125.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.86	2.59	6.86	2.59	HS 51.77	93.2
5C1	10.44	5.43	10.44	5.43	0.00	217.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.200

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	59.30 R	45.62	183.00	0.0	44.72	34.40	155.00			
		-45.83 L	-35.25	117.00	0.0	-35.54	-27.33	140.00		90.00	
OPER	5C1	54.34 L	41.80	108.00	0.0	0.00	0.00	0.00			
		-40.35 L	-31.04	128.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.06	3.44	2.69	3.92	HS 53.73	96.7
5C1	5.57	6.51	4.89	7.43	0.00	195.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.6	66.1
OPER	151.4	-122.6	110.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.98	25.40	-2.29	19.54	-4.46	20.95	-3.43	16.12
OPER	5C1	-4.75	19.69	-3.66	15.15	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.49	2.60	HS 52.09	93.8
5C1	25.79	5.60	0.00	223.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.200

Dead Load Moment	Superimposed Dead Load Moment
-0.1	-1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.7	-
163.9								
OPER	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-
273.2								

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	59.30 R	45.62	183.00	0.0	44.72	34.40	155.00	
		-45.83 L	-35.25	117.00	0.0	-35.54	-27.33	140.00	90.00
OPER	5C1	54.34 L	41.80	108.00	0.0	0.00	0.00	0.00	
		-40.35 L	-31.04	128.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
bend	+bend	-bend	+bend	-bend		
HS20	2.79	3.58	2.79	3.58	HS 55.87	100.6
5C1	5.08	6.77	5.08	6.77	0.00	203.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.300

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	173.9	-165.3	151.6	-187.6
OPER	301.2C	-264.1	264.1	-301.2C	289.8	-275.5	252.6	-312.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.33 R	66.41	185.50	0.0	65.08	50.06	157.50			
		-38.03 L	-29.26	117.00	0.0	-30.04	-23.11	140.00	0.00		
OPER	5C1	72.24 L	55.57	110.50	0.0	0.00	0.00	0.00			
		-36.38 L	-27.98	129.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.01	4.35	1.76	4.93	HS 35.12	63.2
5C1	4.01	7.57	3.50	8.59	0.00	139.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.3	0.0
	3.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.3	67.4
OPER	151.4	-120.6	112.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-4.42	20.57	-3.40	15.82	-6.74	18.00	-5.18	13.85
OPER	5C1	-6.62	16.50	-5.09	12.69	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	10.73	3.28	HS 65.53	118.0	
5C1	18.22	6.81	0.00	272.3	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.300Dead Load Moment 0.8
Superimposed Dead Load Moment 10.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.7	169.4	-160.2	169.4	-160.2	157.9	-171.6	157.9	-
OPER 286.1	274.6	-274.6	274.6	-274.6	263.2	-286.1	263.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	86.33 R	66.41	185.50	0.0	65.08	50.06	157.50	
		-38.03 L	-29.26	117.00	0.0	-30.04	-23.11	140.00	0.00
OPER	5C1	72.24 L	55.57	110.50	0.0	0.00	0.00	0.00	
		-36.38 L	-27.98	129.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.83	4.51	1.83	4.51	HS 36.58	65.9
5C1	3.64	7.86	3.64	7.86	0.00	145.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.140

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		27.65		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.400

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.	180.7C	-158.4	158.4	-180.7C	169.2	-169.9	146.9	-192.2
OPER	301.2C	-264.1	264.1	-301.2C	282.0	-283.2	244.9	-320.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.81 R	74.47	188.00	0.0	77.26	59.43	160.00			
		-30.24 L	-23.26	117.00	0.0	-26.42	-20.33	140.00	0.00		
OPER	5C1	83.83 R	64.48	172.00	0.0	0.00	0.00	0.00			
		-33.85 L	-26.04	130.50	0.0	0.00	0.00	0.00	0.00	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	1.75	5.62	1.52	6.36	HS 30.36	54.6
5C1	3.36	8.37	2.92	9.47	0.00	116.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.1	0.0 1.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-71.1	68.6
OPER	151.4	-118.5	114.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-8.97	16.78	-6.90	12.91	-9.31	15.02	-7.16	11.55
OPER	5C1	-8.71	13.45	-6.70	10.35	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.64	4.09	HS 81.78	147.2	
5C1	13.61	8.50	0.00	340.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.400Dead Load Moment 1.4
Superimposed Dead Load Moment 17.8

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	172.4	-157.1	172.5	-157.1	153.3	-176.3	153.3	-
OPER 293.8	274.6	-274.6	274.6	-274.6	255.5	-293.8	255.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.81 R	74.47	188.00	0.0	77.26	59.43
		-30.24 L	-23.26	117.00	0.0	-26.42	-20.33
OPER	5C1	83.83 R	64.48	172.00	0.0	0.00	0.00
		-33.85 L	-26.04	130.50	0.0	0.00	0.00

Serviceability

Rating Veh.	Rating top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	Factor bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.58	5.83	1.58	5.83	HS 31.66	57.0
5C1	3.05	8.68	3.05	8.68	0.00	121.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.500

	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	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			111.439

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		28.83		104.4

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.500

Dead Load Moment 1.5
Superimposed Dead Load Moment 20.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	188.8C	-153.8	136.7	-188.8C	175.8	-166.8	123.6	-201.9
OPER	314.7C	-256.3	227.8	-314.7C	293.0	-278.0	206.1	-336.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.42	L	72.63	148.50	0.0	82.02	63.09	162.50		
		-22.44	L	-17.26	117.00	0.0	-22.81	-17.55	140.00	0.00	
OPER	5C1	85.78	L	65.99	111.50	0.0	0.00	0.00	0.00		
		-32.72	L	-25.17	131.50	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.86	7.31	1.31	HS 26.19	47.1
5C1	3.42	8.49	2.40	0.00	96.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.500

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.0	0.0
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.9	69.9
OPER	151.4	-116.4	116.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-13.13	13.13	-10.10	10.10	-12.11	12.08	-9.31	9.29
OPER	5C1	-10.99	10.98	-8.45	8.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.32	5.32	HS 106.43	191.6
5C1	10.60	10.60	0.00	423.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.500Dead Load Moment 1.5
Superimposed Dead Load Moment 20.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 155.2	168.6	-151.2	150.9	-133.5	146.9	-173.0	129.1	-
OPER 258.7	266.5	-266.5	236.9	-236.9	244.8	-288.3	215.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	94.42 L	72.63	148.50	0.0	82.02	63.09	162.50	
		-22.44 L	-17.26	117.00	0.0	-22.81	-17.55	140.00	0.00
OPER	5C1	85.78 L	65.99	111.50	0.0	0.00	0.00	0.00	
		-32.72 L	-25.17	131.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.55	7.58	1.37	6.80	HS 27.35	49.2
5C1	2.85	8.81	2.51	7.91	0.00	100.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.600

Dead Load Moment 1.3
Superimposed Dead Load Moment 17.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	169.3	-169.8	147.1	-192.1
OPER	301.2C	-264.1	264.1	-301.2C	282.2	-283.1	245.1	-320.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.78 L	74.45	137.00	0.0	77.15	59.35	165.00			
		-30.14 R	-23.19	208.00	0.0	-26.36	-20.28	185.00	0.00		
OPER	5C1	83.79 L	64.46	153.00	0.0	0.00	0.00	0.00			
		-33.79 R	-25.99	194.50	0.0	0.00	0.00	0.00	0.00	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	1.75	5.64	1.52	6.37	HS 30.39	54.7
5C1	3.37	8.38	2.92	9.48	0.00	117.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.600

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	-68.6	71.1
OPER	151.4	-114.3	118.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-15.04	9.29	-11.57	7.14
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	4.09	7.66	HS 81.73	147.1	
5C1	8.49	13.61	0.00	339.8	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.600

Dead Load Moment	Superimposed Dead Load Moment
1.3	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	-
INV.	172.4	-157.2	172.4	-157.2	153.4	-176.2	153.4	-
176.2								
OPER	274.6	-274.6	274.6	-274.6	255.6	-293.6	255.6	-
293.6								

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	96.78 L	74.45	137.00	0.0	77.15	59.35	165.00	
		-30.14 R	-23.19	208.00	0.0	-26.36	-20.28	185.00	0.00
OPER	5C1	83.79 L	64.46	153.00	0.0	0.00	0.00	0.00	
		-33.79 R	-25.99	194.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	1.59	5.84	1.59	5.84	HS 31.70	57.1
5C1	3.05	8.69	3.05	8.69	0.00	122.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.700

Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	174.1	-165.1	151.8	-187.4
OPER	301.2C	-264.1	264.1	-301.2C	290.1	-275.1	253.0	-312.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.29 L	66.37	139.50	0.0	64.86	49.89	167.50			
		-37.91 R	-29.16	208.00	0.0	-29.96	-23.05	185.00	0.00		
OPER	5C1	72.17 R	55.52	214.50	0.0	0.00	0.00	0.00			
		-36.26 R	-27.89	196.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.02	4.36	1.76	35.19	63.3
5C1	4.02	7.59	3.51	0.00	140.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.700

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.3	-3.9	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.3	72.4
OPER	151.4	-112.2	120.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-20.57	4.41	-15.82	3.39	-18.03	6.71	-13.87	5.16
OPER	5C1	-16.50	6.62	-12.70	5.09	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.27	10.78	HS 65.47	117.8	
5C1	6.80	18.22	0.00	272.0	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.700Dead Load Moment 0.8
Superimposed Dead Load Moment 10.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.4	169.2	-160.3	169.2	-160.4	158.1	-171.4	158.1	-
OPER 285.7	274.6	-274.6	274.6	-274.6	263.6	-285.7	263.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	86.29 L	66.37	139.50	0.0	64.86	49.89	167.50	
		-37.91 R	-29.16	208.00	0.0	-29.96	-23.05	185.00	0.00
OPER	5C1	72.17 R	55.52	214.50	0.0	0.00	0.00	0.00	
		-36.26 R	-27.89	196.00	0.0	0.00	0.00	0.00	0.00

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	1.83	4.52	1.83	4.52	HS 36.65	66.0
5C1	3.65	7.88	3.65	7.88	0.00	146.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.800

Dead Load Moment Superimposed Dead Load Moment
-0.2 -1.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.9	-157.2	159.7	-179.5
OPER	301.2C	-264.1	264.1	-301.2C	303.2	-262.1	266.1	-299.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.24 L	45.57	142.00	0.0	44.93	34.56	170.00			
		-45.68 R	-35.14	208.00	0.0	-35.61	-27.39	185.00	235.00		
OPER	5C1	54.23 R	41.71	217.00	0.0	0.00	0.00	0.00			
		-40.18 R	-30.91	197.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	3.07	3.44	2.69	53.90	97.0
5C1	5.59	6.52	4.91	0.00	196.3

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 7.800
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 -0.5 -5.8 0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.1	73.6
OPER	151.4	-110.2	122.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.98	4.44	-16.14	3.42
OPER	5C1	-19.70	4.77	-15.16	3.67	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.60	16.58	HS 52.04	93.7
5C1	5.59	25.74	0.00	223.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.800

Dead Load Moment	Superimposed Dead Load Moment
-0.2	-1.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.6	164.0	-165.6	164.0	-165.6	166.0	-163.6	166.0	-
OPER 272.6	274.6	-274.6	274.6	-274.6	276.6	-272.6	276.6	-

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	59.24 L	45.57	142.00	0.0	44.93	34.56	170.00	
		-45.68 R	-35.14	208.00	0.0	-35.61	-27.39	185.00	235.00
OPER	5C1	54.23 R	41.71	217.00	0.0	0.00	0.00	0.00	
		-40.18 R	-30.91	197.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.80	3.58	2.80	3.58	HS 56.03	100.9
5C1	5.10	6.78	5.10	6.78	0.00	204.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.900

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 7.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.90	28.67	28.67	1.700	999999.000	96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.900

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-18.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.9	-146.3	170.6	-168.6
OPER	301.2C	-264.1	264.1	-301.2C	321.5	-243.8	284.3	-280.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	15.99 L	12.30	144.50	0.0	24.96	19.20	172.50			
		-58.95 L	-45.34	166.00	0.0	-54.33	-41.79	185.00	162.50		
OPER	5C1	28.04 R	21.57	219.50	0.0	0.00	0.00	0.00			
		-46.72 R	-35.94	199.50	0.0	0.00	0.00	0.00	0.00	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	2.48	6.84	2.86	HS 49.63	89.3
5C1	11.46	5.22	10.14	6.01	0.00	208.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.9	74.9
OPER	151.4	-108.1	124.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.78	3.21	-18.30	2.47
OPER	5C1	-22.91	3.18	-17.62	2.44	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.15	23.34	HS 43.07	77.5
5C1	4.72	39.26	0.00	188.7

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 7.900

Dead Load Moment	Superimposed Dead Load Moment
-1.6	-18.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber	bottom fiber	top fiber	bottom fi	top fiber	bottom fi	top fiber	bottom fi
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV.	156.7	-172.9	156.7	-172.9	176.9	-152.6	176.9	-
152.6								
OPER	274.6	-274.6	274.6	-274.6	294.9	-254.4	294.9	-
254.4								

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	15.99 L	12.30	144.50	0.0	24.96	19.20	172.50	
		-58.95 L	-45.34	166.00	0.0	-54.33	-41.79	185.00	162.50
OPER	5C1	28.04 R	21.57	219.50	0.0	0.00	0.00	0.00	
		-46.72 R	-35.94	199.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	7.09	2.59	7.09	2.59	HS 51.78	93.2
5C1	10.52	5.45	10.52	5.45	0.00	217.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.90	28.67	28.67	1.700
			999999.000
			96.458

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.000

Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.6	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.7	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00			
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00		
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00			
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.51	1.34	11.16	1.57	HS 26.81 48.3
5C1	26.80	3.70	23.91	4.32	0.00 148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.7	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.0	105.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.53	-23.17	26.56	-23.78	26.37	-18.30	20.28
OPER	5C1	-22.91	25.96	-17.62	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.000Dead Load Moment Superimposed Dead Load Moment
-3.3 -40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00	
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00	
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	11.54	1.40	11.54	1.40	HS 28.09	50.6
5C1	24.74	3.88	24.74	3.88	0.00	155.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.000

Dead Load Superimposed Dead Load
Moment Moment
-3.3 -40.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	206.9	-132.2	184.6	-154.5
OPER	301.2C	-264.1	264.1	-301.2C	344.9	-220.4	307.7	-257.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00			
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00		
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00			
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	12.51	1.34	11.16	1.57	HS 26.81 48.3
5C1	26.80	3.70	23.91	4.32	0.00 148.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.8	-9.6	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.6	63.6
OPER	151.4	-106.0	105.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.53	-26.56	26.56	-26.36	26.37	-20.27	20.28
OPER	5C1	-25.97	25.96	-19.97	19.97	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.84	1.84	HS 36.81	66.3
5C1	4.08	4.08	0.00	163.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.000

Dead Load Moment	Superimposed Dead Load Moment
-3.3	-40.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 138.6	147.3	-182.2	147.3	-182.3	191.0	-138.6	191.0	-
OPER 231.0	274.6	-274.6	274.6	-274.6	318.3	-231.0	318.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.54 L	12.73	117.00	0.0	16.44	12.64	140.00	
		-98.65 R	-75.89	195.50	0.0	-90.83	-69.87	165.00	185.00
OPER	5C1	12.87 L	9.90	90.50	0.0	0.00	0.00	0.00	
		-59.57 R	-45.82	179.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.54	1.40	11.54	1.40	HS 28.09	50.6
5C1	24.74	3.88	24.74	3.88	0.00	155.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.100

Dead Load Moment Superimposed Dead Load Moment
-1.5 -18.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	192.7	-146.5	170.4	-168.7
OPER	301.2C	-264.1	264.1	-301.2C	321.2	-244.1	284.0	-281.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.26 R	12.51	205.50	0.0	25.56	19.66	177.50			
		-59.16 R	-45.51	184.00	0.0	-54.28	-41.76	165.00		187.50	
OPER	5C1	28.29 L	21.76	130.50	0.0	0.00	0.00	0.00			
		-47.00 L	-36.16	150.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	7.54	2.48	6.67	2.85	89.1
5C1	11.35	5.19	10.04	5.98	207.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.100

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.6	0.0	7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.9	64.8
OPER	151.4	-124.9	108.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.95	30.11	-2.27	23.16	-3.15	23.80	-2.42	18.31
OPER	5C1	-3.16	22.90	-2.43	17.62	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	23.80	2.15	HS 43.03	77.5
5C1	39.47	4.72	0.00	188.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.100

Dead Load Moment	Superimposed Dead Load Moment
-1.5	-18.5

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	-
INV.	156.8	-172.8	156.8	-172.8	176.8	-152.8	176.8	-
152.8								
OPER	274.6	-274.6	274.6	-274.6	294.6	-254.7	294.6	-
254.7								

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	16.26 R	12.51	205.50	0.0	25.56	19.66	177.50	
		-59.16 R	-45.51	184.00	0.0	-54.28	-41.76	165.00	187.50
OPER	5C1	28.29 L	21.76	130.50	0.0	0.00	0.00	0.00	
		-47.00 L	-36.16	150.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	6.92	2.58	6.92	2.58	HS 51.66	93.0
5C1	10.41	5.42	10.41	5.42	0.00	216.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.89	28.67	28.67	1.700
			999999.000
			96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment
-0.1 -1.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	181.6	-157.6	159.3	-179.9
OPER	301.2C	-264.1	264.1	-301.2C	302.6	-262.6	265.5	-299.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.49 R	45.76	208.00	0.0	44.80	34.46	180.00			
		-45.90 L	-35.30	142.00	0.0	-35.59	-27.38	165.00		115.00	
OPER	5C1	54.50 L	41.92	133.00	0.0	0.00	0.00	0.00			
		-40.43 L	-31.10	153.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.05	3.43	2.68	3.92	96.4
5C1	5.55	6.50	4.87	7.41	194.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.200

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.5	0.0
	5.9

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.7	66.0
OPER	151.4	-122.8	110.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-2.95	25.40	-2.27	19.53	-4.40	20.99	-3.38	16.14
OPER	5C1	-4.75	19.69	-3.66	15.15	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.76	2.60	HS 52.00	93.6
5C1	25.84	5.59	0.00	223.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.200

Dead Load Moment Superimposed Dead Load Moment

-0.1 -1.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 163.9	164.2	-165.4	164.2	-165.4	165.6	-163.9	165.6	-
OPER 273.2	274.6	-274.6	274.6	-274.6	276.1	-273.2	276.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.49 R	45.76	208.00	0.0	44.80	34.46	180.00	
		-45.90 L	-35.30	142.00	0.0	-35.59	-27.38	165.00	115.00
OPER	5C1	54.50 L	41.92	133.00	0.0	0.00	0.00	0.00	
		-40.43 L	-31.10	153.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.79	3.57	2.79	3.57	HS 55.69	100.2
5C1	5.07	6.76	5.07	6.76	0.00	202.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.300

Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	173.6	-165.6	151.3	-187.9
OPER	301.2C	-264.1	264.1	-301.2C	289.3	-276.0	252.2	-313.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.52 R	66.55	210.50	0.0	65.31	50.24	182.50			
		-38.10 L	-29.31	142.00	0.0	-29.96	-23.05	165.00	0.00		
OPER	5C1	72.46 L	55.74	135.50	0.0	0.00	0.00	0.00			
		-36.47 L	-28.05	154.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	2.01	4.35	1.75	4.93	HS 34.97	63.0
5C1	3.99	7.57	3.48	8.59	0.00	139.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.300

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.3	0.0 4.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-72.4	67.3
OPER	151.4	-120.7	112.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.42	20.56	-3.40	15.82	-6.67	18.04	-5.13	13.88
OPER	5C1	-6.61	16.50	-5.08	12.69	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	10.86	3.27	HS 65.42	117.8	
5C1	18.28	6.80	0.00	271.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.300Dead Load Moment 0.9
Superimposed Dead Load Moment 11.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.9	169.5	-160.0	169.6	-160.0	157.6	-171.9	157.6	-
OPER 286.6	274.6	-274.6	274.6	-274.6	262.7	-286.6	262.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	86.52 R	66.55	210.50	0.0	65.31	50.24	182.50	
		-38.10 L	-29.31	142.00	0.0	-29.96	-23.05	165.00	0.00
OPER	5C1	72.46 L	55.74	135.50	0.0	0.00	0.00	0.00	
		-36.47 L	-28.05	154.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.82	4.51	1.82	4.51	HS 36.44	65.6
5C1	3.62	7.86	3.63	7.86	0.00	145.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.89	28.67	28.67	1.700	999999.000	96.350

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		28.83		104.2

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.400

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.	180.7C	-158.4	158.4	-180.7C	168.6	-170.5	146.4	-192.8
OPER	301.2C	-264.1	264.1	-301.2C	281.1	-284.2	244.0	-321.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	97.03 R	74.64	213.00	0.0	77.62	59.71	185.00			
		-30.30 L	-23.31	142.00	0.0	-26.18	-20.14	165.00	0.00		
OPER	5C1	84.03 R	64.64	197.00	0.0	0.00	0.00	0.00			
		-33.94 L	-26.11	155.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.74	5.63	1.51	6.36	HS 30.17	54.3
5C1	3.35	8.37	2.90	9.47	0.00	116.1

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 8.400
 HS20 5C1

Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.2 0.0 2.1

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-71.2	68.5
OPER	151.4	-118.7	114.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-8.98	16.78	-6.90	12.91	-9.24	15.05	-7.11	11.58
OPER	5C1	-8.69	13.45	-6.68	10.35	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	7.70	4.08	HS 81.65	147.0	
5C1	13.66	8.49	0.00	339.6	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.400Dead Load Moment 1.5
Superimposed Dead Load Moment 18.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 176.9	172.8	-156.7	172.8	-156.7	152.7	-176.9	152.7	-
OPER 294.8	274.6	-274.6	274.6	-274.6	254.5	-294.8	254.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	97.03 R	74.64	213.00	0.0	77.62	59.71	185.00	
		-30.30 L	-23.31	142.00	0.0	-26.18	-20.14	165.00	0.00
OPER	5C1	84.03 R	64.64	197.00	0.0	0.00	0.00	0.00	
		-33.94 L	-26.11	155.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.57	5.84	1.57	5.84	HS 31.48	56.7
5C1	3.03	8.69	3.03	8.69	0.00	121.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.500

Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	166.8	-172.3	144.6	-194.6
OPER	301.2C	-264.1	264.1	-301.2C	278.0	-287.2	240.9	-324.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.70 L	72.84	173.50	0.0	82.51	63.47	187.50			
		-22.50 L	-17.31	142.00	0.0	-22.39	-17.23	165.00	0.00		
OPER	5C1	86.34 R	66.42	238.50	0.0	0.00	0.00	0.00			
		-32.81 L	-25.24	156.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.76	7.66	1.53	30.53	55.0
5C1	3.22	8.75	2.79	0.00	111.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.500

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	-70.0	69.7
OPER	151.4	-116.6	116.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.	w/imp. (-)	(+) w/imp.	w/o imp. (-)	(+) w/o imp.
INV.	HS20	-13.13	13.12	-10.10	10.10	-12.04	12.12	-9.26	9.32
OPER	5C1	-10.95	10.98	-8.43	8.45	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.33	5.31	HS 106.29	191.3
5C1	10.65	10.59	0.00	423.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.500Dead Load Moment 1.7
Superimposed Dead Load Moment 21.4

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. 178.7	174.0	-155.5	174.0	-155.5	150.9	-178.7	150.9	-
OPER 297.8	274.6	-274.6	274.6	-274.6	251.5	-297.8	251.5	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load 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	94.70 L	72.84	173.50	0.0	82.51	63.47	187.50	
		-22.50 L	-17.31	142.00	0.0	-22.39	-17.23	165.00	0.00
OPER	5C1	86.34 R	66.42	238.50	0.0	0.00	0.00	0.00	
		-32.81 L	-25.24	156.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		Rating Factor bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.59	7.94	1.59	7.94	HS 31.87	57.4
5C1	2.91	9.07	2.91	9.07	0.00	116.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.600

Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	168.2	-171.0	145.9	-193.2
OPER	301.2C	-264.1	264.1	-301.2C	280.3	-284.9	243.2	-322.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.99 L	74.61	162.00	0.0	77.69	59.76	190.00			
		-30.01 R	-23.08	233.00	0.0	-25.78	-19.83	210.00	0.00		
OPER	5C1	84.06 L	64.66	178.00	0.0	0.00	0.00	0.00			
		-33.85 R	-26.04	219.50	0.0	0.00	0.00	0.00	0.00	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	1.73	5.70	1.50	6.44	HS 30.09	54.2
5C1	3.34	8.42	2.89	9.51	0.00	115.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.600

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	-68.7	71.0
OPER	151.4	-114.5	118.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-16.78	8.97	-12.91	6.90	-14.97	9.32	-11.52	7.17
OPER	5C1	-13.45	8.71	-10.35	6.70	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	4.09	7.62	HS 81.87
5C1	8.51	13.59	0.00
			Load Capacity (tons)
			147.4
			340.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.600Dead Load Moment 1.6
Superimposed Dead Load Moment 19.3

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 177.3	173.1	-156.4	173.1	-156.4	152.3	-177.3	152.3	-
OPER 295.5	274.6	-274.6	274.6	-274.6	253.8	-295.5	253.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	96.99 L	74.61	162.00	0.0	77.69	59.76	190.00	
		-30.01 R	-23.08	233.00	0.0	-25.78	-19.83	210.00	0.00
OPER	5C1	84.06 L	64.66	178.00	0.0	0.00	0.00	0.00	
		-33.85 R	-26.04	219.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.57	5.91	1.57	5.91	HS 31.40	56.5
5C1	3.02	8.73	3.02	8.73	0.00	120.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.700

Dead Load Moment 1.0
Superimposed Dead Load Moment 12.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	172.7	-166.5	150.4	-188.8
OPER	301.2C	-264.1	264.1	-301.2C	287.8	-277.5	250.7	-314.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	86.47 L	66.51	164.50	0.0	65.44	50.34	192.50			
		-37.72 R	-29.02	233.00	0.0	-29.21	-22.47	210.00	0.00		
OPER	5C1	72.98 R	56.14	239.50	0.0	0.00	0.00	0.00			
		-36.31 R	-27.93	221.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.00	4.41	1.74	HS 34.79	62.6
5C1	3.94	7.64	3.43	0.00	137.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.700

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	72.3
OPER	151.4	-112.4	120.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-20.57	4.41	-15.82	3.39	-17.96	6.75	-13.82	5.19
OPER	5C1	-16.50	6.62	-12.69	5.09	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.28	10.71	HS 65.57	118.0	
5C1	6.81	18.19	0.00	272.5	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.700

Dead Load Moment Superimposed Dead Load Moment

1.0 12.4

Rating Veh. ber	Moment Capacity		Available Capacity for LL+I	
	top fiber	bottom fiber	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend
INV.	170.1	-159.4	170.1	-159.4
172.8				
OPER	274.6	-274.6	274.6	-274.6
288.0				

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	86.47 L	66.51	164.50	0.0	65.44
		-37.72 R	-29.02	233.00	0.0	-29.21
OPER	5C1	72.98 R	56.14	239.50	0.0	0.00
		-36.31 R	-27.93	221.00	0.0	0.00

Serviceability

Rating Veh.	Rating top fiber	Factor bottom fiber	Rating Value	Load Capacity (tons)
HS20	1.81	4.58	1.81	4.58
5C1	3.58	7.93	3.58	7.93

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.800

Dead Load Moment 0.1
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.	180.7C	-158.4	158.4	-180.7C	180.2	-158.9	158.0	-181.2
OPER	301.2C	-264.1	264.1	-301.2C	300.4	-264.9	263.3	-302.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.41 L	45.70	167.00	0.0	45.53	35.03	195.00			
		-45.44 R	-34.95	233.00	0.0	-33.18	-25.52	210.00	177.50		
OPER	5C1	55.26 R	42.51	242.00	0.0	0.00	0.00	0.00			
		-40.23 R	-30.94	222.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	3.03	3.50	2.66	3.99	HS 53.18	95.7
5C1	5.44	6.58	4.76	7.51	0.00	190.6

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-5.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-66.2	73.5
OPER	151.4	-110.3	122.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.	(-) w/imp.	(+) w/imp.	(-) w/o imp.	(+) w/o imp.
INV.	HS20	-25.40	2.99	-19.54	2.30	-20.91	4.48	-16.08	3.44
OPER	5C1	-19.69	4.77	-15.15	3.67	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.61	16.43	HS 52.13	93.8	
5C1	5.60	25.71	0.00	224.1	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.800Dead Load Moment 0.1
Superimposed Dead Load Moment 0.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 165.3	165.1	-164.5	165.1	-164.5	164.3	-165.2	164.3	-
OPER 275.4	274.6	-274.6	274.6	-274.6	273.8	-275.4	273.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.41 L	45.70	167.00	0.0	45.53	35.03	195.00
		-45.44 R	-34.95	233.00	0.0	-33.18	-25.52	210.00
OPER	5C1	55.26 R	42.51	242.00	0.0	0.00	0.00	0.00
		-40.23 R	-30.94	222.00	0.0	0.00	0.00	0.00

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	2.77	3.64	2.77	3.64	HS 55.31	99.6
5C1	4.96	6.85	4.96	6.85	0.00	198.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section
Positive Bending	Negative Bending	Modulus - Z		
Top	Bott.	Top	Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 8.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.900

Dead Load Moment Superimposed Dead Load Moment
-1.2 -15.8

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	190.9	-148.2	168.6	-170.5
OPER	301.2C	-264.1	264.1	-301.2C	318.2	-247.1	281.1	-284.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.17 L	12.44	169.50	0.0	25.58	19.68	197.50			
		-58.85 L	-45.27	191.00	0.0	-53.00	-40.77	210.00	187.50		
OPER	5C1	29.42 R	22.63	244.50	0.0	0.00	0.00	0.00			
		-46.77 R	-35.98	224.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	7.46	2.52	6.59	2.90	HS 50.38	90.7
5C1	10.82	5.28	9.56	6.08	0.00	211.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.900

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.6	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.0	74.7
OPER	151.4	-108.3	124.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	3.12	-23.17	2.40	-23.72	3.24	-18.24	2.49
OPER	5C1	-22.88	3.18	-17.60	2.44	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.16	23.05	HS 43.14	77.7
5C1	4.73	39.20	0.00	189.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 8.900Dead Load Moment -1.2
Superimposed Dead Load Moment -15.8

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.6	158.0	-171.6	158.0	-171.6	175.0	-154.6	175.0	-
OPER 257.6	274.6	-274.6	274.6	-274.6	291.6	-257.6	291.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.17 L	12.44	169.50	0.0	25.58	19.68	197.50	
		-58.85 L	-45.27	191.00	0.0	-53.00	-40.77	210.00	187.50
OPER	5C1	29.42 R	22.63	244.50	0.0	0.00	0.00	0.00	
		-46.77 R	-35.98	224.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.84	2.63	6.84	2.63	HS 52.53	94.6
5C1	9.91	5.51	9.91	5.51	0.00	220.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.000

Dead Load Moment Superimposed Dead Load Moment
-2.9 -37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.7
OPER	301.2C	-264.1	264.1	-301.2C	341.2	-224.1	304.0	-261.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00			
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00		
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00			
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	10.20	1.37	9.09	1.59	HS 27.30
5C1	22.08	3.77	19.68	4.40	0.00 150.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.6	-0.8	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	90.8	-63.7	64.0
OPER	151.4	-106.2	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.12	34.48	-23.17	26.52	-23.72	26.11	-18.24	20.08
OPER	5C1	-22.88	25.93	-17.60	19.95	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.86	HS 36.91	66.4
5C1	4.10	4.11	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.1

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.	148.8	-180.8	148.8	-180.8	188.8	-140.8	188.8	-
140.8								
OPER	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-
234.7								

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat.	Truck	Live Load Moment	Loc. of Ax.	Lane Live Load Moment	Loc. of Conc.				
Typ.	Veh.	w/imp.	w/o imp.	Front Wheel	Dis.	w/imp.	w/o imp.	Load 1	Load 2
INV.	HS20	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00	
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00	
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	9.41	1.43	9.41	1.43	HS 28.58	51.4
5C1	20.36	3.95	20.36	3.95	0.00	158.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.84	28.67	28.67	1.700
			999999.000
			93.631

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	204.7	-134.5	182.4	-156.7
OPER	301.2C	-264.1	264.1	-301.2C	341.2	-224.1	304.0	-261.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00			
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00		
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00			
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	10.20	1.37	9.09	1.59	HS 27.30	49.1
5C1	22.08	3.77	19.68	4.40	0.00	150.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	0.7	-9.5	9.1

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	90.8	-63.7	64.0
OPER	151.4	-106.2	106.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.53	34.48	-26.56	26.52	-26.29	26.11	-20.22	20.08
OPER	5C1	-25.91	25.93	-19.93	19.95	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.85	1.86	HS 36.91	66.4
5C1	4.10	4.11	0.00	164.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.000

Dead Load Moment	Superimposed Dead Load Moment
-2.9	-37.1

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.	148.8	-180.8	148.8	-180.8	188.8	-140.8	188.8	-
140.8								
OPER	274.6	-274.6	274.6	-274.6	314.6	-234.7	314.6	-
234.7								

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	20.06 R	15.43	258.00	0.0	17.91	13.78	235.00	
		-98.53 R	-75.79	220.50	0.0	-89.37	-68.75	190.00	210.00
OPER	5C1	15.45 R	11.89	284.50	0.0	0.00	0.00	0.00	
		-59.40 R	-45.69	204.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
bend	+bend	-bend	+bend	-bend		
HS20	9.41	1.43	9.41	1.43	HS 28.58	51.4
5C1	20.36	3.95	20.36	3.95	0.00	158.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.100

Dead Load Moment	Superimposed Dead Load Moment
-1.3	-16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	191.5	-147.6	169.3	-169.9
OPER	301.2C	-264.1	264.1	-301.2C	319.2	-246.0	282.1	-283.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	16.23 R	12.49	230.50	0.0	25.90	19.92	202.50			
		-59.00 R	-45.38	209.00	0.0	-53.55	-41.19	190.00		212.50	
OPER	5C1	28.17 L	21.67	155.50	0.0	0.00	0.00	0.00			
		-46.73 L	-35.95	175.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend		
HS20	7.40	2.50	6.54	2.88	HS 50.05	90.1
5C1	11.33	5.26	10.02	6.06	0.00	210.6

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 9.100
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.6 0.0 7.2

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-74.5	65.2
OPER	151.4	-124.2	108.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-3.64	30.06	-2.80	23.12	-3.50	23.53	-2.69	18.10
OPER	5C1	-3.50	22.87	-2.69	17.59	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	20.47	2.17	HS 43.39	78.1
5C1	35.48	4.75	0.00	190.1

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.100Dead Load Moment -1.3
Superimposed Dead Load Moment -16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 154.0	157.6	-172.0	157.6	-172.0	175.6	-154.0	175.6	-
OPER 256.6	274.6	-274.6	274.6	-274.6	292.7	-256.6	292.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live Load w/imp.	Moment w/o imp.	Loc. of Ax. Front Wheel	Lane Dis.	Live Load w/imp.	Moment w/o imp.	Loc. of Conc. Load 1	Load 2
INV.	HS20	16.23 R	12.49	230.50	0.0	25.90	19.92	202.50	
		-59.00 R	-45.38	209.00	0.0	-53.55	-41.19	190.00	212.50
OPER	5C1	28.17 L	21.67	155.50	0.0	0.00	0.00	0.00	
		-46.73 L	-35.95	175.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	6.78	2.61	6.78	2.61	HS 52.19	93.9
5C1	10.39	5.49	10.39	5.49	0.00	219.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.200

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.200

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.	180.7C	-158.4	158.4	-180.7C	181.5	-157.7	159.2	-180.0
OPER	301.2C	-264.1	264.1	-301.2C	302.5	-262.8	265.3	-299.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	59.28 R	45.60	233.00	0.0	44.71	34.39	205.00			
		-45.69 L	-35.15	167.00	0.0	-35.33	-27.18	190.00		140.00	
OPER	5C1	54.28 L	41.75	158.00	0.0	0.00	0.00	0.00			
		-40.20 L	-30.92	178.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.06	3.45	2.68	3.94	HS 53.71 96.7
5C1	5.57	6.54	4.89	7.46	0.00 195.5

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.200

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.4	0.0	5.3

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-73.3	66.5
OPER	151.4	-122.1	110.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.64	25.33	-2.80	19.49	-4.54	20.71	-3.49	15.93
OPER	5C1	-5.28	19.65	-4.06	15.12	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	16.14	2.62	HS 52.46	94.4
5C1	23.14	5.64	0.00	225.4

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.200

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	top fiber	bottom fi	top fiber	bottom fi
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 164.0	164.3	-165.3	164.3	-165.3	165.5	-164.0	165.5	-
OPER 273.4	274.6	-274.6	274.6	-274.6	275.9	-273.4	275.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	59.28 R	45.60	233.00	0.0	44.71	34.39	205.00	
		-45.69 L	-35.15	167.00	0.0	-35.33	-27.18	190.00	140.00
OPER	5C1	54.28 L	41.75	158.00	0.0	0.00	0.00	0.00	
		-40.20 L	-30.92	178.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	2.79	3.59	2.79	3.59	HS 55.84	100.5
5C1	5.08	6.80	5.08	6.80	0.00	203.3

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.300

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.300

Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	174.5	-164.6	152.2	-186.9
OPER	301.2C	-264.1	264.1	-301.2C	290.9	-274.4	253.7	-311.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.98 R	66.14	235.50	0.0	64.49	49.61	207.50			
		-37.88 L	-29.14	167.00	0.0	-30.02	-23.09	190.00	0.00		
OPER	5C1	72.10 L	55.46	160.50	0.0	0.00	0.00	0.00			
		-36.31 L	-27.93	179.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	2.03	4.35	1.77	35.41	63.7
5C1	4.03	7.56	3.52	0.00	140.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.300

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.2	0.0
	3.4

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	90.8	-72.0	67.7
OPER	151.4	-120.0	112.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-4.55	20.51	-3.50	15.77	-6.82	17.75	-5.25	13.66
OPER	5C1	-7.30	16.45	-5.61	12.66	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	10.55	3.30	HS 66.02	118.8
5C1	16.45	6.86	0.00	274.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.300Dead Load Moment 0.7
Superimposed Dead Load Moment 9.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 171.0	168.9	-160.6	168.9	-160.6	158.6	-171.0	158.6	-
OPER 285.0	274.6	-274.6	274.6	-274.6	264.3	-285.0	264.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	85.98 R	66.14	235.50	0.0	64.49	49.61	207.50
		-37.88 L	-29.14	167.00	0.0	-30.02	-23.09	190.00
OPER	5C1	72.10 L	55.46	160.50	0.0	0.00	0.00	0.00
		-36.31 L	-27.93	179.00	0.0	0.00	0.00	0.00

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	1.84	4.51	1.84	4.51	HS 36.88	66.4
5C1	3.67	7.85	3.67	7.85	0.00	146.6

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.85	28.67	28.67	1.700	999999.000	93.826

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		18.40		106.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.400

Dead Load Moment 1.1
Superimposed Dead Load Moment 15.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	170.6	-168.5	148.4	-190.8
OPER	301.2C	-264.1	264.1	-301.2C	284.4	-280.9	247.3	-318.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.08 R	73.91	238.00	0.0	76.04	58.49	210.00			
		-30.06 L	-23.13	167.00	0.0	-26.55	-20.43	190.00	0.00		
OPER	5C1	83.57 R	64.28	222.00	0.0	0.00	0.00	0.00			
		-34.03 L	-26.18	180.50	0.0	0.00	0.00	0.00	0.00	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	1.78	5.61	1.54	6.35	HS 30.89	55.6
5C1	3.40	8.25	2.96	9.34	0.00	118.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.400Dead 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 68.9
OPER 151.4 -118.0 114.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.12	16.75	-7.02	12.88	-9.41	14.76	-7.24	11.35
OPER	5C1	-9.45	13.40	-7.27	10.31	0.00	0.00	0.00	0.00

Rating Shear

Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	7.53	4.12	HS 82.31	148.2
5C1	12.49	8.57	0.00	342.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.400

Dead Load Moment Superimposed Dead Load Moment

1.1 15.7

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 174.9	171.5	-158.1	171.5	-158.1	154.7	-174.8	154.7	-
OPER 291.4	274.6	-274.6	274.6	-274.6	257.8	-291.4	257.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.08 R	73.91	238.00	0.0	76.04	58.49	210.00	
		-30.06 L	-23.13	167.00	0.0	-26.55	-20.43	190.00	0.00
OPER	5C1	83.57 R	64.28	222.00	0.0	0.00	0.00	0.00	
		-34.03 L	-26.18	180.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.61	5.82	1.61	5.82	HS 32.20	58.0
5C1	3.09	8.56	3.09	8.56	0.00	123.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.27	8.24	8.24	0.62	1.84
21.0	19.77	0.400	bott	10.50	8.24	8.24	0.62	1.84

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
17.00	17.00	9.88	11.12	1197.3	1197.3

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
121.1	107.7	121.1	107.7	409.17

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	23.17
bott	4.12	0.62	13.400	150.00	81.63		26.25

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.85	28.67	28.67	1.700
			999999.000
			108.756

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	409.17	109.1
bott	22.62		41.59		102.3

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.500

Dead Load Moment 1.1
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.	188.8C	-153.8	136.7	-188.8C	178.0	-164.6	125.9	-199.7
OPER	314.7C	-256.3	227.8	-314.7C	296.7	-274.3	209.8	-332.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	94.08 R	72.37	226.50	0.0	80.13	61.64	212.50			
		-27.22 R	-20.93	258.00	0.0	-24.26	-18.66	235.00	0.00		
OPER	5C1	85.43 L	65.72	161.50	0.0	0.00	0.00	0.00			
		-34.30 R	-26.39	243.50	0.0	0.00	0.00	0.00	0.00	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	6.05	1.34	7.34	HS 26.76	48.2
5C1	3.47	8.00	2.45	9.70	0.00	98.2

SHEAR RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.1	-0.5	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-69.5	70.2
OPER	151.4	-115.9	117.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-13.29	13.08	-10.22	10.06	-12.21	11.82	-9.39	9.09
OPER	5C1	-11.66	10.93	-8.97	8.41	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	5.23	5.36	HS 104.65	188.4
5C1	9.94	10.70	0.00	397.5

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.500

Dead Load Moment Superimposed Dead Load Moment

1.1 16.9

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-bend
INV. 153.0	167.1	-152.7	149.4	-134.9	149.1	-170.7	131.3	-
OPER 255.0	266.5	-266.5	236.9	-236.9	248.5	-284.6	218.9	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	94.08 R	72.37	226.50	0.0	80.13	61.64	212.50	
		-27.22 R	-20.93	258.00	0.0	-24.26	-18.66	235.00	0.00
OPER	5C1	85.43 L	65.72	161.50	0.0	0.00	0.00	0.00	
		-34.30 R	-26.39	243.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.59	6.27	1.40	5.62	HS 27.92	50.3
5C1	2.91	8.30	2.56	7.43	0.00	102.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.600

Dead Load Moment 0.8
Superimposed Dead Load Moment 13.2

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	180.7C	-158.4	158.4	-180.7C	172.3	-166.8	150.0	-189.1
OPER	301.2C	-264.1	264.1	-301.2C	287.2	-278.1	250.1	-315.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	96.27 L	74.05	187.00	0.0	74.62	57.40	215.00			
		-36.67 R	-28.21	258.00	0.0	-28.39	-21.84	235.00	0.00		
OPER	5C1	80.84 L	62.18	203.00	0.0	0.00	0.00	0.00			
		-36.23 R	-27.87	244.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	1.79	4.55	1.56	HS 31.17	56.1
5C1	3.55	7.68	3.09	0.00	123.7

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.600

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.2	-2.4	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-68.3	71.4
OPER	151.4	-113.8	119.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-16.99	8.92	-13.07	6.86	-15.15	9.03	-11.65	6.94
OPER	5C1	-13.88	8.66	-10.68	6.66	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.02	7.92	HS 80.37	144.7
5C1	8.20	13.75	0.00	327.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.600Dead Load Moment 0.8
Superimposed Dead Load Moment 13.2

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 173.2	170.4	-159.2	170.4	-159.2	156.4	-173.2	156.4	-
OPER 288.7	274.6	-274.6	274.6	-274.6	260.6	-288.6	260.6	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	96.27 L	74.05	187.00	0.0	74.62	57.40	215.00
		-36.67 R	-28.21	258.00	0.0	-28.39	-21.84	235.00
OPER	5C1	80.84 L	62.18	203.00	0.0	0.00	0.00	0.00
		-36.23 R	-27.87	244.50	0.0	0.00	0.00	0.00

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	1.62	4.72	1.62	4.72	HS 32.49	58.5
5C1	3.22	7.97	3.22	7.97	0.00	129.0

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.700

Dead Load Moment 0.1
Superimposed Dead Load Moment 4.7

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.	180.7C	-158.4	158.4	-180.7C	177.8	-161.3	155.6	-183.6
OPER	301.2C	-264.1	264.1	-301.2C	296.4	-268.9	259.3	-306.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Load Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Load Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	85.54 L	65.80	189.50	0.0	61.69	47.45	217.50			
		-46.13 R	-35.48	258.00	0.0	-32.52	-25.02	235.00	0.00		
OPER	5C1	66.58 L	51.22	201.50	0.0	0.00	0.00	0.00			
		-39.74 R	-30.57	246.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend		
HS20	2.08	3.50	1.82	3.98	HS 36.37	65.5
5C1	4.45	6.76	3.89	7.70	0.00	155.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.700

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.4	-4.3
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-67.0	72.7
OPER	151.4	-111.7	121.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-20.66	4.35	-15.90	3.35	-18.14	6.46	-13.95	4.97
OPER	5C1	-16.82	6.58	-12.94	5.06	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	3.24	11.26	HS 64.87
5C1	6.64	18.41	0.00
			Load Capacity (tons)
			116.8
			265.6

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.700

Dead Load Moment Superimposed Dead Load Moment

0.1 4.7

Rating Veh. ber	Moment Capacity top fiber		bottom fiber		Available Capacity for LL+I			
	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 167.7	166.7	-162.9	166.7	-162.9	161.9	-167.7	161.9	-
OPER 279.4	274.6	-274.6	274.6	-274.6	269.8	-279.4	269.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	85.54 L	65.80	189.50	0.0	61.69	47.45	217.50	
		-46.13 R	-35.48	258.00	0.0	-32.52	-25.02	235.00	0.00
OPER	5C1	66.58 L	51.22	201.50	0.0	0.00	0.00	0.00	
		-39.74 R	-30.57	246.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor top fiber		bottom fiber		Rating Value	Load Capacity (tons)
	+bend	-bend	+bend	-bend		
HS20	1.89	3.63	1.89	3.63	HS 37.85	68.1
5C1	4.05	7.03	4.05	7.03	0.00	162.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.800

	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	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Bending Bott.	Negative Bending Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.800

Dead Load Moment Superimposed Dead Load Moment
-1.0 -8.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	186.5	-152.7	164.2	-175.0
OPER	301.2C	-264.1	264.1	-301.2C	310.8	-254.5	273.6	-291.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	58.31 L	44.85	192.00	0.0	41.30	31.77	220.00			
		-55.58 R	-42.76	258.00	0.0	-37.44	-28.80	235.00		202.50	
OPER	5C1	46.31 L	35.62	169.00	0.0	0.00	0.00	0.00			
		-44.77 R	-34.44	247.50	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.20	2.75	2.82	3.15	54.95
5C1	6.71	5.68	5.91	6.51	98.9
					227.4

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.800

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.5	-6.3
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-65.8	73.9
OPER	151.4	-109.6	123.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-25.52	2.99	-19.63	2.30	-21.08	4.19	-16.22	3.23
OPER	5C1	-20.12	4.74	-15.48	3.65	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.58	17.63	HS 51.55	92.8
5C1	5.45	26.00	0.00	218.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.800

Dead Load Moment	Superimposed Dead Load Moment
-1.0	-8.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 159.0	161.0	-168.6	161.0	-168.6	170.5	-159.0	170.5	-
OPER 265.1	274.6	-274.6	274.6	-274.6	284.2	-265.1	284.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	58.31 L	44.85	192.00	0.0	41.30	31.77	220.00	
		-55.58 R	-42.76	258.00	0.0	-37.44	-28.80	235.00	202.50
OPER	5C1	46.31 L	35.62	169.00	0.0	0.00	0.00	0.00	
		-44.77 R	-34.44	247.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	2.92	2.86	2.92	2.86	HS 57.23	103.0
5C1	6.14	5.92	6.14	5.92	0.00	236.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 9.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.97	28.67	28.67	1.700
			999999.000
			100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.900

Dead Load Moment Superimposed Dead Load Moment
-2.5 -26.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	180.7C	-158.4	158.4	-180.7C	198.2	-141.0	175.9	-163.3
OPER	301.2C	-264.1	264.1	-301.2C	330.3	-235.0	293.2	-272.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	14.99 L	11.53	194.50	0.0	21.06	16.20	222.50			
		-67.90 L	-52.23	216.00	0.0	-58.74	-45.19	235.00	212.50		
OPER	5C1	21.47 L	16.51	171.50	0.0	0.00	0.00	0.00			
		-55.04 R	-42.34	253.50	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	9.41	2.08	8.35	2.40	HS 41.53
5C1	15.39	4.27	13.66	4.94	0.00 170.8

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.900

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
-0.7	-8.2
	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	90.8	-64.5	75.2
OPER	151.4	-107.6	125.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)	w/imp. (-)	w/imp. (+)	w/o imp. (-)	w/o imp. (+)
INV.	HS20	-30.26	3.13	-23.28	2.40	-23.88	3.00	-18.37	2.31
OPER	5C1	-23.53	3.16	-18.10	2.43	0.00	0.00	0.00	0.00

Rating		Shear	
Veh.	Rating (-)	Factor (+)	Rating Value
HS20	2.13	24.04	42.66
5C1	4.57	39.59	0.00
			Load Capacity (tons)
			76.8
			182.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 9.900

Dead Load Moment	Superimposed Dead Load Moment
-2.5	-26.6

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	-
INV.	153.1	-176.4	153.1	-176.4	182.2	-147.3	182.2	-
147.3								
OPER	274.6	-274.6	274.6	-274.6	303.7	-245.5	303.7	-
245.5								

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	14.99 L	11.53	194.50	0.0	21.06	16.20	222.50	
		-67.90 L	-52.23	216.00	0.0	-58.74	-45.19	235.00	212.50
OPER	5C1	21.47 L	16.51	171.50	0.0	0.00	0.00	0.00	
		-55.04 R	-42.34	253.50	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor				Rating Value	Load Capacity (tons)
	top fiber	bottom fiber	top fiber	bottom fiber		
	+bend	-bend	+bend	-bend		
HS20	8.65	2.17	8.65	2.17	HS 43.39	78.1
5C1	14.15	4.46	14.15	4.46	0.00	178.4

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.89	8.24	8.24	0.62	1.78
21.0	19.77	0.400	bott	9.88	8.24	8.24	0.62	1.78

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
18.00	18.00	10.50	10.50	1310.8	1310.8

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	391.56

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.62	13.400	0.01	0.01	49.42	24.71
bott	3.92	0.62	13.400	150.00	84.06		24.71

ASD - Moment Values

Cb	Iy		J	fb	
	top	bott		top	bott
1.97	28.67	28.67	1.700	999999.000	100.237

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	391.56	109.1
bott	22.62		41.59		102.0

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	151.4

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.000

Dead Load Moment Superimposed Dead Load Moment
-4.4 -49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-158.4	158.4	-215.6C	247.9	-126.2	190.7	-183.4
OPER	359.4C	-264.1	264.1	-359.4C	413.2	-210.3	317.9	-305.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00			
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00		215.00	
OPER	5C1	13.07 L	10.05	140.50	0.0	0.00	0.00	0.00			
		-73.72 R	-56.71	256.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	14.73	1.22	11.33	1.77	HS 24.41	43.9	
5C1	31.62	2.85	24.33	4.14	0.00	114.1	

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.7	-0.8	-8.2	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.0	-63.3	71.7
OPER	171.7	-105.5	119.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-30.26	36.72	-23.28	28.25	-23.88	26.68	-18.37	20.52
OPER	5C1	-23.53	27.32	-18.10	21.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.83	1.95	HS 36.51	65.7
5C1	3.95	4.37	0.00	158.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.4	-49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 132.5	143.3	-186.3	143.3	-186.3	197.1	-132.5	197.1	-
OPER 220.8	274.6	-274.6	274.6	-274.6	328.4	-220.8	328.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00	
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00	215.00
OPER	5C1	13.07 L	10.05	140.50	0.0	0.00	0.00	0.00	
		-73.72 R	-56.71	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.71	1.28	11.71	1.28	HS 25.64	46.1
5C1	25.14	2.99	25.14	2.99	0.00	119.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
124.8	124.8	124.8	124.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			111.193

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.4	-49.4

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-158.4	158.4	-215.6C	247.9	-126.2	190.7	-183.4
OPER	359.4C	-264.1	264.1	-359.4C	413.2	-210.3	317.9	-305.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00			
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00		215.00	
OPER	5C1	13.07 L	10.05	140.50	0.0	0.00	0.00	0.00			
		-73.72 R	-56.71	256.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	14.73	1.22	11.33	1.77	HS 24.41	43.9
5C1	31.62	2.85	24.33	4.14	0.00	114.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.000

Dead Load		Superimposed Dead Load	
(-) Shear	(+) Shear	(-) Shear	(+) Shear
-0.8	1.1	-10.1	11.6

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I	
		(-)	(+)
INV.	103.0	-63.3	71.7
OPER	171.7	-105.5	119.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-34.68	36.72	-26.68	28.25	-26.43	26.68	-20.33	20.52
OPER	5C1	-26.68	27.32	-20.52	21.02	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	1.83	1.95	HS 36.51	65.7
5C1	3.95	4.37	0.00	158.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.000

Dead Load Moment	Superimposed Dead Load Moment
-4.4	-49.4

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 132.5	143.3	-186.3	143.3	-186.3	197.1	-132.5	197.1	-
OPER 220.8	274.6	-274.6	274.6	-274.6	328.4	-220.8	328.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	16.83 L	12.95	167.00	0.0	12.44	9.57	190.00	
		-103.37 R	-79.51	246.50	0.0	-95.99	-73.84	235.00	215.00
OPER	5C1	13.07 L	10.05	140.50	0.0	0.00	0.00	0.00	
		-73.72 R	-56.71	256.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	11.71	1.28	11.71	1.28	HS 25.64	46.1
5C1	25.14	2.99	25.14	2.99	0.00	119.8

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.100

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.100

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.100

Dead Load Moment	Superimposed Dead Load Moment
-1.9	-22.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	230.5	-173.9	203.7	-200.8
OPER	359.4C	-314.7	314.7	-359.4C	384.2	-289.9	339.5	-334.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	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	12.61 L	9.70	162.00	0.0	24.09	18.53	227.50			
		-62.19 R	-47.84	234.00	0.0	-58.00	-44.61	215.00	240.00		
OPER	5C1	29.51 L	22.70	180.50	0.0	0.00	0.00	0.00			
		-52.22 R	-40.17	261.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	9.57	2.80	8.46	3.23	HS 55.93	100.7
5C1	13.02	5.55	11.51	6.41	0.00	222.0

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.100

Dead Load	Superimposed Dead Load
Shear (-)	Shear (+)
0.9	0.0
	9.7

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-85.6	72.9
OPER	171.7	-142.7	121.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.64	32.71	-0.50	25.16	-1.34	24.40	-1.03	18.77
OPER	5C1	-1.00	24.64	-0.77	18.95	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	63.70	2.23	HS 44.60	80.3
5C1	142.50	4.93	0.00	197.3

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.100

Dead Load Moment	Superimposed Dead Load Moment
-1.9	-22.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 181.5	186.4	-206.3	186.4	-206.3	211.2	-181.5	211.2	-
OPER 302.5	327.3	-327.3	327.3	-327.3	352.1	-302.5	352.1	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	12.61 L	9.70	162.00	0.0	24.09	18.53	227.50	
		-62.19 R	-47.84	234.00	0.0	-58.00	-44.61	215.00	240.00
OPER	5C1	29.51 L	22.70	180.50	0.0	0.00	0.00	0.00	
		-52.22 R	-40.17	261.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	8.77	2.92	8.77	2.92	HS 58.36	105.1
5C1	11.93	5.79	11.93	5.79	0.00	231.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.200

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.200

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.200

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.	215.6C	-188.8	188.8	-215.6C	216.3	-188.2	189.4	-215.0
OPER	359.4C	-314.7	314.7	-359.4C	360.4	-313.7	315.7	-358.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	64.03 R	49.26	258.00	0.0	47.61	36.62	230.00			
		-50.19 L	-38.61	192.00	0.0	-38.81	-29.86	215.00		165.00	
OPER	5C1	58.64 L	45.11	183.00	0.0	0.00	0.00	0.00			
		-44.49 L	-34.22	203.00	0.0	0.00	0.00	0.00		0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend -bend	Rating Value	Load Capacity (tons)
HS20	3.38	3.75	2.96	4.28	59.17
5C1	6.15	7.05	5.38	8.06	0.00

SHEAR RATING REPORT

Structure I. D. HAM500

Rating Types and Vehicles
INV. OPER POST SPEC

Member I. D. S05
Check Point I. D. 10.200

HS20 5C1

Dead Load Superimposed Dead Load
Shear (-) Shear (+) Shear

0.7 0.0 7.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.0	-84.3	74.2
OPER	171.7	-140.6	123.6

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-0.97	28.21	-0.74	21.70	-2.83	21.94	-2.18	16.88
OPER	5C1	-2.52	21.70	-1.94	16.69	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	29.79	2.63	HS 52.59	94.7
5C1	55.76	5.70	0.00	227.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.200Dead Load Moment 0.1
Superimposed Dead Load Moment -1.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 195.8	196.0	-196.8	196.0	-196.8	197.0	-195.8	197.0	-
OPER 326.3	327.3	-327.3	327.3	-327.3	328.3	-326.3	328.3	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	64.03 R	49.26	258.00	0.0	47.61	36.62	230.00	
		-50.19 L	-38.61	192.00	0.0	-38.81	-29.86	215.00	165.00
OPER	5C1	58.64 L	45.11	183.00	0.0	0.00	0.00	0.00	
		-44.49 L	-34.22	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	3.08	3.90	3.08	3.90	HS 61.52	110.7
5C1	5.60	7.33	5.60	7.33	0.00	223.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.300

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.300

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.300

Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	205.1	-199.3	178.3	-226.2
OPER	359.4C	-314.7	314.7	-359.4C	341.9	-332.2	297.2	-376.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	99.59 R	76.61	260.50	0.0	72.01	55.39	232.50			
		-43.92 L	-33.78	192.00	0.0	-33.96	-26.12	215.00	165.00		
OPER	5C1	81.12 L	62.40	185.50	0.0	0.00	0.00	0.00			
		-38.93 L	-29.94	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	2.06	4.54	1.79	5.15	HS 35.81	64.5
5C1	4.21	8.53	3.66	9.68	0.00	146.5

SHEAR RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC
 Structure I. D. HAM500
 Member I. D. S05
 Check Point I. D. 10.300
 HS20 5C1
 Dead Load Superimposed Dead Load
 Shear (-) Shear (+) Shear
 0.5 0.0 5.8

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	Capacity for LL+I (+)
INV.	103.0	-83.1	75.4
OPER	171.7	-138.5	125.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-3.02	23.30	-2.32	17.93	-4.64	19.35	-3.57	14.89
OPER	5C1	-4.30	18.57	-3.31	14.29	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	17.90	3.24	HS 64.74	116.5
5C1	32.21	6.77	0.00	270.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.300Dead Load Moment 1.7
Superimposed Dead Load Moment 15.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 206.9	203.4	-189.4	203.4	-189.4	185.9	-206.9	185.9	-
OPER 344.8	327.3	-327.3	327.3	-327.3	309.8	-344.8	309.8	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	99.59 R	76.61	260.50	0.0	72.01	55.39	232.50	
		-43.92 L	-33.78	192.00	0.0	-33.96	-26.12	215.00	165.00
OPER	5C1	81.12 L	62.40	185.50	0.0	0.00	0.00	0.00	
		-38.93 L	-29.94	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.87	4.71	1.87	4.71	HS 37.32	67.2
5C1	3.82	8.86	3.82	8.86	0.00	152.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.400

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.400

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	35.26	2.861
			999999.000
			93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		9.77		107.7

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.400

Dead Load Moment Superimposed Dead Load Moment
2.8 28.1

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend	top fiber +bend	bottom fiber -bend
INV.	215.6C	-188.8	188.8	-215.6C	197.1	-207.3	170.3	-234.1
OPER	359.4C	-314.7	314.7	-359.4C	328.6	-345.5	283.9	-390.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	115.21 R	88.62	263.00	0.0	88.94	68.42	235.00			
		-37.64 L	-28.96	192.00	0.0	-27.85	-21.42	215.00	0.00		
OPER	5C1	98.68 R	75.91	247.00	0.0	0.00	0.00	0.00			
		-33.37 L	-25.67	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.71	5.51	1.48	6.22	HS 29.57	53.2
5C1	3.33	10.36	2.88	11.70	0.00	115.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.400

Dead Load	Superimposed Dead Load
Shear	(-) Shear (+) Shear
0.4	0.0 3.9

Rat. Veh.	Shear Capacity VU	Available Capacity for LL+I (-)	(+)
INV.	103.0	-81.8	76.7
OPER	171.7	-136.4	127.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp. (-)	(+)	w/o imp. (-)	(+)	w/imp. (-)	(+)	w/o imp. (-)	(+)
INV.	HS20	-6.10	18.19	-4.69	14.00	-6.75	16.67	-5.19	12.82
OPER	5C1	-6.27	15.74	-4.82	12.11	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	12.12	4.22	HS 84.31	151.8	
5C1	21.75	8.12	0.00	324.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.400

Dead Load Moment	Superimposed Dead Load Moment
2.8	28.1

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 214.9	208.7	-184.0	208.7	-184.0	177.9	-214.9	177.9	-
OPER 358.1	327.3	-327.3	327.3	-327.3	296.4	-358.1	296.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	115.21 R	88.62	263.00	0.0	88.94	68.42	235.00	
		-37.64 L	-28.96	192.00	0.0	-27.85	-21.42	215.00	0.00
OPER	5C1	98.68 R	75.91	247.00	0.0	0.00	0.00	0.00	
		-33.37 L	-25.67	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating		Factor		Rating Value	Load Capacity (tons)
	top +bend	fiber -bend	bottom +bend	fiber -bend		
HS20	1.54	5.71	1.54	5.71	HS 30.88	55.6
5C1	3.00	10.73	3.00	10.73	0.00	120.2

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.500

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.500

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.71	35.26	2.861	93.308

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.500

Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	192.3	-212.2	165.5	-239.0
OPER	359.4C	-314.7	314.7	-359.4C	320.5	-353.6	275.8	-398.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	121.33 R	93.33	265.50	0.0	99.13	76.25	237.50			
		-31.37 L	-24.13	192.00	0.0	-23.21	-17.85	215.00	0.00		
OPER	5C1	107.92 L	83.01	225.50	0.0	0.00	0.00	0.00			
		-27.80 L	-21.39	203.00	0.0	0.00	0.00	0.00	0.00		

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor bottom fiber +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.59	6.76	1.36	7.62	HS 27.27	49.1
5C1	2.97	12.72	2.56	14.33	0.00	102.2

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.500

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
0.2	0.0	2.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-80.6	78.0
OPER	171.7	-134.3	129.9

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-9.71	15.07	-7.47	11.59	-9.15	13.93	-7.04	10.71
OPER	5C1	-8.38	13.46	-6.45	10.35	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	8.30	5.17	HS 103.48	186.3
5C1	16.01	9.65	0.00	386.2

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.500Dead Load Moment 3.5
Superimposed Dead Load Moment 35.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 219.7	211.9	-180.8	211.9	-180.8	173.0	-219.7	173.0	-
OPER 366.2	327.3	-327.3	327.3	-327.3	288.4	-366.2	288.4	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	121.33 R	93.33	265.50	0.0	99.13	76.25	237.50	
		-31.37 L	-24.13	192.00	0.0	-23.21	-17.85	215.00	0.00
OPER	5C1	107.92 L	83.01	225.50	0.0	0.00	0.00	0.00	
		-27.80 L	-21.39	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.43	7.00	1.43	7.00	HS 28.52	51.3
5C1	2.67	13.17	2.67	13.17	0.00	106.9

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.600

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.600

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 37.9

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	190.7	-213.8	163.9	-240.6
OPER	359.4C	-314.7	314.7	-359.4C	317.8	-356.3	273.1	-401.0

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.64 R	98.95	254.00	0.0	99.50	76.54	240.00			
		-25.10 L	-19.30	192.00	0.0	-18.57	-14.28	215.00	0.00		
OPER	5C1	110.40 L	84.92	228.00	0.0	0.00	0.00	0.00			
		-22.24 L	-17.11	203.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	1.48	8.52	1.27	9.59	HS 25.47	45.9
5C1	2.88	16.02	2.47	18.03	0.00	98.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.600

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.	103.0	-79.3	79.2
OPER	171.7	-132.1	132.1

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-12.86	11.46	-9.90	8.82	-11.81	11.17	-9.09	8.59
OPER	5C1	-10.92	11.03	-8.40	8.49	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	6.16	6.91	HS 123.26	221.9
5C1	12.10	11.97	0.00	478.9

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.600Dead Load Moment 3.7
Superimposed Dead Load Moment 37.9

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 221.3	213.0	-179.7	213.0	-179.7	171.4	-221.3	171.4	-
OPER 368.9	327.3	-327.3	327.3	-327.3	285.7	-368.9	285.7	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.64 R	98.95	254.00	0.0	99.50	76.54	240.00	
		-25.10 L	-19.30	192.00	0.0	-18.57	-14.28	215.00	0.00
OPER	5C1	110.40 L	84.92	228.00	0.0	0.00	0.00	0.00	
		-22.24 L	-17.11	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	1.33	8.82	1.33	8.82	HS 26.65	48.0
5C1	2.59	16.58	2.59	16.58	0.00	103.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.700

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.700

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
 Check Point I. D. 10.700

Dead Load Moment 3.4
 Superimposed Dead Load Moment 35.6

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	192.2	-212.2	165.4	-239.1
OPER	359.4C	-314.7	314.7	-359.4C	320.4	-353.7	275.6	-398.5

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	128.37 R	98.75	256.50	0.0	91.15	70.12	242.50			
		-18.82 L	-14.48	192.00	0.0	-13.93	-10.71	215.00	0.00		
OPER	5C1	105.14 L	80.88	226.50	0.0	0.00	0.00	0.00			
		-16.68 L	-12.83	203.00	0.0	0.00	0.00	0.00	0.00	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	1.50	11.28	1.29	12.70	HS 25.77	46.4
5C1	3.05	21.20	2.62	23.89	0.00	104.9

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.700

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.	103.0	-78.0	80.5
OPER	171.7	-130.0	134.2

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-17.12	8.72	-13.17	6.71	-14.73	8.44	-11.33	6.49
OPER	5C1	-14.02	8.45	-10.78	6.50	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	4.56	9.23	HS 91.17	164.1
5C1	9.28	15.88	0.00	371.0

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.700Dead Load Moment 3.4
Superimposed Dead Load Moment 35.6

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 219.8	212.0	-180.7	212.0	-180.7	172.9	-219.8	172.9	-
OPER 366.3	327.3	-327.3	327.3	-327.3	288.2	-366.3	288.2	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	128.37 R	98.75	256.50	0.0	91.15	70.12	242.50	
		-18.82 L	-14.48	192.00	0.0	-13.93	-10.71	215.00	0.00
OPER	5C1	105.14 L	80.88	226.50	0.0	0.00	0.00	0.00	
		-16.68 L	-12.83	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.35	11.68	1.35	11.68	HS 26.94	48.5
5C1	2.74	21.96	2.74	21.96	0.00	109.7

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.800

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.800

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.800

Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	196.9	-207.6	170.1	-234.4
OPER	359.4C	-314.7	314.7	-359.4C	328.1	-346.0	283.4	-390.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	108.87 R	83.74	259.00	0.0	71.42	54.94	245.00			
		-12.55 L	-9.65	192.00	0.0	-9.28	-7.14	215.00	0.00		
OPER	5C1	87.67 L	67.44	229.00	0.0	0.00	0.00	0.00			
		-11.12 L	-8.56	203.00	0.0	0.00	0.00	0.00	0.00	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	1.81	16.54	1.56	18.68	HS 31.24	56.2
5C1	3.74	31.11	3.23	35.13	0.00	129.3

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.800

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.4	-3.8	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-76.8	81.8
OPER	171.7	-127.9	136.3

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-21.77	5.87	-16.75	4.52	-17.87	5.76	-13.74	4.43
OPER	5C1	-17.53	5.69	-13.49	4.38	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	3.53	13.93	HS 70.51	126.9	
5C1	7.30	23.95	0.00	291.9	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.800Dead Load Moment 2.7
Superimposed Dead Load Moment 28.5

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 215.1	208.9	-183.9	208.9	-183.9	177.6	-215.1	177.6	-
OPER 358.5	327.3	-327.3	327.3	-327.3	296.0	-358.5	296.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	108.87 R	83.74	259.00	0.0	71.42	54.94	245.00	
		-12.55 L	-9.65	192.00	0.0	-9.28	-7.14	215.00	0.00
OPER	5C1	87.67 L	67.44	229.00	0.0	0.00	0.00	0.00	
		-11.12 L	-8.56	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	1.63	17.14	1.63	17.14	HS 32.63	58.7
5C1	3.38	32.24	3.38	32.24	0.00	135.1

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.900

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Depth	Web Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Bending Top	Positive Bending Bott.	Negative Bending Top	Negative Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 10.900

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh.	Moment Capacity				Available Capacity for LL+I			
	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend	top fiber +bend	bottom fiber -bend	top fiber -bend	bottom fiber +bend
INV.	215.6C	-188.8	188.8	-215.6C	204.7	-199.8	177.9	-226.6
OPER	359.4C	-314.7	314.7	-359.4C	341.2	-332.9	296.4	-377.7

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	Loc. of Front Wheel	Ax. Dis.	Lane w/imp.	Live Load w/o imp.	Moment	Loc. of Load 1	Conc. Load 2
INV.	HS20	66.91 R	51.47	261.50	0.0	41.80	32.15	247.50			
		-6.27 L	-4.83	192.00	0.0	-4.64	-3.57	215.00	0.00		
OPER	5C1	53.16 L	40.89	231.50	0.0	0.00	0.00	0.00			
		-5.56 L	-4.28	203.00	0.0	0.00	0.00	0.00	0.00	0.00	

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor +bend	bottom fiber -bend	Rating Value	Load Capacity (tons)
HS20	3.06	31.84	2.66	36.12	HS 53.16	95.7
5C1	6.42	59.87	5.58	67.91	0.00	223.1

SHEAR RATING REPORT

Rating Types and Vehicles

INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.900

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.	103.0	-75.5	83.0
OPER	171.7	-125.9	138.4

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-26.77	2.95	-20.59	2.27	-21.20	3.17	-16.31	2.44
OPER	5C1	-21.26	3.70	-16.36	2.85	0.00	0.00	0.00	0.00

Rating		Shear			
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)	
HS20	2.82	26.22	HS 56.42	101.6	
5C1	5.92	37.40	0.00	236.7	

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 10.900Dead Load Moment 1.6
Superimposed Dead Load Moment 16.7

Rating Veh. ber	Moment Capacity				Available Capacity for LL+I			
	top fiber		bottom fiber		top fiber		bottom fi	
bend	+bend	-bend	+bend	-bend	+bend	-bend	+bend	-
INV. 207.3	203.7	-189.1	203.7	-189.1	185.4	-207.3	185.4	-
OPER 345.5	327.3	-327.3	327.3	-327.3	309.0	-345.5	309.0	-

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Truck Veh.	Live 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	66.91 R	51.47	261.50	0.0	41.80	32.15	247.50	
		-6.27 L	-4.83	192.00	0.0	-4.64	-3.57	215.00	0.00
OPER	5C1	53.16 L	40.89	231.50	0.0	0.00	0.00	0.00	
		-5.56 L	-4.28	203.00	0.0	0.00	0.00	0.00	0.00

Serviceability

Rating Veh.	Rating Factor		bottom fiber		Rating Value	Load Capacity (tons)
	top fiber +bend	-bend	+bend	-bend		
HS20	2.77	33.04	2.77	33.04	HS 55.42	99.8
5C1	5.81	62.13	5.81	62.13	0.00	232.5

SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 11.000

RATIO/Inv.	Allowable stress (fs) (psi)			
	Inventory	Operating	Posting	Special
Fy (yield)	18150.	24750.	0.	0.
Fy (ultimate)	33000.			

Non-Composite Structural Steel Section Properties:

Section Height	Web Depth	Thk.		Dc	b max	b min	t	ry
H	D	tw	top	9.86	8.30	8.30	0.74	1.82
21.2	19.72	0.460	bott	9.86	8.30	8.30	0.74	1.82

Hybrid Section Properties:

Hybrid Reduction Factor		Hybrid Yield Strength		
Positive Bending	Negative Bending	Top	Web	Bottom
1.0000	1.0000	33000.	33000.	33000.

Section Gross	Area Net	Neutral Axis		Moment of Inertia	
		Top	Bott.	Positive Bending	Negative Bending
21.30	21.30	10.60	10.60	1576.9	1576.9

Section Modulus				Plastic Section Modulus - Z
Positive Top	Bending Bott.	Negative Top	Bending Bott.	(Fy * Z)
148.8	148.8	148.8	148.8	467.23

ADDITIONAL SECTION DATA (ASD/LFD)

Structure I. D. HAM500

Member I. D. S05
Check Point I. D. 11.000

	b'	t	b/t	Lb (in.)	Lb/ry	D/tw	Dc/tw
top	3.92	0.74	11.220	0.01	0.01	43.34	21.67
bott	3.92	0.74	11.220	150.00	82.26		21.67

ASD - Moment Values

Cb	Iy	J	fb
top	bott	top	bott
1.75	35.26	35.26	2.861
			999999.000
			95.718

LFD - Moment Values

Compact Values (C)

	4110/ sqrt Fy	19230/ sqrt Fy	M1	Mu	3.6-2.2(M1/Mu)E6/ Fy
top	22.62	105.86	0.00	467.23	109.1
bott	22.62		0.00		109.1

Braced Non Compact Values (B)

	24 /	36500/ sqrt Fy	20,000,000 Af/ Fy d
top	24.00	200.93	0.00
bott	24.00		0.00

Non Compact Values (N)

	Cb	lambda	Rb	Mr	Lp	Lr
top	0.00	0.	0.000	0.00	0.0	0.00
bott	0.00	0.	0.000	0.00	0.0	0.00

ASD/LFD Shear Values

k	d0 (ft)	C	Fyweb	6000 sqrt(k)/ sqrt Fy	7500 sqrt(k)/ sqrt Fy	ASD Fv	LFD Vp
5.00	12.50	1.00	33000.	73.86	0.00	11.0	171.7

MOMENT RATING REPORT

Rating Types and Vehicles
 INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
 Check Point I. D. 11.000

Dead 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.	215.6C	-188.8	188.8	-215.6C	215.6	-188.8	188.8	-215.6
OPER	359.4C	-314.7	314.7	-359.4C	359.4	-314.7	314.7	-359.4

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Rat. Veh.	Truck w/imp.	Live Load w/o imp.	Moment	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	5C1	0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	
		0.00	R	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00

Moment

Rating Veh.	top fiber +bend	Rating bottom fiber -bend	Factor	Rating Value	Load Capacity (tons)
HS20	999.00	999.00	999.00	999.00	999.0
5C1	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 5C1

Member I. D. S05
Check Point I. D. 11.000

Dead Load	Superimposed	Dead Load
Shear	(-) Shear	(+) Shear
-0.7	-7.6	0.0

Rat. Veh.	Shear Capacity VU	Available Capacity (-)	for LL+I (+)
INV.	103.0	-74.3	79.7
OPER	171.7	-123.8	132.8

Live Load Effect

Impact Factors: +bend - .300 -bend - .300

Rat. Typ.	Rat. Veh.	Truck Live Load Shear				Lane Live Load Shear			
		w/imp.		w/o imp.		w/imp.		w/o imp.	
		(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)
INV.	HS20	-32.02	0.00	-24.63	0.00	-24.72	2.37	-19.01	1.83
OPER	5C1	-25.16	0.00	-19.35	0.00	0.00	0.00	0.00	0.00

Rating		Shear		
Veh.	Rating (-)	Factor (+)	Rating Value	Load Capacity (tons)
HS20	2.32	33.58	HS 46.38	83.5
5C1	4.92	999.00	0.00	196.8

SERVICEABILITY RATING REPORT

Rating Types and Vehicles
INV. OPER POST SPEC

Structure I. D. HAM500

HS20 5C1

Member I. D. S05
Check Point I. D. 11.000Dead 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. 196.4	196.4	-196.4	196.4	-196.4	196.4	-196.4	196.4	-
OPER 327.3	327.3	-327.3	327.3	-327.3	327.3	-327.3	327.3	-

Live Load Effect

Impact Factors: +bend - .000 -bend - .000

Rat. Typ.	Truck Veh.	Live 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	5C1	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	top fiber -bend	bottom fiber +bend	bottom fiber -bend		
HS20	999.00	999.00	999.00	999.00	HS 999.00	999.0
5C1	999.00	999.00	999.00	999.00	0.00	999.0