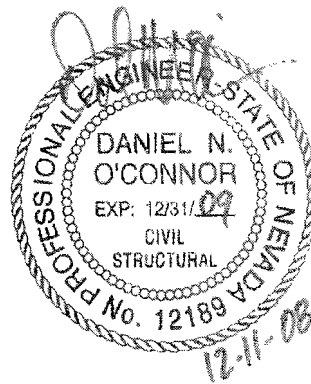
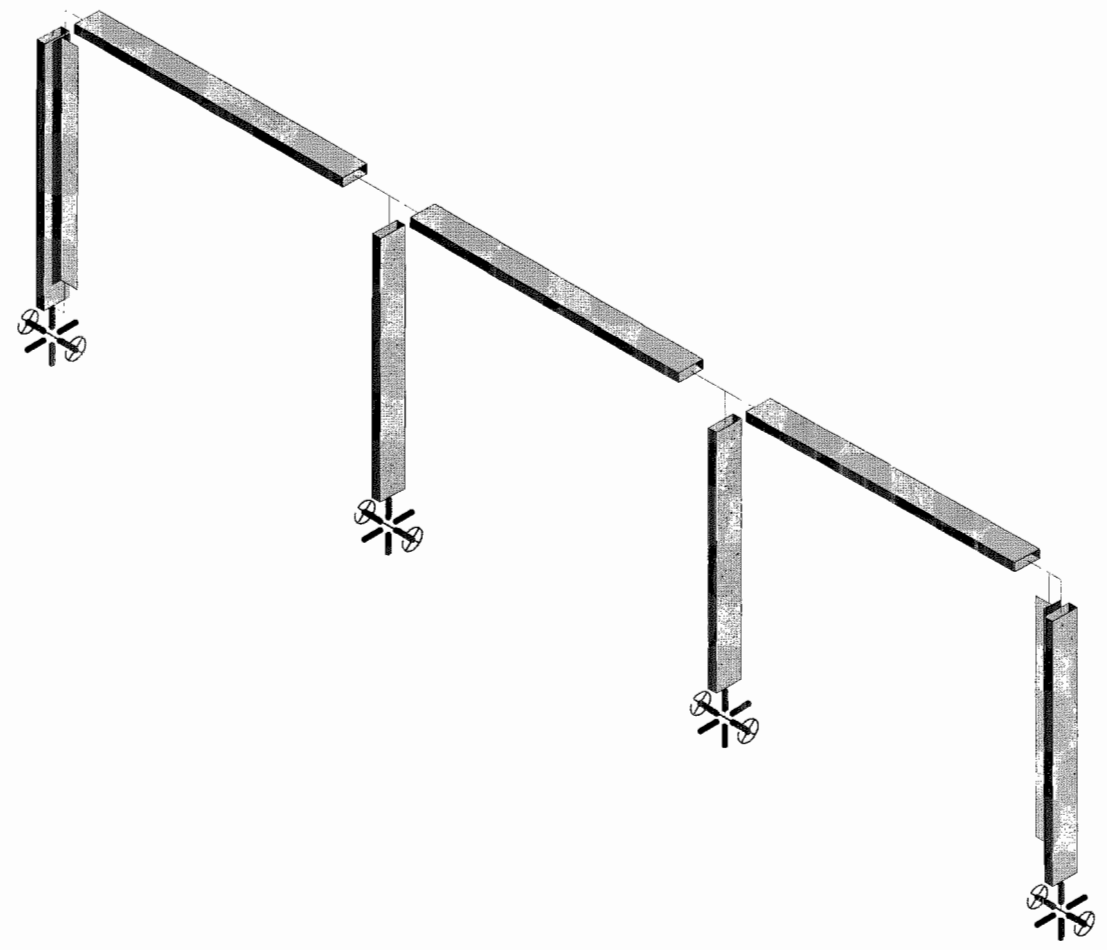
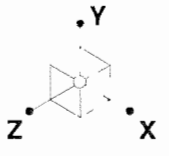


**D10d—3"x1" RECT. TUBE x 36-1/2" HIGH RAIL WITH 2"x1-1/2"x1/4" TEE
FOR USE WITH ADJUST-A-JAW™ AND FIXED JAW HARDWARE,
WITHOUT BOTTOM RAIL**

Building Code:	2006 <i>International Building Code</i> 2007 <i>California Building Code</i> AISC <i>Steel Construction Manual</i> , 13th ed—ASD
Material:	Carbon Steel, A500, Grade B, Fy = 42 ksi (HSS Tube) Carbon Steel, A36, Fy = 36 ksi (Tee) Stainless Steel, A554, Grade MT-304 or MT-316, Fy = 30 ksi Stainless Steel, LDX 2101 (UNS S32101), Fy = 60 ksi (Anchor Post and Tee)
Height:	36.5"
Anchor Post:	Carbon Steel: HSS 3x1x3/16 Tube with 2"x1.5"x 1/4" Tee Stainless Steel: 3"x1"x0.120" Tube (LDX 2101) with 2"x1.5"x 1/4" Tee (LDX 2101)
Intermediate Posts:	Carbon Steel: HSS 3x1x1/8 Tube Stainless Steel: 3"x1"x0.120" Tube
Top Rail:	Carbon Steel: HSS 3x1x1/8 Tube Stainless Steel: 3"x1"x0.120" Tube
Bottom Rail:	None
Number of Cables:	10
Cable Spacing:	3.23"



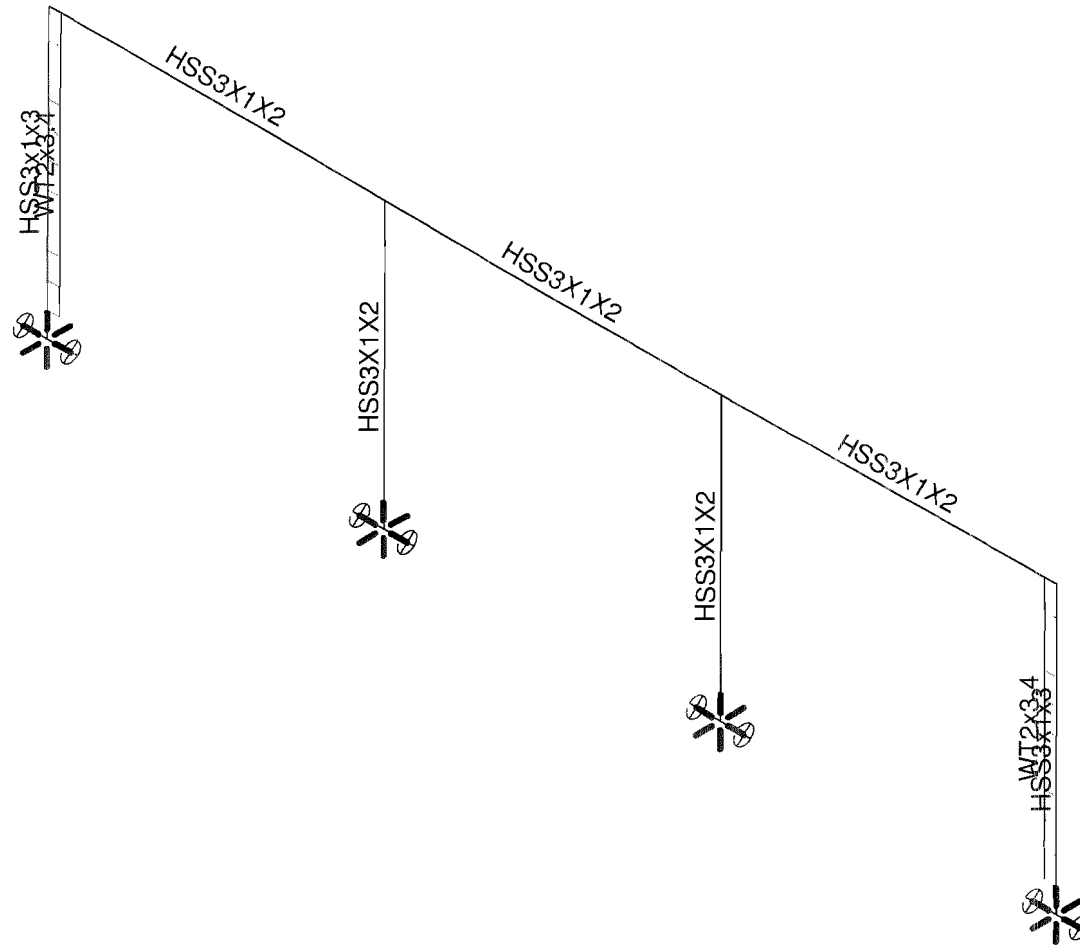
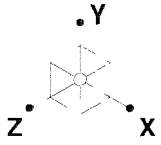
Disclaimer: Analysis and Structural Certification DOES NOT include base plates or anchorage to supporting structure. Where required by the Local Building Official, these shall be reviewed and designed by the project Structural Engineer of Record.



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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

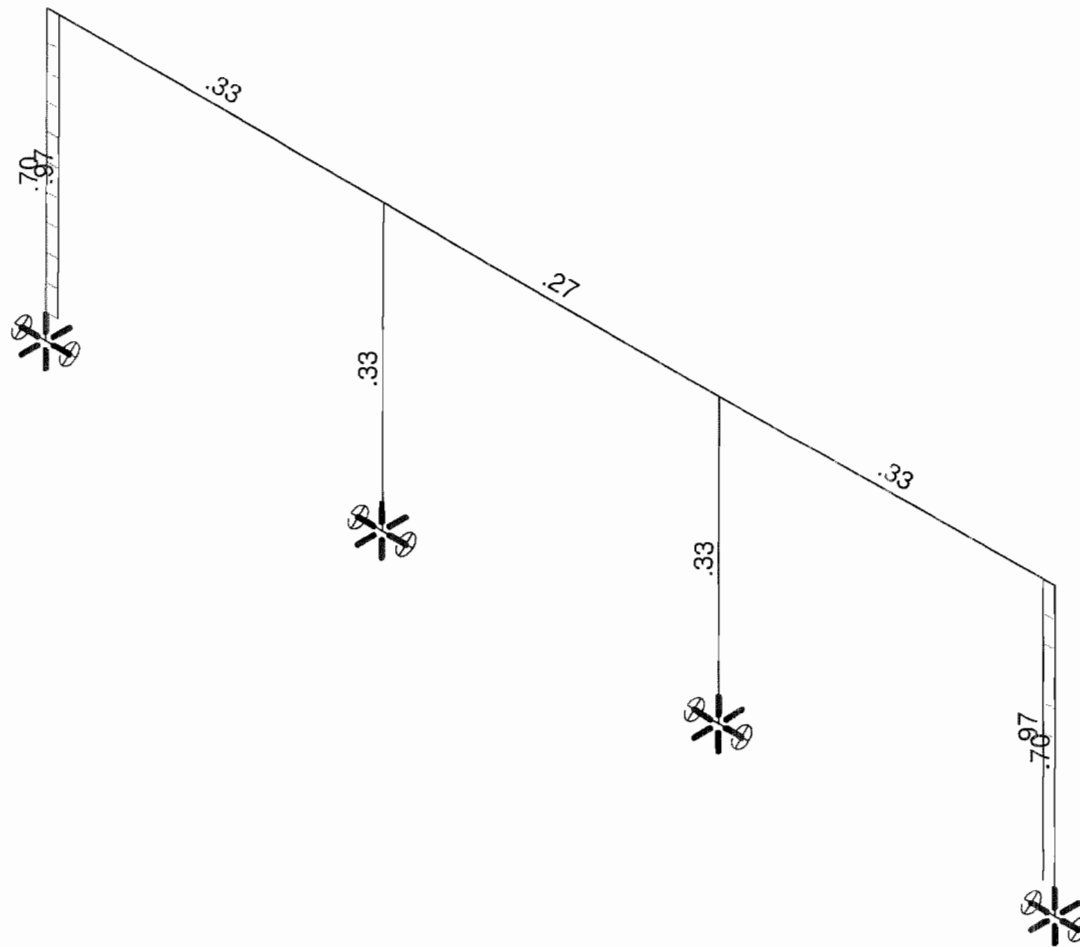
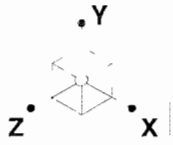
Dec 10, 2008 at 3:09 PM
D10d.R3D



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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:09 PM
D10d.R3D



Member Code Checks Displayed
Solution: Envelope

Ferrari Shields & Associates

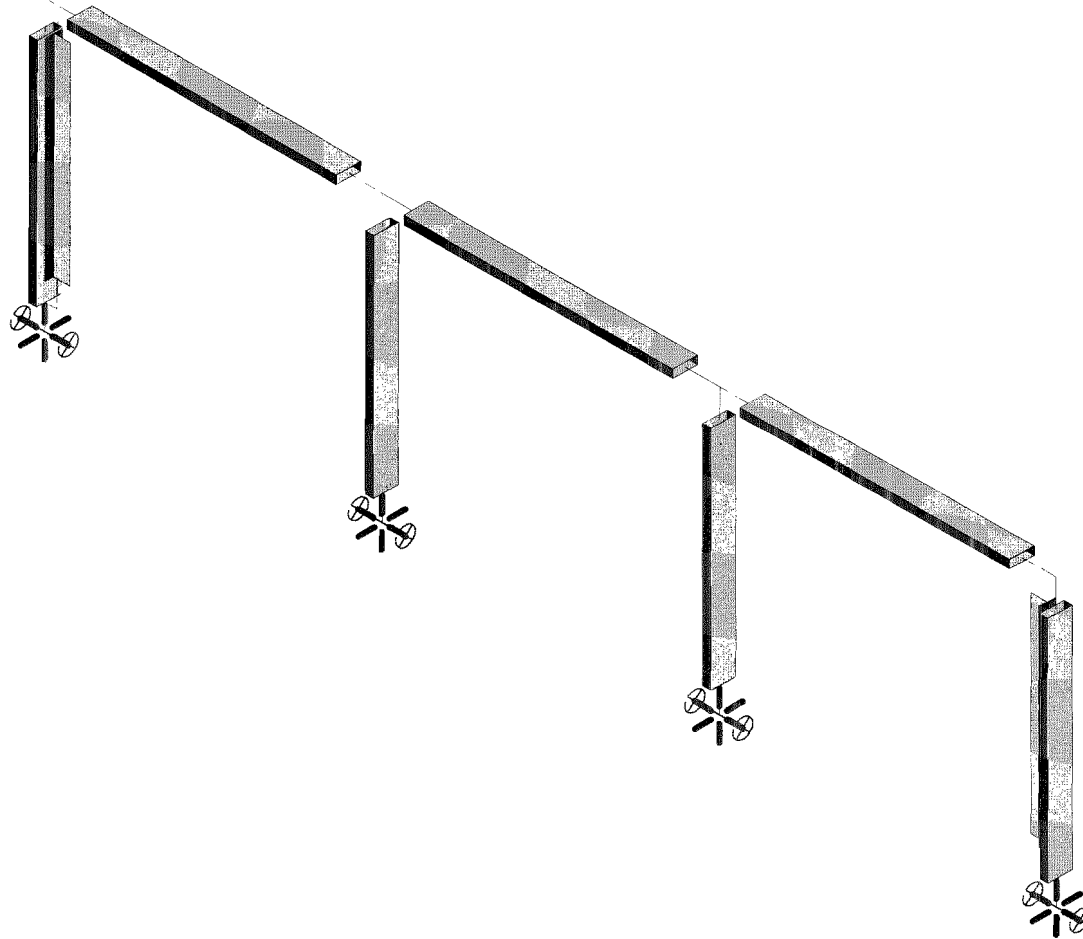
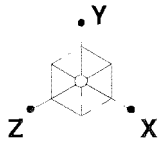
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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:10 PM

D10d.R3D

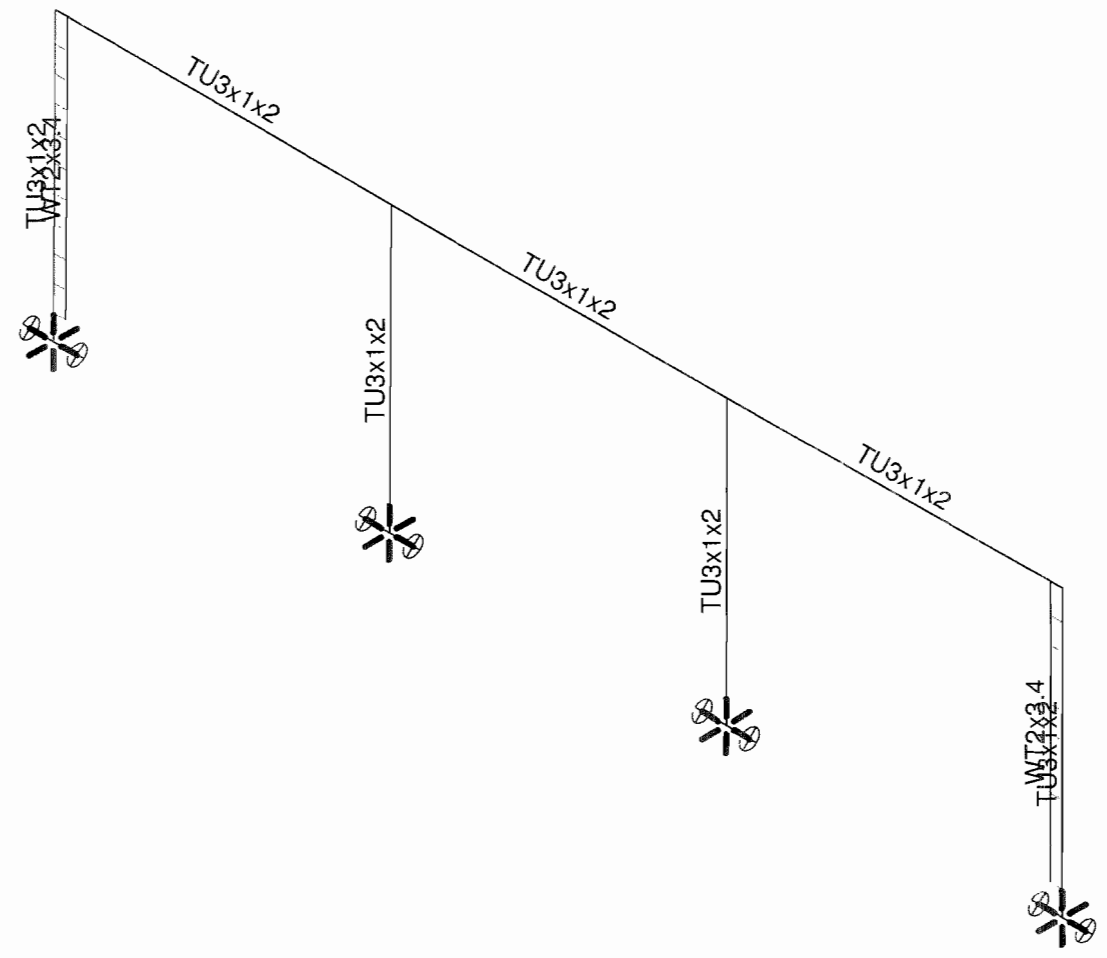
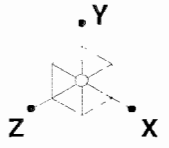


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D10d (SS) - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:21 PM

D10dss.R3D



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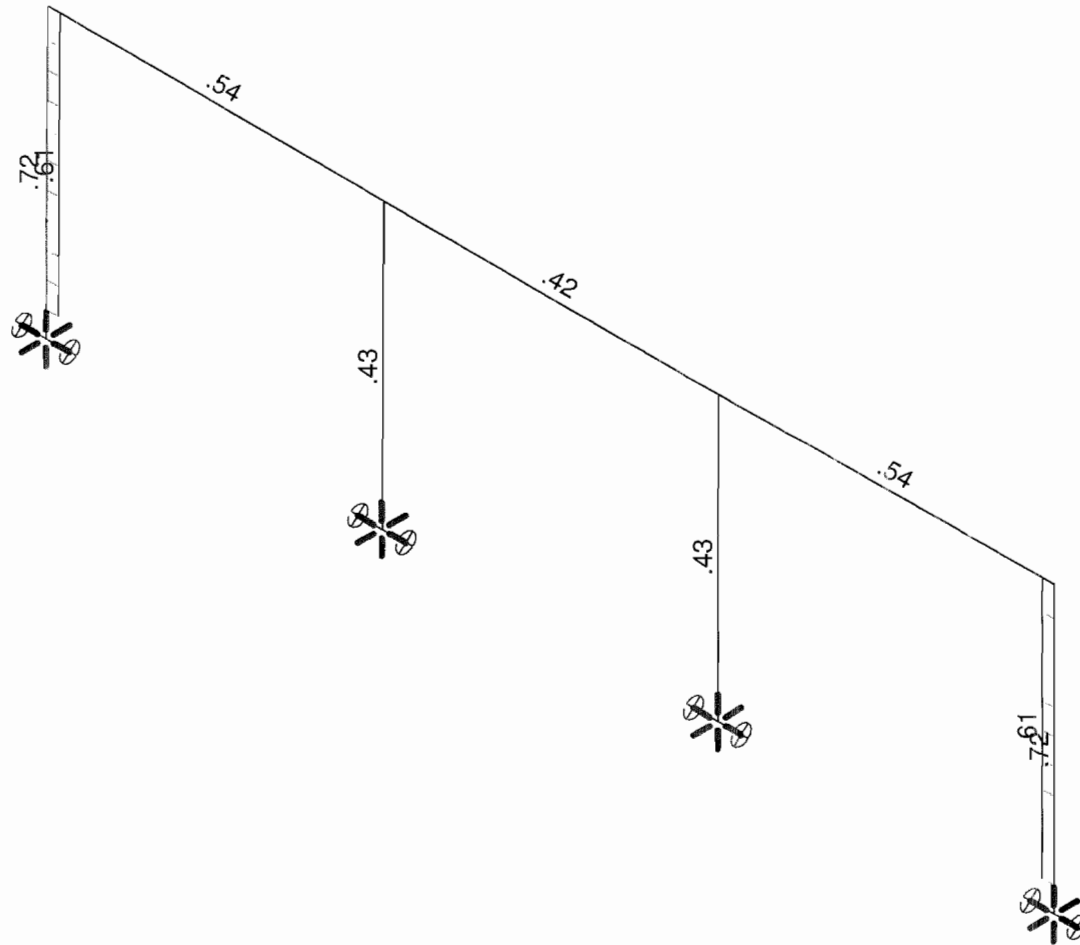
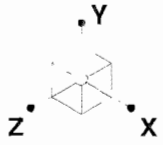
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D10d (SS) - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:21 PM

D10dss.R3D



Member Code Checks Displayed
Solution: Envelope
Reaction units are lb and k-ft

Ferrari Shields & Associates

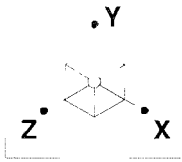
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D10d (SS) - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:20 PM

D10dss.R3D



400lb
400lb
400lb
400lb
400lb
400lb
400lb
400lb
400lb

57.8

-1976.9

-57.9
9.7

-57.9

-9.7

1976.8

57.9

-400lb
-400lb
-400lb
-400lb
-400lb
-400lb
-400lb
-400lb
-400lb

Loads: LC 1. Cable Prestress
Results for LC 1, Cable Prestress
Reaction units are lb and k-ft

Ferrari Shields & Associates

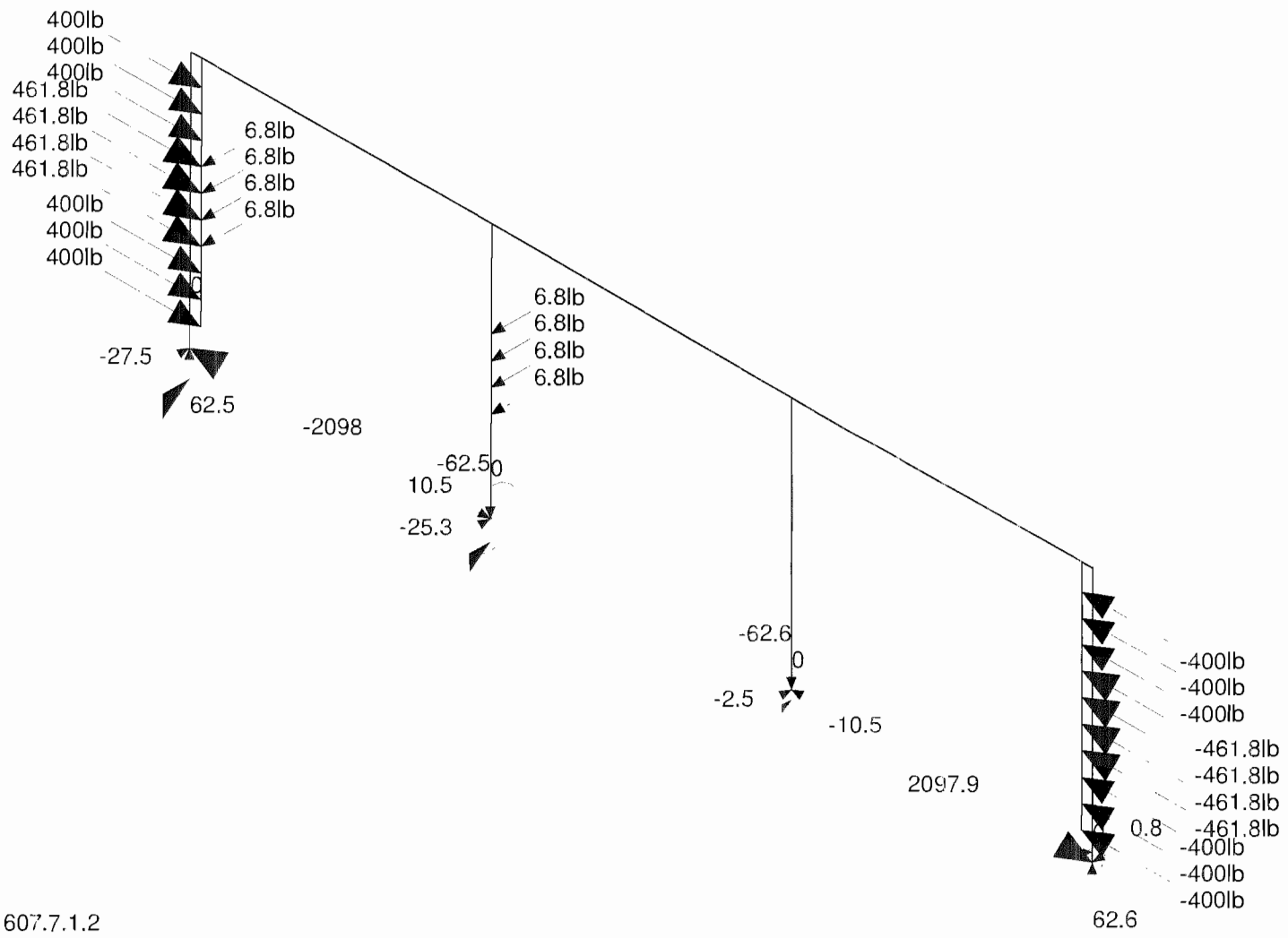
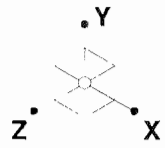
D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

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Dec 10, 2008 at 3:10 PM

D10d.R3D



Loads: LC 2, 1607.7.1.2
 Results for LC 2, 1607.7.1.2
 Reaction units are lb and k-ft

Ferrari Shields & Associates

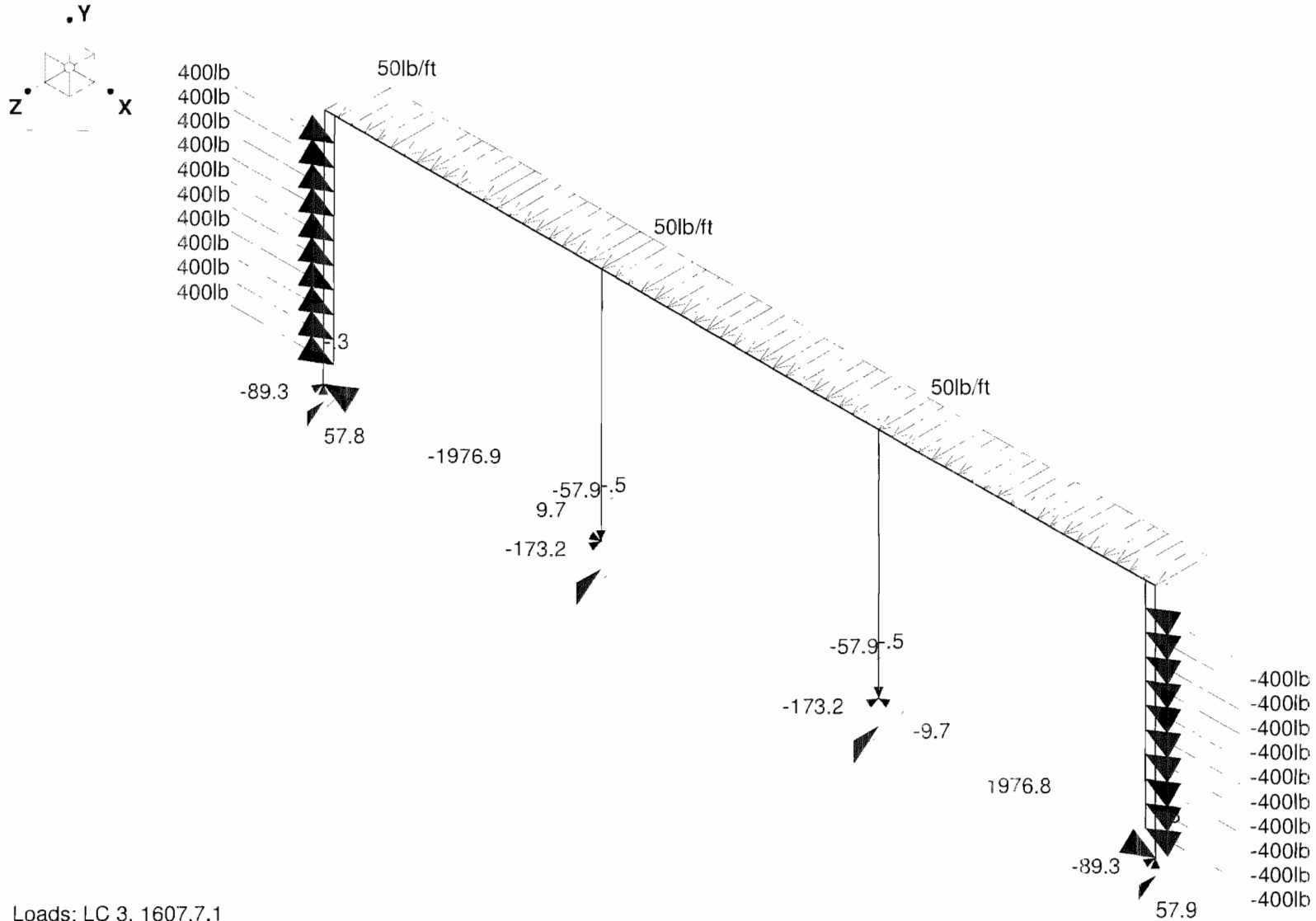
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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:11 PM

D10d.R3D



Loads: LC 3, 1607.7.1
 Results for LC 3, 1607.7.1
 Reaction units are lb and k-ft

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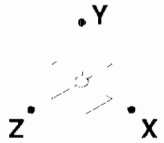
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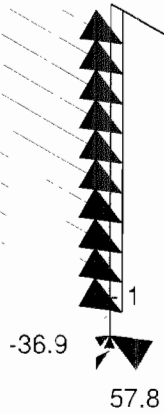
D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:11 PM

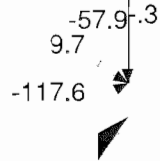
D10d.R3D



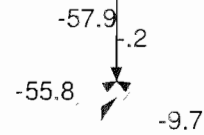
400lb
400lb
400lb
400lb
400lb
400lb
400lb
400lb
400lb
400lb



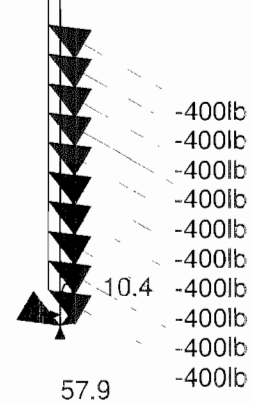
-1976.9



200lb



1976.8



Loads: LC 4, 1607.7.1.1 (1)
Results for LC 4, 1607.7.1.1 (1)
Reaction units are lb and k-ft

Ferrari Shields & Associates

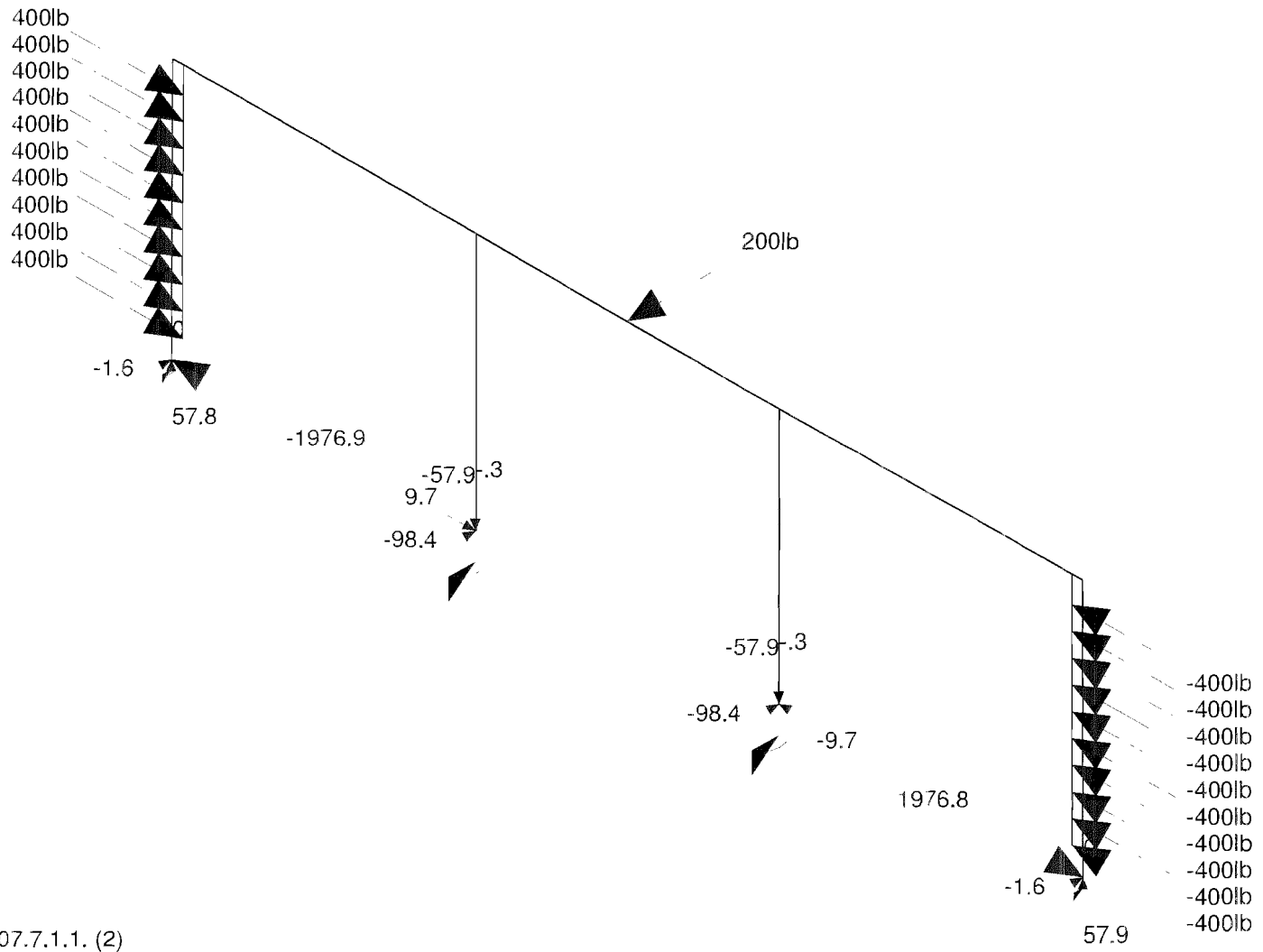
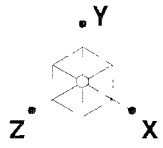
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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:11 PM

D10d.R3D

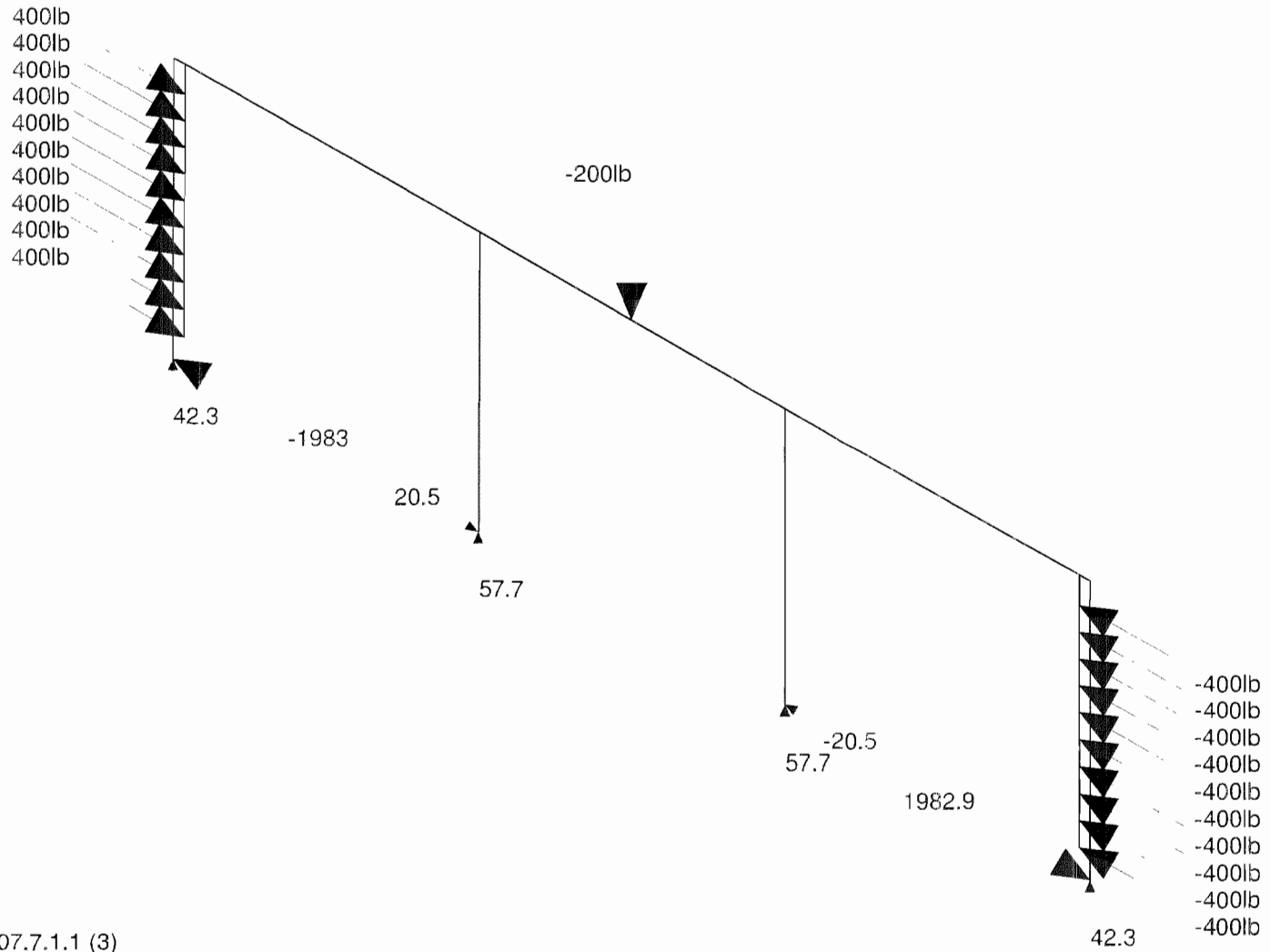
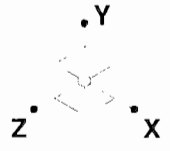


Loads: LC 5, 1607.7.1.1. (2)
 Results for LC 5, 1607.7.1.1. (2)
 Reaction units are lb and k-ft

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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 10, 2008 at 3:11 PM
 D10d.R3D



Loads: LC 6, 1607.7.1.1 (3)
 Results for LC 6, 1607.7.1.1 (3)
 Reaction units are lb and k-ft

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D10d - 3x1 TUBE x 36-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

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Dec 10, 2008 at 3:12 PM

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D10d.R3D

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation	Yes
Include Warping	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Vertical Axis	Y

Hot Rolled Steel Code	AISC : ASD 13th
Cold Formed Steel Code	AISI 01: ASD
Wood Code	NDS 2005: ASD
Wood Temperature	< 100F
Concrete Code	ACI 2005

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	PCA Load Contour
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections	Yes
Bad Framing Warnings	No
Unused Force Warnings	Yes

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]	Yield[ksi]
1	A500Gr42	29000	11154	.3	.65	.49	42
2	A36	29000	11154	.3	.65	.49	36
3	SS316	28000	11154	.3	.65	.49	30
4	LDX2101	28000	11154	.3	.65	.49	60

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	RAIL	HSS3X1X2	Beam	Tube	A500Gr42	Typical	.841	.138	.818	.409
2	ERAIL	HSS3X1X2	Beam	Tube	A500Gr42	Typical	.841	.138	.818	.409
3	POST	HSS3X1X2	Column	Tube	A500Gr42	Typical	.841	.138	.818	.409
4	EPOST	HSS3x1x3	Column	Tube	A500Gr42	Typical	1.271	.189	1.237	.519
5	TEE	WT2x3.4	Column	W_Tee	A36	Typical	.938	.169	.348	.018

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]
1	GEN_RIGID	1e+6		.3	.65	0

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	LINK	ARB_LINK_1	Beam	GEN_RIGID	1e+6	1e+6	1e+6	1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area (Mem...	Surface (Pl...
1	Cable Prestress	None				20				
2	1607.7.1.2	None				16				
3	1607.7.1	None						3		
4	1607.7.1.1 (1)	None				1				
5	1607.7.1.1 (2)	None					1			
6	1607.7.1.1 (3)	None					1			

Load Combinations

	Description	Solve	PDelta	SR...	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Cable Prestress	Yes	C		1	1					
2	1607.7.1.2	Yes	C		1	1	2	1			
3	1607.7.1	Yes	C		1	1	3	1			
4	1607.7.1.1 (1)	Yes	C		1	1	4	1			
5	1607.7.1.1. (2)	Yes	C		1	1	5	1			
6	1607.7.1.1 (3)	Yes	C		1	1	6	1			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		90	EPOST	Column	Tube	A500Gr42	Typical
2	M2	N3	N4		90	POST	Column	Tube	A500Gr42	Typical
3	M3	N2	N4		90	ERAIL	Beam	Tube	A500Gr42	Typical
4	M4	N4	N8		90	RAIL	Beam	Tube	A500Gr42	Typical
5	M5	N5	N6		90	EPOST	Column	Tube	A500Gr42	Typical
6	M6	N7	N8		90	POST	Column	Tube	A500Gr42	Typical
7	M7	N8	N6		90	ERAIL	Beam	Tube	A500Gr42	Typical
8	M8	N54	N10		180	TEE	Column	W Tee	A36	Typical
9	M9	N53	N9			TEE	Column	W Tee	A36	Typical
10	M10	N11	N13			LINK	Beam	None	GEN_RIGID	Typical
11	M11	N14	N12			LINK	Beam	None	GEN_RIGID	Typical
12	M12	N15	N17			LINK	Beam	None	GEN_RIGID	Typical
13	M13	N18	N16			LINK	Beam	None	GEN_RIGID	Typical
14	M14	N19	N21			LINK	Beam	None	GEN_RIGID	Typical
15	M15	N22	N20			LINK	Beam	None	GEN_RIGID	Typical
16	M16	N23	N25			LINK	Beam	None	GEN_RIGID	Typical
17	M17	N26	N24			LINK	Beam	None	GEN_RIGID	Typical
18	M18	N27	N29			LINK	Beam	None	GEN_RIGID	Typical
19	M19	N30	N28			LINK	Beam	None	GEN_RIGID	Typical
20	M20	N31	N33			LINK	Beam	None	GEN_RIGID	Typical
21	M21	N34	N32			LINK	Beam	None	GEN_RIGID	Typical
22	M22	N35	N37			LINK	Beam	None	GEN_RIGID	Typical
23	M23	N38	N36			LINK	Beam	None	GEN_RIGID	Typical
24	M24	N43	N45			LINK	Beam	None	GEN_RIGID	Typical
25	M25	N46	N44			LINK	Beam	None	GEN_RIGID	Typical
26	M26	N47	N49			LINK	Beam	None	GEN_RIGID	Typical
27	M27	N50	N48			LINK	Beam	None	GEN_RIGID	Typical
28	M28	N51	N53			LINK	Beam	None	GEN_RIGID	Typical
29	M29	N54	N52			LINK	Beam	None	GEN_RIGID	Typical

Envelope Joint Reactions

	Joint		X [lb]	lc	Y [lb]	lc	Z [lb]	lc	MX [k-ft]	lc	MY [k-ft]	lc	MZ [k-ft]	lc
1	N1	max	-1976.897	4	62.515	2	0	1	0	1	0	1	0	1
2		min	-2097.999	2	42.285	6	-89.292	3	-.323	3	0	1	0	1
3	N3	max	20.493	6	57.701	6	0	1	0	1	0	1	0	1
4		min	9.711	4	-62.522	2	-173.205	3	-.497	3	0	1	0	1
5	N5	max	2097.948	2	62.583	2	10.355	4	.018	4	0	1	0	1
6		min	1976.847	3	42.319	6	-89.303	3	-.323	3	0	1	0	1
7	N7	max	-9.743	1	57.698	6	0	1	0	1	0	1	0	1
8		min	-20.531	6	-62.574	2	-173.206	3	-.497	3	0	1	0	1
9	Totals:	max	-.083	1	200.002	6	0	1						
10		min	-.089	2	.002	1	-525.006	3						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	lc	y Shear[lb]	lc	z Shear[lb]	lc	Torque[k-ft]	lc	y-y Moment[...]	lc	z-z Moment[...]	lc
1	M1	1	max	62.515	2	0	1	-1977.555	4	0	1	0	1	0	1
2			min	42.285	6	-89.308	3	-2098.765	2	0	1	0	1	-.323	3
3		2	max	6275.685	2	0	1	-463.912	1	0	1	-.178	1	0	1
4			min	5841.665	1	-83.65	3	-512.651	2	-.002	3	-.192	2	-.223	3
5		3	max	9132.077	2	0	1	9.322	2	0	1	-.202	1	0	1
6			min	8346.251	1	-93.54	3	6.082	6	-.002	3	-.221	2	-.155	3
7		4	max	6074.253	2	0	1	530.847	2	0	1	-.154	1	0	1
8			min	5659.258	1	-91.451	3	478.307	6	-.002	2	-.166	2	-.084	3
9		5	max	444.295	6	0	1	729.283	2	.002	5	.059	2	.001	2
10			min	412.658	1	-98.705	3	687.736	1	-.002	2	.054	6	-.012	3
11	M2	1	max	57.701	6	0	1	20.578	6	0	1	0	1	0	1
12			min	-62.522	2	-173.205	3	9.711	4	0	1	0	1	-.497	3
13		2	max	57.701	6	0	1	20.578	6	0	1	.015	6	0	1
14			min	-62.522	2	-173.205	3	9.711	4	0	1	.007	4	-.367	3
15		3	max	57.701	6	0	1	20.516	6	0	1	.031	6	0	2
16			min	-62.522	2	-173.205	3	9.711	4	0	1	.015	4	-.237	3
17		4	max	57.701	6	1.938	2	20.383	6	0	1	.046	6	.002	2
18			min	-62.522	2	-173.205	3	9.711	4	0	1	.022	4	-.107	3
19		5	max	57.701	6	1.938	2	20.383	6	0	1	.061	6	.028	4
20			min	-62.522	2	-173.205	3	9.711	4	0	1	.029	4	0	1
21	M3	1	max	725.209	2	0	1	-407.306	1	.001	2	.059	2	.002	2
22			min	684.143	1	-99.78	3	-438.844	6	-.012	3	.054	6	-.002	5
23		2	max	2149.3	2	0	1	-42.37	6	0	2	.114	2	.063	3
24			min	2017.127	6	-50.27	3	-62.59	2	-.022	3	.101	6	0	1
25		3	max	2149.3	2	0	1	-42.37	6	0	2	.064	6	.088	3
26			min	2017.127	6	-40.556	4	-62.59	2	-.022	3	.055	4	0	1
27		4	max	2149.3	2	37.23	3	-42.37	6	0	2	.027	6	.106	4
28			min	2017.127	6	-40.556	4	-62.59	2	-.022	3	.004	1	0	1
29		5	max	2149.3	2	80.98	3	-42.37	6	0	2	-.01	6	.142	4
30			min	2017.127	6	-40.556	4	-62.59	2	-.022	3	-.05	2	0	1
31	M4	1	max	2159.799	2	48.01	4	.008	2	.011	4	.051	6	.142	4
32			min	2032.904	1	-100	5	-99.984	6	0	3	-.019	2	0	1
33		2	max	2159.799	2	48.01	4	.008	2	.011	4	-.018	1	.107	5
34			min	2032.904	1	-100	5	-99.984	6	0	3	-.036	6	0	1
35		3	max	2159.799	2	100	5	100.016	6	.011	4	-.018	1	.195	5
36			min	2032.904	1	0	1	.006	1	0	3	-.124	6	0	1
37		4	max	2159.799	2	100	5	100.016	6	.011	4	-.018	4	.107	5

Envelope Member Section Forces (Continued)

Member	Sec		Axial[lb]	lc	y Shear[lb]	lc	z Shear[lb]	lc	Torque[k-ft]	lc	y-y Moment[...]	lc	z-z Moment[...]	lc	
38		min	2032.904	1	0	1	.006	1	0	3	-.036	6	0	2	
39	5	max	2159.799	2	100	5	100.016	6	.011	4	.051	6	.023	3	
40		min	2032.904	1	0	1	.006	1	0	3	-.019	2	-.026	4	
41	M5	1	max	62.583	2	10.356	4	2098.714	2	0	1	0	.018	4	
42		min	42.319	6	-89.319	3	1977.505	1	0	1	0	1	-.323	3	
43		2	max	6275.493	2	9.317	4	512.615	2	.002	3	.192	2	.009	4
44		min	5841.485	1	-83.659	3	463.882	1	0	4	.178	1	-.223	3	
45		3	max	9131.484	2	9.685	4	-6.091	6	.002	3	.221	2	.002	4
46		min	8345.748	1	-93.549	3	-9.349	2	0	4	.202	1	-.155	3	
47		4	max	6073.463	2	9.423	4	-478.299	6	.002	3	.165	2	0	1
48		min	5658.614	1	-91.455	3	-530.849	2	0	4	.154	1	-.084	3	
49		5	max	444.159	6	.004	2	-687.662	4	0	1	-.054	6	0	1
50		min	412.389	4	-98.706	3	-729.195	2	-.002	5	-.059	2	-.012	3	
51	M6	1	max	57.698	6	0	1	-9.743	1	0	1	0	1	0	1
52		min	-62.574	2	-173.206	3	-20.526	6	0	1	0	1	-.497	3	
53		2	max	57.698	6	0	1	-9.743	1	0	1	-.007	1	0	1
54		min	-62.574	2	-173.206	3	-20.526	6	0	1	-.015	6	-.367	3	
55		3	max	57.698	6	0	1	-9.743	1	0	1	-.015	1	0	1
56		min	-62.574	2	-173.206	3	-20.526	6	0	1	-.031	6	-.237	3	
57		4	max	57.698	6	0	1	-9.743	1	0	1	-.022	1	0	1
58		min	-62.574	2	-173.206	3	-20.526	6	0	1	-.046	6	-.107	3	
59		5	max	57.698	6	0	1	-9.743	1	0	1	-.029	1	.022	3
60		min	-62.574	2	-173.206	3	-20.526	6	0	1	-.062	6	0	1	
61	M7	1	max	2149.262	2	5.757	5	62.658	2	.022	3	-.01	6	.023	3
62		min	2017.088	6	-80.98	3	42.404	6	0	1	-.051	2	-.026	4	
63		2	max	2149.262	2	5.757	5	62.658	2	.022	3	.027	6	.074	3
64		min	2017.088	6	-37.23	3	42.404	6	0	1	.004	4	-.02	4	
65		3	max	2149.262	2	6.52	3	62.658	2	.022	3	.064	6	.088	3
66		min	2017.088	6	-7.448	4	42.404	6	0	1	.055	1	-.013	4	
67		4	max	2149.262	2	50.27	3	62.658	2	.022	3	.114	2	.063	3
68		min	2017.088	6	-7.448	4	42.404	6	0	1	.101	6	-.007	4	
69		5	max	725.121	2	99.781	3	438.707	6	.012	3	.059	2	0	1
70		min	684.067	4	0	1	407.032	4	0	1	.054	6	-.002	5	
71	M8	1	max	-3824.617	1	1072.76	2	11.098	3	0	3	.002	4	-.038	6
72		min	-4077.918	2	994.801	1	-1.323	4	0	4	-.036	3	-.039	2	
73		2	max	-7189.612	1	580.637	2	13.128	3	0	3	.001	4	-.328	1
74		min	-7796.005	2	501.75	1	-1.424	4	0	4	-.028	3	-.356	2	
75		3	max	-7966.359	1	-269.256	6	14.206	3	0	3	0	4	-.389	1
76		min	-8698.656	2	-314.989	2	-1.451	4	0	4	-.02	3	-.426	2	
77		4	max	-5600.713	1	-775.361	6	13.721	3	0	3	0	1	-.227	1
78		min	-6010.881	2	-860.549	2	-1.414	4	0	4	-.011	3	-.243	2	
79		5	max	-354.486	4	-1327.247	6	0	1	0	1	0	1	.155	2
80		min	-401.842	6	-1424.141	2	-19.147	5	0	5	-.01	3	.134	6	
81	M9	1	max	-3824.746	1	1072.811	2	0	1	0	1	.036	3	-.038	6
82		min	-4078.055	2	994.845	1	-11.096	3	0	3	0	1	-.039	2	
83		2	max	-7189.965	1	580.705	2	0	1	0	1	.028	3	-.328	1
84		min	-7796.405	2	501.806	1	-13.126	3	0	3	0	1	-.356	2	
85		3	max	-7966.99	1	-269.241	6	7.381	2	0	1	.02	3	-.389	1
86		min	-8699.414	2	-314.946	2	-14.206	3	0	3	0	2	-.426	2	
87		4	max	-5601.413	1	-775.374	6	11.191	2	0	1	.011	3	-.227	1
88		min	-6011.74	2	-860.547	2	-13.724	3	0	2	0	1	-.243	2	
89		5	max	-354.812	1	-1327.242	6	19.147	5	0	5	.01	3	.155	2
90		min	-402.012	6	-1424.092	2	0	1	0	2	0	1	.134	6	

Envelope AISC 13th ASD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	lc	Shear ...	Loc[in]	Dir	lc	Pnc/om [lb]	Pnt/om [lb]	Mnyy/om [k-ft]	Mnzz/om ...	Cb	LRFD E...
1	M1	HSS3x1x3	.696	16.125	3	.836	0	z	2	18701.761	31962.654	.981	2.313	1...	H1-1a
2	M2	HSS3X1X2	.327	0	3	.019	22.875	y	3	13014.498	21154.469	.683	1.528	1...	H1-1b
3	M3	HSS3X1X2	.334	1.75	2	.203	0	z	3	10920.289	21154.469	.683	1.528	1...	H1-1b
4	M4	HSS3X1X2	.274	21	6	.044	21	z	6	10920.289	21154.469	.683	1.528	1	H1-1b
5	M5	HSS3x1x3	.695	16.125	3	.836	0	z	2	18701.761	31962.654	.981	2.313	1...	H1-1a
6	M6	HSS3X1X2	.327	0	3	.019	0	y	3	13014.498	21154.469	.683	1.528	1...	H1-1b
7	M7	HSS3X1X2	.332	40.25	2	.203	40.688	z	3	10920.289	21154.469	.683	1.528	1...	H1-1b
8	M8	WT2x3.4	.967	12.641	2	.220	29.383	y	2	17346.727	20209.581	.486	.709	1	H1-1a
9	M9	WT2x3.4	.969	12.641	2	.221	29.383	y	2	17346.727	20209.581	.486	.709	1	H1-1a

Global

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation	Yes
Include Warping	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Vertical Axis	Y

Hot Rolled Steel Code	AISC : ASD 13th
Cold Formed Steel Code	AISI 01: ASD
Wood Code	NDS 2005: ASD
Wood Temperature	< 100F
Concrete Code	ACI 2005

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	PCA Load Contour
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections	Yes
Bad Framing Warnings	No
Unused Force Warnings	Yes

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]	Yield[ksi]
1	A500Gr42	29000	11154	.3	.65	.49	42
2	A36	29000	11154	.3	.65	.49	36
3	SS316	28000	11154	.3	.65	.49	30
4	LDX2101	28000	11154	.3	.65	.49	60

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	RAIL	TU3x1x2	Beam	Tube	SS316	Typical	.902	.149	.918	.41
2	ERAIL	TU3x1x2	Beam	Tube	SS316	Typical	.902	.149	.918	.41
3	POST	TU3x1x2	Column	Tube	SS316	Typical	.902	.149	.918	.41
4	EPOST	TU3x1x2	Column	Tube	LDX2101	Typical	.902	.149	.918	.41
5	TEE	WT2x3.4	Column	W_Tee	LDX2101	Typical	.938	.169	.348	.018

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E5 F)	Density[k/ft^3]
1	GEN_RIGID	1e+6		.3	.65	0

General Section Sets

	Label	Shape	Type	Material	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	LINK	ARB_LINK_1	Beam	GEN_RIGID	1e+6	1e+6	1e+6	1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area (Mem...	Surface (Pl...
1	Cable Prestress	None				20				
2	1607.7.1.2	None				16				
3	1607.7.1	None						3		
4	1607.7.1.1 (1)	None				1				
5	1607.7.1.1 (2)	None					1			
6	1607.7.1.1 (3)	None					1			

Load Combinations

	Description	Solve	PDelta	SR...	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	Cable Prestress	Yes	C		1	1						
2	1607.7.1.2	Yes	C		1	1	2	1				
3	1607.7.1	Yes	C		1	1	3	1				
4	1607.7.1.1 (1)	Yes	C		1	1	4	1				
5	1607.7.1.1. (2)	Yes	C		1	1	5	1				
6	1607.7.1.1 (3)	Yes	C		1	1	6	1				

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		90	EPOST	Column	Tube	LDX2101	Typical
2	M2	N3	N4		90	POST	Column	Tube	SS316	Typical
3	M3	N2	N4		90	ERAIL	Beam	Tube	SS316	Typical
4	M4	N4	N8		90	RAIL	Beam	Tube	SS316	Typical
5	M5	N5	N6		90	EPOST	Column	Tube	LDX2101	Typical
6	M6	N7	N8		90	POST	Column	Tube	SS316	Typical
7	M7	N8	N6		90	ERAIL	Beam	Tube	SS316	Typical
8	M8	N54	N10		180	TEE	Column	W Tee	LDX2101	Typical
9	M9	N53	N9			TEE	Column	W Tee	LDX2101	Typical
10	M10	N11	N13			LINK	Beam	None	GEN_RIGID	Typical
11	M11	N14	N12			LINK	Beam	None	GEN_RIGID	Typical
12	M12	N15	N17			LINK	Beam	None	GEN_RIGID	Typical
13	M13	N18	N16			LINK	Beam	None	GEN_RIGID	Typical
14	M14	N19	N21			LINK	Beam	None	GEN_RIGID	Typical
15	M15	N22	N20			LINK	Beam	None	GEN_RIGID	Typical
16	M16	N23	N25			LINK	Beam	None	GEN_RIGID	Typical
17	M17	N26	N24			LINK	Beam	None	GEN_RIGID	Typical
18	M18	N27	N29			LINK	Beam	None	GEN_RIGID	Typical
19	M19	N30	N28			LINK	Beam	None	GEN_RIGID	Typical
20	M20	N31	N33			LINK	Beam	None	GEN_RIGID	Typical
21	M21	N34	N32			LINK	Beam	None	GEN_RIGID	Typical
22	M22	N35	N37			LINK	Beam	None	GEN_RIGID	Typical
23	M23	N38	N36			LINK	Beam	None	GEN_RIGID	Typical
24	M24	N43	N45			LINK	Beam	None	GEN_RIGID	Typical
25	M25	N46	N44			LINK	Beam	None	GEN_RIGID	Typical
26	M26	N47	N49			LINK	Beam	None	GEN_RIGID	Typical
27	M27	N50	N48			LINK	Beam	None	GEN_RIGID	Typical
28	M28	N51	N53			LINK	Beam	None	GEN_RIGID	Typical
29	M29	N54	N52			LINK	Beam	None	GEN_RIGID	Typical

Envelope Joint Reactions

	Joint		X [lb]	lc	Y [lb]	lc	Z [lb]	lc	MX [k-ft]	lc	MY [k-ft]	lc	MZ [k-ft]	lc
1	N1	max	-1966.476	4	75.338	2	0	1	0	1	0	1	0	1
2		min	-2086.742	2	54.256	6	-85.269	3	-313	3	0	1	0	1
3	N3	max	22.444	6	45.728	6	0	1	0	1	0	1	0	1
4		min	11.641	4	-75.348	2	-177.231	3	-515	3	0	1	0	1
5	N5	max	2086.687	2	75.41	2	10.64	4	.021	4	0	1	0	1
6		min	1966.423	3	54.299	6	-85.263	3	-313	3	0	1	0	1
7	N7	max	-11.677	1	45.715	6	0	1	0	1	0	1	0	1
8		min	-22.485	6	-75.403	2	-177.23	3	-515	3	0	1	0	1
9	Totals:	max	-.089	1	199.998	6	0	1						
10		min	-.096	2	-.002	2	-524.993	3						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	lc	y Shear[lb]	lc	z Shear[lb]	lc	Torque[k-ft]	lc	y-y Moment[...]	lc	z-z Moment[...]	lc
1	M1	1	max	75.338	2	0	1	-1967.44	4	0	1	0	1	0	1
2			min	54.256	6	-85.296	3	-2087.864	2	0	1	0	1	-313	3
3		2	max	6069.851	2	0	1	-367.147	1	0	1	-.156	1	0	1
4			min	5649.462	1	-79.083	3	-405.898	2	-.002	3	-.168	2	-.208	3
5		3	max	8806.7	2	0	1	11.166	2	0	1	-.18	1	0	1
6			min	8046.49	1	-91.049	3	8.31	6	-.002	3	-.197	2	-.143	3
7		4	max	5777.688	2	0	1	427.242	2	0	1	-.134	1	0	1
8			min	5383.29	1	-88.142	3	385.012	6	-.002	3	-.144	2	-.074	3
9		5	max	409.839	6	0	1	594.594	2	.002	5	.055	2	.001	2
10			min	376.391	1	-85.063	3	560.819	1	-.002	2	.05	6	-.009	5
11	M2	1	max	45.728	6	0	1	22.515	6	0	1	0	1	0	1
12			min	-75.348	2	-177.231	3	11.641	4	0	1	0	1	-.515	3
13		2	max	45.728	6	0	1	22.515	6	0	1	.017	6	0	1
14			min	-75.348	2	-177.231	3	11.641	4	0	1	.009	4	-.383	3
15		3	max	45.728	6	0	1	22.463	6	0	1	.034	6	0	1
16			min	-75.348	2	-177.231	3	11.641	4	0	1	.017	4	-.25	3
17		4	max	45.728	6	1.345	2	22.353	6	0	1	.051	6	.001	2
18			min	-75.348	2	-177.231	3	11.641	4	0	1	.026	4	-.117	3
19		5	max	45.728	6	1.345	2	22.353	6	0	1	.067	6	.025	4
20			min	-75.348	2	-177.231	3	11.641	4	0	1	.035	4	0	1
21	M3	1	max	590.286	2	0	1	-371.263	1	.001	2	.055	2	.002	2
22			min	556.996	1	-85.018	3	-404.622	6	-.009	5	.05	6	-.002	5
23		2	max	2160.524	2	.131	2	-54.239	6	0	2	.137	2	.058	3
24			min	2027.602	6	-44.921	3	-75.297	2	-.017	5	.123	6	0	1
25		3	max	2160.524	2	.131	2	-54.239	6	0	2	.076	6	.078	3
26			min	2027.602	6	-38.927	4	-75.297	2	-.017	5	.066	4	0	1
27		4	max	2160.524	2	42.579	3	-54.239	6	0	2	.028	6	.102	4
28			min	2027.602	6	-38.927	4	-75.297	2	-.017	5	.005	1	0	1
29		5	max	2160.524	2	86.329	3	-54.239	6	0	2	-.019	6	.136	4
30			min	2027.602	6	-38.927	4	-75.297	2	-.017	5	-.06	2	0	1
31	M4	1	max	2173.109	2	46.811	4	.009	2	.011	4	.048	6	.136	4
32			min	2045.224	1	-100	5	-99.985	6	0	1	-.023	2	0	1
33		2	max	2173.109	2	46.811	4	.009	2	.011	4	-.021	1	.106	5
34			min	2045.224	1	-100	5	-99.985	6	0	1	-.04	6	0	1
35		3	max	2173.109	2	100	5	100.015	6	.011	4	-.021	1	.193	5
36			min	2045.224	1	0	3	.007	1	0	1	-.127	6	0	1
37		4	max	2173.109	2	100	5	100.015	6	.011	4	-.021	4	.106	5

Envelope Member Section Forces (Continued)

Member	Sec		Axial[lb]	lc	y Shear[lb]	lc	z Shear[lb]	lc	Torque[k-ft]	lc	y-y Moment[lb-ft]	lc	z-z Moment[lb-ft]	lc	
38		min	2045.224	1	0	1	.007	1	0	1	-.04	6	-.001	2	
39	5	max	2173.109	2	100	5	100.015	6	.011	4	.048	6	.018	5	
40		min	2045.224	1	0	1	.007	1	0	1	-.023	2	-.028	4	
41	M5	1	max	75.41	2	10.641	4	2087.81	2	0	0	1	.021	4	
42		min	54.299	6	-85.29	3	1967.388	3	0	1	0	1	-.313	3	
43	2	max	6069.646	2	9.399	4	405.866	2	.002	3	.168	2	.011	4	
44		min	5649.27	1	-79.078	3	367.119	1	0	4	.156	1	-.208	3	
45	3	max	8806.075	2	9.963	4	-8.325	6	.002	3	.197	2	.003	4	
46		min	8045.956	1	-91.042	3	-11.194	2	0	4	.18	1	-.143	3	
47	4	max	5776.847	2	9.61	4	-385.009	6	.002	3	.144	2	0	2	
48		min	5382.592	1	-88.138	3	-427.246	2	0	4	.134	1	-.074	3	
49	5	max	409.639	6	.173	2	-560.755	4	0	3	-.05	6	0	1	
50		min	376.073	4	-85.061	3	-594.52	2	-.002	5	-.055	2	-.009	5	
51	M6	1	max	45.715	6	0	-11.677	1	0	1	0	1	0	1	
52		min	-75.403	2	-177.23	3	-22.482	6	0	1	0	1	-.515	3	
53	2	max	45.715	6	0	1	-11.677	1	0	1	-.009	1	0	1	
54		min	-75.403	2	-177.23	3	-22.482	6	0	1	-.017	6	-.383	3	
55	3	max	45.715	6	0	1	-11.677	1	0	1	-.018	1	0	1	
56		min	-75.403	2	-177.23	3	-22.482	6	0	1	-.034	6	-.25	3	
57	4	max	45.715	6	0	1	-11.677	1	0	1	-.026	1	0	1	
58		min	-75.403	2	-177.23	3	-22.482	6	0	1	-.051	6	-.117	3	
59	5	max	45.715	6	0	1	-11.677	1	0	1	-.035	1	.017	5	
60		min	-75.403	2	-177.23	3	-22.482	6	0	1	-.067	6	0	2	
61	M7	1	max	2160.482	2	5.299	5	75.37	2	.017	5	-.019	6	.018	5
62		min	2027.561	6	-86.328	3	54.284	6	0	1	-.06	2	-.028	4	
63	2	max	2160.482	2	5.299	5	75.37	2	.017	5	.028	6	.06	3	
64		min	2027.561	6	-42.578	3	54.284	6	0	1	.005	4	-.021	4	
65	3	max	2160.482	2	5.299	5	75.37	2	.017	5	.076	6	.078	3	
66		min	2027.561	6	-7.871	4	54.284	6	0	1	.066	1	-.014	4	
67	4	max	2160.482	2	44.922	3	75.37	2	.017	5	.137	2	.058	3	
68		min	2027.561	6	-7.871	4	54.284	6	0	1	.123	6	-.007	4	
69	5	max	590.213	2	85.017	3	404.421	6	.009	5	.055	2	0	3	
70		min	556.933	4	-.133	2	370.94	4	0	1	.05	6	-.002	5	
71	M8	1	max	-3687.596	1	1203.344	2	13.214	3	0	3	.003	4	-.045	6
72		min	-3931.737	2	1115.704	1	-1.675	4	0	4	-.045	3	-.046	2	
73	2	max	-6934.909	1	649.096	2	15.909	3	0	3	.002	4	-.372	1	
74		min	-7521.312	2	560.327	1	-1.834	4	0	4	-.035	3	-.404	2	
75	3	max	-7647.432	1	-312.857	6	17.539	3	0	3	0	4	-.439	1	
76		min	-8352.932	2	-365.318	2	-1.892	4	0	4	-.024	3	-.482	2	
77	4	max	-5312.83	1	-883.793	6	16.745	3	0	3	0	2	-.253	1	
78		min	-5701.435	2	-980.748	2	-1.826	4	0	4	-.012	3	-.271	2	
79	5	max	-306.307	4	-1466.542	6	1.666	3	0	3	0	1	.187	2	
80		min	-355.338	6	-1570.269	2	-14.904	5	0	5	-.008	5	.164	6	
81	M9	1	max	-3687.733	1	1203.406	2	0	1	0	1	.045	3	-.045	6
82		min	-3931.883	2	1115.759	1	-13.215	3	0	3	0	1	-.046	2	
83	2	max	-6935.282	1	649.173	2	0	1	0	1	.035	3	-.372	1	
84		min	-7521.734	2	560.39	1	-15.91	3	0	3	0	1	-.404	2	
85	3	max	-7648.11	1	-312.834	6	7.701	2	0	1	.024	3	-.439	1	
86		min	-8353.737	2	-365.269	2	-17.54	3	0	3	0	2	-.482	2	
87	4	max	-5313.588	1	-883.799	6	11.965	2	0	1	.012	3	-.253	1	
88		min	-5702.349	2	-980.739	2	-16.743	3	0	3	0	1	-.271	2	
89	5	max	-306.689	1	-1466.539	6	14.904	5	0	5	.008	5	.187	2	
90		min	-355.583	6	-1570.239	2	-1.665	3	0	2	0	1	.164	6	

Envelope AISC 13th ASD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	lc	Shear ...	Loc[in]	Dir	lc	Pnc/om [lb]	Pnt/om [lb]	Mnyy/om [k-ft]	Mnzz/om ...	Cb	LRFD E...
1	M1	TU3x1x2	.725	16.125	2	.631	0	z	2	15890.753	32421.557	1.052	2.403	2...	H1-1a
2	M2	TU3x1x2	.431	0	3	.026	22.875	y	3	11349.041	16210.778	.526	1.202	1...	H1-1b
3	M3	TU3x1x2	.544	1.75	2	.250	0	z	5	9977.855	16210.778	.526	1.202	1...	H1-1a
4	M4	TU3x1x2	.420	21	6	.060	21	z	6	9977.855	16210.778	.526	1.202	1	H1-1a
5	M5	TU3x1x2	.722	16.125	2	.631	0	z	2	15890.753	32421.557	1.052	2.403	2...	H1-1a
6	M6	TU3x1x2	.431	0	3	.026	0	y	3	11349.041	16210.778	.526	1.202	1...	H1-1b
7	M7	TU3x1x2	.542	40.25	2	.250	40.688	z	5	9977.855	16210.778	.526	1.202	1...	H1-1a
8	M8	WT2x3.4	.613	12.641	2	.146	29.383	y	2	25875.632	33682.635	.809	1.182	1	H1-1a
9	M9	WT2x3.4	.614	12.641	2	.146	29.383	y	2	25875.632	33682.635	.809	1.182	1	H1-1a

*** End of Calculations ***