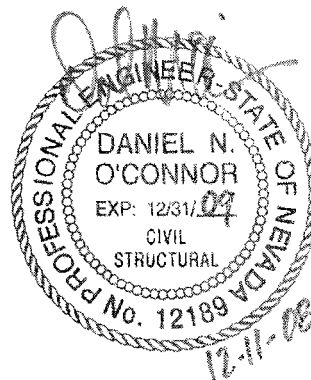
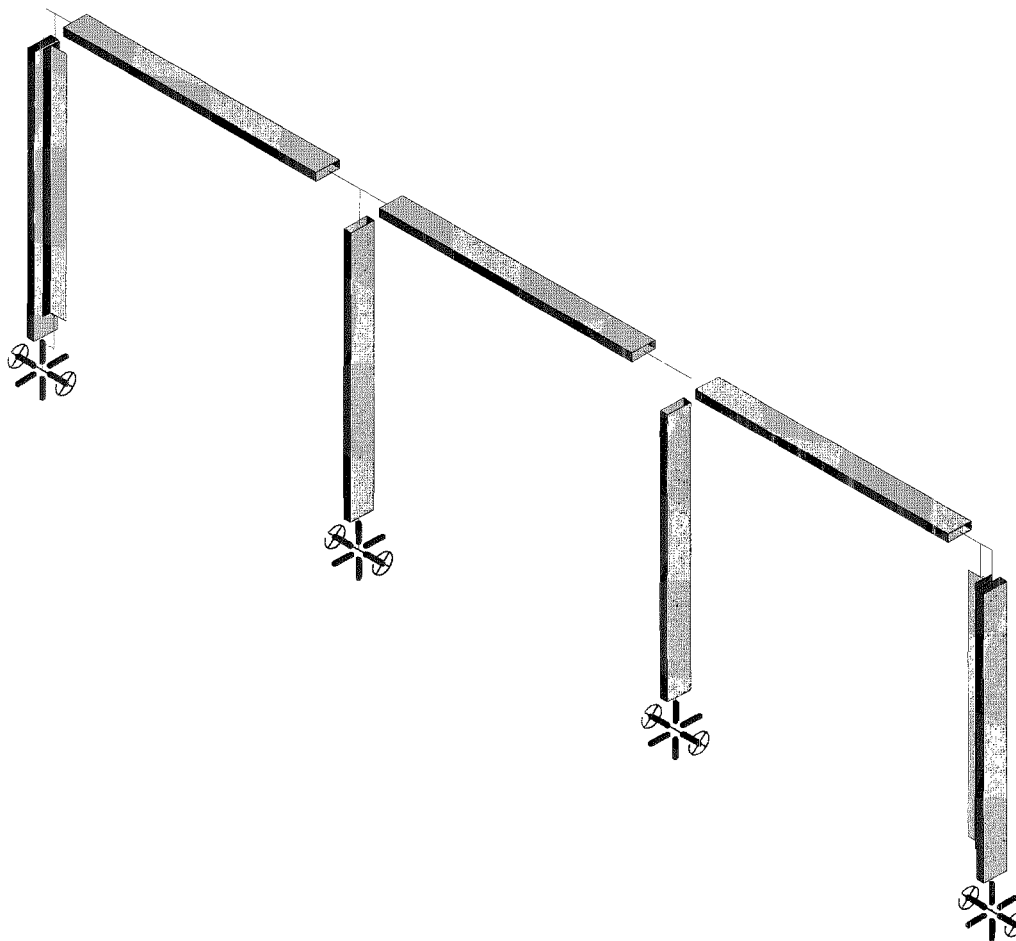
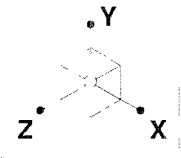


**D9d—3"x1" RECT. TUBE x 42-1/2" HIGH RAIL WITH 2"x1-1/2"x1/4" TEE
FOR USE WITH ADJUST-A-JAW™ AND FIXED JAW HARDWARE,
WITHOUT BOTTOM RAIL**

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, A572, Grade 50, Fy = 50 ksi (Bar and Tee) Stainless Steel, A554, Grade MT-304 or MT-316, Fy = 30 ksi Stainless Steel, LDX 2101 (UNS S32101), Fy = 60 ksi (Bar and Tee)
Height:	42.5"
Anchor Post:	Carbon Steel: 3"x1" Flat Bar (A572, Grade 50) with 2"x1.5"x1/4" Tee (A572, Grade 50) Stainless Steel: 3"x1" Flat Bar (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
Number of Cables:	12
Cable Spacing:	3.19"



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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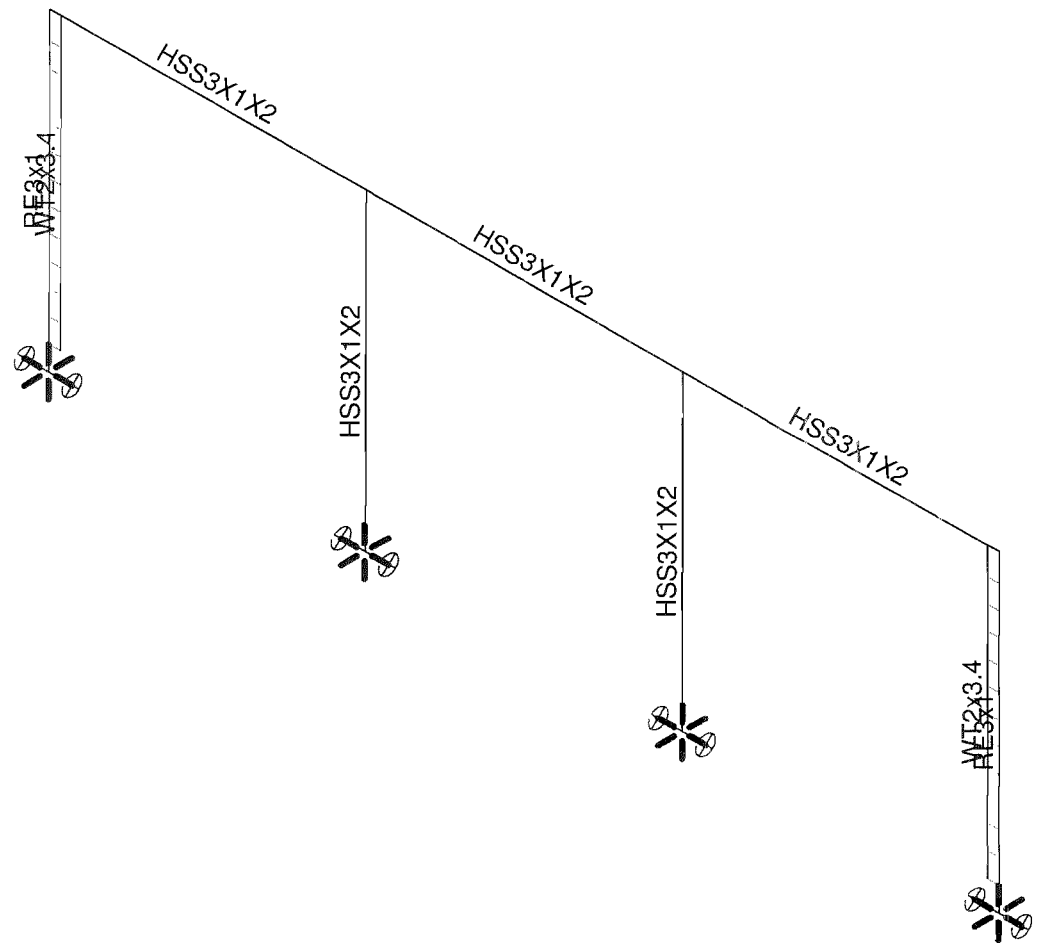
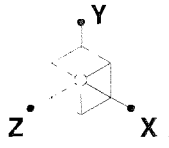
D. O'Connor

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D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:07 PM

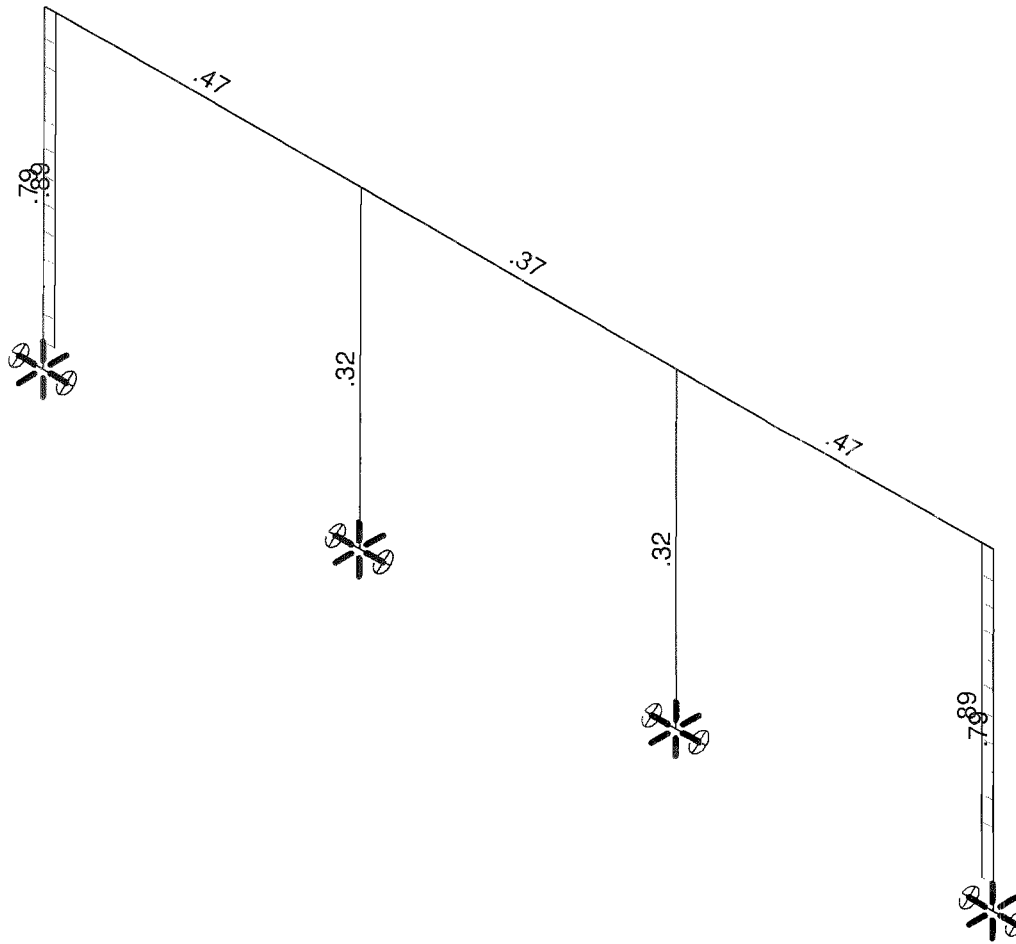
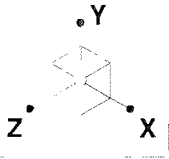
D9d.R3D



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D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:08 PM
D9d.R3D



Member Code Checks Displayed
 Solution: Envelope

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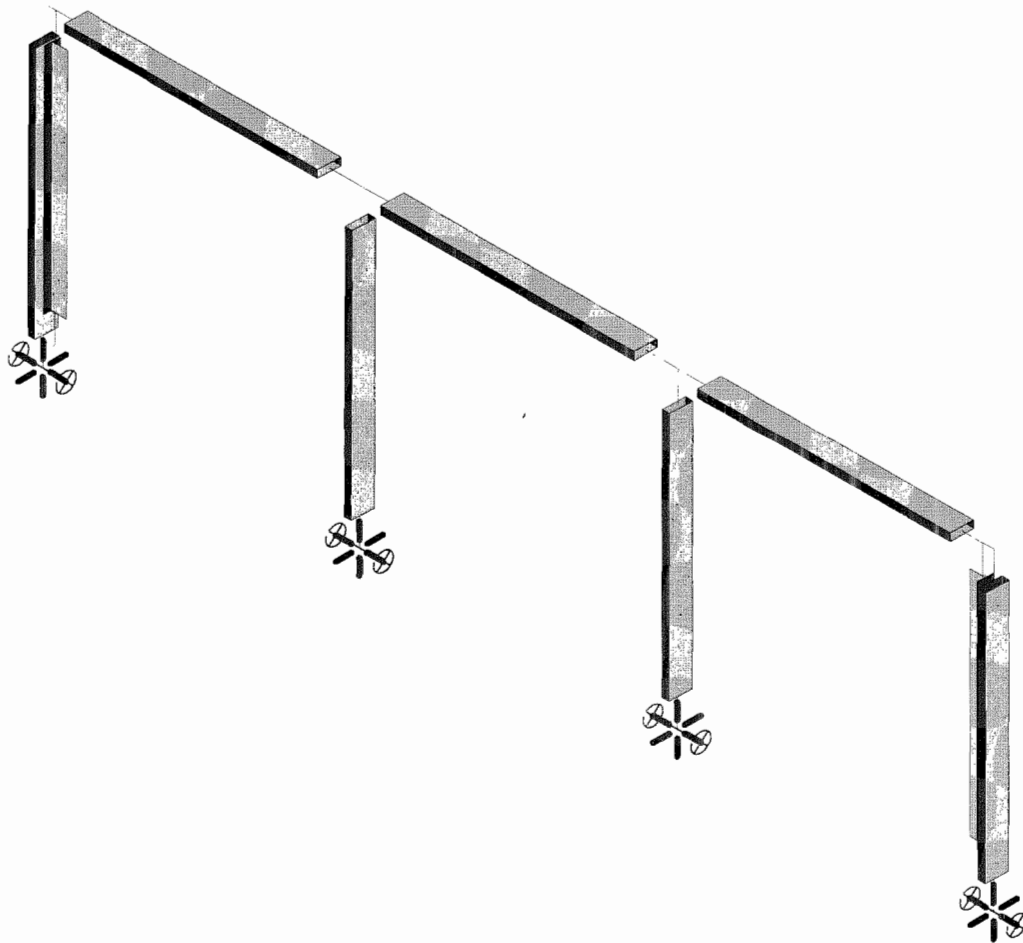
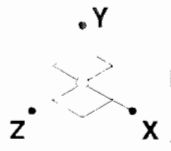
D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

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Dec 10, 2008 at 3:31 PM

D9d.R3D

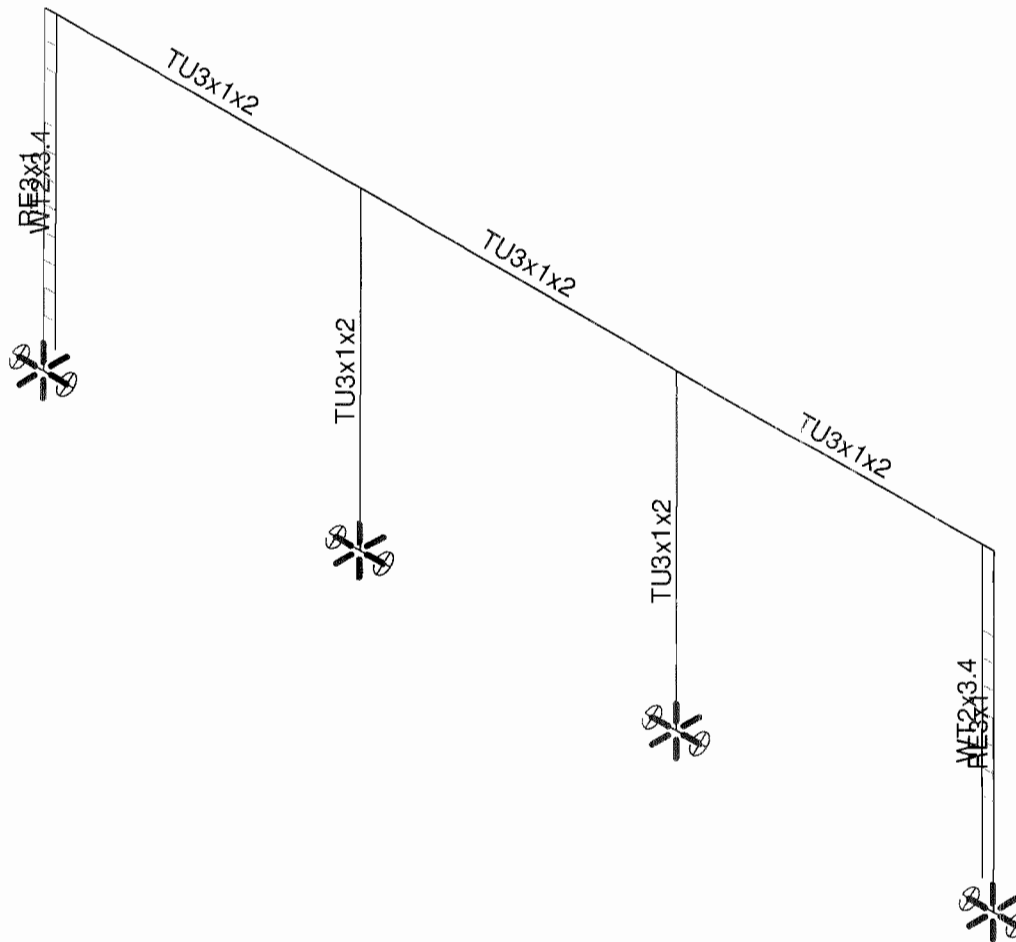
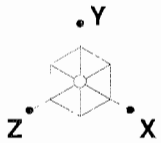


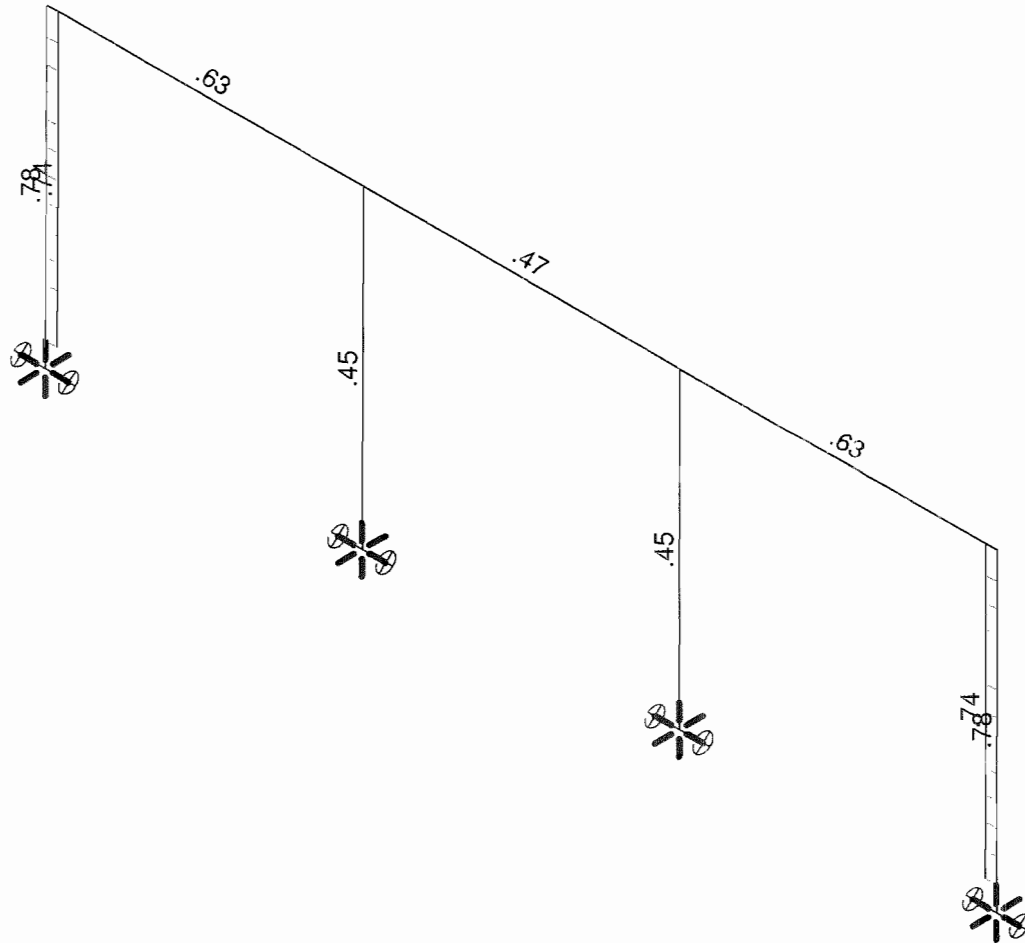
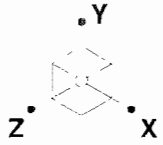
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D9d (SS) - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:15 PM

D9dss.R3D





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

Ferrari Shields & Associates

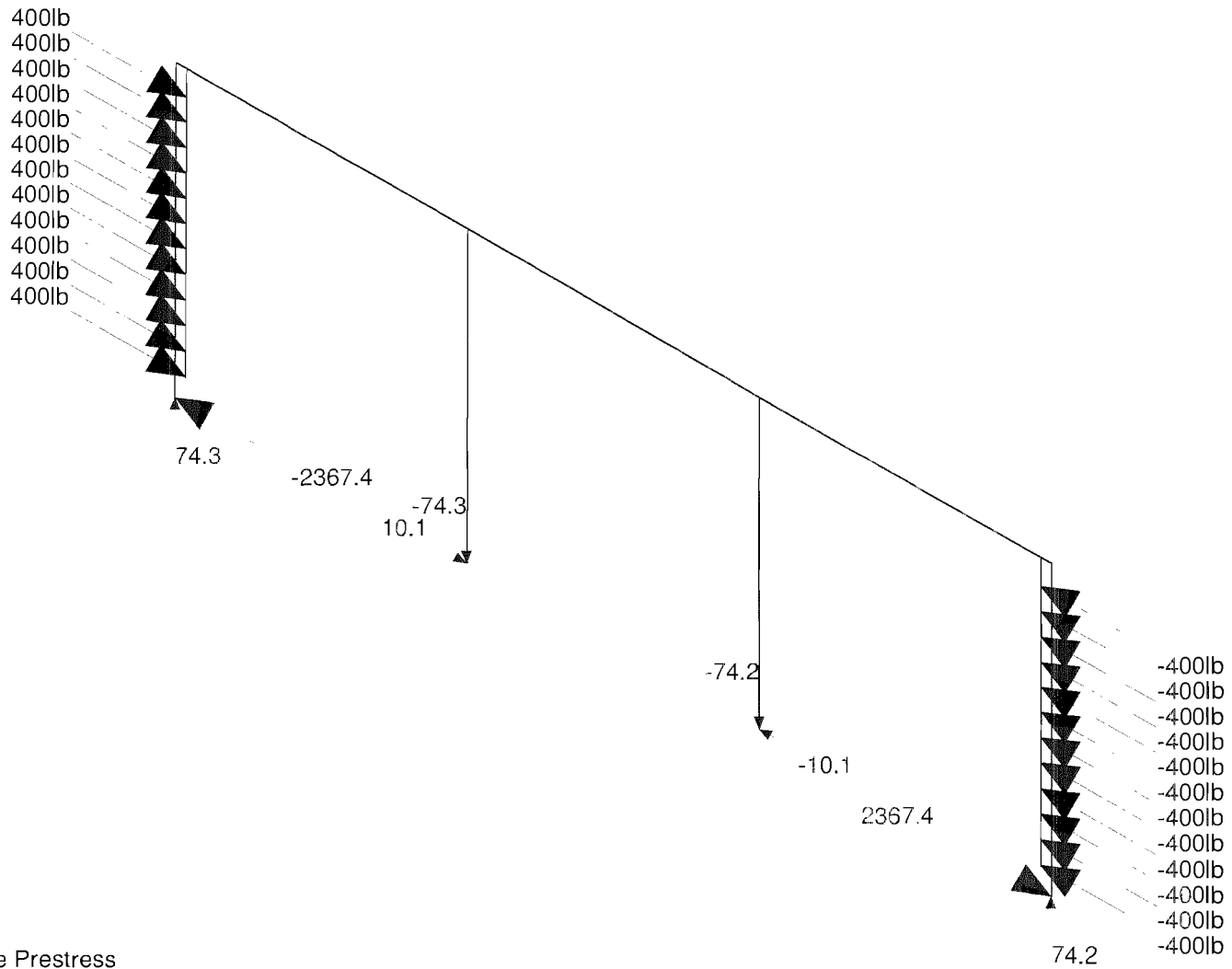
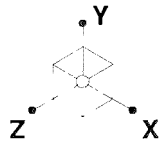
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D9d (SS) - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:16 PM

D9dss.R3D



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

Ferrari Shields & Associates

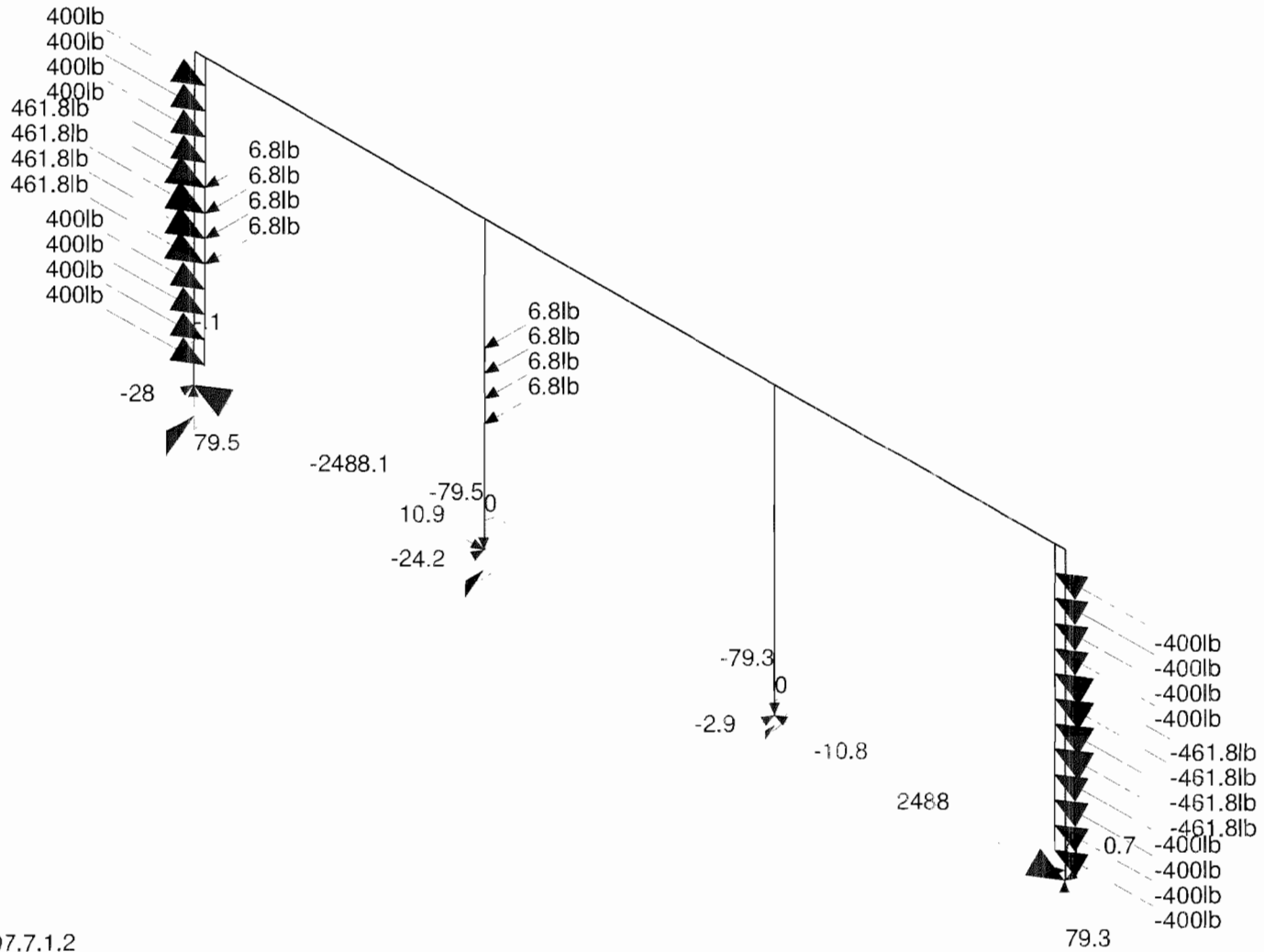
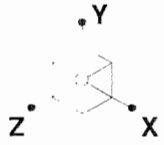
D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

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Dec 9, 2008 at 3:09 PM

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D9d.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

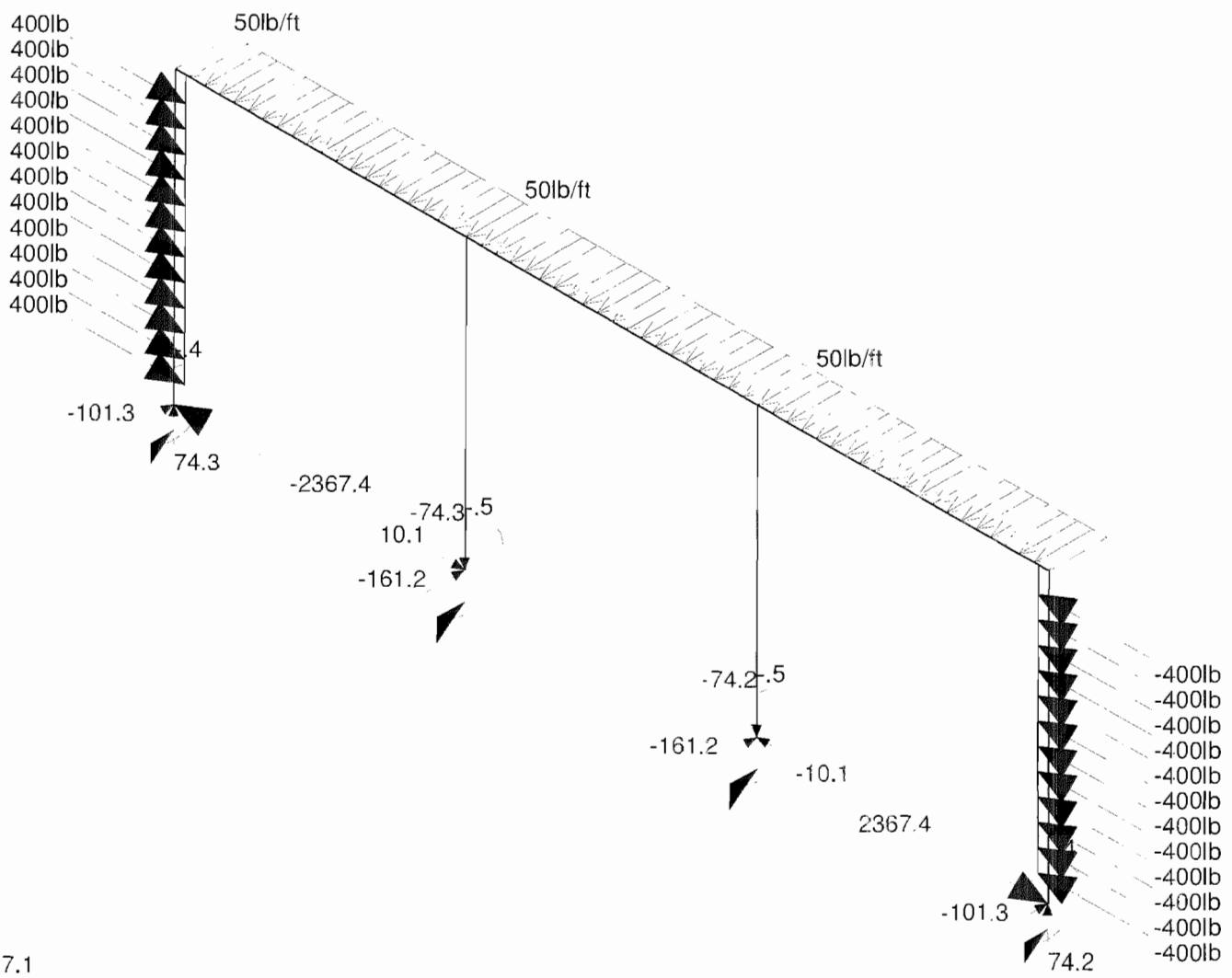
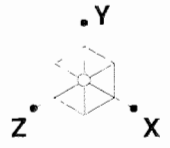
D. O'Connor

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D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:09 PM

D9d.R3D



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

Ferrari Shields & Associates

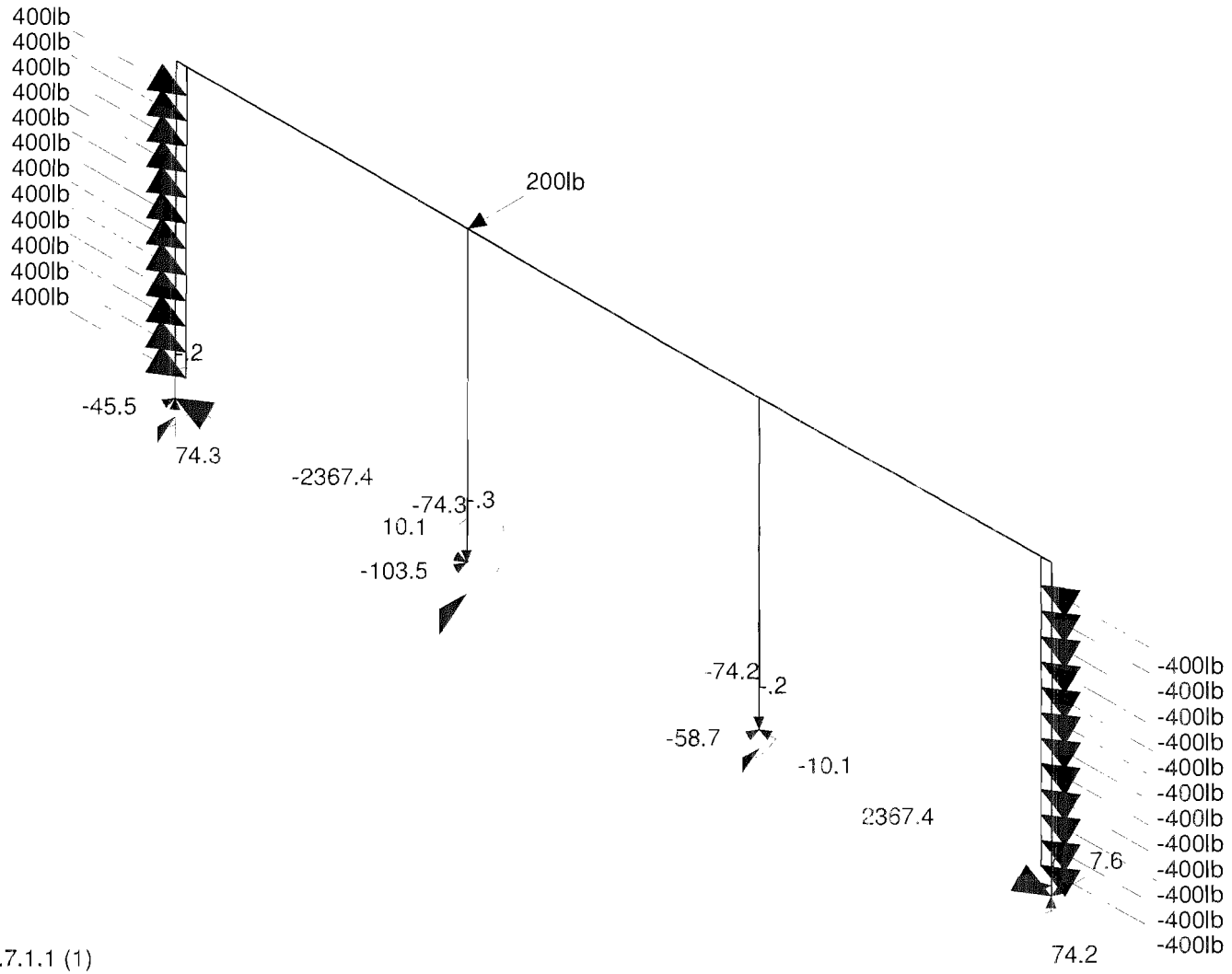
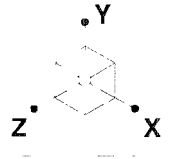
D. O'Connor

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D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:09 PM

D9d.R3D



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

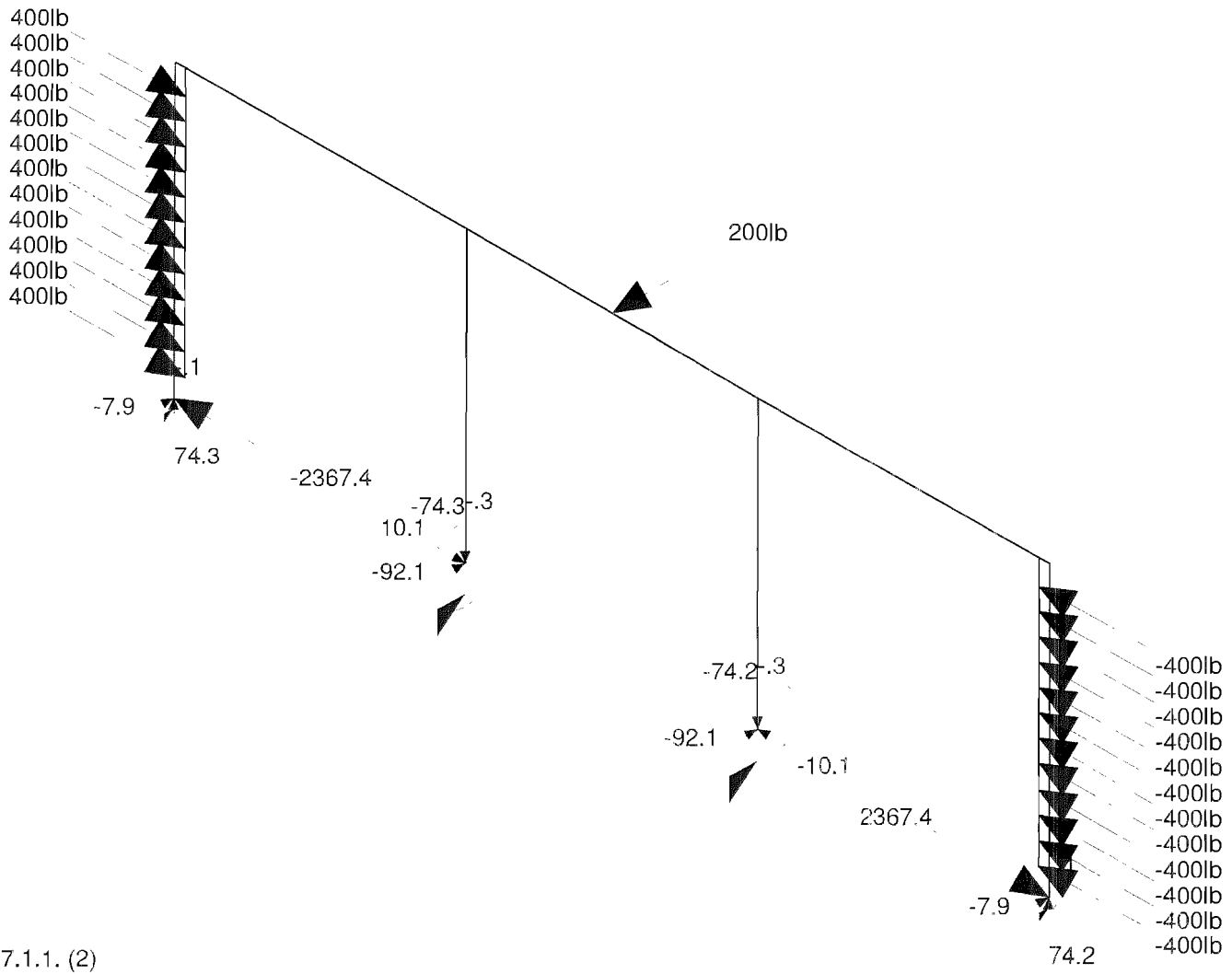
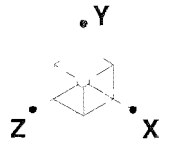
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D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:10 PM

D9d.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

Ferrari Shields & Associates

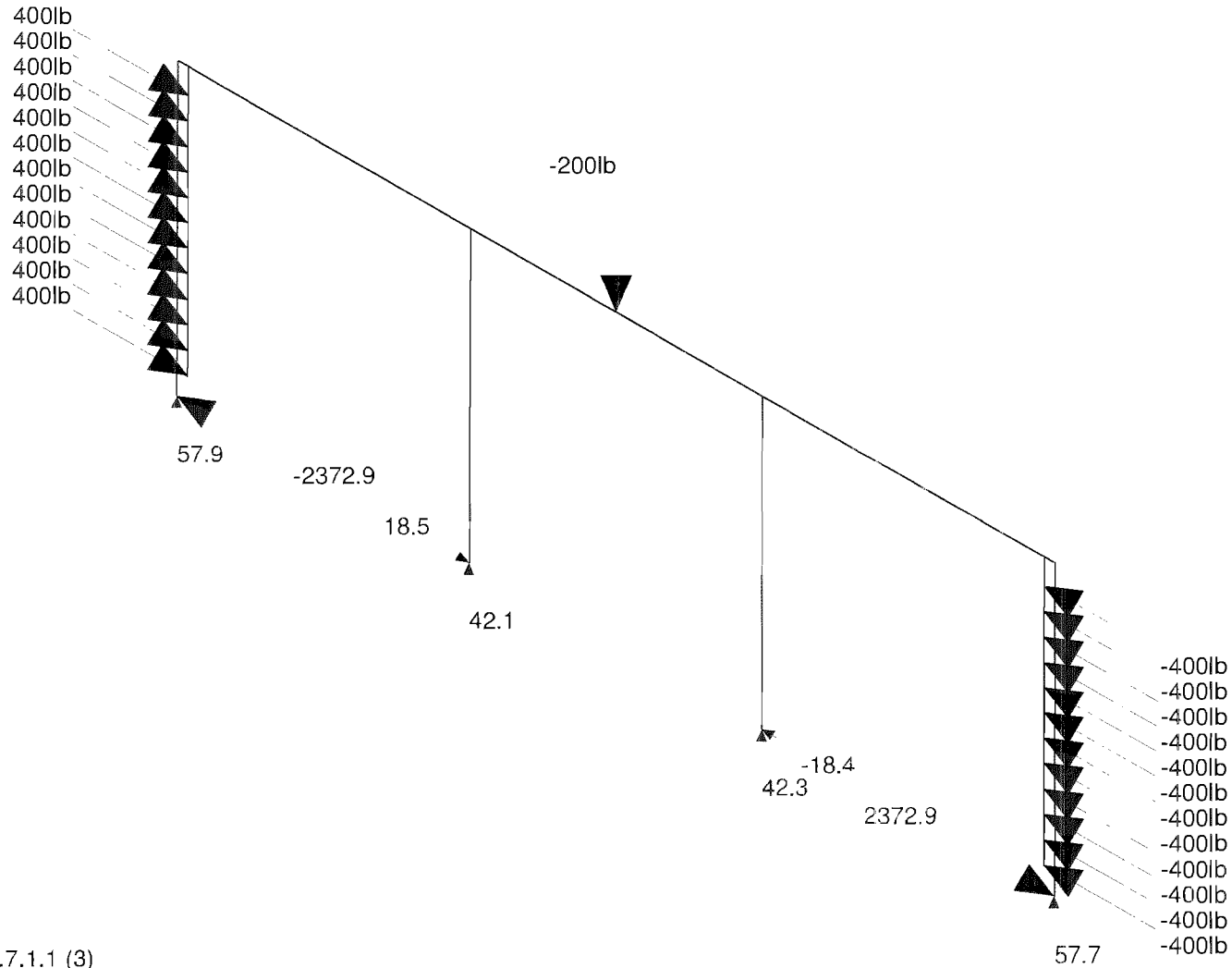
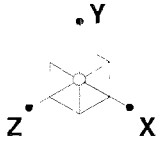
D. O'Connor

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D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:10 PM

D9d.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

Ferrari Shields & Associates

D. O'Connor

08196

D9d - 3x1 TUBE x 42-1/2" HIGH RAIL W/ T2x1.5x0.25 W/O BTM RAIL

Dec 9, 2008 at 3:10 PM

D9d.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
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 [ksj]	G [ksj]	Nu	Therm (1E5 F)	Density[k/ft^3]	Yield[ksj]
1	A500Gr42	29000	11154	.3	.65	.49	46
2	A36	29000	11154	.3	.65	.49	36
3	A572Gr50	29000	11154	.3	.65	.49	50

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	POST	HSS3X1X2	Column	Tube	A500Gr42	Typical	.841	.138	.818	.409
3	EPOST	RE3x1	Column	Tube	A572Gr50	Typical	3	.25	2.25	.79
4	TEE	WT2x3.4	Column	W Tee	A572Gr50	Typical	.938	.169	.348	.018

General Material Properties

	Label	E [ksj]	G [ksj]	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				24				
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			
9		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	A572Gr50	Typical
2	M2	N3	N4		90	POST	Column	Tube	A500Gr42	Typical
3	M3	N2	N4		90	RAIL	Beam	Tube	A500Gr42	Typical
4	M4	N4	N8		90	RAIL	Beam	Tube	A500Gr42	Typical
5	M5	N5	N6		90	EPOST	Column	Tube	A572Gr50	Typical
6	M6	N7	N8		90	POST	Column	Tube	A500Gr42	Typical
7	M7	N8	N6		90	RAIL	Beam	Tube	A500Gr42	Typical
8	M8	N58	N10		180	TEE	Column	W Tee	A572Gr50	Typical
9	M9	N57	N9			TEE	Column	W Tee	A572Gr50	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	N39	N41			LINK	Beam	None	GEN_RIGID	Typical
25	M25	N42	N40			LINK	Beam	None	GEN_RIGID	Typical
26	M26	N43	N45			LINK	Beam	None	GEN_RIGID	Typical
27	M27	N46	N44			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
30	M30	N55	N57			LINK	Beam	None	GEN_RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
31	M31	N58	N56			LINK	Beam	None	GEN_RIGID	Typical
32	M32	N59	N61			LINK	Beam	None	GEN_RIGID	Typical
33	M33	N62	N60			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	-2367.373	1	79.517	2	0	1	0	1	0	1	0	1
2		min	-2488.054	2	57.932	6	-101.271	3	-.439	3	0	1	0	1
3	N3	max	18.522	6	42.077	6	0	1	0	1	0	1	0	1
4		min	10.128	1	-79.499	2	-161.229	3	-.531	3	0	1	0	1
5	N5	max	2488.041	2	79.292	2	7.649	4	.009	4	0	1	0	1
6		min	2367.388	1	57.651	6	-101.267	3	-.439	3	0	1	0	1
7	N7	max	-10.062	1	42.339	6	0	1	0	1	0	1	0	1
8		min	-18.418	6	-79.311	2	-161.229	3	-.531	3	0	1	0	1
9	Totals:	max	.086	2	199.999	6	0	1						
10		min	.08	1	-.001	2	-524.996	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	79.517	2	0	1	-2368.322	1	0	1	0	1	0	1
2			min	57.932	6	-101.286	3	-2489.138	2	0	1	0	1	-.439	3
3		2	max	10405.125	2	0	1	-857.813	1	0	1	-.186	1	0	1
4			min	9752.881	1	-105.319	3	-948.788	2	0	3	-.196	2	-.323	3
5		3	max	13442.747	2	0	1	22.529	2	0	1	-.3	1	0	1
6			min	12414.117	1	-117.236	3	16.841	6	-.001	2	-.325	2	-.225	3
7		4	max	10124.238	2	0	1	992.654	2	0	1	-.142	1	0	1
8			min	9494.297	1	-116.288	3	894.925	6	-.002	2	-.148	2	-.122	3
9		5	max	482.919	6	0	1	1316.028	2	.004	3	.112	2	0	2
10			min	450.12	1	-132.243	3	1253.654	1	-.002	2	.104	6	-.018	3
11	M2	1	max	42.077	6	0	1	18.598	6	0	1	0	1	0	1
12			min	-79.499	2	-161.229	3	10.128	1	0	1	0	1	-.531	3
13		2	max	42.077	6	0	1	18.598	6	0	1	.016	6	0	1
14			min	-79.499	2	-161.229	3	10.128	1	0	1	.009	1	-.39	3
15		3	max	42.077	6	0	1	18.544	6	0	1	.033	6	.002	2
16			min	-79.499	2	-161.229	3	10.128	1	0	1	.018	1	-.249	3
17		4	max	42.077	6	2.988	2	18.43	6	0	1	.049	6	.003	2
18			min	-79.499	2	-161.229	3	10.128	1	0	1	.027	1	-.108	3
19		5	max	42.077	6	2.988	2	18.43	6	0	1	.065	6	.033	3
20			min	-79.499	2	-161.229	3	10.128	1	0	1	.035	1	0	1
21	M3	1	max	1310.556	2	0	1	-437.341	1	0	2	.112	2	.002	2
22			min	1248.725	1	-137.761	3	-469.919	6	-.018	3	.104	6	-.004	3
23		2	max	2559.012	2	0	1	-58.413	6	0	1	.146	2	.078	3
24			min	2426.95	6	-67.282	3	-80.027	2	-.033	3	.132	6	0	1
25		3	max	2559.012	2	0	1	-58.413	6	0	1	.081	6	.117	3
26			min	2426.95	6	-52.062	4	-80.027	2	-.033	3	.071	1	0	1
27		4	max	2559.012	2	20.218	3	-58.413	6	0	1	.03	6	.136	4
28			min	2426.95	6	-52.062	4	-80.027	2	-.033	3	-.006	1	0	1
29		5	max	2559.012	2	63.968	3	-58.413	6	0	1	-.021	6	.182	4
30			min	2426.95	6	-52.062	4	-80.027	2	-.033	3	-.064	2	0	1
31	M4	1	max	2569.868	2	54.381	4	-.012	1	.01	4	.043	6	.182	4

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	
32		min	2442.63	1	-100	5	-100.009	6	0	3	-.026	2	0	1	
33	2	max	2569.868	2	54.381	4	-.012	1	.01	4	-.024	1	.14	5	
34		min	2442.63	1	-100	5	-100.009	6	0	3	-.044	6	0	1	
35	3	max	2569.868	2	100	5	99.991	6	.01	4	-.024	1	.228	5	
36		min	2442.63	1	0	1	-.018	2	0	3	-.132	6	0	1	
37	4	max	2569.868	2	100	5	99.991	6	.01	4	-.024	1	.14	5	
38		min	2442.63	1	0	1	-.018	2	0	3	-.044	6	0	1	
39	5	max	2569.868	2	100	5	99.991	6	.01	4	.043	6	.082	3	
40		min	2442.63	1	0	1	-.018	2	0	3	-.026	2	-.008	4	
41	M5	1	max	79.292	2	7.65	4	2489.125	2	0	1	0	.009	4	
42		min	57.651	6	-101.282	3	2368.336	1	0	1	0	1	-.439	3	
43	2	max	10405.547	2	7.261	4	948.958	2	0	3	.196	2	.002	4	
44		min	9753.247	1	-105.316	3	857.93	1	0	4	.186	1	-.323	3	
45	3	max	13444.387	2	7.252	4	-16.601	6	.001	3	.325	2	0	2	
46		min	12415.279	1	-117.236	3	-22.336	2	0	4	.3	1	-.225	3	
47	4	max	10126.833	2	7.037	4	-894.803	6	.001	3	.148	2	0	1	
48		min	9496.048	1	-116.289	3	-992.569	2	0	4	.142	1	-.122	3	
49	5	max	484.235	6	0	1	-1253.962	1	0	1	-1.104	6	0	1	
50		min	450.804	1	-132.242	3	-1316.493	2	-.004	3	-.111	2	-.018	3	
51	M6	1	max	42.339	6	0	1	-10.062	1	0	1	0	1	0	1
52		min	-79.311	2	-161.229	3	-18.413	6	0	1	0	1	-.531	3	
53	2	max	42.339	6	0	1	-10.062	1	0	1	-.009	1	0	1	
54		min	-79.311	2	-161.229	3	-18.413	6	0	1	-.016	6	-.39	3	
55	3	max	42.339	6	0	1	-10.062	1	0	1	-.018	1	0	1	
56		min	-79.311	2	-161.229	3	-18.413	6	0	1	-.032	6	-.249	3	
57	4	max	42.339	6	0	1	-10.062	1	0	1	-.026	1	0	1	
58		min	-79.311	2	-161.229	3	-18.413	6	0	1	-.048	6	-.108	3	
59	5	max	42.339	6	0	1	-10.062	1	0	1	-.035	1	.033	3	
60		min	-79.311	2	-161.229	3	-18.413	6	0	1	-.064	6	0	1	
61	M7	1	max	2559.111	2	15.14	5	79.8	2	.033	3	-.021	6	.082	3
62		min	2427.054	6	-63.968	3	58.129	6	0	1	-.064	2	-.008	4	
63	2	max	2559.111	2	15.14	5	79.8	2	.033	3	.03	6	.119	3	
64		min	2427.054	6	-20.218	3	58.129	6	0	1	.006	1	-.006	4	
65	3	max	2559.111	2	23.532	3	79.8	2	.033	3	.081	6	.117	3	
66		min	2427.054	6	-2.281	4	58.129	6	0	1	.071	1	-.004	4	
67	4	max	2559.111	2	67.282	3	79.8	2	.033	3	.146	2	.078	3	
68		min	2427.054	6	-2.281	4	58.129	6	0	1	.132	6	-.002	4	
69	5	max	1311.02	2	137.761	3	471.267	6	.018	3	.111	2	0	1	
70		min	1249.032	1	0	1	438.04	1	0	1	-.104	6	-.004	3	
71	M8	1	max	-4932.219	1	662.493	2	6.342	3	0	3	0	4	-.084	1
72		min	-5201.518	2	623.13	1	-.525	4	0	4	-.028	3	-.088	2	
73	2	max	-11179.673	1	295.094	2	8.305	3	0	3	0	2	-.347	1	
74		min	-12016.963	2	254.915	1	-.55	4	0	4	-.023	3	-.371	2	
75	3	max	-11984.919	1	-140.416	6	8.969	3	0	3	0	2	-.422	1	
76		min	-12956.506	2	-163.595	2	-.543	4	0	4	-.016	3	-.457	2	
77	4	max	-7247.631	1	-521.692	6	8.455	3	0	3	0	1	-.299	1	
78		min	-7675.93	2	-564.873	2	-.527	4	0	4	-.009	3	-.317	2	
79	5	max	-376.652	1	-1167.06	6	0	1	0	1	0	1	.151	2	
80		min	-426.583	6	-1248.092	2	-29.729	3	0	5	-.015	3	.13	6	
81	M9	1	max	-4932.114	1	662.454	2	0	1	0	.028	3	-.084	1	
82		min	-5201.431	2	623.099	1	-6.342	3	0	3	0	1	-.088	2	
83	2	max	-11178.907	1	295.01	2	0	1	0	1	.023	3	-.347	1	
84		min	-12015.94	2	254.86	1	-8.304	3	0	3	0	1	-.371	2	

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
85	3	max	-11983.37	1	-140.513	6	6.588	2	0	1	.016	3	-.421	1
86		min	-12954.26	2	-163.672	2	-8.968	3	0	2	0	2	-.457	2
87	4	max	-7245.666	1	-521.718	6	9.56	2	0	1	.009	3	-.299	1
88		min	-7672.987	2	-564.888	2	-8.453	3	0	2	0	2	-.317	2
89	5	max	-375.819	1	-1167.538	6	29.731	3	0	5	.015	3	.151	2
90		min	-424.987	6	-1248.456	2	0	1	0	2	0	1	.13	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	RE3x1	.789	19.25	2	.046	0	z	21301.587	89820.359	1.871	5.614	2...	H1-1a
2	M2	HSS3X1X2	.319	0	3	.016	22.75	y	11230.157	23169.181	.748	1.673	1...	H1-1b
3	M3	HSS3X1X2	.473	1.75	2	.208	0	z	11230.351	23169.181	.748	1.673	1...	H1-1a
4	M4	HSS3X1X2	.374	.21	6	.040	0	z	11230.351	23169.181	.748	1.673	1	H1-1a
5	M5	RE3x1	.787	19.25	2	.046	0	z	21301.587	89820.359	1.871	5.614	2...	H1-1a
6	M6	HSS3X1X2	.319	0	3	.016	0	y	11230.157	23169.181	.748	1.673	1...	H1-1b
7	M7	HSS3X1X2	.470	40.25	2	.208	40.688	z	11230.351	23169.181	.748	1.673	1...	H1-1a
8	M8	WT2x3.4	.885	16.159	2	.139	35.145	y	25105.889	28068.862	.674	.985	1	H1-1a
9	M9	WT2x3.4	.885	16.159	2	.140	35.145	y	25105.889	28068.862	.674	.985	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 (1/E5 F)	Density[k/ft^3]	Yield[ksi]
1	A500Gr42	29000	11154	.3	.65	.49	46
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	POST	TU3x1x2	Column	Tube	SS316	Typical	.902	.149	.918	.41
3	EPOST	RE3x1	Column	Tube	LDX2101	Typical	3	.25	2.25	.79
4	TEE	WT2x3.4	Column	W Tee	LDX2101	Typical	.938	.169	.348	.018

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1/E5 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				24				
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			
9		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	LDX2101	Typical
2	M2	N3	N4		90	POST	Column	Tube	SS316	Typical
3	M3	N2	N4		90	RAIL	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	RAIL	Beam	Tube	SS316	Typical
8	M8	N58	N10		180	TEE	Column	W Tee	LDX2101	Typical
9	M9	N57	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	N39	N41			LINK	Beam	None	GEN_RIGID	Typical
25	M25	N42	N40			LINK	Beam	None	GEN_RIGID	Typical
26	M26	N43	N45			LINK	Beam	None	GEN_RIGID	Typical
27	M27	N46	N44			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
30	M30	N55	N57			LINK	Beam	None	GEN_RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
31	M31	N58	N56			LINK	Beam	None	GEN_RIGID	Typical
32	M32	N59	N61			LINK	Beam	None	GEN_RIGID	Typical
33	M33	N62	N60			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	-2363.162	1	85.301	2	0	1	0	1	0	1	0	1
2		min	-2483.526	2	63.39	6	-100.964	3	-436	3	0	1	0	1
3	N3	max	19.252	6	36.604	6	0	1	0	1	0	1	0	1
4		min	10.86	1	-85.301	2	-161.529	3	-536	3	0	1	0	1
5	N5	max	2483.548	2	85.292	2	7.438	4	.009	4	0	1	0	1
6		min	2363.184	4	63.311	6	-100.97	3	-436	3	0	1	0	1
7	N7	max	-10.856	4	36.694	6	0	1	0	1	0	1	0	1
8		min	-19.231	6	-85.293	2	-161.53	3	-536	3	0	1	0	1
9	Totals:	max	.027	2	199.999	6	0	1						
10		min	.025	1	0	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	85.301	2	0	1	-2364.213	1	0	1	0	1	0	1
2			min	63.39	6	-100.981	3	-2484.727	2	0	1	0	1	-436	3
3		2	max	10395.897	2	0	1	-851.546	1	0	1	-186	1	0	1
4			min	9743.772	1	-105.309	3	-942.054	2	0	3	-197	2	-32	3
5		3	max	13419.897	2	0	1	25.651	2	0	1	-299	1	0	1
6			min	12391.672	1	-117.476	3	19.789	6	-0.001	2	-324	2	-222	3
7		4	max	10074.872	2	0	1	991.748	2	0	1	-141	4	0	1
8			min	9447.512	1	-116.401	3	894.19	6	-0.002	2	-147	2	-119	3
9		5	max	481.591	6	0	1	1309.619	2	.003	5	.117	2	0	2
10			min	446.809	4	-128.225	3	1247.6	4	-0.002	2	.109	6	-0.16	3
11	M2	1	max	36.604	6	0	1	19.317	6	0	1	0	1	0	1
12			min	-85.301	2	-161.529	3	10.86	1	0	1	0	1	-536	3
13		2	max	36.604	6	0	1	19.317	6	0	1	.017	6	0	1
14			min	-85.301	2	-161.529	3	10.86	1	0	1	.01	1	-395	3
15		3	max	36.604	6	0	1	19.27	6	0	1	.034	6	.002	2
16			min	-85.301	2	-161.529	3	10.86	1	0	1	.019	1	-253	3
17		4	max	36.604	6	2.892	2	19.171	6	0	1	.051	6	.003	2
18			min	-85.301	2	-161.529	3	10.86	1	0	1	.029	1	-112	3
19		5	max	36.604	6	2.892	2	19.171	6	0	1	.067	6	.029	3
20			min	-85.301	2	-161.529	3	10.86	1	0	1	.038	1	0	1
21	M3	1	max	1304.042	2	0	1	-433.688	4	0	2	.117	2	.002	2
22			min	1242.565	4	-132.998	3	-468.251	6	-0.016	3	.109	6	-0.003	5
23		2	max	2563.666	2	0	1	-63.885	6	0	1	.157	2	.077	3
24			min	2431.325	6	-65.957	3	-85.827	2	-0.029	3	.142	6	0	1
25		3	max	2563.666	2	0	1	-63.885	6	0	1	.086	6	.115	3
26			min	2431.325	6	-51.667	4	-85.827	2	-0.029	3	.076	1	0	1
27		4	max	2563.666	2	21.543	3	-63.885	6	0	1	.03	6	.135	4
28			min	2431.325	6	-51.667	4	-85.827	2	-0.029	3	.006	4	0	1
29		5	max	2563.666	2	65.293	3	-63.885	6	0	1	-0.026	6	.181	4
30			min	2431.325	6	-51.667	4	-85.827	2	-0.029	3	-0.069	2	0	1
31	M4	1	max	2575.292	2	54.158	4	0	1	.01	4	.042	6	.181	4

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	
32		min	2447.69	1	-100	5	-99.995	6	0	3	-.028	2	0	1	
33	2	max	2575.292	2	54.158	4	0	1	.01	4	-.026	4	.14	5	
34		min	2447.69	1	-100	5	-99.995	6	0	3	-.046	6	0	1	
35	3	max	2575.292	2	100	5	100.005	6	.01	4	-.026	1	.227	5	
36		min	2447.69	1	0	1	0	2	0	3	-.133	6	0	1	
37	4	max	2575.292	2	100	5	100.005	6	.01	4	-.026	1	.14	5	
38		min	2447.69	1	0	1	0	2	0	3	-.046	6	0	1	
39	5	max	2575.292	2	100	5	100.005	6	.01	4	.042	6	.077	3	
40		min	2447.69	1	0	1	0	2	0	3	-.028	2	-.009	4	
41	M5	1	max	85.292	2	7.438	4	2484.75	2	0	1	0	.009	4	
42		min	63.311	6	-100.987	3	2364.235	4	0	1	0	1	-.436	3	
43	2	max	10395.997	2	7.092	4	942.066	2	0	3	.197	2	.003	4	
44		min	9743.864	1	-105.315	3	851.555	1	0	4	.186	1	-.32	3	
45	3	max	13420.016	2	7.117	4	-19.725	6	.001	3	.324	2	0	2	
46		min	12391.766	1	-117.48	3	-25.651	2	0	4	.299	1	-.222	3	
47	4	max	10074.997	2	6.907	4	-894.149	6	.001	3	.147	2	0	1	
48		min	9447.598	1	-116.402	3	-991.747	2	0	4	.141	1	-.119	3	
49	5	max	482.011	6	0	1	-1247.615	1	0	1	-.109	6	0	1	
50		min	446.846	1	-128.223	3	-1309.639	2	-.003	5	-.117	2	-.016	3	
51	M6	1	max	36.694	6	0	1	-10.856	4	0	1	0	1	0	1
52		min	-85.293	2	-161.53	3	-19.228	6	0	1	0	1	-.536	3	
53	2	max	36.694	6	0	1	-10.856	4	0	1	-.009	4	0	1	
54		min	-85.293	2	-161.53	3	-19.228	6	0	1	-.017	6	-.395	3	
55	3	max	36.694	6	0	1	-10.856	4	0	1	-.019	4	0	1	
56		min	-85.293	2	-161.53	3	-19.228	6	0	1	-.034	6	-.253	3	
57	4	max	36.694	6	0	1	-10.856	4	0	1	-.028	4	0	1	
58		min	-85.293	2	-161.53	3	-19.228	6	0	1	-.05	6	-.112	3	
59	5	max	36.694	6	0	1	-10.856	4	0	1	-.038	4	.029	3	
60		min	-85.293	2	-161.53	3	-19.228	6	0	1	-.067	6	0	1	
61	M7	1	max	2563.67	2	14.979	5	85.817	2	.029	3	-.026	6	.077	3
62		min	2431.345	6	-65.293	3	63.804	6	0	1	-.069	2	-.009	4	
63	2	max	2563.67	2	14.979	5	85.817	2	.029	3	.03	6	.115	3	
64		min	2431.345	6	-21.543	3	63.804	6	0	1	.006	1	-.007	4	
65	3	max	2563.67	2	22.207	3	85.817	2	.029	3	.086	6	.115	3	
66		min	2431.345	6	-2.453	4	63.804	6	0	1	.076	4	-.005	4	
67	4	max	2563.67	2	65.957	3	85.817	2	.029	3	.157	2	.077	3	
68		min	2431.345	6	-2.453	4	63.804	6	0	1	.142	6	-.002	4	
69	5	max	1304.062	2	132.995	3	468.679	6	.016	3	.117	2	0	1	
70		min	1242.58	1	0	1	433.726	1	0	1	.109	6	-.003	5	
71	M8	1	max	-4923.886	1	670.071	2	6.343	3	0	3	0	4	-.083	4
72		min	-5192.684	2	630.236	1	-.509	4	0	4	-.028	3	-.087	2	
73	2	max	-11161.14	1	297.974	2	8.313	3	0	3	0	4	-.346	1	
74		min	-11997.788	2	257.304	1	-.538	4	0	4	-.022	3	-.37	2	
75	3	max	-11948.469	1	-143.955	6	8.989	3	0	3	0	2	-.421	1	
76		min	-12918.078	2	-167.579	2	-.533	4	0	4	-.015	3	-.456	2	
77	4	max	-7184.659	1	-530.22	6	8.453	3	0	3	0	1	-.297	1	
78		min	-7608.271	2	-574.1	2	-.516	4	0	4	-.008	3	-.316	2	
79	5	max	-367.119	1	-1178.284	6	0	1	0	1	0	1	.16	2	
80		min	-418.7	6	-1259.609	2	-27.047	5	0	5	-.013	3	.139	6	
81	M9	1	max	-4923.838	1	670.063	2	0	1	0	.028	3	-.083	4	
82		min	-5192.634	2	630.229	1	-6.342	3	0	3	0	1	-.087	2	
83	2	max	-11161.032	1	297.972	2	0	1	0	1	.022	3	-.346	1	
84		min	-11997.663	2	257.304	1	-8.312	3	0	3	0	1	-.37	2	

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
85	3	max	-11948.371	1	-143.983	6	6.518	2	0	1	.015	3	-.421	1
86		min	-12917.946	2	-167.581	2	-8.987	3	0	2	0	2	-.456	2
87	4	max	-7184.564	4	-530.231	6	9.469	2	0	1	.008	3	-.297	1
88		min	-7608.138	2	-574.1	2	-8.451	3	0	2	0	2	-.316	2
89	5	max	-367.075	4	-1178.429	6	27.048	5	0	5	.013	3	.16	2
90		min	-418.2	6	-1259.624	2	0	1	0	2	0	1	.139	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	RE3x1	.784	19.25	2	.038	0	z	2	20567.049	107784.431	2.246	6.737	2.... H1-1a
2	M2	TU3x1x2	.448	0	3	.024	16.188	y	3	9977.739	16210.778	.526	1.202	1.... H1-1b
3	M3	TU3x1x2	.630	1.75	2	.308	0	z	3	9977.855	16210.778	.526	1.202	1.... H1-1a
4	M4	TU3x1x2	.471	21	6	.060	21	z	6	9977.855	16210.778	.526	1.202	1 H1-1a
5	M5	RE3x1	.782	19.25	2	.038	0	z	2	20567.049	107784.431	2.246	6.737	2.... H1-1a
6	M6	TU3x1x2	.448	0	3	.024	0	y	3	9977.739	16210.778	.526	1.202	1.... H1-1b
7	M7	TU3x1x2	.627	40.25	2	.308	40.688	z	3	9977.855	16210.778	.526	1.202	1.... H1-1a
8	M8	WT2x3.4	.736	16.159	2	.117	35.145	y	2	29383.187	33682.635	.809	1.182	1 H1-1a
9	M9	WT2x3.4	.736	16.159	2	.117	35.145	y	2	29383.187	33682.635	.809	1.182	1 H1-1a

*** End of Calculations ***