FULLERTON
ENGINEERING · DESIGN

Fullerton Engineering Consultants, Inc.
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June 30, 2016

RE:	**AT&T LTE 2C**
Prepared For:	Smartlink / AT&T
Site Number:	CTL05702
FA Location:	10070913
Site Name:	ASHFORD SOUTHEAST
Site Address:	142 Fitts Road Ashford, CT 06278

To Whom It May Concern,

This structural assessment is in regards to the adequacy of the existing low profile platform, for the AT&T LTE 2C project. The purpose was to determine conformance of existing mounting structure under 2003 International Building Code and the industry standard ANSI/TIA-222-F (Structural Standards for Steel Antenna Towers and Antenna Supporting Structures).

Based on collected information via a site visit dated 05/10/2016, technical data of the proposed equipment, structural calculations and engineering judgment, existing low profile platform is **adequate** to support the proposed installation for the above referenced program provided that the following modifications are installed:

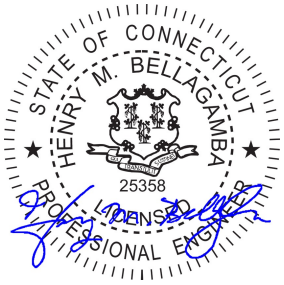
- Addition of new handrail. For installation details see latest construction drawings prepared by Fullerton Engineering.

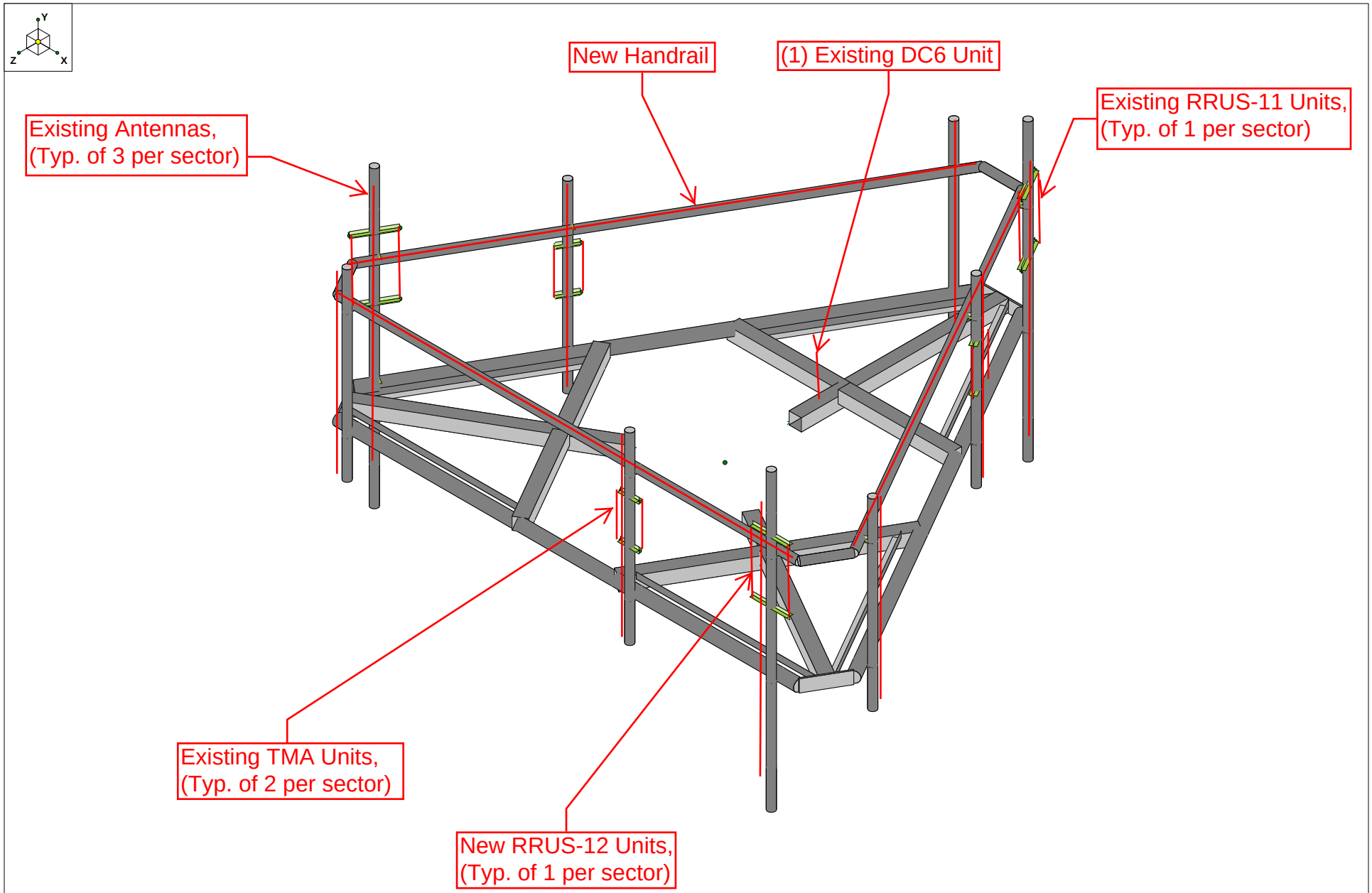
This PE certification completed by Fullerton Engineering Consultants is inclusive of the existing antenna mounting structure that will support the existing and proposed loading provided by the client.

This certification assumes that all the existing structural members of the existing antenna mounting structure are in good condition and have not been altered from the manufacturer's original design. Prior to installation of new equipment, contractor shall inspect the condition of all relevant members and connectors. The contractor shall be responsible for the means and methods of construction.

Respectfully,

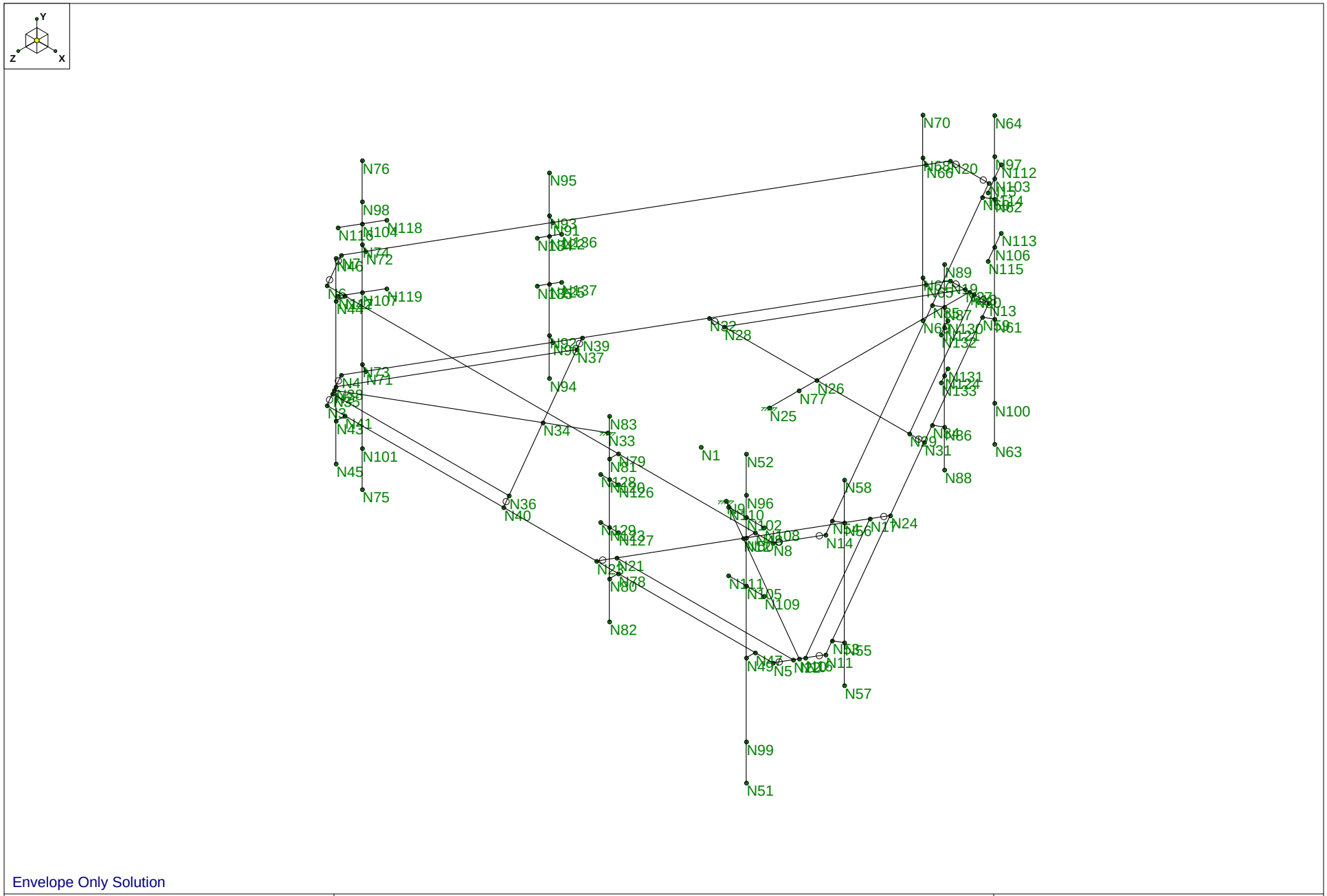
Henry M. Bellagamba, P.E.





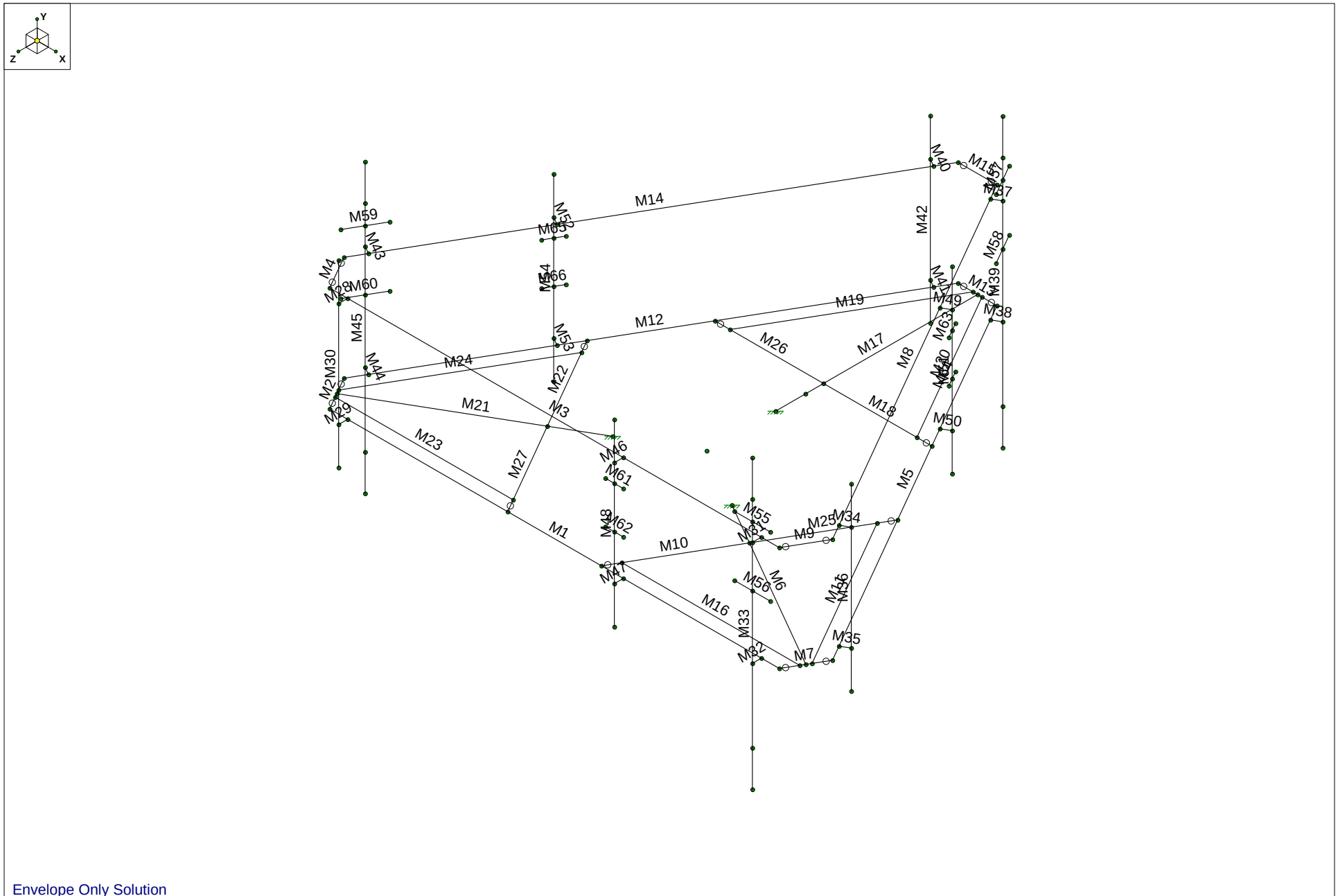
Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 1
THC		June 30, 2016 at 10:40 AM
CTL05702		CTL05702 - Mount Analysis.r3d



Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 2
THC		June 30, 2016 at 10:47 AM
CTL05702		CTL05702 - Mount Analysis.r3d



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Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 3
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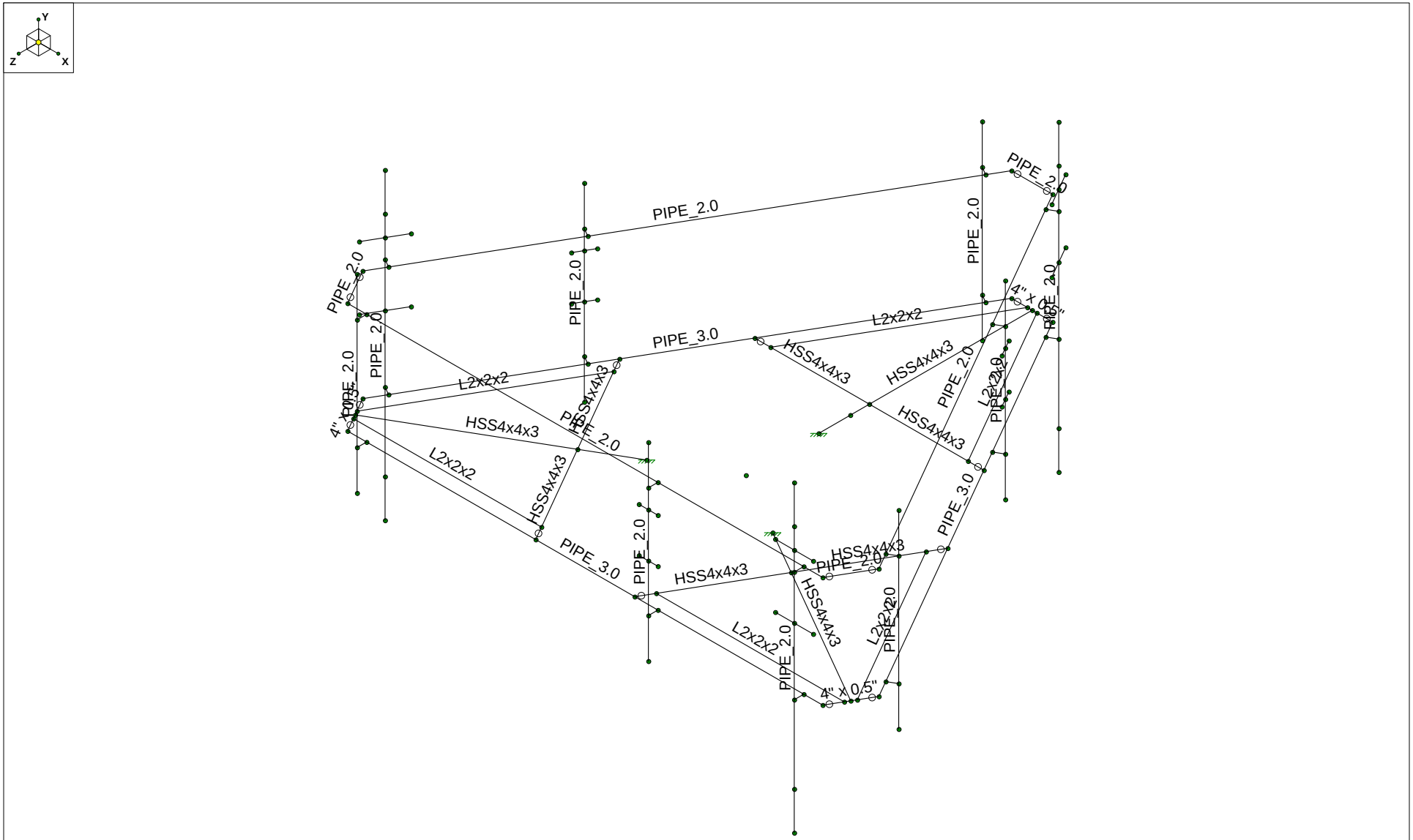

Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 4
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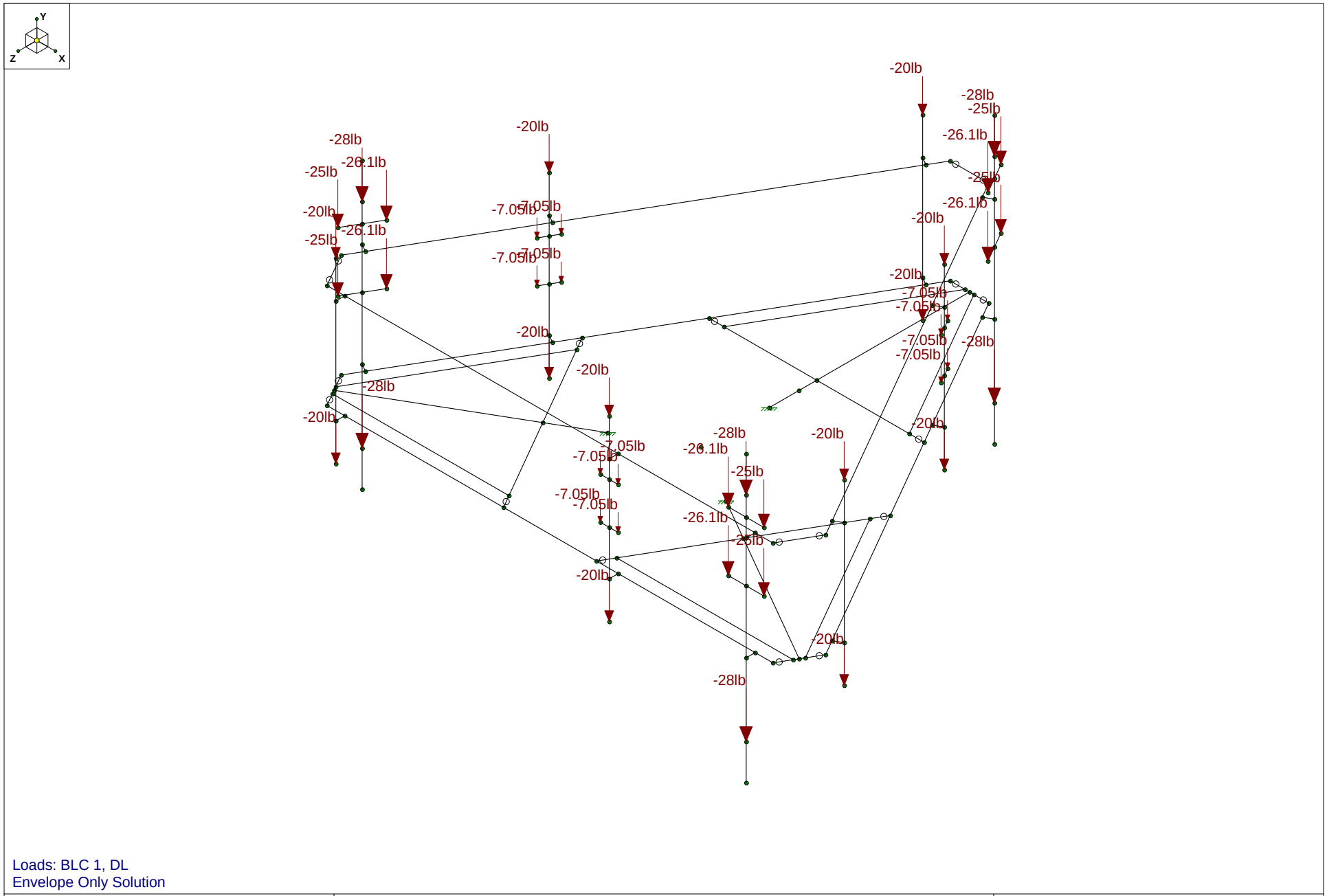
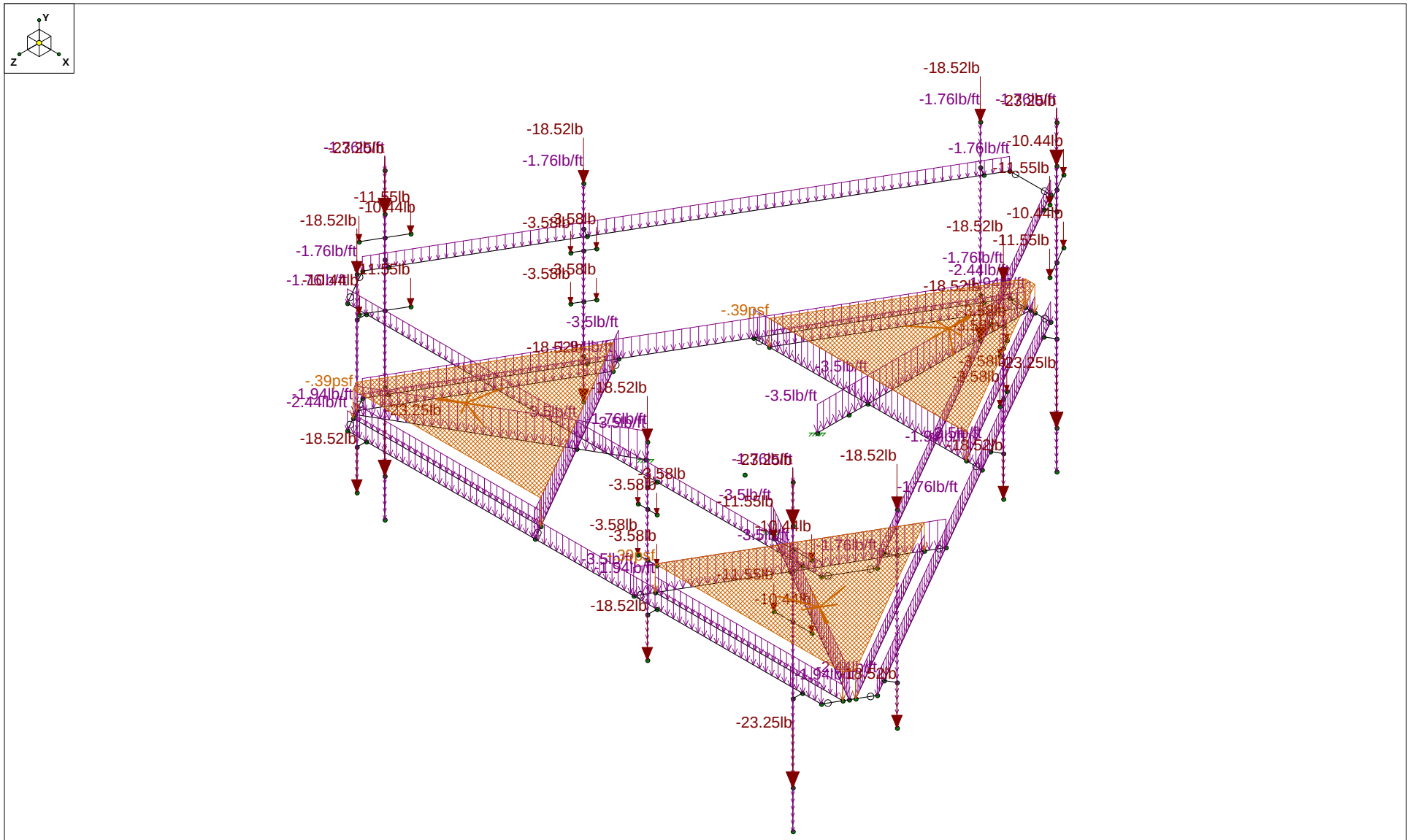


Loads: BLC 1, DL
Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 5
THC		June 30, 2016 at 10:50 AM
CTL05702		CTL05702 - Mount Analysis.r3d



Loads: BLC 2, DLi
Envelope Only Solution

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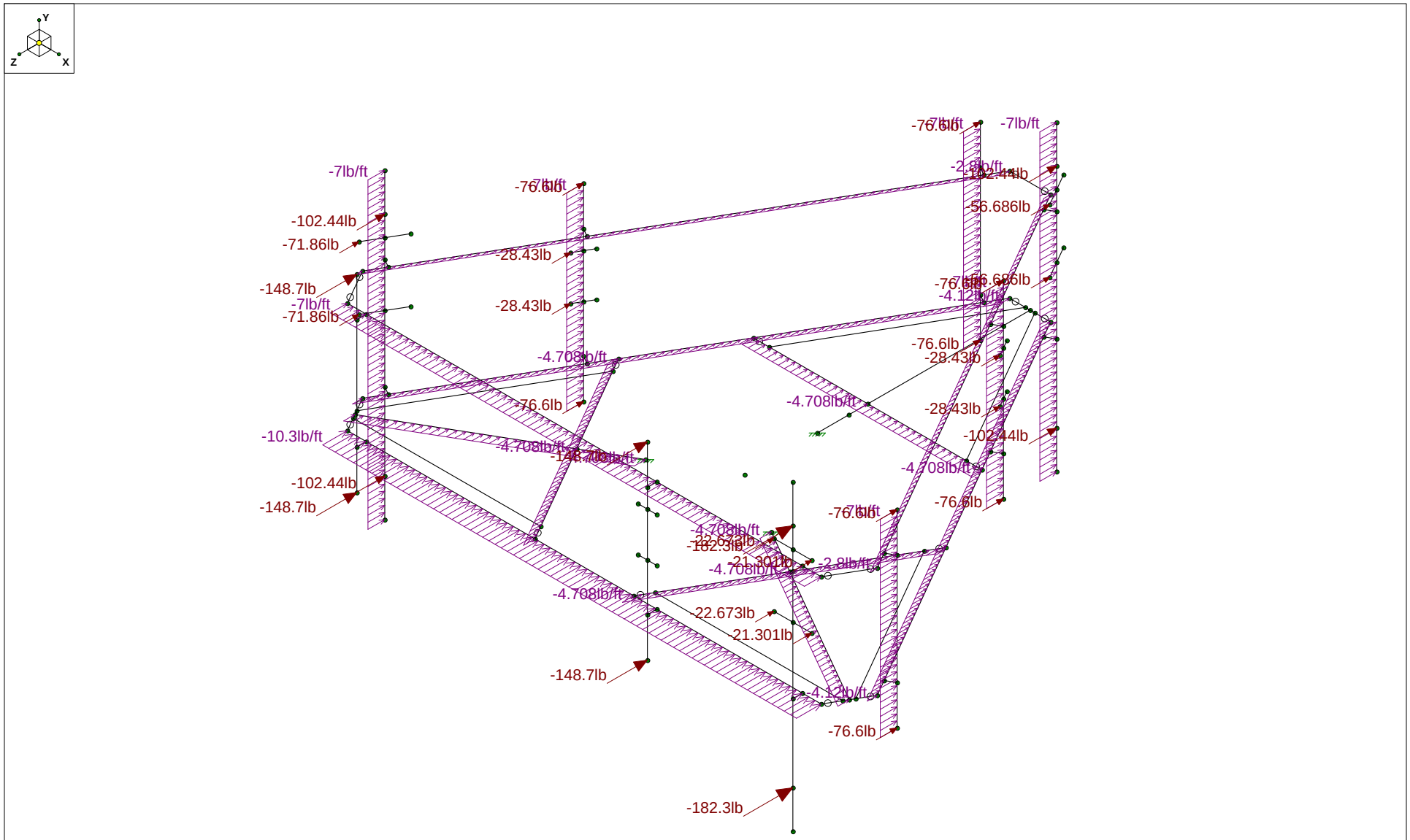

Loads: BLC 4, WLz-
Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 7
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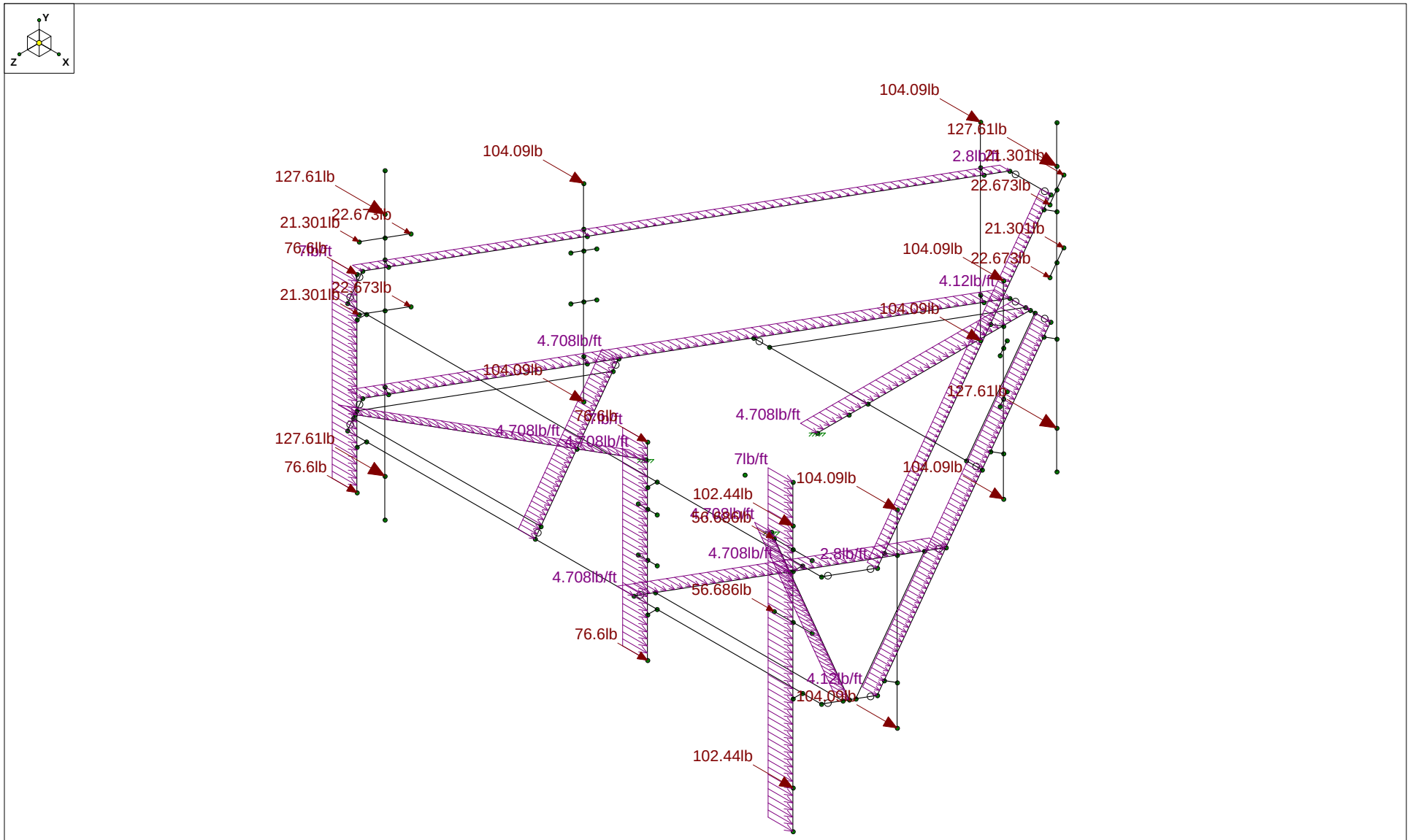
CTL05702		CTL05702 - Mount Analysis.r3d



Loads: BLC 5, WLx
Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 8
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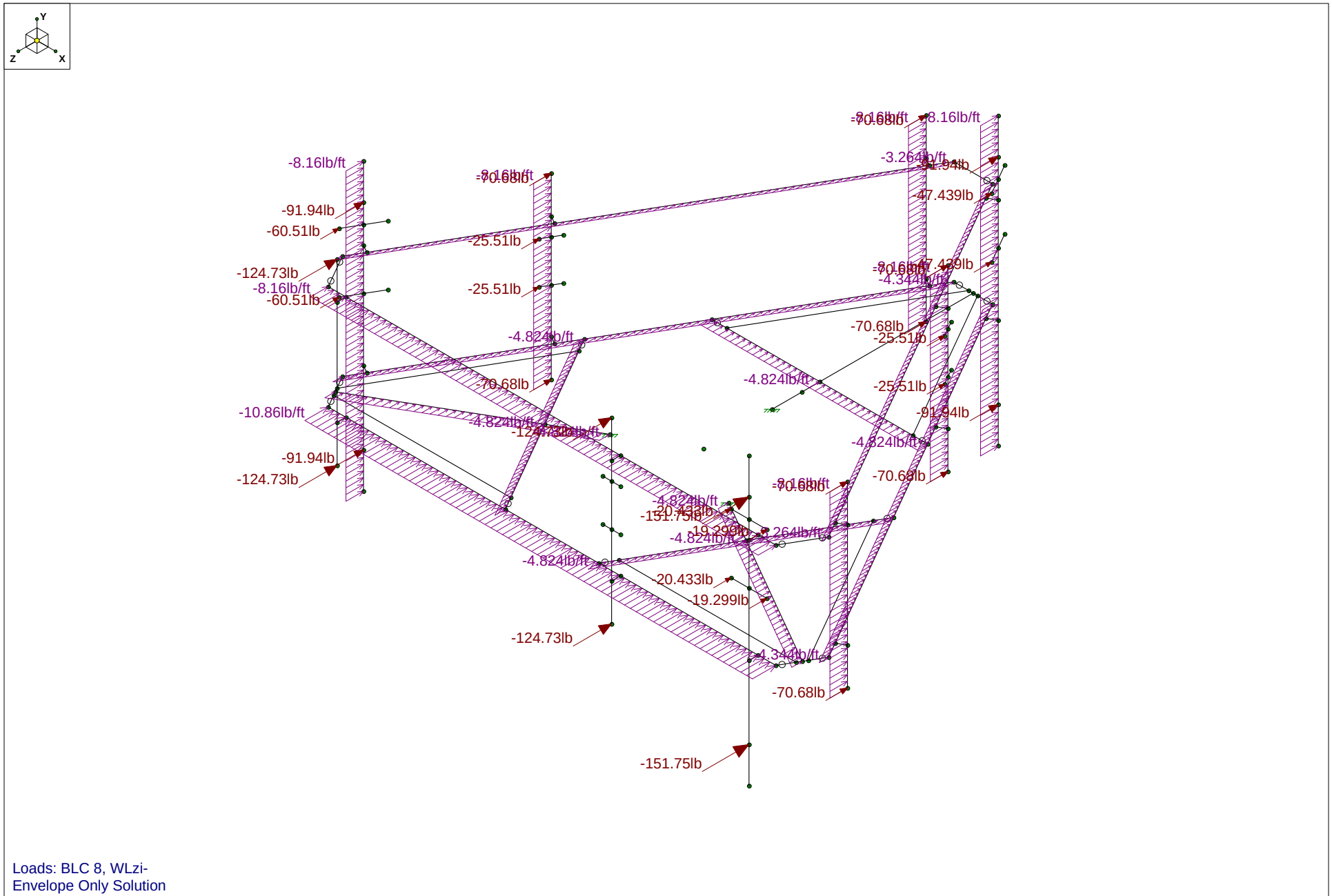
CTL05702		CTL05702 - Mount Analysis.r3d



Loads: BLC 8, WLzi-
Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 9
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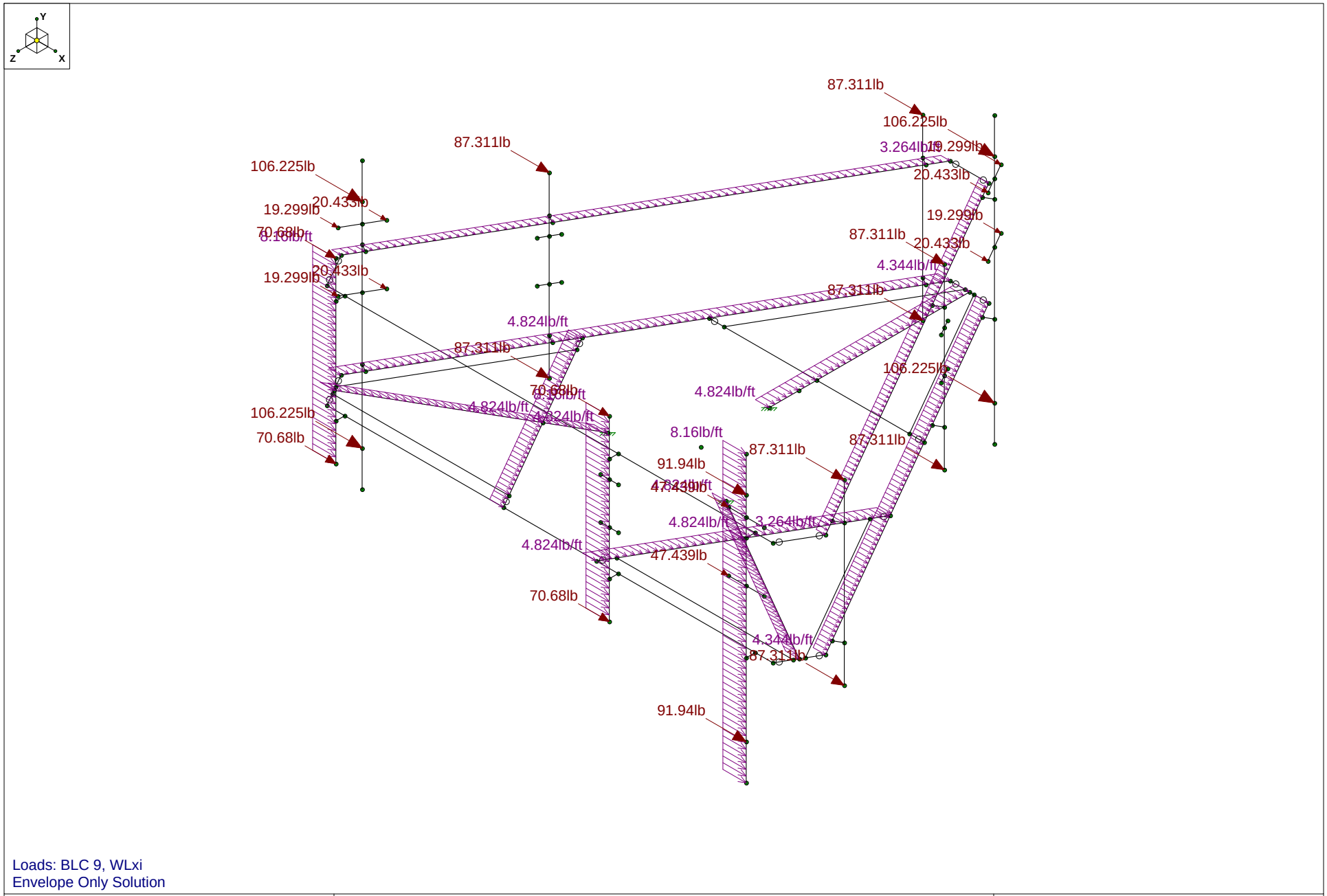

Loads: BLC 9, WLxi
Envelope Only Solution

Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 10
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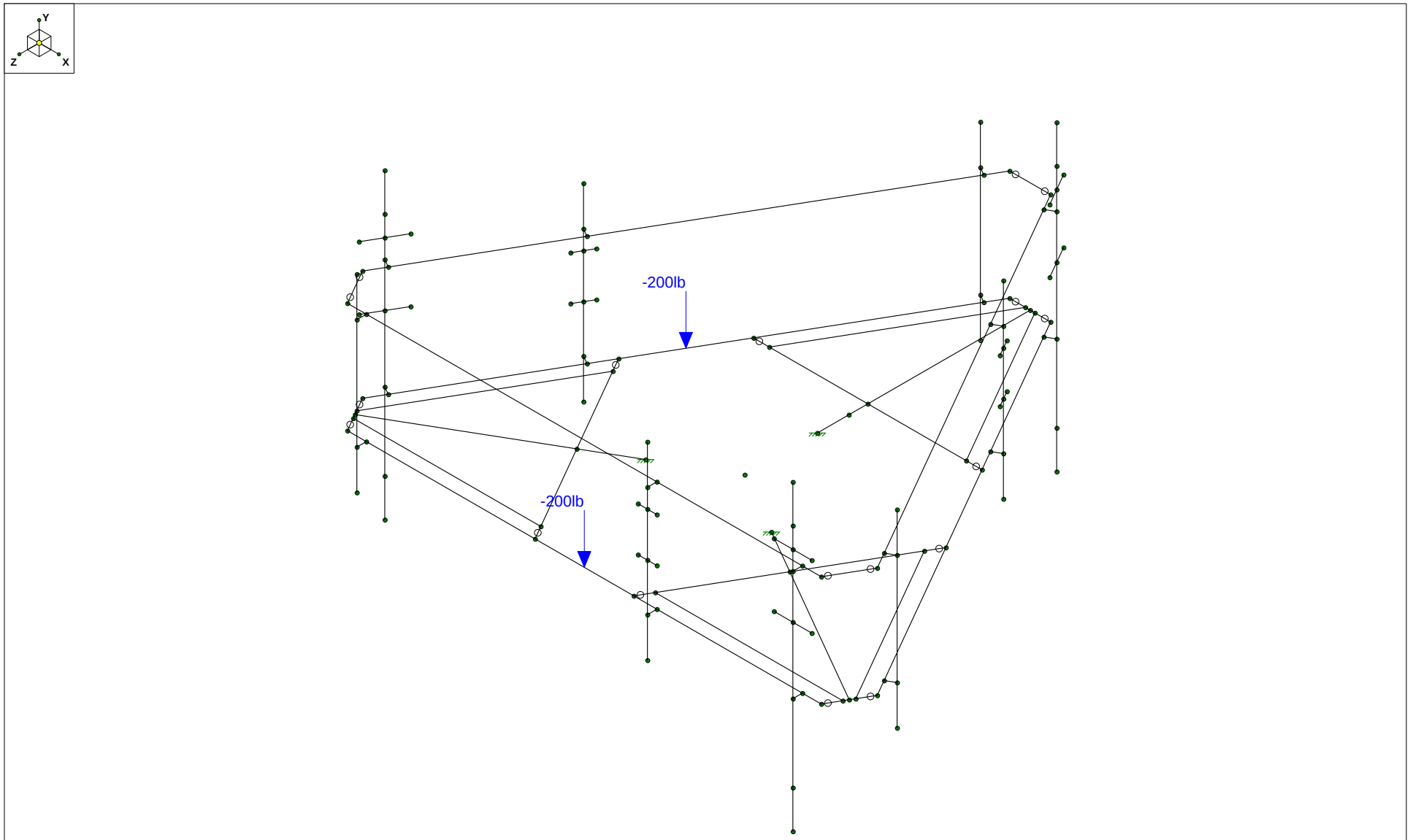
CTL05702		CTL05702 - Mount Analysis.r3d



Loads: BLC 11, LL
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Fullerton Engineering Consultants, ...	Mount Analysis-Low Profile Platform	SK - 11
THC		June 30, 2016 at 10:57 AM
CTL05702		CTL05702 - Mount Analysis.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 13th(360-05): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 13th(360-05): ASD
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2 DL+1.6 WLz		Y		1	1.2	3	1.6																
2	1.2 DL+ 1.6 WLz-		Y		1	1.2	4	1.6																
3	1.2 DL+1.6 WLx		Y		1	1.2	5	1.6																
4	1.2 DL+ 1.6 WLx-		Y		1	1.2	6	1.6																
5	1.2 DL+1 DLi + 1 WLzi		Y		1	1.2	2	1	7	1														
6	1.2 DL+1 DLi + 1 WLzi-		Y		1	1.2	2	1	8	1														
7	1.2 DL+1 DLi + 1 WLxi		Y		1	1.2	2	1	9	1														
8	1.2 DL+1 DLi + 1 WLxi-		Y		1	1.2	2	1	10	1														
9	0.9 DL + 1.6 WLz		Y		1	.9	3	1.6																
10	0.9 DL + 1.6 WLz-		Y		1	.9	4	1.6																
11	0.9 DL + 1.6 WLx		Y		1	.9	5	1.6																
12	0.9 DL + 1.6 WLx-		Y		1	.9	6	1.6																
13	1.2 DL + 1.6 LL		Y		1	1.2	11	1.6																
14			Y																					
15	DL+WLz	Yes	Y		1	1	3	1																
16	DL+WLz-	Yes	Y		1	1	4	1																
17	DL + WLx	Yes	Y		1	1	5	1																
18	DL + WLx-	Yes	Y		1	1	6	1																
19	DL + DLi + 0.75 WLzi	Yes	Y		1	1	2	1	7	.75														
20	DL + DLi + 0.75 WLzi-	Yes	Y		1	1	2	1	8	.75														
21	DL + DLi + 0.75 WLxi	Yes	Y		1	1	2	1	9	.75														
22	DL + DLi + 0.75 WLxi-	Yes	Y		1	1	2	1	10	.75														
23	DL + LL	Yes	Y		1	1	11	1																

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	DL	None		-1		42				
2	DLi	None				42		30	3	
3	WLz	None				30		20		
4	WLz-	None				30		20		
5	WLx	None				28		14		
6	WLx-	None				28		14		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
7	WLzi	None				30		20		
8	WLzi-	None				30		20		
9	WLxi	None				28		14		
10	WLxi-	None				28		14		
11	LL	None					2			
12	BLC 2 Transient Area Loads	None						90		

Envelope AISC 13th(360-05): ASD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[..	Dir	LC	Pnc/o...	Pnt/om...	Mnyy/o..	Mnzz/o..	Cb	Eqn
1	M48	PIPE_2.0	.509	47.5	16	.068	47.5		18	16154....	21988....	1.281	1.281	1..	H1-1b
2	M36	PIPE_2.0	.496	47.5	16	.075	47.5		16	16154....	21988....	1.281	1.281	1..	H1-1b
3	M51	PIPE_2.0	.479	47.5	15	.085	47.5		16	16154....	21988....	1.281	1.281	1..	H1-1b
4	M54	PIPE_2.0	.469	47.5	16	.086	47.5		16	16154....	21988....	1.281	1.281	1..	H1-1b
5	M16	L2x2x2	.436	59.467	15	.013	0	z	16	3190.5...	10584....	.268	.519	2..	H2-1
6	M33	PIPE_2.0	.425	59	16	.086	59		17	9986.4...	21988....	1.281	1.281	3	H1-1b
7	M45	PIPE_2.0	.422	59	16	.103	59		16	9986.4...	21988....	1.281	1.281	2..	H1-1b
8	M14	PIPE_2.0	.420	143.99	16	.160	145....		16	4174.6...	21988....	1.281	1.281	3	H1-1b
9	M24	L2x2x2	.407	59.467	18	.009	59.4...	z	16	3190.5...	10584....	.268	.519	2..	H2-1
10	M17	HSS4x4x3	.394	0	20	.077	0	y	21	62569....	71065....	8.424	8.424	2..	H1-1b
11	M42	PIPE_2.0	.391	47.5	18	.091	12.5		16	16154....	21988....	1.281	1.281	1..	H1-1b
12	M30	PIPE_2.0	.387	47.5	17	.085	47.5		18	16154....	21988....	1.281	1.281	1..	H1-1b
13	M20	L2x2x2	.379	59.467	16	.011	0	z	18	3190.5...	10584....	.263	.518	2..	H2-1
14	M39	PIPE_2.0	.375	59	18	.098	59		16	9986.4...	21988....	1.281	1.281	1..	H1-1b
15	M23	L2x2x2	.374	0	15	.010	59.4...	z	16	3190.5...	10584....	.268	.517	2..	H2-1
16	M11	L2x2x2	.351	0	17	.009	0	z	16	3190.5...	10584....	.268	.516	2..	H2-1
17	M21	HSS4x4x3	.350	0	22	.077	0	y	20	62569....	71065....	8.424	8.424	2..	H1-1b
18	M3	PIPE_2.0	.346	143.99	18	.160	0		16	4174.6...	21988....	1.281	1.281	2..	H1-1b
19	M6	HSS4x4x3	.340	0	21	.079	0	y	19	62569....	71065....	8.424	8.424	2..	H1-1b
20	M19	L2x2x2	.334	0	16	.009	0	z	18	3190.5...	10584....	.263	.489	1..	H2-1
21	M8	PIPE_2.0	.311	6.26	16	.159	4.695		16	4174.6...	21988....	1.281	1.281	2..	H1-1b
22	M13	4" x 0.5"	.270	6.5	16	.331	4.875	y	18	28128....	43113....	.449	3.593	1..	H1-1b
23	M7	4" x 0.5"	.268	6.5	16	.382	4.875	y	16	28128....	43113....	.449	3.593	1..	H1-1b
24	M2	4" x 0.5"	.246	6.5	18	.327	8.125	y	16	28128....	43113....	.449	3.593	1..	H1-1b
25	M5	PIPE_3.0	.181	90.776	16	.151	90.7...		17	18822....	44622....	3.934	3.934	2..	H1-1b
26	M1	PIPE_3.0	.171	57.909	19	.178	90.7...		16	18822....	44622....	3.934	3.934	2..	H1-1b
27	M26	HSS4x4x3	.167	0	20	.096	31.3...	z	17	68505....	71065....	8.424	8.424	1..	H1-1b
28	M12	PIPE_3.0	.166	90.776	18	.158	90.7...		16	18822....	44622....	3.934	3.934	2..	H1-1b
29	M18	HSS4x4x3	.166	36.234	20	.095	0	z	17	68505....	71065....	8.424	8.424	1..	H1-1b
30	M10	HSS4x4x3	.164	36.234	19	.148	4.907	z	16	68505....	71065....	8.424	8.424	1..	H1-1b
31	M22	HSS4x4x3	.163	36.234	22	.106	4.907	z	18	68505....	71065....	8.424	8.424	1..	H1-1b
32	M25	HSS4x4x3	.155	0	21	.089	31.3...	z	18	68505....	71065....	8.424	8.424	1..	H1-1b
33	M27	HSS4x4x3	.150	0	19	.134	31.3...	z	16	68505....	71065....	8.424	8.424	1..	H1-1b
34	M4	PIPE_2.0	.087	5.146	16	.308	0		16	21672....	21988....	1.281	1.281	1..	H3-6
35	M9	PIPE_2.0	.076	5.281	16	.280	13		16	21672....	21988....	1.281	1.281	1..	H3-6
36	M15	PIPE_2.0	.070	5.281	17	.274	0		17	21672....	21988....	1.281	1.281	1..	H3-6

< 1.0 => Members are adequate