STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950A
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

March 10, 2021

Allison Hebel
Site Acquisition Specialist
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379

RE: **EM-CING-132-210216** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 151 Sand Hill Road, South Windsor, Connecticut.

Dear Ms. Hebel:

The Connecticut Siting Council (Council) is in receipt of your correspondence of March 9, 2021 submitted in response to the Council's March 9, 2021 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

s/ Melanie A. Bachman

Melanie A. Bachman
Executive Director

MAB/IN/emr

From: Allison Hebel <ahebel@clinellc.com>
Sent: Tuesday, March 9, 2021 2:52 PM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: RE: Council Incomplete Letter for EM-CING-132-210216 (151 Sand Hill Road, South Windsor)

Hi Evan,
See attached. Can you confirm that you received this signed and stamped MA?

Allison Hebel | Site Acquisition Consultant
750 West Center St. Suite 301 | West Bridgewater, MA 02379
Phone: 215.588.7035 Fax: 508.819.3017
ahebel@clinellc.com | www.centerlinecommunications.com

CENTERLINE COMMUNICATIONS
750 West Center Street, Suite 301
West Bridgewater, MA 02379
781.713.4725

Mount Analysis Report

Site Number	CT1139
FA Number	10035389
Site Name	South Windsor Sand Hill Rd
Project	LTE 4C/5C/6C/5G/BWE/RETRO
Pace ID	MRCTB048696, MRCTB048654, MRCTB048665, MRCTB048719, MRCTB048688, MRCTB048721
Site Location	151 Sand Hill Road South Windsor, CT 06074 41.8359919° N, 72.5519989° W
Design Codes	TIA-222-H Standards 2018 IBC ASCE 7-16 2018 CT State Building Code
Mount Centerline	170 ft.
Mount Classification	Platform with Handrails

	Stress Ratio	Overall Result
Existing Platform with Handrails	**59%**	**PASS**

Client:

at&t Mobility Corp.
55 Cochituate Road
Framingham, MA 01701

at&t

STATE OF CONNECTICUT
DEREK J. CREASER
No. 20551
LICENSED PROFESSIONAL ENGINEER

Digitally signed by: Derek J. Creaser, P.E.
DN: CN = Derek J. Creaser, P.E. email = dcreaser@clinellc.com C = US O = Centerline Communications OU = Director - A&E Services
Date: 2020.12.22 13:47:16 -05'00'

Date: 12/22/2020

Scope of Work:

Centerline Communications was authorized by AT&T to perform a mount analysis of the existing antenna mount to determine its capacity to support the proposed and existing AT&T equipment listed in this report. This mount was analyzed using RISA 3D v17.0.4.

Final Appurtenances Configuration:

Elevation (ft)	Position[1]	Azimuth (degrees)	Quantity	Appurtenance	Sector
170	MP1	40	1	QS66512-2 Antenna	Sector 1
170	MP3	40	1	HPA-65R-BUU-H6 Antenna	
170	**MP5**	**40**	**1**	**DMP65R-BU6DA Antenna**	
170	**R1**	**40**	**1**	**RRUS-E2 B29 RRH**	
170	**R1**	**40**	**1**	**8843 B2/B66A RRH**	
170	R4	40	1	RRUS-32 B30 RRH	
170	**R4**	**40**	**1**	**4449 B5/B12 RRH**	
170	MP2	40	1	DC6-48-60-18-8F Squid	
170	MP6	160	1	QS66512-2 Antenna	Sector 2
170	MP8	160	1	HPA-65R-BUU-H6 Antenna	
170	**MP10**	**160**	**1**	**DMP65R-BU6DA Antenna**	
170	**R2**	**160**	**1**	**RRUS-E2 B29 RRH**	
170	**R2**	**160**	**1**	**8843 B2/B66A RRH**	
170	R5	160	1	RRUS-32 B30 RRH	
170	**R5**	**160**	**1**	**4449 B5/B12 RRH**	
170	MP7	160	1	DC6-48-60-18-8F Squid	
170	MP11	280	1	QS66512-2 Antenna	Sector 3
170	MP12	280	1	HPA-65R-BUU-H6 Antenna	
170	**MP13**	**280**	**1**	**DMP65R-BU6DA Antenna**	
170	**R3**	**280**	**1**	**RRUS-E2 B29 RRH**	
170	**R3**	**280**	**1**	**8843 B2/B66A RRH**	
170	R6	280	1	RRUS-32 B30 RRH	
170	**R6**	**280**	**1**	**4449 B5/B12 RRH**	
170	**MP16**	**280**	**1**	**DC6-48-60-0-8F Squid**	

Notes:

1. MP represent Mount Pipe and R represent RRH mount.
2. Existing Appurtenance
3. **Proposed Appurtenance**

Design Criteria:

Design Codes:

TIA-222-H Standards
2018 IBC
ASCE 7-16
2018 CT State Building Code

Ultimate Wind Speed	118 mph
Wind Speed with Ice	50 mph
Ice Thickness	1.5 in.
Exposure Category	C
Topographic Method	Method 1, Cat. 1
Risk Category	II
Site Soil Class (Assumed)	D-Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_S	0.184 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.055 g
Short Period Site Coefficient, F_a	1.6
Long Period Site Coefficient, F_v	2.4

***Refer to calculations for additional design criteria.**

Conclusion:

The results of the analysis concluded that the existing AT&T mounts *are capable* to support the proposed and existing AT&T equipment loads upon completion of the modifications. Centerline Communications recommends the following:

- Install (1) 2" STD x 5.0' long mount pipe in all sectors.
- Install (1) Site Pro 1 Part #RRUDSM mount in all sectors.

	Stress Ratio	Overall Result
Existing Mount	**59%**	**PASS**

Reference Documents:

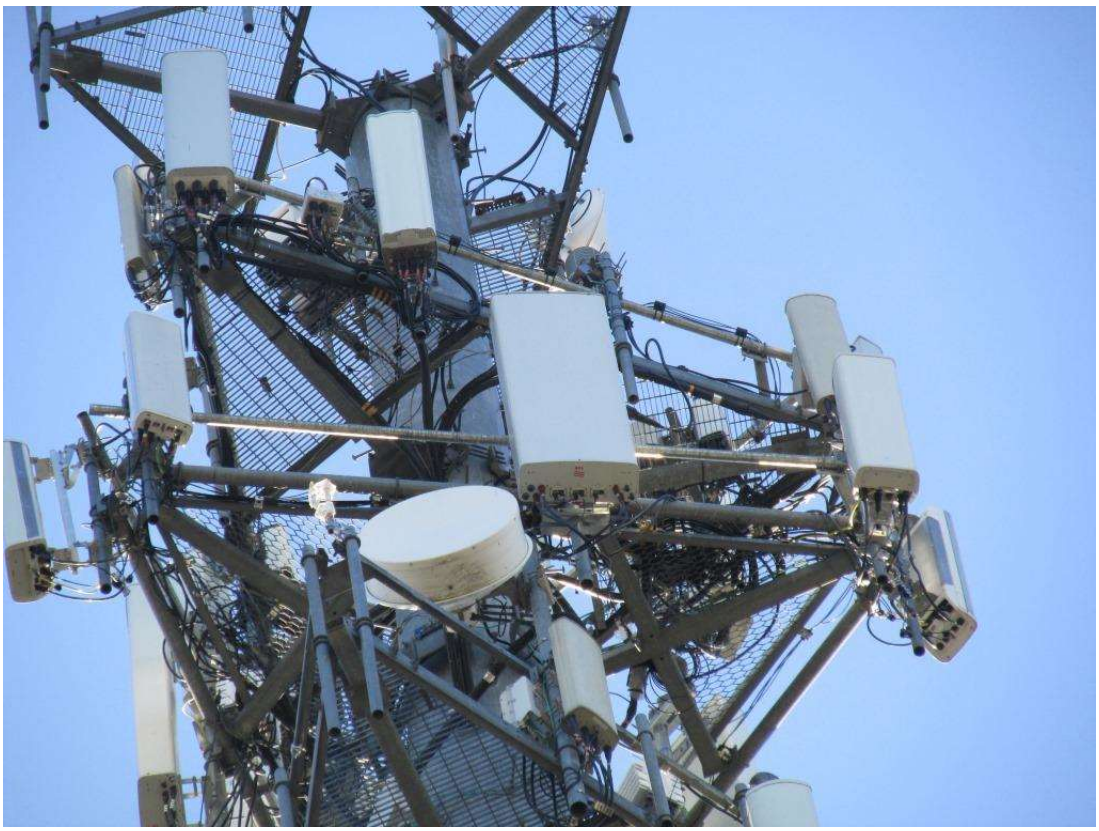
- AT&T RFDS ID #4093558 V2.0, dated 10/13/2020
- Structural Analysis by TES, dated 03/23/2018
- Mount Analysis by Centek Engineering, dated 05/02/2018
- Mount Mapping Report by Trylon, dated 11/30/2020

Assumptions and Limitations:

- The calculations performed by Centerline Communications are limited to the structural members in these calculations only.
- Structural calculations in this report do not check the adequacy of the supporting structure, other mounts, or coax mounting attachments.
- The calculation assumes all structural members to be in good condition i.e. no damage, rust or other defects.

Photos:

Alpha Sector



Beta Sector

Gamma Sector

Overall Tower

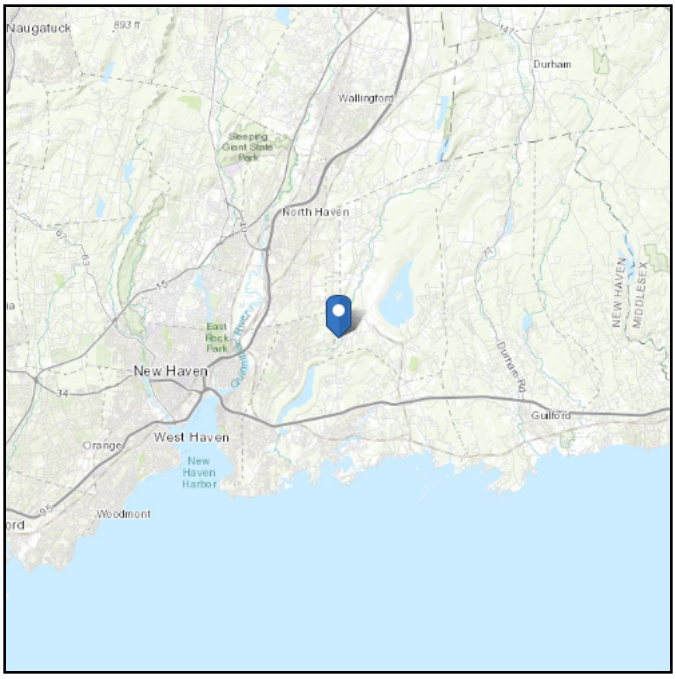
Design Calculations

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 163.63 ft (NAVD 88)
Latitude: 41.835992
Longitude: -72.551999



Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Wed Dec 16 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

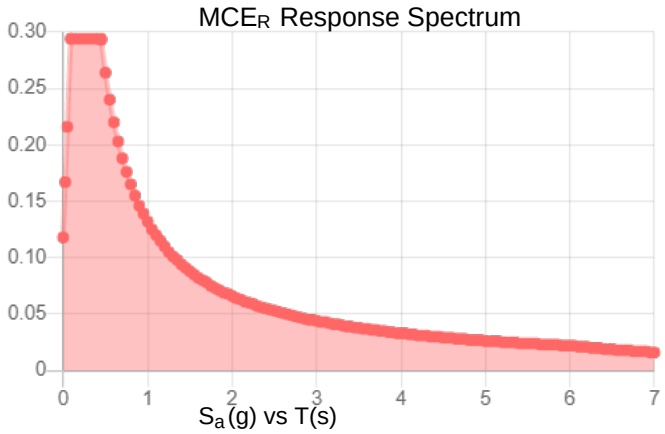
Seismic

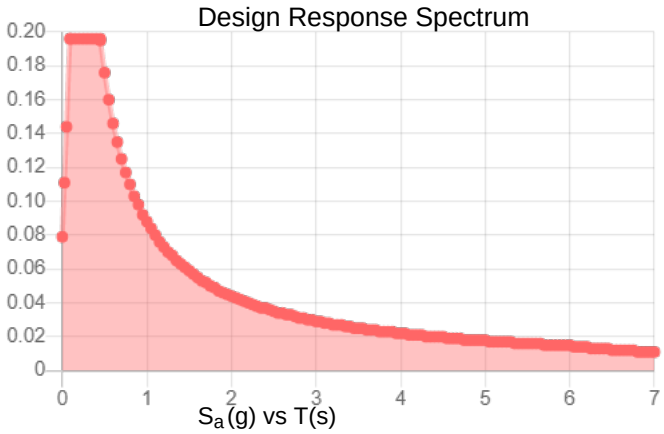
Site Soil Class: D - Stiff Soil

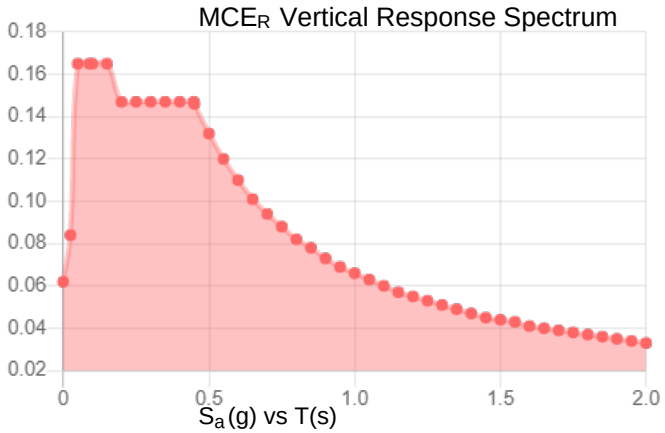
Results:

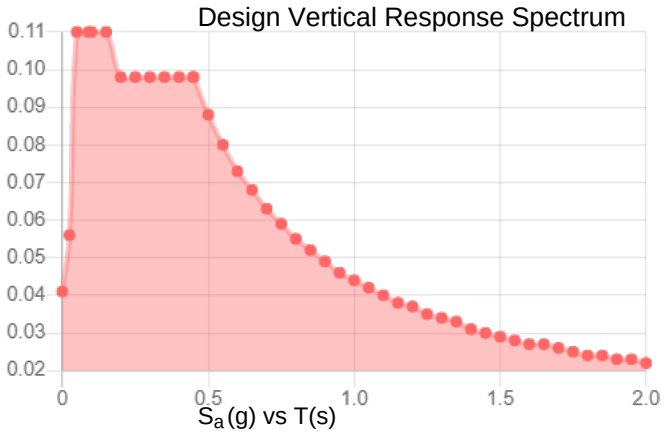
S_S :	0.184	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.098
F_v :	2.4	PGA_M :	0.157
S_{MS} :	0.294	F_{PGA} :	1.6
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.196	C_v :	0.7

Seismic Design Category B









Data Accessed: Wed Dec 16 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Dec 16 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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Site Details	
Site Name	SOUTH WINDSOR SAND HILL RD
Carrier	AT&T
City, State	SOUTH WINDSOR, CT
Project	LTE 4C/5C/6C/5G/BWE/RETRO

Mount Details		
Mount Type	3-Sided Platform	
Mount Height, z	170	ft
Number of Sectors	3	
Tower Type	Monopole	
Tower Height, h	188	ft

Topographic Factors		
Topographic Procedure	No Topo	
Feature	Flat	
Crest Height, H	N/A	ft
Distance from Crest, x	N/A	ft
Slope (H/L)	N/A	
Topographic Factor, K_{zt}	1.00	

Seismic Factors		
Importance Factor, I_E	1	
Short Period Spectral Acceleration, S_s	0.184	g
1 Second Period Spectral Acceleration, S_1	0.055	g
Long-Period Transition Period, T_L	6	
Design Category	B	
Short Period Site Coefficient, F_a	1.60	
Long-Period Site Coefficient, F_v	2.4	

Site Parameters		
Wind Speed, V	118	mph
Wind Speed with Ice, V_i	50	mph
Design Ice Thickness, t_i	1.5	in
Risk Category	II	
Exposure Category	C	
AMSL	163	ft
Site Soil Class	D-Stiff Soil (Assumed)	

Code	
Building Code	2018 IBC
TIA Code	TIA-222-H
ASCE Code	7-16

Site Constants		
Importance Factor, I	1.00	
Wind Direction Prob. Factor, K_d	0.95	
Velocity Pressure Coefficient, K_z	1.42	
Ground Elevation Factor, K_e	0.99	
Rootop Wind Speed-Up Factor, K_s	1.00	
Gust Effect Factor, G_h	1.00	
Design Ice Thickness, t_{iz}	1.77	in
Velocity Pressure, q_z	47.64	psf
Velocity Pressure with Ice, q_{zi}	8.55	psf
Shielding Factor, K_a	0.90	
Flat Velocity Pressure (Ca =2.0)	95.28	psf
Round Velocity Pressure (Ca = 1.2)	57.17	psf
Round Velocity Pressure with Ice (Ca = 1.2)	10.26	psf
Engineer Initials	**AP**	

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Members Forces								
Member Label	**Shape**	**Type**	**w, lbs/ft**	**q_z, psf**	**w_i, lbs/ft**	**q_{zi}, psf**	**E_v, lbs./ft**	**V_s, lbs/ft**
Horizontal	C6X10.5	Beam	10.45	95.283	17.47	10.26	0.41	1.03
Standoff	HSS4X4X4	Beam	12.33	95.283	16.03	10.26	0.48	1.21
Mount Pipe	PIPE_2.0	Beam	3.47	57.17	8.94	10.26	0.14	0.34
Support Rail	PIPE_2.0	Beam	3.47	57.17	8.94	10.26	0.14	0.34
Corner Plate	PL4.5x1/2	Beam	7.66	95.283	13.591	10.26	0.301	0.75
Support Rail Corner Angle	L2.5x2.5x4	Beam	4.05	95.283	11.449	10.26	0.159	0.4
Cross Member	C6X10.5	Beam	10.45	95.283	17.47	10.26	0.41	1.03

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Sector 1							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H/W/D, in	$Wt./Wt._{ice}$, lbs.
QS66512-2 Antenna	170	8.13	6.80	334.44	305.86	72\12\9.6	111\230.65
HPA-65R-BUU-H6 Antenna	170	9.66	6.45	379.71	310.94	72\14.8\9	50.7\251.75
DMP65R-BU6DA Antenna	170	12.71	5.62	468.90	316.81	71.2\20.7\7.7	79.4\291.62
RRUS-E2 B29 RRH	170	3.15	1.29	114.91	75.05	20.4\18.5\7.5	53\96.86
8843 B2/B66A RRH	170	1.64	1.35	67.21	61.09	14.9\13.2\10.9	72\74.83
RRUS-32 B30 RRH	170	2.69	1.57	103.44	79.44	26.7\12.1\6.7	60\86.63
4449 B5/B12 RRH	170	1.65	1.30	67.00	59.49	15\13.2\10.4	73\73.33
DC6-48-60-18-8F Squid	170	2.74	2.74	117.30	117.30	31.4\10.24\10.24	26.2\108.1

*Dish force coefficient is calculated per Annex C of TIA-222-H, if available.

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Sector 1 Continue…									
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force	
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Ev, lbs	Vs, lbs
QS66512-2 Antenna	170	6.13	5.32	105.69	97.44	21.62	19.77	4.36	10.89
HPA-65R-BUU-H6 Antenna	170	7.08	5.12	118.89	99.00	24.54	20.10	1.99	4.98
DMP65R-BU6DA Antenna	170	8.97	4.62	144.86	100.81	30.31	20.48	3.12	7.79
RRUS-E2 B29 RRH	170	2.56	1.28	37.91	25.82	7.43	4.85	2.08	5.20
8843 B2/B66A RRH	170	1.50	1.29	23.22	21.32	4.34	3.95	2.83	7.07
RRUS-32 B30 RRH	170	2.30	1.53	34.78	27.49	6.69	5.13	2.36	5.89
4449 B5/B12 RRH	170	1.51	1.26	23.15	20.83	4.33	3.85	2.87	7.16
DC6-48-60-18-8F Squid	170	2.34	2.34	39.09	39.09	7.58	7.58	1.03	2.57

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Sector 2							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H/W/D, in	$Wt./Wt._{ice}$, lbs.
QS66512-2 Antenna	170	8.13	6.80	334.44	305.86	72\12\9.6	111\230.65
HPA-65R-BUU-H6 Antenna	170	9.66	6.45	379.71	310.94	72\14.8\9	50.7\251.75
DMP65R-BU6DA Antenna	170	12.71	5.62	468.90	316.81	71.2\20.7\7.7	79.4\291.62
RRUS-E2 B29 RRH	170	3.15	1.29	114.91	75.05	20.4\18.5\7.5	53\96.86
8843 B2/B66A RRH	170	1.64	1.35	67.21	61.09	14.9\13.2\10.9	72\74.83
RRUS-32 B30 RRH	170	2.69	1.57	103.44	79.44	26.7\12.1\6.7	60\86.63
4449 B5/B12 RRH	170	1.65	1.30	67.00	59.49	15\13.2\10.4	73\73.33
DC6-48-60-18-8F Squid	170	2.74	2.74	117.30	117.30	31.4\10.24\10.24	26.2\108.1

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Sector 2 Continue…									
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force	
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Ev, lbs	Vs, lbs
QS66512-2 Antenna	170	6.13	5.32	105.69	97.44	21.62	19.77	4.36	10.89
HPA-65R-BUU-H6 Antenna	170	7.08	5.12	118.89	99.00	24.54	20.10	1.99	4.98
DMP65R-BU6DA Antenna	170	8.97	4.62	144.86	100.81	30.31	20.48	3.12	7.79
RRUS-E2 B29 RRH	170	2.56	1.28	37.91	25.82	7.43	4.85	2.08	5.20
8843 B2/B66A RRH	170	1.50	1.29	23.22	21.32	4.34	3.95	2.83	7.07
RRUS-32 B30 RRH	170	2.30	1.53	34.78	27.49	6.69	5.13	2.36	5.89
4449 B5/B12 RRH	170	1.51	1.26	23.15	20.83	4.33	3.85	2.87	7.16
DC6-48-60-18-8F Squid	170	2.34	2.34	39.09	39.09	7.58	7.58	1.03	2.57

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Sector 3							
		Wind Force				Dimensions	Weights
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	H/W/D, in	Wt./$Wt._{ice}$, lbs.
QS66512-2 Antenna	170	8.13	6.80	291.56	348.73	72\12\9.6	111\230.65
HPA-65R-BUU-H6 Antenna	170	9.66	6.45	276.56	414.10	72\14.8\9	50.7\251.75
DMP65R-BU6DA Antenna	170	12.71	5.62	240.77	544.94	71.2\20.7\7.7	79.4\291.62
RRUS-E2 B29 RRH	170	3.15	1.29	55.11	134.85	20.4\18.5\7.5	53\96.86
8843 B2/B66A RRH	170	1.64	1.35	58.03	70.28	14.9\13.2\10.9	72\74.83
RRUS-32 B30 RRH	170	2.69	1.57	67.43	115.44	26.7\12.1\6.7	60\86.63
4449 B5/B12 RRH	170	1.65	1.30	55.74	70.75	15\13.2\10.4	73\73.33
DC6-48-60-0-8F Squid	170	2.74	2.74	117.30	117.30	31.4\10.24\10.24	26.2\108.1

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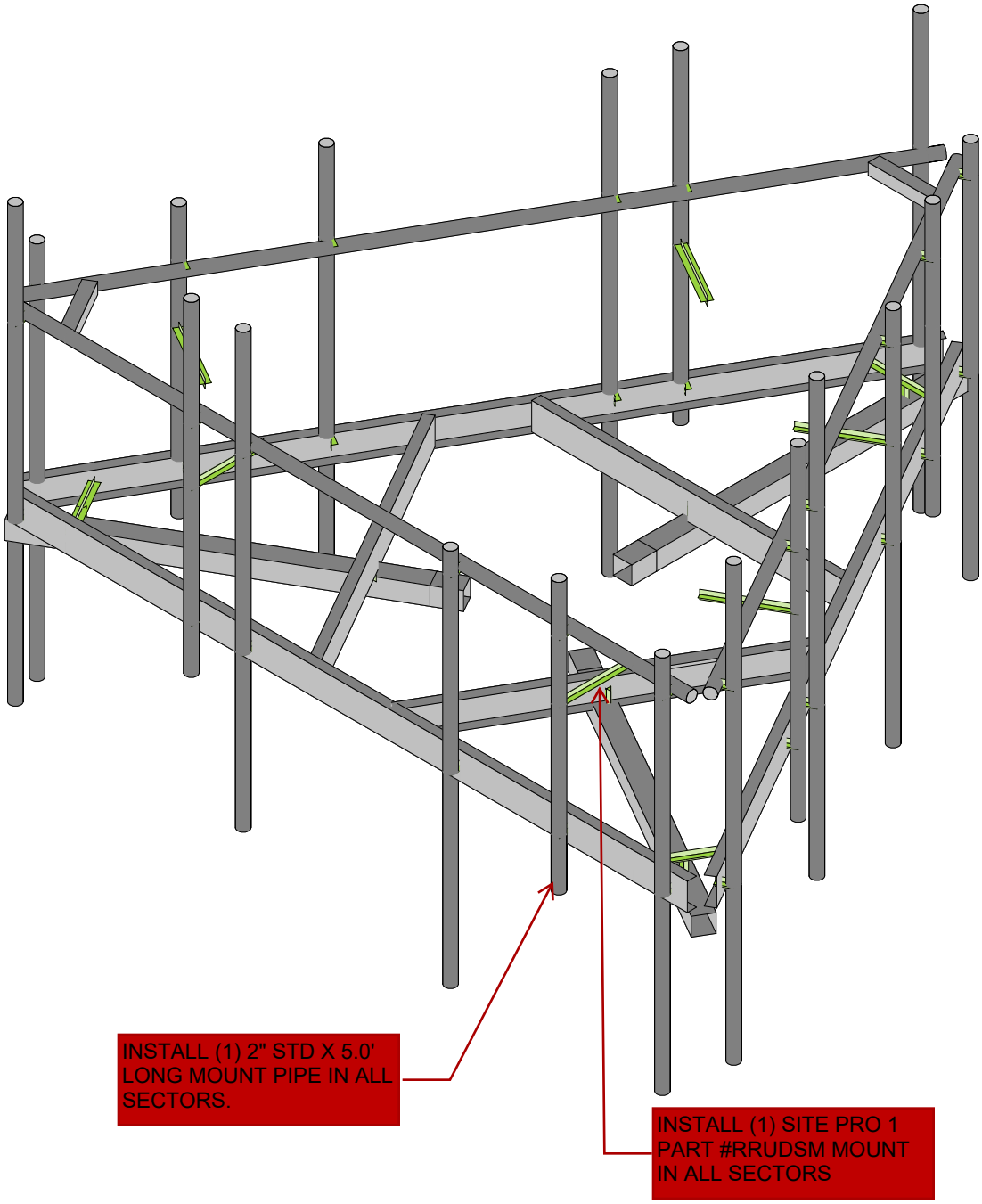
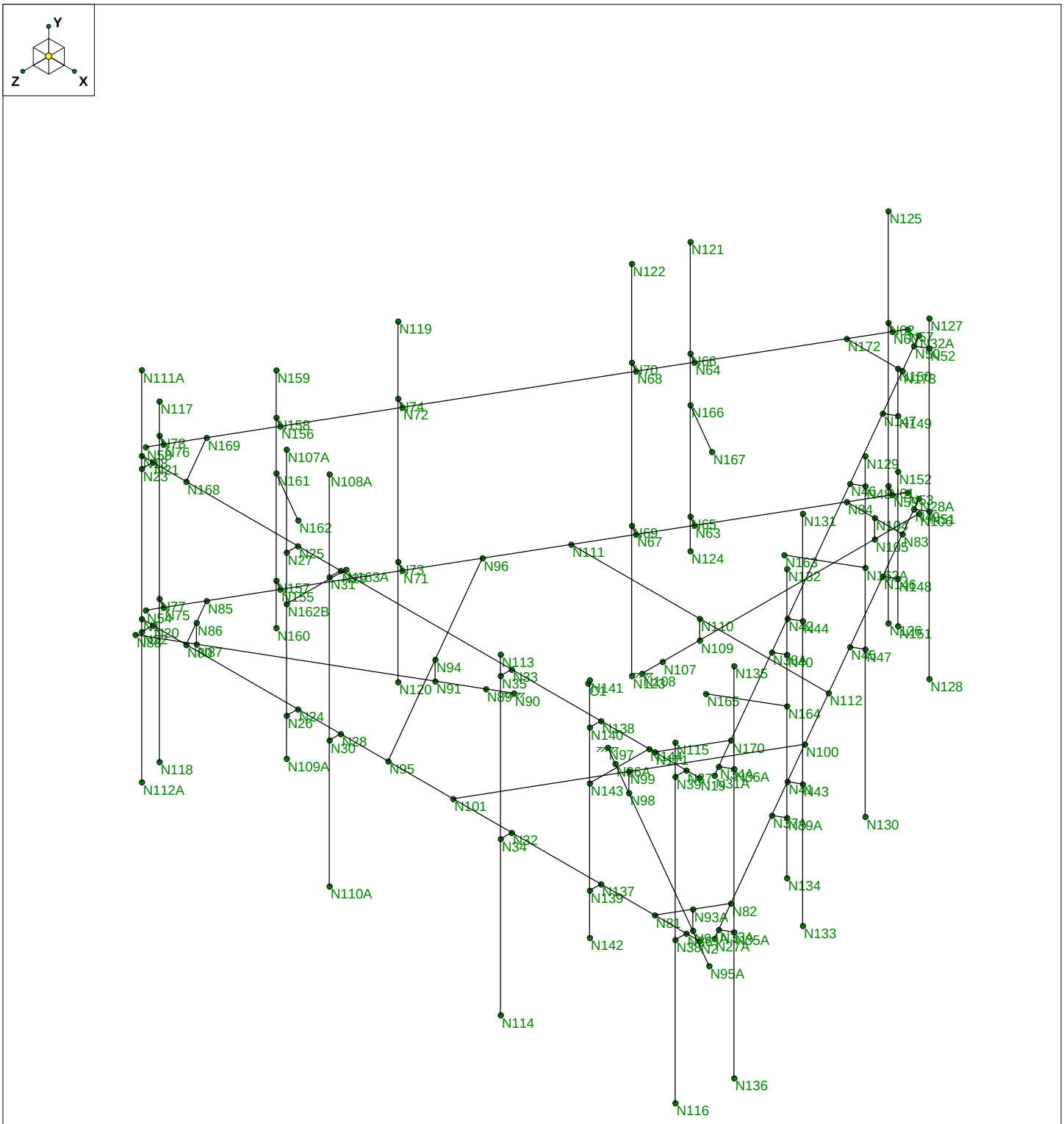
Sector 3 Continue...									
		Wind Force with Ice				Wind Force V = 30 mph		Seismic Force	
Appurtenances	Rad. Ht., ft	Front EPA ft^2	Side EPA ft^2	0° Force lbs.	90° Force lbs.	0° Force lbs.	90° Force lbs.	Ev, lbs	Vs, lbs
QS66512-2 Antenna	170	6.13	5.32	93.31	109.82	18.85	22.54	4.36	10.89
HPA-65R-BUU-H6 Antenna	170	7.08	5.12	89.05	128.84	17.88	26.77	1.99	4.98
DMP65R-BU6DA Antenna	170	8.97	4.62	78.79	166.88	15.56	35.22	3.12	7.79
RRUS-E2 B29 RRH	170	2.56	1.28	19.78	43.95	3.56	8.72	2.08	5.20
8843 B2/B66A RRH	170	1.50	1.29	20.38	24.16	3.75	4.54	2.83	7.07
RRUS-32 B30 RRH	170	2.30	1.53	23.85	38.42	4.36	7.46	2.36	5.89
4449 B5/B12 RRH	170	1.51	1.26	19.67	24.31	3.60	4.57	2.87	7.16
DC6-48-60-0-8F Squid	170	2.34	2.34	39.09	39.09	7.58	7.58	1.03	2.57

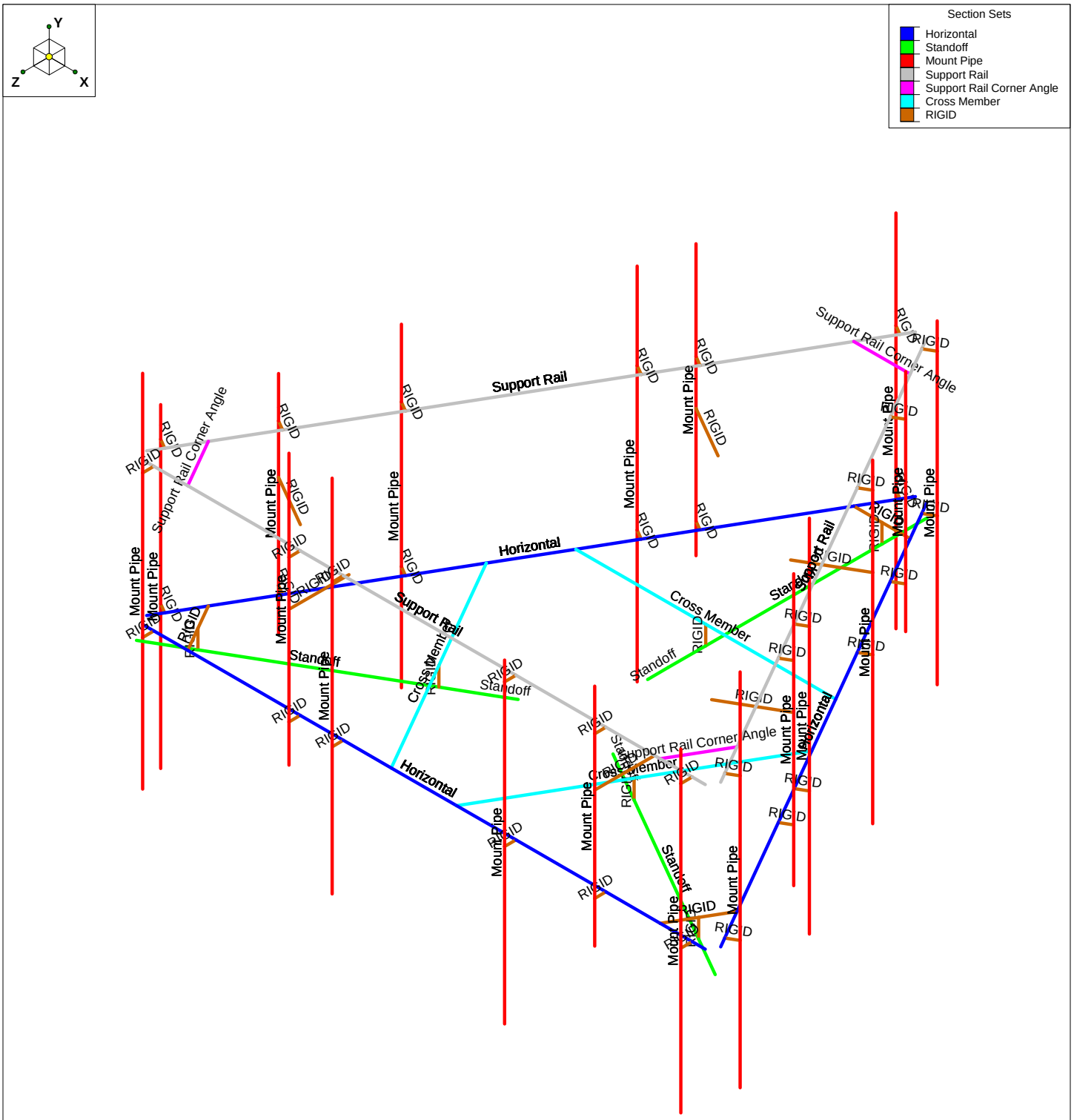
Existing Mount Results



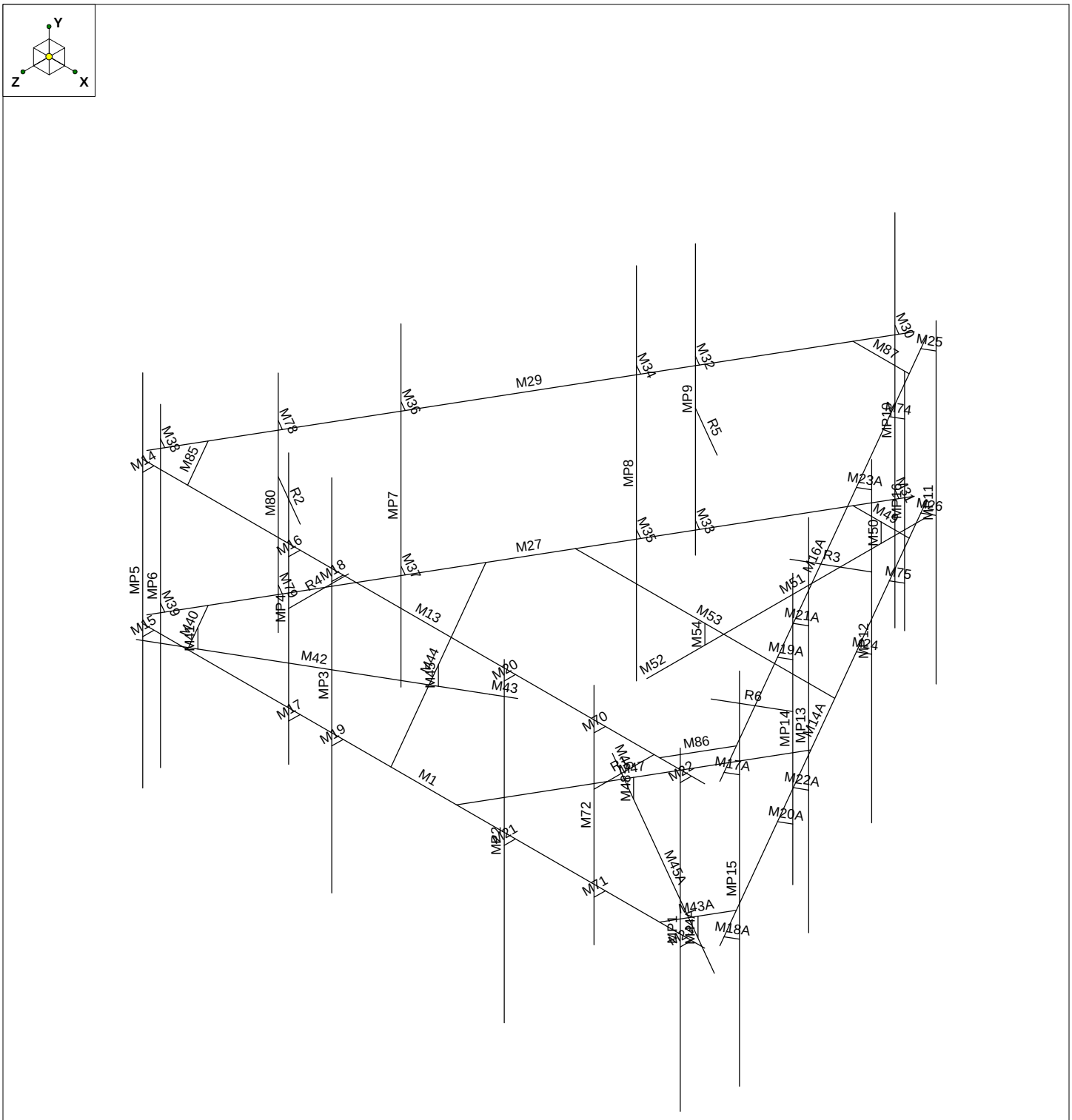
Centerline Communication...	CT1139_Mount	Rendered
AP		Dec 21, 2020 at 2:46 PM
		CT1139.r3d



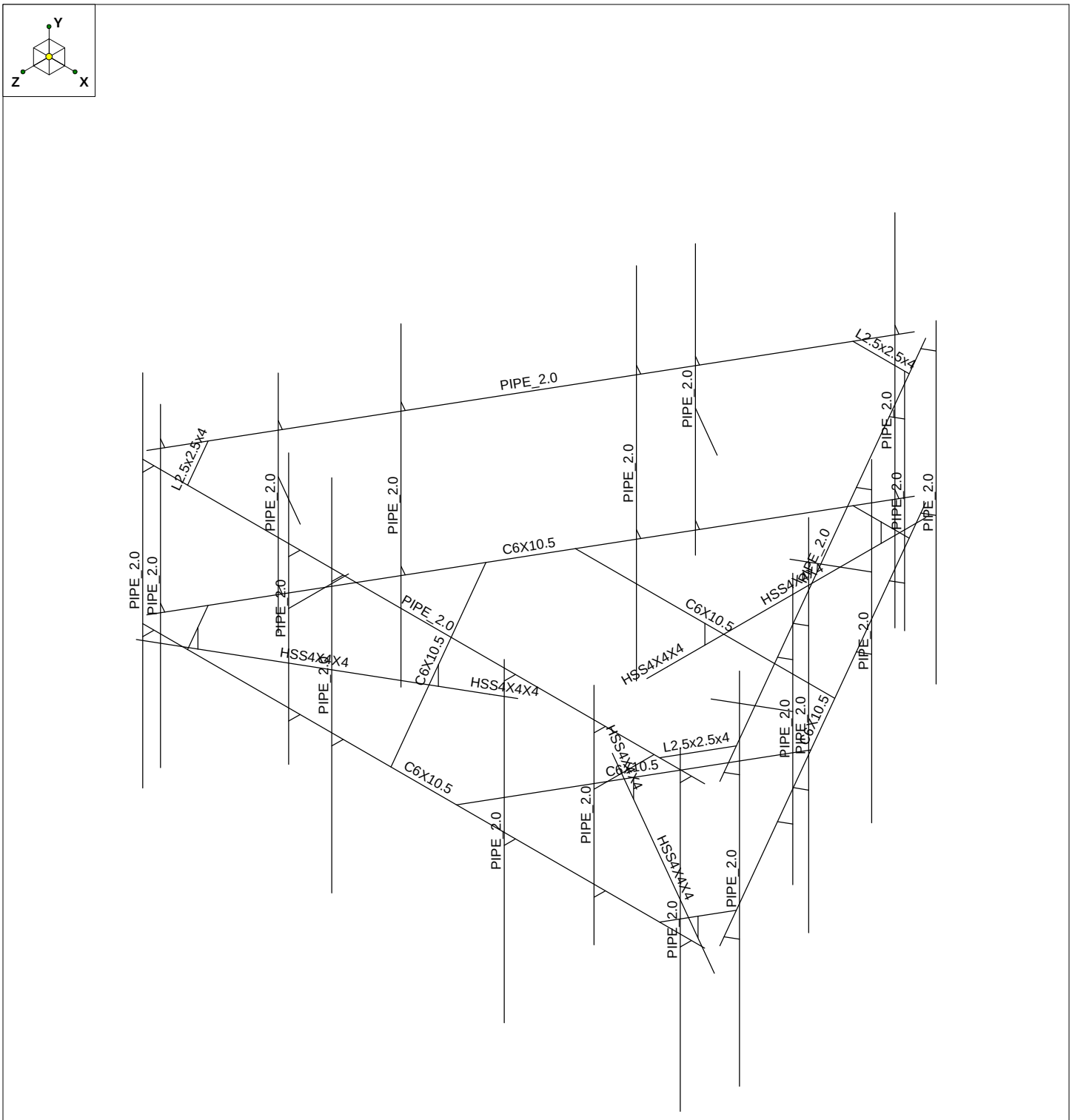
Centerline Communication...	CT1139_Mount	Wireframe
AP		Dec 21, 2020 at 2:46 PM
		CT1139.r3d



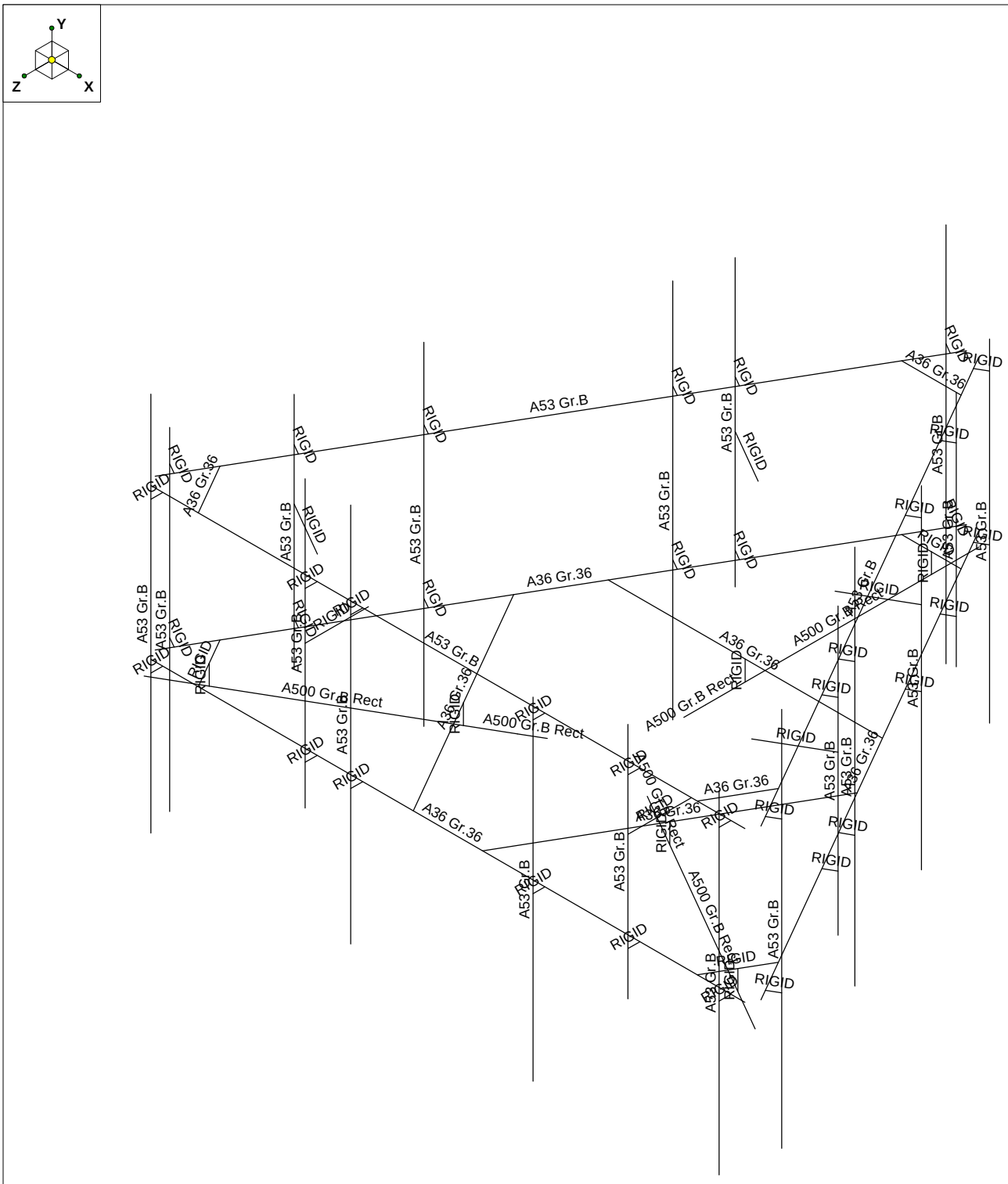
Centerline Communication...	CT1139_Mount	Section Sets
AP		Dec 21, 2020 at 2:47 PM
		CT1139.r3d



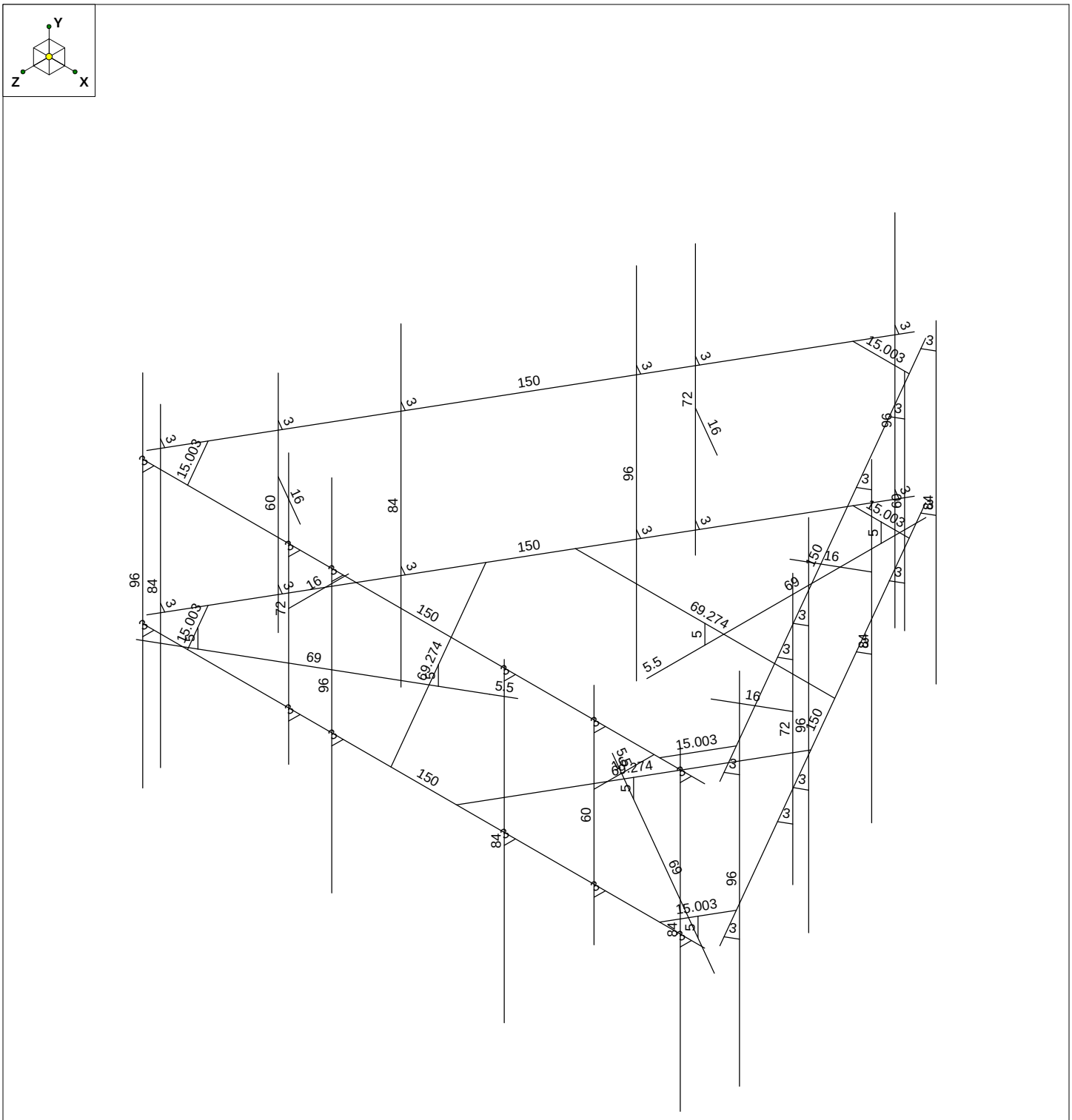
Centerline Communication...	CT1139_Mount	Member Label
AP		Dec 21, 2020 at 2:47 PM
		CT1139.r3d



Centerline Communication...		Member Shape
AP	CT1139_Mount	Dec 21, 2020 at 2:47 PM
		CT1139.r3d

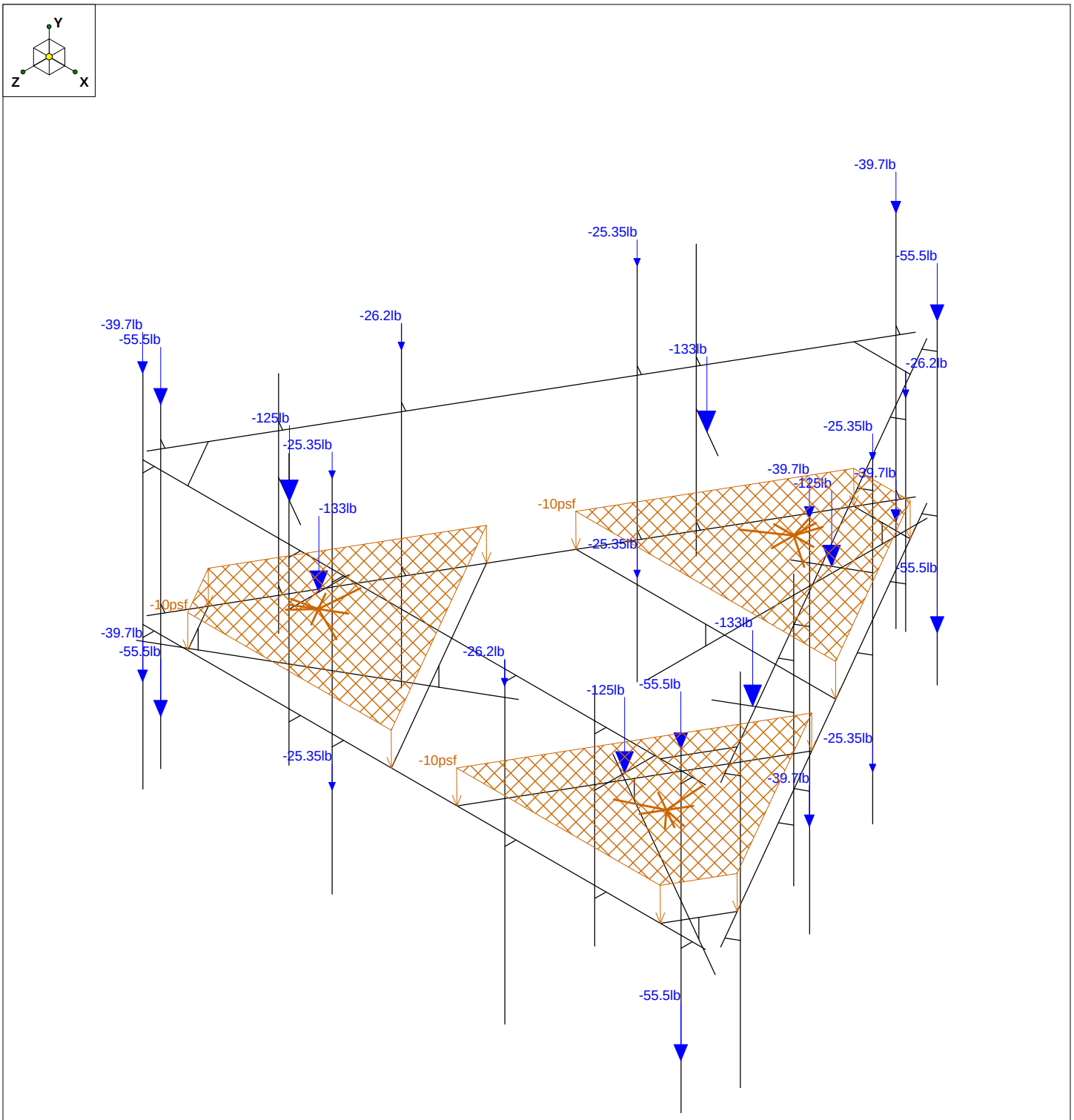


Centerline Communication...		Material Sets
AP	CT1139_Mount	Dec 21, 2020 at 2:48 PM
		CT1139.r3d



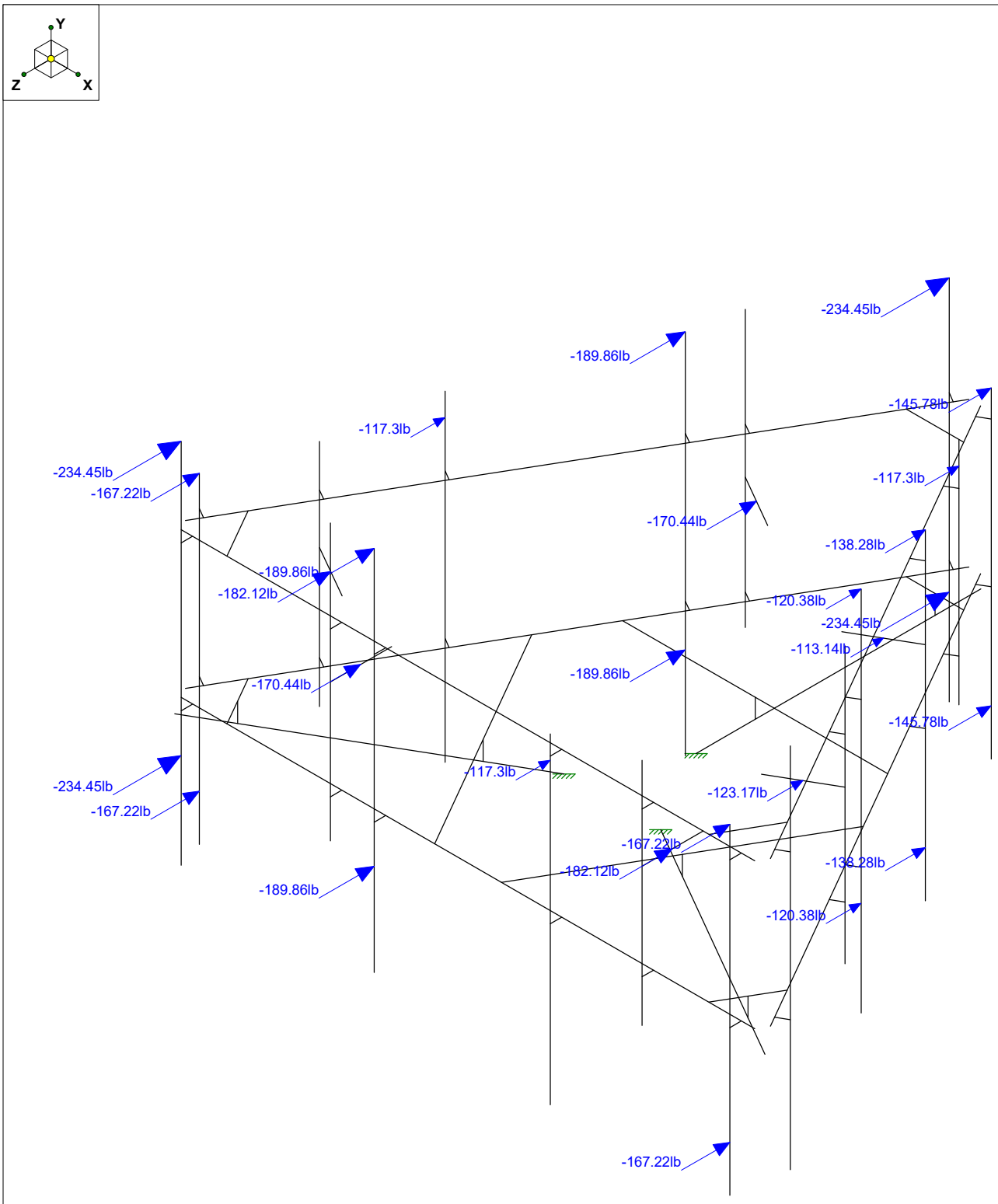
Member Length (in) Displayed

Centerline Communication...	CT1139_Mount	Member Length
AP		Dec 21, 2020 at 2:49 PM
		CT1139.r3d



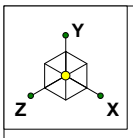
Loads: BLC 1, Dead Load

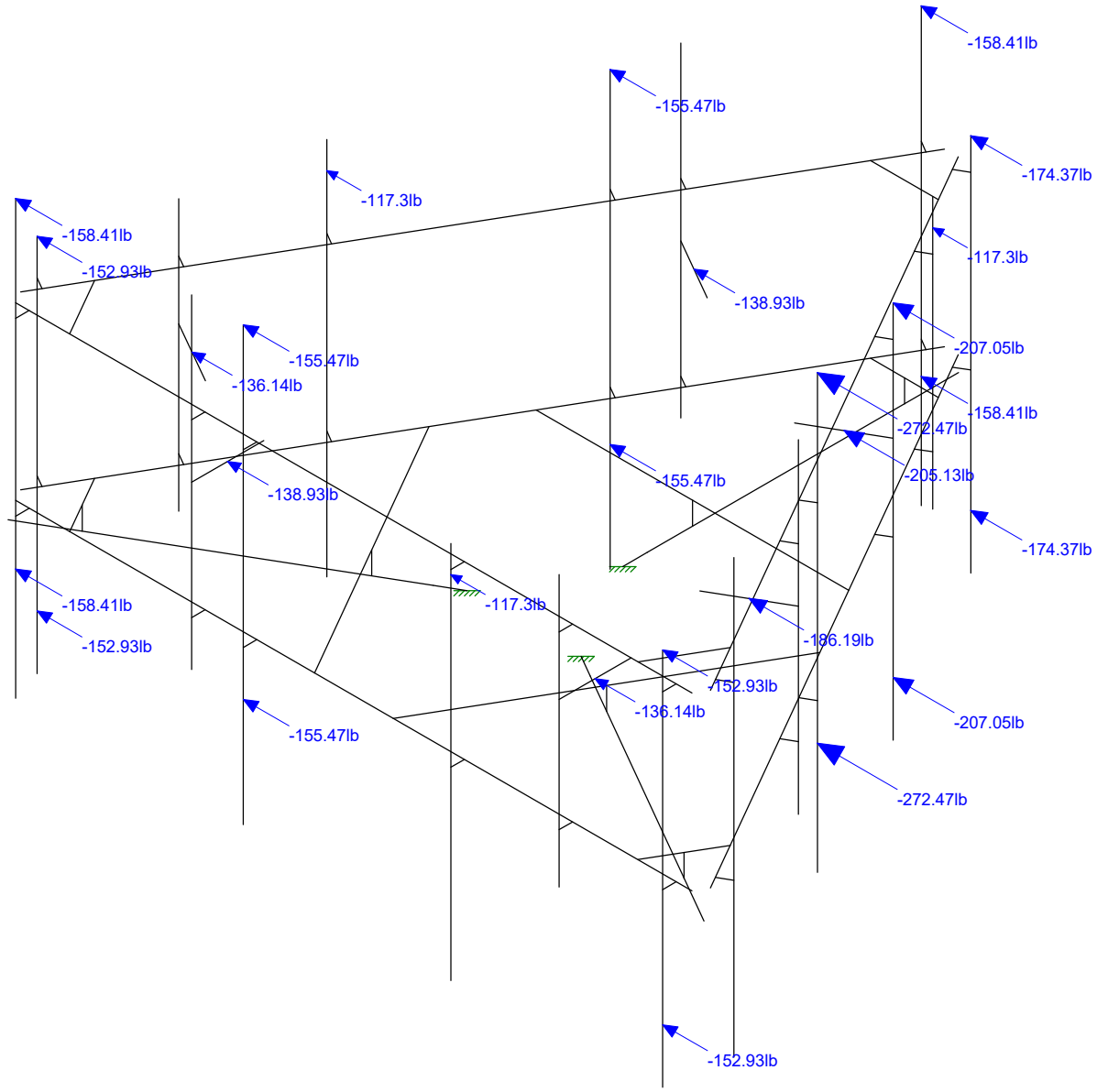
Centerline Communication...	CT1139_Mount	Dead Load
AP		Dec 21, 2020 at 2:49 PM
		CT1139.r3d



Loads: BLC 2, Wind 0

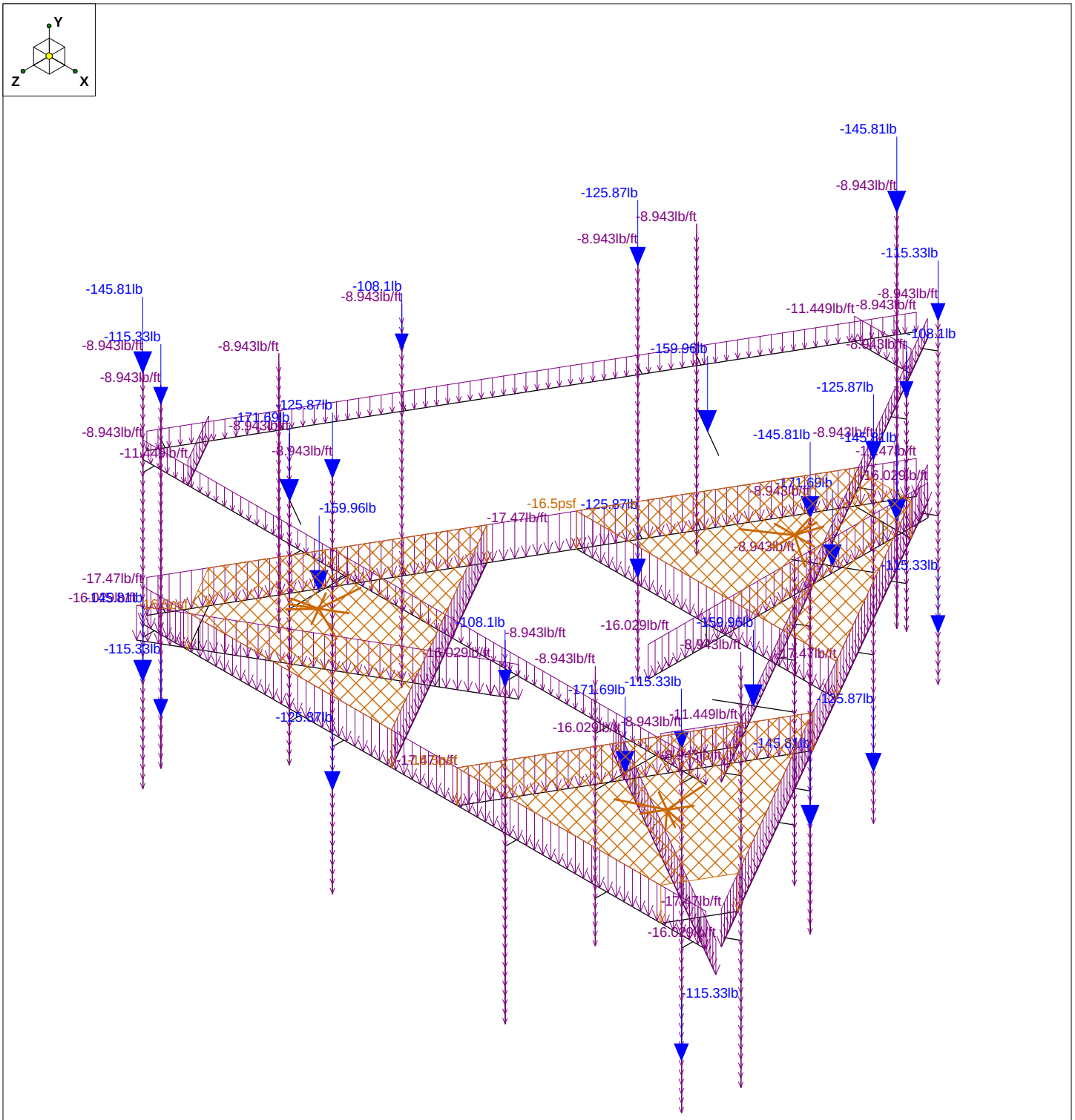
Centerline Communication...	CT1139_Mount	WIND 0
AP		Dec 22, 2020 at 8:21 AM
		CT1139.r3d





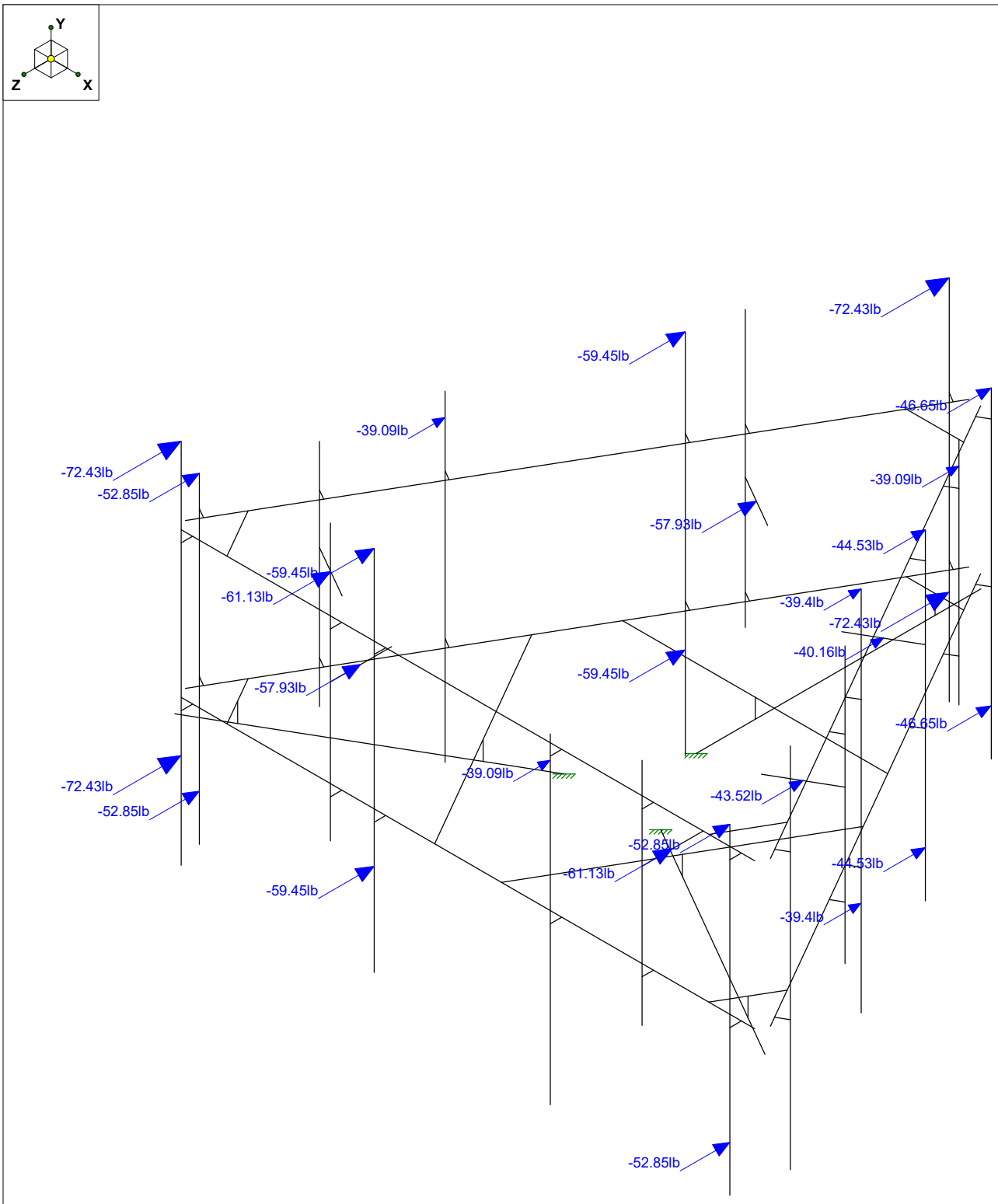
Loads: BLC 5, Wind 90

Centerline Communication...	CT1139_Mount	WIND 90
AP		Dec 22, 2020 at 8:22 AM
		CT1139.r3d



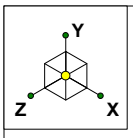
Loads: BLC 9, Ice Weight

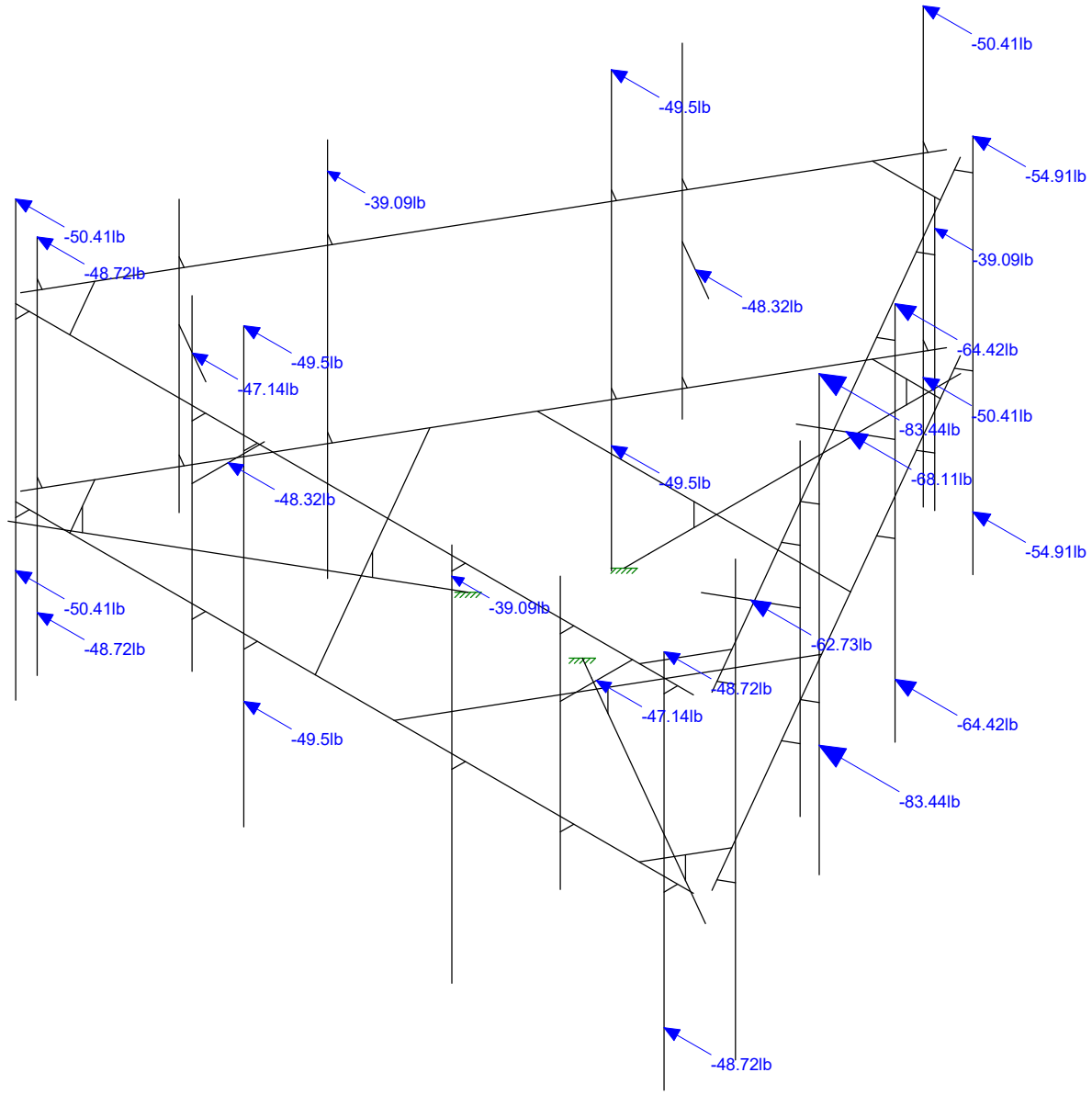
Centerline Communication...	CT1139_Mount	Ice Weight
AP		Dec 21, 2020 at 2:50 PM
		CT1139.r3d



Loads: BLC 10, Ice + Wind 0

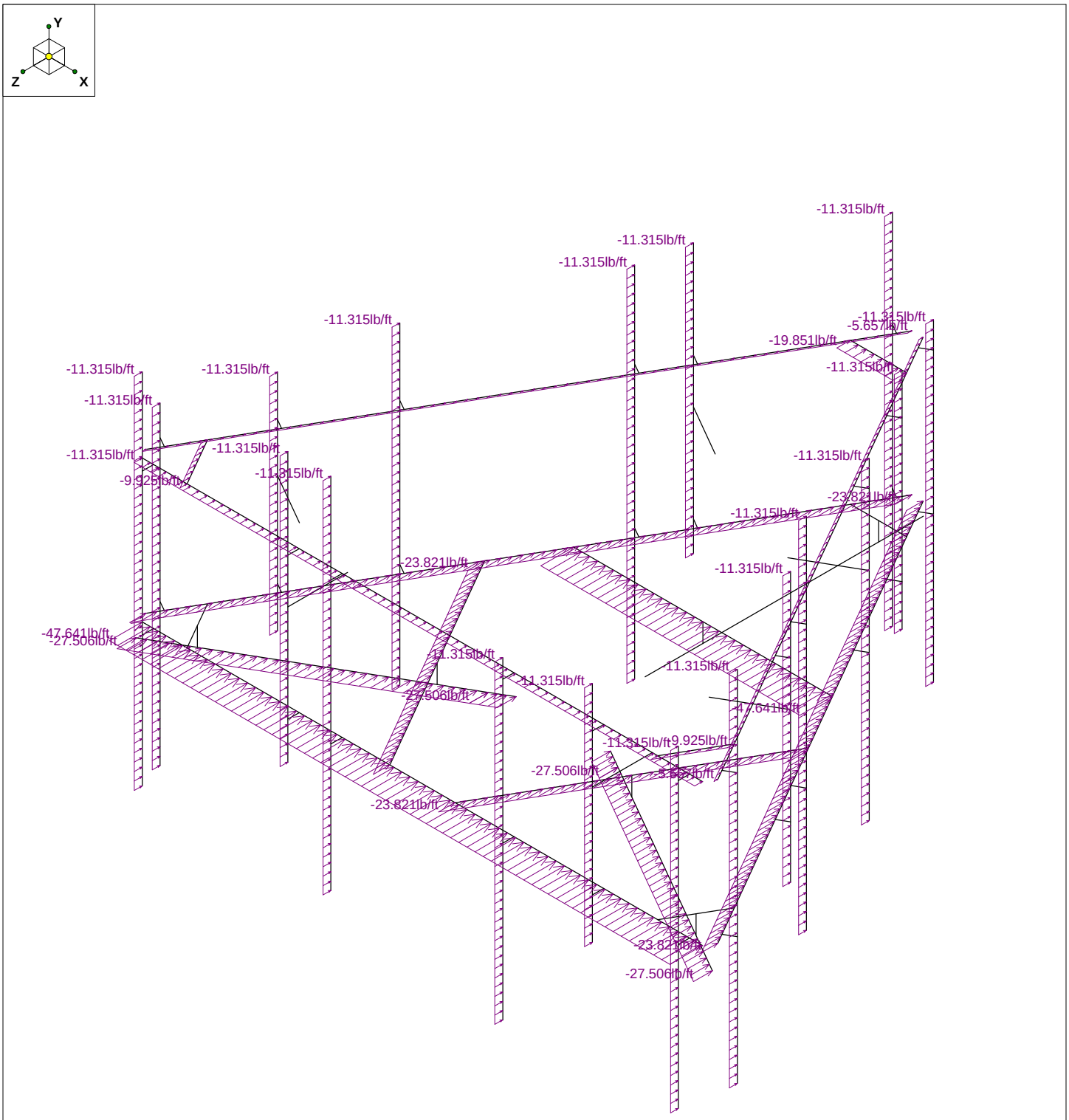
Centerline Communication...	CT1139_Mount	ICE + WIND 0
AP		Dec 22, 2020 at 8:22 AM
		CT1139.r3d





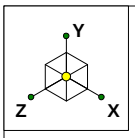
Loads: BLC 13, Ice + Wind 90

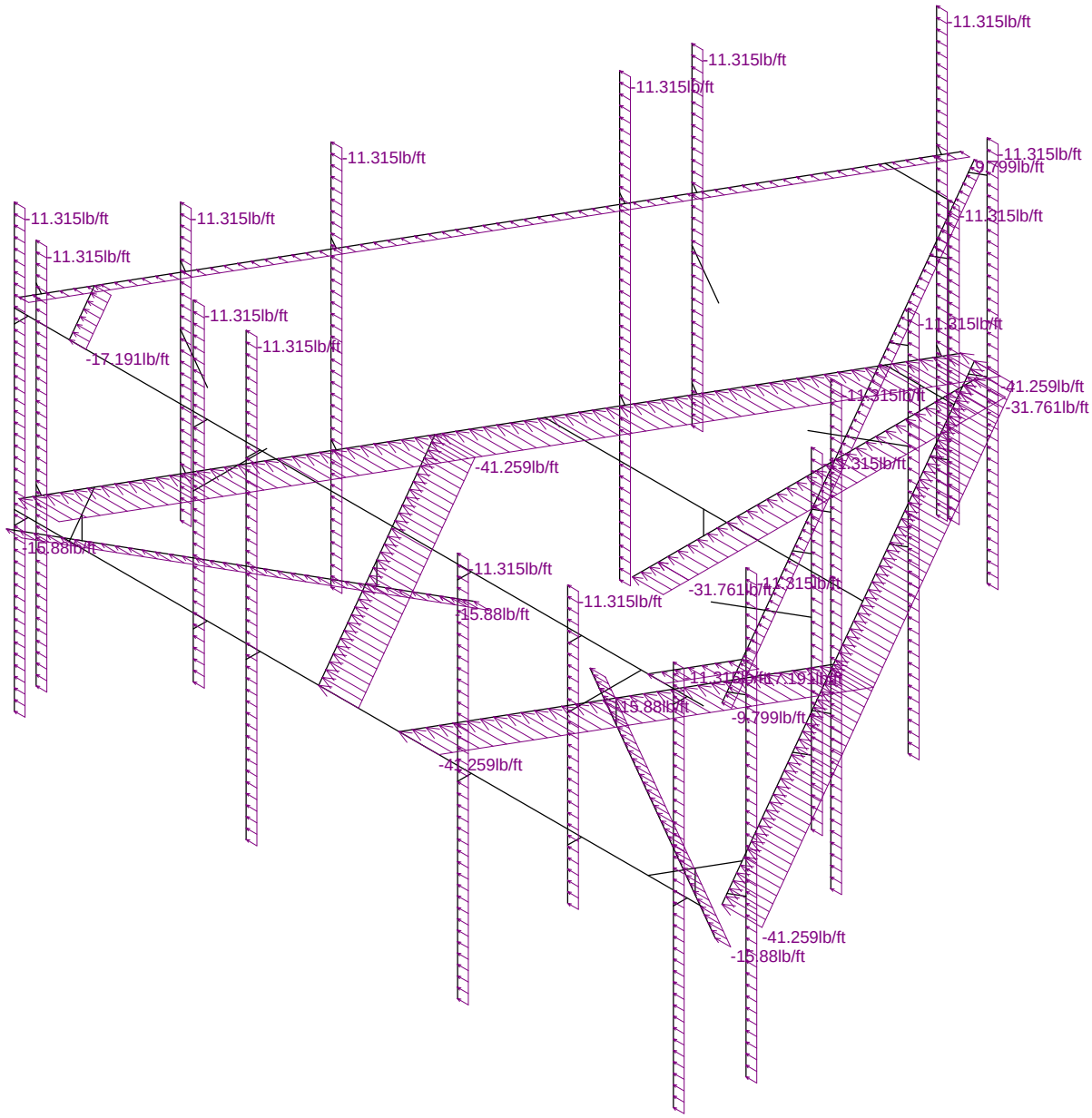
Centerline Communication...	CT1139_Mount	ICE + WIND 90
AP		Dec 22, 2020 at 8:22 AM
		CT1139.r3d



Loads: BLC 17, Distri. Wind Z

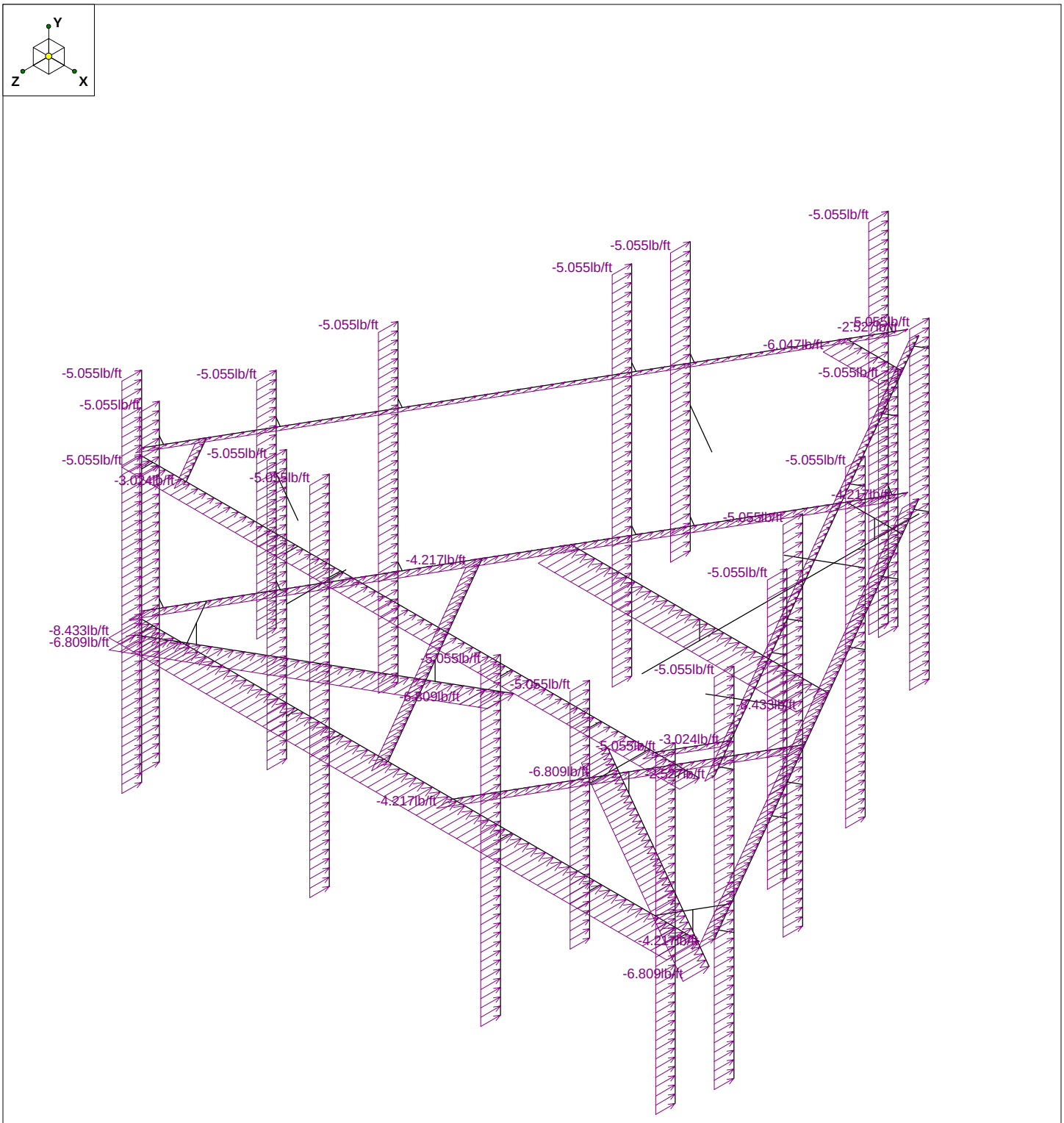
Centerline Communication...		Distr. Wind 0
AP	CT1139_Mount	Dec 21, 2020 at 2:51 PM
		CT1139.r3d





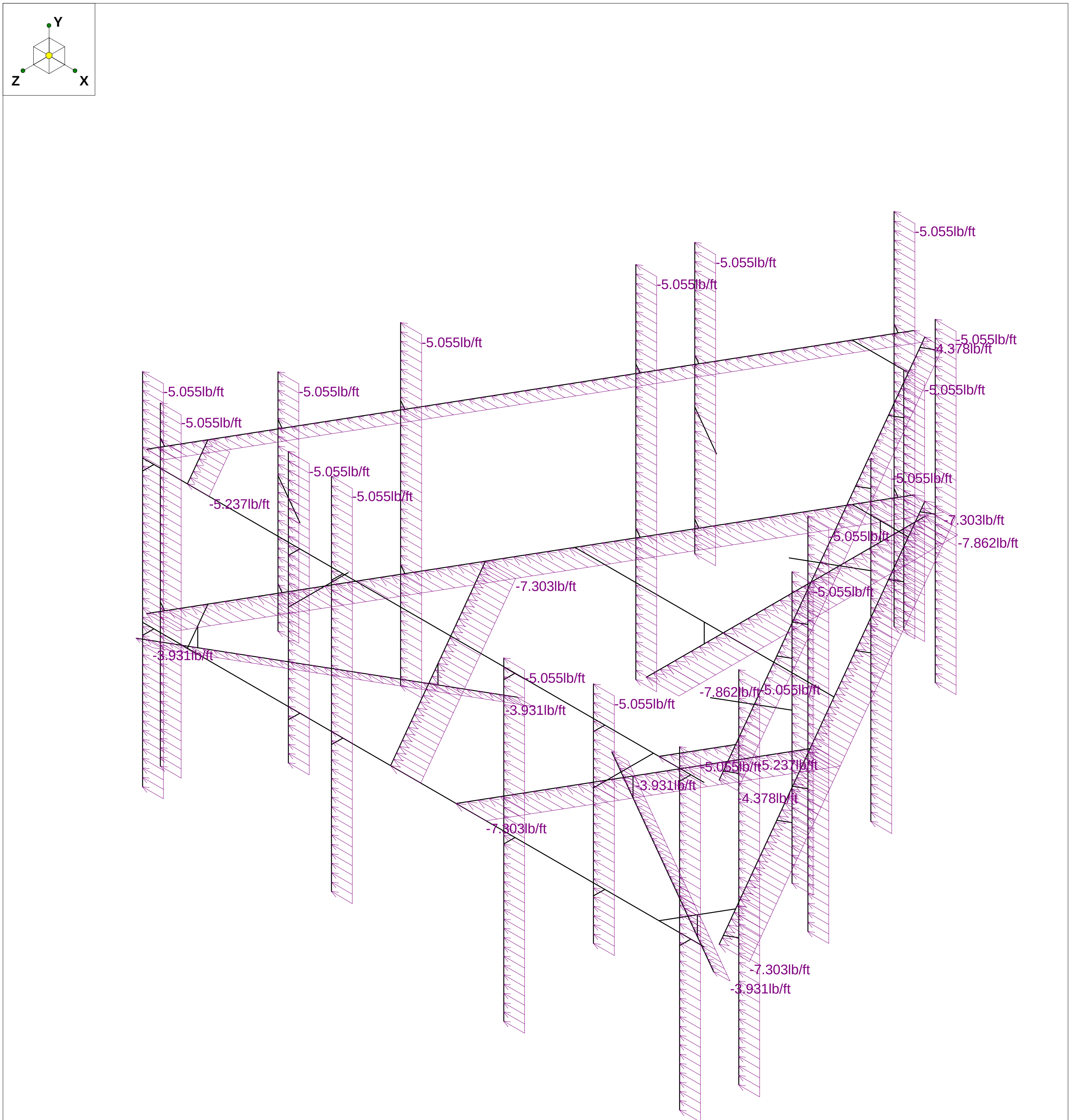
Loads: BLC 18, Distri. Wind X

Centerline Communication...	CT1139_Mount	Distr. Wind 90
AP		Dec 21, 2020 at 2:52 PM
		CT1139.r3d



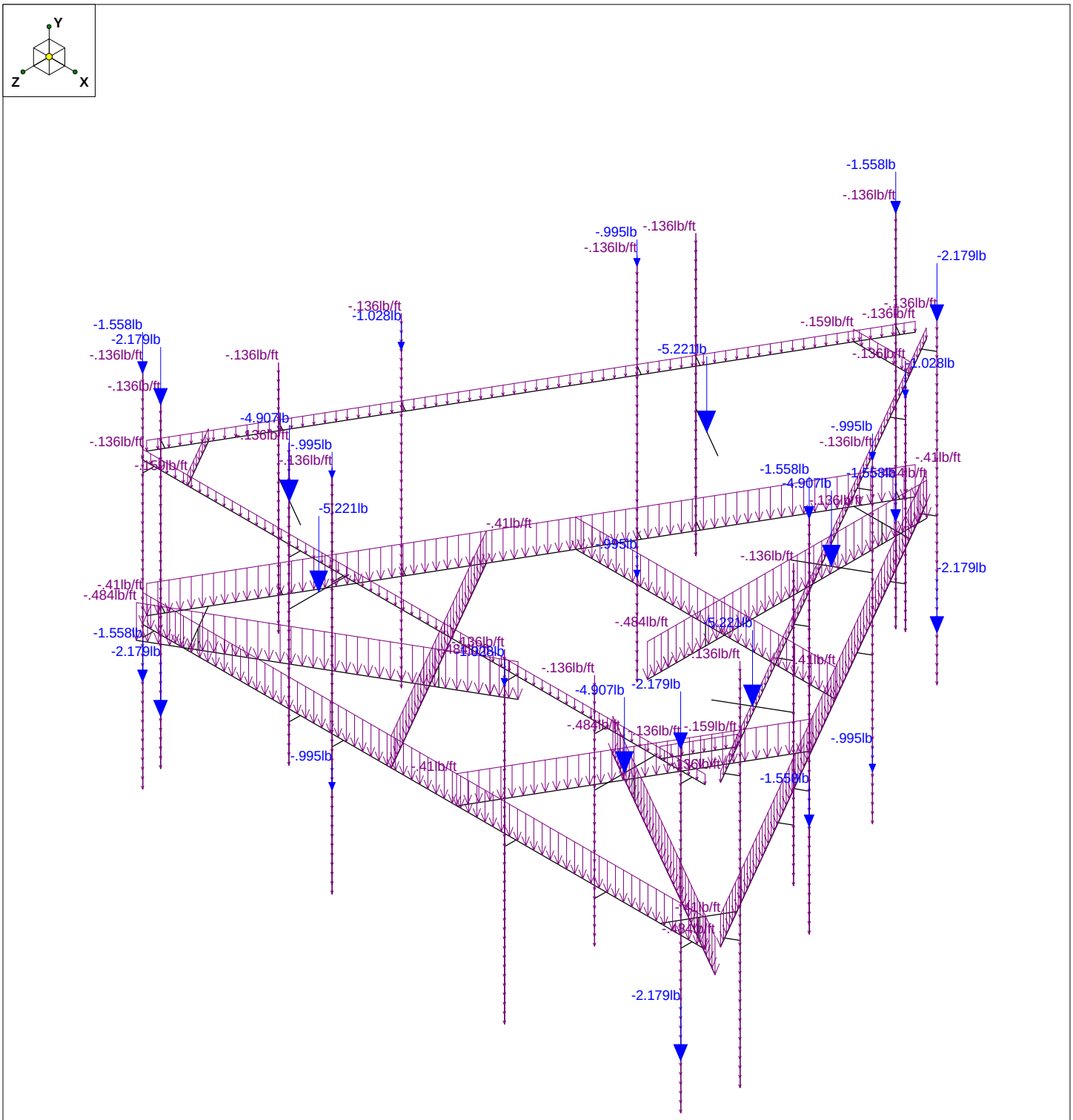
Loads: BLC 19, Distri. Ice + Wind Z

Centerline Communication...		Distr. Ice + Wind 0
AP	CT1139_Mount	Dec 21, 2020 at 2:52 PM
		CT1139.r3d



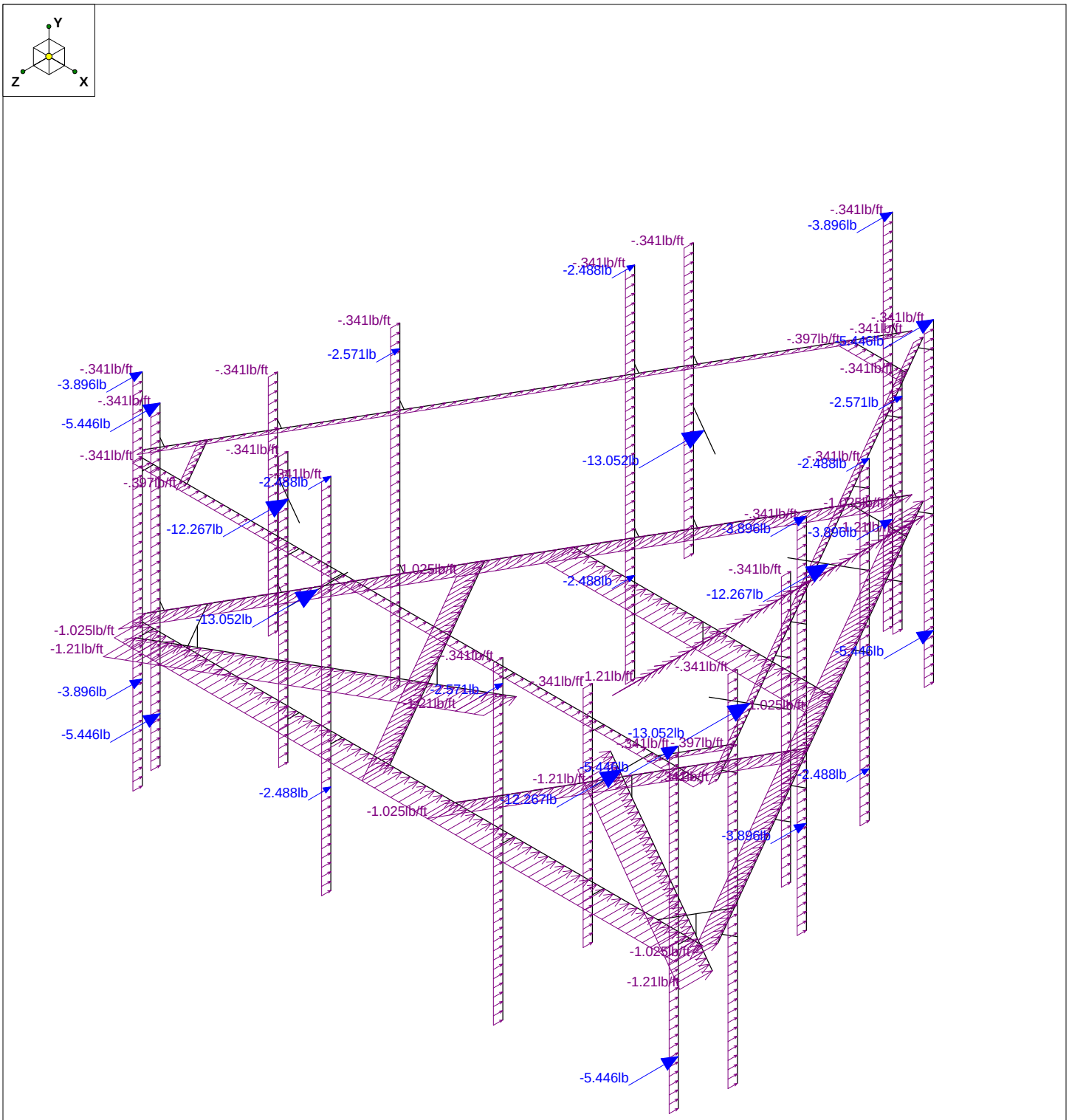
Loads: BLC 20, Distrr. Ice + Wind X

Centerline Communication...		Distr. Ice + Wind 90
AP	CT1139_Mount	Dec 21, 2020 at 2:52 PM
		CT1139.r3d



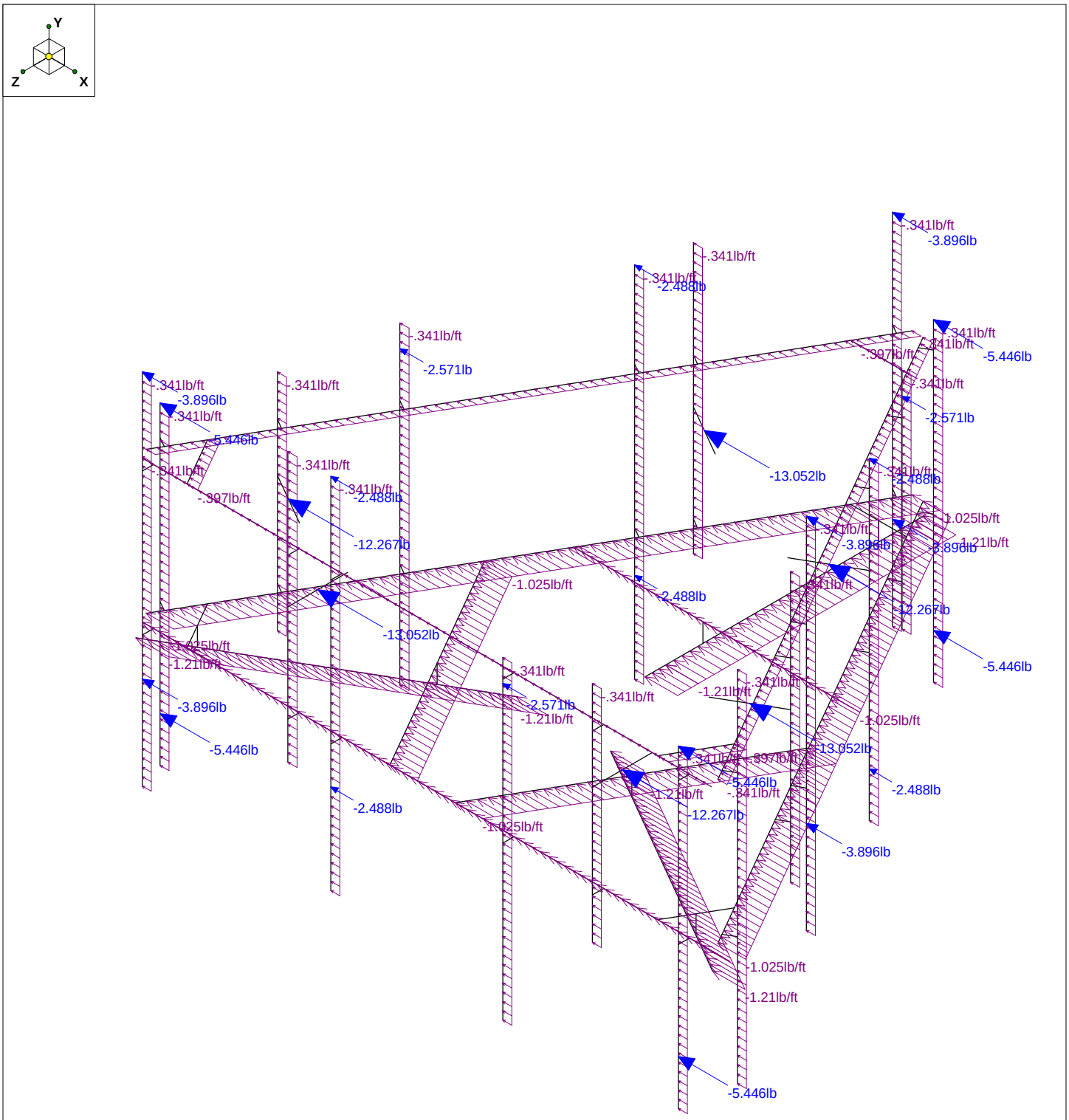
Loads: BLC 21, Seismic Load Y

Centerline Communication...	CT1139_Mount	Seismic Y
AP		Dec 21, 2020 at 2:52 PM
		CT1139.r3d



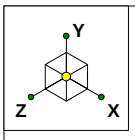
Loads: BLC 22, Seismic Load Z

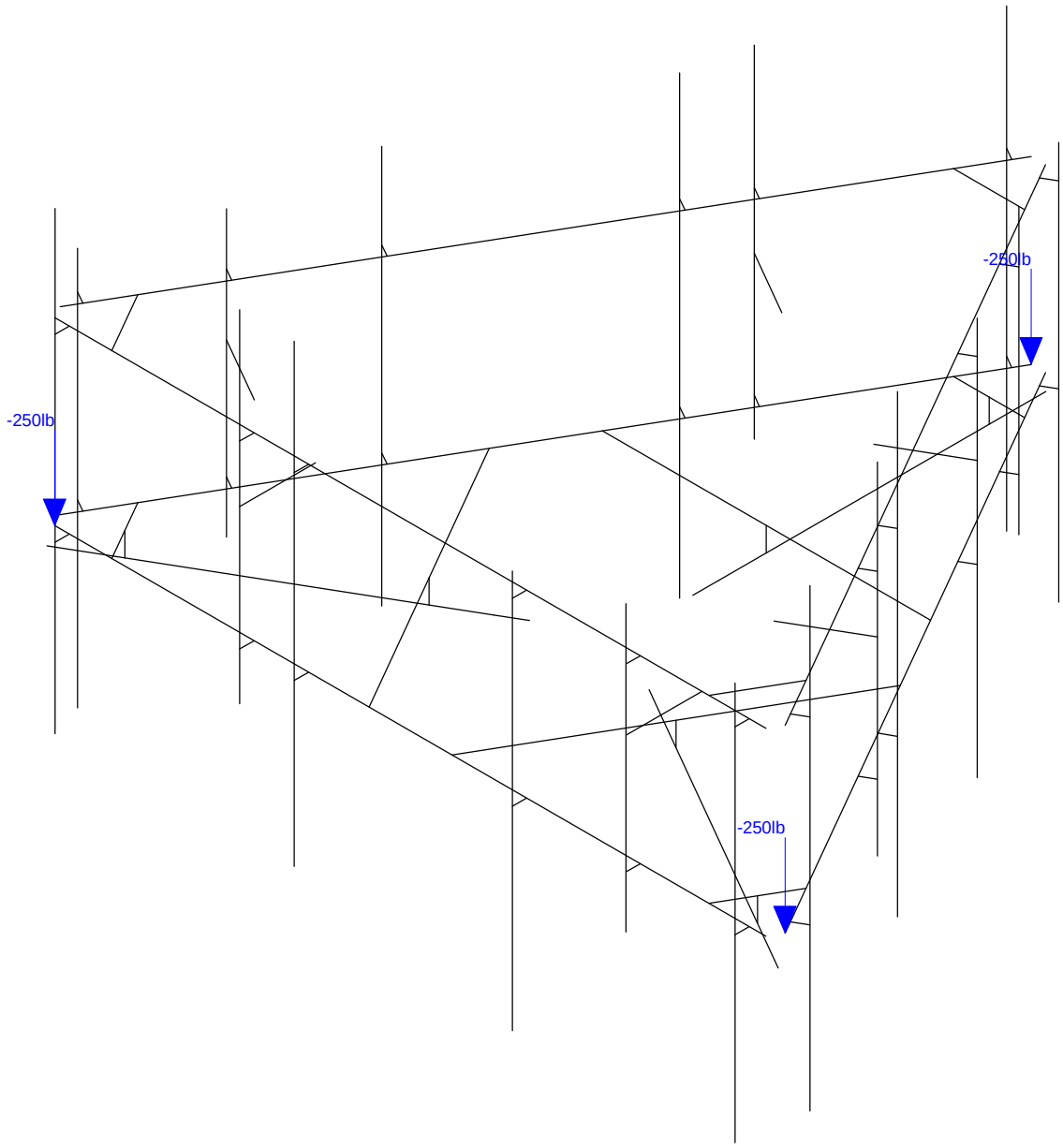
Centerline Communication...		Seismic 0
AP	CT1139_Mount	Dec 21, 2020 at 2:52 PM
		CT1139.r3d



Loads: BLC 23, Seismic Load X

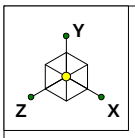
Centerline Communication...	CT1139_Mount	Seismic 90
AP		Dec 21, 2020 at 2:53 PM
		CT1139.r3d

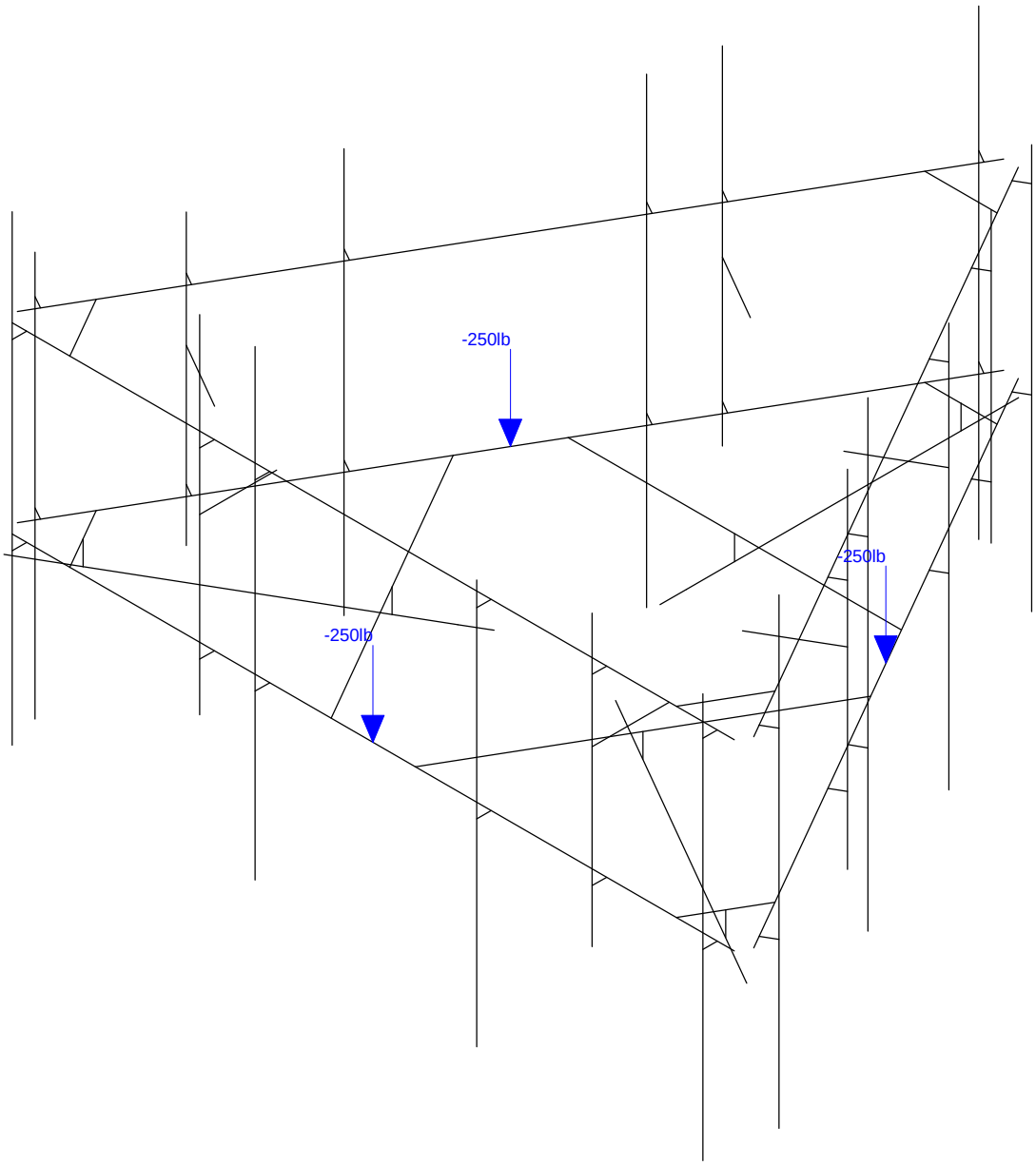




Loads: BLC 24, Live Loads 1

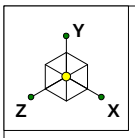
Centerline Communication...	CT1139_Mount	Live Load 1
AP		Dec 21, 2020 at 2:53 PM
		CT1139.r3d

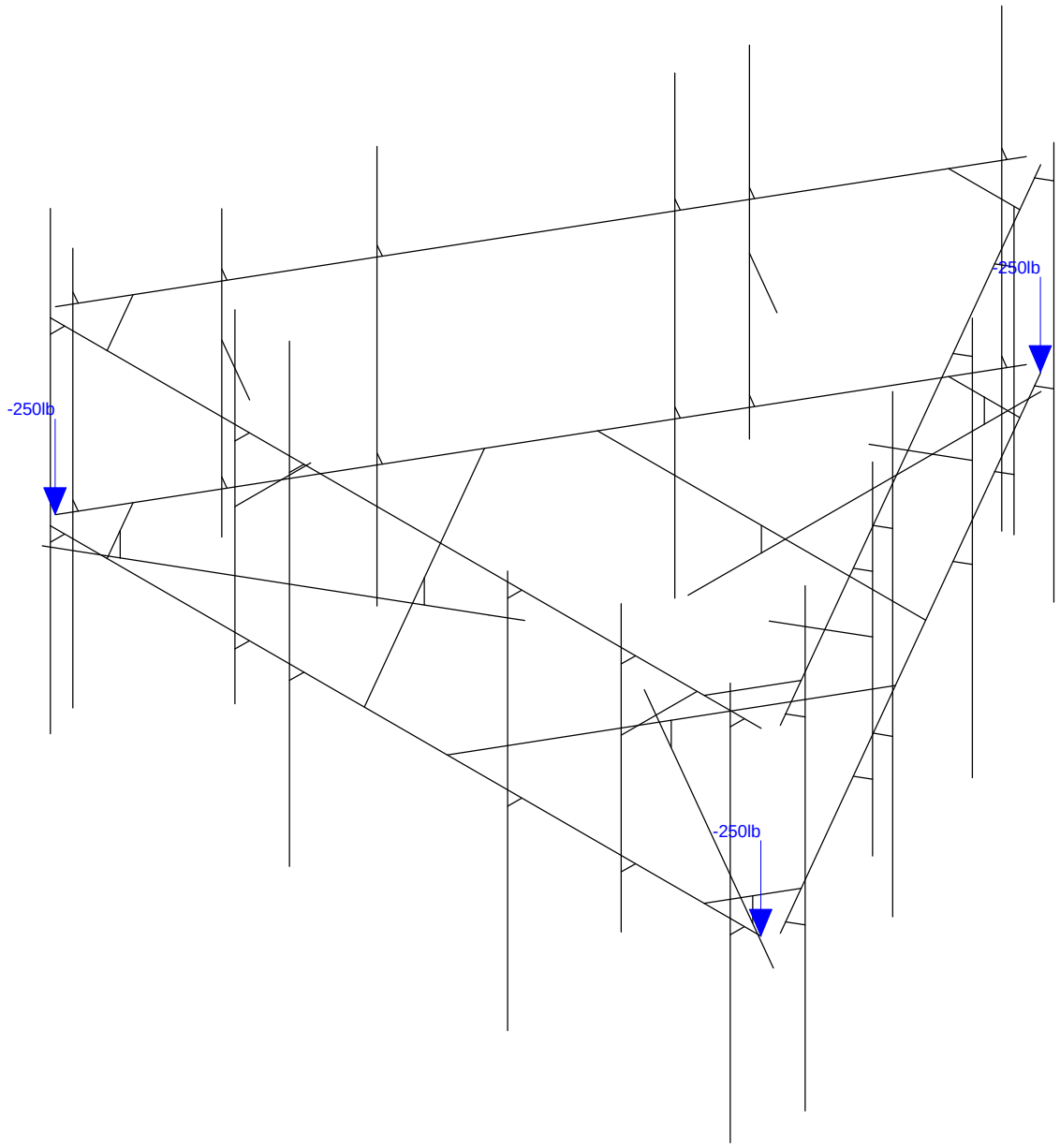




Loads: BLC 25, Live Loads 2

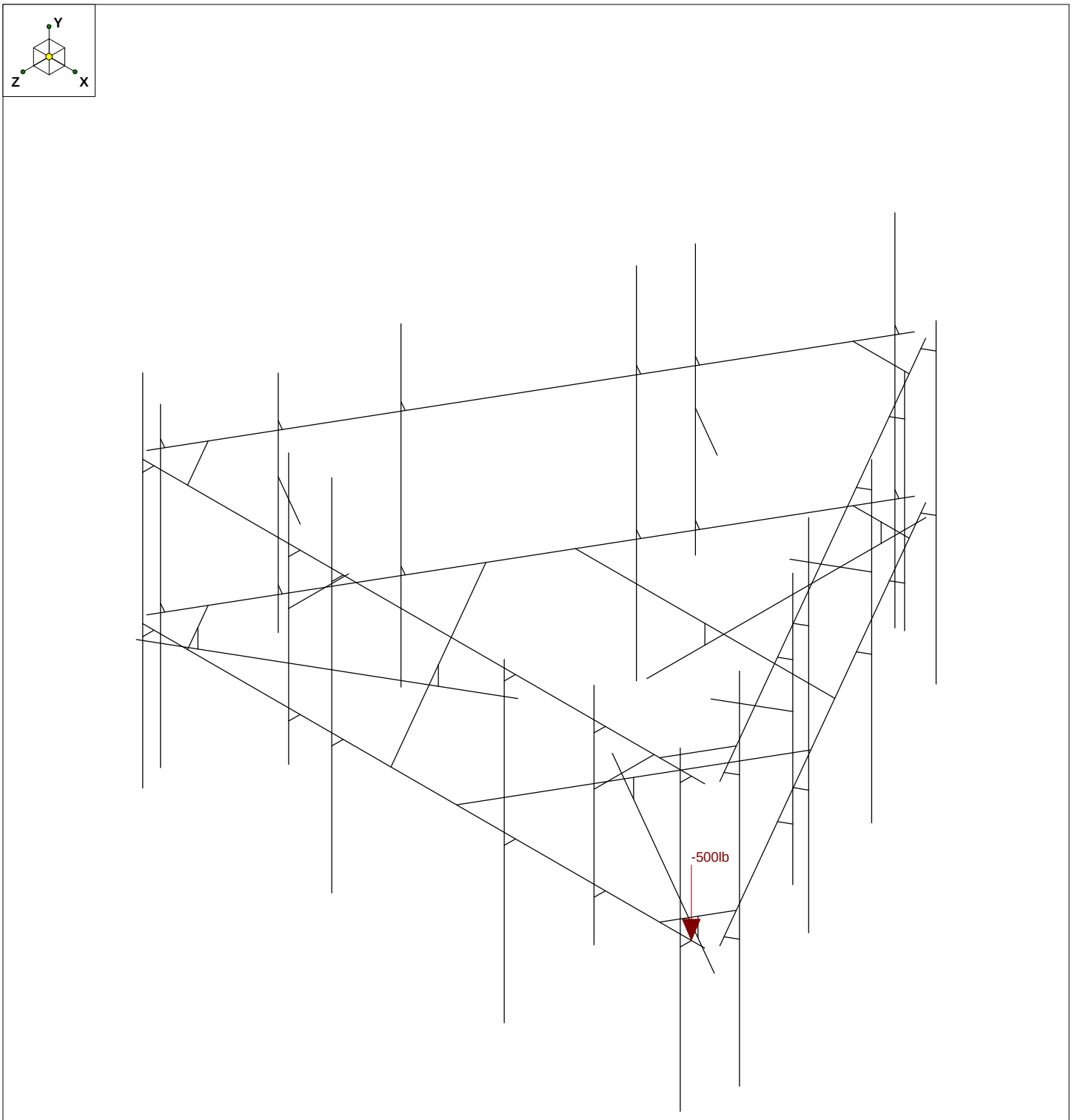
Centerline Communication...	CT1139_Mount	Live Load 2
AP		Dec 21, 2020 at 2:53 PM
		CT1139.r3d





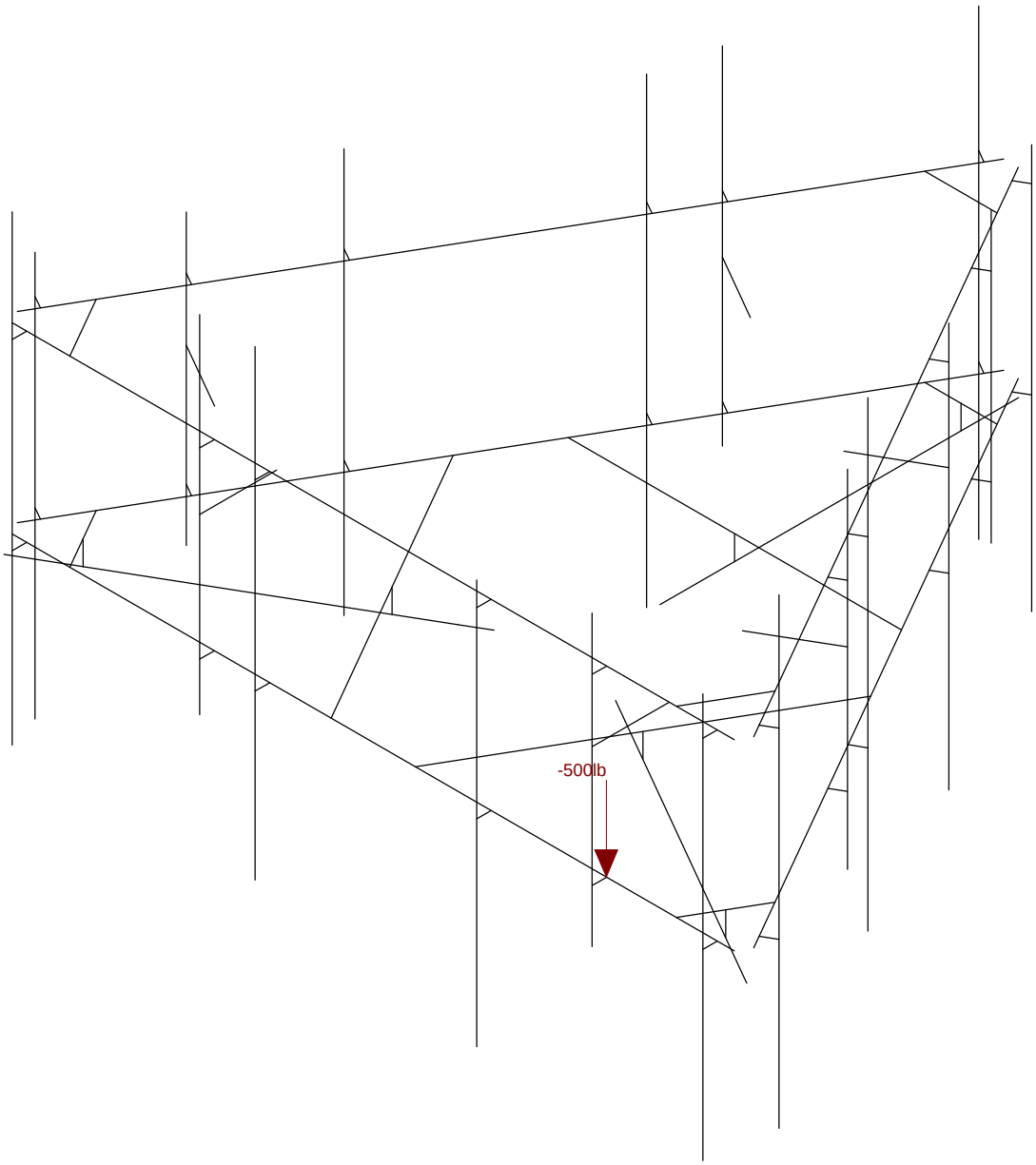
Loads: BLC 26, Live Loads 3

Centerline Communication...	CT1139_Mount	Live Load 3
AP		Dec 21, 2020 at 2:53 PM
		CT1139.r3d



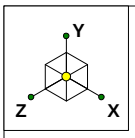
Loads: BLC 27, Maintenance Load 1

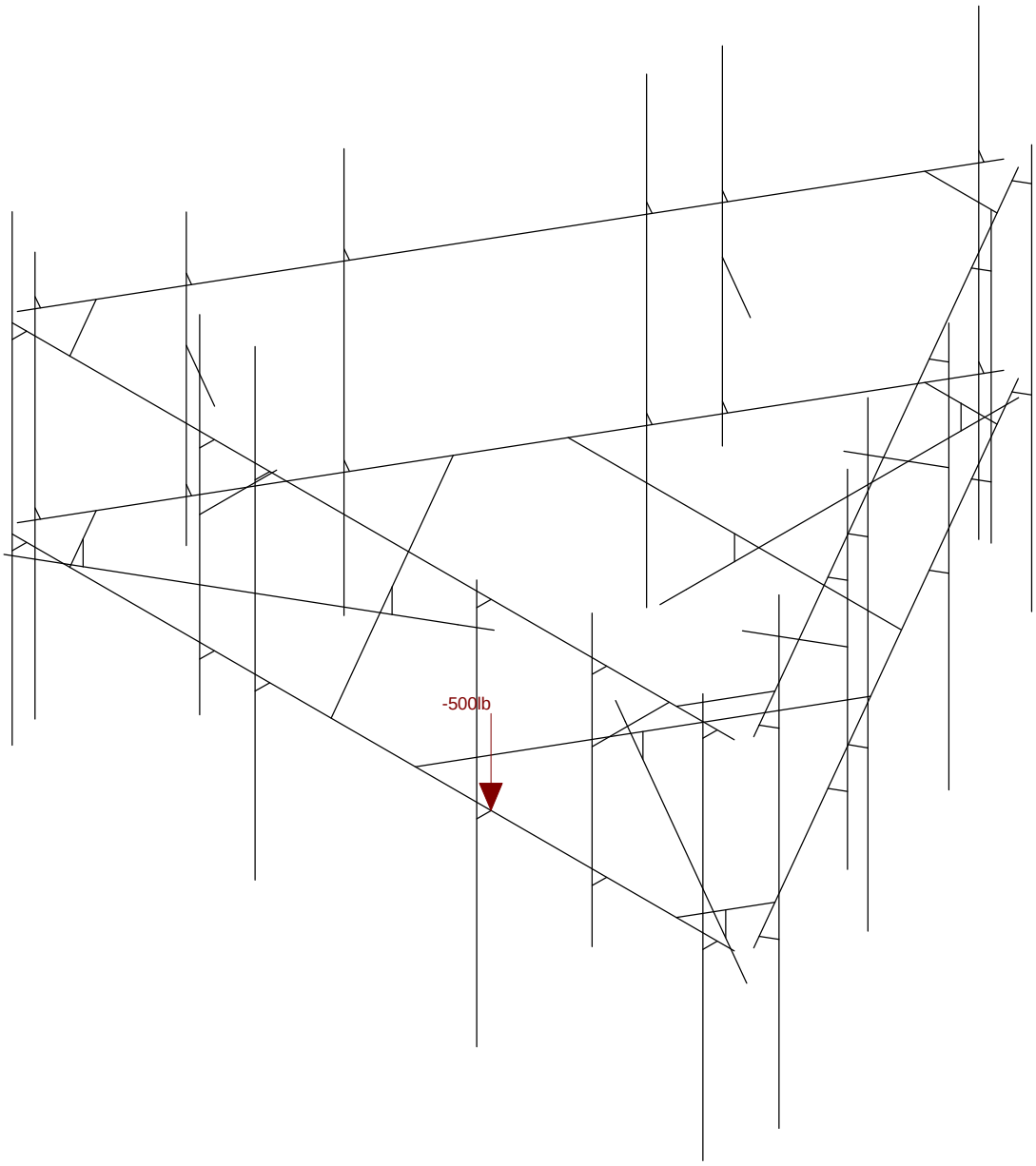
Centerline Communication...	CT1139_Mount	Maintenance Load 1
AP		Dec 21, 2020 at 2:53 PM
		CT1139.r3d



Loads: BLC 28, Maintenance Load 2

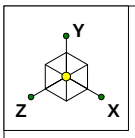
Centerline Communication...	CT1139_Mount	Maintenance Load 2
AP		Dec 21, 2020 at 2:53 PM
		CT1139.r3d

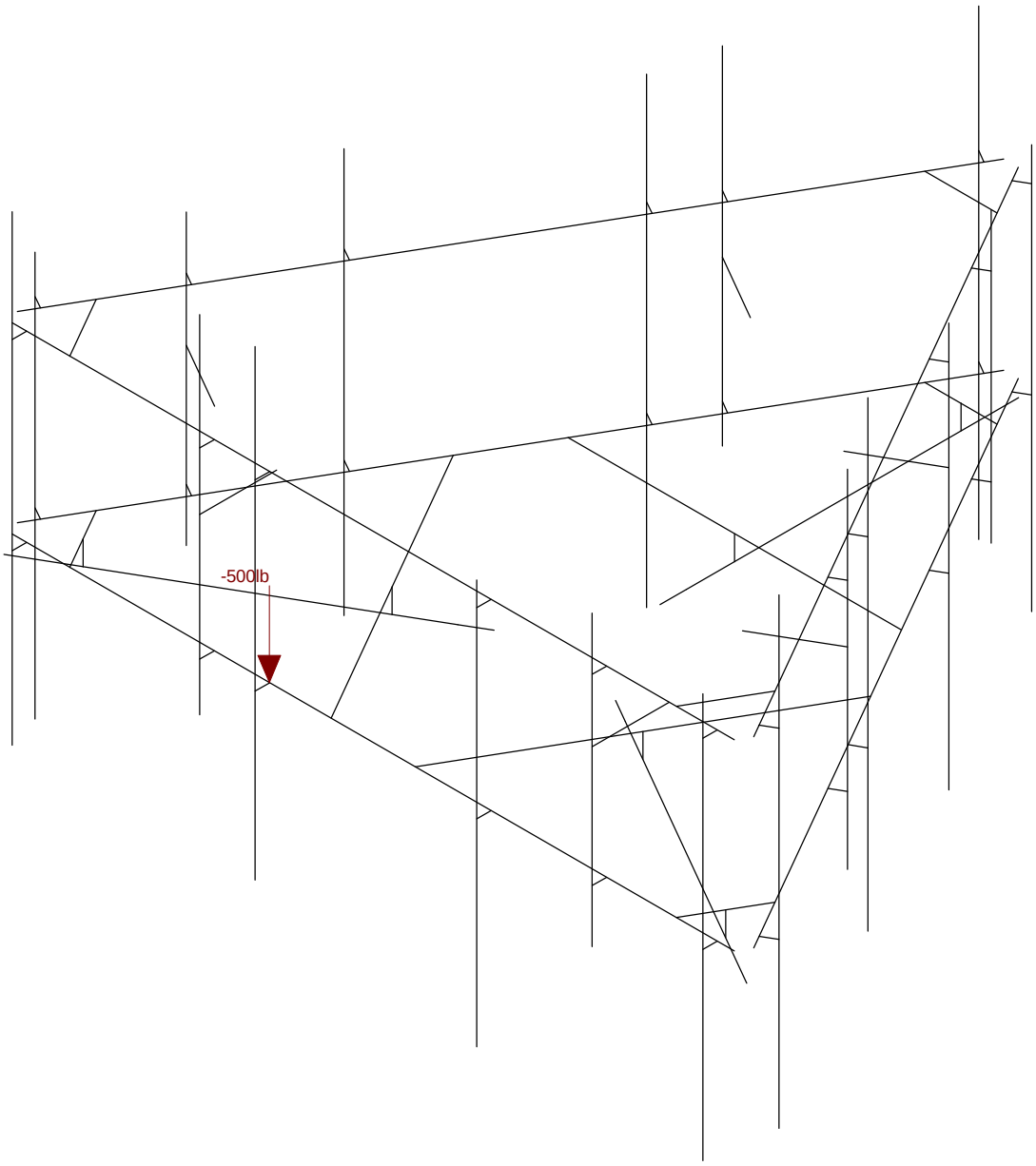




Loads: BLC 29, Maintenance Load 3

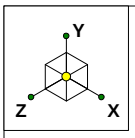
Centerline Communication...	CT1139_Mount	Maintenance Load 3
AP		Dec 21, 2020 at 2:54 PM
		CT1139.r3d

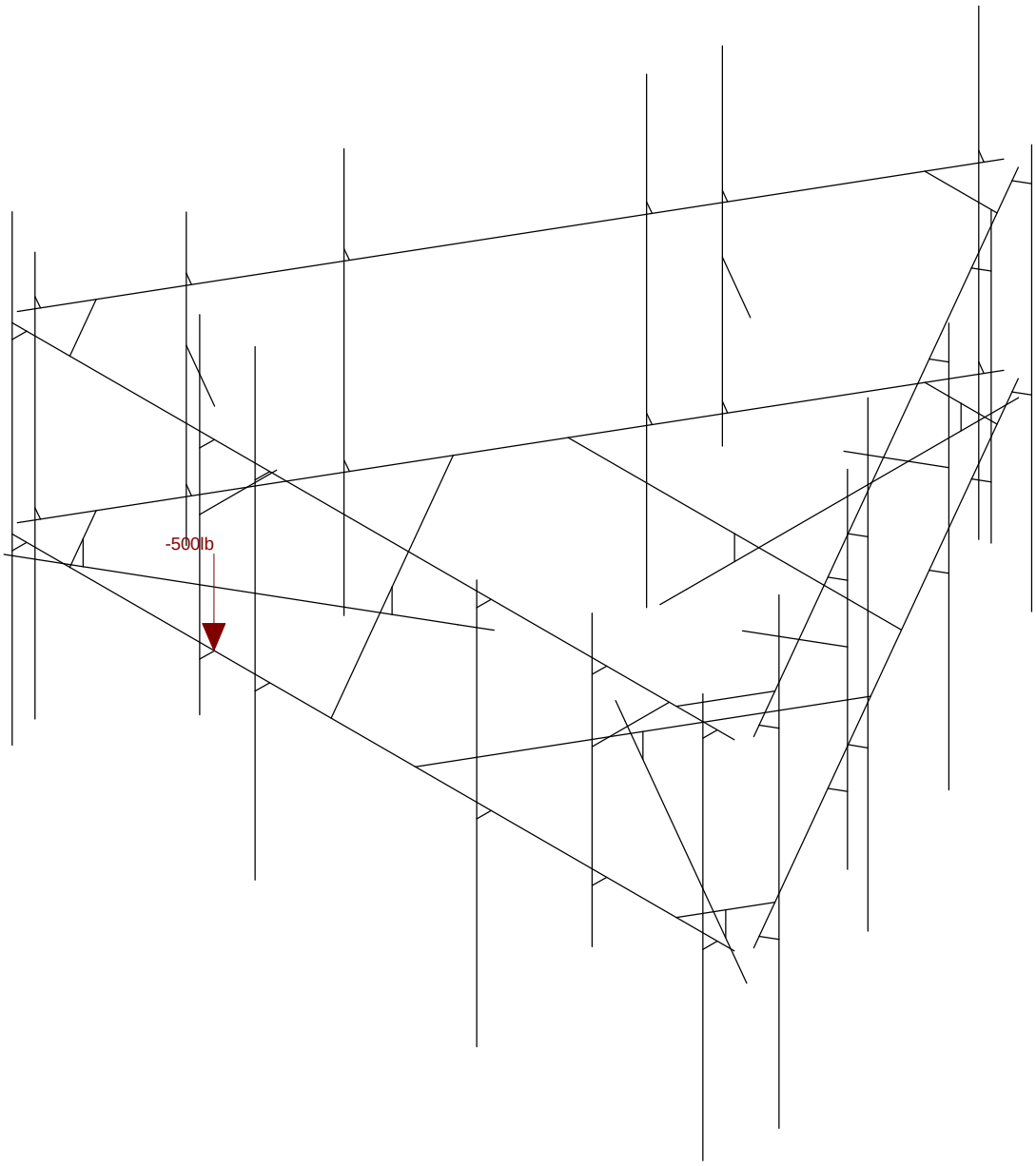




Loads: BLC 30, Maintenance Load 4

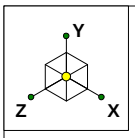
Centerline Communication...	CT1139_Mount	Maintenance Load 4
AP		Dec 21, 2020 at 2:54 PM
		CT1139.r3d

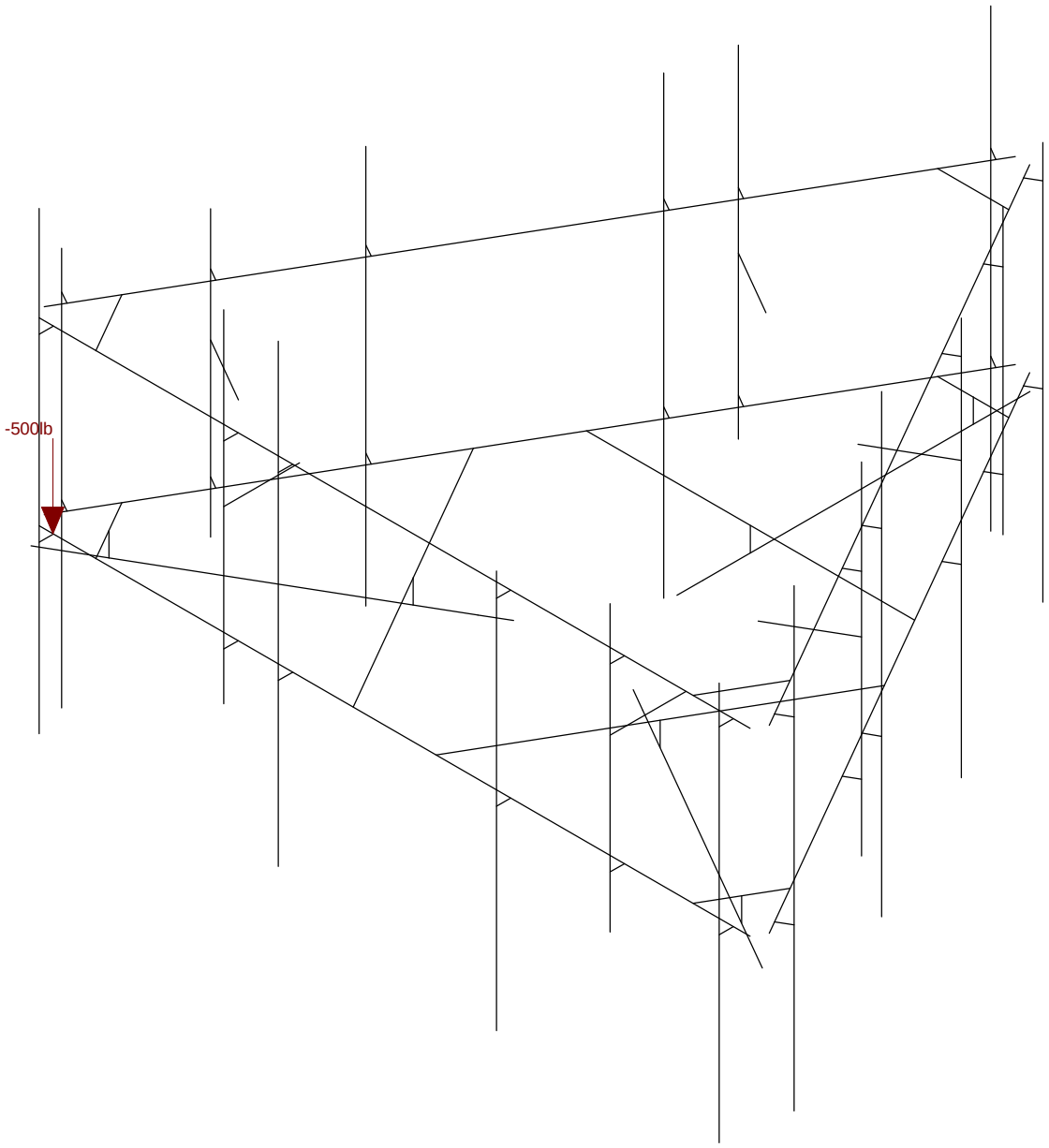




Loads: BLC 31, Maintenance Load 5

Centerline Communication...	CT1139_Mount	Maintenance Load 5
AP		Dec 21, 2020 at 2:54 PM
		CT1139.r3d





Loads: BLC 32, Maintenance Load 6

Centerline Communication...	CT1139_Mount	Maintenance Load 6
AP		Dec 21, 2020 at 2:54 PM
		CT1139.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[lb/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	490	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Horizontal	C6X10.5	Beam	Channel	A36 Gr.36	Typical	3.07	.86	15.1	.128
2	Standoff	HSS4X4X4	Beam	Tube	A500 Gr.B R...	Typical	3.37	7.8	7.8	12.8
3	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Support Rail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	Corner Plate	PL4.5x1/2	Beam	RECT	A36 Gr.36	Typical	2.25	.047	3.797	.174
6	Support Rail Co...	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
7	Cross Member	C6X10.5	Beam	Channel	A36 Gr.36	Typical	3.07	.86	15.1	.128

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	.581	.057	4.41	.00063

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	150	0	-0.	0	
3	N18	0	38	0	0	
4	N19	150	38	-0.	0	
5	N20	3	0	-0.	0	
6	N21	3	38	-0.	0	
7	N22	3	0	3	0	
8	N23	3	38	3	0	
9	N24	42	0	-0.	0	
10	N25	42	38	-0.	0	
11	N26	42	0	3	0	
12	N27	42	38	3	0	
13	N28	53.5	0	-0.	0	
14	N29	53.5	38	-0.	0	
15	N30	53.5	0	3	0	
16	N31	53.5	38	3	0	
17	N32	99.5	0	-0.	0	
18	N33	99.5	38	-0.	0	
19	N34	99.5	0	3	0	
20	N35	99.5	38	3	0	
21	N36	146.5	0	-0.	0	
22	N37	146.5	38	-0.	0	
23	N38	146.5	0	3	0	
24	N39	146.5	38	3	0	
25	N27A	151.501454	0	-2.600595	0	
26	N28A	76.501454	0	-132.504405	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
27	N31A	151.501454	38	-2.600595	0	
28	N32A	76.501454	38	-132.504405	0	
29	N33A	150.001454	0	-5.198671	0	
30	N34A	150.001454	38	-5.198671	0	
31	N35A	152.59953	0	-6.698671	0	
32	N36A	152.59953	38	-6.698671	0	
33	N37A	130.501454	0	-38.973662	0	
34	N38A	130.501454	38	-38.973662	0	
35	N39A	133.09953	0	-40.473662	0	
36	N40	133.09953	38	-40.473662	0	
37	N41	124.751454	0	-48.932954	0	
38	N42	124.751454	38	-48.932954	0	
39	N43	127.34953	0	-50.432954	0	
40	N44	127.34953	38	-50.432954	0	
41	N45	101.751454	0	-88.770122	0	
42	N46	101.751454	38	-88.770122	0	
43	N47	104.34953	0	-90.270122	0	
44	N48	104.34953	38	-90.270122	0	
45	N49	78.251454	0	-129.473316	0	
46	N50	78.251454	38	-129.473316	0	
47	N51	80.84953	0	-130.973316	0	
48	N52	80.84953	38	-130.973316	0	
49	N53	73.498546	0	-132.504405	0	
50	N54	-1.501454	0	-2.600595	0	
51	N57	73.498546	38	-132.504405	0	
52	N58	-1.501454	38	-2.600595	0	
53	N59	71.998546	0	-129.906329	0	
54	N60	71.998546	38	-129.906329	0	
55	N61	69.40047	0	-131.406329	0	
56	N62	69.40047	38	-131.406329	0	
57	N63	52.498546	0	-96.131338	0	
58	N64	52.498546	38	-96.131338	0	
59	N65	49.90047	0	-97.631338	0	
60	N66	49.90047	38	-97.631338	0	
61	N67	46.748546	0	-86.172046	0	
62	N68	46.748546	38	-86.172046	0	
63	N69	44.15047	0	-87.672046	0	
64	N70	44.15047	38	-87.672046	0	
65	N71	23.748546	0	-46.334878	0	
66	N72	23.748546	38	-46.334878	0	
67	N73	21.15047	0	-47.834878	0	
68	N74	21.15047	38	-47.834878	0	
69	N75	0.248546	0	-5.631684	0	
70	N76	0.248546	38	-5.631684	0	
71	N77	-2.34953	0	-7.131684	0	
72	N78	-2.34953	38	-7.131684	0	
73	C1	75	0	-45.035	0	
74	N80	12	0	-0.	0	
75	N81	138	0	-0.	0	
76	N82	145.501454	0	-12.9929	0	
77	N83	82.501454	0	-122.1121	0	
78	N84	67.498546	0	-122.1121	0	
79	N85	4.498546	0	-12.9929	0	
80	N86	8.249273	0	-6.49645	0	
81	N87	8.249273	-5	-6.49645	0	
82	N88	-2.143032	-5	-0.49645	0	
83	N89	57.612721	-5	-34.99645	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
84	N90	62.375861	-5	-37.74645	0	
85	N91	48.952467	-5	-29.99645	0	
86	N94	48.952467	0	-29.99645	0	
87	N95	66.270925	0	-0.	0	
88	N96	31.634009	0	-59.9929	0	
89	N93A	141.750727	0	-6.49645	0	
90	N94A	141.750727	-5	-6.49645	0	
91	N95A	152.143032	-5	-0.49645	0	
92	N96A	92.387279	-5	-34.99645	0	
93	N97	87.624139	-5	-37.74645	0	
94	N98	101.047533	-5	-29.99645	0	
95	N99	101.047533	0	-29.99645	0	
96	N100	118.365991	0	-59.9929	0	
97	N101	83.729075	0	0.	0	
98	N104	75	0	-122.1121	0	
99	N105	75	-5	-122.1121	0	
100	N106	75	-5	-134.1121	0	
101	N107	75	-5	-65.1121	0	
102	N108	75	-5	-59.6121	0	
103	N109	75	-5	-75.1121	0	
104	N110	75	0	-75.1121	0	
105	N111	40.363083	0	-75.1121	0	
106	N112	109.636917	0	-75.1121	0	
107	N107A	42	62	3	0	
108	N108A	53.5	62	3	0	
109	N109A	42	-10	3	0	
110	N110A	53.5	-34	3	0	
111	N111A	3	61	3	0	
112	N112A	3	-35	3	0	
113	N113	99.5	43	3	0	
114	N114	99.5	-41	3	0	
115	N115	146.5	46	3	0	
116	N116	146.5	-38	3	0	
117	N117	-2.34953	46	-7.131684	0	
118	N118	-2.34953	-38	-7.131684	0	
119	N119	21.15047	56	-47.834878	0	
120	N120	21.15047	-28	-47.834878	0	
121	N121	49.90047	64	-97.631338	0	
122	N122	44.15047	61	-87.672046	0	
123	N123	44.15047	-35	-87.672046	0	
124	N124	49.90047	-8	-97.631338	0	
125	N125	69.40047	64	-131.406329	0	
126	N126	69.40047	-32	-131.406329	0	
127	N127	80.84953	45	-130.973316	0	
128	N128	80.84953	-39	-130.973316	0	
129	N129	104.34953	45	-90.270122	0	
130	N130	104.34953	-39	-90.270122	0	
131	N131	127.34953	63	-50.432954	0	
132	N132	133.09953	58	-40.473662	0	
133	N133	127.34953	-33	-50.432954	0	
134	N134	133.09953	-14	-40.473662	0	
135	N135	152.59953	62	-6.698671	0	
136	N136	152.59953	-34	-6.698671	0	
137	N137	123.5	0	-0.	0	
138	N138	123.5	38	-0.	0	
139	N139	123.5	0	3	0	
140	N140	123.5	38	3	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
141	N141	123.5	49	3	0	
142	N142	123.5	-11	3	0	
143	N143	123.5	25	3	0	
144	N144	123.5	25	-13	0	
145	N146	89.751454	0	-109.554732	0	
146	N147	89.751454	38	-109.554732	0	
147	N148	92.34953	0	-111.054732	0	
148	N149	92.34953	38	-111.054732	0	
149	N150	92.34953	49	-111.054732	0	
150	N151	92.34953	-11	-111.054732	0	
151	N152	92.34953	25	-111.054732	0	
152	N155	11.748546	0	-25.550268	0	
153	N156	11.748546	38	-25.550268	0	
154	N157	9.15047	0	-27.050268	0	
155	N158	9.15047	38	-27.050268	0	
156	N159	9.15047	49	-27.050268	0	
157	N160	9.15047	-11	-27.050268	0	
158	N161	9.15047	25	-27.050268	0	
159	N162	23.006876	25	-19.050268	0	
160	N162A	104.34953	19	-90.270122	0	
161	N163	90.493124	19	-82.270122	0	
162	N162B	42	26	3	0	
163	N163A	42	26	-13	0	
164	N164	133.09953	26	-40.473662	0	
165	N165	119.243124	26	-32.473662	0	
166	N166	49.90047	26	-97.631338	0	
167	N167	63.756876	26	-89.631338	0	
168	N168	12	38	-0.	0	
169	N169	4.498546	38	-12.9929	0	
170	N170	145.501454	38	-12.9929	0	
171	N171	138	38	-0.	0	
172	N172	67.498546	38	-122.1121	0	
173	N173	82.501454	38	-122.1121	0	

Joint Loads and Enforced Displacements (BLC 27 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N36	L	Y	-500

Joint Loads and Enforced Displacements (BLC 28 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N137	L	Y	-500

Joint Loads and Enforced Displacements (BLC 29 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N32	L	Y	-500

Joint Loads and Enforced Displacements (BLC 30 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N28	L	Y	-500

Joint Loads and Enforced Displacements (BLC 31 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N24	L	Y	-500

Joint Loads and Enforced Displacements (BLC 32 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N20	L	Y	-500

Joint Loads and Enforced Displacements (BLC 33 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N75	L	Y	-500

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N155	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N71	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 10)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N67	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 11)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N63	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 12)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N59	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 13)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N49	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 14)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N146	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 15)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N45	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 16)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N41	L	Y	-500

Joint Loads and Enforced Displacements (BLC 43 : Maintenance Load 17)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N37A	L	Y	-500

Joint Loads and Enforced Displacements (BLC 44 : Maintenance Load 18)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N33A	L	Y	-500

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N90	max	1314.755	12	4468.335	20	3711.304	16	1681.57	9	2392.412	2	475.715	9
2		min	-5000.932	16	-170.033	9	-2199.766	14	-3877.538	7	-2363.921	15	-6362.12	20
3	N97	max	5647.495	18	3753.4	22	3377.127	17	2228.91	10	1212.607	8	4482.872	22
4		min	286.876	15	-1332.028	11	-1112.376	15	-3154.42	8	-1181.999	9	-3365.158	11
5	N108	max	2663.762	5	4895.726	16	2349.43	9	7909.389	16	502.204	9	371.952	173
6		min	-338.77	9	-1302.135	15	-6784.084	22	-3878.711	15	-3156.057	5	-1360.003	12
7	Totals:	max	8050.291	5	11092.368	19	8275.063	9						
8		min	-.005	8	3026.803	15	-8275.061	15						

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N90	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N97	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N108	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Horizontal	150			Lbyy						Lateral
2	M13	Support Rail	150			Lbyy						Lateral
3	M14A	Horizontal	150			Lbyy						Lateral
4	M16A	Support Rail	150			Lbyy						Lateral
5	M27	Horizontal	150			Lbyy						Lateral
6	M29	Support Rail	150			Lbyy						Lateral
7	M42	Standoff	69			Lbyy						Lateral
8	M43	Standoff	5.5			Lbyy						Lateral
9	M44	Cross Mem...	69.274			Lbyy						Lateral
10	M45A	Standoff	69			Lbyy						Lateral
11	M46	Standoff	5.5			Lbyy						Lateral
12	M47	Cross Mem...	69.274			Lbyy						Lateral
13	M51	Standoff	69			Lbyy						Lateral
14	M52	Standoff	5.5			Lbyy						Lateral
15	M53	Cross Mem...	69.274			Lbyy						Lateral
16	MP5	Mount Pipe	96			Lbyy						Lateral
17	MP4	Mount Pipe	72			Lbyy						Lateral
18	MP3	Mount Pipe	96			Lbyy						Lateral
19	MP2	Mount Pipe	84			Lbyy						Lateral
20	MP1	Mount Pipe	84			Lbyy						Lateral
21	MP10	Mount Pipe	96			Lbyy						Lateral
22	MP9	Mount Pipe	72			Lbyy						Lateral
23	MP8	Mount Pipe	96			Lbyy						Lateral
24	MP7	Mount Pipe	84			Lbyy						Lateral
25	MP6	Mount Pipe	84			Lbyy						Lateral
26	MP15	Mount Pipe	96			Lbyy						Lateral
27	MP14	Mount Pipe	72			Lbyy						Lateral
28	MP13	Mount Pipe	96			Lbyy						Lateral
29	MP12	Mount Pipe	84			Lbyy						Lateral
30	MP11	Mount Pipe	84			Lbyy						Lateral
31	M72	Mount Pipe	60			Lbyy						Lateral
32	MP16	Mount Pipe	60			Lbyy						Lateral
33	M80	Mount Pipe	60			Lbyy						Lateral
34	M85	Support Rail...	15.003			Lbyy						Lateral
35	M86	Support Rail...	15.003			Lbyy						Lateral
36	M87	Support Rail...	15.003			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2		180	Horizontal	Beam	Channel	A36 Gr.36	Typical
2	M13	N18	N19			Support Rail	Beam	Pipe	A53 Gr.B	Typical
3	M14	N21	N23			RIGID	None	None	RIGID	Typical
4	M15	N20	N22			RIGID	None	None	RIGID	Typical
5	M16	N25	N27			RIGID	None	None	RIGID	Typical
6	M17	N24	N26			RIGID	None	None	RIGID	Typical
7	M18	N29	N31			RIGID	None	None	RIGID	Typical
8	M19	N28	N30			RIGID	None	None	RIGID	Typical
9	M20	N33	N35			RIGID	None	None	RIGID	Typical
10	M21	N32	N34			RIGID	None	None	RIGID	Typical
11	M22	N37	N39			RIGID	None	None	RIGID	Typical
12	M23	N36	N38			RIGID	None	None	RIGID	Typical
13	M14A	N27A	N28A		180	Horizontal	Beam	Channel	A36 Gr.36	Typical
14	M16A	N31A	N32A			Support Rail	Beam	Pipe	A53 Gr.B	Typical
15	M17A	N34A	N36A			RIGID	None	None	RIGID	Typical
16	M18A	N33A	N35A			RIGID	None	None	RIGID	Typical
17	M19A	N38A	N40			RIGID	None	None	RIGID	Typical
18	M20A	N37A	N39A			RIGID	None	None	RIGID	Typical
19	M21A	N42	N44			RIGID	None	None	RIGID	Typical
20	M22A	N41	N43			RIGID	None	None	RIGID	Typical
21	M23A	N46	N48			RIGID	None	None	RIGID	Typical
22	M24	N45	N47			RIGID	None	None	RIGID	Typical
23	M25	N50	N52			RIGID	None	None	RIGID	Typical
24	M26	N49	N51			RIGID	None	None	RIGID	Typical
25	M27	N53	N54		180	Horizontal	Beam	Channel	A36 Gr.36	Typical
26	M29	N57	N58			Support Rail	Beam	Pipe	A53 Gr.B	Typical
27	M30	N60	N62			RIGID	None	None	RIGID	Typical
28	M31	N59	N61			RIGID	None	None	RIGID	Typical
29	M32	N64	N66			RIGID	None	None	RIGID	Typical
30	M33	N63	N65			RIGID	None	None	RIGID	Typical
31	M34	N68	N70			RIGID	None	None	RIGID	Typical
32	M35	N67	N69			RIGID	None	None	RIGID	Typical
33	M36	N72	N74			RIGID	None	None	RIGID	Typical
34	M37	N71	N73			RIGID	None	None	RIGID	Typical
35	M38	N76	N78			RIGID	None	None	RIGID	Typical
36	M39	N75	N77			RIGID	None	None	RIGID	Typical
37	M40	N80	N85			RIGID	None	None	RIGID	Typical
38	M41	N86	N87			RIGID	None	None	RIGID	Typical
39	M42	N88	N89			Standoff	Beam	Tube	A500 Gr.B...	Typical
40	M43	N89	N90			Standoff	Beam	Tube	A500 Gr.B...	Typical
41	M44	N96	N95			Cross Member	Beam	Channel	A36 Gr.36	Typical
42	M45	N91	N94			RIGID	None	None	RIGID	Typical
43	M43A	N82	N81			RIGID	None	None	RIGID	Typical
44	M44A	N93A	N94A			RIGID	None	None	RIGID	Typical
45	M45A	N95A	N96A			Standoff	Beam	Tube	A500 Gr.B...	Typical
46	M46	N96A	N97			Standoff	Beam	Tube	A500 Gr.B...	Typical
47	M47	N101	N100			Cross Member	Beam	Channel	A36 Gr.36	Typical
48	M48	N98	N99			RIGID	None	None	RIGID	Typical
49	M49	N84	N83			RIGID	None	None	RIGID	Typical
50	M50	N104	N105			RIGID	None	None	RIGID	Typical
51	M51	N106	N107			Standoff	Beam	Tube	A500 Gr.B...	Typical
52	M52	N107	N108			Standoff	Beam	Tube	A500 Gr.B...	Typical
53	M53	N112	N111			Cross Member	Beam	Channel	A36 Gr.36	Typical
54	M54	N109	N110			RIGID	None	None	RIGID	Typical
55	MP5	N111A	N112A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
56	MP4	N107A	N109A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	MP3	N108A	N110A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
58	MP2	N113	N114			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
59	MP1	N115	N116			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
60	MP10	N125	N126			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
61	MP9	N121	N124			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
62	MP8	N122	N123			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
63	MP7	N119	N120			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
64	MP6	N117	N118			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
65	MP15	N135	N136			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
66	MP14	N132	N134			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
67	MP13	N131	N133			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
68	MP12	N129	N130			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
69	MP11	N127	N128			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
70	M70	N138	N140			RIGID	None	None	RIGID	Typical
71	M71	N137	N139			RIGID	None	None	RIGID	Typical
72	M72	N141	N142			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
73	R1	N143	N144			RIGID	None	None	RIGID	Typical
74	M74	N147	N149			RIGID	None	None	RIGID	Typical
75	M75	N146	N148			RIGID	None	None	RIGID	Typical
76	MP16	N150	N151			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
77	M78	N156	N158			RIGID	None	None	RIGID	Typical
78	M79	N155	N157			RIGID	None	None	RIGID	Typical
79	M80	N159	N160			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
80	R2	N161	N162			RIGID	None	None	RIGID	Typical
81	R3	N162A	N163			RIGID	None	None	RIGID	Typical
82	R4	N162B	N163A			RIGID	None	None	RIGID	Typical
83	R6	N164	N165			RIGID	None	None	RIGID	Typical
84	R5	N166	N167			RIGID	None	None	RIGID	Typical
85	M85	N168	N169		180	Support Rail C...	Beam	Single Angle	A36 Gr.36	Typical
86	M86	N170	N171		180	Support Rail C...	Beam	Single Angle	A36 Gr.36	Typical
87	M87	N172	N173		180	Support Rail C...	Beam	Single Angle	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis Offs...	Inactive	Seismi...
1	M1						Yes				None
2	M13						Yes				None
3	M14						Yes	** NA **			None
4	M15						Yes	** NA **			None
5	M16						Yes	** NA **			None
6	M17						Yes	** NA **			None
7	M18						Yes	** NA **			None
8	M19						Yes	** NA **			None
9	M20						Yes	** NA **			None
10	M21						Yes	** NA **			None
11	M22						Yes	** NA **			None
12	M23						Yes	** NA **			None
13	M14A						Yes				None
14	M16A						Yes				None
15	M17A						Yes	** NA **			None
16	M18A						Yes	** NA **			None
17	M19A						Yes	** NA **			None
18	M20A						Yes	** NA **			None
19	M21A						Yes	** NA **			None
20	M22A						Yes	** NA **			None
21	M23A						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis Offs...	Inactive	Seismi...
22	M24						Yes	** NA **			None
23	M25						Yes	** NA **			None
24	M26						Yes	** NA **			None
25	M27						Yes				None
26	M29						Yes				None
27	M30						Yes	** NA **			None
28	M31						Yes	** NA **			None
29	M32						Yes	** NA **			None
30	M33						Yes	** NA **			None
31	M34						Yes	** NA **			None
32	M35						Yes	** NA **			None
33	M36						Yes	** NA **			None
34	M37						Yes	** NA **			None
35	M38						Yes	** NA **			None
36	M39						Yes	** NA **			None
37	M40						Yes	** NA **			None
38	M41						Yes	** NA **			None
39	M42						Yes				None
40	M43						Yes				None
41	M44						Yes				None
42	M45						Yes	** NA **			None
43	M43A						Yes	** NA **			None
44	M44A						Yes	** NA **			None
45	M45A						Yes				None
46	M46						Yes				None
47	M47						Yes				None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes				None
52	M52						Yes				None
53	M53						Yes				None
54	M54						Yes	** NA **			None
55	MP5						Yes				None
56	MP4						Yes				None
57	MP3						Yes				None
58	MP2						Yes				None
59	MP1						Yes				None
60	MP10						Yes				None
61	MP9						Yes				None
62	MP8						Yes				None
63	MP7						Yes				None
64	MP6						Yes				None
65	MP15						Yes				None
66	MP14						Yes				None
67	MP13						Yes				None
68	MP12						Yes				None
69	MP11						Yes				None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes				None
73	R1						Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	MP16						Yes				None
77	M78						Yes	** NA **			None
78	M79						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis Offs...	Inactive	Seismi...
79	M80						Yes				None
80	R2						Yes	** NA **			None
81	R3						Yes	** NA **			None
82	R4						Yes	** NA **			None
83	R6						Yes	** NA **			None
84	R5						Yes	** NA **			None
85	M85						Yes				None
86	M86						Yes				None
87	M87						Yes				None

Basic Load Cases

	BLC Description	Category	X Grav...	Y Grav...	Z Grav...	Joint	Point	Distrib...	Area(M...	Surfac...
1	Dead Load	DL		-1			33		3	
2	Wind 0	WLZ					66			
3	Wind 30	None					66			
4	Wind 60	None					66			
5	Wind 90	WLX					66			
6	Wind 120	None					66			
7	Wind 150	None					66			
8	Wind 180	WLZ					66			
9	Ice Weight	DL					33	87	3	
10	Ice + Wind 0	WLZ					66			
11	Ice + Wind 30	None					66			
12	Ice + Wind 60	None					66			
13	Ice + Wind 90	WLX					66			
14	Ice + Wind 120	None					66			
15	Ice + Wind 150	None					66			
16	Ice + Wind 180	WLZ					66			
17	Distri. Wind Z	WLZ						87		
18	Distri. Wind X	WLX						87		
19	Distri. Ice + Win...	WLZ						87		
20	Distrr. Ice + Win...	WLX						87		
21	Seismic Load Y	ELY					33	87		
22	Seismic Load Z	ELZ					33	87		
23	Seismic Load X	ELX					33	87		
24	Live Loads 1	LL					3			
25	Live Loads 2	LL					3			
26	Live Loads 3	LL					3			
27	Maintenance Lo...	None				1				
28	Maintenance Lo...	None				1				
29	Maintenance Lo...	None				1				
30	Maintenance Lo...	None				1				
31	Maintenance Lo...	None				1				
32	Maintenance Lo...	None				1				
33	Maintenance Lo...	None				1				
34	Maintenance Lo...	None				1				
35	Maintenance Lo...	None				1				
36	Maintenance Lo...	None				1				
37	Maintenance Lo...	None				1				
38	Maintenance Lo...	None				1				
39	Maintenance Lo...	None				1				
40	Maintenance Lo...	None				1				
41	Maintenance Lo...	None				1				
42	Maintenance Lo...	None				1				
43	Maintenance Lo...	None				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Grav...	Y Grav...	Z Grav...	Joint	Point	Distrib...	Area(M...	Surfac...
44	Maintenance Lo...	None				1				
45	BLC 1 Transient...	None						33		
46	BLC 9 Transient...	None						33		

Load Combinations

	Description	S...	PDelta	SRSS	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D + 1.0W 0°	Yes	Y		1	1.2	2	1	17	1	18													
3	1.2D + 1.0W 30°	Yes	Y		1	1.2	3	1	17	.866	18	.5												
4	1.2D + 1.0W 60°	Yes	Y		1	1.2	4	1	17	.5	18	.866												
5	1.2D + 1.0W 90°	Yes	Y		1	1.2	5	1	17		18	1												
6	1.2D + 1.0W 120°	Yes	Y		1	1.2	6	1	17	-.5	18	.866												
7	1.2D + 1.0W 150°	Yes	Y		1	1.2	7	1	17	-.8...	18	.5												
8	1.2D + 1.0W 180°	Yes	Y		1	1.2	8	1	17	-1	18													
9	0.9D + 1.0W 0°	Yes	Y		1	.9	2	1	17	1	18													
10	0.9D + 1.0W 30°	Yes	Y		1	.9	3	1	17	.866	18	.5												
11	0.9D + 1.0W 60°	Yes	Y		1	.9	4	1	17	.5	18	.866												
12	0.9D + 1.0W 90°	Yes	Y		1	.9	5	1	17		18	1												
13	0.9D + 1.0W 120°	Yes	Y		1	.9	6	1	17	-.5	18	.866												
14	0.9D + 1.0W 150°	Yes	Y		1	.9	7	1	17	-.8...	18	.5												
15	0.9D + 1.0W 180°	Yes	Y		1	.9	8	1	17	-1	18													
16	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	10	1	19	1	20											
17	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	11	1	19	.866	20	.5										
18	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	12	1	19	.5	20	.866										
19	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	13	1	19		20	1										
20	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	14	1	19	-.5	20	.866										
21	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	15	1	19	-.8...	20	.5										
22	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	9	1	16	1	19	-1	20											
23	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22	1	23													
24	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22	.866	23	.5												
25	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22	.5	23	.866												
26	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22		23	1												
27	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22	-.5	23	.866												
28	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22	-.8...	23	.5												
29	1.2D + 1.0Ev + 1....	Yes	Y		1	1.2	21	1	22	-1	23													
30	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	2	.231	17	.231	18											
31	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	3	.231	17	.2	18	.116										
32	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	4	.231	17	.116	18	.2										
33	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	5	.231	17		18	.231										
34	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	6	.231	17	-.1...	18	.2										
35	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	7	.231	17	-.2	18	.116										
36	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	24	1.5	8	.231	17	-.2...	18											
37	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	2	.231	17		18											
38	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	3	.231	17	.116	18											
39	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	4	.231	17	.2	18											
40	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	5	.231	17		18											
41	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	6	.231	17	.2	18											
42	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	7	.231	17	.116	18											
43	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	25	1.5	8	.231	17		18											
44	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	2	.231	17	.054	18											
45	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	3	.231	17	.046	18	.027										
46	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	4	.231	17	.027	18	.046										
47	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	5	.231	17		18	.054										
48	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	6	.231	17	-.0...	18	.046										
49	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	7	.231	17	-.0...	18	.027										

Load Combinations (Continued)

	Description	S...	PDelta	SRSS	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
50	1.0D +1.5Lv + 1.0...	Yes	Y		1	1	26	1.5	8	.231	17	-.0...	18											
51	1.2D + 1.5Lv	Yes	Y		1	1.2	24	1.5																
52	1.2D + 1.5Lv	Yes	Y		1	1.2	25	1.5																
53	1.2D + 1.5Lv	Yes	Y		1	1.2	26	1.5																
54	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	2	.065	17	.065	18											
55	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	3	.065	17	.056	18	.032										
56	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	4	.065	17	.032	18	.056										
57	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	5	.065	17		18	.065										
58	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	6	.065	17	-.0...	18	.056										
59	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	7	.065	17	-.0...	18	.032										
60	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	27	1.5	8	.065	17	-.0...	18											
61	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	2	.065	17	.065	18											
62	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	3	.065	17	.056	18	.032										
63	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	4	.065	17	.032	18	.056										
64	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	5	.065	17		18	.065										
65	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	6	.065	17	-.0...	18	.056										
66	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	7	.065	17	-.0...	18	.032										
67	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	28	1.5	8	.065	17	-.0...	18											
68	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	2	.065	17	.065	18											
69	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	3	.065	17	.056	18	.032										
70	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	4	.065	17	.032	18	.056										
71	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	5	.065	17		18	.065										
72	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	6	.065	17	-.0...	18	.056										
73	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	7	.065	17	-.0...	18	.032										
74	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	29	1.5	8	.065	17	-.0...	18											
75	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	2	.065	17	.065	18											
76	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	3	.065	17	.056	18	.032										
77	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	4	.065	17	.032	18	.056										
78	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	5	.065	17		18	.065										
79	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	6	.065	17	-.0...	18	.056										
80	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	7	.065	17	-.0...	18	.032										
81	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	30	1.5	8	.065	17	-.0...	18											
82	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	2	.065	17	.065	18											
83	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	3	.065	17	.056	18	.032										
84	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	4	.065	17	.032	18	.056										
85	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	5	.065	17		18	.065										
86	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	6	.065	17	-.0...	18	.056										
87	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	7	.065	17	-.0...	18	.032										
88	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	31	1.5	8	.065	17	-.0...	18											
89	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	2	.065	17	.065	18											
90	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	3	.065	17	.056	18	.032										
91	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	4	.065	17	.032	18	.056										
92	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	5	.065	17		18	.065										
93	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	6	.065	17	-.0...	18	.056										
94	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	7	.065	17	-.0...	18	.032										
95	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	32	1.5	8	.065	17	-.0...	18											
96	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	2	.065	17	.065	18											
97	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	3	.065	17	.056	18	.032										
98	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	4	.065	17	.032	18	.056										
99	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	5	.065	17		18	.065										
100	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	6	.065	17	-.0...	18	.056										
101	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	7	.065	17	-.0...	18	.032										
102	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	33	1.5	8	.065	17	-.0...	18											
103	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	2	.065	17	.065	18											
104	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	3	.065	17	.056	18	.032										
105	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	4	.065	17	.032	18	.056										
106	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	5	.065	17		18	.065										

Load Combinations (Continued)

	Description	S...	PDelta	SRSS	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
107	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	6	.065	17	-.0...	18	.056										
108	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	7	.065	17	-.0...	18	.032										
109	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	34	1.5	8	.065	17	-.0...	18											
110	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	2	.065	17	.065	18											
111	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	3	.065	17	.056	18	.032										
112	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	4	.065	17	.032	18	.056										
113	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	5	.065	17		18	.065										
114	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	6	.065	17	-.0...	18	.056										
115	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	7	.065	17	-.0...	18	.032										
116	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	35	1.5	8	.065	17	-.0...	18											
117	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	2	.065	17	.065	18											
118	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	3	.065	17	.056	18	.032										
119	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	4	.065	17	.032	18	.056										
120	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	5	.065	17		18	.065										
121	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	6	.065	17	-.0...	18	.056										
122	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	7	.065	17	-.0...	18	.032										
123	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	36	1.5	8	.065	17	-.0...	18											
124	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	2	.065	17	.065	18											
125	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	3	.065	17	.056	18	.032										
126	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	4	.065	17	.032	18	.056										
127	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	5	.065	17		18	.065										
128	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	6	.065	17	-.0...	18	.056										
129	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	7	.065	17	-.0...	18	.032										
130	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	37	1.5	8	.065	17	-.0...	18											
131	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	2	.065	17	.065	18											
132	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	3	.065	17	.056	18	.032										
133	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	4	.065	17	.032	18	.056										
134	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	5	.065	17		18	.065										
135	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	6	.065	17	-.0...	18	.056										
136	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	7	.065	17	-.0...	18	.032										
137	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	38	1.5	8	.065	17	-.0...	18											
138	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	2	.065	17	.065	18											
139	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	3	.065	17	.056	18	.032										
140	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	4	.065	17	.032	18	.056										
141	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	5	.065	17		18	.065										
142	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	6	.065	17	-.0...	18	.056										
143	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	7	.065	17	-.0...	18	.032										
144	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	39	1.5	8	.065	17	-.0...	18											
145	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	2	.065	17	.065	18											
146	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	3	.065	17	.056	18	.032										
147	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	4	.065	17	.032	18	.056										
148	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	5	.065	17		18	.065										
149	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	6	.065	17	-.0...	18	.056										
150	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	7	.065	17	-.0...	18	.032										
151	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	40	1.5	8	.065	17	-.0...	18											
152	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	2	.065	17	.065	18											
153	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	3	.065	17	.056	18	.032										
154	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	4	.065	17	.032	18	.056										
155	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	5	.065	17		18	.065										
156	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	6	.065	17	-.0...	18	.056										
157	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	7	.065	17	-.0...	18	.032										
158	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	41	1.5	8	.065	17	-.0...	18											
159	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	2	.065	17	.065	18											
160	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	3	.065	17	.056	18	.032										
161	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	4	.065	17	.032	18	.056										
162	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	5	.065	17		18	.065										
163	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	6	.065	17	-.0...	18	.056										

Load Combinations (Continued)

	Description	S...	PDelta	SRSS	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
164	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	7	.065	17	-.0...	18	.032										
165	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	42	1.5	8	.065	17	-.0...	18											
166	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	2	.065	17	.065	18											
167	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	3	.065	17	.056	18	.032										
168	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	4	.065	17	.032	18	.056										
169	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	5	.065	17		18	.065										
170	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	6	.065	17	-.0...	18	.056										
171	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	7	.065	17	-.0...	18	.032										
172	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	43	1.5	8	.065	17	-.0...	18											
173	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	2	.065	17	.065	18											
174	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	3	.065	17	.056	18	.032										
175	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	4	.065	17	.032	18	.056										
176	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	5	.065	17		18	.065										
177	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	6	.065	17	-.0...	18	.056										
178	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	7	.065	17	-.0...	18	.032										
179	1.2D + 1.5Lm + 1....	Yes	Y		1	1.2	44	1.5	8	.065	17	-.0...	18											

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc.....	L...	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [...	phi*Mn z-z [lb.....	Eqn
1	M85	L2.5x2.5x4	.587	0	2	.118	15.... y	3	36638.776	38556	1113.554	2537.388	2... H2-1
2	M87	L2.5x2.5x4	.532	15.003	5	.120	0 y	5	36638.776	38556	1113.554	2537.388	2... H2-1
3	M43	HSS4X4...	.530	5.5	7	.152	5.5 y	8	139395.395	139518	16180.5	16180.5	1... H1-1b
4	M52	HSS4X4...	.520	5.5	17	.169	5.5 z	12	139395.395	139518	16180.5	16180.5	1... H1-1b
5	MP9	PIPE_2.0	.461	63.75	7	.148	63....	5	20866.733	32130	1871.625	1871.625	2... H1-1b
6	MP8	PIPE_2.0	.452	61	7	.102	61	3	14916.096	32130	1871.625	1871.625	2... H1-1b
7	M86	L2.5x2.5x4	.450	15.003	2	.098	15.... y	7	36638.776	38556	1113.554	2537.388	2... H2-1
8	MP7	PIPE_2.0	.439	56	2	.124	56	4	17855.085	32130	1871.625	1871.625	2... H1-1b
9	M80	PIPE_2.0	.436	48.75	2	.185	48....	3	23808.54	32130	1871.625	1871.625	1... H1-1b
10	MP12	PIPE_2.0	.429	44.625	4	.182	44....	12	17855.085	32130	1871.625	1871.625	1... H1-1b
11	M29	PIPE_2.0	.410	10.937	6	.267	125	10	6295.422	32130	1871.625	1871.625	3... H1-1b
12	MP13	PIPE_2.0	.410	63	3	.124	63	12	14916.096	32130	1871.625	1871.625	2... H1-1b
13	MP14	PIPE_2.0	.406	57.75	3	.170	20....	5	20866.733	32130	1871.625	1871.625	2... H1-1b
14	MP2	PIPE_2.0	.396	42.875	5	.130	42....	8	17855.085	32130	1871.625	1871.625	1... H1-1b
15	M42	HSS4X4...	.390	69	7	.151	69 y	8	121489.014	139518	16180.5	16180.5	2... H1-1b
16	M13	PIPE_2.0	.384	10.938	10	.252	10....	3	6295.422	32130	1871.625	1871.625	3... H1-1b
17	M51	HSS4X4...	.377	69	2	.169	69 z	12	121489.014	139518	16180.5	16180.5	2... H1-1b
18	M46	HSS4X4...	.370	5.5	22	.144	5.5 y	8	139395.395	139518	16180.5	16180.5	1... H1-1b
19	M72	PIPE_2.0	.357	48.75	6	.166	48....	7	23808.54	32130	1871.625	1871.625	1... H1-1b
20	M1	C6X10.5	.353	65.625	15	.287	65.... z	2	8634.87	99468	2428.235	13626.3	1... H1-1b
21	MP4	PIPE_2.0	.349	61.5	11	.141	61.5	8	20866.733	32130	1871.625	1871.625	2... H1-1b
22	M27	C6X10.5	.347	65.625	11	.286	65.... y	5	8634.87	99468	2428.235	13719.071	1... H1-1b
23	M53	C6X10.5	.344	34.637	18	.060	34.... y	16	40366.216	99468	2428.235	16686	1... H1-1b
24	M16A	PIPE_2.0	.339	40.625	6	.314	137...	5	6295.422	32130	1871.625	1871.625	3... H3-6
25	M44	C6X10.5	.337	34.637	6	.056	34.... y	20	40366.216	99468	2428.235	16686	1... H1-1b
26	MP3	PIPE_2.0	.317	62	11	.100	62	8	14916.096	32130	1871.625	1871.625	1... H1-1b
27	M47	C6X10.5	.315	34.637	22	.052	34.... y	22	40366.216	99468	2428.235	16686	1... H1-1b
28	MP10	PIPE_2.0	.308	26	9	.141	64	4	14916.096	32130	1871.625	1871.625	4... H1-1b
29	M14A	C6X10.5	.304	84.375	13	.290	65.... z	6	8634.87	99468	2428.235	11148.502	1... H1-1b
30	MP16	PIPE_2.0	.295	11.25	11	.167	48....	12	23808.54	32130	1871.625	1871.625	1... H1-1b
31	MP5	PIPE_2.0	.281	23	8	.145	61	2	14916.096	32130	1871.625	1871.625	2... H1-1b
32	MP6	PIPE_2.0	.279	45.5	2	.151	45.5	3	17855.085	32130	1871.625	1871.625	1... H1-1b
33	M45A	HSS4X4...	.256	69	22	.144	69 y	8	121489.014	139518	16180.5	16180.5	2... H1-1b
34	MP15	PIPE_2.0	.242	62	2	.142	62	6	14916.096	32130	1871.625	1871.625	2... H1-1b
35	MP1	PIPE_2.0	.240	45.5	7	.147	45.5	7	17855.085	32130	1871.625	1871.625	1... H1-1b
36	MP11	PIPE_2.0	.240	44.625	12	.161	44....	5	17855.085	32130	1871.625	1871.625	1... H1-1b