



AMERICAN TOWER®
CORPORATION

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Antenna Mount Analysis Report

ATC Site Name : **Mlfd - Milford**

ATC Asset Number : **302516**

Engineering Number : **13958547_08_01**

Mount Elevation : **104.5 ft**

Carrier : **AT&T Mobility**

Carrier Site Name : **MRCTB050833**

Carrier Site Number : **CTCN002111**

Site Location : **438 Bridgeport Ave**
Milford, CT 06460-4105
41.20661111,-73.0934

County : **New Haven**

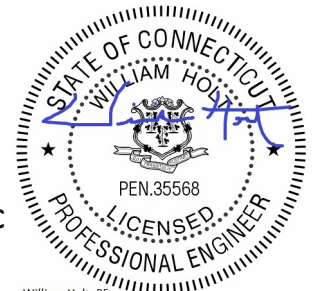
Date : **March 22, 2022**

Max Usage : **66%**

Result : **Contingent Pass***
***See conclusion for requirements**

Prepared By:
Amey Kulkarni
Telamon Tower Engineering, PLLC

Reviewed By:
William Holt, P.E.
Telamon Tower Engineering, PLLC



William Holt, PE
Director of Engineering
License No. 35568 Expires: 01/31/2023

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Introduction

The proposed equipment is to be mounted to the existing Platform w/ Support Rails & Kickers. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

Supporting Documents

Structural Data	Site Photos, dated November 10, 2021 Mount Mapping Report by ProVertic, Site #CT2111, dated March 4, 2018 Assembly Drawings by Site Pro 1, Part #SCX7-U, dated October 8, 2010 Assembly Drawings by Site Pro 1, Part #BBPM-K3, dated April 26, 2013
Previous Analyses	Structural Analysis by ATC, Engineering #13958547_C3_04, dated February 28, 2022
Loading Data	ATC Application, Project #13958547, dated February 25, 2022 AT&T RFDS ID: 4705791 Version: 2.00, dated January 13, 2022
Modifications	Mount Modification Analysis by Hudson Design Group LLC, Site #CT2111 (LTE 5C-6C-7C), dated March 4, 2018

Analysis

Codes	TIA-222-H
Basic Wind Speed	120 mph, V_{ult} (3-Second Gust)
Basic Wind Speed w/ Ice	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
Exposure Category	B
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Risk Category	II
Maintenance Live Load	L_M : 500 lb
Spectral Response	S_S : 0.20; S_1 : 0.05; Site Class: D

Conclusion

Based on the analysis, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

AT&T CONMAT does not have parts connecting pipe to HSS and pipe to pipe clamp kit. Hence proposing modification parts not listed in CONMAT list.

- **Replace existing mount pipe at position 1 with (1) proposed 8 ft long Pipe 2 STD, A53 Gr. B mount pipe at each sector (3 total). Connect to platform base HSS member using (1) Site Pro 1 BBPM-K3 crossover plate kit per connection (3 total). Connect to support rail pipe using (1) Site Pro 1 SXC7-U (ANT.16985) crossover plate kit per connection (3 total). Connect to top unistrut members using (1) 1/2" Ø U-bolt per connection (2 total).**
- **Replace existing mount pipe at position 3 with (1) proposed 10 ft long Pipe 2 STD, A53 Gr. B mount pipe at each sector (3 total). Connect to platform base HSS member using (1) Site Pro 1 BBPM-K3 crossover plate kit per connection (3 total). Connect to support rail pipe using (1) Site Pro 1 SXC7-U (ANT.16985) crossover plate kit per connection (3 total). Connect to top unistrut members using (1) 1/2" Ø U-bolt per connection (2 total).**
- **Replace existing mount pipe at position 4 with (1) proposed 8 ft long Pipe 2 STD, A53 Gr. B mount pipe at each sector (3 total). Connect to platform base HSS member using (1) Site Pro 1 BBPM-K3 crossover plate kit per connection (3 total). Connect to support rail pipe using (1) Site Pro 1 SXC7-U (ANT.16985) crossover plate kit per connection (3 total). Connect to top unistrut members using (1) 1/2" Ø U-bolt per connection (2 total).**
- **Install (1) proposed 8 ft long Pipe 2 STD, A53 Gr. B secondary mount pipe at position 4 in each sector (3 total). Connect to proposed primary mount pipe using (1) Site Pro 1 DCP12K threaded rod kit (3 total).**

No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

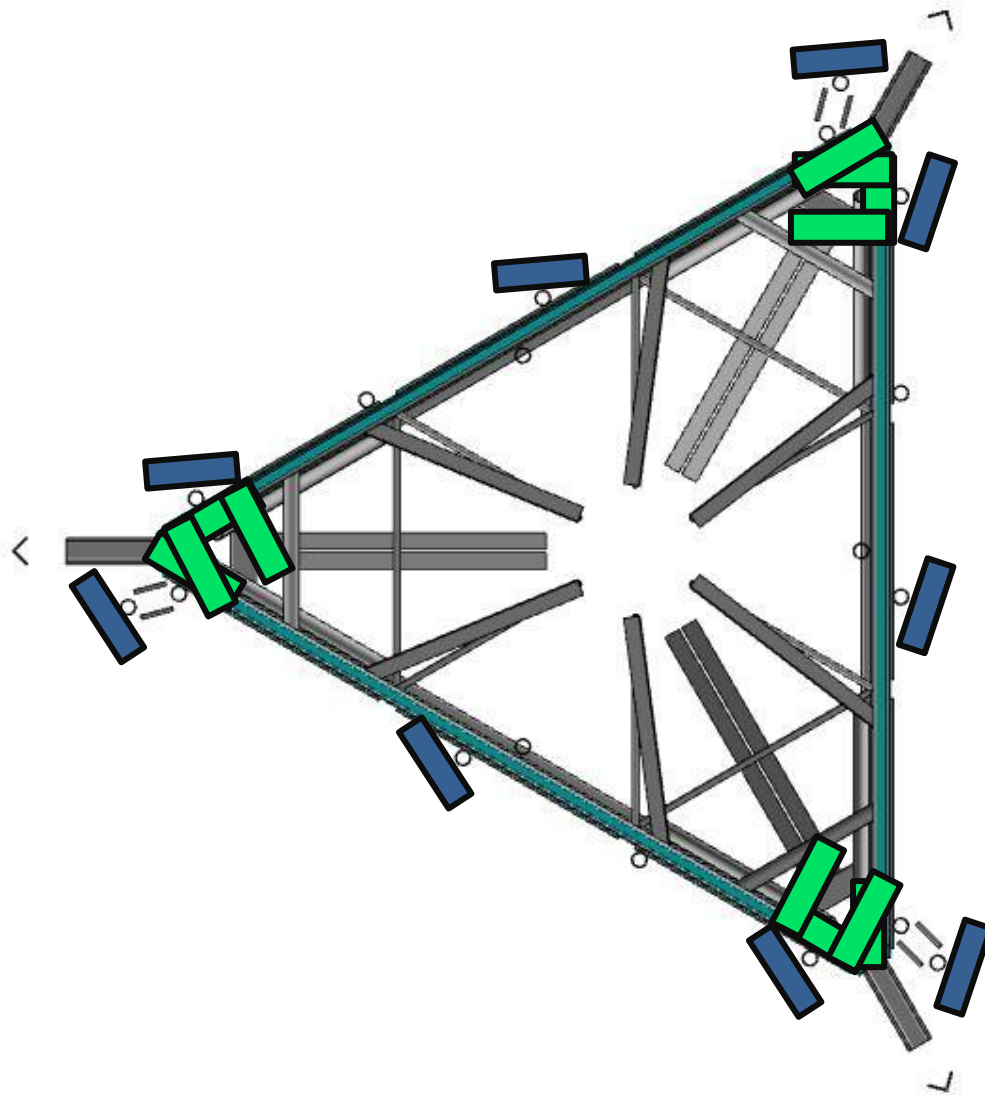
Antenna Loading

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
104.5	108.0	3	Ericsson AIR 6449 B77D
	106.0	3	Quintel Technology QD4616-7
		3	CCI DMP65R-BU4D
		1	Raycap DC9-48-60-24-8C-EV
		3	Ericsson RRUS 32 B66A
		3	Ericsson RRUS 32 B2
		3	Ericsson RRUS 32 B30
		3	Ericsson RRUS E2 B29
		3	Ericsson RRUS 4449 B5/B12
		3	Ericsson RRUS 4478 B14
		2	Commscope WCS-IMFQ-AMT
		2	Raycap DC6-48-60-18-8F
	104.0	3	Ericsson AIR 6419 B77G

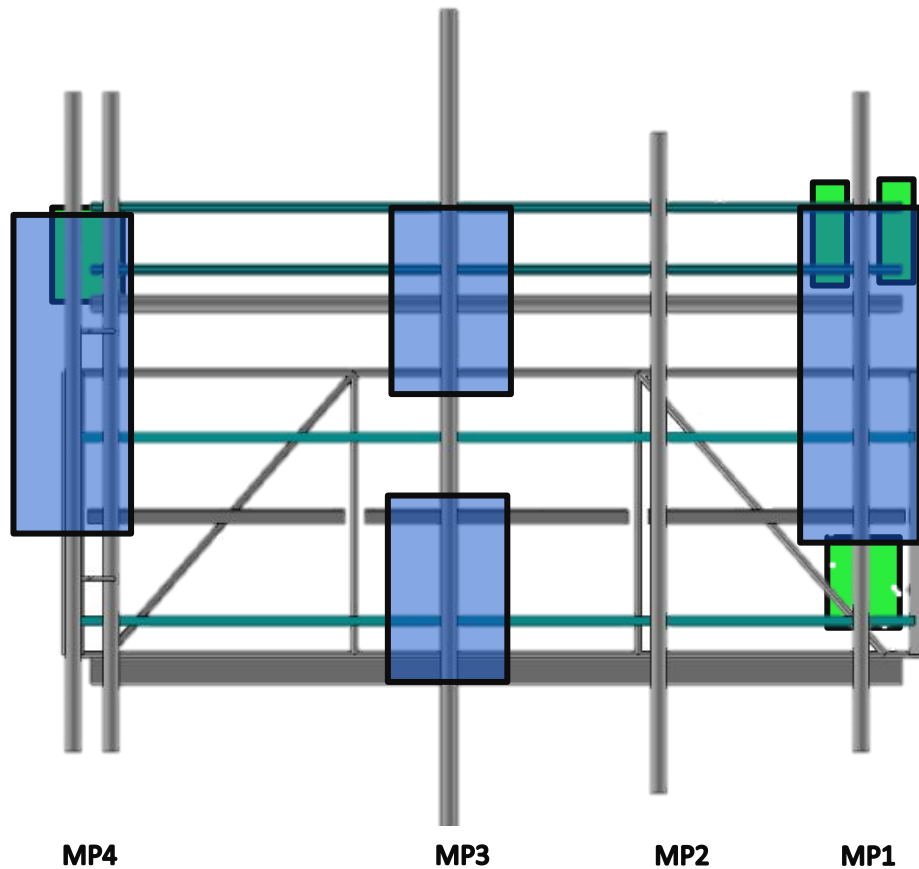
Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Unistruts	66%	Pass
Stand-Off Horizontals	56%	Pass
Platform Base	45%	Pass
Support Rail	35%	Pass
Mount Pipes	28%	Pass
Bracing Members	17%	Pass

Equipment Layout Plan View



Equipment Layout Front Elevation View



Total #	Equipment	Mount Pipe Position
3	Quintel Technology QD4616-7	P1
3	Ericsson AIR 6449 B77D	P3
3	Ericsson AIR 6419 B77G	P3
3	Cci Antennas DMP65R-BU4D	P4
3	Ericsson RRUS 4478 B14	Stand-off
3	Ericsson RRUS 4449 B5/B12	Stand-off
3	Ericsson RRUS 32 B2	P1
3	Ericsson RRUS 32 B66A	P1
3	Ericsson RRUS E2 B29	P1
3	Ericsson RRUS 32 B30	P4
2	Commscope WCS-IMFQ-AMT	P4 (Alpha & Beta Only)
2	Raycap DC6-48-60-18-8F	Face Pipe (Alpha & Beta Only)
1	Raycap DC9-48-60-24-8C-EV	Face Pipe (Gamma Only)

Standard Conditions

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, Telamon Tower Engineering, PLLC should be notified immediately to revise results.

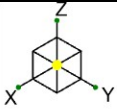
This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.
7. Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

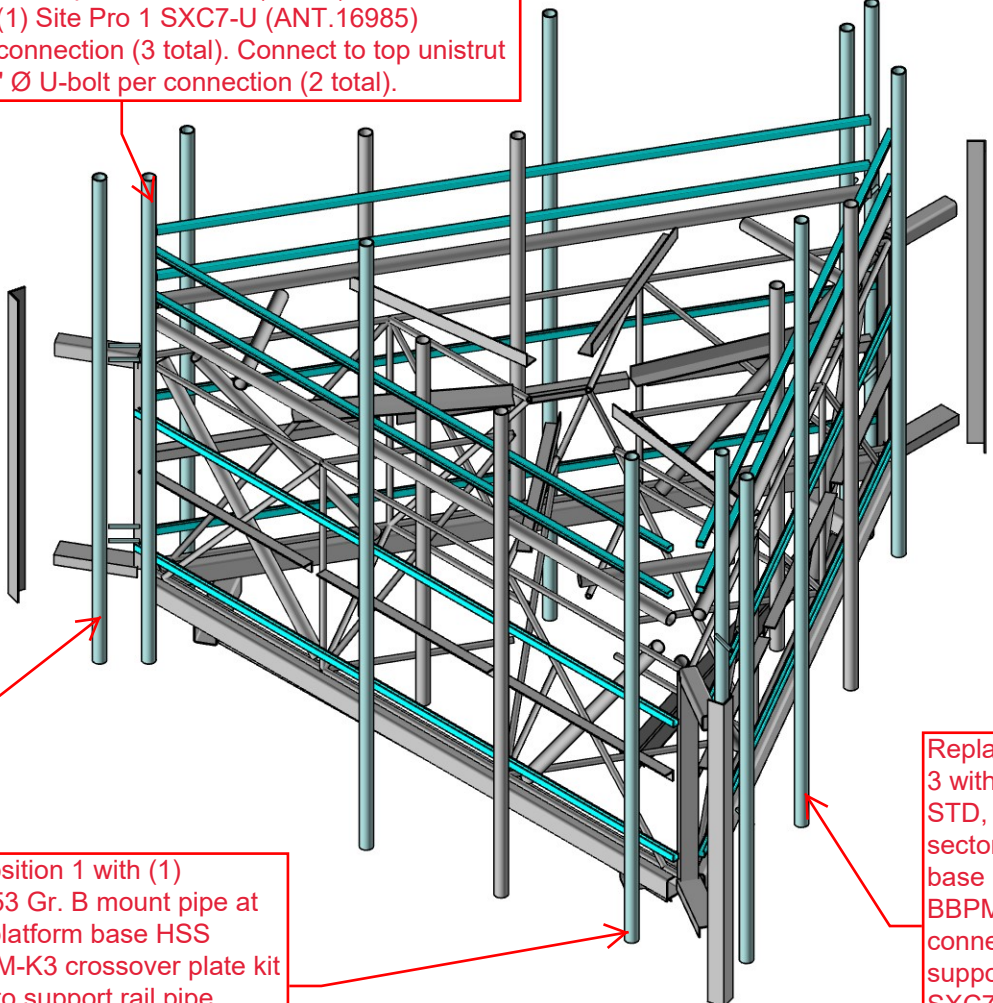
All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from Telamon Tower Engineering, PLLC.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. Telamon Tower Engineering, PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by Telamon Tower Engineering, PLLC verifies the adequacy of the primary members of the structure. Telamon Tower Engineering, PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.



Replace existing mount pipe at position 4 with (1) proposed 8 ft long Pipe 2 STD, A53 Gr. B mount pipe at each sector (3 total). Connect to platform base HSS member using (1) Site Pro 1 BBPM-K3 crossover plate kit per connection (3 total). Connect to support rail pipe using (1) Site Pro 1 SXC7-U (ANT.16985) crossover plate kit per connection (3 total). Connect to top unistrut members using (1) 1/2" Ø U-bolt per connection (2 total).

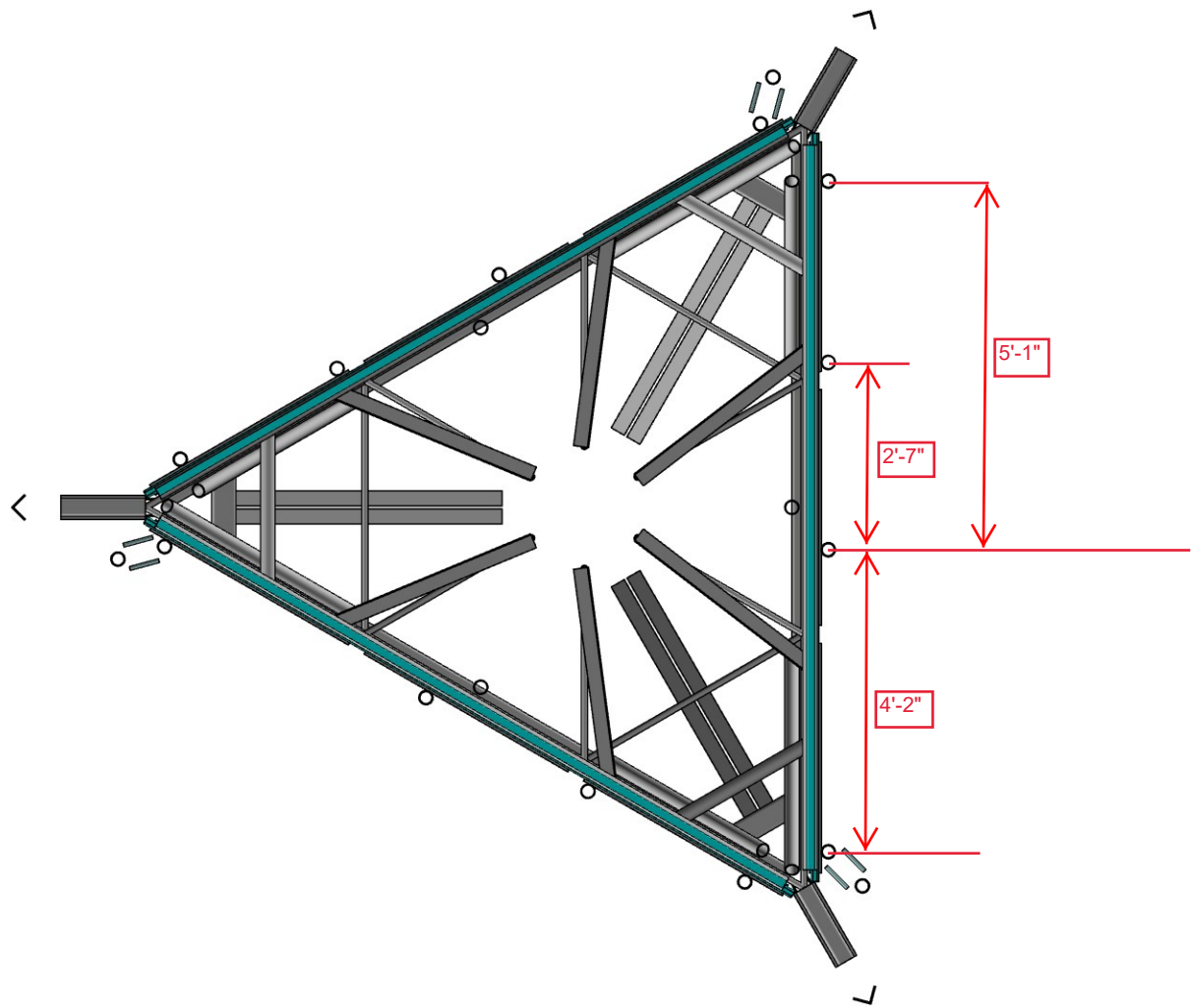
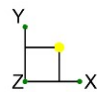


Install (1) proposed 8 ft long Pipe 2 STD, A53 Gr. B mount pipe secondary mount pipe at position 4 in each sector (3 total). Connect to proposed primary mount pipe using (1) Site Pro 1 DCP12K threaded rod kit (3 total).

Replace existing mount pipe at position 1 with (1) proposed 8 ft long Pipe 2 STD, A53 Gr. B mount pipe at each sector (3 total). Connect to platform base HSS member using (1) Site Pro 1 BBPM-K3 crossover plate kit per connection (3 total). Connect to support rail pipe using (1) Site Pro 1 SXC7-U (ANT.16985) crossover plate kit per connection (3 total). Connect to top unistrut members using (1) 1/2" Ø U-bolt per connection (2 total).

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Telamon CLS	41124-13958547_08_01-Mlfd - Milford	IN-1
ADK		Mar 22, 2022
41124-13958547_08_01-01-MA	Proposed Mount Modification - Isometric View	302516_13958547_08_01_AT&T MOBILITY...



Telamon CLS

ADK

41124-13958547_08_01-01-MA

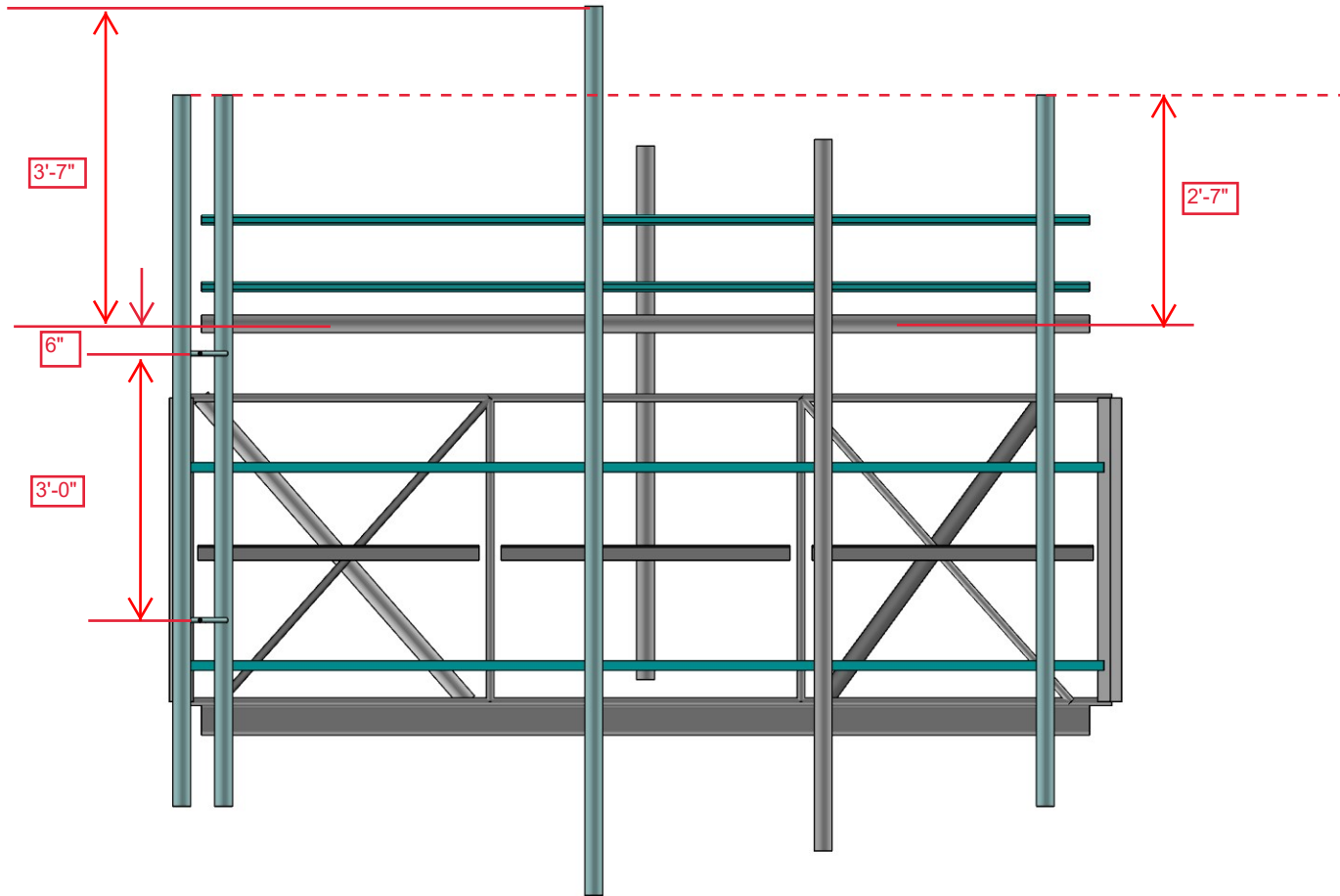
41124-13958547_08_01-Mlfd - Milford

Proposed Mount Modification - Plan View

IN-3

Mar 22, 2022

302516_13958547_08_01_AT&T MOBILITY...



Telamon CLS

ADK

41124-13958547_08_01-01-MA

41124-13958547_08_01-Mlfd - Milford

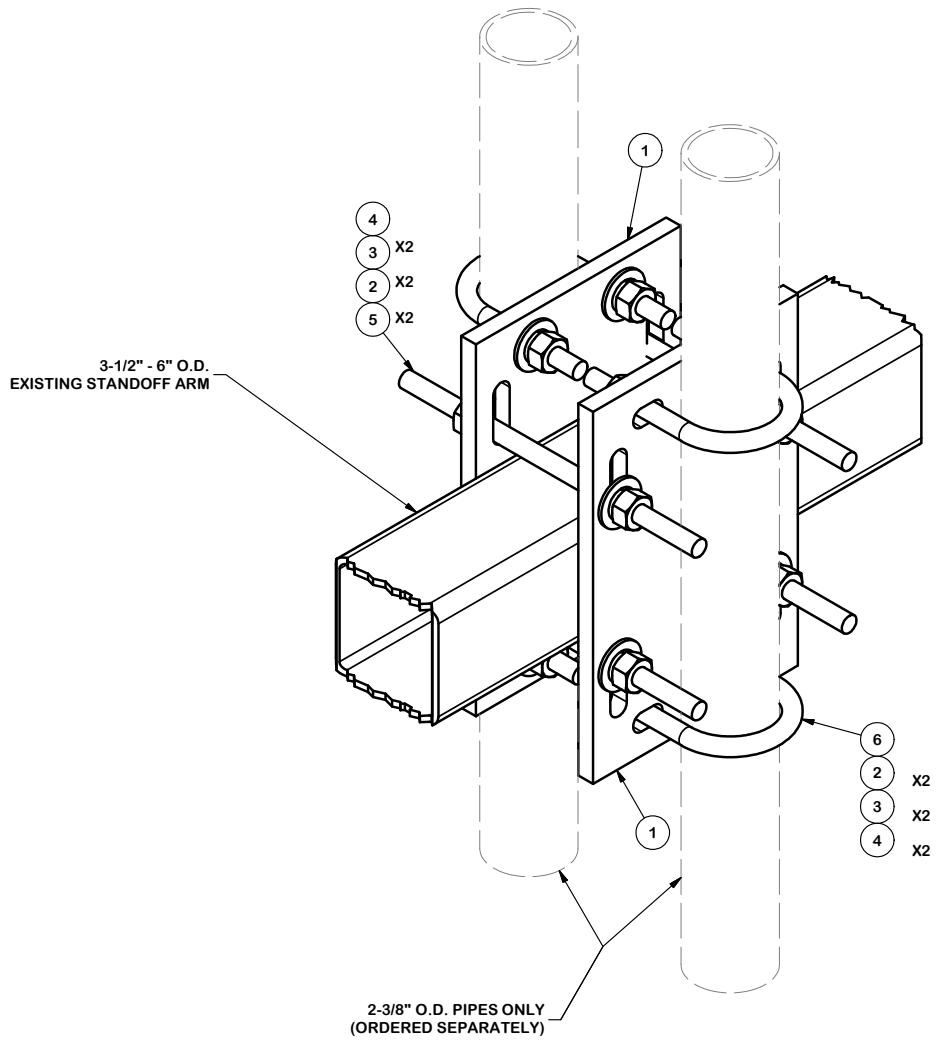
Proposed Mount Modification - Front View

IN-2

Mar 22, 2022

302516_13958547_08_01_AT&T MOBILITY...


PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	SCX6	CROSSOVER PLATE	11 in	10.62	21.23
2	16	G12FW	1/2" HDG USS FLATWASHER		0.03	0.54
3	16	G12LW	1/2" HDG LOCKWASHER		0.01	0.22
4	16	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.14
5	4	G12R-10	1/2" x 10" THREADED ROD (HDG.)		3.23	12.91
6	4	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.66	2.63
					TOTAL WT. #	38.67



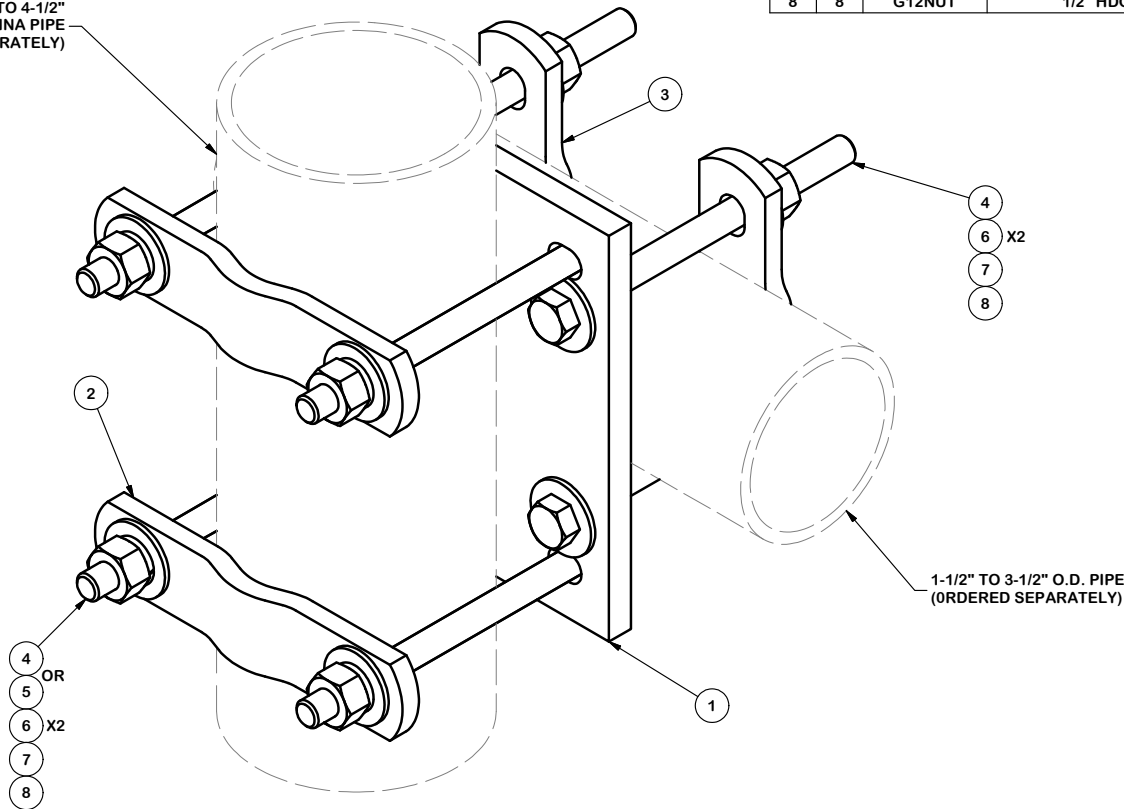
TOLERANCE NOTES
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030 ")
DRILLED AND GAS CUT HOLES (± 0.030 ") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010 ") - NO CONING OF HOLES
BENDS ARE $\pm 1/2$ DEGREE
ALL OTHER MACHINING (± 0.030 ")
ALL OTHER ASSEMBLY (± 0.060 ")

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION		BACK TO BACK PIPE MOUNT 2-3/8" PIPES	
CPD NO.	DRAWN BY	ENG. APPROVAL	
	CEK 4/26/2013		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	03	CUSTOMER	BMC 4/26/2013

 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	Engineering Support Team: 1-888-753-7446
PART NO.	BBPM-K3
DWG. NO.	BBPM-K3

1-1/2" TO 4-1/2"
ANTENNA PIPE
(ORDERED SEPARATELY)



1-1/2" TO 3-1/2" O.D. PIPE
(ORDERED SEPARATELY)

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX7	CROSSOVER PLATE	8 in	7.55	7.55
2	2	X-115765	5" V-CLAMP		1.02	2.04
3	2	X-100064	CLAMP (S) (4" V-CLAMP) GALVANIZED		0.91	1.83
4	8	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	3.28
5	4	G12045	1/2" x 4.5" HDG HEX BOLT GR5 FULL THREAD	4 1/2 in	0.30	1.19
6	16	G12FW	1/2" HDG USS FLATWASHER		0.03	0.54
7	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
8	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	16.98

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS CUT $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION

CROSSOVER PLATE
(V-CLAMP STYLE)

CPD NO.	DRAWN BY	ENG. APPROVAL
CLASS	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER
		BMC 10/8/2010



A valmont COMPANY

Engineering
Support Team:
1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

PART NO.	SCX7-U	PAGE
DWG. NO.	SCX7-U	1 OF 1

Wind & Ice Loading			
Nominal Mount Elevation (AGL), z_{mount}	105 ft	K_a	0.90
Nominal Rad Elevation (AGL), z_{rad}	106 ft	K_d	0.95
Elevation AMSL (ft)	75 ft	K_s	1.00
TIA Standard	H	K_z	1.00
Basic Wind Speed, V_{ult} (bare)	120 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	1.00
Design Ice Thickness, t_i	1 in	t_{iz}	1.12 in
Exposure Category	B	G_h	1.00
Risk Category	II	q_z (bare)	35.0 psf
Seismic Response Coeff., C_s	0.11	q_z (ice)	6.1 psf

Live Loading	
At Mount Pipes, L_M	####
Joint Labels Considered	1_M1
	1_M2
	1_M3
	1_M4

Member Distributed Loading				
Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Platform Tube	Tube 1x1x3	5.24	2.00	3.28
Corner Mount Channel	CH4x2x7/32	20.97	1.50	8.12
Unistrut	Unistrut A1000	6.55	1.31	4.54
Bracing Angle	L1x1x3	5.24	2.00	3.48
Corner Channel	CH3x2x7/32	15.73	1.43	7.25
Corner Mount Tube	HSS3X3X4	15.73	1.43	6.78
Corner Angle	L3X3X4	15.73	1.43	6.67
Face Angle	L2x2x4	10.49	1.36	4.92
Support Rail	PIPE_2.0	7.47	2.52	4.79
SR Bracing	PIPE_2.0	7.47	2.52	4.79
Stabilizer	L2.5x2.5x3	13.11	1.40	5.80
HSS Face Horizontal	HSS4X4X4	20.97	1.50	8.52
Kicker	L2.5x2.5x3	13.11	1.40	5.80
MOUNT_PIPE_2.0	PIPE_2.0	7.47	2.52	4.79
MOD Mount Pipe	PIPE_2.0	7.47	2.52	4.79
Face Diagonal Pipe	PIPE_2.0	7.47	2.52	4.79
MOD Threaded Rods	SRO.625	1.97	1.57	2.40

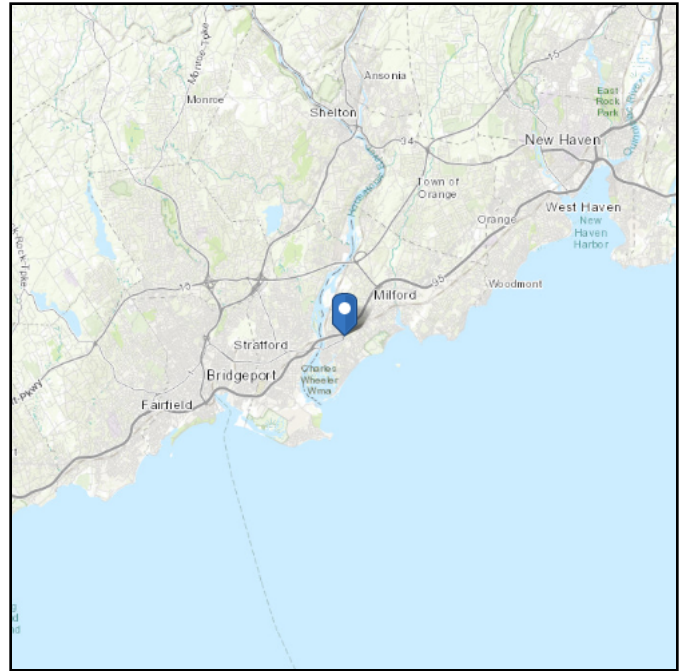
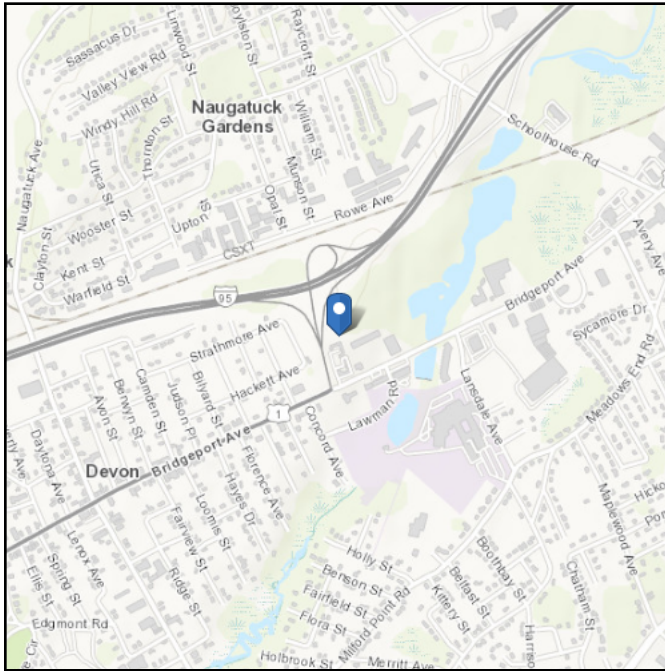
Appurtenances																														
Appurtenance Model	Status	Azimuth Offset (*, U)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA _A (Bare) (ft²)		EPA _A (Ice) (ft²)		F _A (Bare) (lb)		F _A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
QD4616-7				<input type="checkbox"/>			1	1	1		1_A1T	1_A1B	2_A1T	2_A1B	3_A1T	3_A1B	51.5	22	9.6	109	Flat	147.89	9.44	4.56	10.86	5.71	298.21	143.94	59.55	31.29
AIR 6449 B77D			108	<input type="checkbox"/>			1	1	1		1_A3T	1_A3B	2_A3T	2_A3B	3_A3T	3_A3B	30.4	15.9	10.6	81.6	Flat	75.31	4.03	2.72	4.94	3.50	127.90	86.43	27.23	19.31
AIR 6419 B77G			104	<input type="checkbox"/>			1	1	1		1_A3T	1_A3B	2_A3T	2_A3B	3_A3T	3_A3B	28.3	16.1	7.9	66.1	Flat	62.50	3.80	1.94	4.67	2.63	119.27	60.87	25.46	14.35
DMP65R-BU4D				<input type="checkbox"/>			1	1	1		1_A4T	1_A4B	2_A4T	2_A4B	3_A4T	3_A4B	48	20.7	7.7	76.5	Generic	116.54	7.48	2.81	8.67	3.75	236.25	88.75	47.55	20.58
RRUS 4478 B14				<input type="checkbox"/>	0.5		1	1	1		RA1		RB1		RG1		16.5	13.4	7.7	59.9	Flat	39.40	1.84	0.53	2.44	0.78	58.20	16.72	13.40	4.26
RRUS 4449 B5/B12				<input type="checkbox"/>	0.5		1	1	1		RA1		RB1		RG1		17.9	13.19	9.44	71	Flat	45.58	1.97	0.70	2.59	0.98	62.14	22.24	14.21	5.38
RRUS 32 B2				<input checked="" type="checkbox"/>	0.5		1	1	1		1_R1TT		2_R1TT		3_R1TT		27.2	12.05	7	52.9	Flat	51.82	1.67	1.37	2.33	1.75	52.69	43.13	12.76	9.62
RRUS 32 B66A				<input checked="" type="checkbox"/>	0.5		1	1	1		1_R1TT		2_R1TT		3_R1TT		27.6	12.45	7.41	55.12	Flat	50.17	1.78	1.43	2.45	1.83	56.27	45.22	13.46	10.02
RRUS E2 B29				<input type="checkbox"/>	0.5		1	1	1		1_R1BN		2_R1BN		3_R1BN		20.4	18.5	7.5	60	Flat	52.19	1.57	1.29	1.96	1.84	49.67	40.60	10.74	10.09
RRUS 32 B30				<input type="checkbox"/>	0.5		1	1	1		1_R4BN		2_R4BN		3_R4BN		26.7	12.1	6.7	60	Flat	45.85	1.35	1.57	1.73	2.22	42.52	49.67	9.49	12.16
WCS-IMFQ-AMT				<input type="checkbox"/>	0		1	1			1_T4TN		2_T4TN				11.2	10.6	6.9	29.5	Flat	21.77	0.00	0.64	0.00	1.03	0.00	20.34	0.00	5.62
DC6-48-60-18-8F				<input type="checkbox"/>			1	1			DC1		DC2				24	11	11	18.9	Round	39.82	1.28	1.28	1.69	1.69	40.53	40.53	9.27	9.27
DC9-48-60-24-8C-EV				<input type="checkbox"/>					1					DC3			31.41	10.24	18.28	26.2	Flat	83.32	2.74	4.78	3.53	5.76	86.44	151.13	19.34	31.57

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Elevation: 75.77 ft (NAVD 88)
Latitude: 41.206611
Longitude: -73.0934



Wind

Results:

Wind Speed	120 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Mar 21 2022

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).

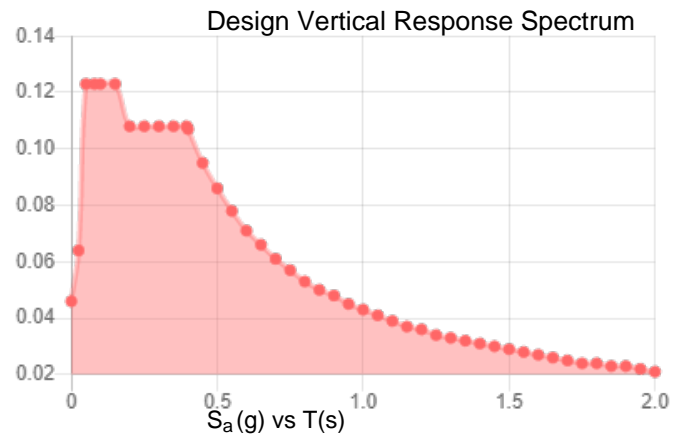
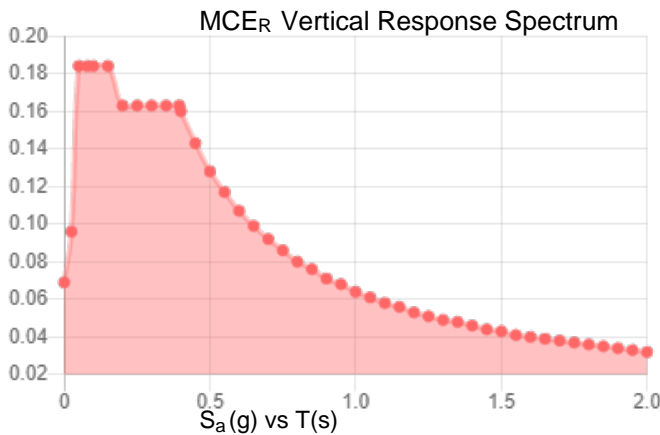
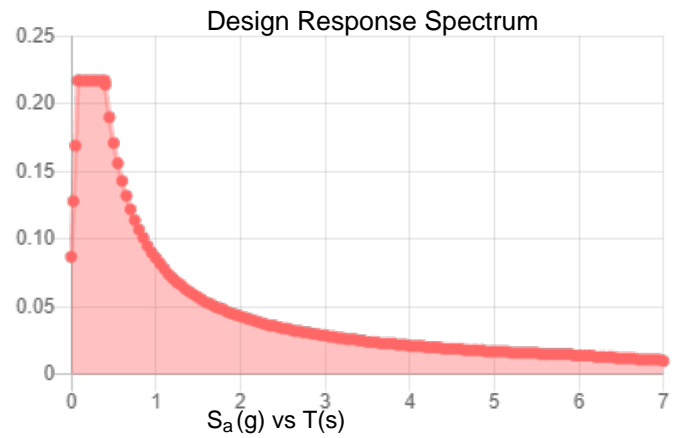
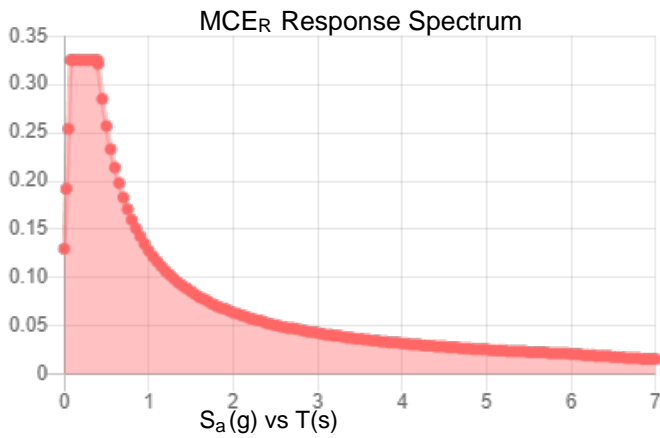
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	0.203	S_{D1} :	0.086
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.115
F_v :	2.4	PGA _M :	0.18
S_{MS} :	0.325	F_{PGA} :	1.571
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.217	C_v :	0.707

Seismic Design Category B



Data Accessed: Mon Mar 21 2022

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: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Mon Mar 21 2022

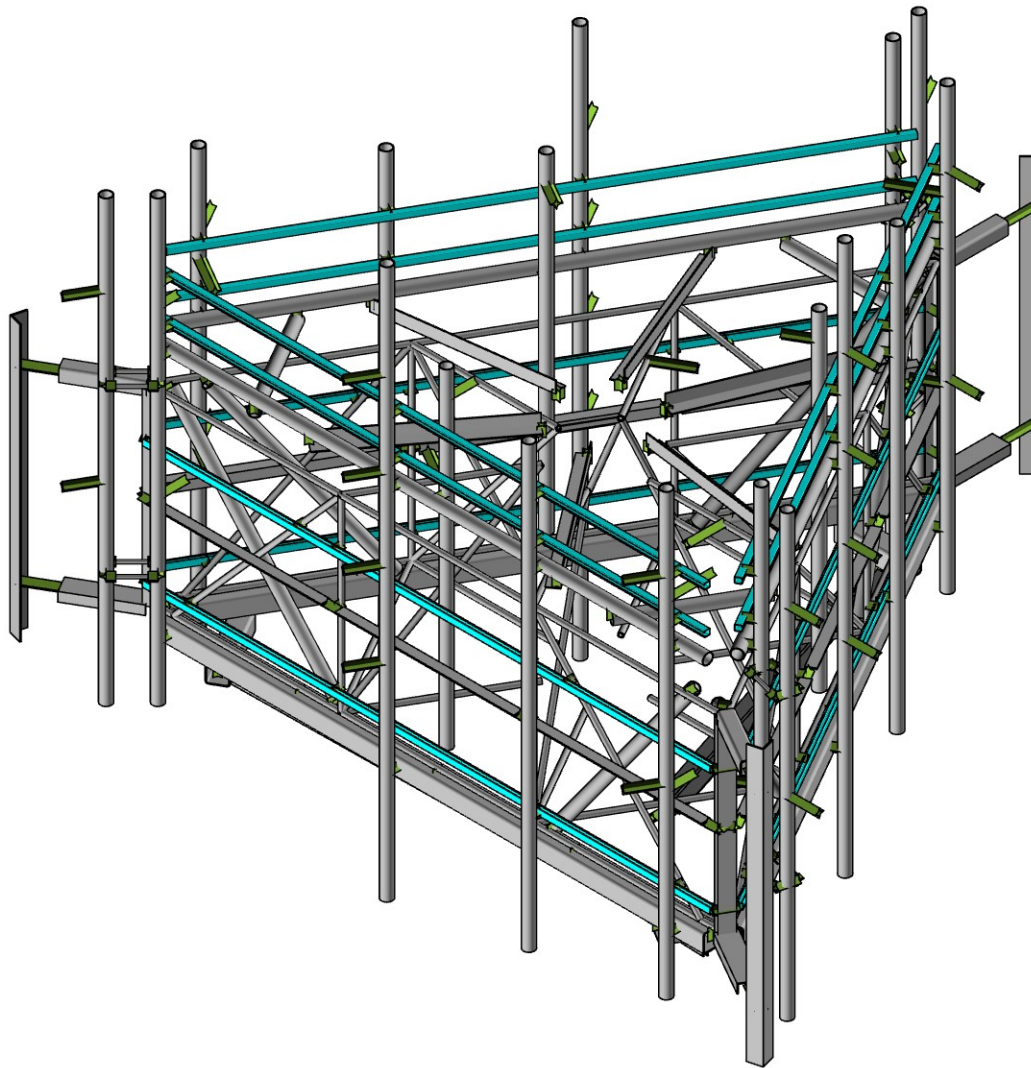
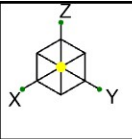
Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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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ADK

41124-13958547_08_01-01-MA

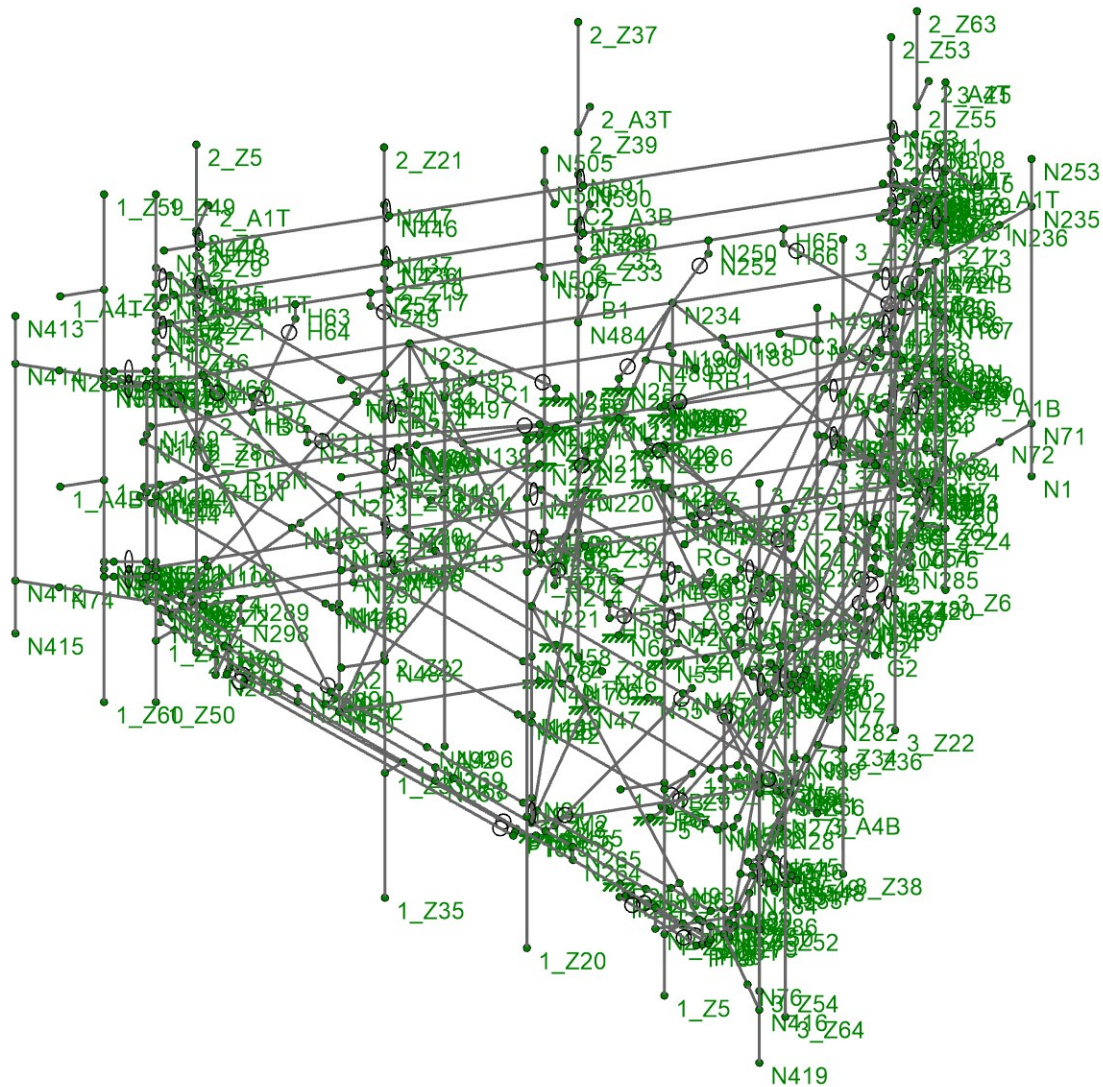
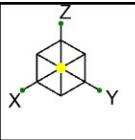
41124-13958547_08_01-Mlfd - Milford

Rendered

SK-1

Mar 22, 2022

302516_13958547_08_01_AT&T MOBILITY.r3d

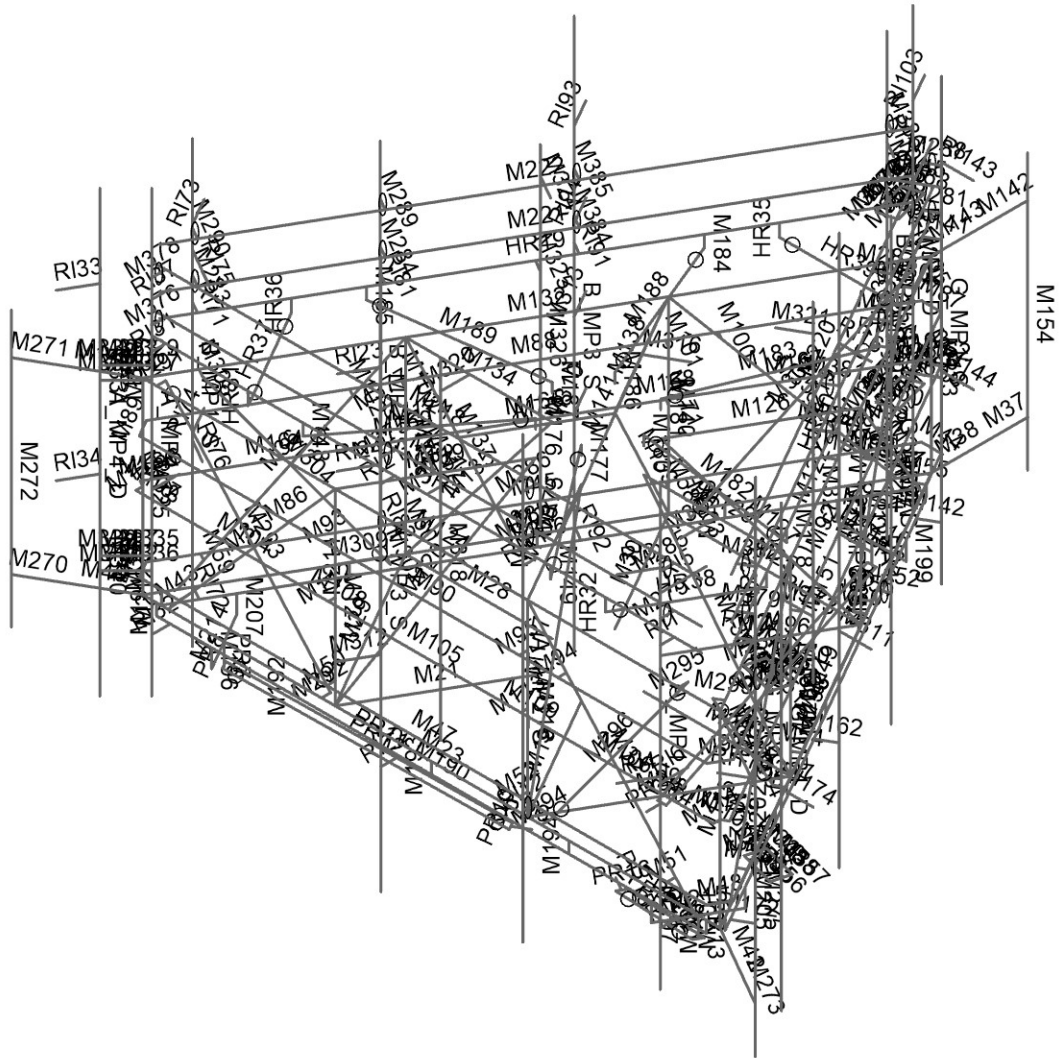
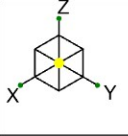


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 ADK
 41124-13958547_08_01-01-MA

41124-13958547_08_01-Mlfd - Milford
 Joint Labels

SK-2
 Mar 22, 2022
 302516_13958547_08_01_AT&T MOBILITY.r3d

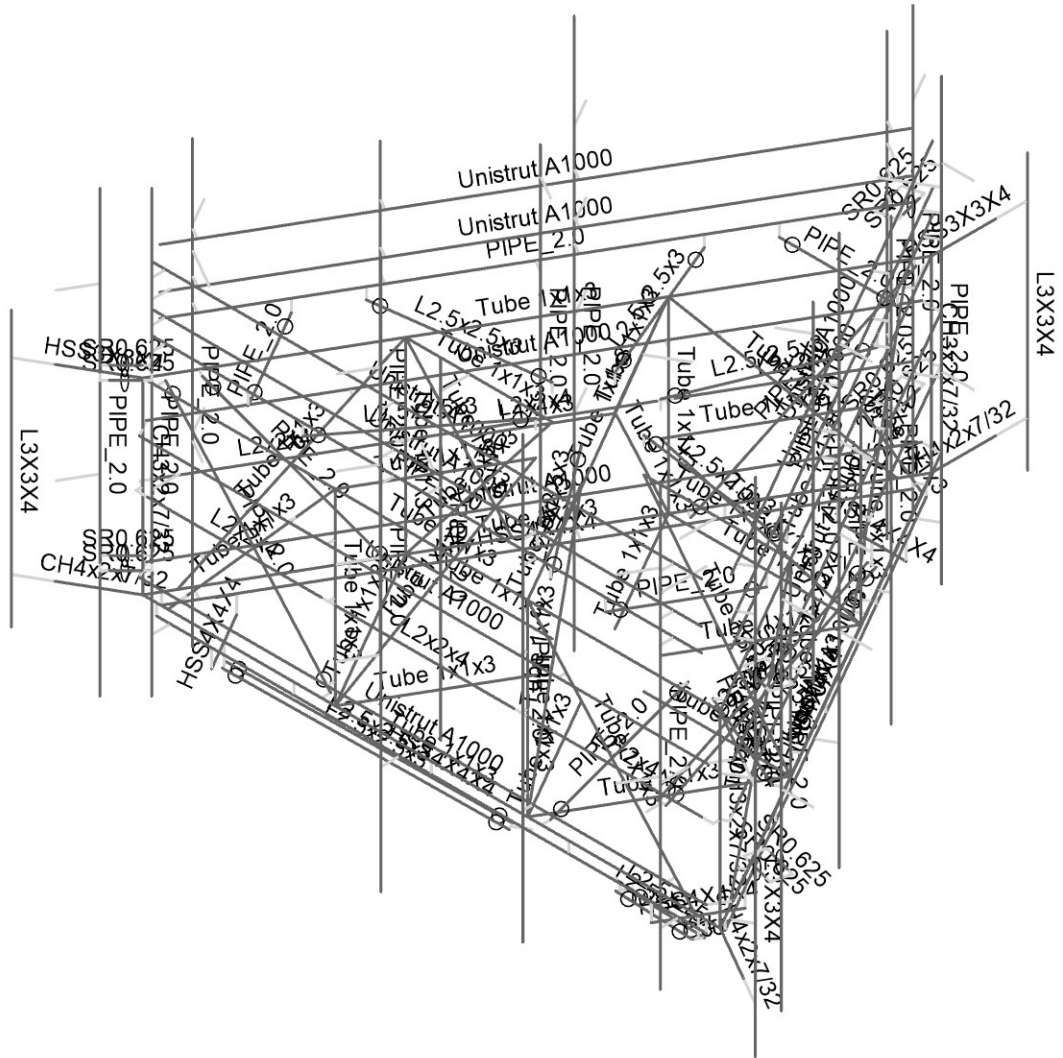
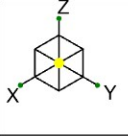


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 41124-13958547_08_01-MA

41124-13958547_08_01-Mlfd - Milford
 Member Labels

SK-3
 Mar 22, 2022
 302516_13958547_08_01_AT&T MOBILITY.r3d



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ADK

41124-13958547_08_01-MA

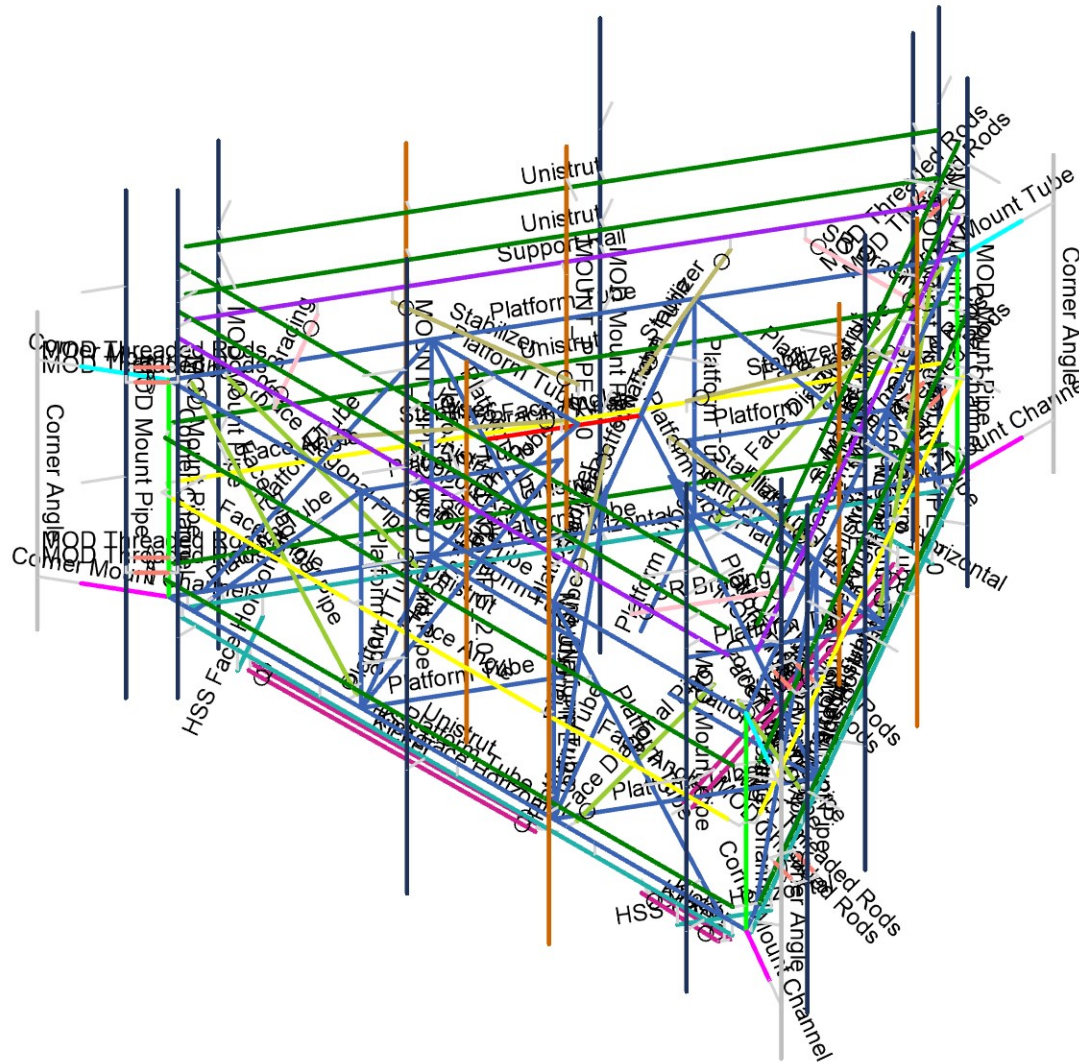
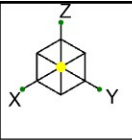
41124-13958547_08_01-Mlfd - Milford

Member Shapes

SK-4

Mar 22, 2022

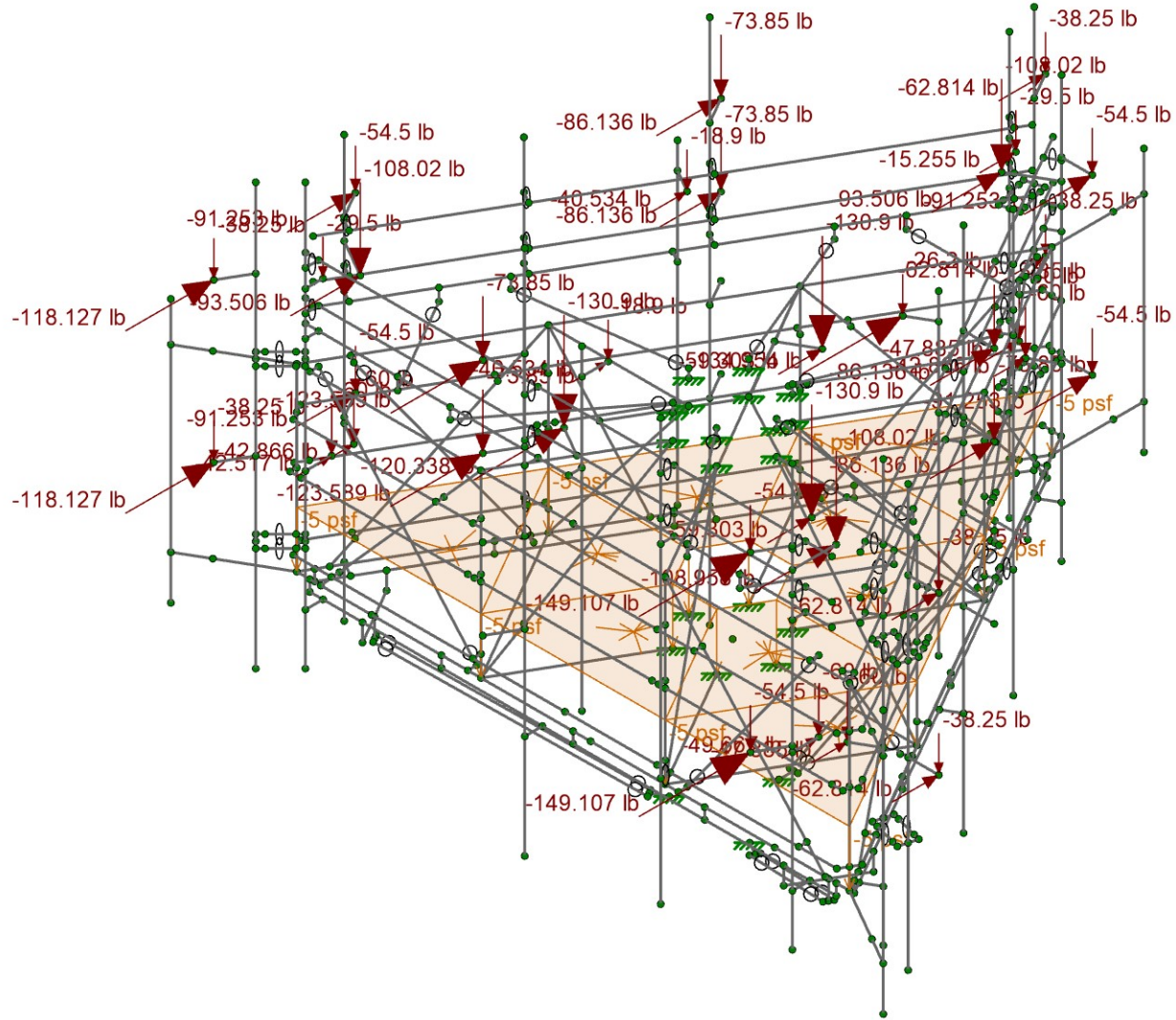
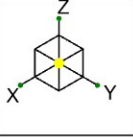
302516_13958547_08_01_AT&T MOBILITY.r3d



Section Sets	
[Blue Box]	Platform Tube
[Green Box]	Corner Channel
[Red Box]	Bracing Angle
[Grey Box]	Corner Angle
[Magenta Box]	Corner Mount Channel
[Cyan Box]	Corner Mount Tube
[Brown Box]	MOUNT_PIPE_2.0
[Yellow Box]	Face Angle
[Purple Box]	Support Rail
[Olive Green Box]	Stabilizer
[Light Green Box]	Face Diagonal Pipe
[Pink Box]	SR Bracing
[Teal Box]	HSS Face Horizontal
[Magenta Box]	Kicker
[Orange Box]	MOD Threaded Rods
[Dark Blue Box]	MOD Mount Pipe
[Light Green Box]	Unistrut
[Dark Red Box]	RIGID

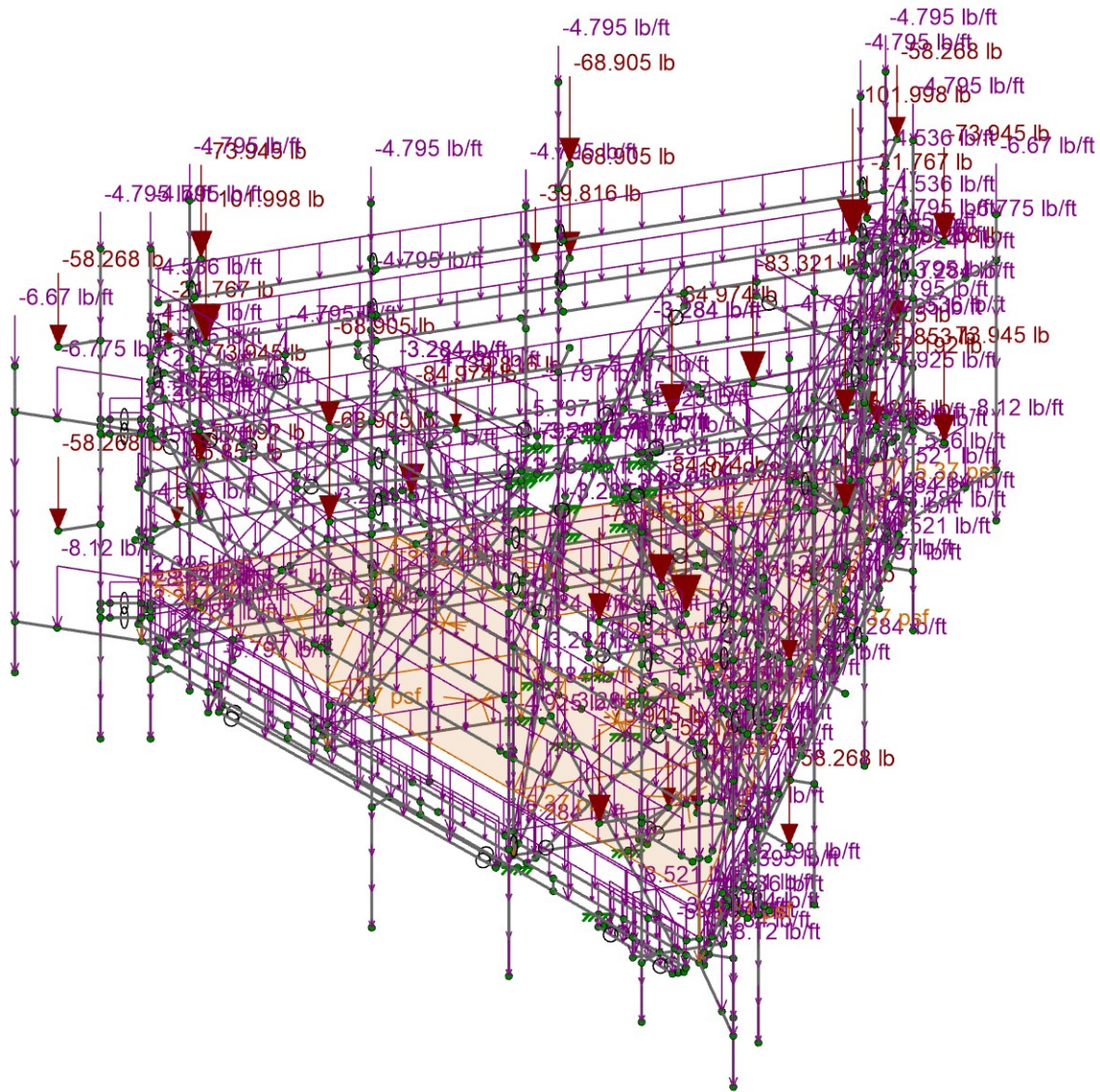
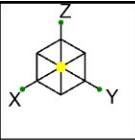
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ADK		Mar 22, 2022
41124-13958547_08_01-01-MA	Section Set	302516_13958547_08_01_AT&T MOBILITY.r3d



Loads: LC 1, DISPLAY (1.0D + 1.0W_0)
Envelope Only Solution

Telamon CLS	41124-13958547_08_01-Mifd - Milford	SK-6
ADK		Mar 22, 2022
41124-13958547_08_01-01-MA	Joint Loads – Dead and Normal Wind	302516_13958547_08_01_AT&T MOBILITY.r3d



Loads: BLC 2, Ice Dead
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ADK

41124-13958547_08_01-01-MA

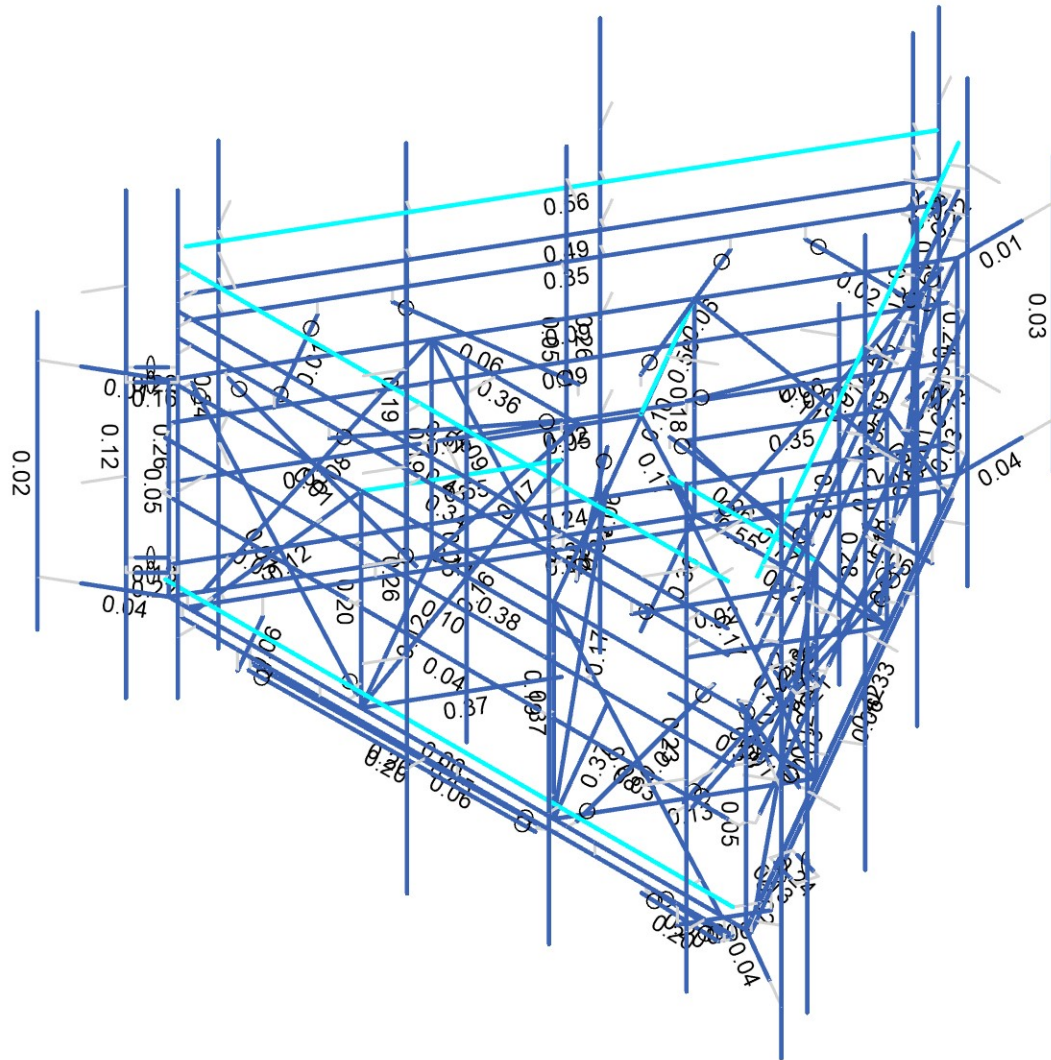
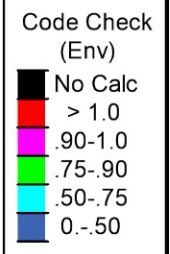
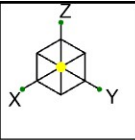
41124-13958547_08_01-Mlfd - Milford

Ice Dead Loads

SK-8

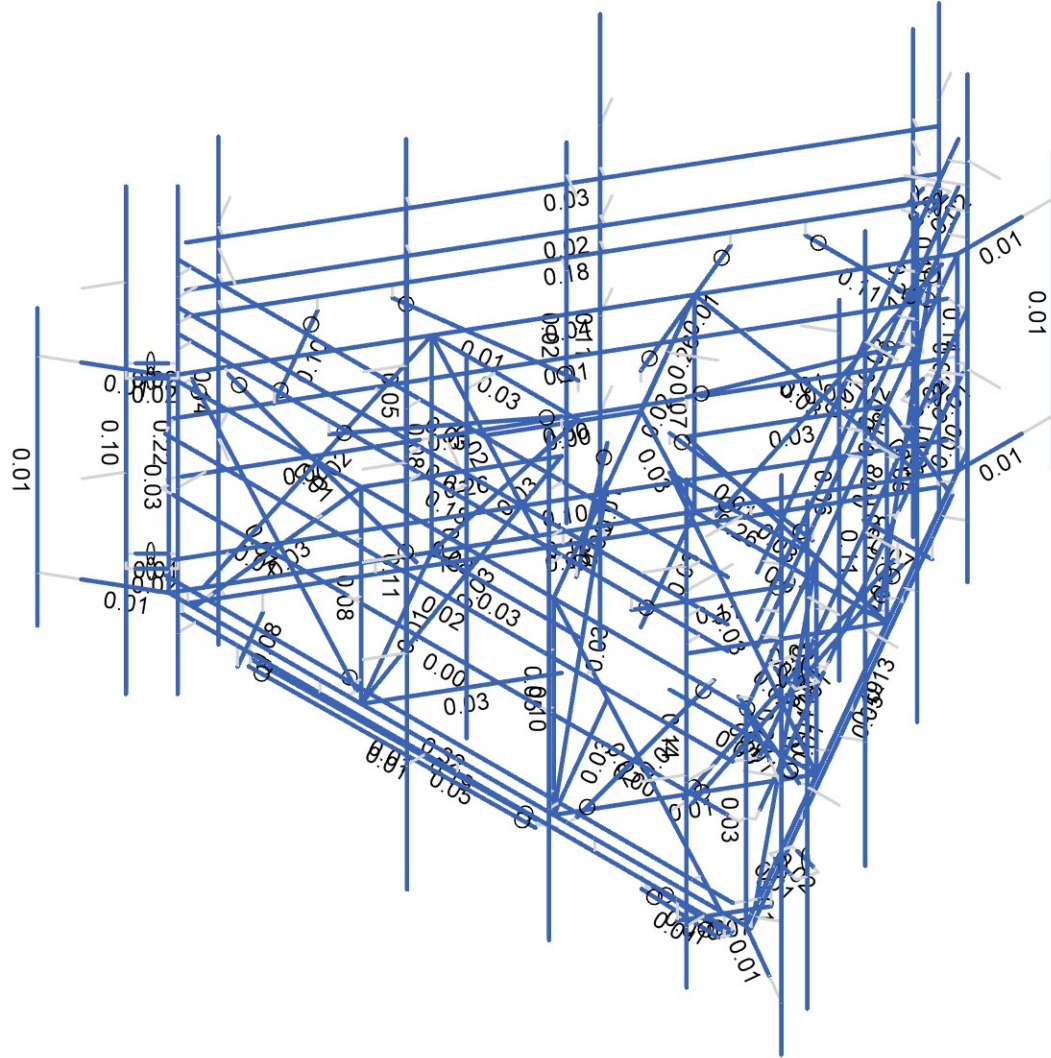
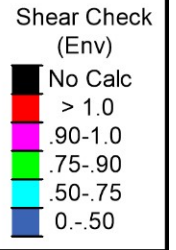
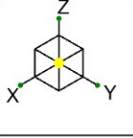
Mar 22, 2022

302516_13958547_08_01_AT&T MOBILITY.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Telamon CLS	41124-13958547_08_01-Mlfd - Milford	SK-9
ADK		Mar 22, 2022
41124-13958547_08_01-01-MA	Envelope Member Unity Check Results - Bending	302516_13958547_08_01_AT&T MOBILITY.r3d



Member Shear Checks Displayed (Enveloped)
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ADK

41124-13958547_08_01-01-MA

41124-13958547_08_01-Mlfd - Milford

Envelope Member Check Results - Shear

SK-10

Mar 22, 2022

302516_13958547_08_01_AT&T MOBILITY.r3d

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
1	Dead	DL	-1	47		9
2	Ice Dead	RL		47	135	9
3	BLC 1 Transient Area Loads	None			81	
4	BLC 2 Transient Area Loads	None			81	
5	Structure Wind 0°	None			133	
6	Structure Wind 30°	None			232	
7	Structure Wind 45°	None			262	
8	Structure Wind 60°	None			266	
9	Structure Wind 90°	None			117	
10	Structure Wind 120°	None			266	
11	Structure Wind 135°	None			270	
12	Structure Wind 150°	None			234	
13	Structure Wind 180°	None			133	
14	Structure Wind 210°	None			232	
15	Structure Wind 225°	None			262	
16	Structure Wind 240°	None			266	
17	Structure Wind 270°	None			117	
18	Structure Wind 300°	None			266	
19	Structure Wind 315°	None			270	
20	Structure Wind 330°	None			234	
21	Structure Wind w/ Ice 0°	None			133	
22	Structure Wind w/ Ice 30°	None			232	
23	Structure Wind w/ Ice 45°	None			262	
24	Structure Wind w/ Ice 60°	None			266	
25	Structure Wind w/ Ice 90°	None			117	
26	Structure Wind w/ Ice 120°	None			266	
27	Structure Wind w/ Ice 135°	None			270	
28	Structure Wind w/ Ice 150°	None			234	
29	Structure Wind w/ Ice 180°	None			133	
30	Structure Wind w/ Ice 210°	None			232	
31	Structure Wind w/ Ice 225°	None			262	
32	Structure Wind w/ Ice 240°	None			266	
33	Structure Wind w/ Ice 270°	None			117	
34	Structure Wind w/ Ice 300°	None			266	
35	Structure Wind w/ Ice 315°	None			270	
36	Structure Wind w/ Ice 330°	None			234	
37	Antenna Wind 0°	None		46		
38	Antenna Wind 30°	None		94		
39	Antenna Wind 45°	None		94		
40	Antenna Wind 60°	None		94		
41	Antenna Wind 90°	None		47		
42	Antenna Wind 120°	None		92		
43	Antenna Wind 135°	None		94		
44	Antenna Wind 150°	None		94		
45	Antenna Wind 180°	None		46		
46	Antenna Wind 210°	None		94		
47	Antenna Wind 225°	None		94		
48	Antenna Wind 240°	None		94		
49	Antenna Wind 270°	None		47		
50	Antenna Wind 300°	None		92		
51	Antenna Wind 315°	None		94		
52	Antenna Wind 330°	None		94		
53	Antenna Wind w/ Ice 0°	None		46		
54	Antenna Wind w/ Ice 30°	None		94		
55	Antenna Wind w/ Ice 45°	None		94		

Basic Load Cases (Continued)

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
56	Antenna Wind w/ Ice 60°	None		94		
57	Antenna Wind w/ Ice 90°	None		47		
58	Antenna Wind w/ Ice 120°	None		92		
59	Antenna Wind w/ Ice 135°	None		94		
60	Antenna Wind w/ Ice 150°	None		94		
61	Antenna Wind w/ Ice 180°	None		46		
62	Antenna Wind w/ Ice 210°	None		94		
63	Antenna Wind w/ Ice 225°	None		94		
64	Antenna Wind w/ Ice 240°	None		94		
65	Antenna Wind w/ Ice 270°	None		47		
66	Antenna Wind w/ Ice 300°	None		92		
67	Antenna Wind w/ Ice 315°	None		94		
68	Antenna Wind w/ Ice 330°	None		94		
69	Seismic X	ELX		47	135	
70	Seismic Y	ELY		47	135	
71	Seismic Z	ELZ		47	135	
72	Maintenance Live 500 (1)	OL1		1		
73	Maintenance Live 500 (2)	OL2		1		
74	Maintenance Live 500 (3)	OL3		1		
75	Maintenance Live 500 (4)	OL4		1		

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DISPLAY (1.0D + 1.0W 0°)	Yes	Y	DL	1	37	1				
2	1.4D	Yes	Y	DL	1.4						
3	1.2D + 1.0W 0°	Yes	Y	DL	1.2	5	1	37	1		
4	1.2D + 1.0W 30°	Yes	Y	DL	1.2	6	1	38	1		
5	1.2D + 1.0W 45°	Yes	Y	DL	1.2	7	1	39	1		
6	1.2D + 1.0W 60°	Yes	Y	DL	1.2	8	1	40	1		
7	1.2D + 1.0W 90°	Yes	Y	DL	1.2	9	1	41	1		
8	1.2D + 1.0W 120°	Yes	Y	DL	1.2	10	1	42	1		
9	1.2D + 1.0W 135°	Yes	Y	DL	1.2	11	1	43	1		
10	1.2D + 1.0W 150°	Yes	Y	DL	1.2	12	1	44	1		
11	1.2D + 1.0W 180°	Yes	Y	DL	1.2	13	-1	45	-1		
12	1.2D + 1.0W 210°	Yes	Y	DL	1.2	14	-1	46	-1		
13	1.2D + 1.0W 225°	Yes	Y	DL	1.2	15	-1	47	-1		
14	1.2D + 1.0W 240°	Yes	Y	DL	1.2	16	-1	48	-1		
15	1.2D + 1.0W 270°	Yes	Y	DL	1.2	17	-1	49	-1		
16	1.2D + 1.0W 300°	Yes	Y	DL	1.2	18	-1	50	-1		
17	1.2D + 1.0W 315°	Yes	Y	DL	1.2	19	-1	51	-1		
18	1.2D + 1.0W 330°	Yes	Y	DL	1.2	20	-1	52	-1		
19	1.2D + 1.0Di + 1.0Wi 0°	Yes	Y	DL	1.2	21	1	53	1	RL	1
20	1.2D + 1.0Di + 1.0Wi 30°	Yes	Y	DL	1.2	22	1	54	1	RL	1
21	1.2D + 1.0Di + 1.0Wi 45°	Yes	Y	DL	1.2	23	1	55	1	RL	1
22	1.2D + 1.0Di + 1.0Wi 60°	Yes	Y	DL	1.2	24	1	56	1	RL	1
23	1.2D + 1.0Di + 1.0Wi 90°	Yes	Y	DL	1.2	25	1	57	1	RL	1
24	1.2D + 1.0Di + 1.0Wi 120°	Yes	Y	DL	1.2	26	1	58	1	RL	1
25	1.2D + 1.0Di + 1.0Wi 135°	Yes	Y	DL	1.2	27	1	59	1	RL	1
26	1.2D + 1.0Di + 1.0Wi 150°	Yes	Y	DL	1.2	28	1	60	1	RL	1
27	1.2D + 1.0Di + 1.0Wi 180°	Yes	Y	DL	1.2	29	-1	61	-1	RL	1
28	1.2D + 1.0Di + 1.0Wi 210°	Yes	Y	DL	1.2	30	-1	62	-1	RL	1
29	1.2D + 1.0Di + 1.0Wi 225°	Yes	Y	DL	1.2	31	-1	63	-1	RL	1
30	1.2D + 1.0Di + 1.0Wi 240°	Yes	Y	DL	1.2	32	-1	64	-1	RL	1
31	1.2D + 1.0Di + 1.0Wi 270°	Yes	Y	DL	1.2	33	-1	65	-1	RL	1
32	1.2D + 1.0Di + 1.0Wi 300°	Yes	Y	DL	1.2	34	-1	66	-1	RL	1

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
33	1.2D + 1.0Di + 1.0Wi 315°	Yes	Y	DL	1.2	35	-1	67	-1	RL	1
34	1.2D + 1.0Di + 1.0Wi 330°	Yes	Y	DL	1.2	36	-1	68	-1	RL	1
35	1.2D + 1.0Ev + 1.0Eh 0°	Yes	Y	DL	1.243	ELX	-1	ELY			
36	1.2D + 1.0Ev + 1.0Eh 30°	Yes	Y	DL	1.243	ELX	-0.866	ELY	0.5		
37	1.2D + 1.0Ev + 1.0Eh 45°	Yes	Y	DL	1.243	ELX	-0.707	ELY	0.707		
38	1.2D + 1.0Ev + 1.0Eh 60°	Yes	Y	DL	1.243	ELX	-0.5	ELY	0.866		
39	1.2D + 1.0Ev + 1.0Eh 90°	Yes	Y	DL	1.243	ELX		ELY	1		
40	1.2D + 1.0Ev + 1.0Eh 120°	Yes	Y	DL	1.243	ELX	0.5	ELY	0.866		
41	1.2D + 1.0Ev + 1.0Eh 135°	Yes	Y	DL	1.243	ELX	0.707	ELY	0.707		
42	1.2D + 1.0Ev + 1.0Eh 150°	Yes	Y	DL	1.243	ELX	0.866	ELY	0.5		
43	1.2D + 1.0Ev + 1.0Eh 180°	Yes	Y	DL	1.243	ELX	1	ELY			
44	1.2D + 1.0Ev + 1.0Eh 210°	Yes	Y	DL	1.243	ELX	0.866	ELY	-0.5		
45	1.2D + 1.0Ev + 1.0Eh 225°	Yes	Y	DL	1.243	ELX	0.707	ELY	-0.707		
46	1.2D + 1.0Ev + 1.0Eh 240°	Yes	Y	DL	1.243	ELX	0.5	ELY	-0.866		
47	1.2D + 1.0Ev + 1.0Eh 270°	Yes	Y	DL	1.243	ELX		ELY	-1		
48	1.2D + 1.0Ev + 1.0Eh 300°	Yes	Y	DL	1.243	ELX	-0.5	ELY	-0.866		
49	1.2D + 1.0Ev + 1.0Eh 315°	Yes	Y	DL	1.243	ELX	-0.707	ELY	-0.707		
50	1.2D + 1.0Ev + 1.0Eh 330°	Yes	Y	DL	1.243	ELX	-0.866	ELY	-0.5		
51	0.9D - 1.0Ev + 1.0Eh 0°	Yes	Y	DL	0.857	ELX	-1	ELY			
52	0.9D - 1.0Ev + 1.0Eh 30°	Yes	Y	DL	0.857	ELX	-0.866	ELY	0.5		
53	0.9D - 1.0Ev + 1.0Eh 45°	Yes	Y	DL	0.857	ELX	-0.707	ELY	0.707		
54	0.9D - 1.0Ev + 1.0Eh 60°	Yes	Y	DL	0.857	ELX	-0.5	ELY	0.866		
55	0.9D - 1.0Ev + 1.0Eh 90°	Yes	Y	DL	0.857	ELX		ELY	1		
56	0.9D - 1.0Ev + 1.0Eh 120°	Yes	Y	DL	0.857	ELX	0.5	ELY	0.866		
57	0.9D - 1.0Ev + 1.0Eh 135°	Yes	Y	DL	0.857	ELX	0.707	ELY	0.707		
58	0.9D - 1.0Ev + 1.0Eh 150°	Yes	Y	DL	0.857	ELX	0.866	ELY	0.5		
59	0.9D - 1.0Ev + 1.0Eh 180°	Yes	Y	DL	0.857	ELX	1	ELY			
60	0.9D - 1.0Ev + 1.0Eh 210°	Yes	Y	DL	0.857	ELX	0.866	ELY	-0.5		
61	0.9D - 1.0Ev + 1.0Eh 225°	Yes	Y	DL	0.857	ELX	0.707	ELY	-0.707		
62	0.9D - 1.0Ev + 1.0Eh 240°	Yes	Y	DL	0.857	ELX	0.5	ELY	-0.866		
63	0.9D - 1.0Ev + 1.0Eh 270°	Yes	Y	DL	0.857	ELX		ELY	-1		
64	0.9D - 1.0Ev + 1.0Eh 300°	Yes	Y	DL	0.857	ELX	-0.5	ELY	-0.866		
65	0.9D - 1.0Ev + 1.0Eh 315°	Yes	Y	DL	0.857	ELX	-0.707	ELY	-0.707		
66	0.9D - 1.0Ev + 1.0Eh 330°	Yes	Y	DL	0.857	ELX	-0.866	ELY	-0.5		
67	1.2D + 1.5Lm 1 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.066	37	0.066	OL1	1.5
68	1.2D + 1.5Lm 1 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.066	38	0.066	OL1	1.5
69	1.2D + 1.5Lm 1 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.066	39	0.066	OL1	1.5
70	1.2D + 1.5Lm 1 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.066	40	0.066	OL1	1.5
71	1.2D + 1.5Lm 1 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.066	41	0.066	OL1	1.5
72	1.2D + 1.5Lm 1 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.066	42	0.066	OL1	1.5
73	1.2D + 1.5Lm 1 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.066	43	0.066	OL1	1.5
74	1.2D + 1.5Lm 1 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.066	44	0.066	OL1	1.5
75	1.2D + 1.5Lm 1 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.066	45	-0.066	OL1	1.5
76	1.2D + 1.5Lm 1 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.066	46	-0.066	OL1	1.5
77	1.2D + 1.5Lm 1 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.066	47	-0.066	OL1	1.5
78	1.2D + 1.5Lm 1 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.066	48	-0.066	OL1	1.5
79	1.2D + 1.5Lm 1 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.066	49	-0.066	OL1	1.5
80	1.2D + 1.5Lm 1 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.066	50	-0.066	OL1	1.5
81	1.2D + 1.5Lm 1 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.066	51	-0.066	OL1	1.5
82	1.2D + 1.5Lm 1 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.066	52	-0.066	OL1	1.5
83	1.2D + 1.5Lm 2 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.066	37	0.066	OL2	1.5
84	1.2D + 1.5Lm 2 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.066	38	0.066	OL2	1.5
85	1.2D + 1.5Lm 2 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.066	39	0.066	OL2	1.5
86	1.2D + 1.5Lm 2 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.066	40	0.066	OL2	1.5
87	1.2D + 1.5Lm 2 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.066	41	0.066	OL2	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
88	1.2D + 1.5Lm 2 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.066	42	0.066	OL2	1.5
89	1.2D + 1.5Lm 2 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.066	43	0.066	OL2	1.5
90	1.2D + 1.5Lm 2 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.066	44	0.066	OL2	1.5
91	1.2D + 1.5Lm 2 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.066	45	-0.066	OL2	1.5
92	1.2D + 1.5Lm 2 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.066	46	-0.066	OL2	1.5
93	1.2D + 1.5Lm 2 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.066	47	-0.066	OL2	1.5
94	1.2D + 1.5Lm 2 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.066	48	-0.066	OL2	1.5
95	1.2D + 1.5Lm 2 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.066	49	-0.066	OL2	1.5
96	1.2D + 1.5Lm 2 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.066	50	-0.066	OL2	1.5
97	1.2D + 1.5Lm 2 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.066	51	-0.066	OL2	1.5
98	1.2D + 1.5Lm 2 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.066	52	-0.066	OL2	1.5
99	1.2D + 1.5Lm 3 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.066	37	0.066	OL3	1.5
100	1.2D + 1.5Lm 3 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.066	38	0.066	OL3	1.5
101	1.2D + 1.5Lm 3 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.066	39	0.066	OL3	1.5
102	1.2D + 1.5Lm 3 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.066	40	0.066	OL3	1.5
103	1.2D + 1.5Lm 3 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.066	41	0.066	OL3	1.5
104	1.2D + 1.5Lm 3 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.066	42	0.066	OL3	1.5
105	1.2D + 1.5Lm 3 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.066	43	0.066	OL3	1.5
106	1.2D + 1.5Lm 3 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.066	44	0.066	OL3	1.5
107	1.2D + 1.5Lm 3 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.066	45	-0.066	OL3	1.5
108	1.2D + 1.5Lm 3 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.066	46	-0.066	OL3	1.5
109	1.2D + 1.5Lm 3 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.066	47	-0.066	OL3	1.5
110	1.2D + 1.5Lm 3 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.066	48	-0.066	OL3	1.5
111	1.2D + 1.5Lm 3 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.066	49	-0.066	OL3	1.5
112	1.2D + 1.5Lm 3 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.066	50	-0.066	OL3	1.5
113	1.2D + 1.5Lm 3 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.066	51	-0.066	OL3	1.5
114	1.2D + 1.5Lm 3 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.066	52	-0.066	OL3	1.5
115	1.2D + 1.5Lm 4 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.066	37	0.066	OL4	1.5
116	1.2D + 1.5Lm 4 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.066	38	0.066	OL4	1.5
117	1.2D + 1.5Lm 4 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.066	39	0.066	OL4	1.5
118	1.2D + 1.5Lm 4 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.066	40	0.066	OL4	1.5
119	1.2D + 1.5Lm 4 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.066	41	0.066	OL4	1.5
120	1.2D + 1.5Lm 4 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.066	42	0.066	OL4	1.5
121	1.2D + 1.5Lm 4 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.066	43	0.066	OL4	1.5
122	1.2D + 1.5Lm 4 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.066	44	0.066	OL4	1.5
123	1.2D + 1.5Lm 4 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.066	45	-0.066	OL4	1.5
124	1.2D + 1.5Lm 4 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.066	46	-0.066	OL4	1.5
125	1.2D + 1.5Lm 4 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.066	47	-0.066	OL4	1.5
126	1.2D + 1.5Lm 4 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.066	48	-0.066	OL4	1.5
127	1.2D + 1.5Lm 4 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.066	49	-0.066	OL4	1.5
128	1.2D + 1.5Lm 4 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.066	50	-0.066	OL4	1.5
129	1.2D + 1.5Lm 4 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.066	51	-0.066	OL4	1.5
130	1.2D + 1.5Lm 4 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.066	52	-0.066	OL4	1.5

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	SAE J429 Gr.2	29000	11154	0.3	0.65	0.49	57	1.5	74	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$1e^{-6}F^{-1}$]	Density [k/ft ³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65
3	A570 Gr. 33	29500	11346	0.3	0.65	0.49	33	52

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Platform Tube	Tube 1x1x3	Beam	None	A36 Gr.36	Typical	0.474	0.06	0.06	0.088
2	Corner Channel	CH3x2x7/32	Beam	None	A36 Gr.36	Typical	1.436	0.565	2.002	0.021
3	Bracing Angle	L1x1x3	Beam	None	A36 Gr.36	Typical	0.34	0.03	0.03	0.003
4	Corner Angle	L3X3X4	Beam	None	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
5	Corner Mount Channel	CH4x2x7/32	Beam	None	A36 Gr.36	Typical	1.654	0.622	3.955	0.025
6	Corner Mount Tube	HSS3X3X4	Beam	None	A36 Gr.36	Typical	2.44	3.02	3.02	5.08
7	MOUNT_PIPE_2.0	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	Face Angle	L2x2x4	Beam	None	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
9	Support Rail	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
10	Stabilizer	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
11	Face Diagonal Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
12	SR Bracing	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
13	HSS Face Horizontal	HSS4X4X4	Beam	None	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
14	Kicker	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
15	MOD Threaded Rods	SR0.625_HRA	Beam	None	SAE J429 Gr.2	Typical	0.307	0.007	0.007	0.015
16	MOD Mount Pipe	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Unistrut	Unistrut A1000	Beam	None	A570 Gr. 33	Typical	0.286	0.055	0.074	0.000537

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	K y-y	K z-z	Function
1	M19	Platform Tube	32			0.65	0.65	Lateral
2	M20	Platform Tube	42			0.65	0.65	Lateral
3	M21	Platform Tube	32			0.65	0.65	Lateral
4	M22	Platform Tube	126	42	42	0.65	0.65	Lateral
5	M23	Platform Tube	126	42	42	0.65	0.65	Lateral
6	M24	Platform Tube	32			0.65	0.65	Lateral
7	M25	Platform Tube	42			0.65	0.65	Lateral
8	M26	Platform Tube	32			0.65	0.65	Lateral
9	M27	Platform Tube	126	42	42	0.65	0.65	Lateral
10	M28	Platform Tube	32			0.65	0.65	Lateral
11	M29	Platform Tube	42			0.65	0.65	Lateral
12	M30	Platform Tube	32			0.65	0.65	Lateral
13	M31	Platform Tube	54.893		35.814	0.65	0.65	Lateral
14	M32	Platform Tube	54.893		35.814	0.65	0.65	Lateral
15	M33	Platform Tube	54.893		35.814	0.65	0.65	Lateral
16	M34	Platform Tube	54.893		35.814	0.65	0.65	Lateral
17	M35	Platform Tube	54.893		35.814	0.65	0.65	Lateral
18	M36	Platform Tube	54.893		35.814	0.65	0.65	Lateral
19	M38	Corner Mount Channel	14					Lateral
20	M40	Corner Mount Channel	14					Lateral
21	M42	Corner Mount Channel	14					Lateral
22	M73	Bracing Angle	25			0.65	0.65	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	K y-y	K z-z	Function
23	M116	Platform Tube	32			0.65	0.65	Lateral
24	M117	Platform Tube	52.01			0.65	0.65	Lateral
25	M118	Platform Tube	41		26.75	0.65	0.65	Lateral
26	M119	Platform Tube	32			0.65	0.65	Lateral
27	M120	Platform Tube	52.01			0.65	0.65	Lateral
28	M121	Platform Tube	41		26.75	0.65	0.65	Lateral
29	M122	Platform Tube	126	42	42	0.65	0.65	Lateral
30	M123	Corner Channel	41	26.75		0.65	0.65	Lateral
31	M124	Platform Tube	126	42	42	0.65	0.65	Lateral
32	M125	Corner Channel	41	26.75		0.65	0.65	Lateral
33	M126	Platform Tube	32			0.65	0.65	Lateral
34	M127	Platform Tube	52.01			0.65	0.65	Lateral
35	M128	Platform Tube	41		26.75	0.65	0.65	Lateral
36	M129	Platform Tube	32			0.65	0.65	Lateral
37	M130	Platform Tube	52.01			0.65	0.65	Lateral
38	M131	Platform Tube	41		26.75	0.65	0.65	Lateral
39	M132	Platform Tube	126	42	42	0.65	0.65	Lateral
40	M133	Corner Channel	41	26.75		0.65	0.65	Lateral
41	M134	Platform Tube	32			0.65	0.65	Lateral
42	M135	Platform Tube	52.01			0.65	0.65	Lateral
43	M136	Platform Tube	41		26.75	0.65	0.65	Lateral
44	M137	Platform Tube	44.385			0.65	0.65	Lateral
45	M138	Platform Tube	32			0.65	0.65	Lateral
46	M139	Platform Tube	52.01			0.65	0.65	Lateral
47	M140	Platform Tube	41		26.75	0.65	0.65	Lateral
48	M141	Platform Tube	44.385			0.65	0.65	Lateral
49	M143	Corner Mount Tube	14					Lateral
50	M145	Corner Mount Tube	14					Lateral
51	M147	Corner Mount Tube	14					Lateral
52	M154	Corner Angle	60					Lateral
53	M104	Face Angle	38					Lateral
54	M105	Face Angle	39					Lateral
55	M106	Face Angle	38					Lateral
56	M150	Face Angle	38					Lateral
57	M151	Face Angle	39					Lateral
58	M153	Face Angle	38					Lateral
59	M164	Face Angle	38					Lateral
60	M165	Face Angle	39					Lateral
61	M167	Face Angle	38					Lateral
62	HR1	Support Rail	120	78	50			Lateral
63	HR10	Support Rail	120	78	50			Lateral
64	HR19	Support Rail	120	78	50			Lateral
65	HR37	SR Bracing	25.732					Lateral
66	HR38	SR Bracing	25.732					Lateral
67	HR39	SR Bracing	25.732					Lateral
68	M174	Stabilizer	36.172					Lateral
69	M175	Stabilizer	36.172					Lateral
70	M182	Stabilizer	36.172					Lateral
71	M183	Stabilizer	36.172					Lateral
72	M188	Stabilizer	36.172					Lateral
73	M189	Stabilizer	36.172					Lateral
74	M190	HSS Face Horizontal	120	96	50	0.65	0.65	Lateral
75	M198	HSS Face Horizontal	120	96	50	0.65	0.65	Lateral
76	M206	HSS Face Horizontal	120	96	50	0.65	0.65	Lateral
77	M214	HSS Face Horizontal	15					Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	K y-y	K z-z	Function
78	M215	HSS Face Horizontal	15					Lateral
79	M216	HSS Face Horizontal	15					Lateral
80	PR5	Kicker	50.881					Lateral
81	PR6	Kicker	50.881					Lateral
82	PR11	Kicker	50.881					Lateral
83	PR12	Kicker	50.881					Lateral
84	PR17	Kicker	50.881					Lateral
85	PR18	Kicker	50.881					Lateral
86	M272	Corner Angle	60					Lateral
87	M275	Corner Angle	60					Lateral
88	A MP1 S	MOD Mount Pipe	96					Lateral
89	A MP2 S	MOUNT PIPE 2.0	96					Lateral
90	A MP3 S	MOD Mount Pipe	120					Lateral
91	A MP4 S	MOD Mount Pipe	96					Lateral
92	A MP4 D	MOD Mount Pipe	96					Lateral
93	B MP1 S	MOD Mount Pipe	96					Lateral
94	B MP2 S	MOUNT PIPE 2.0	96					Lateral
95	B MP3 S	MOD Mount Pipe	120					Lateral
96	B MP4 S	MOD Mount Pipe	96					Lateral
97	B MP4 D	MOD Mount Pipe	96					Lateral
98	G MP1 S	MOD Mount Pipe	96					Lateral
99	G MP2 S	MOUNT PIPE 2.0	96					Lateral
100	G MP3 S	MOD Mount Pipe	120					Lateral
101	G MP4 S	MOD Mount Pipe	96					Lateral
102	G MP4 D	MOD Mount Pipe	96					Lateral
103	M293	Face Diagonal Pipe	54.562					Lateral
104	M296	Face Diagonal Pipe	50.804					Lateral
105	M298	Face Diagonal Pipe	50.804					Lateral
106	M300	Face Diagonal Pipe	54.562					Lateral
107	M304	Face Diagonal Pipe	50.804					Lateral
108	M306	Face Diagonal Pipe	54.562					Lateral
109	M318	MOUNT PIPE 2.0	72					Lateral
110	M323	MOUNT PIPE 2.0	72					Lateral
111	M326	MOUNT PIPE 2.0	72					Lateral
112	M333	MOD Threaded Rods	5					Lateral
113	M334	MOD Threaded Rods	5					Lateral
114	M337	MOD Threaded Rods	5					Lateral
115	M342	MOD Threaded Rods	5					Lateral
116	M345	MOD Threaded Rods	5					Lateral
117	M347	MOD Threaded Rods	5					Lateral
118	M354	MOD Threaded Rods	5					Lateral
119	M358	MOD Threaded Rods	5					Lateral
120	M361	MOD Threaded Rods	5					Lateral
121	M363	MOD Threaded Rods	5					Lateral
122	M370	MOD Threaded Rods	5					Lateral
123	M374	MOD Threaded Rods	5					Lateral

Cold Formed Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	K y-y	K z-z	Function
1	M45	Unistrut	123.875	42	42	Lbyy	0.65	0.65	Lateral
2	M47	Unistrut	123.875	42	42	Lbyy	0.65	0.65	Lateral
3	M49	Unistrut	123.875	42	42	Lbyy	0.65	0.65	Lateral
4	M88	Unistrut	123.875	42	42	Lbyy	0.65	0.65	Lateral
5	M90	Unistrut	123.875	42	42	Lbyy	0.65	0.65	Lateral
6	M92	Unistrut	123.875	42	42	Lbyy	0.65	0.65	Lateral

Cold Formed Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	K y-y	K z-z	Function
7	M217	Unistrut	120		50	Lbyy			Lateral
8	M218	Unistrut	120		50	Lbyy			Lateral
9	M219	Unistrut	120		50	Lbyy			Lateral
10	M220	Unistrut	120		50	Lbyy			Lateral
11	M221	Unistrut	120		50	Lbyy			Lateral
12	M222	Unistrut	120		50	Lbyy			Lateral

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M19			Yes	N/A	None
2	M20			Yes	N/A	None
3	M21			Yes	N/A	None
4	M22			Yes	N/A	None
5	M23			Yes	N/A	None
6	M24			Yes	N/A	None
7	M25			Yes	N/A	None
8	M26			Yes	N/A	None
9	M27			Yes	N/A	None
10	M28			Yes	N/A	None
11	M29			Yes	N/A	None
12	M30			Yes	N/A	None
13	M31			Yes	N/A	None
14	M32			Yes	N/A	None
15	M33			Yes	N/A	None
16	M34			Yes	N/A	None
17	M35			Yes	N/A	None
18	M36			Yes	N/A	None
19	M37			Yes	** NA **	None
20	M38			Yes	N/A	None
21	M40			Yes	N/A	None
22	M42			Yes	N/A	None
23	M43			Yes	** NA **	None
24	M44			Yes	** NA **	None
25	M45			Yes	N/A	None
26	M46			Yes	** NA **	None
27	M47			Yes	N/A	None
28	M48			Yes	** NA **	None
29	M49			Yes	N/A	None
30	M50			Yes	** NA **	None
31	M51			Yes	** NA **	None
32	M52			Yes	** NA **	None
33	M53			Yes	** NA **	None
34	M54			Yes	** NA **	None
35	M55			Yes	** NA **	None
36	M56			Yes	** NA **	None
37	M57			Yes	** NA **	None
38	M58			Yes	** NA **	None
39	M59			Yes	** NA **	None
40	M60			Yes	** NA **	None
41	M73			Yes	N/A	None
42	M86			Yes	** NA **	None
43	M87			Yes	** NA **	None
44	M88			Yes	N/A	None
45	M89			Yes	** NA **	None
46	M90			Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
47	M91			Yes	** NA **	None
48	M92			Yes	N/A	None
49	M93			Yes	** NA **	None
50	M94			Yes	** NA **	None
51	M95			Yes	** NA **	None
52	M96			Yes	** NA **	None
53	M97			Yes	** NA **	None
54	M98			Yes	** NA **	None
55	M99			Yes	** NA **	None
56	M100			Yes	** NA **	None
57	M101			Yes	** NA **	None
58	M102			Yes	** NA **	None
59	M103			Yes	** NA **	None
60	M116			Yes	N/A	None
61	M117			Yes	N/A	None
62	M118			Yes	N/A	None
63	M119			Yes	N/A	None
64	M120			Yes	N/A	None
65	M121			Yes	N/A	None
66	M122			Yes	N/A	None
67	M123			Yes	N/A	None
68	M124			Yes	N/A	None
69	M125			Yes	N/A	None
70	M126			Yes	N/A	None
71	M127			Yes	N/A	None
72	M128			Yes	N/A	None
73	M129			Yes	N/A	None
74	M130			Yes	N/A	None
75	M131			Yes	N/A	None
76	M132			Yes	N/A	None
77	M133			Yes	N/A	None
78	M134			Yes	N/A	None
79	M135			Yes	N/A	None
80	M136			Yes	N/A	None
81	M137			Yes	N/A	None
82	M138			Yes	N/A	None
83	M139			Yes	N/A	None
84	M140			Yes	N/A	None
85	M141			Yes	N/A	None
86	M142			Yes	** NA **	None
87	M143			Yes	N/A	None
88	M145			Yes	N/A	None
89	M147			Yes	N/A	None
90	M154			Yes	Default	None
91	M104			Yes	Default	None
92	M105			Yes	Default	None
93	M106			Yes	Default	None
94	M107			Yes	** NA **	None
95	M108			Yes	** NA **	None
96	M109			Yes	** NA **	None
97	M110			Yes	** NA **	None
98	M111			Yes	** NA **	None
99	M112			Yes	** NA **	None
100	M113			Yes	** NA **	None
101	M114			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
102	M115			Yes	** NA **	None
103	M150			Yes	Default	None
104	M151			Yes	Default	None
105	M152			Yes	** NA **	None
106	M153			Yes	Default	None
107	M157			Yes	** NA **	None
108	M158			Yes	** NA **	None
109	M159			Yes	** NA **	None
110	M160			Yes	** NA **	None
111	M161			Yes	** NA **	None
112	M162			Yes	** NA **	None
113	M163			Yes	** NA **	None
114	M164			Yes	Default	None
115	M165			Yes	Default	None
116	M166			Yes	** NA **	None
117	M167			Yes	Default	None
118	M168			Yes	** NA **	None
119	M169			Yes	** NA **	None
120	M170			Yes	** NA **	None
121	M171			Yes	** NA **	None
122	M172			Yes	** NA **	None
123	M173			Yes	** NA **	None
124	HR1			Yes	Default	None
125	HR10			Yes	Default	None
126	HR19			Yes	Default	None
127	HR31			Yes	** NA **	None
128	HR32			Yes	** NA **	None
129	HR33			Yes	** NA **	None
130	HR34			Yes	** NA **	None
131	HR35			Yes	** NA **	None
132	HR36			Yes	** NA **	None
133	HR37	BenPIN	BenPIN	Yes	Default	None
134	HR38	BenPIN	BenPIN	Yes	Default	None
135	HR39	BenPIN	BenPIN	Yes	Default	None
136	M148			Yes	** NA **	None
137	M149			Yes	** NA **	None
138	M174	BenPIN	BenPIN	Yes	Default	None
139	M175	BenPIN	BenPIN	Yes	Default	None
140	M176			Yes	** NA **	None
141	M177			Yes	** NA **	None
142	M178			Yes	** NA **	None
143	M179			Yes	** NA **	None
144	M180			Yes	** NA **	None
145	M181			Yes	** NA **	None
146	M182	BenPIN	BenPIN	Yes	Default	None
147	M183	BenPIN	BenPIN	Yes	Default	None
148	M184			Yes	** NA **	None
149	M185			Yes	** NA **	None
150	M186			Yes	** NA **	None
151	M187			Yes	** NA **	None
152	M188	BenPIN	BenPIN	Yes	Default	None
153	M189	BenPIN	BenPIN	Yes	Default	None
154	M190			Yes	Default	None
155	M191			Yes	** NA **	None
156	M192			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
157	M193			Yes	** NA **	None
158	M194			Yes	** NA **	None
159	M195			Yes	** NA **	None
160	M196			Yes	** NA **	None
161	M197			Yes	** NA **	None
162	M198			Yes	Default	None
163	M199			Yes	** NA **	None
164	M200			Yes	** NA **	None
165	M201			Yes	** NA **	None
166	M202			Yes	** NA **	None
167	M203			Yes	** NA **	None
168	M204			Yes	** NA **	None
169	M205			Yes	** NA **	None
170	M206			Yes	Default	None
171	M207			Yes	** NA **	None
172	M208			Yes	** NA **	None
173	M209			Yes	** NA **	None
174	M210			Yes	** NA **	None
175	M211			Yes	** NA **	None
176	M212			Yes	** NA **	None
177	M213			Yes	** NA **	None
178	M214			Yes	Default	None
179	M215			Yes	Default	None
180	M216			Yes	Default	None
181	PR1			Yes	** NA **	None
182	PR2			Yes	** NA **	None
183	PR3			Yes	** NA **	None
184	PR4			Yes	** NA **	None
185	PR5	BenPIN	BenPIN	Yes	N/A	None
186	PR6	BenPIN	BenPIN	Yes	N/A	None
187	PR7			Yes	** NA **	None
188	PR8			Yes	** NA **	None
189	PR9			Yes	** NA **	None
190	PR10			Yes	** NA **	None
191	PR11	BenPIN	BenPIN	Yes	N/A	None
192	PR12	BenPIN	BenPIN	Yes	N/A	None
193	PR13			Yes	** NA **	None
194	PR14			Yes	** NA **	None
195	PR15			Yes	** NA **	None
196	PR16			Yes	** NA **	None
197	PR17	BenPIN	BenPIN	Yes	N/A	None
198	PR18	BenPIN	BenPIN	Yes	N/A	None
199	M217			Yes	Default	None
200	M218			Yes	Default	None
201	M219			Yes	Default	None
202	M220			Yes	Default	None
203	M221			Yes	Default	None
204	M222			Yes	Default	None
205	M270			Yes	** NA **	None
206	M271			Yes	** NA **	None
207	M272			Yes	Default	None
208	M273			Yes	** NA **	None
209	M274			Yes	** NA **	None
210	M275			Yes	Default	None
211	R12			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
212	RI1			Yes	** NA **	None
213	A_MP1_S			Yes	Default	None
214	RI3			Yes	** NA **	None
215	RI4			Yes	** NA **	None
216	RI5			Yes	** NA **	None
217	RI6			Yes	** NA **	None
218	RI12		OOOXOO	Yes	** NA **	None
219	RI11			Yes	** NA **	None
220	A_MP2_S			Yes	** NA **	None
221	RI22			Yes	** NA **	None
222	RI21			Yes	** NA **	None
223	A_MP3_S			Yes	Default	None
224	RI23			Yes	** NA **	None
225	RI24			Yes	** NA **	None
226	RI32			Yes	** NA **	None
227	RI31			Yes	** NA **	None
228	A_MP4_S			Yes	Default	None
229	RI33			Yes	** NA **	None
230	RI34			Yes	** NA **	None
231	RI36			Yes	** NA **	None
232	RI37			Yes	** NA **	None
233	A_MP4_D			Yes	Default	None
234	RI72			Yes	** NA **	None
235	RI71			Yes	** NA **	None
236	B_MP1_S			Yes	Default	None
237	RI73			Yes	** NA **	None
238	RI74			Yes	** NA **	None
239	RI75			Yes	** NA **	None
240	RI76			Yes	** NA **	None
241	RI82		OOOXOO	Yes	** NA **	None
242	RI81			Yes	** NA **	None
243	B_MP2_S			Yes	** NA **	None
244	RI92			Yes	** NA **	None
245	RI91			Yes	** NA **	None
246	B_MP3_S			Yes	Default	None
247	RI93			Yes	** NA **	None
248	RI94			Yes	** NA **	None
249	RI102			Yes	** NA **	None
250	RI101			Yes	** NA **	None
251	B_MP4_S			Yes	Default	None
252	RI103			Yes	** NA **	None
253	RI104			Yes	** NA **	None
254	RI106			Yes	** NA **	None
255	RI107			Yes	** NA **	None
256	B_MP4_D			Yes	Default	None
257	RI142			Yes	** NA **	None
258	RI141			Yes	** NA **	None
259	G_MP1_S			Yes	Default	None
260	RI143			Yes	** NA **	None
261	RI144			Yes	** NA **	None
262	RI145			Yes	** NA **	None
263	RI146			Yes	** NA **	None
264	RI152		OOOXOO	Yes	** NA **	None
265	RI151			Yes	** NA **	None
266	G_MP2_S			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
267	RI162			Yes	** NA **	None
268	RI161			Yes	** NA **	None
269	G_MP3_S			Yes	Default	None
270	RI163			Yes	** NA **	None
271	RI164			Yes	** NA **	None
272	RI172			Yes	** NA **	None
273	RI171			Yes	** NA **	None
274	G_MP4_S			Yes	Default	None
275	RI173			Yes	** NA **	None
276	RI174			Yes	** NA **	None
277	RI176			Yes	** NA **	None
278	G_MP4_D			Yes	Default	None
279	M279		OOOXOO	Yes	** NA **	None
280	M280		OOOXOO	Yes	** NA **	None
281	M281		OOOXOO	Yes	** NA **	None
282	M282		OOOXOO	Yes	** NA **	None
283	M283		OOOXOO	Yes	** NA **	None
284	M284		OOOXOO	Yes	** NA **	None
285	M285		OOOXOO	Yes	** NA **	None
286	M286		OOOXOO	Yes	** NA **	None
287	M287		OOOXOO	Yes	** NA **	None
288	M288		OOOXOO	Yes	** NA **	None
289	M289		OOOXOO	Yes	** NA **	None
290	M290		OOOXOO	Yes	** NA **	None
291	M291			Yes	** NA **	None
292	M292			Yes	** NA **	None
293	M293	BenPIN	BenPIN	Yes	Default	None
294	M294			Yes	** NA **	None
295	M295			Yes	** NA **	None
296	M296	BenPIN	BenPIN	Yes	Default	None
297	M297			Yes	** NA **	None
298	M298	BenPIN	BenPIN	Yes	Default	None
299	M299			Yes	** NA **	None
300	M300	BenPIN	BenPIN	Yes	Default	None
301	M301			Yes	** NA **	None
302	M302			Yes	** NA **	None
303	M303			Yes	** NA **	None
304	M304	BenPIN	BenPIN	Yes	Default	None
305	M305			Yes	** NA **	None
306	M306	BenPIN	BenPIN	Yes	Default	None
307	M307			Yes	** NA **	None
308	M308			Yes	** NA **	None
309	M309			Yes	** NA **	None
310	M310			Yes	** NA **	None
311	M311			Yes	** NA **	None
312	M312			Yes	** NA **	None
313	M313			Yes	** NA **	None
314	M314			Yes	** NA **	None
315	M315			Yes	** NA **	None
316	M316			Yes	** NA **	None
317	M317			Yes	** NA **	None
318	M318			Yes	** NA **	None
319	M319			Yes	** NA **	None
320	M320			Yes	** NA **	None
321	M321			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
322	M322			Yes	** NA **	None
323	M323			Yes	** NA **	None
324	M324			Yes	** NA **	None
325	M325			Yes	** NA **	None
326	M326			Yes	** NA **	None
327	M327			Yes	** NA **	None
328	M328			Yes	** NA **	None
329	M329			Yes	** NA **	None
330	M330			Yes	** NA **	None
331	M331			Yes	** NA **	None
332	M332			Yes	** NA **	None
333	M333		OOOXOO	Yes	Default	None
334	M334		OOOXOO	Yes	Default	None
335	M335			Yes	** NA **	None
336	M336			Yes	** NA **	None
337	M337		OOOXOO	Yes	Default	None
338	M338			Yes	** NA **	None
339	M339			Yes	** NA **	None
340	M340			Yes	** NA **	None
341	M341			Yes	** NA **	None
342	M342		OOOXOO	Yes	Default	None
343	M343			Yes	** NA **	None
344	M344			Yes	** NA **	None
345	M345		OOOXOO	Yes	Default	None
346	M346			Yes	** NA **	None
347	M347		OOOXOO	Yes	Default	None
348	M348			Yes	** NA **	None
349	M349			Yes	** NA **	None
350	M350			Yes	** NA **	None
351	M351			Yes	** NA **	None
352	M352			Yes	** NA **	None
353	M353			Yes	** NA **	None
354	M354		OOOXOO	Yes	Default	None
355	M355			Yes	** NA **	None
356	M356			Yes	** NA **	None
357	M357			Yes	** NA **	None
358	M358		OOOXOO	Yes	Default	None
359	M359			Yes	** NA **	None
360	M360			Yes	** NA **	None
361	M361		OOOXOO	Yes	Default	None
362	M362			Yes	** NA **	None
363	M363		OOOXOO	Yes	Default	None
364	M364			Yes	** NA **	None
365	M365			Yes	** NA **	None
366	M366			Yes	** NA **	None
367	M367			Yes	** NA **	None
368	M368			Yes	** NA **	None
369	M369			Yes	** NA **	None
370	M370		OOOXOO	Yes	Default	None
371	M371			Yes	** NA **	None
372	M372			Yes	** NA **	None
373	M373			Yes	** NA **	None
374	M374		OOOXOO	Yes	Default	None
375	M375		OOOXOO	Yes	** NA **	None
376	M376		OOOXOO	Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
377	M377		OOOXOO	Yes	** NA **	None
378	M378		OOOXOO	Yes	** NA **	None
379	M379		OOOXOO	Yes	** NA **	None
380	M380		OOOXOO	Yes	** NA **	None
381	M381		OOOXOO	Yes	** NA **	None
382	M382		OOOXOO	Yes	** NA **	None
383	M383		OOOXOO	Yes	** NA **	None
384	M384		OOOXOO	Yes	** NA **	None
385	M385		OOOXOO	Yes	** NA **	None
386	M386		OOOXOO	Yes	** NA **	None

Node Boundary Conditions

	Node 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	N53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N226	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N60	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N233	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N58	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N231	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N49	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N222	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N47	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N220	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N55	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N228	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N217	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
14	N218	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	N247	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
16	N248	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
17	N258	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
18	N259	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
19	P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
20	P5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
21	P21	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N53	max	559.149	3	597.455	10	34.926	29	7.767	27	17.419	28	131.696	7
2		min	-974.772	11	-363.958	18	11.706	51	0.659	18	5.148	5	-133.743	15
3	N226	max	935.979	21	-15.666	15	1346.573	22	36.468	15	28.472	7	173.235	7
4		min	44.269	13	-544.433	23	259.2	14	-27.262	7	-15.273	15	-176.79	15
5	N60	max	465.394	3	281.358	4	37.796	25	-1.966	4	19.532	25	133.131	7
6		min	-852.09	11	-498.905	12	12.525	66	-8.771	27	5.248	17	-134.048	15
7	N233	max	902.391	18	501.946	32	1425.627	34	45.891	15	143.725	31	201.188	7
8		min	-186.116	10	-51.076	8	249.57	10	-21.056	7	61.672	54	-200.557	15
9	N58	max	71.869	18	504.817	14	37.863	24	-6.561	16	0.743	4	131.574	7
10		min	-83.89	15	-961.528	6	12.708	63	-21.356	24	-2.482	12	-133.671	15
11	N231	max	104.135	18	1071.045	31	1344.646	31	-4.901	8	37.301	10	169.182	7
12		min	-105.143	15	-7.395	7	157.519	7	-20.181	21	-35.406	18	-171.986	15
13	N49	max	978.623	7	365.895	13	35.555	20	-3.052	12	-3.171	15	123.534	7
14		min	-632.731	15	-560.328	6	11.681	62	-11.787	20	-15.386	22	-124.391	15
15	N222	max	74.483	3	528.265	12	1341.241	27	-49.15	18	-15.683	15	189.68	18
16		min	-817.914	27	-131.868	4	312.491	3	-137.551	26	-60.852	34	-189.667	10

Envelope Node Reactions (Continued)

Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
17	N47	max	1013.876	16	592.565	17	35.483	19	11.595	34	-3.799	8	123.039	12
18		min	-535.327	8	-324.155	9	11.793	57	2.675	90	-15.804	33	-124.758	4
19	N220	max	-77.557	3	32.123	18	1348.886	27	36.518	12	9.865	7	162.14	12
20		min	-930.488	27	-552.023	26	245.001	3	-29.646	4	-24.552	15	-165.081	4
21	N55	max	73.931	4	1161.41	17	36.08	31	19.61	31	0.542	18	131.086	7
22		min	-82.287	7	-682.953	9	11.93	56	4.61	7	-2.96	26	-132.014	15
23	N228	max	137.872	4	98.434	14	1350.326	22	116.226	33	-17.249	12	191.121	12
24		min	-137.234	7	-951.475	22	301.737	14	50.069	59	-92.505	4	-190.893	4
25	N217	max	949.667	18	713.975	18	14.408	26	118.006	10	158.584	18	0	130
26		min	-908.879	10	-709.679	10	3.94	66	-118.597	18	-151.69	10	0	1
27	N218	max	864.853	4	712.283	12	14.615	28	107.786	4	144.511	4	0	130
28		min	-911.708	12	-649.606	4	3.945	52	-118.06	12	-152.452	12	0	1
29	N247	max	1130.685	4	490.474	12	14.417	20	76.507	4	188.298	4	0	130
30		min	-1151.096	12	-456.876	4	3.94	60	-82.256	12	-191.638	12	0	1
31	N248	max	139.422	15	1156.082	15	14.631	23	204.27	7	22.581	15	0	130
32		min	-172.846	7	-1224.917	7	3.945	63	-192.766	15	-27.914	7	0	1
33	N258	max	141.001	7	1120.354	15	14.385	31	194.539	7	23.011	7	0	130
34		min	-158.03	15	-1166.847	7	3.942	55	-186.769	15	-26.006	15	0	1
35	N259	max	1083.699	18	438.2	18	14.479	34	72.948	10	180.327	18	0	130
36		min	-1018.817	10	-434.069	10	3.949	58	-73.73	18	-169.552	10	0	1
37	P13	max	1009.879	31	-585.782	55	1012.48	30	-38.264	10	64.455	7	310.728	18
38		min	337.132	56	-1743.294	30	336.866	55	-255.774	34	-202.37	15	-318.789	10
39	P5	max	-671.098	59	47.121	15	1002.911	19	156.201	7	282.069	19	339.329	7
40		min	-1993.311	19	-47.874	7	334.415	59	-155.666	15	94.054	59	-338.23	15
41	P21	max	955.291	24	1654.584	25	962.853	24	246.86	26	70.462	15	318.101	12
42		min	313.773	65	542.635	66	313.106	65	23.547	18	-194.764	7	-320.092	4
43	Totals:	max	6483.328	3	6469.245	15	10831.638	32						
44		min	-6483.352	11	-6469.253	7	3734.773	55						

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

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	M138	Tube 1x1x3	0.559	0	15	0.26	0	y	32	12828.63	15357.6	418.5	418.5	1.804	H1-1b
2	M129	Tube 1x1x3	0.548	0	4	0.265	0	y	22	12828.63	15357.6	418.5	418.5	1.788	H1-1b
3	M119	Tube 1x1x3	0.547	0	10	0.265	0	y	27	12828.63	15357.6	418.5	418.5	1.79	H1-1b
4	M23	Tube 1x1x3	0.454	33.158	108	0.187	0	z	10	11264.442	15357.6	418.5	418.5	3	H1-1b
5	M22	Tube 1x1x3	0.42	33.158	23	0.185	0	z	5	11264.442	15357.6	418.5	418.5	3	H1-1b
6	M26	Tube 1x1x3	0.384	0	15	0.03	32	z	10	12828.63	15357.6	418.5	418.5	2.13	H1-1b
7	M28	Tube 1x1x3	0.378	0	7	0.029	32	z	12	12828.63	15357.6	418.5	418.5	2.107	H1-1b
8	M19	Tube 1x1x3	0.369	0	15	0.032	32	z	7	12828.63	15357.6	418.5	418.5	2.681	H1-1b
9	M118	Tube 1x1x3	0.366	36.253	91	0.101	41	y	95	11429.929	15357.6	418.5	418.5	2.675	H1-1b
10	M21	Tube 1x1x3	0.366	0	7	0.032	32	z	15	12828.63	15357.6	418.5	418.5	2.587	H1-1b
11	M24	Tube 1x1x3	0.359	0	12	0.03	0	z	7	12828.63	15357.6	418.5	418.5	2.288	H1-1b
12	M30	Tube 1x1x3	0.357	0	10	0.029	32	z	4	12828.63	15357.6	418.5	418.5	2.057	H1-1b
13	M134	Tube 1x1x3	0.355	0	15	0.029	32	z	15	12828.63	15357.6	418.5	418.5	2.086	H1-1b
14	HR10	PIPE 2.0	0.355	33.474	7	0.181	86.526	14	19360.206	32130	1871.625	1871.625	2.376	H1-1b	
15	M126	Tube 1x1x3	0.352	0	7	0.029	32	z	4	12828.63	15357.6	418.5	418.5	2.078	H1-1b
16	HR19	PIPE 2.0	0.347	33.474	17	0.183	86.526	8	19360.206	32130	1871.625	1871.625	2.502	H1-1b	
17	HR1	PIPE 2.0	0.339	33.474	12	0.181	86.526	3	19360.206	32130	1871.625	1871.625	2.635	H1-1b	
18	M116	Tube 1x1x3	0.335	0	10	0.029	32	z	10	12828.63	15357.6	418.5	418.5	2.088	H1-1b
19	G_MP4_S	PIPE 2.0	0.319	83.874	5	0.232	83.874	5	14916.096	32130	1871.625	1871.625	2.399	H3-6	
20	M27	Tube 1x1x3	0.304	63	4	0.184	0	z	15	11264.442	15357.6	418.5	418.5	1.887	H1-1b
21	G_MP3_S	PIPE 2.0	0.278	42.947	6	0.11	42.316	4	9836.597	32130	1871.625	1871.625	1.935	H1-1b	
22	B_MP4_S	PIPE 2.0	0.269	83.874	15	0.22	83.874	15	14916.096	32130	1871.625	1871.625	2.885	H1-1b	
23	A_MP3_S	PIPE 2.0	0.261	42.947	11	0.106	42.316	10	9836.597	32130	1871.625	1871.625	2.981	H1-1b	
24	B_MP3_S	PIPE 2.0	0.259	42.947	16	0.107	42.316	15	9836.597	32130	1871.625	1871.625	1.955	H1-1b	

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn	
25	A_MP4_S	PIPE 2.0	0.259	83.874	10	0.22	83.874	10	14916.096	32130	1871.625	1871.625	2.947	H1-1b	
26	M358	SR0.625_HRA	0.239	0	5	0.022	0	5	14450.988	15738.635	163.941	163.941	2.229	H1-1b	
27	B_MP1_S	PIPE 2.0	0.236	83.874	17	0.14	31.326	8	14916.096	32130	1871.625	1871.625	2.558	H1-1b	
28	G_MP1_S	PIPE 2.0	0.235	83.874	15	0.139	31.326	14	14916.096	32130	1871.625	1871.625	2.181	H1-1b	
29	A_MP1_S	PIPE 2.0	0.234	83.874	4	0.14	31.326	3	14916.096	32130	1871.625	1871.625	2.551	H1-1b	
30	M347	SR0.625_HRA	0.224	0	12	0.024	0	13	14450.988	15738.635	163.941	163.941	2.25	H1-1b	
31	M333	SR0.625_HRA	0.223	0	18	0.024	0	18	14450.988	15738.635	163.941	163.941	2.251	H1-1b	
32	M363	SR0.625_HRA	0.223	0	7	0.024	0	7	14450.988	15738.635	163.941	163.941	2.252	H1-1b	
33	M374	SR0.625_HRA	0.222	0	16	0.021	0	16	14450.988	15738.635	163.941	163.941	2.236	H1-1b	
34	M128	Tube 1x1x3	0.22	41	23	0.086	41	y	10	11429.929	15357.6	418.5	418.5	2.795	H1-1b
35	M342	SR0.625_HRA	0.217	0	10	0.02	0	11	14450.988	15738.635	163.941	163.941	2.226	H1-1b	
36	PR6	L2.5x2.5x3	0.215	25.44	15	0.008	50.881	y	15	16236.829	29192.4	872.574	1689.116	1.136	H2-1
37	PR5	L2.5x2.5x3	0.213	25.44	7	0.008	50.881	z	15	16236.829	29192.4	872.574	1689.116	1.136	H2-1
38	G_MP2_S	PIPE 2.0	0.205	25.263	13	0.052	25.263	14	14916.096	32130	1871.625	1871.625	2.255	H1-1b	
39	PR12	L2.5x2.5x3	0.204	25.44	10	0.007	50.881	y	18	16236.829	29192.4	872.574	1689.116	1.136	H2-1
40	PR11	L2.5x2.5x3	0.203	25.44	18	0.007	50.881	z	18	16236.829	29192.4	872.574	1689.116	1.136	H2-1
41	PR18	L2.5x2.5x3	0.203	25.44	4	0.007	50.881	y	4	16236.829	29192.4	872.574	1689.116	1.136	H2-1
42	PR17	L2.5x2.5x3	0.203	25.44	12	0.007	50.881	z	4	16236.829	29192.4	872.574	1689.116	1.136	H2-1
43	M131	Tube 1x1x3	0.202	41	20	0.081	41	y	18	11429.929	15357.6	418.5	418.5	3	H1-1b
44	M121	Tube 1x1x3	0.198	41	26	0.083	41	y	7	11429.929	15357.6	418.5	418.5	3	H1-1b
45	A_MP2_S	PIPE 2.0	0.191	25.263	3	0.054	25.263	3	14916.096	32130	1871.625	1871.625	1.812	H1-1b	
46	B_MP2_S	PIPE 2.0	0.19	25.263	8	0.055	25.263	9	14916.096	32130	1871.625	1871.625	2.243	H1-1b	
47	M136	Tube 1x1x3	0.186	41	34	0.078	41	y	4	11429.929	15357.6	418.5	418.5	2.899	H1-1b
48	M140	Tube 1x1x3	0.184	41	31	0.072	41	y	12	11429.929	15357.6	418.5	418.5	3	H1-1b
49	M135	Tube 1x1x3	0.175	0	15	0.031	0	z	10	9547.737	15357.6	418.5	418.5	1.701	H1-1b
50	M139	Tube 1x1x3	0.171	0	7	0.033	0	z	7	9547.737	15357.6	418.5	418.5	2.206	H1-1b
51	M130	Tube 1x1x3	0.169	0	7	0.031	0	z	12	9547.737	15357.6	418.5	418.5	1.652	H1-1b
52	M127	Tube 1x1x3	0.168	0	7	0.033	0	z	15	9547.737	15357.6	418.5	418.5	1.557	H1-1b
53	M117	Tube 1x1x3	0.165	0	10	0.031	0	z	4	9547.737	15357.6	418.5	418.5	1.659	H1-1b
54	M370	SR0.625_HRA	0.16	5	15	0.018	0	15	14450.988	15738.635	163.941	163.941	2.252	H1-1b	
55	M334	SR0.625_HRA	0.16	5	10	0.018	0	10	14450.988	15738.635	163.941	163.941	2.257	H1-1b	
56	M120	Tube 1x1x3	0.16	0	12	0.031	52.01	z	7	9547.737	15357.6	418.5	418.5	1.666	H1-1b
57	M354	SR0.625_HRA	0.157	5	4	0.017	0	4	14450.988	15738.635	163.941	163.941	2.241	H1-1b	
58	M323	PIPE 2.0	0.129	23.874	10	0.063	23.874	10	20866.733	32130	1871.625	1871.625	2.436	H1-1b	
59	M337	SR0.625_HRA	0.129	5	34	0.014	0	34	14450.988	15738.635	163.941	163.941	2.258	H1-1b	
60	M345	SR0.625_HRA	0.127	5	28	0.014	0	28	14450.988	15738.635	163.941	163.941	2.265	H1-1b	
61	M361	SR0.625_HRA	0.126	5	23	0.013	0	23	14450.988	15738.635	163.941	163.941	2.262	H1-1b	
62	M20	Tube 1x1x3	0.125	42	7	0.009	0	y	28	11264.442	15357.6	418.5	418.5	2.022	H1-1b
63	M33	Tube 1x1x3	0.123	54.893	15	0.035	54.893	z	7	9044.351	15357.6	418.5	418.5	3	H1-1b
64	M29	Tube 1x1x3	0.123	42	12	0.01	0	y	26	11264.442	15357.6	418.5	418.5	2.064	H1-1b
65	M25	Tube 1x1x3	0.122	42	18	0.011	0	y	23	11264.442	15357.6	418.5	418.5	2.081	H1-1b
66	M31	Tube 1x1x3	0.12	54.893	20	0.033	54.893	z	12	9044.351	15357.6	418.5	418.5	3	H1-1b
67	B_MP4_D	PIPE 2.0	0.12	34.863	16	0.104	70.737	15	14916.096	32130	1871.625	1871.625	2.556	H1-1b	
68	G_MP4_D	PIPE 2.0	0.12	34.863	6	0.109	70.737	5	14916.096	32130	1871.625	1871.625	2.681	H1-1b	
69	A_MP4_D	PIPE 2.0	0.12	34.863	11	0.104	70.737	10	14916.096	32130	1871.625	1871.625	2.886	H1-1b	
70	M122	Tube 1x1x3	0.115	126	15	0.076	0	y	27	11264.442	15357.6	418.5	418.5	3	H1-1b
71	M35	Tube 1x1x3	0.113	54.893	10	0.029	54.893	z	18	9044.351	15357.6	418.5	418.5	2.874	H1-1b
72	M124	Tube 1x1x3	0.11	126	4	0.084	0	y	113	11264.442	15357.6	418.5	418.5	3	H1-1b
73	M141	Tube 1x1x3	0.102	44.385	19	0.02	22.192	y	4	10863.993	15357.6	418.5	418.5	2.645	H1-1b
74	M132	Tube 1x1x3	0.093	126	10	0.043	0	y	7	11264.442	15357.6	418.5	418.5	3	H1-1b
75	M137	Tube 1x1x3	0.089	44.385	13	0.019	0	z	18	10863.993	15357.6	418.5	418.5	2.566	H1-1b
76	M32	Tube 1x1x3	0.085	54.893	10	0.024	6.356	y	87	9044.351	15357.6	418.5	418.5	3	H1-1b
77	M36	Tube 1x1x3	0.083	54.893	15	0.023	54.893	z	7	9044.351	15357.6	418.5	418.5	3	H1-1b
78	M34	Tube 1x1x3	0.08	54.893	4	0.023	54.893	z	12	9044.351	15357.6	418.5	418.5	3	H1-1b
79	M214	HSS4X4X4	0.065	7.5	31	0.077	0	z	33	108630.642	109188	12663	12663	1.29	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn	
80	M190	HSS4X4X4	0.065	53.053	105	0.051	3.158	z	10	99933.726	109188	12663	12663	1.882	H1-1b
81	M215	HSS4X4X4	0.064	7.5	26	0.069	7.5	z	26	108630.642	109188	12663	12663	1.236	H1-1b
82	M216	HSS4X4X4	0.063	7.5	34	0.073	15	z	31	108630.642	109188	12663	12663	1.287	H1-1b
83	M183	L2.5x2.5x3	0.063	18.086	12	0.009	36.172	z	15	21702.342	29192.4	872.574	1820.047	1.136	H2-1
84	M175	L2.5x2.5x3	0.06	18.086	18	0.009	36.172	z	4	21702.342	29192.4	872.574	1820.047	1.136	H2-1
85	M189	L2.5x2.5x3	0.059	18.086	7	0.008	36.172	z	10	21702.342	29192.4	872.574	1820.047	1.136	H2-1
86	M182	L2.5x2.5x3	0.059	18.086	15	0.01	36.172	y	5	21702.342	29192.4	872.574	1820.047	1.136	H2-1
87	M206	HSS4X4X4	0.058	12	22	0.052	3.158	z	15	99933.726	109188	12663	12663	1.945	H1-1b
88	M188	L2.5x2.5x3	0.056	18.086	10	0.009	36.172	z	16	21702.342	29192.4	872.574	1820.047	1.136	H2-1
89	M198	HSS4X4X4	0.056	12	27	0.053	3.158	z	5	99933.726	109188	12663	12663	2.04	H1-1b
90	M174	L2.5x2.5x3	0.055	18.086	4	0.01	36.172	z	11	21702.342	29192.4	872.574	1820.047	1.136	H2-1
91	M133	CH3x2x7/32	0.05	0	16	0.028	9.495	y	15	36800.265	46511.723	1810.725	4254.922	1.807	H1-1b
92	M125	CH3x2x7/32	0.049	0	11	0.028	9.495	y	10	36800.265	46511.723	1810.725	4254.922	1.407	H1-1b
93	M73	L1x1x3	0.048	25	12	0.005	25	y	12	7627.912	11010.946	115.944	269.286	1.5	H2-1
94	M326	PIPE 2.0	0.047	23.874	8	0.018	23.874	4	20866.733	32130	1871.625	1871.625	1	H1-1b	
95	M318	PIPE 2.0	0.047	23.874	3	0.018	23.874	15	20866.733	32130	1871.625	1871.625	1	H1-1b	
96	M123	CH3x2x7/32	0.047	0	11	0.028	9.495	y	4	36800.265	46511.723	1810.725	4254.922	2.342	H1-1b
97	M105	L2x2x4	0.042	0	15	0.005	39	z	7	17919.534	30585.6	690.934	1576.849	1.5	H2-1
98	M40	CH4x2x7/32	0.041	14	3	0.01	4.274	y	17	51243.484	53599.223	1892.056	6340.567	1.418	H1-1b
99	M151	L2x2x4	0.041	0	10	0.005	39	z	17	17919.534	30585.6	690.934	1576.849	1.5	H2-1
100	M42	CH4x2x7/32	0.041	14	14	0.01	3.832	z	14	51243.484	53599.223	1892.056	6340.567	1.418	H1-1b
101	M38	CH4x2x7/32	0.04	14	8	0.01	3.832	z	9	51243.484	53599.223	1892.056	6340.567	1.419	H1-1b
102	M153	L2x2x4	0.033	0	86	0.006	38	z	32	18411.164	30585.6	690.934	1576.849	1.5	H2-1
103	M106	L2x2x4	0.03	38	91	0.004	0	z	89	18411.164	30585.6	690.934	1576.849	1.5	H2-1
104	M104	L2x2x4	0.03	38	12	0.006	38	z	26	18411.164	30585.6	690.934	1576.849	1.5	H2-1
105	M150	L2x2x4	0.029	0	19	0.003	38	y	6	18411.164	30585.6	690.934	1576.849	1.5	H2-1
106	M167	L2x2x4	0.028	0	16	0.005	38	z	27	18411.164	30585.6	690.934	1576.849	1.5	H2-1
107	M164	L2x2x4	0.026	0	31	0.003	0	y	7	18411.164	30585.6	690.934	1576.849	1.5	H2-1
108	M154	L3X3X4	0.026	9.158	16	0.005	49.895	y	8	26816.408	46656	1688.138	3461.516	1.381	H2-1
109	M272	L3X3X4	0.024	9.158	11	0.005	49.895	y	3	26816.408	46656	1688.138	3447.416	1.353	H2-1
110	M275	L3X3X4	0.024	9.158	5	0.005	49.895	y	14	26816.408	46656	1688.138	3450.561	1.359	H2-1
111	M165	L2x2x4	0.022	0	4	0.004	0	z	31	17919.534	30585.6	690.934	1576.849	1.5	H2-1
112	HR38	PIPE 2.0	0.016	25.732	8	0.109	25.732	4	30406.57	32130	1871.625	1871.625	1.136	H1-1b*	
113	HR39	PIPE 2.0	0.015	25.732	3	0.113	25.732	15	30406.57	32130	1871.625	1871.625	1.136	H1-1b*	
114	HR37	PIPE 2.0	0.015	25.732	14	0.104	25.732	10	30406.57	32130	1871.625	1871.625	1.136	H1-1b*	
115	M300	PIPE 2.0	0.013	27.281	13	0.012	54.562	7	25076.146	32130	1871.625	1871.625	1.136	H1-1b	
116	M147	HSS3X3X4	0.013	14	11	0.012	14	z	12	78399.678	79056	6696	6696	1.64	H1-1b
117	M293	PIPE 2.0	0.013	27.281	18	0.011	54.562	12	25076.146	32130	1871.625	1871.625	1.136	H1-1b	
118	M306	PIPE 2.0	0.012	27.568	16	0.01	54.562	9	25076.146	32130	1871.625	1871.625	1.136	H1-1b	
119	M143	HSS3X3X4	0.012	14	6	0.012	14	z	15	78399.678	79056	6696	6696	1.788	H1-1b
120	M145	HSS3X3X4	0.012	14	16	0.012	14	z	18	78399.678	79056	6696	6696	1.714	H1-1b
121	M304	PIPE 2.0	0.01	25.669	16	0.008	50.804	7	25916.739	32130	1871.625	1871.625	1.136	H1-1b	
122	M298	PIPE 2.0	0.01	25.402	15	0.008	50.804	4	25916.739	32130	1871.625	1871.625	1.136	H1-1b	
123	M296	PIPE 2.0	0.01	25.402	4	0.009	50.804	10	25916.739	32130	1871.625	1871.625	1.136	H1-1b	

Envelope AISI S100-16: LRFD Member Cold Formed Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pn [lb]	phi*Tn [lb]	phi*Mnyy [lb-ft]	phi*Mnzz [lb-ft]	phi*Vny [lb]	phi*Vnz [lb]	Cb	Eqn	
1	M47	Unistrut A1000	0.663	83.453	83	0.318	83.453	z	90	2619.297	8494.2	185.351	291.912	1337.391	2674.782	2.987	H1.2-1
2	M218	Unistrut A1000	0.573	84	11	0.029	84	z	3	828.973	8494.2	145.311	247.76	1337.391	2674.782	1.705	H1.2-1
3	M220	Unistrut A1000	0.569	84	6	0.028	84	z	14	828.973	8494.2	145.311	250.266	1337.391	2674.782	1.762	H1.2-1
4	M222	Unistrut A1000	0.56	84	16	0.029	84	z	8	828.973	8494.2	145.311	261.7	1337.391	2674.782	2.084	H1.2-1
5	M219	Unistrut A1000	0.486	84	6	0.021	84	z	14	828.973	8494.2	145.311	244.427	1337.391	2674.782	1.634	H1.2-1
6	M221	Unistrut A1000	0.485	84	16	0.021	84	z	8	828.973	8494.2	145.311	235.403	1337.391	2674.782	1.468	H1.2-1
7	M217	Unistrut A1000	0.478	84	11	0.021	84	z	3	828.973	8494.2	145.311	242.176	1337.391	2674.782	1.589	H1.2-1
8	M49	Unistrut A1000	0.329	83.453	30	0.126	83.453	z	21	2619.297	8494.2	185.351	291.912	1337.391	2674.782	3.326	H1.2-1

Company :Telamon CLS
 Designer :ADK
 Job Number :41124-13958547_08_01-01-MA
 Model Name:41124-13958547_08_01-Mlfd - Milford

3/22/2022
 11:14:31 AM
 Checked By : KSM

Envelope AISI S100-16: LRFD Member Cold Formed Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC Shear Check	Loc[in]	Dir	LC	phi*Pn[lb]	phi*Tn[lb]	phi*Mnyy[lb-ft]	phi*Mnzz[lb-ft]	phi*Vny[lb]	phi*Vnz[lb]	Cb	Eqn
9	M45	Unistrut A1000	0.243	83.453	17		z	152619.297	8494.2	185.351	291.912	1337.391	2674.782	2.855	H1.2-1
10	M90	Unistrut A1000	0.104	82.801	7		y	262619.297	8494.2	185.351	291.912	1337.391	2674.782	1	H1.2-1
11	M92	Unistrut A1000	0.103	41.074	18		y	202619.297	8494.2	167.289	291.912	1337.391	2674.782	1	H1.2-1
12	M88	Unistrut A1000	0.09	91.928	15		y	312619.297	8494.2	185.351	271.666	1337.391	2674.782	1	H1.2-1