City of Puyallup
Building
ACCEPTED
JMontgomery
03/13/2023
10:32:35 AM

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

PRCTI20230195

MasTec Network Solutions

October 28, 2022

SEE PAGES 81-90 FOR STRUCTURAL ENGINEER MOUNT REINFORCEMENT DRAWINGS DETAILS

MasTec Network Solutions
1151 SE Cary Pkwy Suite 101
Cary, NC 27518
Tel (919) 674-5895
MNS.Engineering@mastec.com

Subject: **Mount Modification Structural Analysis**

Carrier Designation:

Carrier: AT&T
Site Name: Downtown Puyallup
Site Number: TA48
FA Number: 10102328
Initiative: 5G NR 1SR CBAND
PACE Number: MRWOR059704

Engineering Firm Designation: **MNS Project Number:** 33683-MMD1

Site Data:

110 9Th Avenue Southwest
Puyallup, Pierce County, WA 98371
Latitude 47.1847°, Longitude -122.2961°
65.5 ft Stadium
60 ft RAD Center

MasTec Network Solutions is pleased to submit this **Mount Modification Structural Analysis** to determine the structural integrity of the above-mentioned structure.

This analysis has been performed in compliance with the 2018 International Building Code (IBC) and ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures. Based on our analysis we have determined the structural strength to have the following result:

Antenna Mounting Structure	**65%**	**Sufficient***

***Structure has sufficient capacity provided the modifications are installed as recommended.**

We at MasTec Network Solutions appreciate the opportunity of providing continued specialty services. Please do not hesitate to contact our office should you have any questions.

Prepared By: David Powers

Reviewed By:

Raphael Mohamed, PE, Peng
Senior Director of Engineering
WA PE License No. 42214

RAPHAEL MOHAMED STATE OF WASHINGTON 42214 REGISTERED PROFESSIONAL ENGINEER

Raphael Mohamed, PE, PENG

Digitally signed by Raphael Mohamed, PE, PENG
DN: C=US, E=raphael.mohamed@mastec.com, O=MasTec Network Solutions, OU=MasTec Engineering, CN="Raphael Mohamed, PE, PENG"
Date: 2022.10.31 10:25:09-04'00'

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

MasTec Network Solutions

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The purpose of this analysis is to determine the acceptability of AT&T's proposed loading. Documents used for this analysis are stated in **Table 1**. This analysis has been performed in compliance with the applicable codes and parameters listed in **Table 2**.

Table 1: Referenced Documents

Company	Document Type	Reference	Date
MasTec	Modification Drawings	Project #: 33683-MMD1	10/28/2022
Morison Hershield	Mount Analysis	Project #: GED-445 / 1801115	3/1/2018
MasTec	Construction Drawings	Site Number: 10102328	5/13/2022
AT&T	RFDS	RFDS Name: STTLWATA48	4/25/2022

Table 2: Design Basis

Codes and Standards	
Local Building Code	*2018 International Building Code*
TIA Standard	*ANSI/TIA-222-H*
Wind Parameters	
Ultimate Wind Speed	98 mph
Nominal Wind Speed with Ice	30 mph
Radial Ice Thickness	1 in
Operational Wind Speed	30 mph
Exposure Category	C
Risk Category	II
Topographic Category	1
Seismic Parameters	
S_S	1.271
S_1	0.438

Seismic effects have been considered in accordance with Section 2.7 of TIA-222-H.

Based on our analysis, we have determined the mounting components to be **adequate** to support the existing and proposed loading as described in Table 3 of this analysis report.

To ensure the requirements of the applicable standards are met, we have the following recommendations:

Recommendations:

1) All bolts and hardware should be checked for tightness and condition prior to installing the proposed equipment.

2) In order for the results of this analysis to be valid, the modifications in **APPENDIX 6** must be installed as specified.

CARRIER LOADING

The existing and proposed antenna equipment with corresponding mounts are shown below in **Table 3**. If the equipment listed below differs from actual field conditions, MasTec Network Solutions should be contacted to review the discrepancies.

Table 3: Appurtenance Loading

Final Carrier Loading:

Antenna Elevation (ft)	Qty	Description	Carrier	Mount Elevation (ft)	Mount Type	Notes
63	3	Nokia AEQK	AT&T	60	Pipe Mounts	--
60	3	Cellmax CMA-UBTULBULBHH-6517-17-21-21				
	9	DC2-48-60-0-9E				
	3	AirScale Dual RRH 4T4R B12/14 320W AHLBA				
	3	B25 RRH4X30-4R				
	3	Kathrein 80010992				
	3	FC12-PC6-10E				
	3	AirScale RRH 4T4R B5 160W AHCA				
	3	B66A RRH4X45-4R				
	3	RRH4x25-WCS-4R				
	1	DC9-48-60-24-8C-EV				
59.5	3	Nokia AEQU				

ANALYSIS RESULTS

RISA-3D (V17.0.4), a commercially available software package for structural analysis, was used to create a three-dimensional model of the structure and calculate member stresses for various loading cases. Selected output from the analysis is included in **APPENDIX 3**. Please find below a summary of the structure analysis results.

Capacity percentages below 105% are considered acceptable for structure components.

Table 4: Mount Components (Alpha Sector)

Structural Component	Capacity Percentage	Result	Notes
Mount Pipe	65%	Pass	1
MOD Plate	46%	Pass	1
MOD Pipe	10%	Pass	1

1. Please see **APPENDIX 3** for calculation details

Table 5: Additional Structural Components (Alpha Sector)

Component	Percentage	Result	Notes
Connection Bolts	9%	Pass	1

1. Please see **APPENDIX 2** for calculation details.

Table 6: Mount Components (Beta & Gamma Sector)

Structural Component	Capacity Percentage	Result	Notes
Mount Pipe	49%	Pass	1
MOD Plate	40%	Pass	1

2. Please see **APPENDIX 3** for calculation details

Table 7: Additional Structural Components (Beta & Gamma Sector)

Component	Percentage	Result	Notes
Connection Bolts	6%	Pass	1

2. Please see **APPENDIX 2** for calculation details.

ASSUMPTIONS, LIMITATIONS AND DISCLAIMER

1) The mount was built in accordance with the designer's specifications and the mount has been maintained and is free of damage.
2) This Structural Analysis is not a condition assessment of the mount and is an evaluation of the theoretical structural capacity.
3) This analysis is based from the information supplied, and therefore, this report's results are as accurate as the supplied data.
4) MasTec Network Solutions makes no warranties, expressed and/or implied, in connection with this report, and disclaims any liability associated with material, fabrication, or erection of this tower. MasTec will not be held responsible from any consequential or incidental damages sustained by any person, firm, or organization as a result of the contents of this report. The maximum liability of MasTec pursuant to this report will be limited to the total fee received for compilation of this report.
5) It is the tower owner's responsibility to verify that the mount modeled and analyzed is the correct structure modeled.
6) The use of this report shall be limited to the purpose for which it was commissioned and may not be used for any other purposes without the written consent of MasTec Network Solutions.
7) The mount was properly fabricated and was constructed and has been maintained in accordance with manufacturer's specifications.
8) The connection from the tower to the mount is assumed to be adequate and in good condition.
9) Member connections are assumed to have been designed to meet or exceed the theoretical capacity of the connected member.
10) Steel grades have been assumed as follows:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
HSS (Round)	ASTM 500 (GR B-42)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
U-Bolts	SAE 429 Gr.2

APPENDIX 1: LOADING PARAMETERS

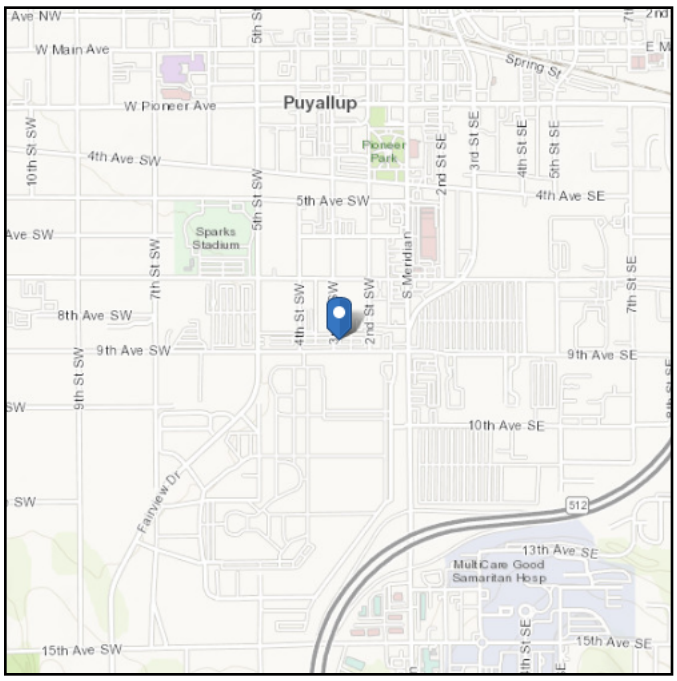
PRCTI20230195

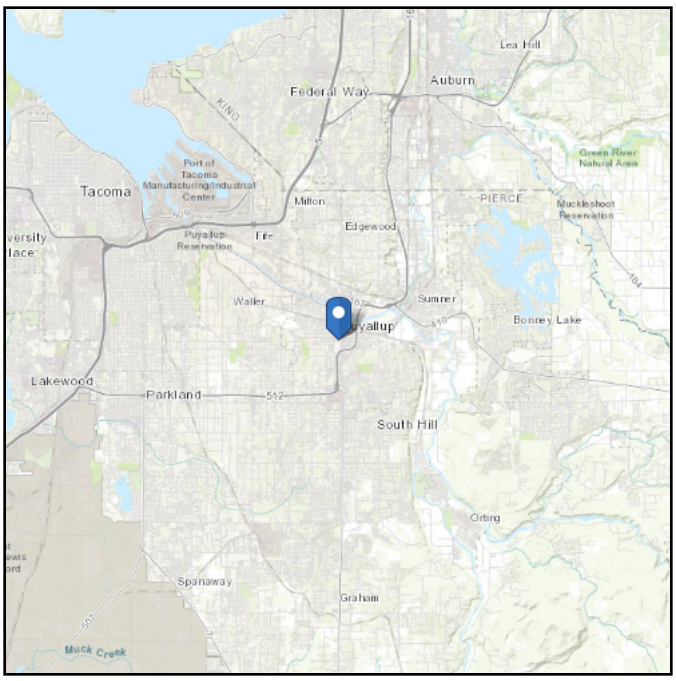
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 41.8 ft (NAVD 88)
Latitude: 47.18472
Longitude: -122.29611





Wind

Results:

Wind Speed	98 Vmph
10-year MRI	67 Vmph
25-year MRI	73 Vmph
50-year MRI	78 Vmph
100-year MRI	83 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 Oct 17 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 not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

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

Results:

S_S :	1.271	S_{D1} :	N/A
S_1 :	0.438	T_L :	6
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA_M :	0.6
S_{MS} :	1.525	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.017	C_v :	1.354

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Mon Oct 17 2022

Date Source: USGS Seismic Design Maps

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	25 F
Gust Speed	30 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Oct 17 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.

APPENDIX 2: LOADING CALCULATIONS (ALPHA SECTOR)

PRCTI20230195

MasTec Network Solutions

Mount Analysis Tool (v4.3.7)

Site Name	DOWNTOWN PUYALLUP		
Site ID/FA Number	10102328	Rooftop?	Yes
MNS Project Number	33683	Existing Site Audit?	Yes
Code	H	Risk Category	II

Legend
Input
Calculated
Notes

Maximum Capacity		
Controlling Capacity	68.9%	PASS

Analysis Parameters		
Mount Height	60	ft
Exposure Category	C	(B,C, or D)
Ultimate Wind Speed	98	mph
Ice Wind Speed	30	mph
Design Ice Thickness, t_i	1	in
Maintenance Wind Speed	30	mph
Run Earthquake Analysis?	Yes	
Ground Elevation	41.8	ft, Google Earth
Tower/Rooftop Height	65.5	ft
S_1	0.438	USGS
S_{DS}	1.017	2.7.5
Vertical Seismic Loads, E_v	0.203	2.7.6
Seismic Response Coefficient, C_s	0.339	2.7.7.1.1
C_s * Amplification Factor	0.407	2.7.8.1

Wind Parameters					
Gust Effect Factor, G_h	1.000	2.6.9	K_s	1.000	2.6.7
K_Z	1.137	2.6.5.2	K_e	0.998	2.6.8
K_{Zt}	1.000	2.6.6	K_a	0.900	16.6
K_d	0.950	Table 2-2	*Note for Rooftop Structures greater than 50', unobstructed for 90 deg and protruding 50' above surrounding buildings Ks must be calculated.		
q_z	26.507	psf, 2.6.11.6			
C/D	104.478	Table 2-9			
t_{iz}	1.062	in, 2.6.10			
q_{iz}	2.236	psf, 2.6.9.6	I, Ice	1.000	Table 2-3
C/D_{iz}	31.983	Table 2-9	I, EQ	1.000	Table 2-3
$q_{Maintenance}$	2.239	psf, 2.6.9.6	$K_{es\ (Wind)}$	0.950	Table S-1
$C/D_{Maintenance}$	31.983	Table 2-9	$K_{es\ (ice)}$	0.850	Table S-1
Ice Dead, Grating	0.008422081	ksf			
Dead, Grating	0.012	ksf			

Pipe Mounts (Orientation Drawn Top-Down)			
Risa 3D Label	Elevation (ft)	Length (in)	Diameter (in)
MP1	60	120	2.375
MP2	60	120	2.375
MP3	60	120	2.375
MP4	60	120	2.375
MP5	60	120	2.375

Appurtenances					
Model	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)
Cellemax CMA-UBTULBULBHH-6517-17-2	Antenna	96.5	27.2	7.7	115
Kathrein 80010992K	Antenna	105.2	20	6.9	144.3
Nokia AEQK	Antenna	29.53	17.72	9.53	99.21
Nokia AEQU	Antenna	29.5	17.7	9.5	99.21
Raycap DC2-48-60-0-9E	RRU, TMA, Etc.	10.25	10.75	6.27	16
Nokia Airscale Dual RRH 4T4R B12/14	RRU, TMA, Etc.	28.7	15.4	9.5	46
Alcatel Lucent TME B25 RRH4X30-4F	RRU, TMA, Etc.	21.4	12	7.2	51
Raycap FC12-PC6-10E	RRU, TMA, Etc.	15.5	16.25	6.64	20.35
Nokia Airscale RRH 4T4R B5 160W AH(	RRU, TMA, Etc.	13.27	11.6	6.5	36.8
Alcatel Lucent TME B66A RRH4X45-4	RRU, TMA, Etc.	25.8	11.8	7.2	56.8
Alcatel Lucent TME RRH4X25-WCS-4I	RRU, TMA, Etc.	34.7	13.2	11.3	91

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
MP1	max CMA-UBTULBULBHH-6517-17-	60	1	0	100.0%	100.0%	Antenna	96.500	27.200	7.700	115.000	22.722	8.176	0.515	0.185	9.8%	90.2%
MP1	Nokia Airscale Dual RRH 4T4R B12/1	63	1	90	25.0%	100.0%	RRU, TMA, Etc.	28.700	15.400	9.500	46.000	3.683	2.316	0.013	0.083	8.0%	32.0%
MP1	Alcatel Lucent TME B25 RRH4X30-4	63	1	90	25.0%	0.0%	RRU, TMA, Etc.	21.400	12.000	7.200	51.000	2.140	1.306	0.007	0.000	11.1%	28.9%
MP1																	
MP1																	
MP1																	
MP2	Raycap DC2-48-60-0-9E	63	1	0	100.0%	100.0%	RRU, TMA, Etc.	10.250	10.750	6.270	16.000	0.918	0.536	0.021	0.012	15.7%	24.3%
MP2																	
MP2																	
MP2																	
MP2																	
MP2																	
MP3	Raycap FC12-PC6-10E	63	1	0	100.0%	100.0%	RRU, TMA, Etc.	15.500	16.250	6.640	20.350	2.099	0.858	0.048	0.019	13.5%	26.5%
MP3	Alcatel Lucent TME RRH4X25-WCS-4	60	1	0	100.0%	100.0%	RRU, TMA, Etc.	34.700	13.200	11.300	91.000	3.835	3.337	0.087	0.076	35.5%	64.5%
MP3																	
MP3																	
MP3																	
MP3																	
MP4	Kathrein 80010992K	60	1	0	100.0%	100.0%	Antenna	105.200	20.000	6.900	144.300	19.326	8.443	0.438	0.191	6.2%	93.8%
MP4	Nokia Airscale RRH 4T4R B5 160W AH	63	1	90	25.0%	0.0%	RRU, TMA, Etc.	13.270	11.600	6.500	36.800	1.283	0.719	0.004	0.000	14.5%	25.5%
MP4	Alcatel Lucent TME B66A RRH4X45-4	63	1	90	25.0%	100.0%	RRU, TMA, Etc.	25.800	11.800	7.200	56.800	2.537	1.610	0.009	0.057	9.2%	30.8%
MP4																	
MP4																	
MP4																	
MP5	Nokia AEQK	63	1	0	100.0%	100.0%	Antenna	29.530	17.720	9.530	99.210	4.361	2.397	0.099	0.054	7.7%	32.3%
MP5	Nokia AEQU	59.5	1	0	100.0%	100.0%	Antenna	29.500	17.700	9.500	99.210	4.351	2.388	0.099	0.054	42.7%	67.3%
MP5																	
MP5																	
MP5																	
MP5																	

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Type	Height (in)	Width (in)	Depth (in)	Ice Weight (lb)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
MP1	max CMA-UBTULBULBHH-6517-17-	60	1	0	100.0%	100.0%	Antenna	96.500	27.200	7.700	258.618	24.543	9.807	0.052	0.021	9.8%	90.2%
MP1	lokia Airscale Dual RRH 4T4R B12/1	63	1	90	25.0%	100.0%	RRU, TMA, Etc.	28.700	15.400	9.500	50.089	4.374	2.895	0.002	0.009	8.0%	32.0%
MP1	Alcatel Lucent TME B25 RRH4X30-4I	63	1	90	25.0%	0.0%	RRU, TMA, Etc.	21.400	12.000	7.200	29.287	2.669	1.746	0.001	0.000	11.1%	28.9%
MP1																	
MP1																	
MP1																	
MP2	Raycap DC2-48-60-0-9E	63	1	0	100.0%	100.0%	RRU, TMA, Etc.	10.250	10.750	6.270	12.569	1.261	0.811	0.003	0.002	15.7%	24.3%
MP2																	
MP2																	
MP2																	
MP2																	
MP2																	
MP3	Raycap FC12-PC6-10E	63	1	0	100.0%	100.0%	RRU, TMA, Etc.	15.500	16.250	6.640	26.282	2.604	1.218	0.006	0.003	13.5%	26.5%
MP3	lcatel Lucent TME RRH4X25-WCS-4	60	1	0	100.0%	100.0%	RRU, TMA, Etc.	34.700	13.200	11.300	58.270	4.565	4.029	0.010	0.009	35.5%	64.5%
MP3																	
MP3																	
MP3																	
MP3																	
MP4	Kathrein 80010992K	60	1	0	100.0%	100.0%	Antenna	105.200	20.000	6.900	213.197	21.177	10.197	0.045	0.022	6.2%	93.8%
MP4	okia Airscale RRH 4T4R B5 160W AH	63	1	90	25.0%	0.0%	RRU, TMA, Etc.	13.270	11.600	6.500	17.311	1.684	1.043	0.001	0.000	14.5%	25.5%
MP4	lcatel Lucent TME B66A RRH4X45-4	63	1	90	25.0%	100.0%	RRU, TMA, Etc.	25.800	11.800	7.200	34.903	3.130	2.115	0.001	0.007	9.2%	30.8%
MP4																	
MP4																	
MP4																	
MP5	Nokia AEQK	63	1	0	100.0%	100.0%	Antenna	29.530	17.720	9.530	57.033	5.098	2.989	0.011	0.006	7.7%	32.3%
MP5	Nokia AEQU	59.5	1	0	100.0%	100.0%	Antenna	29.500	17.700	9.500	56.889	5.088	2.978	0.011	0.006	42.7%	67.3%
MP5																	
MP5																	
MP5																	
MP5																	

Member	Section Set	Member Length (ft)	Flat/Round	Wind Projection (in)	D_c (in)	A_{lz} (in^2)	C_F	Front Wind (klf)	Side Wind (klf)	Front Ice Wind (klf)	Side Ice Wind (klf)	Ice Dead (klf)	Front Maint Wind (klf)	Side Maint Wind (klf)
MP1	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M2	MOD Plate	0.75	Flat	0.500	4.000	13.898	2.000	0.000	0.002	0.000	0.000	0.005	0.000	0.000
M3	MOD Plate	0.75	Flat	0.500	4.000	13.898	2.000	0.000	0.002	0.000	0.000	0.005	0.000	0.000
MP5	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M5	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M6	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
MP2	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M8	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M9	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
MP4	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M11	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M12	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
MP3	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M14	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M15	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M16	RIGID	0.25	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M17	RIGID	0.25	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M18	RIGID	0.25	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M19	RIGID	0.25	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M20	MOD Pipe	13	Round	2.380	2.380	9.305	1.200	0.005	0.000	0.001	0.000	0.004	0.001	0.000

PRCTI20230195

MasTec Network Solutions

Mastec Network Solution - 1151 SE Cary Pkwy, Suite 101, Cary, NC 27518

MNS CONNECTION TOOL - RESULTS SUMMARY

Site Name: TA
Site Number: 10102328
MNS ENG. Number: 33683
Design Code: ANSI/TIA-222-H

Results Overview
Bolted Connections: 9.4% PASS

Bolted Connections:

Conn. No.	Joint Label	Bolt Group Properties & Geometry	Shear Capacity	Tension Capacity	Shear-Tension Interaction	Result
1	N5	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.13k ϕVn= 7.95k Vu/(ϕVn)= 1.6%	Tu= 0.15k ϕTn= 13.25k Tu/(ϕTn)= 1.1%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
2	N6	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.75k ϕVn= 7.95k Vu/(ϕVn)= 9.4%	Tu= 0.24k ϕTn= 13.25k Tu/(ϕTn)= 1.8%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 1%	Shear: PASS Tension: PASS Interaction: PASS
3	N11	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.1k ϕVn= 7.95k Vu/(ϕVn)= 1.3%	Tu= 0k ϕTn= 13.25k Tu/(ϕTn)= 0%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
4	N12	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.36k ϕVn= 7.95k Vu/(ϕVn)= 4.6%	Tu= 0.25k ϕTn= 13.25k Tu/(ϕTn)= 1.9%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
5	N17	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.05k ϕVn= 7.95k Vu/(ϕVn)= 0.6%	Tu= 0k ϕTn= 13.25k Tu/(ϕTn)= 0%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
6	N18	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.21k ϕVn= 7.95k Vu/(ϕVn)= 2.7%	Tu= 0.28k ϕTn= 13.25k Tu/(ϕTn)= 2.1%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
7	N23	(2) 0.4 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.32k ϕVn= 5.09k Vu/(ϕVn)= 6.3%	Tu= 0.02k ϕTn= 8.48k Tu/(ϕTn)= 0.2%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
8	N24	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.21k ϕVn= 7.95k Vu/(ϕVn)= 2.6%	Tu= 0.18k ϕTn= 13.25k Tu/(ϕTn)= 1.3%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
9	N29	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.07k ϕVn= 7.95k Vu/(ϕVn)= 0.9%	Tu= 0.01k ϕTn= 13.25k Tu/(ϕTn)= 0.1%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
10	N30	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.38k ϕVn= 7.95k Vu/(ϕVn)= 4.8%	Tu= 0.33k ϕTn= 13.25k Tu/(ϕTn)= 2.5%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS

APPENDIX 3: RISA 3D OUTPUT (ALPHA SECTOR)

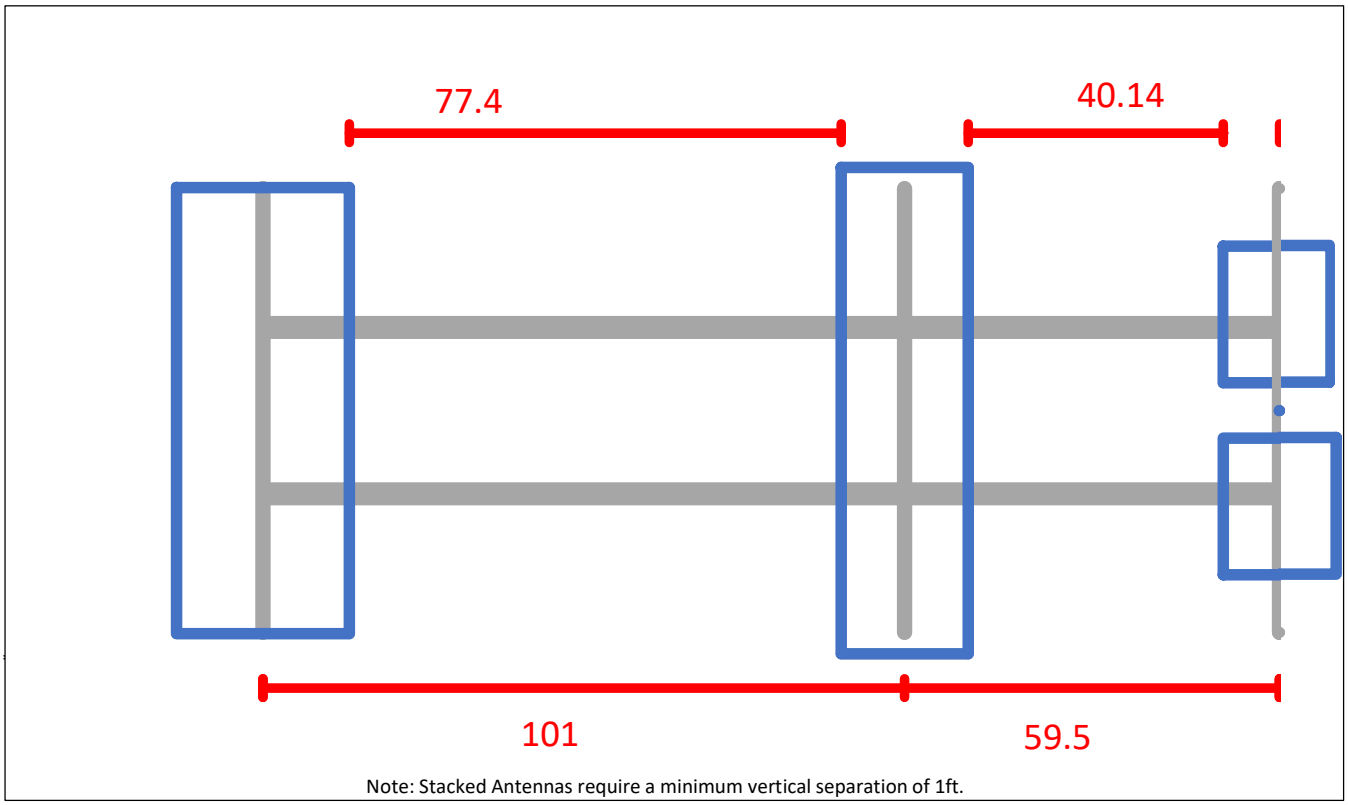
PRCTI20230195

ALPHA SECTOR

Face Width (ft)	13.33

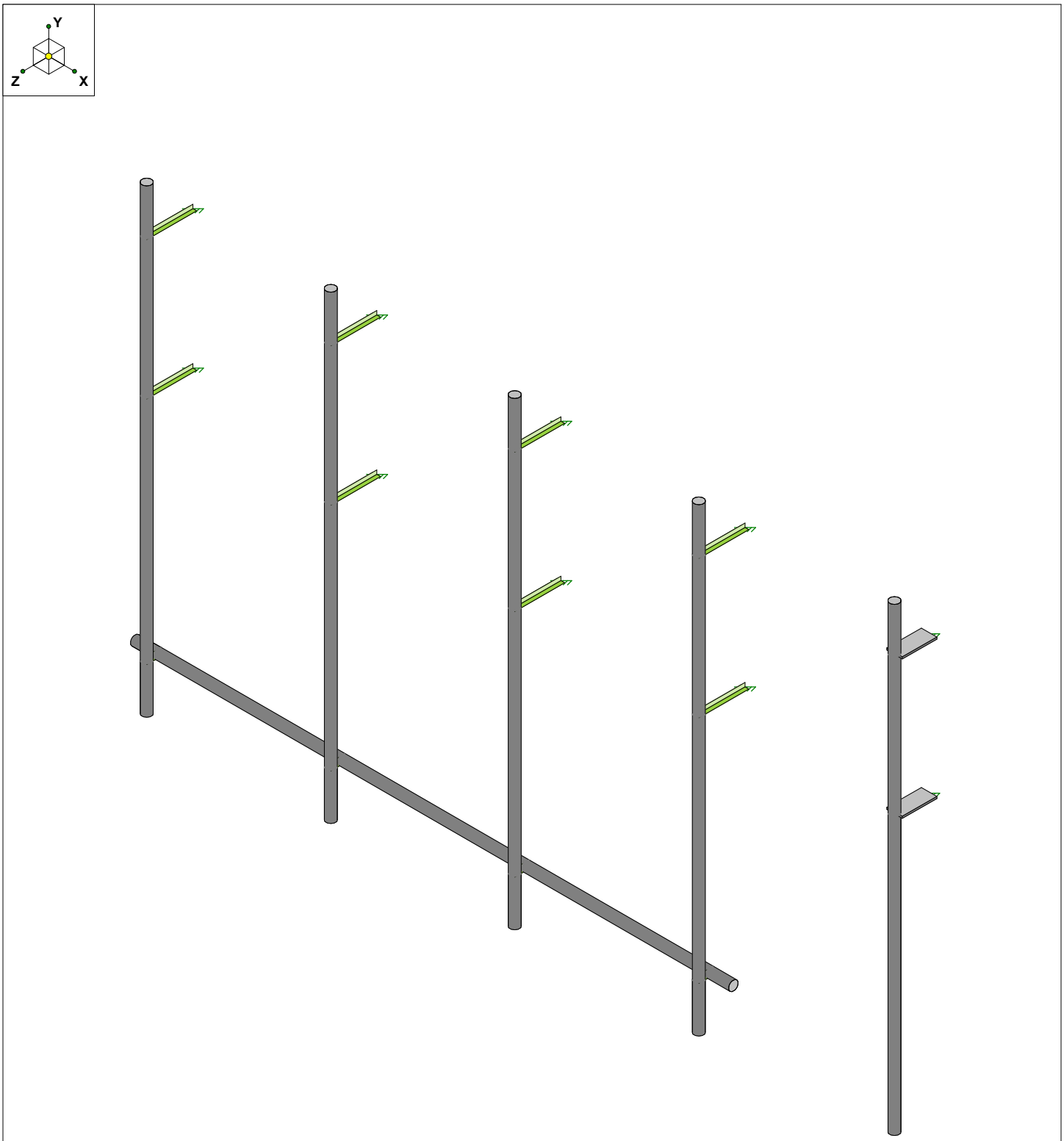
MasTec Network Solutions

Spacing (in)	Antenna 1		Spacing (in)	Antenna 2		Spacing (in)	Antenna 3		Spacing (in)	Antenna 4		Spacing (in)
-13.6	Height (in)	96.5	77.4	Height (in)	105.2	40.14	Height (in)	29.53	-8.86	Height (in)		-0.04
Spacing (in)	Width (in)	27.2	Spacing (in)	Width (in)	20	Spacing (in)	Width (in)	17.72	Spacing (in)	Width (in)		Spacing (in)
	Depth (in)	7.7	101	Depth (in)	6.9	59	Depth (in)	9.53		Depth (in)		-0.04
Spacing (in)	Antenna 5		Spacing (in)	Antenna 6		Spacing (in)	Antenna 7		Spacing (in)	Antenna 8		Spacing (in)
	Height (in)			Height (in)			Height (in)	29.5		Height (in)		
Spacing (in)	Width (in)		Spacing (in)	Width (in)		Spacing (in)	Width (in)	17.7	Spacing (in)	Width (in)		Spacing (in)
	Depth (in)			Depth (in)			Depth (in)	9.5		Depth (in)		



Note: Stacked Antennas require a minimum vertical separation of 1ft.

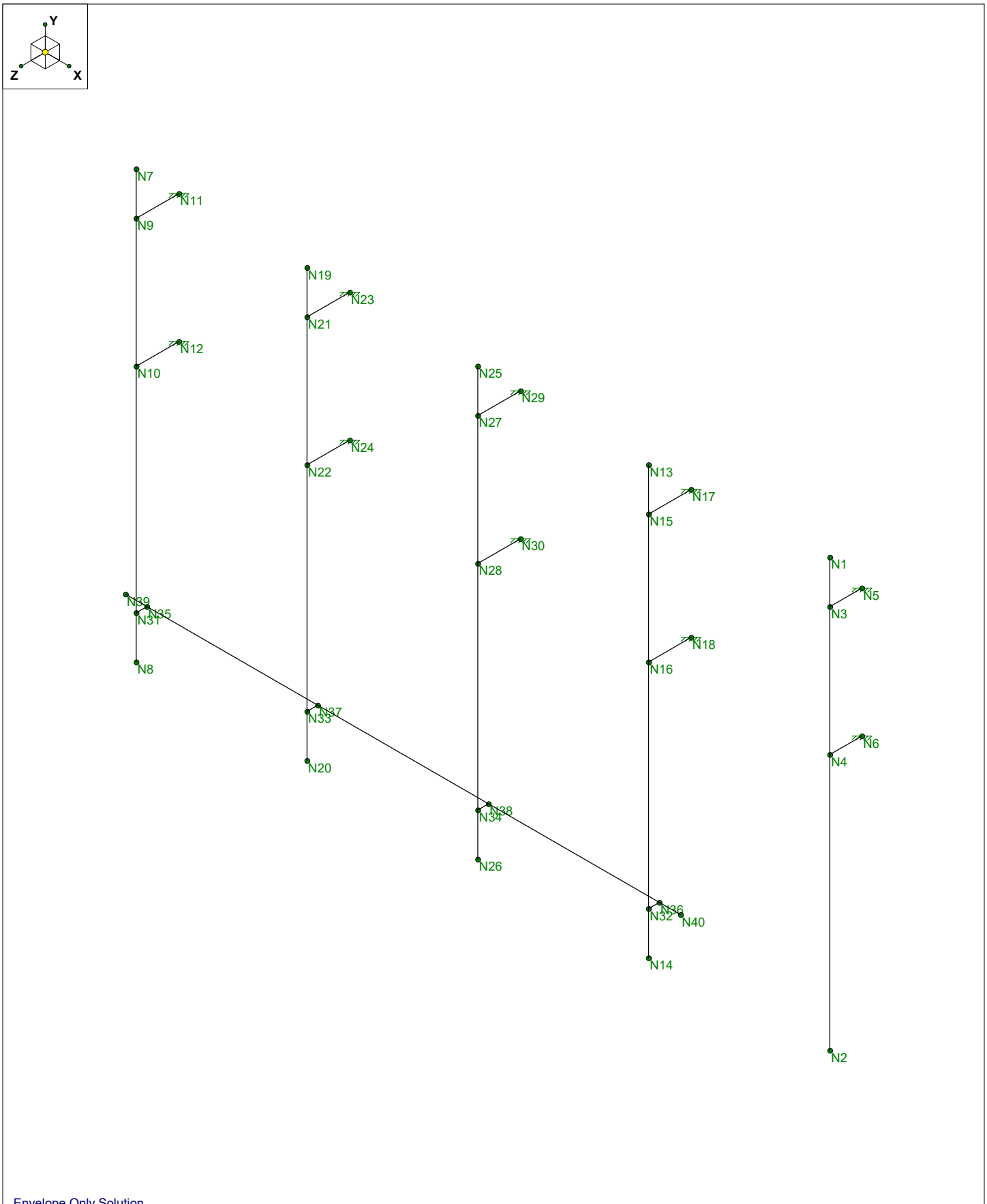
PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 10:34 AM
33683		33683-MOD1.r3d

PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 10:34 AM
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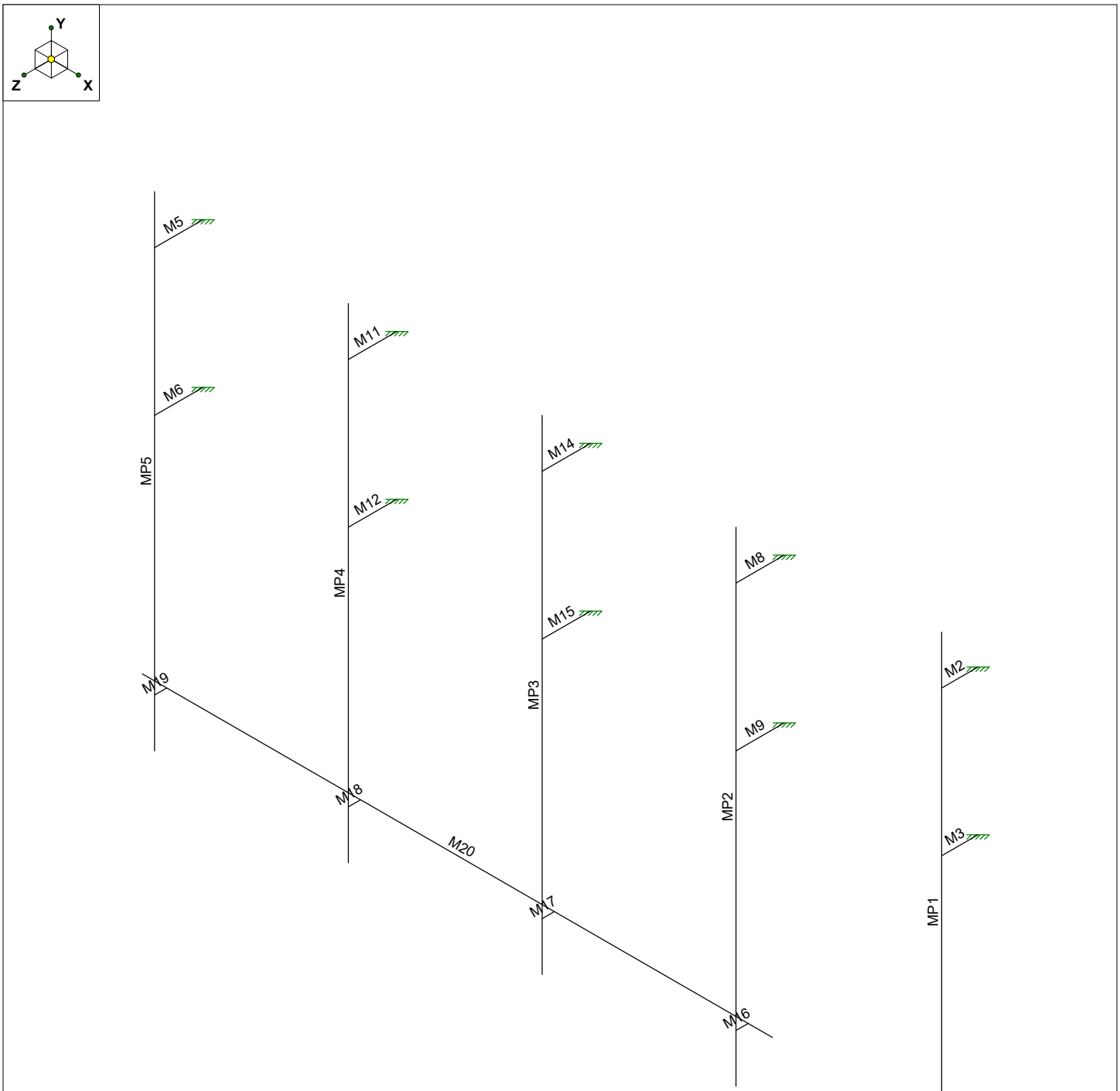
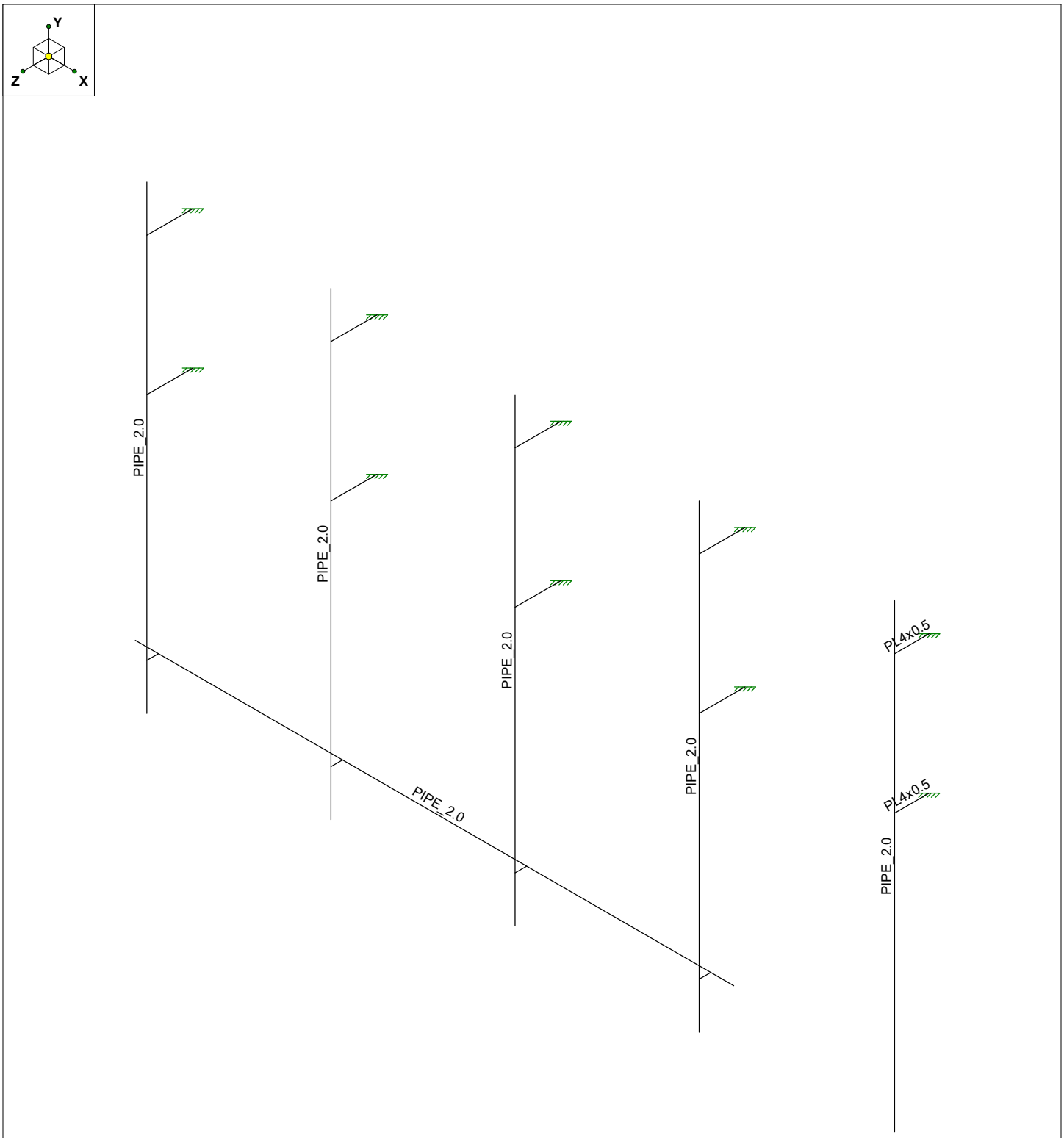


Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 10:34 AM
33683		33683-MOD1.r3d

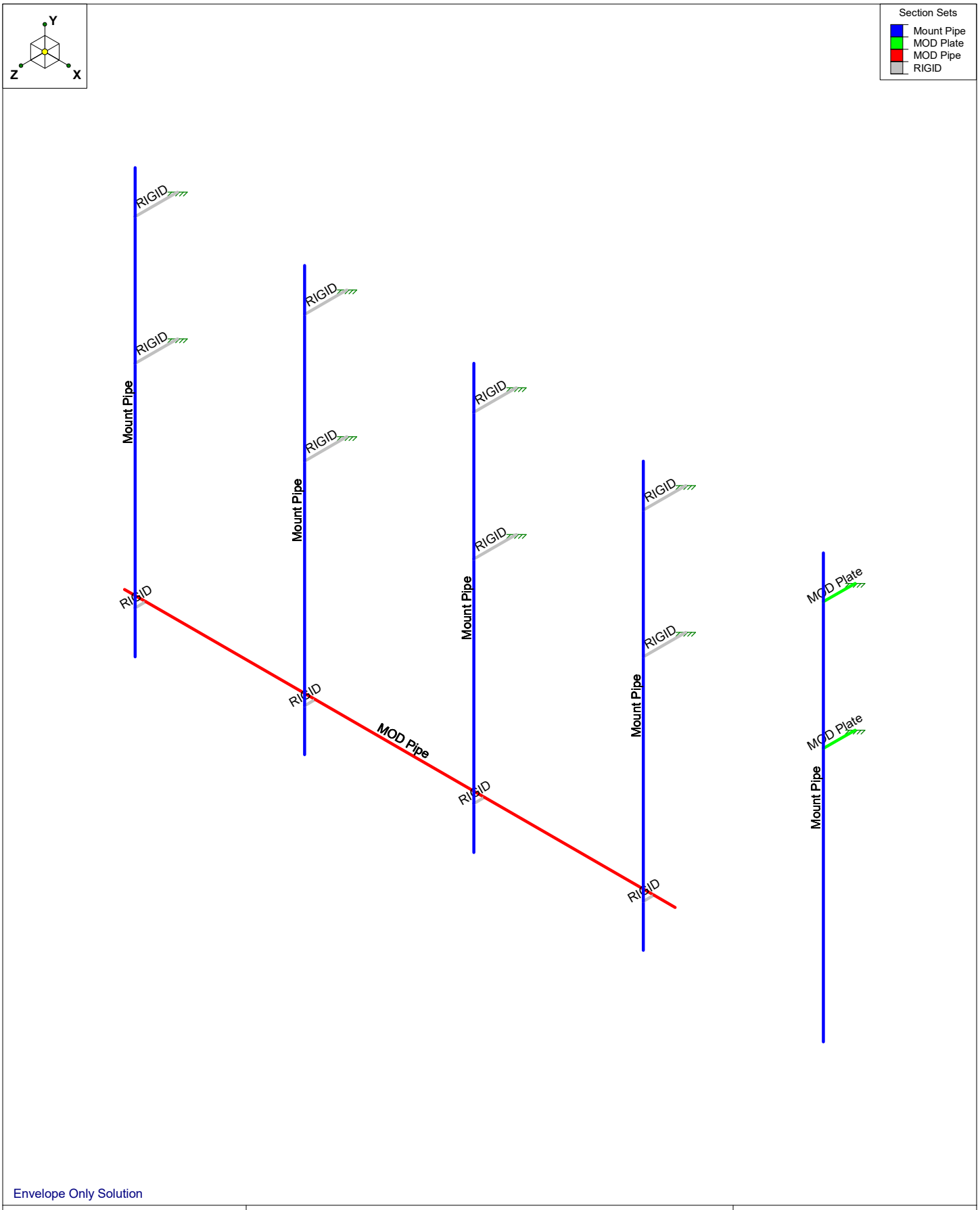
PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 10:34 AM
33683		33683-MOD1.r3d

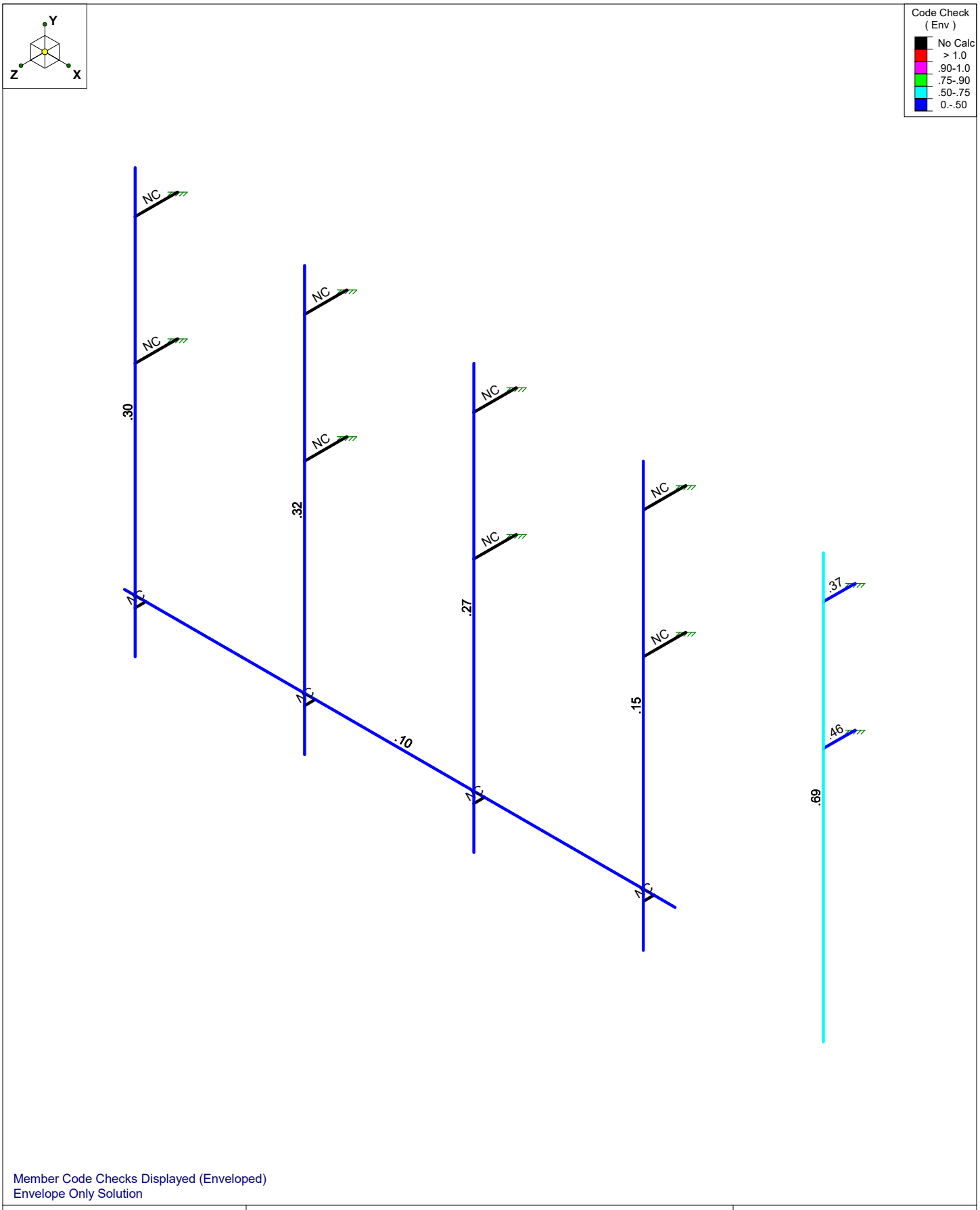
PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 10:35 AM
33683		33683-MOD1.r3d

PRCTI20230195



Member Code Checks Displayed (Enveloped)
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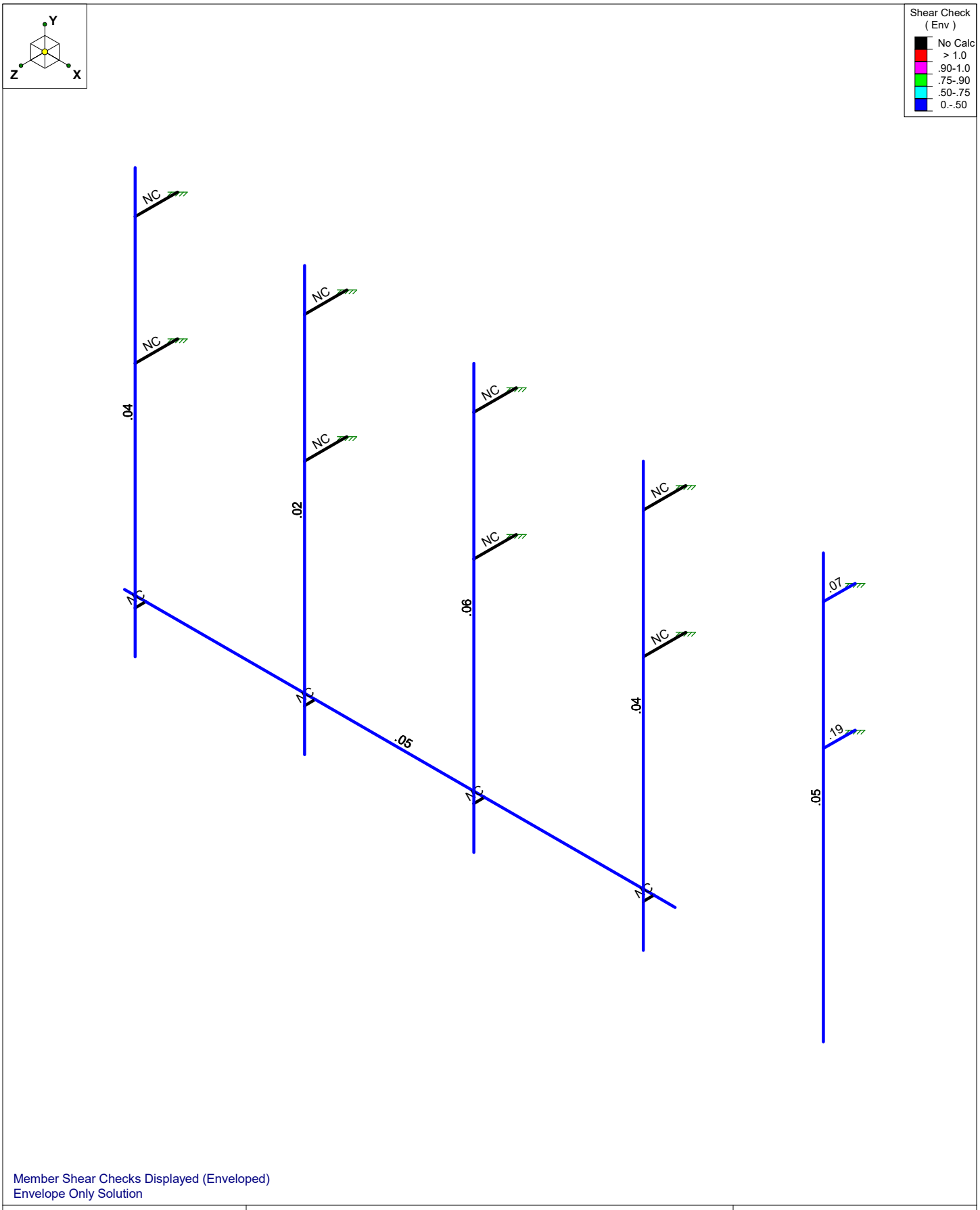
MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 10:35 AM
33683		33683-MOD1.r3d

PRCTI20230195



Member Shear Checks Displayed (Enveloped)
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MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
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33683		33683-MOD1.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	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	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	MOD Plate	PL4x0.5	Beam	RECT	A36 Gr.36	Typical	2	.042	2.667	.154
3	MOD Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	10	10	-.25	0	
2	N2	10	0	-.25	0	
3	N3	10	9	-.25	0	
4	N4	10	6	-.25	0	
5	N5	10	9	-1	0	
6	N6	10	6	-1	0	
7	N7	-6	10	0	0	
8	N8	-6	0	0	0	
9	N9	-6	9	0	0	
10	N10	-6	6	0	0	
11	N11	-6	9	-1	0	
12	N12	-6	6	-1	0	
13	N13	6	10	0	0	
14	N14	6	0	0	0	
15	N15	6	9	0	0	
16	N16	6	6	0	0	
17	N17	6	9	-1	0	
18	N18	6	6	-1	0	
19	N19	-2	10	0	0	
20	N20	-2	0	0	0	
21	N21	-2	9	0	0	
22	N22	-2	6	0	0	
23	N23	-2	9	-1	0	
24	N24	-2	6	-1	0	
25	N25	2	10	0	0	
26	N26	2	0	0	0	
27	N27	2	9	0	0	
28	N28	2	6	0	0	
29	N29	2	9	-1	0	
30	N30	2	6	-1	0	
31	N31	-6	1	0	0	
32	N32	6	1	0	0	
33	N33	-2	1	0	0	
34	N34	2	1	0	0	
35	N35	-6	1	-.25	0	
36	N36	6	1	-.25	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
37	N37	-2	1	-.25	0	
38	N38	2	1	-.25	0	
39	N39	-6.5	1	-.25	0	
40	N40	6.5	1	-.25	0	

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	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N12	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N17	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N18	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N23	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N29	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N30	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	MP1	N1	N2			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
2	M2	N3	N5		90	MOD Plate	Beam	RECT	A36 Gr.36	Typical
3	M3	N4	N6		90	MOD Plate	Beam	RECT	A36 Gr.36	Typical
4	MP5	N7	N8			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
5	M5	N9	N11			RIGID	None	None	RIGID	Typical
6	M6	N10	N12			RIGID	None	None	RIGID	Typical
7	MP2	N13	N14			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
8	M8	N15	N17			RIGID	None	None	RIGID	Typical
9	M9	N16	N18			RIGID	None	None	RIGID	Typical
10	MP4	N19	N20			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
11	M11	N21	N23			RIGID	None	None	RIGID	Typical
12	M12	N22	N24			RIGID	None	None	RIGID	Typical
13	MP3	N25	N26			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
14	M14	N27	N29			RIGID	None	None	RIGID	Typical
15	M15	N28	N30			RIGID	None	None	RIGID	Typical
16	M16	N32	N36			RIGID	None	None	RIGID	Typical
17	M17	N34	N38			RIGID	None	None	RIGID	Typical
18	M18	N33	N37			RIGID	None	None	RIGID	Typical
19	M19	N31	N35			RIGID	None	None	RIGID	Typical
20	M20	N39	N40			MOD Pipe	Beam	Pipe	A53 Gr.B	Typical

Joint Loads and Enforced Displacements (BLC 42 : Man 1 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 43 : Man 2 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 44 : Man 3 (500 lbs))

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...

Joint Loads and Enforced Displacements (BLC 44 : Man 3 (500 lbs)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 45 : Man 4 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 46 : Man 5 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 47 : Man 6 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.115	%50
2	MP1	Y	-.046	%20
3	MP1	Y	-.051	%20
4	MP2	Y	-.016	%20
5	MP3	Y	-.02	%20
6	MP3	Y	-.091	%50
7	MP4	Y	-.144	%50
8	MP4	Y	-.037	%20
9	MP4	Y	-.057	%20
10	MP5	Y	-.099	%20
11	MP5	Y	-.099	%55

Member Point Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.259	%50
2	MP1	Y	-.05	%20
3	MP1	Y	-.029	%20
4	MP2	Y	-.013	%20
5	MP3	Y	-.026	%20
6	MP3	Y	-.058	%50
7	MP4	Y	-.213	%50
8	MP4	Y	-.017	%20
9	MP4	Y	-.035	%20
10	MP5	Y	-.057	%20
11	MP5	Y	-.057	%55

Member Point Loads (BLC 3 : Full Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.257	%9.8
2	MP1	Z	-.013	%20
3	MP1	Z	-.007	%20
4	MP2	Z	-.021	%20
5	MP3	Z	-.048	%20
6	MP3	Z	-.087	%50
7	MP4	Z	-.219	%6.2
8	MP4	Z	-.004	%20
9	MP4	Z	-.009	%20

Member Point Loads (BLC 3 : Full Wind Antenna (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	MP5	Z	-.049	%7.7
11	MP5	Z	-.049	%42.7
12	MP1	Z	-.257	%90.2
13	MP4	Z	-.219	%93.8
14	MP5	Z	-.049	%32.3
15	MP5	Z	-.049	%67.3

Member Point Loads (BLC 4 : Full Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.187	%9.8
2	MP1	Z	-.013	%20
3	MP1	Z	-.007	%20
4	MP2	Z	-.016	%20
5	MP3	Z	-.035	%20
6	MP3	Z	-.073	%50
7	MP4	Z	-.163	%6.2
8	MP4	Z	-.004	%20
9	MP4	Z	-.009	%20
10	MP5	Z	-.038	%7.7
11	MP5	Z	-.038	%42.7
12	MP1	Z	-.187	%90.2
13	MP4	Z	-.163	%93.8
14	MP5	Z	-.038	%32.3
15	MP5	Z	-.038	%67.3
16	MP1	X	.108	%9.8
17	MP1	X	.022	%20
18	MP1	X	.002	%20
19	MP2	X	.009	%20
20	MP3	X	.02	%20
21	MP3	X	.042	%50
22	MP4	X	.094	%6.2
23	MP4	X	.001	%20
24	MP4	X	.015	%20
25	MP5	X	.022	%7.7
26	MP5	X	.022	%42.7
27	MP1	X	.108	%90.2
28	MP4	X	.094	%93.8
29	MP5	X	.022	%32.3
30	MP5	X	.022	%67.3

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.067	%9.8
2	MP1	Z	-.009	%20
3	MP1	Z	-.005	%20
4	MP2	Z	-.007	%20
5	MP3	Z	-.013	%20
6	MP3	Z	-.039	%50
7	MP4	Z	-.063	%6.2
8	MP4	Z	-.003	%20
9	MP4	Z	-.007	%20
10	MP5	Z	-.016	%7.7
11	MP5	Z	-.016	%42.7
12	MP1	Z	-.067	%90.2
13	MP4	Z	-.063	%93.8
14	MP5	Z	-.016	%32.3

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
15	MP5	Z	-.016	%67.3
16	MP1	X	.116	%9.8
17	MP1	X	.025	%20
18	MP1	X	.008	%20
19	MP2	X	.012	%20
20	MP3	X	.023	%20
21	MP3	X	.068	%50
22	MP4	X	.11	%6.2
23	MP4	X	.005	%20
24	MP4	X	.017	%20
25	MP5	X	.028	%7.7
26	MP5	X	.028	%42.7
27	MP1	X	.116	%90.2
28	MP4	X	.11	%93.8
29	MP5	X	.028	%32.3
30	MP5	X	.028	%67.3

Member Point Loads (BLC 6 : Full Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	0	%9.8
2	MP1	Z	0	%20
3	MP1	Z	0	%20
4	MP2	Z	0	%20
5	MP3	Z	0	%20
6	MP3	Z	0	%50
7	MP4	Z	0	%6.2
8	MP4	Z	0	%20
9	MP4	Z	0	%20
10	MP5	Z	0	%7.7
11	MP5	Z	0	%42.7
12	MP1	Z	0	%90.2
13	MP4	Z	0	%93.8
14	MP5	Z	0	%32.3
15	MP5	Z	0	%67.3
16	MP1	X	.093	%9.8
17	MP1	X	.021	%20
18	MP1	X	.012	%20
19	MP2	X	.012	%20
20	MP3	X	.019	%20
21	MP3	X	.076	%50
22	MP4	X	.096	%6.2
23	MP4	X	.007	%20
24	MP4	X	.014	%20
25	MP5	X	.027	%7.7
26	MP5	X	.027	%42.7
27	MP1	X	.093	%90.2
28	MP4	X	.096	%93.8
29	MP5	X	.027	%32.3
30	MP5	X	.027	%67.3

Member Point Loads (BLC 7 : Full Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.067	%9.8
2	MP1	Z	.009	%20
3	MP1	Z	.005	%20
4	MP2	Z	.007	%20

Member Point Loads (BLC 7 : Full Wind Antenna (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
5	MP3	Z	.013	%20
6	MP3	Z	.039	%50
7	MP4	Z	.063	%6.2
8	MP4	Z	.003	%20
9	MP4	Z	.007	%20
10	MP5	Z	.016	%7.7
11	MP5	Z	.016	%42.7
12	MP1	Z	.067	%90.2
13	MP4	Z	.063	%93.8
14	MP5	Z	.016	%32.3
15	MP5	Z	.016	%67.3
16	MP1	X	.116	%9.8
17	MP1	X	.025	%20
18	MP1	X	.008	%20
19	MP2	X	.012	%20
20	MP3	X	.023	%20
21	MP3	X	.068	%50
22	MP4	X	.11	%6.2
23	MP4	X	.005	%20
24	MP4	X	.017	%20
25	MP5	X	.028	%7.7
26	MP5	X	.028	%42.7
27	MP1	X	.116	%90.2
28	MP4	X	.11	%93.8
29	MP5	X	.028	%32.3
30	MP5	X	.028	%67.3

Member Point Loads (BLC 8 : Full Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.187	%9.8
2	MP1	Z	.013	%20
3	MP1	Z	.007	%20
4	MP2	Z	.016	%20
5	MP3	Z	.035	%20
6	MP3	Z	.073	%50
7	MP4	Z	.163	%6.2
8	MP4	Z	.004	%20
9	MP4	Z	.009	%20
10	MP5	Z	.038	%7.7
11	MP5	Z	.038	%42.7
12	MP1	Z	.187	%90.2
13	MP4	Z	.163	%93.8
14	MP5	Z	.038	%32.3
15	MP5	Z	.038	%67.3
16	MP1	X	.108	%9.8
17	MP1	X	.022	%20
18	MP1	X	.002	%20
19	MP2	X	.009	%20
20	MP3	X	.02	%20
21	MP3	X	.042	%50
22	MP4	X	.094	%6.2
23	MP4	X	.001	%20
24	MP4	X	.015	%20
25	MP5	X	.022	%7.7
26	MP5	X	.022	%42.7
27	MP1	X	.108	%90.2

Member Point Loads (BLC 8 : Full Wind Antenna (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
28	MP4	X	.094	%93.8
29	MP5	X	.022	%32.3
30	MP5	X	.022	%67.3

Member Point Loads (BLC 15 : Ice Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.026	%9.8
2	MP1	Z	-.002	%20
3	MP1	Z	-.001	%20
4	MP2	Z	-.003	%20
5	MP3	Z	-.006	%20
6	MP3	Z	-.01	%50
7	MP4	Z	-.023	%6.2
8	MP4	Z	-.001	%20
9	MP4	Z	-.001	%20
10	MP5	Z	-.005	%7.7
11	MP5	Z	-.005	%42.7
12	MP1	Z	-.026	%90.2
13	MP4	Z	-.023	%93.8
14	MP5	Z	-.005	%32.3
15	MP5	Z	-.005	%67.3

Member Point Loads (BLC 16 : Ice Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.019	%9.8
2	MP1	Z	-.002	%20
3	MP1	Z	-.001	%20
4	MP2	Z	-.002	%20
5	MP3	Z	-.004	%20
6	MP3	Z	-.008	%50
7	MP4	Z	-.017	%6.2
8	MP4	Z	-.001	%20
9	MP4	Z	-.001	%20
10	MP5	Z	-.004	%7.7
11	MP5	Z	-.004	%42.7
12	MP1	Z	-.019	%90.2
13	MP4	Z	-.017	%93.8
14	MP5	Z	-.004	%32.3
15	MP5	Z	-.004	%67.3
16	MP1	X	.011	%9.8
17	MP1	X	.003	%20
18	MP1	X	0	%20
19	MP2	X	.001	%20
20	MP3	X	.002	%20
21	MP3	X	.005	%50
22	MP4	X	.01	%6.2
23	MP4	X	0	%20
24	MP4	X	.002	%20
25	MP5	X	.002	%7.7
26	MP5	X	.002	%42.7
27	MP1	X	.011	%90.2
28	MP4	X	.01	%93.8
29	MP5	X	.002	%32.3
30	MP5	X	.002	%67.3

Member Point Loads (BLC 17 : Ice Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.007	%9.8
2	MP1	Z	-.001	%20
3	MP1	Z	-.001	%20
4	MP2	Z	-.001	%20
5	MP3	Z	-.002	%20
6	MP3	Z	-.004	%50
7	MP4	Z	-.007	%6.2
8	MP4	Z	0	%20
9	MP4	Z	-.001	%20
10	MP5	Z	-.002	%7.7
11	MP5	Z	-.002	%42.7
12	MP1	Z	-.007	%90.2
13	MP4	Z	-.007	%93.8
14	MP5	Z	-.002	%32.3
15	MP5	Z	-.002	%67.3
16	MP1	X	.012	%9.8
17	MP1	X	.003	%20
18	MP1	X	.001	%20
19	MP2	X	.002	%20
20	MP3	X	.003	%20
21	MP3	X	.008	%50
22	MP4	X	.012	%6.2
23	MP4	X	.001	%20
24	MP4	X	.002	%20
25	MP5	X	.003	%7.7
26	MP5	X	.003	%42.7
27	MP1	X	.012	%90.2
28	MP4	X	.012	%93.8
29	MP5	X	.003	%32.3
30	MP5	X	.003	%67.3

Member Point Loads (BLC 18 : Ice Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	0	%9.8
2	MP1	Z	0	%20
3	MP1	Z	0	%20
4	MP2	Z	0	%20
5	MP3	Z	0	%20
6	MP3	Z	0	%50
7	MP4	Z	0	%6.2
8	MP4	Z	0	%20
9	MP4	Z	0	%20
10	MP5	Z	0	%7.7
11	MP5	Z	0	%42.7
12	MP1	Z	0	%90.2
13	MP4	Z	0	%93.8
14	MP5	Z	0	%32.3
15	MP5	Z	0	%67.3
16	MP1	X	.01	%9.8
17	MP1	X	.002	%20
18	MP1	X	.001	%20
19	MP2	X	.002	%20
20	MP3	X	.003	%20
21	MP3	X	.009	%50
22	MP4	X	.011	%6.2
23	MP4	X	.001	%20

Member Point Loads (BLC 18 : Ice Wind Antenna (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
24	MP4	X	.002	%20
25	MP5	X	.003	%7.7
26	MP5	X	.003	%42.7
27	MP1	X	.01	%90.2
28	MP4	X	.011	%93.8
29	MP5	X	.003	%32.3
30	MP5	X	.003	%67.3

Member Point Loads (BLC 19 : Ice Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.007	%9.8
2	MP1	Z	.001	%20
3	MP1	Z	.001	%20
4	MP2	Z	.001	%20
5	MP3	Z	.002	%20
6	MP3	Z	.004	%50
7	MP4	Z	.007	%6.2
8	MP4	Z	0	%20
9	MP4	Z	.001	%20
10	MP5	Z	.002	%7.7
11	MP5	Z	.002	%42.7
12	MP1	Z	.007	%90.2
13	MP4	Z	.007	%93.8
14	MP5	Z	.002	%32.3
15	MP5	Z	.002	%67.3
16	MP1	X	.012	%9.8
17	MP1	X	.003	%20
18	MP1	X	.001	%20
19	MP2	X	.002	%20
20	MP3	X	.003	%20
21	MP3	X	.008	%50
22	MP4	X	.012	%6.2
23	MP4	X	.001	%20
24	MP4	X	.002	%20
25	MP5	X	.003	%7.7
26	MP5	X	.003	%42.7
27	MP1	X	.012	%90.2
28	MP4	X	.012	%93.8
29	MP5	X	.003	%32.3
30	MP5	X	.003	%67.3

Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.019	%9.8
2	MP1	Z	.001	%20
3	MP1	Z	.001	%20
4	MP2	Z	.001	%20
5	MP3	Z	.002	%20
6	MP3	Z	.004	%50
7	MP4	Z	.007	%6.2
8	MP4	Z	0	%20
9	MP4	Z	.001	%20
10	MP5	Z	.002	%7.7
11	MP5	Z	.002	%42.7
12	MP1	Z	.019	%90.2
13	MP4	Z	.007	%93.8

Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
14	MP5	Z	.002	%32.3
15	MP5	Z	.002	%67.3
16	MP1	X	.011	%9.8
17	MP1	X	.003	%20
18	MP1	X	.001	%20
19	MP2	X	.002	%20
20	MP3	X	.003	%20
21	MP3	X	.008	%50
22	MP4	X	.012	%6.2
23	MP4	X	.001	%20
24	MP4	X	.002	%20
25	MP5	X	.003	%7.7
26	MP5	X	.003	%42.7
27	MP1	X	.011	%90.2
28	MP4	X	.012	%93.8
29	MP5	X	.003	%32.3
30	MP5	X	.003	%67.3

Member Point Loads (BLC 27 : Seismic Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.047	%50
2	MP1	Z	-.019	%20
3	MP1	Z	-.021	%20
4	MP2	Z	-.007	%20
5	MP3	Z	-.008	%20
6	MP3	Z	-.037	%50
7	MP4	Z	-.059	%50
8	MP4	Z	-.015	%20
9	MP4	Z	-.023	%20
10	MP5	Z	-.04	%20
11	MP5	Z	-.04	%55

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	X	.047	%50
2	MP1	X	.019	%20
3	MP1	X	.021	%20
4	MP2	X	.007	%20
5	MP3	X	.008	%20
6	MP3	X	.037	%50
7	MP4	X	.059	%50
8	MP4	X	.015	%20
9	MP4	X	.023	%20
10	MP5	X	.04	%20
11	MP5	X	.04	%55

Member Point Loads (BLC 41 : Seismic Vertical Antennas)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.023	%50
2	MP1	Y	-.009	%20
3	MP1	Y	-.01	%20
4	MP2	Y	-.003	%20
5	MP3	Y	-.004	%20
6	MP3	Y	-.019	%50
7	MP4	Y	-.029	%50

Member Point Loads (BLC 41 : Seismic Vertical Antennas) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
8	MP4	Y	-.007	%20
9	MP4	Y	-.012	%20
10	MP5	Y	-.02	%20
11	MP5	Y	-.02	%55

Member Distributed Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Y	-.004	-.004	0	%100
2	M2	Y	-.005	-.005	0	%100
3	M3	Y	-.005	-.005	0	%100
4	MP5	Y	-.004	-.004	0	%100
5	M5	Y	-.001	-.001	0	%100
6	M6	Y	-.001	-.001	0	%100
7	MP2	Y	-.004	-.004	0	%100
8	M8	Y	-.001	-.001	0	%100
9	M9	Y	-.001	-.001	0	%100
10	MP4	Y	-.004	-.004	0	%100
11	M11	Y	-.001	-.001	0	%100
12	M12	Y	-.001	-.001	0	%100
13	MP3	Y	-.004	-.004	0	%100
14	M14	Y	-.001	-.001	0	%100
15	M15	Y	-.001	-.001	0	%100
16	M16	Y	-.001	-.001	0	%100
17	M17	Y	-.001	-.001	0	%100
18	M18	Y	-.001	-.001	0	%100
19	M19	Y	-.001	-.001	0	%100
20	M20	Y	-.004	-.004	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	-.005	-.005	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	-.005	-.005	0	%7.7
5	MP2	Z	-.005	-.005	0	%15.7
6	MP4	Z	-.005	-.005	0	%6.2
7	MP3	Z	-.005	-.005	0	%13.5
8	M20	Z	-.005	-.005	0	%100
9	MP1	Z	-.005	-.005	%90.2	%100
10	MP5	Z	-.005	-.005	%67.3	%100
11	MP2	Z	-.005	-.005	%24.3	%100
12	MP4	Z	-.005	-.005	%93.8	%100
13	MP3	Z	-.005	-.005	%64.5	%100
14	MP1	X	0	0	0	%100
15	M2	X	0	0	0	%100
16	M3	X	0	0	0	%100
17	MP5	X	0	0	0	%100
18	MP2	X	0	0	0	%100
19	MP4	X	0	0	0	%100
20	MP3	X	0	0	0	%100
21	M20	X	0	0	0	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	-.005	-.005	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	-.005	-.005	0	%7.7
5	MP2	Z	-.005	-.005	0	%15.7
6	MP4	Z	-.005	-.005	0	%6.2
7	MP3	Z	-.005	-.005	0	%13.5
8	M20	Z	-.004	-.004	0	%100
9	MP1	Z	-.005	-.005	%90.2	%100
10	MP5	Z	-.005	-.005	%67.3	%100
11	MP2	Z	-.005	-.005	%24.3	%100
12	MP4	Z	-.005	-.005	%93.8	%100
13	MP3	Z	-.005	-.005	%64.5	%100
14	MP1	X	.003	.003	0	%100
15	M2	X	0	0	0	%100
16	M3	X	0	0	0	%100
17	MP5	X	.003	.003	0	%100
18	MP2	X	.003	.003	0	%100
19	MP4	X	.003	.003	0	%100
20	MP3	X	.003	.003	0	%100
21	M20	X	.002	.002	0	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	-.003	-.003	0	%8
2	M2	Z	-.001	-.001	0	%100
3	M3	Z	-.001	-.001	0	%100
4	MP5	Z	-.003	-.003	0	%7.7
5	MP2	Z	-.003	-.003	0	%15.7
6	MP4	Z	-.003	-.003	0	%6.2
7	MP3	Z	-.003	-.003	0	%13.5
8	M20	Z	-.001	-.001	0	%100
9	MP1	Z	-.003	-.003	%90.2	%100
10	MP5	Z	-.003	-.003	%67.3	%100
11	MP2	Z	-.003	-.003	%24.3	%100
12	MP4	Z	-.003	-.003	%93.8	%100
13	MP3	Z	-.003	-.003	%64.5	%100
14	MP1	X	.005	.005	0	%100
15	M2	X	.001	.001	0	%100
16	M3	X	.001	.001	0	%100
17	MP5	X	.005	.005	0	%100
18	MP2	X	.005	.005	0	%100
19	MP4	X	.005	.005	0	%100
20	MP3	X	.005	.005	0	%100
21	M20	X	.001	.001	0	%100

Member Distributed Loads (BLC 12 : Full Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	0	0	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	0	0	0	%7.7
5	MP2	Z	0	0	0	%15.7
6	MP4	Z	0	0	0	%6.2
7	MP3	Z	0	0	0	%13.5
8	M20	Z	0	0	0	%100

Member Distributed Loads (BLC 12 : Full Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
9	MP1	Z	0	0	%90.2	%100
10	MP5	Z	0	0	%67.3	%100
11	MP2	Z	0	0	%24.3	%100
12	MP4	Z	0	0	%93.8	%100
13	MP3	Z	0	0	%64.5	%100
14	MP1	X	.005	.005	0	%100
15	M2	X	.002	.002	0	%100
16	M3	X	.002	.002	0	%100
17	MP5	X	.005	.005	0	%100
18	MP2	X	.005	.005	0	%100
19	MP4	X	.005	.005	0	%100
20	MP3	X	.005	.005	0	%100
21	M20	X	0	0	0	%100

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	.003	.003	0	%8
2	M2	Z	.001	.001	0	%100
3	M3	Z	.001	.001	0	%100
4	MP5	Z	.003	.003	0	%7.7
5	MP2	Z	.003	.003	0	%15.7
6	MP4	Z	.003	.003	0	%6.2
7	MP3	Z	.003	.003	0	%13.5
8	M20	Z	.001	.001	0	%100
9	MP1	Z	.003	.003	%90.2	%100
10	MP5	Z	.003	.003	%67.3	%100
11	MP2	Z	.003	.003	%24.3	%100
12	MP4	Z	.003	.003	%93.8	%100
13	MP3	Z	.003	.003	%64.5	%100
14	MP1	X	.005	.005	0	%100
15	M2	X	.001	.001	0	%100
16	M3	X	.001	.001	0	%100
17	MP5	X	.005	.005	0	%100
18	MP2	X	.005	.005	0	%100
19	MP4	X	.005	.005	0	%100
20	MP3	X	.005	.005	0	%100
21	M20	X	.001	.001	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	.005	.005	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	.005	.005	0	%7.7
5	MP2	Z	.005	.005	0	%15.7
6	MP4	Z	.005	.005	0	%6.2
7	MP3	Z	.005	.005	0	%13.5
8	M20	Z	.004	.004	0	%100
9	MP1	Z	.005	.005	%90.2	%100
10	MP5	Z	.005	.005	%67.3	%100
11	MP2	Z	.005	.005	%24.3	%100
12	MP4	Z	.005	.005	%93.8	%100
13	MP3	Z	.005	.005	%64.5	%100
14	MP1	X	.003	.003	0	%100
15	M2	X	0	0	0	%100
16	M3	X	0	0	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
17	MP5	X	.003	.003	0	%100
18	MP2	X	.003	.003	0	%100
19	MP4	X	.003	.003	0	%100
20	MP3	X	.003	.003	0	%100
21	M20	X	.002	.002	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	-.001	-.001	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	-.001	-.001	0	%7.7
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	MP2	Z	-.001	-.001	0	%15.7
8	M8	Z	0	0	0	%100
9	M9	Z	0	0	0	%100
10	MP4	Z	-.001	-.001	0	%6.2
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	MP3	Z	-.001	-.001	0	%13.5
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	-.001	-.001	0	%100
21	MP1	Z	-.001	-.001	%90.2	%100
22	MP5	Z	-.001	-.001	%67.3	%100
23	MP2	Z	-.001	-.001	%24.3	%100
24	MP4	Z	-.001	-.001	%93.8	%100
25	MP3	Z	-.001	-.001	%64.5	%100
26	MP1	X	0	0	0	%100
27	M2	X	0	0	0	%100
28	M3	X	0	0	0	%100
29	MP5	X	0	0	0	%100
30	M5	X	0	0	0	%100
31	M6	X	0	0	0	%100
32	MP2	X	0	0	0	%100
33	M8	X	0	0	0	%100
34	M9	X	0	0	0	%100
35	MP4	X	0	0	0	%100
36	M11	X	0	0	0	%100
37	M12	X	0	0	0	%100
38	MP3	X	0	0	0	%100
39	M14	X	0	0	0	%100
40	M15	X	0	0	0	%100
41	M16	X	0	0	0	%100
42	M17	X	0	0	0	%100
43	M18	X	0	0	0	%100
44	M19	X	0	0	0	%100
45	M20	X	0	0	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg))

Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	-.001	-.001	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	-.001	-.001	0	%7.7
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	MP2	Z	-.001	-.001	0	%15.7
8	M8	Z	0	0	0	%100
9	M9	Z	0	0	0	%100
10	MP4	Z	-.001	-.001	0	%6.2
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	MP3	Z	-.001	-.001	0	%13.5
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	-.001	-.001	0	%100
21	MP1	Z	-.001	-.001	%90.2	%100
22	MP5	Z	-.001	-.001	%67.3	%100
23	MP2	Z	-.001	-.001	%24.3	%100
24	MP4	Z	-.001	-.001	%93.8	%100
25	MP3	Z	-.001	-.001	%64.5	%100
26	MP1	X	0	0	0	%100
27	M2	X	0	0	0	%100
28	M3	X	0	0	0	%100
29	MP5	X	0	0	0	%100
30	M5	X	0	0	0	%100
31	M6	X	0	0	0	%100
32	MP2	X	0	0	0	%100
33	M8	X	0	0	0	%100
34	M9	X	0	0	0	%100
35	MP4	X	0	0	0	%100
36	M11	X	0	0	0	%100
37	M12	X	0	0	0	%100
38	MP3	X	0	0	0	%100
39	M14	X	0	0	0	%100
40	M15	X	0	0	0	%100
41	M16	X	0	0	0	%100
42	M17	X	0	0	0	%100
43	M18	X	0	0	0	%100
44	M19	X	0	0	0	%100
45	M20	X	0	0	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	0	0	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	0	0	0	%7.7
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	MP2	Z	0	0	0	%15.7
8	M8	Z	0	0	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
9	M9	Z	0	0	0	%100
10	MP4	Z	0	0	0	%6.2
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	MP3	Z	0	0	0	%13.5
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	MP1	Z	0	0	%90.2	%100
22	MP5	Z	0	0	%67.3	%100
23	MP2	Z	0	0	%24.3	%100
24	MP4	Z	0	0	%93.8	%100
25	MP3	Z	0	0	%64.5	%100
26	MP1	X	.001	.001	0	%100
27	M2	X	0	0	0	%100
28	M3	X	0	0	0	%100
29	MP5	X	.001	.001	0	%100
30	M5	X	0	0	0	%100
31	M6	X	0	0	0	%100
32	MP2	X	.001	.001	0	%100
33	M8	X	0	0	0	%100
34	M9	X	0	0	0	%100
35	MP4	X	.001	.001	0	%100
36	M11	X	0	0	0	%100
37	M12	X	0	0	0	%100
38	MP3	X	.001	.001	0	%100
39	M14	X	0	0	0	%100
40	M15	X	0	0	0	%100
41	M16	X	0	0	0	%100
42	M17	X	0	0	0	%100
43	M18	X	0	0	0	%100
44	M19	X	0	0	0	%100
45	M20	X	0	0	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	0	0	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	0	0	0	%7.7
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	MP2	Z	0	0	0	%15.7
8	M8	Z	0	0	0	%100
9	M9	Z	0	0	0	%100
10	MP4	Z	0	0	0	%6.2
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	MP3	Z	0	0	0	%13.5
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	MP1	Z	0	0	%90.2	%100
22	MP5	Z	0	0	%67.3	%100
23	MP2	Z	0	0	%24.3	%100
24	MP4	Z	0	0	%93.8	%100
25	MP3	Z	0	0	%64.5	%100
26	MP1	X	.001	.001	0	%100
27	M2	X	0	0	0	%100
28	M3	X	0	0	0	%100
29	MP5	X	.001	.001	0	%100
30	M5	X	0	0	0	%100
31	M6	X	0	0	0	%100
32	MP2	X	.001	.001	0	%100
33	M8	X	0	0	0	%100
34	M9	X	0	0	0	%100
35	MP4	X	.001	.001	0	%100
36	M11	X	0	0	0	%100
37	M12	X	0	0	0	%100
38	MP3	X	.001	.001	0	%100
39	M14	X	0	0	0	%100
40	M15	X	0	0	0	%100
41	M16	X	0	0	0	%100
42	M17	X	0	0	0	%100
43	M18	X	0	0	0	%100
44	M19	X	0	0	0	%100
45	M20	X	0	0	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	0	0	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	0	0	0	%7.7
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	MP2	Z	0	0	0	%15.7
8	M8	Z	0	0	0	%100
9	M9	Z	0	0	0	%100
10	MP4	Z	0	0	0	%6.2
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	MP3	Z	0	0	0	%13.5
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	MP1	Z	0	0	%90.2	%100
22	MP5	Z	0	0	%67.3	%100
23	MP2	Z	0	0	%24.3	%100
24	MP4	Z	0	0	%93.8	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
25	MP3	Z	0	0	%64.5	%100
26	MP1	X	.001	.001	0	%100
27	M2	X	0	0	0	%100
28	M3	X	0	0	0	%100
29	MP5	X	.001	.001	0	%100
30	M5	X	0	0	0	%100
31	M6	X	0	0	0	%100
32	MP2	X	.001	.001	0	%100
33	M8	X	0	0	0	%100
34	M9	X	0	0	0	%100
35	MP4	X	.001	.001	0	%100
36	M11	X	0	0	0	%100
37	M12	X	0	0	0	%100
38	MP3	X	.001	.001	0	%100
39	M14	X	0	0	0	%100
40	M15	X	0	0	0	%100
41	M16	X	0	0	0	%100
42	M17	X	0	0	0	%100
43	M18	X	0	0	0	%100
44	M19	X	0	0	0	%100
45	M20	X	0	0	0	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP1	Z	.001	.001	0	%8
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP5	Z	.001	.001	0	%7.7
5	M5	Z	0	0	0	%100
6	M6	Z	0	0	0	%100
7	MP2	Z	.001	.001	0	%15.7
8	M8	Z	0	0	0	%100
9	M9	Z	0	0	0	%100
10	MP4	Z	.001	.001	0	%6.2
11	M11	Z	0	0	0	%100
12	M12	Z	0	0	0	%100
13	MP3	Z	.001	.001	0	%13.5
14	M14	Z	0	0	0	%100
15	M15	Z	0	0	0	%100
16	M16	Z	0	0	0	%100
17	M17	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	.001	.001	0	%100
21	MP1	Z	.001	.001	%90.2	%100
22	MP5	Z	.001	.001	%67.3	%100
23	MP2	Z	.001	.001	%24.3	%100
24	MP4	Z	.001	.001	%93.8	%100
25	MP3	Z	.001	.001	%64.5	%100
26	MP1	X	0	0	0	%100
27	M2	X	0	0	0	%100
28	M3	X	0	0	0	%100
29	MP5	X	0	0	0	%100
30	M5	X	0	0	0	%100
31	M6	X	0	0	0	%100
32	MP2	X	0	0	0	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
33	M8	X	0	0	0	%100
34	M9	X	0	0	0	%100
35	MP4	X	0	0	0	%100
36	M11	X	0	0	0	%100
37	M12	X	0	0	0	%100
38	MP3	X	0	0	0	%100
39	M14	X	0	0	0	%100
40	M15	X	0	0	0	%100
41	M16	X	0	0	0	%100
42	M17	X	0	0	0	%100
43	M18	X	0	0	0	%100
44	M19	X	0	0	0	%100
45	M20	X	0	0	0	%100

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface(Plate/Wall)
1	Dead	None		-1			11			
2	Ice Dead	None					11	20		
3	Full Wind Antenna (0 Deg)	None					15			
4	Full Wind Antenna (30 Deg)	None					30			
5	Full Wind Antenna (60 Deg)	None					30			
6	Full Wind Antenna (90 Deg)	None					30			
7	Full Wind Antenna (120 D...	None					30			
8	Full Wind Antenna (150 D...	None					30			
9	Full Wind Members (0 Deg)	None						21		
10	Full Wind Members (30 D...	None						21		
11	Full Wind Members (60 D...	None						21		
12	Full Wind Members (90 D...	None						21		
13	Full Wind Members (120 ...	None						21		
14	Full Wind Members (150 ...	None						21		
15	Ice Wind Antenna (0 Deg)	None					15			
16	Ice Wind Antenna (30 Deg)	None					30			
17	Ice Wind Antenna (60 Deg)	None					30			
18	Ice Wind Antenna (90 Deg)	None					30			
19	Ice Wind Antenna (120 De...	None					30			
20	Ice Wind Antenna (150 De...	None					30			
21	Ice Wind Members (0 Deg)	None						45		
22	Ice Wind Members (30 Deg)	None						45		
23	Ice Wind Members (60 Deg)	None						45		
24	Ice Wind Members (90 Deg)	None						45		
25	Ice Wind Members (120 D...	None						45		
26	Ice Wind Members (150 D...	None						45		
27	Seismic Antenna (0 Deg)	None					11			
28	Seismic Antenna (90 Deg)	None					11			
29	Seismic Members (0 Deg)	None		-.203	-.407					
30	Seismic Members (30 Deg)	None	.203	-.203	-.352					
31	Seismic Members (60 Deg)	None	.352	-.203	-.203					
32	Seismic Members (90 Deg)	None	.407	-.203	-2.492e-...					
33	Seismic Members (120 De...	None	.352	-.203	.203					
34	Seismic Members (150 De...	None	.203	-.203	.352					
35	Seismic Members (180 De...	None	4.984e-17	-.203	.407					
36	Seismic Members (210 De...	None	-.203	-.203	.352					
37	Seismic Members (240 De...	None	-.352	-.203	.203					
38	Seismic Members (270 De...	None	-.407	-.203	7.476e-17					
39	Seismic Members (300 De...	None	-.352	-.203	-.203					

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface(Plate/Wall)
40	Seismic Members (330 De...	None	-.203	-.203	-.352					
41	Seismic Vertical Antennas	None					11			
42	Man 1 (500 lbs)	None				1				
43	Man 2 (500 lbs)	None				1				
44	Man 3 (500 lbs)	None				1				
45	Man 4 (250 lbs)	None				1				
46	Man 5 (250 lbs)	None				1				
47	Man 6 (250 lbs)	None				1				

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D + 1.0W 0°	Yes	Y		1	1.2	3	1	9	1														
3	1.2D + 1.0W 30°	Yes	Y		1	1.2	4	1	10	1														
4	1.2D + 1.0W 60°	Yes	Y		1	1.2	5	1	11	1														
5	1.2D + 1.0W 90°	Yes	Y		1	1.2	6	1	12	1														
6	1.2D + 1.0W 120°	Yes	Y		1	1.2	7	1	13	1														
7	1.2D + 1.0W 150°	Yes	Y		1	1.2	8	1	14	1														
8	1.2D + 1.0W 180°	Yes	Y		1	1.2	3	-1	9	-1														
9	1.2D + 1.0W 210°	Yes	Y		1	1.2	4	-1	10	-1														
10	1.2D + 1.0W 240°	Yes	Y		1	1.2	5	-1	11	-1														
11	1.2D + 1.0W 270°	Yes	Y		1	1.2	6	-1	12	-1														
12	1.2D + 1.0W 300°	Yes	Y		1	1.2	7	-1	13	-1														
13	1.2D + 1.0W 330°	Yes	Y		1	1.2	8	-1	14	-1														
14	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	15	1	21	1												
15	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	16	1	22	1												
16	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	17	1	23	1												
17	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	18	1	24	1												
18	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	19	1	25	1												
19	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	20	1	26	1												
20	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	15	-1	21	-1												
21	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	16	-1	22	-1												
22	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	17	-1	23	-1												
23	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	18	-1	24	-1												
24	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	19	-1	25	-1												
25	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	20	-1	26	-1												
26	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	3	.099	9	.099	42	1.5												
27	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	4	.099	10	.099	42	1.5												
28	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	5	.099	11	.099	42	1.5												
29	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	6	.099	12	.099	42	1.5												
30	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	7	.099	13	.099	42	1.5												
31	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	8	.099	14	.099	42	1.5												
32	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	3	-.099	9	-.099	42	1.5												
33	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	4	-.099	10	-.099	42	1.5												
34	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	5	-.099	11	-.099	42	1.5												
35	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	6	-.099	12	-.099	42	1.5												
36	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	7	-.099	13	-.099	42	1.5												
37	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	8	-.099	14	-.099	42	1.5												
38	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	3	.099	9	.099	43	1.5												
39	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	4	.099	10	.099	43	1.5												
40	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	5	.099	11	.099	43	1.5												
41	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	6	.099	12	.099	43	1.5												
42	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	7	.099	13	.099	43	1.5												
43	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	8	.099	14	.099	43	1.5												
44	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	3	-.099	9	-.099	43	1.5												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
45	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	4	-.099	10	-.099	43	1.5												
46	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	5	-.099	11	-.099	43	1.5												
47	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	6	-.099	12	-.099	43	1.5												
48	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	7	-.099	13	-.099	43	1.5												
49	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	8	-.099	14	-.099	43	1.5												
50	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	3	.099	9	.099	44	1.5												
51	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	4	.099	10	.099	44	1.5												
52	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	5	.099	11	.099	44	1.5												
53	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	6	.099	12	.099	44	1.5												
54	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	7	.099	13	.099	44	1.5												
55	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	8	.099	14	.099	44	1.5												
56	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	3	-.099	9	-.099	44	1.5												
57	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	4	-.099	10	-.099	44	1.5												
58	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	5	-.099	11	-.099	44	1.5												
59	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	6	-.099	12	-.099	44	1.5												
60	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	7	-.099	13	-.099	44	1.5												
61	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	8	-.099	14	-.099	44	1.5												
62	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
63	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
64	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
65	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
66	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
67	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
68	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
69	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
70	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
71	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
72	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
73	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
74	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
75	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
76	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
77	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
78	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
79	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
80	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
81	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
82	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
83	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
84	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
85	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
86	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
87	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
88	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
89	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
90	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
91	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
92	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
93	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
94	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
95	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
96	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
97	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
98	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	1	28		29	1	41	1										
99	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.866	28	.5	30	1	41	1										
100	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.5	28	.866	31	1	41	1										
101	1.2D + 1.0EV +...	Yes	Y		1	1.2	27		28	1	32	1	41	1										

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
102	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.5	28	.866	33	1	41	1										
103	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.866	28	.5	34	1	41	1										
104	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-1	28		35	1	41	1										
105	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.866	28	-.5	36	1	41	1										
106	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.5	28	-.866	37	1	41	1										
107	1.2D + 1.0EV +...	Yes	Y		1	1.2	27		28	-1	38	1	41	1										
108	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.5	28	-.866	39	1	41	1										
109	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.866	28	-.5	40	1	41	1										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N5	max	.052	6	.598	2	.102	8	.079	8	.031	6	.035	6
2		min	-.052	10	-.289	8	-.174	2	-.197	2	-.031	10	-.035	10
3	N6	max	.368	10	.598	8	.717	2	.022	2	.268	12	.086	12
4		min	-.368	6	-.29	2	-.645	8	-.143	20	-.268	4	-.086	4
5	N11	max	.045	12	.139	15	.061	2	-.083	2	.045	12	.018	107
6		min	-.045	4	.09	8	-.061	8	-.139	20	-.045	4	-.018	101
7	N12	max	.136	10	.321	18	.22	2	.353	8	.147	10	.162	10
8		min	-.137	4	.154	12	-.22	8	-.744	2	-.148	4	-.165	4
9	N17	max	.021	12	.043	25	.025	2	-.014	8	.021	12	.007	12
10		min	-.021	4	.023	7	-.025	8	-.044	14	-.021	4	-.007	4
11	N18	max	.072	12	.097	24	.067	2	.233	8	.09	13	.143	12
12		min	-.071	6	.006	6	-.067	8	-.32	2	-.089	7	-.141	6
13	N23	max	.139	12	.131	15	.232	2	-.006	2	.139	12	.031	6
14		min	-.139	4	.086	8	-.232	8	-.165	8	-.139	4	-.031	10
15	N24	max	.084	107	.539	24	.131	2	.354	8	.09	12	.151	10
16		min	-.084	101	.244	7	-.131	8	-.865	2	-.089	6	-.15	4
17	N29	max	.03	12	.055	25	.042	2	-.007	8	.03	12	.011	12
18		min	-.03	4	.026	8	-.042	8	-.056	14	-.03	4	-.011	4
19	N30	max	.148	12	.282	18	.187	2	.339	8	.165	12	.205	12
20		min	-.148	6	.155	13	-.187	8	-.664	2	-.165	6	-.205	6
21	Totals:	max	.987	12	2.287	20	1.507	2						
22		min	-.987	4	1.205	2	-1.507	8						

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	MP1	PIPE_2.0	.689	4.063	8	.047	2.083		2	9.837	32.13	1.872	1.872	1	H1-1b
2	M2	PL4x0.5	.369	0	2	.073	0	y	10	52.806	64.8	.675	5.296	1	H1-1b
3	M3	PL4x0.5	.457	0	8	.188	.75	y	12	52.806	64.8	.675	5.296	1	H1-1b
4	MP5	PIPE_2.0	.304	4.063	8	.042	4.063		8	9.837	32.13	1.872	1.872	1....	H1-1b
5	MP2	PIPE_2.0	.152	4.063	8	.036	4.063		8	9.837	32.13	1.872	1.872	1....	H1-1b
6	MP4	PIPE_2.0	.324	4.063	8	.023	.625		8	9.837	32.13	1.872	1.872	2....	H1-1b
7	MP3	PIPE_2.0	.275	4.063	8	.057	4.063		8	9.837	32.13	1.872	1.872	1....	H1-1b
8	M20	PIPE_2.0	.095	4.604	8	.054	8.396		8	5.82	32.13	1.872	1.872	1....	H1-1b

APPENDIX 4: LOADING CALCULATIONS (BETA GAMMA SECTOR)

PRCTI20230195

MasTec Network Solutions

Mount Analysis Tool (v4.3.7)

Site Name	DOWNTOWN PUYALLUP		
Site ID/FA Number	10102328	**Rooftop?**	Yes
MNS Project Number	33683	**Existing Site Audit?**	Yes
Code	H	**Risk Category**	II

Legend
Input
Calculated
Notes

Maximum Capacity		
Controlling Capacity	**49.1%**	**PASS**

Analysis Parameters		
Mount Height	60	ft
Exposure Category	C	(B,C, or D)
Ultimate Wind Speed	98	mph
Ice Wind Speed	30	mph
Design Ice Thickness, t_i	1	in
Maintenance Wind Speed	30	mph
Run Earthquake Analysis?	Yes	
Ground Elevation	41.8	ft, Google Earth
Tower/Rooftop Height	65.5	ft
S_1	0.438	USGS
S_{DS}	1.017	2.7.5
Vertical Seismic Loads, E_v	0.203	2.7.6
Seismic Response Coefficient, C_s	0.339	2.7.7.1.1
C_s * Amplification Factor	0.407	2.7.8.1

Wind Parameters					
Gust Effect Factor, G_h	1.000	2.6.9	K_s	1.000	2.6.7
K_Z	1.137	2.6.5.2	K_e	0.998	2.6.8
K_{Zt}	1.000	2.6.6	K_a	0.900	16.6
K_d	0.950	Table 2-2	*Note for Rooftop Structures greater than 50', unobstructed for 90 deg and protruding 50' above surrounding buildings Ks must be calculated.		
q_z	26.507	psf, 2.6.11.6			
C/D	104.478	Table 2-9			
t_{iz}	1.062	in, 2.6.10			
q_{iz}	2.236	psf, 2.6.9.6	I, Ice	1.000	Table 2-3
C/D_{iz}	31.983	Table 2-9	I, EQ	1.000	Table 2-3
$q_{Maintenance}$	2.239	psf, 2.6.9.6	$K_{es\ (Wind)}$	0.950	Table S-1
$C/D_{Maintenance}$	31.983	Table 2-9	$K_{es\ (ice)}$	0.850	Table S-1
Ice Dead, Grating	0.008422081	ksf			
Dead, Grating	0.012	ksf			

Pipe Mounts (Orientation Drawn Top-Down)			
Risa 3D Label	Elevation (ft)	Length (in)	Diameter (in)
MP1	60	120	2.375
MP2	60	120	2.375
MP3	60	120	2.375

Appurtenances					
Model	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)
Cellemax CMA-UBTULBULBHH-6517-17-2	Antenna	96.5	27.2	7.7	115
Kathrein 80010992K	Antenna	105.2	20	6.9	144.3
Nokia AEQK	Antenna	29.53	17.72	9.53	99.21
Nokia AEQU	Antenna	29.5	17.7	9.5	99.21
Raycap DC2-48-60-0-9E	RRU, TMA, Etc.	10.25	10.75	6.27	16
Nokia Airscale Dual RRH 4T4R B12/14	RRU, TMA, Etc.	28.7	15.4	9.5	46
Alcatel Lucent TME B25 RRH4X30-4F	RRU, TMA, Etc.	21.4	12	7.2	51
Raycap FC12-PC6-10E	RRU, TMA, Etc.	15.5	16.25	6.64	20.35
Nokia Airscale RRH 4T4R B5 160W AH(	RRU, TMA, Etc.	13.27	11.6	6.5	36.8
Alcatel Lucent TME B66A RRH4X45-4	RRU, TMA, Etc.	25.8	11.8	7.2	56.8
Alcatel Lucent TME RRH4X25-WCS-4I	RRU, TMA, Etc.	34.7	13.2	11.3	91

Loads and Equipment

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
MP1	max CMA-UBTULBULBHH-6517-17-	60	1	0	100.0%	100.0%	Antenna	96.500	27.200	7.700	115.000	22.722	8.176	0.515	0.185	9.8%	90.2%
MP1																	
MP1																	
MP1																	
MP1																	
MP1																	
MP2	Kathrein 80010992K	60	1	0	100.0%	100.0%	Antenna	105.200	20.000	6.900	144.300	19.326	8.443	0.438	0.191	6.2%	93.8%
MP2																	
MP2																	
MP2																	
MP2																	
MP2																	
MP3	Nokia AEQK	63	1	0	100.0%	100.0%	Antenna	29.530	17.720	9.530	99.210	4.361	2.397	0.099	0.054	7.7%	32.3%
MP3	Nokia AEQU	59.5	1	0	100.0%	100.0%	Antenna	29.500	17.700	9.500	99.210	4.351	2.388	0.099	0.054	42.7%	67.3%
MP3																	
MP3																	
MP3																	
MP3																	

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Type	Height (in)	Width (in)	Depth (in)	Ice Weight (lb)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
MP1	max CMA-UBTULBULBHH-6517-17-	60	1	0	100.0%	100.0%	Antenna	96.500	27.200	7.700	258.618	24.543	9.807	0.052	0.021	9.8%	90.2%
MP1																	
MP1																	
MP1																	
MP1																	
MP1																	
MP2	Kathrein 80010992K	60	1	0	100.0%	100.0%	Antenna	105.200	20.000	6.900	213.197	21.177	10.197	0.045	0.022	6.2%	93.8%
MP2																	
MP2																	
MP2																	
MP2																	
MP2																	
MP3	Nokia AEQK	63	1	0	100.0%	100.0%	Antenna	29.530	17.720	9.530	57.033	5.098	2.989	0.011	0.006	7.7%	32.3%
MP3	Nokia AEQU	59.5	1	0	100.0%	100.0%	Antenna	29.500	17.700	9.500	56.889	5.088	2.978	0.011	0.006	42.7%	67.3%
MP3																	
MP3																	
MP3																	
MP3																	

Member	Section Set	Member Length (ft)	Flat/Round	Wind Projection (in)	D_L (in)	A_{lz} (in^2)	C_F	Front Wind (klf)	Side Wind (klf)	Front Ice Wind (klf)	Side Ice Wind (klf)	Ice Dead (klf)	Front Maint Wind (klf)	Side Maint Wind (klf)
MP6	Mount Pipe	6	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M2	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M3	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
MP2	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M8	MOD Plate	0.75	Flat	0.500	4.000	13.898	2.000	0.000	0.002	0.000	0.000	0.005	0.000	0.000
M9	MOD Plate	0.75	Flat	0.500	4.000	13.898	2.000	0.000	0.002	0.000	0.000	0.005	0.000	0.000
MP3	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M11	RIGID	0.75	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M12	RIGID	0.75	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
MP1	Mount Pipe	10	Round	2.380	2.380	9.305	1.200	0.005	0.005	0.001	0.001	0.004	0.001	0.001
M14	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
M15	RIGID	1	Flat	0.000	0.000	2.558	2.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000

PRCTI20230195

MasTec Network Solutions

Mastec Network Solution - 1151 SE Cary Pkwy, Suite 101, Cary, NC 27518

MNS CONNECTION TOOL - RESULTS SUMMARY

Site Name: TA48
Site Number: 10102328
MNS ENG. Number: 33683
Design Code: ANSI/TIA-222-H

Results Overview
Bolted Connections: 6.2% PASS

Bolted Connections:

Conn. No.	Joint Label	Bolt Group Properties & Geometry	Shear Capacity	Tension Capacity	Shear-Tension Interaction	Result
1	N5	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.27k ϕVn= 7.95k Vu/(ϕVn)= 3.4%	Tu= 0k ϕTn= 13.25k Tu/(ϕTn)= 0%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
2	N6	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.45k ϕVn= 7.95k Vu/(ϕVn)= 5.6%	Tu= 0k ϕTn= 13.25k Tu/(ϕTn)= 0%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
3	N17	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.09k ϕVn= 7.95k Vu/(ϕVn)= 1.1%	Tu= 0.17k ϕTn= 13.25k Tu/(ϕTn)= 1.3%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
4	N18	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.44k ϕVn= 7.95k Vu/(ϕVn)= 5.5%	Tu= 0.25k ϕTn= 13.25k Tu/(ϕTn)= 1.9%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
5	N29	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.34k ϕVn= 7.95k Vu/(ϕVn)= 4.2%	Tu= 0k ϕTn= 13.25k Tu/(ϕTn)= 0%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 0%	Shear: PASS Tension: PASS Interaction: PASS
6	N30	(2) 0.5 in. MATERIAL: A325N HORIZ.= 6in. VERT.= 0in. SINGLE SHEAR AZIMUTH= 0°	Vu= 0.36k ϕVn= 7.95k Vu/(ϕVn)= 4.5%	Tu= 0.82k ϕTn= 13.25k Tu/(ϕTn)= 6.2%	[Vu/(ϕVn)]^2 + [Tu/(ϕTn)]^2 = 1%	Shear: PASS Tension: PASS Interaction: PASS

APPENDIX 5: RISA 3D OUTPUT (BETA & GAMMA SECTOR)

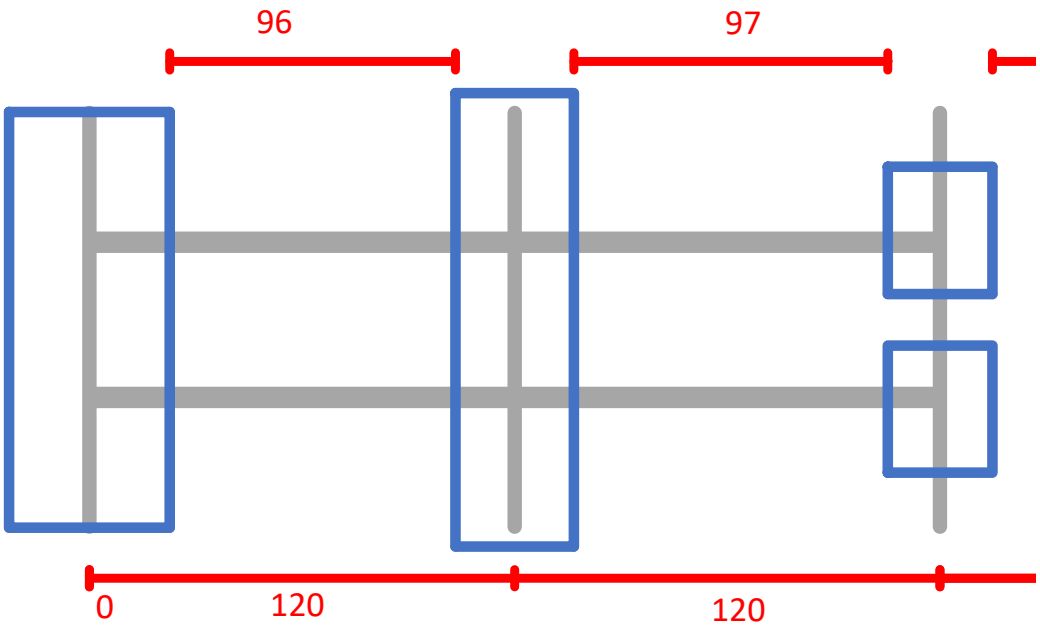
PRCTI20230195

BETA SECTOR

Face Width (ft)	12

MasTec Network Solutions

Spacing (in)	Antenna 1		Spacing (in)	Antenna 2		Spacing (in)	Antenna 3		Spacing (in)	Antenna 4		Spacing (in)
-13.6	Height (in)	96.5	48.4	Height (in)	105.2	53.14	Height (in)	29.5	28.14	Height (in)		-37
Spacing (in)	Width (in)	27.2	Spacing (in)	Width (in)	20	Spacing (in)	Width (in)	17.7	Spacing (in)	Width (in)		Spacing (in)
0	Depth (in)	7.7	72	Depth (in)	6.9	72	Depth (in)	9.53	37	Depth (in)		-37
Spacing (in)	Antenna 5		Spacing (in)	Antenna 6		Spacing (in)	Antenna 7		Spacing (in)	Antenna 8		Spacing (in)
	Height (in)			Height (in)			Height (in)	29.5		Height (in)		
Spacing (in)	Width (in)		Spacing (in)	Width (in)		Spacing (in)	Width (in)	17.7	Spacing (in)	Width (in)		Spacing (in)
	Depth (in)			Depth (in)			Depth (in)	9.5		Depth (in)		



Note: Stacked Antennas require a minimum vertical separation of 1ft.

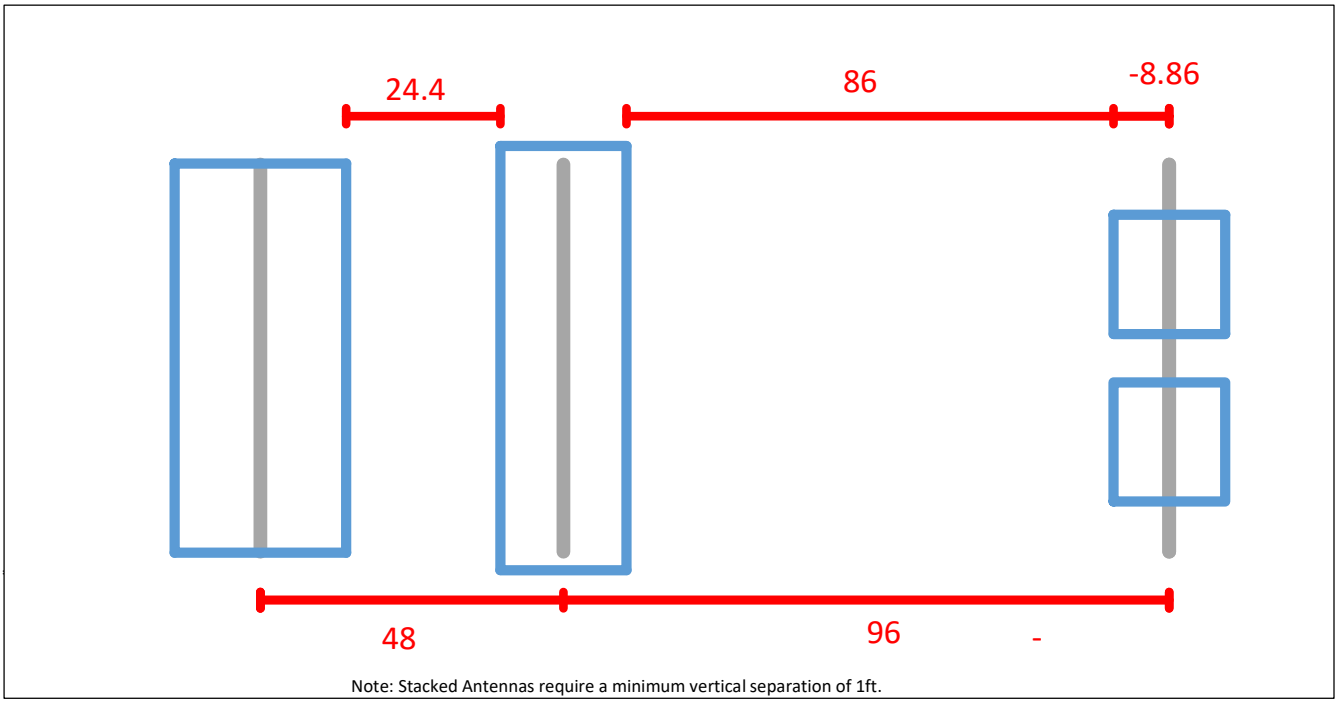
PRCTI20230195

GAMMA SECTOR

Mount Face Width		ft
Horizontal Offset		ft

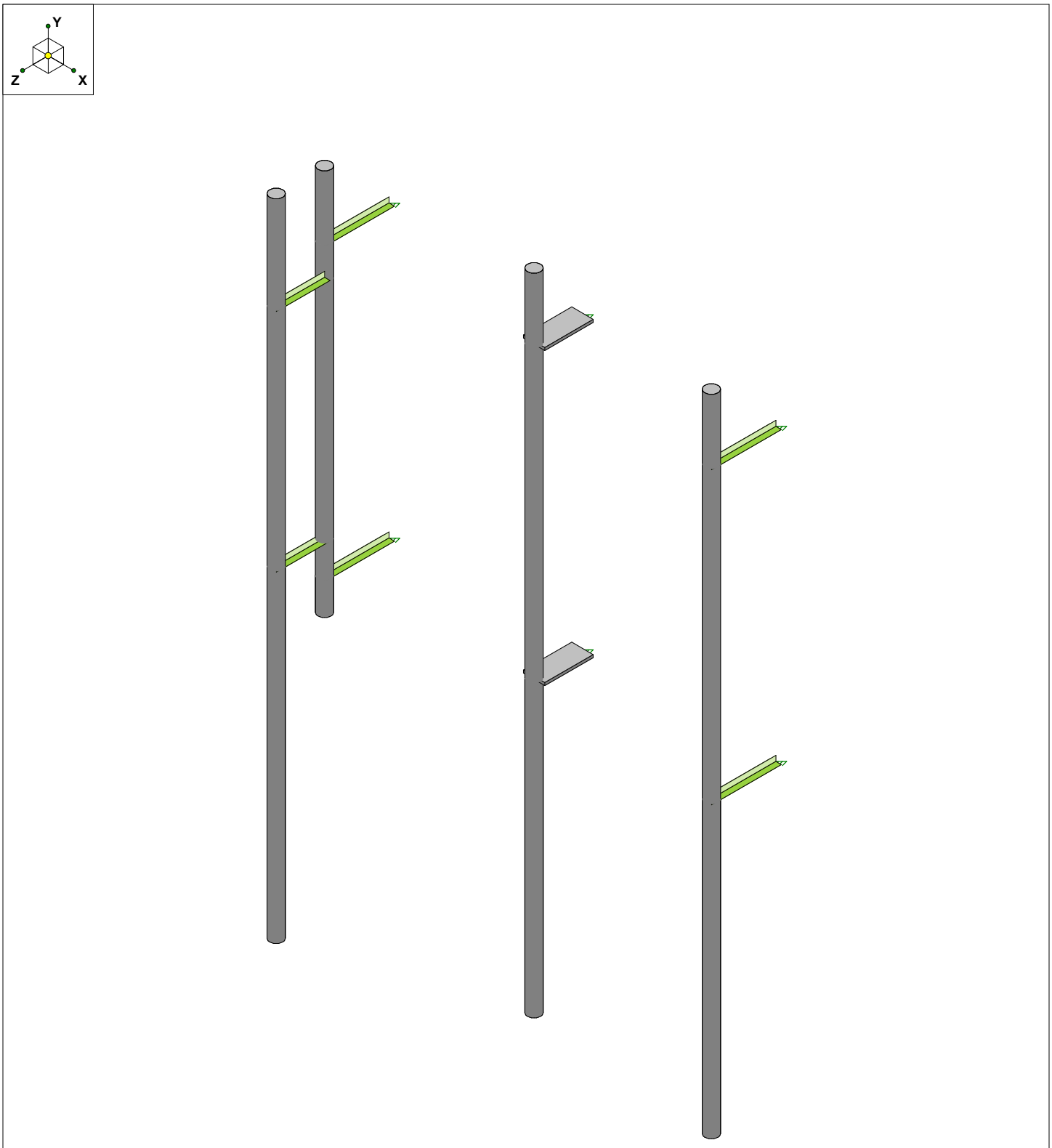
MasTec Network Solutions

Spacing (in)	Antenna 1		Spacing (in)	Antenna 2		Spacing (in)	Antenna 3		Spacing (in)	Antenna 4		Spacing (in)
	Cellemax CMA-UBTULBULBHH-6517-17-21-2			Kathrein 80010992K						Nokia AEQK		
-13.6	Height (in)	96.5	24.4	Height (in)	105.2	86	Height (in)		-8.86	Height (in)	29.53	-152.86
Spacing (in)	Width (in)	27.2	Spacing (in)	Width (in)	20	Spacing (in)	Width (in)		Spacing (in)	Width (in)	17.72	Spacing (in)
	Depth (in)	7.7	48	Depth (in)	6.9	96	Depth (in)			Depth (in)	9.53	-144
Spacing (in)	Antenna 5		Spacing (in)	Antenna 6		Spacing (in)	Antenna 7		Spacing (in)	Antenna 8		Spacing (in)
										Nokia AEQU		
	Height (in)			Height (in)			Height (in)			Height (in)	29.5	
Spacing (in)	Width (in)		Spacing (in)	Width (in)		Spacing (in)	Width (in)		Spacing (in)	Width (in)	17.7	Spacing (in)
	Depth (in)			Depth (in)			Depth (in)			Depth (in)	9.5	



Note: Stacked Antennas require a minimum vertical separation of 1ft.

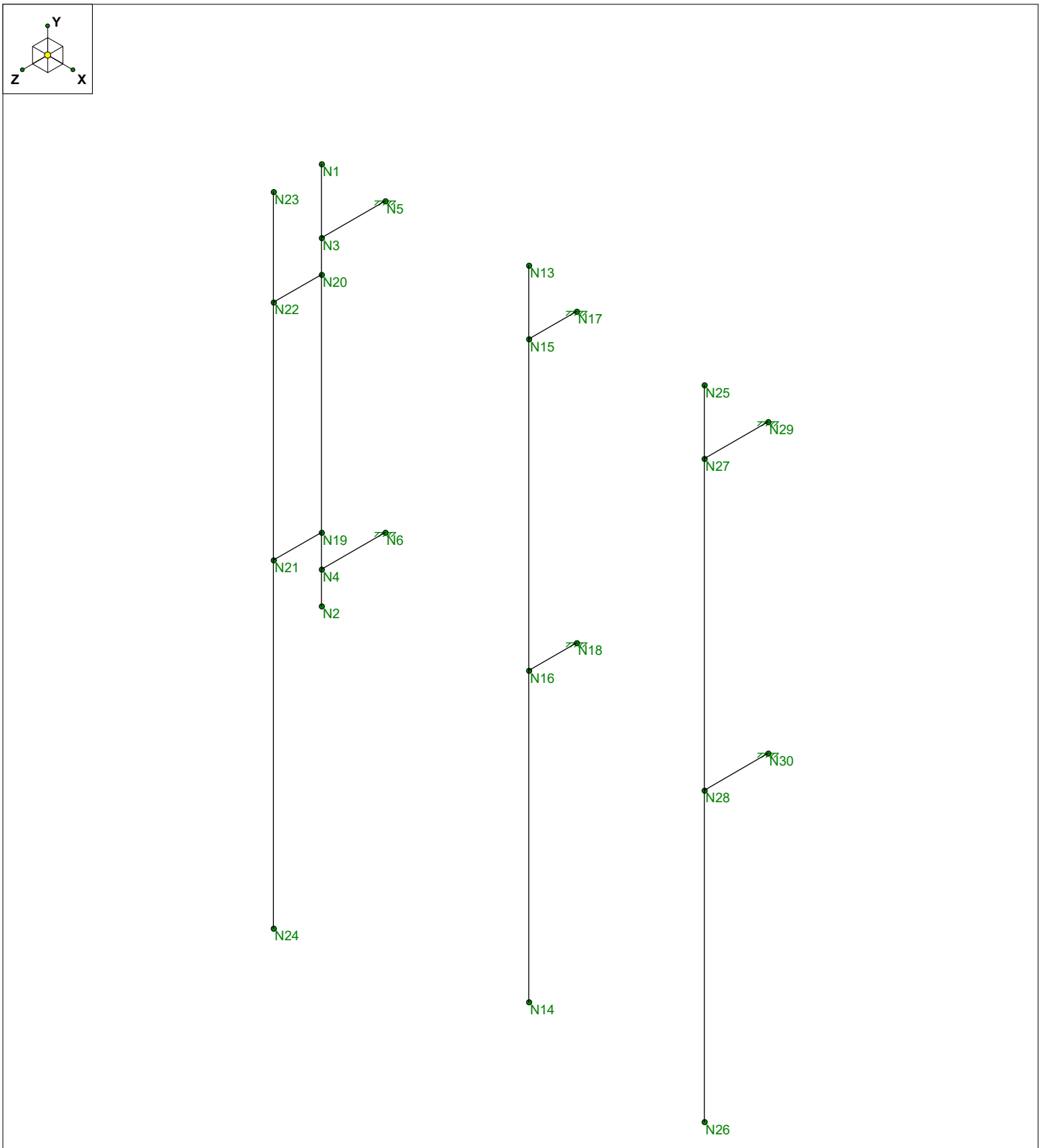
PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:03 AM
33683		33683-MOD.r3d

PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:03 AM
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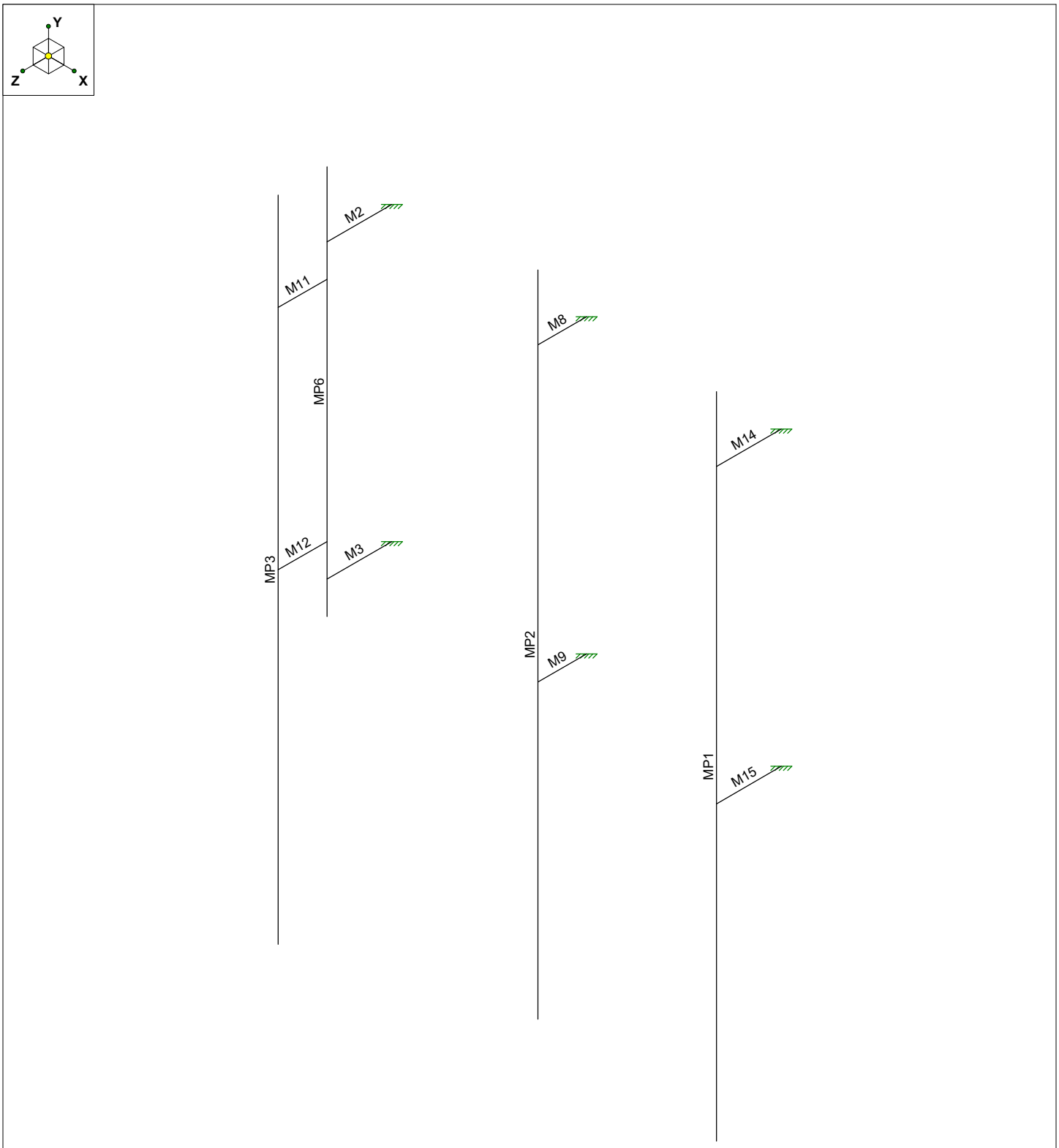
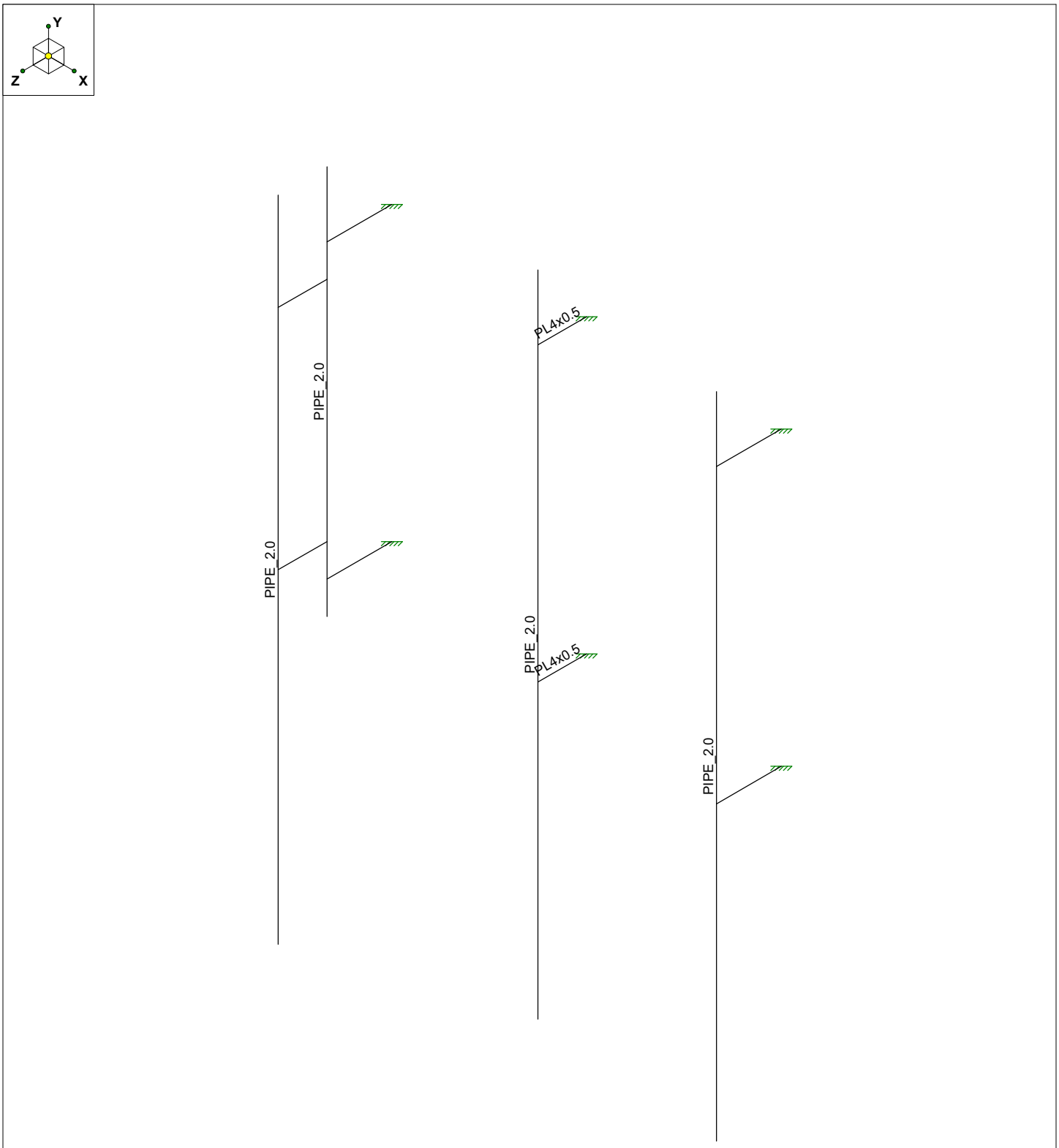
PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:03 AM
33683		33683-MOD.r3d

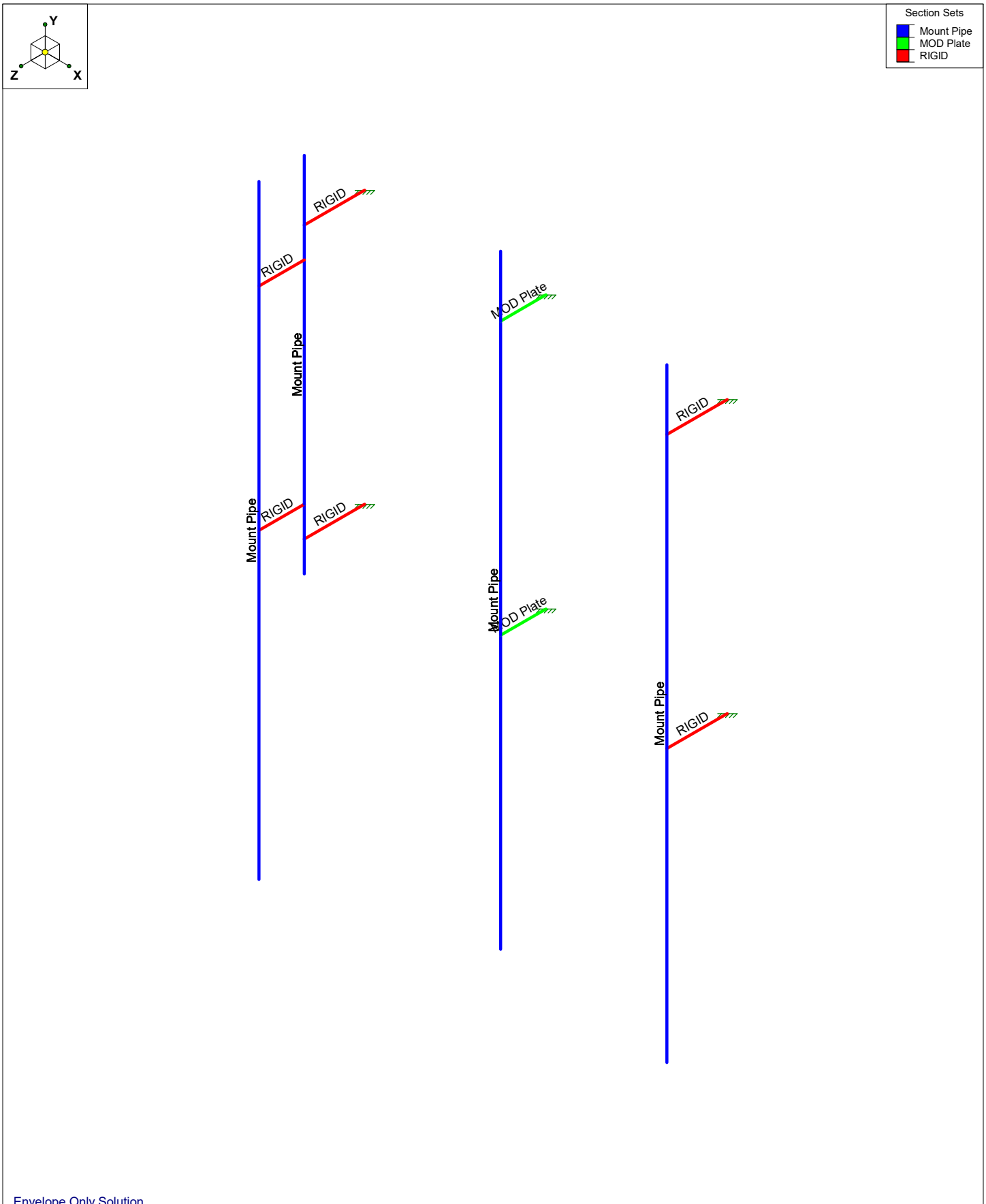
PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:04 AM
33683		33683-MOD.r3d

PRCTI20230195



Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:04 AM
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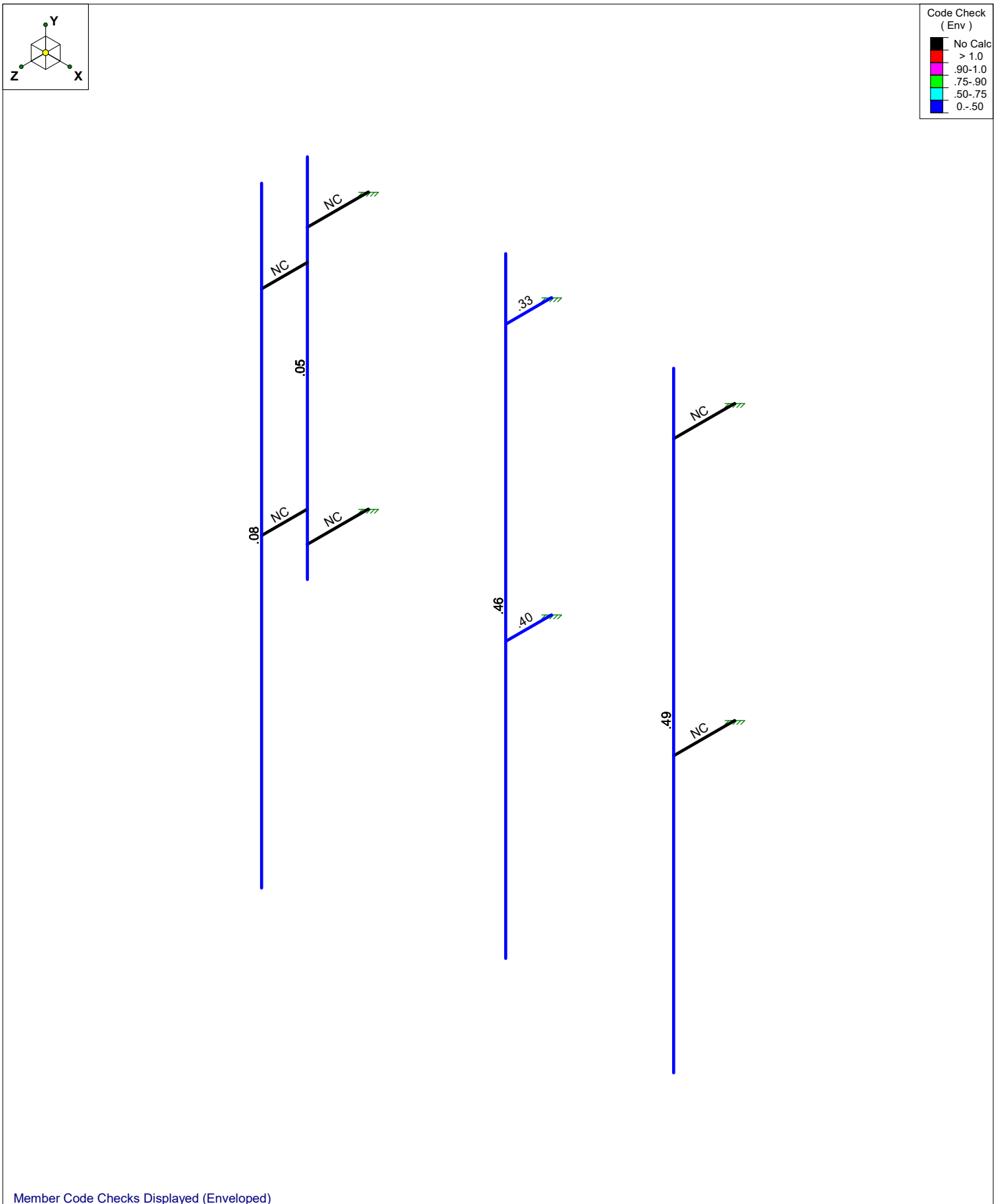
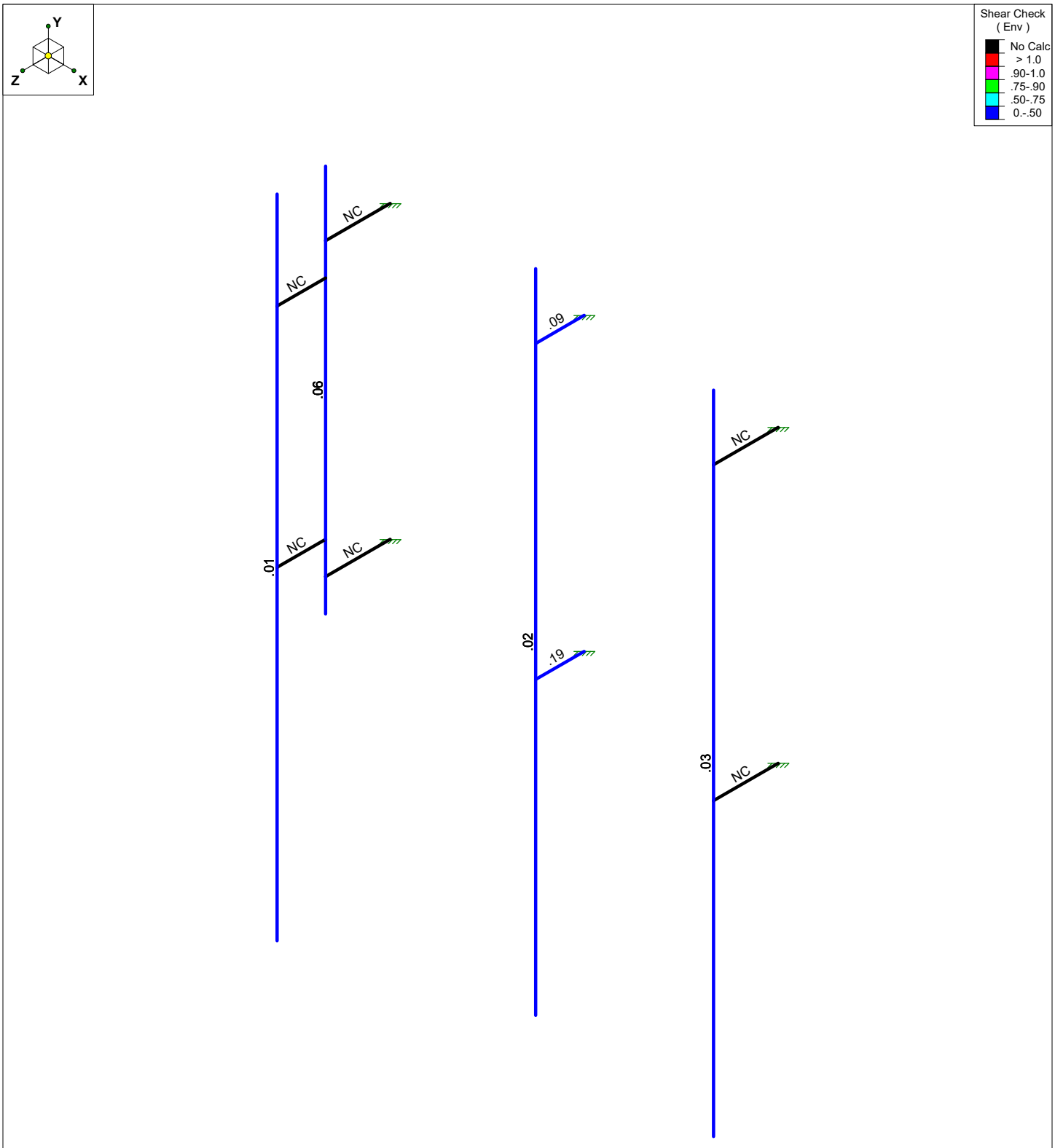
PRCTI20230195



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:04 AM
33683		33683-MOD.r3d

PRCTI20230195



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

MasTec Network Solutions	10102328 - DOWNTOWN PUYALLUP	
David Powers		Oct 27, 2022 at 11:04 AM
33683		33683-MOD.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	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	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	MOD Plate	PL4x0.5	Beam	RECT	A36 Gr.36	Typical	2	.042	2.667	.154

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	10	0	0	
2	N2	0	4	0	0	
3	N3	0	9	0	0	
4	N4	0	4.5	0	0	
5	N5	0	9	-1	0	
6	N6	0	4.5	-1	0	
7	N13	3	10	-.25	0	
8	N14	3	0	-.25	0	
9	N15	3	9	-.25	0	
10	N16	3	4.5	-.25	0	
11	N17	3	9	-1	0	
12	N18	3	4.5	-1	0	
13	N19	0	5	0	0	
14	N20	0	8.5	0	0	
15	N21	0	5	.75	0	
16	N22	0	8.5	.75	0	
17	N23	0	10	.75	0	
18	N24	0	0	.75	0	
19	N25	6	10	0	0	
20	N26	6	0	0	0	
21	N27	6	9	0	0	
22	N28	6	4.5	0	0	
23	N29	6	9	-1	0	
24	N30	6	4.5	-1	0	

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	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N17	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N18	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N29	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N30	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	MP6	N1	N2			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
2	M2	N3	N5			RIGID	None	None	RIGID	Typical
3	M3	N4	N6			RIGID	None	None	RIGID	Typical
4	MP2	N13	N14			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
5	M8	N15	N17		90	MOD Plate	Beam	RECT	A36 Gr.36	Typical
6	M9	N16	N18		90	MOD Plate	Beam	RECT	A36 Gr.36	Typical
7	MP3	N23	N24			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
8	M11	N22	N20			RIGID	None	None	RIGID	Typical
9	M12	N21	N19			RIGID	None	None	RIGID	Typical
10	MP1	N25	N26			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
11	M14	N27	N29			RIGID	None	None	RIGID	Typical
12	M15	N28	N30			RIGID	None	None	RIGID	Typical

Joint Loads and Enforced Displacements (BLC 42 : Man 1 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 43 : Man 2 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 44 : Man 3 (500 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 45 : Man 4 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 46 : Man 5 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Joint Loads and Enforced Displacements (BLC 47 : Man 6 (250 lbs))

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1				0

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.115	%50
2	MP2	Y	-.144	%50
3	MP3	Y	-.099	%20
4	MP3	Y	-.099	%55

Member Point Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.259	%50
2	MP2	Y	-.213	%50
3	MP3	Y	-.057	%20
4	MP3	Y	-.057	%55

Member Point Loads (BLC 3 : Full Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.257	%9.8
2	MP2	Z	-.219	%6.2
3	MP3	Z	-.049	%7.7
4	MP3	Z	-.049	%42.7
5	MP1	Z	-.257	%90.2
6	MP2	Z	-.219	%93.8
7	MP3	Z	-.049	%32.3
8	MP3	Z	-.049	%67.3

Member Point Loads (BLC 4 : Full Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.187	%9.8
2	MP2	Z	-.163	%6.2
3	MP3	Z	-.038	%7.7
4	MP3	Z	-.038	%42.7
5	MP1	Z	-.187	%90.2
6	MP2	Z	-.163	%93.8
7	MP3	Z	-.038	%32.3
8	MP3	Z	-.038	%67.3
9	MP1	X	.108	%9.8
10	MP2	X	.094	%6.2
11	MP3	X	.022	%7.7
12	MP3	X	.022	%42.7
13	MP1	X	.108	%90.2
14	MP2	X	.094	%93.8
15	MP3	X	.022	%32.3
16	MP3	X	.022	%67.3

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.067	%9.8
2	MP2	Z	-.063	%6.2
3	MP3	Z	-.016	%7.7
4	MP3	Z	-.016	%42.7
5	MP1	Z	-.067	%90.2
6	MP2	Z	-.063	%93.8
7	MP3	Z	-.016	%32.3
8	MP3	Z	-.016	%67.3
9	MP1	X	.116	%9.8
10	MP2	X	.11	%6.2
11	MP3	X	.028	%7.7
12	MP3	X	.028	%42.7
13	MP1	X	.116	%90.2
14	MP2	X	.11	%93.8
15	MP3	X	.028	%32.3
16	MP3	X	.028	%67.3

Member Point Loads (BLC 6 : Full Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	0	%9.8
2	MP2	Z	0	%6.2
3	MP3	Z	0	%7.7
4	MP3	Z	0	%42.7
5	MP1	Z	0	%90.2
6	MP2	Z	0	%93.8

Member Point Loads (BLC 6 : Full Wind Antenna (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
7	MP3	Z	0	%32.3
8	MP3	Z	0	%67.3
9	MP1	X	.093	%9.8
10	MP2	X	.096	%6.2
11	MP3	X	.027	%7.7
12	MP3	X	.027	%42.7
13	MP1	X	.093	%90.2
14	MP2	X	.096	%93.8
15	MP3	X	.027	%32.3
16	MP3	X	.027	%67.3

Member Point Loads (BLC 7 : Full Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.067	%9.8
2	MP2	Z	.063	%6.2
3	MP3	Z	.016	%7.7
4	MP3	Z	.016	%42.7
5	MP1	Z	.067	%90.2
6	MP2	Z	.063	%93.8
7	MP3	Z	.016	%32.3
8	MP3	Z	.016	%67.3
9	MP1	X	.116	%9.8
10	MP2	X	.11	%6.2
11	MP3	X	.028	%7.7
12	MP3	X	.028	%42.7
13	MP1	X	.116	%90.2
14	MP2	X	.11	%93.8
15	MP3	X	.028	%32.3
16	MP3	X	.028	%67.3

Member Point Loads (BLC 8 : Full Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.187	%9.8
2	MP2	Z	.163	%6.2
3	MP3	Z	.038	%7.7
4	MP3	Z	.038	%42.7
5	MP1	Z	.187	%90.2
6	MP2	Z	.163	%93.8
7	MP3	Z	.038	%32.3
8	MP3	Z	.038	%67.3
9	MP1	X	.108	%9.8
10	MP2	X	.094	%6.2
11	MP3	X	.022	%7.7
12	MP3	X	.022	%42.7
13	MP1	X	.108	%90.2
14	MP2	X	.094	%93.8
15	MP3	X	.022	%32.3
16	MP3	X	.022	%67.3

Member Point Loads (BLC 15 : Ice Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.026	%9.8
2	MP2	Z	-.023	%6.2
3	MP3	Z	-.005	%7.7
4	MP3	Z	-.005	%42.7

Member Point Loads (BLC 15 : Ice Wind Antenna (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
5	MP1	Z	-.026	%90.2
6	MP2	Z	-.023	%93.8
7	MP3	Z	-.005	%32.3
8	MP3	Z	-.005	%67.3

Member Point Loads (BLC 16 : Ice Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.019	%9.8
2	MP2	Z	-.017	%6.2
3	MP3	Z	-.004	%7.7
4	MP3	Z	-.004	%42.7
5	MP1	Z	-.019	%90.2
6	MP2	Z	-.017	%93.8
7	MP3	Z	-.004	%32.3
8	MP3	Z	-.004	%67.3
9	MP1	X	.011	%9.8
10	MP2	X	.01	%6.2
11	MP3	X	.002	%7.7
12	MP3	X	.002	%42.7
13	MP1	X	.011	%90.2
14	MP2	X	.01	%93.8
15	MP3	X	.002	%32.3
16	MP3	X	.002	%67.3

Member Point Loads (BLC 17 : Ice Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.007	%9.8
2	MP2	Z	-.007	%6.2
3	MP3	Z	-.002	%7.7
4	MP3	Z	-.002	%42.7
5	MP1	Z	-.007	%90.2
6	MP2	Z	-.007	%93.8
7	MP3	Z	-.002	%32.3
8	MP3	Z	-.002	%67.3
9	MP1	X	.012	%9.8
10	MP2	X	.012	%6.2
11	MP3	X	.003	%7.7
12	MP3	X	.003	%42.7
13	MP1	X	.012	%90.2
14	MP2	X	.012	%93.8
15	MP3	X	.003	%32.3
16	MP3	X	.003	%67.3

Member Point Loads (BLC 18 : Ice Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	0	%9.8
2	MP2	Z	0	%6.2
3	MP3	Z	0	%7.7
4	MP3	Z	0	%42.7
5	MP1	Z	0	%90.2
6	MP2	Z	0	%93.8
7	MP3	Z	0	%32.3
8	MP3	Z	0	%67.3
9	MP1	X	.01	%9.8
10	MP2	X	.011	%6.2

Member Point Loads (BLC 18 : Ice Wind Antenna (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
11	MP3	X	.003	%7.7
12	MP3	X	.003	%42.7
13	MP1	X	.01	%90.2
14	MP2	X	.011	%93.8
15	MP3	X	.003	%32.3
16	MP3	X	.003	%67.3

Member Point Loads (BLC 19 : Ice Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.007	%9.8
2	MP2	Z	.007	%6.2
3	MP3	Z	.002	%7.7
4	MP3	Z	.002	%42.7
5	MP1	Z	.007	%90.2
6	MP2	Z	.007	%93.8
7	MP3	Z	.002	%32.3
8	MP3	Z	.002	%67.3
9	MP1	X	.012	%9.8
10	MP2	X	.012	%6.2
11	MP3	X	.003	%7.7
12	MP3	X	.003	%42.7
13	MP1	X	.012	%90.2
14	MP2	X	.012	%93.8
15	MP3	X	.003	%32.3
16	MP3	X	.003	%67.3

Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	.019	%9.8
2	MP2	Z	.007	%6.2
3	MP3	Z	.002	%7.7
4	MP3	Z	.002	%42.7
5	MP1	Z	.019	%90.2
6	MP2	Z	.007	%93.8
7	MP3	Z	.002	%32.3
8	MP3	Z	.002	%67.3
9	MP1	X	.011	%9.8
10	MP2	X	.012	%6.2
11	MP3	X	.003	%7.7
12	MP3	X	.003	%42.7
13	MP1	X	.011	%90.2
14	MP2	X	.012	%93.8
15	MP3	X	.003	%32.3
16	MP3	X	.003	%67.3

Member Point Loads (BLC 27 : Seismic Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Z	-.047	%50
2	MP2	Z	-.059	%50
3	MP3	Z	-.04	%20
4	MP3	Z	-.04	%55

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	X	.047	%50

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
2	MP2	X	.059	%50
3	MP3	X	.04	%20
4	MP3	X	.04	%55

Member Point Loads (BLC 41 : Seismic Vertical Antennas)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP1	Y	-.023	%50
2	MP2	Y	-.029	%50
3	MP3	Y	-.02	%20
4	MP3	Y	-.02	%55

Member Distributed Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Y	-.004	-.004	0	%100
2	M2	Y	-.001	-.001	0	%100
3	M3	Y	-.001	-.001	0	%100
4	MP2	Y	-.004	-.004	0	%100
5	M8	Y	-.005	-.005	0	%100
6	M9	Y	-.005	-.005	0	%100
7	MP3	Y	-.004	-.004	0	%100
8	M11	Y	-.001	-.001	0	%100
9	M12	Y	-.001	-.001	0	%100
10	MP1	Y	-.004	-.004	0	%100
11	M14	Y	-.001	-.001	0	%100
12	M15	Y	-.001	-.001	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	-.005	-.005	0	%100
2	MP2	Z	-.005	-.005	0	%6.2
3	M8	Z	0	0	0	%100
4	M9	Z	0	0	0	%100
5	MP3	Z	-.005	-.005	0	%7.7
6	MP1	Z	-.005	-.005	0	%9.8
7	MP2	Z	-.005	-.005	%93.8	%100
8	MP3	Z	-.005	-.005	%67.3	%100
9	MP1	Z	-.005	-.005	%90.2	%100
10	MP6	X	0	0	0	%100
11	MP2	X	0	0	0	%100
12	M8	X	0	0	0	%100
13	M9	X	0	0	0	%100
14	MP3	X	0	0	0	%100
15	MP1	X	0	0	0	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	-.005	-.005	0	%100
2	MP2	Z	-.005	-.005	0	%6.2
3	M8	Z	0	0	0	%100
4	M9	Z	0	0	0	%100
5	MP3	Z	-.005	-.005	0	%7.7
6	MP1	Z	-.005	-.005	0	%9.8
7	MP2	Z	-.005	-.005	%93.8	%100
8	MP3	Z	-.005	-.005	%67.3	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
9	MP1	Z	-.005	-.005	%90.2	%100
10	MP6	X	.003	.003	0	%100
11	MP2	X	.003	.003	0	%100
12	M8	X	0	0	0	%100
13	M9	X	0	0	0	%100
14	MP3	X	.003	.003	0	%100
15	MP1	X	.003	.003	0	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	-.003	-.003	0	%100
2	MP2	Z	-.003	-.003	0	%6.2
3	M8	Z	-.001	-.001	0	%100
4	M9	Z	-.001	-.001	0	%100
5	MP3	Z	-.003	-.003	0	%7.7
6	MP1	Z	-.003	-.003	0	%9.8
7	MP2	Z	-.003	-.003	%93.8	%100
8	MP3	Z	-.003	-.003	%67.3	%100
9	MP1	Z	-.003	-.003	%90.2	%100
10	MP6	X	.005	.005	0	%100
11	MP2	X	.005	.005	0	%100
12	M8	X	.001	.001	0	%100
13	M9	X	.001	.001	0	%100
14	MP3	X	.005	.005	0	%100
15	MP1	X	.005	.005	0	%100

Member Distributed Loads (BLC 12 : Full Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	0	0	0	%100
2	MP2	Z	0	0	0	%6.2
3	M8	Z	0	0	0	%100
4	M9	Z	0	0	0	%100
5	MP3	Z	0	0	0	%7.7
6	MP1	Z	0	0	0	%9.8
7	MP2	Z	0	0	%93.8	%100
8	MP3	Z	0	0	%67.3	%100
9	MP1	Z	0	0	%90.2	%100
10	MP6	X	.005	.005	0	%100
11	MP2	X	.005	.005	0	%100
12	M8	X	.002	.002	0	%100
13	M9	X	.002	.002	0	%100
14	MP3	X	.005	.005	0	%100
15	MP1	X	.005	.005	0	%100

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	.003	.003	0	%100
2	MP2	Z	.003	.003	0	%6.2
3	M8	Z	.001	.001	0	%100
4	M9	Z	.001	.001	0	%100
5	MP3	Z	.003	.003	0	%7.7
6	MP1	Z	.003	.003	0	%9.8
7	MP2	Z	.003	.003	%93.8	%100
8	MP3	Z	.003	.003	%67.3	%100
9	MP1	Z	.003	.003	%90.2	%100

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
10	MP6	X	.005	.005	0	%100
11	MP2	X	.005	.005	0	%100
12	M8	X	.001	.001	0	%100
13	M9	X	.001	.001	0	%100
14	MP3	X	.005	.005	0	%100
15	MP1	X	.005	.005	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	.005	.005	0	%100
2	MP2	Z	.005	.005	0	%6.2
3	M8	Z	0	0	0	%100
4	M9	Z	0	0	0	%100
5	MP3	Z	.005	.005	0	%7.7
6	MP1	Z	.005	.005	0	%9.8
7	MP2	Z	.005	.005	%93.8	%100
8	MP3	Z	.005	.005	%67.3	%100
9	MP1	Z	.005	.005	%90.2	%100
10	MP6	X	.003	.003	0	%100
11	MP2	X	.003	.003	0	%100
12	M8	X	0	0	0	%100
13	M9	X	0	0	0	%100
14	MP3	X	.003	.003	0	%100
15	MP1	X	.003	.003	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	-.001	-.001	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP2	Z	-.001	-.001	0	%6.2
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	MP3	Z	-.001	-.001	0	%7.7
8	M11	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	MP1	Z	-.001	-.001	0	%9.8
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	MP2	Z	-.001	-.001	%93.8	%100
14	MP3	Z	-.001	-.001	%67.3	%100
15	MP1	Z	-.001	-.001	%90.2	%100
16	MP6	X	0	0	0	%100
17	M2	X	0	0	0	%100
18	M3	X	0	0	0	%100
19	MP2	X	0	0	0	%100
20	M8	X	0	0	0	%100
21	M9	X	0	0	0	%100
22	MP3	X	0	0	0	%100
23	M11	X	0	0	0	%100
24	M12	X	0	0	0	%100
25	MP1	X	0	0	0	%100
26	M14	X	0	0	0	%100
27	M15	X	0	0	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	-.001	-.001	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP2	Z	-.001	-.001	0	%6.2
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	MP3	Z	-.001	-.001	0	%7.7
8	M11	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	MP1	Z	-.001	-.001	0	%9.8
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	MP2	Z	-.001	-.001	%93.8	%100
14	MP3	Z	-.001	-.001	%67.3	%100
15	MP1	Z	-.001	-.001	%90.2	%100
16	MP6	X	0	0	0	%100
17	M2	X	0	0	0	%100
18	M3	X	0	0	0	%100
19	MP2	X	0	0	0	%100
20	M8	X	0	0	0	%100
21	M9	X	0	0	0	%100
22	MP3	X	0	0	0	%100
23	M11	X	0	0	0	%100
24	M12	X	0	0	0	%100
25	MP1	X	0	0	0	%100
26	M14	X	0	0	0	%100
27	M15	X	0	0	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	0	0	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP2	Z	0	0	0	%6.2
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	MP3	Z	0	0	0	%7.7
8	M11	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	MP1	Z	0	0	0	%9.8
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	MP2	Z	0	0	%93.8	%100
14	MP3	Z	0	0	%67.3	%100
15	MP1	Z	0	0	%90.2	%100
16	MP6	X	.001	.001	0	%100
17	M2	X	0	0	0	%100
18	M3	X	0	0	0	%100
19	MP2	X	.001	.001	0	%100
20	M8	X	0	0	0	%100
21	M9	X	0	0	0	%100
22	MP3	X	.001	.001	0	%100
23	M11	X	0	0	0	%100
24	M12	X	0	0	0	%100
25	MP1	X	.001	.001	0	%100
26	M14	X	0	0	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
27	M15	X	0	0	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	0	0	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP2	Z	0	0	0	%6.2
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	MP3	Z	0	0	0	%7.7
8	M11	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	MP1	Z	0	0	0	%9.8
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	MP2	Z	0	0	%93.8	%100
14	MP3	Z	0	0	%67.3	%100
15	MP1	Z	0	0	%90.2	%100
16	MP6	X	.001	.001	0	%100
17	M2	X	0	0	0	%100
18	M3	X	0	0	0	%100
19	MP2	X	.001	.001	0	%100
20	M8	X	0	0	0	%100
21	M9	X	0	0	0	%100
22	MP3	X	.001	.001	0	%100
23	M11	X	0	0	0	%100
24	M12	X	0	0	0	%100
25	MP1	X	.001	.001	0	%100
26	M14	X	0	0	0	%100
27	M15	X	0	0	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	0	0	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP2	Z	0	0	0	%6.2
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	MP3	Z	0	0	0	%7.7
8	M11	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	MP1	Z	0	0	0	%9.8
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	MP2	Z	0	0	%93.8	%100
14	MP3	Z	0	0	%67.3	%100
15	MP1	Z	0	0	%90.2	%100
16	MP6	X	.001	.001	0	%100
17	M2	X	0	0	0	%100
18	M3	X	0	0	0	%100
19	MP2	X	.001	.001	0	%100
20	M8	X	0	0	0	%100
21	M9	X	0	0	0	%100
22	MP3	X	.001	.001	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
23	M11	X	0	0	0	%100
24	M12	X	0	0	0	%100
25	MP1	X	.001	.001	0	%100
26	M14	X	0	0	0	%100
27	M15	X	0	0	0	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F,...	Start Location[ft,%]	End Location[ft,%]
1	MP6	Z	.001	.001	0	%100
2	M2	Z	0	0	0	%100
3	M3	Z	0	0	0	%100
4	MP2	Z	.001	.001	0	%6.2
5	M8	Z	0	0	0	%100
6	M9	Z	0	0	0	%100
7	MP3	Z	.001	.001	0	%7.7
8	M11	Z	0	0	0	%100
9	M12	Z	0	0	0	%100
10	MP1	Z	.001	.001	0	%9.8
11	M14	Z	0	0	0	%100
12	M15	Z	0	0	0	%100
13	MP2	Z	.001	.001	%93.8	%100
14	MP3	Z	.001	.001	%67.3	%100
15	MP1	Z	.001	.001	%90.2	%100
16	MP6	X	0	0	0	%100
17	M2	X	0	0	0	%100
18	M3	X	0	0	0	%100
19	MP2	X	0	0	0	%100
20	M8	X	0	0	0	%100
21	M9	X	0	0	0	%100
22	MP3	X	0	0	0	%100
23	M11	X	0	0	0	%100
24	M12	X	0	0	0	%100
25	MP1	X	0	0	0	%100
26	M14	X	0	0	0	%100
27	M15	X	0	0	0	%100

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...Area(M...		Surface(Plate/Wall)
1	Dead	None		-1			4			
2	Ice Dead	None					4	12		
3	Full Wind Antenna (0 Deg)	None					8			
4	Full Wind Antenna (30 Deg)	None					16			
5	Full Wind Antenna (60 Deg)	None					16			
6	Full Wind Antenna (90 Deg)	None					16			
7	Full Wind Antenna (120 D...	None					16			
8	Full Wind Antenna (150 D...	None					16			
9	Full Wind Members (0 Deg)	None						15		
10	Full Wind Members (30 D...	None						15		
11	Full Wind Members (60 D...	None						15		
12	Full Wind Members (90 D...	None						15		
13	Full Wind Members (120 ...	None						15		
14	Full Wind Members (150 ...	None						15		
15	Ice Wind Antenna (0 Deg)	None					8			
16	Ice Wind Antenna (30 Deg)	None					16			
17	Ice Wind Antenna (60 Deg)	None					16			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(M...	Surface(Plate/Wall)
18	Ice Wind Antenna (90 Deg)	None					16			
19	Ice Wind Antenna (120 De...	None					16			
20	Ice Wind Antenna (150 De...	None					16			
21	Ice Wind Members (0 Deg)	None						27		
22	Ice Wind Members (30 Deg)	None						27		
23	Ice Wind Members (60 Deg)	None						27		
24	Ice Wind Members (90 Deg)	None						27		
25	Ice Wind Members (120 D...	None						27		
26	Ice Wind Members (150 D...	None						27		
27	Seismic Antenna (0 Deg)	None					4			
28	Seismic Antenna (90 Deg)	None					4			
29	Seismic Members (0 Deg)	None		-.203	-.407					
30	Seismic Members (30 Deg)	None	.203	-.203	-.352					
31	Seismic Members (60 Deg)	None	.352	-.203	-.203					
32	Seismic Members (90 Deg)	None	.407	-.203	-2.492e-...					
33	Seismic Members (120 De...	None	.352	-.203	.203					
34	Seismic Members (150 De...	None	.203	-.203	.352					
35	Seismic Members (180 De...	None	4.984e-17	-.203	.407					
36	Seismic Members (210 De...	None	-.203	-.203	.352					
37	Seismic Members (240 De...	None	-.352	-.203	.203					
38	Seismic Members (270 De...	None	-.407	-.203	7.476e-17					
39	Seismic Members (300 De...	None	-.352	-.203	-.203					
40	Seismic Members (330 De...	None	-.203	-.203	-.352					
41	Seismic Vertical Antennas	None					4			
42	Man 1 (500 lbs)	None				1				
43	Man 2 (500 lbs)	None				1				
44	Man 3 (500 lbs)	None				1				
45	Man 4 (250 lbs)	None				1				
46	Man 5 (250 lbs)	None				1				
47	Man 6 (250 lbs)	None				1				

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4D	Yes	Y		1	1.4																		
2	1.2D + 1.0W 0°	Yes	Y		1	1.2	3	1	9	1														
3	1.2D + 1.0W 30°	Yes	Y		1	1.2	4	1	10	1														
4	1.2D + 1.0W 60°	Yes	Y		1	1.2	5	1	11	1														
5	1.2D + 1.0W 90°	Yes	Y		1	1.2	6	1	12	1														
6	1.2D + 1.0W 120°	Yes	Y		1	1.2	7	1	13	1														
7	1.2D + 1.0W 150°	Yes	Y		1	1.2	8	1	14	1														
8	1.2D + 1.0W 180°	Yes	Y		1	1.2	3	-1	9	-1														
9	1.2D + 1.0W 210°	Yes	Y		1	1.2	4	-1	10	-1														
10	1.2D + 1.0W 240°	Yes	Y		1	1.2	5	-1	11	-1														
11	1.2D + 1.0W 270°	Yes	Y		1	1.2	6	-1	12	-1														
12	1.2D + 1.0W 300°	Yes	Y		1	1.2	7	-1	13	-1														
13	1.2D + 1.0W 330°	Yes	Y		1	1.2	8	-1	14	-1														
14	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	15	1	21	1												
15	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	16	1	22	1												
16	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	17	1	23	1												
17	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	18	1	24	1												
18	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	19	1	25	1												
19	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	20	1	26	1												
20	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	15	-1	21	-1												
21	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	16	-1	22	-1												
22	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	17	-1	23	-1												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
23	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	18	-1	24	-1												
24	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	19	-1	25	-1												
25	1.2D + 1.0Di + 1...	Yes	Y		1	1.2	2	1	20	-1	26	-1												
26	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	3	.099	9	.099	42	1.5												
27	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	4	.099	10	.099	42	1.5												
28	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	5	.099	11	.099	42	1.5												
29	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	6	.099	12	.099	42	1.5												
30	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	7	.099	13	.099	42	1.5												
31	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	8	.099	14	.099	42	1.5												
32	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	3	-.099	9	-.099	42	1.5												
33	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	4	-.099	10	-.099	42	1.5												
34	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	5	-.099	11	-.099	42	1.5												
35	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	6	-.099	12	-.099	42	1.5												
36	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	7	-.099	13	-.099	42	1.5												
37	1.2D + 1.5Lm_1...	Yes	Y		1	1.2	8	-.099	14	-.099	42	1.5												
38	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	3	.099	9	.099	43	1.5												
39	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	4	.099	10	.099	43	1.5												
40	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	5	.099	11	.099	43	1.5												
41	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	6	.099	12	.099	43	1.5												
42	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	7	.099	13	.099	43	1.5												
43	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	8	.099	14	.099	43	1.5												
44	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	3	-.099	9	-.099	43	1.5												
45	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	4	-.099	10	-.099	43	1.5												
46	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	5	-.099	11	-.099	43	1.5												
47	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	6	-.099	12	-.099	43	1.5												
48	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	7	-.099	13	-.099	43	1.5												
49	1.2D + 1.5Lm_2...	Yes	Y		1	1.2	8	-.099	14	-.099	43	1.5												
50	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	3	.099	9	.099	44	1.5												
51	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	4	.099	10	.099	44	1.5												
52	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	5	.099	11	.099	44	1.5												
53	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	6	.099	12	.099	44	1.5												
54	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	7	.099	13	.099	44	1.5												
55	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	8	.099	14	.099	44	1.5												
56	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	3	-.099	9	-.099	44	1.5												
57	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	4	-.099	10	-.099	44	1.5												
58	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	5	-.099	11	-.099	44	1.5												
59	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	6	-.099	12	-.099	44	1.5												
60	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	7	-.099	13	-.099	44	1.5												
61	1.2D + 1.5Lm_3...	Yes	Y		1	1.2	8	-.099	14	-.099	44	1.5												
62	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
63	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
64	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
65	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
66	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
67	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
68	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
69	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
70	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
71	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
72	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
73	1.2D + 1.5Lv_1 ...	Yes	Y		1	1.2	45	1.5																
74	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
75	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
76	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
77	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
78	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
79	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
80	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
81	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
82	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
83	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
84	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
85	1.2D + 1.5Lv_2 ...	Yes	Y		1	1.2	46	1.5																
86	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
87	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
88	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
89	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
90	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
91	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
92	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
93	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
94	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
95	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
96	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
97	1.2D + 1.5Lv_3 ...	Yes	Y		1	1.2	47	1.5																
98	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	1	28		29	1	41	1										
99	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.866	28	.5	30	1	41	1										
100	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.5	28	.866	31	1	41	1										
101	1.2D + 1.0EV +...	Yes	Y		1	1.2	27		28	1	32	1	41	1										
102	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.5	28	.866	33	1	41	1										
103	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.866	28	.5	34	1	41	1										
104	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-1	28		35	1	41	1										
105	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.866	28	-.5	36	1	41	1										
106	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	-.5	28	-.866	37	1	41	1										
107	1.2D + 1.0EV +...	Yes	Y		1	1.2	27		28	-1	38	1	41	1										
108	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.5	28	-.866	39	1	41	1										
109	1.2D + 1.0EV +...	Yes	Y		1	1.2	27	.866	28	-.5	40	1	41	1										

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N5	max	.068	12	.247	14	.052	2	-.128	8	.117	12	.019	107
2		min	-.068	4	.133	8	-.123	8	-.287	14	-.117	4	-.019	101
3	N6	max	.124	10	.246	20	.194	2	-.131	2	.196	12	.01	101
4		min	-.124	6	.133	2	-.123	8	-.286	20	-.196	4	-.01	107
5	N17	max	.041	12	.526	2	.043	2	.082	8	.033	12	.043	6
6		min	-.041	4	-.301	8	-.077	8	-.171	2	-.033	4	-.043	10
7	N18	max	.23	10	.527	8	.401	2	.033	2	.17	12	.089	12
8		min	-.23	6	-.299	2	-.367	8	-.122	8	-.17	4	-.089	4
9	N29	max	.132	12	.072	25	.262	2	-.021	2	.132	12	.004	11
10		min	-.132	4	.029	8	-.262	8	-.072	20	-.132	4	-.004	5
11	N30	max	.15	12	.409	21	.262	2	.773	8	.15	12	.45	12
12		min	-.15	4	.151	2	-.262	8	-1.075	2	-.15	4	-.45	4
13	Totals:	max	.746	12	1.454	25	1.214	2						
14		min	-.746	4	.711	2	-1.214	8						

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	MP6	PIPE_2.0	.053	5	2	.059	5.5		12	20.867	32.13	1.872	1.872	1	H1-1b
2	MP2	PIPE_2.0	.458	5.521	8	.023	.625		8	9.837	32.13	1.872	1.872	1	H1-1b
3	M8	PL4x0.5	.329	0	2	.087	.75	y	12	52.806	64.8	.675	5.296	1	H1-1b
4	M9	PL4x0.5	.404	0	8	.188	.75	y	12	52.806	64.8	.675	5.296	1	H1-1b

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
5	MP3	PIPE_2.0	.078	5	9	.010	5		13	9.837	32.13	1.872	1.872	1....	H1-1b
6	MP1	PIPE_2.0	.491	5.521	8	.027	5.521		8	9.837	32.13	1.872	1.872	1	H1-1b

APPENDIX 6: MODIFICATION DRAWINGS

PRCTI20230195

MOUNT REINFORCEMENT DRAWINGS PREPARED FOR AT&T

SITE NAME: DOWNTOWN PUYALLUP
USID NUMBER: 44225
FA#: 10102328

SITE ADDRESS:
110 9TH AVENUE SOUTHWEST, PUYALLUP,
PIERCE COUNTY, WA 98371

PROJECT CONTACTS:

1. PROJECT MANAGER
   DOUGLAS KONRATH
   DOUGLAS.KONRATH@MASTEC.COM

2. DESIGN ENGINEER - MAIN RFI CONTACT
   DAVID POWERS
   DAVID.POWERS@MASTEC.COM

3. ENGINEER OF RECORD
   RAPHAEL I. MOHAMED, PE, PEng
   919-674-5895
   1151 SE CARY PKWY
   SUITE 101
   CARY, NC 27518
   RAPHAEL.MOHAMED@MASTEC.COM

4. FOR FABRICATION AND CONSTRUCTION RELATED INQUIRIES: CONTACT MASTEC DESIGN ENGINEER AND ENGINEER OF RECORD.

QUALIFIED ENGINEERING SERVICES ARE AVAILABLE FROM MASTEC NETWORK SOLUTIONS TO ASSIST CONTRACTORS IN CLASS IV RIGGING PLAN REVIEWS. FOR REQUESTED QUALIFIED ENGINEERING SERVICES, PLEASE CONTACT RAPHAEL MOHAMED AT (919) 244-5207.

DRAWINGS INCLUDED

SHEET NO.	DESCRIPTION	SHEET NO.	DESCRIPTION
T-1	TITLE SHEET		
N-1	MODIFICATION INSPECTION CHECKLIST		
N-2	GENERAL NOTES		
S-1	MODIFICATION SCHEDULE		
S-2	WALL MOUNT & PIPE INSTALLATION DETAILS		
S-3	ALPHA SECTOR REINFORCEMENT		
A-1	MANUFACTURER SPECIFICATIONS		

BUILDING INFORMATION

BUILDING HEIGHT / TYPE:	65'-6" STADIUM
MOUNT HEIGHT/TYPE:	64'-2" (PIPE MOUNT)
TOWER LOCATION:	LAT: 47.18472°
	LONG: -122.29611°
FAILING ANALYSIS FIRM NAME:	MASTEC NETWORK SOLUTIONS
PROJECT NUMBER:	33683-PEL1
STRUCTURAL ANALYSIS DATE:	10/19/2022
PASSING ANALYSIS FIRM NAME:	MASTEC NETWORK SOLUTIONS
PROJECT NUMBER:	33683-MMD1

CODE COMPLIANCE

ANSI/TIA-222-H

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

City of Puyallup
Building
ACCEPTED
JMontgomery
03/13/2023
11:05:05 AM

NO.	DATE	DESCRIPTION	BY
0	10/28/2022	FIRST ISSUE	DWP

REVISIONS

RAPHAEL MOHAMED
STATE OF WASHINGTON
42214
REGISTERED
PROFESSIONAL ENGINEER

RAPHAEL I. MOHAMED, PE,PEng
SENIOR DIRECTOR OF ENGINEERING
WA PE LICENSE NO. 42214

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WASHINGTON.

MasTec Network Solutions
507 AIRPORT BLVD., SUITE 111
MORRISVILLE, NC 27560

SITE NAME: DOWNTOWN PUYALLUP
USID NUMBER: 44225
FA NUMBER: 10102328
MNS ENG. NUMBER: 33683 - MMD1

SITE ADDRESS:
110 9TH AVENUE SOUTHWEST
PUYALLUP, WA 98371

DRAWN BY: DWP

CHECKED BY: TJG

APPROVED BY: RIM

SCALE: N.T.S

TITLE SHEET

T-1

REV 0

PRCTI20230195

MI CHECKLIST

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
N/A	EOR APPROVAL
N/A	FABRICATION INSPECTION
N/A	FABRICATOR CERTIFIED WELD INSPECTION
N/A	MATERIAL TEST REPORT (MTR)
N/A	FABRICATOR NDE INSPECTION
N/A	NDE REPORT OF BASE PLATE
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
N/A	CONTINUOUS FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS
N/A	GROUT COMP. STRENGTH (ASTM C109)
N/A	POST INSTALLED ANCHOR ROD VERIFICATION
N/A	BASE PLATE GROUT VERIFICATION
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION AND NDE REPORTS
N/A	EARTHWORK: LIFT AND DENSITY
X	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTE: X DENOTES A DOCUMENT NEEDED FOR THE PMI REPORT
N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE PMI REPORT

MODIFICATION INSPECTION NOTES:

GENERAL:

1. THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF THE TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR)
2. THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.
3. TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR POINT OF CONTACT (POC).

MI INSPECTOR:

1. THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM

   REVIEW THE REQUIREMENTS OF THE MI CHECKLIST WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
2. THE MI IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTORS (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS. AND SUBMITTING THE MI REPORT.

GENERAL CONTRACTOR:

1. THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:
   - REVIEW THE REQUIREMENTS OF THE MI CHECKLIST.
   - WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT
   - ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
   - BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.
2. THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

MI VERIFICATION INSPECTIONS:

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS:

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTIONS AND INSPECTION:
- RAW MATERIALS
- PHOTOS OF ALL CRITICAL DETAILS
- FOUNDATION MODIFICATIONS
- WELD PREPARATION
- BOLT INSTALLATION AND TORQUE
- FINAL INSTALLED CONDITION
- SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
- FINAL IN FIELD CONDITIONS

PHOTOS OF ELEVATED MODIFICATION TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.

CORRECTION OF FAILING MI'S:

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH THE TOWER OWNER TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
- OR, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/ENFORCEMENT USING THE AS-BUILT CONDITION.

RECOMMENDATIONS:

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI, THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACULTIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

CANCELLATION OR DELAYS IN SCHEDULED MI:

IF THE GC AND MI INSPECTOR AGREE TO A DATE ON WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, TOWER OWNER SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF TOWER OWNER CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

NO.	DATE	DESCRIPTION	BY
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REVISIONS

RAPHAEL MOHAMED
STATE OF WASHINGTON
42214
REGISTERED
PROFESSIONAL ENGINEER

RAPHAEL I. MOHAMED, PE,PEng
SENIOR DIRECTOR OF ENGINEERING
WA PE LICENSE NO. 42214

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MasTec Network Solutions
507 AIRPORT BLVD., SUITE 111
MORRISVILLE, NC 27560

SITE NAME: DOWNTOWN PUYALLUP
USID NUMBER: 44225
FA NUMBER: 10102328
MNS ENG. NUMBER: 33683 - MMD1

SITE ADDRESS:
110 9TH AVENUE SOUTHWEST
PUYALLUP, WA 98371

DRAWN BY: DWP

CHECKED BY: TJG

APPROVED BY: RIM

SCALE: N.T.S

MODIFICATION INSPECTION CHECKLIST

N-1

REV 0

PRCTI20230195

GENERAL NOTES:

1. ALL WORK PRESENTED IN THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
2. THE CONTRACTOR MUST HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE IN TOWER ERECTION AND RETROFIT SIMILAR TO THAT DESCRIBED HEREIN.
3. ALL CONSTRUCTION IS TO BE COMPLETE IN ACCORDANCE WITH THE ANSI/ASSE A10.48 AND ANSI/TIA-322 STANDARDS. THE CONTRACTOR MUST HAVE CONSIDERABLE WORKING KNOWLEDGE IN THESE STANDARDS TO ACCEPT THIS WORK. BY ACCEPTING THIS PROJECT, THE CONTRACTOR IS ATTESTING THAT HE HAS SUFFICIENT EXPERIENCE, ABILITY, AND KNOWLEDGE OF THE WORK TO BE PERFORMED AND IS PROPERLY LICENSED AND REGISTERED TO COMPLETE THIS WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY MATERIAL ORDERS, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE EOR. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR MAY PROCEED WITH THE PROJECT.
5. ANY WORK PERFORMED WITHOUT A PREFABRICATION MAPPING IS DONE AT THE RISK OF THE CONTRACTOR AND/OR FABRICATOR.
6. ALL MANUFACTURERS' INSTRUCTIONS FOR INSTALLATION MUST BE FOLLOWED EXACTLY AS SPECIFIED. WHEN CONFLICTING WITH THESE DRAWINGS, THE MANUFACTURER SPECIFICATIONS SHALL GOVERN.
7. ALL MATERIALS AND EQUIPMENT USED IN THE INSTALLATION OF THESE DRAWINGS SHALL BE IN NEW OR GOOD WORKING QUALITY, FREE FROM DEFECTS AND FAULTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE GIVEN WRITTEN APPROVAL FROM THE EOR PRIOR TO INSTALLATION. ALL MATERIALS SHALL BE WARRANTED FOR ONE YEAR FROM ACCEPTANCE DATE.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL INTENDED CONSTRUCTION ACTIVITY INCLUDING MATERIALS, ACCESS AND WORK SCHEDULE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND WILL BE RESPONSIBLE FOR ABIDING BY ALL REQUIREMENTS AND CONDITIONS OF THE PERMITS. WHEN APPLICABLE, THE CONTRACTOR MUST NOTIFY THE APPLICABLE JURISDICTION PRIOR TO BEGINNING OF ANY CONSTRUCTION.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS. CONSTRUCTION OF THE PROPOSED WORK SHALL MEET ANSI/ASSE A10.48, OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
10. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE INSTALLATION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENTS DURING ERECTION AND/OR FIELD ALTERATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY; SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
12. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED OR ALTERED WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE EOR.
13. INCORRECTLY FABRICATED, DAMAGED, MIS-FITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO THE EOR PRIOR TO ANY REMEDIAL OR CORRECTING ACTION. ALL ACTIONS SHALL REQUIRE EOR APPROVAL.

STEEL:

1. THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC CODE AND ASTM SPECIFICATIONS.
2. HOLES SHALL NOT BE TORCH CUT THROUGH STRUCTURAL STEEL FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC SPECIFICATIONS.
3. HOT-DIP GALVANIZE ALL ITEMS AFTER FABRICATION IN COMPLIANCE WITH ASTM A-123 UNLESS OTHERWISE SPECIFIED. ALL NEW STEEL IS TO BE PAINTED TO MATCH THE EXISTING STEEL.
4. NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLY DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION UNLESS OTHERWISE SPECIFIED.
5. ALL CONNECTIONS NOT DETAILED IN THESE DRAWINGS MUST BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS.
6. ALL BOLTED CONNECTIONS MUST BE INSTALLED TO A SNUG-TIGHTENED CONDITION PER AISC “SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM 325 OR A490 BOLTS” SECTION 8.1 UNLESS OTHERWISE SPECIFIED.
7. CONTRACTOR MAY BE REQUIRED TO STACK WASHERS FOR BOLTS WHERE THREADS ARE EXCLUDED FROM SHEAR PLANE TO OBTAIN SNUG TIGHT INSTALLATION. A NUT LOCKING DEVICE MUST BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS. GALVANIZED ASTM 325 OR A490 BOLTS SHALL NOT BE REUSED.

COLD GALVANIZATION:

1. ALL DAMAGED SURFACES SHALL BE REPAIRED WITH A COLD-GALVANIZING COATING CONFORMING TO ASTM 780. THIS COATING SHALL BE APPLIED BY BRUSH. THE GALVANIZING COMPOUND SHALL CONTAIN A MINIMUM OF 95% ± PURE ZINC. THE FINISHED COATING SHALL BE A MINIMUM THICKNESS OF 4 MILS.
2. CONTRACTOR TO USE ZINGA OR ZRC COLD GALVANIZATION COMPOUNDS OR APPROVED EQUIVALENTS.
3. CLEAN AREAS TO BE PREPARED AND REMOVE SLAG FROM WELDS FOR TREATMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. IF THE TOWER IS PAINTED, ALL TREATED AREAS ARE TO BE BRUSH PAINTED TO MATCH THE TOWER AFTER COLD GALVANIZING COMPOUND IS ALLOWED TO CURE.

U-BOLTS:

1. ALL U-BOLTS ARE TO BE ASTM A36/A307, SAE 429 GR. 2 UNLESS OTHERWISE SPECIFIED.
2. U-BOLTS SHALL MEET REQUIREMENTS OF ASME B18.31.5-2011 BENT BOLTS.
3. U-BOLT ASSEMBLY SHALL COME COMPLETE WITH NUTS (ASTM A563), WASHERS (ASTM F436), AND LOCK WASHERS.
4. FULL U-BOLT ASSEMBLY TO BE HOT-DIP GALVANIZED PER ASTM A153/A153M OR A123, AS APPLICABLE.

WELDING NOTES:

1. A;LL WELDING SHALL BE CARRIED OUT UNDER GOOD OPERATOR CONDITIONS AS DEFINED IN SECTION 5.12 OF AWS D1.1.
2. ALL ARC WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.1 (LATEST EDITION). THIS SHALL INCLUDE A CERTIFIED WELDING INSPECTION (CWI) FOR ACCEPTANCE OR REJECTION OF ALL WELDING OPERATIONS PRE-DURING-POST, USING THE ACCEPTANCE CRITERIA OF AWS D1.1. THE CWI SHALL WORK WITH THE GC ON THE LEVEL OF INTERACTION NEEDED TO CONDUCT THE WELDING INSPECTION. THE CERTIFIED WELDING INSPECTION IS THE RESPONSIBILITY OF THE GC.
3. THE CWI SHALL INDICATE, IN A WRITTEN WELDING REPORT, THAT ALL WELDING OPERTATIONS, PRE-DURING-POST, WERE CONDUCTED IN ACCORDANCE WITH AWS D1.1 INCLUDING PHOTOGRAPHS AND DOCUMENTATION SUPPORTING THE ACCEPTANCE OR REJECTION OF ALL WELDING. ALL CWI WELDING INSPECTION DOCUMENTATION AND PHOTOS SHALL BE SUBMITTED TO THE MI INSPECTOR.
4. FOR ALL WELDING, USE E 70 XX ELECTRODES, UNO.
5. SURFACES TO BE WELDED SHALL BE FREE FROM SCALE, SLAG, RUST, MOISTURE, GREASE OR ANY OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING. GRIND THE SURFACE ADJACENT TO THE WELD FOR A DISTANCE OF 2" MINIMUM ALL AROUND. ENSURE BOTH AREAS ARE 100% FREE OF ALL GALVANIZING.
6. DO NOT WELD IF THE TEMPERATURE OF THE STEEL IN THE VICINITY OF THE WELD AREAS IS BELOW 0°F. WHEN THE TEMPERATURE IS BETWEEN 0°F AND 32°F, PREHEAT AND MAINTAIN THE STEEL IN THE VICINITY OF THE WELD AREA AT 70°F DURING THE WELDING PROCESS.
7. DO NOT WELD ON WET OR FROST-COVERED SURFACES AND PROVIDE ADEQUATE PROTECTION FROM HIGH WINDS.
8. FIELD NDE MINIMUM REQUIREMENTS:
   A. ALL NDE SHALL BE IN ACCORDANCE WITH AWS D1.1.
   B. ALL TESTING LIMITATIONS SHALL BE DETAILED IN THE NDE REPORT.

MODIFICATION MATERIALS

SCOPE	SHAPE	GRADE	YIELD STRENGTH (Fy)	ULTIMATE STRENGTH (Fu)
ALL	PIPE	A53 GR. B	35 KSI	60 KSI
ALL	ANGLES	A36	36 KSI	58 KSI

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NOTES

N-2

REV 0

PRCTI20230195

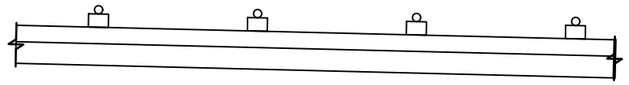
MODIFICATION SCHEDULE

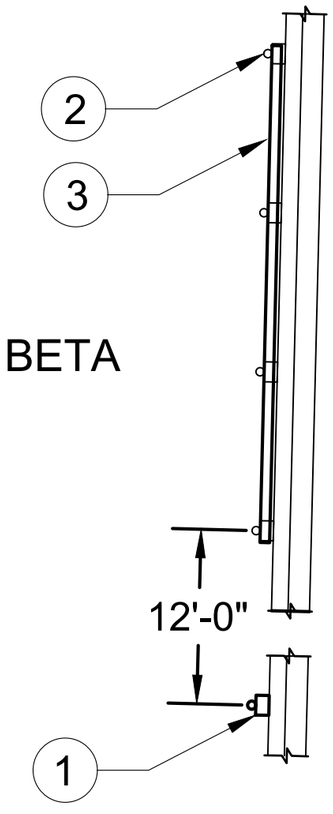
SCOPE NO.	MODIFICATION DESCRIPTION	BOTTOM ELEVATION	TOP ELEVATION	SHEET NO.
1	INSTALLATION OF NEW WALL MOUNT AND MOUNT PIPE	-	60'-0" ±	S-2
2	INSTALLATION OF NEW MOUNT PIPE	-	60'-0" ±	S-2
3	INSTALLATION OF NEW HORIZONTAL	-	60'-0" ±	S-2

NOTES:

1. APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS.
2. ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT MUST NOT BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION OF PROPOSED MODIFICATIONS.
3. ANTENNA AND COAX NOT SHOWN FOR CLARITY. SEE STRUCTURAL ANALYSIS REPORT FOR EXISTING ANTENNA LOADING AND COAX CONFIGURATION.
4. PRIOR TO FABRICATION AND INSTALLATION , CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. INFORMATION PROVIDED IS FOR QUOTING PURPOSES ONLY, AND SHALL NOT BE USED FOR FABRICATION.
5. EXISTING RRU'S AND ANCILLARY EQUIPMENT MAY NEED TO BE TEMPORARILY RELOCATED AS NECESSARY TO COMPLETE THIS MODIFICATION. EQUIPMENT IS NOT TO BE TAKEN OFF AIR AT ANY TIME DURING INSTALLATION. PLEASE CONTACT EOR IF THIS CANNOT BE MET.
6. CONTACT EOR IF PROPOSED MOUNT REINFORCEMENT DIMENSIONS CANNOT BE MET.

GAMMA





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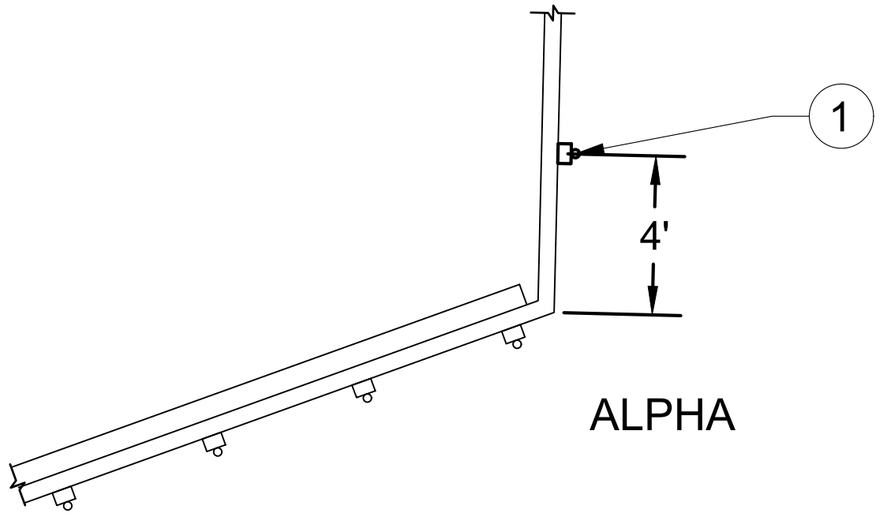

ALPHA

NO.	DATE	DESCRIPTION	BY
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MODIFICATION SCHEDULE

S-1

REV 0

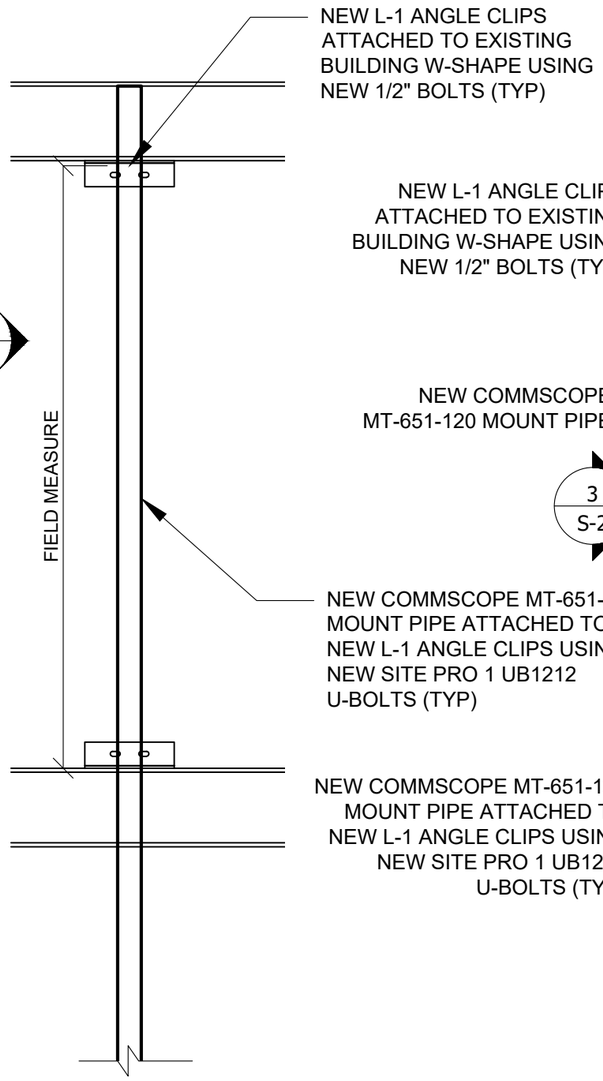
PRCTI20230195

NOTES:

1. CONTRACTOR TO FIELD VERIFY THE REQUIRED LENGTH OF THE NEW ANGLES AND MAY CUT ENDS AS REQUIRED TO AVOID UNNECESSARY OVERHANG AND OVERLAP.
2. TWO COATS OF COLD GALVANIZING COATING MUST BE APPLIED TO ALL CUT ENDS IN ACCORDANCE TO ASTM A780 PRIOR TO INSTALLATION.

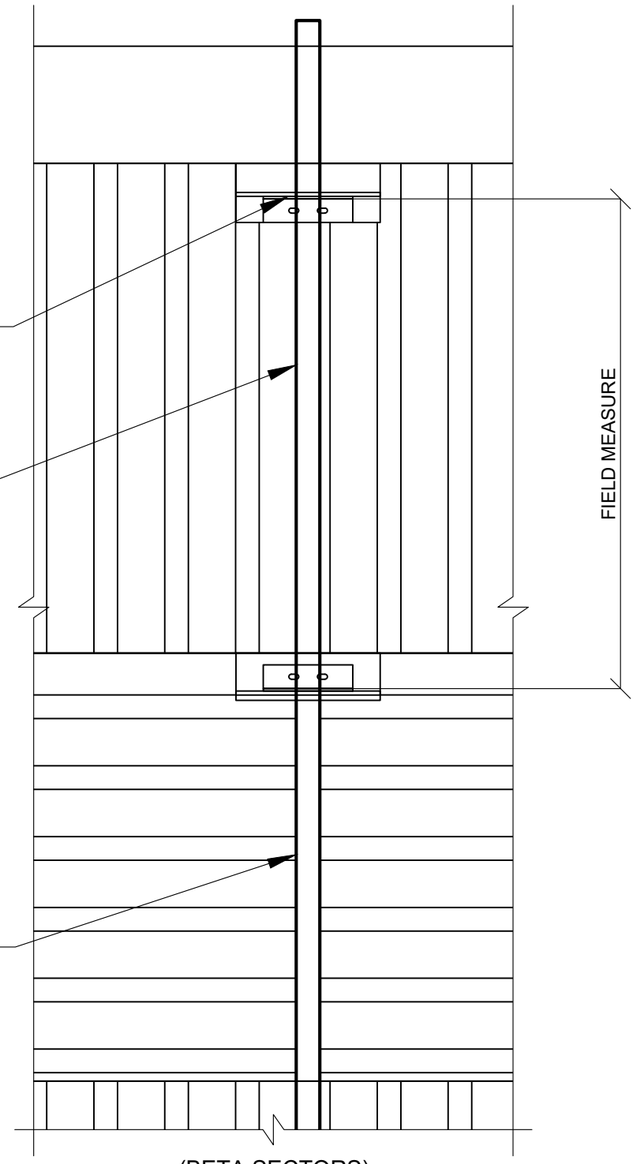
NEW WALL MOUNT & MOUNT PIPE MATERIAL LIST

PART NO.	QTY.	LENGTH	DESCRIPTION
L-1	4	9"	L5X3X1/4 ANGLE CLIPS
-	8	--	A325N BOLT, 1/2"Ø W/ NUT-LKW EA.
MT-651-120	2	10'-0"	COMMSCOPE 2 STD MOUNT PIPE
UB1212	4	--	SITE PRO 1 U-BOLT KIT



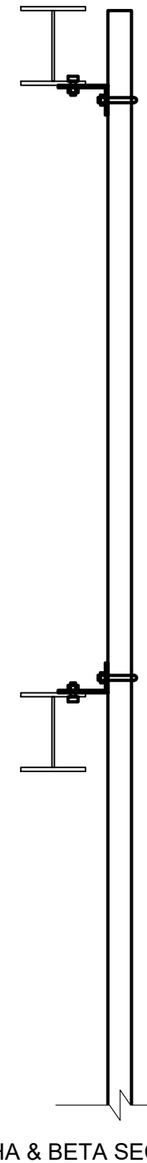
(ALPHA SECTOR)

1 S-2 NEW PIPE MOUNT INSTALLATION
FRONT VIEW
NTS



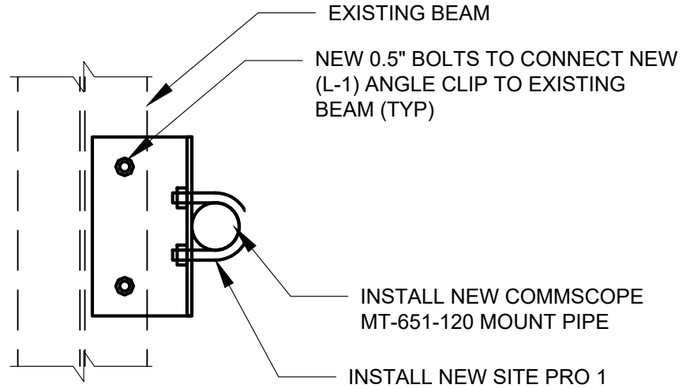
(BETA SECTORS)

2 S-2 NEW PIPE MOUNT INSTALLATION
FRONT VIEW
NTS



(ALPHA & BETA SECTORS)

3 S-2 NEW PIPE MOUNT INSTALLATION
SIDE VIEW
NTS



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WALL MOUNT & PIPE INSTALLATION DETAILS

S-2

REV 0

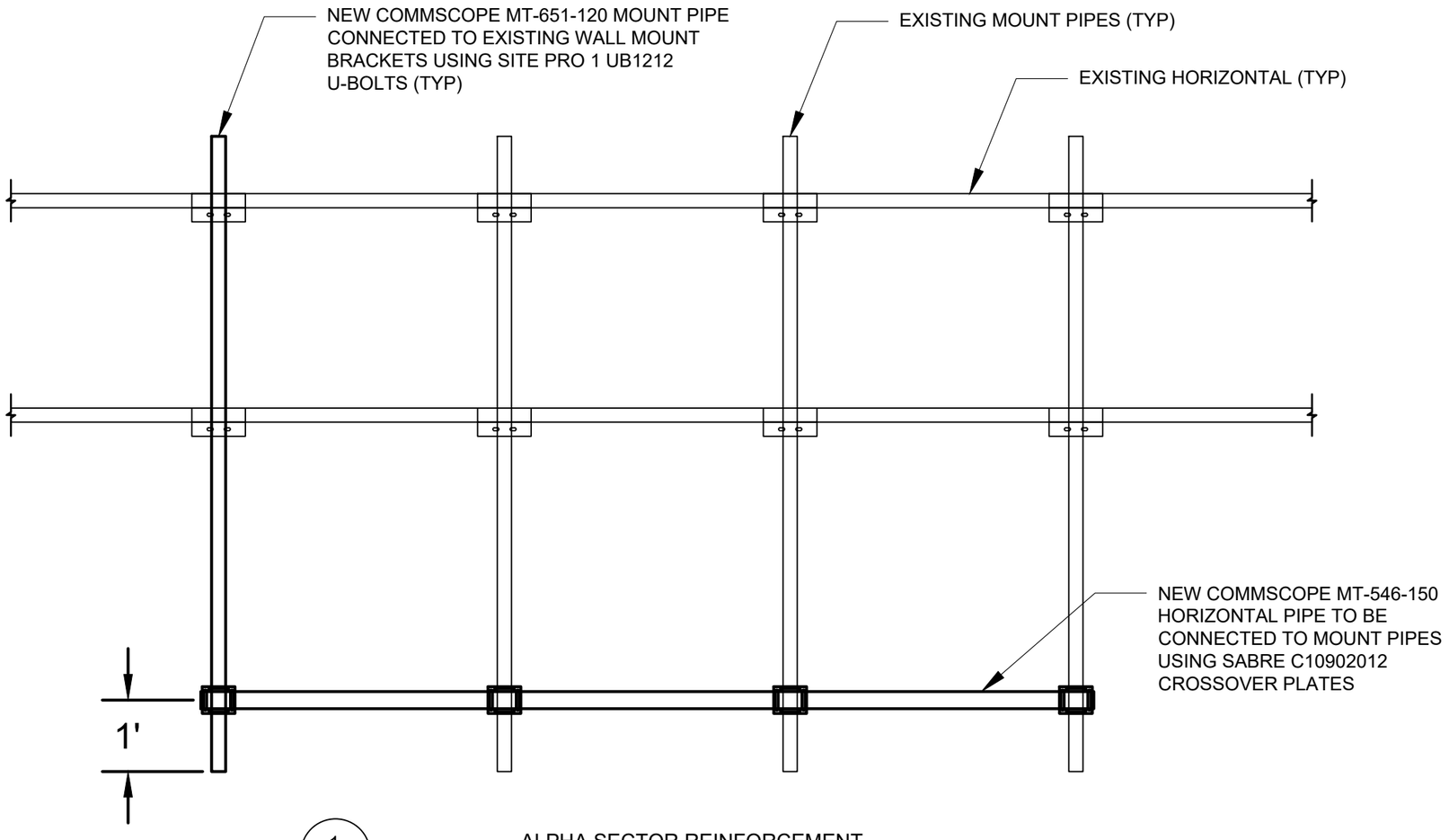
PRCTI20230195

NOTES:

1. CONTRACTOR TO FIELD VERIFY THE REQUIRED LENGTH OF THE NEW ANGLES AND MAY CUT ENDS AS REQUIRED TO AVOID UNNECESSARY OVERHANG AND OVERLAP.
2. TWO COATS OF COLD GALVANIZING COATING MUST BE APPLIED TO ALL CUT ENDS IN ACCORDANCE TO ASTM A780 PRIOR TO INSTALLATION.

ALPHA SECTOR REINFORCEMENT MATERIAL LIST

PART NO.	QTY.	LENGTH	DESCRIPTION
MT-651-120	1	10'-0"	COMMSCOPE 2 STD MOUNT PIPE
MT-546-150	1	12'-6"	COMMSCOPE 2.5 STD PIPE
C10902012	4	-	SABRE CROSSOVER PLATE KIT 2-3/8" TO 2-7/8" PIPES
UB1212	2	-	SITE PRO 1 U-BOLT KIT



1 / S-3 ALPHA SECTOR REINFORCEMENT

FRONT VIEW
NTS

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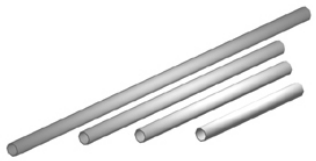
ALPHA SECTOR REINFORCEMENT

S-3 | REV 0

PRCTI20230195

MT-651-120



Plain End Pipe, 2-3/8 in OD x 120 in

Product Classification

Product Type	Plain end pipe

Dimensions

Pipe Outer Diameter	60.3 mm	2 3/8 in
Height	60.3 mm	2.4 in
Length	3048 mm	120.0 in
Weight	? kg	? lb
Width	60.3 mm	2.4 in

General Specifications

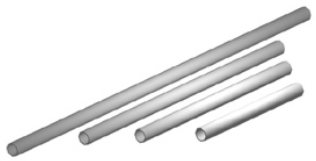
Material Type	Hot dip galvanized steel
Pipe Length	3048 mm | 120.0 in
Includes	Pipe
Package Quantity	1
Pipe, quantity	1

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

PRCTI20230195

MT-546-150



Plain End Pipe, 2-7/8 in OD x 150 in

Product Classification

Product Type	Plain end pipe

Dimensions

Pipe Outer Diameter	73.0 mm | 2 7/8 in
Height	73.0 mm | 2.9 in
Length	3810.0 mm | 150.0 in
Weight	32.7 kg | 72.0 lb
Width	73.0 mm | 2.9 in

General Specifications

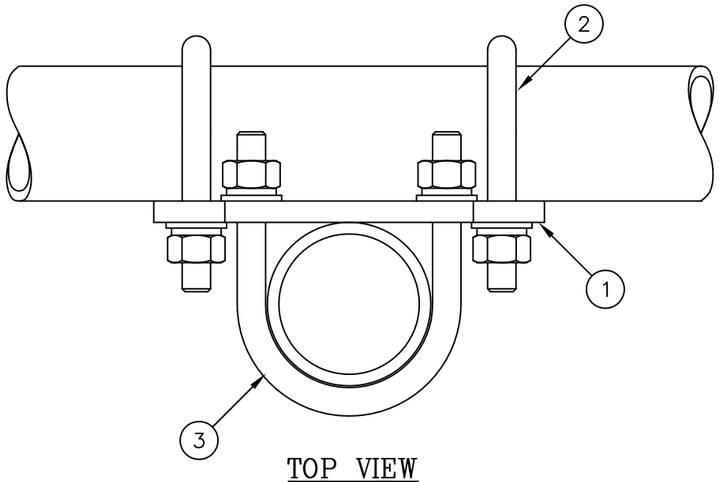
Material Type	Hot dip galvanized steel
Pipe Length	3810.0 mm | 150.0 in
Includes	Pipe
Package Quantity	1
Pipe, quantity	1

Regulatory Compliance/Certifications

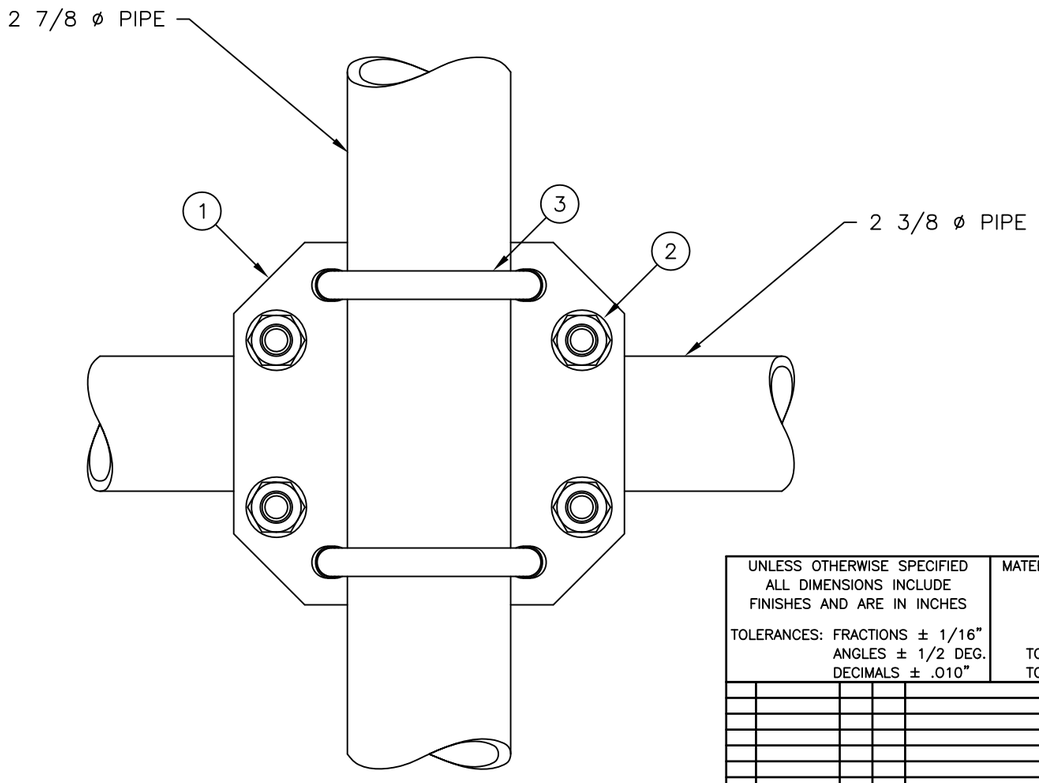
Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

PRCTI20230195

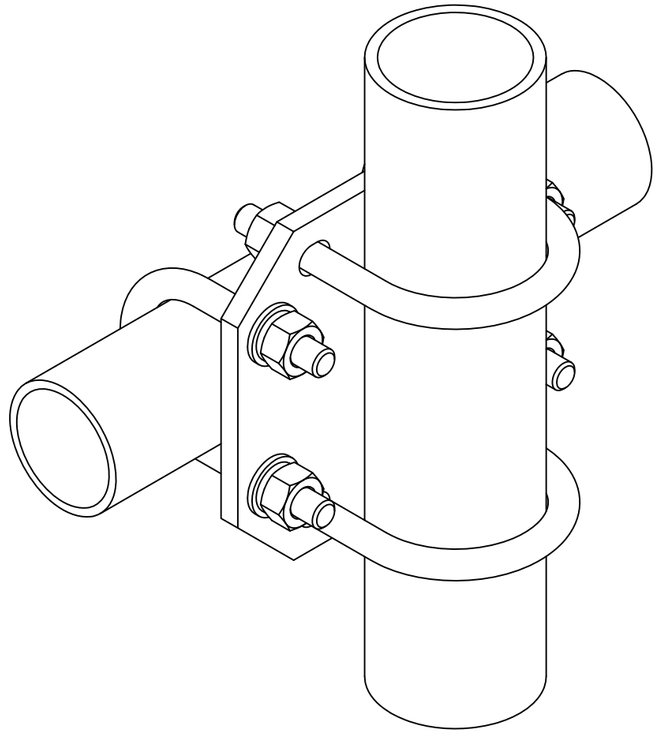
C1090212 CROSSOVER PLATE KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	1	CS03116	CROSSOVER PLATE	4
2.	2	C40034139	U-BOLT ASSEMBLY, 1/2 ø X 2 15/16 C-C	2
3.	2	C40034140	U-BOLT ASSEMBLY, 1/2 ø X 3 7/16 C-C	2
			TOTAL WEIGHT	8



TOP VIEW



FRONT VIEW



ISOMETRIC VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
Towers and Poles

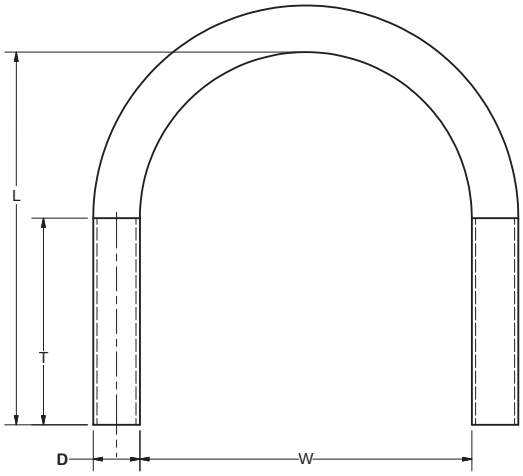
CONFIDENTIAL

CROSSOVER PLATE KIT
2 3/8"ø TO 2 7/8"ø PIPES
(1/2"ø U-BOLTS)

		SIZE	DRAWING NO.	REV
DATE	06/26/14	B	C10902012	0
DRAWN BY	WRF		SCALE	PAGE
CHECKED BY	KLE		None	1 OF 1

U-bolts

A valmont COMPANY



Features: Includes nuts, locks, and flat washers, long thread lengths. Hot-dip galvanized.

Construction: SAE J429 Gr. 2. Coarse threads.

Design Criteria: Conforms to the minimum requirements as stated in SAE J429 (Latest Revision) Grade 2 Stud, Rolled or Cut CNC threads. SAE J429 Grade 2 (Yield Fy = 57 ksi / Tensile Fu = 74 ksi). All finished goods are Hot Dip Galvanized in accordance with ASTM A123 requirements.

Part #	Diameter (D)	Width (W)	Length (L)	Thread (T)	Weight
UB3200	3/8”	2”	3”	1-1/4”	0.40 lb.
UB3212	3/8”	2-1/2”	3-5/8”	1-3/4”	0.45 lb.
UB3300	3/8”	3”	4-1/4”	2”	0.50 lb.
UB3312	3/8”	3-1/2”	4-3/4”	2”	0.50 lb.
UB3418	3/8”	4”	5-3/4”	2-1/2”	0.60 lb.
UB1400	1/2”	2”	4”	2”	0.65 lb.
UB1212	1/2”	2-1/2”	4-1/2”	2”	0.65 lb.
UB1300	1/2”	3”	5”	2”	0.70 lb.
UB1358	1/2”	3-5/8”	5-1/2”	3”	0.75 lb.
UB1306	1/2”	3-5/8”	6”	3”	0.80 lb.
UB1418	1/2”	4-1/8”	6”	3”	0.90 lb.
UB1458	1/2”	4-5/8”	7”	3”	0.90 lb.
UB5258	5/8”	2-5/8”	4-1/2”	2”	1.20 lb.
UB5358	5/8”	3-5/8”	6”	3”	1.45 lb.
UB5458	5/8”	4-5/8”	7”	3”	1.60 lb.