Alex Murshteyn, Site Acquisition Consultant
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

November 8, 2019

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification // Site: Portland S CT (ATC: 411257)
191 Middle Haddam Rd, Portland, CT 06480
N 41.56225 // W 72.5738

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 15 antennas at the 127-foot level on the existing 138.5-foot monopole tower, located at 191 Middle Haddam Rd, Portland, CT. The Council approved Verizon Wireless use of the existing tower in 2002 under Docket 206. The tower is owned by American Tower. The property is owned by Philip B. Knowlton, Jr. and Tina S. Knowlton. Verizon Wireless now intends to remove 9 of its existing antennas to replace with 6 and install them on side-by-side mounts for the LTE (700/850/2100 MHz) replacements for its AWS/LTE upgrade. Additionally, Verizon Wireless will install 6 remote radio head units (RRUs) and 1 over-voltage protector (OVP) and remove and upgrade certain cabling; altogether updating leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Town of Portland's chief elected official, First Selectwoman Susan Bransfield, its Land Use Administrator, Ashley Majorowski, ground owners Philip and Tina Knowlton, as well as American Tower, which is the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are construction drawings dated October 23, 2019 and a structural analysis dated September 12, 2019 by A.T. Engineering Service, PLLC, Mount Structural Analysis by Trylon dated August 26, 2019 and

radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analyses by A.T. Engineering Service, PLLC, dated September 12, 2019 and Mount Structural Analysis by Trylon dated August 26, 2019.

For the foregoing reasons, Verizon Wireless respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Alex Murshteyn, Site Acquisition Consultant
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

Attachments

cc: Susan Bransfield, First Selectwoman - as elected official
Ashley Majorowski, Land Use Administrator - as P&Z official
Philip and Tina Knowlton - as ground owner
American Tower Corporation - as tower owner

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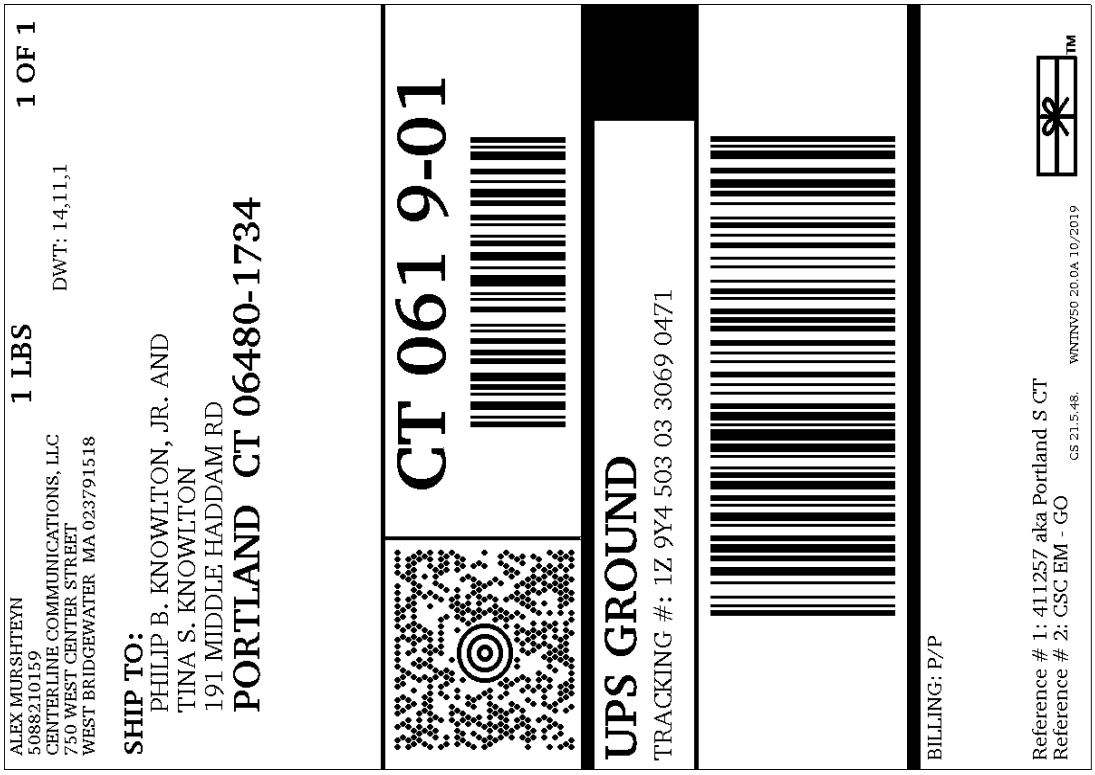

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Telecommunications Database
Publications
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Statutes & Regulations
Electric Transmission Upgrade Projects
Frequently Asked Questions

Melanie Bachman,
Executive Director

Decisions

Printable Version

DOCKET NO. 206 - Crown Atlantic Company LLC and Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a cellular telecommunications facility at 191 Middle Haddam Road, Portland, Connecticut.	}	Connecticut Siting Council

July 11, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed prime site in Portland, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Crown Atlantic Company LLC and Cellco Partnership d/b/a Verizon Wireless for the construction, maintenance and operation of a cellular telecommunications facility at the proposed prime site located at 191 Middle Haddam Road, Portland, Connecticut. We deny certification of the proposed alternate site located at 191 Middle Haddam Road, Portland, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Cellco and other entities, both public and private, but such tower shall not exceed a height of 130 feet above ground level unless the need for other wireless telecommunications providers require a height greater than 130 feet, which if approved by the Council through a petition pursuant to Sections 16-50j-38 through 16-50j-40 of the Regulations of Connecticut State Agencies, shall authorize the extension of the tower to a maximum height of 180 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location for the tower 180 feet west of the east property boundary and 180 feet north of the south property boundary that incorporates the tower radius within the lessor's property, tower foundation, antennas, equipment building, security fence, access road, utility line, and landscaping plan. The Certificate holder shall provide plans for either an architecturally treated equipment building or security fence. The D&M Plan shall also include construction plans to be submitted prior to construction for site clearing, water drainage, and erosion and sedimentation control consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. Following completion of construction, if the facility does not initially provide, or permanently ceases to provide wireless telecommunications services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment within sixty days or reapply for any continued or new use to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within sixty days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if construction and operation authorized herein is not completed within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, New Haven Register, and The Middletown Press.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The party to this proceeding is:

Crown Atlantic Company LLC
And Cellco Partnership d/b/a
Verizon Wireless

Robert Stanford, Project Manager
Crown Atlantic Company LLC
703 Hebron Avenue
Glastonbury, CT 06033

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

Content Last Modified on 12/22/2003 7:36:35 AM

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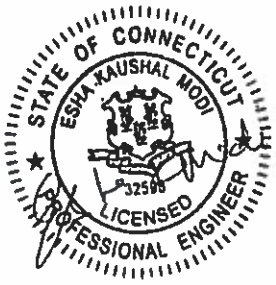
Structural Analysis Report

Structure	:	**138.5 ft Monopole**
ATC Site Name	:	**Middle Haddam Road-CROWN CT, CT**
ATC Asset Number	:	**411257**
Engineering Number	:	**12976958_C3_03**
Proposed Carrier	:	**VERIZON WIRELESS**
Carrier Site Name	:	**Portland South CT**
Carrier Site Number	:	**15096289**
Site Location	:	**191 Middle Haddam Rd** **Portland, CT 06480-1767** **41.562200,-72.573800**
County	:	**Middlesex**
Date	:	**September 12, 2019**
Max Usage	:	**52%**
Result	:	**Pass**



Prepared By:
Lucas Tait
Structural Engineer

L Tait

Reviewed By:

Authorized by "EOR"
08/26/2019 11:04 AM cosign

COA: PEC.0001553

AMERICAN TOWER CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 138.5 ft monopole to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower Drawings	EEI Job #12477 Revision II, dated May 13, 2004 Mapping by HTS, ATC Site #411257, dated March 24, 2016
Foundation Drawing	Mapping by TPS Report #TPS-CT-257, dated October 22, 2015
Geotechnical Report	CHA Project #11869.1011.1502, dated September 23, 2002

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	101 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
137.0	6	Ericsson KRY 112 20	Low Profile Platform	-	T-MOBILE
	3	RFS APXV18-209014-C			
	3	Andrew LNX-6515DS-A1M			
128	1	VZW Unused Reserve: 17704 sq in	Low Profile Platform		Verizon Wireless
119.0	6	Ericsson RRUS 11 (Band 12)	Low Profile Platform	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (2) 3" conduit (1) 1/2" Coax	AT&T MOBILITY
	6	Powerwave Allgon 7770.00			
	1	Raycap DC6-48-60-18-8F			
	3	KMW AM-X-CD-16-65-00T-RET			
	6	Powerwave Allgon LGP21401			
117.0	6	Generic 7" x 6" x 3" Diplexer			
104.0	1	RFI Antennas CC807-08	Side Arm	(2) 1/2" Coax (1) 7/8" Coax	CITY OF MIDDLETOWN, CT
100.0	1	Bird DS428E83I01T			
87.0	1	RFI Antennas CC807-08		(1) 7/8" Coax	
80.0	2	Radio Waves HP3-11	Pole Mount	(1) 7/8" Coax (2) EW90	
	1	RFI Antennas OA20-41-DIN			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
128.0	4	Antel LPA-185080/12CF___	-	(18) 1 5/8" Coax	VERIZON WIRELESS
	1	Antel BXA-70063/4CF			
	2	Antel BXA-70063/6CF_			
	2	Amphenol Antel LPA-171063-12CF-EDIN-X			
	6	Decibel DB846H80E-SX			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
138.0	1	Generic 10' Omni	Low Profile Platform	-	VERIZON WIRELESS
130.0	6	Quintel QS8656-5D (100 lbs)	Low Profile Platform	-	
127.0	3	Samsung B5/B13 RRH-BR04C	Low Profile Platform	(6) 1 5/8" Coax (1) 2.02 (51.2mm) Hybrid	
	2	RFS APL866513-44T0			
	1	Raycap RCMDC-6627-PF-48			
	4	Decibel DB846H80E-SX			
	3	Samsung B2/B66A RRH-BR049			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	37%	Pass
Shaft	49%	Pass
Base Plate	38%	Pass
Flange Plate @ 128.5'	6%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,872.4	11%
Axial (Kips)	49.82	2%
Shear (Kips)	28.60	52%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
138.0	Generic 10' Omni	VERIZON WIRELESS	0.644	0.446
130.0	Quintel QS8656-5D (100 lbs)		0.582	0.444
127.0	Samsung B2/B66A RRH-BR049		0.559	0.443
	Samsung B5/B13 RRH-BR04C			
	RFS APL866513-44T0			
	Raycap RCMDC-6627-PF-48			
	Decibel DB846H80E-SX			
80.0	Radio Waves HP3-11	CITY OF MIDDLETOWN, CT	0.234	0.327

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

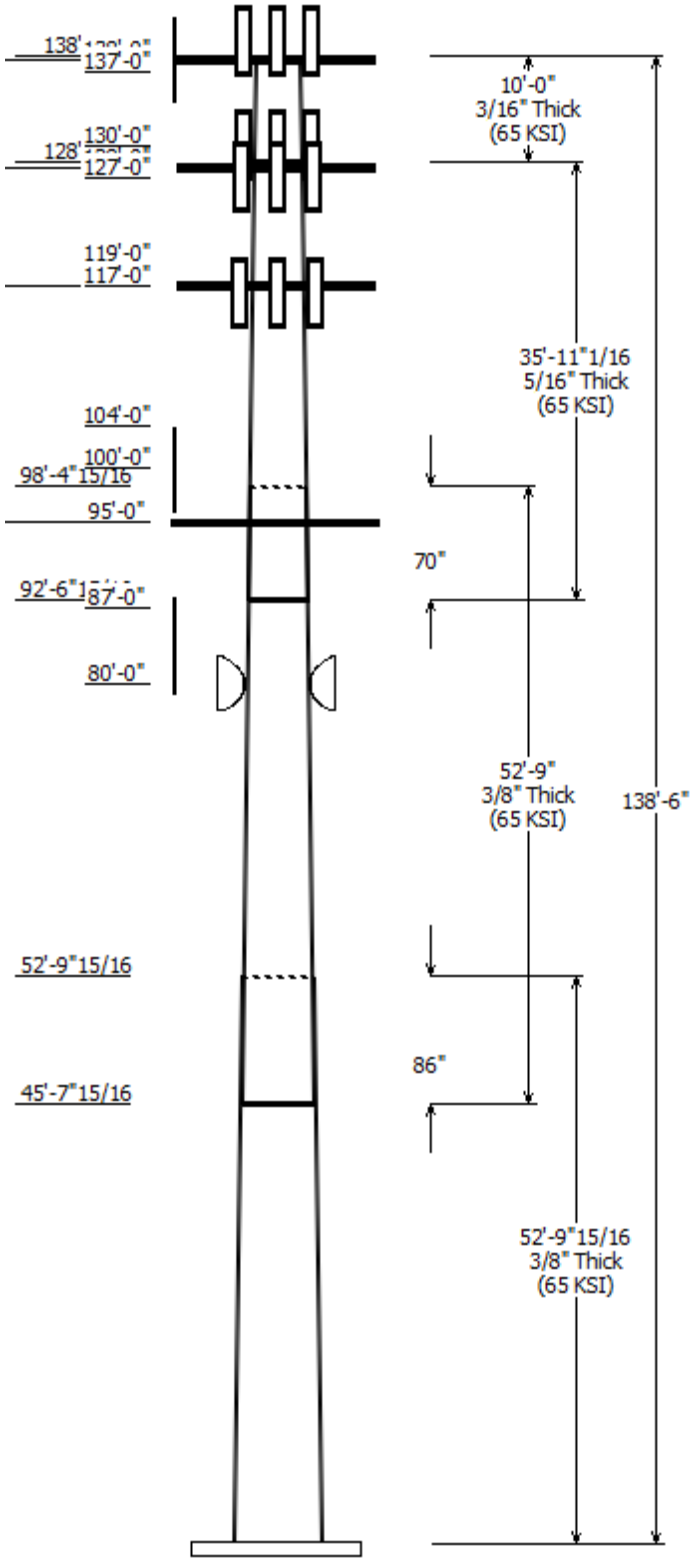
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

Client :	VERIZON WIRELESS
Pole :	411257
Code:	ANSI/TIA-222-G
Location :	Middle Haddam Road-CROWN CT, CT
Description :	138.5 ft Monopole
Struct Class :	II
Shape :	18 Sides
Exposure :	B
Height :	138.50 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.245509 (in/ft)

Sections Properties

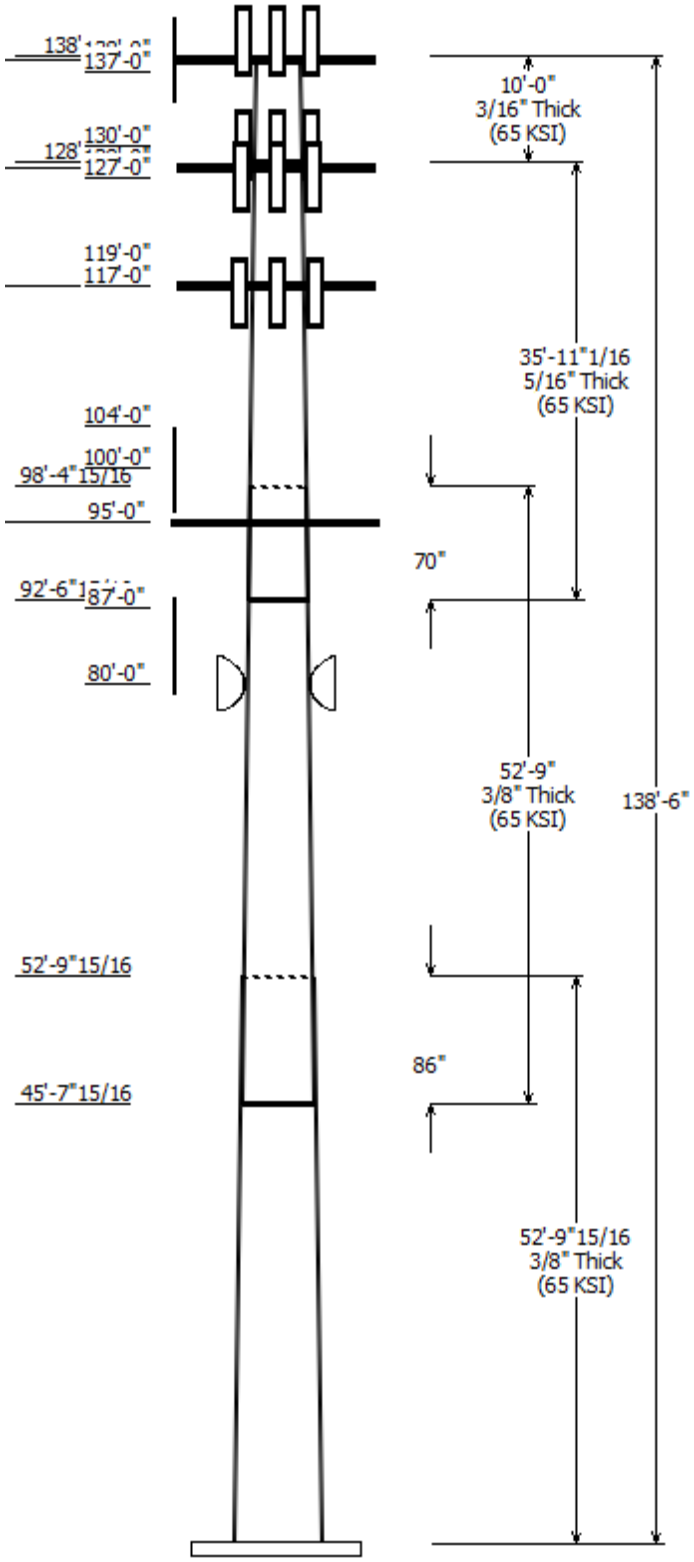
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	52.830	50.53	63.50	0.375		0.000	18 Sides	65
2	52.750	40.08	53.03	0.375	Slip Joint	86.000	18 Sides	65
3	35.920	33.32	42.14	0.313	Slip Joint	70.000	18 Sides	65
4	10.000	30.87	33.32	0.188	Butt Joint	0.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
138.000	138.000	1	Generic 10' Omni
138.000	138.000	1	Round Low Profile Platform
137.000	139.000	3	Andrew LNX-6515DS-A1M
137.000	139.000	3	RFS APXV18-209014-C
137.000	139.000	6	Ericsson KRY 112 20
130.000	130.000	6	Quintel QS8656-5D (100 lbs)
128.000	128.000	1	VZW Unused Reserve: 17704
128.000	128.000	1	Flat Low Profile Platform
127.000	127.000	3	Samsung B2/B66A RRH-BR049
127.000	127.000	4	Decibel DB846H80E-SX
127.000	127.000	1	Raycap RCMDC-6627-PF-48
127.000	127.000	2	RFS APL866513-44T0
127.000	127.000	3	Samsung B5/B13 RRH-BR04C
119.000	117.000	3	KMW AM-X-CD-16-65-00T-RET
119.000	117.000	6	Powerwave Allgon 7770.00
119.000	117.000	6	Ericsson RRUS 11 (Band 12)
119.000	117.000	1	Raycap DC6-48-60-18-8F
119.000	117.000	6	Powerwave Allgon LGP21401
117.000	117.000	6	Generic 7" x 6" x 3" Diplexer
117.000	117.000	1	Round Low Profile Platform
104.000	102.000	1	RFI Antennas CC807-08
100.000	100.000	1	Bird DS428E83I01T
95.000	95.000	3	Flat Side Arm
87.000	86.000	1	RFI Antennas CC807-08
80.000	80.000	2	Radio Waves HP3-11
80.000	82.000	1	RFI Antennas OA20-41-DIN

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	80.000	7/8" Coax	No
0.000	80.000	EW90	No
0.000	87.000	7/8" Coax	No
0.000	100.0	1/2" Coax	No
0.000	100.0	7/8" Coax	No
0.000	104.0	1/2" Coax	No
0.000	117.0	1/2" Coax	No
0.000	117.0	3" conduit	No
0.000	119.0	0.39" (10mm)	No
0.000	119.0	0.78" (19.7mm) 8	No



0.000	119.0	1 5/8" Coax	No
0.000	119.0	3" conduit	No
0.000	127.0	1 5/8" Coax	No
0.000	127.0	2.02 (51.2mm)	No
0.000	138.0	1 5/8" Coax	No
0.000	138.0	1 5/8" Coax	Yes

Load Cases

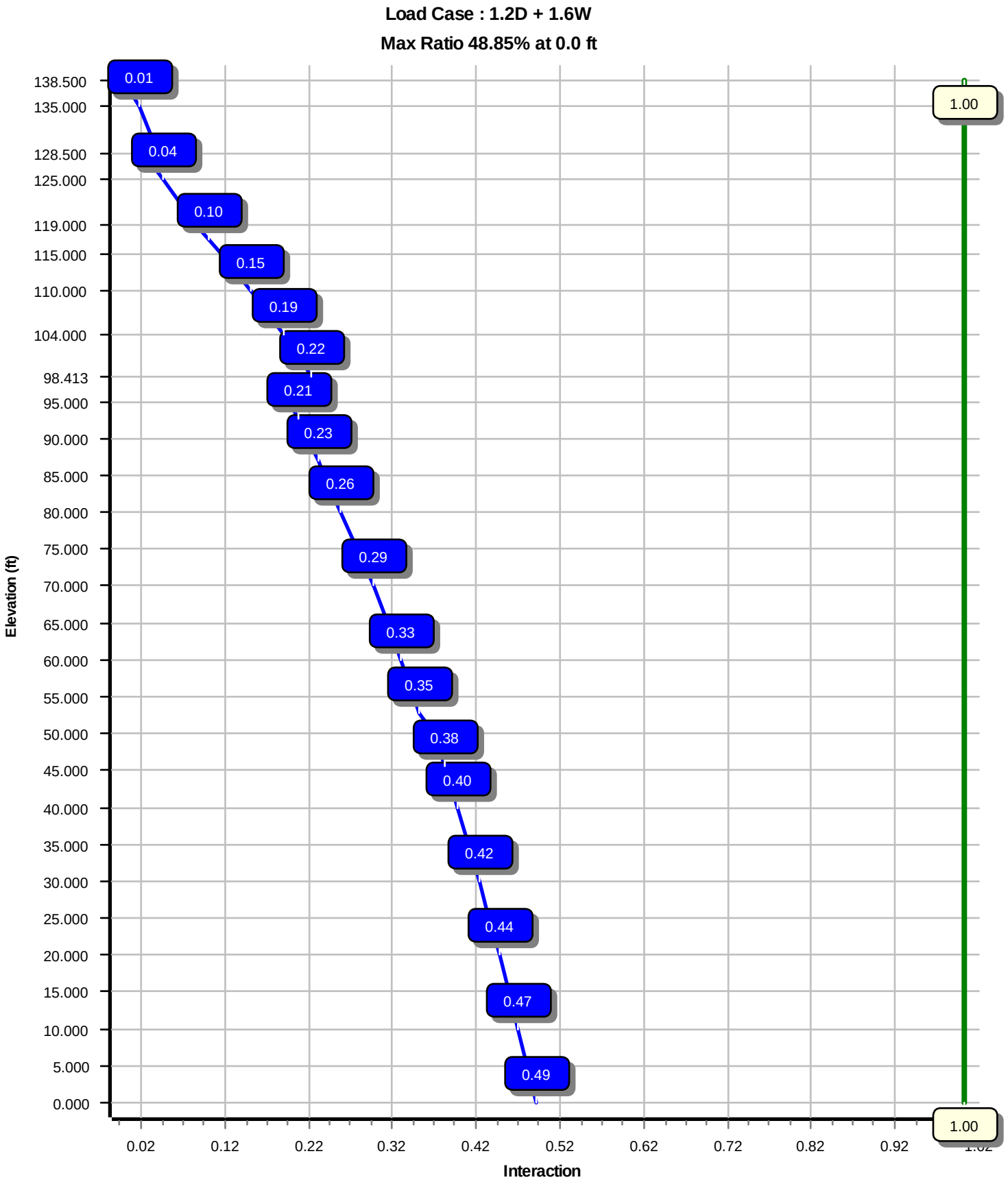
1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2872.41	28.60	49.82
0.9D + 1.6W	2855.79	28.59	37.36
1.2D + 1.0Di + 1.0Wi	792.46	8.13	71.55
(1.2 + 0.2Sds) * DL + E ELFM	242.28	2.29	49.59
(1.2 + 0.2Sds) * DL + E EMAM	285.09	2.61	49.59
(0.9 - 0.2Sds) * DL + E ELFM	240.63	2.29	34.50
(0.9 - 0.2Sds) * DL + E EMAM	283.03	2.61	34.50
1.0D + 1.0W	564.76	5.64	41.54

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	80.00	2.806	0.327


Load Case : 1.2D + 1.6W
Max Ratio 48.85% at 0.0 ft
Elevation (ft)
138.500
135.000
128.500
125.000
119.000
115.000
110.000
104.000
98.413
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.01
0.04
0.10
0.15
0.19
0.22
0.21
0.23
0.26
0.29
0.33
0.35
0.38
0.40
0.42
0.44
0.47
0.49
1.00
1.00
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 411257 Code: ANSI/TIA-222-G

Site Name: Middle Haddam Road-CROWN CT,CT Engineering Number:12976958_C3_03 9/12/2019 12:12:07 PM

Customer: VERIZON WIRELESS

Analysis Parameters

Location :	Middlesex County, CT	Height (ft) :	138.5
Code :	ANSI/TIA-222-G	Base Diameter (in) :	63.50
Shape :	18 Sides	Top Diameter (in) :	30.87
Pole Type :	Taper	Taper (in/ft) :	0.246
Pole Manfacturer :		Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	101 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.58				
T_L (sec):	6	p:	1.3	C_s:	0.042
S_s:	0.180	S_1:	0.063	C_s Max:	0.042
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.192	S_{d1}:	0.101		

Load Cases

1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	52.830	0.3750	65		0.00	12,119	63.50	0.00	75.13	37825.1	28.09	169.33	50.53	52.83	59.69	18972.0	22.00	134.75	0.245509
2-18	52.750	0.3750	65	Slip	86.00	9,868	53.03	45.66	62.68	21964.6	23.18	141.44	40.08	98.41	47.27	9418.8	17.09	106.90	0.245509
3-18	35.920	0.3125	65	Slip	70.00	4,537	42.14	92.58	41.49	9174.0	22.02	134.87	33.32	128.50	32.75	4509.3	17.04	106.65	0.245509
4-18	10.000	0.1875	65	Butt	0.00	646	33.32	128.50	19.72	2736.4	29.58	177.74	30.87	138.50	18.26	2172.2	27.27	164.65	0.245509
				Shaft Weight		27,170													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
138.00	Generic 10' Omni	1	1.00	0.000	25.00	3.000	1.00	100.40	6.575	1.00
138.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,143.60	40.772	1.00
137.00	Ericsson KRY 112 20	6	0.80	2.000	12.10	0.450	0.50	27.62	0.950	0.50
137.00	RFS APXV18-209014-C	3	0.80	2.000	18.70	3.570	0.67	106.23	4.502	0.67
137.00	Andrew LNX-6515DS-A1M	3	0.80	2.000	49.80	11.410	0.70	277.11	14.628	0.70
130.00	Quintel QS8656-5D (100 lbs)	6	0.80	0.000	100.00	11.470	0.74	357.16	14.665	0.74
128.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,138.75	44.923	1.00
128.00	VZW Unused Reserve: 17704 sq	1	0.80	0.000	1,283.50	122.940	0.90	2,165.05	207.379	0.90
127.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.880	0.50	147.22	2.771	0.50
127.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.880	0.50	126.63	2.771	0.50
127.00	RFS APL866513-44T0	2	0.80	0.000	15.70	4.050	0.82	141.82	4.956	0.82
127.00	Raycap RCMDC-6627-PF-48	1	0.80	0.000	32.00	4.060	1.00	157.15	5.405	1.00
127.00	Decibel DB846H80E-SX	4	0.80	0.000	16.00	5.870	0.73	172.12	6.202	0.73
119.00	Powerwave Allgon LGP21401	6	0.80	-2.000	14.10	1.100	0.50	38.51	1.796	0.50
119.00	Raycap DC6-48-60-18-8F	1	0.80	-2.000	20.00	1.260	1.00	71.51	1.904	1.00
119.00	Ericsson RRUS 11 (Band 12)	6	0.80	-2.000	50.00	2.570	0.67	116.69	3.596	0.67
119.00	Powerwave Allgon 7770.00	6	0.80	-2.000	35.00	5.510	0.65	166.26	6.538	0.65
119.00	KMW AM-X-CD-16-65-00T-RET	3	0.80	-2.000	48.50	8.020	0.67	206.93	10.747	0.67
117.00	Generic 7" x 6" x 3" Diplexer	6	0.80	0.000	5.00	0.350	0.50	15.80	0.747	0.50
117.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,132.74	40.450	1.00
104.00	RFI Antennas CC807-08	1	1.00	-2.000	24.30	2.850	1.00	94.73	6.120	1.00
100.00	Bird DS428E83I01T	1	1.00	0.000	8.90	0.470	0.67	25.68	0.931	1.00
95.00	Flat Side Arm	3	1.00	0.000	150.00	6.300	0.67	219.94	8.650	0.67
87.00	RFI Antennas CC807-08	1	1.00	-1.000	24.30	2.850	1.00	93.54	6.064	1.00
80.00	RFI Antennas OA20-41-DIN	1	1.00	2.000	28.00	4.410	1.00	142.34	10.407	1.00
80.00	Radio Waves HP3-11	2	1.00	0.000	50.00	8.920	1.00	220.79	10.564	1.00
Totals	Num Loadings:26	73			8,703.70			18,263.62		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	138.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-Mobile
0.00	138.00	6	1 5/8" Coax	1.98	0.82	N	6	0.00	0.00	90	0.00	Y	T-Mobile
0.00	127.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	127.00	1	2.02 (51.2mm) Hybrid	2.02	3.04	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	119.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	119.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	119.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	119.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	117.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY

0.00	117.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	104.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CITY OF
0.00	100.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	CITY OF
0.00	100.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	CITY OF
0.00	87.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	CITY OF
0.00	80.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	CITY OF
0.00	80.00	2	EW90	1.32	0.32	N	0	0.00	0.00	0	0.00	N	CITY OF

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	63.500	75.132	37,825.1	28.09	169.33	68.4	1173.	0.0	0.0
5.00		0.3750	62.272	73.671	35,661.0	27.52	166.06	69.0	1127.	0.0	1,265.9
10.00		0.3750	61.045	72.210	33,581.2	26.94	162.79	69.7	1083.	0.0	1,241.0
15.00		0.3750	59.817	70.749	31,583.8	26.36	159.51	70.4	1040.	0.0	1,216.1
20.00		0.3750	58.590	69.288	29,667.2	25.79	156.24	71.1	997.3	0.0	1,191.3
25.00		0.3750	57.362	67.827	27,829.8	25.21	152.97	71.8	955.6	0.0	1,166.4
30.00		0.3750	56.135	66.366	26,069.8	24.63	149.69	72.4	914.7	0.0	1,141.6
35.00		0.3750	54.907	64.905	24,385.7	24.05	146.42	73.1	874.8	0.0	1,116.7
40.00		0.3750	53.680	63.444	22,775.6	23.48	143.15	73.8	835.7	0.0	1,091.9
45.00		0.3750	52.452	61.983	21,238.1	22.90	139.87	74.5	797.5	0.0	1,067.0
45.66	Bot - Section 2	0.3750	52.289	61.789	21,039.5	22.82	139.44	74.6	792.5	0.0	139.7
50.00		0.3750	51.225	60.521	19,771.4	22.32	136.60	75.1	760.2	0.0	1,818.1
52.83	Top - Section 1	0.3750	51.280	60.587	19,835.8	22.35	136.75	75.1	761.9	0.0	1,166.3
55.00		0.3750	50.747	59.953	19,219.6	22.10	135.33	75.4	746.0	0.0	445.0
60.00		0.3750	49.519	58.492	17,848.4	21.52	132.05	76.1	709.9	0.0	1,007.6
65.00		0.3750	48.292	57.031	16,544.1	20.94	128.78	76.8	674.8	0.0	982.7
70.00		0.3750	47.064	55.570	15,304.9	20.37	125.50	77.4	640.5	0.0	957.9
75.00		0.3750	45.837	54.109	14,129.2	19.79	122.23	78.1	607.1	0.0	933.0
80.00		0.3750	44.609	52.648	13,015.3	19.21	118.96	78.8	574.7	0.0	908.2
85.00		0.3750	43.382	51.187	11,961.5	18.64	115.68	79.5	543.1	0.0	883.3
87.00		0.3750	42.891	50.603	11,556.4	18.40	114.38	79.8	530.7	0.0	346.4
90.00		0.3750	42.154	49.726	10,966.2	18.06	112.41	80.2	512.4	0.0	512.1
92.58	Bot - Section 3	0.3750	41.521	48.972	10,474.9	17.76	110.72	80.5	496.9	0.0	433.2
95.00		0.3750	40.927	48.265	10,027.7	17.48	109.14	80.8	482.6	0.0	739.6
98.41	Top - Section 2	0.3125	40.714	40.071	8,263.7	21.21	130.28	76.5	399.8	0.0	1,025.0
100.0		0.3125	40.324	39.685	8,027.0	20.99	129.04	76.7	392.1	0.0	215.3
104.0		0.3125	39.342	38.711	7,450.3	20.44	125.89	77.4	373.0	0.0	533.5
105.0		0.3125	39.097	38.468	7,310.6	20.30	125.11	77.5	368.3	0.0	131.3
110.0		0.3125	37.869	37.250	6,638.2	19.60	121.18	78.3	345.3	0.0	644.1
115.0		0.3125	36.641	36.032	6,008.3	18.91	117.25	79.2	323.0	0.0	623.4
117.0		0.3125	36.150	35.545	5,768.0	18.63	115.68	79.5	314.3	0.0	243.6
119.0		0.3125	35.659	35.058	5,534.1	18.36	114.11	79.8	305.7	0.0	240.2
120.0		0.3125	35.414	34.815	5,419.6	18.22	113.32	80.0	301.4	0.0	118.9
125.0		0.3125	34.186	33.597	4,870.7	17.53	109.40	80.8	280.6	0.0	582.0
127.0		0.3125	33.695	33.110	4,661.9	17.25	107.83	81.1	272.5	0.0	227.0
128.0		0.3125	33.450	32.867	4,559.8	17.11	107.04	81.3	268.5	0.0	112.3
128.5	Top - Section 3	0.3125	33.327	32.745	4,509.3	17.04	106.65	81.4	266.5	0.0	55.8
128.5	Bot - Section 4	0.1875	33.327	19.721	2,736.4	29.58	177.74	66.6	161.7	0.0	
130.0		0.1875	32.959	19.502	2,646.2	29.23	175.78	67.0	158.1	0.0	100.1
135.0		0.1875	31.731	18.772	2,359.9	28.08	169.23	68.4	146.5	0.0	325.6
137.0		0.1875	31.240	18.480	2,251.4	27.62	166.61	68.9	141.9	0.0	126.8
138.0		0.1875	30.995	18.334	2,198.4	27.38	165.31	69.2	139.7	0.0	62.6
138.5		0.1875	30.872	18.260	2,172.2	27.27	164.65	69.3	138.6	0.0	31.1
											27,169.6

Load Case: 1.2D + 1.6W — 101 mph with No Ice — 21 Iterations

Gust Response Factor :1.10 — Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		264.3	0.0					0.0	0.0	264.3	0.0	0.0	0.0
5.00		523.4	1,519.0					0.0	276.7	523.4	1,795.7	0.0	0.0
10.00		513.1	1,489.2					0.0	276.7	513.1	1,765.9	0.0	0.0
15.00		502.8	1,459.4					0.0	276.7	502.8	1,736.1	0.0	0.0
20.00		492.5	1,429.5					0.0	276.7	492.5	1,706.3	0.0	0.0
25.00		482.2	1,399.7					0.0	276.7	482.2	1,676.4	0.0	0.0
30.00		477.4	1,369.9					0.0	276.7	477.4	1,646.6	0.0	0.0
35.00		482.4	1,340.1					0.0	276.7	482.4	1,616.8	0.0	0.0
40.00		490.0	1,310.2					0.0	276.7	490.0	1,586.9	0.0	0.0
45.00		279.5	1,280.4					0.0	276.7	279.5	1,557.1	0.0	0.0
45.66	Bot - Section 2	251.8	167.6					0.0	36.7	251.8	204.3	0.0	0.0
50.00		362.2	2,181.7					0.0	240.0	362.2	2,421.7	0.0	0.0
52.83	Top - Section 1	253.5	1,399.5					0.0	156.6	253.5	1,556.1	0.0	0.0
55.00		364.1	534.0					0.0	120.1	364.1	654.1	0.0	0.0
60.00		507.7	1,209.1					0.0	276.7	507.7	1,485.8	0.0	0.0
65.00		506.6	1,179.3					0.0	276.7	506.6	1,456.0	0.0	0.0
70.00		504.3	1,149.5					0.0	276.7	504.3	1,426.2	0.0	0.0
75.00		500.9	1,119.6					0.0	276.7	500.9	1,396.4	0.0	0.0
80.00	Appurtenance(s)	496.6	1,089.8	902.0	0.0	359.6	153.6	0.0	276.7	1,398.6	1,520.1	0.0	0.0
85.00		345.1	1,060.0					0.0	270.9	345.1	1,330.9	0.0	0.0
87.00	Appurtenance(s)	244.2	415.6	117.8	0.0	-117.8	29.2	0.0	108.4	362.0	553.2	0.0	0.0
90.00		271.0	614.5					0.0	161.4	271.0	775.9	0.0	0.0
92.58	Bot - Section 3	242.8	519.9					0.0	138.8	242.8	658.7	0.0	0.0
95.00	Appurtenance(s)	283.0	887.5	538.5	0.0	0.0	540.0	0.0	130.2	821.5	1,557.7	0.0	0.0
98.41	Top - Section 2	241.1	1,230.1					0.0	183.6	241.1	1,413.6	0.0	0.0
100.00	Appurtenance(s)	266.3	258.4	13.6	0.0	0.0	10.7	0.0	85.3	279.9	354.4	0.0	0.0
104.00	Appurtenance(s)	237.3	640.2	123.7	0.0	-247.3	29.2	0.0	212.8	361.0	882.2	0.0	0.0
105.00		280.2	157.6					0.0	53.0	280.2	210.6	0.0	0.0
110.00		461.7	773.0					0.0	265.1	461.7	1,038.1	0.0	0.0
115.00		318.7	748.1					0.0	265.1	318.7	1,013.2	0.0	0.0
117.00	Appurtenance(s)	179.5	292.3	1,017.2	0.0	0.0	1,836.0	0.0	106.1	1,196.7	2,234.3	0.0	0.0
119.00	Appurtenance(s)	133.7	288.3	1,895.5	0.0	-3,790.9	912.1	0.0	87.5	2,029.2	1,287.9	0.0	0.0
120.00		263.2	142.7					0.0	21.4	263.2	164.0	0.0	0.0
125.00		304.9	698.4					0.0	106.8	304.9	805.2	0.0	0.0
127.00	Appurtenance(s)	128.8	272.4	1,237.5	0.0	0.0	709.8	0.0	42.7	1,366.2	1,024.9	0.0	0.0
128.00	Appurtenance(s)	64.0	134.7	5,307.1	0.0	0.0	3,340.2	0.0	11.8	5,371.1	3,486.7	0.0	0.0
128.50	Top - Section 3	84.8	67.0					0.0	5.9	84.8	72.9	0.0	0.0
130.00	Appurtenance(s)	271.5	120.1	1,894.8	0.0	0.0	720.0	0.0	17.7	2,166.3	857.8	0.0	0.0
135.00		289.6	390.7					0.0	59.0	289.6	449.8	0.0	0.0
137.00	Appurtenance(s)	122.0	152.1	1,232.1	0.0	2,464.1	333.7	0.0	23.6	1,354.1	509.4	0.0	0.0
138.00	Appurtenance(s)	60.6	75.2	1,168.5	0.0	0.0	1,830.0	0.0	11.8	1,229.1	1,917.0	0.0	0.0
138.50		20.1	37.4					0.0	0.0	20.1	37.4	0.0	0.0
								Totals:		28,817.2	49,844.4	0.00	0.00

Load Case: 1.2D + 1.6W 101 mph with No Ice 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.82	-28.60	0.00	-2,872.41	0.00	2,872.41	4,622.17	2,311.08	12,011.9	6,014.90	0.00	0.00	0.488
5.00	-47.97	-28.16	0.00	-2,729.42	0.00	2,729.42	4,577.30	2,288.65	11,662.6	5,839.99	0.06	-0.11	0.478
10.00	-46.15	-27.73	0.00	-2,588.61	0.00	2,588.61	4,530.64	2,265.32	11,313.4	5,665.13	0.23	-0.21	0.467
15.00	-44.37	-27.30	0.00	-2,449.96	0.00	2,449.96	4,482.20	2,241.10	10,964.6	5,490.46	0.50	-0.32	0.456
20.00	-42.62	-26.88	0.00	-2,313.45	0.00	2,313.45	4,431.97	2,215.98	10,616.4	5,316.12	0.90	-0.43	0.445
25.00	-40.89	-26.46	0.00	-2,179.06	0.00	2,179.06	4,379.95	2,189.98	10,269.2	5,142.24	1.40	-0.53	0.433
30.00	-39.20	-26.04	0.00	-2,046.76	0.00	2,046.76	4,326.15	2,163.08	9,923.16	4,968.95	2.02	-0.64	0.421
35.00	-37.54	-25.61	0.00	-1,916.57	0.00	1,916.57	4,270.57	2,135.29	9,578.57	4,796.40	2.75	-0.75	0.409
40.00	-35.92	-25.16	0.00	-1,788.53	0.00	1,788.53	4,213.20	2,106.60	9,235.72	4,624.72	3.59	-0.86	0.395
45.00	-34.34	-24.90	0.00	-1,662.71	0.00	1,662.71	4,154.05	2,077.02	8,894.88	4,454.05	4.55	-0.97	0.382
45.66	-34.11	-24.67	0.00	-1,646.20	0.00	1,646.20	4,146.06	2,073.03	8,849.83	4,431.49	4.68	-0.98	0.380
50.00	-31.67	-24.31	0.00	-1,539.20	0.00	1,539.20	4,093.11	2,046.55	8,556.32	4,284.52	5.62	-1.07	0.367
52.83	-30.09	-24.06	0.00	-1,470.40	0.00	1,470.40	4,095.88	2,047.94	8,571.50	4,292.12	6.27	-1.13	0.350
55.00	-29.42	-23.72	0.00	-1,418.20	0.00	1,418.20	4,068.92	2,034.46	8,425.29	4,218.91	6.80	-1.18	0.344
60.00	-27.90	-23.23	0.00	-1,299.62	0.00	1,299.62	4,005.50	2,002.75	8,090.36	4,051.19	8.09	-1.28	0.328
65.00	-26.42	-22.73	0.00	-1,183.50	0.00	1,183.50	3,940.29	1,970.15	7,758.36	3,884.94	9.49	-1.38	0.311
70.00	-24.97	-22.23	0.00	-1,069.85	0.00	1,069.85	3,873.30	1,936.65	7,429.56	3,720.30	10.99	-1.48	0.294
75.00	-23.55	-21.73	0.00	-958.69	0.00	958.69	3,804.52	1,902.26	7,104.24	3,557.40	12.59	-1.57	0.276
80.00	-22.04	-20.33	0.00	-849.67	0.00	849.67	3,733.96	1,866.98	6,782.67	3,396.38	14.28	-1.66	0.256
85.00	-20.70	-19.96	0.00	-748.04	0.00	748.04	3,661.61	1,830.81	6,465.12	3,237.37	16.07	-1.75	0.237
87.00	-20.14	-19.60	0.00	-708.12	0.00	708.12	3,632.18	1,816.09	6,339.29	3,174.36	16.81	-1.79	0.229
90.00	-19.36	-19.32	0.00	-649.32	0.00	649.32	3,587.48	1,793.74	6,151.87	3,080.51	17.95	-1.84	0.216
92.58	-18.70	-19.07	0.00	-599.48	0.00	599.48	3,548.53	1,774.27	5,992.00	3,000.45	18.96	-1.88	0.205
95.00	-17.15	-18.21	0.00	-553.34	0.00	553.34	3,511.56	1,755.78	5,843.19	2,925.94	19.92	-1.91	0.194
98.41	-15.74	-17.93	0.00	-491.18	0.00	491.18	2,757.29	1,378.64	4,577.91	2,292.36	21.31	-1.97	0.220
100.00	-15.38	-17.65	0.00	-462.74	0.00	462.74	2,739.94	1,369.97	4,504.91	2,255.80	21.96	-1.99	0.211
104.00	-14.50	-17.27	0.00	-392.14	0.00	392.14	2,695.39	1,347.70	4,322.06	2,164.24	23.66	-2.05	0.187
105.00	-14.29	-16.99	0.00	-374.87	0.00	374.87	2,684.08	1,342.04	4,276.63	2,141.49	24.09	-2.06	0.181
110.00	-13.25	-16.50	0.00	-289.93	0.00	289.93	2,626.44	1,313.22	4,051.27	2,028.65	26.28	-2.13	0.148
115.00	-12.24	-16.15	0.00	-207.41	0.00	207.41	2,567.01	1,283.50	3,829.12	1,917.41	28.54	-2.18	0.113
117.00	-10.05	-14.88	0.00	-175.10	0.00	175.10	2,542.74	1,271.37	3,741.21	1,873.39	29.46	-2.20	0.098
119.00	-8.84	-12.80	0.00	-145.35	0.00	145.35	2,518.18	1,259.09	3,653.88	1,829.66	30.39	-2.22	0.083
120.00	-8.68	-12.53	0.00	-132.54	0.00	132.54	2,505.80	1,252.90	3,610.43	1,807.90	30.85	-2.22	0.077
125.00	-7.88	-12.20	0.00	-69.87	0.00	69.87	2,442.80	1,221.40	3,395.49	1,700.27	33.20	-2.25	0.044
127.00	-6.91	-10.80	0.00	-45.47	0.00	45.47	2,417.10	1,208.55	3,310.62	1,657.77	34.14	-2.26	0.030
128.00	-3.64	-5.29	0.00	-34.68	0.00	34.68	2,404.14	1,202.07	3,268.43	1,636.65	34.61	-2.26	0.023
128.50	-3.57	-5.20	0.00	-32.03	0.00	32.03	2,397.64	1,198.82	3,247.40	1,626.11	34.85	-2.26	0.021
128.50	-3.57	-5.20	0.00	-32.03	0.00	32.03	1,182.32	591.16	1,613.50	807.95	34.85	-2.26	0.043
130.00	-2.80	-3.01	0.00	-24.23	0.00	24.23	1,176.33	588.17	1,587.39	794.88	35.56	-2.26	0.033
135.00	-2.36	-2.70	0.00	-9.20	0.00	9.20	1,155.21	577.60	1,500.16	751.20	37.93	-2.27	0.014
137.00	-1.90	-1.33	0.00	-1.34	0.00	1.34	1,146.26	573.13	1,465.23	733.70	38.89	-2.27	0.003
138.00	-0.04	-0.02	0.00	-0.01	0.00	0.01	1,141.67	570.84	1,447.77	724.96	39.36	-2.27	0.000
138.50	0.00	-0.02	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	39.60	-2.27	0.000

Load Case: 0.9D + 1.6W — 101 mph with No Ice (Reduced DL) — 21 Iterations

Gust Response Factor :1.10 — Wind Importance Factor 1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		264.3	0.0					0.0	0.0	264.3	0.0	0.0	0.0
5.00		523.4	1,139.3					0.0	207.5	523.4	1,346.8	0.0	0.0
10.00		513.1	1,116.9					0.0	207.5	513.1	1,324.4	0.0	0.0
15.00		502.8	1,094.5					0.0	207.5	502.8	1,302.1	0.0	0.0
20.00		492.5	1,072.2					0.0	207.5	492.5	1,279.7	0.0	0.0
25.00		482.2	1,049.8					0.0	207.5	482.2	1,257.3	0.0	0.0
30.00		477.4	1,027.4					0.0	207.5	477.4	1,234.9	0.0	0.0
35.00		482.4	1,005.0					0.0	207.5	482.4	1,212.6	0.0	0.0
40.00		490.0	982.7					0.0	207.5	490.0	1,190.2	0.0	0.0
45.00		279.5	960.3					0.0	207.5	279.5	1,167.8	0.0	0.0
45.66	Bot - Section 2	251.8	125.7					0.0	27.5	251.8	153.3	0.0	0.0
50.00		362.2	1,636.3					0.0	180.0	362.2	1,816.3	0.0	0.0
52.83	Top - Section 1	253.5	1,049.6					0.0	117.5	253.5	1,167.1	0.0	0.0
55.00		364.1	400.5					0.0	90.1	364.1	490.6	0.0	0.0
60.00		507.7	906.8					0.0	207.5	507.7	1,114.4	0.0	0.0
65.00		506.6	884.5					0.0	207.5	506.6	1,092.0	0.0	0.0
70.00		504.3	862.1					0.0	207.5	504.3	1,069.6	0.0	0.0
75.00		500.9	839.7					0.0	207.5	500.9	1,047.3	0.0	0.0
80.00	Appurtenance(s)	496.6	817.4	902.0	0.0	359.6	115.2	0.0	207.5	1,398.6	1,140.1	0.0	0.0
85.00		345.1	795.0					0.0	203.2	345.1	998.2	0.0	0.0
87.00	Appurtenance(s)	244.2	311.7	117.8	0.0	-117.8	21.9	0.0	81.3	362.0	414.9	0.0	0.0
90.00		271.0	460.9					0.0	121.0	271.0	581.9	0.0	0.0
92.58	Bot - Section 3	242.8	389.9					0.0	104.1	242.8	494.0	0.0	0.0
95.00	Appurtenance(s)	283.0	665.6	538.5	0.0	0.0	405.0	0.0	97.6	821.5	1,168.3	0.0	0.0
98.41	Top - Section 2	241.1	922.5					0.0	137.7	241.1	1,060.2	0.0	0.0
100.00	Appurtenance(s)	266.3	193.8	13.6	0.0	0.0	8.0	0.0	64.0	279.9	265.8	0.0	0.0
104.00	Appurtenance(s)	237.3	480.2	123.7	0.0	-247.3	21.9	0.0	159.6	361.0	661.7	0.0	0.0
105.00		280.2	118.2					0.0	39.8	280.2	158.0	0.0	0.0
110.00		461.7	579.7					0.0	198.9	461.7	778.6	0.0	0.0
115.00		318.7	561.1					0.0	198.9	318.7	759.9	0.0	0.0
117.00	Appurtenance(s)	179.5	219.2	1,017.2	0.0	0.0	1,377.0	0.0	79.5	1,196.7	1,675.7	0.0	0.0
119.00	Appurtenance(s)	133.7	216.2	1,895.5	0.0	-3,790.9	684.1	0.0	65.6	2,029.2	965.9	0.0	0.0
120.00		263.2	107.0					0.0	16.0	263.2	123.0	0.0	0.0
125.00		304.9	523.8					0.0	80.1	304.9	603.9	0.0	0.0
127.00	Appurtenance(s)	128.8	204.3	1,237.5	0.0	0.0	532.3	0.0	32.0	1,366.2	768.7	0.0	0.0
128.00	Appurtenance(s)	64.0	101.0	5,307.1	0.0	0.0	2,505.2	0.0	8.9	5,371.1	2,615.0	0.0	0.0
128.50	Top - Section 3	84.8	50.2					0.0	4.4	84.8	54.7	0.0	0.0
130.00	Appurtenance(s)	271.5	90.1	1,894.8	0.0	0.0	540.0	0.0	13.3	2,166.3	643.4	0.0	0.0
135.00		289.6	293.0					0.0	44.3	289.6	337.3	0.0	0.0
137.00	Appurtenance(s)	122.0	114.1	1,232.1	0.0	2,464.1	250.3	0.0	17.7	1,354.1	382.1	0.0	0.0
138.00	Appurtenance(s)	60.6	56.4	1,168.5	0.0	0.0	1,372.5	0.0	8.9	1,229.1	1,437.7	0.0	0.0
138.50		20.1	28.0					0.0	0.0	20.1	28.0	0.0	0.0
								Totals:		28,817.2	37,383.3	0.00	0.00

Load Case: 0.9D + 1.6W 101 mph with No Ice (Reduced DL) 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.36	-28.59	0.00	-2,855.79	0.00	2,855.79	4,622.17	2,311.08	12,011.9	6,014.90	0.00	0.00	0.483
5.00	-35.96	-28.13	0.00	-2,712.85	0.00	2,712.85	4,577.30	2,288.65	11,662.6	5,839.99	0.06	-0.10	0.473
10.00	-34.58	-27.68	0.00	-2,572.21	0.00	2,572.21	4,530.64	2,265.32	11,313.4	5,665.13	0.22	-0.21	0.462
15.00	-33.23	-27.23	0.00	-2,433.84	0.00	2,433.84	4,482.20	2,241.10	10,964.6	5,490.46	0.50	-0.32	0.451
20.00	-31.91	-26.79	0.00	-2,297.70	0.00	2,297.70	4,431.97	2,215.98	10,616.4	5,316.12	0.89	-0.42	0.440
25.00	-30.61	-26.35	0.00	-2,163.76	0.00	2,163.76	4,379.95	2,189.98	10,269.2	5,142.24	1.39	-0.53	0.428
30.00	-29.33	-25.92	0.00	-2,032.00	0.00	2,032.00	4,326.15	2,163.08	9,923.16	4,968.95	2.00	-0.64	0.416
35.00	-28.07	-25.47	0.00	-1,902.42	0.00	1,902.42	4,270.57	2,135.29	9,578.57	4,796.40	2.73	-0.74	0.403
40.00	-26.84	-25.02	0.00	-1,775.06	0.00	1,775.06	4,213.20	2,106.60	9,235.72	4,624.72	3.57	-0.85	0.390
45.00	-25.65	-24.75	0.00	-1,649.98	0.00	1,649.98	4,154.05	2,077.02	8,894.88	4,454.05	4.52	-0.96	0.377
45.66	-25.48	-24.52	0.00	-1,633.57	0.00	1,633.57	4,146.06	2,073.03	8,849.83	4,431.49	4.65	-0.97	0.375
50.00	-23.64	-24.15	0.00	-1,527.25	0.00	1,527.25	4,093.11	2,046.55	8,556.32	4,284.52	5.58	-1.07	0.362
52.83	-22.46	-23.90	0.00	-1,458.90	0.00	1,458.90	4,095.88	2,047.94	8,571.50	4,292.12	6.23	-1.13	0.346
55.00	-21.94	-23.55	0.00	-1,407.05	0.00	1,407.05	4,068.92	2,034.46	8,425.29	4,218.91	6.75	-1.17	0.339
60.00	-20.80	-23.06	0.00	-1,289.29	0.00	1,289.29	4,005.50	2,002.75	8,090.36	4,051.19	8.04	-1.27	0.324
65.00	-19.68	-22.56	0.00	-1,174.01	0.00	1,174.01	3,940.29	1,970.15	7,758.36	3,884.94	9.42	-1.37	0.307
70.00	-18.59	-22.06	0.00	-1,061.22	0.00	1,061.22	3,873.30	1,936.65	7,429.56	3,720.30	10.91	-1.47	0.290
75.00	-17.52	-21.56	0.00	-950.93	0.00	950.93	3,804.52	1,902.26	7,104.24	3,557.40	12.50	-1.56	0.272
80.00	-16.39	-20.15	0.00	-842.78	0.00	842.78	3,733.96	1,866.98	6,782.67	3,396.38	14.18	-1.65	0.253
85.00	-15.38	-19.79	0.00	-742.01	0.00	742.01	3,661.61	1,830.81	6,465.12	3,237.37	15.96	-1.74	0.234
87.00	-14.96	-19.43	0.00	-702.42	0.00	702.42	3,632.18	1,816.09	6,339.29	3,174.36	16.70	-1.77	0.226
90.00	-14.37	-19.15	0.00	-644.13	0.00	644.13	3,587.48	1,793.74	6,151.87	3,080.51	17.83	-1.82	0.213
92.58	-13.87	-18.90	0.00	-594.71	0.00	594.71	3,548.53	1,774.27	5,992.00	3,000.45	18.82	-1.86	0.202
95.00	-12.72	-18.06	0.00	-548.96	0.00	548.96	3,511.56	1,755.78	5,843.19	2,925.94	19.78	-1.90	0.191
98.41	-11.66	-17.79	0.00	-487.34	0.00	487.34	2,757.29	1,378.64	4,577.91	2,292.36	21.15	-1.95	0.217
100.00	-11.39	-17.51	0.00	-459.12	0.00	459.12	2,739.94	1,369.97	4,504.91	2,255.80	21.81	-1.97	0.208
104.00	-10.73	-17.13	0.00	-389.10	0.00	389.10	2,695.39	1,347.70	4,322.06	2,164.24	23.49	-2.03	0.184
105.00	-10.57	-16.85	0.00	-371.97	0.00	371.97	2,684.08	1,342.04	4,276.63	2,141.49	23.92	-2.05	0.178
110.00	-9.79	-16.37	0.00	-287.72	0.00	287.72	2,626.44	1,313.22	4,051.27	2,028.65	26.10	-2.11	0.146
115.00	-9.03	-16.03	0.00	-205.86	0.00	205.86	2,567.01	1,283.50	3,829.12	1,917.41	28.34	-2.17	0.111
117.00	-7.40	-14.77	0.00	-173.81	0.00	173.81	2,542.74	1,271.37	3,741.21	1,873.39	29.25	-2.18	0.096
119.00	-6.51	-12.71	0.00	-144.26	0.00	144.26	2,518.18	1,259.09	3,653.88	1,829.66	30.17	-2.20	0.082
120.00	-6.39	-12.44	0.00	-131.55	0.00	131.55	2,505.80	1,252.90	3,610.43	1,807.90	30.63	-2.21	0.075
125.00	-5.80	-12.12	0.00	-69.34	0.00	69.34	2,442.80	1,221.40	3,395.49	1,700.27	32.96	-2.23	0.043
127.00	-5.08	-10.72	0.00	-45.11	0.00	45.11	2,417.10	1,208.55	3,310.62	1,657.77	33.89	-2.24	0.029
128.00	-2.68	-5.25	0.00	-34.38	0.00	34.38	2,404.14	1,202.07	3,268.43	1,636.65	34.36	-2.24	0.022
128.50	-2.63	-5.17	0.00	-31.76	0.00	31.76	2,397.64	1,198.82	3,247.40	1,626.11	34.60	-2.24	0.021
128.50	-2.63	-5.17	0.00	-31.76	0.00	31.76	1,182.32	591.16	1,613.50	807.95	34.60	-2.24	0.042
130.00	-2.07	-2.98	0.00	-24.01	0.00	24.01	1,176.33	588.17	1,587.39	794.88	35.30	-2.25	0.032
135.00	-1.74	-2.67	0.00	-9.13	0.00	9.13	1,155.21	577.60	1,500.16	751.20	37.66	-2.25	0.014
137.00	-1.42	-1.31	0.00	-1.32	0.00	1.32	1,146.26	573.13	1,465.23	733.70	38.60	-2.26	0.003
138.00	-0.03	-0.02	0.00	-0.01	0.00	0.01	1,141.67	570.84	1,447.77	724.96	39.08	-2.26	0.000
138.50	0.00	-0.02	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	39.31	-2.26	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 20 Iterations

Gust Response Factor :1.10 | Ice Dead Load Factor :1.00 | Wind Importance Factor :1.00
Dead Load Factor :1.20 | Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		77.5	0.0					0.0	0.0	77.5	0.0	0.0	0.0
5.00		153.8	1,979.6					12.6	327.5	166.3	2,307.0	0.0	0.0
10.00		151.3	1,994.3					13.4	332.9	164.7	2,327.2	0.0	0.0
15.00		148.7	1,981.1					13.8	335.7	162.4	2,316.7	0.0	0.0
20.00		145.9	1,958.7					14.0	337.6	160.0	2,296.3	0.0	0.0
25.00		143.2	1,931.5					14.2	339.1	157.4	2,270.6	0.0	0.0
30.00		142.0	1,901.4					14.4	340.3	156.5	2,241.7	0.0	0.0
35.00		143.8	1,869.2					14.9	341.4	158.7	2,210.6	0.0	0.0
40.00		146.3	1,835.5					15.7	342.3	162.0	2,177.9	0.0	0.0
45.00		83.5	1,800.7					16.4	343.1	99.9	2,143.8	0.0	0.0
45.66	Bot - Section 2	75.3	236.9					2.2	45.6	77.6	282.5	0.0	0.0
50.00		108.5	2,634.4					14.8	298.3	123.3	2,932.7	0.0	0.0
52.83	Top - Section 1	76.0	1,693.3					9.9	194.9	85.9	1,888.2	0.0	0.0
55.00		109.3	758.1					7.7	149.6	117.0	907.7	0.0	0.0
60.00		152.7	1,716.7					18.2	345.2	170.8	2,061.9	0.0	0.0
65.00		152.6	1,679.0					18.7	345.7	171.3	2,024.7	0.0	0.0
70.00		152.2	1,640.7					19.2	346.3	171.5	1,987.0	0.0	0.0
75.00		151.6	1,602.0					19.7	346.8	171.2	1,948.8	0.0	0.0
80.00	Appurtenance(s)	150.6	1,563.0	196.0	0.0	130.0	352.8	20.2	347.2	366.7	2,263.1	0.0	0.0
85.00		104.8	1,523.6					20.6	341.9	125.4	1,865.4	0.0	0.0
87.00	Appurtenance(s)	74.3	599.8	38.4	0.0	-38.4	77.9	8.4	136.9	121.1	814.6	0.0	0.0
90.00		82.6	887.1					12.7	204.2	95.2	1,091.3	0.0	0.0
92.58	Bot - Section 3	74.0	751.6					11.0	175.8	85.0	927.4	0.0	0.0
95.00	Appurtenance(s)	86.4	1,105.7	113.2	0.0	0.0	659.8	10.4	164.9	210.0	1,930.4	0.0	0.0
98.41	Top - Section 2	73.7	1,532.7					14.9	232.8	88.5	1,765.5	0.0	0.0
100.00	Appurtenance(s)	81.5	398.1	6.2	0.0	0.0	22.4	7.0	108.3	94.6	528.8	0.0	0.0
104.00	Appurtenance(s)	72.7	985.4	40.7	0.0	-81.4	79.1	17.7	270.8	131.1	1,335.2	0.0	0.0
105.00		86.1	243.6					4.5	67.6	90.5	311.1	0.0	0.0
110.00		142.1	1,191.1					22.6	338.0	164.6	1,529.2	0.0	0.0
115.00		98.3	1,155.2					22.9	338.4	121.2	1,493.6	0.0	0.0
117.00	Appurtenance(s)	55.5	453.6	292.0	0.0	0.0	2,214.5	9.3	135.4	356.7	2,803.5	0.0	0.0
119.00	Appurtenance(s)	41.4	447.8	380.7	0.0	-761.5	2,453.9	9.3	116.9	431.4	3,018.6	0.0	0.0
120.00		81.6	222.0					4.7	36.1	86.3	258.1	0.0	0.0
125.00		94.6	1,082.8					23.6	180.7	118.3	1,263.5	0.0	0.0
127.00	Appurtenance(s)	40.0	424.5	226.2	0.0	0.0	1,928.3	9.5	72.4	275.8	2,425.2	0.0	0.0
128.00	Appurtenance(s)	19.9	210.3	1,377.6	0.0	0.0	4,303.8	4.8	26.6	1,402.3	4,540.8	0.0	0.0
128.50	Top - Section 3	26.4	104.7					2.4	13.3	28.8	118.0	0.0	0.0
130.00	Appurtenance(s)	84.8	232.1	371.1	0.0	0.0	1,814.3	7.2	40.0	463.1	2,086.4	0.0	0.0
135.00		90.6	751.8					24.3	133.5	114.8	885.3	0.0	0.0
137.00	Appurtenance(s)	38.3	294.8	247.6	0.0	495.1	1,146.9	9.8	53.5	295.6	1,495.1	0.0	0.0
138.00	Appurtenance(s)	19.0	146.1	343.1	0.0	0.0	2,227.4	4.9	26.8	367.0	2,400.3	0.0	0.0
138.50		6.3	72.7					0.0	0.0	6.3	72.7	0.0	0.0
								Totals:		8,194.58	71,548.3	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 20 Iterations

Gust Response Factor: 1.10 | Ice Dead Load Factor: 1.00 | Wind Importance Factor: 1.00
Dead Load Factor: 1.20 | Ice Importance Factor: 1.00
Wind Load Factor: 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-71.55	-8.13	0.00	-792.46	0.00	792.46	4,622.17	2,311.08	12,011.9	6,014.90	0.00	0.00	0.147
5.00	-69.24	-8.00	0.00	-751.78	0.00	751.78	4,577.30	2,288.65	11,662.6	5,839.99	0.02	-0.03	0.144
10.00	-66.90	-7.87	0.00	-711.77	0.00	711.77	4,530.64	2,265.32	11,313.4	5,665.13	0.06	-0.06	0.140
15.00	-64.58	-7.74	0.00	-672.42	0.00	672.42	4,482.20	2,241.10	10,964.6	5,490.46	0.14	-0.09	0.137
20.00	-62.28	-7.61	0.00	-633.73	0.00	633.73	4,431.97	2,215.98	10,616.4	5,316.12	0.25	-0.12	0.133
25.00	-60.01	-7.47	0.00	-595.70	0.00	595.70	4,379.95	2,189.98	10,269.2	5,142.24	0.39	-0.15	0.130
30.00	-57.76	-7.34	0.00	-558.32	0.00	558.32	4,326.15	2,163.08	9,923.16	4,968.95	0.55	-0.18	0.126
35.00	-55.55	-7.20	0.00	-521.62	0.00	521.62	4,270.57	2,135.29	9,578.57	4,796.40	0.75	-0.21	0.122
40.00	-53.37	-7.06	0.00	-485.60	0.00	485.60	4,213.20	2,106.60	9,235.72	4,624.72	0.99	-0.23	0.118
45.00	-51.22	-6.97	0.00	-450.29	0.00	450.29	4,154.05	2,077.02	8,894.88	4,454.05	1.25	-0.26	0.113
45.66	-50.94	-6.90	0.00	-445.67	0.00	445.67	4,146.06	2,073.03	8,849.83	4,431.49	1.28	-0.27	0.113
50.00	-48.01	-6.78	0.00	-415.75	0.00	415.75	4,093.11	2,046.55	8,556.32	4,284.52	1.54	-0.29	0.109
52.83	-46.12	-6.70	0.00	-396.56	0.00	396.56	4,095.88	2,047.94	8,571.50	4,292.12	1.72	-0.31	0.104
55.00	-45.21	-6.59	0.00	-382.03	0.00	382.03	4,068.92	2,034.46	8,425.29	4,218.91	1.86	-0.32	0.102
60.00	-43.14	-6.43	0.00	-349.08	0.00	349.08	4,005.50	2,002.75	8,090.36	4,051.19	2.22	-0.35	0.097
65.00	-41.12	-6.26	0.00	-316.94	0.00	316.94	3,940.29	1,970.15	7,758.36	3,884.94	2.60	-0.38	0.092
70.00	-39.13	-6.09	0.00	-285.63	0.00	285.63	3,873.30	1,936.65	7,429.56	3,720.30	3.00	-0.40	0.087
75.00	-37.18	-5.93	0.00	-255.16	0.00	255.16	3,804.52	1,902.26	7,104.24	3,557.40	3.44	-0.43	0.082
80.00	-34.92	-5.56	0.00	-225.41	0.00	225.41	3,733.96	1,866.98	6,782.67	3,396.38	3.90	-0.45	0.076
85.00	-33.05	-5.42	0.00	-197.63	0.00	197.63	3,661.61	1,830.81	6,465.12	3,237.37	4.38	-0.47	0.070
87.00	-32.24	-5.30	0.00	-186.78	0.00	186.78	3,632.18	1,816.09	6,339.29	3,174.36	4.59	-0.48	0.068
90.00	-31.14	-5.20	0.00	-170.87	0.00	170.87	3,587.48	1,793.74	6,151.87	3,080.51	4.89	-0.50	0.064
92.58	-30.22	-5.12	0.00	-157.45	0.00	157.45	3,548.53	1,774.27	5,992.00	3,000.45	5.17	-0.51	0.061
95.00	-28.29	-4.90	0.00	-145.06	0.00	145.06	3,511.56	1,755.78	5,843.19	2,925.94	5.43	-0.52	0.058
98.41	-26.52	-4.80	0.00	-128.35	0.00	128.35	2,757.29	1,378.64	4,577.91	2,292.36	5.80	-0.53	0.066
100.00	-25.99	-4.70	0.00	-120.74	0.00	120.74	2,739.94	1,369.97	4,504.91	2,255.80	5.98	-0.54	0.063
104.00	-24.66	-4.56	0.00	-101.94	0.00	101.94	2,695.39	1,347.70	4,322.06	2,164.24	6.44	-0.55	0.056
105.00	-24.35	-4.47	0.00	-97.38	0.00	97.38	2,684.08	1,342.04	4,276.63	2,141.49	6.55	-0.56	0.055
110.00	-22.82	-4.30	0.00	-75.02	0.00	75.02	2,626.44	1,313.22	4,051.27	2,028.65	7.14	-0.57	0.046
115.00	-21.33	-4.17	0.00	-53.53	0.00	53.53	2,567.01	1,283.50	3,829.12	1,917.41	7.75	-0.59	0.036
117.00	-18.53	-3.78	0.00	-45.20	0.00	45.20	2,542.74	1,271.37	3,741.21	1,873.39	8.00	-0.59	0.031
119.00	-15.51	-3.32	0.00	-37.63	0.00	37.63	2,518.18	1,259.09	3,653.88	1,829.66	8.25	-0.60	0.027
120.00	-15.25	-3.23	0.00	-34.31	0.00	34.31	2,505.80	1,252.90	3,610.43	1,807.90	8.37	-0.60	0.025
125.00	-13.99	-3.10	0.00	-18.15	0.00	18.15	2,442.80	1,221.40	3,395.49	1,700.27	9.00	-0.60	0.016
127.00	-11.57	-2.80	0.00	-11.95	0.00	11.95	2,417.10	1,208.55	3,310.62	1,657.77	9.26	-0.61	0.012
128.00	-7.04	-1.35	0.00	-9.15	0.00	9.15	2,404.14	1,202.07	3,268.43	1,636.65	9.38	-0.61	0.009
128.50	-6.93	-1.32	0.00	-8.48	0.00	8.48	2,397.64	1,198.82	3,247.40	1,626.11	9.45	-0.61	0.008
128.50	-6.93	-1.32	0.00	-8.48	0.00	8.48	1,182.32	591.16	1,613.50	807.95	9.45	-0.61	0.016
130.00	-4.84	-0.84	0.00	-6.50	0.00	6.50	1,176.33	588.17	1,587.39	794.88	9.64	-0.61	0.012
135.00	-3.96	-0.71	0.00	-2.32	0.00	2.32	1,155.21	577.60	1,500.16	751.20	10.28	-0.61	0.007
137.00	-2.47	-0.40	0.00	-0.40	0.00	0.40	1,146.26	573.13	1,465.23	733.70	10.53	-0.61	0.003
138.00	-0.07	-0.01	0.00	0.00	0.00	0.00	1,141.67	570.84	1,447.77	724.96	10.66	-0.61	0.000
138.50	0.00	-0.01	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	10.72	-0.61	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 20 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		52.2	0.0					0.0	0.0	52.2	0.0	0.0	0.0
5.00		103.3	1,265.9					0.0	230.6	103.3	1,496.5	0.0	0.0
10.00		101.3	1,241.0					0.0	230.6	101.3	1,471.6	0.0	0.0
15.00		99.2	1,216.1					0.0	230.6	99.2	1,446.7	0.0	0.0
20.00		97.2	1,191.3					0.0	230.6	97.2	1,421.9	0.0	0.0
25.00		95.2	1,166.4					0.0	230.6	95.2	1,397.0	0.0	0.0
30.00		94.2	1,141.6					0.0	230.6	94.2	1,372.2	0.0	0.0
35.00		95.2	1,116.7					0.0	230.6	95.2	1,347.3	0.0	0.0
40.00		96.7	1,091.9					0.0	230.6	96.7	1,322.5	0.0	0.0
45.00		55.1	1,067.0					0.0	230.6	55.1	1,297.6	0.0	0.0
45.66	Bot - Section 2	49.7	139.7					0.0	30.6	49.7	170.3	0.0	0.0
50.00		71.5	1,818.1					0.0	200.0	71.5	2,018.1	0.0	0.0
52.83	Top - Section 1	50.0	1,166.3					0.0	130.5	50.0	1,296.8	0.0	0.0
55.00		71.8	445.0					0.0	100.1	71.8	545.1	0.0	0.0
60.00		100.2	1,007.6					0.0	230.6	100.2	1,238.2	0.0	0.0
65.00		100.0	982.7					0.0	230.6	100.0	1,213.3	0.0	0.0
70.00		99.5	957.9					0.0	230.6	99.5	1,188.5	0.0	0.0
75.00		98.8	933.0					0.0	230.6	98.8	1,163.6	0.0	0.0
80.00	Appurtenance(s)	98.0	908.2	178.0	0.0	71.0	128.0	0.0	230.6	276.0	1,266.8	0.0	0.0
85.00		68.1	883.3					0.0	225.8	68.1	1,109.1	0.0	0.0
87.00	Appurtenance(s)	48.2	346.4	23.2	0.0	-23.2	24.3	0.0	90.3	71.4	461.0	0.0	0.0
90.00		53.5	512.1					0.0	134.5	53.5	646.6	0.0	0.0
92.58	Bot - Section 3	47.9	433.2					0.0	115.6	47.9	548.9	0.0	0.0
95.00	Appurtenance(s)	55.9	739.6	106.3	0.0	0.0	450.0	0.0	108.5	162.1	1,298.1	0.0	0.0
98.41	Top - Section 2	47.6	1,025.0					0.0	153.0	47.6	1,178.0	0.0	0.0
100.00	Appurtenance(s)	52.5	215.3	2.7	0.0	0.0	8.9	0.0	71.1	55.2	295.3	0.0	0.0
104.00	Appurtenance(s)	46.8	533.5	24.4	0.0	-48.8	24.3	0.0	177.4	71.2	735.2	0.0	0.0
105.00		55.3	131.3					0.0	44.2	55.3	175.5	0.0	0.0
110.00		91.1	644.1					0.0	221.0	91.1	865.1	0.0	0.0
115.00		62.9	623.4					0.0	221.0	62.9	844.4	0.0	0.0
117.00	Appurtenance(s)	35.4	243.6	200.7	0.0	0.0	1,530.0	0.0	88.4	236.2	1,861.9	0.0	0.0
119.00	Appurtenance(s)	26.4	240.2	374.1	0.0	-748.1	760.1	0.0	72.9	400.5	1,073.3	0.0	0.0
120.00		51.9	118.9					0.0	17.8	51.9	136.7	0.0	0.0
125.00		60.2	582.0					0.0	89.0	60.2	671.0	0.0	0.0
127.00	Appurtenance(s)	25.4	227.0	244.2	0.0	0.0	591.5	0.0	35.6	269.6	854.1	0.0	0.0
128.00	Appurtenance(s)	12.6	112.3	1,047.4	0.0	0.0	2,783.5	0.0	9.8	1,060.0	2,905.6	0.0	0.0
128.50	Top - Section 3	16.7	55.8					0.0	4.9	16.7	60.7	0.0	0.0
130.00	Appurtenance(s)	53.6	100.1	373.9	0.0	0.0	600.0	0.0	14.8	427.5	714.9	0.0	0.0
135.00		57.1	325.6					0.0	49.2	57.1	374.8	0.0	0.0
137.00	Appurtenance(s)	24.1	126.8	243.1	0.0	486.3	278.1	0.0	19.7	267.2	424.5	0.0	0.0
138.00	Appurtenance(s)	12.0	62.6	230.6	0.0	0.0	1,525.0	0.0	9.8	242.6	1,597.5	0.0	0.0
138.50		4.0	31.1					0.0	0.0	4.0	31.1	0.0	0.0
								Totals:		5,687.05	41,537.0	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 20 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.54	-5.64	0.00	-564.76	0.00	564.76	4,622.17	2,311.08	12,011.9	6,014.90	0.00	0.00	0.103
5.00	-40.04	-5.55	0.00	-536.55	0.00	536.55	4,577.30	2,288.65	11,662.6	5,839.99	0.01	-0.02	0.101
10.00	-38.56	-5.46	0.00	-508.79	0.00	508.79	4,530.64	2,265.32	11,313.4	5,665.13	0.04	-0.04	0.098
15.00	-37.12	-5.38	0.00	-481.46	0.00	481.46	4,482.20	2,241.10	10,964.6	5,490.46	0.10	-0.06	0.096
20.00	-35.69	-5.29	0.00	-454.57	0.00	454.57	4,431.97	2,215.98	10,616.4	5,316.12	0.18	-0.08	0.094
25.00	-34.29	-5.21	0.00	-428.12	0.00	428.12	4,379.95	2,189.98	10,269.2	5,142.24	0.28	-0.10	0.091
30.00	-32.92	-5.12	0.00	-402.08	0.00	402.08	4,326.15	2,163.08	9,923.16	4,968.95	0.40	-0.13	0.089
35.00	-31.57	-5.04	0.00	-376.47	0.00	376.47	4,270.57	2,135.29	9,578.57	4,796.40	0.54	-0.15	0.086
40.00	-30.25	-4.95	0.00	-351.29	0.00	351.29	4,213.20	2,106.60	9,235.72	4,624.72	0.71	-0.17	0.083
45.00	-28.95	-4.89	0.00	-326.56	0.00	326.56	4,154.05	2,077.02	8,894.88	4,454.05	0.89	-0.19	0.080
45.66	-28.78	-4.85	0.00	-323.31	0.00	323.31	4,146.06	2,073.03	8,849.83	4,431.49	0.92	-0.19	0.080
50.00	-26.76	-4.78	0.00	-302.28	0.00	302.28	4,093.11	2,046.55	8,556.32	4,284.52	1.10	-0.21	0.077
52.83	-25.46	-4.73	0.00	-288.76	0.00	288.76	4,095.88	2,047.94	8,571.50	4,292.12	1.23	-0.22	0.073
55.00	-24.91	-4.66	0.00	-278.51	0.00	278.51	4,068.92	2,034.46	8,425.29	4,218.91	1.34	-0.23	0.072
60.00	-23.67	-4.56	0.00	-255.21	0.00	255.21	4,005.50	2,002.75	8,090.36	4,051.19	1.59	-0.25	0.069
65.00	-22.46	-4.46	0.00	-232.40	0.00	232.40	3,940.29	1,970.15	7,758.36	3,884.94	1.86	-0.27	0.066
70.00	-21.27	-4.37	0.00	-210.08	0.00	210.08	3,873.30	1,936.65	7,429.56	3,720.30	2.16	-0.29	0.062
75.00	-20.11	-4.27	0.00	-188.26	0.00	188.26	3,804.52	1,902.26	7,104.24	3,557.40	2.47	-0.31	0.058
80.00	-18.84	-3.99	0.00	-166.85	0.00	166.85	3,733.96	1,866.98	6,782.67	3,396.38	2.81	-0.33	0.054
85.00	-17.73	-3.92	0.00	-146.90	0.00	146.90	3,661.61	1,830.81	6,465.12	3,237.37	3.16	-0.34	0.050
87.00	-17.27	-3.85	0.00	-139.06	0.00	139.06	3,632.18	1,816.09	6,339.29	3,174.36	3.30	-0.35	0.049
90.00	-16.62	-3.79	0.00	-127.52	0.00	127.52	3,587.48	1,793.74	6,151.87	3,080.51	3.53	-0.36	0.046
92.58	-16.07	-3.74	0.00	-117.74	0.00	117.74	3,548.53	1,774.27	5,992.00	3,000.45	3.72	-0.37	0.044
95.00	-14.78	-3.57	0.00	-108.68	0.00	108.68	3,511.56	1,755.78	5,843.19	2,925.94	3.91	-0.38	0.041
98.41	-13.60	-3.52	0.00	-96.48	0.00	96.48	2,757.29	1,378.64	4,577.91	2,292.36	4.19	-0.39	0.047
100.00	-13.30	-3.47	0.00	-90.89	0.00	90.89	2,739.94	1,369.97	4,504.91	2,255.80	4.32	-0.39	0.045
104.00	-12.57	-3.39	0.00	-77.03	0.00	77.03	2,695.39	1,347.70	4,322.06	2,164.24	4.65	-0.40	0.040
105.00	-12.39	-3.34	0.00	-73.64	0.00	73.64	2,684.08	1,342.04	4,276.63	2,141.49	4.73	-0.41	0.039
110.00	-11.53	-3.24	0.00	-56.96	0.00	56.96	2,626.44	1,313.22	4,051.27	2,028.65	5.16	-0.42	0.032
115.00	-10.68	-3.17	0.00	-40.75	0.00	40.75	2,567.01	1,283.50	3,829.12	1,917.41	5.61	-0.43	0.025
117.00	-8.82	-2.92	0.00	-34.41	0.00	34.41	2,542.74	1,271.37	3,741.21	1,873.39	5.79	-0.43	0.022
119.00	-7.75	-2.52	0.00	-28.56	0.00	28.56	2,518.18	1,259.09	3,653.88	1,829.66	5.97	-0.44	0.019
120.00	-7.62	-2.46	0.00	-26.04	0.00	26.04	2,505.80	1,252.90	3,610.43	1,807.90	6.06	-0.44	0.017
125.00	-6.94	-2.40	0.00	-13.73	0.00	13.73	2,442.80	1,221.40	3,395.49	1,700.27	6.52	-0.44	0.011
127.00	-6.09	-2.12	0.00	-8.93	0.00	8.93	2,417.10	1,208.55	3,310.62	1,657.77	6.71	-0.44	0.008
128.00	-3.20	-1.04	0.00	-6.81	0.00	6.81	2,404.14	1,202.07	3,268.43	1,636.65	6.80	-0.44	0.005
128.50	-3.13	-1.02	0.00	-6.29	0.00	6.29	2,397.64	1,198.82	3,247.40	1,626.11	6.85	-0.44	0.005
128.50	-3.13	-1.02	0.00	-6.29	0.00	6.29	1,182.32	591.16	1,613.50	807.95	6.85	-0.44	0.010
130.00	-2.42	-0.59	0.00	-4.75	0.00	4.75	1,176.33	588.17	1,587.39	794.88	6.99	-0.44	0.008
135.00	-2.05	-0.53	0.00	-1.81	0.00	1.81	1,155.21	577.60	1,500.16	751.20	7.45	-0.45	0.004
137.00	-1.63	-0.26	0.00	-0.26	0.00	0.26	1,146.26	573.13	1,465.23	733.70	7.64	-0.45	0.002
138.00	-0.03	0.00	0.00	0.00	0.00	0.00	1,141.67	570.84	1,447.77	724.96	7.73	-0.45	0.000
138.50	0.00	0.00	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	7.78	-0.45	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.04	
Upper Limit C_s	0.04	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	1.58	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.54	
Total Unfactored Dead Load:	41.54	k
Seismic Base Shear (E):	2.29	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
41	138.25	31	62	0.002	4	39
40	137.50	72	144	0.004	9	90
39	136.00	146	286	0.008	18	181
38	132.50	375	703	0.020	45	464
37	129.25	115	207	0.006	13	142
36	128.25	61	108	0.003	7	75
35	127.50	122	216	0.006	14	151
34	126.00	263	456	0.013	29	325
33	122.50	671	1,115	0.031	72	831
32	119.50	137	219	0.006	14	169
31	118.00	313	491	0.014	32	388
30	116.00	332	507	0.014	33	411
29	112.50	844	1,230	0.035	79	1,046
28	107.50	865	1,175	0.033	76	1,071
27	104.50	176	228	0.006	15	217
26	102.00	711	891	0.025	57	880
25	99.21	286	344	0.010	22	355
24	96.71	1,178	1,359	0.038	88	1,459
23	93.79	848	934	0.026	60	1,050
22	91.29	549	580	0.016	37	680
21	88.50	647	651	0.018	42	801
20	86.00	437	421	0.012	27	541
19	82.50	1,109	1,002	0.028	65	1,373

18	77.50	1,139	934	0.026	60	1,410
17	72.50	1,164	861	0.024	55	1,441
16	67.50	1,188	788	0.022	51	1,472
15	62.50	1,213	714	0.020	46	1,503
14	57.50	1,238	641	0.018	41	1,533
13	53.92	545	255	0.007	16	675
12	51.42	1,297	565	0.016	36	1,606
11	47.83	2,018	786	0.022	51	2,499
10	45.33	170	61	0.002	4	211
9	42.50	1,298	421	0.012	27	1,607
8	37.50	1,322	354	0.010	23	1,638
7	32.50	1,347	289	0.008	19	1,669
6	27.50	1,372	228	0.006	15	1,699
5	22.50	1,397	170	0.005	11	1,730
4	17.50	1,422	117	0.003	8	1,761
3	12.50	1,447	71	0.002	5	1,792
2	7.50	1,472	33	0.001	2	1,822
1	2.50	1,496	6	0.000	0	1,853
Generic 10' Omni	138.00	25	50	0.001	3	31
Round Low Profile Pl	138.00	1,500	2,996	0.084	193	1,858
Ericsson KRY 112 20	137.00	73	143	0.004	9	90
RFS APXV18-209014-C	137.00	56	111	0.003	7	69
Andrew LNX-6515DS-A1	137.00	149	295	0.008	19	185
Quintel QS8656-5D (1	130.00	600	1,093	0.031	70	743
Flat Low Profile Pla	128.00	1,500	2,667	0.075	172	1,858
VZW Unused Reserve:	128.00	1,283	2,282	0.064	147	1,589
Samsung B2/B66A RRH-	127.00	253	445	0.013	29	314
Samsung B5/B13 RRH-B	127.00	211	371	0.010	24	261
RFS APL866513-44T0	127.00	31	55	0.002	4	39
Raycap RCMDC-6627-PF	127.00	32	56	0.002	4	40
Decibel DB846H80E-SX	127.00	64	112	0.003	7	79
Powerwave Allgon LGP	119.00	85	134	0.004	9	105
Raycap DC6-48-60-18-	119.00	20	32	0.001	2	25
Ericsson RRUS 11 (Ba	119.00	300	477	0.013	31	372
Powerwave Allgon 777	119.00	210	334	0.009	21	260
KMW AM-X-CD-16-65-00	119.00	146	231	0.007	15	180
Generic 7" x 6" x 3"	117.00	30	46	0.001	3	37
Round Low Profile Pl	117.00	1,500	2,322	0.065	150	1,858
RFI Antennas CC807-0	104.00	24	31	0.001	2	30
Bird DS428E83I01T	100.00	9	11	0.000	1	11
Flat Side Arm	95.00	450	505	0.014	33	557
RFI Antennas CC807-0	87.00	24	24	0.001	2	30
RFI Antennas OA20-41	80.00	28	24	0.001	2	35
Radio Waves HP3-11	80.00	100	86	0.002	6	124
		41,537	35,558	1.000	2,290	51,439

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
41	138.25	31	62	0.002	4	27
40	137.50	72	144	0.004	9	62
39	136.00	146	286	0.008	18	126
38	132.50	375	703	0.020	45	323
37	129.25	115	207	0.006	13	99
36	128.25	61	108	0.003	7	52
35	127.50	122	216	0.006	14	105
34	126.00	263	456	0.013	29	226
33	122.50	671	1,115	0.031	72	578
32	119.50	137	219	0.006	14	118

31	118.00	313	491	0.014	32	270
30	116.00	332	507	0.014	33	286
29	112.50	844	1,230	0.035	79	728
28	107.50	865	1,175	0.033	76	745
27	104.50	176	228	0.006	15	151
26	102.00	711	891	0.025	57	613
25	99.21	286	344	0.010	22	247
24	96.71	1,178	1,359	0.038	88	1,015
23	93.79	848	934	0.026	60	731
22	91.29	549	580	0.016	37	473
21	88.50	647	651	0.018	42	557
20	86.00	437	421	0.012	27	376
19	82.50	1,109	1,002	0.028	65	956
18	77.50	1,139	934	0.026	60	981
17	72.50	1,164	861	0.024	55	1,003
16	67.50	1,188	788	0.022	51	1,024
15	62.50	1,213	714	0.020	46	1,045
14	57.50	1,238	641	0.018	41	1,067
13	53.92	545	255	0.007	16	470
12	51.42	1,297	565	0.016	36	1,117
11	47.83	2,018	786	0.022	51	1,739
10	45.33	170	61	0.002	4	147
9	42.50	1,298	421	0.012	27	1,118
8	37.50	1,322	354	0.010	23	1,139
7	32.50	1,347	289	0.008	19	1,161
6	27.50	1,372	228	0.006	15	1,182
5	22.50	1,397	170	0.005	11	1,204
4	17.50	1,422	117	0.003	8	1,225
3	12.50	1,447	71	0.002	5	1,247
2	7.50	1,472	33	0.001	2	1,268
1	2.50	1,496	6	0.000	0	1,289
Generic 10' Omni	138.00	25	50	0.001	3	22
Round Low Profile Pl	138.00	1,500	2,996	0.084	193	1,292
Ericsson KRY 112 20	137.00	73	143	0.004	9	63
RFS APXV18-209014-C	137.00	56	111	0.003	7	48
Andrew LNX-6515DS-A1	137.00	149	295	0.008	19	129
Quintel QS8656-5D (1	130.00	600	1,093	0.031	70	517
Flat Low Profile Pla	128.00	1,500	2,667	0.075	172	1,292
VZW Unused Reserve:	128.00	1,283	2,282	0.064	147	1,106
Samsung B2/B66A RRH-	127.00	253	445	0.013	29	218
Samsung B5/B13 RRH-B	127.00	211	371	0.010	24	182
RFS APL866513-44T0	127.00	31	55	0.002	4	27
Raycap RCMDC-6627-PF	127.00	32	56	0.002	4	28
Decibel DB846H80E-SX	127.00	64	112	0.003	7	55
Powerwave Allgon LGP	119.00	85	134	0.004	9	73
Raycap DC6-48-60-18-	119.00	20	32	0.001	2	17
Ericsson RRUS 11 (Ba	119.00	300	477	0.013	31	258
Powerwave Allgon 777	119.00	210	334	0.009	21	181
KMW AM-X-CD-16-65-00	119.00	146	231	0.007	15	125
Generic 7" x 6" x 3"	117.00	30	46	0.001	3	26
Round Low Profile Pl	117.00	1,500	2,322	0.065	150	1,292
RFI Antennas CC807-0	104.00	24	31	0.001	2	21
Bird DS428E83I01T	100.00	9	11	0.000	1	8
Flat Side Arm	95.00	450	505	0.014	33	388
RFI Antennas CC807-0	87.00	24	24	0.001	2	21
RFI Antennas OA20-41	80.00	28	24	0.001	2	24
Radio Waves HP3-11	80.00	100	86	0.002	6	86
		41,537	35,558	1.000	2,290	35,788

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.59	-2.29	0.00	-242.28	0.00	242.28	4,622.17	2,311.08	12,011.9	6,014.90	0.00	0.00	0.051
5.00	-47.76	-2.30	0.00	-230.82	0.00	230.82	4,577.30	2,288.65	11,662.6	5,839.99	0.00	-0.01	0.050
10.00	-45.97	-2.30	0.00	-219.33	0.00	219.33	4,530.64	2,265.32	11,313.4	5,665.13	0.02	-0.02	0.049
15.00	-44.21	-2.30	0.00	-207.83	0.00	207.83	4,482.20	2,241.10	10,964.6	5,490.46	0.04	-0.03	0.048
20.00	-42.48	-2.29	0.00	-196.34	0.00	196.34	4,431.97	2,215.98	10,616.4	5,316.12	0.08	-0.04	0.047
25.00	-40.78	-2.28	0.00	-184.87	0.00	184.87	4,379.95	2,189.98	10,269.2	5,142.24	0.12	-0.05	0.045
30.00	-39.11	-2.27	0.00	-173.46	0.00	173.46	4,326.15	2,163.08	9,923.16	4,968.95	0.17	-0.05	0.044
35.00	-37.47	-2.25	0.00	-162.11	0.00	162.11	4,270.57	2,135.29	9,578.57	4,796.40	0.23	-0.06	0.043
40.00	-35.87	-2.23	0.00	-150.85	0.00	150.85	4,213.20	2,106.60	9,235.72	4,624.72	0.30	-0.07	0.041
45.00	-35.65	-2.23	0.00	-139.71	0.00	139.71	4,154.05	2,077.02	8,894.88	4,454.05	0.39	-0.08	0.040
45.66	-33.16	-2.18	0.00	-138.23	0.00	138.23	4,146.06	2,073.03	8,849.83	4,431.49	0.40	-0.08	0.039
50.00	-31.55	-2.14	0.00	-128.79	0.00	128.79	4,093.11	2,046.55	8,556.32	4,284.52	0.48	-0.09	0.038
52.83	-30.87	-2.13	0.00	-122.74	0.00	122.74	4,095.88	2,047.94	8,571.50	4,292.12	0.53	-0.10	0.036
55.00	-29.34	-2.08	0.00	-118.13	0.00	118.13	4,068.92	2,034.46	8,425.29	4,218.91	0.58	-0.10	0.035
60.00	-27.84	-2.04	0.00	-107.70	0.00	107.70	4,005.50	2,002.75	8,090.36	4,051.19	0.68	-0.11	0.034
65.00	-26.37	-1.99	0.00	-97.50	0.00	97.50	3,940.29	1,970.15	7,758.36	3,884.94	0.80	-0.12	0.032
70.00	-24.92	-1.93	0.00	-87.55	0.00	87.55	3,873.30	1,936.65	7,429.56	3,720.30	0.93	-0.12	0.030
75.00	-23.51	-1.87	0.00	-77.88	0.00	77.88	3,804.52	1,902.26	7,104.24	3,557.40	1.06	-0.13	0.028
80.00	-21.98	-1.80	0.00	-68.51	0.00	68.51	3,733.96	1,866.98	6,782.67	3,396.38	1.21	-0.14	0.026
85.00	-21.44	-1.78	0.00	-59.50	0.00	59.50	3,661.61	1,830.81	6,465.12	3,237.37	1.35	-0.15	0.024
87.00	-20.61	-1.73	0.00	-55.94	0.00	55.94	3,632.18	1,816.09	6,339.29	3,174.36	1.42	-0.15	0.023
90.00	-19.93	-1.69	0.00	-50.75	0.00	50.75	3,587.48	1,793.74	6,151.87	3,080.51	1.51	-0.15	0.022
92.58	-18.88	-1.63	0.00	-46.38	0.00	46.38	3,548.53	1,774.27	5,992.00	3,000.45	1.60	-0.16	0.021
95.00	-16.86	-1.51	0.00	-42.43	0.00	42.43	3,511.56	1,755.78	5,843.19	2,925.94	1.68	-0.16	0.019
98.41	-16.51	-1.48	0.00	-37.29	0.00	37.29	2,757.29	1,378.64	4,577.91	2,292.36	1.79	-0.16	0.022
100.00	-15.62	-1.42	0.00	-34.93	0.00	34.93	2,739.94	1,369.97	4,504.91	2,255.80	1.85	-0.16	0.021
104.00	-15.37	-1.41	0.00	-29.23	0.00	29.23	2,695.39	1,347.70	4,322.06	2,164.24	1.99	-0.17	0.019
105.00	-14.30	-1.33	0.00	-27.83	0.00	27.83	2,684.08	1,342.04	4,276.63	2,141.49	2.02	-0.17	0.018
110.00	-13.25	-1.25	0.00	-21.17	0.00	21.17	2,626.44	1,313.22	4,051.27	2,028.65	2.20	-0.18	0.015
115.00	-12.84	-1.22	0.00	-14.93	0.00	14.93	2,567.01	1,283.50	3,829.12	1,917.41	2.39	-0.18	0.013
117.00	-10.56	-1.02	0.00	-12.50	0.00	12.50	2,542.74	1,271.37	3,741.21	1,873.39	2.46	-0.18	0.011
119.00	-9.45	-0.93	0.00	-10.45	0.00	10.45	2,518.18	1,259.09	3,653.88	1,829.66	2.54	-0.18	0.009
120.00	-8.62	-0.86	0.00	-9.52	0.00	9.52	2,505.80	1,252.90	3,610.43	1,807.90	2.58	-0.18	0.009
125.00	-8.30	-0.82	0.00	-5.25	0.00	5.25	2,442.80	1,221.40	3,395.49	1,700.27	2.77	-0.18	0.006
127.00	-7.41	-0.74	0.00	-3.60	0.00	3.60	2,417.10	1,208.55	3,310.62	1,657.77	2.85	-0.18	0.005
128.00	-3.89	-0.40	0.00	-2.85	0.00	2.85	2,404.14	1,202.07	3,268.43	1,636.65	2.88	-0.18	0.003
128.50	-3.75	-0.39	0.00	-2.65	0.00	2.65	2,397.64	1,198.82	3,247.40	1,626.11	2.90	-0.18	0.003
128.50	-3.75	-0.39	0.00	-2.65	0.00	2.65	1,182.32	591.16	1,613.50	807.95	2.90	-0.18	0.006
130.00	-2.54	-0.27	0.00	-2.07	0.00	2.07	1,176.33	588.17	1,587.39	794.88	2.96	-0.18	0.005
135.00	-2.36	-0.25	0.00	-0.71	0.00	0.71	1,155.21	577.60	1,500.16	751.20	3.16	-0.19	0.003
137.00	-1.93	-0.21	0.00	-0.21	0.00	0.21	1,146.26	573.13	1,465.23	733.70	3.23	-0.19	0.002
138.00	0.00	0.00	0.00	0.00	0.00	0.00	1,141.67	570.84	1,447.77	724.96	3.27	-0.19	0.000
138.50	0.00	0.00	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	3.29	-0.19	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.50	-2.29	0.00	-240.63	0.00	240.63	4,622.17	2,311.08	12,011.9	6,014.90	0.00	0.00	0.047
5.00	-33.23	-2.29	0.00	-229.17	0.00	229.17	4,577.30	2,288.65	11,662.6	5,839.99	0.00	-0.01	0.047
10.00	-31.98	-2.29	0.00	-217.70	0.00	217.70	4,530.64	2,265.32	11,313.4	5,665.13	0.02	-0.02	0.045
15.00	-30.76	-2.29	0.00	-206.23	0.00	206.23	4,482.20	2,241.10	10,964.6	5,490.46	0.04	-0.03	0.044
20.00	-29.55	-2.28	0.00	-194.78	0.00	194.78	4,431.97	2,215.98	10,616.4	5,316.12	0.08	-0.04	0.043
25.00	-28.37	-2.27	0.00	-183.36	0.00	183.36	4,379.95	2,189.98	10,269.2	5,142.24	0.12	-0.04	0.042
30.00	-27.21	-2.26	0.00	-171.99	0.00	171.99	4,326.15	2,163.08	9,923.16	4,968.95	0.17	-0.05	0.041
35.00	-26.07	-2.24	0.00	-160.70	0.00	160.70	4,270.57	2,135.29	9,578.57	4,796.40	0.23	-0.06	0.040
40.00	-24.95	-2.21	0.00	-149.52	0.00	149.52	4,213.20	2,106.60	9,235.72	4,624.72	0.30	-0.07	0.038
45.00	-24.81	-2.21	0.00	-138.45	0.00	138.45	4,154.05	2,077.02	8,894.88	4,454.05	0.38	-0.08	0.037
45.66	-23.07	-2.16	0.00	-136.98	0.00	136.98	4,146.06	2,073.03	8,849.83	4,431.49	0.39	-0.08	0.036
50.00	-21.95	-2.12	0.00	-127.61	0.00	127.61	4,093.11	2,046.55	8,556.32	4,284.52	0.47	-0.09	0.035
52.83	-21.48	-2.11	0.00	-121.60	0.00	121.60	4,095.88	2,047.94	8,571.50	4,292.12	0.53	-0.10	0.034
55.00	-20.41	-2.07	0.00	-117.03	0.00	117.03	4,068.92	2,034.46	8,425.29	4,218.91	0.57	-0.10	0.033
60.00	-19.37	-2.02	0.00	-106.69	0.00	106.69	4,005.50	2,002.75	8,090.36	4,051.19	0.68	-0.11	0.031
65.00	-18.34	-1.97	0.00	-96.57	0.00	96.57	3,940.29	1,970.15	7,758.36	3,884.94	0.80	-0.12	0.030
70.00	-17.34	-1.92	0.00	-86.71	0.00	86.71	3,873.30	1,936.65	7,429.56	3,720.30	0.92	-0.12	0.028
75.00	-16.36	-1.86	0.00	-77.12	0.00	77.12	3,804.52	1,902.26	7,104.24	3,557.40	1.05	-0.13	0.026
80.00	-15.29	-1.79	0.00	-67.83	0.00	67.83	3,733.96	1,866.98	6,782.67	3,396.38	1.20	-0.14	0.024
85.00	-14.92	-1.76	0.00	-58.91	0.00	58.91	3,661.61	1,830.81	6,465.12	3,237.37	1.34	-0.15	0.022
87.00	-14.34	-1.71	0.00	-55.39	0.00	55.39	3,632.18	1,816.09	6,339.29	3,174.36	1.41	-0.15	0.021
90.00	-13.87	-1.68	0.00	-50.25	0.00	50.25	3,587.48	1,793.74	6,151.87	3,080.51	1.50	-0.15	0.020
92.58	-13.13	-1.62	0.00	-45.92	0.00	45.92	3,548.53	1,774.27	5,992.00	3,000.45	1.58	-0.15	0.019
95.00	-11.73	-1.49	0.00	-42.01	0.00	42.01	3,511.56	1,755.78	5,843.19	2,925.94	1.66	-0.16	0.018
98.41	-11.49	-1.47	0.00	-36.92	0.00	36.92	2,757.29	1,378.64	4,577.91	2,292.36	1.78	-0.16	0.020
100.00	-10.87	-1.41	0.00	-34.58	0.00	34.58	2,739.94	1,369.97	4,504.91	2,255.80	1.83	-0.16	0.019
104.00	-10.69	-1.39	0.00	-28.94	0.00	28.94	2,695.39	1,347.70	4,322.06	2,164.24	1.97	-0.17	0.017
105.00	-9.95	-1.32	0.00	-27.55	0.00	27.55	2,684.08	1,342.04	4,276.63	2,141.49	2.00	-0.17	0.017
110.00	-9.22	-1.24	0.00	-20.96	0.00	20.96	2,626.44	1,313.22	4,051.27	2,028.65	2.18	-0.17	0.014
115.00	-8.93	-1.20	0.00	-14.78	0.00	14.78	2,567.01	1,283.50	3,829.12	1,917.41	2.37	-0.18	0.011
117.00	-7.35	-1.01	0.00	-12.38	0.00	12.38	2,542.74	1,271.37	3,741.21	1,873.39	2.44	-0.18	0.009
119.00	-6.57	-0.92	0.00	-10.35	0.00	10.35	2,518.18	1,259.09	3,653.88	1,829.66	2.52	-0.18	0.008
120.00	-6.00	-0.85	0.00	-9.43	0.00	9.43	2,505.80	1,252.90	3,610.43	1,807.90	2.56	-0.18	0.008
125.00	-5.77	-0.82	0.00	-5.19	0.00	5.19	2,442.80	1,221.40	3,395.49	1,700.27	2.75	-0.18	0.005
127.00	-5.16	-0.73	0.00	-3.56	0.00	3.56	2,417.10	1,208.55	3,310.62	1,657.77	2.82	-0.18	0.004
128.00	-2.71	-0.40	0.00	-2.83	0.00	2.83	2,404.14	1,202.07	3,268.43	1,636.65	2.86	-0.18	0.003
128.50	-2.61	-0.39	0.00	-2.63	0.00	2.63	2,397.64	1,198.82	3,247.40	1,626.11	2.88	-0.18	0.003
128.50	-2.61	-0.39	0.00	-2.63	0.00	2.63	1,182.32	591.16	1,613.50	807.95	2.88	-0.18	0.005
130.00	-1.77	-0.27	0.00	-2.05	0.00	2.05	1,176.33	588.17	1,587.39	794.88	2.94	-0.18	0.004
135.00	-1.64	-0.25	0.00	-0.70	0.00	0.70	1,155.21	577.60	1,500.16	751.20	3.13	-0.18	0.002
137.00	-1.34	-0.20	0.00	-0.20	0.00	0.20	1,146.26	573.13	1,465.23	733.70	3.21	-0.18	0.001
138.00	0.00	0.00	0.00	0.00	0.00	0.00	1,141.67	570.84	1,447.77	724.96	3.25	-0.18	0.000
138.50	0.00	0.00	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	3.26	-0.18	0.000

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.58
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
41	138.25	31	1.883	1.944	1.127	0.371	10	39
40	137.50	72	1.863	1.840	1.089	0.358	23	90
39	136.00	146	1.822	1.642	1.016	0.333	42	181
38	132.50	375	1.730	1.238	0.861	0.278	90	464
37	129.25	115	1.646	0.928	0.734	0.232	23	142
36	128.25	61	1.621	0.844	0.698	0.218	11	75
35	127.50	122	1.602	0.784	0.672	0.208	22	151
34	126.00	263	1.564	0.672	0.623	0.189	43	325
33	122.50	671	1.479	0.450	0.518	0.148	86	831
32	119.50	137	1.407	0.297	0.439	0.117	14	169
31	118.00	313	1.372	0.233	0.403	0.103	28	388
30	116.00	332	1.326	0.158	0.359	0.085	24	411
29	112.50	844	1.247	0.054	0.291	0.058	42	1,046
28	107.50	865	1.139	-0.046	0.212	0.027	20	1,071
27	104.50	176	1.076	-0.082	0.172	0.013	2	217
26	102.00	711	1.025	-0.103	0.144	0.004	2	880
25	99.21	286	0.970	-0.116	0.117	-0.004	-1	355
24	96.71	1,178	0.921	-0.121	0.096	-0.009	-9	1,459
23	93.79	848	0.867	-0.121	0.075	-0.011	-8	1,050
22	91.29	549	0.821	-0.115	0.060	-0.012	-6	680
21	88.50	647	0.772	-0.106	0.046	-0.010	-6	801
20	86.00	437	0.729	-0.095	0.036	-0.008	-3	541
19	82.50	1,109	0.671	-0.078	0.024	-0.002	-2	1,373
18	77.50	1,139	0.592	-0.050	0.014	0.008	8	1,410
17	72.50	1,164	0.518	-0.023	0.008	0.019	19	1,441
16	67.50	1,188	0.449	0.002	0.006	0.029	30	1,472
15	62.50	1,213	0.385	0.023	0.007	0.037	38	1,503
14	57.50	1,238	0.326	0.039	0.010	0.042	45	1,533
13	53.92	545	0.286	0.048	0.013	0.044	21	675
12	51.42	1,297	0.260	0.053	0.016	0.044	50	1,606
11	47.83	2,018	0.225	0.059	0.020	0.045	78	2,499
10	45.33	170	0.202	0.062	0.023	0.045	7	211
9	42.50	1,298	0.178	0.065	0.026	0.044	50	1,607
8	37.50	1,322	0.139	0.069	0.032	0.043	49	1,638

7	32.50	1,347	0.104	0.071	0.037	0.041	48	1,669
6	27.50	1,372	0.075	0.072	0.040	0.040	47	1,699
5	22.50	1,397	0.050	0.071	0.042	0.038	46	1,730
4	17.50	1,422	0.030	0.068	0.041	0.035	44	1,761
3	12.50	1,447	0.015	0.061	0.036	0.031	39	1,792
2	7.50	1,472	0.006	0.046	0.026	0.024	31	1,822
1	2.50	1,496	0.001	0.020	0.011	0.011	14	1,853
Generic 10' Omni	138.00	25	1.876	1.909	1.114	0.367	8	31
Round Low Profile Pl	138.00	1,500	1.876	1.909	1.114	0.367	477	1,858
Ericsson KRY 112 20	137.00	73	1.849	1.772	1.064	0.350	22	90
RFS APXV18-209014-C	137.00	56	1.849	1.772	1.064	0.350	17	69
Andrew LNX-6515DS-A1	137.00	149	1.849	1.772	1.064	0.350	45	185
Quintel QS8656-5D (1	130.00	600	1.665	0.994	0.762	0.242	126	743
Flat Low Profile Pla	128.00	1,500	1.614	0.823	0.690	0.215	279	1,858
VZW Unused Reserve:	128.00	1,283	1.614	0.823	0.690	0.215	239	1,589
Samsung B2/B66A RRH-	127.00	253	1.589	0.745	0.655	0.202	44	314
Samsung B5/B13 RRH-B	127.00	211	1.589	0.745	0.655	0.202	37	261
RFS APL866513-44T0	127.00	31	1.589	0.745	0.655	0.202	5	39
Raycap RCMDC-6627-PF	127.00	32	1.589	0.745	0.655	0.202	6	40
Decibel DB846H80E-SX	127.00	64	1.589	0.745	0.655	0.202	11	79
Powerwave Allgon LGP	119.00	85	1.395	0.275	0.427	0.112	8	105
Raycap DC6-48-60-18-	119.00	20	1.395	0.275	0.427	0.112	2	25
Ericsson RRUS 11 (Ba	119.00	300	1.395	0.275	0.427	0.112	29	372
Powerwave Allgon 777	119.00	210	1.395	0.275	0.427	0.112	20	260
KMW AM-X-CD-16-65-00	119.00	146	1.395	0.275	0.427	0.112	14	180
Generic 7" x 6" x 3"	117.00	30	1.349	0.194	0.381	0.094	2	37
Round Low Profile Pl	117.00	1,500	1.349	0.194	0.381	0.094	122	1,858
RFI Antennas CC807-0	104.00	24	1.066	-0.087	0.166	0.011	0	30
Bird DS428E83I01T	100.00	9	0.985	-0.113	0.124	-0.002	0	11
Flat Side Arm	95.00	450	0.889	-0.122	0.083	-0.010	-4	557
RFI Antennas CC807-0	87.00	24	0.746	-0.100	0.040	-0.009	0	30
RFI Antennas OA20-41	80.00	28	0.631	-0.064	0.018	0.003	0	35
Radio Waves HP3-11	80.00	100	0.631	-0.064	0.018	0.003	0	124
		41,537	70.152	27.572	24.408	7.516	2,625	51,439

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
41	138.25	31	1.883	1.944	1.127	0.371	10	27
40	137.50	72	1.863	1.840	1.089	0.358	23	62
39	136.00	146	1.822	1.642	1.016	0.333	42	126
38	132.50	375	1.730	1.238	0.861	0.278	90	323
37	129.25	115	1.646	0.928	0.734	0.232	23	99
36	128.25	61	1.621	0.844	0.698	0.218	11	52
35	127.50	122	1.602	0.784	0.672	0.208	22	105
34	126.00	263	1.564	0.672	0.623	0.189	43	226
33	122.50	671	1.479	0.450	0.518	0.148	86	578
32	119.50	137	1.407	0.297	0.439	0.117	14	118
31	118.00	313	1.372	0.233	0.403	0.103	28	270
30	116.00	332	1.326	0.158	0.359	0.085	24	286
29	112.50	844	1.247	0.054	0.291	0.058	42	728
28	107.50	865	1.139	-0.046	0.212	0.027	20	745
27	104.50	176	1.076	-0.082	0.172	0.013	2	151
26	102.00	711	1.025	-0.103	0.144	0.004	2	613
25	99.21	286	0.970	-0.116	0.117	-0.004	-1	247
24	96.71	1,178	0.921	-0.121	0.096	-0.009	-9	1,015
23	93.79	848	0.867	-0.121	0.075	-0.011	-8	731
22	91.29	549	0.821	-0.115	0.060	-0.012	-6	473

21	88.50	647	0.772	-0.106	0.046	-0.010	-6	557
20	86.00	437	0.729	-0.095	0.036	-0.008	-3	376
19	82.50	1,109	0.671	-0.078	0.024	-0.002	-2	956
18	77.50	1,139	0.592	-0.050	0.014	0.008	8	981
17	72.50	1,164	0.518	-0.023	0.008	0.019	19	1,003
16	67.50	1,188	0.449	0.002	0.006	0.029	30	1,024
15	62.50	1,213	0.385	0.023	0.007	0.037	38	1,045
14	57.50	1,238	0.326	0.039	0.010	0.042	45	1,067
13	53.92	545	0.286	0.048	0.013	0.044	21	470
12	51.42	1,297	0.260	0.053	0.016	0.044	50	1,117
11	47.83	2,018	0.225	0.059	0.020	0.045	78	1,739
10	45.33	170	0.202	0.062	0.023	0.045	7	147
9	42.50	1,298	0.178	0.065	0.026	0.044	50	1,118
8	37.50	1,322	0.139	0.069	0.032	0.043	49	1,139
7	32.50	1,347	0.104	0.071	0.037	0.041	48	1,161
6	27.50	1,372	0.075	0.072	0.040	0.040	47	1,182
5	22.50	1,397	0.050	0.071	0.042	0.038	46	1,204
4	17.50	1,422	0.030	0.068	0.041	0.035	44	1,225
3	12.50	1,447	0.015	0.061	0.036	0.031	39	1,247
2	7.50	1,472	0.006	0.046	0.026	0.024	31	1,268
1	2.50	1,496	0.001	0.020	0.011	0.011	14	1,289
Generic 10' Omni	138.00	25	1.876	1.909	1.114	0.367	8	22
Round Low Profile Pl	138.00	1,500	1.876	1.909	1.114	0.367	477	1,292
Ericsson KRY 112 20	137.00	73	1.849	1.772	1.064	0.350	22	63
RFS APXV18-209014-C	137.00	56	1.849	1.772	1.064	0.350	17	48
Andrew LNX-6515DS-A1	137.00	149	1.849	1.772	1.064	0.350	45	129
Quintel QS8656-5D (1	130.00	600	1.665	0.994	0.762	0.242	126	517
Flat Low Profile Pla	128.00	1,500	1.614	0.823	0.690	0.215	279	1,292
VZW Unused Reserve:	128.00	1,283	1.614	0.823	0.690	0.215	239	1,106
Samsung B2/B66A RRH-	127.00	253	1.589	0.745	0.655	0.202	44	218
Samsung B5/B13 RRH-B	127.00	211	1.589	0.745	0.655	0.202	37	182
RFS APL866513-44T0	127.00	31	1.589	0.745	0.655	0.202	5	27
Raycap RCMDC-6627-PF	127.00	32	1.589	0.745	0.655	0.202	6	28
Decibel DB846H80E-SX	127.00	64	1.589	0.745	0.655	0.202	11	55
Powerwave Allgon LGP	119.00	85	1.395	0.275	0.427	0.112	8	73
Raycap DC6-48-60-18-	119.00	20	1.395	0.275	0.427	0.112	2	17
Ericsson RRUS 11 (Ba	119.00	300	1.395	0.275	0.427	0.112	29	258
Powerwave Allgon 777	119.00	210	1.395	0.275	0.427	0.112	20	181
KMW AM-X-CD-16-65-00	119.00	146	1.395	0.275	0.427	0.112	14	125
Generic 7" x 6" x 3"	117.00	30	1.349	0.194	0.381	0.094	2	26
Round Low Profile Pl	117.00	1,500	1.349	0.194	0.381	0.094	122	1,292
RFI Antennas CC807-0	104.00	24	1.066	-0.087	0.166	0.011	0	21
Bird DS428E83I01T	100.00	9	0.985	-0.113	0.124	-0.002	0	8
Flat Side Arm	95.00	450	0.889	-0.122	0.083	-0.010	-4	388
RFI Antennas CC807-0	87.00	24	0.746	-0.100	0.040	-0.009	0	21
RFI Antennas OA20-41	80.00	28	0.631	-0.064	0.018	0.003	0	24
Radio Waves HP3-11	80.00	100	0.631	-0.064	0.018	0.003	0	86
		41,537	70.152	27.572	24.408	7.516	2,625	35,788

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.59	-2.61	0.00	-285.09	0.00	285.09	4,622.17	2,311.08	12,011.94	6,014.90	0.00	0.00	0.058
5.00	-47.76	-2.59	0.00	-272.02	0.00	272.02	4,577.30	2,288.65	11,662.64	5,839.99	0.01	-0.01	0.057
10.00	-45.97	-2.56	0.00	-259.06	0.00	259.06	4,530.64	2,265.32	11,313.44	5,665.13	0.02	-0.02	0.056
15.00	-44.21	-2.52	0.00	-246.26	0.00	246.26	4,482.20	2,241.10	10,964.63	5,490.46	0.05	-0.03	0.055
20.00	-42.48	-2.49	0.00	-233.64	0.00	233.64	4,431.97	2,215.98	10,616.46	5,316.12	0.09	-0.04	0.054
25.00	-40.78	-2.44	0.00	-221.22	0.00	221.22	4,379.95	2,189.98	10,269.21	5,142.24	0.14	-0.05	0.052
30.00	-39.11	-2.40	0.00	-209.00	0.00	209.00	4,326.15	2,163.08	9,923.16	4,968.95	0.20	-0.06	0.051
35.00	-37.47	-2.36	0.00	-196.99	0.00	196.99	4,270.57	2,135.29	9,578.57	4,796.40	0.28	-0.08	0.050
40.00	-35.87	-2.31	0.00	-185.20	0.00	185.20	4,213.20	2,106.60	9,235.72	4,624.72	0.36	-0.09	0.049
45.00	-35.65	-2.31	0.00	-173.63	0.00	173.63	4,154.05	2,077.02	8,894.88	4,454.05	0.46	-0.10	0.048
45.66	-33.15	-2.23	0.00	-172.10	0.00	172.10	4,146.06	2,073.03	8,849.83	4,431.49	0.47	-0.10	0.047
50.00	-31.55	-2.18	0.00	-162.42	0.00	162.42	4,093.11	2,046.55	8,556.32	4,284.52	0.57	-0.11	0.046
52.83	-30.87	-2.16	0.00	-156.25	0.00	156.25	4,095.88	2,047.94	8,571.50	4,292.12	0.63	-0.12	0.044
55.00	-29.34	-2.12	0.00	-151.55	0.00	151.55	4,068.92	2,034.46	8,425.29	4,218.91	0.69	-0.12	0.043
60.00	-27.84	-2.08	0.00	-140.95	0.00	140.95	4,005.50	2,002.75	8,090.36	4,051.19	0.82	-0.13	0.042
65.00	-26.36	-2.06	0.00	-130.53	0.00	130.53	3,940.29	1,970.15	7,758.36	3,884.94	0.96	-0.14	0.040
70.00	-24.92	-2.04	0.00	-120.26	0.00	120.26	3,873.30	1,936.65	7,429.56	3,720.30	1.12	-0.15	0.039
75.00	-23.51	-2.03	0.00	-110.07	0.00	110.07	3,804.52	1,902.26	7,104.24	3,557.40	1.28	-0.16	0.037
80.00	-21.98	-2.03	0.00	-99.93	0.00	99.93	3,733.96	1,866.98	6,782.67	3,396.38	1.46	-0.17	0.035
85.00	-21.44	-2.03	0.00	-89.77	0.00	89.77	3,661.61	1,830.81	6,465.12	3,237.37	1.65	-0.18	0.034
87.00	-20.61	-2.04	0.00	-85.71	0.00	85.71	3,632.18	1,816.09	6,339.29	3,174.36	1.73	-0.19	0.033
90.00	-19.93	-2.05	0.00	-79.59	0.00	79.59	3,587.48	1,793.74	6,151.87	3,080.51	1.85	-0.20	0.031
92.58	-18.88	-2.05	0.00	-74.31	0.00	74.31	3,548.53	1,774.27	5,992.00	3,000.45	1.96	-0.20	0.030
95.00	-16.86	-2.06	0.00	-69.35	0.00	69.35	3,511.56	1,755.78	5,843.19	2,925.94	2.06	-0.20	0.029
98.41	-16.51	-2.06	0.00	-62.32	0.00	62.32	2,757.29	1,378.64	4,577.91	2,292.36	2.21	-0.21	0.033
100.00	-15.62	-2.06	0.00	-59.05	0.00	59.05	2,739.94	1,369.97	4,504.91	2,255.80	2.28	-0.21	0.032
104.00	-15.37	-2.05	0.00	-50.83	0.00	50.83	2,695.39	1,347.70	4,322.06	2,164.24	2.46	-0.22	0.029
105.00	-14.30	-2.03	0.00	-48.77	0.00	48.77	2,684.08	1,342.04	4,276.63	2,141.49	2.51	-0.22	0.028
110.00	-13.25	-1.99	0.00	-38.62	0.00	38.62	2,626.44	1,313.22	4,051.27	2,028.65	2.75	-0.23	0.024
115.00	-12.84	-1.96	0.00	-28.69	0.00	28.69	2,567.01	1,283.50	3,829.12	1,917.41	2.99	-0.24	0.020
117.00	-10.56	-1.80	0.00	-24.76	0.00	24.76	2,542.74	1,271.37	3,741.21	1,873.39	3.10	-0.24	0.017
119.00	-9.45	-1.71	0.00	-21.16	0.00	21.16	2,518.18	1,259.09	3,653.88	1,829.66	3.20	-0.24	0.015
120.00	-8.62	-1.62	0.00	-19.46	0.00	19.46	2,505.80	1,252.90	3,610.43	1,807.90	3.25	-0.25	0.014
125.00	-8.29	-1.57	0.00	-11.36	0.00	11.36	2,442.80	1,221.40	3,395.49	1,700.27	3.51	-0.25	0.010
127.00	-7.41	-1.45	0.00	-8.21	0.00	8.21	2,417.10	1,208.55	3,310.62	1,657.77	3.61	-0.25	0.008
128.00	-3.89	-0.90	0.00	-6.77	0.00	6.77	2,404.14	1,202.07	3,268.43	1,636.65	3.67	-0.25	0.006
128.50	-3.75	-0.88	0.00	-6.32	0.00	6.32	2,397.64	1,198.82	3,247.40	1,626.11	3.69	-0.25	0.005
128.50	-3.75	-0.88	0.00	-6.32	0.00	6.32	1,182.32	591.16	1,613.50	807.95	3.69	-0.25	0.011
130.00	-2.54	-0.66	0.00	-5.00	0.00	5.00	1,176.33	588.17	1,587.39	794.88	3.77	-0.25	0.008
135.00	-2.36	-0.61	0.00	-1.73	0.00	1.73	1,155.21	577.60	1,500.16	751.20	4.04	-0.25	0.004
137.00	-1.92	-0.50	0.00	-0.50	0.00	0.50	1,146.26	573.13	1,465.23	733.70	4.14	-0.25	0.002
138.00	0.00	0.00	0.00	0.00	0.00	0.00	1,141.67	570.84	1,447.77	724.96	4.20	-0.25	0.000
138.50	0.00	0.00	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	4.22	-0.25	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.50	-2.61	0.00	-283.03	0.00	283.03	4,622.17	2,311.08	12,011.94	6,014.90	0.00	0.00	0.055
5.00	-33.23	-2.59	0.00	-269.96	0.00	269.96	4,577.30	2,288.65	11,662.64	5,839.99	0.01	-0.01	0.053
10.00	-31.98	-2.55	0.00	-257.03	0.00	257.03	4,530.64	2,265.32	11,313.44	5,665.13	0.02	-0.02	0.052
15.00	-30.76	-2.52	0.00	-244.26	0.00	244.26	4,482.20	2,241.10	10,964.63	5,490.46	0.05	-0.03	0.051
20.00	-29.55	-2.47	0.00	-231.68	0.00	231.68	4,431.97	2,215.98	10,616.46	5,316.12	0.09	-0.04	0.050
25.00	-28.37	-2.43	0.00	-219.31	0.00	219.31	4,379.95	2,189.98	10,269.21	5,142.24	0.14	-0.05	0.049
30.00	-27.21	-2.39	0.00	-207.16	0.00	207.16	4,326.15	2,163.08	9,923.16	4,968.95	0.20	-0.06	0.048
35.00	-26.07	-2.34	0.00	-195.22	0.00	195.22	4,270.57	2,135.29	9,578.57	4,796.40	0.27	-0.07	0.047
40.00	-24.95	-2.30	0.00	-183.51	0.00	183.51	4,213.20	2,106.60	9,235.72	4,624.72	0.36	-0.09	0.046
45.00	-24.80	-2.29	0.00	-172.04	0.00	172.04	4,154.05	2,077.02	8,894.88	4,454.05	0.45	-0.10	0.045
45.66	-23.07	-2.21	0.00	-170.52	0.00	170.52	4,146.06	2,073.03	8,849.83	4,431.49	0.47	-0.10	0.044
50.00	-21.95	-2.16	0.00	-160.92	0.00	160.92	4,093.11	2,046.55	8,556.32	4,284.52	0.56	-0.11	0.043
52.83	-21.48	-2.14	0.00	-154.80	0.00	154.80	4,095.88	2,047.94	8,571.50	4,292.12	0.63	-0.11	0.041
55.00	-20.41	-2.10	0.00	-150.15	0.00	150.15	4,068.92	2,034.46	8,425.29	4,218.91	0.68	-0.12	0.041
60.00	-19.37	-2.06	0.00	-139.65	0.00	139.65	4,005.50	2,002.75	8,090.36	4,051.19	0.81	-0.13	0.039
65.00	-18.34	-2.03	0.00	-129.34	0.00	129.34	3,940.29	1,970.15	7,758.36	3,884.94	0.95	-0.14	0.038
70.00	-17.34	-2.02	0.00	-119.16	0.00	119.16	3,873.30	1,936.65	7,429.56	3,720.30	1.11	-0.15	0.037
75.00	-16.36	-2.01	0.00	-109.09	0.00	109.09	3,804.52	1,902.26	7,104.24	3,557.40	1.27	-0.16	0.035
80.00	-15.29	-2.01	0.00	-99.05	0.00	99.05	3,733.96	1,866.98	6,782.67	3,396.38	1.45	-0.17	0.033
85.00	-14.91	-2.01	0.00	-89.00	0.00	89.00	3,661.61	1,830.81	6,465.12	3,237.37	1.64	-0.18	0.032
87.00	-14.34	-2.02	0.00	-84.98	0.00	84.98	3,632.18	1,816.09	6,339.29	3,174.36	1.71	-0.19	0.031
90.00	-13.86	-2.02	0.00	-78.92	0.00	78.92	3,587.48	1,793.74	6,151.87	3,080.51	1.83	-0.19	0.029
92.58	-13.13	-2.03	0.00	-73.70	0.00	73.70	3,548.53	1,774.27	5,992.00	3,000.45	1.94	-0.20	0.028
95.00	-11.73	-2.04	0.00	-68.78	0.00	68.78	3,511.56	1,755.78	5,843.19	2,925.94	2.04	-0.20	0.027
98.41	-11.48	-2.04	0.00	-61.82	0.00	61.82	2,757.29	1,378.64	4,577.91	2,292.36	2.19	-0.21	0.031
100.00	-10.86	-2.04	0.00	-58.58	0.00	58.58	2,739.94	1,369.97	4,504.91	2,255.80	2.26	-0.21	0.030
104.00	-10.69	-2.04	0.00	-50.44	0.00	50.44	2,695.39	1,347.70	4,322.06	2,164.24	2.44	-0.22	0.027
105.00	-9.94	-2.01	0.00	-48.40	0.00	48.40	2,684.08	1,342.04	4,276.63	2,141.49	2.49	-0.22	0.026
110.00	-9.22	-1.97	0.00	-38.33	0.00	38.33	2,626.44	1,313.22	4,051.27	2,028.65	2.72	-0.23	0.022
115.00	-8.93	-1.94	0.00	-28.49	0.00	28.49	2,567.01	1,283.50	3,829.12	1,917.41	2.97	-0.24	0.018
117.00	-7.34	-1.79	0.00	-24.60	0.00	24.60	2,542.74	1,271.37	3,741.21	1,873.39	3.07	-0.24	0.016
119.00	-6.57	-1.70	0.00	-21.02	0.00	21.02	2,518.18	1,259.09	3,653.88	1,829.66	3.17	-0.24	0.014
120.00	-5.99	-1.61	0.00	-19.33	0.00	19.33	2,505.80	1,252.90	3,610.43	1,807.90	3.22	-0.24	0.013
125.00	-5.77	-1.56	0.00	-11.29	0.00	11.29	2,442.80	1,221.40	3,395.49	1,700.27	3.48	-0.25	0.009
127.00	-5.15	-1.44	0.00	-8.17	0.00	8.17	2,417.10	1,208.55	3,310.62	1,657.77	3.58	-0.25	0.007
128.00	-2.70	-0.89	0.00	-6.73	0.00	6.73	2,404.14	1,202.07	3,268.43	1,636.65	3.63	-0.25	0.005
128.50	-2.61	-0.87	0.00	-6.28	0.00	6.28	2,397.64	1,198.82	3,247.40	1,626.11	3.66	-0.25	0.005
128.50	-2.61	-0.87	0.00	-6.28	0.00	6.28	1,182.32	591.16	1,613.50	807.95	3.66	-0.25	0.010
130.00	-1.77	-0.65	0.00	-4.98	0.00	4.98	1,176.33	588.17	1,587.39	794.88	3.74	-0.25	0.008
135.00	-1.64	-0.61	0.00	-1.72	0.00	1.72	1,155.21	577.60	1,500.16	751.20	4.00	-0.25	0.004
137.00	-1.34	-0.50	0.00	-0.50	0.00	0.50	1,146.26	573.13	1,465.23	733.70	4.11	-0.25	0.002
138.00	0.00	0.00	0.00	0.00	0.00	0.00	1,141.67	570.84	1,447.77	724.96	4.16	-0.25	0.000
138.50	0.00	0.00	0.00	0.00	0.00	0.00	1,139.36	569.68	1,439.04	720.59	4.19	-0.25	0.000

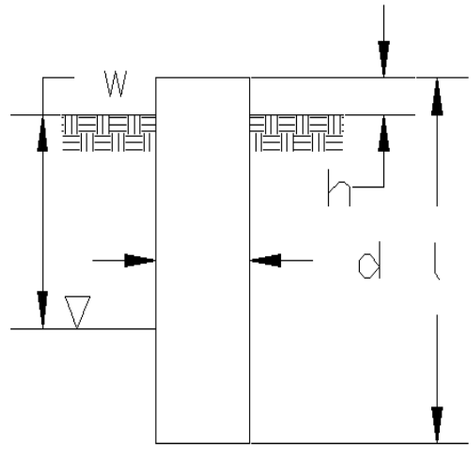
Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	28.60	0.00	49.82	0.00	0.00	2872.41	0.00	0.49
0.9D + 1.6W	28.59	0.00	37.36	0.00	0.00	2855.79	0.00	0.48
1.2D + 1.0Di + 1.0Wi	8.13	0.00	71.55	0.00	0.00	792.46	0.00	0.15
(1.2 + 0.2Sds) * DL + E ELFM	2.29	0.00	49.59	0.00	0.00	242.28	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.61	0.00	49.59	0.00	0.00	285.09	0.00	0.06
(0.9 - 0.2Sds) * DL + E ELFM	2.29	0.00	34.50	0.00	0.00	240.63	0.00	0.05
(0.9 - 0.2Sds) * DL + E EMAM	2.61	0.00	34.50	0.00	0.00	283.03	0.00	0.05
1.0D + 1.0W	5.64	0.00	41.54	0.00	0.00	564.76	0.00	0.10

Site Name: Middle Haddam Road-CROWN CT, CT
Site Number: 411257
Tower Type: MP
Design Base Loads (Factored) - Analysis per TIA-222-G Standards

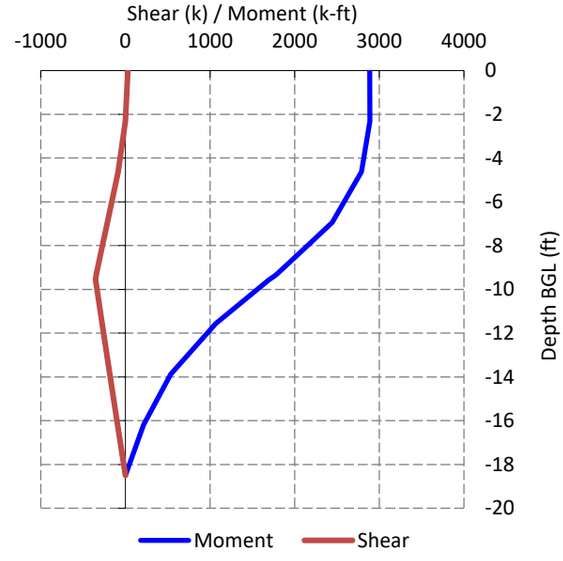
Pier Foundation Analysis

Foundation Analysis Parameters		
Analyze or Design a Foundation?	Analyze	-
Foundation Mapped:	Y	-
Moment (M):	2872.4	k-ft
Shear/Leg (V):	28.6	k
Axial Load (P):	49.8	k
Uplift/Leg (U):	0.0	k
Diameter of Caisson (d):	8	ft
Caisson Embedment (L-h):	18.5	ft
Caisson Height Above Ground (h):	0.5	ft
Depth Below Ground Surface to Water Table (w):	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Water:	62.4	pcf
Tension/Compression Skin Friction Factor:	1	-
Pullout Angle:	30	°

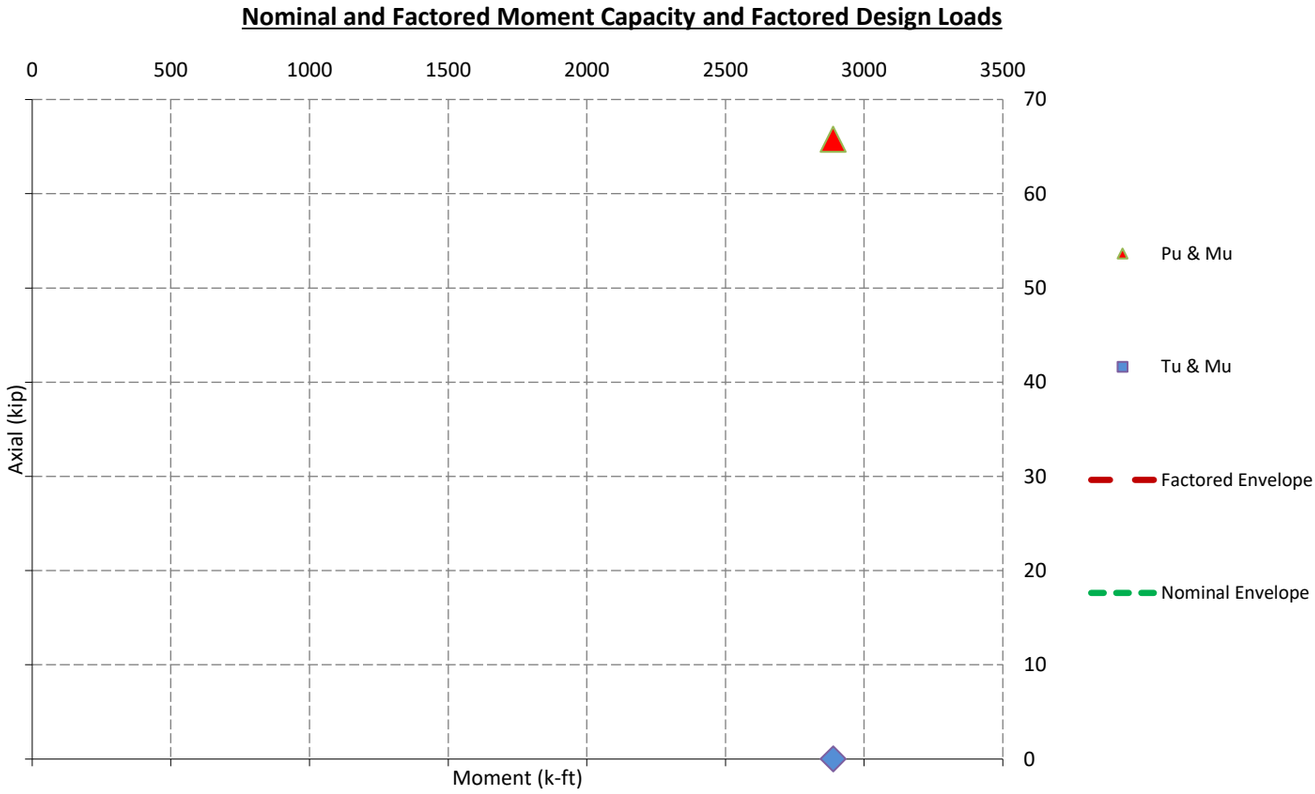


Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cu (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0	2	105	0	0	0	0
2	4	140	9083			
4	9	140	13483		6067	
9	19.5	139	9180		4131	43469

Soil Strength Capacities		
Required Embedment:	10.0	ft
Volume of Concrete:	955.0	ft^3
Buoyant Weight of Concrete:	143.3	k
Average Soil Unit Weight:	135.7	pcf
Skin Friction Resistance:	1748.7	k
Compressive Bearing Resistance:	2185.0	k
Pullout Weight (Minus Concrete Weight):	636.9	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	477.7	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	2950.3	k
T_u:	0.0	k
$T_u/\phi_s T_n$:	0%	Pass
P_u:	65.8	k
$P_u/\phi_s P_n$:	2%	Pass
Total Lateral Resistance:	9650.9	k
Inflection Point (Below Ground Surface):	9.6	ft
Moment At Inflection Point (M_D):	3160.1	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	28532.1	k-ft
ϕ_s:	0.75	-
$M_D/\phi_s M_n$:	11%	Pass



52%	Pass


Nominal and Factored Moment Capacity and Factored Design Loads
0
500
1000
1500
2000
2500
3000
3500
70
60
50
40
30
20
10
0
Axial (kip)
Moment (k-ft)
Pu & Mu
Tu & Mu
Factored Envelope
Nominal Envelope

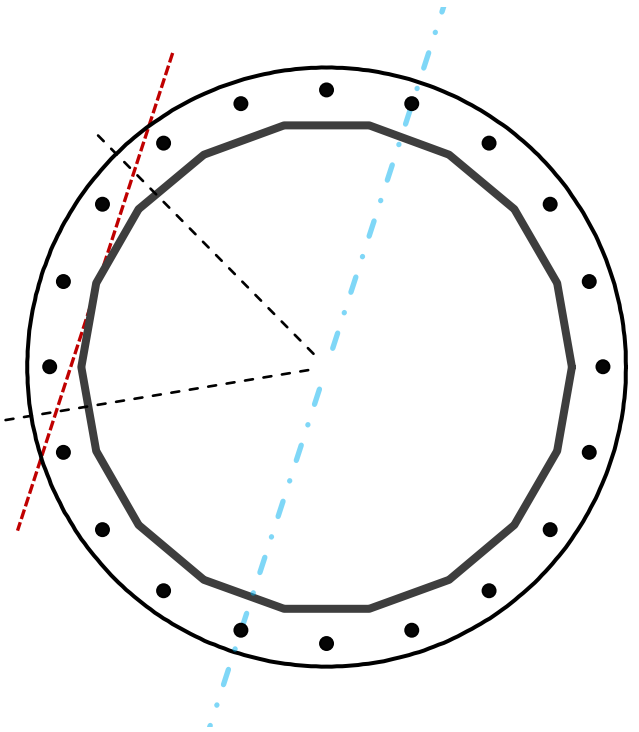
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	63.5	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2872.4	k-ft
Axial, Pu	49.8	k
Shear, Vu	28.6	k
Neutral Axis	72	°

Report Capacities		
Component	Capacity	Result
Base Plate	38%	Pass
Anchor Rods	37%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	79	in
Thickness	2 1/4	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	971.9	k
Bending Stress, ϕMn	2561.4	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	73	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	11.5	in
Orientation Offset	0	°
Applied Force, Pu	96.9	k
Anchor Rods, ϕPn	259.8	k

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***128.5 ft***
Pole Diameter	33.54	in
Pole Thickness	0.3125	in
Plate Diameter	41	in
Plate Thickness	1	in
Plate Fy	65	ksi
Weld Length	0.55	in
f_s Resistance	85.11	k-in
Applied	2.75	k-in

Code Rev.	***G***
Moment	32.0 k-ft
Axial	3.6 k

Required Flange Thickness:
0.18 in OK

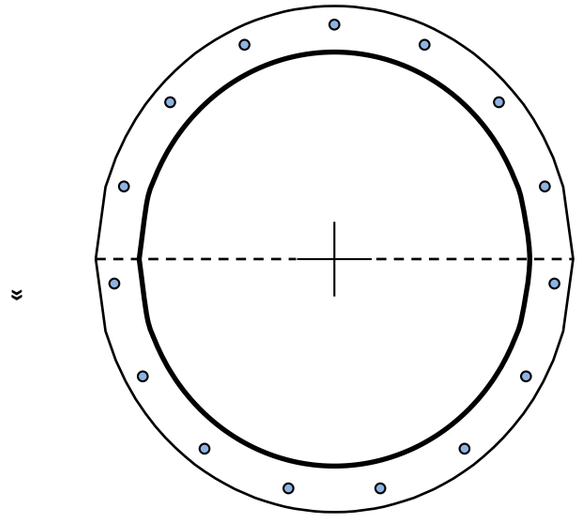
Date	9/12/2019
Engineer	Lucas.Tait
Site #	411257
Carrier	Verizon Wireless

Stiffeners

#	

Bolts

#	***15***	
Bolt Circle	38	in
(R)adial / (S)quare	R	
Bolt Gap	6	in
Diameter	1	in
Hole Diameter	1.125	in
Type	A572	
Fy	65	ksi
Fu	80	ksi
f_s Resistance	36.34	k
Applied	2.46	k



Reinforcement

#	

Plate Stress Ratio:
3% Pass

Bolt Stress Ratio:
7% Pass

Extra Bolts O

#	

Mount Structural Analysis Report of the Existing Platform

Trylon Project #153798
August 26, 2019

Carrier Name	Verizon
ATC Site Code	411257
ATC Site Name	Middle Haddam Road Crown CT
Verizon Site Code	467183
Verizon Site Name	Portland S CT
Site Adress	191 Middle Haddam Road ,Portland,Middlesex, CT 06480
Coordinates	41.56225, -72.573778
Structure Type	Monopole
Mount Elevation	125-ft
Antenna Centerline	127-ft
Standard	2018 IBC / ASCE 7-16 / TIA-222-H

Structure Rating =	**56%**	**PASS**

Analysis performed by:
Mitroi Camelia

Reviewed and approved by:
Cliff Abernathy, P.E.

STATE OF CONNECTICUT
CLIFF ABERNATHY
No. 31023
LICENSED
PROFESSIONAL ENGINEER

DocuSigned by:
[signature]
142937E47E...

8/26/2019

Trylon

Analysis Date: 08/26/2019

MOUNT STRUCTURAL ANALYSIS REPORT

ATC

10 Presidential Way Woburn, MA 01801

Attention: **Blake Paynter**

Subject: Analysis of the Existing Platform installed at 125-ft. elevation

Dear Blake Paynter,

We have been provided with RF information, photos and sketches of the structure for above-referenced site. Verizon is proposing to change the equipment configuration on the existing mounting hardware.

A revised antenna, coax and miscellaneous equipment schematic have been provided to us. We have been asked to evaluate this information to determine whether or not the mounting apparatus is adequate to safely support the proposed loading change.

RISA 3D (version 17), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

1. Source of data

Document Type	Source	Date
Mount Mapping	Trylon	15/8/2019
Scoping Master Tracker	ATC	24/6/2019
Construction Drawings	Not Available	Not Available

2. Analysis Criteria

Standard	2018 IBC / ASCE 7-16 / TIA-222-H
Basic Design Wind Speed without Ice (mph)	120
Basic Design Wind Speed with Ice (mph)	50
Basic Design Ice Thickness (in)	1.00
Structure Risk Category	II
Exposure Category	B
Topographic Factor, Kzt	1
Wind Direction Probability Factor, Kd	0.95
Gust Factor, Gh	1.00
Shielding Factor, Ka	0.90
Velocity Pressure Coefficient, Kz	1.06
Rooftop Speed-up Factor, Ks	1.00
Ground Elevation Factor, Ke	0.99
Wind Velocity Pressure w/o Ice, qz (lbs/sf)	36.72
Wind Velocity Pressure with Ice, qz (lbs/sf)	6.38
Thickness of Radial Glaze, tiz (in)	1.14
Seismic Response Coefficient, Cs	0.11
Live Load Wind Speed (mph)	30
Man Live Load at Mounting Pipes, Lw (lbs)	500
Man Live Load at Mid/End Points, Lv (lbs)	250

3. Final Equipment Configuration

Mount Centerline	125 ft.
Antennas Centerline	127 ft.
Antennas Azimuth	30/150/270

Position No.	Quantity for all sectors	Equipment Manufacturer	Equipment Model	Height [in]	Width [in]	Thk. [in]	Weight [lbs]	Ice Weight [lbs]	Normal Wind Force w/o ice [lbs]	Normal Wind Force w/ ice [lbs]
1,4	6	Andrew	DB848H80E-SX	72	6.5	8	16.0	96.1	164.96	37.68
3	6	Quintel	QS6656-5D	72	12	9.6	92.5	138.5	268.79	55.83
3	3	Samsung	B2/B66A RRH-BR049	15	15	10	84.4	33.5	41.31	10.16
3	3	Samsung	B5/B13 RRH-BR04C	15	15	8.1	70.4	31.8	33.46	8.59
-	1	Raycap	RVZDC-6627-PF-48	28.93	15.73	10.31	32.0	56.9	73.11	15.69

4. Standard Conditions for Providing Structural Consulting Services on Existing Structures

1) Mounting hardware is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorized by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.
2) The structural analysis has been performed assuming that hardware is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.
3) The structural analysis provided is an assessment of the primary load carrying capacity of the hardware. We provide a limited scope of service. In some cases we cannot verify the capacity of every weld, plate, connection detail, etc. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.
4) We cannot be held responsible for mounting hardware that is installed improperly or hardware that is loose or has a tendency of working loose over the lifetime of the mounting hardware. Our analysis has been performed assuming fully tightened connections, and proper installation and symmetry of the mounting hardware per manufacturer's instructions.
5) The structural analysis has been performed using information currently provided by the client and potentially field verified. We have been provided with a mounting arrangement for all telecommunications equipment, including antennas RRH's, TMA's, RRU's, diplexers, surge protection devices, etc. Our analysis has been based upon a particular mounting arrangement. We are not responsible for deviations in the mounting arrangement that may occur over time. If deviations in equipment type or mounting arrangements are proposed, then we should be contacted to revise the recommendations of this structural report.
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7) Steel grade and strength is unknown and cannot be field tested. We cannot be held responsible for equipment manufactured from inferior steel or bolts. Our analysis assumes that standard structural grade steel has been used by the equipment manufacturer for all assembled parts of the mounting apparatus. Acceptable steels and connection components are specified by the American Institute of Steel Construction. It is assumed all welded connections are performed in the shop under the latest American Welding Society Code. No field welds are permitted or assumed for the existing premanufactured equipment.
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Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
HSS (Round)	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
U-Bolts, Threaded Rods	SAE J429 Gr.2

5. Analysis Results

Mount CL (ft.)	Component	% Capacity	Pass/Fail	Notes
125	Tube Face Horizontals	25	Pass	1,2
	Tube Standoffs	56	Pass	1,2
	Mounting Pipes	55	Pass	1,2
	Connections	48	Pass	1,2

Structure Rating (max from all components) =	**56%**

Notes:

1. See additional documentation in "Appendix B - Analysis Output" for calculations supporting the % capacity consumed.
2. All sectors are typical

6. Conclusions and Recommendations

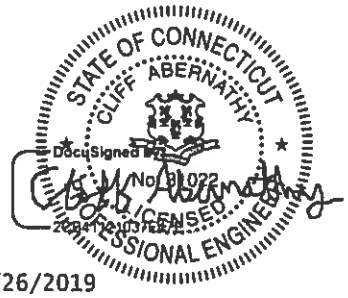
Based on information provided, our calculations conclude that the Existing Verizon Platform located at 125-ft elevation on the existing Monopole at the specified address, is ADEQUATE to safely support the proposed equipment, subject to the attached Standard Conditions on page 3.

Sincerely,
Analysis performed by:

Mitroi Camelia

Reviewed by:

Cliff Abernathy, P.E.



8/26/2019

Trylon

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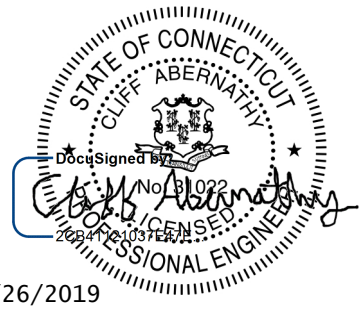

8/26/2019

APPENDIX A
ADDITIONAL CALCULATIONS

Trylon

Analysis date: 08/26/2019

Detailed Wind Force Calculation Sample

Manufacturer	**Andrew**	
Model	**DB848H80E-SX**	
Flat or Round	F	
Length of Normal Face	72	[in]
Width of Normal Face	6.5	[in]
Length of Transversal Face	72	[in]
Width of Transversal Face	8	[in]
Weight	16.00	[lbs.]
A_N	468.00	[in^2]
A_T	576.00	[in^2]
C_{aN}	1.54	
C_{aT}	1.47	

Wind Forces without ice

Wind Force 0 degrees	164.96	[lbs.]
Wind Force 30 degrees	172.19	[lbs.]
Wind Force 60 degrees	186.65	[lbs.]
Wind Force 90 degrees	193.88	[lbs.]
Wind Force 120 degrees	186.65	[lbs.]
Wind Force 150 degrees	172.19	[lbs.]

Wind Forces with ice

Wind Force 0 degrees	37.68	[lbs.]
Wind Force 30 degrees	38.97	[lbs.]
Wind Force 60 degrees	41.56	[lbs.]
Wind Force 90 degrees	42.86	[lbs.]
Wind Force 120 degrees	41.56	[lbs.]
Wind Force 150 degrees	38.97	[lbs.]
Weight of ice	96.06	[lbs.]

SEISMIC CALCULATIONS

Seismic Input

S_S	0.21
S_1	0.056
S_{MS}	0.337
S_{M1}	0.134
$S_{DS} = 2/3\ S_{MS}$	0.225
$S_{D1} = 2/3\ S_{M1}$	0.08933333
ρ	1

Seismic Response Coefficient	
Tower Height (ft)	150
Mount Location (ft)	125
As (Amplification Factor)	1.00
R (Response modification coeficient)	2
I (Importance Factor)	1
Cs, min	0.01
Cs	0.11

WIND FORCES 0 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	A_N [in²]	A_T [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	0	680.00	0.00	42.50	0.00	2.00	1.20	312.12	1.84	1.84	0.00
M2	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	90	368.00	0.00	23.00	0.00	1.93	1.20	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	102	2.375	102	2.375	90	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M8	Pipe	2.375" O.D.	R	102	2.375	102	2.375	90	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M10	Pipe	2.375" O.D.	R	83	2.375	83	2.375	90	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.65	0.00
M14	Pipe	2.375" O.D.	R	102	2.375	102	2.375	90	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M12	Pipe	2.375" O.D.	R	102	2.375	102	2.375	90	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 0 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	120	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	0.46	0.00
M16	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	210	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	1.33	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M30	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M32	Pipe	2.375" O.D.	R	83	2.375	83	2.375	210	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.65	0.00
M36	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M34	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

1825 W. Walnut Hill Lane Suite 302
Irving, Texas 75038

Trylon

Analysis date: 08/26/2019

WIND FORCES 0 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length	Normal Width	Lateral Length	Lateral Width	θ (wind direction from normal face)	AN	AT	Aspect Ratio Normal	Aspect Ratio Lateral	CaN	CaT	Resultant Wind Force Frontal	Resultant Wind Force Distributed	Resultant Component on Global X	Resultant Component on Global Y
				[in]	[in]	[in]	[in]	[°]	[in²]	[in²]	-	-	-	-	[lbs]	[lbs/in]	[lbs/in]	[lbs/in]
M6	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	240	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	0.46	0.00
M15	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	330	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	1.33	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M20	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M22	Pipe	2.375" O.D.	R	83	2.375	83	2.375	330	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.65	0.00
M26	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
M24	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.65	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 30 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	30	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	0.23	0.40
M2	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	120	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	0.67	1.15
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	102	2.375	102	2.375	120	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M8	Pipe	2.375" O.D.	R	102	2.375	102	2.375	120	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M10	Pipe	2.375" O.D.	R	83	2.375	83	2.375	120	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.33	0.57
M14	Pipe	2.375" O.D.	R	102	2.375	102	2.375	120	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M12	Pipe	2.375" O.D.	R	102	2.375	102	2.375	120	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 30 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	150	680.00	0.00	42.50	0.00	2.00	1.20	312.12	1.84	0.92	1.59
M16	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	240	368.00	0.00	23.00	0.00	1.93	1.20	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M30	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M32	Pipe	2.375" O.D.	R	83	2.375	83	2.375	240	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.33	0.57
M36	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M34	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 30 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	270	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	0.23	0.40
M15	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	360	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	0.67	1.15
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M20	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M22	Pipe	2.375" O.D.	R	83	2.375	83	2.375	360	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.33	0.57
M26	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M24	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 60 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	60	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	0.23	0.40
M2	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	150	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	0.67	1.15
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	195	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	195	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	102	2.375	102	2.375	150	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M8	Pipe	2.375" O.D.	R	102	2.375	102	2.375	150	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M10	Pipe	2.375" O.D.	R	83	2.375	83	2.375	150	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.33	0.57
M14	Pipe	2.375" O.D.	R	102	2.375	102	2.375	150	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M12	Pipe	2.375" O.D.	R	102	2.375	102	2.375	150	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 60 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	180	680.00	0.00	42.50	0.00	2.00	1.20	312.12	1.84	0.92	1.59
M16	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	270	368.00	0.00	23.00	0.00	1.93	1.20	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	102	2.375	102	2.375	270	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M30	Pipe	2.375" O.D.	R	102	2.375	102	2.375	270	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M32	Pipe	2.375" O.D.	R	83	2.375	83	2.375	270	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.33	0.57
M36	Pipe	2.375" O.D.	R	102	2.375	102	2.375	270	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M34	Pipe	2.375" O.D.	R	102	2.375	102	2.375	270	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 60 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	300	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	0.23	0.40
M15	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	390	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	0.67	1.15
0	0	0	0	0	0.000	0	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	102	2.375	102	2.375	390	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M20	Pipe	2.375" O.D.	R	102	2.375	102	2.375	390	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M22	Pipe	2.375" O.D.	R	83	2.375	83	2.375	390	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.33	0.57
M26	Pipe	2.375" O.D.	R	102	2.375	102	2.375	390	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
M24	Pipe	2.375" O.D.	R	102	2.375	102	2.375	390	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.33	0.57
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 90 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	90	680.00	0.00	42.50	0.00	2.00	1.20	0.00	0.00	0.00	0.00
M2	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	180	368.00	0.00	23.00	0.00	1.93	1.20	163.28	1.77	0.00	1.77
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	102	2.375	102	2.375	180	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M8	Pipe	2.375" O.D.	R	102	2.375	102	2.375	180	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M10	Pipe	2.375" O.D.	R	83	2.375	83	2.375	180	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.00	0.65
M14	Pipe	2.375" O.D.	R	102	2.375	102	2.375	180	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M12	Pipe	2.375" O.D.	R	102	2.375	102	2.375	180	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 90 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	210	680.00	0.00	42.50	0.00	2.00	1.20	234.09	1.38	0.00	1.38
M16	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	300	368.00	0.00	23.00	0.00	1.93	1.20	40.82	0.44	0.00	0.44
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	102	2.375	102	2.375	300	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M30	Pipe	2.375" O.D.	R	102	2.375	102	2.375	300	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M32	Pipe	2.375" O.D.	R	83	2.375	83	2.375	300	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.00	0.65
M36	Pipe	2.375" O.D.	R	102	2.375	102	2.375	300	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M34	Pipe	2.375" O.D.	R	102	2.375	102	2.375	300	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 90 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	330	680.00	0.00	42.50	0.00	2.00	1.20	234.09	1.38	0.00	1.38
M15	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	420	368.00	0.00	23.00	0.00	1.93	1.20	40.82	0.44	0.00	0.44
0	0	0	0	0	0.000	0	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	420	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	102	2.375	102	2.375	420	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M20	Pipe	2.375" O.D.	R	102	2.375	102	2.375	420	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M22	Pipe	2.375" O.D.	R	83	2.375	83	2.375	420	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	0.00	0.65
M26	Pipe	2.375" O.D.	R	102	2.375	102	2.375	420	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
M24	Pipe	2.375" O.D.	R	102	2.375	102	2.375	420	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	0.00	0.65
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 120 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	120	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	-0.23	0.40
M2	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	210	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	-0.67	1.15
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M8	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M10	Pipe	2.375" O.D.	R	83	2.375	83	2.375	210	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	-0.33	0.57
M14	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M12	Pipe	2.375" O.D.	R	102	2.375	102	2.375	210	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 120 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	240	680.00	0.00	42.50	0.00	2.00	1.20	78.03	0.46	-0.23	0.40
M16	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	330	368.00	0.00	23.00	0.00	1.93	1.20	122.46	1.33	-0.67	1.15
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M30	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M32	Pipe	2.375" O.D.	R	83	2.375	83	2.375	330	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	-0.33	0.57
M36	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M34	Pipe	2.375" O.D.	R	102	2.375	102	2.375	330	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 120 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	360	680.00	0.00	42.50	0.00	2.00	1.20	312.12	1.84	-0.92	1.59
M15	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	450	368.00	0.00	23.00	0.00	1.93	1.20	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	102	2.375	102	2.375	450	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M20	Pipe	2.375" O.D.	R	102	2.375	102	2.375	450	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M22	Pipe	2.375" O.D.	R	83	2.375	83	2.375	450	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	-0.33	0.57
M26	Pipe	2.375" O.D.	R	102	2.375	102	2.375	450	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
M24	Pipe	2.375" O.D.	R	102	2.375	102	2.375	450	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.33	0.57
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 150 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	A_N [in^2]	A_T [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	150	680.00	0.00	42.50	0.00	2.00	1.20	234.09	1.38	-1.19	0.69
M2	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	240	368.00	0.00	23.00	0.00	1.93	1.20	40.82	0.44	-0.38	0.22
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M8	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M10	Pipe	2.375" O.D.	R	83	2.375	83	2.375	240	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	-0.57	0.33
M14	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M12	Pipe	2.375" O.D.	R	102	2.375	102	2.375	240	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 150 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	A_N [in²]	A_T [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	270	680.00	0.00	42.50	0.00	2.00	1.20	0.00	0.00	0.00	0.00
M16	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	360	368.00	0.00	23.00	0.00	1.93	1.20	163.28	1.77	-1.54	0.89
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M30	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M32	Pipe	2.375" O.D.	R	83	2.375	83	2.375	360	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	-0.57	0.33
M36	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M34	Pipe	2.375" O.D.	R	102	2.375	102	2.375	360	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 150 DIRECTION - NO ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	170	4.000	0	4.000	390	680.00	0.00	42.50	0.00	2.00	1.20	234.09	1.38	-1.19	0.69
M15	Equal_Tube	Tube 4x4	F	92	4.000	0	4.000	480	368.00	0.00	23.00	0.00	1.93	1.20	40.82	0.44	-0.38	0.22
0	0	0	0	0	0.000	0	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	120	0.000	480	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	102	2.375	102	2.375	480	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M20	Pipe	2.375" O.D.	R	102	2.375	102	2.375	480	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M22	Pipe	2.375" O.D.	R	83	2.375	83	2.375	480	197.13	197.13	34.95	34.95	1.20	1.20	54.29	0.65	-0.57	0.33
M26	Pipe	2.375" O.D.	R	102	2.375	102	2.375	480	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
M24	Pipe	2.375" O.D.	R	102	2.375	102	2.375	480	242.25	242.25	42.95	42.95	1.20	1.20	66.72	0.65	-0.57	0.33
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	0	0.000	0	0.000	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 0 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	0	1083.44	14.39	27.40	0.36	2.00	1.20	86.34	0.50	0.50	0.00
M2	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	90	592.94	14.39	14.99	0.36	1.67	1.20	0.69	0.01	0.01	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	90	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M8	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	90	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M10	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	90	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.20	0.00
M14	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	90	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M12	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	90	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 0 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	120	1083.44	14.39	27.40	0.36	2.00	1.20	22.10	0.13	0.13	0.00
M16	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	210	592.94	14.39	14.99	0.36	1.67	1.20	29.70	0.31	0.31	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M30	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M32	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	210	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.20	0.00
M36	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M34	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 0 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	240	1083.44	14.39	27.40	0.36	2.00	1.20	22.10	0.13	0.13	0.00
M15	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	330	592.94	14.39	14.99	0.36	1.67	1.20	29.70	0.31	0.31	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M20	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M22	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	330	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.20	0.00
M26	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
M24	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.21	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 30 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	30	1083.44	14.39	27.40	0.36	2.00	1.20	64.92	0.38	0.33	0.19
M2	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	120	592.94	14.39	14.99	0.36	1.67	1.20	10.36	0.11	0.10	0.05
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	120	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M8	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	120	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M10	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	120	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.17	0.10
M14	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	120	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M12	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	120	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 30 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal) [°]	A_N [in^2]	A_T [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	150	1083.44	14.39	27.40	0.36	2.00	1.20	64.92	0.38	0.33	0.19
M16	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	240	592.94	14.39	14.99	0.36	1.67	1.20	10.36	0.11	0.10	0.05
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M30	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M32	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	240	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.17	0.10
M36	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M34	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 30 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	270	1083.44	14.39	27.40	0.36	2.00	1.20	0.69	0.00	0.00	0.00
M15	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	360	592.94	14.39	14.99	0.36	1.67	1.20	39.37	0.42	0.36	0.21
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M20	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M22	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	360	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.17	0.10
M26	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
M24	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.18	0.11
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 60 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal) [°]	A_N [in^2]	A_T [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	60	1083.44	14.39	27.40	0.36	2.00	1.20	22.10	0.13	0.06	0.11
M2	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	150	592.94	14.39	14.99	0.36	1.67	1.20	29.70	0.31	0.16	0.27
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	195	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	195	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	150	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M8	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	150	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M10	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	150	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.10	0.17
M14	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	150	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M12	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	150	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 60 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	180	1083.44	14.39	27.40	0.36	2.00	1.20	86.34	0.50	0.25	0.43
M16	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	270	592.94	14.39	14.99	0.36	1.67	1.20	0.69	0.01	0.00	0.01
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	270	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M30	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	270	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M32	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	270	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.10	0.17
M36	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	270	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M34	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	270	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 60 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal face) [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	300	1083.44	14.39	27.40	0.36	2.00	1.20	22.10	0.13	0.06	0.11
M15	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	390	592.94	14.39	14.99	0.36	1.67	1.20	29.70	0.31	0.16	0.27
0	0	0	0	2.29	0.00	2.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	390	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M20	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	390	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M22	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	390	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.10	0.17
M26	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	390	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
M24	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	390	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.11	0.18
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 90 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	90	1083.44	14.39	27.40	0.36	2.00	1.20	0.69	0.00	0.00	0.00
M2	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	180	592.94	14.39	14.99	0.36	1.67	1.20	39.37	0.42	0.00	0.42
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	225	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	315	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	180	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M8	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	180	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M10	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	180	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.00	0.20
M14	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	180	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M12	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	180	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 90 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	210	1083.44	14.39	27.40	0.36	2.00	1.20	64.92	0.38	0.00	0.38
M16	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	300	592.94	14.39	14.99	0.36	1.67	1.20	10.36	0.11	0.00	0.11
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	435	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	300	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	300	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M30	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	300	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M32	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	300	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.00	0.20
M36	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	300	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M34	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	300	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 90 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	330	1083.44	14.39	27.40	0.36	2.00	1.20	64.92	0.38	0.00	0.38
M15	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	420	592.94	14.39	14.99	0.36	1.67	1.20	10.36	0.11	0.00	0.11
0	0	0	0	2.29	0.00	2.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	555	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	420	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	420	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M20	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	420	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M22	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	420	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	0.00	0.20
M26	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	420	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
M24	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	420	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	0.00	0.21
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 120 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	120	1083.44	14.39	27.40	0.36	2.00	1.20	22.10	0.13	-0.06	0.11
M2	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	210	592.94	14.39	14.99	0.36	1.67	1.20	29.70	0.31	-0.16	0.27
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	255	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	345	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	210	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M8	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M10	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	210	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	-0.10	0.17
M14	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M12	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	210	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 120 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	240	1083.44	14.39	27.40	0.36	2.00	1.20	22.10	0.13	-0.06	0.11
M16	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	330	592.94	14.39	14.99	0.36	1.67	1.20	29.70	0.31	-0.16	0.27
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	465	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	330	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M30	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M32	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	330	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	-0.10	0.17
M36	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M34	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	330	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 120 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	360	1083.44	14.39	27.40	0.36	2.00	1.20	86.34	0.50	-0.25	0.43
M15	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	450	592.94	14.39	14.99	0.36	1.67	1.20	0.69	0.01	0.00	0.01
0	0	0	0	2.29	0.00	2.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	450	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	450	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M20	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	450	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M22	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	450	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	-0.10	0.17
M26	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	450	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
M24	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	450	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.11	0.18
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Trylon

Analysis date: 08/26/2019

WIND FORCES 150 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in^2]	AT [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M5	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	150	1083.44	14.39	27.40	0.36	2.00	1.20	64.92	0.38	-0.33	0.19
M2	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	240	592.94	14.39	14.99	0.36	1.67	1.20	10.36	0.11	-0.10	0.05
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	285	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	375	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	240	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M4	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M8	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M10	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	240	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	-0.17	0.10
M14	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M12	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	240	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 150 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	A_N [in^2]	A_T [in^2]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M1	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	270	1083.44	14.39	27.40	0.36	2.00	1.20	0.69	0.00	0.00	0.00
M16	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	360	592.94	14.39	14.99	0.36	1.67	1.20	39.37	0.42	-0.36	0.21
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	405	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	495	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	360	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M28	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M30	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M32	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	360	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	-0.17	0.10
M36	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M34	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	360	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	270	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

WIND FORCES 150 DIRECTION - ICE

Member Label	Member Type	Description	F/R	Normal Length [in]	Normal Width [in]	Lateral Length [in]	Lateral Width [in]	θ (wind direction from normal [°]	AN [in²]	AT [in²]	Aspect Ratio Normal -	Aspect Ratio Lateral -	CaN -	CaT -	Resultant Wind Force Frontal [lbs]	Resultant Wind Force Distributed [lbs/in]	Resultant Component on Global X [lbs/in]	Resultant Component on Global Y [lbs/in]
M6	Equal_Tube	Tube 4x4	F	172.29	6.29	2.29	6.29	390	1083.44	14.39	27.40	0.36	2.00	1.20	64.92	0.38	-0.33	0.19
M15	Equal_Tube	Tube 4x4	F	94.29	6.29	2.29	6.29	480	592.94	14.39	14.99	0.36	1.67	1.20	10.36	0.11	-0.10	0.05
0	0	0	0	2.29	0.00	2.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	390	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	525	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	615	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	122.29	0.00	480	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M18	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	480	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M20	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	480	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M22	Pipe	2.375" O.D.	R	85.29	4.66	85.29	4.66	480	397.75	397.75	18.29	18.29	1.05	1.05	16.65	0.20	-0.17	0.10
M26	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	480	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
M24	Pipe	2.375" O.D.	R	104.29	4.66	104.29	4.66	480	486.35	486.35	22.36	22.36	1.14	1.14	22.12	0.21	-0.18	0.11
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0	0	0	2.29	0.00	2.29	0.00	150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CONNECTION CHECK

Mount to Tower Connections Check (N1 - Results from LC14)

Reactions		
Tension Force (X)	0.6838	[kips]
Shear Force (Y)	0.0008	[kips]
Shear Force (Z)	2.398	[kips]
Torsional Moment (about x-x)	0.155	[kips-in]
Bending Moment (about y-y)	106.6	[kips-in]
Bending Moment (about z-z)	0.26	[kips-in]

Bolt Properties		
# of Bolts	4	
Distance between bolts, z-z	8	[in]
Distance between bolts, y-y	3	[in]
Bolt Diameter	0.75	[in]
Bolt Grade	A325, D<1	Assumed
An	0.334	[in^2]
Ab	0.442	[in^2]
Yield Strength, min	92	[ksi]
Tensile Strength, min	120	[ksi]

Bolt Strength		
ϕ*Rnt	30.10	[kips]
ϕ*Rnv	19.88	[kips]

Strength Check		
Tension	22.85%	PASS
Shear	3.03%	PASS
Combined Tension and Shear	5.31%	PASS

Trylon

Analysis Date: 08/26/2019

Weldment Connections Check

Reactions		
Tension Force (X)	0.6838	[kips]
Shear Force (Y)	0.0008	[kips]
Shear Force (Z)	2.398	[kips]
Torsional Moment (about x-x)	0.155	[kips-in]
Bending Moment (about y-y)	106.6	[kips-in]
Bending Moment (about z-z)	0.26	[kips-in]

Fillet Weld Check		
The standoff member is Round?	No	
Height, z-z	4	[in]
Width, y-y	4	[in]
Fillet weld Thickness	0.313	[in]
Weld Material Yield (Assumed)	70	[ksi]
Length of weldment	16.00	[in]
Section modulus in a line weld, y-y	21.33	[in^2]
Section modulus in a line weld, z-z	21.33	[in^2]
Fnw	63	ksi
Weld Force, y-y	5.04	kips/inch
Weld Force, z-z	0.05	kips/inch
ϕ*Rn	10.46	kips/inch
Weld Check	48.22%	PASS

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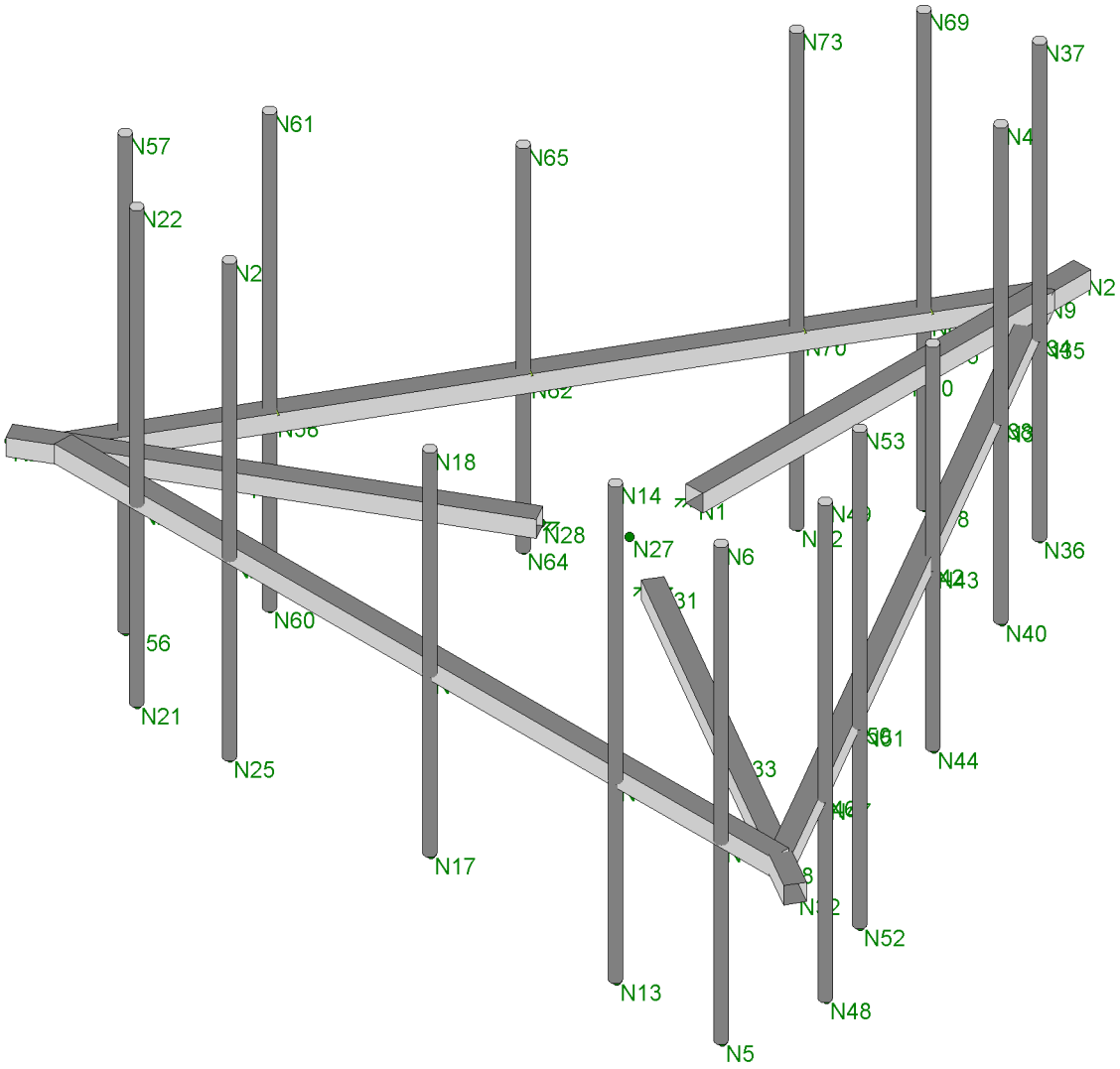
Irving, Texas 75038

APPENDIX B

SOFTWARE OUTPUTS



Loads: BLC 1, Self Weight
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 1
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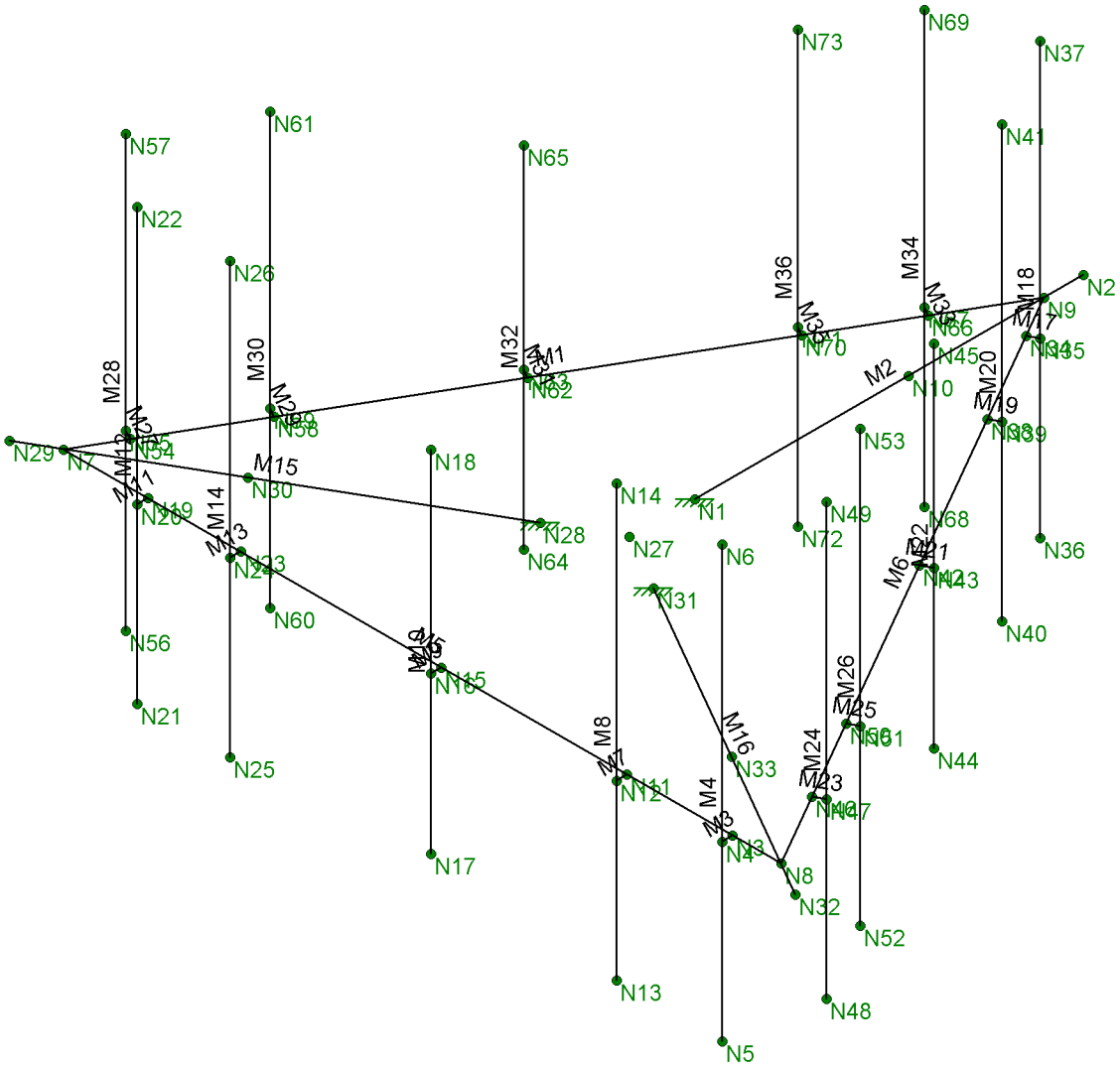

Loads: BLC 1, Self Weight
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 2
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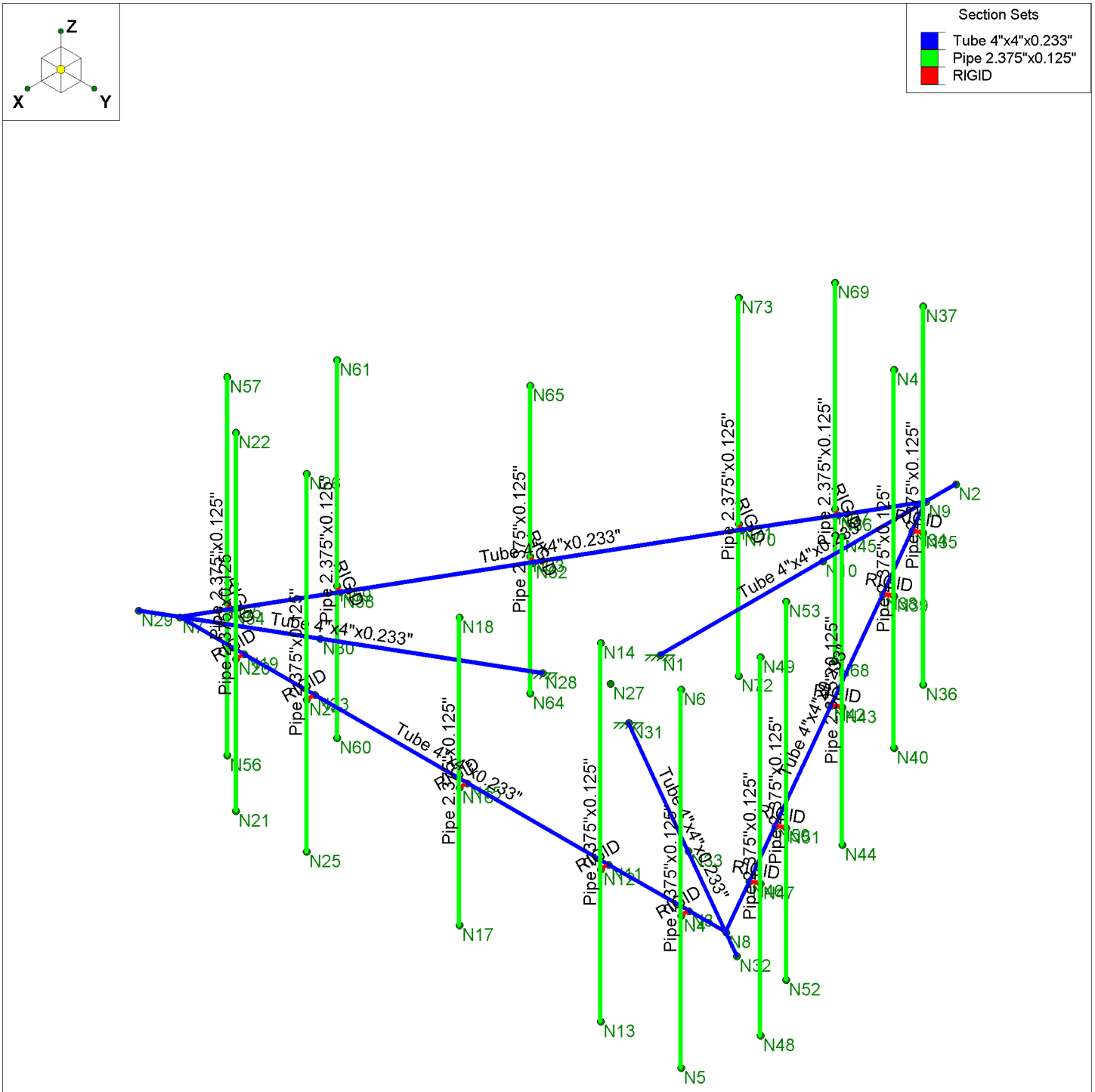

Loads: BLC 1, Self Weight
Envelope Only Solution

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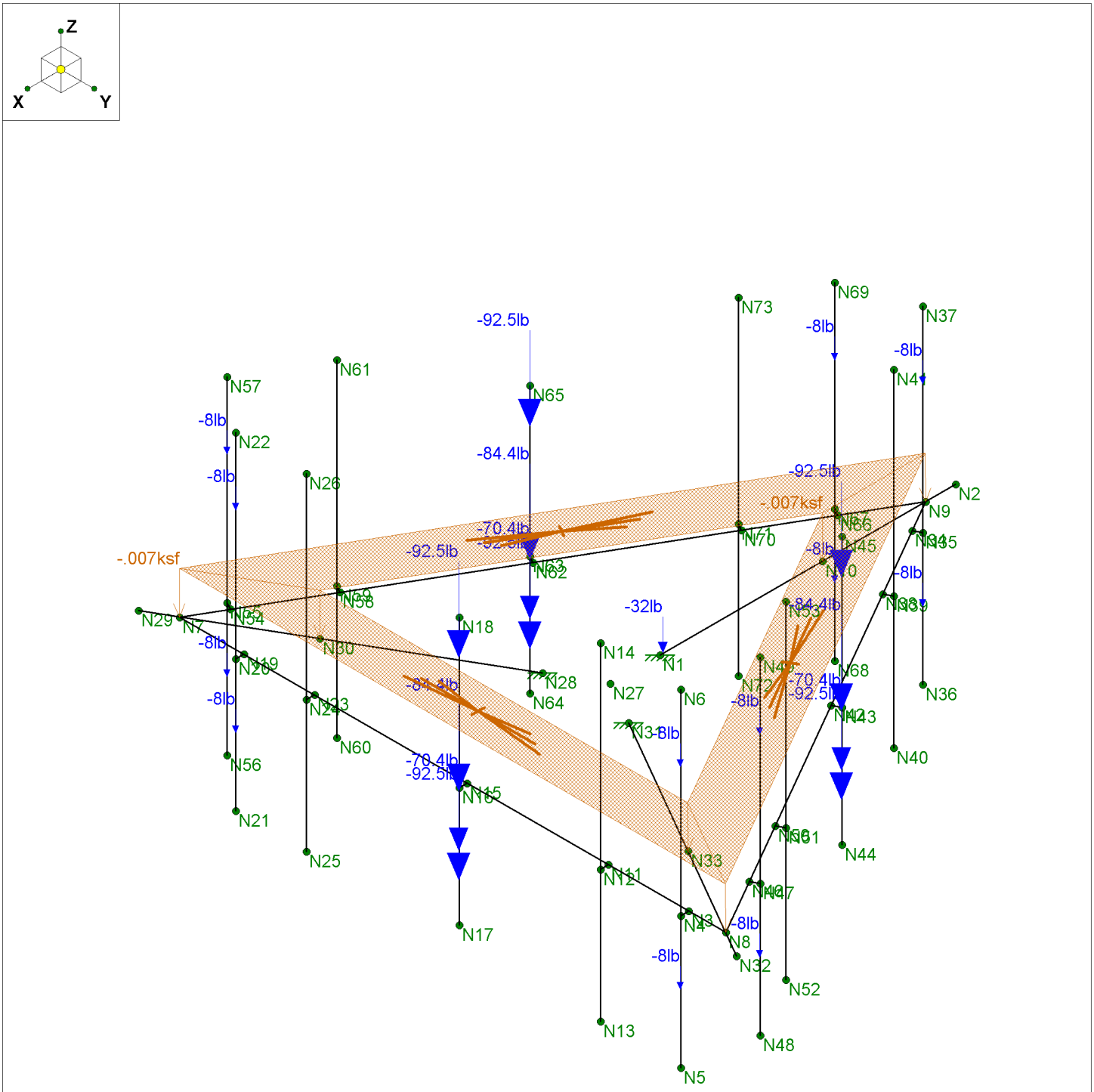

Loads: BLC 2, Weights
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 4
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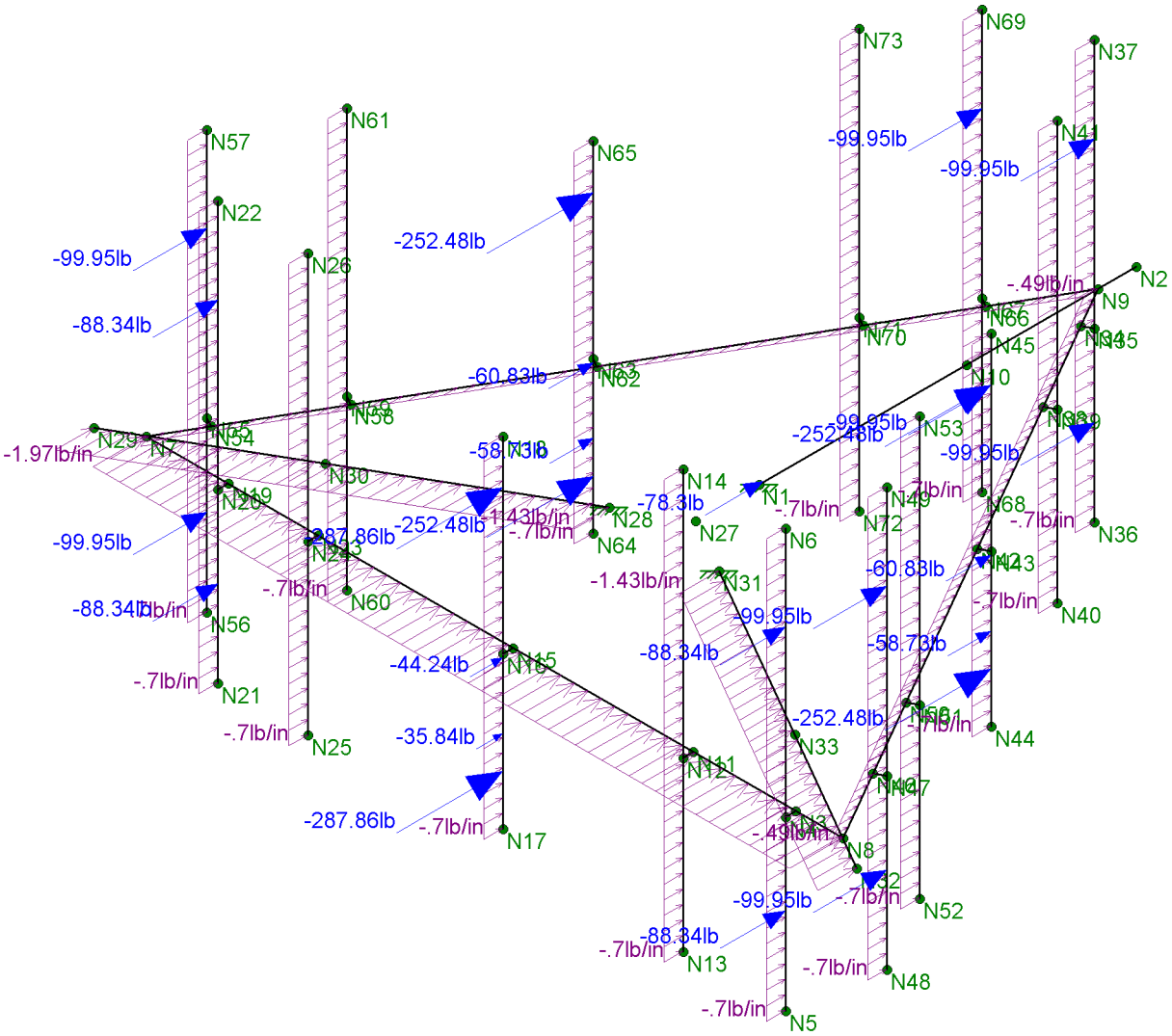

Loads: BLC 4, Wind 0°
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 5
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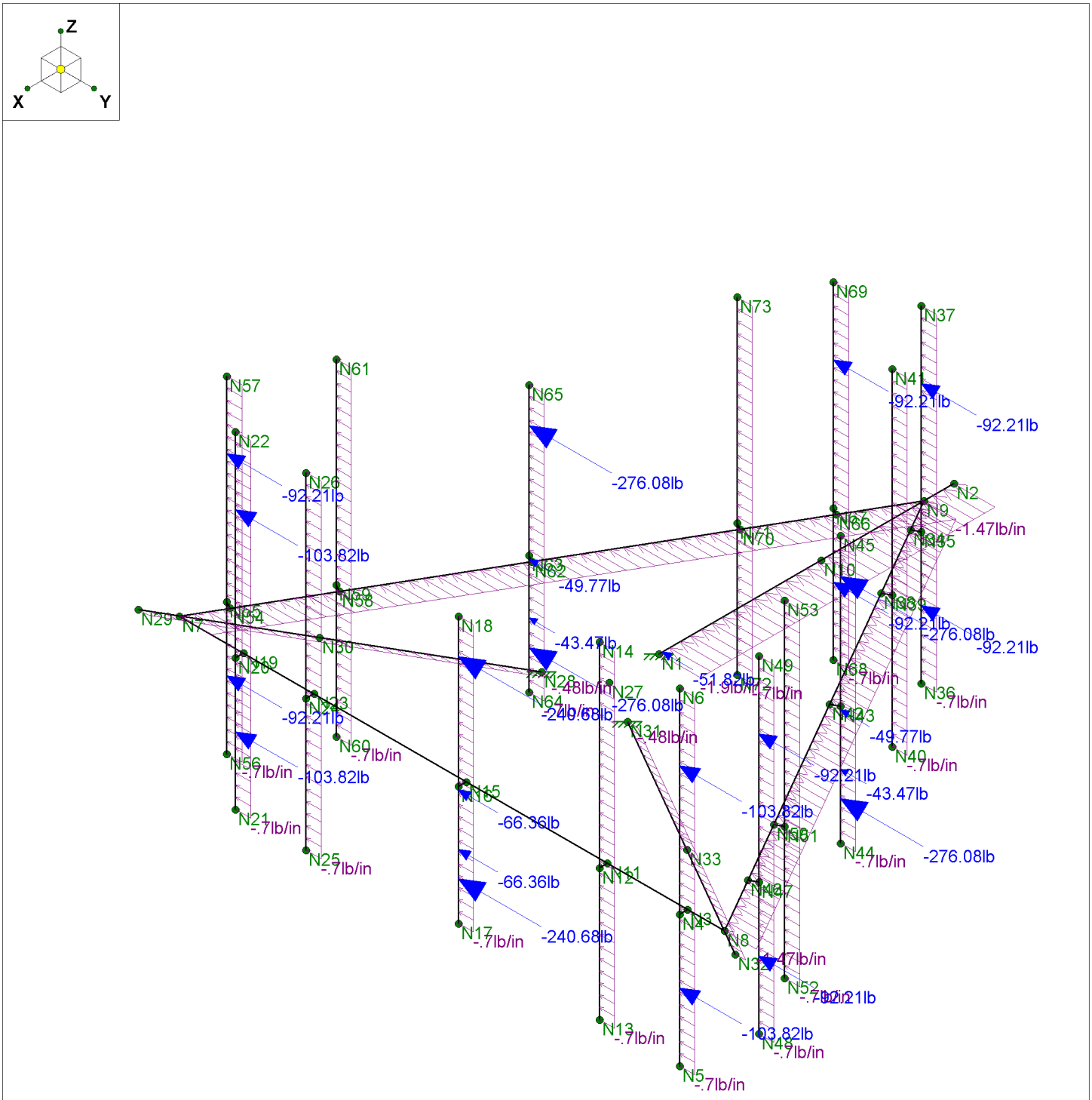

Loads: BLC 7, Wind 90°
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 6
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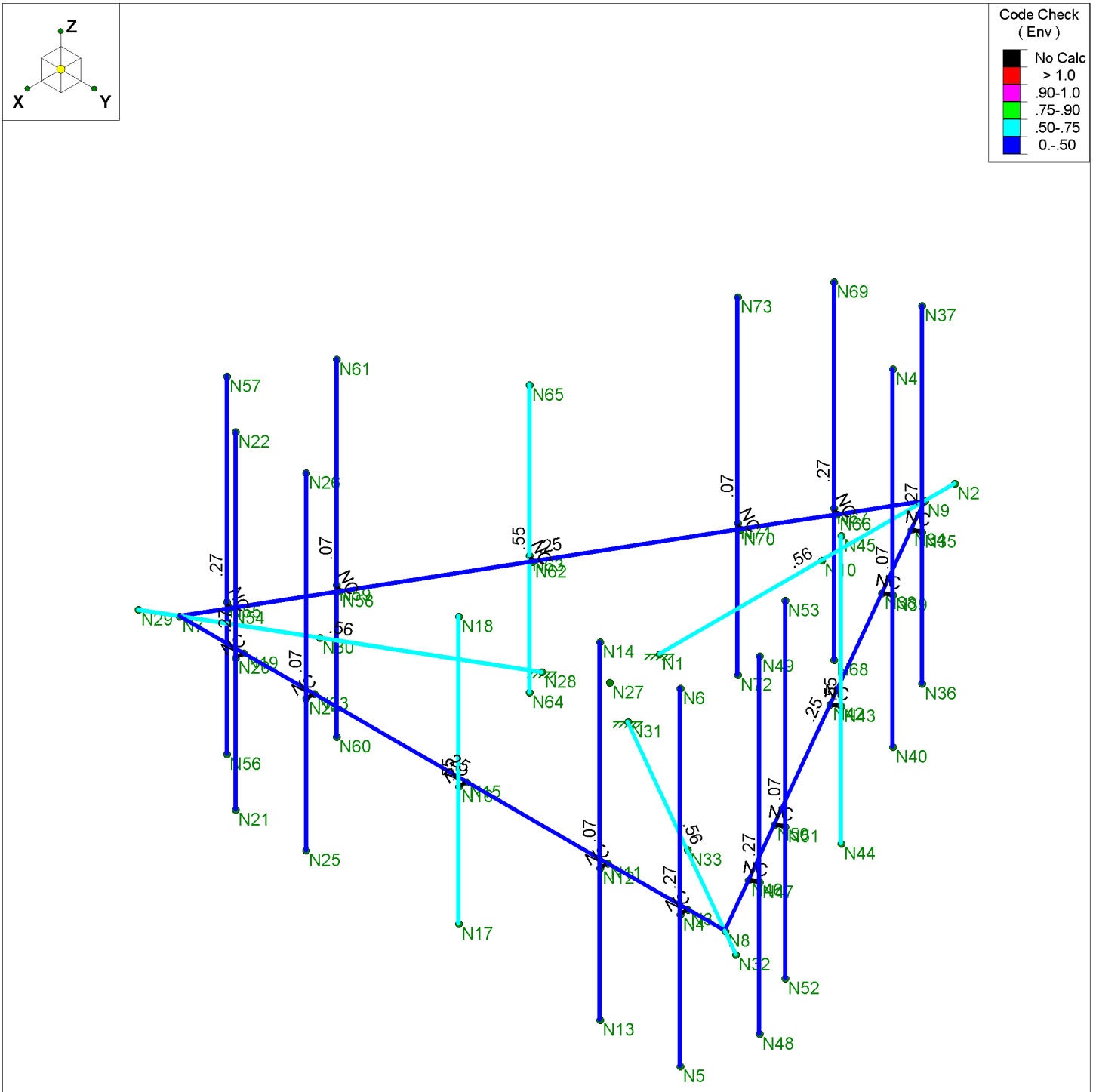
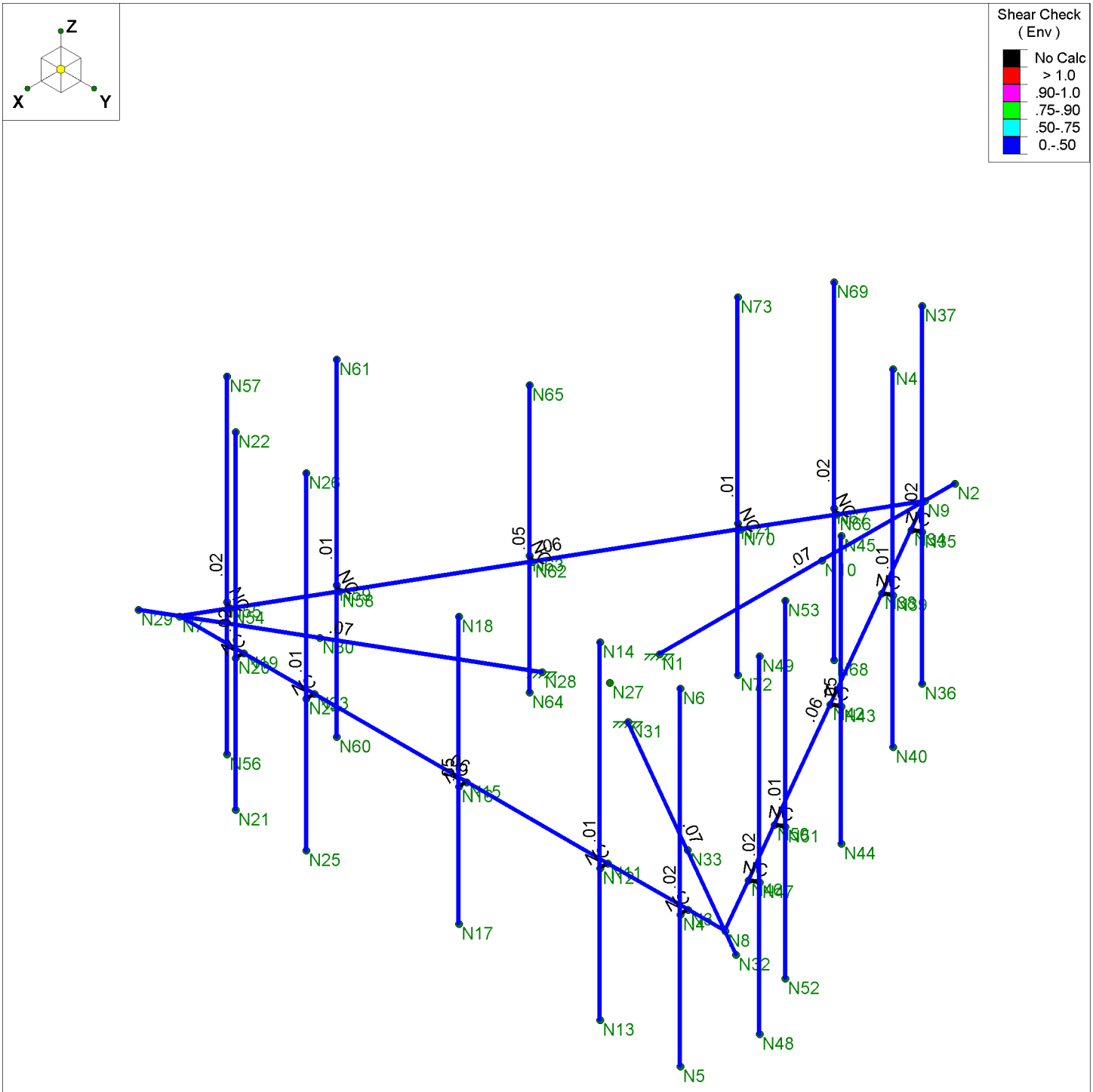


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 7
AV		Aug 26, 2019 at 2:47 PM
153798		152688_411257_ATC_MM_July 25...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Trylon	152688_411257_ATC_MM_July 25_Verizon	SK - 8
AV		Aug 26, 2019 at 2:47 PM
153798		152688_411257_ATC_MM_July 25...

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Z
Global Member Orientation Plane	XY
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

(Global) Model Settings, Continued

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

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

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	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	1.4	65	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33	45
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50	65

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Tube 4"x4"x...	HSS4X4X4	Beam	Tube	A500 Gr.B R...	Typical	3.37	7.8	7.8	12.8
2	Pipe 2.375"x...	Pipe2.375x0....	Beam	Pipe	A53 Gr.B	Typical	.884	.561	.561	1.122

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	.581	.057	4.41	.00063

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	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N28	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N31	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	M1	N9	N7			Tube 4"x4"x0.2...	Beam	Tube	A500 Gr.B...	Typical
2	M2	N1	N2			Tube 4"x4"x0.2...	Beam	Tube	A500 Gr.B...	Typical
3	M3	N3	N4			RIGID	None	None	RIGID	Typical
4	M4	N5	N6			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
5	M5	N7	N8			Tube 4"x4"x0.2...	Beam	Tube	A500 Gr.B...	Typical
6	M6	N8	N9			Tube 4"x4"x0.2...	Beam	Tube	A500 Gr.B...	Typical
7	M7	N11	N12			RIGID	None	None	RIGID	Typical
8	M8	N13	N14			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
9	M9	N15	N16			RIGID	None	None	RIGID	Typical
10	M10	N17	N18			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
11	M11	N19	N20			RIGID	None	None	RIGID	Typical
12	M12	N21	N22			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
13	M13	N23	N24			RIGID	None	None	RIGID	Typical
14	M14	N25	N26			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
15	M15	N28	N29			Tube 4"x4"x0.2...	Beam	Tube	A500 Gr.B...	Typical
16	M16	N31	N32			Tube 4"x4"x0.2...	Beam	Tube	A500 Gr.B...	Typical
17	M17	N34	N35			RIGID	None	None	RIGID	Typical
18	M18	N36	N37			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
19	M19	N38	N39			RIGID	None	None	RIGID	Typical
20	M20	N40	N41			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
21	M21	N42	N43			RIGID	None	None	RIGID	Typical
22	M22	N44	N45			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
23	M23	N46	N47			RIGID	None	None	RIGID	Typical
24	M24	N48	N49			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
25	M25	N50	N51			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
26	M26	N52	N53			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
27	M27	N54	N55			RIGID	None	None	RIGID	Typical
28	M28	N56	N57			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
29	M29	N58	N59			RIGID	None	None	RIGID	Typical
30	M30	N60	N61			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
31	M31	N62	N63			RIGID	None	None	RIGID	Typical
32	M32	N64	N65			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
33	M33	N66	N67			RIGID	None	None	RIGID	Typical
34	M34	N68	N69			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical
35	M35	N70	N71			RIGID	None	None	RIGID	Typical
36	M36	N72	N73			Pipe 2.375"x0....	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes	** NA **			None
4	M4						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes	** NA **			None
8	M8						Yes				None
9	M9						Yes	** NA **			None
10	M10						Yes	Default			None
11	M11						Yes	** NA **			None
12	M12						Yes				None
13	M13						Yes	** NA **			None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes	** NA **			None
18	M18						Yes				None
19	M19						Yes	** NA **			None
20	M20						Yes				None
21	M21						Yes	** NA **			None
22	M22						Yes				None
23	M23						Yes	** NA **			None
24	M24						Yes				None
25	M25						Yes	** NA **			None
26	M26						Yes				None
27	M27						Yes	** NA **			None
28	M28						Yes	Default			None
29	M29						Yes	** NA **			None
30	M30						Yes				None
31	M31						Yes	** NA **			None
32	M32						Yes				None
33	M33						Yes	** NA **			None
34	M34						Yes				None
35	M35						Yes	** NA **			None
36	M36						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Tube 4"x4"x...	170	170	170	Lbyy			.65	.65		Lateral
2	M2	Tube 4"x4"x...	92	82.65	82.65	Lbyy			.65	.65		Lateral
3	M4	Pipe 2.375"...	102	61	1	Lbyy			2.1	2.1		Lateral
4	M5	Tube 4"x4"x...	170	170	170	Lbyy			.65	.65		Lateral
5	M6	Tube 4"x4"x...	170	170	170	Lbyy			.65	.65		Lateral
6	M8	Pipe 2.375"...	102	61	1	Lbyy			2.1	2.1		Lateral
7	M10	Pipe 2.375"...	83	46	46	Lbyy			2.1	2.1		Lateral
8	M12	Pipe 2.375"...	102	61	61	Lbyy			1	1		Lateral
9	M14	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
10	M15	Tube 4"x4"x...	92	82.65	82.65	Lbyy			.65	.65		Lateral
11	M16	Tube 4"x4"x...	92	82.65	82.65	Lbyy			.65	.65		Lateral
12	M18	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
13	M20	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
14	M22	Pipe 2.375"...	83	46	46	Lbyy			2.1	2.1		Lateral
15	M24	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
16	M26	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
17	M28	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
18	M30	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
19	M32	Pipe 2.375"...	83	46	46	Lbyy			2.1	2.1		Lateral
20	M34	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral
21	M36	Pipe 2.375"...	102	61	61	Lbyy			2.1	2.1		Lateral

Cold Formed Steel Design Parameters

	Label	Shape	Length...	Lbyy[in]	Lbzz[in]	Lcomp to...	Lcomp bo...	L-torque[in]	Kyy	Kzz	Cb	R	a[in]	Funct...
No Data to Print ...														

Joint Loads and Enforced Displacements (BLC 16 : Lm1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N55	L	Z	-500

Joint Loads and Enforced Displacements (BLC 17 : Lm2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N59	L	Z	-500

Joint Loads and Enforced Displacements (BLC 18 : Lm3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N71	L	Z	-500

Joint Loads and Enforced Displacements (BLC 19 : Lm4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N67	L	Z	-500

Joint Loads and Enforced Displacements (BLC 20 : Lm5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N35	L	Z	-500

Joint Loads and Enforced Displacements (BLC 21 : Lm6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N39	L	Z	-500

Joint Loads and Enforced Displacements (BLC 22 : Lm7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N51	L	Z	-500

Joint Loads and Enforced Displacements (BLC 23 : Lm8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N47	L	Z	-500

Joint Loads and Enforced Displacements (BLC 24 : Lm9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N4	L	Z	-500

Joint Loads and Enforced Displacements (BLC 25 : Lm10)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N12	L	Z	-500

Joint Loads and Enforced Displacements (BLC 26 : Lm11)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N24	L	Z	-500

Joint Loads and Enforced Displacements (BLC 27 : Lm12)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-in), (in,rad), (lb*s^...
1	N20	L	Z	-500

Member Point Loads (BLC 2 : Weights)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	Z	-8	21
2	M4	Z	-8	81
3	M10	Z	-46.25	12
4	M10	Z	-46.25	72
5	M10	Z	-46.25	12
6	M10	Z	-46.25	72
7	M12	Z	-8	21
8	M12	Z	-8	81
9	M28	Z	-8	21
10	M28	Z	-8	81
11	M32	Z	-46.25	12
12	M32	Z	-46.25	72
13	M32	Z	-46.25	12
14	M32	Z	-46.25	72
15	M34	Z	-8	21
16	M34	Z	-8	81
17	M18	Z	-8	21
18	M18	Z	-8	81
19	M22	Z	-46.25	12

Member Point Loads (BLC 2 : Weights) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
20	M22	Z	-46.25	72
21	M22	Z	-46.25	12
22	M22	Z	-46.25	72
23	M24	Z	-8	21
24	M24	Z	-8	81
25	M10	Z	-84.4	36
26	M10	Z	-70.4	20
27	M32	Z	-84.4	36
28	M32	Z	-70.4	20
29	M22	Z	-84.4	36
30	M22	Z	-70.4	20
31	M2	Z	-32	1

Member Point Loads (BLC 3 : ICE Load)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	Z	-48.03	21
2	M4	Z	-48.03	81
3	M10	Z	-69.25	12
4	M10	Z	-69.25	72
5	M10	Z	-69.25	12
6	M10	Z	-69.25	72
7	M12	Z	-48.03	21
8	M12	Z	-48.03	81
9	M28	Z	-48.03	21
10	M28	Z	-48.03	81
11	M32	Z	-69.25	12
12	M32	Z	-69.25	72
13	M32	Z	-69.25	12
14	M32	Z	-69.25	72
15	M34	Z	-48.03	21
16	M34	Z	-48.03	81
17	M18	Z	-48.03	21
18	M18	Z	-48.03	81
19	M22	Z	-69.25	12
20	M22	Z	-69.25	72
21	M22	Z	-69.25	12
22	M22	Z	-69.25	72
23	M24	Z	-48.03	21
24	M24	Z	-48.03	81
25	M10	Z	-33.5	36
26	M10	Z	-31.79	20
27	M32	Z	-33.5	36
28	M32	Z	-31.79	20
29	M22	Z	-33.5	36
30	M22	Z	-31.79	20
31	M2	Z	-56.87	1

Member Point Loads (BLC 4 : Wind 0Á)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-88.34	21
2	M4	X	-88.34	81

Member Point Loads (BLC 4 : Wind 0Á) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
3	M10	X	-143.93	12
4	M10	X	-143.93	72
5	M10	X	-143.93	12
6	M10	X	-143.93	72
7	M12	X	-88.34	21
8	M12	X	-88.34	81
9	M28	X	-99.95	21
10	M28	X	-99.95	81
11	M32	X	-126.24	12
12	M32	X	-126.24	72
13	M32	X	-126.24	12
14	M32	X	-126.24	72
15	M34	X	-99.95	21
16	M34	X	-99.95	81
17	M18	X	-99.95	21
18	M18	X	-99.95	81
19	M22	X	-126.24	12
20	M22	X	-126.24	72
21	M22	X	-126.24	12
22	M22	X	-126.24	72
23	M24	X	-99.95	21
24	M24	X	-99.95	81
25	M10	X	-44.24	36
26	M10	X	-35.84	20
27	M32	X	-60.83	36
28	M32	X	-58.73	20
29	M22	X	-60.83	36
30	M22	X	-58.73	20
31	M2	X	-78.3	1

Member Point Loads (BLC 5 : Wind 30Á)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-79.85	21
2	M4	X	-79.85	81
3	M10	X	-119.54	12
4	M10	X	-119.54	72
5	M10	X	-119.54	12
6	M10	X	-119.54	72
7	M12	X	-79.85	21
8	M12	X	-79.85	81
9	M28	X	-79.85	21
10	M28	X	-79.85	81
11	M32	X	-119.54	12
12	M32	X	-119.54	72
13	M32	X	-119.54	12
14	M32	X	-119.54	72
15	M34	X	-79.85	21
16	M34	X	-79.85	81
17	M18	X	-89.91	21
18	M18	X	-89.91	81
19	M22	X	-104.22	12

Member Point Loads (BLC 5 : Wind 30Á (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
20	M22	X	-104.22	72
21	M22	X	-104.22	12
22	M22	X	-104.22	72
23	M24	X	-89.91	21
24	M24	X	-89.91	81
25	M10	X	-43.1	36
26	M10	X	-37.64	20
27	M32	X	-43.1	36
28	M32	X	-37.64	20
29	M22	X	-57.47	36
30	M22	X	-57.47	20
31	M2	X	-62.07	1
32	M4	Y	-46.1	21
33	M4	Y	-46.1	81
34	M10	Y	-69.02	12
35	M10	Y	-69.02	72
36	M10	Y	-69.02	12
37	M10	Y	-69.02	72
38	M12	Y	-46.1	21
39	M12	Y	-46.1	81
40	M28	Y	-46.1	21
41	M28	Y	-46.1	81
42	M32	Y	-69.02	12
43	M32	Y	-69.02	72
44	M32	Y	-69.02	12
45	M32	Y	-69.02	72
46	M34	Y	-46.1	21
47	M34	Y	-46.1	81
48	M18	Y	-51.91	21
49	M18	Y	-51.91	81
50	M22	Y	-60.17	12
51	M22	Y	-60.17	72
52	M22	Y	-60.17	12
53	M22	Y	-60.17	72
54	M24	Y	-51.91	21
55	M24	Y	-51.91	81
56	M10	Y	-24.89	36
57	M10	Y	-21.73	20
58	M32	Y	-24.89	36
59	M32	Y	-21.73	20
60	M22	Y	-33.18	36
61	M22	Y	-33.18	20
62	M2	Y	-35.84	1

Member Point Loads (BLC 6 : Wind 60Á

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-49.98	21
2	M4	X	-49.98	81
3	M10	X	-63.12	12
4	M10	X	-63.12	72
5	M10	X	-63.12	12

Member Point Loads (BLC 6 : Wind 60Á (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
6	M10	X	-63.12	72
7	M12	X	-49.98	21
8	M12	X	-49.98	81
9	M28	X	-44.17	21
10	M28	X	-44.17	81
11	M32	X	-71.97	12
12	M32	X	-71.97	72
13	M32	X	-71.97	12
14	M32	X	-71.97	72
15	M34	X	-44.17	21
16	M34	X	-44.17	81
17	M18	X	-49.98	21
18	M18	X	-49.98	81
19	M22	X	-63.12	12
20	M22	X	-63.12	72
21	M22	X	-63.12	12
22	M22	X	-63.12	72
23	M24	X	-49.98	21
24	M24	X	-49.98	81
25	M10	X	-30.42	36
26	M10	X	-29.37	20
27	M32	X	-22.12	36
28	M32	X	-17.92	20
29	M22	X	-30.42	36
30	M22	X	-29.37	20
31	M2	X	-29.22	1
32	M4	Y	-86.56	21
33	M4	Y	-86.56	81
34	M10	Y	-109.33	12
35	M10	Y	-109.33	72
36	M10	Y	-109.33	12
37	M10	Y	-109.33	72
38	M12	Y	-86.56	21
39	M12	Y	-86.56	81
40	M28	Y	-76.5	21
41	M28	Y	-76.5	81
42	M32	Y	-124.65	12
43	M32	Y	-124.65	72
44	M32	Y	-124.65	12
45	M32	Y	-124.65	72
46	M34	Y	-76.5	21
47	M34	Y	-76.5	81
48	M18	Y	-86.56	21
49	M18	Y	-86.56	81
50	M22	Y	-109.33	12
51	M22	Y	-109.33	72
52	M22	Y	-109.33	12
53	M22	Y	-109.33	72
54	M24	Y	-86.56	21
55	M24	Y	-86.56	81
56	M10	Y	-52.68	36
57	M10	Y	-50.86	20

Member Point Loads (BLC 6 : Wind 60Á) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
58	M32	Y	-38.31	36
59	M32	Y	-31.04	20
60	M22	Y	-52.68	36
61	M22	Y	-50.86	20
62	M2	Y	-50.61	1

Member Point Loads (BLC 7 : Wind 90Á)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	Y	-103.82	21
2	M4	Y	-103.82	81
3	M10	Y	-120.34	12
4	M10	Y	-120.34	72
5	M10	Y	-120.34	12
6	M10	Y	-120.34	72
7	M12	Y	-103.82	21
8	M12	Y	-103.82	81
9	M28	Y	-92.21	21
10	M28	Y	-92.21	81
11	M32	Y	-138.04	12
12	M32	Y	-138.04	72
13	M32	Y	-138.04	12
14	M32	Y	-138.04	72
15	M34	Y	-92.21	21
16	M34	Y	-92.21	81
17	M18	Y	-92.21	21
18	M18	Y	-92.21	81
19	M22	Y	-138.04	12
20	M22	Y	-138.04	72
21	M22	Y	-138.04	12
22	M22	Y	-138.04	72
23	M24	Y	-92.21	21
24	M24	Y	-92.21	81
25	M10	Y	-66.36	36
26	M10	Y	-66.36	20
27	M32	Y	-49.77	36
28	M32	Y	-43.47	20
29	M22	Y	-49.77	36
30	M22	Y	-43.47	20
31	M2	Y	-51.82	1

Member Point Loads (BLC 8 : Wind 120Á)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	49.98	21
2	M4	X	49.98	81
3	M10	X	63.12	12
4	M10	X	63.12	72
5	M10	X	63.12	12
6	M10	X	63.12	72
7	M12	X	49.98	21
8	M12	X	49.98	81
9	M28	X	49.98	21

Member Point Loads (BLC 8 : Wind 120Á) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
10	M28	X	49.98	81
11	M32	X	63.12	12
12	M32	X	63.12	72
13	M32	X	63.12	12
14	M32	X	63.12	72
15	M34	X	49.98	21
16	M34	X	49.98	81
17	M18	X	44.17	21
18	M18	X	44.17	81
19	M22	X	71.97	12
20	M22	X	71.97	72
21	M22	X	71.97	12
22	M22	X	71.97	72
23	M24	X	44.17	21
24	M24	X	44.17	81
25	M10	X	30.42	36
26	M10	X	29.37	20
27	M32	X	30.42	36
28	M32	X	29.37	20
29	M22	X	22.12	36
30	M22	X	17.92	20
31	M2	X	29.22	1
32	M4	Y	-86.56	21
33	M4	Y	-86.56	81
34	M10	Y	-109.33	12
35	M10	Y	-109.33	72
36	M10	Y	-109.33	12
37	M10	Y	-109.33	72
38	M12	Y	-86.56	21
39	M12	Y	-86.56	81
40	M28	Y	-86.56	21
41	M28	Y	-86.56	81
42	M32	Y	-109.33	12
43	M32	Y	-109.33	72
44	M32	Y	-109.33	12
45	M32	Y	-109.33	72
46	M34	Y	-86.56	21
47	M34	Y	-86.56	81
48	M18	Y	-76.5	21
49	M18	Y	-76.5	81
50	M22	Y	-124.65	12
51	M22	Y	-124.65	72
52	M22	Y	-124.65	12
53	M22	Y	-124.65	72
54	M24	Y	-76.5	21
55	M24	Y	-76.5	81
56	M10	Y	-52.68	36
57	M10	Y	-50.86	20
58	M32	Y	-52.68	36
59	M32	Y	-50.86	20
60	M22	Y	-38.31	36
61	M22	Y	-31.04	20

Member Point Loads (BLC 8 : Wind 120Á) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
62	M2	Y	-50.61	1

Member Point Loads (BLC 9 : Wind 150Á)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	79.85	21
2	M4	X	79.85	81
3	M10	X	119.54	12
4	M10	X	119.54	72
5	M10	X	119.54	12
6	M10	X	119.54	72
7	M12	X	79.85	21
8	M12	X	79.85	81
9	M28	X	89.91	21
10	M28	X	89.91	81
11	M32	X	104.22	12
12	M32	X	104.22	72
13	M32	X	104.22	12
14	M32	X	104.22	72
15	M34	X	89.91	21
16	M34	X	89.91	81
17	M18	X	79.85	21
18	M18	X	79.85	81
19	M22	X	119.54	12
20	M22	X	119.54	72
21	M22	X	119.54	12
22	M22	X	119.54	72
23	M24	X	79.85	21
24	M24	X	79.85	81
25	M10	X	43.1	36
26	M10	X	37.64	20
27	M32	X	57.47	36
28	M32	X	57.47	20
29	M22	X	43.1	36
30	M22	X	37.64	20
31	M2	X	62.07	1
32	M4	Y	-46.1	21
33	M4	Y	-46.1	81
34	M10	Y	-69.02	12
35	M10	Y	-69.02	72
36	M10	Y	-69.02	12
37	M10	Y	-69.02	72
38	M12	Y	-46.1	21
39	M12	Y	-46.1	81
40	M28	Y	-51.91	21
41	M28	Y	-51.91	81
42	M32	Y	-60.17	12
43	M32	Y	-60.17	72
44	M32	Y	-60.17	12
45	M32	Y	-60.17	72
46	M34	Y	-51.91	21
47	M34	Y	-51.91	81

Member Point Loads (BLC 9 : Wind 150Á) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
48	M18	Y	-46.1	21
49	M18	Y	-46.1	81
50	M22	Y	-69.02	12
51	M22	Y	-69.02	72
52	M22	Y	-69.02	12
53	M22	Y	-69.02	72
54	M24	Y	-46.1	21
55	M24	Y	-46.1	81
56	M10	Y	-24.89	36
57	M10	Y	-21.73	20
58	M32	Y	-33.18	36
59	M32	Y	-33.18	20
60	M22	Y	-24.89	36
61	M22	Y	-21.73	20
62	M2	Y	-35.84	1

Member Point Loads (BLC 10 : Wind 0Áwith ice)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-20.18	21
2	M4	X	-20.18	81
3	M10	X	-29.89	12
4	M10	X	-29.89	72
5	M10	X	-29.89	12
6	M10	X	-29.89	72
7	M12	X	-20.18	21
8	M12	X	-20.18	81
9	M28	X	-22.26	21
10	M28	X	-22.26	81
11	M32	X	-26.79	12
12	M32	X	-26.79	72
13	M32	X	-26.79	12
14	M32	X	-26.79	72
15	M34	X	-22.26	21
16	M34	X	-22.26	81
17	M18	X	-22.26	21
18	M18	X	-22.26	81
19	M22	X	-26.79	12
20	M22	X	-26.79	72
21	M22	X	-26.79	12
22	M22	X	-26.79	72
23	M24	X	-22.26	21
24	M24	X	-22.26	81
25	M10	X	-10.88	36
26	M10	X	-9.2	20
27	M32	X	-14.2	36
28	M32	X	-13.78	20
29	M22	X	-14.2	36
30	M22	X	-13.78	20
31	M2	X	-16.8	1

Member Point Loads (BLC 11 : Wind 30Áwith ice)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-18.07	21
2	M4	X	-18.07	81
3	M10	X	-24.99	12
4	M10	X	-24.99	72
5	M10	X	-24.99	12
6	M10	X	-24.99	72
7	M12	X	-18.07	21
8	M12	X	-18.07	81
9	M28	X	-18.07	21
10	M28	X	-18.07	81
11	M32	X	-24.99	12
12	M32	X	-24.99	72
13	M32	X	-24.99	12
14	M32	X	-24.99	72
15	M34	X	-18.07	21
16	M34	X	-18.07	81
17	M18	X	-19.88	21
18	M18	X	-19.88	81
19	M22	X	-22.3	12
20	M22	X	-22.3	72
21	M22	X	-22.3	12
22	M22	X	-22.3	72
23	M24	X	-19.88	21
24	M24	X	-19.88	81
25	M10	X	-10.38	36
26	M10	X	-9.29	20
27	M32	X	-10.38	36
28	M32	X	-9.29	20
29	M22	X	-13.25	36
30	M22	X	-13.25	20
31	M2	X	-13.46	1
32	M4	Y	-10.44	21
33	M4	Y	-10.44	81
34	M10	Y	-14.43	12
35	M10	Y	-14.43	72
36	M10	Y	-14.43	12
37	M10	Y	-14.43	72
38	M12	Y	-10.44	21
39	M12	Y	-10.44	81
40	M28	Y	-10.44	21
41	M28	Y	-10.44	81
42	M32	Y	-14.43	12
43	M32	Y	-14.43	72
44	M32	Y	-14.43	12
45	M32	Y	-14.43	72
46	M34	Y	-10.44	21
47	M34	Y	-10.44	81
48	M18	Y	-11.48	21
49	M18	Y	-11.48	81
50	M22	Y	-12.88	12
51	M22	Y	-12.88	72
52	M22	Y	-12.88	12

Member Point Loads (BLC 11 : Wind 30Áwith ice) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
53	M22	Y	-12.88	72
54	M24	Y	-11.48	21
55	M24	Y	-11.48	81
56	M10	Y	-5.99	36
57	M10	Y	-5.36	20
58	M32	Y	-5.99	36
59	M32	Y	-5.36	20
60	M22	Y	-7.65	36
61	M22	Y	-7.65	20
62	M2	Y	-7.77	1

Member Point Loads (BLC 12 : Wind 60Áwith ice)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-11.13	21
2	M4	X	-11.13	81
3	M10	X	-13.39	12
4	M10	X	-13.39	72
5	M10	X	-13.39	12
6	M10	X	-13.39	72
7	M12	X	-11.13	21
8	M12	X	-11.13	81
9	M28	X	-10.09	21
10	M28	X	-10.09	81
11	M32	X	-14.95	12
12	M32	X	-14.95	72
13	M32	X	-14.95	12
14	M32	X	-14.95	72
15	M34	X	-10.09	21
16	M34	X	-10.09	81
17	M18	X	-11.13	21
18	M18	X	-11.13	81
19	M22	X	-13.39	12
20	M22	X	-13.39	72
21	M22	X	-13.39	12
22	M22	X	-13.39	72
23	M24	X	-11.13	21
24	M24	X	-11.13	81
25	M10	X	-7.1	36
26	M10	X	-6.89	20
27	M32	X	-5.44	36
28	M32	X	-4.6	20
29	M22	X	-7.1	36
30	M22	X	-6.89	20
31	M2	X	-6.51	1
32	M4	Y	-19.28	21
33	M4	Y	-19.28	81
34	M10	Y	-23.2	12
35	M10	Y	-23.2	72
36	M10	Y	-23.2	12
37	M10	Y	-23.2	72
38	M12	Y	-19.28	21

Member Point Loads (BLC 12 : Wind 60Áwith ice) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
39	M12	Y	-19.28	81
40	M28	Y	-17.47	21
41	M28	Y	-17.47	81
42	M32	Y	-25.89	12
43	M32	Y	-25.89	72
44	M32	Y	-25.89	12
45	M32	Y	-25.89	72
46	M34	Y	-17.47	21
47	M34	Y	-17.47	81
48	M18	Y	-19.28	21
49	M18	Y	-19.28	81
50	M22	Y	-23.2	12
51	M22	Y	-23.2	72
52	M22	Y	-23.2	12
53	M22	Y	-23.2	72
54	M24	Y	-19.28	21
55	M24	Y	-19.28	81
56	M10	Y	-12.3	36
57	M10	Y	-11.93	20
58	M32	Y	-9.42	36
59	M32	Y	-7.96	20
60	M22	Y	-12.3	36
61	M22	Y	-11.93	20
62	M2	Y	-11.27	1

Member Point Loads (BLC 13 : Wind 90Áwith ice)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	Y	-22.95	21
2	M4	Y	-22.95	81
3	M10	Y	-25.75	12
4	M10	Y	-25.75	72
5	M10	Y	-25.75	12
6	M10	Y	-25.75	72
7	M12	Y	-22.95	21
8	M12	Y	-22.95	81
9	M28	Y	-20.87	21
10	M28	Y	-20.87	81
11	M32	Y	-28.86	12
12	M32	Y	-28.86	72
13	M32	Y	-28.86	12
14	M32	Y	-28.86	72
15	M34	Y	-20.87	21
16	M34	Y	-20.87	81
17	M18	Y	-20.87	21
18	M18	Y	-20.87	81
19	M22	Y	-28.86	12
20	M22	Y	-28.86	72
21	M22	Y	-28.86	12
22	M22	Y	-28.86	72
23	M24	Y	-20.87	21
24	M24	Y	-20.87	81

Member Point Loads (BLC 13 : Wind 90Áwith ice) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
25	M10	Y	-15.31	36
26	M10	Y	-15.31	20
27	M32	Y	-11.99	36
28	M32	Y	-10.72	20
29	M22	Y	-11.99	36
30	M22	Y	-10.72	20
31	M2	Y	-11.75	1

Member Point Loads (BLC 14 : Wind 120Áwith ice)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	11.13	21
2	M4	X	11.13	81
3	M10	X	13.39	12
4	M10	X	13.39	72
5	M10	X	13.39	12
6	M10	X	13.39	72
7	M12	X	11.13	21
8	M12	X	11.13	81
9	M28	X	11.13	21
10	M28	X	11.13	81
11	M32	X	13.39	12
12	M32	X	13.39	72
13	M32	X	13.39	12
14	M32	X	13.39	72
15	M34	X	11.13	21
16	M34	X	11.13	81
17	M18	X	10.09	21
18	M18	X	10.09	81
19	M22	X	14.95	12
20	M22	X	14.95	72
21	M22	X	14.95	12
22	M22	X	14.95	72
23	M24	X	10.09	21
24	M24	X	10.09	81
25	M10	X	7.1	36
26	M10	X	6.89	20
27	M32	X	7.1	36
28	M32	X	6.89	20
29	M22	X	5.44	36
30	M22	X	4.6	20
31	M2	X	6.51	1
32	M4	Y	-19.28	21
33	M4	Y	-19.28	81
34	M10	Y	-23.2	12
35	M10	Y	-23.2	72
36	M10	Y	-23.2	12
37	M10	Y	-23.2	72
38	M12	Y	-19.28	21
39	M12	Y	-19.28	81
40	M28	Y	-19.28	21
41	M28	Y	-19.28	81

Member Point Loads (BLC 14 : Wind 120Áwith ice) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
42	M32	Y	-23.2	12
43	M32	Y	-23.2	72
44	M32	Y	-23.2	12
45	M32	Y	-23.2	72
46	M34	Y	-19.28	21
47	M34	Y	-19.28	81
48	M18	Y	-17.47	21
49	M18	Y	-17.47	81
50	M22	Y	-25.89	12
51	M22	Y	-25.89	72
52	M22	Y	-25.89	12
53	M22	Y	-25.89	72
54	M24	Y	-17.47	21
55	M24	Y	-17.47	81
56	M10	Y	-12.3	36
57	M10	Y	-11.93	20
58	M32	Y	-12.3	36
59	M32	Y	-11.93	20
60	M22	Y	-9.42	36
61	M22	Y	-7.96	20
62	M2	Y	-11.27	1

Member Point Loads (BLC 15 : Wind 150Áwith ice)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	18.07	21
2	M4	X	18.07	81
3	M10	X	24.99	12
4	M10	X	24.99	72
5	M10	X	24.99	12
6	M10	X	24.99	72
7	M12	X	18.07	21
8	M12	X	18.07	81
9	M28	X	19.88	21
10	M28	X	19.88	81
11	M32	X	22.3	12
12	M32	X	22.3	72
13	M32	X	22.3	12
14	M32	X	22.3	72
15	M34	X	19.88	21
16	M34	X	19.88	81
17	M18	X	18.07	21
18	M18	X	18.07	81
19	M22	X	24.99	12
20	M22	X	24.99	72
21	M22	X	24.99	12
22	M22	X	24.99	72
23	M24	X	18.07	21
24	M24	X	18.07	81
25	M10	X	10.38	36
26	M10	X	9.29	20
27	M32	X	13.25	36

Member Point Loads (BLC 15 : Wind 150Áwith ice) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
28	M32	X	13.25	20
29	M22	X	10.38	36
30	M22	X	9.29	20
31	M2	X	13.46	1
32	M4	Y	-10.44	21
33	M4	Y	-10.44	81
34	M10	Y	-14.43	12
35	M10	Y	-14.43	72
36	M10	Y	-14.43	12
37	M10	Y	-14.43	72
38	M12	Y	-10.44	21
39	M12	Y	-10.44	81
40	M28	Y	-11.48	21
41	M28	Y	-11.48	81
42	M32	Y	-12.88	12
43	M32	Y	-12.88	72
44	M32	Y	-12.88	12
45	M32	Y	-12.88	72
46	M34	Y	-11.48	21
47	M34	Y	-11.48	81
48	M18	Y	-10.44	21
49	M18	Y	-10.44	81
50	M22	Y	-14.43	12
51	M22	Y	-14.43	72
52	M22	Y	-14.43	12
53	M22	Y	-14.43	72
54	M24	Y	-10.44	21
55	M24	Y	-10.44	81
56	M10	Y	-5.99	36
57	M10	Y	-5.36	20
58	M32	Y	-7.65	36
59	M32	Y	-7.65	20
60	M22	Y	-5.99	36
61	M22	Y	-5.36	20
62	M2	Y	-7.77	1

Member Point Loads (BLC 34 : Lv7)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M5	Z	-250	85

Member Point Loads (BLC 35 : Lv8)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M1	Z	-250	85

Member Point Loads (BLC 36 : Lv9)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M6	Z	-250	85

Member Point Loads (BLC 40 : Horizontal Seismic Load X)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]

Member Point Loads (BLC 40 : Horizontal Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	X	-8	21
2	M4	X	-8	81
3	M10	X	-46.25	12
4	M10	X	-46.25	72
5	M10	X	-46.25	12
6	M10	X	-46.25	72
7	M12	X	-8	21
8	M12	X	-8	81
9	M28	X	-8	21
10	M28	X	-8	81
11	M32	X	-46.25	12
12	M32	X	-46.25	72
13	M32	X	-46.25	12
14	M32	X	-46.25	72
15	M34	X	-8	21
16	M34	X	-8	81
17	M18	X	-8	21
18	M18	X	-8	81
19	M22	X	-46.25	12
20	M22	X	-46.25	72
21	M22	X	-46.25	12
22	M22	X	-46.25	72
23	M24	X	-8	21
24	M24	X	-8	81
25	M10	X	-84.4	36
26	M10	X	-70.4	20
27	M32	X	-84.4	36
28	M32	X	-70.4	20
29	M22	X	-84.4	36
30	M22	X	-70.4	20
31	M2	X	-32	1

Member Point Loads (BLC 41 : Horizontal Seismic Load Y)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
1	M4	Y	-8	21
2	M4	Y	-8	81
3	M10	Y	-46.25	12
4	M10	Y	-46.25	72
5	M10	Y	-46.25	12
6	M10	Y	-46.25	72
7	M12	Y	-8	21
8	M12	Y	-8	81
9	M28	Y	-8	21
10	M28	Y	-8	81
11	M32	Y	-46.25	12
12	M32	Y	-46.25	72
13	M32	Y	-46.25	12
14	M32	Y	-46.25	72
15	M34	Y	-8	21
16	M34	Y	-8	81
17	M18	Y	-8	21

Member Point Loads (BLC 41 : Horizontal Seismic Load Y) (Continued)

	Member Label	Direction	Magnitude[lb,k-in]	Location[in,%]
18	M18	Y	-8	81
19	M22	Y	-46.25	12
20	M22	Y	-46.25	72
21	M22	Y	-46.25	12
22	M22	Y	-46.25	72
23	M24	Y	-8	21
24	M24	Y	-8	81
25	M10	Y	-84.4	36
26	M10	Y	-70.4	20
27	M32	Y	-84.4	36
28	M32	Y	-70.4	20
29	M22	Y	-84.4	36
30	M22	Y	-70.4	20
31	M2	Y	-32	1

Member Distributed Loads (BLC 3 : ICE Load)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	Z	-.79	-.79	0	0
2	M2	Z	-.79	-.79	0	0
3	M4	Z	-.41	-.41	0	0
4	M8	Z	-.41	-.41	0	0
5	M10	Z	-.41	-.41	0	0
6	M14	Z	-.41	-.41	0	0
7	M12	Z	-.41	-.41	0	0
8	M1	Z	-.79	-.79	0	0
9	M16	Z	-.79	-.79	0	0
10	M28	Z	-.41	-.41	0	0
11	M30	Z	-.41	-.41	0	0
12	M32	Z	-.41	-.41	0	0
13	M36	Z	-.41	-.41	0	0
14	M34	Z	-.41	-.41	0	0
15	M6	Z	-.79	-.79	0	0
16	M15	Z	-.79	-.79	0	0
17	M18	Z	-.41	-.41	0	0
18	M20	Z	-.41	-.41	0	0
19	M22	Z	-.41	-.41	0	0
20	M26	Z	-.41	-.41	0	0
21	M24	Z	-.41	-.41	0	0

Member Distributed Loads (BLC 4 : Wind 0Á)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	-1.97	-1.97	0	0
2	M2	X	0	0	0	0
3	M4	X	-.7	-.7	0	0
4	M8	X	-.7	-.7	0	0
5	M10	X	-.7	-.7	0	0
6	M14	X	-.7	-.7	0	0
7	M12	X	-.7	-.7	0	0
8	M1	X	-.49	-.49	0	0
9	M16	X	-1.43	-1.43	0	0

Member Distributed Loads (BLC 4 : Wind 0Á) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
10	M28	X	-.7	-.7	0	0
11	M30	X	-.7	-.7	0	0
12	M32	X	-.7	-.7	0	0
13	M36	X	-.7	-.7	0	0
14	M34	X	-.7	-.7	0	0
15	M6	X	-.49	-.49	0	0
16	M15	X	-1.43	-1.43	0	0
17	M18	X	-.7	-.7	0	0
18	M20	X	-.7	-.7	0	0
19	M22	X	-.7	-.7	0	0
20	M26	X	-.7	-.7	0	0
21	M24	X	-.7	-.7	0	0

Member Distributed Loads (BLC 5 : Wind 30Á)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	-1.28	-1.28	0	0
2	M2	X	-.41	-.41	0	0
3	M4	X	-.61	-.61	0	0
4	M8	X	-.61	-.61	0	0
5	M10	X	-.61	-.61	0	0
6	M14	X	-.61	-.61	0	0
7	M12	X	-.61	-.61	0	0
8	M1	X	-1.28	-1.28	0	0
9	M16	X	-.41	-.41	0	0
10	M28	X	-.61	-.61	0	0
11	M30	X	-.61	-.61	0	0
12	M32	X	-.61	-.61	0	0
13	M36	X	-.61	-.61	0	0
14	M34	X	-.61	-.61	0	0
15	M6	X	0	0	0	0
16	M15	X	-1.65	-1.65	0	0
17	M18	X	-.61	-.61	0	0
18	M20	X	-.61	-.61	0	0
19	M22	X	-.61	-.61	0	0
20	M26	X	-.61	-.61	0	0
21	M24	X	-.61	-.61	0	0
22	M5	Y	-.74	-.74	0	0
23	M2	Y	-.24	-.24	0	0
24	M4	Y	-.35	-.35	0	0
25	M8	Y	-.35	-.35	0	0
26	M10	Y	-.35	-.35	0	0
27	M14	Y	-.35	-.35	0	0
28	M12	Y	-.35	-.35	0	0
29	M1	Y	-.74	-.74	0	0
30	M16	Y	-.24	-.24	0	0
31	M28	Y	-.35	-.35	0	0
32	M30	Y	-.35	-.35	0	0
33	M32	Y	-.35	-.35	0	0
34	M36	Y	-.35	-.35	0	0
35	M34	Y	-.35	-.35	0	0
36	M6	Y	0	0	0	0

Member Distributed Loads (BLC 5 : Wind 30Á) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
37	M15	Y	-.95	-.95	0	0
38	M18	Y	-.35	-.35	0	0
39	M20	Y	-.35	-.35	0	0
40	M22	Y	-.35	-.35	0	0
41	M26	Y	-.35	-.35	0	0
42	M24	Y	-.35	-.35	0	0

Member Distributed Loads (BLC 6 : Wind 60Á)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	-.25	-.25	0	0
2	M2	X	-.71	-.71	0	0
3	M4	X	-.35	-.35	0	0
4	M8	X	-.35	-.35	0	0
5	M10	X	-.35	-.35	0	0
6	M14	X	-.35	-.35	0	0
7	M12	X	-.35	-.35	0	0
8	M1	X	-.98	-.98	0	0
9	M16	X	0	0	0	0
10	M28	X	-.35	-.35	0	0
11	M30	X	-.35	-.35	0	0
12	M32	X	-.35	-.35	0	0
13	M36	X	-.35	-.35	0	0
14	M34	X	-.35	-.35	0	0
15	M6	X	-.25	-.25	0	0
16	M15	X	-.71	-.71	0	0
17	M18	X	-.35	-.35	0	0
18	M20	X	-.35	-.35	0	0
19	M22	X	-.35	-.35	0	0
20	M26	X	-.35	-.35	0	0
21	M24	X	-.35	-.35	0	0
22	M5	Y	-.43	-.43	0	0
23	M2	Y	-1.23	-1.23	0	0
24	M4	Y	-.61	-.61	0	0
25	M8	Y	-.61	-.61	0	0
26	M10	Y	-.61	-.61	0	0
27	M14	Y	-.61	-.61	0	0
28	M12	Y	-.61	-.61	0	0
29	M1	Y	-1.7	-1.7	0	0
30	M16	Y	0	0	0	0
31	M28	Y	-.61	-.61	0	0
32	M30	Y	-.61	-.61	0	0
33	M32	Y	-.61	-.61	0	0
34	M36	Y	-.61	-.61	0	0
35	M34	Y	-.61	-.61	0	0
36	M6	Y	-.43	-.43	0	0
37	M15	Y	-1.23	-1.23	0	0
38	M18	Y	-.61	-.61	0	0
39	M20	Y	-.61	-.61	0	0
40	M22	Y	-.61	-.61	0	0
41	M26	Y	-.61	-.61	0	0
42	M24	Y	-.61	-.61	0	0

Member Distributed Loads (BLC 7 : Wind 90Á)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	Y	0	0	0	0
2	M2	Y	-1.9	-1.9	0	0
3	M4	Y	-.7	-.7	0	0
4	M8	Y	-.7	-.7	0	0
5	M10	Y	-.7	-.7	0	0
6	M14	Y	-.7	-.7	0	0
7	M12	Y	-.7	-.7	0	0
8	M1	Y	-1.47	-1.47	0	0
9	M16	Y	-.48	-.48	0	0
10	M28	Y	-.7	-.7	0	0
11	M30	Y	-.7	-.7	0	0
12	M32	Y	-.7	-.7	0	0
13	M36	Y	-.7	-.7	0	0
14	M34	Y	-.7	-.7	0	0
15	M6	Y	-1.47	-1.47	0	0
16	M15	Y	-.48	-.48	0	0
17	M18	Y	-.7	-.7	0	0
18	M20	Y	-.7	-.7	0	0
19	M22	Y	-.7	-.7	0	0
20	M26	Y	-.7	-.7	0	0
21	M24	Y	-.7	-.7	0	0

Member Distributed Loads (BLC 8 : Wind 120Á)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	.25	.25	0	0
2	M2	X	.71	.71	0	0
3	M4	X	.35	.35	0	0
4	M8	X	.35	.35	0	0
5	M10	X	.35	.35	0	0
6	M14	X	.35	.35	0	0
7	M12	X	.35	.35	0	0
8	M1	X	.25	.25	0	0
9	M16	X	.71	.71	0	0
10	M28	X	.35	.35	0	0
11	M30	X	.35	.35	0	0
12	M32	X	.35	.35	0	0
13	M36	X	.35	.35	0	0
14	M34	X	.35	.35	0	0
15	M6	X	.98	.98	0	0
16	M15	X	0	0	0	0
17	M18	X	.35	.35	0	0
18	M20	X	.35	.35	0	0
19	M22	X	.35	.35	0	0
20	M26	X	.35	.35	0	0
21	M24	X	.35	.35	0	0
22	M5	Y	-.43	-.43	0	0
23	M2	Y	-1.23	-1.23	0	0
24	M4	Y	-.61	-.61	0	0
25	M8	Y	-.61	-.61	0	0
26	M10	Y	-.61	-.61	0	0
27	M14	Y	-.61	-.61	0	0

Member Distributed Loads (BLC 8 : Wind 120Á) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
28	M12	Y	-.61	-.61	0	0
29	M1	Y	-.43	-.43	0	0
30	M16	Y	-1.23	-1.23	0	0
31	M28	Y	-.61	-.61	0	0
32	M30	Y	-.61	-.61	0	0
33	M32	Y	-.61	-.61	0	0
34	M36	Y	-.61	-.61	0	0
35	M34	Y	-.61	-.61	0	0
36	M6	Y	-1.7	-1.7	0	0
37	M15	Y	0	0	0	0
38	M18	Y	-.61	-.61	0	0
39	M20	Y	-.61	-.61	0	0
40	M22	Y	-.61	-.61	0	0
41	M26	Y	-.61	-.61	0	0
42	M24	Y	-.61	-.61	0	0

Member Distributed Loads (BLC 9 : Wind 150Á)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	1.28	1.28	0	0
2	M2	X	.41	.41	0	0
3	M4	X	.61	.61	0	0
4	M8	X	.61	.61	0	0
5	M10	X	.61	.61	0	0
6	M14	X	.61	.61	0	0
7	M12	X	.61	.61	0	0
8	M1	X	0	0	0	0
9	M16	X	1.65	1.65	0	0
10	M28	X	.61	.61	0	0
11	M30	X	.61	.61	0	0
12	M32	X	.61	.61	0	0
13	M36	X	.61	.61	0	0
14	M34	X	.61	.61	0	0
15	M6	X	1.28	1.28	0	0
16	M15	X	.41	.41	0	0
17	M18	X	.61	.61	0	0
18	M20	X	.61	.61	0	0
19	M22	X	.61	.61	0	0
20	M26	X	.61	.61	0	0
21	M24	X	.61	.61	0	0
22	M5	Y	-.74	-.74	0	0
23	M2	Y	-.24	-.24	0	0
24	M4	Y	-.35	-.35	0	0
25	M8	Y	-.35	-.35	0	0
26	M10	Y	-.35	-.35	0	0
27	M14	Y	-.35	-.35	0	0
28	M12	Y	-.35	-.35	0	0
29	M1	Y	0	0	0	0
30	M16	Y	-.95	-.95	0	0
31	M28	Y	-.35	-.35	0	0
32	M30	Y	-.35	-.35	0	0
33	M32	Y	-.35	-.35	0	0

Member Distributed Loads (BLC 9 : Wind 150Á) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
34	M36	Y	-.35	-.35	0	0
35	M34	Y	-.35	-.35	0	0
36	M6	Y	-.74	-.74	0	0
37	M15	Y	-.24	-.24	0	0
38	M18	Y	-.35	-.35	0	0
39	M20	Y	-.35	-.35	0	0
40	M22	Y	-.35	-.35	0	0
41	M26	Y	-.35	-.35	0	0
42	M24	Y	-.35	-.35	0	0

Member Distributed Loads (BLC 10 : Wind 0Áwith ice)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	-.54	-.54	0	0
2	M2	X	-.01	-.01	0	0
3	M4	X	-.23	-.23	0	0
4	M8	X	-.23	-.23	0	0
5	M10	X	-.21	-.21	0	0
6	M14	X	-.23	-.23	0	0
7	M12	X	-.23	-.23	0	0
8	M1	X	-.14	-.14	0	0
9	M16	X	-.34	-.34	0	0
10	M28	X	-.23	-.23	0	0
11	M30	X	-.23	-.23	0	0
12	M32	X	-.21	-.21	0	0
13	M36	X	-.23	-.23	0	0
14	M34	X	-.23	-.23	0	0
15	M6	X	-.14	-.14	0	0
16	M15	X	-.34	-.34	0	0
17	M18	X	-.23	-.23	0	0
18	M20	X	-.23	-.23	0	0
19	M22	X	-.21	-.21	0	0
20	M26	X	-.23	-.23	0	0
21	M24	X	-.23	-.23	0	0

Member Distributed Loads (BLC 11 : Wind 30Áwith ice)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	-.35	-.35	0	0
2	M2	X	-.1	-.1	0	0
3	M4	X	-.2	-.2	0	0
4	M8	X	-.2	-.2	0	0
5	M10	X	-.18	-.18	0	0
6	M14	X	-.2	-.2	0	0
7	M12	X	-.2	-.2	0	0
8	M1	X	-.35	-.35	0	0
9	M16	X	-.1	-.1	0	0
10	M28	X	-.2	-.2	0	0
11	M30	X	-.2	-.2	0	0
12	M32	X	-.18	-.18	0	0
13	M36	X	-.2	-.2	0	0
14	M34	X	-.2	-.2	0	0
15	M6	X	0	0	0	0

Member Distributed Loads (BLC 11 : Wind 30Áwith ice) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
16	M15	X	-.39	-.39	0	0
17	M18	X	-.2	-.2	0	0
18	M20	X	-.2	-.2	0	0
19	M22	X	-.18	-.18	0	0
20	M26	X	-.2	-.2	0	0
21	M24	X	-.2	-.2	0	0
22	M5	Y	-.2	-.2	0	0
23	M2	Y	-.06	-.06	0	0
24	M4	Y	-.11	-.11	0	0
25	M8	Y	-.11	-.11	0	0
26	M10	Y	-.1	-.1	0	0
27	M14	Y	-.11	-.11	0	0
28	M12	Y	-.11	-.11	0	0
29	M1	Y	-.2	-.2	0	0
30	M16	Y	-.06	-.06	0	0
31	M28	Y	-.11	-.11	0	0
32	M30	Y	-.11	-.11	0	0
33	M32	Y	-.1	-.1	0	0
34	M36	Y	-.11	-.11	0	0
35	M34	Y	-.11	-.11	0	0
36	M6	Y	0	0	0	0
37	M15	Y	-.22	-.22	0	0
38	M18	Y	-.11	-.11	0	0
39	M20	Y	-.11	-.11	0	0
40	M22	Y	-.1	-.1	0	0
41	M26	Y	-.11	-.11	0	0
42	M24	Y	-.11	-.11	0	0

Member Distributed Loads (BLC 12 : Wind 60Áwith ice)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	-.07	-.07	0	0
2	M2	X	-.17	-.17	0	0
3	M4	X	-.11	-.11	0	0
4	M8	X	-.11	-.11	0	0
5	M10	X	-.1	-.1	0	0
6	M14	X	-.11	-.11	0	0
7	M12	X	-.11	-.11	0	0
8	M1	X	-.27	-.27	0	0
9	M16	X	0	0	0	0
10	M28	X	-.11	-.11	0	0
11	M30	X	-.11	-.11	0	0
12	M32	X	-.1	-.1	0	0
13	M36	X	-.11	-.11	0	0
14	M34	X	-.11	-.11	0	0
15	M6	X	-.07	-.07	0	0
16	M15	X	-.17	-.17	0	0
17	M18	X	-.11	-.11	0	0
18	M20	X	-.11	-.11	0	0
19	M22	X	-.1	-.1	0	0
20	M26	X	-.11	-.11	0	0
21	M24	X	-.11	-.11	0	0

Member Distributed Loads (BLC 12 : Wind 60Áwith ice) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
22	M5	Y	-.12	-.12	0	0
23	M2	Y	-.29	-.29	0	0
24	M4	Y	-.2	-.2	0	0
25	M8	Y	-.2	-.2	0	0
26	M10	Y	-.18	-.18	0	0
27	M14	Y	-.2	-.2	0	0
28	M12	Y	-.2	-.2	0	0
29	M1	Y	-.46	-.46	0	0
30	M16	Y	-.01	-.01	0	0
31	M28	Y	-.2	-.2	0	0
32	M30	Y	-.2	-.2	0	0
33	M32	Y	-.18	-.18	0	0
34	M36	Y	-.2	-.2	0	0
35	M34	Y	-.2	-.2	0	0
36	M6	Y	-.12	-.12	0	0
37	M15	Y	-.29	-.29	0	0
38	M18	Y	-.2	-.2	0	0
39	M20	Y	-.2	-.2	0	0
40	M22	Y	-.18	-.18	0	0
41	M26	Y	-.2	-.2	0	0
42	M24	Y	-.2	-.2	0	0

Member Distributed Loads (BLC 13 : Wind 90Áwith ice)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	Y	0	0	0	0
2	M2	Y	-.45	-.45	0	0
3	M4	Y	-.23	-.23	0	0
4	M8	Y	-.23	-.23	0	0
5	M10	Y	-.21	-.21	0	0
6	M14	Y	-.23	-.23	0	0
7	M12	Y	-.23	-.23	0	0
8	M1	Y	-.4	-.4	0	0
9	M16	Y	-.12	-.12	0	0
10	M28	Y	-.23	-.23	0	0
11	M30	Y	-.23	-.23	0	0
12	M32	Y	-.21	-.21	0	0
13	M36	Y	-.23	-.23	0	0
14	M34	Y	-.23	-.23	0	0
15	M6	Y	-.4	-.4	0	0
16	M15	Y	-.12	-.12	0	0
17	M18	Y	-.23	-.23	0	0
18	M20	Y	-.23	-.23	0	0
19	M22	Y	-.21	-.21	0	0
20	M26	Y	-.23	-.23	0	0
21	M24	Y	-.23	-.23	0	0

Member Distributed Loads (BLC 14 : Wind 120Áwith ice)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	.07	.07	0	0
2	M2	X	.17	.17	0	0
3	M4	X	.11	.11	0	0

Member Distributed Loads (BLC 14 : Wind 120Áwith ice) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
4	M8	X	.11	.11	0	0
5	M10	X	.1	.1	0	0
6	M14	X	.11	.11	0	0
7	M12	X	.11	.11	0	0
8	M1	X	.07	.07	0	0
9	M16	X	.17	.17	0	0
10	M28	X	.11	.11	0	0
11	M30	X	.11	.11	0	0
12	M32	X	.1	.1	0	0
13	M36	X	.11	.11	0	0
14	M34	X	.11	.11	0	0
15	M6	X	.27	.27	0	0
16	M15	X	0	0	0	0
17	M18	X	.11	.11	0	0
18	M20	X	.11	.11	0	0
19	M22	X	.1	.1	0	0
20	M26	X	.11	.11	0	0
21	M24	X	.11	.11	0	0
22	M5	Y	-.12	-.12	0	0
23	M2	Y	-.29	-.29	0	0
24	M4	Y	-.2	-.2	0	0
25	M8	Y	-.2	-.2	0	0
26	M10	Y	-.18	-.18	0	0
27	M14	Y	-.2	-.2	0	0
28	M12	Y	-.2	-.2	0	0
29	M1	Y	-.12	-.12	0	0
30	M16	Y	-.29	-.29	0	0
31	M28	Y	-.2	-.2	0	0
32	M30	Y	-.2	-.2	0	0
33	M32	Y	-.18	-.18	0	0
34	M36	Y	-.2	-.2	0	0
35	M34	Y	-.2	-.2	0	0
36	M6	Y	-.46	-.46	0	0
37	M15	Y	-.01	-.01	0	0
38	M18	Y	-.2	-.2	0	0
39	M20	Y	-.2	-.2	0	0
40	M22	Y	-.18	-.18	0	0
41	M26	Y	-.2	-.2	0	0
42	M24	Y	-.2	-.2	0	0

Member Distributed Loads (BLC 15 : Wind 150Áwith ice)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M5	X	.35	.35	0	0
2	M2	X	.1	.1	0	0
3	M4	X	.2	.2	0	0
4	M8	X	.2	.2	0	0
5	M10	X	.18	.18	0	0
6	M14	X	.2	.2	0	0
7	M12	X	.2	.2	0	0
8	M1	X	0	0	0	0
9	M16	X	.39	.39	0	0

Member Distributed Loads (BLC 15 : Wind 150Áwith ice) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
10	M28	X	.2	.2	0	0
11	M30	X	.2	.2	0	0
12	M32	X	.18	.18	0	0
13	M36	X	.2	.2	0	0
14	M34	X	.2	.2	0	0
15	M6	X	.35	.35	0	0
16	M15	X	.1	.1	0	0
17	M18	X	.2	.2	0	0
18	M20	X	.2	.2	0	0
19	M22	X	.18	.18	0	0
20	M26	X	.2	.2	0	0
21	M24	X	.2	.2	0	0
22	M5	Y	-.2	-.2	0	0
23	M2	Y	-.06	-.06	0	0
24	M4	Y	-.11	-.11	0	0
25	M8	Y	-.11	-.11	0	0
26	M10	Y	-.1	-.1	0	0
27	M14	Y	-.11	-.11	0	0
28	M12	Y	-.11	-.11	0	0
29	M1	Y	0	0	0	0
30	M16	Y	-.22	-.22	0	0
31	M28	Y	-.11	-.11	0	0
32	M30	Y	-.11	-.11	0	0
33	M32	Y	-.1	-.1	0	0
34	M36	Y	-.11	-.11	0	0
35	M34	Y	-.11	-.11	0	0
36	M6	Y	-.2	-.2	0	0
37	M15	Y	-.06	-.06	0	0
38	M18	Y	-.11	-.11	0	0
39	M20	Y	-.11	-.11	0	0
40	M22	Y	-.1	-.1	0	0
41	M26	Y	-.11	-.11	0	0
42	M24	Y	-.11	-.11	0	0

Member Distributed Loads (BLC 42 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-.015	-.371	0	24.286
2	M1	Z	-.371	-.711	24.286	48.571
3	M1	Z	-.711	-.67	48.571	72.857
4	M1	Z	-.67	-.67	72.857	97.143
5	M1	Z	-.67	-.711	97.143	121.429
6	M1	Z	-.711	-.371	121.429	145.714
7	M1	Z	-.371	-.015	145.714	170
8	M2	Z	-.156	-.564	27.6	49.067
9	M2	Z	-.564	-.5	49.067	70.533
10	M2	Z	-.5	-.062	70.533	92
11	M15	Z	-.156	-.564	27.6	49.067
12	M15	Z	-.564	-.5	49.067	70.533
13	M15	Z	-.5	-.062	70.533	92
14	M5	Z	-.015	-.371	0	24.286
15	M5	Z	-.371	-.711	24.286	48.571

Member Distributed Loads (BLC 42 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
16	M5	Z	-.711	-.67	48.571	72.857
17	M5	Z	-.67	-.67	72.857	97.143
18	M5	Z	-.67	-.711	97.143	121.429
19	M5	Z	-.711	-.371	121.429	145.714
20	M5	Z	-.371	-.015	145.714	170
21	M16	Z	-.156	-.564	27.6	49.067
22	M16	Z	-.564	-.5	49.067	70.533
23	M16	Z	-.5	-.062	70.533	92
24	M6	Z	-.015	-.371	0	24.286
25	M6	Z	-.371	-.711	24.286	48.571
26	M6	Z	-.711	-.67	48.571	72.857
27	M6	Z	-.67	-.67	72.857	97.143
28	M6	Z	-.67	-.711	97.143	121.429
29	M6	Z	-.711	-.371	121.429	145.714
30	M6	Z	-.371	-.015	145.714	170

Member Distributed Loads (BLC 43 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/in,...	End Magnitude[lb/in,...	Start Location[in,%]	End Location[in,%]
1	M1	Z	-.037	-.901	0	24.286
2	M1	Z	-.901	-1.727	24.286	48.571
3	M1	Z	-1.727	-1.628	48.571	72.857
4	M1	Z	-1.628	-1.628	72.857	97.143
5	M1	Z	-1.628	-1.727	97.143	121.429
6	M1	Z	-1.727	-.901	121.429	145.714
7	M1	Z	-.901	-.037	145.714	170
8	M2	Z	-.379	-1.369	27.6	49.067
9	M2	Z	-1.369	-1.215	49.067	70.533
10	M2	Z	-1.215	-.152	70.533	92
11	M15	Z	-.379	-1.369	27.6	49.067
12	M15	Z	-1.369	-1.215	49.067	70.533
13	M15	Z	-1.215	-.152	70.533	92
14	M5	Z	-.037	-.901	0	24.286
15	M5	Z	-.901	-1.727	24.286	48.571
16	M5	Z	-1.727	-1.628	48.571	72.857
17	M5	Z	-1.628	-1.628	72.857	97.143
18	M5	Z	-1.628	-1.727	97.143	121.429
19	M5	Z	-1.727	-.901	121.429	145.714
20	M5	Z	-.901	-.037	145.714	170
21	M16	Z	-.379	-1.369	27.6	49.067
22	M16	Z	-1.369	-1.215	49.067	70.533
23	M16	Z	-1.215	-.152	70.533	92
24	M6	Z	-.037	-.901	0	24.286
25	M6	Z	-.901	-1.727	24.286	48.571
26	M6	Z	-1.727	-1.628	48.571	72.857
27	M6	Z	-1.628	-1.628	72.857	97.143
28	M6	Z	-1.628	-1.727	97.143	121.429
29	M6	Z	-1.727	-.901	121.429	145.714
30	M6	Z	-.901	-.037	145.714	170

Member Area Loads (BLC 2 : Weights)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N7	N9	N10	N30	Z	Two Way	-.007
2	N7	N30	N33	N8	Z	Two Way	-.007
3	N10	N33	N8	N9	Z	Two Way	-.007

Member Area Loads (BLC 3 : ICE Load)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N7	N9	N10	N30	Z	Two Way	-.017
2	N7	N30	N33	N8	Z	Two Way	-.017
3	N10	N33	N8	N9	Z	Two Way	-.017

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL			-1					
2	Weights	DL					31		3	
3	ICE Load	DL					31	21	3	
4	Wind 0Á	WL					31	21		
5	Wind 30Á	WL					62	42		
6	Wind 60Á	WL					62	42		
7	Wind 90Á	WL					31	21		
8	Wind 120Á	WL					62	42		
9	Wind 150Á	WL					62	42		
10	Wind 0Áwith ice	WL					31	21		
11	Wind 30Áwith ice	WL					62	42		
12	Wind 60Áwith ice	WL					62	42		
13	Wind 90Áwith ice	WL					31	21		
14	Wind 120Áwith ice	WL					62	42		
15	Wind 150Áwith ice	WL					62	42		
16	Lm1	LL				1				
17	Lm2	LL				1				
18	Lm3	LL				1				
19	Lm4	LL				1				
20	Lm5	LL				1				
21	Lm6	LL				1				
22	Lm7	LL				1				
23	Lm8	LL				1				
24	Lm9	LL				1				
25	Lm10	LL				1				
26	Lm11	LL				1				
27	Lm12	LL				1				
28	Lv1	LL								
29	Lv2	LL								
30	Lv3	LL								
31	Lv4	LL								
32	Lv5	LL								
33	Lv6	LL								
34	Lv7	LL					1			
35	Lv8	LL					1			
36	Lv9	LL					1			
37	Lv10	LL								

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
38	Lv11	LL								
39	Lv12	LL								
40	Horizontal Seismic Lo...	ELX	-1				31			
41	Horizontal Seismic Lo...	ELY		-1			31			
42	BLC 2 Transient Area...	None						30		
43	BLC 3 Transient Area...	None						30		

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Dead Only	Yes	Y		1	1.4	2	1.4																
2	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	4	1														
3	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	5	1														
4	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	6	1														
5	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	7	1														
6	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	8	1														
7	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	9	1														
8	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	4	-1														
9	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	5	-1														
10	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	6	-1														
11	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	7	-1														
12	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	8	-1														
13	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	9	-1														
14	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	10	1	3	1												
15	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	11	1	3	1												
16	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	12	1	3	1												
17	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	13	1	3	1												
18	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	14	1	3	1												
19	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	15	1	3	1												
20	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	10	-1	3	1												
21	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	11	-1	3	1												
22	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	12	-1	3	1												
23	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	13	-1	3	1												
24	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	14	-1	3	1												
25	1.2D+1.0...	Yes	Y		1	1.2	2	1.2	15	-1	3	1												
26	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	.063												
27	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	.063												
28	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	.063												
29	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	.063												
30	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	.063												
31	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	.063												
32	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	-.063												
33	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	-.063												
34	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	-.063												
35	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	-.063												
36	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	-.063												
37	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	-.063												
38	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	.063												
39	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	.063												
40	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	.063												
41	1.2D+1.5L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	.063												

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
42	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	8	.063														
43	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	9	.063														
44	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	4	-.063														
45	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	5	-.063														
46	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	6	-.063														
47	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	7	-.063														
48	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	8	-.063														
49	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	17	1.5	9	-.063														
50	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	4	.063														
51	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	5	.063														
52	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	6	.063														
53	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	7	.063														
54	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	8	.063														
55	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	9	.063														
56	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	4	-.063														
57	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	5	-.063														
58	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	6	-.063														
59	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	7	-.063														
60	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	8	-.063														
61	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	18	1.5	9	-.063														
62	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	4	.063														
63	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	5	.063														
64	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	6	.063														
65	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	7	.063														
66	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	8	.063														
67	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	9	.063														
68	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	4	-.063														
69	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	5	-.063														
70	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	6	-.063														
71	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	7	-.063														
72	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	8	-.063														
73	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	19	1.5	9	-.063														
74	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	4	.063														
75	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	5	.063														
76	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	6	.063														
77	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	7	.063														
78	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	8	.063														
79	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	9	.063														
80	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	4	-.063														
81	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	5	-.063														
82	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	6	-.063														
83	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	7	-.063														
84	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	8	-.063														
85	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	20	1.5	9	-.063														
86	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	4	.063														
87	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	5	.063														
88	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	6	.063														
89	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	7	.063														
90	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	8	.063														
91	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	9	.063														
92	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	4	-.063														
93	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	5	-.063														

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
94	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	6	-.063														
95	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	7	-.063														
96	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	8	-.063														
97	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	21	1.5	9	-.063														
98	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	4	.063														
99	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	5	.063														
100	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	6	.063														
101	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	7	.063														
102	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	8	.063														
103	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	9	.063														
104	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	4	-.063														
105	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	5	-.063														
106	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	6	-.063														
107	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	7	-.063														
108	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	8	-.063														
109	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	22	1.5	9	-.063														
110	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	4	.063														
111	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	5	.063														
112	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	6	.063														
113	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	7	.063														
114	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	8	.063														
115	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	9	.063														
116	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	4	-.063														
117	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	5	-.063														
118	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	6	-.063														
119	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	7	-.063														
120	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	8	-.063														
121	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	23	1.5	9	-.063														
122	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	4	.063														
123	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	5	.063														
124	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	6	.063														
125	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	7	.063														
126	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	8	.063														
127	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	9	.063														
128	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	4	-.063														
129	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	5	-.063														
130	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	6	-.063														
131	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	7	-.063														
132	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	8	-.063														
133	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	24	1.5	9	-.063														
134	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	4	.063														
135	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	5	.063														
136	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	6	.063														
137	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	7	.063														
138	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	8	.063														
139	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	9	.063														
140	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	4	-.063														
141	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	5	-.063														
142	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	6	-.063														
143	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	7	-.063														
144	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	8	-.063														
145	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	25	1.5	9	-.063														

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
146	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	4	.063														
147	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	5	.063														
148	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	6	.063														
149	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	7	.063														
150	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	8	.063														
151	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	9	.063														
152	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	4	-.063														
153	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	5	-.063														
154	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	6	-.063														
155	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	7	-.063														
156	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	8	-.063														
157	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	26	1.5	9	-.063														
158	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	4	.063														
159	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	5	.063														
160	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	6	.063														
161	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	7	.063														
162	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	8	.063														
163	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	9	.063														
164	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	4	-.063														
165	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	5	-.063														
166	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	6	-.063														
167	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	7	-.063														
168	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	8	-.063														
169	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	27	1.5	9	-.063														
170	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	28	1.5																
171	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	29	1.5																
172	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	30	1.5																
173	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	31	1.5																
174	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	32	1.5																
175	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	33	1.5																
176	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	34	1.5																
177	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	35	1.5																
178	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	36	1.5																
179	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	37	1.5																
180	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	38	1.5																
181	1.2D+1.5L..	Yes	Y		1	1.2	2	1.2	39	1.5																
182	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	.112	41															
183	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	.097	41	.056														
184	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	.056	41	.097														
185	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40		41	.112														
186	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	-.056	41	.097														
187	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	-.097	41	.056														
188	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	-.112	41															
189	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	-.097	41	-.056														
190	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	-.056	41	-.097														
191	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40		41	-.112														
192	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	.056	41	-.097														
193	1.2D+1.0E..	Yes	Y		1	1.245	2	1.245	40	.097	41	-.056														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-in]	LC	MY [k-in]	LC	MZ [k-in]	LC
1	N1	max	2753.195	2	668.332	5	2398.074	14	4.552	95	106.614	14	18.615	11
2		min	-2750.193	8	-668.32	11	925.231	8	-4.622	53	37.386	8	-18.615	5
3	N28	max	1334.046	12	2321.907	6	2302.653	18	-32.374	12	-17.523	13	18.615	3
4		min	-1335.508	6	-2319.273	12	886.557	12	-92.326	18	-53.399	19	-18.616	9
5	N31	max	1341.444	4	2315.012	4	2302.667	22	92.172	22	-17.697	3	18.615	7
6		min	-1343.002	10	-2317.59	10	886.562	4	32.271	4	-53.669	21	-18.615	13
7	Totals:	max	4931.76	2	4903.65	5	6878.786	21						
8		min	-4931.759	8	-4903.649	11	3187.535	3						

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

	Member	Shape	Code C...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M1	HSS4X4X4	.254	170	17	.056	170	z	4	97839.166	139518	194.166	194.166	2....	H1-1b
2	M2	HSS4X4X4	.561	0	17	.074	0	y	95	128292.6...	139518	194.166	194.166	2....	H1-1b
3	M4	Pipe2.375x0....	.272	41.438	11	.018	41.438		11	7721.428	27832.55	19.954	19.954	1....	H1-1b
4	M5	HSS4X4X4	.254	170	21	.056	170	z	8	97839.166	139518	194.166	194.166	2....	H1-1b
5	M6	HSS4X4X4	.254	170	25	.056	170	z	12	97839.166	139518	194.166	194.166	2....	H1-1b
6	M8	Pipe2.375x0....	.066	41.438	7	.005	41.438		7	7721.428	27832.55	19.954	19.954	1	H1-1b
7	M10	Pipe2.375x0....	.546	37.177	8	.048	36.313		5	13115.425	27832.55	19.954	19.954	1	H1-1b
8	M12	Pipe2.375x0....	.271	41.438	5	.018	41.438		5	20618.25	27832.55	19.954	19.954	1	H1-1b
9	M14	Pipe2.375x0....	.066	41.438	9	.005	41.438		9	7721.428	27832.55	19.954	19.954	1....	H1-1b
10	M15	HSS4X4X4	.560	0	21	.073	0	y	39	128292.6...	139518	194.166	194.166	2....	H1-1b
11	M16	HSS4X4X4	.560	0	19	.073	0	y	139	128292.6...	139518	194.166	194.166	2....	H1-1b
12	M18	Pipe2.375x0....	.273	41.438	3	.018	41.438		3	7721.428	27832.55	19.954	19.954	1	H1-1b
13	M20	Pipe2.375x0....	.066	41.438	12	.005	41.438		12	7721.428	27832.55	19.954	19.954	1....	H1-1b
14	M22	Pipe2.375x0....	.546	37.177	12	.048	36.313		9	13115.425	27832.55	19.954	19.954	1....	H1-1b
15	M24	Pipe2.375x0....	.273	41.438	9	.018	41.438		9	7721.428	27832.55	19.954	19.954	1....	H1-1b
16	M26	Pipe2.375x0....	.066	41.438	12	.005	41.438		12	7721.428	27832.55	19.954	19.954	1....	H1-1b
17	M28	Pipe2.375x0....	.273	41.438	7	.018	41.438		7	7721.428	27832.55	19.954	19.954	1	H1-1b
18	M30	Pipe2.375x0....	.066	41.438	4	.005	41.438		4	7721.428	27832.55	19.954	19.954	1	H1-1b
19	M32	Pipe2.375x0....	.546	37.177	4	.048	36.313		13	13115.425	27832.55	19.954	19.954	1	H1-1b
20	M34	Pipe2.375x0....	.273	41.438	13	.018	41.438		13	7721.428	27832.55	19.954	19.954	1....	H1-1b
21	M36	Pipe2.375x0....	.066	41.438	4	.005	41.438		4	7721.428	27832.55	19.954	19.954	1	H1-1b

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

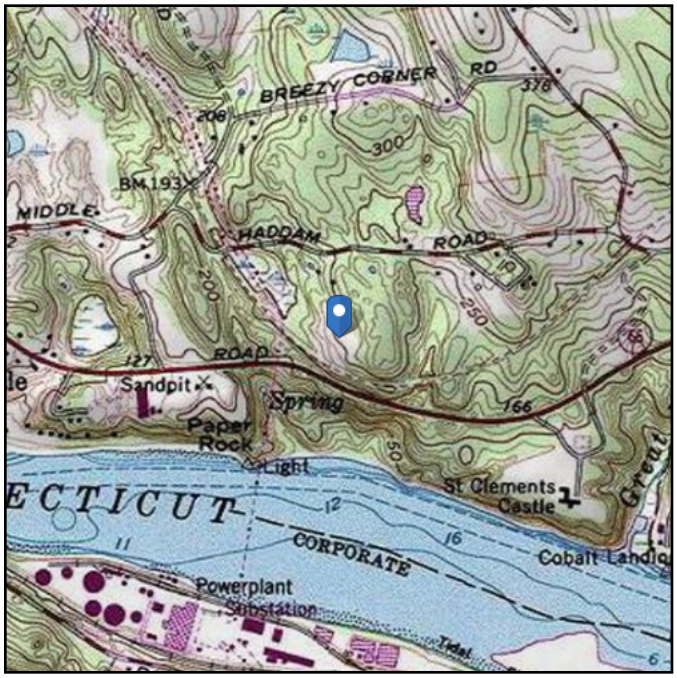
Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pn[lb]	phi*Tn[lb]	phi*Mny...	phi*Mnz...	phi*V...	phi*V...	Cb	Eqn
No Data to Print ...																

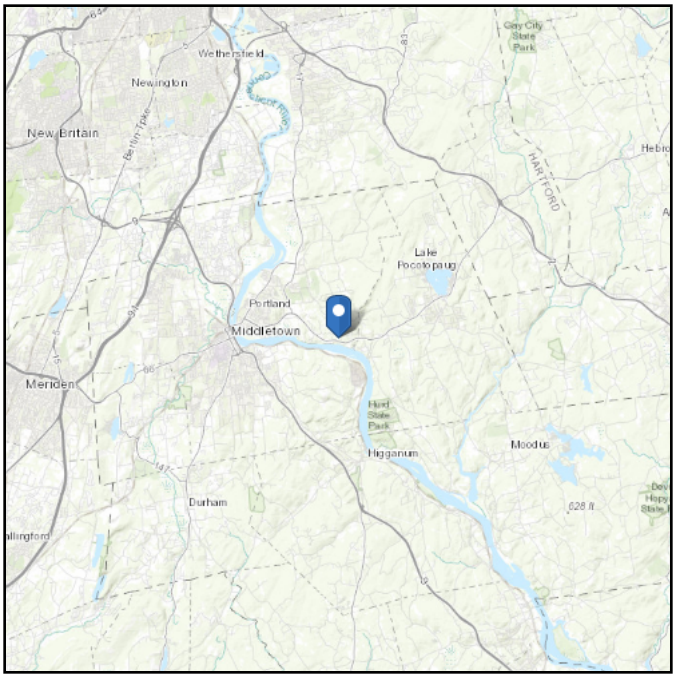
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 250.62 ft (NAVD 88)
Latitude: 41.56225
Longitude: -72.573778





Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Fri Aug 23 2019

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

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

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

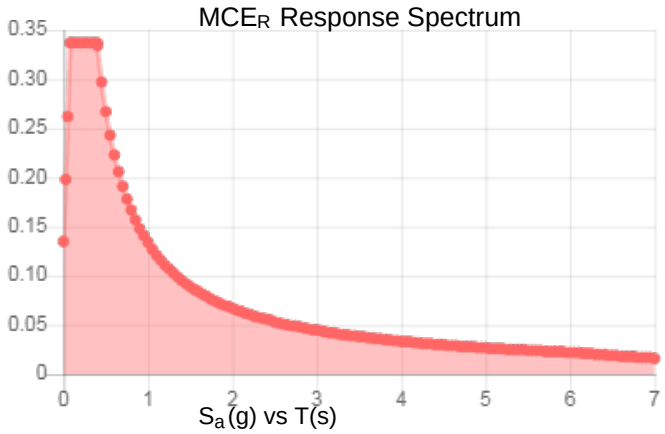
Seismic

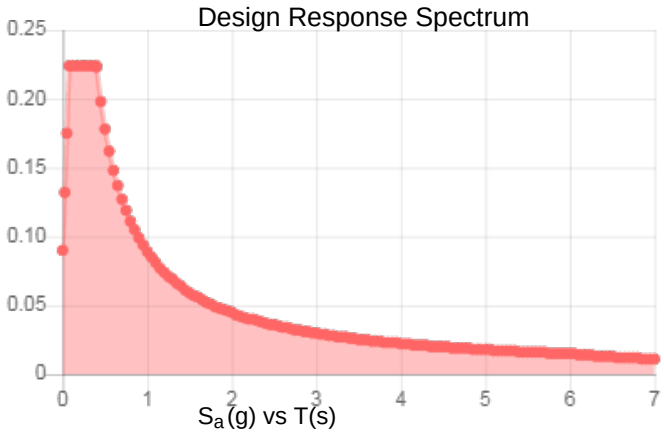
Site Soil Class: D - Stiff Soil

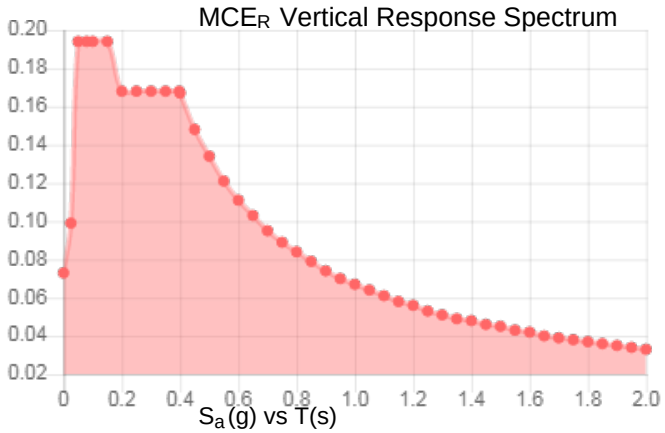
Results:

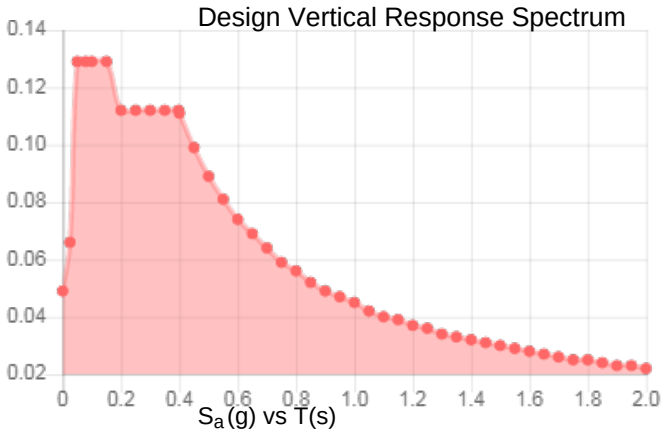
S_S :	0.21	S_{D1} :	0.089
S_1 :	0.056	T_L :	6
F_a :	1.6	PGA :	0.117
F_v :	2.4	PGA_M :	0.184
S_{MS} :	0.337	F_{PGA} :	1.566
S_{M1} :	0.134	I_e :	1
S_{DS} :	0.224	C_v :	0.721

Seismic Design Category B









Data Accessed: Fri Aug 23 2019

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Aug 23 2019

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 C

SCOPE OF WORK FILES

EAST > North East > New England > New England West > PORTLAND S CT

- Gadasu, Shiva - shiva.gadasu@verizonwireless.com - 06/24/2019 15:31:11

Project Detail		Location Information	
Site Type		**Siterra Site ID#**	
Carrier Aggregation	false	**Site Name**	PORTLAND S CT
MPT Id		**Siterra SR#**	
eCIP-0	false	**E-NodeB ID#**	064044
Project Name	850 ADD	**PSLC#**	467183
RFDS Project ID	1248699	**Switch Name**	
Project ID	15096289	**Tower Owner**	
Site Traker Project ID		**Tower Type**	Monopole
RFDS Project Scope	AWS, 850NR add Mount hexports 2" Edge-to-edge using mounting brackets Remove any unused coax/spare antennas Rev0_20190624 : Initial design	**Street Address**	191 Middle Haddam Road
		City	Portland
		State	CT
		Zip Code	06480
		County	Middlesex
		Latitude	41.56225 / 41° ° 33' ' 44.1" " N
		Longitude	-72.573778 / 72° ° 34' ' 25.6008" " W

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Antenna Summary

Added Antennas

700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	QTY
YES		YES			YES	QUINTEL USA INC	QS6656-5D	127	130	150(D2),30(D1),270(D3)	true	true	PHYSICAL	6

Removed Antennas

700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	QTY
YES						AMPHENOL ANTEL INC.	BXA-70063-6CF-750MHZ (200499)	127	130	150(D2),30(D1)	false	false	PHYSICAL	2
YES						ANTEL	BXA-70063-4CF (200498)	127	129	270(D3)	false	false	PHYSICAL	1

Retained Antennas

700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	QTY
	YES					CELWAVE	APL866513 (42326)	127	129	270(D3)	false	false	PHYSICAL	2
	YES					DECIBEL PRODUCTS	DB846H80E-SX_0 (168526)	127	130	150(D2),30(D1)	false	false	PHYSICAL	4

Added: 6	Removed: 3	Retained: 6

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Equipment Summary

Added Non Antennas

Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
RRU						YES	Tower	Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)			PHYSICAL	3
RRU	YES		YES				Tower	Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)			PHYSICAL	3
OVP Box							Tower		12 sector OVP			PHYSICAL	1
Hybrid Cable							Tower		12x24 Hybrid			PHYSICAL	1
Mount							Tower	Quintel	AS-005245			PHYSICAL	3

Removed Non Antennas

Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
RRU	YES						Shelter	Nokia	UHBA B13 RRH 4x30			PHYSICAL	3

Retained Non Antennas

Equipment Type	700 LTE	850 CDMA	850 LTE	1900 CDMA	1900 LTE	2100 LTE	Location	Make	Model	Cable Length	Cable Size	Inst. Type	Quantity
Coaxial Cables							Tower					PHYSICAL	6

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Services

700 MHZ LTE						
	Current Version:			Proposed Version:		
	0000			0002		
Sector	D1	D2	D3	D1	D2	D3
Azimuth	30	150	270	30	150	270
Cell/ENode B ID	064044	064044	064044	064044	064044	064044
Antenna Model	BXA-70063-6CF-750MHZ (200499)	BXA-70063-6CF-750MHZ (200499)	BXA-70063-4CF (200498)	QS6656-5D_V2-0P_740MHz_02DT_Port1	QS6656-5D_V2-0P_740MHz_02DT_Port1	QS6656-5D_V2-0P_740MHz_02DT_Port1
Antenna Make	AMPHENOL ANTEL INC.	AMPHENOL ANTEL INC.	ANTEL	QUINTEL USA INC	QUINTEL USA INC	QUINTEL USA INC
Centerline(Ft)	127	127	127	127	127	127
Mechanical DT(Deg.)	0	0	0	0	0	0
Electrical DT	0	0	0	2	2	2
Tip Height	130	130	129	130	130	130
TMA make						
TMA model						
RRU make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung
RRU model	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
# of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						

2100 MHZ LTE				
	Current Version:	Proposed Version:		
		0002		
Sector		D1	D2	D3
Azimuth		30	150	270
Cell/ENode B ID		064044	064044	064044
Antenna Model		QS6656-5D_V2-0P_2140MHz_00DT_Port5	QS6656-5D_V2-0P_2140MHz_00DT_Port5	QS6656-5D_V2-0P_2140MHz_00DT_Port5
Antenna Make		QUINTEL USA INC	QUINTEL USA INC	QUINTEL USA INC
Centerline(Ft)		127	127	127
Mechanical DT(Deg.)		0	0	0
Electrical DT		0	0	0
Tip Height		130	130	130
TMA make				
TMA model				
RRU make		Samsung	Samsung	Samsung
RRU model		B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
# of Tx, Rx Lines		4,4	4,4	4,4
Position				

850 MHZ CDMA						
	Current Version:			Proposed Version:		
	0000			0002		
Sector	D1	D2	D3	D1	D2	D3
Azimuth	30	150	270	30	150	270
Cell/ENode B ID						
Antenna Model	DB846H80E-SX_0 (168526)	DB846H80E-SX_0 (168526)	APL866513 (42326)	DB846H80E-SX_0 (168526)	DB846H80E-SX_0 (168526)	APL866513 (42326)
Antenna Make	DECIBEL PRODUCTS	DECIBEL PRODUCTS	CELWAVE	DECIBEL PRODUCTS	DECIBEL PRODUCTS	CELWAVE
Centerline(Ft)	127	127	127	127	127	127
Mechanical DT(Deg.)	0	0	0	0	0	0
Electrical DT	0	0	0	0	0	0
Tip Height	130	130	129	130	130	129
TMA make						
TMA model						
RRU make						
RRU model						
# of Tx, Rx Lines						
Position						

850 MHZ LTE				
	Current Version:	Proposed Version:		
		0002		
Sector		D1	D2	D3
Azimuth		30	150	270
Cell/ENode B ID		064044	064044	064044
Antenna Model		QS6656-5D_V2-0P_803MHz_02DT_Port1	QS6656-5D_V2-0P_803MHz_02DT_Port1	QS6656-5D_V2-0P_803MHz_02DT_Port1
Antenna Make		QUINTEL USA INC	QUINTEL USA INC	QUINTEL USA INC
Centerline(Ft)		127	127	127
Mechanical DT(Deg.)		0	0	0
Electrical DT		2	2	2
Tip Height		130	130	130
TMA make				
TMA model				
RRU make		Samsung	Samsung	Samsung
RRU model		B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
# of Tx, Rx Lines		4,4	4,4	4,4
Position				

Service Comments

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Callsigns Per Antenna - Proposed

Sector	Make	Model	Centerline	Tip Height	Azimuth(TN)	Elec. Tilt	Mech. Tilt	Gain	Horiz BW	Regulatory Power	700 Callsigns	850 Callsigns	1900 Callsigns	2100 Callsigns	28 GHz Callsigns	31 GHz Callsigns	39 GHz Callsigns
D3	QUINTEL USA INC	QS6656-5D_V2-0P_2140MHz_00DT_Port5	127ft/38.71m	130ft/39.62m	270	0	0	17.998	57	157.23				WQGA906,WQGB276			
D1	DECIBEL PRODUCTS	DB846H80E-SX_0 (168526)	127ft/38.71m	130ft/39.62m	30	0	0	14	83	444.63		KNKA404					
D2	QUINTEL USA INC	QS6656-5D_V2-0P_803MHz_02DT_Port1	127ft/38.71m	130ft/39.62m	150	2	0	12.398	67	475.12		KNKA404					
D3	QUINTEL USA INC	QS6656-5D_V2-0P_803MHz_02DT_Port1	127ft/38.71m	130ft/39.62m	270	2	0	12.398	67	475.12		KNKA404					
D2	QUINTEL USA INC	QS6656-5D_V2-0P_740MHz_02DT_Port1	127ft/38.71m	130ft/39.62m	150	2	0	11.798	69	45.98	WQJQ689						
D1	QUINTEL USA INC	QS6656-5D_V2-0P_2140MHz_00DT_Port5	127ft/38.71m	130ft/39.62m	30	0	0	17.998	57	157.23				WQGA906,WQGB276			
D2	DECIBEL PRODUCTS	DB846H80E-SX_0 (168526)	127ft/38.71m	130ft/39.62m	150	0	0	14	83	444.63		KNKA404					
D3	QUINTEL USA INC	QS6656-5D_V2-0P_740MHz_02DT_Port1	127ft/38.71m	130ft/39.62m	270	2	0	11.798	69	45.98	WQJQ689						
D3	CELWAVE	APL866513 (42326)	127ft/38.71m	129ft/39.32m	270	0	0	13.2	65.75	369.83		KNKA404					
D1	QUINTEL USA INC	QS6656-5D_V2-0P_740MHz_02DT_Port1	127ft/38.71m	130ft/39.62m	30	2	0	11.798	69	45.98	WQJQ689						

D1	QUINTEL USA INC	QS6656-5D_V2-0P_803MHz_02DT_Port1	127ft/38.71m	130ft/39.62m	30	2	0	12.398	67	475.12		KNKA404					
D2	QUINTEL USA INC	QS6656-5D_V2-0P_2140MHz_00DT_Port5	127ft/38.71m	130ft/39.62m	150	0	0	17.998	57	157.23				WQGA906,WQGB276			

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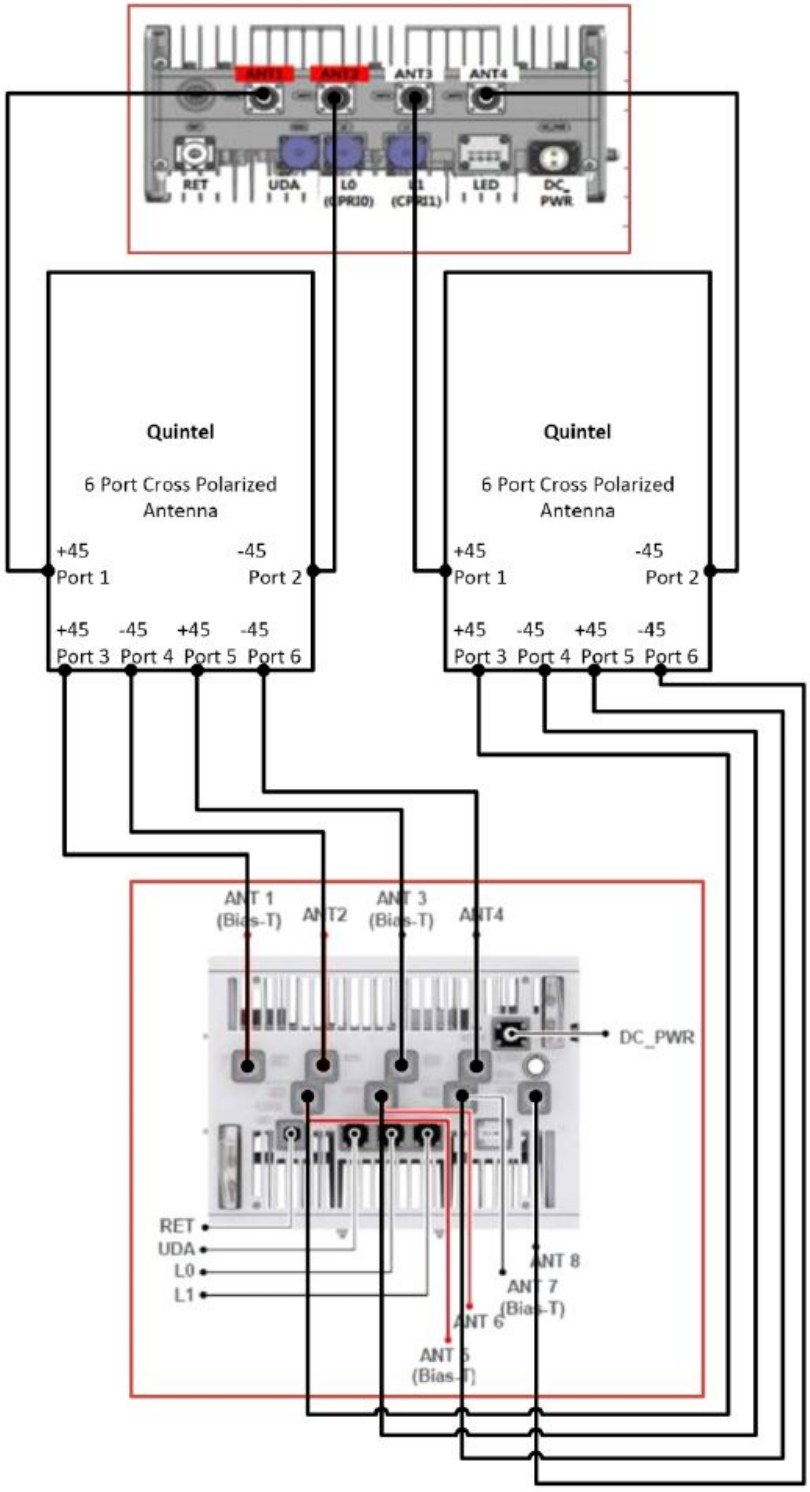
Callsigns

Callsigns	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs/ Sq Mi	Status	Project Action
KNKA404	***Hartford-New Britain-Bristol, CT***	***CL***	***CMA032***	***A***	***CT***	***Middlesex***	***Cellco Partnership***	***Yes***	***25.000***	***824.000-835.000***	***869.000-880.000***	***845.000-846.500***	***890.000-891.500***	***475.12***	***500***	***448.6***	***Active***	***Added***
KNLH251	Hartford, CT	CW	BTA184	F	CT	Middlesex	Cellco Partnership	Yes	10.000	1890.000-1895.000	1970.000-1975.000	.000-.000	.000-.000		1640	448.6	Active	
WPLM398	Hartford, CT	LD	BTA184	B	CT	Middlesex	Cellco Partnership	Yes	150.000	31000.000-31075.000	31225.000-31300.000	.000-.000	.000-.000			448.6	Active	
WPOH943	Hartford, CT	LD	BTA184	A	CT	Middlesex	Cellco Partnership	Yes	300.000	29100.000-29250.000	31075.000-31225.000	.000-.000	.000-.000			448.6	Active	
WPOJ730	Hartford, CT	CW	BTA184	C	CT	Middlesex	Cellco Partnership	Yes	15.000	1895.000-1902.500	1975.000-1982.500	.000-.000	.000-.000		1640	448.6	Active	
WQGA906	***New York-No. New Jer.-Long Island, NY-NJ-CT-PA-MA-***	***AW***	***BEA010***	***B***	***CT***	***Middlesex***	***Cellco Partnership***	***Yes***	***20.000***	***1720.000-1730.000***	***2120.000-2130.000***	***.000-.000***	***.000-.000***	***157.23***	***1640***	***448.6***	***Active***	***Added***
WQGB276	***Hartford-New Britain-Bristol, CT***	***AW***	***CMA032***	***A***	***CT***	***Middlesex***	***Cellco Partnership***	***Yes***	***20.000***	***1710.000-1720.000***	***2110.000-2120.000***	***.000-.000***	***.000-.000***	***157.23***	***1640***	***448.6***	***Active***	***Added***
WQJQ689	***Northeast***	***WU***	***REA001***	***C***	***CT***	***Middlesex***	***Cellco Partnership***	***Yes***	***22.000***	***746.000-757.000***	***776.000-787.000***	***.000-.000***	***.000-.000***	***45.98***	***1000***	***448.6***	***Active***	***Added***
WRBA710	Hartford, CT	UU	BTA184	L1	CT	Middlesex	Cellco Partnership	Yes	325.000	27500.000-27600.000	27700.000-27925.000	.000-.000	.000-.000			448.6	Active	

WRBA711	Hartford, CT	UU	BTA184	L2	CT	Middlesex	Cellco Partnership	Yes	325.000	27925.000-28050.000	28150.000-28350.000	.000-.000	.000-.000			448.6	Active	
WRBD571	New York, NY	UU	PEA001	2-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBD572	New York, NY	UU	PEA001	2-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBE444	New York, NY	UU	PEA001	5-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	38800.000-38850.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBE445	New York, NY	UU	PEA001	5-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39500.000-39550.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBE704	New York, NY	UU	PEA001	6-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBE705	New York, NY	UU	PEA001	6-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	.000	.000-.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBE864	New York, NY	UU	PEA001	7-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	38900.000-38950.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBE865	New York, NY	UU	PEA001	7-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39600.000-39650.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBF500	New York, NY	UU	PEA001	9-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39000.000-39050.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBF501	New York, NY	UU	PEA001	9-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39700.000-39750.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBF792	New York, NY	UU	PEA001	10-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39050.000-39100.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBF793	New York, NY	UU	PEA001	10-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39750.000-39800.000	.000-.000	.000-.000	.000-.000			.0	Active	

WRBF968	New York, NY	UU	PEA001	11-A	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39100.000-39150.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRBF969	New York, NY	UU	PEA001	11-B	CT	Middlesex	Straight Path Spectrum, LLC	Yes	50.000	39800.000-39850.000	.000-.000	.000-.000	.000-.000			.0	Active	
WRDG500	New York, NY	UU	PEA001	S2	CT	Middlesex	Cellco Partnership	Yes	400.000	37800.000-38200.000	.000-.000	.000-.000	.000-.000			.0	Active	



Quintel®
New Dimensions in Wireless™

QS6656-5D

6ft 65° XXX MultiServ™ 6-Port Antenna

2x698-806MHz & 824-894MHz / 4x1695-2400MHz

MultiServ

- Provides 6 antenna Ports in a slim-line form factor
- Independent 700 & 850 Tilt for use with **dual band radios**
- Optimized Azimuth patterns for Min Inter-Sector Interference

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal (RET) with Smart Bias T
- Industry leading Minimal Wind-Load design

The Quintel MultiServ™ Multiband 6 Port Antenna with patented QTilt™ technology uniquely delivers three independent services in a single slim-line antenna. This antenna allows for the use of **dual band radios** with 700 and 850 on a single pair of lowband ports while offering independent tilt between the 700 and 850 bands. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS6656-5D also provides 4x1695-2400MHz ports as two side-by-side (CLA-2X) arrays for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2		4x Ports 3-6			
Operating Frequency (MHz)	698-806	824-894	1695-2400			
	698-806	824-894	1695-1780	1850-1990	2110-2180	2300-2400
Azimuth beamwidth[1]	67°	64°	67°	63°	60°	59°
Elevation beamwidth[1]	12.1°	10.6°	6.2°	5.9°	5.2°	4.8°
Gain[1] (dBi)	12.5	13.4	17	17.1	17.8	18.0
Polarization	±45°		2x ±45°			
Electrical down-tilt range	2°-10°	2°-10°	0° – 8°			
Upper SLL (20° > mainbeam)[1]	-17dB	-17dB	-16dB	-18dB	-17dB	-16dB
Front to Back Ratio(180°±10°)[1]	≥25dB	≥25dB	≥25dB	≥25dB	≥28dB	≥30dB
Port to Port isolation[1]	≥25dB	≥25dB	≥30dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0°)[1]	>16dB	>16dB	>19dB	>19dB	>19dB	>19dB
Max Power handling (per any port)	250 watts		250 watts			
PIM (3rd Order) (2x43dBm)	>153dBc		>153dBc			
X Band PIM (3rd Order) (2x43dBm)	>159dBc					

[1] *Typical Performance across frequency and Downtilt.*

Mechanical Characteristics	
Dimensions	L 72"(1828mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	92.5lbs (42.0kg)
No. of Connectors	6x 4.3-10 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area[2]	Front: 2.6ft² (0.24m²) Side: 5ft² (0.48m²)
Wind Load @160km/h (45m/s)[2]	Front: 284.7N (64 lbs), Side: 535.5N (120.4 lbs)
Operating Temperature	-40°C to +65°C

[2] *Derived from wind tunnel measurements*

Fully Integrated RET Characteristics	
AISG Standards	V1.1, V 2.0 and 3GPP
Factory Default	AISG 2.0
Surge immunity	IEC 61000-4-5:2005 4KV (AISG PIN)
Device Type	SRET Type 1
AISG Data rate	9.6 kbps
No of connectors	2in/2out.
Connector type	IEC 60130-9 (Ed 3.0)
MTBF	36,000 Operational moves

Quintel®
New Dimensions in Wireless™

QS6656-5D

6ft 65º XXX MultiServ™ 6-Port Antenna

2x698-806MHz & 824-894MHz / 4x1695-2400MHz

MultiServ

RET Configuration

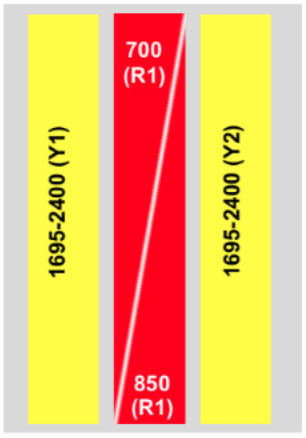
The Quintel MultiServ™ Multiband 6 Port Antenna has the following Array, RF Port and AISG I/O Configurations.

The 6-Port array topology consists of 3 radiating arrays:

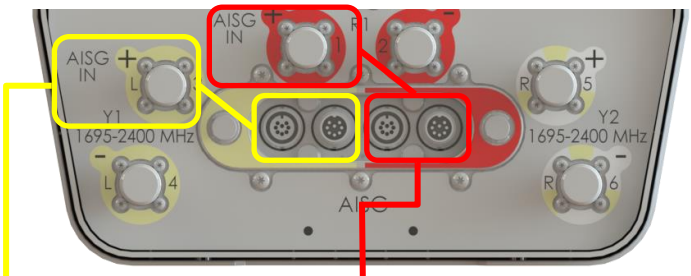
R1 – 698-806 & 824-894MHz
Y1 – 1695-2400MHz
Y2 – 1695-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)
R1	1-2	698-806 & 824-894
Y1	3-4	1695-2400
Y2	5-6	1695-2400



The RET Devices can be communicated with either via the designated external AISG connector or RF Port as shown below.



AISG I/O Configuration

RET Device	Band	RF Ports
3	1695-2400	3-6

AISG I/O Configuration

RET Device	Band	RF Ports
1	698-806	1-2
2	824-894	1-2

Multiband Optimization

The Quintel MultiServ™ Multiband QSx656-5D series of 6 Port Antennas are the only antenna solutions for independently optimizing 700MHz and 850MHz services when dual-band, lowband radios are used at site. Independent tilting ensures that traffic in each band can be optimized for coverage, capacity, interference, contouring at 850MHz band, spectrum border area transitions, and for optimal carrier aggregation tuning in the future.

The tilt of each service is controlled independently via internal RET actuators compliant to AISG1.1, AISG2.0 and 3GPP protocols. The QS6656-5D provides a total of 3 independent tilts:

- 1x(698-806MHz)
- 1x(824-894MHz)
- 1x Left & Right Array (1695-2400MHz)

Design Optimization

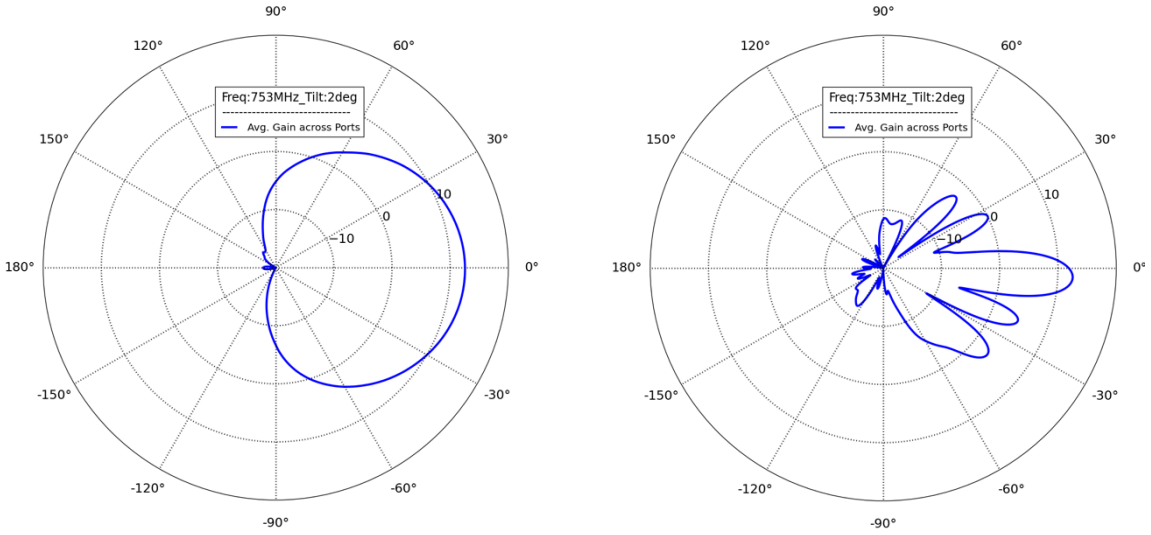
All Quintel antennas use the same mechanical mounting brackets thus making maintenance swaps easy and future proof. All Quintel Antennas also have Azimuth patterns optimized with network design and deployment in mind. The 3dB Azimuth beamwidth is ~65º as with most Antennas, but we have optimized how the pattern rolls-off and where the sidelobes emerge such that there is minimal Inter-Sector Interference when 3x sectors are deployed. For interference limited networks, we can deliver 25% more capacity.

Quintel®
New Dimensions in Wireless™

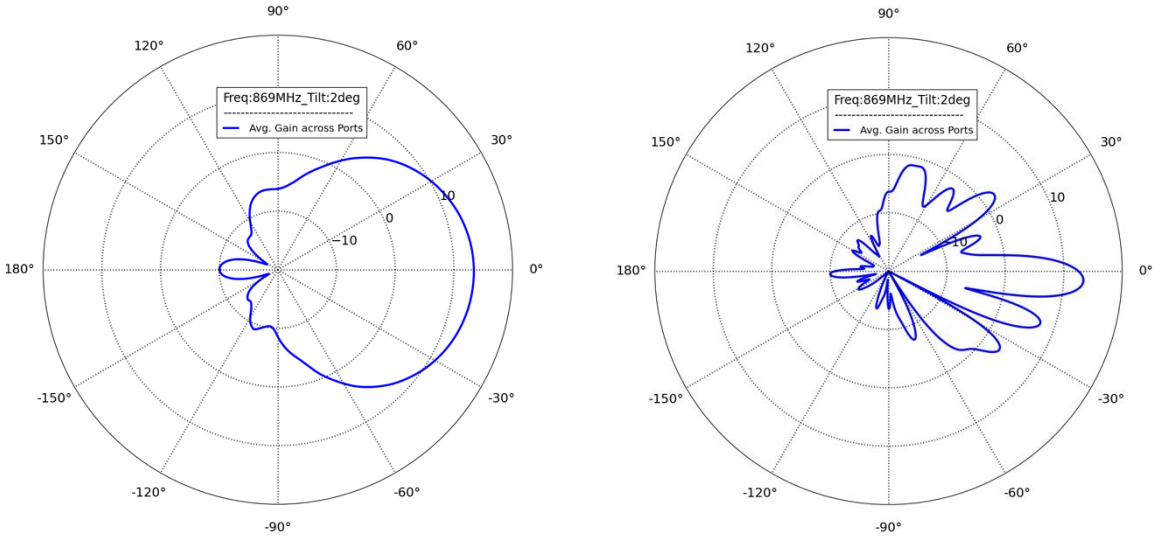
QS6656-5D

6ft 65º XXX MultiServ™ 6-Port Antenna

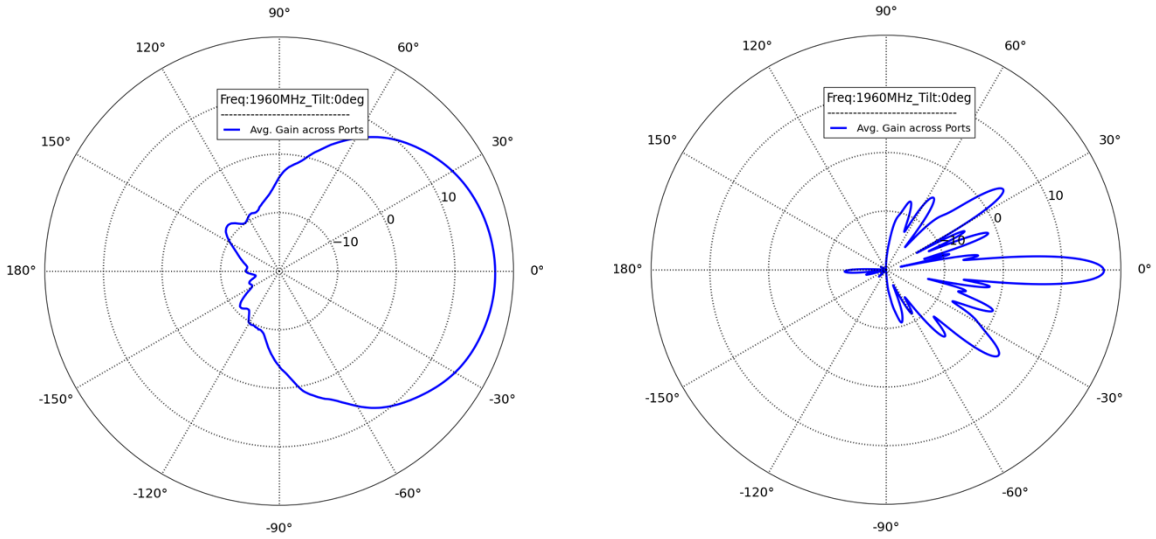
2x698-806MHz & 824-894MHz / 4x1695-2400MHz



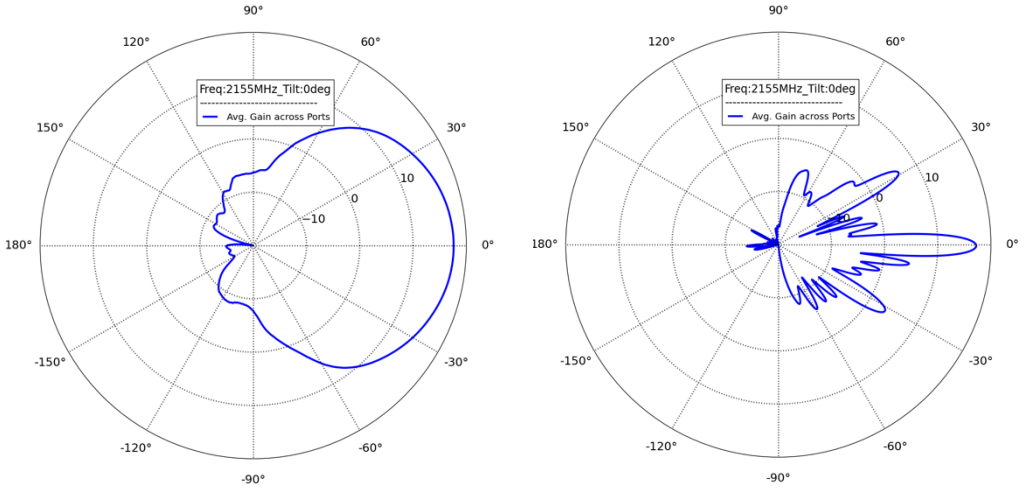
753MHz Azimuth (Left) and Elevation (Right) Patterns



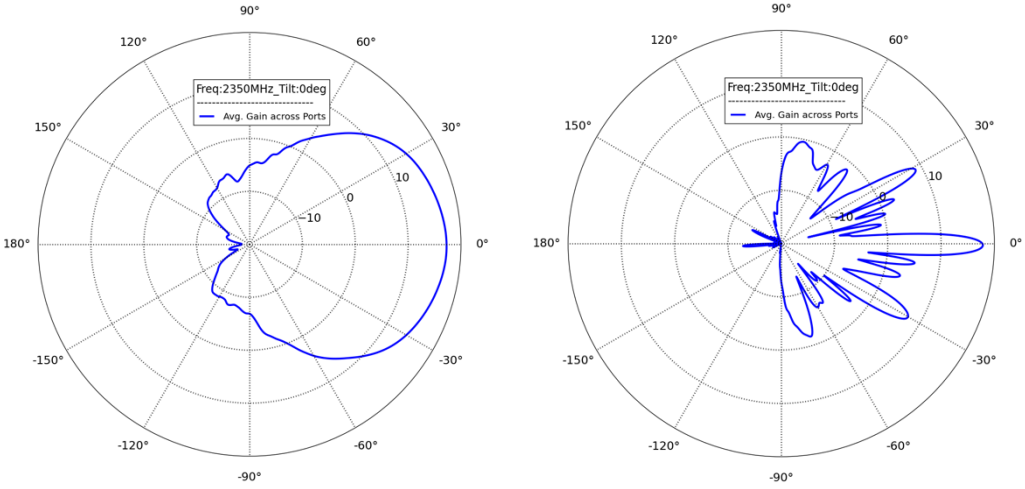
869MHz Azimuth (Left) and Elevation (Right) Patterns



1960MHz Azimuth (Left) and Elevation (Right) Patterns



2155MHz Azimuth (Left) and Elevation (Right) Patterns



2350MHz Azimuth (Left) and Elevation (Right) Patterns

Tel (Americas): +1 (585) 420-8720
info@quintelsolutions.com
www.quintelsolutions.com

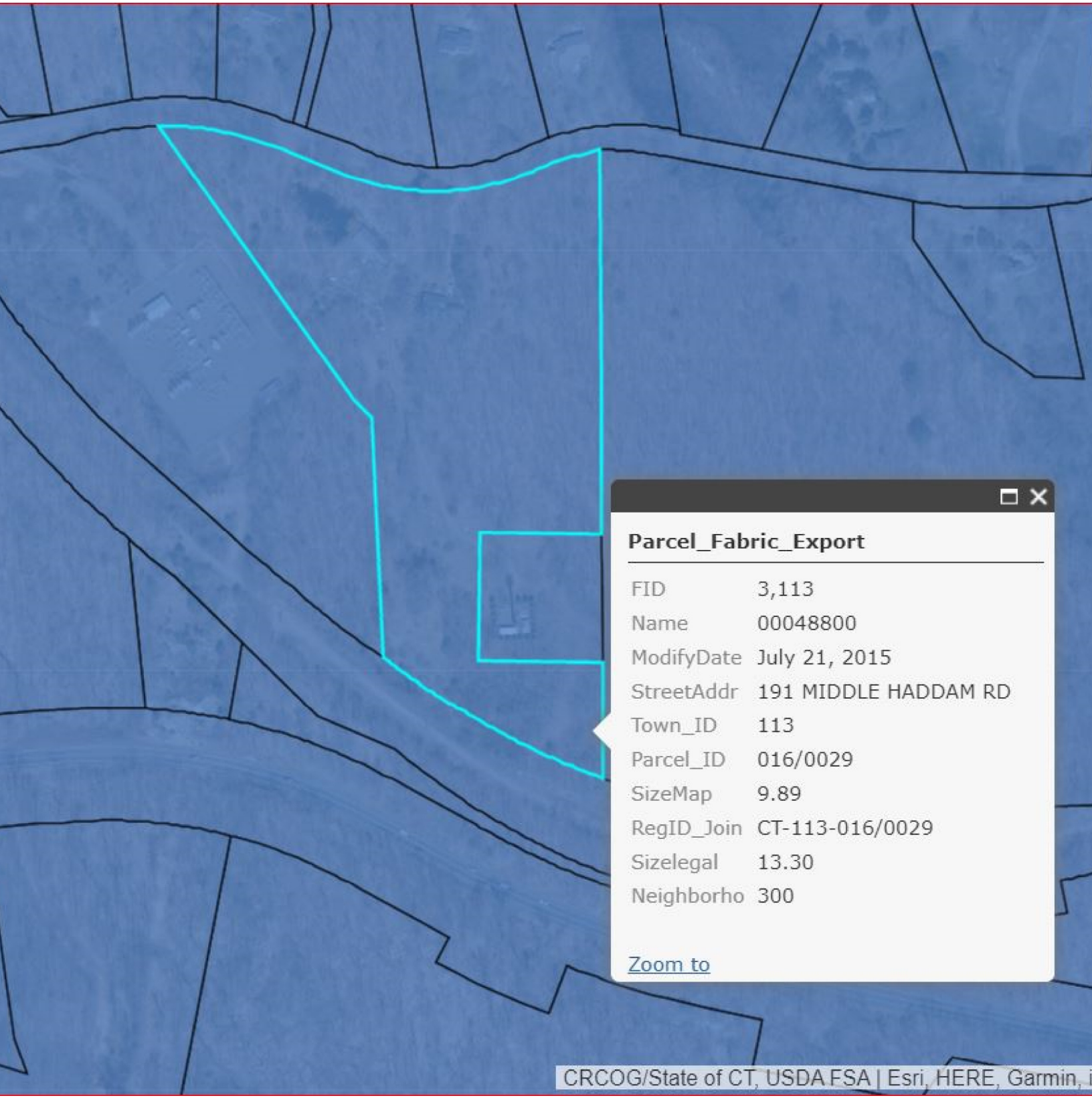
Site Name: Portland South CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	4	1028	4110.16	110	0.1222	1.0	12.22%
VZW Cellular	869	2	330	659.26	110	0.0196	0.579333333	3.38%
VZW Cellular	880	4	438	1753.28	110	0.0521	0.586666667	8.88%
VZW AWS	2145	4	1101	4404.12	110	0.1309	1.0	13.09%
VZW 700	746	4	438	1753.28	100	0.0631	0.497333333	12.68%
Total Percentage of Maximum Permissible Exposure								50.25%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-19

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:
1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.


Parcel_Fabric_Export
FID 3,113
Name 00048800
ModifyDate July 21, 2015
StreetAddr 191 MIDDLE HADDAM RD
Town_ID 113
Parcel_ID 016/0029
SizeMap 9.89
RegID_Join CT-113-016/0029
Sizelegal 13.30
Neighborho 300
Zoom to
CRCOG/State of CT, USDA FSA | Esri, HERE, Garmin, i

Portland, CT : Assessor Database

Property Search:

Parcel ID:	Alternate ID:	Owner 1 Name:	Street Number:	Street Name:
			191	MIDDLE HADDAM RD

Search Reset

Property Detail:

Parcel ID:	Alternate ID/Map Block Lot:	Card:	Card:	Street Name:	Street Number:	Zoning:	LUC:	Acres:
016-0029	00048800	1	1	MIDDLE HADDAM RD	191	RR	Single Family Residence	13.30

Owner Information:

Owner 1 Name:	KNOWLTON PHILIP B JR & TINA S
Owner 2 Name:	
Street 1:	191 MIDDLE HADDAM RD
Street 2:	
City:	PORTLAND
State:	CT
Zip:	06480
Volume:	147
Page:	264

Dwelling Information:

Living Units:	1
Style:	CAPE
Exterior Wall:	ALUM/VINYL
Story Height:	1.5
Attic:	NONE
Basement:	FULL
Rec Room:	263
Finished Basement Area:	0
Bsmt Gar Spaces:	0
Heating System:	OIL/HOT WATER
Heating Type:	BASIC
Fireplaces:	1
Year Built:	1963
Living Area:	1953
Unfinished Area:	0
Rooms:	8
Bedrooms:	3
Full Baths:	1
Half Baths:	1

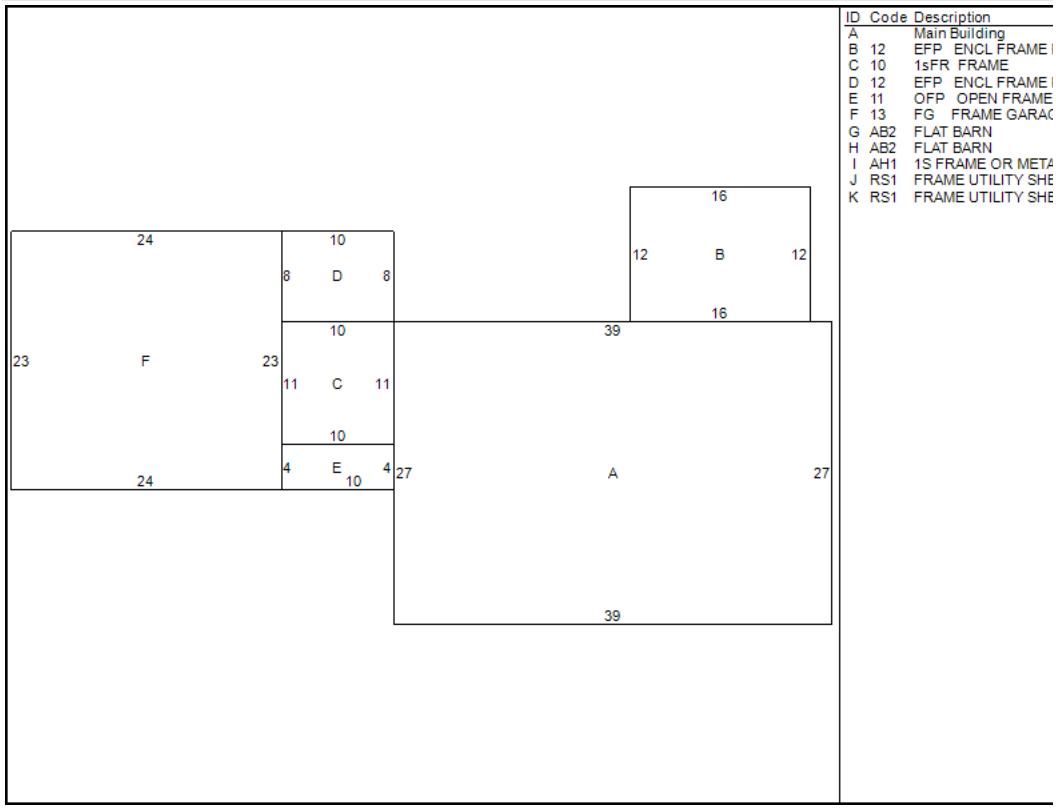
Valuation:

Appraised Land:	$157,000.00
Appraised Bldg:	$158,600.00
Appraised Total:	$315,600.00
Total Assessment:	$220,920.00

Property Images:

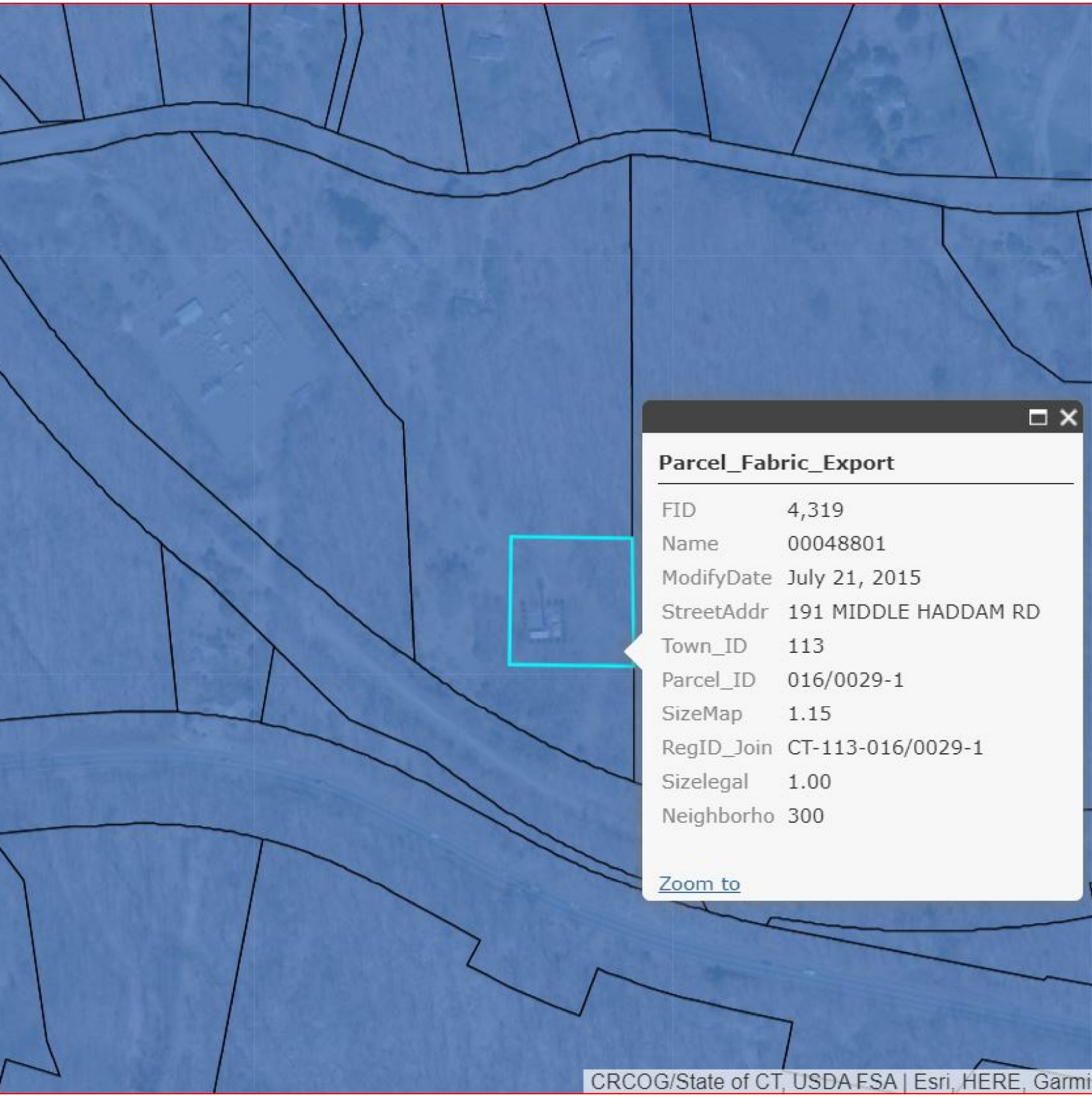
Picture:

Sketch:



Out-Buildings:

Code:	Description:	Units:	Year Built:	Size1:	Size2:	Area:	Grade:	Co
AB2	FLAT BARN	0	1963	1	1984	0	1	
AB2	FLAT BARN	0	1963	1	336	0	3	
RS1	FRAME UTILITY SHED	0	1963	1	200	0	2	
RS1	FRAME UTILITY SHED	0	1963	1	432	0	4	
AH1	1S FRAME OR METAL POULTRY HSE	0	1963	1	108	0	1	


Parcel_Fabric_Export
FID 4,319
Name 00048801
ModifyDate July 21, 2015
StreetAddr 191 MIDDLE HADDAM RD
Town_ID 113
Parcel_ID 016/0029-1
SizeMap 1.15
RegID_Join CT-113-016/0029-1
Sizelegal 1.00
Neighborho 300
Zoom to
CRCOG/State of CT, USDA FSA | Esri, HERE, Garmi

Portland, CT : Assessor Database

Property Search:

Parcel ID:	Alternate ID:	Owner 1 Name:	Street Number:	Street Name:
				MIDDLE HADDAM RD

Search Reset

Property Detail:

Parcel ID:	Alternate ID/Map Block Lot:	Card:	Card:	Street Name:	Street Number:	Zoning:	LUC:	Acres:
016-0029-1	00048801	1	1	MIDDLE HADDAM RD	191	RR	Communication Towers	1.00

Owner Information:

Owner 1 Name:	VERIZON WIRELESS
Owner 2 Name:	
Street 1:	PO BOX 2549
Street 2:	
City:	ADDISON
State:	TX
Zip:	75001
Volume:	496
Page:	315

Property Images:

Picture:

Sketch:

There is no sketch available.

Building Information:

Building Number:	1
Units:	1
Structure Type:	TELEPHONE EQUIPMENT BLDG
Grade:	A
Identical Units:	1
Year Built:	2004

Valuation:

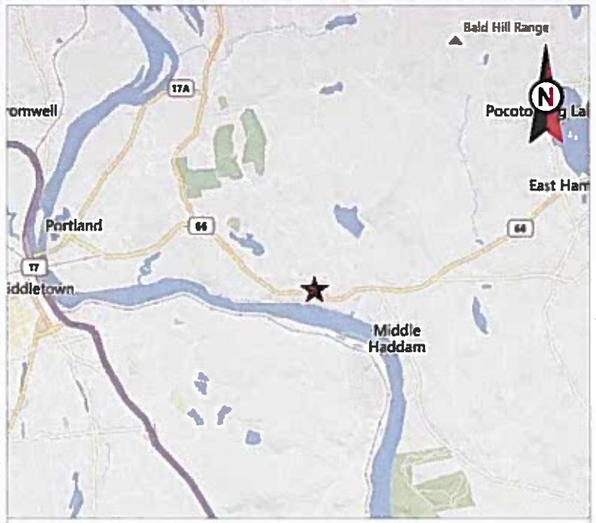
Appraised Land:	$80,000.00
Appraised Bldg:	$172,600.00
Appraised Total:	$252,600.00
Total Assessment:	$176,820.00

Out-Buildings:

Code:	Description:	Units:	Year Built:	Size1:	Size2:	Area:	Grade:	Condition:
TT4	TOWER CELLULAR	4	2005	1	130	0	1	
FN1	FENCE CHAIN	3	2004	8	200	0	1	

Building Interior/Exterior Information:

Floor From:	Floor To:	Area:	Use Type:	Exterior Walls:	Contruction Type:	Heating:	A/C:	Plumbing:	Functional Utility:
01	01	240	SUPPORT AREA	CONCRETE NON-LOAD BEARING	WOOD FRAME/JOIST/BEAM	NONE	NONE	NONE	3



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: MIDDLE HADDAM ROAD-CROWN CT

ATC SITE NUMBER: 411257

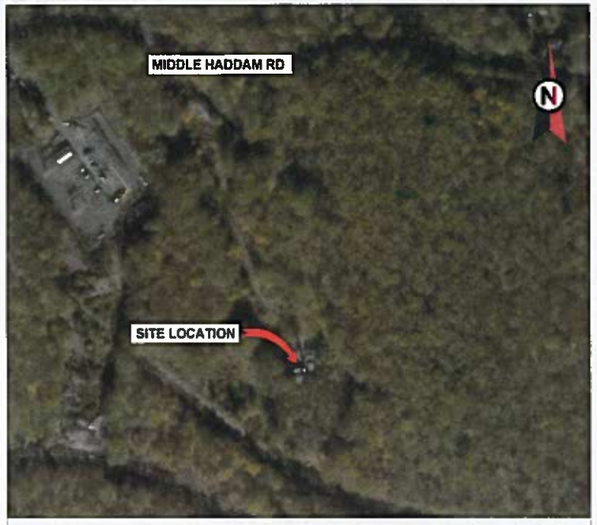
VERIZON SITE NAME: PORTLAND S CT

VERIZON SITE NUMBER:467183

SITE ADDRESS: 191 MIDDLE HADDAM RD PORTLAND, CT 06480

VERIZON WIRELESS

ANTENNA AMENDMENT DRAWINGS



LOCATION MAP

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: NORTHEAST UTILITY SERVICE
PHONE: (203) 845-3400

TELEPHONE COMPANY: N/A
PHONE: N/A

811 Know what's below. Call before you dig.

PROJECT SUMMARY

SITE ADDRESS:

191 MIDDLE HADDAM RD PORTLAND, CT 06480

COUNTY: MIDDLESEX

GEOGRAPHIC COORDINATES:

LATITUDE: 41.56225

LONGITUDE: -72.573778

GROUND ELEVATION: 249' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

PHILIP B KNOWLTON
TINA KNOWLTON
191 MIDDLE HADDAM RD
PORTLAND, CT 06480

APPLICANT:

VERIZON WIRELESS
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

REMOVE (9) PANELS AND (12) 1-5/8" COAX CABLES

INSTALL (6) NEW PANELS, (6) RRUs, (1) 2.02" HYBRID CABLE, (1) OVP, AND (3) SIDE BY SIDE MOUNTS

EXISTING (6) PANELS, (6) 1-5/8" COAX CABLES TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

START OUT GOING EAST ON EAST RIVER DR. TOWARD PITKIN ST. MERGE ONTO CT-15 S/WILBUR CROSS HIGHWAY/US-5 S 1.0 MILES. MERGE ONTO I-91 VIA EXIT NUMBER 86 TOWARD NEW HAVEN/NY CITY...MERGE ONTO CT-9 VIA EXIT NUMBER 22S-ON THE LEFT-TOWARD MIDDLETOWN/OLD SAYBROOK....TURN RIGHT ONTO CT-17/ST JOHN'S SQ. CONTINUE TO FOLLOW CT-17...TURN SLIGHT RIGHT ONTO CT-66 E/CT-17 N. MARLBOROUGH ST. CONTINUE TO FOLLOW CT-66E...TURN SLIGHT LEFT ONTO MIDDLE HADDAM RD.....END AT 191 MIDDLE HADDAM RD. PORTLAND CT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	COVER SHEET	0	10/23/19	AR
G-002	GENERAL NOTES	0	10/23/19	AR
C-101	DETAILED SITE PLAN AND TOWER ELEVATION	0	10/23/19	AR
C-501	RF SCHEDULE AND ANTENNA INSTALLATION	0	10/23/19	AR
C-502	CONSTRUCTION DETAILS	0	10/23/19	AR
R-601	SUPPLEMENTAL	0	10/23/19	AR

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

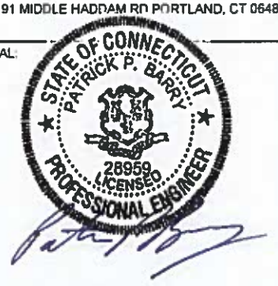
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AR	10/23/19

ATC SITE NUMBER:
411257

ATC SITE NAME:
MIDDLE HADDAM ROAD-CROWN CT

SITE ADDRESS:
191 MIDDLE HADDAM RD PORTLAND, CT 06480

SEAL:



Authorized by "EOR"
Oct 25 2019 6:59 AM

verizon

DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	10/23/19
ATC JOB NO:	12976958
CUSTOMER ID:	PORTLAND S CT
CUSTOMER #:	467183

COVER SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE VERIZON WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY VERIZON WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON WIRELESS REP. ANY WORK FOUND BY THE VERIZON WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
   B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
   C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
   D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
   E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
   B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
   C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
   D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
   E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
   F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
   G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AR	10/23/19

ATC SITE NUMBER:
411257

ATC SITE NAME:
MIDDLE HADDAM ROAD-CROWN CT

SITE ADDRESS:
191 MIDDLE HADDAM RD PORTLAND, CT 06480

SEAL:

Authorized by "EOR"
Oct 25 2019 6:59 AM

verizon

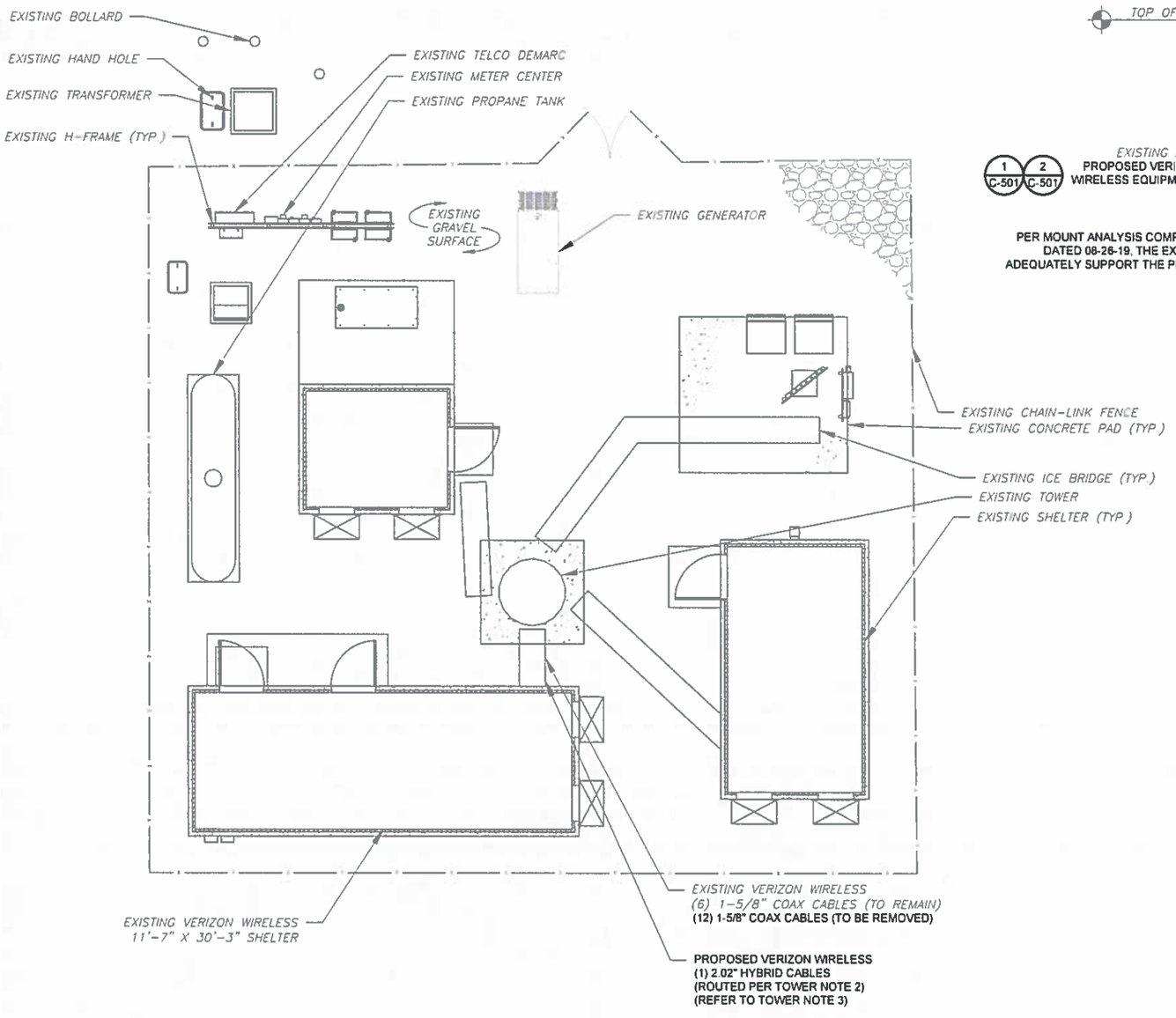
DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	10/23/19
ATC JOB NO:	12976958
CUSTOMER ID:	PORTLAND S CT
CUSTOMER #:	467183

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

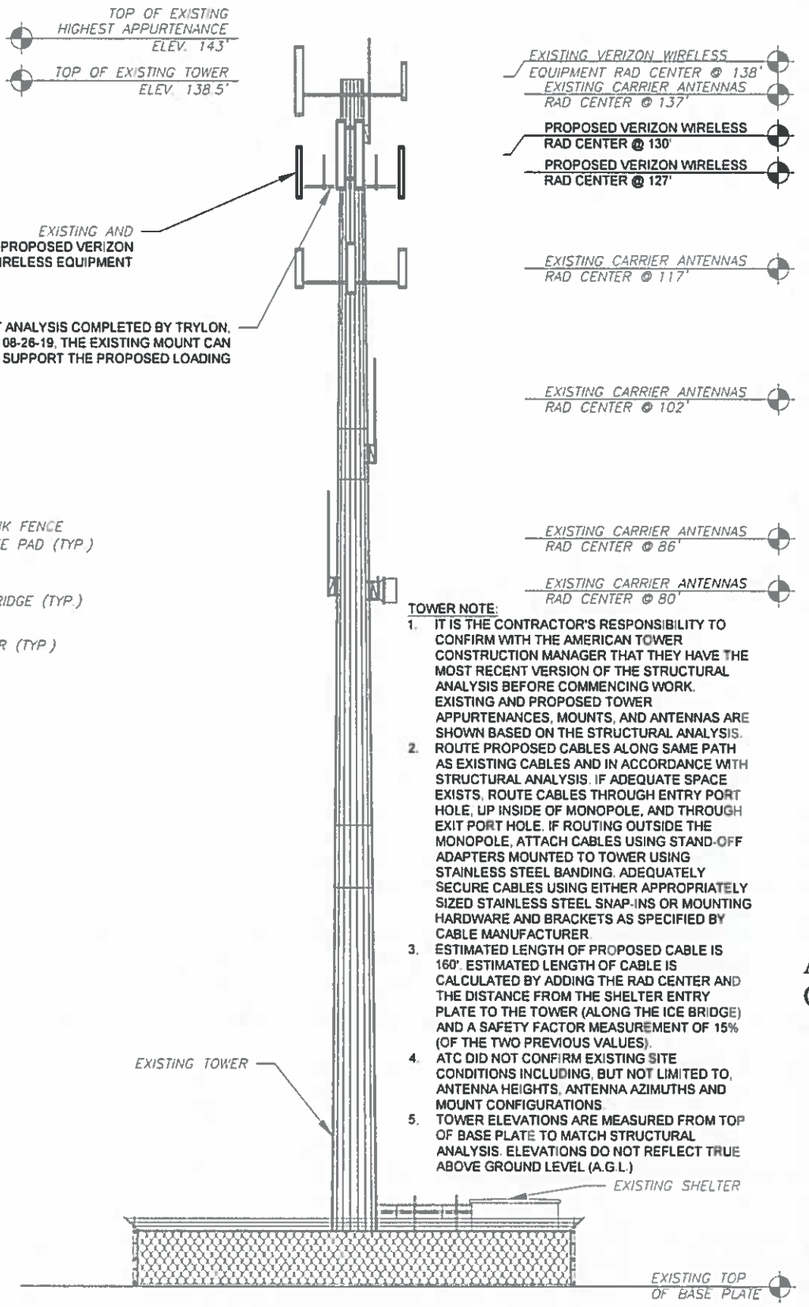
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, CABLE SUPPORTS, AND CABLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE INSTALLING NEW CABLE SUPPORT STRUCTURES, COAX PORTS, OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.



1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)



TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
3. ESTIMATED LENGTH OF PROPOSED CABLE IS 160'. ESTIMATED LENGTH OF CABLE IS CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES).
4. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
5. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

2 TOWER ELEVATION

SCALE: NOT TO SCALE

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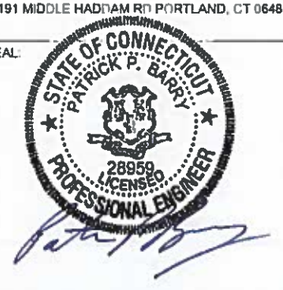
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	AR	10/23/19

ATC SITE NUMBER:
411257

ATC SITE NAME:
MIDDLE HADDAM ROAD-CROWN CT

SITE ADDRESS:
191 MIDDLE HADDAM RD PORTLAND, CT 06480

SEAL:



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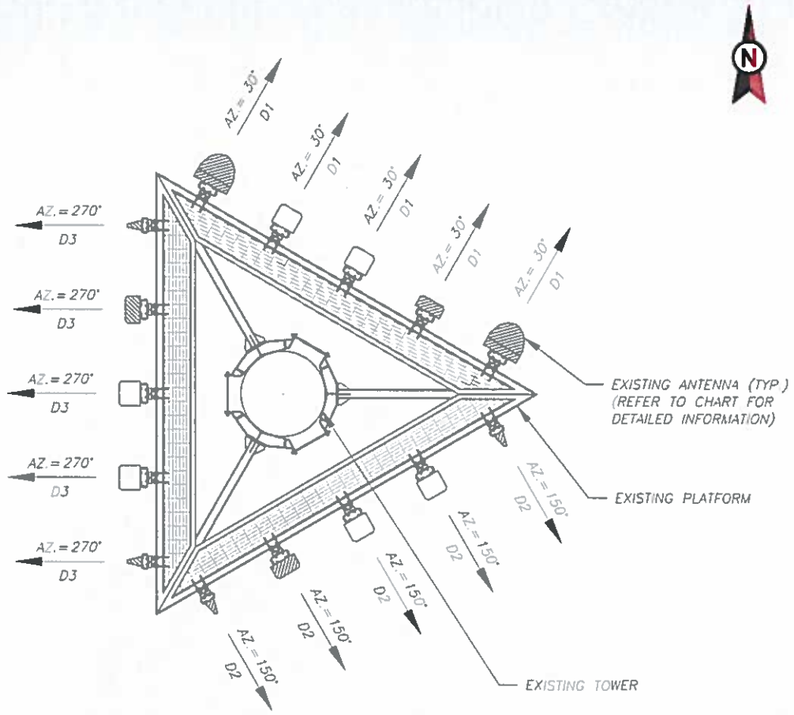
DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	10/23/19
ATC JOB NO:	12976958
CUSTOMER ID:	PORTLAND S CT
CUSTOMER #:	467183

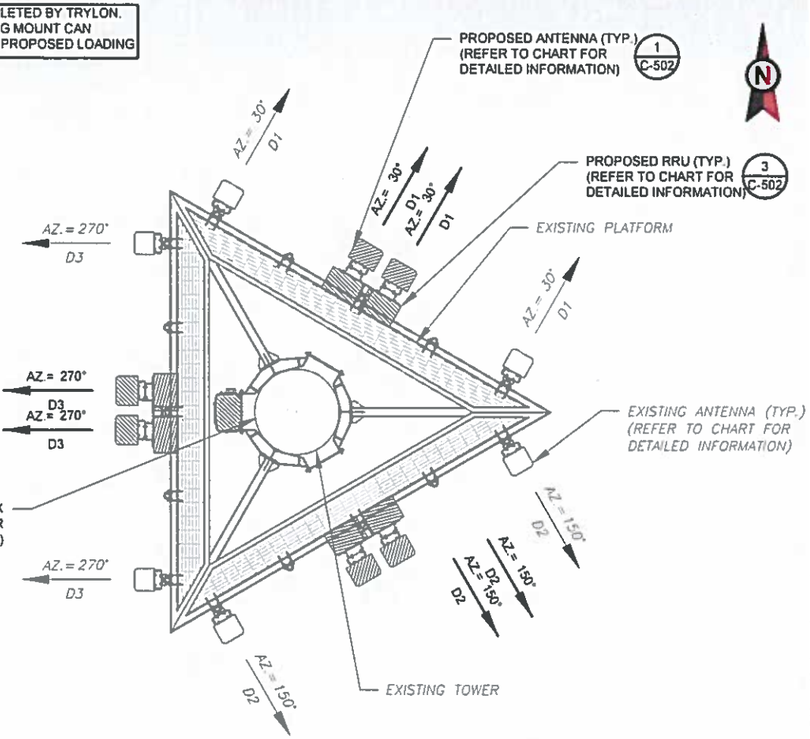
DETAILED SITE PLAN AND TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	0



1 CURRENT ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY TRYLON. DATED 08-26-19, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING



2 FINAL ANTENNA PLAN

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
D1	127'	30°	A1	LPA-171063-12CF-EDIN-X	-	RMV	-	-
			A2	DB846H80E-SX	850 CDMA	REL	-	-
			A3	DB846H80E-SX	850 CDMA	REL	-	-
			A4	BXA-70063/4CF	700 LTE	RMV	-	-
			A5	LPA-171063-12CF-EDIN-X	-	RMV	-	-
D2	127'	150°	B1	LPA-1859B01/12CF	-	RMV	-	-
			B2	DB846H80E-SX	850 CDMA	REL	-	-
			B3	DB846H80E-SX	850 CDMA	REL	-	-
			B4	BXA-70063/6CF	700 LTE	RMV	-	-
			B5	LPA-1859B01/12CF	-	RMV	-	-
D3	127'	270°	C1	LPA-1859B01/12CF	-	RMV	-	-
			C2	APL866513-44T0	850 CDMA	REL	-	-
			C3	APL866513-44T0	850 CDMA	REL	-	-
			C4	BXA-70063/6CF	700 LTE	RMV	-	-
			C5	LPA-1859B01/12CF	-	RMV	-	-

NOTES

1. BASED ON APPROVED ATC APPLICATION 12976958, DATED 09/12/19. CONFIRM WITH VERIZON WIRELESS REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
4. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
D1	127'	30°	A1	DB846H80E-SX	850 CDMA	REL	-	-
			A2	-	-	-	-	-
			A3	(2) QS6656-5D	700/850/2100 LTE	ADD	B2/B66A RRH-BR049 B5/B13 RRH-BR04C	ADD
			A4	-	-	-	-	-
			A5	DB846H80E-SX	850 CDMA	REL	-	-
D2	127'	150°	B1	DB846H80E-SX	850 CDMA	REL	-	-
			B2	-	-	-	-	-
			B3	(2) QS6656-5D	700/850/2100 LTE	ADD	B2/B66A RRH-BR049 B5/B13 RRH-BR04C	ADD
			B4	-	-	-	-	-
			B5	DB846H80E-SX	850 CDMA	RMN	-	-
D3	127'	270°	C1	APL866513-44T0	850 CDMA	RMN	-	-
			C2	-	-	-	-	-
			C3	(2) QS6656-5D	700/850/2100 LTE	ADD	B2/B66A RRH-BR049 B5/B13 RRH-BR04C	ADD
			C4	-	-	-	-	-
			C5	APL866513-44T0	850 CDMA	RMN	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	-	RMV
-	-	(6) 1-5/8"	-	RMN

STATUS ABBREVIATIONS
RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
DSC: TO BE DISCONNECTED & REMAIN
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS
FIBER DISTRIBUTION/OVP TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL FIBER DISTRIBUTION/OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
(1) RCMDC-6627-PF-48	ADD	-	(1) 2.02	ADD
-	-	(6) 1-5/8"	-	RMN

3 EQUIPMENT SCHEDULES

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
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REV.	DESCRIPTION	BY	DATE
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SITE ADDRESS:
191 MIDDLE HADDAM RD PORTLAND, CT 06480

SEAL:

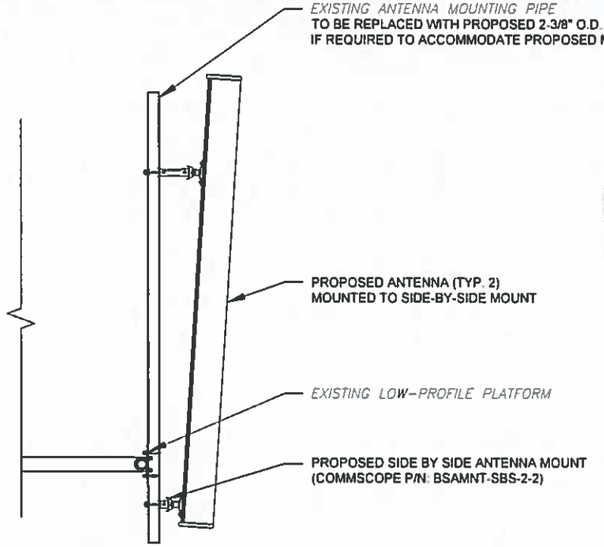
Authorized by "EOR"
Oct 25 2019 7:00 AM

verizon

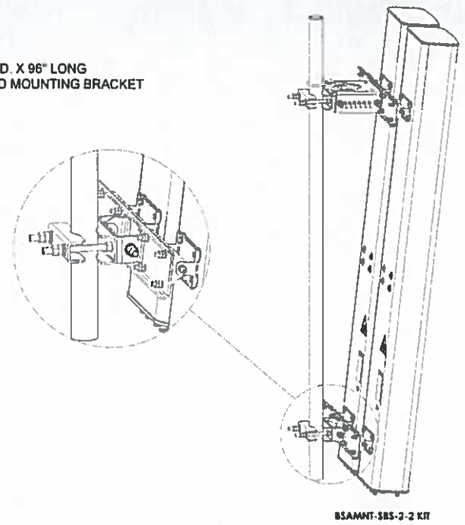
DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	10/23/19
ATC JOB NO:	12976958
CUSTOMER ID:	PORTLAND S CT
CUSTOMER #:	467183

RF SCHEDULE AND ANTENNA INSTALLATION

SHEET NUMBER:	REVISION:
C-501	0



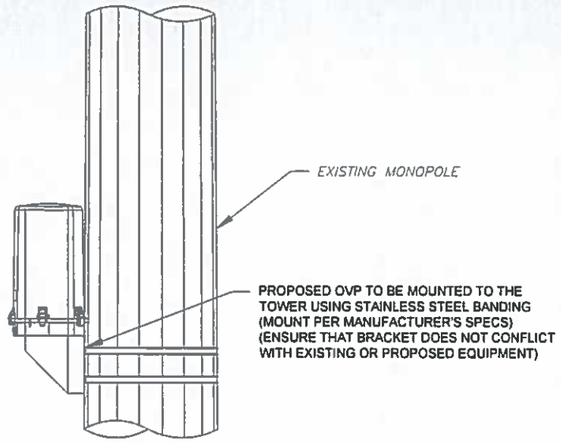
PROFILE VIEW



ISOMETRIC VIEW (BY MANUFACTURER)

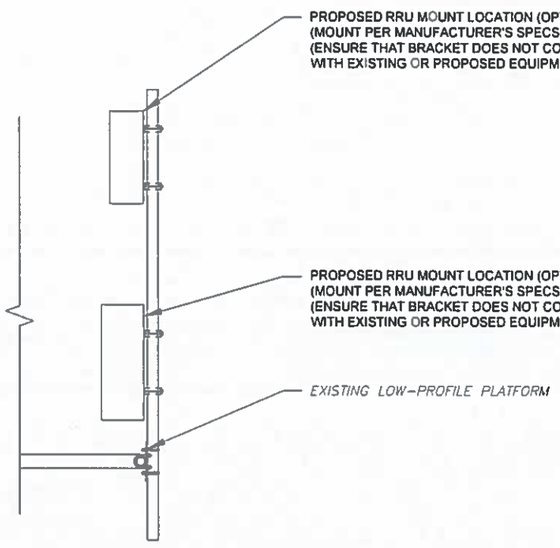
1 PROPOSED SIDE-BY-SIDE MOUNT

SCALE: NOT TO SCALE



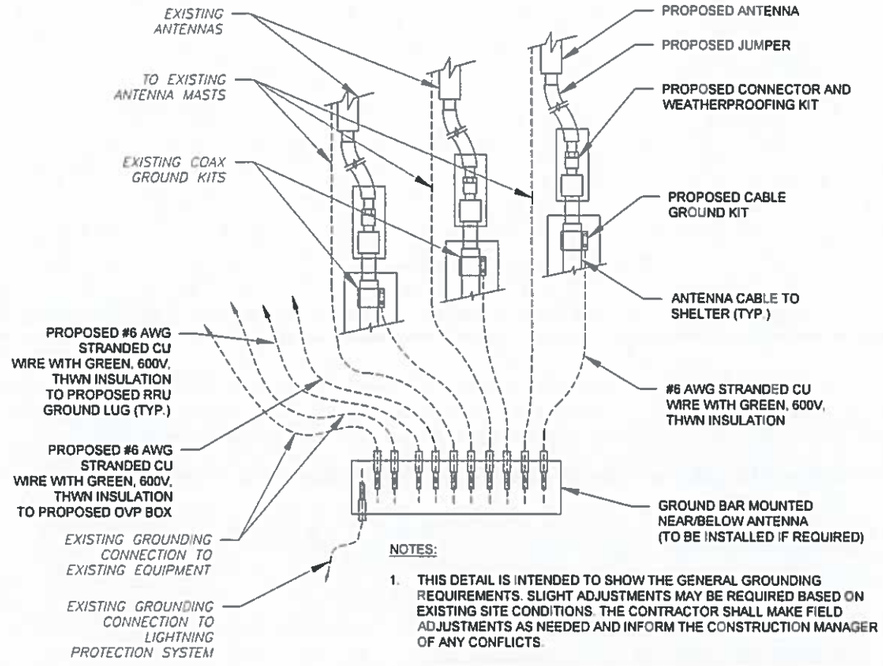
2 PROPOSED OVP MOUNTING

SCALE: NOT TO SCALE



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: NOT TO SCALE



NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH VERIZON WIRELESS GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON WIRELESS GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

4 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
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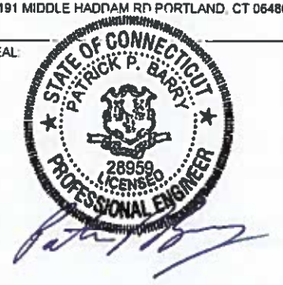
ATC SITE NAME:
MIDDLE HADDAM ROAD-CROWN CT

SITE ADDRESS:
191 MIDDLE HADDAM RD PORTLAND, CT 06480

SEAL:



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Oct 25 2019 7:00 AM

verizon

DRAWN BY:	AR
APPROVED BY:	PPB
DATE DRAWN:	10/23/19
ATC JOB NO:	12976958
CUSTOMER ID:	PORTLAND S CT
CUSTOMER #:	467183

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	0

Trylon

AMERICAN TOWER®

Mount Structural Analysis Report of the Existing Platform

Trylon Project #153798
August 26, 2019

Carrier Name	Verizon
ATC Site Code	411257
ATC Site Name	Middle Haddam Road Crown CT
Verizon Site Code	467183
Verizon Site Name	Portland S CT
Site Adress	191 Middle Haddam Road ,Portland,Middlesex, CT 06480
Coordinates	41.56225, -72.573778
Structure Type	Monopole
Mount Elevation	125-ft
Antenna Centerline	127-ft
Standard	2018 IBC / ASCE 7-16 / TIA-222-H

Structure Rating =	**56%**	**PASS**

Analysis performed by:
Mitrol Camelia

Reviewed and approved by:
Cliff Abernathy, P.E.

STATE OF CONNECTICUT
CLIFF ABERNATHY
No. 31068
LICENSED PROFESSIONAL ENGINEER
8/26/2019

DocuSign Envelope ID: 500191D8-C67D-4971-BBE8-2929E1ACCFD2

6. Conclusions and Recommendations

Based on information provided, our calculations conclude that the Existing Verizon Platform located at 125-ft elevation on the existing Monopole at the specified address, is ADEQUATE to safely support the proposed equipment, subject to the attached Standard Conditions on page 3.

Sincerely,
Analysis performed by:

Mitrol Camelia

Reviewed by:

Cliff Abernathy, P.E.

STATE OF CONNECTICUT
CLIFF ABERNATHY
No. 31068
LICENSED PROFESSIONAL ENGINEER
8/26/2019

1825 W. Walnut Hill Lane Suite 302
Irving, Texas 75038

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0