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

VIA ELECTRONIC MAIL

January 18, 2019

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800
Woburn, MA 01801

RE: **EM-VER-084-181218** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 111 Schoolhouse Road, Milford, Connecticut.

Dear Mr. Barbadora:

The Connecticut Siting Council (Council) is in receipt of your correspondence of January 17, 2019, 2018 submitted in response to the Council's December 20, 2018 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

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

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/emr

Robidoux, Evan

From: Barbadora, Jeff <Jeff.Barbadora@crowncastle.com>
Sent: Thursday, January 17, 2019 12:21 PM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for EM-VER-084-181218-SchoolhouseRd-Milford
Attachments: SA.pdf

Please find attached updated SA as requested.

Thanks,

Jeffrey Barbadora
781-970-0053
12 Gill Street, Suite 5800, Woburn, MA 01801
CrownCastle.com

From: Robidoux, Evan <Evan.Robidoux@ct.gov>
Sent: Thursday, December 20, 2018 11:54 AM
To: Barbadora, Jeff <Jeff.Barbadora@crowncastle.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for EM-VER-084-181218-SchoolhouseRd-Milford

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

PJF PAUL J. FORD & COMPANY

Date: **December 26, 2018**

Heather Simeone
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford & Company
250 East Broad st., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	468062
	Carrier Site Name:	MILFORD 2 CT
Crown Castle Designation:	**Crown Castle BU Number:**	876342
	Crown Castle Site Name:	BIC DRIVE (SSUSA)
	Crown Castle JDE Job Number:	534512
	Crown Castle Work Order Number:	1674856
	Crown Castle Order Number:	461231 Rev. 0
Engineering Firm Designation:	**Paul J. Ford & Company Project Number:**	37518-0321.007.7805
Site Data:	**111 School House Road, a/k/a Bic Drive, MILFORD, New Haven County, CT** **Latitude *41° 12' 46.06"*, Longitude *-73° 5' 7.1"*** **140 Foot - Monopole Tower**	

Dear Heather Simeone,

Paul J. Ford & Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

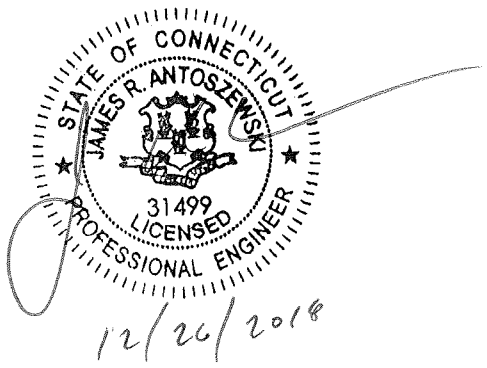
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2016 Connecticut State Building Code (2015 International Building Code). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

Jaime Acuna
Structural Designer
jacuna@pauljford.com



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Respectfully submitted by:

Jaime Acuna
Structural Designer SJT
jacuna@pauljford.com

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 140 ft Monopole tower designed by SUMMIT.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
104.0	104.0	1	Site Pro 1	HRK -14	8	1 5/8
		15	Site Pro 1	SCX1-K		
		3	alcatel lucent	B13 RRH 4X30		
		3	andrew	LNX-6514DS-VTM w/ Mount Pipe		
		3	commscope	CBC1923T-DS-43		
		6	commscope	SBNHH-1D65B w/ Mount Pipe		
		3	nokia	AIRSCALE RRH 4T4R B5 160W		
		3	nokia	B25 RRH4X30 (UHFA)		
		3	nokia	B66A RRH4X45 (UHIE)		
		2	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	rymsa wireless	MG D3-800TX w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 1201-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
140.0	140.0	3	alcatel lucent	TD-RRH8X20-25	1 1 3	1/2 1 5/8 1 1/4
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 1201-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
137.0	137.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-
		3	alcatel lucent	TME-1900MHz RRH (65 MHz)		
		3	alcatel lucent	TME-800MHZ RRH		
		1	tower mounts	Side Arm Mount [SO 103-3]		
121.0	123.0	3	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	2 2 2 12	3/8 3/4 7/16 1 5/8
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS12/RRUS A2		
		3	kaelus	DBC0061F1V51-2		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		3	quintel technology	QS66512-6 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8C		
		1	raycap	DC6-48-60-18-8F		
	121.0	1	tower mounts	Miscellaneous [NA 510-1]		
		1	tower mounts	Platform Mount [LP 1201-1]		
115.0	116.0	3	andrew	ETW200VS12UB	2 5 11	1 3/8 1 5/8 1 1/4
		3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	ericsson	RADIO 4449 B12/B71		
		3	remec	S20070A1		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	115.0	3	pole mounts	2.375" OD x 9' Mount Pipe		
		1	tower mounts	Miscellaneous [NA 509-3]		
		1	tower mounts	Miscellaneous [NA 510-1]		
		1	tower mounts	Platform Mount [LP 1201-1]		
95.0	95.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1 5/8
		1	tower mounts	Pipe Mount [PM 601-3]		
80.0	82.0	1	kathrein	OG-860/1920/GPS-A	1	1/2
	80.0	1	tower mounts	Side Arm Mount [SO 901-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided.

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 08-12040E G1, 12/05/2008	1531894	CCISITES
4-POST-MODIFICATION INSPECTION	PJF, 41709-0132, 12/04/2009	2547672	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25566, 04/21/2016	6234048	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	PJF, 29299-549, 09/29/1999	1631615	CCISITES
4-TOWER MANUFACTURER DRAWINGS	PJF, 29299-549, 10/29/1999	1630877	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 41709-0132, 12/04/2009	2547673	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37515-2876.002.7700 R1, 10/20/2015	6173982	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Monopole was modified in conformance with the referenced modification drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford & Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	140 - 135	Pole	TP17.015x16x0.25	Pole	7.8%	Pass
L2	135 - 130	Pole	TP18.03x17.015x0.25	Pole	15.1%	Pass
L3	130 - 125	Pole	TP19.045x18.03x0.25	Pole	21.3%	Pass
L4	125 - 120	Pole	TP20.061x19.045x0.25	Pole	30.2%	Pass
L5	120 - 115	Pole	TP21.076x20.061x0.25	Pole	42.0%	Pass
L6	115 - 110	Pole	TP22.091x21.076x0.25	Pole	58.4%	Pass
L7	110 - 105	Pole	TP23.106x22.091x0.25	Pole	72.0%	Pass
L8	105 - 104	Pole	TP23.309x23.106x0.25	Pole	74.5%	Pass
L9	104 - 103.75	Pole + Reinf.	TP23.36x23.309x0.4625	Reinf. 9 Tension Rupture	69.1%	Pass
L10	103.75 - 98.75	Pole + Reinf.	TP24.375x23.36x0.45	Reinf. 9 Tension Rupture	84.4%	Pass
L11	98.75 - 98.5	Pole + Reinf.	TP24.426x24.375x0.45	Reinf. 9 Tension Rupture	85.1%	Pass
L12	98.5 - 98.25	Pole + Reinf.	TP24.476x24.426x0.725	Reinf. 9 Tension Rupture	54.9%	Pass
L13	98.25 - 97	Pole + Reinf.	TP24.73x24.476x0.725	Reinf. 9 Tension Rupture	57.3%	Pass
L14	97 - 96.75	Pole + Reinf.	TP24.781x24.73x0.5125	Reinf. 5 Tension Rupture	68.2%	Pass
L15	96.75 - 88.5	Pole + Reinf.	TP26.456x24.781x0.5	Reinf. 5 Tension Rupture	78.5%	Pass
L16	88.5 - 88	Pole + Reinf.	TP26.058x25.296x0.5625	Reinf. 5 Tension Rupture	78.4%	Pass
L17	88 - 87.75	Pole + Reinf.	TP26.108x26.058x0.7625	Reinf. 5 Tension Rupture	61.3%	Pass
L18	87.75 - 82.75	Pole + Reinf.	TP27.124x26.108x0.7375	Reinf. 5 Tension Rupture	67.7%	Pass
L19	82.75 - 77.75	Pole + Reinf.	TP28.139x27.124x0.725	Reinf. 5 Tension Rupture	73.6%	Pass
L20	77.75 - 72.75	Pole + Reinf.	TP29.154x28.139x0.7125	Reinf. 5 Tension Rupture	79.0%	Pass
L21	72.75 - 68.08	Pole + Reinf.	TP30.102x29.154x0.6875	Reinf. 5 Tension Rupture	83.7%	Pass
L22	68.08 - 67.83	Pole + Reinf.	TP30.153x30.102x0.8125	Reinf. 7 Tension Rupture	71.4%	Pass
L23	67.83 - 62.83	Pole + Reinf.	TP31.168x30.153x0.7875	Reinf. 7 Tension Rupture	75.7%	Pass
L24	62.83 - 57.83	Pole + Reinf.	TP32.184x31.168x0.7625	Reinf. 7 Tension Rupture	79.6%	Pass
L25	57.83 - 52.83	Pole + Reinf.	TP33.199x32.184x0.75	Reinf. 7 Tension Rupture	83.3%	Pass
L26	52.83 - 47.25	Pole + Reinf.	TP34.332x33.199x0.75	Reinf. 7 Tension Rupture	84.2%	Pass
L27	47.25 - 46.5	Pole + Reinf.	TP33.859x32.844x0.8	Reinf. 7 Tension Rupture	83.1%	Pass
L28	46.5 - 41.5	Pole + Reinf.	TP34.874x33.859x0.8	Reinf. 7 Tension Rupture	86.0%	Pass
L29	41.5 - 37.75	Pole + Reinf.	TP35.636x34.874x0.775	Reinf. 7 Tension Rupture	88.0%	Pass
L30	37.75 - 37.5	Pole + Reinf.	TP35.686x35.636x0.85	Reinf. 2 Bolt Shear	84.3%	Pass
L31	37.5 - 32.5	Pole + Reinf.	TP36.702x35.686x0.825	Reinf. 7 Tension Rupture	84.7%	Pass
L32	32.5 - 32.25	Pole + Reinf.	TP36.752x36.702x0.875	Reinf. 2 Tension Rupture	78.4%	Pass
L33	32.25 - 27.25	Pole + Reinf.	TP37.767x36.752x0.8625	Reinf. 6 Tension Rupture	80.5%	Pass
L34	27.25 - 23.5	Pole + Reinf.	TP38.529x37.767x0.85	Reinf. 6 Tension Rupture	82.0%	Pass
L35	23.5 - 23.25	Pole + Reinf.	TP38.58x38.529x0.95	Reinf. 2 Tension Rupture	77.1%	Pass
L36	23.25 - 20.75	Pole + Reinf.	TP39.087x38.58x0.95	Reinf. 2 Tension Rupture	78.0%	Pass
L37	20.75 - 20.5	Pole + Reinf.	TP39.138x39.087x0.9	Reinf. 2 Tension Rupture	79.1%	Pass
L38	20.5 - 15.5	Pole + Reinf.	TP40.153x39.138x0.875	Reinf. 2 Tension Rupture	80.8%	Pass
L39	15.5 - 10.5	Pole + Reinf.	TP41.168x40.153x0.8625	Reinf. 2 Tension Rupture	82.4%	Pass
L40	10.5 - 5.5	Pole + Reinf.	TP42.183x41.168x0.85	Reinf. 2 Tension Rupture	83.9%	Pass
L41	5.5 - 3	Pole + Reinf.	TP42.691x42.183x0.8375	Reinf. 2 Tension Rupture	84.6%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L42	3 - 2.75	Pole + Reinf.	TP42.742x42.691x0.9	Reinf. 2 Tension Rupture	79.7%	Pass
L43	2.75 - 0	Pole + Reinf.	TP43.3x42.742x0.9	Reinf. 2 Tension Rupture	80.5%	Pass
					Summary	
				Pole	74.5%	Pass
				Reinforcement	88.0%	Pass
				Overall	88.0%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	84.7	Pass
1	Base Plate	0	71.1	Pass
1	Base Foundation Structural Steel	0	58.7	Pass
1	Base Foundation Soil Interaction	0	58.5	Pass

Structure Rating (max from all components) =	88.0%

Notes:

- All Structural rating are per TIA-222-H Section 15.5

1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

4.1) Recommendations

The monopole and its foundation have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1) Tower is located in New Haven County, Connecticut.
2) Tower base elevation above sea level: 40.0000 ft.
3) Basic wind speed of 125 mph.
4) Risk Category II.
5) Exposure Category C.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height 0.0000 ft.
9) Nominal ice thickness of 1.2750 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TIA-222-H Annex S.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.05.
19) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	140.0000-135.0000	5.0000	0.00	12	16.0000	17.0151	0.2500	1.0000	A572-65 (65 ksi)
L2	135.0000-130.0000	5.0000	0.00	12	17.0151	18.0303	0.2500	1.0000	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	130.0000-125.0000	5.0000	0.00	12	18.0303	19.0454	0.2500	1.0000	A572-65 (65 ksi)
L4	125.0000-120.0000	5.0000	0.00	12	19.0454	20.0606	0.2500	1.0000	A572-65 (65 ksi)
L5	120.0000-115.0000	5.0000	0.00	12	20.0606	21.0757	0.2500	1.0000	A572-65 (65 ksi)
L6	115.0000-110.0000	5.0000	0.00	12	21.0757	22.0909	0.2500	1.0000	A572-65 (65 ksi)
L7	110.0000-105.0000	5.0000	0.00	12	22.0909	23.1060	0.2500	1.0000	A572-65 (65 ksi)
L8	105.0000-104.0000	1.0000	0.00	12	23.1060	23.3090	0.2500	1.0000	A572-65 (65 ksi)
L9	104.0000-103.7500	0.2500	0.00	12	23.3090	23.3598	0.4625	1.8500	A572-65 (65 ksi)
L10	103.7500-98.7500	5.0000	0.00	12	23.3598	24.3750	0.4500	1.8000	A572-65 (65 ksi)
L11	98.7500-98.5000	0.2500	0.00	12	24.3750	24.4257	0.4500	1.8000	A572-65 (65 ksi)
L12	98.5000-98.2500	0.2500	0.00	12	24.4257	24.4765	0.7250	2.9000	A572-65 (65 ksi)
L13	98.2500-97.0000	1.2500	0.00	12	24.4765	24.7303	0.7250	2.9000	A572-65 (65 ksi)
L14	97.0000-96.7500	0.2500	0.00	12	24.7303	24.7810	0.5125	2.0500	A572-65 (65 ksi)
L15	96.7500-88.5000	8.2500	3.25	12	24.7810	26.4560	0.5000	2.0000	A572-65 (65 ksi)
L16	88.5000-88.0000	3.7500	0.00	12	25.2962	26.0576	0.5625	2.2500	A572-65 (65 ksi)
L17	88.0000-87.7500	0.2500	0.00	12	26.0576	26.1084	0.7625	3.0500	A572-65 (65 ksi)
L18	87.7500-82.7500	5.0000	0.00	12	26.1084	27.1236	0.7375	2.9500	A572-65 (65 ksi)
L19	82.7500-77.7500	5.0000	0.00	12	27.1236	28.1389	0.7250	2.9000	A572-65 (65 ksi)
L20	77.7500-72.7500	5.0000	0.00	12	28.1389	29.1542	0.7125	2.8500	A572-65 (65 ksi)
L21	72.7500-68.0800	4.6700	0.00	12	29.1542	30.1024	0.6875	2.7500	A572-65 (65 ksi)
L22	68.0800-67.8300	0.2500	0.00	12	30.1024	30.1532	0.8125	3.2500	A572-65 (65 ksi)
L23	67.8300-62.8300	5.0000	0.00	12	30.1532	31.1684	0.7875	3.1500	A572-65 (65 ksi)
L24	62.8300-57.8300	5.0000	0.00	12	31.1684	32.1837	0.7625	3.0500	A572-65 (65 ksi)
L25	57.8300-52.8300	5.0000	0.00	12	32.1837	33.1990	0.7500	3.0000	A572-65 (65 ksi)
L26	52.8300-47.2500	5.5800	4.25	12	33.1990	34.3320	0.7500	3.0000	A572-65 (65 ksi)
L27	47.2500-46.5000	5.0000	0.00	12	32.8440	33.8592	0.8000	3.2000	A572-65 (65 ksi)
L28	46.5000-41.5000	5.0000	0.00	12	33.8592	34.8743	0.8000	3.2000	A572-65 (65 ksi)
L29	41.5000-37.7500	3.7500	0.00	12	34.8743	35.6357	0.7750	3.1000	A572-65 (65 ksi)
L30	37.7500-37.5000	0.2500	0.00	12	35.6357	35.6864	0.8500	3.4000	A572-65 (65 ksi)
L31	37.5000-32.5000	5.0000	0.00	12	35.6864	36.7016	0.8250	3.3000	A572-65 (65 ksi)
L32	32.5000-32.2500	0.2500	0.00	12	36.7016	36.7523	0.8750	3.5000	A572-65 (65 ksi)
L33	32.2500-27.2500	5.0000	0.00	12	36.7523	37.7675	0.8625	3.4500	A572-65 (65 ksi)
L34	27.2500-23.5000	3.7500	0.00	12	37.7675	38.5288	0.8500	3.4000	A572-65 (65 ksi)
L35	23.5000-23.2500	0.2500	0.00	12	38.5288	38.5796	0.9500	3.8000	A572-65 (65 ksi)
L36	23.2500-20.7500	2.5000	0.00	12	38.5796	39.0872	0.9500	3.8000	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L37	20.7500-20.5000	0.2500	0.00	12	39.0872	39.1379	0.9000	3.6000	A572-65 (65 ksi)
L38	20.5000-15.5000	5.0000	0.00	12	39.1379	40.1531	0.8750	3.5000	A572-65 (65 ksi)
L39	15.5000-10.5000	5.0000	0.00	12	40.1531	41.1682	0.8625	3.4500	A572-65 (65 ksi)
L40	10.5000-5.5000	5.0000	0.00	12	41.1682	42.1833	0.8500	3.4000	A572-65 (65 ksi)
L41	5.5000-3.0000	2.5000	0.00	12	42.1833	42.6909	0.8375	3.3500	A572-65 (65 ksi)
L42	3.0000-2.7500	0.2500	0.00	12	42.6909	42.7417	0.9000	3.6000	A572-65 (65 ksi)
L43	2.7500-0.0000	2.7500		12	42.7417	43.3000	0.9000	3.6000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.4762	12.6788	401.4426	5.6385	8.2880	48.4366	813.4316	6.2401	3.6180	14.472
	17.5272	13.4959	484.1766	6.0019	8.8138	54.9336	981.0731	6.6423	3.8901	15.56
L2	17.5272	13.4959	484.1766	6.0019	8.8138	54.9336	981.0731	6.6423	3.8901	15.56
	18.5781	14.3131	577.5618	6.3653	9.3397	61.8395	1170.2967	7.0445	4.1621	16.648
L3	18.5781	14.3131	577.5618	6.3653	9.3397	61.8395	1170.2967	7.0445	4.1621	16.648
	19.6291	15.1303	682.2430	6.7288	9.8655	69.1542	1382.4093	7.4467	4.4342	17.737
L4	19.6291	15.1303	682.2430	6.7288	9.8655	69.1542	1382.4093	7.4467	4.4342	17.737
	20.6801	15.9475	798.8653	7.0922	10.3914	76.8777	1618.7177	7.8489	4.7062	18.825
L5	20.6801	15.9475	798.8653	7.0922	10.3914	76.8777	1618.7177	7.8489	4.7062	18.825
	21.7310	16.7647	928.0736	7.4556	10.9172	85.0100	1880.5287	8.2511	4.9783	19.913
L6	21.7310	16.7647	928.0736	7.4556	10.9172	85.0100	1880.5287	8.2511	4.9783	19.913
	22.7820	17.5819	1070.5128	7.8190	11.4431	93.5512	2169.1491	8.6533	5.2504	21.001
L7	22.7820	17.5819	1070.5128	7.8190	11.4431	93.5512	2169.1491	8.6533	5.2504	21.001
	23.8329	18.3991	1226.8278	8.1825	11.9689	102.5011	2485.8858	9.0555	5.5224	22.09
L8	23.8329	18.3991	1226.8278	8.1825	11.9689	102.5011	2485.8858	9.0555	5.5224	22.09
	24.0431	18.5625	1259.8127	8.2551	12.0741	104.3402	2552.7221	9.1359	5.5768	22.307
L9	23.9682	34.0242	2266.8112	8.1791	12.0741	187.7418	4593.1742	16.7457	5.0073	10.827
	24.0207	34.0998	2281.9531	8.1972	12.1004	188.5853	4623.8556	16.7829	5.0209	10.856
L10	24.0251	33.1963	2223.9169	8.2017	12.1004	183.7890	4506.2586	16.3382	5.0544	11.232
	25.0761	34.6673	2532.8387	8.5651	12.6262	200.6014	5132.2179	17.0622	5.3265	11.837
L11	25.0761	34.6673	2532.8387	8.5651	12.6262	200.6014	5132.2179	17.0622	5.3265	11.837
	25.1286	34.7408	2548.9933	8.5833	12.6525	201.4614	5164.9515	17.0984	5.3401	11.867
L12	25.0316	55.3293	3967.0149	8.4849	12.6525	313.5356	8038.2476	27.2314	4.6031	6.349
	25.0841	55.4478	3992.5567	8.5030	12.6788	314.9000	8090.0023	27.2897	4.6167	6.368
L13	25.0841	55.4478	3992.5567	8.5030	12.6788	314.9000	8090.0023	27.2897	4.6167	6.368
	25.3469	56.0403	4121.9115	8.5939	12.8103	321.7661	8352.1101	27.5813	4.6847	6.462
L14	25.4219	39.9653	2991.8320	8.6700	12.8103	233.5495	6062.2627	19.6697	5.2542	10.252
	25.4744	40.0491	3010.6829	8.6881	12.8366	234.5396	6100.4598	19.7110	5.2678	10.279
L15	25.4788	39.0924	2941.7926	8.6926	12.8366	229.1729	5960.8694	19.2401	5.3013	10.603
	27.2129	41.7892	3593.5618	9.2922	13.7042	262.2232	7281.5305	20.5674	5.7502	11.5
L16	26.6733	44.7988	3498.0762	8.8546	13.1034	266.9593	7088.0507	22.0486	5.2719	9.372
	26.7784	46.1780	3831.1985	9.1272	13.4978	283.8379	7763.0469	22.7274	5.4759	9.735
L17	26.7078	62.1058	5072.1375	9.0556	13.4978	375.7741	10277.5258	30.5666	4.9399	6.479
	26.7604	62.2304	5102.7357	9.0738	13.5241	377.3059	10339.5260	30.6279	4.9535	6.496
L18	26.7692	60.2495	4950.0516	9.0828	13.5241	366.0162	10030.1466	29.6530	5.0205	6.808
	27.8203	62.6605	5568.4063	9.4462	14.0500	396.3267	11283.1009	30.8396	5.2926	7.176
L19	27.8247	61.6276	5481.8099	9.4507	14.0500	390.1633	11107.6331	30.3312	5.3261	7.346
	28.8758	63.9977	6138.9199	9.8142	14.5759	421.1678	12439.1161	31.4977	5.5982	7.722
L20	28.8802	62.9230	6041.3330	9.8186	14.5759	414.4728	12241.3785	30.9688	5.6317	7.904

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	29.9313	65.2523	6737.3847	10.1821	15.1019	446.1297	13651.7681	32.1152	5.9038	8.286
L21	29.9401	63.0181	6518.1433	10.1911	15.1019	431.6122	13207.5255	31.0156	5.9708	8.685
	30.9218	65.1173	7191.4623	10.5305	15.5930	461.1967	14571.8523	32.0487	6.2249	9.054
L22	30.8777	76.6297	8391.1100	10.4858	15.5930	538.1314	17002.6638	37.7148	5.8899	7.249
	30.9302	76.7625	8434.8143	10.5040	15.6193	540.0236	17091.2205	37.7802	5.9036	7.266
L23	30.9391	74.4640	8196.1968	10.5129	15.6193	524.7465	16607.7168	36.6489	5.9706	7.582
	31.9901	77.0385	9076.0309	10.8764	16.1453	562.1486	18390.4993	37.9160	6.2426	7.927
L24	31.9990	74.6542	8809.6151	10.8853	16.1453	545.6474	17850.6686	36.7425	6.3096	8.275
	33.0500	77.1469	9721.8760	11.2488	16.6712	583.1554	19699.1565	37.9694	6.5817	8.632
L25	33.0544	75.9124	9573.9180	11.2533	16.6712	574.2803	19399.3535	37.3618	6.6152	8.82
	34.1055	78.3643	10531.8744	11.6167	17.1971	612.4228	21340.4329	38.5685	6.8873	9.183
L26	34.1055	78.3643	10531.8744	11.6167	17.1971	612.4228	21340.4329	38.5685	6.8873	9.183
	35.2785	81.1005	11674.0825	12.0224	17.7840	656.4383	23654.8561	39.9152	7.1910	9.588
L27	34.6137	82.5454	10818.6492	11.4718	17.0132	635.8972	21921.5163	40.6263	6.6582	8.323
	34.7714	85.1604	11879.7585	11.8352	17.5390	677.3319	24071.6116	41.9134	6.9303	8.663
L28	34.7714	85.1604	11879.7585	11.8352	17.5390	677.3319	24071.6116	41.9134	6.9303	8.663
	35.8223	87.7754	13008.0772	12.1986	18.0649	720.0749	26357.8911	43.2004	7.2023	9.003
L29	35.8312	85.0948	12629.3321	12.2076	18.0649	699.1091	25590.4509	41.8811	7.2693	9.38
	36.6194	86.9948	13494.3105	12.4801	18.4593	731.0314	27343.1315	42.8162	7.4734	9.643
L30	36.5929	95.2084	14704.8924	12.4533	18.4593	796.6126	29796.0987	46.8587	7.2724	8.556
	36.6455	95.3473	14769.3558	12.4714	18.4856	798.9668	29926.7191	46.9270	7.2860	8.572
L31	36.6543	92.6094	14365.8472	12.4804	18.4856	777.1385	29109.1012	45.5795	7.3530	8.913
	37.7052	95.3061	15657.7196	12.8438	19.0114	823.5958	31726.7849	46.9068	7.6250	9.242
L32	37.6876	100.9414	16537.3365	12.8259	19.0114	869.8636	33509.1272	49.6803	7.4910	8.561
	37.7401	101.0844	16607.7237	12.8441	19.0377	872.3595	33651.7509	49.7507	7.5046	8.577
L33	37.7446	99.6750	16387.5874	12.8486	19.0377	860.7964	33205.6949	49.0570	7.5381	8.74
	38.7955	102.4943	17817.8582	13.2120	19.5635	910.7682	36103.8114	50.4446	7.8102	9.055
L34	38.7999	101.0431	17577.4772	13.2165	19.5635	898.4810	35616.7343	49.7303	7.8437	9.228
	39.5881	103.1270	18687.5722	13.4890	19.9579	936.3481	37866.0878	50.7559	8.0477	9.468
L35	39.5529	114.9536	20720.2553	13.4532	19.9579	1038.1965	41984.8547	56.5767	7.7797	8.189
	39.6054	115.1089	20804.3283	13.4714	19.9842	1041.0375	42155.2095	56.6531	7.7933	8.204
L36	39.6054	115.1089	20804.3283	13.4714	19.9842	1041.0375	42155.2095	56.6531	7.7933	8.204
	40.1309	116.6616	21657.6007	13.6531	20.2471	1069.6619	43884.1706	57.4173	7.9294	8.347
L37	40.1485	110.6664	20598.5325	13.6710	20.2471	1017.3548	41738.2115	54.4666	8.0634	8.959
	40.2011	110.8135	20680.7785	13.6892	20.2734	1020.0923	41904.8641	54.5390	8.0770	8.974

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L38	40.2099	107.8058	20145.7748	13.6981	20.2734	993.7029	40820.8016	53.0587	8.1440	9.307
	41.2608	110.6659	21792.1381	14.0615	20.7993	1047.7351	44156.7800	54.4664	8.4160	9.618
L39	41.2652	109.1197	21501.3368	14.0660	20.7993	1033.7537	43567.5377	53.7054	8.4495	9.797
	42.3162	111.9390	23211.3454	14.4294	21.3251	1088.4505	47032.4786	55.0930	8.7216	10.112
L40	42.3206	110.3509	22896.2383	14.4339	21.3251	1073.6742	46393.9862	54.3114	8.7551	10.3
	43.3716	113.1294	24669.6127	14.7973	21.8510	1128.9939	49987.3235	55.6788	9.0271	10.62
L41	43.3760	111.4994	24328.8835	14.8018	21.8510	1113.4005	49296.9138	54.8766	9.0606	10.819
	43.9014	112.8682	25235.9298	14.9835	22.1139	1141.1799	51134.8355	55.5503	9.1967	10.981
L42	43.8794	121.1101	26997.8975	14.9611	22.1139	1220.8568	54705.0599	59.6067	9.0292	10.032
	43.9319	121.2572	27096.3879	14.9793	22.1402	1223.8555	54904.6282	59.6791	9.0428	10.048
L43	43.9319	121.2572	27096.3879	14.9793	22.1402	1223.8555	54904.6282	59.6791	9.0428	10.048
	44.5100	122.8752	28195.6364	15.1792	22.4294	1257.0838	57132.0035	60.4754	9.1924	10.214

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 140.0000-135.0000				1	1	1			
L2 135.0000-130.0000				1	1	1			
L3 130.0000-125.0000				1	1	1			
L4 125.0000-120.0000				1	1	1			
L5 120.0000-115.0000				1	1	1			
L6 115.0000-110.0000				1	1	1			
L7 110.0000-105.0000				1	1	1			
L8 105.0000-104.0000				1	1	1			
L9 104.0000-103.7500				1	1	0.942021			
L10 103.7500-98.7500				1	1	0.950174			
L11 98.7500-98.5000				1	1	0.949339			
L12 98.5000-98.2500				1	1	0.901676			
L13 98.2500-97.0000				1	1	0.895789			
L14 97.0000-96.7500				1	1	0.916918			
L15 96.7500-88.5000				1	1	0.921726			
L16 88.5000-88.0000				1	1	0.928587			
L17 88.0000-87.7500				1	1	0.97954			
L18 87.7500-82.7500				1	1	0.989121			
L19 82.7500-77.7500				1	1	0.984416			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L20 77.7500-72.7500				1	1	0.981146			
L21 72.7500-68.0800				1	1	0.997834			
L22 68.0800-67.8300				1	1	0.957491			
L23 67.8300-62.8300				1	1	0.967322			
L24 62.8300-57.8300				1	1	0.979205			
L25 57.8300-52.8300				1	1	0.97703			
L26 52.8300-47.2500				1	1	0.972405			
L27 47.2500-46.5000				1	1	0.985251			
L28 46.5000-41.5000				1	1	0.969863			
L29 41.5000-37.7500				1	1	0.989134			
L30 37.7500-37.5000				1	1	0.961419			
L31 37.5000-32.5000				1	1	0.974696			
L32 32.5000-32.2500				1	1	0.982743			
L33 32.2500-27.2500				1	1	0.981183			
L34 27.2500-23.5000				1	1	0.984079			
L35 23.5000-23.2500				1	1	1.02955			
L36 23.2500-20.7500				1	1	1.0211			
L37 20.7500-20.5000				1	1	0.982282			
L38 20.5000-15.5000				1	1	0.994668			
L39 15.5000-10.5000				1	1	0.994306			
L40 10.5000-5.5000				1	1	0.994679			
L41 5.5000-3.0000				1	1	1.00241			
L42 3.0000-2.7500				1	1	0.956794			
L43 2.7500-0.0000				1	1	0.949681			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF4-50A(1/2)	C	No	No	Inside Pole	140.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
LDF7-50A(1-5/8)	C	No	No	Inside Pole	140.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00

Description	*Face or Leg*	*Allow Shield*	*Exclude From Torque Calculation*	*Component Type*	*Placement* *ft*	*Total Number*		*C_AA_A* *ft^2/ft*	*Weight* *klf*
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	140.0000 - 0.0000	3	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	121.0000 - 0.0000	12	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	121.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
WR-VG122ST-BRDA(7/16)	C	No	No	Inside Pole	121.0000 - 0.0000	2	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
FB-L98B-034-XXX(3/8)	C	No	No	CaAa (Out Of Face)	121.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.01
WR-VG86ST-BRD(3/4)	C	No	No	CaAa (Out Of Face)	121.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.01
WR-VG86ST-BRD(3/4)	C	No	No	CaAa (Out Of Face)	95.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.01
WR-VG86ST-BRD(3/4)	C	No	No	CaAa (Out Of Face)	121.0000 - 95.0000	1	No Ice	0.0795	0.00
							1/2" Ice	0.1795	0.00
							1" Ice	0.2795	0.00
							2" Ice	0.4795	0.01
2 1/2" (Nominal) Conduit	C	No	No	Inside Pole	121.0000 - 0.0000	2	No Ice	0.0000	0.01
							1/2" Ice	0.0000	0.01
							1" Ice	0.0000	0.01
							2" Ice	0.0000	0.01
***									
HJ7-50A(1-5/8)	C	No	No	CaAa (Out Of Face)	115.0000 - 0.0000	1	No Ice	0.1980	0.00
							1/2" Ice	0.2980	0.00
							1" Ice	0.3980	0.00
							2" Ice	0.5980	0.01
HJ7-50A(1-5/8)	C	No	No	CaAa (Out Of Face)	115.0000 - 0.0000	4	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.01
LDF6-50A(1-1/4)	C	No	No	Inside Pole	115.0000 - 0.0000	11	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
HCS 6X12 6AWG(1-3/8)	C	No	No	CaAa (Out Of Face)	115.0000 - 0.0000	2	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.01
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	104.0000 - 0.0000	6	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	104.0000 - 0.0000	2	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
***									
CR 50 1873(1-5/8)	C	No	No	CaAa (Out Of Face)	95.0000 - 0.0000	1	No Ice	0.1980	0.00
							1/2" Ice	0.2980	0.00
							1" Ice	0.3980	0.00
							2" Ice	0.5980	0.01

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
CR 50 1873(1-5/8)	C	No	No	CaAa (Out Of Face)	95.0000 - 0.0000	5	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.01
***									
LDF4-50A(1/2)	C	No	No	Inside Pole	80.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00
***									
Aero MP3-08	C	No	No	CaAa (Out Of Face)	41.7500 - 0.0000	1	No Ice	0.4667	0.00
							1/2" Ice	0.5778	0.00
							1" Ice	0.6889	0.00
							2" Ice	0.9111	0.00
Aero MP3-06	C	No	No	CaAa (Out Of Face)	71.7500 - 41.7500	1	No Ice	0.4343	0.00
							1/2" Ice	0.5454	0.00
							1" Ice	0.6566	0.00
							2" Ice	0.8788	0.00
Aero MP3-05	C	No	No	CaAa (Out Of Face)	100.7500 - 71.7500	1	No Ice	0.3478	0.00
							1/2" Ice	0.4001	0.00
							1" Ice	0.6566	0.00
							2" Ice	0.8788	0.00
***									
1 1/4" Flat Reinforcement	C	No	No	CaAa (Out Of Face)	35.5000 - 0.0000	1	No Ice	0.2083	0.00
							1/2" Ice	0.3194	0.00
							1" Ice	0.4306	0.00
							2" Ice	0.6528	0.00
1" Flat Reinforcement	C	No	No	CaAa (Out Of Face)	90.6700 - 35.5000	1	No Ice	0.1667	0.00
							1/2" Ice	0.2778	0.00
							1" Ice	0.3889	0.00
							2" Ice	0.6111	0.00
1" Flat Reinforcement	C	No	No	CaAa (Out Of Face)	105.5000 - 95.5000	1	No Ice	0.1667	0.00
							1/2" Ice	0.2778	0.00
							1" Ice	0.3889	0.00
							2" Ice	0.6111	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	140.0000-135.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L2	135.0000-130.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	130.0000-125.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L4	125.0000-120.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.080	0.05
L5	120.0000-115.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.398	0.16
L6	115.0000-110.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.388	0.23
L7	110.0000-105.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.471	0.23

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L8	105.0000-104.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.444	0.05
L9	104.0000-103.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.111	0.01
L10	103.7500-98.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.916	0.27
L11	98.7500-98.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.198	0.01
L12	98.5000-98.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.198	0.01
L13	98.2500-97.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.990	0.07
L14	97.0000-96.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.198	0.01
L15	96.7500-88.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	6.499	0.48
L16	88.5000-88.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.455	0.03
L17	88.0000-87.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.228	0.01
L18	87.7500-82.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.552	0.30
L19	82.7500-77.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.552	0.30
L20	77.7500-72.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.552	0.30
L21	72.7500-68.0800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.569	0.28
L22	68.0800-67.8300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.249	0.01
L23	67.8300-62.8300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.985	0.30
L24	62.8300-57.8300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.985	0.30
L25	57.8300-52.8300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.985	0.30
L26	52.8300-47.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.563	0.33
L27	47.2500-46.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.748	0.04
L28	46.5000-41.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.993	0.30
L29	41.5000-37.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.860	0.22
L30	37.7500-37.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.257	0.01

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L31	37.5000-32.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.272	0.30
L32	32.5000-32.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.268	0.01
L33	32.2500-27.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.355	0.30
L34	27.2500-23.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.016	0.22
L35	23.5000-23.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.268	0.01
L36	23.2500-20.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.678	0.15
L37	20.7500-20.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.268	0.01
L38	20.5000-15.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.355	0.30
L39	15.5000-10.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.355	0.30
L40	10.5000-5.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.355	0.30
L41	5.5000-3.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.678	0.15
L42	3.0000-2.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.268	0.01
L43	2.7500-0.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.945	0.16

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	140.0000-135.0000	A	1.471	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L2	135.0000-130.0000	A	1.465	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	130.0000-125.0000	A	1.459	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L4	125.0000-120.0000	A	1.454	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.370	0.06
L5	120.0000-115.0000	A	1.448	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.845	0.22
L6	115.0000-110.0000	A	1.441	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	4.270	0.50
L7	110.0000-105.0000	A	1.435	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	4.500	0.50

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L8	105.0000-104.0000	A	1.431	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.334	0.10
L9	104.0000-103.7500	A	1.430	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.333	0.03
L10	103.7500-98.7500	A	1.426	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	8.161	0.54
L11	98.7500-98.5000	A	1.423	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.520	0.03
L12	98.5000-98.2500	A	1.422	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.520	0.03
L13	98.2500-97.0000	A	1.421	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	2.598	0.13
L14	97.0000-96.7500	A	1.420	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.519	0.03
L15	96.7500-88.5000	A	1.414	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	15.543	1.15
L16	88.5000-88.0000	A	1.407	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.095	0.07
L17	88.0000-87.7500	A	1.406	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.546	0.04
L18	87.7500-82.7500	A	1.402	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.904	0.74
L19	82.7500-77.7500	A	1.393	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.868	0.74
L20	77.7500-72.7500	A	1.385	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.831	0.73
L21	72.7500-68.0800	A	1.375	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.080	0.68
L22	68.0800-67.8300	A	1.371	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.539	0.04
L23	67.8300-62.8300	A	1.365	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.749	0.72
L24	62.8300-57.8300	A	1.354	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.703	0.72
L25	57.8300-52.8300	A	1.343	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.654	0.71
L26	52.8300-47.2500	A	1.329	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	11.826	0.79
L27	47.2500-46.5000	A	1.321	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.590	0.11
L28	46.5000-41.5000	A	1.312	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.533	0.70
L29	41.5000-37.7500	A	1.299	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	7.972	0.52
L30	37.7500-37.5000	A	1.292	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.530	0.03

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L31	37.5000-32.5000	A	1.282	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.687	0.68
L32	32.5000-32.2500	A	1.273	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.536	0.03
L33	32.2500-27.2500	A	1.262	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.683	0.68
L34	27.2500-23.5000	A	1.242	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	7.949	0.50
L35	23.5000-23.2500	A	1.232	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.528	0.03
L36	23.2500-20.7500	A	1.224	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	5.262	0.33
L37	20.7500-20.5000	A	1.216	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.525	0.03
L38	20.5000-15.5000	A	1.200	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.421	0.65
L39	15.5000-10.5000	A	1.161	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.259	0.63
L40	10.5000-5.5000	A	1.106	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	10.027	0.60
L41	5.5000-3.0000	A	1.039	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	4.870	0.29
L42	3.0000-2.7500	A	0.999	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.479	0.03
L43	2.7500-0.0000	A	0.928	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	5.100	0.29

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	140.0000-135.0000	0.0000	0.0000	0.0000	0.0000
L2	135.0000-130.0000	0.0000	0.0000	0.0000	0.0000
L3	130.0000-125.0000	0.0000	0.0000	0.0000	0.0000
L4	125.0000-120.0000	-0.0853	0.0492	-0.2689	0.1552
L5	120.0000-115.0000	-0.4027	0.2325	-1.1826	0.6828
L6	115.0000-110.0000	-1.2716	0.7342	-2.3699	1.3683
L7	110.0000-105.0000	-1.3471	0.7777	-2.5063	1.4470
L8	105.0000-104.0000	-1.9081	1.1016	-3.3404	1.9286
L9	104.0000-103.7500	-1.9149	1.1055	-3.3532	1.9360
L10	103.7500-98.7500	-2.3929	1.3815	-3.8668	2.2325
L11	98.7500-98.5000	-3.0108	1.7383	-4.5079	2.6027

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L12	98.5000-98.2500	-3.0209	1.7441	-4.5211	2.6103
L13	98.2500-97.0000	-3.0261	1.7471	-4.5336	2.6175
L14	97.0000-96.7500	-3.0248	1.7464	-4.5391	2.6207
L15	96.7500-88.5000	-3.0450	1.7580	-4.3568	2.5154
L16	88.5000-88.0000	-3.3880	1.9561	-4.7940	2.7678
L17	88.0000-87.7500	-3.3972	1.9614	-4.8008	2.7717
L18	87.7500-82.7500	-3.4165	1.9725	-4.8422	2.7956
L19	82.7500-77.7500	-3.4529	1.9935	-4.9188	2.8399
L20	77.7500-72.7500	-3.4874	2.0135	-4.9910	2.8815
L21	72.7500-68.0800	-3.7065	2.1400	-5.0563	2.9193
L22	68.0800-67.8300	-3.7771	2.1807	-5.0925	2.9402
L23	67.8300-62.8300	-3.7950	2.1910	-5.1248	2.9588
L24	62.8300-57.8300	-3.8285	2.2104	-5.1838	2.9929
L25	57.8300-52.8300	-3.8609	2.2291	-5.2390	3.0247
L26	52.8300-47.2500	-3.8940	2.2482	-5.2930	3.0559
L27	47.2500-46.5000	-3.8960	2.2493	-5.2957	3.0575
L28	46.5000-41.5000	-3.9180	2.2621	-5.3147	3.0684
L29	41.5000-37.7500	-4.0321	2.3279	-5.4016	3.1186
L30	37.7500-37.5000	-4.0461	2.3360	-5.4200	3.1293
L31	37.5000-32.5000	-4.1339	2.3867	-5.4811	3.1645
L32	32.5000-32.2500	-4.1986	2.4241	-5.5290	3.1922
L33	32.2500-27.2500	-4.2138	2.4328	-5.5456	3.2017
L34	27.2500-23.5000	-4.2386	2.4472	-5.5690	3.2152
L35	23.5000-23.2500	-4.2527	2.4553	-5.5808	3.2220
L36	23.2500-20.7500	-4.2603	2.4597	-5.5857	3.2249
L37	20.7500-20.5000	-4.2664	2.4632	-5.5883	3.2264
L38	20.5000-15.5000	-4.2799	2.4710	-5.5927	3.2289
L39	15.5000-10.5000	-4.3057	2.4859	-5.5894	3.2271
L40	10.5000-5.5000	-4.3306	2.5003	-5.5578	3.2088
L41	5.5000-3.0000	-4.3486	2.5107	-5.4907	3.1701
L42	3.0000-2.7500	-4.3568	2.5154	-5.4440	3.1431
L43	2.7500-0.0000	-4.3639	2.5195	-5.3458	3.0864

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft ft ft	°	ft		ft^2	ft^2	K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.08 0.15 0.23 0.41
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.08 0.15 0.23 0.41

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.08 0.15 0.23 0.41
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.08 0.13 0.19 0.34
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.08 0.13 0.19 0.34
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.08 0.13 0.19 0.34
(3) ACU-A20-N	A	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
(3) ACU-A20-N	B	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
(3) ACU-A20-N	C	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
TD-RRH8X20-25	A	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8X20-25	B	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8X20-25	C	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
(2) 2.375" OD x 6' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.03 0.04 0.05 0.09
(2) 2.375" OD x 6' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.03 0.04 0.05 0.09
(2) 2.375" OD x 6' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.03 0.04 0.05 0.09

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert*	*Azimuth Adjustment*	*Placement*		*C_AA_A Front*	*C_AA_A Side*	*Weight*
			ft	*°*	*ft*		*ft^2*	*ft^2*	*K*
			ft						
			ft						
Platform Mount [LP 1201-1]	C	None		0.00	140.0000	No Ice	23.1000	23.1000	2.10
						1/2" Ice	26.8000	26.8000	2.50
						1" Ice	30.5000	30.5000	2.90
						2" Ice	37.9000	37.9000	3.70
***									
TME-1900MHz RRH (65 MHz)	A	From Leg	2.0000	0.00	137.0000	No Ice	2.3125	2.3750	0.06
			0.00			1/2" Ice	2.5168	2.5809	0.08
			0.00			1" Ice	2.7284	2.7943	0.11
						2" Ice	3.1740	3.2431	0.18
TME-1900MHz RRH (65 MHz)	B	From Leg	2.0000	0.00	137.0000	No Ice	2.3125	2.3750	0.06
			0.00			1/2" Ice	2.5168	2.5809	0.08
			0.00			1" Ice	2.7284	2.7943	0.11
						2" Ice	3.1740	3.2431	0.18
TME-1900MHz RRH (65 MHz)	C	From Leg	2.0000	0.00	137.0000	No Ice	2.3125	2.3750	0.06
			0.00			1/2" Ice	2.5168	2.5809	0.08
			0.00			1" Ice	2.7284	2.7943	0.11
						2" Ice	3.1740	3.2431	0.18
TME-800MHZ RRH	A	From Leg	2.0000	0.00	137.0000	No Ice	2.1342	1.7730	0.05
			0.00			1/2" Ice	2.3195	1.9461	0.07
			0.00			1" Ice	2.5123	2.1267	0.10
						2" Ice	2.9201	2.5100	0.16
TME-800MHZ RRH	B	From Leg	2.0000	0.00	137.0000	No Ice	2.1342	1.7730	0.05
			0.00			1/2" Ice	2.3195	1.9461	0.07
			0.00			1" Ice	2.5123	2.1267	0.10
						2" Ice	2.9201	2.5100	0.16
TME-800MHZ RRH	C	From Leg	2.0000	0.00	137.0000	No Ice	2.1342	1.7730	0.05
			0.00			1/2" Ice	2.3195	1.9461	0.07
			0.00			1" Ice	2.5123	2.1267	0.10
						2" Ice	2.9201	2.5100	0.16
800MHz 2X50W RRH W/FILTER	A	From Leg	2.0000	0.00	137.0000	No Ice	2.0583	1.9317	0.06
			0.00			1/2" Ice	2.2398	2.1087	0.09
			0.00			1" Ice	2.4287	2.2931	0.11
						2" Ice	2.8287	2.6843	0.17
800MHz 2X50W RRH W/FILTER	B	From Leg	2.0000	0.00	137.0000	No Ice	2.0583	1.9317	0.06
			0.00			1/2" Ice	2.2398	2.1087	0.09
			0.00			1" Ice	2.4287	2.2931	0.11
						2" Ice	2.8287	2.6843	0.17
800MHz 2X50W RRH W/FILTER	C	From Leg	2.0000	0.00	137.0000	No Ice	2.0583	1.9317	0.06
			0.00			1/2" Ice	2.2398	2.1087	0.09
			0.00			1" Ice	2.4287	2.2931	0.11
						2" Ice	2.8287	2.6843	0.17
Side Arm Mount [SO 103-3]	C	None		0.00	137.0000	No Ice	9.5000	9.5000	0.22
						1/2" Ice	11.8000	11.8000	0.32
						1" Ice	14.1000	14.1000	0.41
						2" Ice	18.7000	18.7000	0.60
***									
7770.00 w/ Mount Pipe	A	From Leg	4.0000	0.00	121.0000	No Ice	5.7460	4.2543	0.06
			0.00			1/2" Ice	6.1791	5.0137	0.10
			2.00			1" Ice	6.6067	5.7109	0.16
						2" Ice	7.4880	7.1553	0.29
7770.00 w/ Mount Pipe	B	From Leg	4.0000	0.00	121.0000	No Ice	5.7460	4.2543	0.06
			0.00			1/2" Ice	6.1791	5.0137	0.10
			2.00			1" Ice	6.6067	5.7109	0.16

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
						1" Ice	7.4880	7.1553	0.29
						2" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.0000	0.00	121.0000	No Ice	5.7460	4.2543	0.06
			0.00			1/2" Ice	6.1791	5.0137	0.10
			2.00				6.6067	5.7109	0.16
						1" Ice	7.4880	7.1553	0.29
						2" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.0000	0.00	121.0000	No Ice	9.8953	8.1125	0.08
			0.00			1/2" Ice	10.4700	9.3041	0.16
			2.00				11.0098	10.2095	0.25
						1" Ice	12.1119	12.0135	0.46
						2" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.0000	0.00	121.0000	No Ice	9.8953	8.1125	0.08
			0.00			1/2" Ice	10.4700	9.3041	0.16
			2.00				11.0098	10.2095	0.25
						1" Ice	12.1119	12.0135	0.46
						2" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.0000	0.00	121.0000	No Ice	9.8953	8.1125	0.08
			0.00			1/2" Ice	10.4700	9.3041	0.16
			2.00				11.0098	10.2095	0.25
						1" Ice	12.1119	12.0135	0.46
						2" Ice			
QS66512-6 w/ Mount Pipe	A	From Leg	4.0000	0.00	121.0000	No Ice	8.3708	8.4625	0.14
			0.00			1/2" Ice	8.9314	9.6573	0.21
			2.00				9.4571	10.5478	0.30
						1" Ice	10.5310	12.3523	0.49
						2" Ice			
QS66512-6 w/ Mount Pipe	B	From Leg	4.0000	0.00	121.0000	No Ice	8.3708	8.4625	0.14
			0.00			1/2" Ice	8.9314	9.6573	0.21
			2.00				9.4571	10.5478	0.30
						1" Ice	10.5310	12.3523	0.49
						2" Ice			
QS66512-6 w/ Mount Pipe	C	From Leg	4.0000	0.00	121.0000	No Ice	8.3708	8.4625	0.14
			0.00			1/2" Ice	8.9314	9.6573	0.21
			2.00				9.4571	10.5478	0.30
						1" Ice	10.5310	12.3523	0.49
						2" Ice			
(2) LGP21401	A	From Leg	4.0000	0.00	121.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2" Ice	1.2388	0.4422	0.02
			2.00				1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) LGP21401	B	From Leg	4.0000	0.00	121.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2" Ice	1.2388	0.4422	0.02
			2.00				1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) LGP21401	C	From Leg	4.0000	0.00	121.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2" Ice	1.2388	0.4422	0.02
			2.00				1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
DC6-48-60-18-8F	B	From Leg	4.0000	0.00	121.0000	No Ice	1.2117	1.2117	0.03
			0.00			1/2" Ice	1.8924	1.8924	0.05
			2.00				2.1051	2.1051	0.08
						1" Ice	2.5703	2.5703	0.14
						2" Ice			
RRUS12/RRUS A2	A	From Leg	4.0000	0.00	121.0000	No Ice	3.1435	1.8351	0.07
			0.00			1/2" Ice	3.3632	2.0121	0.10
			2.00				3.5904	2.1965	0.13
						1" Ice	4.0669	2.5875	0.20
						2" Ice			
RRUS12/RRUS A2	B	From Leg	4.0000	0.00	121.0000	No Ice	3.1435	1.8351	0.07
			0.00			1/2" Ice	3.3632	2.0121	0.10
			2.00				3.5904	2.1965	0.13

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
						1" Ice	4.0669	2.5875	0.20
						2" Ice			
RRUS12/RRUS A2	C	From Leg	4.0000	0.00	121.0000	No Ice	3.1435	1.8351	0.07
			0.00			1/2"	3.3632	2.0121	0.10
			2.00			Ice	3.5904	2.1965	0.13
						1" Ice	4.0669	2.5875	0.20
						2" Ice			
RRUS 11	A	From Leg	4.0000	0.00	121.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2"	2.9984	1.3395	0.07
			2.00			Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
RRUS 11	B	From Leg	4.0000	0.00	121.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2"	2.9984	1.3395	0.07
			2.00			Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
RRUS 11	C	From Leg	4.0000	0.00	121.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2"	2.9984	1.3395	0.07
			2.00			Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
RRUS 32	A	From Leg	4.0000	0.00	121.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			2.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
RRUS 32	B	From Leg	4.0000	0.00	121.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			2.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
RRUS 32	C	From Leg	4.0000	0.00	121.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			2.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
DBC0061F1V51-2	A	From Leg	4.0000	0.00	121.0000	No Ice	0.2133	0.4133	0.01
			0.00			1/2"	0.2793	0.4959	0.02
			2.00			Ice	0.3526	0.5859	0.02
						1" Ice	0.5215	0.7881	0.04
						2" Ice			
DBC0061F1V51-2	B	From Leg	4.0000	0.00	121.0000	No Ice	0.2133	0.4133	0.01
			0.00			1/2"	0.2793	0.4959	0.02
			2.00			Ice	0.3526	0.5859	0.02
						1" Ice	0.5215	0.7881	0.04
						2" Ice			
DBC0061F1V51-2	C	From Leg	4.0000	0.00	121.0000	No Ice	0.2133	0.4133	0.01
			0.00			1/2"	0.2793	0.4959	0.02
			2.00			Ice	0.3526	0.5859	0.02
						1" Ice	0.5215	0.7881	0.04
						2" Ice			
DC6-48-60-18-8C	C	From Leg	4.0000	0.00	121.0000	No Ice	2.7366	2.7366	0.03
			0.00			1/2"	2.9630	2.9630	0.05
			2.00			Ice	3.1964	3.1964	0.08
						1" Ice	3.6842	3.6842	0.15
						2" Ice			
Platform Mount [LP 1201-1]	C	None		0.00	121.0000	No Ice	23.1000	23.1000	2.10
						1/2"	26.8000	26.8000	2.50
						Ice	30.5000	30.5000	2.90
						1" Ice	37.9000	37.9000	3.70
						2" Ice			
Miscellaneous [NA 510-1]	C	None		0.00	121.0000	No Ice	6.0000	6.0000	0.26
						1/2"	8.5000	8.5000	0.34
						Ice	11.0000	11.0000	0.42

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		C_AA_A *Front* *ft²*	C_AA_A *Side* *ft²*	*Weight* *K*
						1" Ice	16.0000	16.0000	0.59
						2" Ice			
(4) L 4 x 4 x 1/4 x 5' Mount Angle (Horiz)	A	None		0.00	121.0000	No Ice	2.7778	0.2217	0.02
						1/2" Ice	3.1457	0.7859	0.03
						1" Ice	3.5210	1.3624	0.04
						2" Ice	4.2938	2.3980	0.08
(4) L 4 x 4 x 1/4 x 5' Mount Angle (Horiz)	B	None		0.00	121.0000	No Ice	2.7778	0.2217	0.02
						1/2" Ice	3.1457	0.7859	0.03
						1" Ice	3.5210	1.3624	0.04
						2" Ice	4.2938	2.3980	0.08
(4) L 4 x 4 x 1/4 x 5' Mount Angle (Horiz)	C	None		0.00	121.0000	No Ice	2.7778	0.2217	0.02
						1/2" Ice	3.1457	0.7859	0.03
						1" Ice	3.5210	1.3624	0.04
						2" Ice	4.2938	2.3980	0.08
3' x 2" Sch 40 Pipe Mount	A	None		0.00	121.0000	No Ice	0.5826	0.5826	0.01
						1/2" Ice	0.7701	0.7701	0.02
						1" Ice	0.9669	0.9669	0.02
						2" Ice	1.3881	1.3881	0.05
3' x 2" Sch 40 Pipe Mount	B	None		0.00	121.0000	No Ice	0.5826	0.5826	0.01
						1/2" Ice	0.7701	0.7701	0.02
						1" Ice	0.9669	0.9669	0.02
						2" Ice	1.3881	1.3881	0.05
3' x 2" Sch 40 Pipe Mount	C	None		0.00	121.0000	No Ice	0.5826	0.5826	0.01
						1/2" Ice	0.7701	0.7701	0.02
						1" Ice	0.9669	0.9669	0.02
						2" Ice	1.3881	1.3881	0.05
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AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.0000	0.00	115.0000	No Ice	6.7474	6.0700	0.15
			0.00			1/2" Ice	7.2017	6.8671	0.21
			1.00			1" Ice	7.6475	7.5828	0.28
						2" Ice	8.5651	9.0629	0.44
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.0000	0.00	115.0000	No Ice	6.7474	6.0700	0.15
			0.00			1/2" Ice	7.2017	6.8671	0.21
			1.00			1" Ice	7.6475	7.5828	0.28
						2" Ice	8.5651	9.0629	0.44
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.0000	0.00	115.0000	No Ice	6.7474	6.0700	0.15
			0.00			1/2" Ice	7.2017	6.8671	0.21
			1.00			1" Ice	7.6475	7.5828	0.28
						2" Ice	8.5651	9.0629	0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000	0.00	115.0000	No Ice	20.4801	11.0240	0.16
			0.00			1/2" Ice	21.2306	12.5496	0.30
			1.00			1" Ice	21.9900	14.0992	0.44
						2" Ice	23.4441	16.4509	0.78
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000	0.00	115.0000	No Ice	20.4801	11.0240	0.16
			0.00			1/2" Ice	21.2306	12.5496	0.30
			1.00			1" Ice	21.9900	14.0992	0.44
						2" Ice	23.4441	16.4509	0.78
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000	0.00	115.0000	No Ice	20.4801	11.0240	0.16
			0.00			1/2" Ice	21.2306	12.5496	0.30
			1.00			1" Ice	21.9900	14.0992	0.44
						2" Ice	23.4441	16.4509	0.78
(2) S20070A1	A	From Leg	4.0000	0.00	115.0000	No Ice	0.6560	0.3257	0.01

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		C_AA_A *Front* *ft²*	C_AA_A *Side* *ft²*	*Weight* *K*
			0.00			1/2"	0.7636	0.4114	0.01
			1.00			Ice	0.8786	0.5041	0.02
						1" Ice	1.1308	0.7105	0.04
						2" Ice			
S20070A1	B	From Leg	4.0000	0.00	115.0000	No Ice	0.6560	0.3257	0.01
			0.00			1/2"	0.7636	0.4114	0.01
			1.00			Ice	0.8786	0.5041	0.02
						1" Ice	1.1308	0.7105	0.04
						2" Ice			
ETW200VS12UB	A	From Leg	4.0000	0.00	115.0000	No Ice	0.4043	0.1628	0.01
			0.00			1/2"	0.4857	0.2187	0.01
			1.00			Ice	0.5746	0.2820	0.02
						1" Ice	0.7746	0.4309	0.03
						2" Ice			
ETW200VS12UB	B	From Leg	4.0000	0.00	115.0000	No Ice	0.4043	0.1628	0.01
			0.00			1/2"	0.4857	0.2187	0.01
			1.00			Ice	0.5746	0.2820	0.02
						1" Ice	0.7746	0.4309	0.03
						2" Ice			
ETW200VS12UB	C	From Leg	4.0000	0.00	115.0000	No Ice	0.4043	0.1628	0.01
			0.00			1/2"	0.4857	0.2187	0.01
			1.00			Ice	0.5746	0.2820	0.02
						1" Ice	0.7746	0.4309	0.03
						2" Ice			
RADIO 4449 B12/B71	A	From Leg	4.0000	0.00	115.0000	No Ice	1.6500	1.1625	0.07
			0.00			1/2"	1.8104	1.3012	0.09
			1.00			Ice	1.9781	1.4473	0.11
						1" Ice	2.3359	1.7618	0.16
						2" Ice			
RADIO 4449 B12/B71	B	From Leg	4.0000	0.00	115.0000	No Ice	1.6500	1.1625	0.07
			0.00			1/2"	1.8104	1.3012	0.09
			1.00			Ice	1.9781	1.4473	0.11
						1" Ice	2.3359	1.7618	0.16
						2" Ice			
RADIO 4449 B12/B71	C	From Leg	4.0000	0.00	115.0000	No Ice	1.6500	1.1625	0.07
			0.00			1/2"	1.8104	1.3012	0.09
			1.00			Ice	1.9781	1.4473	0.11
						1" Ice	2.3359	1.7618	0.16
						2" Ice			
Platform Mount [LP 1201-1]	C	None		0.00	115.0000	No Ice	23.1000	23.1000	2.10
						1/2"	26.8000	26.8000	2.50
						Ice	30.5000	30.5000	2.90
						1" Ice	37.9000	37.9000	3.70
						2" Ice			
Miscellaneous [NA 509-3]	C	None		0.00	115.0000	No Ice	11.8400	11.8400	0.28
						1/2"	16.9600	16.9600	0.30
						Ice	22.0800	22.0800	0.32
						1" Ice	32.3200	32.3200	0.36
						2" Ice			
Miscellaneous [NA 510-1]	C	None		0.00	115.0000	No Ice	6.0000	6.0000	0.26
						1/2"	8.5000	8.5000	0.34
						Ice	11.0000	11.0000	0.42
						1" Ice	16.0000	16.0000	0.59
						2" Ice			
2.375" OD x 9' Mount Pipe	A	From Leg	4.0000	0.00	115.0000	No Ice	2.1375	2.1375	0.03
			0.00			1/2"	3.0656	3.0656	0.04
			0.00			Ice	4.0104	4.0104	0.06
						1" Ice	5.1312	5.1312	0.13
						2" Ice			
2.375" OD x 9' Mount Pipe	B	From Leg	4.0000	0.00	115.0000	No Ice	2.1375	2.1375	0.03
			0.00			1/2"	3.0656	3.0656	0.04
			0.00			Ice	4.0104	4.0104	0.06
						1" Ice	5.1312	5.1312	0.13
						2" Ice			
2.375" OD x 9' Mount Pipe	C	From Leg	4.0000	0.00	115.0000	No Ice	2.1375	2.1375	0.03

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
			0.00 0.00			1/2" Ice 1" Ice 2" Ice	3.0656 4.0104 5.1312	3.0656 4.0104 5.1312	0.04 0.06 0.13
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LNX-6514DS-VTM w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.3968 8.9546 9.4800 10.5532	7.0679 8.2532 9.1523 10.9842	0.06 0.13 0.21 0.39
LNX-6514DS-VTM w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.3968 8.9546 9.4800 10.5532	7.0679 8.2532 9.1523 10.9842	0.06 0.13 0.21 0.39
LNX-6514DS-VTM w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.3968 8.9546 9.4800 10.5532	7.0679 8.2532 9.1523 10.9842	0.06 0.13 0.21 0.39
MG D3-800TX w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.5703 3.9790 4.3870 5.1988	3.4178 4.1193 4.7842 6.1642	0.03 0.07 0.11 0.21
MG D3-800TX w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.5703 3.9790 4.3870 5.1988	3.4178 4.1193 4.7842 6.1642	0.03 0.07 0.11 0.21
MG D3-800TX w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.5703 3.9790 4.3870 5.1988	3.4178 4.1193 4.7842 6.1642	0.03 0.07 0.11 0.21
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.3995 8.9639 9.4943 10.5749	7.0730 8.2637 9.1753 11.0130	0.07 0.14 0.21 0.39
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.3995 8.9639 9.4943 10.5749	7.0730 8.2637 9.1753 11.0130	0.07 0.14 0.21 0.39
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.3995 8.9639 9.4943 10.5749	7.0730 8.2637 9.1753 11.0130	0.07 0.14 0.21 0.39
DB-T1-6Z-8AB-0Z	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.8000 5.0704 5.3481 5.9259	2.0000 2.1926 2.3926 2.8148	0.04 0.08 0.12 0.21
DB-T1-6Z-8AB-0Z	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.8000 5.0704 5.3481 5.9259	2.0000 2.1926 2.3926 2.8148	0.04 0.08 0.12 0.21
B25 RRH4X30 (UHFA)	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1147 2.3027 2.4981 2.9111	1.2897 1.4450 1.6073 1.9584	0.05 0.07 0.09 0.14

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
B25 RRH4X30 (UHFA)	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1147 2.3027 2.4981 2.9111	1.2897 1.4450 1.6073 1.9584	0.05 0.07 0.09 0.14
B25 RRH4X30 (UHFA)	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1147 2.3027 2.4981 2.9111	1.2897 1.4450 1.6073 1.9584	0.05 0.07 0.09 0.14
B66A RRH4X45 (UHIE)	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.5370 2.7496 2.9696 3.4318	1.6101 1.7906 1.9781 2.3740	0.06 0.08 0.10 0.16
B66A RRH4X45 (UHIE)	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.5370 2.7496 2.9696 3.4318	1.6101 1.7906 1.9781 2.3740	0.06 0.08 0.10 0.16
B66A RRH4X45 (UHIE)	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.5370 2.7496 2.9696 3.4318	1.6101 1.7906 1.9781 2.3740	0.06 0.08 0.10 0.16
B13 RRH 4X30	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0552 2.2405 2.4333 2.8411	1.3201 1.4754 1.6376 1.9966	0.06 0.07 0.09 0.14
B13 RRH 4X30	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0552 2.2405 2.4333 2.8411	1.3201 1.4754 1.6376 1.9966	0.06 0.07 0.09 0.14
B13 RRH 4X30	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0552 2.2405 2.4333 2.8411	1.3201 1.4754 1.6376 1.9966	0.06 0.07 0.09 0.14
AIRSCALE RRH 4T4R B5 160W	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2857 1.4277 1.5771 1.8983	0.7204 0.8341 0.9552 1.2197	0.04 0.05 0.06 0.09
AIRSCALE RRH 4T4R B5 160W	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2857 1.4277 1.5771 1.8983	0.7204 0.8341 0.9552 1.2197	0.04 0.05 0.06 0.09
AIRSCALE RRH 4T4R B5 160W	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2857 1.4277 1.5771 1.8983	0.7204 0.8341 0.9552 1.2197	0.04 0.05 0.06 0.09
CBC1923T-DS-43	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3162 0.3888 0.4688 0.6511	0.2300 0.2943 0.3659 0.5315	0.01 0.01 0.02 0.03
CBC1923T-DS-43	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3162 0.3888 0.4688 0.6511	0.2300 0.2943 0.3659 0.5315	0.01 0.01 0.02 0.03

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* ° 	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
CBC1923T-DS-43	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3162 0.3888 0.4688 0.6511	0.2300 0.2943 0.3659 0.5315	0.01 0.01 0.02 0.03
Platform Mount [LP 1201-1]	C	None		0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	23.1000 26.8000 30.5000 37.9000	23.1000 26.8000 30.5000 37.9000	2.10 2.50 2.90 3.70
HRK -14	C	None		0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.0000 8.5000 11.0000 16.0000	6.0000 8.5000 11.0000 16.0000	0.26 0.34 0.42 0.59
(5) SCX1-K	A	None		0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	0.00 0.00 0.00 0.00
(5) SCX1-K	B	None		0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	0.00 0.00 0.00 0.00
(5) SCX1-K	C	None		0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	0.00 0.00 0.00 0.00
2.375" OD x 6' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.03 0.04 0.05 0.09
2.375" OD x 6' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.03 0.04 0.05 0.09
2.375" OD x 6' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	104.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.03 0.04 0.05 0.09
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APXV18-206517S-C w/ Mount Pipe	A	From Leg	1.0000 0.00 0.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.4042 5.9597 6.4808 7.5467	4.7000 5.8600 6.7338 8.5150	0.05 0.10 0.15 0.28
APXV18-206517S-C w/ Mount Pipe	B	From Leg	1.0000 0.00 0.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.4042 5.9597 6.4808 7.5467	4.7000 5.8600 6.7338 8.5150	0.05 0.10 0.15 0.28
APXV18-206517S-C w/ Mount Pipe	C	From Leg	1.0000 0.00 0.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.4042 5.9597 6.4808 7.5467	4.7000 5.8600 6.7338 8.5150	0.05 0.10 0.15 0.28
Pipe Mount [PM 601-3]	C	None		0.00	95.0000	No Ice 1/2" Ice 1" Ice	4.3900 5.4800 6.5700 8.7500	4.3900 5.4800 6.5700 8.7500	0.20 0.24 0.28 0.36

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***						2" Ice			
OG-860/1920/GPS-A	A	From Leg	4.0000 0.00 2.00	0.00	80.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3077 0.3952 0.4897 0.6997	0.3667 0.4572 0.5548 0.7708	0.00 0.01 0.01 0.02
Side Arm Mount [SO 901-1]	A	None		0.00	80.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.5000 0.6800 0.8600 1.2200	0.8800 1.1300 1.3800 1.8800	0.11 0.11 0.11 0.12
********									

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % 	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 140.0000-135.0000	137.4744	1.353	0.05	7.084	A	0.000	7.084	7.084	100.00	0.000	0.000
					B	0.000	7.084		100.00	0.000	0.000
					C	0.000	7.084		100.00	0.000	0.000
L2 135.0000-130.0000	132.4759	1.343	0.05	7.522	A	0.000	7.522	7.522	100.00	0.000	0.000
					B	0.000	7.522		100.00	0.000	0.000
					C	0.000	7.522		100.00	0.000	0.000
L3 130.0000-125.0000	127.4772	1.332	0.05	7.960	A	0.000	7.960	7.960	100.00	0.000	0.000
					B	0.000	7.960		100.00	0.000	0.000
					C	0.000	7.960		100.00	0.000	0.000
L4 125.0000-120.0000	122.4784	1.321	0.05	8.398	A	0.000	8.398	8.398	100.00	0.000	0.000
					B	0.000	8.398		100.00	0.000	0.000
					C	0.000	8.398		100.00	0.000	0.080
L5 120.0000-115.0000	117.4794	1.309	0.05	8.836	A	0.000	8.836	8.836	100.00	0.000	0.000
					B	0.000	8.836		100.00	0.000	0.000
					C	0.000	8.836		100.00	0.000	0.398
L6 115.0000-110.0000	112.4804	1.297	0.05	9.274	A	0.000	9.274	9.274	100.00	0.000	0.000
					B	0.000	9.274		100.00	0.000	0.000
					C	0.000	9.274		100.00	0.000	1.388
L7 110.0000-105.0000	107.4813	1.285	0.05	9.711	A	0.000	9.711	9.711	100.00	0.000	0.000
					B	0.000	9.711		100.00	0.000	0.000
					C	0.000	9.711		100.00	0.000	1.471
L8 105.0000-104.0000	104.4993	1.277	0.05	1.995	A	0.000	1.995	1.995	100.00	0.000	0.000
					B	0.000	1.995		100.00	0.000	0.000
					C	0.000	1.995		100.00	0.000	0.444
L9 104.0000-103.7500	103.8750	1.276	0.05	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.111
L10 103.7500-98.7500	101.2323	1.269	0.05	10.229	A	0.000	10.229	10.229	100.00	0.000	0.000
					B	0.000	10.229		100.00	0.000	0.000
					C	0.000	10.229		100.00	0.000	2.916
L11 98.7500-98.5000	98.6250	1.262	0.05	0.523	A	0.000	0.523	0.523	100.00	0.000	0.000
					B	0.000	0.523		100.00	0.000	0.000
					C	0.000	0.523		100.00	0.000	0.198
L12 98.5000-98.2500	98.3750	1.261	0.05	0.522	A	0.000	0.522	0.522	100.00	0.000	0.000
					B	0.000	0.522		100.00	0.000	0.000
					C	0.000	0.522		100.00	0.000	0.198

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L13 98.2500-97.0000	97.6239	1.259	0.05	2.627	A	0.000	2.627	2.627	100.00	0.000	0.000
					B	0.000	2.627		100.00	0.000	0.000
					C	0.000	2.627		100.00	0.000	0.990
L14 97.0000-96.7500	96.8750	1.257	0.05	0.530	A	0.000	0.530	0.530	100.00	0.000	0.000
					B	0.000	0.530		100.00	0.000	0.000
					C	0.000	0.530		100.00	0.000	0.198
L15 96.7500-88.5000	92.5800	1.245	0.04	18.113	A	0.000	18.113	18.113	100.00	0.000	0.000
					B	0.000	18.113		100.00	0.000	0.000
					C	0.000	18.113		100.00	0.000	6.499
L16 88.5000-88.0000	88.2498	1.233	0.04	1.114	A	0.000	1.114	1.114	100.00	0.000	0.000
					B	0.000	1.114		100.00	0.000	0.000
					C	0.000	1.114		100.00	0.000	0.455
L17 88.0000-87.7500	87.8750	1.232	0.04	0.557	A	0.000	0.557	0.557	100.00	0.000	0.000
					B	0.000	0.557		100.00	0.000	0.000
					C	0.000	0.557		100.00	0.000	0.228
L18 87.7500-82.7500	85.2341	1.224	0.04	11.373	A	0.000	11.373	11.373	100.00	0.000	0.000
					B	0.000	11.373		100.00	0.000	0.000
					C	0.000	11.373		100.00	0.000	4.552
L19 82.7500-77.7500	80.2347	1.208	0.04	11.813	A	0.000	11.813	11.813	100.00	0.000	0.000
					B	0.000	11.813		100.00	0.000	0.000
					C	0.000	11.813		100.00	0.000	4.552
L20 77.7500-72.7500	75.2352	1.192	0.04	12.252	A	0.000	12.252	12.252	100.00	0.000	0.000
					B	0.000	12.252		100.00	0.000	0.000
					C	0.000	12.252		100.00	0.000	4.552
L21 72.7500-68.0800	70.4025	1.175	0.04	11.843	A	0.000	11.843	11.843	100.00	0.000	0.000
					B	0.000	11.843		100.00	0.000	0.000
					C	0.000	11.843		100.00	0.000	4.569
L22 68.0800-67.8300	67.9550	1.167	0.04	0.644	A	0.000	0.644	0.644	100.00	0.000	0.000
					B	0.000	0.644		100.00	0.000	0.000
					C	0.000	0.644		100.00	0.000	0.249
L23 67.8300-62.8300	65.3162	1.157	0.04	13.110	A	0.000	13.110	13.110	100.00	0.000	0.000
					B	0.000	13.110		100.00	0.000	0.000
					C	0.000	13.110		100.00	0.000	4.985
L24 62.8300-57.8300	60.3166	1.138	0.04	13.552	A	0.000	13.552	13.552	100.00	0.000	0.000
					B	0.000	13.552		100.00	0.000	0.000
					C	0.000	13.552		100.00	0.000	4.985
L25 57.8300-52.8300	55.3171	1.117	0.04	13.992	A	0.000	13.992	13.992	100.00	0.000	0.000
					B	0.000	13.992		100.00	0.000	0.000
					C	0.000	13.992		100.00	0.000	4.985
L26 52.8300-47.2500	50.0244	1.094	0.04	16.132	A	0.000	16.132	16.132	100.00	0.000	0.000
					B	0.000	16.132		100.00	0.000	0.000
					C	0.000	16.132		100.00	0.000	5.563
L27 47.2500-46.5000	46.8747	1.079	0.04	2.168	A	0.000	2.168	2.168	100.00	0.000	0.000
					B	0.000	2.168		100.00	0.000	0.000
					C	0.000	2.168		100.00	0.000	0.748
L28 46.5000-41.5000	43.9877	1.065	0.04	14.707	A	0.000	14.707	14.707	100.00	0.000	0.000
					B	0.000	14.707		100.00	0.000	0.000
					C	0.000	14.707		100.00	0.000	4.993
L29 41.5000-37.7500	39.6183	1.041	0.04	11.320	A	0.000	11.320	11.320	100.00	0.000	0.000
					B	0.000	11.320		100.00	0.000	0.000
					C	0.000	11.320		100.00	0.000	3.860
L30 37.7500-37.5000	37.6250	1.03	0.04	0.763	A	0.000	0.763	0.763	100.00	0.000	0.000
					B	0.000	0.763		100.00	0.000	0.000
					C	0.000	0.763		100.00	0.000	0.257
L31 37.5000-32.5000	34.9883	1.015	0.04	15.492	A	0.000	15.492	15.492	100.00	0.000	0.000
					B	0.000	15.492		100.00	0.000	0.000
					C	0.000	15.492		100.00	0.000	5.272
L32 32.5000-32.2500	32.3750	0.998	0.04	0.786	A	0.000	0.786	0.786	100.00	0.000	0.000
					B	0.000	0.786		100.00	0.000	0.000
					C	0.000	0.786		100.00	0.000	0.268
L33 32.2500-27.2500	29.7386	0.98	0.04	15.946	A	0.000	15.946	15.946	100.00	0.000	0.000
					B	0.000	15.946		100.00	0.000	0.000
					C	0.000	15.946		100.00	0.000	5.355
L34 27.2500-23.5000	25.3688	0.948	0.03	12.248	A	0.000	12.248	12.248	100.00	0.000	0.000
					B	0.000	12.248		100.00	0.000	0.000
					C	0.000	12.248		100.00	0.000	4.016
L35 23.5000-23.2500	23.3750	0.932	0.03	0.825	A	0.000	0.825	0.825	100.00	0.000	0.000
					B	0.000	0.825		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	0.825		100.00	0.000	0.268
L36 23.2500-20.7500	21.9973	0.92	0.03	8.306	A	0.000	8.306	8.306	100.00	0.000	0.000
					B	0.000	8.306		100.00	0.000	0.000
					C	0.000	8.306		100.00	0.000	2.678
L37 20.7500-20.5000	20.6250	0.908	0.03	0.837	A	0.000	0.837	0.837	100.00	0.000	0.000
					B	0.000	0.837		100.00	0.000	0.000
					C	0.000	0.837		100.00	0.000	0.268
L38 20.5000-15.5000	17.9893	0.882	0.03	16.973	A	0.000	16.973	16.973	100.00	0.000	0.000
					B	0.000	16.973		100.00	0.000	0.000
					C	0.000	16.973		100.00	0.000	5.355
L39 15.5000-10.5000	12.9896	0.85	0.03	17.413	A	0.000	17.413	17.413	100.00	0.000	0.000
					B	0.000	17.413		100.00	0.000	0.000
					C	0.000	17.413		100.00	0.000	5.355
L40 10.5000-5.5000	7.9899	0.85	0.03	17.853	A	0.000	17.853	17.853	100.00	0.000	0.000
					B	0.000	17.853		100.00	0.000	0.000
					C	0.000	17.853		100.00	0.000	5.355
L41 5.5000-3.0000	4.2475	0.85	0.03	9.091	A	0.000	9.091	9.091	100.00	0.000	0.000
					B	0.000	9.091		100.00	0.000	0.000
					C	0.000	9.091		100.00	0.000	2.678
L42 3.0000-2.7500	2.8750	0.85	0.03	0.915	A	0.000	0.915	0.915	100.00	0.000	0.000
					B	0.000	0.915		100.00	0.000	0.000
					C	0.000	0.915		100.00	0.000	0.268
L43 2.7500-0.0000	1.3720	0.85	0.03	10.134	A	0.000	10.134	10.134	100.00	0.000	0.000
					B	0.000	10.134		100.00	0.000	0.000
					C	0.000	10.134		100.00	0.000	2.945

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 140.0000-135.0000	137.4744	1.353	0.01	1.4706	8.310	A	0.000	8.310	8.310	100.00	0.000	0.000
						B	0.000	8.310		100.00	0.000	0.000
						C	0.000	8.310		100.00	0.000	0.000
L2 135.0000-130.0000	132.4759	1.343	0.01	1.4651	8.743	A	0.000	8.743	8.743	100.00	0.000	0.000
						B	0.000	8.743		100.00	0.000	0.000
						C	0.000	8.743		100.00	0.000	0.000
L3 130.0000-125.0000	127.4772	1.332	0.01	1.4595	9.176	A	0.000	9.176	9.176	100.00	0.000	0.000
						B	0.000	9.176		100.00	0.000	0.000
						C	0.000	9.176		100.00	0.000	0.000
L4 125.0000-120.0000	122.4784	1.321	0.01	1.4537	9.609	A	0.000	9.609	9.609	100.00	0.000	0.000
						B	0.000	9.609		100.00	0.000	0.000
						C	0.000	9.609		100.00	0.000	0.370
L5 120.0000-115.0000	117.4794	1.309	0.01	1.4476	10.042	A	0.000	10.042	10.042	100.00	0.000	0.000
						B	0.000	10.042		100.00	0.000	0.000
						C	0.000	10.042		100.00	0.000	1.845
L6 115.0000-110.0000	112.4804	1.297	0.01	1.4413	10.475	A	0.000	10.475	10.475	100.00	0.000	0.000
						B	0.000	10.475		100.00	0.000	0.000
						C	0.000	10.475		100.00	0.000	4.270
L7 110.0000-105.0000	107.4813	1.285	0.01	1.4348	10.907	A	0.000	10.907	10.907	100.00	0.000	0.000
						B	0.000	10.907		100.00	0.000	0.000
						C	0.000	10.907		100.00	0.000	4.500
L8 105.0000-104.0000	104.4993	1.277	0.01	1.4308	2.233	A	0.000	2.233	2.233	100.00	0.000	0.000
						B	0.000	2.233		100.00	0.000	0.000
						C	0.000	2.233		100.00	0.000	1.334
L9 104.0000-103.7500	103.8750	1.276	0.01	1.4299	0.559	A	0.000	0.559	0.559	100.00	0.000	0.000
						B	0.000	0.559		100.00	0.000	0.000
						C	0.000	0.559		100.00	0.000	0.333
L10 103.7500-98.7500	101.2323	1.269	0.01	1.4262	11.418	A	0.000	11.418	11.418	100.00	0.000	0.000
						B	0.000	11.418		100.00	0.000	0.000
						C	0.000	11.418		100.00	0.000	8.161

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L11 98.7500-98.5000	98.6250	1.262	0.01	1.4225	0.582	A	0.000	0.582	0.582	100.00	0.000	0.000
						B	0.000	0.582		100.00	0.000	0.000
						C	0.000	0.582		100.00	0.000	0.520
L12 98.5000-98.2500	98.3750	1.261	0.01	1.4222	0.581	A	0.000	0.581	0.581	100.00	0.000	0.000
						B	0.000	0.581		100.00	0.000	0.000
						C	0.000	0.581		100.00	0.000	0.520
L13 98.2500-97.0000	97.6239	1.259	0.01	1.4211	2.923	A	0.000	2.923	2.923	100.00	0.000	0.000
						B	0.000	2.923		100.00	0.000	0.000
						C	0.000	2.923		100.00	0.000	2.598
L14 97.0000-96.7500	96.8750	1.257	0.01	1.4200	0.589	A	0.000	0.589	0.589	100.00	0.000	0.000
						B	0.000	0.589		100.00	0.000	0.000
						C	0.000	0.589		100.00	0.000	0.519
L15 96.7500-88.5000	92.5800	1.245	0.01	1.4135	20.056	A	0.000	20.056	20.056	100.00	0.000	0.000
						B	0.000	20.056		100.00	0.000	0.000
						C	0.000	20.056		100.00	0.000	15.543
L16 88.5000-88.0000	88.2498	1.233	0.01	1.4068	1.231	A	0.000	1.231	1.231	100.00	0.000	0.000
						B	0.000	1.231		100.00	0.000	0.000
						C	0.000	1.231		100.00	0.000	1.095
L17 88.0000-87.7500	87.8750	1.232	0.01	1.4062	0.616	A	0.000	0.616	0.616	100.00	0.000	0.000
						B	0.000	0.616		100.00	0.000	0.000
						C	0.000	0.616		100.00	0.000	0.546
L18 87.7500-82.7500	85.2341	1.224	0.01	1.4019	12.541	A	0.000	12.541	12.541	100.00	0.000	0.000
						B	0.000	12.541		100.00	0.000	0.000
						C	0.000	12.541		100.00	0.000	10.904
L19 82.7500-77.7500	80.2347	1.208	0.01	1.3935	12.974	A	0.000	12.974	12.974	100.00	0.000	0.000
						B	0.000	12.974		100.00	0.000	0.000
						C	0.000	12.974		100.00	0.000	10.868
L20 77.7500-72.7500	75.2352	1.192	0.01	1.3845	13.406	A	0.000	13.406	13.406	100.00	0.000	0.000
						B	0.000	13.406		100.00	0.000	0.000
						C	0.000	13.406		100.00	0.000	10.831
L21 72.7500-68.0800	70.4025	1.175	0.01	1.3754	12.913	A	0.000	12.913	12.913	100.00	0.000	0.000
						B	0.000	12.913		100.00	0.000	0.000
						C	0.000	12.913		100.00	0.000	10.080
L22 68.0800-67.8300	67.9550	1.167	0.01	1.3705	0.701	A	0.000	0.701	0.701	100.00	0.000	0.000
						B	0.000	0.701		100.00	0.000	0.000
						C	0.000	0.701		100.00	0.000	0.539
L23 67.8300-62.8300	65.3162	1.157	0.01	1.3651	14.248	A	0.000	14.248	14.248	100.00	0.000	0.000
						B	0.000	14.248		100.00	0.000	0.000
						C	0.000	14.248		100.00	0.000	10.749
L24 62.8300-57.8300	60.3166	1.138	0.01	1.3543	14.680	A	0.000	14.680	14.680	100.00	0.000	0.000
						B	0.000	14.680		100.00	0.000	0.000
						C	0.000	14.680		100.00	0.000	10.703
L25 57.8300-52.8300	55.3171	1.117	0.01	1.3426	15.110	A	0.000	15.110	15.110	100.00	0.000	0.000
						B	0.000	15.110		100.00	0.000	0.000
						C	0.000	15.110		100.00	0.000	10.654
L26 52.8300-47.2500	50.0244	1.094	0.01	1.3292	17.368	A	0.000	17.368	17.368	100.00	0.000	0.000
						B	0.000	17.368		100.00	0.000	0.000
						C	0.000	17.368		100.00	0.000	11.826
L27 47.2500-46.5000	46.8747	1.079	0.01	1.3205	2.334	A	0.000	2.334	2.334	100.00	0.000	0.000
						B	0.000	2.334		100.00	0.000	0.000
						C	0.000	2.334		100.00	0.000	1.590
L28 46.5000-41.5000	43.9877	1.065	0.01	1.3122	15.801	A	0.000	15.801	15.801	100.00	0.000	0.000
						B	0.000	15.801		100.00	0.000	0.000
						C	0.000	15.801		100.00	0.000	10.533
L29 41.5000-37.7500	39.6183	1.041	0.01	1.2985	12.132	A	0.000	12.132	12.132	100.00	0.000	0.000
						B	0.000	12.132		100.00	0.000	0.000
						C	0.000	12.132		100.00	0.000	7.972
L30 37.7500-37.5000	37.6250	1.03	0.01	1.2918	0.817	A	0.000	0.817	0.817	100.00	0.000	0.000
						B	0.000	0.817		100.00	0.000	0.000
						C	0.000	0.817		100.00	0.000	0.530
L31 37.5000-32.5000	34.9883	1.015	0.01	1.2825	16.560	A	0.000	16.560	16.560	100.00	0.000	0.000
						B	0.000	16.560		100.00	0.000	0.000
						C	0.000	16.560		100.00	0.000	10.687
L32 32.5000-32.2500	32.3750	0.998	0.01	1.2726	0.839	A	0.000	0.839	0.839	100.00	0.000	0.000
						B	0.000	0.839		100.00	0.000	0.000
						C	0.000	0.839		100.00	0.000	0.536
L33 32.2500-27.2500	29.7386	0.98	0.01	1.2618	16.997	A	0.000	16.997	16.997	100.00	0.000	0.000
						B	0.000	16.997		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	16.997		100.00	0.000	10.683
L34 27.2500-23.5000	25.3688	0.948	0.01	1.2419	13.024	A	0.000	13.024	13.024	100.00	0.000	0.000
						B	0.000	13.024		100.00	0.000	0.000
						C	0.000	13.024		100.00	0.000	7.949
L35 23.5000-23.2500	23.3750	0.932	0.01	1.2318	0.876	A	0.000	0.876	0.876	100.00	0.000	0.000
						B	0.000	0.876		100.00	0.000	0.000
						C	0.000	0.876		100.00	0.000	0.528
L36 23.2500-20.7500	21.9973	0.92	0.01	1.2243	8.816	A	0.000	8.816	8.816	100.00	0.000	0.000
						B	0.000	8.816		100.00	0.000	0.000
						C	0.000	8.816		100.00	0.000	5.262
L37 20.7500-20.5000	20.6250	0.908	0.01	1.2165	0.888	A	0.000	0.888	0.888	100.00	0.000	0.000
						B	0.000	0.888		100.00	0.000	0.000
						C	0.000	0.888		100.00	0.000	0.525
L38 20.5000-15.5000	17.9893	0.882	0.01	1.1999	17.973	A	0.000	17.973	17.973	100.00	0.000	0.000
						B	0.000	17.973		100.00	0.000	0.000
						C	0.000	17.973		100.00	0.000	10.421
L39 15.5000-10.5000	12.9896	0.85	0.00	1.1615	18.381	A	0.000	18.381	18.381	100.00	0.000	0.000
						B	0.000	18.381		100.00	0.000	0.000
						C	0.000	18.381		100.00	0.000	10.259
L40 10.5000-5.5000	7.9899	0.85	0.00	1.1064	18.775	A	0.000	18.775	18.775	100.00	0.000	0.000
						B	0.000	18.775		100.00	0.000	0.000
						C	0.000	18.775		100.00	0.000	10.027
L41 5.5000-3.0000	4.2475	0.85	0.00	1.0387	9.524	A	0.000	9.524	9.524	100.00	0.000	0.000
						B	0.000	9.524		100.00	0.000	0.000
						C	0.000	9.524		100.00	0.000	4.870
L42 3.0000-2.7500	2.8750	0.85	0.00	0.9989	0.956	A	0.000	0.956	0.956	100.00	0.000	0.000
						B	0.000	0.956		100.00	0.000	0.000
						C	0.000	0.956		100.00	0.000	0.479
L43 2.7500-0.0000	1.3720	0.85	0.00	0.9277	10.559	A	0.000	10.559	10.559	100.00	0.000	0.000
						B	0.000	10.559		100.00	0.000	0.000
						C	0.000	10.559		100.00	0.000	5.100

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 140.0000-135.0000	137.4744	1.353	0.01	7.084	A	0.000	7.084	7.084	100.00	0.000	0.000
					B	0.000	7.084		100.00	0.000	0.000
					C	0.000	7.084		100.00	0.000	0.000
L2 135.0000-130.0000	132.4759	1.343	0.01	7.522	A	0.000	7.522	7.522	100.00	0.000	0.000
					B	0.000	7.522		100.00	0.000	0.000
					C	0.000	7.522		100.00	0.000	0.000
L3 130.0000-125.0000	127.4772	1.332	0.01	7.960	A	0.000	7.960	7.960	100.00	0.000	0.000
					B	0.000	7.960		100.00	0.000	0.000
					C	0.000	7.960		100.00	0.000	0.000
L4 125.0000-120.0000	122.4784	1.321	0.01	8.398	A	0.000	8.398	8.398	100.00	0.000	0.000
					B	0.000	8.398		100.00	0.000	0.000
					C	0.000	8.398		100.00	0.000	0.080
L5 120.0000-115.0000	117.4794	1.309	0.01	8.836	A	0.000	8.836	8.836	100.00	0.000	0.000
					B	0.000	8.836		100.00	0.000	0.000
					C	0.000	8.836		100.00	0.000	0.398
L6 115.0000-110.0000	112.4804	1.297	0.01	9.274	A	0.000	9.274	9.274	100.00	0.000	0.000
					B	0.000	9.274		100.00	0.000	0.000
					C	0.000	9.274		100.00	0.000	1.388
L7 110.0000-105.0000	107.4813	1.285	0.01	9.711	A	0.000	9.711	9.711	100.00	0.000	0.000
					B	0.000	9.711		100.00	0.000	0.000
					C	0.000	9.711		100.00	0.000	1.471
L8 105.0000-104.0000	104.4993	1.277	0.01	1.995	A	0.000	1.995	1.995	100.00	0.000	0.000
					B	0.000	1.995		100.00	0.000	0.000
					C	0.000	1.995		100.00	0.000	0.444

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L9 104.0000-103.7500	103.8750	1.276	0.01	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.111
L10 103.7500-98.7500	101.2323	1.269	0.01	10.229	A	0.000	10.229	10.229	100.00	0.000	0.000
					B	0.000	10.229		100.00	0.000	0.000
					C	0.000	10.229		100.00	0.000	2.916
L11 98.7500-98.5000	98.6250	1.262	0.01	0.523	A	0.000	0.523	0.523	100.00	0.000	0.000
					B	0.000	0.523		100.00	0.000	0.000
					C	0.000	0.523		100.00	0.000	0.198
L12 98.5000-98.2500	98.3750	1.261	0.01	0.522	A	0.000	0.522	0.522	100.00	0.000	0.000
					B	0.000	0.522		100.00	0.000	0.000
					C	0.000	0.522		100.00	0.000	0.198
L13 98.2500-97.0000	97.6239	1.259	0.01	2.627	A	0.000	2.627	2.627	100.00	0.000	0.000
					B	0.000	2.627		100.00	0.000	0.000
					C	0.000	2.627		100.00	0.000	0.990
L14 97.0000-96.7500	96.8750	1.257	0.01	0.530	A	0.000	0.530	0.530	100.00	0.000	0.000
					B	0.000	0.530		100.00	0.000	0.000
					C	0.000	0.530		100.00	0.000	0.198
L15 96.7500-88.5000	92.5800	1.245	0.01	18.113	A	0.000	18.113	18.113	100.00	0.000	0.000
					B	0.000	18.113		100.00	0.000	0.000
					C	0.000	18.113		100.00	0.000	6.499
L16 88.5000-88.0000	88.2498	1.233	0.01	1.114	A	0.000	1.114	1.114	100.00	0.000	0.000
					B	0.000	1.114		100.00	0.000	0.000
					C	0.000	1.114		100.00	0.000	0.455
L17 88.0000-87.7500	87.8750	1.232	0.01	0.557	A	0.000	0.557	0.557	100.00	0.000	0.000
					B	0.000	0.557		100.00	0.000	0.000
					C	0.000	0.557		100.00	0.000	0.228
L18 87.7500-82.7500	85.2341	1.224	0.01	11.373	A	0.000	11.373	11.373	100.00	0.000	0.000
					B	0.000	11.373		100.00	0.000	0.000
					C	0.000	11.373		100.00	0.000	4.552
L19 82.7500-77.7500	80.2347	1.208	0.01	11.813	A	0.000	11.813	11.813	100.00	0.000	0.000
					B	0.000	11.813		100.00	0.000	0.000
					C	0.000	11.813		100.00	0.000	4.552
L20 77.7500-72.7500	75.2352	1.192	0.01	12.252	A	0.000	12.252	12.252	100.00	0.000	0.000
					B	0.000	12.252		100.00	0.000	0.000
					C	0.000	12.252		100.00	0.000	4.552
L21 72.7500-68.0800	70.4025	1.175	0.01	11.843	A	0.000	11.843	11.843	100.00	0.000	0.000
					B	0.000	11.843		100.00	0.000	0.000
					C	0.000	11.843		100.00	0.000	4.569
L22 68.0800-67.8300	67.9550	1.167	0.01	0.644	A	0.000	0.644	0.644	100.00	0.000	0.000
					B	0.000	0.644		100.00	0.000	0.000
					C	0.000	0.644		100.00	0.000	0.249
L23 67.8300-62.8300	65.3162	1.157	0.01	13.110	A	0.000	13.110	13.110	100.00	0.000	0.000
					B	0.000	13.110		100.00	0.000	0.000
					C	0.000	13.110		100.00	0.000	4.985
L24 62.8300-57.8300	60.3166	1.138	0.01	13.552	A	0.000	13.552	13.552	100.00	0.000	0.000
					B	0.000	13.552		100.00	0.000	0.000
					C	0.000	13.552		100.00	0.000	4.985
L25 57.8300-52.8300	55.3171	1.117	0.01	13.992	A	0.000	13.992	13.992	100.00	0.000	0.000
					B	0.000	13.992		100.00	0.000	0.000
					C	0.000	13.992		100.00	0.000	4.985
L26 52.8300-47.2500	50.0244	1.094	0.01	16.132	A	0.000	16.132	16.132	100.00	0.000	0.000
					B	0.000	16.132		100.00	0.000	0.000
					C	0.000	16.132		100.00	0.000	5.563
L27 47.2500-46.5000	46.8747	1.079	0.01	2.168	A	0.000	2.168	2.168	100.00	0.000	0.000
					B	0.000	2.168		100.00	0.000	0.000
					C	0.000	2.168		100.00	0.000	0.748
L28 46.5000-41.5000	43.9877	1.065	0.01	14.707	A	0.000	14.707	14.707	100.00	0.000	0.000
					B	0.000	14.707		100.00	0.000	0.000
					C	0.000	14.707		100.00	0.000	4.993
L29 41.5000-37.7500	39.6183	1.041	0.01	11.320	A	0.000	11.320	11.320	100.00	0.000	0.000
					B	0.000	11.320		100.00	0.000	0.000
					C	0.000	11.320		100.00	0.000	3.860
L30 37.7500-37.5000	37.6250	1.03	0.01	0.763	A	0.000	0.763	0.763	100.00	0.000	0.000
					B	0.000	0.763		100.00	0.000	0.000
					C	0.000	0.763		100.00	0.000	0.257
L31 37.5000-32.5000	34.9883	1.015	0.01	15.492	A	0.000	15.492	15.492	100.00	0.000	0.000
					B	0.000	15.492		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
					C	0.000	15.492		100.00	0.000	5.272
L32 32.5000-32.2500	32.3750	0.998	0.01	0.786	A	0.000	0.786	0.786	100.00	0.000	0.000
					B	0.000	0.786		100.00	0.000	0.000
					C	0.000	0.786		100.00	0.000	0.268
L33 32.2500-27.2500	29.7386	0.98	0.01	15.946	A	0.000	15.946	15.946	100.00	0.000	0.000
					B	0.000	15.946		100.00	0.000	0.000
					C	0.000	15.946		100.00	0.000	5.355
L34 27.2500-23.5000	25.3688	0.948	0.01	12.248	A	0.000	12.248	12.248	100.00	0.000	0.000
					B	0.000	12.248		100.00	0.000	0.000
					C	0.000	12.248		100.00	0.000	4.016
L35 23.5000-23.2500	23.3750	0.932	0.01	0.825	A	0.000	0.825	0.825	100.00	0.000	0.000
					B	0.000	0.825		100.00	0.000	0.000
					C	0.000	0.825		100.00	0.000	0.268
L36 23.2500-20.7500	21.9973	0.92	0.01	8.306	A	0.000	8.306	8.306	100.00	0.000	0.000
					B	0.000	8.306		100.00	0.000	0.000
					C	0.000	8.306		100.00	0.000	2.678
L37 20.7500-20.5000	20.6250	0.908	0.01	0.837	A	0.000	0.837	0.837	100.00	0.000	0.000
					B	0.000	0.837		100.00	0.000	0.000
					C	0.000	0.837		100.00	0.000	0.268
L38 20.5000-15.5000	17.9893	0.882	0.01	16.973	A	0.000	16.973	16.973	100.00	0.000	0.000
					B	0.000	16.973		100.00	0.000	0.000
					C	0.000	16.973		100.00	0.000	5.355
L39 15.5000-10.5000	12.9896	0.85	0.01	17.413	A	0.000	17.413	17.413	100.00	0.000	0.000
					B	0.000	17.413		100.00	0.000	0.000
					C	0.000	17.413		100.00	0.000	5.355
L40 10.5000-5.5000	7.9899	0.85	0.01	17.853	A	0.000	17.853	17.853	100.00	0.000	0.000
					B	0.000	17.853		100.00	0.000	0.000
					C	0.000	17.853		100.00	0.000	5.355
L41 5.5000-3.0000	4.2475	0.85	0.01	9.091	A	0.000	9.091	9.091	100.00	0.000	0.000
					B	0.000	9.091		100.00	0.000	0.000
					C	0.000	9.091		100.00	0.000	2.678
L42 3.0000-2.7500	2.8750	0.85	0.01	0.915	A	0.000	0.915	0.915	100.00	0.000	0.000
					B	0.000	0.915		100.00	0.000	0.000
					C	0.000	0.915		100.00	0.000	0.268
L43 2.7500-0.0000	1.3720	0.85	0.01	10.134	A	0.000	10.134	10.134	100.00	0.000	0.000
					B	0.000	10.134		100.00	0.000	0.000
					C	0.000	10.134		100.00	0.000	2.945

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice

Comb. No.	Description
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	140 - 135	Pole	Max Tension	26	0.00	-0.00	0.00
			Max. Compression	26	-8.90	0.01	-0.01
			Max. Mx	20	-3.96	26.25	-0.01
			Max. My	14	-3.96	0.01	-26.25
			Max. Vy	20	-6.30	26.25	-0.01
			Max. Vx	14	6.30	0.01	-26.25
			Max. Torque	12			0.00
L2	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-9.39	0.03	-0.02
			Max. Mx	20	-4.23	58.77	-0.01
			Max. My	14	-4.23	0.02	-58.78
			Max. Vy	20	-6.71	58.77	-0.01
			Max. Vx	14	6.71	0.02	-58.78
			Max. Torque	12			0.00
L3	130 - 125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-9.90	0.04	-0.03
			Max. Mx	20	-4.53	93.39	-0.02
			Max. My	14	-4.52	0.03	-93.40
			Max. Vy	20	-7.14	93.39	-0.02
			Max. Vx	14	7.14	0.03	-93.40
			Max. Torque	12			0.00
L4	125 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.52	0.11	-0.60
			Max. Mx	20	-8.91	146.28	-0.15
			Max. My	14	-8.91	0.01	-146.47
			Max. Vy	20	-15.56	146.28	-0.15
			Max. Vx	14	15.56	0.01	-146.47
			Max. Torque	22			0.50
L5	120 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.31	0.19	-0.65
			Max. Mx	20	-9.46	225.22	-0.17
			Max. My	14	-9.46	0.03	-225.41
			Max. Vy	20	-16.03	225.22	-0.17
			Max. Vx	14	16.03	0.03	-225.41

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	22			0.51
L6	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.94	0.38	-0.62
			Max. Mx	20	-14.20	339.45	-0.12
			Max. My	14	-14.19	0.04	-339.74
			Max. Vy	20	-22.50	339.45	-0.12
			Max. Vx	14	22.52	0.04	-339.74
			Max. Torque	22			0.51
L7	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.07	0.70	-0.80
			Max. Mx	20	-14.98	453.15	-0.14
			Max. My	14	-14.97	0.08	-453.53
			Max. Vy	20	-22.99	453.15	-0.14
			Max. Vx	14	23.01	0.08	-453.53
			Max. Torque	10			-0.51
L8	105 - 104	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.30	0.76	-0.84
			Max. Mx	20	-15.14	476.19	-0.14
			Max. My	14	-15.13	0.09	-476.59
			Max. Vy	20	-23.09	476.19	-0.14
			Max. Vx	14	23.11	0.09	-476.59
			Max. Torque	10			-0.52
L9	104 - 103.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.82	1.50	-0.43
			Max. Mx	20	-19.24	483.77	-0.05
			Max. My	14	-19.23	0.27	-483.86
			Max. Vy	20	-29.50	483.77	-0.05
			Max. Vx	14	29.58	0.27	-483.86
			Max. Torque	2			0.73
L10	103.75 - 98.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.30	1.85	-0.62
			Max. Mx	20	-20.32	632.81	-0.31
			Max. My	14	-20.30	0.56	-633.28
			Max. Vy	20	-30.12	632.81	-0.31
			Max. Vx	14	30.20	0.56	-633.28
			Max. Torque	24			0.87
L11	98.75 - 98.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.38	1.87	-0.63
			Max. Mx	20	-20.38	640.34	-0.33
			Max. My	14	-20.37	0.58	-640.83
			Max. Vy	20	-30.14	640.34	-0.33
			Max. Vx	14	30.22	0.58	-640.83
			Max. Torque	24			0.88
L12	98.5 - 98.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.47	1.89	-0.64
			Max. Mx	20	-20.46	647.88	-0.34
			Max. My	14	-20.44	0.59	-648.39
			Max. Vy	20	-30.18	647.88	-0.34
			Max. Vx	14	30.26	0.59	-648.39
			Max. Torque	24			0.89
L13	98.25 - 97	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.93	1.97	-0.69
			Max. Mx	20	-20.79	685.72	-0.40
			Max. My	14	-20.78	0.66	-686.33
			Max. Vy	20	-30.37	685.72	-0.40
			Max. Vx	14	30.45	0.66	-686.33
			Max. Torque	24			0.94
L14	97 - 96.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.01	1.99	-0.70
			Max. Mx	20	-20.86	693.32	-0.42
			Max. My	14	-20.85	0.68	-693.94
			Max. Vy	20	-30.40	693.32	-0.42
			Max. Vx	14	30.48	0.68	-693.94
			Max. Torque	24			0.95
L15	96.75 - 88.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.75	2.51	-0.99
			Max. Mx	20	-22.41	849.78	-0.69
			Max. My	14	-22.40	0.99	-850.77

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-31.92	849.78	-0.69
			Max. Vx	14	32.00	0.99	-850.77
			Max. Torque	24			1.15
L16	88.5 - 88	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.81	2.90	-1.22
			Max. Mx	20	-23.87	970.64	-0.89
			Max. My	14	-23.86	1.22	-971.91
			Max. Vy	20	-32.52	970.64	-0.89
			Max. Vx	14	32.60	1.22	-971.91
			Max. Torque	24			1.31
L17	88 - 87.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.93	2.93	-1.23
			Max. Mx	20	-23.96	978.77	-0.91
			Max. My	14	-23.95	1.24	-980.06
			Max. Vy	20	-32.55	978.77	-0.91
			Max. Vx	14	32.63	1.24	-980.06
			Max. Torque	24			1.33
L18	87.75 - 82.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.21	3.50	-1.56
			Max. Mx	20	-25.64	1143.44	-1.18
			Max. My	14	-25.63	1.56	-1145.10
			Max. Vy	20	-33.30	1143.44	-1.18
			Max. Vx	14	33.38	1.56	-1145.10
			Max. Torque	24			1.57
L19	82.75 - 77.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.68	4.09	-1.81
			Max. Mx	20	-27.50	1312.01	-1.46
			Max. My	14	-27.49	1.88	-1314.01
			Max. Vy	20	-34.11	1312.01	-1.46
			Max. Vx	14	34.19	1.88	-1314.01
			Max. Torque	24			1.77
L20	77.75 - 72.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.01	4.69	-2.16
			Max. Mx	20	-29.27	1484.38	-1.74
			Max. My	14	-29.26	2.20	-1486.73
			Max. Vy	20	-34.84	1484.38	-1.74
			Max. Vx	14	34.91	2.20	-1486.73
			Max. Torque	24			2.03
L21	72.75 - 68.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.21	5.27	-2.48
			Max. Mx	20	-30.95	1648.65	-2.00
			Max. My	14	-30.94	2.51	-1651.33
			Max. Vy	20	-35.52	1648.65	-2.00
			Max. Vx	14	35.59	2.51	-1651.33
			Max. Torque	24			2.29
L22	68.08 - 67.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.34	5.30	-2.50
			Max. Mx	20	-31.07	1657.54	-2.02
			Max. My	14	-31.06	2.52	-1660.23
			Max. Vy	20	-35.54	1657.54	-2.02
			Max. Vx	14	35.62	2.52	-1660.23
			Max. Torque	24			2.30
L23	67.83 - 62.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.89	5.92	-2.86
			Max. Mx	20	-33.04	1837.16	-2.30
			Max. My	14	-33.03	2.85	-1840.20
			Max. Vy	20	-36.30	1837.16	-2.30
			Max. Vx	14	36.37	2.85	-1840.20
			Max. Torque	24			2.59
L24	62.83 - 57.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.47	6.56	-3.22
			Max. Mx	20	-35.05	2020.48	-2.59

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-35.05	3.18	-2023.87
			Max. Vy	20	-37.03	2020.48	-2.59
			Max. Vx	14	37.11	3.18	-2023.87
			Max. Torque	24			2.89
L25	57.83 - 52.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.06	7.21	-3.59
			Max. Mx	20	-37.10	2207.41	-2.87
			Max. My	14	-37.09	3.51	-2211.14
			Max. Vy	20	-37.74	2207.41	-2.87
			Max. Vx	14	37.82	3.51	-2211.14
			Max. Torque	24			3.18
L26	52.83 - 47.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.76	7.38	-3.69
			Max. Mx	20	-37.65	2257.73	-2.95
			Max. My	14	-37.64	3.60	-2261.55
			Max. Vy	20	-37.93	2257.73	-2.95
			Max. Vx	14	38.01	3.60	-2261.55
			Max. Torque	24			3.26
L27	47.25 - 46.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.10	8.04	-4.07
			Max. Mx	20	-41.13	2449.54	-3.24
			Max. My	14	-41.12	3.94	-2453.70
			Max. Vy	20	-38.76	2449.54	-3.24
			Max. Vx	14	38.84	3.94	-2453.70
			Max. Torque	24			3.57
L28	46.5 - 41.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.87	8.69	-4.44
			Max. Mx	20	-43.35	2645.05	-3.53
			Max. My	14	-43.35	4.28	-2649.55
			Max. Vy	20	-39.44	2645.05	-3.53
			Max. Vx	14	39.51	4.28	-2649.55
			Max. Torque	24			3.87
L29	41.5 - 37.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.96	9.18	-4.73
			Max. Mx	20	-45.05	2793.85	-3.74
			Max. My	14	-45.05	4.53	-2798.60
			Max. Vy	20	-39.93	2793.85	-3.74
			Max. Vx	14	40.01	4.53	-2798.60
			Max. Torque	24			4.10
L30	37.75 - 37.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.10	9.22	-4.75
			Max. Mx	20	-45.19	2803.84	-3.76
			Max. My	14	-45.19	4.55	-2808.61
			Max. Vy	20	-39.95	2803.84	-3.76
			Max. Vx	14	40.02	4.55	-2808.61
			Max. Torque	24			4.11
L31	37.5 - 32.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.02	9.88	-5.12
			Max. Mx	20	-47.57	3005.24	-4.05
			Max. My	14	-47.57	4.89	-3010.34
			Max. Vy	20	-40.60	3005.24	-4.05
			Max. Vx	14	40.68	4.89	-3010.34
			Max. Torque	24			4.43
L32	32.5 - 32.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.17	9.91	-5.15
			Max. Mx	20	-47.71	3015.39	-4.06
			Max. My	14	-47.71	4.90	-3020.52
			Max. Vy	20	-40.63	3015.39	-4.06
			Max. Vx	14	40.70	4.90	-3020.52
			Max. Torque	24			4.45
L33	32.25 - 27.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.23	10.54	-5.51
			Max. Mx	20	-50.24	3220.17	-4.35
			Max. My	14	-50.24	5.25	-3225.63
			Max. Vy	20	-41.27	3220.17	-4.35
			Max. Vx	14	41.35	5.25	-3225.63

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	24			4.77
L34	27.25 - 23.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.55	11.01	-5.78
			Max. Mx	20	-52.17	3375.80	-4.57
			Max. My	14	-52.17	5.50	-3381.50
			Max. Vy	20	-41.73	3375.80	-4.57
			Max. Vx	14	41.81	5.50	-3381.50
			Max. Torque	24			5.01
L35	23.5 - 23.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.72	11.04	-5.80
			Max. Mx	20	-52.34	3386.23	-4.59
			Max. My	14	-52.33	5.52	-3391.95
			Max. Vy	20	-41.74	3386.23	-4.59
			Max. Vx	14	41.82	5.52	-3391.95
			Max. Torque	24			5.02
L36	23.25 - 20.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.44	11.36	-5.98
			Max. Mx	20	-53.78	3491.01	-4.73
			Max. My	14	-53.78	5.69	-3496.89
			Max. Vy	20	-42.07	3491.01	-4.73
			Max. Vx	14	42.14	5.69	-3496.89
			Max. Torque	24			5.18
L37	20.75 - 20.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.60	11.39	-6.00
			Max. Mx	20	-53.94	3501.53	-4.75
			Max. My	14	-53.93	5.71	-3507.43
			Max. Vy	20	-42.08	3501.53	-4.75
			Max. Vx	14	42.15	5.71	-3507.43
			Max. Torque	24			5.20
L38	20.5 - 15.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.83	12.01	-6.36
			Max. Mx	20	-56.67	3713.37	-5.04
			Max. My	14	-56.67	6.05	-3719.60
			Max. Vy	20	-42.64	3713.37	-5.04
			Max. Vx	14	42.72	6.05	-3719.60
			Max. Torque	24			5.51
L39	15.5 - 10.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.07	12.63	-6.72
			Max. Mx	20	-59.44	3927.90	-5.33
			Max. My	14	-59.44	6.40	-3934.46
			Max. Vy	20	-43.17	3927.90	-5.33
			Max. Vx	14	43.24	6.40	-3934.46
			Max. Torque	24			5.81
L40	10.5 - 5.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.30	13.23	-7.06
			Max. Mx	20	-62.24	4145.02	-5.62
			Max. My	14	-62.24	6.75	-4151.89
			Max. Vy	20	-43.68	4145.02	-5.62
			Max. Vx	14	43.75	6.75	-4151.89
			Max. Torque	24			6.12
L41	5.5 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.91	13.51	-7.22
			Max. Mx	20	-63.66	4254.54	-5.77
			Max. My	14	-63.66	6.92	-4261.57
			Max. Vy	20	-43.94	4254.54	-5.77
			Max. Vx	14	44.01	6.92	-4261.57
			Max. Torque	24			6.28
L42	3 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.07	13.54	-7.24
			Max. Mx	20	-63.82	4265.52	-5.78
			Max. My	14	-63.82	6.94	-4272.57
			Max. Vy	20	-43.94	4265.52	-5.78
			Max. Vx	14	44.01	6.94	-4272.57
			Max. Torque	24			6.30
L43	2.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.84	13.81	-7.40
			Max. Mx	20	-65.39	4386.81	-5.95
			Max. My	14	-65.39	7.13	-4394.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-44.25	4386.81	-5.95
			Max. Vx	14	44.33	7.13	-4394.03
			Max. Torque	24			6.48

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	99.84	-0.00	0.00
	Max. H_x	21	49.06	44.22	-0.04
	Max. H_z	3	49.06	-0.04	44.29
	Max. M_x	2	4391.33	-0.04	44.29
	Max. M_z	8	4381.71	-44.22	0.04
	Max. Torsion	24	6.48	22.07	38.34
	Min. Vert	21	49.06	44.22	-0.04
	Min. H_x	9	49.06	-44.22	0.04
	Min. H_z	15	49.06	0.04	-44.29
	Min. M_x	14	-4394.03	0.04	-44.29
	Min. M_z	20	-4386.81	44.22	-0.04
	Min. Torsion	12	-6.48	-22.07	-38.34

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	54.51	-0.00	0.00	1.08	2.04	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	65.41	0.04	-44.29	-4391.33	-2.09	-5.75
0.9 Dead+1.0 Wind 0 deg - No Ice	49.06	0.04	-44.29	-4338.48	-2.69	-5.75
1.2 Dead+1.0 Wind 30 deg - No Ice	65.41	22.15	-38.38	-3805.14	-2193.60	-3.48
0.9 Dead+1.0 Wind 30 deg - No Ice	49.06	22.15	-38.38	-3759.38	-2167.66	-3.48
1.2 Dead+1.0 Wind 60 deg - No Ice	65.41	38.32	-22.18	-2199.00	-3796.68	-0.27
0.9 Dead+1.0 Wind 60 deg - No Ice	49.06	38.32	-22.18	-2172.70	-3751.31	-0.27
1.2 Dead+1.0 Wind 90 deg - No Ice	65.41	44.22	-0.04	-3.27	-4381.71	3.00
0.9 Dead+1.0 Wind 90 deg - No Ice	49.06	44.22	-0.04	-3.57	-4329.28	3.00
1.2 Dead+1.0 Wind 120 deg - No Ice	65.41	38.27	22.11	2193.71	-3792.11	5.47
0.9 Dead+1.0 Wind 120 deg - No Ice	49.06	38.27	22.11	2166.80	-3746.79	5.47
1.2 Dead+1.0 Wind 150 deg - No Ice	65.41	22.07	38.34	3803.25	-2185.65	6.48
0.9 Dead+1.0 Wind 150 deg - No Ice	49.06	22.07	38.34	3756.84	-2159.78	6.47
1.2 Dead+1.0 Wind 180 deg - No Ice	65.41	-0.04	44.29	4394.03	7.13	5.74
0.9 Dead+1.0 Wind 180 deg - No Ice	49.06	-0.04	44.29	4340.48	6.43	5.74
1.2 Dead+1.0 Wind 210 deg - No Ice	65.41	-22.15	38.38	3807.85	2198.67	3.48
0.9 Dead+1.0 Wind 210 deg - No Ice	49.06	-22.15	38.38	3761.39	2171.41	3.47

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 240 deg - No Ice	65.41	-38.32	22.18	2201.70	3801.77	0.28
0.9 Dead+1.0 Wind 240 deg - No Ice	49.06	-38.32	22.18	2174.70	3755.09	0.27
1.2 Dead+1.0 Wind 270 deg - No Ice	65.41	-44.22	0.04	5.94	4386.81	-3.00
0.9 Dead+1.0 Wind 270 deg - No Ice	49.06	-44.22	0.04	5.55	4333.06	-3.00
1.2 Dead+1.0 Wind 300 deg - No Ice	65.41	-38.27	-22.11	-2191.05	3797.18	-5.47
0.9 Dead+1.0 Wind 300 deg - No Ice	49.06	-38.27	-22.11	-2164.83	3750.54	-5.47
1.2 Dead+1.0 Wind 330 deg - No Ice	65.41	-22.07	-38.34	-3800.58	2190.69	-6.48
0.9 Dead+1.0 Wind 330 deg - No Ice	49.06	-22.07	-38.34	-3754.86	2163.52	-6.48
1.2 Dead+1.0 Ice+1.0 Temp	99.84	0.00	-0.00	7.40	13.81	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	99.84	0.01	-10.57	-1073.90	13.14	-1.90
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	99.84	5.28	-9.15	-929.43	-526.65	-1.13
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	99.84	9.14	-5.29	-533.91	-921.59	-0.05
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	99.84	10.55	-0.01	6.66	-1065.86	1.04
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	99.84	9.14	5.28	547.46	-920.78	1.85
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	99.84	5.27	9.15	943.56	-525.25	2.16
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	99.84	-0.01	10.57	1088.85	14.77	1.90
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	99.84	-5.28	9.15	944.38	554.57	1.13
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	99.84	-9.14	5.29	548.87	949.51	0.05
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	99.84	-10.55	0.01	8.29	1093.77	-1.04
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	99.84	-9.14	-5.28	-532.51	948.70	-1.85
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	99.84	-5.27	-9.15	-928.62	553.16	-2.16
Dead+Wind 0 deg - Service	54.51	0.01	-9.13	-898.63	1.17	-1.19
Dead+Wind 30 deg - Service	54.51	4.57	-7.91	-778.64	-447.77	-0.72
Dead+Wind 60 deg - Service	54.51	7.90	-4.57	-449.62	-776.16	-0.06
Dead+Wind 90 deg - Service	54.51	9.11	-0.01	0.18	-895.91	0.62
Dead+Wind 120 deg - Service	54.51	7.89	4.56	450.23	-775.21	1.13
Dead+Wind 150 deg - Service	54.51	4.55	7.90	779.94	-446.13	1.34
Dead+Wind 180 deg - Service	54.51	-0.01	9.13	900.87	3.06	1.19
Dead+Wind 210 deg - Service	54.51	-4.57	7.91	780.89	452.00	0.72
Dead+Wind 240 deg - Service	54.51	-7.90	4.57	451.86	780.39	0.06
Dead+Wind 270 deg - Service	54.51	-9.11	0.01	2.06	900.14	-0.62
Dead+Wind 300 deg - Service	54.51	-7.89	-4.56	-447.99	779.44	-1.13
Dead+Wind 330 deg - Service	54.51	-4.55	-7.90	-777.70	450.36	-1.34

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-54.51	0.00	0.00	54.51	-0.00	0.000%
2	0.04	-65.41	-44.29	-0.04	65.41	44.29	0.000%
3	0.04	-49.06	-44.29	-0.04	49.06	44.29	0.000%
4	22.15	-65.41	-38.38	-22.15	65.41	38.38	0.000%
5	22.15	-49.06	-38.38	-22.15	49.06	38.38	0.000%
6	38.32	-65.41	-22.18	-38.32	65.41	22.18	0.000%
7	38.32	-49.06	-22.18	-38.32	49.06	22.18	0.000%
8	44.22	-65.41	-0.04	-44.22	65.41	0.04	0.001%
9	44.22	-49.06	-0.04	-44.22	49.06	0.04	0.001%
10	38.27	-65.41	22.11	-38.27	65.41	-22.11	0.000%
11	38.27	-49.06	22.11	-38.27	49.06	-22.11	0.000%
12	22.07	-65.41	38.34	-22.07	65.41	-38.34	0.000%
13	22.07	-49.06	38.34	-22.07	49.06	-38.34	0.000%
14	-0.04	-65.41	44.29	0.04	65.41	-44.29	0.000%
15	-0.04	-49.06	44.29	0.04	49.06	-44.29	0.000%
16	-22.15	-65.41	38.38	22.15	65.41	-38.38	0.000%
17	-22.15	-49.06	38.38	22.15	49.06	-38.38	0.000%
18	-38.32	-65.41	22.18	38.32	65.41	-22.18	0.000%
19	-38.32	-49.06	22.18	38.32	49.06	-22.18	0.000%
20	-44.22	-65.41	0.04	44.22	65.41	-0.04	0.001%
21	-44.22	-49.06	0.04	44.22	49.06	-0.04	0.001%
22	-38.27	-65.41	-22.11	38.27	65.41	22.11	0.000%
23	-38.27	-49.06	-22.11	38.27	49.06	22.11	0.000%
24	-22.07	-65.41	-38.34	22.07	65.41	38.34	0.000%
25	-22.07	-49.06	-38.34	22.07	49.06	38.34	0.000%
26	0.00	-99.84	0.00	-0.00	99.84	0.00	0.000%
27	0.01	-99.84	-10.57	-0.01	99.84	10.57	0.000%
28	5.28	-99.84	-9.15	-5.28	99.84	9.15	0.000%
29	9.14	-99.84	-5.29	-9.14	99.84	5.29	0.000%
30	10.55	-99.84	-0.01	-10.55	99.84	0.01	0.000%
31	9.14	-99.84	5.28	-9.14	99.84	-5.28	0.000%
32	5.27	-99.84	9.15	-5.27	99.84	-9.15	0.000%
33	-0.01	-99.84	10.57	0.01	99.84	-10.57	0.000%
34	-5.28	-99.84	9.15	5.28	99.84	-9.15	0.000%
35	-9.14	-99.84	5.29	9.14	99.84	-5.29	0.000%
36	-10.55	-99.84	0.01	10.55	99.84	-0.01	0.000%
37	-9.14	-99.84	-5.28	9.14	99.84	5.28	0.000%
38	-5.27	-99.84	-9.15	5.27	99.84	9.15	0.000%
39	0.01	-54.51	-9.13	-0.01	54.51	9.13	0.002%
40	4.57	-54.51	-7.91	-4.57	54.51	7.91	0.000%
41	7.90	-54.51	-4.57	-7.90	54.51	4.57	0.000%
42	9.12	-54.51	-0.01	-9.11	54.51	0.01	0.002%
43	7.89	-54.51	4.56	-7.89	54.51	-4.56	0.000%
44	4.55	-54.51	7.90	-4.55	54.51	-7.90	0.000%
45	-0.01	-54.51	9.13	0.01	54.51	-9.13	0.002%
46	-4.57	-54.51	7.91	4.57	54.51	-7.91	0.000%
47	-7.90	-54.51	4.57	7.90	54.51	-4.57	0.000%
48	-9.12	-54.51	0.01	9.11	54.51	-0.01	0.002%
49	-7.89	-54.51	-4.56	7.89	54.51	4.56	0.000%
50	-4.55	-54.51	-7.90	4.55	54.51	7.90	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	19	0.00000001	0.00009650
3	Yes	19	0.00000001	0.00007030
4	Yes	23	0.00000001	0.00007892
5	Yes	22	0.00000001	0.00011927
6	Yes	23	0.00000001	0.00008034
7	Yes	22	0.00000001	0.00012150
8	Yes	18	0.00000001	0.00009629
9	Yes	18	0.00000001	0.00007062
10	Yes	23	0.00000001	0.00008173
11	Yes	22	0.00000001	0.00012370
12	Yes	23	0.00000001	0.00007776
13	Yes	22	0.00000001	0.00011747
14	Yes	19	0.00000001	0.00010599
15	Yes	19	0.00000001	0.00007707
16	Yes	23	0.00000001	0.00008173
17	Yes	22	0.00000001	0.00012356
18	Yes	23	0.00000001	0.00008020
19	Yes	22	0.00000001	0.00012118
20	Yes	18	0.00000001	0.00011599
21	Yes	18	0.00000001	0.00008516
22	Yes	23	0.00000001	0.00007820
23	Yes	22	0.00000001	0.00011814
24	Yes	23	0.00000001	0.00008228
25	Yes	22	0.00000001	0.00012452
26	Yes	13	0.00000001	0.00012824
27	Yes	20	0.00000001	0.00009684
28	Yes	20	0.00000001	0.00012169
29	Yes	20	0.00000001	0.00012248
30	Yes	20	0.00000001	0.00009568
31	Yes	20	0.00000001	0.00012556
32	Yes	20	0.00000001	0.00012266
33	Yes	20	0.00000001	0.00009811
34	Yes	20	0.00000001	0.00012871
35	Yes	20	0.00000001	0.00012749
36	Yes	20	0.00000001	0.00009809
37	Yes	20	0.00000001	0.00012440
38	Yes	20	0.00000001	0.00012772
39	Yes	15	0.00000001	0.00012165
40	Yes	17	0.00000001	0.00010870
41	Yes	17	0.00000001	0.00011594
42	Yes	15	0.00000001	0.00007762
43	Yes	17	0.00000001	0.00012632
44	Yes	17	0.00000001	0.00010523
45	Yes	15	0.00000001	0.00012371
46	Yes	17	0.00000001	0.00012440
47	Yes	17	0.00000001	0.00011536
48	Yes	15	0.00000001	0.00007925
49	Yes	17	0.00000001	0.00010701
50	Yes	17	0.00000001	0.00012991

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	22.89	46	1.55	0.00
L2	135 - 130	21.27	46	1.54	0.00
L3	130 - 125	19.67	46	1.52	0.00
L4	125 - 120	18.10	46	1.48	0.00
L5	120 - 115	16.57	46	1.44	0.00
L6	115 - 110	15.09	46	1.38	0.00
L7	110 - 105	13.69	46	1.29	0.00
L8	105 - 104	12.39	46	1.19	0.00
L9	104 - 103.75	12.14	46	1.17	0.00
L10	103.75 - 98.75	12.08	46	1.17	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L11	98.75 - 98.5	10.89	46	1.10	0.00
L12	98.5 - 98.25	10.83	46	1.10	0.00
L13	98.25 - 97	10.78	46	1.09	0.00
L14	97 - 96.75	10.49	46	1.08	0.00
L15	96.75 - 88.5	10.44	46	1.08	0.00
L16	91.75 - 88	9.34	46	1.01	0.00
L17	88 - 87.75	8.56	46	0.98	0.00
L18	87.75 - 82.75	8.51	46	0.97	0.00
L19	82.75 - 77.75	7.52	46	0.91	0.00
L20	77.75 - 72.75	6.60	46	0.85	0.00
L21	72.75 - 68.08	5.74	46	0.79	0.00
L22	68.08 - 67.83	5.00	46	0.73	0.00
L23	67.83 - 62.83	4.96	46	0.72	0.00
L24	62.83 - 57.83	4.23	46	0.66	0.00
L25	57.83 - 52.83	3.57	46	0.60	0.00
L26	52.83 - 47.25	2.97	46	0.54	0.00
L27	51.5 - 46.5	2.82	46	0.53	0.00
L28	46.5 - 41.5	2.28	46	0.49	0.00
L29	41.5 - 37.75	1.80	46	0.43	0.00
L30	37.75 - 37.5	1.48	46	0.39	0.00
L31	37.5 - 32.5	1.46	46	0.38	0.00
L32	32.5 - 32.25	1.09	46	0.33	0.00
L33	32.25 - 27.25	1.07	46	0.32	0.00
L34	27.25 - 23.5	0.76	46	0.27	0.00
L35	23.5 - 23.25	0.56	46	0.23	0.00
L36	23.25 - 20.75	0.55	46	0.23	0.00
L37	20.75 - 20.5	0.44	46	0.20	0.00
L38	20.5 - 15.5	0.43	46	0.20	0.00
L39	15.5 - 10.5	0.24	46	0.15	0.00
L40	10.5 - 5.5	0.11	46	0.10	0.00
L41	5.5 - 3	0.03	46	0.05	0.00
L42	3 - 2.75	0.01	46	0.03	0.00
L43	2.75 - 0	0.01	46	0.03	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.0000	APXVSPP18-C-A20 w/ Mount Pipe	46	22.89	1.55	0.00	18506
137.0000	TME-1900MHz RRH (65 MHz)	46	21.92	1.55	0.00	18506
121.0000	7770.00 w/ Mount Pipe	46	16.87	1.45	0.00	5734
115.0000	AIR 32 B2A/B66AA w/ Mount Pipe	46	15.09	1.38	0.00	3967
104.0000	LNX-6514DS-VTM w/ Mount Pipe	46	12.14	1.17	0.00	3349
95.0000	APXV18-206517S-C w/ Mount Pipe	46	10.04	1.05	0.00	4461
80.0000	OG-860/1920/GPS-A	46	7.01	0.88	0.00	4647

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	111.53	14	7.56	0.01
L2	135 - 130	103.65	14	7.53	0.01
L3	130 - 125	95.84	14	7.41	0.01
L4	125 - 120	88.19	14	7.24	0.01
L5	120 - 115	80.73	14	7.02	0.01

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L6	115 - 110	73.55	14	6.72	0.01
L7	110 - 105	66.73	14	6.32	0.01
L8	105 - 104	60.39	16	5.83	0.01
L9	104 - 103.75	59.18	16	5.72	0.01
L10	103.75 - 98.75	58.88	16	5.71	0.01
L11	98.75 - 98.5	53.09	16	5.37	0.01
L12	98.5 - 98.25	52.81	16	5.35	0.01
L13	98.25 - 97	52.53	16	5.34	0.01
L14	97 - 96.75	51.15	16	5.28	0.01
L15	96.75 - 88.5	50.87	16	5.27	0.01
L16	91.75 - 88	45.55	16	4.92	0.01
L17	88 - 87.75	41.75	16	4.76	0.01
L18	87.75 - 82.75	41.50	16	4.75	0.01
L19	82.75 - 77.75	36.68	16	4.46	0.01
L20	77.75 - 72.75	32.17	16	4.16	0.01
L21	72.75 - 68.08	27.98	16	3.85	0.01
L22	68.08 - 67.83	24.37	16	3.55	0.01
L23	67.83 - 62.83	24.18	16	3.53	0.01
L24	62.83 - 57.83	20.64	16	3.24	0.01
L25	57.83 - 52.83	17.40	16	2.95	0.01
L26	52.83 - 47.25	14.48	16	2.65	0.00
L27	51.5 - 46.5	13.75	16	2.57	0.00
L28	46.5 - 41.5	11.14	16	2.40	0.00
L29	41.5 - 37.75	8.79	16	2.10	0.00
L30	37.75 - 37.5	7.22	16	1.88	0.00
L31	37.5 - 32.5	7.12	16	1.87	0.00
L32	32.5 - 32.25	5.31	16	1.59	0.00
L33	32.25 - 27.25	5.23	16	1.58	0.00
L34	27.25 - 23.5	3.71	16	1.32	0.00
L35	23.5 - 23.25	2.75	16	1.13	0.00
L36	23.25 - 20.75	2.69	16	1.11	0.00
L37	20.75 - 20.5	2.14	16	1.00	0.00
L38	20.5 - 15.5	2.09	16	0.99	0.00
L39	15.5 - 10.5	1.18	16	0.74	0.00
L40	10.5 - 5.5	0.54	16	0.50	0.00
L41	5.5 - 3	0.14	16	0.25	0.00
L42	3 - 2.75	0.04	16	0.13	0.00
L43	2.75 - 0	0.04	16	0.12	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.0000	APXVSPP18-C-A20 w/ Mount Pipe	14	111.53	7.56	0.01	3902
137.0000	TME-1900MHz RRH (65 MHz)	14	106.79	7.55	0.01	3902
121.0000	7770.00 w/ Mount Pipe	14	82.20	7.07	0.01	1208
115.0000	AIR 32 B2A/B66AA w/ Mount Pipe	14	73.55	6.72	0.01	834
104.0000	LNX-6514DS-VTM w/ Mount Pipe	16	59.18	5.72	0.01	699
95.0000	APXV18-206517S-C w/ Mount Pipe	16	48.97	5.14	0.01	927
80.0000	OG-860/1920/GPS-A	16	34.16	4.30	0.01	962

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	140 - 135 (1)	TP17.0151x16x0.25	5.0000	0.0000	0.0	13.4959	-3.96
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	5.0000	0.0000	0.0	14.3131	-4.23
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	5.0000	0.0000	0.0	15.1303	-4.52
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	5.0000	0.0000	0.0	15.9475	-8.91
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	5.0000	0.0000	0.0	16.7647	-9.46
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	5.0000	0.0000	0.0	17.5819	-14.19
L7	110 - 105 (7)	TP23.106x22.0909x0.25	5.0000	0.0000	0.0	18.3991	-14.97
L8	105 - 104 (8)	TP23.309x23.106x0.25	1.0000	0.0000	0.0	18.5625	-15.13
L9	104 - 103.75 (9)	TP23.3598x23.309x0.4625	0.2500	0.0000	0.0	34.0998	-19.22
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	5.0000	0.0000	0.0	34.6673	-20.30
L11	98.75 - 98.5 (11)	TP24.4257x24.375x0.45	0.2500	0.0000	0.0	34.7408	-20.37
L12	98.5 - 98.25 (12)	TP24.4765x24.4257x0.725	0.2500	0.0000	0.0	55.4478	-20.44
L13	98.25 - 97 (13)	TP24.7303x24.4765x0.725	1.2500	0.0000	0.0	56.0403	-20.78
L14	97 - 96.75 (14)	TP24.781x24.7303x0.5125	0.2500	0.0000	0.0	40.0491	-20.85
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	8.2500	0.0000	0.0	40.7268	-22.40
L16	88.5 - 88 (16)	TP26.0576x25.2962x0.5625	3.7500	0.0000	0.0	46.1780	-23.86
L17	88 - 87.75 (17)	TP26.1084x26.0576x0.7625	0.2500	0.0000	0.0	62.2304	-23.95
L18	87.75 - 82.75 (18)	TP27.1236x26.1084x0.7375	5.0000	0.0000	0.0	62.6605	-25.63
L19	82.75 - 77.75 (19)	TP28.1389x27.1236x0.725	5.0000	0.0000	0.0	63.9977	-27.49
L20	77.75 - 72.75 (20)	TP29.1542x28.1389x0.7125	5.0000	0.0000	0.0	65.2523	-29.26
L21	72.75 - 68.08 (21)	TP30.1024x29.1542x0.6875	4.6700	0.0000	0.0	65.1173	-30.94
L22	68.08 - 67.83 (22)	TP30.1532x30.1024x0.8125	0.2500	0.0000	0.0	76.7625	-31.06
L23	67.83 - 62.83 (23)	TP31.1684x30.1532x0.7875	5.0000	0.0000	0.0	77.0385	-33.03
L24	62.83 - 57.83 (24)	TP32.1837x31.1684x0.7625	5.0000	0.0000	0.0	77.1469	-35.04
L25	57.83 - 52.83 (25)	TP33.199x32.1837x0.75	5.0000	0.0000	0.0	78.3643	-37.09
L26	52.83 - 47.25 (26)	TP34.332x33.199x0.75	5.5800	0.0000	0.0	79.0164	-37.64
L27	47.25 - 46.5 (27)	TP33.8592x32.844x0.8	5.0000	0.0000	0.0	85.1604	-41.12
L28	46.5 - 41.5 (28)	TP34.8743x33.8592x0.8	5.0000	0.0000	0.0	87.7754	-43.35
L29	41.5 - 37.75 (29)	TP35.6357x34.8743x0.775	3.7500	0.0000	0.0	86.9948	-45.04
L30	37.75 - 37.5 (30)	TP35.6864x35.6357x0.85	0.2500	0.0000	0.0	95.3473	-45.19
L31	37.5 - 32.5 (31)	TP36.7016x35.6864x0.825	5.0000	0.0000	0.0	95.3061	-47.57
L32	32.5 - 32.25 (32)	TP36.7523x36.7016x0.875	0.2500	0.0000	0.0	101.0840	-47.71
L33	32.25 - 27.25 (33)	TP37.7675x36.7523x0.8625	5.0000	0.0000	0.0	102.4940	-50.24
L34	27.25 - 23.5 (34)	TP38.5288x37.7675x0.85	3.7500	0.0000	0.0	103.1270	-52.17

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u
	ft		ft	ft		in^2	K
L35	23.5 - 23.25 (35)	TP38.5796x38.5288x0.95	0.2500	0.0000	0.0	115.1090	-52.33
L36	23.25 - 20.75 (36)	TP39.0872x38.5796x0.95	2.5000	0.0000	0.0	116.6620	-53.78
L37	20.75 - 20.5 (37)	TP39.1379x39.0872x0.9	0.2500	0.0000	0.0	110.8130	-53.93
L38	20.5 - 15.5 (38)	TP40.1531x39.1379x0.875	5.0000	0.0000	0.0	110.6660	-56.66
L39	15.5 - 10.5 (39)	TP41.1682x40.1531x0.8625	5.0000	0.0000	0.0	111.9390	-59.44
L40	10.5 - 5.5 (40)	TP42.1833x41.1682x0.85	5.0000	0.0000	0.0	113.1290	-62.24
L41	5.5 - 3 (41)	TP42.6909x42.1833x0.8375	2.5000	0.0000	0.0	112.8680	-63.66
L42	3 - 2.75 (42)	TP42.7417x42.6909x0.9	0.2500	0.0000	0.0	121.2570	-63.82
L43	2.75 - 0 (43)	TP43.3x42.7417x0.9	2.7500	0.0000	0.0	122.8750	-65.39

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	M_{uy}
	ft		kip-ft	kip-ft
L1	140 - 135 (1)	TP17.0151x16x0.25	26.25	0.00
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	58.78	0.00
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	93.40	0.00
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	146.47	0.00
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	225.41	0.00
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	339.74	0.00
L7	110 - 105 (7)	TP23.106x22.0909x0.25	453.53	0.00
L8	105 - 104 (8)	TP23.309x23.106x0.25	476.59	0.00
L9	104 - 103.75 (9)	TP23.3598x23.309x0.4625	483.89	0.00
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	633.43	0.00
L11	98.75 - 98.5 (11)	TP24.4257x24.375x0.45	640.99	0.00
L12	98.5 - 98.25 (12)	TP24.4765x24.4257x0.725	648.56	0.00
L13	98.25 - 97 (13)	TP24.7303x24.4765x0.725	686.52	0.00
L14	97 - 96.75 (14)	TP24.781x24.7303x0.5125	694.15	0.00
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	851.11	0.00
L16	88.5 - 88 (16)	TP26.0576x25.2962x0.5625	972.33	0.00
L17	88 - 87.75 (17)	TP26.1084x26.0576x0.7625	980.49	0.00
L18	87.75 - 82.75 (18)	TP27.1236x26.1084x0.7375	1145.67	0.00
L19	82.75 - 77.75 (19)	TP28.1389x27.1236x0.725	1314.72	0.00
L20	77.75 - 72.75 (20)	TP29.1542x28.1389x0.7125	1487.58	0.00
L21	72.75 - 68.08 (21)	TP30.1024x29.1542x0.6875	1652.31	0.00
L22	68.08 - 67.83 (22)	TP30.1532x30.1024x0.8125	1661.22	0.00
L23	67.83 - 62.83 (23)	TP31.1684x30.1532x0.7875	1841.33	0.00
L24	62.83 - 57.83 (24)	TP32.1837x31.1684x0.7625	2025.14	0.00

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L25	57.83 - 52.83 (25)	TP33.199x32.1837x0.75	2212.56	0.00
L26	52.83 - 47.25 (26)	TP34.332x33.199x0.75	2263.01	0.00
L27	47.25 - 46.5 (27)	TP33.8592x32.844x0.8	2455.30	0.00
L28	46.5 - 41.5 (28)	TP34.8743x33.8592x0.8	2651.30	0.00
L29	41.5 - 37.75 (29)	TP35.6357x34.8743x0.775	2800.47	0.00
L30	37.75 - 37.5 (30)	TP35.6864x35.6357x0.85	2810.47	0.00
L31	37.5 - 32.5 (31)	TP36.7016x35.6864x0.825	3012.37	0.00
L32	32.5 - 32.25 (32)	TP36.7523x36.7016x0.875	3022.54	0.00
L33	32.25 - 27.25 (33)	TP37.7675x36.7523x0.8625	3227.80	0.00
L34	27.25 - 23.5 (34)	TP38.5288x37.7675x0.85	3383.79	0.00
L35	23.5 - 23.25 (35)	TP38.5796x38.5288x0.95	3394.25	0.00
L36	23.25 - 20.75 (36)	TP39.0872x38.5796x0.95	3499.27	0.00
L37	20.75 - 20.5 (37)	TP39.1379x39.0872x0.9	3509.81	0.00
L38	20.5 - 15.5 (38)	TP40.1531x39.1379x0.875	3722.13	0.00
L39	15.5 - 10.5 (39)	TP41.1682x40.1531x0.8625	3937.14	0.00
L40	10.5 - 5.5 (40)	TP42.1833x41.1682x0.85	4154.73	0.00
L41	5.5 - 3 (41)	TP42.6909x42.1833x0.8375	4264.48	0.00
L42	3 - 2.75 (42)	TP42.7417x42.6909x0.9	4275.49	0.00
L43	2.75 - 0 (43)	TP43.3x42.7417x0.9	4397.03	0.00

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	140 - 135 (1)	TP17.0151x16x0.25	6.30	0.00
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	6.71	0.00
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	7.14	0.00
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	15.56	0.27
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	16.03	0.28
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	22.52	0.27
L7	110 - 105 (7)	TP23.106x22.0909x0.25	23.01	0.33
L8	105 - 104 (8)	TP23.309x23.106x0.25	23.11	0.35
L9	104 - 103.75 (9)	TP23.3598x23.309x0.4625	29.60	0.53
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	30.22	0.61
L11	98.75 - 98.5 (11)	TP24.4257x24.375x0.45	30.25	0.61
L12	98.5 - 98.25 (12)	TP24.4765x24.4257x0.725	30.29	0.62
L13	98.25 - 97 (13)	TP24.7303x24.4765x0.725	30.47	0.64
L14	97 - 96.75 (14)	TP24.781x24.7303x0.5125	30.51	0.65
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	32.02	0.75
L16	88.5 - 88 (16)	TP26.0576x25.2962x0.5625	32.62	0.83

Section No.	*Elevation*	*Size*	*Actual* V_u	*Actual* T_u
	ft		*K*	*kip-ft*
L17	88 - 87.75 (17)	TP26.1084x26.0576x0.7625	32.66	0.83
L18	87.75 - 82.75 (18)	TP27.1236x26.1084x0.7375	33.40	0.95
L19	82.75 - 77.75 (19)	TP28.1389x27.1236x0.725	34.21	1.12
L20	77.75 - 72.75 (20)	TP29.1542x28.1389x0.7125	34.93	1.25
L21	72.75 - 68.08 (21)	TP30.1024x29.1542x0.6875	35.61	1.38
L22	68.08 - 67.83 (22)	TP30.1532x30.1024x0.8125	35.64	1.39
L23	67.83 - 62.83 (23)	TP31.1684x30.1532x0.7875	36.39	1.53
L24	62.83 - 57.83 (24)	TP32.1837x31.1684x0.7625	37.13	1.68
L25	57.83 - 52.83 (25)	TP33.199x32.1837x0.75	37.84	1.83
L26	52.83 - 47.25 (26)	TP34.332x33.199x0.75	38.03	1.87
L27	47.25 - 46.5 (27)	TP33.8592x32.844x0.8	38.86	2.02
L28	46.5 - 41.5 (28)	TP34.8743x33.8592x0.8	39.53	2.17
L29	41.5 - 37.75 (29)	TP35.6357x34.8743x0.775	40.03	2.29
L30	37.75 - 37.5 (30)	TP35.6864x35.6357x0.85	40.04	2.29
L31	37.5 - 32.5 (31)	TP36.7016x35.6864x0.825	40.70	2.45
L32	32.5 - 32.25 (32)	TP36.7523x36.7016x0.875	40.72	2.46
L33	32.25 - 27.25 (33)	TP37.7675x36.7523x0.8625	41.37	2.62
L34	27.25 - 23.5 (34)	TP38.5288x37.7675x0.85	41.83	2.74
L35	23.5 - 23.25 (35)	TP38.5796x38.5288x0.95	41.84	2.75
L36	23.25 - 20.75 (36)	TP39.0872x38.5796x0.95	42.16	2.83
L37	20.75 - 20.5 (37)	TP39.1379x39.0872x0.9	42.17	2.84
L38	20.5 - 15.5 (38)	TP40.1531x39.1379x0.875	42.74	2.99
L39	15.5 - 10.5 (39)	TP41.1682x40.1531x0.8625	43.26	3.14
L40	10.5 - 5.5 (40)	TP42.1833x41.1682x0.85	43.77	3.30
L41	5.5 - 3 (41)	TP42.6909x42.1833x0.8375	44.03	3.38
L42	3 - 2.75 (42)	TP42.7417x42.6909x0.9	44.03	3.39
L43	2.75 - 0 (43)	TP43.3x42.7417x0.9	44.35	3.48

CCIpole

per TIA-222- H

Site BU: 876342

Work Order:

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	140	51.5	3.25	12	16	26.456	0.25	Auto	A572-65
2	91.75	44.5	4.25	12	25.30	34.332	0.3125	Auto	A572-65
3	51.5	51.5	0	12	32.84	43.3	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	23.5	channel	MP3-06 (1.1875")	2						o		o				
2	0	37.75	channel	MP3-08 (1.1875")	2			o								o	
3	20.75	37.75	channel	MP3-08 (1.1875")	1							o					
4	37.75	68.08	channel	MP3-06 (1.1875")	3			o				o				o	
5	68.08	98.5	channel	MP3-05 (1.1875")	3			o				o				o	
6	3	32.5	plate	CI-065125; (1) (1.1875)	3					o				o			o
7	32.5	68.08	plate	CCI-AFP-060100	3					o				o			o
8	68.08	88	plate	CCI-AFP-060100	3					o				o			o
9	97	104	plate	CCI-SFP-045100	3	o				o				o			
10	0	3	plate	FP 1.25 x 7.25_1	3					o				o			o
11																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
2	7.93	2.8	10.32	0.95	47.000	44.000	24.000	9.370	1.1875	A572-65
3	7.93	2.8	10.32	0.95	47.000	44.000	24.000	9.370	1.1875	A572-65
4	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
5	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
6	6.5	1.25	8.125	0.625	n/a	36.000	19.000	6.563	1.1875	A572-65
7	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
8	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
9	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
10	1.25	7.25	9.0625	3.625	n/a	n/a	0.000	9.063	0.0000	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	140 - 135	5		12	16.000	17.015	0.25	A572-65	1.000
2	135 - 130	5		12	17.015	18.030	0.25	A572-65	1.000
3	130 - 125	5		12	18.030	19.045	0.25	A572-65	1.000
4	125 - 120	5		12	19.045	20.061	0.25	A572-65	1.000
5	120 - 115	5		12	20.061	21.076	0.25	A572-65	1.000
6	115 - 110	5		12	21.076	22.091	0.25	A572-65	1.000
7	110 - 105	5		12	22.091	23.106	0.25	A572-65	1.000
8	105 - 104	1		12	23.106	23.309	0.25	A572-65	1.000
9	104 - 103.75	0.25		12	23.309	23.360	0.4625	A572-65	0.942
10	103.75 - 98.75	5		12	23.360	24.375	0.45	A572-65	0.950
11	98.75 - 98.5	0.25		12	24.375	24.426	0.45	A572-65	0.949
12	98.5 - 98.25	0.25		12	24.426	24.476	0.725	A572-65	0.902
13	98.25 - 97	1.25		12	24.476	24.730	0.725	A572-65	0.896
14	97 - 96.75	0.25		12	24.730	24.781	0.5125	A572-65	0.917
15	96.75 - 91.75	8.25	3.25	12	24.781	26.456	0.5	A572-65	0.922
16	91.75 - 88	3.75		12	25.296	26.058	0.5625	A572-65	0.929
17	88 - 87.75	0.25		12	26.058	26.108	0.7625	A572-65	0.980
18	87.75 - 82.75	5		12	26.108	27.124	0.7375	A572-65	0.989
19	82.75 - 77.75	5		12	27.124	28.139	0.725	A572-65	0.984
20	77.75 - 72.75	5		12	28.139	29.154	0.7125	A572-65	0.981
21	72.75 - 68.08	4.67		12	29.154	30.102	0.6875	A572-65	0.998
22	68.08 - 67.83	0.25		12	30.102	30.153	0.8125	A572-65	0.957
23	67.83 - 62.83	5		12	30.153	31.168	0.7875	A572-65	0.967
24	62.83 - 57.83	5		12	31.168	32.184	0.7625	A572-65	0.979
25	57.83 - 52.83	5		12	32.184	33.199	0.75	A572-65	0.977
26	52.83 - 51.5	5.58	4.25	12	33.199	34.332	0.75	A572-65	0.972
27	51.5 - 46.5	5		12	32.844	33.859	0.8	A572-65	0.985
28	46.5 - 41.5	5		12	33.859	34.874	0.8	A572-65	0.970
29	41.5 - 37.75	3.75		12	34.874	35.636	0.775	A572-65	0.989
30	37.75 - 37.5	0.25		12	35.636	35.686	0.85	A572-65	0.961
31	37.5 - 32.5	5		12	35.686	36.702	0.825	A572-65	0.975
32	32.5 - 32.25	0.25		12	36.702	36.752	0.875	A572-65	0.983
33	32.25 - 27.25	5		12	36.752	37.767	0.8625	A572-65	0.981
34	27.25 - 23.5	3.75		12	37.767	38.529	0.85	A572-65	0.984
35	23.5 - 23.25	0.25		12	38.529	38.580	0.95	A572-65	1.030
36	23.25 - 20.75	2.5		12	38.580	39.087	0.95	A572-65	1.021
37	20.75 - 20.5	0.25		12	39.087	39.138	0.9	A572-65	0.982
38	20.5 - 15.5	5		12	39.138	40.153	0.875	A572-65	0.995
39	15.5 - 10.5	5		12	40.153	41.168	0.8625	A572-65	0.994
40	10.5 - 5.5	5		12	41.168	42.183	0.85	A572-65	0.995
41	5.5 - 3	2.5		12	42.183	42.691	0.8375	A572-65	1.002
42	3 - 2.75	0.25		12	42.691	42.742	0.9	A572-65	0.957
43	2.75 - 0	2.75		12	42.742	43.300	0.9	A572-65	0.950

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	140 - 135	3.96	26.25	6.30
2	135 - 130	4.23	58.78	6.71
3	130 - 125	4.52	93.40	7.14
4	125 - 120	8.91	146.47	15.56
5	120 - 115	9.46	225.41	16.03
6	115 - 110	14.19	339.74	22.52
7	110 - 105	14.97	453.53	23.01
8	105 - 104	15.13	476.59	23.11
9	104 - 103.75	19.22	483.89	29.60
10	103.75 - 98.75	20.30	633.43	30.22
11	98.75 - 98.5	20.37	640.99	30.25
12	98.5 - 98.25	20.44	648.56	30.29
13	98.25 - 97	20.78	686.52	30.47
14	97 - 96.75	20.85	694.15	30.51
15	96.75 - 91.75	22.40	851.10	32.02
16	91.75 - 88	23.86	972.33	32.62
17	88 - 87.75	23.95	980.50	32.66
18	87.75 - 82.75	25.63	1145.66	33.40
19	82.75 - 77.75	27.49	1314.71	34.21
20	77.75 - 72.75	29.26	1487.58	34.93
21	72.75 - 68.08	30.94	1652.31	35.61
22	68.08 - 67.83	31.06	1661.21	35.64
23	67.83 - 62.83	33.03	1841.33	36.39
24	62.83 - 57.83	35.04	2025.14	37.13
25	57.83 - 52.83	37.09	2212.55	37.84
26	52.83 - 51.5	37.64	2263.01	38.03
27	51.5 - 46.5	41.12	2455.30	38.86
28	46.5 - 41.5	43.35	2651.30	39.53
29	41.5 - 37.75	45.04	2800.47	40.03
30	37.75 - 37.5	45.19	2810.48	40.04
31	37.5 - 32.5	47.57	3012.36	40.70
32	32.5 - 32.25	47.71	3022.54	40.72
33	32.25 - 27.25	50.24	3227.80	41.37
34	27.25 - 23.5	52.17	3383.79	41.83
35	23.5 - 23.25	52.33	3394.25	41.84
36	23.25 - 20.75	53.78	3499.27	42.16
37	20.75 - 20.5	53.93	3509.81	42.17
38	20.5 - 15.5	56.66	3722.13	42.74
39	15.5 - 10.5	59.44	3937.14	43.26
40	10.5 - 5.5	62.24	4154.73	43.77
41	5.5 - 3	63.66	4264.48	44.03
42	3 - 2.75	63.82	4275.49	44.03
43	2.75 - 0	65.39	4397.03	44.35

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.015x16x0.25	Pole	7.8%	Pass
135 - 130	Pole	TP18.03x17.015x0.25	Pole	15.1%	Pass
130 - 125	Pole	TP19.045x18.03x0.25	Pole	21.3%	Pass
125 - 120	Pole	TP20.061x19.045x0.25	Pole	30.2%	Pass
120 - 115	Pole	TP21.076x20.061x0.25	Pole	42.0%	Pass
115 - 110	Pole	TP22.091x21.076x0.25	Pole	58.4%	Pass
110 - 105	Pole	TP23.106x22.091x0.25	Pole	72.0%	Pass
105 - 104	Pole	TP23.309x23.106x0.25	Pole	74.5%	Pass
104 - 103.75	Pole + Reinf.	TP23.36x23.309x0.4625	Reinf. 9 Tension Rupture	69.1%	Pass
103.75 - 98.75	Pole + Reinf.	TP24.375x23.36x0.45	Reinf. 9 Tension Rupture	84.4%	Pass
98.75 - 98.5	Pole + Reinf.	TP24.426x24.375x0.45	Reinf. 9 Tension Rupture	85.1%	Pass
98.5 - 98.25	Pole + Reinf.	TP24.476x24.426x0.725	Reinf. 9 Tension Rupture	54.9%	Pass
98.25 - 97	Pole + Reinf.	TP24.73x24.476x0.725	Reinf. 9 Tension Rupture	57.3%	Pass
97 - 96.75	Pole + Reinf.	TP24.781x24.73x0.5125	Reinf. 5 Tension Rupture	68.2%	Pass
96.75 - 91.75	Pole + Reinf.	TP26.456x24.781x0.5	Reinf. 5 Tension Rupture	78.5%	Pass
91.75 - 88	Pole + Reinf.	TP26.058x25.296x0.5625	Reinf. 5 Tension Rupture	78.4%	Pass
88 - 87.75	Pole + Reinf.	TP26.108x26.058x0.7625	Reinf. 5 Tension Rupture	61.3%	Pass
87.75 - 82.75	Pole + Reinf.	TP27.124x26.108x0.7375	Reinf. 5 Tension Rupture	67.7%	Pass
82.75 - 77.75	Pole + Reinf.	TP28.139x27.124x0.725	Reinf. 5 Tension Rupture	73.6%	Pass
77.75 - 72.75	Pole + Reinf.	TP29.154x28.139x0.7125	Reinf. 5 Tension Rupture	79.0%	Pass
72.75 - 68.08	Pole + Reinf.	TP30.102x29.154x0.6875	Reinf. 5 Tension Rupture	83.7%	Pass
68.08 - 67.83	Pole + Reinf.	TP30.153x30.102x0.8125	Reinf. 7 Tension Rupture	71.4%	Pass
67.83 - 62.83	Pole + Reinf.	TP31.168x30.153x0.7875	Reinf. 7 Tension Rupture	75.7%	Pass
62.83 - 57.83	Pole + Reinf.	TP32.184x31.168x0.7625	Reinf. 7 Tension Rupture	79.6%	Pass
57.83 - 52.83	Pole + Reinf.	TP33.199x32.184x0.75	Reinf. 7 Tension Rupture	83.3%	Pass
52.83 - 51.5	Pole + Reinf.	TP34.332x33.199x0.75	Reinf. 7 Tension Rupture	84.2%	Pass
51.5 - 46.5	Pole + Reinf.	TP33.859x32.844x0.8	Reinf. 7 Tension Rupture	83.1%	Pass
46.5 - 41.5	Pole + Reinf.	TP34.874x33.859x0.8	Reinf. 7 Tension Rupture	86.0%	Pass
41.5 - 37.75	Pole + Reinf.	TP35.636x34.874x0.775	Reinf. 7 Tension Rupture	88.0%	Pass
37.75 - 37.5	Pole + Reinf.	TP35.686x35.636x0.85	Reinf. 2 Bolt Shear	84.3%	Pass
37.5 - 32.5	Pole + Reinf.	TP36.702x35.686x0.825	Reinf. 7 Tension Rupture	84.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.752x36.702x0.875	Reinf. 2 Tension Rupture	78.4%	Pass
32.25 - 27.25	Pole + Reinf.	TP37.767x36.752x0.8625	Reinf. 6 Tension Rupture	80.5%	Pass
27.25 - 23.5	Pole + Reinf.	TP38.529x37.767x0.85	Reinf. 6 Tension Rupture	82.0%	Pass
23.5 - 23.25	Pole + Reinf.	TP38.58x38.529x0.95	Reinf. 2 Tension Rupture	77.1%	Pass
23.25 - 20.75	Pole + Reinf.	TP39.087x38.58x0.95	Reinf. 2 Tension Rupture	78.0%	Pass
20.75 - 20.5	Pole + Reinf.	TP39.138x39.087x0.9	Reinf. 2 Tension Rupture	79.1%	Pass
20.5 - 15.5	Pole + Reinf.	TP40.153x39.138x0.875	Reinf. 2 Tension Rupture	80.8%	Pass
15.5 - 10.5	Pole + Reinf.	TP41.168x40.153x0.8625	Reinf. 2 Tension Rupture	82.4%	Pass
10.5 - 5.5	Pole + Reinf.	TP42.183x41.168x0.85	Reinf. 2 Tension Rupture	83.9%	Pass
5.5 - 3	Pole + Reinf.	TP42.691x42.183x0.8375	Reinf. 2 Tension Rupture	84.6%	Pass
3 - 2.75	Pole + Reinf.	TP42.742x42.691x0.9	Reinf. 2 Tension Rupture	79.7%	Pass
2.75 - 0	Pole + Reinf.	TP43.3x42.742x0.9	Reinf. 2 Tension Rupture	80.5%	Pass
				Summary	
			Pole	74.5%	Pass
			Reinforcement	88.0%	Pass
			Overall	88.0%	Pass

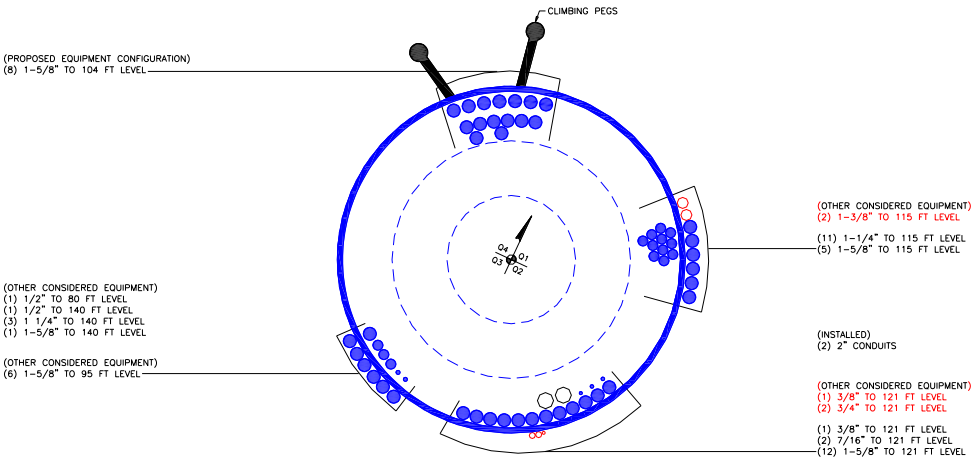
Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*										
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
140 - 135	485	n/a	485	13.48	n/a	13.48	7.8%										
135 - 130	578	n/a	578	14.29	n/a	14.29	15.1%										
130 - 125	683	n/a	683	15.11	n/a	15.11	21.3%										
125 - 120	800	n/a	800	15.92	n/a	15.92	30.2%										
120 - 115	929	n/a	929	16.74	n/a	16.74	42.0%										
115 - 110	1072	n/a	1072	17.56	n/a	17.56	58.4%										
110 - 105	1228	n/a	1228	18.37	n/a	18.37	72.0%										
105 - 104	1262	n/a	1262	18.54	n/a	18.54	74.5%										
104 - 103.75	1270	1013	2283	18.58	13.50	32.08	40.9%									69.1%	
103.75 - 98.75	1445	1099	2543	19.39	13.50	32.89	50.7%									84.4%	
98.75 - 98.5	1454	1103	2557	19.43	13.50	32.93	51.2%									85.1%	
98.5 - 98.25	1463	2557	4020	19.47	30.45	49.92	33.0%					47.1%				54.9%	
98.25 - 97	1509	2607	4116	19.68	30.45	50.13	34.6%					49.1%				57.3%	
97 - 96.75	1519	1483	3002	19.72	16.95	36.67	48.1%					68.2%					
96.75 - 91.75	1715	1599	3314	20.54	16.95	37.49	56.3%					78.5%					
91.75 - 88	2195	1629	3824	25.87	16.95	42.82	52.3%					78.4%					
88 - 87.75	2218	2867	5085	25.92	34.95	60.87	42.8%					61.3%			59.7%		
87.75 - 82.75	2491	3149	5640	26.94	34.95	61.89	46.9%					67.7%			66.1%		
82.75 - 77.75	2784	3375	6159	27.96	34.95	62.91	51.7%					73.6%			71.9%		
77.75 - 72.75	3099	3609	6708	28.98	34.95	63.93	56.2%					79.0%			77.4%		
72.75 - 68.08	3415	3835	7249	29.93	34.95	64.88	60.3%					83.7%			82.0%		
68.08 - 67.83	3429	4990	8419	29.98	43.41	73.39	52.1%				71.1%			71.4%			
67.83 - 62.83	3791	5311	9102	31.00	43.41	74.41	55.8%				75.2%			75.7%			
62.83 - 57.83	4177	5643	9819	32.02	43.41	75.43	59.4%				79.0%			79.6%			
57.83 - 52.83	4588	5984	10572	33.04	43.41	76.45	63.0%				82.5%			83.3%			
52.83 - 51.5	4702	6077	10779	33.32	43.41	76.73	63.9%				83.4%			84.2%			
51.5 - 46.5	5809	6214	12023	40.37	43.41	83.78	58.8%				81.7%			83.1%			
46.5 - 41.5	6353	6572	12925	41.60	43.41	85.01	61.4%				84.4%			86.0%			
41.5 - 37.75	6782	6848	13630	42.52	43.41	85.93	63.3%				86.3%			88.0%			
37.75 - 37.5	6810	7877	14687	42.58	48.96	91.54	59.0%		84.3%	80.7%				82.2%			
37.5 - 32.5	7414	8308	15721	43.80	48.96	92.76	61.4%		82.2%	78.8%				84.7%			
32.5 - 32.25	7455	9253	16708	43.86	55.34	99.20	58.5%		78.4%	74.1%			78.3%				
32.25 - 27.25	8095	9744	17840	45.09	55.34	100.42	60.7%		80.4%	76.1%			80.5%				
27.25 - 23.5	8600	10121	18721	46.00	55.34	101.34	62.4%		81.8%	77.5%			82.0%				
23.5 - 23.25	8810	12398	21208	46.07	72.28	118.34	58.8%	60.2%	77.1%	55.5%			72.8%				
23.25 - 20.75	9163	12712	21875	46.68	72.28	118.95	59.9%	61.0%	78.0%	56.3%			73.7%				
20.75 - 20.5	9060	11536	20596	46.74	61.96	108.69	62.0%	73.8%	79.1%				78.8%				
20.5 - 15.5	9789	12114	21903	47.96	61.96	109.92	64.1%	75.4%	80.8%				80.6%				
15.5 - 10.5	10556	12706	23261	49.19	61.96	111.14	66.1%	77.0%	82.4%				82.2%				
10.5 - 5.5	11361	13312	24673	50.41	61.96	112.37	68.1%	78.4%	83.9%				83.8%				
5.5 - 3	11779	13620	25399	51.02	61.96	112.98	69.1%	79.1%	84.6%				84.5%				
3 - 2.75	11844	15497	27342	51.08	64.77	115.85	65.1%	74.0%	79.7%								72.5%
2.75 - 0	12317	15870	28187	51.76	64.77	116.53	66.2%	74.8%	80.5%								73.1%

Note: Section capacity checked in 5 degree increments.
Rating per TIA-222-H Section 15.5.

APPENDIX B

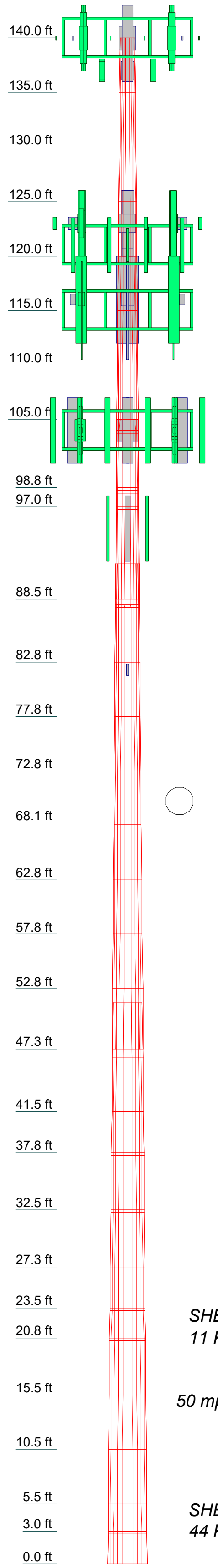
BASE LEVEL DRAWING


CLIMBING PEGS
(PROPOSED EQUIPMENT CONFIGURATION)
(8) 1-5/8" TO 104 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 1-3/8" TO 115 FT LEVEL
(11) 1-1/4" TO 115 FT LEVEL
(5) 1-5/8" TO 115 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 80 FT LEVEL
(1) 1/2" TO 140 FT LEVEL
(3) 1 1/4" TO 140 FT LEVEL
(1) 1-5/8" TO 140 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 95 FT LEVEL
(INSTALLED)
(2) 2" CONDUITS
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 121 FT LEVEL
(2) 3/4" TO 121 FT LEVEL
(1) 3/8" TO 121 FT LEVEL
(2) 7/16" TO 121 FT LEVEL
(12) 1-5/8" TO 121 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	12	0.2500		16.0000	17.0151	A572-65	0.2
2	5.0000	12	0.2500		17.0151	18.0303	A572-65	0.2
3	5.0000	12	0.2500		18.0303	19.0454	A572-65	0.3
4	5.0000	12	0.2500		19.0454	20.0606	A572-65	0.3
5	5.0000	12	0.2500		20.0606	21.0757	A572-65	0.3
6	5.0000	12	0.2500		21.0757	22.0909	A572-65	0.3
7	[illegible]	12	0.2500		22.0909	[illegible]	A572-65	0.3
8–14	[illegible]	12	[illegible]		[illegible]	[illegible]	A572-65	[illegible]
15	[illegible]	12	0.5000	3.2500	24.7810	26.4560	A572-65	1.0
16–17	[illegible]	12	[illegible]		[illegible]	[illegible]	A572-65	[illegible]
18	5.0000	12	[illegible]		[illegible]	[illegible]	A572-65	1.0
19	5.0000	12	0.7250		27.1236	28.1389	A572-65	1.1
20	5.0000	12	0.7125		28.1389	29.1542	A572-65	1.1
21–22	[illegible]	12	[illegible]		[illegible]	[illegible]	A572-65	[illegible]
23	5.0000	12	[illegible]		[illegible]	[illegible]	A572-65	1.2
24	5.0000	12	0.7625		31.1684	32.1837	A572-65	1.3
25	5.0000	12	0.7500		32.1837	33.1990	A572-65	1.3
26	[illegible]	12	0.7500	4.2500	[illegible]	[illegible]	A572-65	1.5
27	[illegible]	12	0.8000		[illegible]	[illegible]	A572-65	1.4
28	5.0000	12	0.8000		[illegible]	[illegible]	A572-65	1.4
29–38	[illegible]	12	[illegible]		[illegible]	[illegible]	A572-65	[illegible]
39	5.0000	12	0.8625		40.1531	41.1682	A572-65	1.9
40	5.0000	12	0.8500		41.1682	42.1833	A572-65	1.9
41–43	[illegible]	12	[illegible]		[illegible]	[illegible]	A572-65	[illegible]
								31.5



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.27 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TIA-222-H Annex S

ALL REACTIONS ARE FACTORED

AXIAL 100 K
SHEAR 11 K
MOMENT 1097 kip-ft
TORQUE 2 kip-ft
50 mph WIND - 1.2750 in ICE

AXIAL 65 K
SHEAR 44 K
MOMENT 4397 kip-ft
TORQUE 6 kip-ft
REACTIONS - 125 mph WIND

Paul J. Ford & Company
250 East Broad st., Suite 600
Columbus, OH 43215
Phone: (614) 221-6679
FAX:

Job: **140-Ft Monopole / Bic Drive (SSUSA)**	
Project: **PJF# 37518-0321.007.7805 / BU# 876342**	
Client: Crown Castle	Drawn by: jacuna / App'd:
Code: TIA-222-H	Date: 12/21/18 / Scale: NTS
Path:	Dwg No. E-1

PAUL J. FORD
& COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

v4.5.2 - Effective 10-16-18

Date: 12/21/2018
PJF Project: 37518-0321.007.7805
Client Ref. # BU 876342
Site Name: Site Name
Description: Description
Owner: Owner
Engineer: JAB

Asymmetric Anchor Rod Analysis

Moment =	4397	k-ft	TIA Ref.	H	η =	N/A	for Base Plates, Rev. G Sect. 4.9.9
Axial =	65.0	kips (+Comp, -Tension)	ASIF =	N/A	Threads =	N-Included	for Flange Plates, Rev. G & H
Shear =	44.0	kips	Max Ratio =	100.0%	lar =	2.25	in, for Base Plates, Rev. H Sect 4.9.9 (Max of Original Items)
Anchor Qty =	19		Location =	Base Plate	Grout =	0.00	psi, for Base Plates, Rev. H Sect 4.9.9 (Note)

**** For Post Installed Anchors: Check anchors for embedment, epoxy/grout bond, and capacity based on proof load. ****

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Type	Area Override, in^2	Area, in^2	Max Net Comp, kips	Max Net Tension, kips	Tension Override, kips	Comp Override, kips	Tension Cap, kips	Comp Cap, kips	Capacity Ratio
1	2.250	#18J A615 Gr 75	75	100	26.0	54.00	Original	0.00	3.98	215.07	206.94	0.00	0.00	243.75	243.75	84.2%
2	2.250	#18J A615 Gr 75	75	100	39.0	54.00	Original	0.00	3.98	216.45	208.32	0.00	0.00	243.75	243.75	84.7%
3	2.250	#18J A615 Gr 75	75	100	51.0	54.00	Original	0.00	3.98	215.13	207.01	0.00	0.00	243.75	243.75	84.2%
4	2.250	#18J A615 Gr 75	75	100	64.0	54.00	Original	0.00	3.98	211.19	203.07	0.00	0.00	243.75	243.75	82.7%
5	2.250	#18J A615 Gr 75	75	100	116.0	54.00	Original	0.00	3.98	187.33	179.20	0.00	0.00	243.75	243.75	73.3%
6	2.250	#18J A615 Gr 75	75	100	129.0	54.00	Original	0.00	3.98	185.02	176.90	0.00	0.00	243.75	243.75	72.4%
7	2.250	#18J A615 Gr 75	75	100	141.0	54.00	Original	0.00	3.98	185.42	177.29	0.00	0.00	243.75	243.75	72.6%
8	2.250	#18J A615 Gr 75	75	100	154.0	54.00	Original	0.00	3.98	188.23	180.10	0.00	0.00	243.75	243.75	73.7%
9	2.250	#18J A615 Gr 75	75	100	206.0	54.00	Original	0.00	3.98	203.34	195.21	0.00	0.00	243.75	243.75	79.6%
10	2.250	#18J A615 Gr 75	75	100	219.0	54.00	Original	0.00	3.98	203.14	195.02	0.00	0.00	243.75	243.75	79.5%
11	2.250	#18J A615 Gr 75	75	100	231.0	54.00	Original	0.00	3.98	200.83	192.70	0.00	0.00	243.75	243.75	78.6%
12	2.250	#18J A615 Gr 75	75	100	244.0	54.00	Original	0.00	3.98	196.33	188.20	0.00	0.00	243.75	243.75	76.8%
13	2.250	#18J A615 Gr 75	75	100	296.0	54.00	Original	0.00	3.98	177.57	169.44	0.00	0.00	243.75	243.75	69.5%
14	2.250	#18J A615 Gr 75	75	100	309.0	54.00	Original	0.00	3.98	178.52	170.40	0.00	0.00	243.75	243.75	69.9%
15	2.250	#18J A615 Gr 75	75	100	321.0	54.00	Original	0.00	3.98	182.30	174.17	0.00	0.00	243.75	243.75	71.4%
16	2.250	#18J A615 Gr 75	75	100	334.0	54.00	Original	0.00	3.98	188.82	180.70	0.00	0.00	243.75	243.75	73.9%
17	2.250	A193 Gr B7	105	125	125.0	66.30	Post-Installed	0.00	3.98	221.55	221.55	0.00	0.00	304.47	341.01	61.9%
18	2.250	A193 Gr B7	105	125	240.0	66.30	Post-Installed	0.00	3.98	239.43	239.43	0.00	0.00	304.47	341.01	66.9%
19	2.250	A193 Gr B7	105	125	330.0	66.30	Post-Installed	0.00	3.98	223.91	223.91	0.00	0.00	304.47	341.01	62.5%
									75.61							

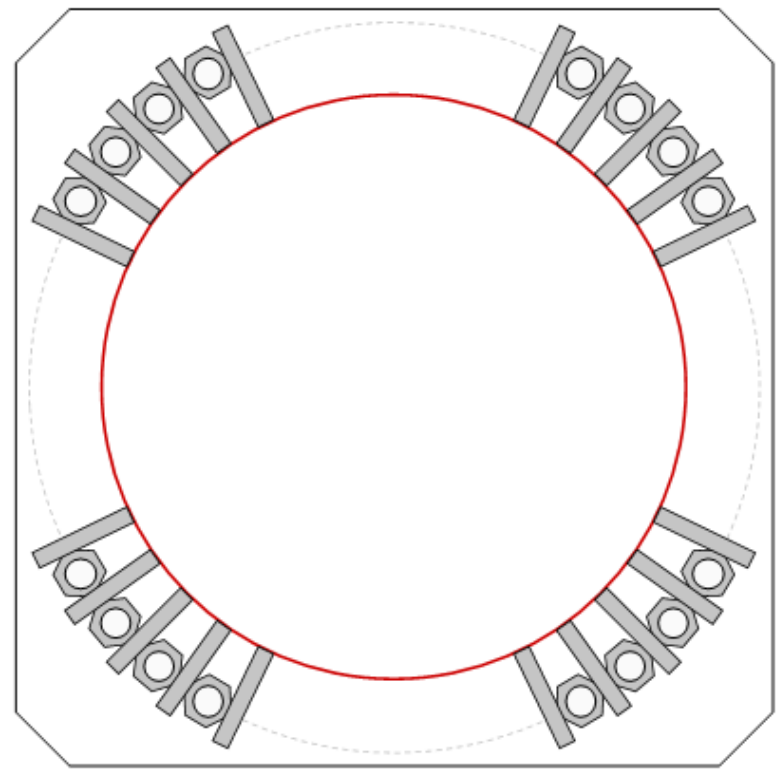
Monopole Base Plate Connection

Site Info	
BU #	876342
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.25

Applied Loads	
Moment (kip-ft)	3822.89
Axial Force (kips)	65.00
Shear Force (kips)	44.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54" BC

Base Plate Data

56" OD x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

(20) 18"H x 7.75"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.3125" fillet

Pole Data

43.3" x 0.375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 216.29	ϕPn_c = 243.75	**Stress Rating**
Vu = 2.75	ϕVn = 73.13	**84.6%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	4.65	(Shear)
Allowable Stress (ksi):	29.25	
Stress Rating:	**15.1%**	**Pass**

Stiffener Summary

Horizontal Weld:	**64.1%**	**Pass**
Vertical Weld:	**71.1%**	**Pass**
Plate Flexure+Shear:	**10.6%**	**Pass**
Plate Tension+Shear:	**29.9%**	**Pass**
Plate Compression:	**44.8%**	**Pass**

Pole Summary

Punching Shear:	**19.0%**	**Pass**

Pier and Pad Foundation

BU # :	876342
Site Name:	Bic Drive (SSUSA)
App. Number:	

TIA-222 Revision:	H
Tower Type:	Monopole

Block Foundation?: ☐

Superstructure Analysis Reactions

Compression, P_{comp}:	65	kips
Base Shear, Vu_comp:	44	kips
Moment, M_u:	4397	ft-kips
Tower Height, **H**:	140	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	32	
Pier Tie/Spiral Size, **St**:	5	
Pier Tie/Spiral Quantity, **mt**:		
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	10	ft
Pad Width, **W**:	22.5	ft
Pad Thickness, **T**:	4	ft
Pad Rebar Size, **Sp**:	11	
Pad Rebar Quantity, **mp**:	23	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	3000	psi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	130	pcf
Ultimate Net Bearing, Qnet:	20.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	32	degrees
SPT Blow Count, N_{blows}:	22	
Base Friction, μ:		
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	455.82	44.00	**9.2%**	**Pass**
Bearing Pressure (ksf)	15.98	3.69	**23.1%**	**Pass**
*Overturning (kip*ft)*	8328.12	4870.00	**58.5%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	7603.29	4683.00	**58.7%**	**Pass**
Pier Compression (kip)	23390.64	122.33	**0.5%**	**Pass**
*Pad Flexure (kip*ft)*	6671.79	1783.02	**25.5%**	**Pass**
Pad Shear - 1-way (kips)	951.31	266.24	**26.7%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.029	**16.6%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	5544.53	2809.80	**48.3%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Soil Rating*:	**58.5%**
Structural Rating*:	**58.7%**

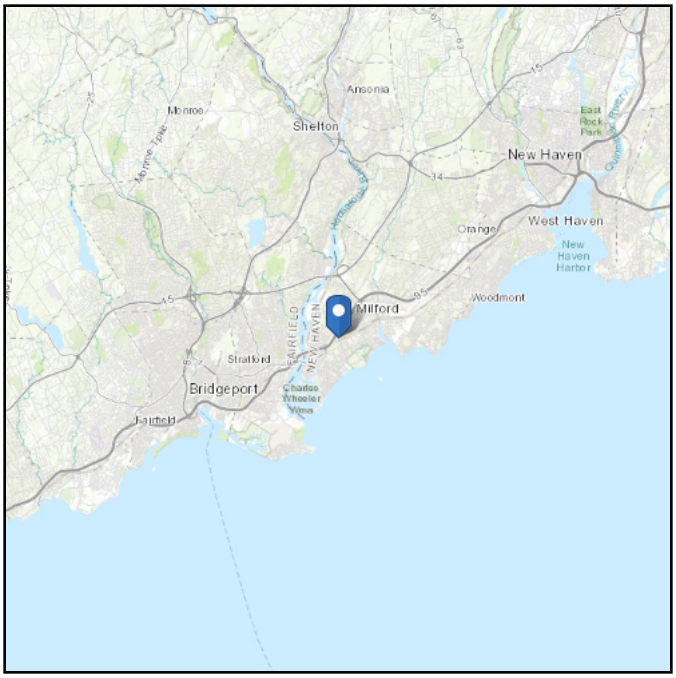
Version 3.0.2

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 40.17 ft (NAVD 88)
Latitude: 41.212794
Longitude: -73.085306



Wind

Results:

Wind Speed:	124 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	100 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Thu Oct 04 2018

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 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

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

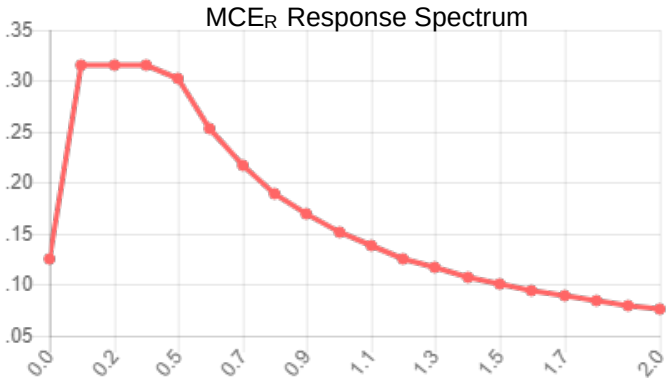
Seismic

Site Soil Class: D - Stiff Soil

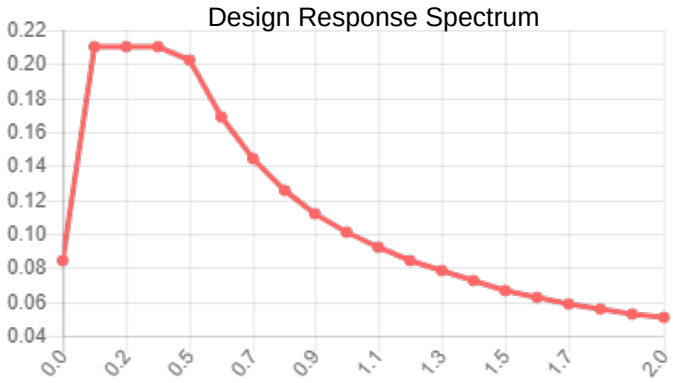
Results:

S_S :	0.197	S_{DS} :	0.210
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.105
S_{MS} :	0.315	PGA_M :	0.167
S_{M1} :	0.152	F_{PGA} :	1.590
		I_e :	1

Seismic Design Category B



S_a(g) vs T(s)



S_a(g) vs T(s)

Data Accessed: Thu Oct 04 2018

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Oct 04 2018

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 50-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.