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
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

March 2, 2022

Denise Sabo
Northeast Site Solutions
54 Main Street, Unit 3
Sturbridge, MA 01566-1359
denise@northeastsitesolutions.com

RE: **TS-DISH-049-220126** – Dish Wireless LLC request for an order to approve tower sharing at an existing telecommunications facility located at 3 Bright Meadow Boulevard, Enfield, Connecticut.

Dear Ms. Sabo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of February 28, 2022 submitted in response to the Council's February 2, 2022 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing 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/IN/emr

From: Deborah Chase <deborah@northeastsitesolutions.com>
Sent: Monday, February 28, 2022 7:31 PM
To: CSC-DL Siting Council <Siting.Council@ct.gov>; Bachman, Melanie <Melanie.Bachman@ct.gov>; Mathews, Lisa A <Lisa.A.Mathews@ct.gov>; Fontaine, Lisa <Lisa.Fontaine@ct.gov>; Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: Denise <denise@northeastsitesolutions.com>; victoria@northeastsitesolutions.com
Subject: Council Incomplete Letter for TS-DISH-049-220126 (Bright Meadow Boulevard, Enfield) 876348
Importance: High

Siting Council
Please see attached the Structural Analysis as requested per the attached incomplete letter.
You will also receive a hard copy (see attached mailing label 557642869)
I have also included the mailing label to Ellen Zoppo, the Town Manager of Enfield (see attached label 557644708).
Please let us know of this is sufficient enough to consider the application complete for review.
Thank you very much

Deborah Chase
Senior Project Coordinator & Analyst
Mobile: 860-490-8839
Save a tree. Refuse.Reduce. Reuse. Recycle.

Date: **August 03, 2021**

MORRISON HERSHFIELD

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00093A
	Site Name:	CT-CCI-T-876348
Crown Castle Designation:	**BU Number:**	876348
	Site Name:	Enfield
	JDE Job Number:	650079
	Work Order Number:	1972559
	Order Number:	556604 Rev. 0
Engineering Firm Designation:	**Morrison Hershfield Project Number:** CN8-725R1 / 2101398	
Site Data:	**Bright Meadow Blvd., Enfield, Hartford County, CT 06082** **Latitude *42° 1' 14.91"*, Longitude *-72° 35' 6.59"*** **147.5 Foot – Summit Monopole Tower**	

Morrison Hershfield 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 2018 Connecticut State Building Code (2015 IBC). Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

STATE OF CONNECTICUT
G. LANCE COOKE
No. 28133
LICENSED
PROFESSIONAL ENGINEER

Digitally signed by G. Lance Cooke
Date: 2021.08.04 09:15:11-07'00'

G. Lance Cooke, P.E. (CT License No. PEN.0028133)
Senior Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 147.5 ft Summit monopole tower designed by Paul J Ford and Company.

The tower was modified per reinforcement drawings prepared by Paul J Ford and Company. Reinforcement consisted of adding flat members from 39 ft to 49 ft and additional anchor rods. Per the post modification inspection completed by Tower Engineering Solutions in August of 2013, these modifications have been properly installed and were considered in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	2 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)
97.0	97.0	3	jma wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
		1	raycap	RDIDC-9181-PF-48		
		1	-	Commscope MC-PK8-DSH		

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)
147.0	147.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3 1	1-5/8 3/4
		3	rfs/celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4415 B66A_CCIV3		
		3	ericsson	RADIO 4424 B25_TMOV1		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	-	Pipe Mount [#9' Long, P2.0 STD]		
		1	Site Pro 1	Platform Reinforcement Kit [#PRK-1245L]		
		1	Site Pro 1	Support Rail Kit [#HRK-12]		
		1	-	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)
145.0	146.0	2	alcatel lucent	TME-800MHz 2x50W RRH	-	-
		1	alcatel lucent	TME-PCS 1900MHz 4x45W-65MHz		
	145.0	1	-	Side Arm Mount [SO 102-3]		
	144.0	1	alcatel lucent	TME-800MHz 2x50W RRH		
		2	alcatel lucent	TME-PCS 1900MHz 4x45W-65MHz		
137.0	139.0	3	samsung telecommunications	MT6407-77A w/ Mount Pipe	8	1-5/8
		1	symmetricom	58532A		
	137.0	3	antel	BXA-70063-6CF-EDIN-2 w/ Mount Pipe		
		6	commscope	SBNHH-1D65B		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		2	rfs/celwave	DB-T1-6Z-8AB-0Z		
		3	-	Dual Antenna Mount Kit		
		1	-	Platform Mount [LP 1201-1_HR-2]		
	135.0	3	samsung telecommunications	CBRS w/ Mount Pipe		
117.0	119.0	1	andrew	SBNHH-1D65A w/ Mount Pipe	9 2 1 1	1-5/8 3/4 3/8 2C
		1	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe		
		1	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		3	ericsson	RRUS 32 B2		
		4	kathrein	860 10025		
	117.0	2	powerwave technologies	LGP17201		
		1	-	Platform Mount [LP 1201-1]		
115.0	119.0	3	raycap	TME-RRU-11	-	-
		1	raycap	TME-DC6-48-60-18-8F		
	115.0	1	-	Side Arm Mount [SO 102-3]		
107.0	107.0	3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	7 2	1-5/8 1-3/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	rfs/celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
107.0	107.0	3	ericsson	RADIO 4449 B12/B71	-	-
		1	-	T-Arm Mount [TA 701-3]		
49.0	50.0	1	symmetricom	58532A	1	1/2
	49.0	1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1532963	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1613614	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1613591	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3667620	CCISITES
4-POST-MODIFICATION INSPECTION	3966655	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), 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. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield 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	147.5 - 142.5	Pole	TP22.95x22x0.25	Pole	5.6	Pass
L2	142.5 - 137.5	Pole	TP23.9x22.95x0.25	Pole	10.9	Pass
L3	137.5 - 132.5	Pole	TP24.85x23.9x0.25	Pole	19.1	Pass
L4	132.5 - 127.5	Pole	TP25.8x24.85x0.25	Pole	26.3	Pass
L5	127.5 - 122.5	Pole	TP26.75x25.8x0.25	Pole	32.9	Pass
L6	122.5 - 117.5	Pole	TP27.7x26.75x0.25	Pole	38.9	Pass
L7	117.5 - 112.5	Pole	TP28.65x27.7x0.25	Pole	46.7	Pass
L8	112.5 - 112.25	Pole	TP29.41x28.65x0.25	Pole	47.1	Pass
L9	112.25 - 107.25	Pole	TP29.148x28.198x0.25	Pole	51.7	Pass
L10	107.25 - 102.25	Pole	TP30.098x29.148x0.25	Pole	59.3	Pass
L11	102.25 - 97.25	Pole	TP31.048x30.098x0.25	Pole	66.0	Pass
L12	97.25 - 92.25	Pole	TP31.998x31.048x0.25	Pole	73.6	Pass
L13	92.25 - 87.25	Pole	TP32.948x31.998x0.25	Pole	80.6	Pass
L14	87.25 - 82.25	Pole	TP33.898x32.948x0.25	Pole	87.0	Pass
L15	82.25 - 77.25	Pole	TP34.848x33.898x0.25	Pole	93.0	Pass
L16	77.25 - 76.75	Pole	TP35.798x34.848x0.25	Pole	93.5	Pass
L17	76.75 - 71.75	Pole	TP35.393x34.443x0.3125	Pole	75.5	Pass
L18	71.75 - 66.75	Pole	TP36.343x35.393x0.3125	Pole	79.2	Pass
L19	66.75 - 61.75	Pole	TP37.293x36.343x0.3125	Pole	82.6	Pass
L20	61.75 - 56.75	Pole	TP38.242x37.293x0.3125	Pole	85.8	Pass
L21	56.75 - 51.75	Pole	TP39.192x38.242x0.3125	Pole	88.7	Pass
L22	51.75 - 47.83	Pole	TP39.937x39.192x0.3125	Pole	90.9	Pass
L23	47.83 - 47.58	Pole	TP39.984x39.937x0.3125	Pole	91.0	Pass
L24	47.58 - 42.58	Pole	TP40.934x39.984x0.3125	Pole	93.6	Pass
L25	42.58 - 41	Pole	TP42.232x40.934x0.3125	Pole	94.4	Pass
L26	41 - 34.75	Pole	TP41.797x40.61x0.375	Pole	78.8	Pass
L27	34.75 - 29.75	Pole	TP42.747x41.797x0.375	Pole	80.4	Pass
L28	29.75 - 24.75	Pole	TP43.697x42.747x0.375	Pole	81.9	Pass
L29	24.75 - 19.75	Pole	TP44.647x43.697x0.375	Pole	83.3	Pass
L30	19.75 - 14.75	Pole	TP45.597x44.647x0.375	Pole	84.6	Pass
L31	14.75 - 9.75	Pole	TP46.547x45.597x0.375	Pole	85.8	Pass
L32	9.75 - 4.75	Pole	TP47.497x46.547x0.375	Pole	86.9	Pass
L33	4.75 - 0	Pole	TP48.4x47.497x0.375	Pole	87.9	Pass
					Summary	
				Pole	94.4	Pass
				Reinforcement	0.0	Pass
				Overall	94.4	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	84.8	Pass
1	Base Plate		70.3	Pass
1	Base Foundation (Structure)	0	54.3	Pass
1	Base Foundation (Soil Interaction)		60.0	Pass

Structure Rating (max from all components) =	94.4%*

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) *Rating per TIA-222-H, Section 15.5.

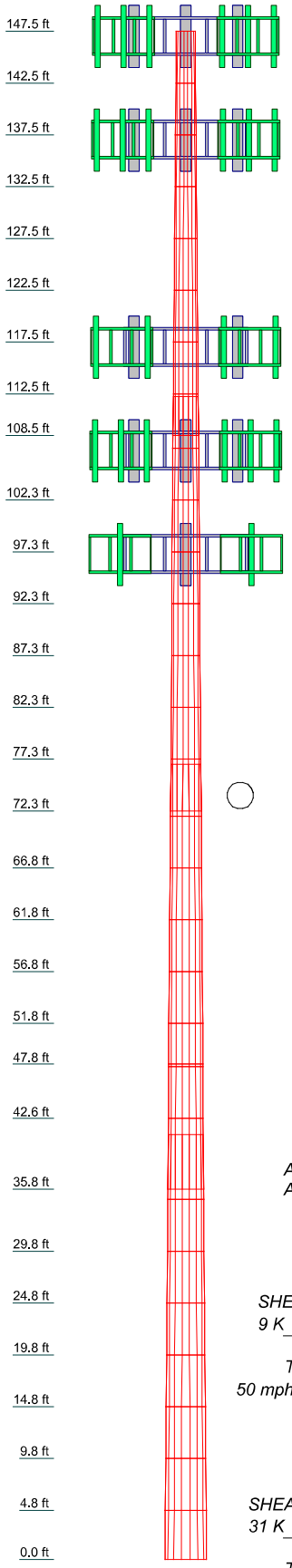
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.2500		22.0000	22.9500		0.3
2	5.00	18	0.2500		22.9500	23.9000		0.3
3	5.00	18	0.2500		23.9000	24.8500		0.3
4	5.00	18	0.2500		24.8500	25.8000		0.3
5	5.00	18	0.2500		25.8000	26.7500		0.4
6	5.00	18	0.2500		26.7500	27.7000		0.4
7	5.00	18	0.2500		27.7000	28.6500		0.4
8	5.00	18	0.2500	3.75	28.6500	29.6000	A607-60	0.3
9	5.00	18	0.2500		29.6000	30.0976		0.4
10	5.00	18	0.2500		30.0976	31.0477		0.4
11	5.00	18	0.2500		31.0477	31.9978		0.4
12	5.00	18	0.2500		31.9978	32.9478		0.4
13	5.00	18	0.2500		32.9478	33.8979		0.4
14	5.00	18	0.2500		33.8979	34.8479		0.4
15	5.00	18	0.2500		34.8479	35.7980		0.5
16	5.00	18	0.2500	4.50	35.7980	36.3427		0.5
17	5.00	18	0.3125		36.3427	37.2926		0.6
18	5.00	18	0.3125		37.2926	38.2425		0.6
19	5.00	18	0.3125		38.2425	39.1924		0.6
20	5.00	18	0.3125		39.1924	40.1423		0.6
21	5.00	18	0.3125		40.1423	40.9339		0.7
22	5.00	18	0.3125		40.9339	41.7972		0.7
23	5.00	18	0.3125		41.7972	42.7472		0.8
24	5.00	18	0.3125		42.7472	43.6973		0.9
25	6.2883	18	0.3125	5.25	43.6973	44.6473	A607-65	1.0
26	5.00	18	0.3750		44.6473	45.5974		1.0
27	5.00	18	0.3750		45.5974	46.5474		0.8
28	5.00	18	0.3750		46.5474	47.4975		0.9
29	5.00	18	0.3750		47.4975	48.4000		0.9
30	5.00	18	0.3750					0.9
31	5.00	18	0.3750					0.9
32	5.00	18	0.3750					0.9
33	4.75	18	0.3750					0.9



ALL REACTIONS ARE FACTORED

AXIAL 100 K

SHEAR 9 K — *MOMENT 1106 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 2.0000 in ICE

AXIAL 50 K

SHEAR 31 K — *MOMENT 3488 kip-ft*

TORQUE 2 kip-ft

REACTIONS - 125 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B 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 2.00 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 0.00 ft
8. CCIPOLE RATING: 94.4%

Morrison Hershfield
Consulting Engineers
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
Phone: (770) 379-8500
FAX: (770) 379-8501

Job: CN8-725R1 / 2101398			
Project: 876348 / Enfield			
Client: Crown Castle USA	Drawn by: RP	App'd:	
Code: TIA-222-H	Date: 08/03/21	Scale: NTS	
Path: C:\Users\RPeddamaru\OneDrive - MORRISON HERSHFIELD\Desktop\CN8-725R1 SA\Analysis\CN8-725R1 BU_876348 WO_1872558.eri		Dwg No. E-1	

Tower Input Data

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

Tower is located in Hartford County, Connecticut.
Tower base elevation above sea level: 110.00 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 2.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
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	147.50-142.50	5.00	0.00	18	22.0000	22.9500	0.2500	1.0000	A607-60 (60 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
L2	142.50-137.50	5.00	0.00	18	22.9500	23.9000	0.2500	1.0000	A607-60 (60 ksi)
L3	137.50-132.50	5.00	0.00	18	23.9000	24.8500	0.2500	1.0000	A607-60 (60 ksi)
L4	132.50-127.50	5.00	0.00	18	24.8500	25.8000	0.2500	1.0000	A607-60 (60 ksi)
L5	127.50-122.50	5.00	0.00	18	25.8000	26.7500	0.2500	1.0000	A607-60 (60 ksi)
L6	122.50-117.50	5.00	0.00	18	26.7500	27.7000	0.2500	1.0000	A607-60 (60 ksi)
L7	117.50-112.50	5.00	0.00	18	27.7000	28.6500	0.2500	1.0000	A607-60 (60 ksi)
L8	112.50-108.50	4.00	3.75	18	28.6500	29.4100	0.2500	1.0000	A607-60 (60 ksi)
L9	108.50-107.25	5.00	0.00	18	28.1975	29.1476	0.2500	1.0000	A607-65 (65 ksi)
L10	107.25-102.25	5.00	0.00	18	29.1476	30.0976	0.2500	1.0000	A607-65 (65 ksi)
L11	102.25-97.25	5.00	0.00	18	30.0976	31.0477	0.2500	1.0000	A607-65 (65 ksi)
L12	97.25-92.25	5.00	0.00	18	31.0477	31.9978	0.2500	1.0000	A607-65 (65 ksi)
L13	92.25-87.25	5.00	0.00	18	31.9978	32.9478	0.2500	1.0000	A607-65 (65 ksi)
L14	87.25-82.25	5.00	0.00	18	32.9478	33.8979	0.2500	1.0000	A607-65 (65 ksi)
L15	82.25-77.25	5.00	0.00	18	33.8979	34.8479	0.2500	1.0000	A607-65 (65 ksi)
L16	77.25-72.25	5.00	4.50	18	34.8479	35.7980	0.2500	1.0000	A607-65 (65 ksi)
L17	72.25-71.75	5.00	0.00	18	34.4429	35.3928	0.3125	1.2500	A607-65 (65 ksi)
L18	71.75-66.75	5.00	0.00	18	35.3928	36.3427	0.3125	1.2500	A607-65 (65 ksi)
L19	66.75-61.75	5.00	0.00	18	36.3427	37.2926	0.3125	1.2500	A607-65 (65 ksi)
L20	61.75-56.75	5.00	0.00	18	37.2926	38.2425	0.3125	1.2500	A607-65 (65 ksi)
L21	56.75-51.75	5.00	0.00	18	38.2425	39.1924	0.3125	1.2500	A607-65 (65 ksi)
L22	51.75-47.83	3.92	0.00	18	39.1924	39.9365	0.3125	1.2500	A607-65 (65 ksi)
L23	47.83-47.58	0.25	0.00	18	39.9365	39.9840	0.3125	1.2500	A607-65 (65 ksi)
L24	47.58-42.58	5.00	0.00	18	39.9840	40.9339	0.3125	1.2500	A607-65 (65 ksi)
L25	42.58-35.75	6.83	5.25	18	40.9339	42.2320	0.3125	1.2500	A607-65 (65 ksi)
L26	35.75-34.75	6.25	0.00	18	40.6096	41.7972	0.3750	1.5000	A607-65 (65 ksi)
L27	34.75-29.75	5.00	0.00	18	41.7972	42.7472	0.3750	1.5000	A607-65 (65 ksi)
L28	29.75-24.75	5.00	0.00	18	42.7472	43.6973	0.3750	1.5000	A607-65 (65 ksi)
L29	24.75-19.75	5.00	0.00	18	43.6973	44.6473	0.3750	1.5000	A607-65 (65 ksi)
L30	19.75-14.75	5.00	0.00	18	44.6473	45.5974	0.3750	1.5000	A607-65 (65 ksi)
L31	14.75-9.75	5.00	0.00	18	45.5974	46.5474	0.3750	1.5000	A607-65 (65 ksi)
L32	9.75-4.75	5.00	0.00	18	46.5474	47.4975	0.3750	1.5000	A607-65 (65 ksi)
L33	4.75-0.00	4.75		18	47.4975	48.4000	0.3750	1.5000	A607-65 (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	22.3008	17.2586	1031.4832	7.7212	11.1760	92.2945	2064.3237	8.6310	3.4320	13.728
	23.2655	18.0125	1172.6326	8.0585	11.6586	100.5809	2346.8081	9.0079	3.5992	14.397
L2	23.2655	18.0125	1172.6326	8.0585	11.6586	100.5809	2346.8081	9.0079	3.5992	14.397
	24.2301	18.7663	1326.1047	8.3957	12.1412	109.2235	2653.9543	9.3849	3.7664	15.066
L3	24.2301	18.7663	1326.1047	8.3957	12.1412	109.2235	2653.9543	9.3849	3.7664	15.066
	25.1948	19.5201	1492.4153	8.7330	12.6238	118.2224	2986.7944	9.7619	3.9336	15.734
L4	25.1948	19.5201	1492.4153	8.7330	12.6238	118.2224	2986.7944	9.7619	3.9336	15.734
	26.1594	20.2739	1672.0802	9.0702	13.1064	127.5774	3346.3605	10.1389	4.1008	16.403
L5	26.1594	20.2739	1672.0802	9.0702	13.1064	127.5774	3346.3605	10.1389	4.1008	16.403
	27.1241	21.0278	1865.6149	9.4075	13.5890	137.2886	3733.6846	10.5159	4.2680	17.072
L6	27.1241	21.0278	1865.6149	9.4075	13.5890	137.2886	3733.6846	10.5159	4.2680	17.072
	28.0888	21.7816	2073.5353	9.7447	14.0716	147.3560	4149.7990	10.8929	4.4352	17.741
L7	28.0888	21.7816	2073.5353	9.7447	14.0716	147.3560	4149.7990	10.8929	4.4352	17.741
	29.0534	22.5354	2296.3570	10.0820	14.5542	157.7797	4595.7356	11.2698	4.6024	18.41
L8	29.0534	22.5354	2296.3570	10.0820	14.5542	157.7797	4595.7356	11.2698	4.6024	18.41
	29.8251	23.1385	2485.6899	10.3518	14.9403	166.3751	4974.6504	11.5714	4.7362	18.945
L9	29.3175	22.1763	2188.3323	9.9214	14.3243	152.7703	4379.5441	11.0903	4.5228	18.091
	29.5586	22.9302	2419.1791	10.2586	14.8070	163.3812	4841.5414	11.4673	4.6900	18.76
L10	29.5586	22.9302	2419.1791	10.2586	14.8070	163.3812	4841.5414	11.4673	4.6900	18.76
	30.5234	23.6841	2665.7150	10.5959	15.2896	174.3483	5334.9377	11.8443	4.8572	19.429
L11	30.5234	23.6841	2665.7150	10.5959	15.2896	174.3483	5334.9377	11.8443	4.8572	19.429
	31.4881	24.4380	2928.4560	10.9332	15.7722	185.6717	5860.7654	12.2213	5.0244	20.098
L12	31.4881	24.4380	2928.4560	10.9332	15.7722	185.6717	5860.7654	12.2213	5.0244	20.098
	32.4528	25.1918	3207.9178	11.2705	16.2549	197.3513	6420.0567	12.5983	5.1916	20.766
L13	32.4528	25.1918	3207.9178	11.2705	16.2549	197.3513	6420.0567	12.5983	5.1916	20.766
	33.4175	25.9457	3504.6163	11.6077	16.7375	209.3872	7013.8441	12.9753	5.3588	21.435
L14	33.4175	25.9457	3504.6163	11.6077	16.7375	209.3872	7013.8441	12.9753	5.3588	21.435
	34.3822	26.6996	3819.0673	11.9450	17.2201	221.7794	7643.1597	13.3523	5.5260	22.104
L15	34.3822	26.6996	3819.0673	11.9450	17.2201	221.7794	7643.1597	13.3523	5.5260	22.104
	35.3470	27.4535	4151.7865	12.2823	17.7028	234.5277	8309.0360	13.7293	5.6932	22.773
L16	35.3470	27.4535	4151.7865	12.2823	17.7028	234.5277	8309.0360	13.7293	5.6932	22.773
	36.3117	28.2073	4503.2898	12.6195	18.1854	247.6324	9012.5051	14.1063	5.8604	23.442
L17	35.7942	33.8531	4982.1890	12.1163	17.4970	284.7451	9970.9337	16.9298	5.5120	17.638
	35.8906	34.7953	5409.8516	12.4535	17.9796	300.8890	10826.821 7	17.4010	5.6791	18.173
L18	35.8906	34.7953	5409.8516	12.4535	17.9796	300.8890	10826.821 7	17.4010	5.6791	18.173
	36.8552	35.7375	5861.3129	12.7907	18.4621	317.4781	11730.338 2	17.8721	5.8463	18.708
L19	36.8552	35.7375	5861.3129	12.7907	18.4621	317.4781	11730.338 2	17.8721	5.8463	18.708
	37.8197	36.6796	6337.2171	13.1279	18.9446	334.5124	12682.772 8	18.3433	6.0135	19.243
L20	37.8197	36.6796	6337.2171	13.1279	18.9446	334.5124	12682.772 8	18.3433	6.0135	19.243
	38.7842	37.6218	6838.2087	13.4651	19.4272	351.9918	13685.415 3	18.8145	6.1807	19.778
L21	38.7842	37.6218	6838.2087	13.4651	19.4272	351.9918	13685.415 3	18.8145	6.1807	19.778
	39.7488	38.5640	7364.9321	13.8024	19.9097	369.9164	14739.555 2	19.2856	6.3479	20.313
L22	39.7488	38.5640	7364.9321	13.8024	19.9097	369.9164	14739.555 2	19.2856	6.3479	20.313
	40.5044	39.3021	7795.9601	14.0665	20.2877	384.2694	15602.178 3	19.6548	6.4788	20.732
L23	40.5044	39.3021	7795.9601	14.0665	20.2877	384.2694	15602.178 3	19.6548	6.4788	20.732
	40.5526	39.3492	7824.0269	14.0834	20.3119	385.1948	15658.348 9	19.6783	6.4872	20.759
L24	40.5526	39.3492	7824.0269	14.0834	20.3119	385.1948	15658.348 9	19.6783	6.4872	20.759
	41.5172	40.2913	8399.6008	14.4206	20.7944	403.9354	16810.254 1	20.1495	6.6544	21.294
L25	41.5172	40.2913	8399.6008	14.4206	20.7944	403.9354	16810.254 1	20.1495	6.6544	21.294
	42.8353	41.5789	9230.8709	14.8814	21.4539	430.2663	18473.888 0	20.7934	6.8828	22.025

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
L26	42.1912	47.8893	9794.3446	14.2833	20.6297	474.7694	19601.5768	23.9492	6.4873	17.299
	42.3841	49.3027	10687.4588	14.7049	21.2330	503.3427	21388.9804	24.6561	6.6963	17.857
L27	42.3841	49.3027	10687.4588	14.7049	21.2330	503.3427	21388.9804	24.6561	6.6963	17.857
	43.3488	50.4335	11439.8267	15.0421	21.7156	526.8025	22894.7062	25.2216	6.8635	18.303
L28	43.3488	50.4335	11439.8267	15.0421	21.7156	526.8025	22894.7062	25.2216	6.8635	18.303
	44.3135	51.5643	12226.7009	15.3794	22.1982	550.7966	24469.4900	25.7871	7.0307	18.749
L29	44.3135	51.5643	12226.7009	15.3794	22.1982	550.7966	24469.4900	25.7871	7.0307	18.749
	45.2782	52.6951	13048.8550	15.7167	22.6808	575.3251	26114.8800	26.3526	7.1979	19.194
L30	45.2782	52.6951	13048.8550	15.7167	22.6808	575.3251	26114.8800	26.3526	7.1979	19.194
	46.2429	53.8259	13907.0627	16.0539	23.1635	600.3880	27832.4247	26.9181	7.3651	19.64
L31	46.2429	53.8259	13907.0627	16.0539	23.1635	600.3880	27832.4247	26.9181	7.3651	19.64
	47.2076	54.9567	14802.0977	16.3912	23.6461	625.9852	29623.6724	27.4836	7.5323	20.086
L32	47.2076	54.9567	14802.0977	16.3912	23.6461	625.9852	29623.6724	27.4836	7.5323	20.086
	48.1723	56.0875	15734.7336	16.7285	24.1287	652.1167	31490.1714	28.0491	7.6996	20.532
L33	48.1723	56.0875	15734.7336	16.7285	24.1287	652.1167	31490.1714	28.0491	7.6996	20.532
	49.0888	57.1618	16656.2703	17.0489	24.5872	677.4366	33334.4574	28.5863	7.8584	20.956

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 147.50-142.50				1	1	1			
L2 142.50-137.50				1	1	1			
L3 137.50-132.50				1	1	1			
L4 132.50-127.50				1	1	1			
L5 127.50-122.50				1	1	1			
L6 122.50-117.50				1	1	1			
L7 117.50-112.50				1	1	1			
L8 112.50-108.50				1	1	1			
L9 108.50-107.25				1	1	1			
L10 107.25-102.25				1	1	1			
L11 102.25-97.25				1	1	1			
L12 97.25-92.25				1	1	1			
L13 92.25-87.25				1	1	1			
L14 87.25-82.25				1	1	1			
L15 82.25-77.25				1	1	1			
L16 77.25-				1	1	1			

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
72.25									
L17 72.25-71.75				1	1	1			
L18 71.75-66.75				1	1	1			
L19 66.75-61.75				1	1	1			
L20 61.75-56.75				1	1	1			
L21 56.75-51.75				1	1	1			
L22 51.75-47.83				1	1	1			
L23 47.83-47.58				1	1	1			
L24 47.58-42.58				1	1	1			
L25 42.58-35.75				1	1	1			
L26 35.75-34.75				1	1	1			
L27 34.75-29.75				1	1	1			
L28 29.75-24.75				1	1	1			
L29 24.75-19.75				1	1	1			
L30 19.75-14.75				1	1	1			
L31 14.75-9.75				1	1	1			
L32 9.75-4.75				1	1	1			
L33 4.75-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
******										
Safety Line 5/8"	B	No	Surface Ar (CaAa)	147.50 - 8.00	1	1	0.000 0.000	0.8800		0.40
Climbing Pegs	B	No	Surface Ar (CaAa)	147.50 - 8.00	1	1	-0.100 0.100	0.7050		1.80
******										
HCS 6X12 6AWG(1-3/8)	A	No	Surface Ar (CaAa)	107.00 - 6.00	2	2	0.400 0.440	1.3800		1.70
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	A	No	Surface Ar (CaAa)	107.00 - 6.00	1	1	0.400 0.400	1.6250		1.07
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	107.00 - 6.00	6	4	0.350 0.450	1.9800		0.82
******										
MP3-03 Reinforcement	A	No	Surface Af (CaAa)	49.00 - 39.00	1	1	-0.417 -0.417	4.0600	11.2600	0.00
MP3-03 Reinforcement	B	No	Surface Af (CaAa)	49.00 - 39.00	1	1	-0.417 -0.417	4.0600	11.2600	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	49.00 - 39.00	1	1	-0.417 -0.417	4.0600	11.2600	0.00
******										

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 plf
******									
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	147.00 - 6.00	1	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
							2" Ice	0.00	0.58
***									
HB158-21U6S24-xxM_TMO(1-5/8)	A	No	No	Inside Pole	147.00 - 6.00	3	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
							2" Ice	0.00	2.50
******									
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Inside Pole	137.00 - 6.00	2	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
LDF7-50A(1-5/8)	B	No	No	Inside Pole	137.00 - 6.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
******									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	117.00 - 6.00	9	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	117.00 - 6.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	117.00 - 6.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
							2" Ice	0.00	0.58
******									
CU12PSM9P6XXX (1-1/2)	B	No	No	Inside Pole	97.00 - 6.00	1	No Ice	0.00	2.35
							1/2" Ice	0.00	2.35
							1" Ice	0.00	2.35
							2" Ice	0.00	2.35
******									
LDF4-50A(1/2)	B	No	No	Inside Pole	49.00 - 6.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
******									

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	147.50-142.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.792	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L2	142.50-137.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.792	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L3	137.50-132.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.792	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
L4	132.50-127.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.792	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L5	127.50-122.50	A	0.000	0.000	0.000	0.000	0.04

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
		B	0.000	0.000	0.792	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L6	122.50-117.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.792	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L7	117.50-112.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.792	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.04
L8	112.50-108.50	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.634	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.03
L9	108.50-107.25	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.198	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L10	107.25-102.25	A	0.000	0.000	5.845	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.04
L11	102.25-97.25	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.04
L12	97.25-92.25	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L13	92.25-87.25	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L14	87.25-82.25	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L15	82.25-77.25	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L16	77.25-72.25	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L17	72.25-71.75	A	0.000	0.000	0.615	0.000	0.01
		B	0.000	0.000	0.079	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L18	71.75-66.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L19	66.75-61.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L20	61.75-56.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L21	56.75-51.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L22	51.75-47.83	A	0.000	0.000	5.610	0.000	0.07
		B	0.000	0.000	1.411	0.000	0.05
		C	0.000	0.000	0.790	0.000	0.03
L23	47.83-47.58	A	0.000	0.000	0.477	0.000	0.00
		B	0.000	0.000	0.209	0.000	0.00
		C	0.000	0.000	0.169	0.000	0.00
L24	47.58-42.58	A	0.000	0.000	9.536	0.000	0.09
		B	0.000	0.000	4.176	0.000	0.06
		C	0.000	0.000	3.383	0.000	0.04
L25	42.58-35.75	A	0.000	0.000	10.833	0.000	0.12
		B	0.000	0.000	3.508	0.000	0.08
		C	0.000	0.000	2.424	0.000	0.06
L26	35.75-34.75	A	0.000	0.000	1.230	0.000	0.02
		B	0.000	0.000	0.159	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L27	34.75-29.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L28	29.75-24.75	A	0.000	0.000	6.152	0.000	0.09

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
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L29	24.75-19.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L30	19.75-14.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L31	14.75-9.75	A	0.000	0.000	6.152	0.000	0.09
		B	0.000	0.000	0.792	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L32	9.75-4.75	A	0.000	0.000	4.614	0.000	0.07
		B	0.000	0.000	0.277	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.03
L33	4.75-0.00	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	0.00

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	147.50-142.50	A	1.971	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.735	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.00
L2	142.50-137.50	A	1.964	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.721	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.00
L3	137.50-132.50	A	1.957	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.707	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.00
L4	132.50-127.50	A	1.950	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.692	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.00
L5	127.50-122.50	A	1.942	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.677	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.00
L6	122.50-117.50	A	1.934	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.661	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.00
L7	117.50-112.50	A	1.926	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	4.645	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L8	112.50-108.50	A	1.918	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	3.703	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.03
L9	108.50-107.25	A	1.914	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	1.157	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.01
L10	107.25-102.25	A	1.908	0.000	0.000	13.458	0.000	0.27
		B		0.000	0.000	4.609	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L11	102.25-97.25	A	1.899	0.000	0.000	14.133	0.000	0.29
		B		0.000	0.000	4.590	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L12	97.25-92.25	A	1.889	0.000	0.000	14.099	0.000	0.28
		B		0.000	0.000	4.571	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L13	92.25-87.25	A	1.879	0.000	0.000	14.064	0.000	0.28
		B		0.000	0.000	4.550	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L14	87.25-82.25	A	1.868	0.000	0.000	14.026	0.000	0.28
		B		0.000	0.000	4.529	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L15	82.25-77.25	A	1.857	0.000	0.000	13.986	0.000	0.28

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
		B		0.000	0.000	4.506	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L16	77.25-72.25	A	1.845	0.000	0.000	13.944	0.000	0.28
		B		0.000	0.000	4.482	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L17	72.25-71.75	A	1.838	0.000	0.000	1.394	0.000	0.03
		B		0.000	0.000	0.448	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L18	71.75-66.75	A	1.831	0.000	0.000	13.895	0.000	0.28
		B		0.000	0.000	4.454	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L19	66.75-61.75	A	1.817	0.000	0.000	13.847	0.000	0.27
		B		0.000	0.000	4.427	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L20	61.75-56.75	A	1.802	0.000	0.000	13.796	0.000	0.27
		B		0.000	0.000	4.397	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L21	56.75-51.75	A	1.787	0.000	0.000	13.741	0.000	0.27
		B		0.000	0.000	4.366	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L22	51.75-47.83	A	1.771	0.000	0.000	11.765	0.000	0.22
		B		0.000	0.000	4.439	0.000	0.11
		C		0.000	0.000	1.042	0.000	0.05
L23	47.83-47.58	A	1.764	0.000	0.000	0.906	0.000	0.02
		B		0.000	0.000	0.439	0.000	0.01
		C		0.000	0.000	0.223	0.000	0.01
L24	47.58-42.58	A	1.754	0.000	0.000	18.083	0.000	0.33
		B		0.000	0.000	8.757	0.000	0.18
		C		0.000	0.000	4.457	0.000	0.10
L25	42.58-35.75	A	1.729	0.000	0.000	21.689	0.000	0.40
		B		0.000	0.000	8.994	0.000	0.20
		C		0.000	0.000	3.185	0.000	0.10
L26	35.75-34.75	A	1.711	0.000	0.000	2.708	0.000	0.05
		B		0.000	0.000	0.850	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.01
L27	34.75-29.75	A	1.696	0.000	0.000	13.424	0.000	0.26
		B		0.000	0.000	4.185	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L28	29.75-24.75	A	1.668	0.000	0.000	13.324	0.000	0.26
		B		0.000	0.000	4.128	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L29	24.75-19.75	A	1.634	0.000	0.000	13.207	0.000	0.25
		B		0.000	0.000	4.061	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L30	19.75-14.75	A	1.593	0.000	0.000	13.063	0.000	0.25
		B		0.000	0.000	3.979	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L31	14.75-9.75	A	1.540	0.000	0.000	12.876	0.000	0.24
		B		0.000	0.000	3.872	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.04
L32	9.75-4.75	A	1.461	0.000	0.000	9.450	0.000	0.17
		B		0.000	0.000	1.300	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.03
L33	4.75-0.00	A	1.306	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	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	147.50-142.50	1.0344	-0.5972	2.6361	-1.5220
L2	142.50-137.50	1.0372	-0.5988	2.6677	-1.5402
L3	137.50-132.50	1.0398	-0.6003	2.6970	-1.5571
L4	132.50-127.50	1.0422	-0.6017	2.7241	-1.5728

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L5	127.50-122.50	1.0445	-0.6030	2.7492	-1.5872
L6	122.50-117.50	1.0466	-0.6043	2.7723	-1.6006
L7	117.50-112.50	1.0486	-0.6054	2.7935	-1.6128
L8	112.50-108.50	1.0503	-0.6064	2.8110	-1.6230
L9	108.50-107.25	1.0503	-0.6064	2.8116	-1.6233
L10	107.25-102.25	-0.5454	-6.3213	0.4300	-5.9928
L11	102.25-97.25	-0.6012	-6.5724	0.3737	-6.2119
L12	97.25-92.25	-0.6059	-6.6398	0.3798	-6.3156
L13	92.25-87.25	-0.6104	-6.7049	0.3854	-6.4163
L14	87.25-82.25	-0.6148	-6.7678	0.3905	-6.5140
L15	82.25-77.25	-0.6191	-6.8285	0.3951	-6.6087
L16	77.25-72.25	-0.6231	-6.8873	0.3992	-6.7004
L17	72.25-71.75	-0.6233	-6.8898	0.3995	-6.7044
L18	71.75-66.75	-0.6255	-6.9212	0.3990	-6.7488
L19	66.75-61.75	-0.6294	-6.9770	0.4019	-6.8353
L20	61.75-56.75	-0.6332	-7.0311	0.4041	-6.9186
L21	56.75-51.75	-0.6368	-7.0834	0.4055	-6.9986
L22	51.75-47.83	-0.5527	-6.1565	0.3739	-6.5071
L23	47.83-47.58	-0.4201	-4.6831	0.3153	-5.5120
L24	47.58-42.58	-0.4225	-4.7129	0.3154	-5.5473
L25	42.58-35.75	-0.5099	-5.6982	0.3516	-6.2839
L26	35.75-34.75	-0.6477	-7.2389	0.4049	-7.2317
L27	34.75-29.75	-0.6496	-7.2667	0.3954	-7.2544
L28	29.75-24.75	-0.6528	-7.3121	0.3898	-7.3126
L29	24.75-19.75	-0.6558	-7.3562	0.3816	-7.3639
L30	19.75-14.75	-0.6588	-7.3990	0.3695	-7.4057
L31	14.75-9.75	-0.6617	-7.4406	0.3511	-7.4334
L32	9.75-4.75	-0.8887	-5.9944	-0.4819	-6.0867
L33	4.75-0.00	0.0000	0.0000	0.0000	0.0000

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
L1	2	Safety Line 5/8"	142.50 - 147.50	1.0000	1.0000
L1	3	Climbing Pegs	142.50 - 147.50	1.0000	1.0000
L2	2	Safety Line 5/8"	137.50 - 142.50	1.0000	1.0000
L2	3	Climbing Pegs	137.50 - 142.50	1.0000	1.0000
L3	2	Safety Line 5/8"	132.50 - 137.50	1.0000	1.0000
L3	3	Climbing Pegs	132.50 - 137.50	1.0000	1.0000
L4	2	Safety Line 5/8"	127.50 - 132.50	1.0000	1.0000
L4	3	Climbing Pegs	127.50 - 132.50	1.0000	1.0000
L5	2	Safety Line 5/8"	122.50 - 127.50	1.0000	1.0000
L5	3	Climbing Pegs	122.50 - 127.50	1.0000	1.0000
L6	2	Safety Line 5/8"	117.50 - 122.50	1.0000	1.0000
L6	3	Climbing Pegs	117.50 - 122.50	1.0000	1.0000
L7	2	Safety Line 5/8"	112.50 - 117.50	1.0000	1.0000
L7	3	Climbing Pegs	112.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			117.50		
L8	2	Safety Line 5/8"	108.50 - 112.50	1.0000	1.0000
L8	3	Climbing Pegs	108.50 - 112.50	1.0000	1.0000
L9	2	Safety Line 5/8"	107.25 - 108.50	1.0000	1.0000
L9	3	Climbing Pegs	107.25 - 108.50	1.0000	1.0000
L10	2	Safety Line 5/8"	102.25 - 107.25	1.0000	1.0000
L10	3	Climbing Pegs	102.25 - 107.25	1.0000	1.0000
L10	18	HCS 6X12 6AWG(1-3/8)	102.25 - 107.00	1.0000	1.0000
L10	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	102.25 - 107.00	1.0000	1.0000
L10	20	LDF7-50A(1-5/8)	102.25 - 107.00	1.0000	1.0000
L11	2	Safety Line 5/8"	97.25 - 102.25	1.0000	1.0000
L11	3	Climbing Pegs	97.25 - 102.25	1.0000	1.0000
L11	18	HCS 6X12 6AWG(1-3/8)	97.25 - 102.25	1.0000	1.0000
L11	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	97.25 - 102.25	1.0000	1.0000
L11	20	LDF7-50A(1-5/8)	97.25 - 102.25	1.0000	1.0000
L12	2	Safety Line 5/8"	92.25 - 97.25	1.0000	1.0000
L12	3	Climbing Pegs	92.25 - 97.25	1.0000	1.0000
L12	18	HCS 6X12 6AWG(1-3/8)	92.25 - 97.25	1.0000	1.0000
L12	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	92.25 - 97.25	1.0000	1.0000
L12	20	LDF7-50A(1-5/8)	92.25 - 97.25	1.0000	1.0000
L13	2	Safety Line 5/8"	87.25 - 92.25	1.0000	1.0000
L13	3	Climbing Pegs	87.25 - 92.25	1.0000	1.0000
L13	18	HCS 6X12 6AWG(1-3/8)	87.25 - 92.25	1.0000	1.0000
L13	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	87.25 - 92.25	1.0000	1.0000
L13	20	LDF7-50A(1-5/8)	87.25 - 92.25	1.0000	1.0000
L14	2	Safety Line 5/8"	82.25 - 87.25	1.0000	1.0000
L14	3	Climbing Pegs	82.25 - 87.25	1.0000	1.0000
L14	18	HCS 6X12 6AWG(1-3/8)	82.25 - 87.25	1.0000	1.0000
L14	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	82.25 - 87.25	1.0000	1.0000
L14	20	LDF7-50A(1-5/8)	82.25 - 87.25	1.0000	1.0000
L15	2	Safety Line 5/8"	77.25 - 82.25	1.0000	1.0000
L15	3	Climbing Pegs	77.25 - 82.25	1.0000	1.0000
L15	18	HCS 6X12 6AWG(1-3/8)	77.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			82.25		
L15	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	77.25 - 82.25	1.0000	1.0000
L15	20	LDF7-50A(1-5/8)	77.25 - 82.25	1.0000	1.0000
L16	2	Safety Line 5/8"	72.25 - 77.25	1.0000	1.0000
L16	3	Climbing Pegs	72.25 - 77.25	1.0000	1.0000
L16	18	HCS 6X12 6AWG(1-3/8)	72.25 - 77.25	1.0000	1.0000
L16	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	72.25 - 77.25	1.0000	1.0000
L16	20	LDF7-50A(1-5/8)	72.25 - 77.25	1.0000	1.0000
L17	2	Safety Line 5/8"	71.75 - 72.25	1.0000	1.0000
L17	3	Climbing Pegs	71.75 - 72.25	1.0000	1.0000
L17	18	HCS 6X12 6AWG(1-3/8)	71.75 - 72.25	1.0000	1.0000
L17	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	71.75 - 72.25	1.0000	1.0000
L17	20	LDF7-50A(1-5/8)	71.75 - 72.25	1.0000	1.0000
L18	2	Safety Line 5/8"	66.75 - 71.75	1.0000	1.0000
L18	3	Climbing Pegs	66.75 - 71.75	1.0000	1.0000
L18	18	HCS 6X12 6AWG(1-3/8)	66.75 - 71.75	1.0000	1.0000
L18	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	66.75 - 71.75	1.0000	1.0000
L18	20	LDF7-50A(1-5/8)	66.75 - 71.75	1.0000	1.0000
L19	2	Safety Line 5/8"	61.75 - 66.75	1.0000	1.0000
L19	3	Climbing Pegs	61.75 - 66.75	1.0000	1.0000
L19	18	HCS 6X12 6AWG(1-3/8)	61.75 - 66.75	1.0000	1.0000
L19	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	61.75 - 66.75	1.0000	1.0000
L19	20	LDF7-50A(1-5/8)	61.75 - 66.75	1.0000	1.0000
L20	2	Safety Line 5/8"	56.75 - 61.75	1.0000	1.0000
L20	3	Climbing Pegs	56.75 - 61.75	1.0000	1.0000
L20	18	HCS 6X12 6AWG(1-3/8)	56.75 - 61.75	1.0000	1.0000
L20	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	56.75 - 61.75	1.0000	1.0000
L20	20	LDF7-50A(1-5/8)	56.75 - 61.75	1.0000	1.0000
L21	2	Safety Line 5/8"	51.75 - 56.75	1.0000	1.0000
L21	3	Climbing Pegs	51.75 - 56.75	1.0000	1.0000
L21	18	HCS 6X12 6AWG(1-3/8)	51.75 - 56.75	1.0000	1.0000
L21	19	MLE HYBRID 9POWER/18FIBER RL	51.75 - 56.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		2(1-5/8)			
L21	20	LDF7-50A(1-5/8)	51.75 - 56.75	1.0000	1.0000
L22	2	Safety Line 5/8"	47.83 - 51.75	1.0000	1.0000
L22	3	Climbing Pegs	47.83 - 51.75	1.0000	1.0000
L22	18	HCS 6X12 6AWG(1-3/8)	47.83 - 51.75	1.0000	1.0000
L22	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	47.83 - 51.75	1.0000	1.0000
L22	20	LDF7-50A(1-5/8)	47.83 - 51.75	1.0000	1.0000
L22	26	MP3-03 Reinforcement	47.83 - 49.00	1.0000	1.0000
L22	27	MP3-03 Reinforcement	47.83 - 49.00	1.0000	1.0000
L22	28	MP3-03 Reinforcement	47.83 - 49.00	1.0000	1.0000
L23	2	Safety Line 5/8"	47.58 - 47.83	1.0000	1.0000
L23	3	Climbing Pegs	47.58 - 47.83	1.0000	1.0000
L23	18	HCS 6X12 6AWG(1-3/8)	47.58 - 47.83	1.0000	1.0000
L23	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	20	LDF7-50A(1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	26	MP3-03 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	27	MP3-03 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	28	MP3-03 Reinforcement	47.58 - 47.83	1.0000	1.0000
L24	2	Safety Line 5/8"	42.58 - 47.58	1.0000	1.0000
L24	3	Climbing Pegs	42.58 - 47.58	1.0000	1.0000
L24	18	HCS 6X12 6AWG(1-3/8)	42.58 - 47.58	1.0000	1.0000
L24	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	42.58 - 47.58	1.0000	1.0000
L24	20	LDF7-50A(1-5/8)	42.58 - 47.58	1.0000	1.0000
L24	26	MP3-03 Reinforcement	42.58 - 47.58	1.0000	1.0000
L24	27	MP3-03 Reinforcement	42.58 - 47.58	1.0000	1.0000
L24	28	MP3-03 Reinforcement	42.58 - 47.58	1.0000	1.0000
L25	2	Safety Line 5/8"	35.75 - 42.58	1.0000	1.0000
L25	3	Climbing Pegs	35.75 - 42.58	1.0000	1.0000
L25	18	HCS 6X12 6AWG(1-3/8)	35.75 - 42.58	1.0000	1.0000
L25	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	35.75 - 42.58	1.0000	1.0000
L25	20	LDF7-50A(1-5/8)	35.75 - 42.58	1.0000	1.0000
L25	26	MP3-03 Reinforcement	39.00 - 42.58	1.0000	1.0000
L25	27	MP3-03 Reinforcement	39.00 - 42.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L25	28	MP3-03 Reinforcement	39.00 - 42.58	1.0000	1.0000
L26	2	Safety Line 5/8"	34.75 - 35.75	1.0000	1.0000
L26	3	Climbing Pegs	34.75 - 35.75	1.0000	1.0000
L26	18	HCS 6X12 6AWG(1-3/8)	34.75 - 35.75	1.0000	1.0000
L26	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.75 - 35.75	1.0000	1.0000
L26	20	LDF7-50A(1-5/8)	34.75 - 35.75	1.0000	1.0000
L27	2	Safety Line 5/8"	29.75 - 34.75	1.0000	1.0000
L27	3	Climbing Pegs	29.75 - 34.75	1.0000	1.0000
L27	18	HCS 6X12 6AWG(1-3/8)	29.75 - 34.75	1.0000	1.0000
L27	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	29.75 - 34.75	1.0000	1.0000
L27	20	LDF7-50A(1-5/8)	29.75 - 34.75	1.0000	1.0000
L28	2	Safety Line 5/8"	24.75 - 29.75	1.0000	1.0000
L28	3	Climbing Pegs	24.75 - 29.75	1.0000	1.0000
L28	18	HCS 6X12 6AWG(1-3/8)	24.75 - 29.75	1.0000	1.0000
L28	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	24.75 - 29.75	1.0000	1.0000
L28	20	LDF7-50A(1-5/8)	24.75 - 29.75	1.0000	1.0000
L29	2	Safety Line 5/8"	19.75 - 24.75	1.0000	1.0000
L29	3	Climbing Pegs	19.75 - 24.75	1.0000	1.0000
L29	18	HCS 6X12 6AWG(1-3/8)	19.75 - 24.75	1.0000	1.0000
L29	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	19.75 - 24.75	1.0000	1.0000
L29	20	LDF7-50A(1-5/8)	19.75 - 24.75	1.0000	1.0000
L30	2	Safety Line 5/8"	14.75 - 19.75	1.0000	1.0000
L30	3	Climbing Pegs	14.75 - 19.75	1.0000	1.0000
L30	18	HCS 6X12 6AWG(1-3/8)	14.75 - 19.75	1.0000	1.0000
L30	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	14.75 - 19.75	1.0000	1.0000
L30	20	LDF7-50A(1-5/8)	14.75 - 19.75	1.0000	1.0000
L31	2	Safety Line 5/8"	9.75 - 14.75	1.0000	1.0000
L31	3	Climbing Pegs	9.75 - 14.75	1.0000	1.0000
L31	18	HCS 6X12 6AWG(1-3/8)	9.75 - 14.75	1.0000	1.0000
L31	19	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	9.75 - 14.75	1.0000	1.0000
L31	20	LDF7-50A(1-5/8)	9.75 - 14.75	1.0000	1.0000
L32	2	Safety Line 5/8"	8.00 - 9.75	1.0000	1.0000
L32	3	Climbing Pegs	8.00 - 9.75	1.0000	1.0000
L32	18	HCS 6X12 6AWG(1-3/8)	6.00 - 9.75	1.0000	1.0000
L32	19	MLE HYBRID 9POWER/18FIBER RL	6.00 - 9.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	20	2(1-5/8) LDF7-50A(1-5/8)	6.00 - 9.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L22	26	MP3-03 Reinforcement	47.83 - 49.00	Auto	0.0000
L22	27	MP3-03 Reinforcement	47.83 - 49.00	Auto	0.0000
L22	28	MP3-03 Reinforcement	47.83 - 49.00	Auto	0.0000
L23	26	MP3-03 Reinforcement	47.58 - 47.83	Auto	0.0000
L23	27	MP3-03 Reinforcement	47.58 - 47.83	Auto	0.0000
L23	28	MP3-03 Reinforcement	47.58 - 47.83	Auto	0.0000
L24	26	MP3-03 Reinforcement	42.58 - 47.58	Auto	0.0000
L24	27	MP3-03 Reinforcement	42.58 - 47.58	Auto	0.0000
L24	28	MP3-03 Reinforcement	42.58 - 47.58	Auto	0.0000
L25	26	MP3-03 Reinforcement	39.00 - 42.58	Auto	0.0000
L25	27	MP3-03 Reinforcement	39.00 - 42.58	Auto	0.0000
L25	28	MP3-03 Reinforcement	39.00 - 42.58	Auto	0.0000

Discrete Tower Loads

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
******									
Platform Mount [LP 1201-1]	C	None		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	18.38 22.11 25.87 33.47	18.38 22.11 25.87 33.47	2.10 2.65 3.26 4.66
***									
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.29 6.86 7.45 8.68	2.76 3.27 3.79 4.90	0.06 0.11 0.16 0.29
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.29 6.86 7.45 8.68	2.76 3.27 3.79 4.90	0.06 0.11 0.16 0.29
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	6.29 6.86 7.45	2.76 3.27 3.79	0.06 0.11 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	8.68	4.90	0.29
						2" Ice			
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
RADIO 4415 B66A_CCIV3	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	0.68 0.79 0.91 1.18	0.05 0.06 0.07 0.11
RADIO 4415 B66A_CCIV3	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	0.68 0.79 0.91 1.18	0.05 0.06 0.07 0.11
RADIO 4415 B66A_CCIV3	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	0.68 0.79 0.91 1.18	0.05 0.06 0.07 0.11
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.15 2.33 2.72	1.59 1.75 1.92 2.28	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.15 2.33 2.72	1.59 1.75 1.92 2.28	0.07 0.09 0.12 0.17
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.15 2.33 2.72	1.59 1.75 1.92 2.28	0.07 0.09 0.12 0.17
RADIO 4424 B25_TMOV1	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	2.05 2.23 2.42	1.61 1.77 1.94	0.10 0.12 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
						1" Ice	2.81	2.30	0.20
						2" Ice			
RADIO 4424 B25_TMOV1	B	From Leg	4.00	0.0000	147.00	No Ice	2.05	1.61	0.10
			0.00			1/2"	2.23	1.77	0.12
			0.00			Ice	2.42	1.94	0.14
						1" Ice	2.81	2.30	0.20
						2" Ice			
RADIO 4424 B25_TMOV1	C	From Leg	4.00	0.0000	147.00	No Ice	2.05	1.61	0.10
			0.00			1/2"	2.23	1.77	0.12
			0.00			Ice	2.42	1.94	0.14
						1" Ice	2.81	2.30	0.20
						2" Ice			
Support Rail Kit [#HRK-12]	C	None		0.0000	147.00	No Ice	12.17	12.17	0.51
						1/2"	16.47	16.47	0.70
						Ice	20.42	20.42	0.95
						1" Ice	27.62	27.62	1.65
						2" Ice			
Platform Reinforcement Kit [#PRK-1245L]	C	None		0.0000	147.00	No Ice	11.84	11.84	0.28
						1/2"	16.96	16.96	0.30
						Ice	22.08	22.08	0.32
						1" Ice	32.32	32.32	0.36
						2" Ice			
Pipe Mount [#9' Long, P2.0 STD]	A	From Leg	4.00	0.0000	147.00	No Ice	2.14	2.14	0.07
			0.00			1/2"	3.07	3.07	0.08
			0.00			Ice	4.01	4.01	0.10
						1" Ice	5.13	5.13	0.17
						2" Ice			
Pipe Mount [#9' Long, P2.0 STD]	B	From Leg	4.00	0.0000	147.00	No Ice	2.14	2.14	0.07
			0.00			1/2"	3.07	3.07	0.08
			0.00			Ice	4.01	4.01	0.10
						1" Ice	5.13	5.13	0.17
						2" Ice			
Pipe Mount [#9' Long, P2.0 STD]	C	From Leg	4.00	0.0000	147.00	No Ice	2.14	2.14	0.07
			0.00			1/2"	3.07	3.07	0.08
			0.00			Ice	4.01	4.01	0.10
						1" Ice	5.13	5.13	0.17
						2" Ice			
******									
TME-PCS 1900MHz 4x45W-65MHz	A	From Leg	4.00	0.0000	145.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			1.00			Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
TME-PCS 1900MHz 4x45W-65MHz	B	From Leg	4.00	0.0000	145.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			-1.00			Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
TME-PCS 1900MHz 4x45W-65MHz	C	From Leg	4.00	0.0000	145.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			-1.00			Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
TME-800MHz 2x50W RRH	A	From Leg	4.00	0.0000	145.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07
			-1.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
TME-800MHz 2x50W RRH	B	From Leg	4.00	0.0000	145.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07
			1.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
TME-800MHz 2x50W RRH	C	From Leg	4.00	0.0000	145.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07

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
			1.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
Side Arm Mount [SO 102-3]	C	None		0.0000	145.00	No Ice	3.60	3.60	0.07
						1/2" Ice	4.18	4.18	0.11
						1" Ice	4.75	4.75	0.14
						2" Ice	5.90	5.90	0.20
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
******									
(2) SBNHH-1D65B	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	4.16 4.57 4.99 5.85	2.49 2.88 3.27 4.09	0.04 0.09 0.15 0.28
(2) SBNHH-1D65B	B	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	4.16 4.57 4.99 5.85	2.49 2.88 3.27 4.09	0.04 0.09 0.15 0.28
(2) SBNHH-1D65B	C	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	4.16 4.57 4.99 5.85	2.49 2.88 3.27 4.09	0.04 0.09 0.15 0.28
BXA-70063-6CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.40 8.14 8.90 10.46	5.39 6.10 6.83 8.34	0.04 0.10 0.16 0.33
BXA-70063-6CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.40 8.14 8.90 10.46	5.39 6.10 6.83 8.34	0.04 0.10 0.16 0.33
BXA-70063-6CF-EDIN-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.40 8.14 8.90 10.46	5.39 6.10 6.83 8.34	0.04 0.10 0.16 0.33
58532A	A	From Leg	4.00 0.00 2.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.19 0.25 0.31 0.47	0.19 0.25 0.31 0.47	0.00 0.00 0.01 0.02
RFV01U-D1A	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	0.08 0.10 0.12 0.18
RFV01U-D1A	B	From Leg	4.00	0.0000	137.00	No Ice	1.88	1.25	0.08

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	2.05 2.22 2.60	1.39 1.54 1.86	0.10 0.12 0.18
RFV01U-D1A	C	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	0.08 0.10 0.12 0.18
RFV01U-D2A	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	0.07 0.09 0.11 0.15
RFV01U-D2A	B	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	0.07 0.09 0.11 0.15
RFV01U-D2A	C	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	0.07 0.09 0.11 0.15
DB-T1-6Z-8AB-0Z	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.80 5.07 5.35 5.93	2.00 2.19 2.39 2.81	0.04 0.08 0.12 0.21
DB-T1-6Z-8AB-0Z	B	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.80 5.07 5.35 5.93	2.00 2.19 2.39 2.81	0.04 0.08 0.12 0.21
Platform Mount [LP 1201-1_HR-2]	C	None		0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	32.68 38.48 44.02 54.73	32.68 38.48 44.02 54.73	2.56 3.32 4.20 6.30
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CBRS w/ Mount Pipe	A	From Leg	4.00 0.00 -2.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.45 1.67 1.90 2.42	0.99 1.18 1.39 1.85	0.03 0.05 0.07 0.12
CBRS w/ Mount Pipe	B	From Leg	4.00 0.00 -2.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.45 1.67 1.90 2.42	0.99 1.18 1.39 1.85	0.03 0.05 0.07 0.12
CBRS w/ Mount Pipe	C	From Leg	4.00 0.00 -2.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.45 1.67 1.90 2.42	0.99 1.18 1.39 1.85	0.03 0.05 0.07 0.12
MT6407-77A w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
MT6407-77A w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29

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
MT6407-77A w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
Dual Antenna Mount Kit	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.32 1.58 1.84 2.40	1.32 1.58 1.84 2.40	0.07 0.08 0.09 0.13
Dual Antenna Mount Kit	B	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.32 1.58 1.84 2.40	1.32 1.58 1.84 2.40	0.07 0.08 0.09 0.13
Dual Antenna Mount Kit	C	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.32 1.58 1.84 2.40	1.32 1.58 1.84 2.40	0.07 0.08 0.09 0.13
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7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.19 14.16 16.14	8.33 9.23 10.15 12.05	0.10 0.19 0.30 0.54
SBNHH-1D65A w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.04 3.34 3.65 4.31	2.45 2.75 3.05 3.68	0.05 0.10 0.16 0.31
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.22 9.98 10.76 12.36	6.25 6.96 7.70 9.22	0.07 0.14 0.22 0.42
LGP17201	A	From Leg	4.00 0.00 0.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.04 2.21 2.59	0.48 0.58 0.69 0.93	0.03 0.04 0.06 0.10
LGP17201	C	From Leg	4.00 0.00 0.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.04 2.21 2.59	0.48 0.58 0.69 0.93	0.03 0.04 0.06 0.10
(2) 860 10025	A	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice	0.14 0.20 0.26 0.41	0.12 0.17 0.23 0.38	0.00 0.00 0.01 0.01

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			
(2) 860 10025	C	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.14 0.20 0.26 0.41	0.12 0.17 0.23 0.38	0.00 0.00 0.01 0.01
RRUS 32 B2	A	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 32 B2	B	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
RRUS 32 B2	C	From Leg	4.00 0.00 2.00	0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	2.73 2.95 3.18 3.66	1.67 1.86 2.05 2.46	0.05 0.07 0.10 0.16
(2) 6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
(2) 6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
(2) 6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
Platform Mount [LP 1201-1]	C	None		0.0000	117.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	18.38 22.11 25.87 33.47	18.38 22.11 25.87 33.47	2.10 2.65 3.26 4.66
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TME-RRU-11	A	From Leg	4.00 0.00 4.00	0.0000	115.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.67	1.19 1.34 1.50 1.84	0.05 0.07 0.10 0.15
TME-RRU-11	B	From Leg	4.00 0.00 4.00	0.0000	115.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.67	1.19 1.34 1.50 1.84	0.05 0.07 0.10 0.15
TME-RRU-11	C	From Leg	4.00 0.00 4.00	0.0000	115.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.67	1.19 1.34 1.50 1.84	0.05 0.07 0.10 0.15
TME-DC6-48-60-18-8F	A	From Leg	4.00 0.00 4.00	0.0000	115.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.00 1.58 1.77 2.18	1.00 1.58 1.77 2.18	0.03 0.05 0.07 0.13
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05

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	3.06	3.06	0.09
						2" Ice			
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	115.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	115.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice			
Side Arm Mount [SO 102-3]	C	None		0.0000	115.00	No Ice	3.60	3.60	0.07
						1/2"	4.18	4.18	0.11
						Ice	4.75	4.75	0.14
						1" Ice	5.90	5.90	0.20
						2" Ice			
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ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00	0.0000	107.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.23
						1" Ice	4.43	3.84	0.38
						2" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00	0.0000	107.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.23
						1" Ice	4.43	3.84	0.38
						2" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00	0.0000	107.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.23
						1" Ice	4.43	3.84	0.38
						2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00	0.0000	107.00	No Ice	14.69	6.87	0.19
			0.00			1/2"	15.46	7.55	0.31
			0.00			Ice	16.23	8.25	0.46
						1" Ice	17.82	9.67	0.79
						2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00	0.0000	107.00	No Ice	14.69	6.87	0.19
			0.00			1/2"	15.46	7.55	0.31
			0.00			Ice	16.23	8.25	0.46
						1" Ice	17.82	9.67	0.79
						2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00	0.0000	107.00	No Ice	14.69	6.87	0.19
			0.00			1/2"	15.46	7.55	0.31
			0.00			Ice	16.23	8.25	0.46
						1" Ice	17.82	9.67	0.79
						2" Ice			
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00	0.0000	107.00	No Ice	3.76	3.15	0.19
			0.00			1/2"	4.12	3.49	0.25
			0.00			Ice	4.48	3.84	0.32
						1" Ice	5.24	4.58	0.48
						2" Ice			
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00	0.0000	107.00	No Ice	3.76	3.15	0.19
			0.00			1/2"	4.12	3.49	0.25
			0.00			Ice	4.48	3.84	0.32
						1" Ice	5.24	4.58	0.48
						2" Ice			
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00	0.0000	107.00	No Ice	3.76	3.15	0.19
			0.00			1/2"	4.12	3.49	0.25
			0.00			Ice	4.48	3.84	0.32
						1" Ice	5.24	4.58	0.48
						2" Ice			
KRY 112 144/1	A	From Leg	4.00	0.0000	107.00	No Ice	0.35	0.17	0.01
			0.00			1/2"	0.43	0.23	0.01

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			Ice	0.51	0.30	0.02
						1" Ice	0.70	0.46	0.03
						2" Ice			
(2) KRY 112 144/1	B	From Leg	4.00	0.0000	107.00	No Ice	0.35	0.17	0.01
			0.00			1/2"	0.43	0.23	0.01
			0.00			Ice	0.51	0.30	0.02
						1" Ice	0.70	0.46	0.03
						2" Ice			
(2) RADIO 4449 B12/B71	A	From Leg	4.00	0.0000	107.00	No Ice	1.65	1.16	0.07
			0.00			1/2"	1.81	1.30	0.09
			0.00			Ice	1.98	1.45	0.11
						1" Ice	2.34	1.76	0.16
						2" Ice			
RADIO 4449 B12/B71	C	From Leg	4.00	0.0000	107.00	No Ice	1.65	1.16	0.07
			0.00			1/2"	1.81	1.30	0.09
			0.00			Ice	1.98	1.45	0.11
						1" Ice	2.34	1.76	0.16
						2" Ice			
T-Arm Mount [TA 701-3]	C	None		0.0000	107.00	No Ice	23.94	23.94	1.09
						1/2"	30.04	30.04	1.48
						Ice	36.16	36.16	1.95
						1" Ice	48.72	48.72	3.16
						2" Ice			
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MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	97.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice	10.11	6.12	0.52
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	97.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice	10.11	6.12	0.52
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	97.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice	10.11	6.12	0.52
						2" Ice			
TA08025-B604	A	From Leg	4.00	0.0000	97.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	B	From Leg	4.00	0.0000	97.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	C	From Leg	4.00	0.0000	97.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B605	A	From Leg	4.00	0.0000	97.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
TA08025-B605	B	From Leg	4.00	0.0000	97.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
TA08025-B605	C	From Leg	4.00	0.0000	97.00	No Ice	1.96	1.13	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
						2" Ice	2.71	1.72	0.16
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	97.00	No Ice	2.01	1.17	0.02
			0.00			1/2" Ice	2.19	1.31	0.04
			0.00			1" Ice	2.37	1.46	0.06
						2" Ice	2.76	1.78	0.11
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.0000	97.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
						2" Ice	4.40	4.40	0.12
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.0000	97.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
						2" Ice	4.40	4.40	0.12
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.0000	97.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
						2" Ice	4.40	4.40	0.12
Commscope MC-PK8-DSH	C	None		0.0000	97.00	No Ice	34.24	34.24	1.75
						1/2" Ice	62.95	62.95	2.10
						1" Ice	91.66	91.66	2.45
						2" Ice	149.08	149.08	3.15
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58532A	A	From Leg	4.00	0.0000	49.00	No Ice	0.19	0.19	0.00
			0.00			1/2" Ice	0.25	0.25	0.00
			1.00			1" Ice	0.31	0.31	0.01
						2" Ice	0.47	0.47	0.02
Side Arm Mount [SO 701-1]	A	From Leg	1.00	0.0000	49.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
						2" Ice	2.01	4.35	0.12
******									

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

Comb. No.	Description
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
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	147.5 - 142.5	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-16.05	-0.06	0.10
			Max. Mx	8	-5.84	-30.23	0.02
			Max. My	2	-5.85	-0.01	30.16
			Max. Vy	20	-7.24	30.21	0.02
			Max. Vx	2	-7.23	-0.01	30.16
			Max. Torque	6			0.00
L2	142.5 - 137.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.86	-0.12	0.21
			Max. Mx	8	-6.23	-67.34	0.04
			Max. My	2	-6.25	-0.01	67.22
			Max. Vy	20	-7.60	67.30	0.04
			Max. Vx	2	-7.59	-0.01	67.22
			Max. Torque	6			0.00
L3	137.5 - 132.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.39	-1.11	1.01
			Max. Mx	8	-10.95	-127.58	-0.03
			Max. My	2	-10.96	0.00	127.50
			Max. Vy	20	-12.54	127.11	0.35
			Max. Vx	2	-12.57	0.00	127.50
			Max. Torque	25			-0.34
L4	132.5 - 127.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.30	-1.16	1.18

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-11.44	-191.21	-0.21
			Max. My	2	-11.45	0.20	191.28
			Max. Vy	20	-12.91	190.73	0.59
			Max. Vx	2	-12.94	0.20	191.28
			Max. Torque	25			-0.34
L5	127.5 - 122.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.23	-1.21	1.36
			Max. Mx	8	-11.96	-256.69	-0.39
			Max. My	2	-11.97	0.41	256.89
			Max. Vy	20	-13.28	256.19	0.83
			Max. Vx	2	-13.31	0.41	256.89
			Max. Torque	25			-0.34
L6	122.5 - 117.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.19	-1.26	1.54
			Max. Mx	8	-12.50	-324.03	-0.56
			Max. My	2	-12.51	0.61	324.36
			Max. Vy	20	-13.66	323.50	1.07
			Max. Vx	2	-13.68	0.61	324.36
			Max. Torque	25			-0.34
L7	117.5 - 112.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.72	-0.23	3.69
			Max. Mx	20	-16.49	411.00	1.43
			Max. My	2	-16.50	0.70	412.80
			Max. Vy	20	-17.48	411.00	1.43
			Max. Vx	2	-17.59	0.70	412.80
			Max. Torque	19			-1.11
L8	112.5 - 108.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.77	-0.23	3.71
			Max. Mx	20	-16.53	415.37	1.43
			Max. My	2	-16.54	0.69	417.20
			Max. Vy	20	-17.50	415.37	1.43
			Max. Vx	2	-17.61	0.69	417.20
			Max. Torque	19			-1.11
L9	108.5 - 107.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.44	-0.27	3.92
			Max. Mx	8	-17.49	-503.95	0.10
			Max. My	2	-17.50	0.63	506.34
			Max. Vy	20	-17.93	503.94	1.41
			Max. Vx	2	-18.04	0.63	506.34
			Max. Torque	19			-1.11
L10	107.25 - 102.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.68	0.43	5.63
			Max. Mx	20	-21.23	609.84	2.03
			Max. My	2	-21.26	0.87	612.98
			Max. Vy	20	-21.50	609.84	2.03
			Max. Vx	2	-21.52	0.87	612.98
			Max. Torque	19			-1.41
L11	102.25 - 97.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.03	0.71	6.04
			Max. Mx	20	-21.97	719.11	2.02
			Max. My	2	-22.05	0.86	721.39
			Max. Vy	20	-22.21	719.11	2.02
			Max. Vx	2	-21.84	0.86	721.39
			Max. Torque	21			-1.54
L12	97.25 - 92.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.21	0.99	7.05
			Max. Mx	20	-25.72	845.01	2.13
			Max. My	2	-25.81	0.85	845.40
			Max. Vy	20	-25.53	845.01	2.13
			Max. Vx	2	-25.08	0.85	845.40
			Max. Torque	21			-1.73

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L13	92.25 - 87.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.62	1.28	7.47
			Max. Mx	20	-26.59	973.59	2.14
			Max. My	2	-26.69	0.85	971.45
			Max. Vy	20	-25.91	973.59	2.14
			Max. Vx	2	-25.36	0.85	971.45
			Max. Torque	21			-1.73
L14	87.25 - 82.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.05	1.57	7.89
			Max. Mx	20	-27.49	1104.03	2.14
			Max. My	2	-27.59	0.84	1098.85
			Max. Vy	20	-26.28	1104.03	2.14
			Max. Vx	2	-25.62	0.84	1098.85
			Max. Torque	21			-1.73
L15	82.25 - 77.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.50	1.87	8.30
			Max. Mx	20	-28.42	1236.23	2.15
			Max. My	2	-28.52	0.83	1227.55
			Max. Vy	20	-26.62	1236.23	2.15
			Max. Vx	2	-25.88	0.83	1227.55
			Max. Torque	21			-1.73
L16	77.25 - 72.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.64	1.90	8.34
			Max. Mx	20	-28.52	1249.55	2.15
			Max. My	2	-28.63	0.83	1240.49
			Max. Vy	20	-26.65	1249.55	2.15
			Max. Vx	2	-25.89	0.83	1240.49
			Max. Torque	21			-1.73
L17	72.25 - 71.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.14	2.20	8.74
			Max. Mx	20	-30.02	1384.04	2.15
			Max. My	2	-30.13	0.83	1370.98
			Max. Vy	20	-27.13	1384.04	2.15
			Max. Vx	2	-26.29	0.83	1370.98
			Max. Torque	21			-1.72
L18	71.75 - 66.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.76	2.50	9.13
			Max. Mx	20	-31.09	1520.59	2.15
			Max. My	2	-31.20	0.82	1503.10
			Max. Vy	20	-27.49	1520.59	2.15
			Max. Vx	2	-26.57	0.82	1503.10
			Max. Torque	21			-1.72
L19	66.75 - 61.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.41	2.80	9.52
			Max. Mx	20	-32.20	1658.86	2.16
			Max. My	2	-32.31	0.82	1636.53
			Max. Vy	20	-27.83	1658.86	2.16
			Max. Vx	2	-26.82	0.82	1636.53
			Max. Torque	21			-1.72
L20	61.75 - 56.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.08	3.10	9.90
			Max. Mx	20	-33.34	1798.75	2.16
			Max. My	2	-33.44	0.81	1771.22
			Max. Vy	20	-28.15	1798.75	2.16
			Max. Vx	2	-27.07	0.81	1771.22
			Max. Torque	21			-1.72
L21	56.75 - 51.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.77	3.40	10.27
			Max. Mx	20	-34.50	1940.17	2.16
			Max. My	2	-34.60	0.81	1907.09

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	-28.44	1940.17	2.16
			Max. Vx	2	-27.30	0.81	1907.09
			Max. Torque	21			-1.72
L22	51.75 - 47.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.30	3.64	10.98
			Max. Mx	20	-35.50	2052.08	2.36
			Max. My	2	-35.60	0.81	2014.57
			Max. Vy	20	-28.74	2052.08	2.36
			Max. Vx	2	-27.52	0.81	2014.57
			Max. Torque	21			-1.90
L23	47.833 - 47.583	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.39	3.65	11.01
			Max. Mx	20	-35.58	2059.26	2.36
			Max. My	2	-35.67	0.81	2021.45
			Max. Vy	20	-28.74	2059.26	2.36
			Max. Vx	2	-27.51	0.81	2021.45
			Max. Torque	21			-1.90
L24	47.583 - 42.583	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.31	3.95	11.36
			Max. Mx	20	-36.77	2203.71	2.36
			Max. My	2	-36.86	0.81	2159.50
			Max. Vy	20	-29.05	2203.71	2.36
			Max. Vx	2	-27.72	0.81	2159.50
			Max. Torque	21			-1.90
L25	42.583 - 35.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.89	4.05	11.47
			Max. Mx	20	-37.15	2249.74	2.36
			Max. My	2	-37.24	0.81	2203.42
			Max. Vy	20	-29.14	2249.74	2.36
			Max. Vx	2	-27.80	0.81	2203.42
			Max. Torque	21			-1.90
L26	35.75 - 34.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.74	4.43	11.91
			Max. Mx	20	-39.67	2433.39	2.36
			Max. My	2	-39.75	0.81	2378.36
			Max. Vy	20	-29.62	2433.39	2.36
			Max. Vx	2	-28.19	0.81	2378.36
			Max. Torque	21			-1.89
L27	34.75 - 29.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.67	4.72	12.25
			Max. Mx	20	-41.07	2582.05	2.36
			Max. My	2	-41.14	0.81	2519.75
			Max. Vy	20	-29.86	2582.05	2.36
			Max. Vx	2	-28.38	0.81	2519.75
			Max. Torque	21			-1.89
L28	29.75 - 24.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.63	5.02	12.58
			Max. Mx	20	-42.50	2731.86	2.36
			Max. My	2	-42.56	0.81	2662.05
			Max. Vy	20	-30.08	2731.86	2.36
			Max. Vx	2	-28.56	0.81	2662.05
			Max. Torque	21			-1.89
L29	24.75 - 19.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.59	5.31	12.89
			Max. Mx	20	-43.95	2882.75	2.35
			Max. My	2	-44.00	0.82	2805.23
			Max. Vy	20	-30.29	2882.75	2.35
			Max. Vx	2	-28.73	0.82	2805.23
			Max. Torque	21			-1.89
L30	19.75 - 14.75	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-94.58	5.58	13.16
			Max. Mx	20	-45.42	3034.69	2.35
			Max. My	2	-45.46	0.82	2949.28
			Max. Vy	20	-30.50	3034.69	2.35
			Max. Vx	2	-28.91	0.82	2949.28
			Max. Torque	21			-1.89
L31	14.75 - 9.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.57	5.86	13.43
			Max. Mx	20	-46.92	3187.66	2.35
			Max. My	2	-46.95	0.82	3094.18
			Max. Vy	20	-30.70	3187.66	2.35
			Max. Vx	2	-29.07	0.82	3094.18
			Max. Torque	21			-1.89
L32	9.75 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.42	6.09	13.60
			Max. Mx	20	-48.38	3341.51	2.33
			Max. My	2	-48.39	0.82	3239.89
			Max. Vy	20	-30.86	3341.51	2.33
			Max. Vx	2	-29.24	0.82	3239.89
			Max. Torque	21			-1.89
L33	4.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.90	6.09	13.60
			Max. Mx	20	-49.63	3488.34	2.26
			Max. My	2	-49.63	0.75	3379.04
			Max. Vy	20	-31.02	3488.34	2.26
			Max. Vx	2	-29.40	0.75	3379.04
			Max. Torque	21			-1.89

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	99.90	-0.00	8.49
	Max. H_x	20	49.65	30.98	-0.01
	Max. H_z	3	37.24	-0.01	29.37
	Max. M_x	2	3379.04	-0.01	29.37
	Max. M_z	8	3484.99	-30.98	0.01
	Max. Torsion	9	1.88	-30.98	0.01
	Min. Vert	23	37.24	25.29	14.67
	Min. H_x	8	49.65	-30.98	0.01
	Min. H_z	15	37.24	0.01	-29.37
	Min. M_x	14	-3372.64	0.01	-29.37
	Min. M_z	20	-3488.34	30.98	-0.01
	Min. Torsion	21	-1.89	30.98	-0.01

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	41.37	-0.00	-0.00	-2.55	1.34	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	49.65	0.01	-29.37	-3379.04	0.75	-0.47
0.9 Dead+1.0 Wind 0 deg - No Ice	37.24	0.01	-29.37	-3305.61	0.31	-0.47
1.2 Dead+1.0 Wind 30 deg - No Ice	49.65	14.62	-25.44	-2927.26	-1675.46	-1.24
0.9 Dead+1.0 Wind 30 deg - No Ice	37.24	14.62	-25.44	-2863.55	-1639.87	-1.25
1.2 Dead+1.0 Wind 60 deg -	49.65	25.65	-14.90	-1708.91	-2931.69	-1.68

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
No Ice						
0.9 Dead+1.0 Wind 60 deg - No Ice	37.24	25.65	-14.90	-1671.50	-2869.28	-1.70
1.2 Dead+1.0 Wind 90 deg - No Ice	49.65	30.98	-0.01	-4.10	-3484.99	-1.87
0.9 Dead+1.0 Wind 90 deg - No Ice	37.24	30.98	-0.01	-3.24	-3411.41	-1.88
1.2 Dead+1.0 Wind 120 deg - No Ice	49.65	25.29	14.67	1683.99	-2901.40	-1.22
0.9 Dead+1.0 Wind 120 deg - No Ice	37.24	25.29	14.67	1648.57	-2839.45	-1.23
1.2 Dead+1.0 Wind 150 deg - No Ice	49.65	14.59	25.43	2919.94	-1673.84	-0.44
0.9 Dead+1.0 Wind 150 deg - No Ice	37.24	14.59	25.43	2857.96	-1638.27	-0.45
1.2 Dead+1.0 Wind 180 deg - No Ice	49.65	-0.01	29.37	3372.64	2.60	0.46
0.9 Dead+1.0 Wind 180 deg - No Ice	37.24	-0.01	29.37	3300.94	2.15	0.46
1.2 Dead+1.0 Wind 210 deg - No Ice	49.65	-14.62	25.44	2920.87	1678.79	1.24
0.9 Dead+1.0 Wind 210 deg - No Ice	37.24	-14.62	25.44	2858.89	1642.32	1.25
1.2 Dead+1.0 Wind 240 deg - No Ice	49.65	-25.65	14.90	1702.54	2935.03	1.69
0.9 Dead+1.0 Wind 240 deg - No Ice	37.24	-25.65	14.90	1666.86	2871.73	1.71
1.2 Dead+1.0 Wind 270 deg - No Ice	49.65	-30.98	0.01	-2.25	3488.34	1.88
0.9 Dead+1.0 Wind 270 deg - No Ice	37.24	-30.98	0.01	-1.39	3413.87	1.89
1.2 Dead+1.0 Wind 300 deg - No Ice	49.65	-25.29	-14.67	-1690.37	2904.76	1.22
0.9 Dead+1.0 Wind 300 deg - No Ice	37.24	-25.29	-14.67	-1653.22	2841.92	1.23
1.2 Dead+1.0 Wind 330 deg - No Ice	49.65	-14.59	-25.43	-2926.33	1677.20	0.43
0.9 Dead+1.0 Wind 330 deg - No Ice	37.24	-14.59	-25.43	-2862.62	1640.73	0.44
1.2 Dead+1.0 Ice+1.0 Temp	99.90	-0.00	-0.00	-13.60	6.09	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	99.90	0.00	-8.49	-1105.87	5.98	-0.12
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	99.90	4.23	-7.35	-959.63	-537.92	-0.30
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	99.90	7.33	-4.25	-559.92	-936.06	-0.41
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	99.90	8.51	-0.00	-13.83	-1087.23	-0.44
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	99.90	7.33	4.24	532.29	-935.91	-0.29
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	99.90	4.23	7.35	932.12	-537.67	-0.10
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	99.90	-0.00	8.49	1078.52	6.28	0.12
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	99.90	-4.23	7.35	932.26	550.19	0.30
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	99.90	-7.33	4.25	532.54	948.32	0.41
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	99.90	-8.51	0.00	-13.54	1099.49	0.44
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	99.90	-7.33	-4.24	-559.66	948.17	0.29
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	99.90	-4.23	-7.35	-959.48	549.93	0.10
Dead+Wind 0 deg - Service	41.37	0.00	-6.37	-726.95	1.19	-0.10
Dead+Wind 30 deg - Service	41.37	3.17	-5.52	-630.01	-358.44	-0.28
Dead+Wind 60 deg - Service	41.37	5.57	-3.23	-368.64	-628.00	-0.38
Dead+Wind 90 deg - Service	41.37	6.72	-0.00	-2.85	-746.85	-0.42
Dead+Wind 120 deg -	41.37	5.49	3.18	359.32	-621.46	-0.28

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
Service						
Dead+Wind 150 deg - Service	41.37	3.17	5.52	624.51	-358.10	-0.10
Dead+Wind 180 deg - Service	41.37	-0.00	6.37	721.64	1.59	0.10
Dead+Wind 210 deg - Service	41.37	-3.17	5.52	624.71	361.22	0.28
Dead+Wind 240 deg - Service	41.37	-5.57	3.23	363.33	630.77	0.38
Dead+Wind 270 deg - Service	41.37	-6.72	0.00	-2.45	749.63	0.42
Dead+Wind 300 deg - Service	41.37	-5.49	-3.18	-364.63	624.24	0.28
Dead+Wind 330 deg - Service	41.37	-3.17	-5.52	-629.82	360.87	0.10

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-41.37	0.00	0.00	41.37	0.00	0.000%
2	0.01	-49.65	-29.37	-0.01	49.65	29.37	0.000%
3	0.01	-37.24	-29.37	-0.01	37.24	29.37	0.000%
4	14.62	-49.65	-25.44	-14.62	49.65	25.44	0.000%
5	14.62	-37.24	-25.44	-14.62	37.24	25.44	0.000%
6	25.65	-49.65	-14.90	-25.65	49.65	14.90	0.000%
7	25.65	-37.24	-14.90	-25.65	37.24	14.90	0.000%
8	30.98	-49.65	-0.01	-30.98	49.65	0.01	0.000%
9	30.98	-37.24	-0.01	-30.98	37.24	0.01	0.000%
10	25.29	-49.65	14.67	-25.29	49.65	-14.67	0.000%
11	25.29	-37.24	14.67	-25.29	37.24	-14.67	0.000%
12	14.59	-49.65	25.43	-14.59	49.65	-25.43	0.000%
13	14.59	-37.24	25.43	-14.59	37.24	-25.43	0.000%
14	-0.01	-49.65	29.37	0.01	49.65	-29.37	0.000%
15	-0.01	-37.24	29.37	0.01	37.24	-29.37	0.000%
16	-14.62	-49.65	25.44	14.62	49.65	-25.44	0.000%
17	-14.62	-37.24	25.44	14.62	37.24	-25.44	0.000%
18	-25.65	-49.65	14.90	25.65	49.65	-14.90	0.000%
19	-25.65	-37.24	14.90	25.65	37.24	-14.90	0.000%
20	-30.98	-49.65	0.01	30.98	49.65	-0.01	0.000%
21	-30.98	-37.24	0.01	30.98	37.24	-0.01	0.000%
22	-25.29	-49.65	-14.67	25.29	49.65	14.67	0.000%
23	-25.29	-37.24	-14.67	25.29	37.24	14.67	0.000%
24	-14.59	-49.65	-25.43	14.59	49.65	25.43	0.000%
25	-14.59	-37.24	-25.43	14.59	37.24	25.43	0.000%
26	0.00	-99.90	0.00	0.00	99.90	0.00	0.000%
27	0.00	-99.90	-8.49	-0.00	99.90	8.49	0.000%
28	4.23	-99.90	-7.35	-4.23	99.90	7.35	0.000%
29	7.33	-99.90	-4.25	-7.33	99.90	4.25	0.000%
30	8.51	-99.90	-0.00	-8.51	99.90	0.00	0.000%
31	7.33	-99.90	4.24	-7.33	99.90	-4.24	0.000%
32	4.23	-99.90	7.35	-4.23	99.90	-7.35	0.000%
33	-0.00	-99.90	8.49	0.00	99.90	-8.49	0.000%
34	-4.23	-99.90	7.35	4.23	99.90	-7.35	0.000%
35	-7.33	-99.90	4.25	7.33	99.90	-4.25	0.000%
36	-8.51	-99.90	0.00	8.51	99.90	-0.00	0.000%
37	-7.33	-99.90	-4.24	7.33	99.90	4.24	0.000%
38	-4.23	-99.90	-7.35	4.23	99.90	7.35	0.000%
39	0.00	-41.37	-6.37	-0.00	41.37	6.37	0.000%
40	3.17	-41.37	-5.52	-3.17	41.37	5.52	0.000%
41	5.57	-41.37	-3.23	-5.57	41.37	3.23	0.000%
42	6.72	-41.37	-0.00	-6.72	41.37	0.00	0.000%
43	5.49	-41.37	3.18	-5.49	41.37	-3.18	0.000%
44	3.17	-41.37	5.52	-3.17	41.37	-5.52	0.000%
45	-0.00	-41.37	6.37	0.00	41.37	-6.37	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
46	-3.17	-41.37	5.52	3.17	41.37	-5.52	0.000%
47	-5.57	-41.37	3.23	5.57	41.37	-3.23	0.000%
48	-6.72	-41.37	0.00	6.72	41.37	-0.00	0.000%
49	-5.49	-41.37	-3.18	5.49	41.37	3.18	0.000%
50	-3.17	-41.37	-5.52	3.17	41.37	5.52	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001176
2	Yes	6	0.00000001	0.00018635
3	Yes	5	0.00000001	0.00082696
4	Yes	8	0.00000001	0.00013185
5	Yes	7	0.00000001	0.00031768
6	Yes	8	0.00000001	0.00013771
7	Yes	7	0.00000001	0.00033272
8	Yes	6	0.00000001	0.00055064
9	Yes	6	0.00000001	0.00018888
10	Yes	8	0.00000001	0.00013154
11	Yes	7	0.00000001	0.00031734
12	Yes	8	0.00000001	0.00013425
13	Yes	7	0.00000001	0.00032454
14	Yes	6	0.00000001	0.00019023
15	Yes	5	0.00000001	0.00084728
16	Yes	8	0.00000001	0.00013598
17	Yes	7	0.00000001	0.00032900
18	Yes	8	0.00000001	0.00013190
19	Yes	7	0.00000001	0.00031725
20	Yes	6	0.00000001	0.00054604
21	Yes	6	0.00000001	0.00018723
22	Yes	8	0.00000001	0.00013596
23	Yes	7	0.00000001	0.00032882
24	Yes	8	0.00000001	0.00013345
25	Yes	7	0.00000001	0.00032180
26	Yes	5	0.00000001	0.00051553
27	Yes	8	0.00000001	0.00046029
28	Yes	8	0.00000001	0.00097607
29	Yes	9	0.00000001	0.00025202
30	Yes	8	0.00000001	0.00045468
31	Yes	8	0.00000001	0.00092518
32	Yes	8	0.00000001	0.00093903
33	Yes	8	0.00000001	0.00044554
34	Yes	8	0.00000001	0.00096121
35	Yes	8	0.00000001	0.00093331
36	Yes	8	0.00000001	0.00045877
37	Yes	9	0.00000001	0.00025438
38	Yes	8	0.00000001	0.00099986
39	Yes	5	0.00000001	0.00022191
40	Yes	6	0.00000001	0.00016248
41	Yes	6	0.00000001	0.00018264
42	Yes	5	0.00000001	0.00034511
43	Yes	6	0.00000001	0.00015900
44	Yes	6	0.00000001	0.00016819
45	Yes	5	0.00000001	0.00021980
46	Yes	6	0.00000001	0.00017505
47	Yes	6	0.00000001	0.00016049
48	Yes	5	0.00000001	0.00034597
49	Yes	6	0.00000001	0.00017777
50	Yes	6	0.00000001	0.00016870

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.5 - 142.5	30.926	48	1.7766	0.0029
L2	142.5 - 137.5	29.067	48	1.7731	0.0029
L3	137.5 - 132.5	27.216	48	1.7614	0.0029
L4	132.5 - 127.5	25.382	48	1.7408	0.0028
L5	127.5 - 122.5	23.574	48	1.7106	0.0028
L6	122.5 - 117.5	21.803	48	1.6724	0.0027
L7	117.5 - 112.5	20.074	48	1.6279	0.0027
L8	112.5 - 108.5	18.396	48	1.5769	0.0025
L9	112.25 - 107.25	18.313	48	1.5741	0.0025
L10	107.25 - 102.25	16.681	48	1.5366	0.0024
L11	102.25 - 97.25	15.107	48	1.4701	0.0022
L12	97.25 - 92.25	13.605	48	1.3979	0.0020
L13	92.25 - 87.25	12.181	48	1.3205	0.0018
L14	87.25 - 82.25	10.841	48	1.2381	0.0016
L15	82.25 - 77.25	9.589	48	1.1519	0.0014
L16	77.25 - 72.25	8.430	48	1.0626	0.0012
L17	76.75 - 71.75	8.319	48	1.0535	0.0012
L18	71.75 - 66.75	7.238	48	1.0081	0.0011
L19	66.75 - 61.75	6.223	48	0.9297	0.0010
L20	61.75 - 56.75	5.291	48	0.8503	0.0009
L21	56.75 - 51.75	4.442	48	0.7705	0.0008
L22	51.75 - 47.833	3.678	48	0.6903	0.0007
L23	47.833 - 47.583	3.137	48	0.6275	0.0006
L24	47.583 - 42.583	3.104	48	0.6235	0.0006
L25	42.583 - 35.75	2.493	48	0.5434	0.0005
L26	41 - 34.75	2.317	48	0.5181	0.0005
L27	34.75 - 29.75	1.670	48	0.4652	0.0004
L28	29.75 - 24.75	1.219	48	0.3961	0.0003
L29	24.75 - 19.75	0.840	48	0.3276	0.0003
L30	19.75 - 14.75	0.533	48	0.2598	0.0002
L31	14.75 - 9.75	0.296	48	0.1928	0.0002
L32	9.75 - 4.75	0.129	48	0.1266	0.0001
L33	4.75 - 0	0.030	48	0.0612	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	Platform Mount [LP 1201-1]	48	30.740	1.7764	0.0029	37148
145.00	TME-PCS 1900MHz 4x45W-65MHz	48	29.996	1.7755	0.0029	37148
137.00	(2) SBNHH-1D65B	48	27.032	1.7597	0.0029	16883
117.00	7770.00 w/ Mount Pipe	48	19.904	1.6231	0.0027	5899
115.00	TME-RRU-11	48	19.228	1.6033	0.0026	5969
107.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	48	16.601	1.5342	0.0024	5056
97.00	MX08FRO665-21 w/ Mount Pipe	48	13.532	1.3942	0.0020	3792
49.00	58532A	48	3.293	0.6462	0.0006	3584

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.5 - 142.5	144.108	20	8.3042	0.0126
L2	142.5 - 137.5	135.447	20	8.2877	0.0126
L3	137.5 - 132.5	126.824	20	8.2326	0.0126
L4	132.5 - 127.5	118.279	20	8.1360	0.0124

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L5	127.5 - 122.5	109.858	20	7.9935	0.0122
L6	122.5 - 117.5	101.604	20	7.8141	0.0120
L7	117.5 - 112.5	93.553	20	7.6050	0.0119
L8	112.5 - 108.5	85.734	20	7.3660	0.0112
L9	112.25 - 107.25	85.350	20	7.3532	0.0111
L10	107.25 - 102.25	77.745	20	7.1774	0.0107
L11	102.25 - 97.25	70.408	20	6.8662	0.0098
L12	97.25 - 92.25	63.409	20	6.5284	0.0089
L13	92.25 - 87.25	56.774	20	6.1661	0.0079
L14	87.25 - 82.25	50.528	20	5.7807	0.0070
L15	82.25 - 77.25	44.694	20	5.3772	0.0061
L16	77.25 - 72.25	39.288	20	4.9595	0.0054
L17	76.75 - 71.75	38.771	20	4.9171	0.0053
L18	71.75 - 66.75	33.730	20	4.7046	0.0050
L19	66.75 - 61.75	29.000	20	4.3379	0.0044
L20	61.75 - 56.75	24.655	20	3.9671	0.0039
L21	56.75 - 51.75	20.699	20	3.5937	0.0034
L22	51.75 - 47.833	17.134	20	3.2191	0.0030
L23	47.833 - 47.583	14.615	20	2.9257	0.0026
L24	47.583 - 42.583	14.462	20	2.9070	0.0026
L25	42.583 - 35.75	11.615	20	2.5331	0.0022
L26	41 - 34.75	10.795	20	2.4150	0.0021
L27	34.75 - 29.75	7.778	20	2.1680	0.0018
L28	29.75 - 24.75	5.677	20	1.8455	0.0015
L29	24.75 - 19.75	3.912	20	1.5260	0.0012
L30	19.75 - 14.75	2.480	20	1.2100	0.0009
L31	14.75 - 9.75	1.377	20	0.8976	0.0007
L32	9.75 - 4.75	0.599	20	0.5892	0.0004
L33	4.75 - 0	0.142	20	0.2850	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	Platform Mount [LP 1201-1]	20	143.241	8.3033	0.0133	8262
145.00	TME-PCS 1900MHz 4x45W-65MHz	20	139.775	8.2989	0.0133	8262
137.00	(2) SBNHH-1D65B	20	125.965	8.2249	0.0133	3766
117.00	7770.00 w/ Mount Pipe	20	92.760	7.5825	0.0123	1305
115.00	TME-RRU-11	20	89.612	7.4898	0.0120	1321
107.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	20	77.371	7.1662	0.0109	1118
97.00	MX08FRO665-21 w/ Mount Pipe	20	63.068	6.5111	0.0090	834
49.00	58532A	20	15.340	3.0131	0.0027	771

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	147.5 - 142.5 (1)	TP22.95x22x0.25	5.00	0.00	0.0	18.0124	-5.84	972.67	0.006
L2	142.5 - 137.5 (2)	TP23.9x22.95x0.25	5.00	0.00	0.0	18.7663	-6.23	1013.38	0.006
L3	137.5 - 132.5 (3)	TP24.85x23.9x0.25	5.00	0.00	0.0	19.5201	-10.95	1054.09	0.010
L4	132.5 - 127.5	TP25.8x24.85x0.25	5.00	0.00	0.0	20.273	-11.45	1094.79	0.010

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(4)					9			
L5	127.5 - 122.5 (5)	TP26.75x25.8x0.25	5.00	0.00	0.0	21.027 8	-11.97	1135.50	0.011
L6	122.5 - 117.5 (6)	TP27.7x26.75x0.25	5.00	0.00	0.0	21.781 6	-12.51	1176.21	0.011
L7	117.5 - 112.5 (7)	TP28.65x27.7x0.25	5.00	0.00	0.0	22.535 4	-16.50	1216.91	0.014
L8	112.5 - 108.5 (8)	TP29.41x28.65x0.25	4.00	0.00	0.0	22.573 1	-16.54	1218.95	0.014
L9	108.5 - 107.25 (9)	TP29.1476x28.1975x0.25	5.00	0.00	0.0	22.930 2	-17.50	1341.42	0.013
L10	107.25 - 102.25 (10)	TP30.0976x29.1476x0.25	5.00	0.00	0.0	23.684 1	-21.26	1385.52	0.015
L11	102.25 - 97.25 (11)	TP31.0477x30.0976x0.25	5.00	0.00	0.0	24.438 0	-22.05	1429.62	0.015
L12	97.25 - 92.25 (12)	TP31.9978x31.0477x0.25	5.00	0.00	0.0	25.191 8	-25.81	1473.72	0.018
L13	92.25 - 87.25 (13)	TP32.9478x31.9978x0.25	5.00	0.00	0.0	25.945 7	-26.59	1517.82	0.018
L14	87.25 - 82.25 (14)	TP33.8979x32.9478x0.25	5.00	0.00	0.0	26.699 6	-27.49	1561.93	0.018
L15	82.25 - 77.25 (15)	TP34.8479x33.8979x0.25	5.00	0.00	0.0	27.453 5	-28.42	1606.03	0.018
L16	77.25 - 72.25 (16)	TP35.798x34.8479x0.25	5.00	0.00	0.0	27.528 9	-28.52	1610.44	0.018
L17	72.25 - 71.75 (17)	TP35.3928x34.4429x0.31 25	5.00	0.00	0.0	34.795 3	-30.02	2035.53	0.015
L18	71.75 - 66.75 (18)	TP36.3427x35.3928x0.31 25	5.00	0.00	0.0	35.737 5	-31.09	2090.64	0.015
L19	66.75 - 61.75 (19)	TP37.2926x36.3427x0.31 25	5.00	0.00	0.0	36.679 6	-32.20	2145.76	0.015
L20	61.75 - 56.75 (20)	TP38.2425x37.2926x0.31 25	5.00	0.00	0.0	37.621 8	-33.34	2200.88	0.015
L21	56.75 - 51.75 (21)	TP39.1924x38.2425x0.31 25	5.00	0.00	0.0	38.564 0	-34.50	2255.99	0.015
L22	51.75 - 47.833 (22)	TP39.9365x39.1924x0.31 25	3.92	0.00	0.0	39.302 1	-35.50	2299.17	0.015
L23	47.833 - 47.583 (23)	TP39.984x39.9365x0.312 5	0.25	0.00	0.0	39.349 2	-35.58	2301.93	0.015
L24	47.583 - 42.583 (24)	TP40.9339x39.984x0.312 5	5.00	0.00	0.0	40.291 3	-36.77	2357.04	0.016
L25	42.583 - 35.75 (25)	TP42.232x40.9339x0.312 5	6.83	0.00	0.0	40.589 6	-37.15	2374.49	0.016
L26	35.75 - 34.75 (26)	TP41.7972x40.6096x0.37 5	6.25	0.00	0.0	49.302 7	-39.67	2884.21	0.014
L27	34.75 - 29.75 (27)	TP42.7472x41.7972x0.37 5	5.00	0.00	0.0	50.433 5	-41.07	2950.36	0.014
L28	29.75 - 24.75 (28)	TP43.6973x42.7472x0.37 5	5.00	0.00	0.0	51.564 3	-42.50	3016.51	0.014
L29	24.75 - 19.75 (29)	TP44.6473x43.6973x0.37 5	5.00	0.00	0.0	52.695 1	-43.95	3082.66	0.014
L30	19.75 - 14.75 (30)	TP45.5974x44.6473x0.37 5	5.00	0.00	0.0	53.825 9	-45.42	3148.82	0.014
L31	14.75 - 9.75 (31)	TP46.5474x45.5974x0.37 5	5.00	0.00	0.0	54.956 7	-46.92	3214.97	0.015
L32	9.75 - 4.75 (32)	TP47.4975x46.5474x0.37 5	5.00	0.00	0.0	56.087 5	-48.38	3281.12	0.015
L33	4.75 - 0 (33)	TP48.4x47.4975x0.375	4.75	0.00	0.0	57.161 8	-49.63	3343.96	0.015

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	147.5 - 142.5 (1)	TP22.95x22x0.25	30.23	574.82	0.053	0.00	574.82	0.000
L2	142.5 - 137.5 (2)	TP23.9x22.95x0.25	67.34	624.21	0.108	0.00	624.21	0.000
L3	137.5 - 132.5 (3)	TP24.85x23.9x0.25	127.58	675.64	0.189	0.00	675.64	0.000
L4	132.5 - 127.5 (4)	TP25.8x24.85x0.25	191.33	723.10	0.265	0.00	723.10	0.000
L5	127.5 - 122.5 (5)	TP26.75x25.8x0.25	257.05	770.96	0.333	0.00	770.96	0.000
L6	122.5 - 117.5 (6)	TP27.7x26.75x0.25	324.61	819.78	0.396	0.00	819.78	0.000
L7	117.5 - 112.5 (7)	TP28.65x27.7x0.25	412.80	869.52	0.475	0.00	869.52	0.000
L8	112.5 - 108.5 (8)	TP29.41x28.65x0.25	417.20	872.02	0.478	0.00	872.02	0.000
L9	108.5 - 107.25 (9)	TP29.1476x28.1975x0.25	506.34	959.47	0.528	0.00	959.47	0.000
L10	107.25 - 102.25 (10)	TP30.0976x29.1476x0.25	612.99	1013.58	0.605	0.00	1013.58	0.000
L11	102.25 - 97.25 (11)	TP31.0477x30.0976x0.25	721.39	1068.46	0.675	0.00	1068.46	0.000
L12	97.25 - 92.25 (12)	TP31.9978x31.0477x0.25	845.40	1124.03	0.752	0.00	1124.03	0.000
L13	92.25 - 87.25 (13)	TP32.9478x31.9978x0.25	973.59	1180.22	0.825	0.00	1180.22	0.000
L14	87.25 - 82.25 (14)	TP33.8979x32.9478x0.25	1104.03	1236.98	0.893	0.00	1236.98	0.000
L15	82.25 - 77.25 (15)	TP34.8479x33.8979x0.25	1236.23	1294.25	0.955	0.00	1294.25	0.000
L16	77.25 - 72.25 (16)	TP35.798x34.8479x0.25	1249.55	1300.01	0.961	0.00	1300.01	0.000
L17	72.25 - 71.75 (17)	TP35.3928x34.4429x0.3125	1384.04	1782.56	0.776	0.00	1782.56	0.000
L18	71.75 - 66.75 (18)	TP36.3427x35.3928x0.3125	1520.59	1865.85	0.815	0.00	1865.85	0.000
L19	66.75 - 61.75 (19)	TP37.2926x36.3427x0.3125	1658.86	1950.18	0.851	0.00	1950.18	0.000
L20	61.75 - 56.75 (20)	TP38.2425x37.2926x0.3125	1798.75	2035.47	0.884	0.00	2035.47	0.000
L21	56.75 - 51.75 (21)	TP39.1924x38.2425x0.3125	1940.18	2121.67	0.914	0.00	2121.67	0.000
L22	51.75 - 47.833 (22)	TP39.9365x39.1924x0.3125	2052.07	2189.78	0.937	0.00	2189.78	0.000
L23	47.833 - 47.583 (23)	TP39.984x39.9365x0.3125	2059.27	2194.15	0.939	0.00	2194.15	0.000
L24	47.583 - 42.583 (24)	TP40.9339x39.984x0.3125	2203.72	2281.83	0.966	0.00	2281.83	0.000
L25	42.583 - 35.75 (25)	TP42.232x40.9339x0.3125	2249.74	2309.75	0.974	0.00	2309.75	0.000
L26	35.75 - 34.75 (26)	TP41.7972x40.6096x0.375	2433.39	2996.00	0.812	0.00	2996.00	0.000
L27	34.75 - 29.75 (27)	TP42.7472x41.7972x0.375	2582.06	3114.92	0.829	0.00	3114.92	0.000
L28	29.75 - 24.75 (28)	TP43.6973x42.7472x0.375	2731.86	3235.13	0.844	0.00	3235.13	0.000
L29	24.75 - 19.75 (29)	TP44.6473x43.6973x0.375	2882.75	3356.57	0.859	0.00	3356.57	0.000
L30	19.75 - 14.75 (30)	TP45.5974x44.6473x0.375	3034.69	3479.18	0.872	0.00	3479.18	0.000
L31	14.75 - 9.75 (31)	TP46.5474x45.5974x0.375	3187.66	3602.88	0.885	0.00	3602.88	0.000
L32	9.75 - 4.75 (32)	TP47.4975x46.5474x0.375	3341.52	3727.64	0.896	0.00	3727.64	0.000
L33	4.75 - 0 (33)	TP48.4x47.4975x0.375	3488.34	3847.06	0.907	0.00	3847.06	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	147.5 - 142.5 (1)	TP22.95x22x0.25	7.24	291.80	0.025	0.00	580.09	0.000
L2	142.5 - 137.5 (2)	TP23.9x22.95x0.25	7.60	304.01	0.025	0.00	629.66	0.000
L3	137.5 - 132.5 (3)	TP24.85x23.9x0.25	12.54	316.23	0.040	0.19	681.26	0.000
L4	132.5 - 127.5 (4)	TP25.8x24.85x0.25	12.96	328.44	0.039	0.34	734.89	0.000
L5	127.5 - 122.5 (5)	TP26.75x25.8x0.25	13.33	340.65	0.039	0.34	790.56	0.000
L6	122.5 - 117.5 (6)	TP27.7x26.75x0.25	13.70	352.86	0.039	0.34	848.26	0.000
L7	117.5 - 112.5 (7)	TP28.65x27.7x0.25	17.59	362.63	0.049	0.37	907.98	0.000
L8	112.5 - 108.5 (8)	TP29.41x28.65x0.25	17.61	365.07	0.048	0.37	911.02	0.000
L9	108.5 - 107.25 (9)	TP29.1476x28.1975x0.25	18.04	399.12	0.045	0.37	1018.42	0.000
L10	107.25 - 102.25 (10)	TP30.0976x29.1476x0.25	21.52	413.01	0.052	0.48	1086.48	0.000
L11	102.25 - 97.25 (11)	TP31.0477x30.0976x0.25	21.84	426.24	0.051	0.48	1156.75	0.000
L12	97.25 - 92.25 (12)	TP31.9978x31.0477x0.25	25.08	439.47	0.057	0.48	1229.22	0.000
L13	92.25 - 87.25 (13)	TP32.9478x31.9978x0.25	25.91	455.35	0.057	1.71	1303.89	0.001
L14	87.25 - 82.25 (14)	TP33.8979x32.9478x0.25	26.28	468.58	0.056	1.71	1380.77	0.001
L15	82.25 - 77.25 (15)	TP34.8479x33.8979x0.25	26.62	481.81	0.055	1.71	1459.83	0.001
L16	77.25 - 72.25 (16)	TP35.798x34.8479x0.25	26.65	483.13	0.055	1.71	1467.87	0.001
L17	72.25 - 71.75 (17)	TP35.3928x34.4429x0.3125	27.13	610.66	0.044	1.71	1876.03	0.001
L18	71.75 - 66.75 (18)	TP36.3427x35.3928x0.3125	27.49	627.19	0.044	1.71	1979.01	0.001
L19	66.75 - 61.75 (19)	TP37.2926x36.3427x0.3125	27.83	643.73	0.043	1.71	2084.73	0.001
L20	61.75 - 56.75 (20)	TP38.2425x37.2926x0.3125	28.15	660.26	0.043	1.70	2193.21	0.001
L21	56.75 - 51.75 (21)	TP39.1924x38.2425x0.3125	28.44	676.80	0.042	1.70	2304.43	0.001
L22	51.75 - 47.833 (22)	TP39.9365x39.1924x0.3125	28.74	689.75	0.042	1.88	2393.48	0.001
L23	47.833 - 47.583 (23)	TP39.984x39.9365x0.3125	28.74	690.58	0.042	1.88	2399.22	0.001
L24	47.583 - 42.583 (24)	TP40.9339x39.984x0.3125	29.05	707.11	0.041	1.88	2515.49	0.001
L25	42.583 - 35.75 (25)	TP42.232x40.9339x0.3125	29.14	712.35	0.041	1.88	2552.88	0.001
L26	35.75 - 34.75 (26)	TP41.7972x40.6096x0.375	29.62	865.26	0.034	1.88	3138.78	0.001
L27	34.75 - 29.75 (27)	TP42.7472x41.7972x0.375	29.86	885.11	0.034	1.88	3284.42	0.001
L28	29.75 - 24.75 (28)	TP43.6973x42.7472x0.375	30.08	904.95	0.033	1.88	3433.35	0.001
L29	24.75 - 19.75 (29)	TP44.6473x43.6973x0.375	30.29	924.80	0.033	1.88	3585.58	0.001
L30	19.75 - 14.75 (30)	TP45.5974x44.6473x0.375	30.50	944.64	0.032	1.88	3741.13	0.001
L31	14.75 - 9.75 (31)	TP46.5474x45.5974x0.375	30.70	964.49	0.032	1.88	3899.96	0.000
L32	9.75 - 4.75 (32)	TP47.4975x46.5474x0.375	30.86	984.34	0.031	1.88	4062.11	0.000
L33	4.75 - 0 (33)	TP48.4x47.4975x0.375	31.02	1003.19	0.031	1.88	4219.20	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	147.5 - 142.5 (1)	0.006	0.053	0.000	0.025	0.000	0.059	1.050	4.8.2
L2	142.5 - 137.5 (2)	0.006	0.108	0.000	0.025	0.000	0.115	1.050	4.8.2
L3	137.5 - 132.5 (3)	0.010	0.189	0.000	0.040	0.000	0.201	1.050	4.8.2
L4	132.5 - 127.5 (4)	0.010	0.265	0.000	0.039	0.000	0.277	1.050	4.8.2
L5	127.5 - 122.5 (5)	0.011	0.333	0.000	0.039	0.000	0.346	1.050	4.8.2
L6	122.5 - 117.5 (6)	0.011	0.396	0.000	0.039	0.000	0.408	1.050	4.8.2
L7	117.5 - 112.5 (7)	0.014	0.475	0.000	0.049	0.000	0.491	1.050	4.8.2
L8	112.5 - 108.5 (8)	0.014	0.478	0.000	0.048	0.000	0.494	1.050	4.8.2
L9	108.5 - 107.25 (9)	0.013	0.528	0.000	0.045	0.000	0.543	1.050	4.8.2
L10	107.25 - 102.25 (10)	0.015	0.605	0.000	0.052	0.000	0.623	1.050	4.8.2
L11	102.25 - 97.25 (11)	0.015	0.675	0.000	0.051	0.000	0.693	1.050	4.8.2
L12	97.25 - 92.25 (12)	0.018	0.752	0.000	0.057	0.000	0.773	1.050	4.8.2
L13	92.25 - 87.25 (13)	0.018	0.825	0.000	0.057	0.001	0.846	1.050	4.8.2
L14	87.25 - 82.25 (14)	0.018	0.893	0.000	0.056	0.001	0.913	1.050	4.8.2
L15	82.25 - 77.25 (15)	0.018	0.955	0.000	0.055	0.001	0.976	1.050	4.8.2
L16	77.25 - 72.25 (16)	0.018	0.961	0.000	0.055	0.001	0.982	1.050	4.8.2
L17	72.25 - 71.75 (17)	0.015	0.776	0.000	0.044	0.001	0.793	1.050	4.8.2
L18	71.75 - 66.75 (18)	0.015	0.815	0.000	0.044	0.001	0.832	1.050	4.8.2
L19	66.75 - 61.75 (19)	0.015	0.851	0.000	0.043	0.001	0.868	1.050	4.8.2
L20	61.75 - 56.75 (20)	0.015	0.884	0.000	0.043	0.001	0.901	1.050	4.8.2
L21	56.75 - 51.75 (21)	0.015	0.914	0.000	0.042	0.001	0.932	1.050	4.8.2
L22	51.75 - 47.833 (22)	0.015	0.937	0.000	0.042	0.001	0.954	1.050	4.8.2
L23	47.833 - 47.583 (23)	0.015	0.939	0.000	0.042	0.001	0.956	1.050	4.8.2
L24	47.583 - 42.583 (24)	0.016	0.966	0.000	0.041	0.001	0.983	1.050	4.8.2
L25	42.583 - 35.75 (25)	0.016	0.974	0.000	0.041	0.001	0.991	1.050	4.8.2
L26	35.75 - 34.75 (26)	0.014	0.812	0.000	0.034	0.001	0.827	1.050	4.8.2
L27	34.75 - 29.75 (27)	0.014	0.829	0.000	0.034	0.001	0.844	1.050	4.8.2
L28	29.75 - 24.75 (28)	0.014	0.844	0.000	0.033	0.001	0.860	1.050	4.8.2
L29	24.75 - 19.75 (29)	0.014	0.859	0.000	0.033	0.001	0.874	1.050	4.8.2
L30	19.75 - 14.75 (30)	0.014	0.872	0.000	0.032	0.001	0.888	1.050	4.8.2
L31	14.75 - 9.75 (31)	0.015	0.885	0.000	0.032	0.000	0.900	1.050	4.8.2
L32	9.75 - 4.75 (32)	0.015	0.896	0.000	0.031	0.000	0.912	1.050	4.8.2
L33	4.75 - 0 (33)	0.015	0.907	0.000	0.031	0.000	0.923	1.050	4.8.2

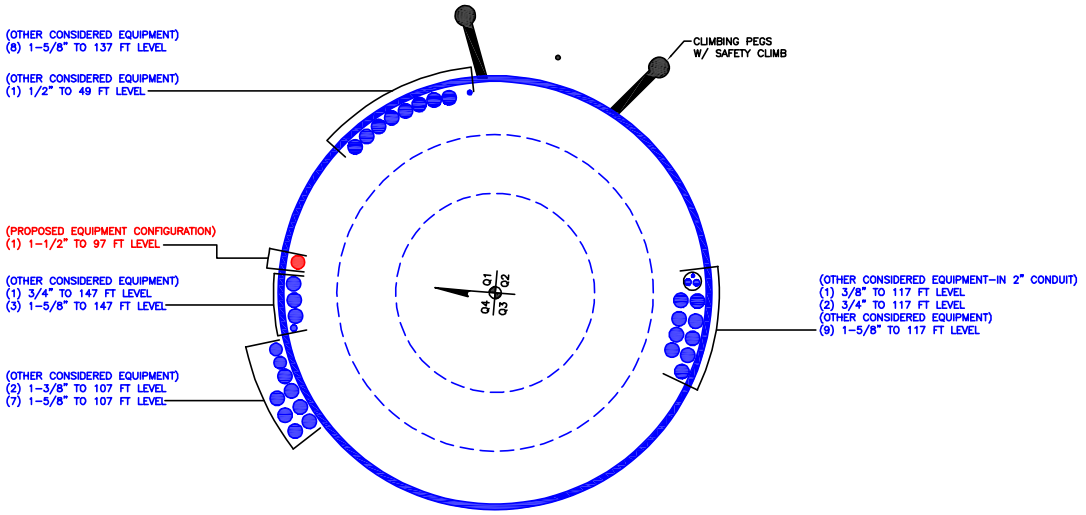
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	147.5 - 142.5	Pole	TP22.95x22x0.25	1	-5.84	1021.31	5.6	Pass
L2	142.5 - 137.5	Pole	TP23.9x22.95x0.25	2	-6.23	1064.05	10.9	Pass
L3	137.5 - 132.5	Pole	TP24.85x23.9x0.25	3	-10.95	1106.79	19.1	Pass
L4	132.5 - 127.5	Pole	TP25.8x24.85x0.25	4	-11.45	1149.53	26.3	Pass
L5	127.5 - 122.5	Pole	TP26.75x25.8x0.25	5	-11.97	1192.27	32.9	Pass
L6	122.5 - 117.5	Pole	TP27.7x26.75x0.25	6	-12.51	1235.02	38.9	Pass
L7	117.5 - 112.5	Pole	TP28.65x27.7x0.25	7	-16.50	1277.76	46.7	Pass
L8	112.5 - 108.5	Pole	TP29.41x28.65x0.25	8	-16.54	1279.90	47.1	Pass
L9	108.5 - 107.25	Pole	TP29.1476x28.1975x0.25	9	-17.50	1408.49	51.7	Pass
L10	107.25 - 102.25	Pole	TP30.0976x29.1476x0.25	10	-21.26	1454.80	59.3	Pass
L11	102.25 - 97.25	Pole	TP31.0477x30.0976x0.25	11	-22.05	1501.10	66.0	Pass
L12	97.25 - 92.25	Pole	TP31.9978x31.0477x0.25	12	-25.81	1547.41	73.6	Pass
L13	92.25 - 87.25	Pole	TP32.9478x31.9978x0.25	13	-26.59	1593.71	80.6	Pass
L14	87.25 - 82.25	Pole	TP33.8979x32.9478x0.25	14	-27.49	1640.03	87.0	Pass
L15	82.25 - 77.25	Pole	TP34.8479x33.8979x0.25	15	-28.42	1686.33	93.0	Pass
L16	77.25 - 72.25	Pole	TP35.798x34.8479x0.25	16	-28.52	1690.96	93.5	Pass
L17	72.25 - 71.75	Pole	TP35.3928x34.4429x0.3125	17	-30.02	2137.31	75.5	Pass
L18	71.75 - 66.75	Pole	TP36.3427x35.3928x0.3125	18	-31.09	2195.17	79.2	Pass
L19	66.75 - 61.75	Pole	TP37.2926x36.3427x0.3125	19	-32.20	2253.05	82.6	Pass
L20	61.75 - 56.75	Pole	TP38.2425x37.2926x0.3125	20	-33.34	2310.92	85.8	Pass
L21	56.75 - 51.75	Pole	TP39.1924x38.2425x0.3125	21	-34.50	2368.79	88.7	Pass
L22	51.75 - 47.833	Pole	TP39.9365x39.1924x0.3125	22	-35.50	2414.13	90.9	Pass
L23	47.833 - 47.583	Pole	TP39.984x39.9365x0.3125	23	-35.58	2417.03	91.0	Pass
L24	47.583 - 42.583	Pole	TP40.9339x39.984x0.3125	24	-36.77	2474.89	93.6	Pass
L25	42.583 - 35.75	Pole	TP42.232x40.9339x0.3125	25	-37.15	2493.21	94.4	Pass
L26	35.75 - 34.75	Pole	TP41.7972x40.6096x0.375	26	-39.67	3028.42	78.8	Pass
L27	34.75 - 29.75	Pole	TP42.7472x41.7972x0.375	27	-41.07	3097.88	80.4	Pass
L28	29.75 - 24.75	Pole	TP43.6973x42.7472x0.375	28	-42.50	3167.34	81.9	Pass
L29	24.75 - 19.75	Pole	TP44.6473x43.6973x0.375	29	-43.95	3236.79	83.3	Pass
L30	19.75 - 14.75	Pole	TP45.5974x44.6473x0.375	30	-45.42	3306.26	84.5	Pass
L31	14.75 - 9.75	Pole	TP46.5474x45.5974x0.375	31	-46.92	3375.72	85.8	Pass
L32	9.75 - 4.75	Pole	TP47.4975x46.5474x0.375	32	-48.38	3445.18	86.9	Pass
L33	4.75 - 0	Pole	TP48.4x47.4975x0.375	33	-49.63	3511.16	87.9	Pass
							Summary	
						Pole (L25)	94.4	Pass
						RATING =	**94.4**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876348 TOWER ID:C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876348

Work Order: 1972559

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	147.5	39	3.75	18	22	29.41	0.25	Auto	A607-60
2	112.25	40	4.5	18	28.20	35.798	0.25	Auto	A607-65
3	76.75	41	5.25	18	34.44	42.232	0.3125	Auto	A607-65
4	41	41	0	18	40.61	48.4	0.375	Auto	A607-65

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	13	14	15	16	17	18
1	40.167	47.833	channel	MP3-03 (1.1875in)	3					X						X						X	
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5 Export to TNX

	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	147.5 - 142.5	5		18	22.000	22.950	0.25	A607-60	1.000
2	142.5 - 137.5	5		18	22.950	23.900	0.25	A607-60	1.000
3	137.5 - 132.5	5		18	23.900	24.850	0.25	A607-60	1.000
4	132.5 - 127.5	5		18	24.850	25.800	0.25	A607-60	1.000
5	127.5 - 122.5	5		18	25.800	26.750	0.25	A607-60	1.000
6	122.5 - 117.5	5		18	26.750	27.700	0.25	A607-60	1.000
7	117.5 - 112.5	5		18	27.700	28.650	0.25	A607-60	1.000
8	112.5 - 112.25	4	3.75	18	28.650	29.410	0.25	A607-60	1.000
9	112.25 - 107.25	5		18	28.198	29.148	0.25	A607-65	1.000
10	107.25 - 102.25	5		18	29.148	30.098	0.25	A607-65	1.000
11	102.25 - 97.25	5		18	30.098	31.048	0.25	A607-65	1.000
12	97.25 - 92.25	5		18	31.048	31.998	0.25	A607-65	1.000
13	92.25 - 87.25	5		18	31.998	32.948	0.25	A607-65	1.000
14	87.25 - 82.25	5		18	32.948	33.898	0.25	A607-65	1.000
15	82.25 - 77.25	5		18	33.898	34.848	0.25	A607-65	1.000
16	77.25 - 76.75	5	4.5	18	34.848	35.798	0.25	A607-65	1.000
17	76.75 - 71.75	5		18	34.443	35.393	0.3125	A607-65	1.000
18	71.75 - 66.75	5		18	35.393	36.343	0.3125	A607-65	1.000
19	66.75 - 61.75	5		18	36.343	37.293	0.3125	A607-65	1.000
20	61.75 - 56.75	5		18	37.293	38.242	0.3125	A607-65	1.000
21	56.75 - 51.75	5		18	38.242	39.192	0.3125	A607-65	1.000
22	51.75 - 47.833	3.917		18	39.192	39.937	0.3125	A607-65	1.000
23	47.833 - 47.583	0.25		18	39.937	39.984	0.3125	A607-65	1.000
24	47.583 - 42.583	5		18	39.984	40.934	0.3125	A607-65	1.000
25	42.583 - 41	6.833	5.25	18	40.934	42.232	0.3125	A607-65	1.000
26	41 - 34.75	6.25		18	40.610	41.797	0.375	A607-65	1.000
27	34.75 - 29.75	5		18	41.797	42.747	0.375	A607-65	1.000
28	29.75 - 24.75	5		18	42.747	43.697	0.375	A607-65	1.000
29	24.75 - 19.75	5		18	43.697	44.647	0.375	A607-65	1.000
30	19.75 - 14.75	5		18	44.647	45.597	0.375	A607-65	1.000
31	14.75 - 9.75	5		18	45.597	46.547	0.375	A607-65	1.000
32	9.75 - 4.75	5		18	46.547	47.497	0.375	A607-65	1.000
33	4.75 - 0	4.75		18	47.497	48.400	0.375	A607-65	1.000

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	147.5 - 142.5	5.84	30.23	7.24
2	142.5 - 137.5	6.23	67.34	7.60
3	137.5 - 132.5	10.95	127.58	12.54
4	132.5 - 127.5	11.45	191.33	12.96
5	127.5 - 122.5	11.97	257.05	13.33
6	122.5 - 117.5	12.51	324.61	13.70
7	117.5 - 112.5	16.51	412.80	17.54
8	112.5 - 112.25	16.54	417.20	17.61
9	112.25 - 107.25	17.50	506.34	18.04
10	107.25 - 102.25	21.26	612.99	21.52
11	102.25 - 97.25	22.05	721.39	21.84
12	97.25 - 92.25	25.81	845.40	25.08
13	92.25 - 87.25	26.59	973.59	25.91
14	87.25 - 82.25	27.49	1104.03	26.28
15	82.25 - 77.25	28.42	1236.23	26.62
16	77.25 - 76.75	28.52	1249.55	26.65
17	76.75 - 71.75	30.02	1384.04	27.13
18	71.75 - 66.75	31.09	1520.59	27.49
19	66.75 - 61.75	32.20	1658.86	27.83
20	61.75 - 56.75	33.34	1798.75	28.15
21	56.75 - 51.75	34.50	1940.17	28.44
22	51.75 - 47.833	35.50	2052.08	28.74
23	47.833 - 47.583	35.58	2059.26	28.74
24	47.583 - 42.583	36.77	2203.71	29.05
25	42.583 - 41	37.15	2249.75	29.14
26	41 - 34.75	39.67	2433.39	29.62
27	34.75 - 29.75	41.07	2582.06	29.86
28	29.75 - 24.75	42.50	2731.86	30.08
29	24.75 - 19.75	43.95	2882.75	30.29
30	19.75 - 14.75	45.42	3034.69	30.50
31	14.75 - 9.75	46.92	3187.66	30.70
32	9.75 - 4.75	48.38	3341.51	30.86
33	4.75 - 0	49.63	3488.34	31.02

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147.5 - 142.5	Pole	TP22.95x22x0.25	Pole	5.6%	Pass
142.5 - 137.5	Pole	TP23.9x22.95x0.25	Pole	10.9%	Pass
137.5 - 132.5	Pole	TP24.85x23.9x0.25	Pole	19.1%	Pass
132.5 - 127.5	Pole	TP25.8x24.85x0.25	Pole	26.3%	Pass
127.5 - 122.5	Pole	TP26.75x25.8x0.25	Pole	32.9%	Pass
122.5 - 117.5	Pole	TP27.7x26.75x0.25	Pole	38.9%	Pass
117.5 - 112.5	Pole	TP28.65x27.7x0.25	Pole	46.7%	Pass
112.5 - 112.25	Pole	TP29.41x28.65x0.25	Pole	47.1%	Pass
112.25 - 107.25	Pole	TP29.148x28.198x0.25	Pole	51.7%	Pass
107.25 - 102.25	Pole	TP30.098x29.148x0.25	Pole	59.3%	Pass
102.25 - 97.25	Pole	TP31.048x30.098x0.25	Pole	66.0%	Pass
97.25 - 92.25	Pole	TP31.998x31.048x0.25	Pole	73.6%	Pass
92.25 - 87.25	Pole	TP32.948x31.998x0.25	Pole	80.6%	Pass
87.25 - 82.25	Pole	TP33.898x32.948x0.25	Pole	87.0%	Pass
82.25 - 77.25	Pole	TP34.848x33.898x0.25	Pole	93.0%	Pass
77.25 - 76.75	Pole	TP35.798x34.848x0.25	Pole	93.5%	Pass
76.75 - 71.75	Pole	TP35.393x34.443x0.3125	Pole	75.5%	Pass
71.75 - 66.75	Pole	TP36.343x35.393x0.3125	Pole	79.2%	Pass
66.75 - 61.75	Pole	TP37.293x36.343x0.3125	Pole	82.6%	Pass
61.75 - 56.75	Pole	TP38.242x37.293x0.3125	Pole	85.8%	Pass
56.75 - 51.75	Pole	TP39.192x38.242x0.3125	Pole	88.7%	Pass
51.75 - 47.83	Pole	TP39.937x39.192x0.3125	Pole	90.9%	Pass
47.83 - 47.58	Pole	TP39.984x39.937x0.3125	Pole	91.0%	Pass
47.58 - 42.58	Pole	TP40.934x39.984x0.3125	Pole	93.6%	Pass
42.58 - 41	Pole	TP42.232x40.934x0.3125	Pole	94.4%	Pass
41 - 34.75	Pole	TP41.797x40.61x0.375	Pole	78.8%	Pass
34.75 - 29.75	Pole	TP42.747x41.797x0.375	Pole	80.4%	Pass
29.75 - 24.75	Pole	TP43.697x42.747x0.375	Pole	81.9%	Pass
24.75 - 19.75	Pole	TP44.647x43.697x0.375	Pole	83.3%	Pass
19.75 - 14.75	Pole	TP45.597x44.647x0.375	Pole	84.6%	Pass
14.75 - 9.75	Pole	TP46.547x45.597x0.375	Pole	85.8%	Pass
9.75 - 4.75	Pole	TP47.497x46.547x0.375	Pole	86.9%	Pass
4.75 - 0	Pole	TP48.4x47.497x0.375	Pole	87.9%	Pass
				Summary	
			Pole	94.4%	Pass
			Reinforcement	0.0%	Pass
			Overall	94.4%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*	
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1
147.5 - 142.5	1172	n/a	1172	18.01	n/a	18.01	5.6%	
142.5 - 137.5	1326	n/a	1326	18.77	n/a	18.77	10.9%	
137.5 - 132.5	1492	n/a	1492	19.52	n/a	19.52	19.1%	
132.5 - 127.5	1671	n/a	1671	20.27	n/a	20.27	26.3%	
127.5 - 122.5	1865	n/a	1865	21.03	n/a	21.03	32.9%	
122.5 - 117.5	2073	n/a	2073	21.78	n/a	21.78	38.9%	
117.5 - 112.5	2296	n/a	2296	22.53	n/a	22.53	46.7%	
112.5 - 112.25	2307	n/a	2307	22.57	n/a	22.57	47.1%	
112.25 - 107.25	2418	n/a	2418	22.93	n/a	22.93	51.7%	
107.25 - 102.25	2665	n/a	2665	23.68	n/a	23.68	59.3%	
102.25 - 97.25	2927	n/a	2927	24.44	n/a	24.44	66.0%	
97.25 - 92.25	3207	n/a	3207	25.19	n/a	25.19	73.6%	
92.25 - 87.25	3503	n/a	3503	25.94	n/a	25.94	80.6%	
87.25 - 82.25	3818	n/a	3818	26.70	n/a	26.70	87.0%	
82.25 - 77.25	4150	n/a	4150	27.45	n/a	27.45	93.0%	
77.25 - 76.75	4185	n/a	4185	27.53	n/a	27.53	93.5%	
76.75 - 71.75	5408	n/a	5408	34.79	n/a	34.79	75.5%	
71.75 - 66.75	5859	n/a	5859	35.74	n/a	35.74	79.2%	
66.75 - 61.75	6335	n/a	6335	36.68	n/a	36.68	82.6%	
61.75 - 56.75	6836	n/a	6836	37.62	n/a	37.62	85.8%	
56.75 - 51.75	7362	n/a	7362	38.56	n/a	38.56	88.7%	
51.75 - 47.83	7793	n/a	7793	39.30	n/a	39.30	90.9%	
47.83 - 47.58	7821	n/a	7821	39.35	n/a	39.35	91.0%	
47.58 - 42.58	8397	n/a	8397	40.29	n/a	40.29	93.6%	
42.58 - 41	8584	n/a	8584	40.59	n/a	40.59	94.4%	
41 - 34.75	10684	n/a	10684	49.30	n/a	49.30	78.8%	
34.75 - 29.75	11436	n/a	11436	50.43	n/a	50.43	80.4%	
29.75 - 24.75	12222	n/a	12222	51.56	n/a	51.56	81.9%	
24.75 - 19.75	13044	n/a	13044	52.69	n/a	52.69	83.3%	
19.75 - 14.75	13902	n/a	13902	53.82	n/a	53.82	84.6%	
14.75 - 9.75	14797	n/a	14797	54.95	n/a	54.95	85.8%	
9.75 - 4.75	15729	n/a	15729	56.09	n/a	56.09	86.9%	
4.75 - 0	16650	n/a	16650	57.16	n/a	57.16	87.9%	

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

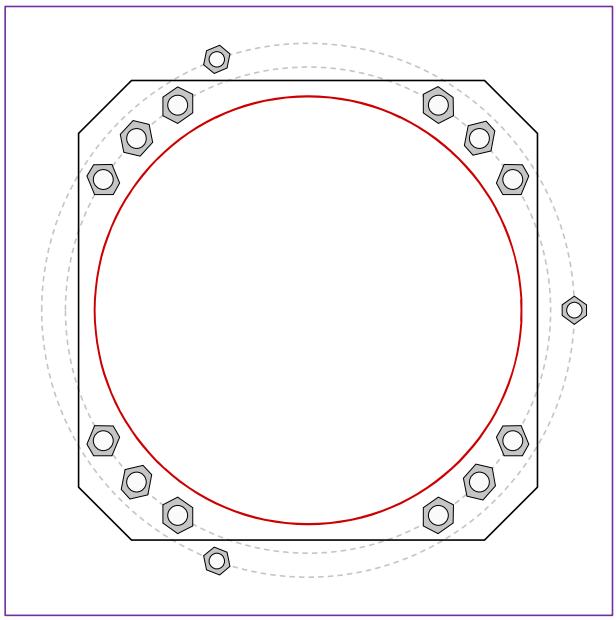
Monopole Base Plate Connection

Site Info	
BU #	876348
Site Name	Enfield
Order #	556604 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	3488.34
Axial Force (kips)	49.63
Shear Force (kips)	31.02

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 55" BC

Anchor Spacing: 6 in

GROUP 2: (3) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 60.4" BC

Base Plate Data

52" W x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 6 in

Stiffener Data

N/A

Pole Data

48.4" x 0.375" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_t = 216.97	ϕPn_t = 243.75	**Stress Rating**
Vu = 2.58	ϕVn = 149.1	**84.8%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 140.31	ϕPn_t = 178.13	**Stress Rating**
Vu = 0	ϕVn = 112.75	**75.0%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	33.23	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**70.3%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

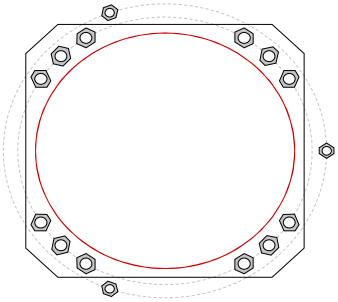
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	32.474174	2.25	A615-75	55	0.5	0	N-Included		No
2	1	45	2.25	A615-75	55	0.5	0	N-Included		No
3	1	57.525826	2.25	A615-75	55	0.5	0	N-Included		No
4	1	122.47417	2.25	A615-75	55	0.5	0	N-Included		No
5	1	135	2.25	A615-75	55	0.5	0	N-Included		No
6	1	147.52583	2.25	A615-75	55	0.5	0	N-Included		No
7	1	212.47417	2.25	A615-75	55	0.5	0	N-Included		No
8	1	225	2.25	A615-75	55	0.5	0	N-Included		No
9	1	237.52583	2.25	A615-75	55	0.5	0	N-Included		No
10	1	302.47417	2.25	A615-75	55	0.5	0	N-Included		No
11	1	315	2.25	A615-75	55	0.5	0	N-Included		No
12	1	327.52583	2.25	A615-75	55	0.5	0	N-Included		No
13	2	110	1.75	A193 Gr. B7	60.4	0.5	0	N-Included		No
14	2	250	1.75	A193 Gr. B7	60.4	0.5	0	N-Included		No
15	2	360	1.75	A193 Gr. B7	60.4	0.5	0	N-Included		No

Plot Graphic



Pier and Pad Foundation

BU # :	876348
Site Name:	Enfield
App. Number:	556604 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	49.65	kips
Base Shear, Vu_comp:	30.98	kips
Moment, M_u:	3488.34	ft-kips
Tower Height, **H**:	147.5	ft
BP Dist. Above Fdn, bp_{dist}:	6	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	8	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	24	
Pier Tie/Spiral Size, **St**:	5	
Pier Tie/Spiral Quantity, **mt**:	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	9.8	ft
Pad Width, W_1:	23.8	ft
Pad Thickness, **T**:	2.8	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	23	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δc:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	115	pcf
Ultimate Gross Bearing, Qult:	6.500	ksf
Cohesion, **Cu**:	1.500	ksf
Friction Angle, φ:		degrees
SPT Blow Count, N_{blows}:	12	
Base Friction, μ:		
Neglected Depth, **N**:	4.00	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)	900.85	30.98	**3.3%**	**Pass**
Bearing Pressure (ksf)	4.88	2.77	**54.2%**	**Pass**
*Overturning (kip*ft)*	6369.46	3822.92	**60.0%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	6922.48	3720.69	**51.2%**	**Pass**
Pier Compression (kip)	30551.04	136.05	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	2893.92	1119.56	**36.8%**	**Pass**
Pad Shear - 1-way (kips)	678.31	194.64	**27.3%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.038	**21.8%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3915.02	2232.41	**54.3%**	**Pass**

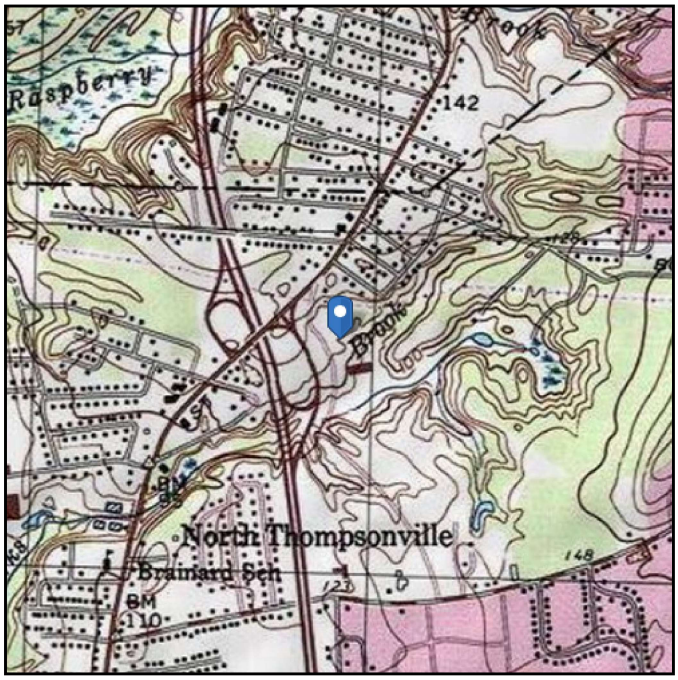
**Rating per TIA-222-H Section 15.5*

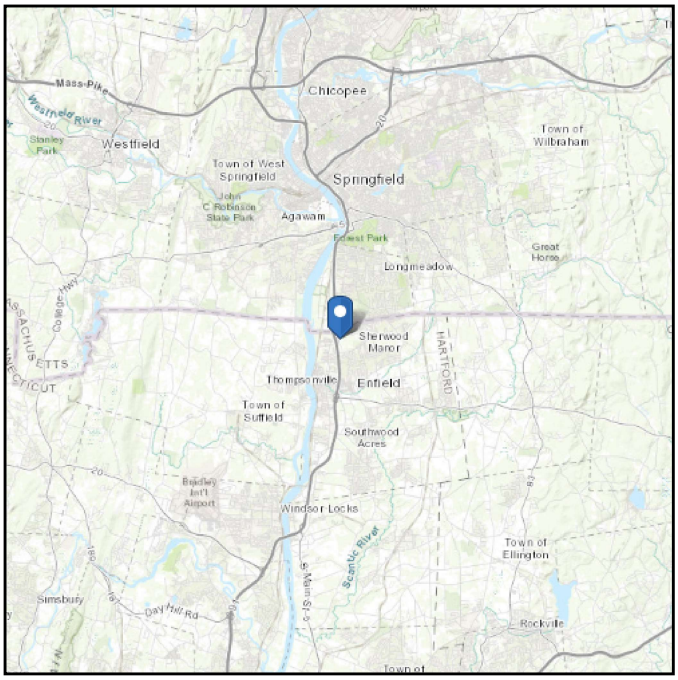
Structural Rating*:	**54.3%**
Soil Rating*:	**60.0%**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	110.38 ft (NAVD 88)
Risk Category:	II	**Latitude:**	42.020808
Soil Class:	D - Stiff Soil	**Longitude:**	-72.585164





Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Accessed: Tue Aug 3 2021

Date Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

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).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

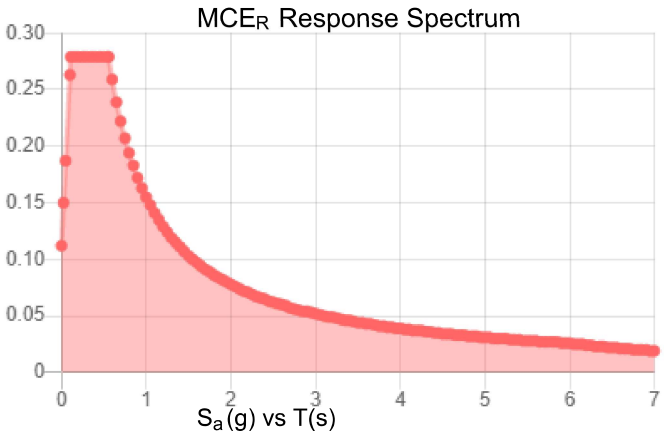
Seismic

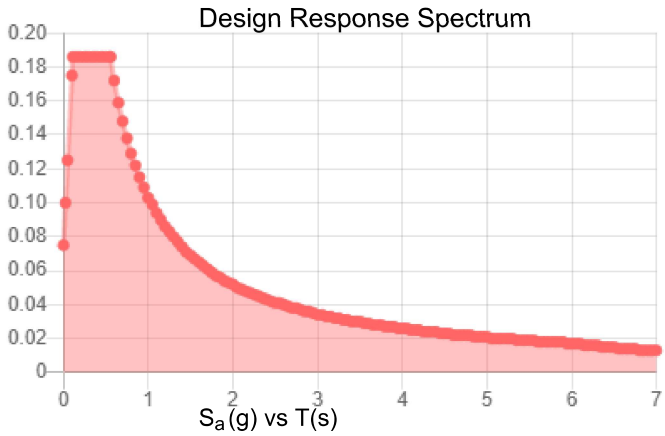
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.175	S_{DS} :	0.186
S_1 :	0.065	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.279	PGA_M :	0.137
S_{M1} :	0.155	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Aug 03 2021

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.

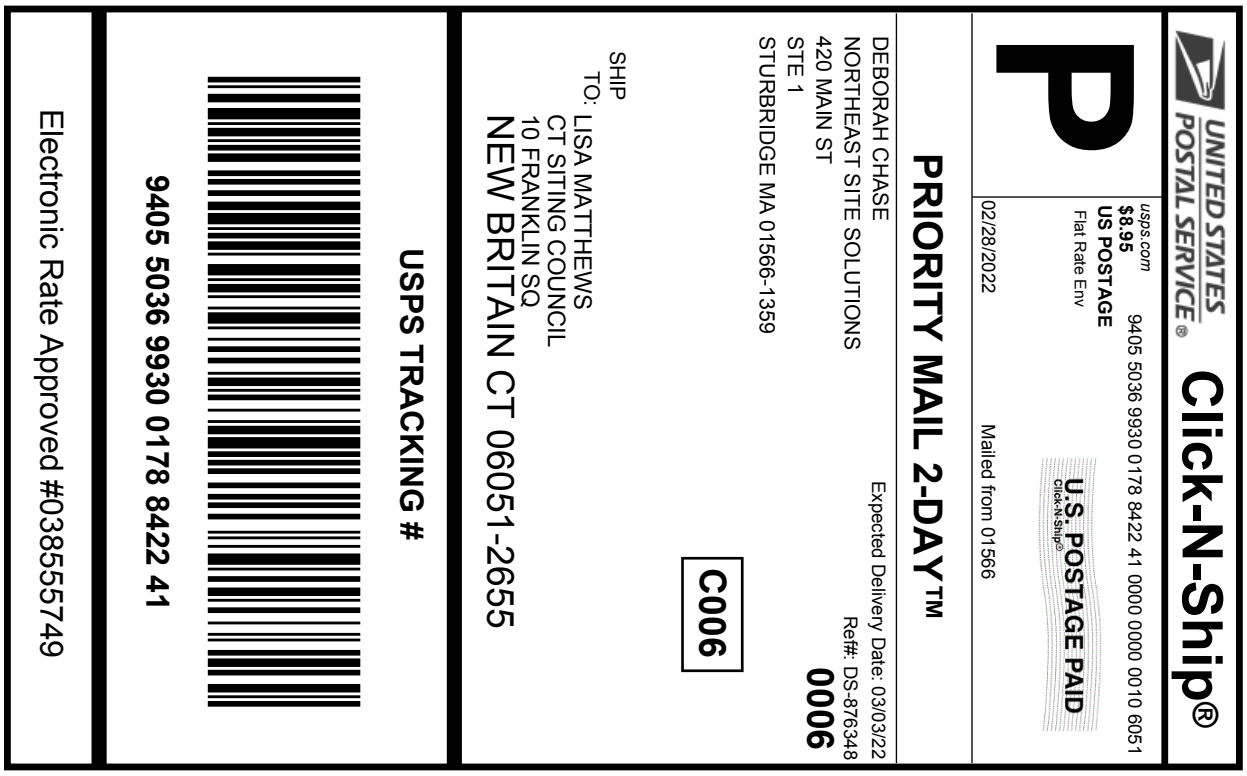
Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Aug 03 2021

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.



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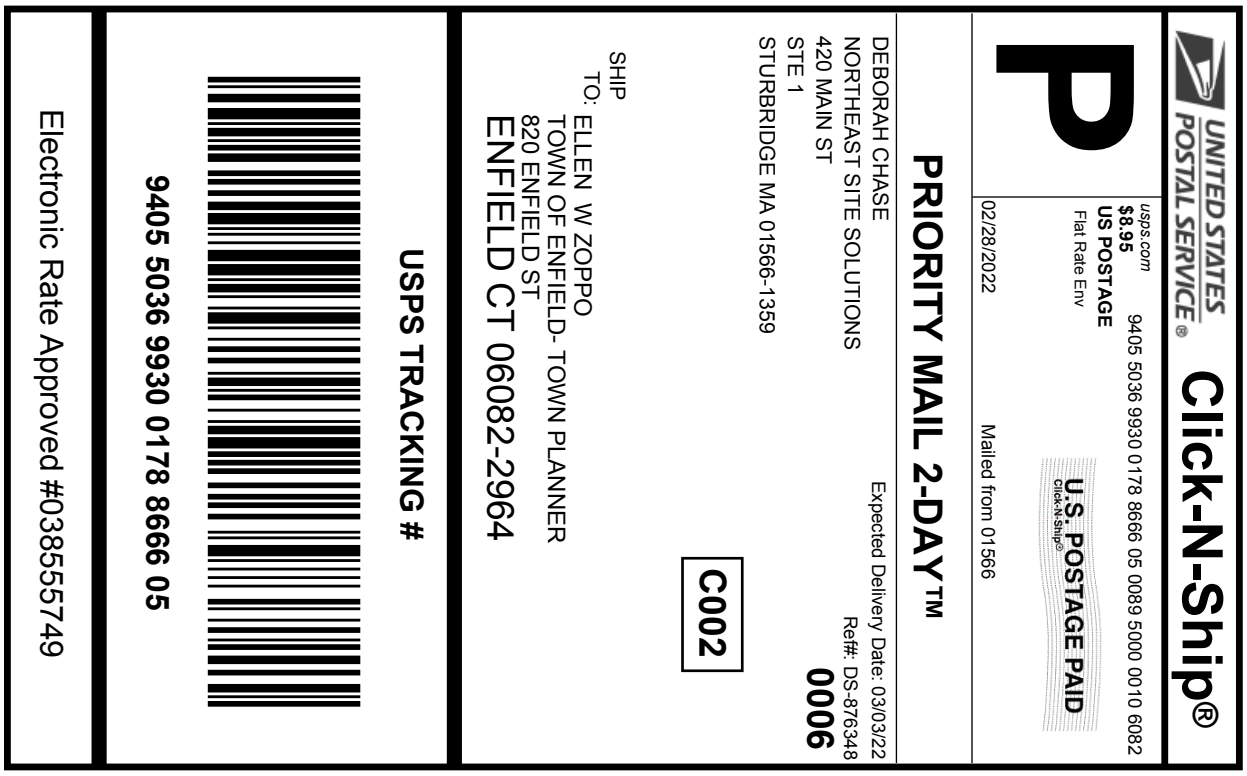

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