

Date: **April 13, 2021**



Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation: **DISH Network Co-Locate**
Site Number: BOBDL00097A
Site Name: CT-CCI-T-876384

Crown Castle Designation: **BU Number:** 876384
Site Name: WESTBROOK / ORSINA
JDE Job Number: 645196
Work Order Number: 1945903
Order Number: 553294 Rev. 0

Engineering Firm Designation: **Crown Castle Project Number:** 1945903

Site Data: **798 Toby Hill Road, WESTBROOK, Middlesex County, CT**
Latitude 41° 19' 12.6", Longitude -72° 26' 30"
150 Foot - Monopole Tower

Crown Castle 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 135 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Brad Sparks

Respectfully submitted by:

Jamal A. Huwel, P.E.
Director Engineering

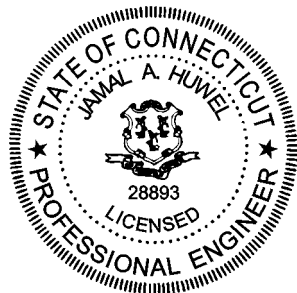


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1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by Engineered Endeavors, Inc. The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	135 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0	120.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-20 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-K6MHDX-9-96 (3)		

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)
150.0	152.0	3	ericsson	AIR6449 B41_T-MOBILE	4	1-5/8
		3	ericsson	RADIO 4415 B66A		
		3	ericsson	RADIO 4424 B25_TMO		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	rfs celwave_cfd	APX16DWV-16DWV-S-E-A20		
		3	rfs celwave_cfd	APXVAALL24_43-U-NA20_TMO		
	1	tower mounts	Platform Mount [LP 301-1]			
140.0	140.0	6	commscope_cfd	JAHH-65B-R3B w/ Mount Pipe	6 2	1-5/8 1-1/4
		2	decibel_cfd	DB846F65ZAXY w/ Mount Pipe		
		4	decibel_cfd	DB846H80E-SX w/ Mount Pipe		
		2	raycap	RVZDC-6627-PF-48		
		3	rfs celwave	FDJ85020Q7-S1		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		1	tower mounts	Platform Mount [LP 304-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	130.0	3	cci antennas_cfd	DMP65R-BU6D w/ Mount Pipe	6 2 2 2	1-5/8 7/8 7/16 3/8
		3	cci antennas_cfd	OPA65R-BU6D w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		3	powerwave technologies	1001940		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8F		
		1	raycap	DC6-48-60-18-8F		
		1	tower mounts	Platform Mount [LP 304-1]		
		1	tower mounts	Side Arm Mount [SO 102-3]		
		1	tower mounts	Side Arm Mount [SO 701-3]		
80.0	81.0	1	lucent	KS24019-L112A	1	1/2
	80.0	1	tower mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1615342	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1615435	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1615370	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2154747	CCISITES
4-POST-MODIFICATION INSPECTION	5840467	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5650397	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.7.5), 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. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP14.12x13x0.1875	Pole	20.0%	Pass
145 - 140	Pole	TP15.241x14.12x0.1875	Pole	31.9%	Pass
140 - 136.29	Pole	TP16.65x15.241x0.1875	Pole	45.4%	Pass
136.29 - 131.29	Pole	TP16.804x15.696x0.3125	Pole	38.3%	Pass
131.29 - 126.29	Pole	TP17.912x16.804x0.3125	Pole	49.7%	Pass
126.29 - 121.29	Pole	TP19.02x17.912x0.3125	Pole	59.2%	Pass
121.29 - 116.29	Pole	TP20.128x19.02x0.3125	Pole	68.3%	Pass
116.29 - 111.29	Pole	TP21.236x20.128x0.3125	Pole	75.7%	Pass
111.29 - 108.25	Pole	TP21.911x21.236x0.3125	Pole	79.3%	Pass
108.25 - 108	Pole + Reinf.	TP21.966x21.911x0.6375	Reinf. 9 Tension Rupture	65.2%	Pass
108 - 103	Pole + Reinf.	TP23.074x21.966x0.6125	Reinf. 9 Tension Rupture	71.0%	Pass
103 - 98	Pole + Reinf.	TP24.182x23.074x0.6	Reinf. 9 Tension Rupture	76.2%	Pass
98 - 93	Pole + Reinf.	TP25.29x24.182x0.5875	Reinf. 9 Tension Rupture	80.6%	Pass
93 - 91.92	Pole + Reinf.	TP26.38x25.29x0.5875	Reinf. 9 Tension Rupture	81.5%	Pass
91.92 - 86.92	Pole + Reinf.	TP26.012x24.906x0.6375	Reinf. 9 Tension Rupture	79.9%	Pass
86.92 - 85.17	Pole + Reinf.	TP26.399x26.012x0.6375	Reinf. 9 Tension Rupture	80.9%	Pass
85.17 - 84.92	Pole + Reinf.	TP26.454x26.399x0.6375	Reinf. 5 Tension Rupture	81.0%	Pass
84.92 - 79.92	Pole + Reinf.	TP27.561x26.454x0.625	Reinf. 5 Tension Rupture	83.7%	Pass
79.92 - 77	Pole + Reinf.	TP28.206x27.561x0.6125	Reinf. 5 Tension Rupture	85.0%	Pass
77 - 76.75	Pole + Reinf.	TP28.262x28.206x0.5375	Reinf. 5 Tension Rupture	86.8%	Pass
76.75 - 75	Pole + Reinf.	TP28.649x28.262x0.5313	Reinf. 5 Tension Rupture	87.6%	Pass
75 - 74.75	Pole + Reinf.	TP28.704x28.649x0.6125	Reinf. 5 Tension Rupture	86.0%	Pass
74.75 - 69.75	Pole + Reinf.	TP29.811x28.704x0.6	Reinf. 5 Tension Rupture	87.9%	Pass
69.75 - 65.08	Pole + Reinf.	TP30.843x29.811x0.5875	Reinf. 5 Tension Rupture	89.4%	Pass
65.08 - 64.83	Pole + Reinf.	TP30.899x30.843x0.5875	Reinf. 3 Tension Rupture	89.5%	Pass
64.83 - 59.83	Pole + Reinf.	TP32.005x30.899x0.5875	Reinf. 3 Tension Rupture	90.8%	Pass
59.83 - 54.83	Pole + Reinf.	TP33.111x32.005x0.575	Reinf. 3 Tension Rupture	92.0%	Pass
54.83 - 49.83	Pole + Reinf.	TP34.218x33.111x0.5625	Reinf. 3 Tension Rupture	93.0%	Pass
49.83 - 48.5	Pole + Reinf.	TP35.62x34.218x0.5625	Reinf. 3 Tension Rupture	93.2%	Pass
48.5 - 42.5	Pole + Reinf.	TP35.092x33.764x0.5625	Reinf. 3 Tension Rupture	97.6%	Pass
42.5 - 37.5	Pole + Reinf.	TP36.199x35.092x0.55	Reinf. 3 Tension Rupture	98.2%	Pass
37.5 - 33	Pole + Reinf.	TP37.194x36.199x0.55	Reinf. 3 Tension Rupture	98.6%	Pass
33 - 32.75	Pole + Reinf.	TP37.25x37.194x0.6625	Reinf. 4 Tension Rupture	84.4%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
32.75 - 32	Pole + Reinf.	TP37.416x37.25x0.6625	Reinf. 4 Tension Rupture	84.5%	Pass
32 - 31.75	Pole + Reinf.	TP37.471x37.416x0.5875	Reinf. 4 Tension Rupture	86.9%	Pass
31.75 - 30	Pole + Reinf.	TP37.858x37.471x0.5875	Reinf. 4 Tension Rupture	87.1%	Pass
30 - 29.75	Pole + Reinf.	TP37.914x37.858x0.5875	Reinf. 2 Tension Rupture	87.1%	Pass
29.75 - 24.75	Pole + Reinf.	TP39.021x37.914x0.575	Reinf. 2 Tension Rupture	87.5%	Pass
24.75 - 19.75	Pole + Reinf.	TP40.128x39.021x0.5688	Reinf. 2 Tension Rupture	87.7%	Pass
19.75 - 14.75	Pole + Reinf.	TP41.235x40.128x0.5625	Reinf. 2 Tension Rupture	87.9%	Pass
14.75 - 9.75	Pole + Reinf.	TP42.341x41.235x0.5625	Reinf. 2 Tension Rupture	88.1%	Pass
9.75 - 4.75	Pole + Reinf.	TP43.448x42.341x0.55	Reinf. 2 Tension Rupture	88.1%	Pass
4.75 - 0	Pole + Reinf.	TP44.5x43.448x0.55	Reinf. 2 Tension Rupture	88.2%	Pass
				Summary	
			Pole	79.3%	Pass
			Reinforcement	98.6%	Pass
			Overall	98.6%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	91.3	Pass
1	Base Plate	0	83.8	Pass
1	Base Foundation Structure	0	93.8	Pass
1	Base Foundation Soil Interaction	0	65.7	Pass

Structure Rating (max from all components) =	98.6%
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Notes:

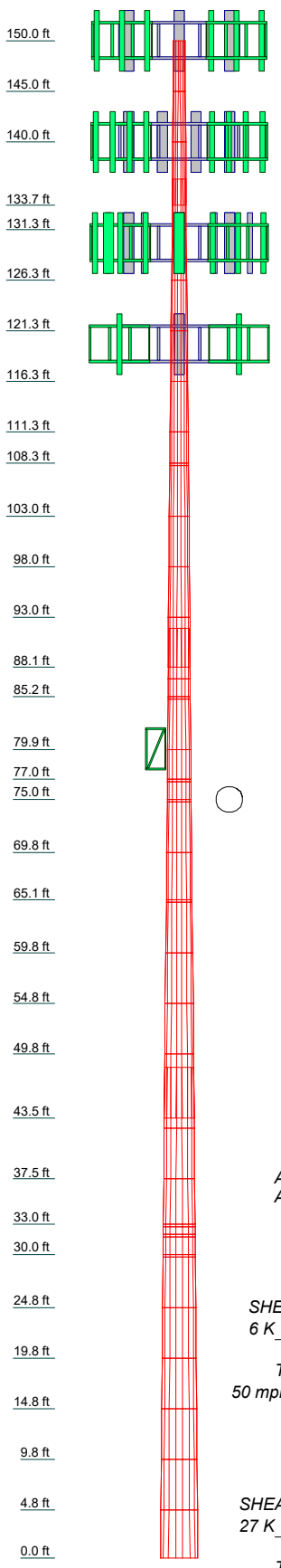
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

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	0.188	2.58	14.120	15.241	0.1	0.1
2	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
3	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
4	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
5	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
6	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
7	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
8	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
9	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
10	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
11	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
12	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
13	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
14	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
15	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
16	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
17	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
18	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
19	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
20	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
21	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
22	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
23	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
24	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
25	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
26	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
27	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
28	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
29	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
30	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
31	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
32	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
33	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
34	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
35	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
36	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
37	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
38	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
39	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
40	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
41	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
42	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1
43	5.00	18	0.188	2.58	14.120	15.241	0.1	0.1

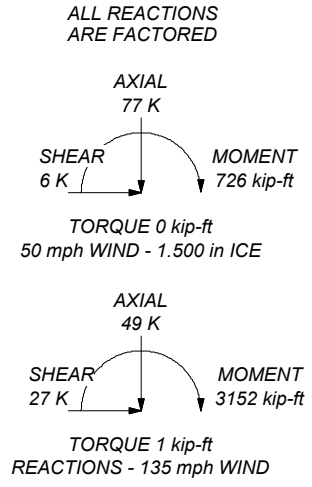


MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 135 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 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. TOWER CAPACITY: 98.6%



<p>CROWN CASTLE The Pathway to Possible</p>	<p>Crown Castle 2000 Corporate Drive Canonsburg, PA 15317 Phone: (724) 416-2000 FAX:</p>		<p>Job: 876384</p>
	<p>Project:</p>		<p>Client: Crown Castle</p>
	<p>Code: TIA-222-H</p>		<p>Drawn by: BSparks</p>
	<p>Path:</p>		<p>Date: 04/13/21</p>
	<p>Scale: NTS</p>		<p>App'd:</p>

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:

- 1) Tower is located in Middlesex County, Connecticut.
- 2) Tower base elevation above sea level: 160.00 ft.
- 3) Basic wind speed of 135 mph.
- 4) Risk Category II.
- 5) Exposure Category B.
- 6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7) Topographic Category: 1.
- 8) Crest Height: 0.00 ft.
- 9) Nominal ice thickness of 1.500 in.
- 10) Ice thickness is considered to increase with height.
- 11) Ice density of 56 pcf.
- 12) A wind speed of 50 mph is used in combination with ice.
- 13) Temperature drop of 50 °F.
- 14) Deflections calculated using a wind speed of 60 mph.
- 15) TOWER CAPACITY: 98.6%.
- 16) A non-linear (P-delta) analysis was used.
- 17) Pressures are calculated at each section.
- 18) Stress ratio used in pole design is 1.05.
- 19) Tower analysis based on target reliabilities in accordance with Annex S.
- 20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- 21) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="background-color: #e0e0e0; text-align: center; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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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	

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
L1	150.00-145.00	5.00	0.000	18	13.000	14.120	0.188	0.750	A572-65 (65 ksi)
L2	145.00-140.00	5.00	0.000	18	14.120	15.241	0.188	0.750	A572-65 (65 ksi)
L3	140.00-133.71	6.29	2.583	18	15.241	16.650	0.188	0.750	A572-65 (65 ksi)
L4	133.71-131.29	5.00	0.000	18	15.696	16.804	0.313	1.250	A572-65 (65 ksi)
L5	131.29-126.29	5.00	0.000	18	16.804	17.912	0.313	1.250	A572-65 (65 ksi)
L6	126.29-121.29	5.00	0.000	18	17.912	19.020	0.313	1.250	A572-65 (65 ksi)
L7	121.29-116.29	5.00	0.000	18	19.020	20.128	0.313	1.250	A572-65 (65 ksi)
L8	116.29-111.29	5.00	0.000	18	20.128	21.236	0.313	1.250	A572-65 (65 ksi)
L9	111.29-108.25	3.04	0.000	18	21.236	21.911	0.313	1.250	A572-65 (65 ksi)
L10	108.25-108.00	0.25	0.000	18	21.911	21.966	0.637	2.550	A572-65 (65 ksi)
L11	108.00-103.00	5.00	0.000	18	21.966	23.074	0.613	2.450	A572-65 (65 ksi)
L12	103.00-98.00	5.00	0.000	18	23.074	24.182	0.600	2.400	A572-65 (65 ksi)
L13	98.00-93.00	5.00	0.000	18	24.182	25.290	0.588	2.350	A572-65 (65 ksi)
L14	93.00-88.08	4.92	3.833	18	25.290	26.380	0.588	2.350	A572-65 (65 ksi)
L15	88.08-86.92	5.00	0.000	18	24.906	26.012	0.637	2.550	A572-65 (65 ksi)
L16	86.92-85.17	1.75	0.000	18	26.012	26.399	0.637	2.550	A572-65 (65 ksi)
L17	85.17-84.92	0.25	0.000	18	26.399	26.454	0.637	2.550	A572-65 (65 ksi)
L18	84.92-79.92	5.00	0.000	18	26.454	27.561	0.625	2.500	A572-65 (65 ksi)
L19	79.92-77.00	2.92	0.000	18	27.561	28.206	0.613	2.450	A572-65 (65 ksi)
L20	77.00-76.75	0.25	0.000	18	28.206	28.262	0.537	2.150	A572-65 (65 ksi)
L21	76.75-75.00	1.75	0.000	18	28.262	28.649	0.531	2.125	A572-65 (65 ksi)
L22	75.00-74.75	0.25	0.000	18	28.649	28.704	0.613	2.450	A572-65 (65 ksi)
L23	74.75-69.75	5.00	0.000	18	28.704	29.811	0.600	2.400	A572-65 (65 ksi)
L24	69.75-65.08	4.67	0.000	18	29.811	30.843	0.588	2.350	A572-65 (65 ksi)
L25	65.08-64.83	0.25	0.000	18	30.843	30.899	0.588	2.350	A572-65 (65 ksi)
L26	64.83-59.83	5.00	0.000	18	30.899	32.005	0.588	2.350	A572-65 (65 ksi)
L27	59.83-54.83	5.00	0.000	18	32.005	33.111	0.575	2.300	A572-65 (65 ksi)
L28	54.83-49.83	5.00	0.000	18	33.111	34.218	0.563	2.250	A572-65 (65 ksi)
L29	49.83-43.50	6.34	5.000	18	34.218	35.620	0.563	2.250	A572-65 (65 ksi)
L30	43.50-42.50	6.00	0.000	18	33.764	35.092	0.563	2.250	A572-65 (65 ksi)
L31	42.50-37.50	5.00	0.000	18	35.092	36.199	0.550	2.200	A572-65 (65 ksi)
L32	37.50-33.00	4.50	0.000	18	36.199	37.194	0.550	2.200	A572-65 (65 ksi)
L33	33.00-32.75	0.25	0.000	18	37.194	37.250	0.662	2.650	A572-65 (65 ksi)
L34	32.75-32.00	0.75	0.000	18	37.250	37.416	0.662	2.650	A572-65 (65 ksi)
L35	32.00-31.75	0.25	0.000	18	37.416	37.471	0.588	2.350	A572-65

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
L36	31.75-30.00	1.75	0.000	18	37.471	37.858	0.588	2.350	(65 ksi) A572-65
L37	30.00-29.75	0.25	0.000	18	37.858	37.914	0.588	2.350	(65 ksi) A572-65
L38	29.75-24.75	5.00	0.000	18	37.914	39.021	0.575	2.300	(65 ksi) A572-65
L39	24.75-19.75	5.00	0.000	18	39.021	40.128	0.569	2.275	(65 ksi) A572-65
L40	19.75-14.75	5.00	0.000	18	40.128	41.235	0.563	2.250	(65 ksi) A572-65
L41	14.75-9.75	5.00	0.000	18	41.235	42.341	0.563	2.250	(65 ksi) A572-65
L42	9.75-4.75	5.00	0.000	18	42.341	43.448	0.550	2.200	(65 ksi) A572-65
L43	4.75-0.00	4.75		18	43.448	44.500	0.550	2.200	(65 ksi) A572-65

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	13.172	7.625	158.142	4.548	6.604	23.946	316.492	3.813	1.958	10.443
	14.309	8.292	203.359	4.946	7.173	28.350	406.985	4.147	2.155	11.494
L2	14.309	8.292	203.359	4.946	7.173	28.350	406.985	4.147	2.155	11.494
	15.447	8.958	256.464	5.344	7.742	33.125	513.266	4.480	2.352	12.546
L3	15.447	8.958	256.464	5.344	7.742	33.125	513.266	4.480	2.352	12.546
	16.878	9.797	335.454	5.844	8.458	39.660	671.349	4.900	2.600	13.869
L4	16.471	15.259	456.220	5.461	7.974	57.216	913.041	7.631	2.213	7.08
	17.015	16.358	562.073	5.855	8.537	65.843	1124.886	8.180	2.408	7.704
L5	17.015	16.358	562.073	5.855	8.537	65.843	1124.886	8.180	2.408	7.704
	18.140	17.457	683.150	6.248	9.099	75.076	1367.198	8.730	2.603	8.328
L6	18.140	17.457	683.150	6.248	9.099	75.076	1367.198	8.730	2.603	8.328
	19.266	18.556	820.473	6.641	9.662	84.915	1642.026	9.280	2.798	8.952
L7	19.266	18.556	820.473	6.641	9.662	84.915	1642.026	9.280	2.798	8.952
	20.391	19.655	975.067	7.035	10.225	95.359	1951.417	9.829	2.993	9.576
L8	20.391	19.655	975.067	7.035	10.225	95.359	1951.417	9.829	2.993	9.576
	21.516	20.754	1147.953	7.428	10.788	106.409	2297.417	10.379	3.188	10.2
L9	21.516	20.754	1147.953	7.428	10.788	106.409	2297.417	10.379	3.188	10.2
	22.201	21.423	1262.573	7.667	11.131	113.431	2526.807	10.713	3.306	10.58
L10	22.151	43.045	2461.119	7.552	11.131	221.111	4925.475	21.527	2.734	4.289
	22.207	43.157	2480.397	7.572	11.159	222.281	4964.058	21.583	2.744	4.304
L11	22.211	41.513	2391.517	7.581	11.159	214.316	4786.180	20.761	2.788	4.552
	23.336	43.667	2783.458	7.974	11.722	237.461	5570.578	21.838	2.983	4.87
L12	23.338	42.800	2731.207	7.978	11.722	233.003	5466.008	21.404	3.005	5.008
	24.463	44.910	3155.421	8.372	12.285	256.859	6314.995	22.459	3.200	5.333
L13	24.465	43.998	3094.599	8.376	12.285	251.908	6193.270	22.003	3.222	5.484
	25.590	46.064	3551.375	8.770	12.848	276.425	7107.424	23.036	3.417	5.816
L14	25.590	46.064	3551.375	8.770	12.848	276.425	7107.424	23.036	3.417	5.816
	26.696	48.096	4042.337	9.156	13.401	301.644	8089.994	24.053	3.609	6.143
L15	26.053	49.104	3653.647	8.615	12.652	288.780	7312.102	24.557	3.261	5.116
	26.315	51.343	4176.502	9.008	13.214	316.065	8358.499	25.676	3.456	5.421
L16	26.315	51.343	4176.502	9.008	13.214	316.065	8358.499	25.676	3.456	5.421
	26.708	52.127	4370.605	9.145	13.411	325.904	8746.961	26.068	3.524	5.528
L17	26.708	52.127	4370.605	9.145	13.411	325.904	8746.961	26.068	3.524	5.528
	26.764	52.239	4398.822	9.165	13.439	327.322	8803.432	26.124	3.534	5.543
L18	26.766	51.239	4318.838	9.169	13.439	321.370	8643.358	25.624	3.556	5.69
	27.890	53.434	4897.948	9.562	14.001	349.831	9802.341	26.722	3.751	6.001
L19	27.891	52.390	4806.675	9.567	14.001	343.312	9619.674	26.200	3.773	6.16
	28.547	53.644	5160.411	9.796	14.329	360.143	10327.611	26.827	3.886	6.345
L20	28.558	47.204	4565.550	9.822	14.329	318.628	9137.107	23.606	4.018	7.476
	28.615	47.298	4592.989	9.842	14.357	319.915	9192.022	23.654	4.028	7.494
L21	28.616	46.759	4542.653	9.844	14.357	316.409	9091.284	23.384	4.039	7.603
	29.009	47.412	4735.633	9.982	14.554	325.392	9477.497	23.710	4.107	7.731
L22	28.996	54.505	5412.711	9.953	14.554	371.915	10832.544	27.258	3.964	6.472

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
	29.052	54.612	5444.815	9.973	14.582	373.400	10896.795	27.311	3.974	6.488
L23	29.054	53.522	5340.820	9.977	14.582	366.268	10688.667	26.766	3.996	6.66
	30.178	55.629	5996.754	10.370	15.144	395.988	12001.400	27.820	4.191	6.984
L24	30.180	54.493	5879.363	10.374	15.144	388.236	11766.463	27.252	4.213	7.17
	31.228	56.419	6524.970	10.741	15.668	416.441	13058.525	28.215	4.394	7.48
L25	31.228	56.419	6524.970	10.741	15.668	416.441	13058.525	28.215	4.394	7.48
	31.285	56.522	6560.826	10.760	15.697	417.980	13130.286	28.266	4.404	7.496
L26	31.285	56.522	6560.826	10.760	15.697	417.980	13130.286	28.266	4.404	7.496
	32.408	58.585	7305.817	11.153	16.259	449.352	14621.248	29.298	4.599	7.828
L27	32.410	57.361	7158.912	11.158	16.259	440.316	14327.245	28.686	4.621	8.036
	33.534	59.381	7941.871	11.550	16.821	472.151	15894.193	29.696	4.816	8.375
L28	33.535	58.112	7778.180	11.555	16.821	462.419	15566.594	29.062	4.838	8.6
	34.659	60.087	8598.641	11.948	17.383	494.667	17208.597	30.049	5.032	8.946
L29	34.659	60.087	8598.641	11.948	17.383	494.667	17208.597	30.049	5.032	8.946
	36.083	62.591	9718.735	12.445	18.095	537.096	19450.258	31.301	5.279	9.385
L30	35.322	59.276	8255.128	11.786	17.152	481.295	16521.119	29.644	4.952	8.804
	35.546	61.648	9286.111	12.258	17.827	520.911	18584.441	30.830	5.186	9.22
L31	35.548	60.300	9089.617	12.262	17.827	509.888	18191.195	30.156	5.208	9.469
	36.672	62.232	9991.773	12.655	18.389	543.356	19996.694	31.122	5.403	9.824
L32	36.672	62.232	9991.773	12.655	18.389	543.356	19996.694	31.122	5.403	9.824
	37.683	63.970	10852.414	13.009	18.895	574.363	21719.108	31.991	5.578	10.142
L33	37.666	76.818	12952.198	12.969	18.895	685.494	25921.439	38.416	5.380	8.121
	37.722	76.935	13011.155	12.988	18.923	687.591	26039.431	38.475	5.390	8.136
L34	37.722	76.935	13011.155	12.988	18.923	687.591	26039.431	38.475	5.390	8.136
	37.891	77.284	13189.101	13.047	19.007	693.901	26395.556	38.649	5.419	8.18
L35	37.902	68.674	11767.743	13.074	19.007	619.121	23550.971	34.344	5.551	9.449
	37.958	68.778	11820.878	13.094	19.035	620.998	23657.309	34.395	5.561	9.465
L36	37.958	68.778	11820.878	13.094	19.035	620.998	23657.309	34.395	5.561	9.465
	38.352	69.500	12197.302	13.231	19.232	634.216	24410.654	34.757	5.629	9.581
L37	38.352	69.500	12197.302	13.231	19.232	634.216	24410.654	34.757	5.629	9.581
	38.408	69.603	12251.721	13.251	19.260	636.116	24519.563	34.808	5.639	9.598
L38	38.410	68.145	12003.097	13.255	19.260	623.207	24021.988	34.079	5.661	9.845
	39.534	70.165	13102.567	13.648	19.823	660.994	26222.374	35.089	5.856	10.184
L39	39.535	69.414	12966.469	13.650	19.823	654.128	25950.000	34.714	5.867	10.315
	40.659	71.412	14118.819	14.043	20.385	692.613	28256.216	35.713	6.061	10.658
L40	40.660	70.639	13970.287	14.046	20.385	685.327	27958.956	35.326	6.072	10.795
	41.784	72.615	15175.948	14.439	20.947	724.487	30371.866	36.314	6.267	11.142
L41	41.784	72.615	15175.948	14.439	20.947	724.487	30371.866	36.314	6.267	11.142
	42.908	74.591	16449.055	14.832	21.509	764.735	32919.754	37.303	6.462	11.488
L42	42.910	72.955	16097.961	14.836	21.509	748.412	32217.104	36.485	6.484	11.789
	44.034	74.888	17411.293	15.229	22.072	788.848	34845.495	37.451	6.679	12.143
L43	44.034	74.888	17411.293	15.229	22.072	788.848	34845.495	37.451	6.679	12.143
	45.102	76.724	18723.356	15.602	22.606	828.247	37471.349	38.369	6.864	12.48

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 150.00-145.00				1	1	1			
L2 145.00-140.00				1	1	1			
L3 140.00-133.71				1	1	1			
L4 133.71-131.29				1	1	1			
L5 131.29-126.29				1	1	1			
L6 126.29-121.29				1	1	1			
L7 121.29-116.29				1	1	1			
L8 116.29-111.29				1	1	1			
L9 111.29-108.25				1	1	1			
L10 108.25-108.00				1	1	0.914761			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	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
ft	ft ²	in							
L11 108.00-103.00				1	1	0.92924			
L12 103.00-98.00				1	1	0.927997			
L13 98.00-93.00				1	1	0.92861			
L14 93.00-88.08				1	1	0.924792			
L15 88.08-86.92				1	1	0.944915			
L16 86.92-85.17				1	1	0.939555			
L17 85.17-84.92				1	1	0.938802			
L18 84.92-79.92				1	1	0.942446			
L19 79.92-77.00				1	1	0.95307			
L20 77.00-76.75				1	1	0.955483			
L21 76.75-75.00				1	1	0.962917			
L22 75.00-74.75				1	1	0.947029			
L23 74.75-69.75				1	1	0.9534			
L24 69.75-65.08				1	1	0.961835			
L25 65.08-64.83				1	1	0.961245			
L26 64.83-59.83				1	1	0.949872			
L27 59.83-54.83				1	1	0.959323			
L28 54.83-49.83				1	1	0.969955			
L29 49.83-43.50				1	1	0.967313			
L30 43.50-42.50				1	1	0.962278			
L31 42.50-37.50				1	1	0.974415			
L32 37.50-33.00				1	1	0.966467			
L33 33.00-32.75				1	1	0.960442			
L34 32.75-32.00				1	1	0.95866			
L35 32.00-31.75				1	1	0.990939			
L36 31.75-30.00				1	1	0.987273			
L37 30.00-29.75				1	1	0.986755			
L38 29.75-24.75				1	1	0.997628			
L39 24.75-19.75				1	1	0.998659			
L40 19.75-14.75				1	1	1.00026			
L41 14.75-9.75				1	1	0.991424			
L42 9.75-4.75				1	1	1.00509			
L43 4.75-0.00				1	1	0.997356			

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
Misc										
Safety Line 3/8	A	No	Surface Ar (CaAa)	150.00 - 0.00	1	1	0.500 0.500	0.000		0.220
2" Rigid Conduit	B	No	Surface Ar (CaAa)	130.00 - 0.00	1	1	0.500 0.500	2.000		2.800

CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	120.00 - 0.00	1	1	-0.210 -0.200	1.600		2.350
Mods										
CCI-65FP-060100	A	No	Surface Af (CaAa)	35.00 - 0.00	1	1	0.500 0.500	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	35.00 - 0.00	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	30.00 - 0.00	1	1	0.250 0.250	6.000	14.000	0.000
CCI-65FP-060100	C	No	Surface Af (CaAa)	30.00 - 0.00	1	1	0.000 0.000	6.000	14.000	0.000

CCI-65FP-060100	A	No	Surface Af (CaAa)	65.08 - 35.00	1	1	0.500 0.500	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	65.08 - 35.00	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	65.08 - 30.00	1	1	0.250 0.250	6.000	14.000	0.000

CCI-65FP-060100	A	No	Surface Af (CaAa)	85.17 - 65.08	1	1	0.500 0.500	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	85.17 - 65.08	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	85.17 - 65.08	1	1	0.250 0.250	6.000	14.000	0.000

CCI-65FP-060100	A	No	Surface Af (CaAa)	110.25 - 85.17	1	1	0.500 0.500	6.000	14.000	0.000
CCI-65FP-060100	A	No	Surface Af (CaAa)	110.25 - 85.17	1	1	-0.250 -0.250	6.000	14.000	0.000
CCI-65FP-060100	B	No	Surface Af (CaAa)	110.25 - 85.17	1	1	0.250 0.250	6.000	14.000	0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		CAAA ft ² /ft	Weight plf
150									
HB158-21U6S24-xxM_TMO(1-5/8)	A	No	No	Inside Pole	150.00 - 0.00	4	No Ice	0.00	2.500
							1/2" Ice	0.00	2.500
							1" Ice	0.00	2.500
							2" Ice	0.00	2.500
140									
LCF158-50JA-A7(1 5/8)	C	No	No	Inside Pole	140.00 - 0.00	6	No Ice	0.00	0.720
							1/2" Ice	0.00	0.720
							1" Ice	0.00	0.720
							2" Ice	0.00	0.720
HB114-U6S12-xxx-LI(1-1/4)	C	No	No	Inside Pole	140.00 - 0.00	2	No Ice	0.00	1.700
							1/2" Ice	0.00	1.700
							1" Ice	0.00	1.700
							2" Ice	0.00	1.700
130									
LDF7-50A(1-5/8")	B	No	No	Inside Pole	130.00 - 0.00	6	No Ice	0.00	0.820

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf
							1/2" Ice	0.00	0.820
							1" Ice	0.00	0.820
							2" Ice	0.00	0.820
WR-VG66ST-BRD(7/8)	B	No	No	Inside Pole	130.00 - 0.00	2	No Ice	0.00	0.912
							1/2" Ice	0.00	0.912
							1" Ice	0.00	0.912
							2" Ice	0.00	0.912
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	130.00 - 0.00	1	No Ice	0.00	0.059
							1/2" Ice	0.00	0.059
							1" Ice	0.00	0.059
							2" Ice	0.00	0.059
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	130.00 - 0.00	1	No Ice	0.00	0.059
							1/2" Ice	0.00	0.059
							1" Ice	0.00	0.059
							2" Ice	0.00	0.059
WR-VG122ST-BRDA(7/16)	B	No	No	Inside Pole	130.00 - 0.00	2	No Ice	0.00	0.141
							1/2" Ice	0.00	0.141
							1" Ice	0.00	0.141
							2" Ice	0.00	0.141
80 LDF4-50A(1/2)	A	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.150
							1/2" Ice	0.00	0.150
							1" Ice	0.00	0.150
							2" Ice	0.00	0.150

Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	150.00-145.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	145.00-140.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L3	140.00-133.71	A	0.000	0.000	0.000	0.000	0.06
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L4	133.71-131.29	A	0.000	0.000	0.000	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L5	131.29-126.29	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.741	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.04
L6	126.29-121.29	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	1.000	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.04
L7	121.29-116.29	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	1.593	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L8	116.29-111.29	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	1.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L9	111.29-108.25	A	0.000	0.000	4.000	0.000	0.03
		B	0.000	0.000	3.096	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.02
L10	108.25-108.00	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L11	108.00-103.00	A	0.000	0.000	10.000	0.000	0.05

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L12	103.00-98.00	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L13	98.00-93.00	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L14	93.00-88.08	A	0.000	0.000	9.833	0.000	0.05
		B	0.000	0.000	6.687	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L15	88.08-86.92	A	0.000	0.000	2.333	0.000	0.01
		B	0.000	0.000	1.587	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L16	86.92-85.17	A	0.000	0.000	3.499	0.000	0.02
		B	0.000	0.000	2.379	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.01
L17	85.17-84.92	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L18	84.92-79.92	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L19	79.92-77.00	A	0.000	0.000	5.834	0.000	0.03
		B	0.000	0.000	3.967	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.02
L20	77.00-76.75	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L21	76.75-75.00	A	0.000	0.000	3.500	0.000	0.02
		B	0.000	0.000	2.380	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.01
L22	75.00-74.75	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L23	74.75-69.75	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L24	69.75-65.08	A	0.000	0.000	9.334	0.000	0.05
		B	0.000	0.000	6.347	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L25	65.08-64.83	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L26	64.83-59.83	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L27	59.83-54.83	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L28	54.83-49.83	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L29	49.83-43.50	A	0.000	0.000	12.673	0.000	0.07
		B	0.000	0.000	8.618	0.000	0.08
		C	0.000	0.000	0.000	0.000	0.05
L30	43.50-42.50	A	0.000	0.000	2.000	0.000	0.01
		B	0.000	0.000	1.360	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L31	42.50-37.50	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L32	37.50-33.00	A	0.000	0.000	8.993	0.000	0.05
		B	0.000	0.000	6.115	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.03
L33	33.00-32.75	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L34	32.75-32.00	A	0.000	0.000	1.500	0.000	0.01

Tower Section <i>n</i>	Tower Elevation <i>ft</i>	Face	A_R <i>ft²</i>	A_F <i>ft²</i>	C_{AA} In Face <i>ft²</i>	C_{AA} Out Face <i>ft²</i>	Weight <i>K</i>
		B	0.000	0.000	1.020	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L35	32.00-31.75	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L36	31.75-30.00	A	0.000	0.000	3.500	0.000	0.02
		B	0.000	0.000	2.380	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.01
L37	30.00-29.75	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.340	0.000	0.00
		C	0.000	0.000	0.250	0.000	0.00
L38	29.75-24.75	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	5.000	0.000	0.04
L39	24.75-19.75	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	5.000	0.000	0.04
L40	19.75-14.75	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	5.000	0.000	0.04
L41	14.75-9.75	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	5.000	0.000	0.04
L42	9.75-4.75	A	0.000	0.000	10.000	0.000	0.05
		B	0.000	0.000	6.800	0.000	0.06
		C	0.000	0.000	5.000	0.000	0.04
L43	4.75-0.00	A	0.000	0.000	9.500	0.000	0.05
		B	0.000	0.000	6.460	0.000	0.06
		C	0.000	0.000	4.750	0.000	0.04

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section <i>n</i>	Tower Elevation <i>ft</i>	Face or Leg	Ice Thickness <i>in</i>	A_R <i>ft²</i>	A_F <i>ft²</i>	C_{AA} In Face <i>ft²</i>	C_{AA} Out Face <i>ft²</i>	Weight <i>K</i>
L1	150.00-145.00	A	1.481	0.000	0.000	1.481	0.000	0.06
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	145.00-140.00	A	1.476	0.000	0.000	1.476	0.000	0.06
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	140.00-133.71	A	1.470	0.000	0.000	1.849	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L4	133.71-131.29	A	1.465	0.000	0.000	0.710	0.000	0.03
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L5	131.29-126.29	A	1.461	0.000	0.000	1.461	0.000	0.06
		B		0.000	0.000	1.824	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.04
L6	126.29-121.29	A	1.455	0.000	0.000	1.455	0.000	0.06
		B		0.000	0.000	2.455	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.04
L7	121.29-116.29	A	1.449	0.000	0.000	1.449	0.000	0.06
		B		0.000	0.000	4.117	0.000	0.11
		C		0.000	0.000	0.000	0.000	0.04
L8	116.29-111.29	A	1.443	0.000	0.000	1.443	0.000	0.06
		B		0.000	0.000	4.686	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.04
L9	111.29-108.25	A	1.438	0.000	0.000	6.025	0.000	0.08
		B		0.000	0.000	5.421	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.02
L10	108.25-108.00	A	1.436	0.000	0.000	0.715	0.000	0.01
		B		0.000	0.000	0.555	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L11	108.00-103.00	A	1.432	0.000	0.000	14.296	0.000	0.17

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B		0.000	0.000	11.096	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.04
L12	103.00-98.00	A	1.425	0.000	0.000	14.276	0.000	0.17
		B		0.000	0.000	11.076	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.04
L13	98.00-93.00	A	1.418	0.000	0.000	14.254	0.000	0.17
		B		0.000	0.000	11.054	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.04
L14	93.00-88.08	A	1.410	0.000	0.000	13.994	0.000	0.17
		B		0.000	0.000	10.847	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.04
L15	88.08-86.92	A	1.406	0.000	0.000	3.321	0.000	0.04
		B		0.000	0.000	2.574	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.01
L16	86.92-85.17	A	1.403	0.000	0.000	4.972	0.000	0.06
		B		0.000	0.000	3.853	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.01
L17	85.17-84.92	A	1.402	0.000	0.000	0.710	0.000	0.01
		B		0.000	0.000	0.550	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L18	84.92-79.92	A	1.397	0.000	0.000	14.192	0.000	0.17
		B		0.000	0.000	10.992	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.04
L19	79.92-77.00	A	1.390	0.000	0.000	8.267	0.000	0.10
		B		0.000	0.000	6.400	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.02
L20	77.00-76.75	A	1.388	0.000	0.000	0.708	0.000	0.01
		B		0.000	0.000	0.548	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L21	76.75-75.00	A	1.386	0.000	0.000	4.955	0.000	0.06
		B		0.000	0.000	3.835	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.01
L22	75.00-74.75	A	1.384	0.000	0.000	0.708	0.000	0.01
		B		0.000	0.000	0.548	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L23	74.75-69.75	A	1.379	0.000	0.000	14.137	0.000	0.17
		B		0.000	0.000	10.937	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.04
L24	69.75-65.08	A	1.369	0.000	0.000	13.169	0.000	0.15
		B		0.000	0.000	10.182	0.000	0.15
		C		0.000	0.000	0.000	0.000	0.04
L25	65.08-64.83	A	1.364	0.000	0.000	0.705	0.000	0.01
		B		0.000	0.000	0.545	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L26	64.83-59.83	A	1.359	0.000	0.000	14.076	0.000	0.16
		B		0.000	0.000	10.876	0.000	0.16
		C		0.000	0.000	0.000	0.000	0.04
L27	59.83-54.83	A	1.347	0.000	0.000	14.042	0.000	0.16
		B		0.000	0.000	10.842	0.000	0.16
		C		0.000	0.000	0.000	0.000	0.04
L28	54.83-49.83	A	1.335	0.000	0.000	14.005	0.000	0.16
		B		0.000	0.000	10.805	0.000	0.16
		C		0.000	0.000	0.000	0.000	0.04
L29	49.83-43.50	A	1.320	0.000	0.000	17.691	0.000	0.20
		B		0.000	0.000	13.636	0.000	0.20
		C		0.000	0.000	0.000	0.000	0.05
L30	43.50-42.50	A	1.309	0.000	0.000	2.792	0.000	0.03
		B		0.000	0.000	2.152	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.01
L31	42.50-37.50	A	1.300	0.000	0.000	13.899	0.000	0.16
		B		0.000	0.000	10.699	0.000	0.16
		C		0.000	0.000	0.000	0.000	0.04
L32	37.50-33.00	A	1.283	0.000	0.000	12.456	0.000	0.14
		B		0.000	0.000	9.578	0.000	0.14
		C		0.000	0.000	0.000	0.000	0.03
L33	33.00-32.75	A	1.275	0.000	0.000	0.691	0.000	0.01
		B		0.000	0.000	0.531	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L34	32.75-32.00	A	1.273	0.000	0.000	2.073	0.000	0.02

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L35	32.00-31.75	B	1.271	0.000	0.000	1.593	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.01
		A		0.000	0.000	0.691	0.000	0.01
L36	31.75-30.00	B	1.267	0.000	0.000	0.531	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
		A		0.000	0.000	4.830	0.000	0.05
L37	30.00-29.75	B	1.262	0.000	0.000	3.710	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.01
		A		0.000	0.000	0.689	0.000	0.01
L38	29.75-24.75	B	1.251	0.000	0.000	0.529	0.000	0.01
		C		0.000	0.000	0.313	0.000	0.00
		A		0.000	0.000	13.752	0.000	0.15
L39	24.75-19.75	B	1.226	0.000	0.000	10.552	0.000	0.15
		C		0.000	0.000	6.251	0.000	0.08
		A		0.000	0.000	13.677	0.000	0.15
L40	19.75-14.75	B	1.195	0.000	0.000	10.477	0.000	0.15
		C		0.000	0.000	6.226	0.000	0.08
		A		0.000	0.000	13.585	0.000	0.15
L41	14.75-9.75	B	1.155	0.000	0.000	10.385	0.000	0.15
		C		0.000	0.000	6.195	0.000	0.08
		A		0.000	0.000	13.464	0.000	0.14
L42	9.75-4.75	B	1.096	0.000	0.000	10.264	0.000	0.14
		C		0.000	0.000	6.155	0.000	0.08
		A		0.000	0.000	13.287	0.000	0.14
L43	4.75-0.00	B	0.980	0.000	0.000	10.087	0.000	0.14
		C		0.000	0.000	6.096	0.000	0.08
		A		0.000	0.000	12.292	0.000	0.12
		B		0.000	0.000	9.252	0.000	0.12
		C		0.000	0.000	5.681	0.000	0.07

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	150.00-145.00	0.000	0.000	0.000	-1.021
L2	145.00-140.00	0.000	0.000	0.000	-1.043
L3	140.00-133.71	0.000	0.000	0.000	-1.063
L4	133.71-131.29	0.000	0.000	0.000	-1.075
L5	131.29-126.29	1.028	0.594	1.138	-0.280
L6	126.29-121.29	1.325	0.765	1.478	-0.059
L7	121.29-116.29	1.706	0.032	1.960	-0.913
L8	116.29-111.29	1.833	-0.195	2.131	-1.188
L9	111.29-108.25	2.797	-0.181	2.752	-0.783
L10	108.25-108.00	3.001	-0.178	2.928	-0.681
L11	108.00-103.00	3.056	-0.178	2.979	-0.690
L12	103.00-98.00	3.158	-0.179	3.075	-0.707
L13	98.00-93.00	3.257	-0.180	3.167	-0.724
L14	93.00-88.08	3.353	-0.181	3.256	-0.739
L15	88.08-86.92	3.358	-0.181	3.261	-0.740
L16	86.92-85.17	3.385	-0.182	3.285	-0.743
L17	85.17-84.92	3.404	-0.182	3.302	-0.745
L18	84.92-79.92	3.453	-0.182	3.347	-0.753
L19	79.92-77.00	3.525	-0.183	3.413	-0.764
L20	77.00-76.75	3.553	-0.183	3.439	-0.768
L21	76.75-75.00	3.571	-0.183	3.455	-0.770
L22	75.00-74.75	3.589	-0.183	3.472	-0.773
L23	74.75-69.75	3.636	-0.184	3.514	-0.780
L24	69.75-65.08	3.719	-0.185	3.589	-0.791
L25	65.08-64.83	3.761	-0.185	3.627	-0.797
L26	64.83-59.83	3.805	-0.186	3.666	-0.803
L27	59.83-54.83	3.887	-0.186	3.739	-0.813
L28	54.83-49.83	3.967	-0.187	3.808	-0.822
L29	49.83-43.50	4.055	-0.188	3.885	-0.831
L30	43.50-42.50	4.059	-0.188	3.890	-0.832

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L31	42.50-37.50	4.105	-0.188	3.923	-0.831
L32	37.50-33.00	4.176	-0.189	3.981	-0.837
L33	33.00-32.75	4.211	-0.189	4.010	-0.839
L34	32.75-32.00	4.219	-0.189	4.016	-0.839
L35	32.00-31.75	4.225	-0.189	4.021	-0.839
L36	31.75-30.00	4.240	-0.190	4.033	-0.840
L37	30.00-29.75	3.619	2.743	3.549	1.646
L38	29.75-24.75	3.654	2.770	3.577	1.666
L39	24.75-19.75	3.720	2.821	3.628	1.705
L40	19.75-14.75	3.785	2.871	3.675	1.746
L41	14.75-9.75	3.849	2.920	3.716	1.791
L42	9.75-4.75	3.911	2.968	3.746	1.843
L43	4.75-0.00	3.971	3.014	3.744	1.919

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 3/8	145.00 - 150.00	1.0000	1.0000
L2	2	Safety Line 3/8	140.00 - 145.00	1.0000	1.0000
L3	2	Safety Line 3/8	133.71 - 140.00	1.0000	1.0000
L4	2	Safety Line 3/8	131.29 - 133.71	1.0000	1.0000
L5	2	Safety Line 3/8	126.29 - 131.29	1.0000	1.0000
L5	18	2" Rigid Conduit	126.29 - 130.00	1.0000	1.0000
L6	2	Safety Line 3/8	121.29 - 126.29	1.0000	1.0000
L6	18	2" Rigid Conduit	121.29 - 126.29	1.0000	1.0000
L7	2	Safety Line 3/8	116.29 - 121.29	1.0000	1.0000
L7	18	2" Rigid Conduit	116.29 - 121.29	1.0000	1.0000
L7	22	CU12PSM9P6XXX(1-1/2)	116.29 - 120.00	1.0000	1.0000
L8	2	Safety Line 3/8	111.29 - 116.29	1.0000	1.0000
L8	18	2" Rigid Conduit	111.29 - 116.29	1.0000	1.0000
L8	22	CU12PSM9P6XXX(1-1/2)	111.29 - 116.29	1.0000	1.0000
L9	2	Safety Line 3/8	108.25 - 111.29	1.0000	1.0000
L9	18	2" Rigid Conduit	108.25 - 111.29	1.0000	1.0000
L9	22	CU12PSM9P6XXX(1-1/2)	108.25 - 111.29	1.0000	1.0000
L9	37	CCI-65FP-060100	108.25 - 110.25	1.0000	1.0000
L9	38	CCI-65FP-060100	108.25 - 110.25	1.0000	1.0000
L9	39	CCI-65FP-060100	108.25 - 110.25	1.0000	1.0000
L10	2	Safety Line 3/8	108.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L10	18	2" Rigid Conduit	108.25 108.00 - 108.25	1.0000	1.0000
L10	22	CU12PSM9P6XXX(1-1/2)	108.00 - 108.25	1.0000	1.0000
L10	37	CCI-65FP-060100	108.00 - 108.25	1.0000	1.0000
L10	38	CCI-65FP-060100	108.00 - 108.25	1.0000	1.0000
L10	39	CCI-65FP-060100	108.00 - 108.25	1.0000	1.0000
L11	2	Safety Line 3/8	103.00 - 108.00	1.0000	1.0000
L11	18	2" Rigid Conduit	103.00 - 108.00	1.0000	1.0000
L11	22	CU12PSM9P6XXX(1-1/2)	103.00 - 108.00	1.0000	1.0000
L11	37	CCI-65FP-060100	103.00 - 108.00	1.0000	1.0000
L11	38	CCI-65FP-060100	103.00 - 108.00	1.0000	1.0000
L11	39	CCI-65FP-060100	103.00 - 108.00	1.0000	1.0000
L12	2	Safety Line 3/8	98.00 - 103.00	1.0000	1.0000
L12	18	2" Rigid Conduit	98.00 - 103.00	1.0000	1.0000
L12	22	CU12PSM9P6XXX(1-1/2)	98.00 - 103.00	1.0000	1.0000
L12	37	CCI-65FP-060100	98.00 - 103.00	1.0000	1.0000
L12	38	CCI-65FP-060100	98.00 - 103.00	1.0000	1.0000
L12	39	CCI-65FP-060100	98.00 - 103.00	1.0000	1.0000
L13	2	Safety Line 3/8	93.00 - 98.00	1.0000	1.0000
L13	18	2" Rigid Conduit	93.00 - 98.00	1.0000	1.0000
L13	22	CU12PSM9P6XXX(1-1/2)	93.00 - 98.00	1.0000	1.0000
L13	37	CCI-65FP-060100	93.00 - 98.00	1.0000	1.0000
L13	38	CCI-65FP-060100	93.00 - 98.00	1.0000	1.0000
L13	39	CCI-65FP-060100	93.00 - 98.00	1.0000	1.0000
L14	2	Safety Line 3/8	88.08 - 93.00	1.0000	1.0000
L14	18	2" Rigid Conduit	88.08 - 93.00	1.0000	1.0000
L14	22	CU12PSM9P6XXX(1-1/2)	88.08 - 93.00	1.0000	1.0000
L14	37	CCI-65FP-060100	88.08 - 93.00	1.0000	1.0000
L14	38	CCI-65FP-060100	88.08 - 93.00	1.0000	1.0000
L14	39	CCI-65FP-060100	88.08 - 93.00	1.0000	1.0000
L15	2	Safety Line 3/8	86.92 - 88.08	1.0000	1.0000
L15	18	2" Rigid Conduit	86.92 - 88.08	1.0000	1.0000
L15	22	CU12PSM9P6XXX(1-1/2)	86.92 - 88.08	1.0000	1.0000
L15	37	CCI-65FP-060100	86.92 - 88.08	1.0000	1.0000
L15	38	CCI-65FP-060100	86.92 - 88.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L15	39	CCI-65FP-060100	86.92 - 88.08	1.0000	1.0000
L16	2	Safety Line 3/8	85.17 - 86.92	1.0000	1.0000
L16	18	2" Rigid Conduit	85.17 - 86.92	1.0000	1.0000
L16	22	CU12PSM9P6XXX(1-1/2)	85.17 - 86.92	1.0000	1.0000
L16	37	CCI-65FP-060100	85.17 - 86.92	1.0000	1.0000
L16	38	CCI-65FP-060100	85.17 - 86.92	1.0000	1.0000
L16	39	CCI-65FP-060100	85.17 - 86.92	1.0000	1.0000
L17	2	Safety Line 3/8	84.92 - 85.17	1.0000	1.0000
L17	18	2" Rigid Conduit	84.92 - 85.17	1.0000	1.0000
L17	22	CU12PSM9P6XXX(1-1/2)	84.92 - 85.17	1.0000	1.0000
L17	33	CCI-65FP-060100	84.92 - 85.17	1.0000	1.0000
L17	34	CCI-65FP-060100	84.92 - 85.17	1.0000	1.0000
L17	35	CCI-65FP-060100	84.92 - 85.17	1.0000	1.0000
L18	2	Safety Line 3/8	79.92 - 84.92	1.0000	1.0000
L18	18	2" Rigid Conduit	79.92 - 84.92	1.0000	1.0000
L18	22	CU12PSM9P6XXX(1-1/2)	79.92 - 84.92	1.0000	1.0000
L18	33	CCI-65FP-060100	79.92 - 84.92	1.0000	1.0000
L18	34	CCI-65FP-060100	79.92 - 84.92	1.0000	1.0000
L18	35	CCI-65FP-060100	79.92 - 84.92	1.0000	1.0000
L19	2	Safety Line 3/8	77.00 - 79.92	1.0000	1.0000
L19	18	2" Rigid Conduit	77.00 - 79.92	1.0000	1.0000
L19	22	CU12PSM9P6XXX(1-1/2)	77.00 - 79.92	1.0000	1.0000
L19	33	CCI-65FP-060100	77.00 - 79.92	1.0000	1.0000
L19	34	CCI-65FP-060100	77.00 - 79.92	1.0000	1.0000
L19	35	CCI-65FP-060100	77.00 - 79.92	1.0000	1.0000
L20	2	Safety Line 3/8	76.75 - 77.00	1.0000	1.0000
L20	18	2" Rigid Conduit	76.75 - 77.00	1.0000	1.0000
L20	22	CU12PSM9P6XXX(1-1/2)	76.75 - 77.00	1.0000	1.0000
L20	33	CCI-65FP-060100	76.75 - 77.00	1.0000	1.0000
L20	34	CCI-65FP-060100	76.75 - 77.00	1.0000	1.0000
L20	35	CCI-65FP-060100	76.75 - 77.00	1.0000	1.0000
L21	2	Safety Line 3/8	75.00 - 76.75	1.0000	1.0000
L21	18	2" Rigid Conduit	75.00 - 76.75	1.0000	1.0000
L21	22	CU12PSM9P6XXX(1-1/2)	75.00 - 76.75	1.0000	1.0000
L21	33	CCI-65FP-060100	75.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L21	34	CCI-65FP-060100	76.75 75.00 -	1.0000	1.0000
L21	35	CCI-65FP-060100	76.75 75.00 -	1.0000	1.0000
L22	2	Safety Line 3/8	76.75 74.75 -	1.0000	1.0000
L22	18	2" Rigid Conduit	75.00 74.75 -	1.0000	1.0000
L22	22	CU12PSM9P6XXX(1-1/2)	75.00 74.75 -	1.0000	1.0000
L22	33	CCI-65FP-060100	74.75 -	1.0000	1.0000
L22	34	CCI-65FP-060100	75.00 74.75 -	1.0000	1.0000
L22	35	CCI-65FP-060100	75.00 74.75 -	1.0000	1.0000
L23	2	Safety Line 3/8	75.00 69.75 -	1.0000	1.0000
L23	18	2" Rigid Conduit	74.75 69.75 -	1.0000	1.0000
L23	22	CU12PSM9P6XXX(1-1/2)	74.75 69.75 -	1.0000	1.0000
L23	33	CCI-65FP-060100	74.75 69.75 -	1.0000	1.0000
L23	34	CCI-65FP-060100	74.75 69.75 -	1.0000	1.0000
L23	35	CCI-65FP-060100	74.75 69.75 -	1.0000	1.0000
L24	2	Safety Line 3/8	74.75 65.08 -	1.0000	1.0000
L24	18	2" Rigid Conduit	69.75 65.08 -	1.0000	1.0000
L24	22	CU12PSM9P6XXX(1-1/2)	69.75 65.08 -	1.0000	1.0000
L24	33	CCI-65FP-060100	65.08 -	1.0000	1.0000
L24	34	CCI-65FP-060100	69.75 65.08 -	1.0000	1.0000
L24	35	CCI-65FP-060100	69.75 65.08 -	1.0000	1.0000
L25	2	Safety Line 3/8	69.75 64.83 -	1.0000	1.0000
L25	18	2" Rigid Conduit	65.08 64.83 -	1.0000	1.0000
L25	22	CU12PSM9P6XXX(1-1/2)	65.08 64.83 -	1.0000	1.0000
L25	29	CCI-65FP-060100	64.83 -	1.0000	1.0000
L25	30	CCI-65FP-060100	65.08 64.83 -	1.0000	1.0000
L25	31	CCI-65FP-060100	65.08 64.83 -	1.0000	1.0000
L26	2	Safety Line 3/8	64.83 -	1.0000	1.0000
L26	18	2" Rigid Conduit	64.83 59.83 -	1.0000	1.0000
L26	22	CU12PSM9P6XXX(1-1/2)	64.83 59.83 -	1.0000	1.0000
L26	29	CCI-65FP-060100	64.83 59.83 -	1.0000	1.0000
L26	30	CCI-65FP-060100	64.83 59.83 -	1.0000	1.0000
L26	31	CCI-65FP-060100	64.83 59.83 -	1.0000	1.0000
L27	2	Safety Line 3/8	64.83 54.83 -	1.0000	1.0000
L27	18	2" Rigid Conduit	59.83 54.83 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L27	22	CU12PSM9P6XXX(1-1/2)	54.83 - 59.83	1.0000	1.0000
L27	29	CCI-65FP-060100	54.83 - 59.83	1.0000	1.0000
L27	30	CCI-65FP-060100	54.83 - 59.83	1.0000	1.0000
L27	31	CCI-65FP-060100	54.83 - 59.83	1.0000	1.0000
L28	2	Safety Line 3/8	49.83 - 54.83	1.0000	1.0000
L28	18	2" Rigid Conduit	49.83 - 54.83	1.0000	1.0000
L28	22	CU12PSM9P6XXX(1-1/2)	49.83 - 54.83	1.0000	1.0000
L28	29	CCI-65FP-060100	49.83 - 54.83	1.0000	1.0000
L28	30	CCI-65FP-060100	49.83 - 54.83	1.0000	1.0000
L28	31	CCI-65FP-060100	49.83 - 54.83	1.0000	1.0000
L29	2	Safety Line 3/8	43.50 - 49.83	1.0000	1.0000
L29	18	2" Rigid Conduit	43.50 - 49.83	1.0000	1.0000
L29	22	CU12PSM9P6XXX(1-1/2)	43.50 - 49.83	1.0000	1.0000
L29	29	CCI-65FP-060100	43.50 - 49.83	1.0000	1.0000
L29	30	CCI-65FP-060100	43.50 - 49.83	1.0000	1.0000
L29	31	CCI-65FP-060100	43.50 - 49.83	1.0000	1.0000
L30	2	Safety Line 3/8	42.50 - 43.50	1.0000	1.0000
L30	18	2" Rigid Conduit	42.50 - 43.50	1.0000	1.0000
L30	22	CU12PSM9P6XXX(1-1/2)	42.50 - 43.50	1.0000	1.0000
L30	29	CCI-65FP-060100	42.50 - 43.50	1.0000	1.0000
L30	30	CCI-65FP-060100	42.50 - 43.50	1.0000	1.0000
L30	31	CCI-65FP-060100	42.50 - 43.50	1.0000	1.0000
L31	2	Safety Line 3/8	37.50 - 42.50	1.0000	1.0000
L31	18	2" Rigid Conduit	37.50 - 42.50	1.0000	1.0000
L31	22	CU12PSM9P6XXX(1-1/2)	37.50 - 42.50	1.0000	1.0000
L31	29	CCI-65FP-060100	37.50 - 42.50	1.0000	1.0000
L31	30	CCI-65FP-060100	37.50 - 42.50	1.0000	1.0000
L31	31	CCI-65FP-060100	37.50 - 42.50	1.0000	1.0000
L32	2	Safety Line 3/8	33.00 - 37.50	1.0000	1.0000
L32	18	2" Rigid Conduit	33.00 - 37.50	1.0000	1.0000
L32	22	CU12PSM9P6XXX(1-1/2)	33.00 - 37.50	1.0000	1.0000
L32	24	CCI-65FP-060100	33.00 - 35.00	1.0000	1.0000
L32	25	CCI-65FP-060100	33.00 - 35.00	1.0000	1.0000
L32	29	CCI-65FP-060100	35.00 - 37.50	1.0000	1.0000
L32	30	CCI-65FP-060100	35.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L32	31	CCI-65FP-060100	37.50 33.00 -	1.0000	1.0000
L33	2	Safety Line 3/8	37.50 32.75 -	1.0000	1.0000
L33	18	2" Rigid Conduit	33.00 32.75 -	1.0000	1.0000
L33	22	CU12PSM9P6XXX(1-1/2)	33.00 32.75 -	1.0000	1.0000
L33	24	CCI-65FP-060100	33.00 32.75 -	1.0000	1.0000
L33	25	CCI-65FP-060100	32.75 - 33.00	1.0000	1.0000
L33	31	CCI-65FP-060100	32.75 - 33.00	1.0000	1.0000
L34	2	Safety Line 3/8	32.00 - 32.75	1.0000	1.0000
L34	18	2" Rigid Conduit	32.00 - 32.75	1.0000	1.0000
L34	22	CU12PSM9P6XXX(1-1/2)	32.00 - 32.75	1.0000	1.0000
L34	24	CCI-65FP-060100	32.00 - 32.75	1.0000	1.0000
L34	25	CCI-65FP-060100	32.00 - 32.75	1.0000	1.0000
L34	31	CCI-65FP-060100	32.00 - 32.75	1.0000	1.0000
L35	2	Safety Line 3/8	31.75 - 32.00	1.0000	1.0000
L35	18	2" Rigid Conduit	31.75 - 32.00	1.0000	1.0000
L35	22	CU12PSM9P6XXX(1-1/2)	31.75 - 32.00	1.0000	1.0000
L35	24	CCI-65FP-060100	31.75 - 32.00	1.0000	1.0000
L35	25	CCI-65FP-060100	31.75 - 32.00	1.0000	1.0000
L35	31	CCI-65FP-060100	31.75 - 32.00	1.0000	1.0000
L36	2	Safety Line 3/8	30.00 - 31.75	1.0000	1.0000
L36	18	2" Rigid Conduit	30.00 - 31.75	1.0000	1.0000
L36	22	CU12PSM9P6XXX(1-1/2)	30.00 - 31.75	1.0000	1.0000
L36	24	CCI-65FP-060100	30.00 - 31.75	1.0000	1.0000
L36	25	CCI-65FP-060100	30.00 - 31.75	1.0000	1.0000
L36	31	CCI-65FP-060100	30.00 - 31.75	1.0000	1.0000
L37	2	Safety Line 3/8	29.75 - 30.00	1.0000	1.0000
L37	18	2" Rigid Conduit	29.75 - 30.00	1.0000	1.0000
L37	22	CU12PSM9P6XXX(1-1/2)	29.75 - 30.00	1.0000	1.0000
L37	24	CCI-65FP-060100	29.75 - 30.00	1.0000	1.0000
L37	25	CCI-65FP-060100	29.75 - 30.00	1.0000	1.0000
L37	26	CCI-65FP-060100	29.75 - 30.00	1.0000	1.0000
L37	27	CCI-65FP-060100	29.75 - 30.00	1.0000	1.0000
L38	2	Safety Line 3/8	24.75 - 29.75	1.0000	1.0000
L38	18	2" Rigid Conduit	24.75 - 29.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L38	22	CU12PSM9P6XXX(1-1/2)	24.75 - 29.75	1.0000	1.0000
L38	24	CCI-65FP-060100	24.75 - 29.75	1.0000	1.0000
L38	25	CCI-65FP-060100	24.75 - 29.75	1.0000	1.0000
L38	26	CCI-65FP-060100	24.75 - 29.75	1.0000	1.0000
L38	27	CCI-65FP-060100	24.75 - 29.75	1.0000	1.0000
L39	2	Safety Line 3/8	19.75 - 24.75	1.0000	1.0000
L39	18	2" Rigid Conduit	19.75 - 24.75	1.0000	1.0000
L39	22	CU12PSM9P6XXX(1-1/2)	19.75 - 24.75	1.0000	1.0000
L39	24	CCI-65FP-060100	19.75 - 24.75	1.0000	1.0000
L39	25	CCI-65FP-060100	19.75 - 24.75	1.0000	1.0000
L39	26	CCI-65FP-060100	19.75 - 24.75	1.0000	1.0000
L39	27	CCI-65FP-060100	19.75 - 24.75	1.0000	1.0000
L40	2	Safety Line 3/8	14.75 - 19.75	1.0000	1.0000
L40	18	2" Rigid Conduit	14.75 - 19.75	1.0000	1.0000
L40	22	CU12PSM9P6XXX(1-1/2)	14.75 - 19.75	1.0000	1.0000
L40	24	CCI-65FP-060100	14.75 - 19.75	1.0000	1.0000
L40	25	CCI-65FP-060100	14.75 - 19.75	1.0000	1.0000
L40	26	CCI-65FP-060100	14.75 - 19.75	1.0000	1.0000
L40	27	CCI-65FP-060100	14.75 - 19.75	1.0000	1.0000
L41	2	Safety Line 3/8	9.75 - 14.75	1.0000	1.0000
L41	18	2" Rigid Conduit	9.75 - 14.75	1.0000	1.0000
L41	22	CU12PSM9P6XXX(1-1/2)	9.75 - 14.75	1.0000	1.0000
L41	24	CCI-65FP-060100	9.75 - 14.75	1.0000	1.0000
L41	25	CCI-65FP-060100	9.75 - 14.75	1.0000	1.0000
L41	26	CCI-65FP-060100	9.75 - 14.75	1.0000	1.0000
L41	27	CCI-65FP-060100	9.75 - 14.75	1.0000	1.0000
L42	2	Safety Line 3/8	4.75 - 9.75	1.0000	1.0000
L42	18	2" Rigid Conduit	4.75 - 9.75	1.0000	1.0000
L42	22	CU12PSM9P6XXX(1-1/2)	4.75 - 9.75	1.0000	1.0000
L42	24	CCI-65FP-060100	4.75 - 9.75	1.0000	1.0000
L42	25	CCI-65FP-060100	4.75 - 9.75	1.0000	1.0000
L42	26	CCI-65FP-060100	4.75 - 9.75	1.0000	1.0000
L42	27	CCI-65FP-060100	4.75 - 9.75	1.0000	1.0000
L43	2	Safety Line 3/8	0.00 - 4.75	1.0000	1.0000
L43	18	2" Rigid Conduit	0.00 - 4.75	1.0000	1.0000
L43	22	CU12PSM9P6XXX(1-1/2)	0.00 - 4.75	1.0000	1.0000
L43	24	CCI-65FP-060100	0.00 - 4.75	1.0000	1.0000
L43	25	CCI-65FP-060100	0.00 - 4.75	1.0000	1.0000
L43	26	CCI-65FP-060100	0.00 - 4.75	1.0000	1.0000
L43	27	CCI-65FP-060100	0.00 - 4.75	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
L9	37	CCI-65FP-060100	108.25 - 110.25	Auto	0.4554
L9	38	CCI-65FP-060100	108.25 - 110.25	Auto	0.4554
L9	39	CCI-65FP-060100	108.25 - 110.25	Auto	0.4554
L10	37	CCI-65FP-060100	108.00 - 108.25	Auto	0.5435
L10	38	CCI-65FP-060100	108.00 - 108.25	Auto	0.5435
L10	39	CCI-65FP-060100	108.00 - 108.25	Auto	0.5435
L11	37	CCI-65FP-060100	103.00 - 108.00	Auto	0.5191
L11	38	CCI-65FP-060100	103.00 - 108.00	Auto	0.5191
L11	39	CCI-65FP-060100	103.00 - 108.00	Auto	0.5191
L12	37	CCI-65FP-060100	98.00 - 103.00	Auto	0.4829
L12	38	CCI-65FP-060100	98.00 - 103.00	Auto	0.4829
L12	39	CCI-65FP-060100	98.00 - 103.00	Auto	0.4829
L13	37	CCI-65FP-060100	93.00 - 98.00	Auto	0.4467
L13	38	CCI-65FP-060100	93.00 - 98.00	Auto	0.4467
L13	39	CCI-65FP-060100	93.00 - 98.00	Auto	0.4467
L14	37	CCI-65FP-060100	88.08 - 93.00	Auto	0.4145
L14	38	CCI-65FP-060100	88.08 - 93.00	Auto	0.4145
L14	39	CCI-65FP-060100	88.08 - 93.00	Auto	0.4145
L15	37	CCI-65FP-060100	86.92 - 88.08	Auto	0.4278
L15	38	CCI-65FP-060100	86.92 - 88.08	Auto	0.4278
L15	39	CCI-65FP-060100	86.92 - 88.08	Auto	0.4278
L16	37	CCI-65FP-060100	85.17 - 86.92	Auto	0.4183
L16	38	CCI-65FP-060100	85.17 - 86.92	Auto	0.4183
L16	39	CCI-65FP-060100	85.17 - 86.92	Auto	0.4183
L17	33	CCI-65FP-060100	84.92 - 85.17	Auto	0.4118
L17	34	CCI-65FP-060100	84.92 - 85.17	Auto	0.4118
L17	35	CCI-65FP-060100	84.92 - 85.17	Auto	0.4118
L18	33	CCI-65FP-060100	79.92 - 84.92	Auto	0.3911
L18	34	CCI-65FP-060100	79.92 - 84.92	Auto	0.3911
L18	35	CCI-65FP-060100	79.92 - 84.92	Auto	0.3911
L19	33	CCI-65FP-060100	77.00 - 79.92	Auto	0.3617
L19	34	CCI-65FP-060100	77.00 - 79.92	Auto	0.3617
L19	35	CCI-65FP-060100	77.00 - 79.92	Auto	0.3617
L20	33	CCI-65FP-060100	76.75 -	Auto	0.3295

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	34	CCI-65FP-060100	77.00 76.75 - 77.00	Auto	0.3295
L20	35	CCI-65FP-060100	76.75 - 77.00	Auto	0.3295
L21	33	CCI-65FP-060100	75.00 - 76.75	Auto	0.3211
L21	34	CCI-65FP-060100	75.00 - 76.75	Auto	0.3211
L21	35	CCI-65FP-060100	75.00 - 76.75	Auto	0.3211
L22	33	CCI-65FP-060100	74.75 - 75.00	Auto	0.3385
L22	34	CCI-65FP-060100	74.75 - 75.00	Auto	0.3385
L22	35	CCI-65FP-060100	74.75 - 75.00	Auto	0.3385
L23	33	CCI-65FP-060100	69.75 - 74.75	Auto	0.3178
L23	34	CCI-65FP-060100	69.75 - 74.75	Auto	0.3178
L23	35	CCI-65FP-060100	69.75 - 74.75	Auto	0.3178
L24	33	CCI-65FP-060100	65.08 - 69.75	Auto	0.2827
L24	34	CCI-65FP-060100	65.08 - 69.75	Auto	0.2827
L24	35	CCI-65FP-060100	65.08 - 69.75	Auto	0.2827
L25	29	CCI-65FP-060100	64.83 - 65.08	Auto	0.2668
L25	30	CCI-65FP-060100	64.83 - 65.08	Auto	0.2668
L25	31	CCI-65FP-060100	64.83 - 65.08	Auto	0.2668
L26	29	CCI-65FP-060100	59.83 - 64.83	Auto	0.2497
L26	30	CCI-65FP-060100	59.83 - 64.83	Auto	0.2497
L26	31	CCI-65FP-060100	59.83 - 64.83	Auto	0.2497
L27	29	CCI-65FP-060100	54.83 - 59.83	Auto	0.2136
L27	30	CCI-65FP-060100	54.83 - 59.83	Auto	0.2136
L27	31	CCI-65FP-060100	54.83 - 59.83	Auto	0.2136
L28	29	CCI-65FP-060100	49.83 - 54.83	Auto	0.1775
L28	30	CCI-65FP-060100	49.83 - 54.83	Auto	0.1775
L28	31	CCI-65FP-060100	49.83 - 54.83	Auto	0.1775
L29	29	CCI-65FP-060100	43.50 - 49.83	Auto	0.1407
L29	30	CCI-65FP-060100	43.50 - 49.83	Auto	0.1407
L29	31	CCI-65FP-060100	43.50 - 49.83	Auto	0.1407
L30	29	CCI-65FP-060100	42.50 - 43.50	Auto	0.1389
L30	30	CCI-65FP-060100	42.50 - 43.50	Auto	0.1389
L30	31	CCI-65FP-060100	42.50 - 43.50	Auto	0.1389
L31	29	CCI-65FP-060100	37.50 - 42.50	Auto	0.1157
L31	30	CCI-65FP-060100	37.50 -	Auto	0.1157

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	31	CCI-65FP-060100	42.50 37.50 - 42.50	Auto	0.1157
L32	24	CCI-65FP-060100	33.00 - 35.00	Auto	0.0768
L32	25	CCI-65FP-060100	33.00 - 35.00	Auto	0.0768
L32	29	CCI-65FP-060100	35.00 - 37.50	Auto	0.0914
L32	30	CCI-65FP-060100	35.00 - 37.50	Auto	0.0914
L32	31	CCI-65FP-060100	33.00 - 37.50	Auto	0.0849
L33	24	CCI-65FP-060100	32.75 - 33.00	Auto	0.1025
L33	25	CCI-65FP-060100	32.75 - 33.00	Auto	0.1025
L33	31	CCI-65FP-060100	32.75 - 33.00	Auto	0.1025
L34	24	CCI-65FP-060100	32.00 - 32.75	Auto	0.0992
L34	25	CCI-65FP-060100	32.00 - 32.75	Auto	0.0992
L34	31	CCI-65FP-060100	32.00 - 32.75	Auto	0.0992
L35	24	CCI-65FP-060100	31.75 - 32.00	Auto	0.0740
L35	25	CCI-65FP-060100	31.75 - 32.00	Auto	0.0740
L35	31	CCI-65FP-060100	31.75 - 32.00	Auto	0.0740
L36	24	CCI-65FP-060100	30.00 - 31.75	Auto	0.0675
L36	25	CCI-65FP-060100	30.00 - 31.75	Auto	0.0675
L36	31	CCI-65FP-060100	30.00 - 31.75	Auto	0.0675
L37	24	CCI-65FP-060100	29.75 - 30.00	Auto	0.0610
L37	25	CCI-65FP-060100	29.75 - 30.00	Auto	0.0610
L37	26	CCI-65FP-060100	29.75 - 30.00	Auto	0.0610
L37	27	CCI-65FP-060100	29.75 - 30.00	Auto	0.0610
L38	24	CCI-65FP-060100	24.75 - 29.75	Auto	0.0403
L38	25	CCI-65FP-060100	24.75 - 29.75	Auto	0.0403
L38	26	CCI-65FP-060100	24.75 - 29.75	Auto	0.0403
L38	27	CCI-65FP-060100	24.75 - 29.75	Auto	0.0403
L39	24	CCI-65FP-060100	19.75 - 24.75	Auto	0.0076
L39	25	CCI-65FP-060100	19.75 - 24.75	Auto	0.0076
L39	26	CCI-65FP-060100	19.75 - 24.75	Auto	0.0076
L39	27	CCI-65FP-060100	19.75 - 24.75	Auto	0.0076
L40	24	CCI-65FP-060100	14.75 - 19.75	Auto	0.0000
L40	25	CCI-65FP-060100	14.75 - 19.75	Auto	0.0000
L40	26	CCI-65FP-060100	14.75 - 19.75	Auto	0.0000
L40	27	CCI-65FP-060100	14.75 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			19.75		
L41	24	CCI-65FP-060100	9.75 - 14.75	Auto	0.0000
L41	25	CCI-65FP-060100	9.75 - 14.75	Auto	0.0000
L41	26	CCI-65FP-060100	9.75 - 14.75	Auto	0.0000
L41	27	CCI-65FP-060100	9.75 - 14.75	Auto	0.0000
L42	24	CCI-65FP-060100	4.75 - 9.75	Auto	0.0000
L42	25	CCI-65FP-060100	4.75 - 9.75	Auto	0.0000
L42	26	CCI-65FP-060100	4.75 - 9.75	Auto	0.0000
L42	27	CCI-65FP-060100	4.75 - 9.75	Auto	0.0000
L43	24	CCI-65FP-060100	0.00 - 4.75	Auto	0.0000
L43	25	CCI-65FP-060100	0.00 - 4.75	Auto	0.0000
L43	26	CCI-65FP-060100	0.00 - 4.75	Auto	0.0000
L43	27	CCI-65FP-060100	0.00 - 4.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CA _{AA} Front ft ²	CA _{AA} Side ft ²	Weight K	
150									
AIR6449 B41_T-MOBILE	A	From Centroid-Face	4.00 6.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.27 6.14 7.06 7.06	2.03 2.70 3.43 3.43	0.11 0.15 0.20 0.30
AIR6449 B41_T-MOBILE	B	From Centroid-Face	4.00 6.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.27 6.14 7.06 7.06	2.03 2.70 3.43 3.43	0.11 0.15 0.20 0.30
AIR6449 B41_T-MOBILE	C	From Centroid-Face	4.00 6.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.27 6.14 7.06 7.06	2.03 2.70 3.43 3.43	0.11 0.15 0.20 0.30
APX16DWV-16DWV-S-E-A20	A	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.26 7.46 8.72 8.72	1.50 2.00 3.62 3.62	0.04 0.07 0.11 0.20
APX16DWV-16DWV-S-E-A20	B	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.26 7.46 8.72 8.72	1.50 2.00 3.62 3.62	0.04 0.07 0.11 0.20
APX16DWV-16DWV-S-E-A20	C	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.26 7.46 8.72 8.72	1.50 2.00 3.62 3.62	0.04 0.07 0.11 0.20
APXVAALL24_43-U-NA20_TMO	A	From Centroid-Face	4.00 -2.000 2.000	0.000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.67 16.21 17.81 17.81	5.32 6.68 8.08 8.08	0.15 0.26 0.38 0.65
APXVAALL24_43-U-NA20_TMO	B	From Centroid-Face	4.00 -2.000	0.000	150.00	No Ice 1/2"	14.67 15.43	5.32 5.99	0.15 0.26

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
		Face	2.000			Ice 16.21	6.68	0.38
						1" Ice 17.81	8.08	0.65
						2" Ice		
APXVAALL24_43-U-NA20_TMO	C	From Centroid-Face	4.00 -2.000 2.000	0.000	150.00	No Ice 14.67	5.32	0.15
						1/2" Ice 15.43	5.99	0.26
						Ice 16.21	6.68	0.38
						1" Ice 17.81	8.08	0.65
						2" Ice		
RADIO 4415 B66A	A	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1.86	0.87	0.05
						1/2" 2.03	1.00	0.06
						Ice 2.20	1.13	0.08
						1" Ice 2.58	1.43	0.12
						2" Ice		
RADIO 4415 B66A	B	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1.86	0.87	0.05
						1/2" 2.03	1.00	0.06
						Ice 2.20	1.13	0.08
						1" Ice 2.58	1.43	0.12
						2" Ice		
RADIO 4415 B66A	C	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1.86	0.87	0.05
						1/2" 2.03	1.00	0.06
						Ice 2.20	1.13	0.08
						1" Ice 2.58	1.43	0.12
						2" Ice		
RADIO 4424 B25_TMO	A	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 2.05	1.61	0.09
						1/2" 2.23	1.77	0.11
						Ice 2.42	1.94	0.13
						1" Ice 2.81	2.30	0.19
						2" Ice		
RADIO 4424 B25_TMO	B	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 2.05	1.61	0.09
						1/2" 2.23	1.77	0.11
						Ice 2.42	1.94	0.13
						1" Ice 2.81	2.30	0.19
						2" Ice		
RADIO 4424 B25_TMO	C	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 2.05	1.61	0.09
						1/2" 2.23	1.77	0.11
						Ice 2.42	1.94	0.13
						1" Ice 2.81	2.30	0.19
						2" Ice		
RADIO 4449 B71 B85A_T-MOBILE	A	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1.97	1.59	0.07
						1/2" 2.15	1.75	0.09
						Ice 2.33	1.92	0.12
						1" Ice 2.72	2.28	0.17
						2" Ice		
RADIO 4449 B71 B85A_T-MOBILE	B	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1.97	1.59	0.07
						1/2" 2.15	1.75	0.09
						Ice 2.33	1.92	0.12
						1" Ice 2.72	2.28	0.17
						2" Ice		
RADIO 4449 B71 B85A_T-MOBILE	C	From Centroid-Face	4.00 -6.000 2.000	0.000	150.00	No Ice 1.97	1.59	0.07
						1/2" 2.15	1.75	0.09
						Ice 2.33	1.92	0.12
						1" Ice 2.72	2.28	0.17
						2" Ice		
Platform Mount [LP 301-1]	C	None		0.000	150.00	No Ice 30.10	30.10	1.59
						1/2" 40.80	40.80	2.03
						Ice 51.50	51.50	2.47
						1" Ice 72.90	72.90	3.35
						2" Ice		
140								
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Centroid-Leg	4.00 4.750 0.000	40.000	140.00	No Ice 5.50	4.38	0.10
						1/2" 5.97	4.84	0.17
						Ice 6.45	5.30	0.25
						1" Ice 7.44	6.26	0.46
						2" Ice		
(2) JAHH-65B-R3B w/	B	From	4.00	45.000	140.00	No Ice 5.50	4.38	0.10

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
Mount Pipe		Centroid-Leg	4.750	0.000		1/2"	5.97	4.84	0.17	
						Ice	6.45	5.30	0.25	
						1" Ice	7.44	6.26	0.46	
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Centroid-Leg	4.00	4.750	50.000	140.00	No Ice	5.50	4.38	0.10
			0.000				1/2"	5.97	4.84	0.17
							Ice	6.45	5.30	0.25
							1" Ice	7.44	6.26	0.46
							2" Ice			
(2) DB846H80E-SX w/ Mount Pipe	A	From Centroid-Leg	4.00	-4.750	10.000	140.00	No Ice	4.12	6.38	0.05
			0.000				1/2"	4.76	7.05	0.10
							Ice	5.42	7.74	0.17
							1" Ice	6.78	9.17	0.32
							2" Ice			
(2) DB846F65ZAXY w/ Mount Pipe	B	From Centroid-Leg	4.00	-4.750	0.000	140.00	No Ice	6.10	6.81	0.06
			0.000				1/2"	6.80	7.52	0.12
							Ice	7.51	8.24	0.19
							1" Ice	8.98	9.73	0.37
							2" Ice			
(2) DB846H80E-SX w/ Mount Pipe	C	From Centroid-Leg	4.00	-4.750	30.000	140.00	No Ice	4.12	6.38	0.05
			0.000				1/2"	4.76	7.05	0.10
							Ice	5.42	7.74	0.17
							1" Ice	6.78	9.17	0.32
							2" Ice			
RVZDC-6627-PF-48	A	From Centroid-Leg	4.00	-7.000	10.000	140.00	No Ice	3.79	2.51	0.03
			0.000				1/2"	4.04	2.73	0.06
							Ice	4.30	2.95	0.10
							1" Ice	4.84	3.42	0.18
							2" Ice			
RVZDC-6627-PF-48	B	From Centroid-Leg	4.00	-7.000	0.000	140.00	No Ice	3.79	2.51	0.03
			0.000				1/2"	4.04	2.73	0.06
							Ice	4.30	2.95	0.10
							1" Ice	4.84	3.42	0.18
							2" Ice			
FDJ85020Q7-S1	A	From Centroid-Leg	4.00	-7.000	10.000	140.00	No Ice	0.96	0.36	0.02
			0.000				1/2"	1.09	0.43	0.03
							Ice	1.24	0.52	0.04
							1" Ice	1.54	0.71	0.08
							2" Ice			
FDJ85020Q7-S1	B	From Centroid-Leg	4.00	-7.000	0.000	140.00	No Ice	0.96	0.36	0.02
			0.000				1/2"	1.09	0.43	0.03
							Ice	1.24	0.52	0.04
							1" Ice	1.54	0.71	0.08
							2" Ice			
FDJ85020Q7-S1	C	From Centroid-Leg	4.00	-7.000	30.000	140.00	No Ice	0.96	0.36	0.02
			0.000				1/2"	1.09	0.43	0.03
							Ice	1.24	0.52	0.04
							1" Ice	1.54	0.71	0.08
							2" Ice			
RFV01U-D1A	B	From Centroid-Leg	4.00	-7.000	0.000	140.00	No Ice	1.88	1.25	0.08
			0.000				1/2"	2.05	1.39	0.10
							Ice	2.22	1.54	0.12
							1" Ice	2.60	1.86	0.18
							2" Ice			
(2) RFV01U-D1A	C	From Centroid-Leg	4.00	-7.000	30.000	140.00	No Ice	1.88	1.25	0.08
			0.000				1/2"	2.05	1.39	0.10
							Ice	2.22	1.54	0.12
							1" Ice	2.60	1.86	0.18
							2" Ice			
(2) RFV01U-D2A	A	From Centroid-Leg	4.00	-7.000	10.000	140.00	No Ice	1.88	1.01	0.07
			0.000				1/2"	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
							2" Ice			
RFV01U-D2A	B	From	4.00	0.000	0.000	140.00	No Ice	1.88	1.01	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
		Centroid-Leg	-7.000 0.000			1/2" Ice 2.05 2.22 1" Ice 2.60 2" Ice	1.14 1.28 1.59	0.09 0.11 0.15
Platform Mount [LP 304-1]	C	None		0.000	140.00	No Ice 17.46 1/2" 22.44 Ice 27.42 1" Ice 37.38 2" Ice	17.46 22.44 27.42 37.38	1.35 1.62 1.90 2.45
130 DMP65R-BU6D w/ Mount Pipe	A	From Centroid-Face	4.00 -7.000 0.000	-20.000	130.00	No Ice 11.96 1/2" 12.70 Ice 13.46 1" Ice 15.02 2" Ice	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53
DMP65R-BU6D w/ Mount Pipe	B	From Centroid-Face	4.00 7.000 0.000	-10.000	130.00	No Ice 11.96 1/2" 12.70 Ice 13.46 1" Ice 15.02 2" Ice	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53
DMP65R-BU6D w/ Mount Pipe	C	From Centroid-Face	4.00 7.000 0.000	-10.000	130.00	No Ice 11.96 1/2" 12.70 Ice 13.46 1" Ice 15.02 2" Ice	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53
OPA65R-BU6D w/ Mount Pipe	A	From Centroid-Face	4.00 0.000 0.000	-20.000	130.00	No Ice 12.25 1/2" 13.00 Ice 13.76 1" Ice 15.34 2" Ice	6.05 6.71 7.39 8.79	0.09 0.18 0.27 0.51
OPA65R-BU6D w/ Mount Pipe	B	From Centroid-Face	4.00 0.000 0.000	-10.000	130.00	No Ice 12.25 1/2" 13.00 Ice 13.76 1" Ice 15.34 2" Ice	6.05 6.71 7.39 8.79	0.09 0.18 0.27 0.51
OPA65R-BU6D w/ Mount Pipe	C	From Centroid-Face	4.00 0.000 0.000	-10.000	130.00	No Ice 12.25 1/2" 13.00 Ice 13.76 1" Ice 15.34 2" Ice	6.05 6.71 7.39 8.79	0.09 0.18 0.27 0.51
7770.00 w/ Mount Pipe	A	From Centroid-Face	4.00 7.000 0.000	-20.000	130.00	No Ice 5.75 1/2" 6.18 Ice 6.61 1" Ice 7.49 2" Ice	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	B	From Centroid-Face	4.00 -7.000 0.000	-10.000	130.00	No Ice 5.75 1/2" 6.18 Ice 6.61 1" Ice 7.49 2" Ice	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
7770.00 w/ Mount Pipe	C	From Centroid-Face	4.00 -7.000 0.000	-10.000	130.00	No Ice 5.75 1/2" 6.18 Ice 6.61 1" Ice 7.49 2" Ice	4.25 5.01 5.71 7.16	0.06 0.10 0.16 0.29
RRUS 4449 B5/B12	A	From Centroid-Face	4.00 7.000 0.000	-20.000	130.00	No Ice 1.97 1/2" 2.14 Ice 2.33 1" Ice 2.72 2" Ice	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	B	From Centroid-Face	4.00 0.000 0.000	-10.000	130.00	No Ice 1.97 1/2" 2.14 Ice 2.33 1" Ice 2.72 2" Ice	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
RRUS 4449 B5/B12	C	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.97	1.41	0.07
			7.000			1/2"	2.14	1.56	0.09
			0.000			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4478 B14	A	From Centroid-Face	4.00	-20.000	130.00	No Ice	1.84	1.06	0.06
			0.000			1/2"	2.01	1.20	0.08
			0.000			Ice	2.19	1.34	0.09
						1" Ice	2.57	1.66	0.14
						2" Ice			
RRUS 4478 B14	B	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.84	1.06	0.06
			-7.000			1/2"	2.01	1.20	0.08
			0.000			Ice	2.19	1.34	0.09
						1" Ice	2.57	1.66	0.14
						2" Ice			
RRUS 4478 B14	C	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.84	1.06	0.06
			0.000			1/2"	2.01	1.20	0.08
			0.000			Ice	2.19	1.34	0.09
						1" Ice	2.57	1.66	0.14
						2" Ice			
RRUS 8843 B2/B66A	A	From Centroid-Face	4.00	-20.000	130.00	No Ice	1.64	1.35	0.07
			-7.000			1/2"	1.80	1.50	0.09
			0.000			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
RRUS 8843 B2/B66A	B	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.64	1.35	0.07
			7.000			1/2"	1.80	1.50	0.09
			0.000			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
RRUS 8843 B2/B66A	C	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.64	1.35	0.07
			-7.000			1/2"	1.80	1.50	0.09
			0.000			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
1001940	A	From Centroid-Face	4.00	-20.000	130.00	No Ice	0.18	0.08	0.00
			-7.000			1/2"	0.23	0.13	0.00
			0.000			Ice	0.30	0.18	0.01
						1" Ice	0.44	0.30	0.01
						2" Ice			
1001940	B	From Centroid-Face	4.00	-10.000	130.00	No Ice	0.18	0.08	0.00
			7.000			1/2"	0.23	0.13	0.00
			0.000			Ice	0.30	0.18	0.01
						1" Ice	0.44	0.30	0.01
						2" Ice			
1001940	C	From Centroid-Face	4.00	-10.000	130.00	No Ice	0.18	0.08	0.00
			-7.000			1/2"	0.23	0.13	0.00
			0.000			Ice	0.30	0.18	0.01
						1" Ice	0.44	0.30	0.01
						2" Ice			
DC6-48-60-18-8F	B	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.21	1.21	0.02
			-7.000			1/2"	1.89	1.89	0.04
			0.000			Ice	2.11	2.11	0.07
						1" Ice	2.57	2.57	0.13
						2" Ice			
DC6-48-60-18-8F	C	From Centroid-Face	4.00	-10.000	130.00	No Ice	1.21	1.21	0.02
			0.000			1/2"	1.89	1.89	0.04
			0.000			Ice	2.11	2.11	0.07
						1" Ice	2.57	2.57	0.13
						2" Ice			
2.4" Dia x 4-ft Mount Pipe	A	From Centroid-Face	4.00	0.000	130.00	No Ice	0.87	0.87	0.01
			0.000			1/2"	1.12	1.12	0.02
			0.000			Ice	1.37	1.37	0.03
						1" Ice	1.91	1.91	0.06
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
2.4" Dia x 4-ft Mount Pipe	B	From Centroid-Face	4.00	0.000	0.000	130.00	No Ice	0.87	0.87	0.01
			0.000	0.000			1/2"	1.12	1.12	0.02
			0.000	0.000			Ice	1.37	1.37	0.03
							1" Ice	1.91	1.91	0.06
							2" Ice			
2.4" Dia x 4-ft Mount Pipe	C	From Centroid-Face	4.00	0.000	0.000	130.00	No Ice	0.87	0.87	0.01
			0.000	0.000			1/2"	1.12	1.12	0.02
			0.000	0.000			Ice	1.37	1.37	0.03
							1" Ice	1.91	1.91	0.06
							2" Ice			
Side Arm Mount [SO 102-3]	C	None			0.000	130.00	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			
Side Arm Mount [SO 701-3]	C	None			0.000	130.00	No Ice	2.83	2.83	0.20
							1/2"	3.92	3.92	0.24
							Ice	5.01	5.01	0.28
							1" Ice	7.19	7.19	0.36
							2" Ice			
Platform Mount [LP 304-1]	C	None			0.000	130.00	No Ice	17.46	17.46	1.35
							1/2"	22.44	22.44	1.62
							Ice	27.42	27.42	1.90
							1" Ice	37.38	37.38	2.45
							2" Ice			
120 MX08FRO665-20 w/ Mount Pipe	A	From Leg	4.00	0.000	0.000	120.00	No Ice	8.01	4.23	0.10
			0.000	0.000			1/2"	8.52	4.69	0.18
			0.000	0.000			Ice	9.04	5.16	0.28
							1" Ice	10.11	6.12	0.51
							2" Ice			
MX08FRO665-20 w/ Mount Pipe	B	From Leg	4.00	0.000	0.000	120.00	No Ice	8.01	4.23	0.10
			0.000	0.000			1/2"	8.52	4.69	0.18
			0.000	0.000			Ice	9.04	5.16	0.28
							1" Ice	10.11	6.12	0.51
							2" Ice			
MX08FRO665-20 w/ Mount Pipe	C	From Leg	4.00	0.000	0.000	120.00	No Ice	8.01	4.23	0.10
			0.000	0.000			1/2"	8.52	4.69	0.18
			0.000	0.000			Ice	9.04	5.16	0.28
							1" Ice	10.11	6.12	0.51
							2" Ice			
TA08025-B604	A	From Leg	4.00	0.000	0.000	120.00	No Ice	1.96	0.98	0.06
			0.000	0.000			1/2"	2.14	1.11	0.08
			0.000	0.000			Ice	2.32	1.25	0.10
							1" Ice	2.71	1.55	0.15
							2" Ice			
TA08025-B604	B	From Leg	4.00	0.000	0.000	120.00	No Ice	1.96	0.98	0.06
			0.000	0.000			1/2"	2.14	1.11	0.08
			0.000	0.000			Ice	2.32	1.25	0.10
							1" Ice	2.71	1.55	0.15
							2" Ice			
TA08025-B604	C	From Leg	4.00	0.000	0.000	120.00	No Ice	1.96	0.98	0.06
			0.000	0.000			1/2"	2.14	1.11	0.08
			0.000	0.000			Ice	2.32	1.25	0.10
							1" Ice	2.71	1.55	0.15
							2" Ice			
TA08025-B605	A	From Leg	4.00	0.000	0.000	120.00	No Ice	1.96	1.13	0.08
			0.000	0.000			1/2"	2.14	1.27	0.09
			0.000	0.000			Ice	2.32	1.41	0.11
							1" Ice	2.71	1.72	0.16
							2" Ice			
TA08025-B605	B	From Leg	4.00	0.000	0.000	120.00	No Ice	1.96	1.13	0.08
			0.000	0.000			1/2"	2.14	1.27	0.09
			0.000	0.000			Ice	2.32	1.41	0.11
							1" Ice	2.71	1.72	0.16
							2" Ice			

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral	Vert					
TA08025-B605	C	From Leg	4.00	0.000	0.000	120.00	2" Ice			
							No Ice	1.96	1.13	0.08
							1/2"	2.14	1.27	0.09
							Ice	2.32	1.41	0.11
							1" Ice	2.71	1.72	0.16
RDIDC-9181-PF-48	B	From Leg	4.00	0.000	0.000	120.00	2" Ice			
							No Ice	2.31	1.29	0.02
							1/2"	2.50	1.45	0.04
							Ice	2.70	1.61	0.06
							1" Ice	3.12	1.96	0.12
Commscope MC-K6MHDX-9-96 (3)	C	None			0.000	120.00	2" Ice			
							No Ice	15.30	15.30	1.19
							1/2"	20.48	20.48	1.71
							Ice	25.66	25.66	2.22
							1" Ice	36.02	36.02	3.25
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.000	0.000	120.00	2" Ice			
							No Ice	1.90	1.90	0.03
							1/2"	2.73	2.73	0.04
							Ice	3.40	3.40	0.06
							1" Ice	4.40	4.40	0.12
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.000	0.000	120.00	2" Ice			
							No Ice	1.90	1.90	0.03
							1/2"	2.73	2.73	0.04
							Ice	3.40	3.40	0.06
							1" Ice	4.40	4.40	0.12
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.000	0.000	120.00	2" Ice			
							No Ice	1.90	1.90	0.03
							1/2"	2.73	2.73	0.04
							Ice	3.40	3.40	0.06
							1" Ice	4.40	4.40	0.12
80 KS24019-L112A	C	From Leg	3.00	0.000	1.000	80.00	2" Ice			
							No Ice	0.10	0.10	0.01
							1/2"	0.18	0.18	0.01
							Ice	0.26	0.26	0.01
							1" Ice	0.42	0.42	0.01
Side Arm Mount [SO 701-1]	C	From Leg	1.50	0.000	0.000	80.00	2" Ice			
							No Ice	0.85	1.67	0.07
							1/2"	1.14	2.34	0.08
							Ice	1.43	3.01	0.09
							1" 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

Comb. No.	Description
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
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	150 - 145	Pole	Max Tension	26	0.00	-0.00	0.00
			Max. Compression	26	-7.85	0.01	0.00
			Max. Mx	20	-3.03	35.43	-0.00
			Max. My	14	-3.03	0.00	-35.42
			Max. Vy	8	5.82	-35.42	0.00
			Max. Vx	14	5.82	0.00	-35.42
			Max. Torque	22			-0.00
L2	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.25	0.01	0.01
			Max. Mx	20	-3.25	65.15	-0.00
			Max. My	14	-3.25	0.01	-65.14
			Max. Vy	8	6.07	-65.14	0.01
			Max. Vx	14	6.07	0.01	-65.14
			Max. Torque	22			-0.00
L3	140 - 133.71	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.21	-0.54	1.05
			Max. Mx	8	-6.14	-105.16	-0.30
			Max. My	2	-6.14	0.10	105.37
			Max. Vy	20	-10.85	104.83	0.04
			Max. Vx	14	10.90	-0.24	-105.03
			Max. Torque	22			-1.84
L4	133.71 -	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
	131.293		Max. Compression	26	-17.00	-0.53	1.04
			Max. Mx	8	-6.69	-160.14	-0.54
			Max. My	2	-6.68	0.34	160.62
			Max. Vy	20	-11.14	159.81	0.26
			Max. Vx	14	11.20	-0.46	-160.29
			Max. Torque	22			-1.84
L5	131.293 - 126.293	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.48	0.73	-1.21
			Max. Mx	20	-10.18	235.91	-0.28
			Max. My	14	-10.19	-0.13	-236.68
			Max. Vy	20	-16.63	235.91	-0.28
			Max. Vx	14	16.58	-0.13	-236.68
			Max. Torque	22			-1.83
L6	126.293 - 121.293	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.23	0.71	-1.20
			Max. Mx	20	-10.83	319.63	-0.51
			Max. My	14	-10.83	0.09	-320.17
			Max. Vy	20	-16.88	319.63	-0.51
			Max. Vx	14	16.84	0.09	-320.17
			Max. Torque	11			-0.83
L7	121.293 - 116.293	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.70	0.28	-1.38
			Max. Mx	20	-13.72	414.21	-0.72
			Max. My	14	-13.73	0.16	-414.59
			Max. Vy	8	19.75	-414.02	-0.53
			Max. Vx	14	19.68	0.16	-414.59
			Max. Torque	11			-0.83
L8	116.293 - 111.293	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.56	0.21	-1.33
			Max. Mx	20	-14.49	513.39	-0.86
			Max. My	14	-14.50	0.29	-513.45
			Max. Vy	8	19.97	-513.25	-0.38
			Max. Vx	14	19.90	0.29	-513.45
			Max. Torque	11			-0.83
L9	111.293 - 108.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.17	0.18	-1.27
			Max. Mx	20	-14.97	574.29	-0.94
			Max. My	14	-14.98	0.36	-574.14
			Max. Vy	8	20.10	-574.18	-0.29
			Max. Vx	14	20.03	0.36	-574.14
			Max. Torque	11			-0.83
L10	108.25 - 108	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.24	0.18	-1.26
			Max. Mx	20	-15.05	579.32	-0.95
			Max. My	14	-15.06	0.37	-579.15
			Max. Vy	8	20.10	-579.21	-0.28
			Max. Vx	14	20.03	0.37	-579.15
			Max. Torque	11			-0.82
L11	108 - 103	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.67	0.14	-1.13
			Max. Mx	20	-16.11	680.60	-1.09
			Max. My	14	-16.12	0.49	-680.10
			Max. Vy	8	20.44	-680.55	-0.13
			Max. Vx	14	20.37	0.49	-680.10
			Max. Torque	11			-0.82
L12	103 - 98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.13	0.09	-1.00
			Max. Mx	20	-17.21	783.55	-1.22
			Max. My	14	-17.22	0.61	-782.71
			Max. Vy	8	20.77	-783.55	0.02
			Max. Vx	14	20.70	0.61	-782.71
			Max. Torque	11			-0.82
L13	98 - 93	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			
L14	93 - 88.0833	Pole	Max. Compression	26	-38.63	0.04	-0.86			
			Max. Mx	8	-18.34	-888.19	0.17			
			Max. My	14	-18.34	0.72	-886.97			
			Max. Vy	8	21.10	-888.19	0.17			
			Max. Vx	14	21.03	0.72	-886.97			
			Max. Torque	11			-0.82			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-38.95	0.03	-0.83			
			Max. Mx	8	-18.58	-911.09	0.21			
			Max. My	14	-18.59	0.75	-909.77			
			L15	88.0833 - 86.9166	Pole	Max. Vy	8	21.17	-911.09	0.21
Max. Vx	14	21.10				0.75	-909.77			
Max. Torque	11						-0.82			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-41.44				-0.02	-0.68			
Max. Mx	8	-20.46				-1018.09	0.36			
Max. My	14	-20.47				0.86	-1016.38			
Max. Vy	8	21.62				-1018.09	0.36			
Max. Vx	14	21.55				0.86	-1016.38			
Max. Torque	11						-0.82			
L16	86.9166 - 85.167	Pole				Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.01	-0.04	-0.63			
			Max. Mx	8	-20.89	-1055.99	0.42			
			Max. My	14	-20.90	0.90	-1054.15			
			Max. Vy	8	21.74	-1055.99	0.42			
			Max. Vx	14	21.67	0.90	-1054.15			
			Max. Torque	11			-0.82			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-42.09	-0.04	-0.62			
			Max. Mx	8	-20.98	-1061.43	0.43			
			L17	85.167 - 84.917	Pole	Max. My	14	-20.99	0.91	-1059.56
Max. Vy	8	21.74				-1061.43	0.43			
Max. Vx	14	21.67				0.91	-1059.56			
Max. Torque	11						-0.82			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-43.87				0.21	-0.65			
Max. Mx	20	-22.33				1170.93	-1.81			
Max. My	14	-22.34				1.21	-1168.81			
Max. Vy	8	22.12				-1170.75	0.47			
Max. Vx	14	22.09				1.21	-1168.81			
L18	84.917 - 79.917	Pole				Max. Torque	11			-0.97
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-44.86	0.18	-0.56			
			Max. Mx	20	-23.10	1235.67	-1.88			
			Max. My	14	-23.10	1.28	-1233.45			
			Max. Vy	8	22.31	-1235.53	0.56			
			Max. Vx	14	22.28	1.28	-1233.45			
			Max. Torque	11			-0.97			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-44.94	0.18	-0.55			
			L19	79.917 - 77	Pole	Max. Mx	20	-23.17	1241.25	-1.89
Max. My	14	-23.18				1.28	-1239.02			
Max. Vy	8	22.31				-1241.10	0.57			
Max. Vx	14	22.28				1.28	-1239.02			
Max. Torque	11						-0.96			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-45.49				0.16	-0.49			
Max. Mx	20	-23.58				1280.37	-1.93			
Max. My	14	-23.58				1.32	-1278.08			
Max. Vy	8	22.44				-1280.25	0.63			
L20	77 - 76.75	Pole				Max. Vx	14	22.41	1.32	-1278.08
			Max. Torque	11			-0.96			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-45.58	0.15	-0.49			
			Max. Mx	20	-23.67	1285.97	-1.94			
			L21	76.75 - 75	Pole	Max. My	14	-23.18	1.28	-1239.02
						Max. Vy	8	22.31	-1241.10	0.57
						Max. Vx	14	22.28	1.28	-1239.02
						Max. Torque	11			-0.96
						Max Tension	1	0.00	0.00	0.00
						Max. Compression	26	-44.94	0.18	-0.55
Max. Mx	20	-23.17				1241.25	-1.89			
Max. My	14	-23.18				1.28	-1239.02			
Max. Vy	8	22.31				-1241.10	0.57			
Max. Vx	14	22.28				1.28	-1239.02			
L22	75 - 74.75	Pole				Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-45.58	0.15	-0.49			
			Max. Mx	20	-23.67	1285.97	-1.94			

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	74.75 - 69.75	Pole	Max. My	14	-23.67	1.33	-1283.68
			Max. Vy	8	22.43	-1285.85	0.64
			Max. Vx	14	22.40	1.33	-1283.68
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.30	0.10	-0.33
			Max. Mx	20	-25.01	1398.87	-2.07
			Max. My	14	-25.01	1.44	-1396.42
			Max. Vy	8	22.76	-1398.82	0.80
			Max. Vx	14	22.73	1.44	-1396.42
L24	69.75 - 65.083	Pole	Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.94	0.04	-0.17
			Max. Mx	8	-26.29	-1505.69	0.95
			Max. My	14	-26.29	1.54	-1503.07
			Max. Vy	8	23.06	-1505.69	0.95
			Max. Vx	14	23.02	1.54	-1503.07
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			L25	65.083 - 64.833	Pole	Max. Compression	26
Max. Mx	8	-26.37				-1511.45	0.95
Max. My	14	-26.38				1.55	-1508.83
Max. Vy	8	23.06				-1511.45	0.95
Max. Vx	14	23.02				1.55	-1508.83
Max. Torque	11						-0.96
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-50.82				-0.02	0.00
Max. Mx	8	-27.77				-1627.52	1.12
Max. My	14	-27.77				1.65	-1624.67
L26	64.833 - 59.833	Pole	Max. Vy	8	23.38	-1627.52	1.12
			Max. Vx	14	23.34	1.65	-1624.67
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.64	-0.08	0.18
			Max. Mx	8	-29.20	-1745.12	1.28
			Max. My	14	-29.20	1.76	-1742.03
			Max. Vy	8	23.68	-1745.12	1.28
			Max. Vx	14	23.65	1.76	-1742.03
			Max. Torque	11			-0.96
L27	59.833 - 54.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.49	-0.14	0.35
			Max. Mx	8	-30.66	-1864.20	1.44
			Max. My	14	-30.67	1.86	-1860.89
			Max. Vy	8	23.97	-1864.20	1.44
			Max. Vx	14	23.94	1.86	-1860.89
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.00	-0.16	0.40
			Max. Mx	8	-31.05	-1896.28	1.49
L28	54.833 - 49.833	Pole	Max. My	14	-31.06	1.89	-1892.90
			Max. Vy	8	24.05	-1896.28	1.49
			Max. Vx	14	24.02	1.89	-1892.90
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.75	-0.24	0.62
			Max. Mx	8	-33.99	-2042.00	1.68
			Max. My	14	-33.99	2.01	-2038.35
			Max. Vy	8	24.52	-2042.00	1.68
			Max. Vx	14	24.48	2.01	-2038.35
L29	49.833 - 43.4966	Pole	Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.75	-0.24	0.62
			Max. Mx	8	-33.99	-2042.00	1.68
			Max. My	14	-33.99	2.01	-2038.35
			Max. Vy	8	24.52	-2042.00	1.68
			Max. Vx	14	24.48	2.01	-2038.35
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			L30	43.4966 - 42.4966	Pole	Max. Compression	26
Max. Mx	8	-33.99				-2042.00	1.68
Max. My	14	-33.99				2.01	-2038.35
Max. Vy	8	24.52				-2042.00	1.68
Max. Vx	14	24.48				2.01	-2038.35
Max. Torque	11						-0.96
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-58.75				-0.24	0.62
Max. Mx	8	-33.99				-2042.00	1.68
Max. My	14	-33.99				2.01	-2038.35
L31	42.4966 -	Pole	Max. Vy	8	24.52	-2042.00	1.68
			Max. Vx	14	24.48	2.01	-2038.35
			Max. Torque	11			-0.96
			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
	37.4966		Max. Compression	26	-60.65	-0.30	0.80
			Max. Mx	8	-35.51	-2165.16	1.85
			Max. My	14	-35.51	2.11	-2161.27
			Max. Vy	8	24.77	-2165.16	1.85
			Max. Vx	14	24.73	2.11	-2161.27
			Max. Torque	11			-0.96
L32	37.4966 - 33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.39	-0.36	0.96
			Max. Mx	8	-36.90	-2276.94	2.00
			Max. My	14	-36.90	2.20	-2272.84
			Max. Vy	8	24.98	-2276.94	2.00
			Max. Vx	14	24.95	2.20	-2272.84
			Max. Torque	11			-0.96
L33	33 - 32.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.50	-0.37	0.97
			Max. Mx	8	-37.00	-2283.19	2.01
			Max. My	14	-37.00	2.21	-2279.07
			Max. Vy	8	24.98	-2283.19	2.01
			Max. Vx	14	24.94	2.21	-2279.07
			Max. Torque	11			-0.96
L34	32.75 - 32	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.82	-0.38	1.00
			Max. Mx	8	-37.26	-2301.94	2.03
			Max. My	14	-37.27	2.22	-2297.79
			Max. Vy	8	25.02	-2301.94	2.03
			Max. Vx	14	24.99	2.22	-2297.79
			Max. Torque	11			-0.96
L35	32 - 31.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.93	-0.38	1.01
			Max. Mx	8	-37.35	-2308.19	2.04
			Max. My	14	-37.35	2.23	-2304.03
			Max. Vy	8	25.03	-2308.19	2.04
			Max. Vx	14	25.00	2.23	-2304.03
			Max. Torque	11			-0.96
L36	31.75 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.65	-0.40	1.07
			Max. Mx	8	-37.92	-2352.08	2.10
			Max. My	14	-37.93	2.26	-2347.83
			Max. Vy	8	25.14	-2352.08	2.10
			Max. Vx	14	25.11	2.26	-2347.83
			Max. Torque	11			-0.96
L37	30 - 29.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.76	-0.41	1.08
			Max. Mx	8	-38.03	-2358.36	2.10
			Max. My	14	-38.03	2.27	-2354.10
			Max. Vy	8	25.13	-2358.36	2.10
			Max. Vx	14	25.09	2.27	-2354.10
			Max. Torque	11			-0.96
L38	29.75 - 24.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.90	-0.48	1.19
			Max. Mx	8	-39.72	-2484.59	2.27
			Max. My	14	-39.72	2.36	-2480.10
			Max. Vy	8	25.37	-2484.59	2.27
			Max. Vx	14	25.34	2.36	-2480.10
			Max. Torque	11			-0.96
L39	24.75 - 19.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.06	-0.55	1.30
			Max. Mx	8	-41.45	-2612.00	2.44
			Max. My	14	-41.45	2.45	-2607.27
			Max. Vy	8	25.61	-2612.00	2.44
			Max. Vx	14	25.58	2.45	-2607.27
			Max. Torque	11			-0.96
L40	19.75 - 14.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.23	-0.62	1.41
			Max. Mx	8	-43.20	-2740.59	2.60

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L41	14.75 - 9.75	Pole	Max. My	14	-43.21	2.55	-2735.62
			Max. Vy	8	25.85	-2740.59	2.60
			Max. Vx	14	25.81	2.55	-2735.62
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.43	-0.69	1.53
			Max. Mx	8	-44.99	-2870.36	2.77
			Max. My	14	-44.99	2.64	-2865.16
			Max. Vy	8	26.08	-2870.36	2.77
			Max. Vx	14	26.05	2.64	-2865.16
L42	9.75 - 4.75	Pole	Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.62	-0.76	1.63
			Max. Mx	8	-46.80	-3001.32	2.93
			Max. My	14	-46.80	2.72	-2995.88
			Max. Vy	8	26.32	-3001.32	2.93
			Max. Vx	14	26.29	2.72	-2995.88
			Max. Torque	11			-0.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.69	-0.83	1.73
L43	4.75 - 0	Pole	Max. Mx	8	-48.54	-3126.84	3.09
			Max. My	14	-48.54	2.80	-3121.18
			Max. Vy	8	26.55	-3126.84	3.09
			Max. Vx	14	26.52	2.80	-3121.18
			Max. Torque	11			-0.96

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	76.69	-5.88	0.00
	Max. H _x	21	36.41	26.53	-0.03
	Max. H _z	3	36.41	-0.03	26.50
	Max. M _x	2	3120.59	-0.03	26.50
	Max. M _z	8	3126.84	-26.53	0.03
	Max. Torsion	23	0.95	22.96	13.23
	Min. Vert	23	36.41	22.96	13.23
	Min. H _x	9	36.41	-26.53	0.03
	Min. H _z	15	36.41	0.03	-26.50
	Min. M _x	14	-3121.18	0.03	-26.50
	Min. M _z	20	-3125.71	26.53	-0.03
	Min. Torsion	11	-0.96	-23.15	-13.34

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	40.46	0.00	0.00	0.20	-0.46	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	48.55	0.03	-26.50	-3120.59	-3.96	-0.57
0.9 Dead+1.0 Wind 0 deg - No Ice	36.41	0.03	-26.50	-3065.04	-3.76	-0.58
1.2 Dead+1.0 Wind 30 deg - No Ice	48.55	13.29	-22.97	-2704.86	-1567.07	-0.11
0.9 Dead+1.0 Wind 30 deg - No Ice	36.41	13.29	-22.97	-2656.74	-1539.00	-0.11
1.2 Dead+1.0 Wind 60 deg - No Ice	48.55	22.99	-13.27	-1563.05	-2709.69	0.37
0.9 Dead+1.0 Wind 60 deg - No Ice	36.41	22.99	-13.27	-1535.28	-2661.25	0.38

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
No Ice						
1.2 Dead+1.0 Wind 90 deg - No Ice	48.55	26.53	-0.03	-3.09	-3126.84	0.76
0.9 Dead+1.0 Wind 90 deg - No Ice	36.41	26.53	-0.03	-3.13	-3070.96	0.78
1.2 Dead+1.0 Wind 120 deg - No Ice	48.55	23.15	13.34	1569.97	-2727.44	0.94
0.9 Dead+1.0 Wind 120 deg - No Ice	36.41	23.15	13.34	1541.94	-2678.75	0.96
1.2 Dead+1.0 Wind 150 deg - No Ice	48.55	13.35	23.12	2722.46	-1572.99	0.87
0.9 Dead+1.0 Wind 150 deg - No Ice	36.41	13.35	23.12	2673.92	-1544.85	0.88
1.2 Dead+1.0 Wind 180 deg - No Ice	48.55	-0.03	26.50	3121.18	2.80	0.56
0.9 Dead+1.0 Wind 180 deg - No Ice	36.41	-0.03	26.50	3065.45	2.90	0.57
1.2 Dead+1.0 Wind 210 deg - No Ice	48.55	-13.40	23.16	2726.56	1578.10	0.11
0.9 Dead+1.0 Wind 210 deg - No Ice	36.41	-13.40	23.16	2677.95	1550.15	0.11
1.2 Dead+1.0 Wind 240 deg - No Ice	48.55	-23.18	13.38	1575.83	2729.65	-0.37
0.9 Dead+1.0 Wind 240 deg - No Ice	36.41	-23.18	13.38	1547.70	2681.20	-0.38
1.2 Dead+1.0 Wind 270 deg - No Ice	48.55	-26.53	0.03	3.67	3125.71	-0.76
0.9 Dead+1.0 Wind 270 deg - No Ice	36.41	-26.53	0.03	3.53	3070.12	-0.77
1.2 Dead+1.0 Wind 300 deg - No Ice	48.55	-22.96	-13.23	-1557.22	2705.19	-0.94
0.9 Dead+1.0 Wind 300 deg - No Ice	36.41	-22.96	-13.23	-1529.54	2657.10	-0.95
1.2 Dead+1.0 Wind 330 deg - No Ice	48.55	-13.24	-22.93	-2700.79	1559.65	-0.87
0.9 Dead+1.0 Wind 330 deg - No Ice	36.41	-13.24	-22.93	-2652.72	1531.98	-0.88
1.2 Dead+1.0 Ice+1.0 Temp	76.69	-0.00	0.00	-1.73	-0.83	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	76.69	0.00	-5.88	-725.71	-1.20	-0.08
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	76.69	2.94	-5.09	-628.88	-363.28	-0.03
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	76.69	5.09	-2.94	-364.02	-628.25	0.03
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	76.69	5.88	-0.00	-2.09	-725.12	0.08
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	76.69	5.09	2.94	359.95	-627.98	0.11
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	76.69	2.94	5.09	625.08	-362.74	0.12
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	76.69	-0.00	5.88	722.18	-0.54	0.08
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	76.69	-2.94	5.09	625.40	361.57	0.03
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	76.69	-5.09	2.94	360.52	626.57	-0.03
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	76.69	-5.88	0.00	-1.44	723.39	-0.08
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	76.69	-5.09	-2.94	-363.45	626.19	-0.11
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	76.69	-2.94	-5.09	-628.56	360.98	-0.12
Dead+Wind 0 deg - Service	40.46	0.00	-4.93	-575.66	-1.09	-0.11
Dead+Wind 30 deg - Service	40.46	2.47	-4.27	-498.95	-289.54	-0.02
Dead+Wind 60 deg - Service	40.46	4.28	-2.47	-288.24	-500.40	0.07
Dead+Wind 90 deg - Service	40.46	4.94	-0.00	-0.37	-577.38	0.15
Dead+Wind 120 deg - Service	40.46	4.31	2.48	289.93	-503.69	0.18
Dead+Wind 150 deg - Service	40.46	2.49	4.30	502.61	-290.64	0.17

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 180 deg - Service	40.46	-0.00	4.93	576.16	0.16	0.11
Dead+Wind 210 deg - Service	40.46	-2.49	4.31	503.37	290.87	0.02
Dead+Wind 240 deg - Service	40.46	-4.31	2.49	291.01	503.38	-0.07
Dead+Wind 270 deg - Service	40.46	-4.94	0.00	0.88	576.44	-0.15
Dead+Wind 300 deg - Service	40.46	-4.27	-2.46	-287.16	498.84	-0.18
Dead+Wind 330 deg - Service	40.46	-2.46	-4.27	-498.19	287.45	-0.17

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-40.46	0.00	0.00	40.46	0.00	0.000%
2	0.03	-48.55	-26.50	-0.03	48.55	26.50	0.000%
3	0.03	-36.41	-26.50	-0.03	36.41	26.50	0.000%
4	13.29	-48.55	-22.97	-13.29	48.55	22.97	0.000%
5	13.29	-36.41	-22.97	-13.29	36.41	22.97	0.000%
6	22.99	-48.55	-13.27	-22.99	48.55	13.27	0.000%
7	22.99	-36.41	-13.27	-22.99	36.41	13.27	0.000%
8	26.53	-48.55	-0.03	-26.53	48.55	0.03	0.000%
9	26.53	-36.41	-0.03	-26.53	36.41	0.03	0.000%
10	23.15	-48.55	13.34	-23.15	48.55	-13.34	0.000%
11	23.15	-36.41	13.34	-23.15	36.41	-13.34	0.000%
12	13.35	-48.55	23.12	-13.35	48.55	-23.12	0.000%
13	13.35	-36.41	23.12	-13.35	36.41	-23.12	0.000%
14	-0.03	-48.55	26.50	0.03	48.55	-26.50	0.000%
15	-0.03	-36.41	26.50	0.03	36.41	-26.50	0.000%
16	-13.40	-48.55	23.16	13.40	48.55	-23.16	0.000%
17	-13.40	-36.41	23.16	13.40	36.41	-23.16	0.000%
18	-23.18	-48.55	13.38	23.18	48.55	-13.38	0.000%
19	-23.18	-36.41	13.38	23.18	36.41	-13.38	0.000%
20	-26.53	-48.55	0.03	26.53	48.55	-0.03	0.000%
21	-26.53	-36.41	0.03	26.53	36.41	-0.03	0.000%
22	-22.96	-48.55	-13.23	22.96	48.55	13.23	0.000%
23	-22.96	-36.41	-13.23	22.96	36.41	13.23	0.000%
24	-13.24	-48.55	-22.93	13.24	48.55	22.93	0.000%
25	-13.24	-36.41	-22.93	13.24	36.41	22.93	0.000%
26	0.00	-76.69	0.00	0.00	76.69	-0.00	0.000%
27	0.00	-76.69	-5.88	-0.00	76.69	5.88	0.000%
28	2.94	-76.69	-5.09	-2.94	76.69	5.09	0.000%
29	5.09	-76.69	-2.94	-5.09	76.69	2.94	0.000%
30	5.88	-76.69	-0.00	-5.88	76.69	0.00	0.000%
31	5.09	-76.69	2.94	-5.09	76.69	-2.94	0.000%
32	2.94	-76.69	5.09	-2.94	76.69	-5.09	0.000%
33	-0.00	-76.69	5.88	0.00	76.69	-5.88	0.000%
34	-2.94	-76.69	5.09	2.94	76.69	-5.09	0.000%
35	-5.09	-76.69	2.94	5.09	76.69	-2.94	0.000%
36	-5.88	-76.69	0.00	5.88	76.69	-0.00	0.000%
37	-5.09	-76.69	-2.94	5.09	76.69	2.94	0.000%
38	-2.94	-76.69	-5.09	2.94	76.69	5.09	0.000%
39	0.00	-40.46	-4.93	-0.00	40.46	4.93	0.000%
40	2.47	-40.46	-4.27	-2.47	40.46	4.27	0.000%
41	4.28	-40.46	-2.47	-4.28	40.46	2.47	0.000%
42	4.94	-40.46	-0.00	-4.94	40.46	0.00	0.000%
43	4.31	-40.46	2.48	-4.31	40.46	-2.48	0.000%
44	2.49	-40.46	4.30	-2.49	40.46	-4.30	0.000%
45	-0.00	-40.46	4.93	0.00	40.46	-4.93	0.000%
46	-2.49	-40.46	4.31	2.49	40.46	-4.31	0.000%
47	-4.31	-40.46	2.49	4.31	40.46	-2.49	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
48	-4.94	-40.46	0.00	4.94	40.46	-0.00	0.000%
49	-4.27	-40.46	-2.46	4.27	40.46	2.46	0.000%
50	-2.46	-40.46	-4.27	2.46	40.46	4.27	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	6	0.0000001	0.00008359
3	Yes	5	0.0000001	0.00046803
4	Yes	7	0.0000001	0.00054290
5	Yes	7	0.0000001	0.00011764
6	Yes	7	0.0000001	0.00054052
7	Yes	7	0.0000001	0.00011702
8	Yes	6	0.0000001	0.00012021
9	Yes	5	0.0000001	0.00069694
10	Yes	7	0.0000001	0.00055419
11	Yes	7	0.0000001	0.00012024
12	Yes	7	0.0000001	0.00053949
13	Yes	7	0.0000001	0.00011630
14	Yes	6	0.0000001	0.00011779
15	Yes	5	0.0000001	0.00067701
16	Yes	7	0.0000001	0.00054856
17	Yes	7	0.0000001	0.00011854
18	Yes	7	0.0000001	0.00055102
19	Yes	7	0.0000001	0.00011919
20	Yes	6	0.0000001	0.00015772
21	Yes	5	0.0000001	0.00091758
22	Yes	7	0.0000001	0.00053403
23	Yes	7	0.0000001	0.00011551
24	Yes	7	0.0000001	0.00054828
25	Yes	7	0.0000001	0.00011938
26	Yes	4	0.0000001	0.00006378
27	Yes	7	0.0000001	0.00057526
28	Yes	7	0.0000001	0.00075951
29	Yes	7	0.0000001	0.00075972
30	Yes	7	0.0000001	0.00057635
31	Yes	7	0.0000001	0.00076145
32	Yes	7	0.0000001	0.00075887
33	Yes	7	0.0000001	0.00057648
34	Yes	7	0.0000001	0.00076086
35	Yes	7	0.0000001	0.00076106
36	Yes	7	0.0000001	0.00057629
37	Yes	7	0.0000001	0.00075775
38	Yes	7	0.0000001	0.00075993
39	Yes	5	0.0000001	0.00012307
40	Yes	5	0.0000001	0.00081926
41	Yes	5	0.0000001	0.00080793
42	Yes	5	0.0000001	0.00013210
43	Yes	5	0.0000001	0.00087445
44	Yes	5	0.0000001	0.00080795
45	Yes	5	0.0000001	0.00012483
46	Yes	5	0.0000001	0.00084430
47	Yes	5	0.0000001	0.00085651
48	Yes	5	0.0000001	0.00013382
49	Yes	5	0.0000001	0.00078493
50	Yes	5	0.0000001	0.00084882

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	26.689	46	1.871	0.001
L2	145 - 140	24.744	46	1.840	0.001
L3	140 - 133.71	22.845	46	1.783	0.001
L4	136.293 - 131.293	21.483	46	1.724	0.001
L5	131.293 - 126.293	19.702	46	1.670	0.002
L6	126.293 - 121.293	17.995	46	1.587	0.002
L7	121.293 - 116.293	16.384	47	1.489	0.002
L8	116.293 - 111.293	14.882	47	1.381	0.001
L9	111.293 - 108.25	13.496	47	1.265	0.001
L10	108.25 - 108	12.713	47	1.193	0.001
L11	108 - 103	12.651	47	1.190	0.001
L12	103 - 98	11.438	47	1.126	0.001
L13	98 - 93	10.294	47	1.060	0.001
L14	93 - 88.0833	9.219	47	0.994	0.001
L15	91.9166 - 86.9166	8.995	47	0.980	0.001
L16	86.9166 - 85.167	7.987	47	0.940	0.001
L17	85.167 - 84.917	7.647	47	0.918	0.001
L18	84.917 - 79.917	7.599	47	0.914	0.001
L19	79.917 - 77	6.675	47	0.851	0.001
L20	77 - 76.75	6.167	47	0.813	0.001
L21	76.75 - 75	6.124	47	0.810	0.001
L22	75 - 74.75	5.832	47	0.785	0.000
L23	74.75 - 69.75	5.791	47	0.782	0.000
L24	69.75 - 65.083	5.005	47	0.720	0.000
L25	65.083 - 64.833	4.330	47	0.662	0.000
L26	64.833 - 59.833	4.295	47	0.659	0.000
L27	59.833 - 54.833	3.637	47	0.599	0.000
L28	54.833 - 49.833	3.041	47	0.540	0.000
L29	49.833 - 43.4966	2.506	47	0.482	0.000
L30	48.4966 - 42.4966	2.373	47	0.467	0.000
L31	42.4966 - 37.4966	1.809	47	0.426	0.000
L32	37.4966 - 33	1.394	47	0.368	0.000
L33	33 - 32.75	1.071	47	0.317	0.000
L34	32.75 - 32	1.055	47	0.315	0.000
L35	32 - 31.75	1.006	47	0.308	0.000
L36	31.75 - 30	0.990	47	0.305	0.000
L37	30 - 29.75	0.881	47	0.288	0.000
L38	29.75 - 24.75	0.866	47	0.285	0.000
L39	24.75 - 19.75	0.594	47	0.234	0.000
L40	19.75 - 14.75	0.375	47	0.184	0.000
L41	14.75 - 9.75	0.208	47	0.136	0.000
L42	9.75 - 4.75	0.090	47	0.089	0.000
L43	4.75 - 0	0.021	47	0.043	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	AIR6449 B41_T-MOBILE	46	26.689	1.871	0.001	6409
140.00	(2) JAAH-65B-R3B w/ Mount Pipe	46	22.845	1.783	0.001	4287
130.00	DMP65R-BU6D w/ Mount Pipe	46	19.252	1.652	0.002	3728
120.00	MX08FRO665-20 w/ Mount Pipe	47	15.985	1.461	0.002	2720
80.00	KS24019-L112A	47	6.690	0.852	0.001	4463

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	144.041	18	10.125	0.006
L2	145 - 140	133.602	18	9.962	0.006
L3	140 - 133.71	123.409	18	9.652	0.006
L4	136.293 - 131.293	116.091	18	9.333	0.007
L5	131.293 - 126.293	106.520	18	9.036	0.011
L6	126.293 - 121.293	97.346	18	8.590	0.011
L7	121.293 - 116.293	88.673	18	8.064	0.009
L8	116.293 - 111.293	80.571	18	7.484	0.007
L9	111.293 - 108.25	73.091	18	6.861	0.006
L10	108.25 - 108	68.859	18	6.470	0.005
L11	108 - 103	68.521	18	6.454	0.005
L12	103 - 98	61.967	18	6.107	0.005
L13	98 - 93	55.778	18	5.751	0.004
L14	93 - 88.0833	49.960	18	5.392	0.004
L15	91.9166 - 86.9166	48.748	18	5.315	0.004
L16	86.9166 - 85.167	43.292	18	5.098	0.003
L17	85.167 - 84.917	41.450	18	4.979	0.003
L18	84.917 - 79.917	41.190	18	4.962	0.003
L19	79.917 - 77	36.187	18	4.615	0.003
L20	77 - 76.75	33.434	18	4.414	0.003
L21	76.75 - 75	33.204	18	4.394	0.003
L22	75 - 74.75	31.620	18	4.261	0.003
L23	74.75 - 69.75	31.398	18	4.244	0.003
L24	69.75 - 65.083	27.138	18	3.905	0.002
L25	65.083 - 64.833	23.480	18	3.591	0.002
L26	64.833 - 59.833	23.292	18	3.575	0.002
L27	59.833 - 54.833	19.723	18	3.250	0.002
L28	54.833 - 49.833	16.491	18	2.930	0.002
L29	49.833 - 43.4966	13.591	18	2.614	0.001
L30	48.4966 - 42.4966	12.871	18	2.531	0.001
L31	42.4966 - 37.4966	9.812	18	2.312	0.001
L32	37.4966 - 33	7.558	18	1.996	0.001
L33	33 - 32.75	5.810	18	1.721	0.001
L34	32.75 - 32	5.720	18	1.708	0.001
L35	32 - 31.75	5.455	18	1.671	0.001
L36	31.75 - 30	5.368	18	1.657	0.001
L37	30 - 29.75	4.778	18	1.561	0.001
L38	29.75 - 24.75	4.697	18	1.547	0.001
L39	24.75 - 19.75	3.222	18	1.270	0.001
L40	19.75 - 14.75	2.034	18	1.000	0.000
L41	14.75 - 9.75	1.125	18	0.737	0.000
L42	9.75 - 4.75	0.487	18	0.482	0.000
L43	4.75 - 0	0.114	18	0.231	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	AIR6449 B41_T-MOBILE	18	144.041	10.125	0.006	1256
140.00	(2) JAHH-65B-R3B w/ Mount	18	123.409	9.652	0.006	841

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
	Pipe					
130.00	DMP65R-BU6D w/ Mount Pipe	18	104.105	8.939	0.012	724
120.00	MX08FRO665-20 w/ Mount Pipe	18	86.521	7.917	0.009	524
80.00	KS24019-L112A	18	36.267	4.621	0.003	835

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L _u	KI/r	A	P _u	φP _n	Ratio
	ft		ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
L1	150 - 145 (1)	TP14.12x13x0.188	5.00	0.00	0.0	8.292	-3.02	485.07	0.006
L2	145 - 140 (2)	TP15.241x14.12x0.188	5.00	0.00	0.0	8.958	-3.25	524.07	0.006
L3	140 - 133.71 (3)	TP16.65x15.241x0.188	6.29	0.00	0.0	9.453	-6.13	552.99	0.011
L4	133.71 - 131.293 (4)	TP16.804x15.696x0.313	5.00	0.00	0.0	16.358	-6.68	956.93	0.007
L5	131.293 - 126.293 (5)	TP17.912x16.804x0.313	5.00	0.00	0.0	17.457	-10.19	1021.22	0.010
L6	126.293 - 121.293 (6)	TP19.02x17.912x0.313	5.00	0.00	0.0	18.556	-10.81	1085.52	0.010
L7	121.293 - 116.293 (7)	TP20.128x19.02x0.313	5.00	0.00	0.0	19.655	-13.71	1149.81	0.012
L8	116.293 - 111.293 (8)	TP21.236x20.128x0.313	5.00	0.00	0.0	20.754	-14.47	1214.10	0.012
L9	111.293 - 108.25 (9)	TP21.911x21.236x0.313	3.04	0.00	0.0	21.423	-14.96	1253.24	0.012
L10	108.25 - 108 (10)	TP21.966x21.911x0.638	0.25	0.00	0.0	43.157	-15.03	2524.69	0.006
L11	108 - 103 (11)	TP23.074x21.966x0.613	5.00	0.00	0.0	43.667	-16.07	2554.55	0.006
L12	103 - 98 (12)	TP24.182x23.074x0.6	5.00	0.00	0.0	44.910	-17.17	2627.25	0.007
L13	98 - 93 (13)	TP25.29x24.182x0.588	5.00	0.00	0.0	46.064	-18.30	2694.75	0.007
L14	93 - 88.0833 (14)	TP26.38x25.29x0.588	4.92	0.00	0.0	46.512	-18.55	2720.94	0.007
L15	88.0833 - 86.9166 (15)	TP26.012x24.906x0.638	5.00	0.00	0.0	51.343	-20.42	3003.58	0.007
L16	86.9166 - 85.167 (16)	TP26.399x26.012x0.638	1.75	0.00	0.0	52.127	-20.86	3049.41	0.007
L17	85.167 - 84.917 (17)	TP26.454x26.399x0.638	0.25	0.00	0.0	52.238	-20.94	3055.95	0.007
L18	84.917 - 79.917 (18)	TP27.561x26.454x0.625	5.00	0.00	0.0	53.434	-22.30	3125.88	0.007
L19	79.917 - 77 (19)	TP28.206x27.561x0.613	2.92	0.00	0.0	53.644	-23.06	3138.20	0.007
L20	77 - 76.75 (20)	TP28.262x28.206x0.538	0.25	0.00	0.0	47.298	-23.14	2766.93	0.008
L21	76.75 - 75 (21)	TP28.649x28.262x0.531	1.75	0.00	0.0	47.411	-23.55	2773.58	0.008
L22	75 - 74.75 (22)	TP28.704x28.649x0.613	0.25	0.00	0.0	54.612	-23.64	3194.82	0.007
L23	74.75 - 69.75 (23)	TP29.811x28.704x0.6	5.00	0.00	0.0	55.629	-24.98	3254.28	0.008
L24	69.75 - 65.083 (24)	TP30.843x29.811x0.588	4.67	0.00	0.0	56.419	-26.26	3300.50	0.008
L25	65.083 - 64.833 (25)	TP30.899x30.843x0.588	0.25	0.00	0.0	56.522	-26.35	3306.53	0.008
L26	64.833 - 59.833 (26)	TP32.005x30.899x0.588	5.00	0.00	0.0	58.585	-27.74	3427.23	0.008
L27	59.833 - 54.833 (27)	TP33.111x32.005x0.575	5.00	0.00	0.0	58.573	-28.63	3426.52	0.008
L28	54.833 -	TP34.218x33.111x0.563	5.00	0.00	0.0	58.112	-29.20	3399.56	0.009

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L29	49.833 (28) 49.833 - 43.4966 (29)	TP35.62x34.218x0.563	6.34	0.00	0.0	60.087	-30.67	3515.12	0.009
L30	43.4966 - 42.4966 (30)	TP35.092x33.764x0.563	6.00	0.00	0.0	61.253	-33.70	3583.28	0.009
L31	42.4966 - 37.4966 (31)	TP36.199x35.092x0.55	5.00	0.00	0.0	60.300	-34.00	3527.54	0.010
L32	37.4966 - 33 (32)	TP37.194x36.199x0.55	4.50	0.00	0.0	62.232	-35.52	3640.58	0.010
L33	33 - 32.75 (33)	TP37.25x37.194x0.663	0.25	0.00	0.0	76.818	-36.90	4493.86	0.008
L34	32.75 - 32 (34)	TP37.416x37.25x0.663	0.75	0.00	0.0	76.935	-37.00	4500.67	0.008
L35	32 - 31.75 (35)	TP37.471x37.416x0.588	0.25	0.00	0.0	68.674	-37.26	4017.45	0.009
L36	31.75 - 30 (36)	TP37.858x37.471x0.588	1.75	0.00	0.0	68.778	-37.36	4023.49	0.009
L37	30 - 29.75 (37)	TP37.914x37.858x0.588	0.25	0.00	0.0	69.500	-37.94	4065.75	0.009
L38	29.75 - 24.75 (38)	TP39.021x37.914x0.575	5.00	0.00	0.0	68.145	-38.03	3986.49	0.010
L39	24.75 - 19.75 (39)	TP40.128x39.021x0.569	5.00	0.00	0.0	69.414	-39.73	4060.72	0.010
L40	19.75 - 14.75 (40)	TP41.235x40.128x0.563	5.00	0.00	0.0	70.639	-41.46	4132.36	0.010
L41	14.75 - 9.75 (41)	TP42.341x41.235x0.563	5.00	0.00	0.0	72.615	-43.22	4247.97	0.010
L42	9.75 - 4.75 (42)	TP43.448x42.341x0.55	5.00	0.00	0.0	72.955	-45.01	4267.89	0.011
L43	4.75 - 0 (43)	TP44.5x43.448x0.55	4.75	0.00	0.0	74.888	-46.82	4380.94	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} / φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} / φM _{ny}
L1	150 - 145 (1)	TP14.12x13x0.188	35.44	175.52	0.202	0.00	175.52	0.000
L2	145 - 140 (2)	TP15.241x14.12x0.188	65.17	205.09	0.318	0.00	205.09	0.000
L3	140 - 133.71 (3)	TP16.65x15.241x0.188	105.36	228.49	0.461	0.00	228.49	0.000
L4	133.71 - 131.293 (4)	TP16.804x15.696x0.313	160.75	407.65	0.394	0.00	407.65	0.000
L5	131.293 - 126.293 (5)	TP17.912x16.804x0.313	236.73	464.82	0.509	0.00	464.82	0.000
L6	126.293 - 121.293 (6)	TP19.02x17.912x0.313	320.24	525.73	0.609	0.00	525.73	0.000
L7	121.293 - 116.293 (7)	TP20.128x19.02x0.313	414.90	590.39	0.703	0.00	590.39	0.000
L8	116.293 - 111.293 (8)	TP21.236x20.128x0.313	513.99	658.81	0.780	0.00	658.81	0.000
L9	111.293 - 108.25 (9)	TP21.911x21.236x0.313	574.94	702.28	0.819	0.00	702.28	0.000
L10	108.25 - 108 (10)	TP21.966x21.911x0.638	579.97	1376.19	0.421	0.00	1376.19	0.000
L11	108 - 103 (11)	TP23.074x21.966x0.613	681.91	1470.18	0.464	0.00	1470.18	0.000
L12	103 - 98 (12)	TP24.182x23.074x0.6	786.03	1590.28	0.494	0.00	1590.28	0.000
L13	98 - 93 (13)	TP25.29x24.182x0.588	891.80	1711.42	0.521	0.00	1711.42	0.000
L14	93 - 88.0833 (14)	TP26.38x25.29x0.588	914.93	1745.23	0.524	0.00	1745.23	0.000
L15	88.0833 - 86.9166 (15)	TP26.012x24.906x0.638	1023.07	1956.84	0.523	0.00	1956.84	0.000
L16	86.9166 - 85.167 (16)	TP26.399x26.012x0.638	1061.37	2017.75	0.526	0.00	2017.75	0.000
L17	85.167 - 84.917 (17)	TP26.454x26.399x0.638	1066.86	2026.53	0.526	0.00	2026.53	0.000

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 $\frac{M_{uy}}{\phi M_{ny}}$
L18	84.917 - 79.917 (18)	TP27.561x26.454x0.625	1177.73	2165.89	0.544	0.00	2165.89	0.000
L19	79.917 - 77 (19)	TP28.206x27.561x0.613	1243.19	2229.73	0.558	0.00	2229.73	0.000
L20	77 - 76.75 (20)	TP28.262x28.206x0.538	1248.83	1980.68	0.631	0.00	1980.68	0.000
L21	76.75 - 75 (21)	TP28.649x28.262x0.531	1288.38	2014.58	0.640	0.00	2014.58	0.000
L22	75 - 74.75 (22)	TP28.704x28.649x0.613	1294.04	2311.82	0.560	0.00	2311.82	0.000
L23	74.75 - 69.75 (23)	TP29.811x28.704x0.6	1408.18	2451.66	0.574	0.00	2451.66	0.000
L24	69.75 - 65.083 (24)	TP30.843x29.811x0.588	1516.13	2578.29	0.588	0.00	2578.29	0.000
L25	65.083 - 64.833 (25)	TP30.899x30.843x0.588	1521.94	2587.82	0.588	0.00	2587.82	0.000
L26	64.833 - 59.833 (26)	TP32.005x30.899x0.588	1639.17	2782.05	0.589	0.00	2782.05	0.000
L27	59.833 - 54.833 (27)	TP33.111x32.005x0.575	1710.23	2843.54	0.601	0.00	2843.54	0.000
L28	54.833 - 49.833 (28)	TP34.218x33.111x0.563	1757.92	2862.95	0.614	0.00	2862.95	0.000
L29	49.833 - 43.4966 (29)	TP35.62x34.218x0.563	1878.15	3062.61	0.613	0.00	3062.61	0.000
L30	43.4966 - 42.4966 (30)	TP35.092x33.764x0.563	2032.92	3183.53	0.639	0.00	3183.53	0.000
L31	42.4966 - 37.4966 (31)	TP36.199x35.092x0.55	2057.63	3156.85	0.652	0.00	3156.85	0.000
L32	37.4966 - 33 (32)	TP37.194x36.199x0.55	2181.92	3364.05	0.649	0.00	3364.05	0.000
L33	33 - 32.75 (33)	TP37.25x37.194x0.663	2294.72	4244.06	0.541	0.00	4244.06	0.000
L34	32.75 - 32 (34)	TP37.416x37.25x0.663	2301.02	4257.05	0.541	0.00	4257.05	0.000
L35	32 - 31.75 (35)	TP37.471x37.416x0.588	2319.93	3833.13	0.605	0.00	3833.13	0.000
L36	31.75 - 30 (36)	TP37.858x37.471x0.588	2326.25	3844.76	0.605	0.00	3844.76	0.000
L37	30 - 29.75 (37)	TP37.914x37.858x0.588	2370.53	3926.59	0.604	0.00	3926.59	0.000
L38	29.75 - 24.75 (38)	TP39.021x37.914x0.575	2376.86	3858.43	0.616	0.00	3858.43	0.000
L39	24.75 - 19.75 (39)	TP40.128x39.021x0.569	2504.21	4049.87	0.618	0.00	4049.87	0.000
L40	19.75 - 14.75 (40)	TP41.235x40.128x0.563	2632.73	4243.03	0.620	0.00	4243.03	0.000
L41	14.75 - 9.75 (41)	TP42.341x41.235x0.563	2762.42	4485.48	0.616	0.00	4485.48	0.000
L42	9.75 - 4.75 (42)	TP43.448x42.341x0.55	2893.28	4633.61	0.624	0.00	4633.61	0.000
L43	4.75 - 0 (43)	TP44.5x43.448x0.55	3025.32	4883.96	0.619	0.00	4883.96	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	150 - 145 (1)	TP14.12x13x0.188	5.82	145.52	0.040	0.00	177.56	0.000
L2	145 - 140 (2)	TP15.241x14.12x0.188	6.07	157.22	0.039	0.00	207.26	0.000
L3	140 - 133.71 (3)	TP16.65x15.241x0.188	10.93	165.90	0.066	1.36	230.76	0.006
L4	133.71 - 131.293 (4)	TP16.804x15.696x0.313	11.23	287.08	0.039	1.36	414.62	0.003
L5	131.293 - 126.293 (5)	TP17.912x16.804x0.313	16.56	306.37	0.054	0.81	472.20	0.002

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 $\frac{T_u}{\phi T_n}$
L6	126.293 - 121.293 (6)	TP19.02x17.912x0.313	16.90	325.65	0.052	0.21	533.53	0.000
L7	121.293 - 116.293 (7)	TP20.128x19.02x0.313	19.74	344.94	0.057	0.02	598.61	0.000
L8	116.293 - 111.293 (8)	TP21.236x20.128x0.313	19.98	364.23	0.055	0.42	667.42	0.001
L9	111.293 - 108.25 (9)	TP21.911x21.236x0.313	20.12	375.97	0.054	0.42	711.14	0.001
L10	108.25 - 108 (10)	TP21.966x21.911x0.638	20.14	757.41	0.027	0.42	1414.73	0.000
L11	108 - 103 (11)	TP23.074x21.966x0.613	20.68	766.36	0.027	0.42	1507.51	0.000
L12	103 - 98 (12)	TP24.182x23.074x0.6	21.01	788.17	0.027	0.42	1627.76	0.000
L13	98 - 93 (13)	TP25.29x24.182x0.588	21.34	808.43	0.026	0.42	1748.92	0.000
L14	93 - 88.0833 (14)	TP26.38x25.29x0.588	21.41	816.28	0.026	0.42	1783.08	0.000
L15	88.0833 - 86.9166 (15)	TP26.012x24.906x0.638	21.86	901.07	0.024	0.42	2002.33	0.000
L16	86.9166 - 85.167 (16)	TP26.399x26.012x0.638	21.98	914.82	0.024	0.42	2063.90	0.000
L17	85.167 - 84.917 (17)	TP26.454x26.399x0.638	21.98	916.79	0.024	0.42	2072.78	0.000
L18	84.917 - 79.917 (18)	TP27.561x26.454x0.625	22.37	937.76	0.024	0.42	2212.10	0.000
L19	79.917 - 77 (19)	TP28.206x27.561x0.613	22.56	941.46	0.024	0.38	2275.06	0.000
L20	77 - 76.75 (20)	TP28.262x28.206x0.538	22.57	830.08	0.027	0.38	2015.38	0.000
L21	76.75 - 75 (21)	TP28.649x28.262x0.531	22.69	832.07	0.027	0.38	2048.89	0.000
L22	75 - 74.75 (22)	TP28.704x28.649x0.613	22.68	958.45	0.024	0.38	2357.90	0.000
L23	74.75 - 69.75 (23)	TP29.811x28.704x0.6	23.01	976.28	0.024	0.38	2497.44	0.000
L24	69.75 - 65.083 (24)	TP30.843x29.811x0.588	23.30	990.15	0.024	0.38	2623.55	0.000
L25	65.083 - 64.833 (25)	TP30.899x30.843x0.588	23.31	991.96	0.023	0.38	2633.15	0.000
L26	64.833 - 59.833 (26)	TP32.005x30.899x0.588	23.62	1028.17	0.023	0.38	2828.89	0.000
L27	59.833 - 54.833 (27)	TP33.111x32.005x0.575	23.86	1035.04	0.023	0.37	2889.19	0.000
L28	54.833 - 49.833 (28)	TP34.218x33.111x0.563	23.98	1026.80	0.023	0.37	2907.11	0.000
L29	49.833 - 43.4966 (29)	TP35.62x34.218x0.563	24.30	1063.80	0.023	0.37	3108.10	0.000
L30	43.4966 - 42.4966 (30)	TP35.092x33.764x0.563	24.76	1081.92	0.023	0.37	3229.82	0.000
L31	42.4966 - 37.4966 (31)	TP36.199x35.092x0.55	24.81	1065.04	0.023	0.37	3201.25	0.000
L32	37.4966 - 33 (32)	TP37.194x36.199x0.55	25.06	1099.80	0.023	0.37	3409.71	0.000
L33	33 - 32.75 (33)	TP37.25x37.194x0.663	25.22	1350.20	0.019	0.37	4313.13	0.000
L34	32.75 - 32 (34)	TP37.416x37.25x0.663	25.27	1356.33	0.019	0.37	4326.20	0.000
L35	32 - 31.75 (35)	TP37.471x37.416x0.588	25.27	1207.05	0.021	0.37	3887.16	0.000
L36	31.75 - 30 (36)	TP37.858x37.471x0.588	25.38	1219.73	0.021	0.37	3898.85	0.000
L37	30 - 29.75 (37)	TP37.914x37.858x0.588	25.37	1221.54	0.021	0.37	3981.19	0.000
L38	29.75 - 24.75 (38)	TP39.021x37.914x0.575	25.43	1203.04	0.021	0.37	3910.68	0.000
L39	24.75 - 19.75 (39)	TP40.128x39.021x0.569	25.66	1225.23	0.021	0.37	4102.26	0.000
L40	19.75 - 14.75 (40)	TP41.235x40.128x0.563	25.90	1246.64	0.021	0.37	4295.48	0.000
L41	14.75 - 9.75 (41)	TP42.341x41.235x0.563	26.13	1281.33	0.020	0.37	4539.20	0.000

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 $\frac{T_u}{\phi T_n}$
L42	9.75 - 4.75 (42)	TP43.448x42.341x0.55	26.37	1287.15	0.020	0.37	4686.00	0.000
L43	4.75 - 0 (43)	TP44.5x43.448x0.55	26.62	1322.33	0.020	0.37	4937.52	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 145 (1)	0.006	0.202	0.000	0.040	0.000	0.210	1.050	4.8.2
L2	145 - 140 (2)	0.006	0.318	0.000	0.039	0.000	0.325	1.050	4.8.2
L3	140 - 133.71 (3)	0.011	0.461	0.000	0.066	0.006	0.477	1.050	4.8.2
L4	133.71 - 131.293 (4)	0.007	0.394	0.000	0.039	0.003	0.403	1.050	4.8.2
L5	131.293 - 126.293 (5)	0.010	0.509	0.000	0.054	0.002	0.522	1.050	4.8.2
L6	126.293 - 121.293 (6)	0.010	0.609	0.000	0.052	0.000	0.622	1.050	4.8.2
L7	121.293 - 116.293 (7)	0.012	0.703	0.000	0.057	0.000	0.718	1.050	4.8.2
L8	116.293 - 111.293 (8)	0.012	0.780	0.000	0.055	0.001	0.795	1.050	4.8.2
L9	111.293 - 108.25 (9)	0.012	0.819	0.000	0.054	0.001	0.834	1.050	4.8.2
L10	108.25 - 108 (10)	0.006	0.421	0.000	0.027	0.000	0.428	1.050	4.8.2
L11	108 - 103 (11)	0.006	0.464	0.000	0.027	0.000	0.471	1.050	4.8.2
L12	103 - 98 (12)	0.007	0.494	0.000	0.027	0.000	0.502	1.050	4.8.2
L13	98 - 93 (13)	0.007	0.521	0.000	0.026	0.000	0.529	1.050	4.8.2
L14	93 - 88.0833 (14)	0.007	0.524	0.000	0.026	0.000	0.532	1.050	4.8.2
L15	88.0833 - 86.9166 (15)	0.007	0.523	0.000	0.024	0.000	0.530	1.050	4.8.2
L16	86.9166 - 85.167 (16)	0.007	0.526	0.000	0.024	0.000	0.533	1.050	4.8.2
L17	85.167 - 84.917 (17)	0.007	0.526	0.000	0.024	0.000	0.534	1.050	4.8.2
L18	84.917 - 79.917 (18)	0.007	0.544	0.000	0.024	0.000	0.551	1.050	4.8.2
L19	79.917 - 77 (19)	0.007	0.558	0.000	0.024	0.000	0.565	1.050	4.8.2
L20	77 - 76.75 (20)	0.008	0.631	0.000	0.027	0.000	0.640	1.050	4.8.2
L21	76.75 - 75 (21)	0.008	0.640	0.000	0.027	0.000	0.649	1.050	4.8.2
L22	75 - 74.75 (22)	0.007	0.560	0.000	0.024	0.000	0.568	1.050	4.8.2
L23	74.75 - 69.75 (23)	0.008	0.574	0.000	0.024	0.000	0.583	1.050	4.8.2
L24	69.75 - 65.083 (24)	0.008	0.588	0.000	0.024	0.000	0.597	1.050	4.8.2
L25	65.083 - 64.833 (25)	0.008	0.588	0.000	0.023	0.000	0.597	1.050	4.8.2
L26	64.833 - 59.833 (26)	0.008	0.589	0.000	0.023	0.000	0.598	1.050	4.8.2
L27	59.833 - 54.833 (27)	0.008	0.601	0.000	0.023	0.000	0.610	1.050	4.8.2
L28	54.833 - 49.833 (28)	0.009	0.614	0.000	0.023	0.000	0.623	1.050	4.8.2
L29	49.833 - 43.4966 (29)	0.009	0.613	0.000	0.023	0.000	0.623	1.050	4.8.2
L30	43.4966 -	0.009	0.639	0.000	0.023	0.000	0.649	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u ϕP_n	M_{ux} ϕM_{nx}	M_{uy} ϕM_{ny}	V_u ϕV_n	T_u ϕT_n			
L31	42.4966 (30) 42.4966 - 37.4966 (31)	0.010	0.652	0.000	0.023	0.000	0.662	1.050	4.8.2
L32	37.4966 - 33 (32)	0.010	0.649	0.000	0.023	0.000	0.659	1.050	4.8.2
L33	33 - 32.75 (33)	0.008	0.541	0.000	0.019	0.000	0.549	1.050	4.8.2
L34	32.75 - 32 (34)	0.008	0.541	0.000	0.019	0.000	0.549	1.050	4.8.2
L35	32 - 31.75 (35)	0.009	0.605	0.000	0.021	0.000	0.615	1.050	4.8.2
L36	31.75 - 30 (36)	0.009	0.605	0.000	0.021	0.000	0.615	1.050	4.8.2
L37	30 - 29.75 (37)	0.009	0.604	0.000	0.021	0.000	0.613	1.050	4.8.2
L38	29.75 - 24.75 (38)	0.010	0.616	0.000	0.021	0.000	0.626	1.050	4.8.2
L39	24.75 - 19.75 (39)	0.010	0.618	0.000	0.021	0.000	0.629	1.050	4.8.2
L40	19.75 - 14.75 (40)	0.010	0.620	0.000	0.021	0.000	0.631	1.050	4.8.2
L41	14.75 - 9.75 (41)	0.010	0.616	0.000	0.020	0.000	0.626	1.050	4.8.2
L42	9.75 - 4.75 (42)	0.011	0.624	0.000	0.020	0.000	0.635	1.050	4.8.2
L43	4.75 - 0 (43)	0.011	0.619	0.000	0.020	0.000	0.631	1.050	4.8.2

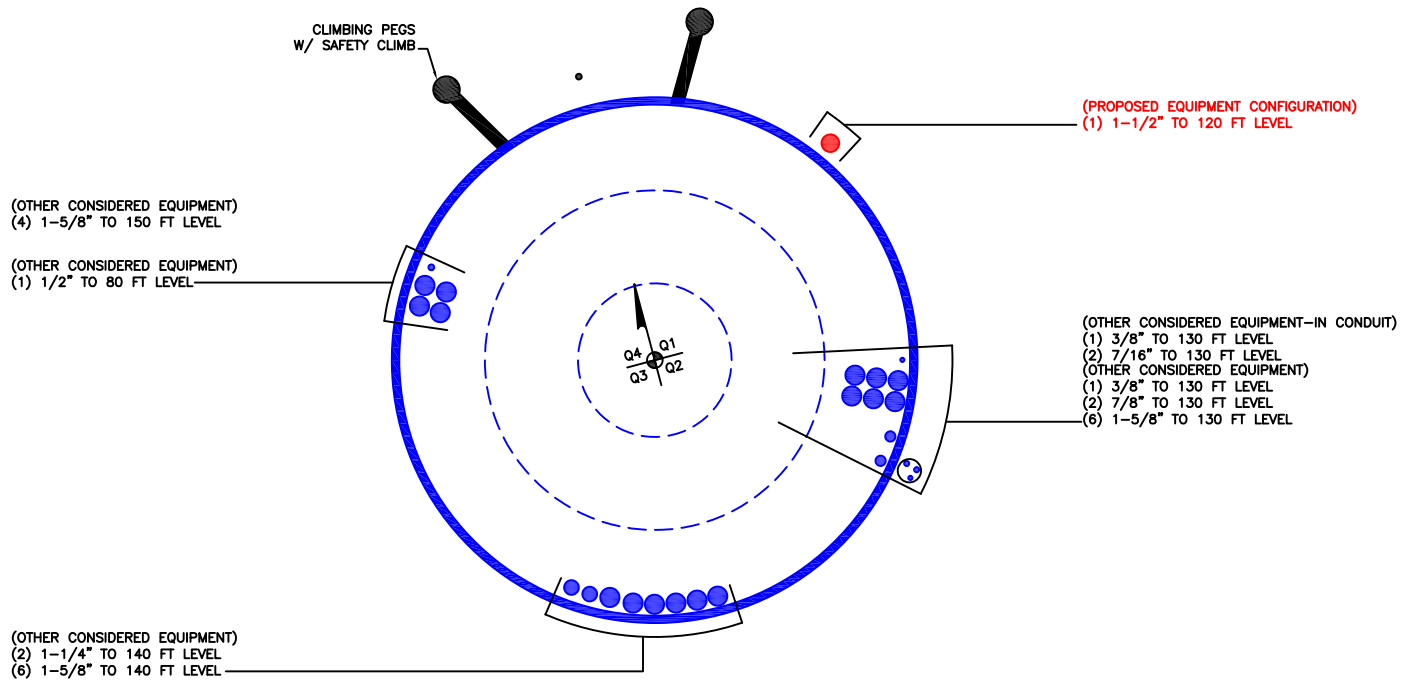
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 145	Pole	TP14.12x13x0.188	1	-3.02	509.32	20.0	Pass
L2	145 - 140	Pole	TP15.241x14.12x0.188	2	-3.25	550.28	31.0	Pass
L3	140 - 133.71	Pole	TP16.65x15.241x0.188	3	-6.13	580.64	45.5	Pass
L4	133.71 - 131.293	Pole	TP16.804x15.696x0.313	4	-6.68	1004.77	38.4	Pass
L5	131.293 - 126.293	Pole	TP17.912x16.804x0.313	5	-10.19	1072.28	49.8	Pass
L6	126.293 - 121.293	Pole	TP19.02x17.912x0.313	6	-10.81	1139.80	59.2	Pass
L7	121.293 - 116.293	Pole	TP20.128x19.02x0.313	7	-13.71	1207.30	68.4	Pass
L8	116.293 - 111.293	Pole	TP21.236x20.128x0.313	8	-14.47	1274.80	75.7	Pass
L9	111.293 - 108.25	Pole	TP21.911x21.236x0.313	9	-14.96	1315.90	79.4	Pass
L10	108.25 - 108	Pole	TP21.966x21.911x0.638	10	-15.03	2650.92	40.8	Pass
L11	108 - 103	Pole	TP23.074x21.966x0.613	11	-16.07	2682.28	44.8	Pass
L12	103 - 98	Pole	TP24.182x23.074x0.6	12	-17.17	2758.61	47.8	Pass
L13	98 - 93	Pole	TP25.29x24.182x0.588	13	-18.30	2829.49	50.3	Pass
L14	93 - 88.0833	Pole	TP26.38x25.29x0.588	14	-18.55	2856.99	50.6	Pass
L15	88.0833 - 86.9166	Pole	TP26.012x24.906x0.638	15	-20.42	3153.76	50.5	Pass
L16	86.9166 - 85.167	Pole	TP26.399x26.012x0.638	16	-20.86	3201.88	50.8	Pass
L17	85.167 - 84.917	Pole	TP26.454x26.399x0.638	17	-20.94	3208.75	50.8	Pass
L18	84.917 - 79.917	Pole	TP27.561x26.454x0.625	18	-22.30	3282.17	52.5	Pass
L19	79.917 - 77	Pole	TP28.206x27.561x0.613	19	-23.06	3295.11	53.9	Pass
L20	77 - 76.75	Pole	TP28.262x28.206x0.538	20	-23.14	2905.28	60.9	Pass
L21	76.75 - 75	Pole	TP28.649x28.262x0.531	21	-23.55	2912.26	61.8	Pass
L22	75 - 74.75	Pole	TP28.704x28.649x0.613	22	-23.64	3354.56	54.1	Pass
L23	74.75 - 69.75	Pole	TP29.811x28.704x0.6	23	-24.98	3416.99	55.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L24	69.75 - 65.083	Pole	TP30.843x29.811x0.588	24	-26.26	3465.52	56.8	Pass	
L25	65.083 - 64.833	Pole	TP30.899x30.843x0.588	25	-26.35	3471.86	56.8	Pass	
L26	64.833 - 59.833	Pole	TP32.005x30.899x0.588	26	-27.74	3598.59	56.9	Pass	
L27	59.833 - 54.833	Pole	TP33.111x32.005x0.575	27	-28.63	3597.85	58.1	Pass	
L28	54.833 - 49.833	Pole	TP34.218x33.111x0.563	28	-29.20	3569.54	59.3	Pass	
L29	49.833 - 43.4966	Pole	TP35.62x34.218x0.563	29	-30.67	3690.88	59.3	Pass	
L30	43.4966 - 42.4966	Pole	TP35.092x33.764x0.563	30	-33.70	3762.44	61.8	Pass	
L31	42.4966 - 37.4966	Pole	TP36.199x35.092x0.55	31	-34.00	3703.92	63.0	Pass	
L32	37.4966 - 33	Pole	TP37.194x36.199x0.55	32	-35.52	3822.61	62.8	Pass	
L33	33 - 32.75	Pole	TP37.25x37.194x0.663	33	-36.90	4718.55	52.3	Pass	
L34	32.75 - 32	Pole	TP37.416x37.25x0.663	34	-37.00	4725.70	52.3	Pass	
L35	32 - 31.75	Pole	TP37.471x37.416x0.588	35	-37.26	4218.32	58.6	Pass	
L36	31.75 - 30	Pole	TP37.858x37.471x0.588	36	-37.36	4224.66	58.5	Pass	
L37	30 - 29.75	Pole	TP37.914x37.858x0.588	37	-37.94	4269.04	58.4	Pass	
L38	29.75 - 24.75	Pole	TP39.021x37.914x0.575	38	-38.03	4185.81	59.6	Pass	
L39	24.75 - 19.75	Pole	TP40.128x39.021x0.569	39	-39.73	4263.76	59.9	Pass	
L40	19.75 - 14.75	Pole	TP41.235x40.128x0.563	40	-41.46	4338.98	60.1	Pass	
L41	14.75 - 9.75	Pole	TP42.341x41.235x0.563	41	-43.22	4460.37	59.7	Pass	
L42	9.75 - 4.75	Pole	TP43.448x42.341x0.55	42	-45.01	4481.28	60.5	Pass	
L43	4.75 - 0	Pole	TP44.5x43.448x0.55	43	-46.82	4599.99	60.1	Pass	
							Summary		
							Pole (L9)	79.4	Pass
							RATING =	79.4	Pass

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

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Site BU: 876384
Work Order: 1945903



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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	150	16.29	2.5833	18	13	16.65	0.1875	Auto	A572-65
2	136.2933	48.21	3.8333	18	15.70	26.38	0.3125	Auto	A572-65
3	91.9166	48.42	5	18	24.91	35.62	0.375	Auto	A572-65
4	48.4966	48.4966	0	18	33.76	44.5	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	33	plate	CCI-WSFP-060100	2																		
2	0	30	plate	CCI-WSFP-060100	2																		
3	32	65.083	plate	CCI-SFP-060100	1																		
4	30	65.083	plate	CCI-SFP-060100	2																		
5	65.083	85.167	plate	CCI-SFP-060100	2																		
6	65.083	75	plate	CCI-SFP-060100	1																		
7	75	77	plate	PL 1x5	1																		
8	77	85.167	plate	CCI-SFP-060100	1																		
9	85.167	108.25	plate	CCI-SFP-060100	3																		
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 (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	6	1	6	0.5	Welded	n/a	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
2	6	1	6	0.5	Welded	n/a	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
3	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
4	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
5	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
6	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
7	5	1	5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	8.000	3.750	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
9	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
PL 1x5	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): [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	150 - 145	5		18	13.000	14.120	0.1875	A572-65	1.000
2	145 - 140	5		18	14.120	15.241	0.1875	A572-65	1.000
3	140 - 136.293	6.29	2.5833	18	15.241	16.650	0.1875	A572-65	1.000
4	136.293 - 131.293	5		18	15.696	16.804	0.3125	A572-65	1.000
5	131.293 - 126.293	5		18	16.804	17.912	0.3125	A572-65	1.000
6	126.293 - 121.293	5		18	17.912	19.020	0.3125	A572-65	1.000
7	121.293 - 116.293	5		18	19.020	20.128	0.3125	A572-65	1.000
8	116.293 - 111.293	5		18	20.128	21.236	0.3125	A572-65	1.000
9	111.293 - 108.25	3.0433		18	21.236	21.911	0.3125	A572-65	1.000
10	108.25 - 108	0.25		18	21.911	21.966	0.6375	A572-65	0.915
11	108 - 103	5		18	21.966	23.074	0.6125	A572-65	0.929
12	103 - 98	5		18	23.074	24.182	0.6	A572-65	0.928
13	98 - 93	5		18	24.182	25.290	0.5875	A572-65	0.929
14	93 - 91.9166	4.9167	3.8333	18	25.290	26.380	0.5875	A572-65	0.925
15	91.9166 - 86.9166	5		18	24.906	26.012	0.6375	A572-65	0.945
16	86.9166 - 85.167	1.7496		18	26.012	26.399	0.6375	A572-65	0.940
17	85.167 - 84.917	0.25		18	26.399	26.454	0.6375	A572-65	0.939
18	84.917 - 79.917	5		18	26.454	27.561	0.625	A572-65	0.942
19	79.917 - 77	2.917		18	27.561	28.206	0.6125	A572-65	0.953
20	77 - 76.75	0.25		18	28.206	28.262	0.5375	A572-65	0.955
21	76.75 - 75	1.75		18	28.262	28.649	0.53125	A572-65	0.963
22	75 - 74.75	0.25		18	28.649	28.704	0.6125	A572-65	0.947
23	74.75 - 69.75	5		18	28.704	29.811	0.6	A572-65	0.953
24	69.75 - 65.083	4.667		18	29.811	30.843	0.5875	A572-65	0.962
25	65.083 - 64.833	0.25		18	30.843	30.899	0.5875	A572-65	0.961
26	64.833 - 59.833	5		18	30.899	32.005	0.5875	A572-65	0.950
27	59.833 - 54.833	5		18	32.005	33.111	0.575	A572-65	0.959
28	54.833 - 49.833	5		18	33.111	34.218	0.5625	A572-65	0.970
29	49.833 - 48.4966	6.3364	5	18	34.218	35.620	0.5625	A572-65	0.967
30	48.4966 - 42.4966	6		18	33.764	35.092	0.5625	A572-65	0.962
31	42.4966 - 37.4966	5		18	35.092	36.199	0.55	A572-65	0.974
32	37.4966 - 33	4.4966		18	36.199	37.194	0.55	A572-65	0.966
33	33 - 32.75	0.25		18	37.194	37.250	0.6625	A572-65	0.960
34	32.75 - 32	0.75		18	37.250	37.416	0.6625	A572-65	0.959
35	32 - 31.75	0.25		18	37.416	37.471	0.5875	A572-65	0.991
36	31.75 - 30	1.75		18	37.471	37.858	0.5875	A572-65	0.987
37	30 - 29.75	0.25		18	37.858	37.914	0.5875	A572-65	0.987
38	29.75 - 24.75	5		18	37.914	39.021	0.575	A572-65	0.998
39	24.75 - 19.75	5		18	39.021	40.128	0.56875	A572-65	0.999
40	19.75 - 14.75	5		18	40.128	41.235	0.5625	A572-65	1.000
41	14.75 - 9.75	5		18	41.235	42.341	0.5625	A572-65	0.991
42	9.75 - 4.75	5		18	42.341	43.448	0.55	A572-65	1.005
43	4.75 - 0	4.75		18	43.448	44.500	0.55	A572-65	0.997

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	150 - 145		3.02	35.44	5.82
2	145 - 140		6.64	65.37	10.15
3	140 - 136.2933		6.14	105.37	10.90
4	136.2933 - 131.2933		6.68	160.75	11.23
5	131.2933 - 126.2933		10.19	236.73	16.56
6	126.2933 - 121.2933		10.81	320.24	16.90
7	121.2933 - 116.2933		13.71	414.90	19.74
8	116.2933 - 111.2933		14.48	514.03	19.96
9	111.2933 - 108.25		14.96	574.94	20.12
10	108.25 - 108		15.03	579.97	20.14
11	108 - 103		16.07	681.91	20.68
12	103 - 98		17.17	786.03	21.01
13	98 - 93		18.30	891.80	21.34
14	93 - 91.9166		18.55	914.94	21.41
15	91.9166 - 86.9166		20.42	1023.06	21.86
16	86.9166 - 85.167		20.86	1061.36	21.98
17	85.167 - 84.917		20.94	1066.85	21.98
18	84.917 - 79.917		22.30	1177.73	22.37
19	79.917 - 77		23.06	1243.19	22.56
20	77 - 76.75		23.14	1248.83	22.57
21	76.75 - 75		23.55	1288.38	22.69
22	75 - 74.75		23.64	1294.04	22.68
23	74.75 - 69.75		24.98	1408.17	23.01
24	69.75 - 65.083		26.26	1516.12	23.30
25	65.083 - 64.833		26.35	1521.94	23.31
26	64.833 - 59.833		27.74	1639.17	23.62
27	59.833 - 54.833		29.18	1757.92	23.93
28	54.833 - 49.833		30.64	1878.15	24.22
29	49.833 - 48.4966		31.04	1910.53	24.30
30	48.4966 - 42.4966		33.97	2057.62	24.76
31	42.4966 - 37.4966		35.49	2181.91	25.01
32	37.4966 - 33		36.89	2294.72	25.22
33	33 - 32.75		36.99	2301.02	25.22
34	32.75 - 32		37.25	2319.94	25.27
35	32 - 31.75		37.34	2326.25	25.27
36	31.75 - 30		37.91	2370.52	25.38
37	30 - 29.75		38.01	2376.86	25.37
38	29.75 - 24.75		39.71	2504.21	25.62
39	24.75 - 19.75		41.44	2632.73	25.85
40	19.75 - 14.75		43.20	2762.42	26.09
41	14.75 - 9.75		44.98	2893.28	26.32
42	9.75 - 4.75		46.80	3025.32	26.56
43	4.75 - 0		48.54	3151.86	26.79

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP14.12x13x0.1875	Pole	20.0%	Pass
145 - 140	Pole	TP15.241x14.12x0.1875	Pole	31.9%	Pass
140 - 136.29	Pole	TP16.65x15.241x0.1875	Pole	45.4%	Pass
136.29 - 131.29	Pole	TP16.804x15.696x0.3125	Pole	38.3%	Pass
131.29 - 126.29	Pole	TP17.912x16.804x0.3125	Pole	49.7%	Pass
126.29 - 121.29	Pole	TP19.02x17.912x0.3125	Pole	59.2%	Pass
121.29 - 116.29	Pole	TP20.128x19.02x0.3125	Pole	68.3%	Pass
116.29 - 111.29	Pole	TP21.236x20.128x0.3125	Pole	75.7%	Pass
111.29 - 108.25	Pole	TP21.911x21.236x0.3125	Pole	79.3%	Pass
108.25 - 108	Pole + Reinf.	TP21.966x21.911x0.6375	Reinf. 9 Tension Rupture	65.2%	Pass
108 - 103	Pole + Reinf.	TP23.074x21.966x0.6125	Reinf. 9 Tension Rupture	71.0%	Pass
103 - 98	Pole + Reinf.	TP24.182x23.074x0.6	Reinf. 9 Tension Rupture	76.2%	Pass
98 - 93	Pole + Reinf.	TP25.29x24.182x0.5875	Reinf. 9 Tension Rupture	80.6%	Pass
93 - 91.92	Pole + Reinf.	TP26.38x25.29x0.5875	Reinf. 9 Tension Rupture	81.5%	Pass
91.92 - 86.92	Pole + Reinf.	TP26.012x24.906x0.6375	Reinf. 9 Tension Rupture	79.9%	Pass
86.92 - 85.17	Pole + Reinf.	TP26.399x26.012x0.6375	Reinf. 9 Tension Rupture	80.9%	Pass
85.17 - 84.92	Pole + Reinf.	TP26.454x26.399x0.6375	Reinf. 5 Tension Rupture	81.0%	Pass
84.92 - 79.92	Pole + Reinf.	TP27.561x26.454x0.625	Reinf. 5 Tension Rupture	83.7%	Pass
79.92 - 77	Pole + Reinf.	TP28.206x27.561x0.6125	Reinf. 5 Tension Rupture	85.0%	Pass
77 - 76.75	Pole + Reinf.	TP28.262x28.206x0.5375	Reinf. 5 Tension Rupture	86.8%	Pass
76.75 - 75	Pole + Reinf.	TP28.649x28.262x0.5313	Reinf. 5 Tension Rupture	87.6%	Pass
75 - 74.75	Pole + Reinf.	TP28.704x28.649x0.6125	Reinf. 5 Tension Rupture	86.0%	Pass
74.75 - 69.75	Pole + Reinf.	TP29.811x28.704x0.6	Reinf. 5 Tension Rupture	87.9%	Pass
69.75 - 65.08	Pole + Reinf.	TP30.843x29.811x0.5875	Reinf. 5 Tension Rupture	89.4%	Pass
65.08 - 64.83	Pole + Reinf.	TP30.899x30.843x0.5875	Reinf. 3 Tension Rupture	89.5%	Pass
64.83 - 59.83	Pole + Reinf.	TP32.005x30.899x0.5875	Reinf. 3 Tension Rupture	90.8%	Pass
59.83 - 54.83	Pole + Reinf.	TP33.111x32.005x0.575	Reinf. 3 Tension Rupture	92.0%	Pass
54.83 - 49.83	Pole + Reinf.	TP34.218x33.111x0.5625	Reinf. 3 Tension Rupture	93.0%	Pass
49.83 - 48.5	Pole + Reinf.	TP35.62x34.218x0.5625	Reinf. 3 Tension Rupture	93.2%	Pass
48.5 - 42.5	Pole + Reinf.	TP35.092x33.764x0.5625	Reinf. 3 Tension Rupture	97.6%	Pass
42.5 - 37.5	Pole + Reinf.	TP36.199x35.092x0.55	Reinf. 3 Tension Rupture	98.2%	Pass
37.5 - 33	Pole + Reinf.	TP37.194x36.199x0.55	Reinf. 3 Tension Rupture	98.6%	Pass
33 - 32.75	Pole + Reinf.	TP37.25x37.194x0.6625	Reinf. 4 Tension Rupture	84.4%	Pass
32.75 - 32	Pole + Reinf.	TP37.416x37.25x0.6625	Reinf. 4 Tension Rupture	84.5%	Pass
32 - 31.75	Pole + Reinf.	TP37.471x37.416x0.5875	Reinf. 4 Tension Rupture	86.9%	Pass
31.75 - 30	Pole + Reinf.	TP37.858x37.471x0.5875	Reinf. 4 Tension Rupture	87.1%	Pass
30 - 29.75	Pole + Reinf.	TP37.914x37.858x0.5875	Reinf. 2 Tension Rupture	87.1%	Pass
29.75 - 24.75	Pole + Reinf.	TP39.021x37.914x0.575	Reinf. 2 Tension Rupture	87.5%	Pass
24.75 - 19.75	Pole + Reinf.	TP40.128x39.021x0.5688	Reinf. 2 Tension Rupture	87.7%	Pass
19.75 - 14.75	Pole + Reinf.	TP41.235x40.128x0.5625	Reinf. 2 Tension Rupture	87.9%	Pass
14.75 - 9.75	Pole + Reinf.	TP42.341x41.235x0.5625	Reinf. 2 Tension Rupture	88.1%	Pass
9.75 - 4.75	Pole + Reinf.	TP43.448x42.341x0.55	Reinf. 2 Tension Rupture	88.1%	Pass
4.75 - 0	Pole + Reinf.	TP44.5x43.448x0.55	Reinf. 2 Tension Rupture	88.2%	Pass
				Summary	
			Pole	79.3%	Pass
			Reinforcement	98.6%	Pass
			Overall	98.6%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*									
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9
150 - 145	203	n/a	203	8.29	n/a	8.29	20.0%									
145 - 140	256	n/a	256	8.96	n/a	8.96	31.9%									
140 - 136.29	301	n/a	301	9.45	n/a	9.45	45.4%									
136.29 - 131.29	562	n/a	562	16.36	n/a	16.36	38.3%									
131.29 - 126.29	683	n/a	683	17.46	n/a	17.46	49.7%									
126.29 - 121.29	820	n/a	820	18.56	n/a	18.56	59.2%									
121.29 - 116.29	975	n/a	975	19.65	n/a	19.65	68.3%									
116.29 - 111.29	1148	n/a	1148	20.75	n/a	20.75	75.7%									
111.29 - 108.25	1262	n/a	1262	21.42	n/a	21.42	79.3%									
108.25 - 108	1272	1215	2486	21.48	18.00	39.48	40.1%									65.2%
108 - 103	1477	1332	2809	22.58	18.00	40.58	43.8%									71.0%
103 - 98	1704	1455	3158	23.68	18.00	41.68	47.1%									76.2%
98 - 93	1952	1583	3535	24.77	18.00	42.77	49.9%									80.6%
93 - 91.92	2009	1611	3620	25.01	18.00	43.01	50.4%									81.5%
91.92 - 86.92	2533	1669	4202	30.51	18.00	48.51	49.5%									79.9%
86.92 - 85.17	2650	1717	4366	30.97	18.00	48.97	50.1%									80.9%
85.17 - 84.92	2666	1724	4390	31.04	18.00	49.04	50.2%					81.0%				
84.92 - 79.92	3020	1863	4884	32.36	18.00	50.36	51.9%					83.7%				81.0%
79.92 - 77	3241	1947	5188	33.12	18.00	51.12	52.8%					85.0%				85.0%
77 - 76.75	3312	1291	4602	33.19	12.00	45.19	66.0%					86.8%				
76.75 - 75	3451	1326	4776	33.65	12.00	45.65	66.5%					87.6%				
75 - 74.75	3418	2013	5431	33.72	18.00	51.72	53.4%					86.0%	86.0%			
74.75 - 69.75	3834	2164	5998	35.03	18.00	53.03	54.7%					87.9%	87.9%			
69.75 - 65.08	4252	2309	6561	36.26	18.00	54.26	55.7%					89.4%	89.4%			
65.08 - 64.83	4275	2317	6592	36.33	18.00	54.33	55.7%				89.5%	89.5%				
64.83 - 59.83	4757	2479	7236	37.65	18.00	55.65	56.7%				90.8%	90.8%				
59.83 - 54.83	5274	2646	7920	38.96	18.00	56.96	57.4%				92.0%	92.0%				
54.83 - 49.83	5827	2818	8645	40.28	18.00	58.28	58.1%				93.0%	93.0%				
49.83 - 48.5	5981	2865	8846	40.63	18.00	58.63	58.3%				93.2%	93.2%				
48.5 - 42.5	6290	2959	9249	41.32	18.00	59.32	61.1%				97.6%	97.6%				
42.5 - 37.5	6911	3141	10052	42.64	18.00	60.64	61.6%				98.2%	98.2%				
37.5 - 33	7503	3310	10813	43.82	18.00	61.82	62.3%				98.6%	98.6%				
33 - 32.75	7590	5391	12981	43.89	30.00	73.89	55.7%	76.0%			83.3%	84.4%				
32.75 - 32	7693	5437	13130	44.09	30.00	74.09	55.9%	76.1%			83.4%	84.5%				
32 - 31.75	7674	4095	11768	44.15	24.00	68.15	58.5%	86.9%				86.9%				
31.75 - 30	7917	4177	12093	44.61	24.00	68.61	58.8%	87.1%				87.1%				
30 - 29.75	7952	4188	12140	44.68	24.00	68.68	58.8%	87.1%	87.1%							
29.75 - 24.75	8676	4428	13104	46.00	24.00	70.00	59.6%	87.5%	87.5%							
24.75 - 19.75	9443	4674	14117	47.31	24.00	71.31	60.2%	87.7%	87.7%							
19.75 - 14.75	10254	4927	15181	48.63	24.00	72.63	60.9%	87.9%	87.9%							
14.75 - 9.75	11110	5186	16297	49.95	24.00	73.95	61.5%	88.1%	88.1%							
9.75 - 4.75	12013	5452	17465	51.27	24.00	75.27	62.0%	88.1%	88.1%							
4.75 - 0	12914	5712	18626	52.52	24.00	76.52	62.5%	88.2%	88.2%							

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

Monopole Base Plate Connection

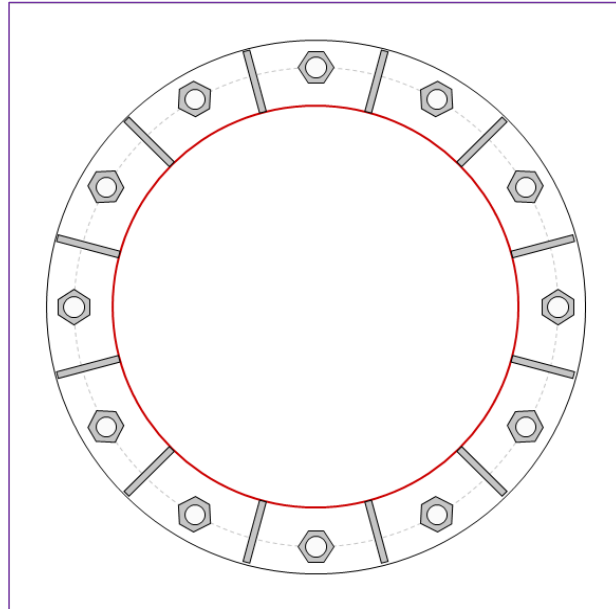


Site Info	
BU #	876384
Site Name	Westbrook/ Orsina
Order #	553294 - Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0.75

Applied Loads	
Moment (kip-ft)	3151.86
Axial Force (kips)	48.54
Shear Force (kips)	26.79

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
 (12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 53" BC

Base Plate Data
 59" OD x 1.75" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)

Stiffener Data
 (12) 18"H x 7"W x 0.75"T, Notch: 0.75"
 plate: $F_y= 50$ ksi ; weld: $F_y= 70$ ksi
 horiz. weld: 0.375" groove, 45° dbl bevelFALSE
 vert. weld: 0.375" fillet

Pole Data
 44.5" x 0.375" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary		<i>(units of kips, kip-in)</i>	
$Pu_t = 233.66$	$\phi Pn_t = 243.75$		Stress Rating
$Vu = 2.23$	$\phi Vn = 149.1$		91.3%
$Mu = n/a$	$\phi Mn = n/a$		Pass

Base Plate Summary		
Max Stress (ksi):	47.52	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	83.8%	Pass

Stiffener Summary		
Horizontal Weld:	75.5%	Pass
Vertical Weld:	56.7%	Pass
Plate Flexure+Shear:	28.2%	Pass
Plate Tension+Shear:	76.5%	Pass
Plate Compression:	82.6%	Pass

Pole Summary		
Punching Shear:	17.0%	Pass

Pier and Pad Foundation



BU # : 876384
Site Name: Westbrook/Orsina
App. Number: 553294 - 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	kips
Base Shear, V_{u_comp} :	27	kips
Moment, M_u :	3152	ft-kips
Tower Height, H :	150	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	99.48	27.00	25.8%	Pass
<i>Bearing Pressure (ksf)</i>	6.00	1.52	25.3%	Pass
<i>Overtuning (kip*ft)</i>	5056.03	3320.75	65.7%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	3280.86	3233.00	93.8%	Pass
<i>Pier Compression (kip)</i>	22913.28	68.44	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	3077.69	1473.64	45.6%	Pass
<i>Pad Shear - 1-way (kips)</i>	1004.09	191.66	18.2%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.038	19.1%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3248.34	1939.80	56.9%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	6	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	30	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	5	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	65.7%
Structural Rating*:	93.8%

Pad Properties		
Depth, D :	5	ft
Pad Width, W_1 :	28	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	28	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	100	pcf
Ultimate Gross Bearing, Q_{ult} :	8.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	0	degrees
SPT Blow Count, N_{blows} :	13	
Base Friction, μ :	0.3	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	2.5	ft

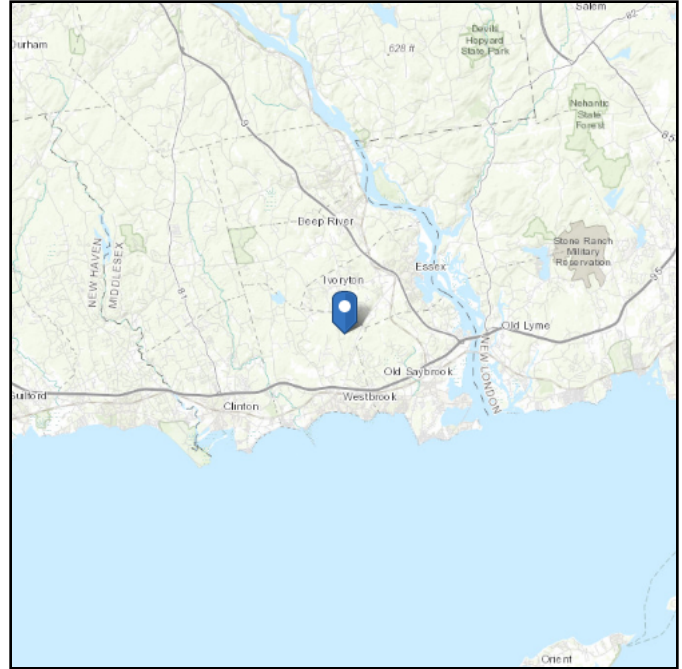
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ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 159.59 ft (NAVD 88)
Latitude: 41.320167
Longitude: -72.441667

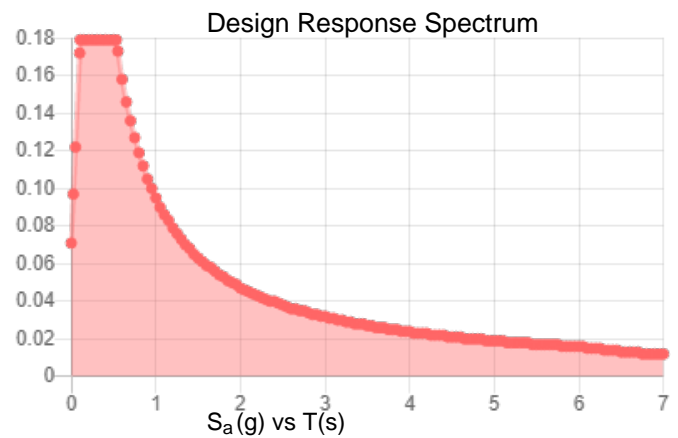
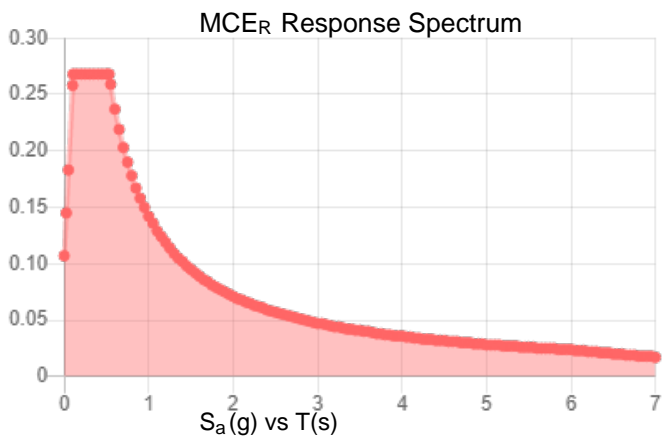


Site Soil Class: D - Stiff Soil

Results:

S_s :	0.167	S_{DS} :	0.179
S_1 :	0.059	S_{D1} :	0.095
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.084
S_{MS} :	0.268	PGA _M :	0.135
S_{M1} :	0.142	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Oct 15 2020

Date Source:

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

Ice

Results:

Ice Thickness: 0.75 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

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

Date Accessed: Thu Oct 15 2020

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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