



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

May 16, 2024

Jeffrey Barbadora
Permitting Specialist
Crown Castle
1800 West Park Drive
Westborough, MA 01581
Jeff.Barbadora@crowncastle.com

RE: **EM-VER-106-240416** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 170 Ingham Hill Road, Old Saybrook, Connecticut. **Acknowledgement of Complete Request.**

Dear Jeffrey Barbadora:

The Connecticut Siting Council (Council) is in receipt of your correspondence of May 16, 2024 submitted in response to the Council's May 16, 2024 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

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

Thank you for your attention and cooperation.

Sincerely,

A handwritten signature in dark ink, appearing to read "Melanie Bachman".

Melanie Bachman
Executive Director

MAB/ANM/laf

From: Barbadora, Jeff <Jeff.Barbadora@crowncastle.com>
Sent: Thursday, May 16, 2024 10:14 AM
To: Fontaine, Lisa <Lisa.Fontaine@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>; carl.fortuna@oldsaybrookct.gov
Subject: RE: Council Incomplete Letter - EM-VER-106-240416 - Ingham Hill Road (Old Saybrook)

Good morning,

Apologize for the incorrect structural analysis.

Please see correct attached structural analysis.

A hard copy is being overnighted to your office for 05/17/24 delivery.

Thanks,

Jeffrey Barbadora
Permitting Specialist
781-970-0053

Crown Castle
1800 W. Park Drive, Suite 250
Westborough, MA 01581

Date: **January 29, 2024**



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation: **Verizon Wireless Co-Locate**
Site Number: 5000245392
Site Name: Old Saybrook CT

Crown Castle Designation: **BU Number:** 841289
Site Name: Old Saybrook
JDE Job Number: 2101354
Work Order Number: 2278740
Order Number: 656560 Rev. 0

Engineering Firm Designation: **TEP Project Number:** 55790.922308

Site Data: **170 Ingham Hill Road, Old Saybrook, Middlesex County, CT 06475**
Latitude 41° 18' 35.55", Longitude -72° 23' 51.13"
150.2 Foot – Monopole Guyed Tower

Tower Engineering Professionals is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

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

LC7: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: VT / CS

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

01/29/2024

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1) INTRODUCTION

This tower is a 150.2-ft monopole guyed tower designed by ITT Meyer. 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:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	1.0 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)
130.0	133.0	3	Antel	BXA-80080/4CF w/ Mount Pipe	11 2	1-1/4 1-5/8
		4	Commscope	JAHH-65B-R3B w/ Mount Pipe		
		2	Commscope	JAHH-45B-R3B w/ Mount Pipe		
		3	Samsung Telecom.	MT6407-77A w/ Mount Pipe		
		3	Commscope	CBC78T-DS-43-2X		
		2	Kaelus	KA-6030		
		3	Samsung Telecom.	RF4440D-13A		
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom.	RF4439D-25A		
	130.0	1	Tower Mounts	Miscellaneous [NA 510-1]		
	1	Tower Mounts	Platform Mount [LP 403-1_KCKR]			

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)
149.0	150.0	2	CCI Antennas	OPA65R-BU4B w/ Mount Pipe	12 6 3	1-1/4 3/4 3/8
		1	CCI Antennas	OPA65R-BU8B w/ Mount Pipe		
		3	Andrew	SBNHH-1D65A w/ Mount Pipe		
		2	Quintel Technology	QS46512-2 w/ Mount Pipe		
		1	Kathrein	80010799 w/ Mount Pipe		
		3	Powerwave Technologies	TT19-08BP111-001		
		6	Kaelus	DBC0061F1V51-2		
		3	Ericsson	RADIO 4449 B5/B12		
		3	Ericsson	RRUS 4415 B25		
		3	Raycap	DC6-48-60-18-8C		
		3	Ericsson	RRUS 4426 B66		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS E2 B29		
	149.0	1	Tower Mounts	Platform Mount [LP 404-1_KCKR]		
140.0	141.0	3	Ericsson	AIR 21 B2A/B4P w/ Mount Pipe	4 6	1-5/8 1-1/4
		3	Ericsson	AIR 21 B4A/B2P w/ Mount Pipe		
		3	RFS Celwave	APXVAALL24_43-U-NA20 w/ Mount Pipe		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
	140.0	1	Tower Mounts	Platform Mount [LP 303-1_HR-1]		
71.0	72.0	2	Kathrein	FMO	2	1/2
	71.0	2	Tower Mounts	Side Arm Mount [SO 305-1]		
22.0	22.0	1	Maxrad	MYA-43012N	1	5/16
		1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	4468634	CCISites
Foundation Mapping Report	4591935	CCISites
Tower Mapping Report	5204147	CCISites
Tower Reinforcement Drawings	4478711	CCISites
Post-Modification Inspection	4468635	CCISites
Tower Reinforcement Drawings	4489382	CCISites
Post-Modification Inspection	4489415	CCISites
Tower Reinforcement Drawings	5293057	CCISites
Post-Modification Inspection	5874000	CCISites
Tower Reinforcement Drawings	6254746	CCISites
Post-Modification Inspection	6444911	CCISites
Tower Reinforcement Drawings	8122612	CCISites
Tower Reinforcement Drawings	8292599	CCISites
Post-Modification Inspection	9017983	CCISites

3.1) Analysis Method

tnxTower (version 8.2.2.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

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

3.2) Assumptions

- 1) The 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. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)^{1,2}

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.78x15x0.1875	Pole	12.5%	Pass
145 - 140	Pole	TP16.56x15.78x0.1875	Pole	23.6%	Pass
140 - 135	Pole	TP17.34x16.56x0.1875	Pole	40.6%	Pass
135 - 130	Pole	TP18.12x17.34x0.1875	Pole	54.4%	Pass
130 - 125	Pole	TP18.9x18.12x0.1875	Pole	77.5%	Pass
125 - 123.75	Pole	TP19.095x18.9x0.1875	Pole	82.1%	Pass
123.75 - 123.5	Pole + Reinf.	TP19.134x19.095x0.4563	Reinf. 7 Tension Rupture	57.0%	Pass
123.5 - 118.5	Pole + Reinf.	TP19.914x19.134x0.4375	Reinf. 7 Tension Rupture	69.2%	Pass
118.5 - 113.5	Pole + Reinf.	TP20.694x19.914x0.4313	Reinf. 7 Tension Rupture	80.4%	Pass
113.5 - 112.75	Pole + Reinf.	TP20.811x20.694x0.425	Reinf. 7 Tension Rupture	82.0%	Pass
112.75 - 112.5	Pole + Reinf.	TP20.85x20.811x1.0625	Reinf. 6 Tension Rupture	44.4%	Pass
112.5 - 110	Pole + Reinf.	TP21.24x20.85x1.0375	Reinf. 6 Tension Rupture	47.5%	Pass
110 - 107.25	Pole + Reinf.	TP21.696x21.24x1.075	Reinf. 6 Tension Rupture	47.7%	Pass
107.25 - 107	Pole + Reinf.	TP21.738x21.696x0.55	Reinf. 5 Tension Rupture	56.4%	Pass
107 - 102	Pole + Reinf.	TP22.568x21.738x0.5375	Reinf. 5 Tension Rupture	62.1%	Pass
102 - 97	Pole + Reinf.	TP23.398x22.568x0.525	Reinf. 5 Tension Rupture	67.7%	Pass
97 - 95	Pole + Reinf.	TP23.729x23.398x0.5188	Reinf. 5 Tension Rupture	69.8%	Pass
95 - 94.75	Pole + Reinf.	TP23.771x23.729x0.65	Reinf. 1 Tension Rupture	67.4%	Pass
94.75 - 89.75	Pole + Reinf.	TP24.601x23.771x0.625	Reinf. 1 Tension Rupture	72.4%	Pass
89.75 - 88.67	Pole + Reinf.	TP24.78x24.601x0.625	Reinf. 1 Tension Rupture	73.5%	Pass
88.67 - 87.75	Pole + Reinf.	TP24.932x24.78x0.625	Reinf. 1 Tension Rupture	72.9%	Pass
87.75 - 87.5	Pole + Reinf.	TP24.974x24.932x0.5875	Reinf. 1 Tension Rupture	82.8%	Pass
87.5 - 85.5	Pole + Reinf.	TP25.305x24.974x0.575	Reinf. 1 Tension Rupture	82.9%	Pass
85.5 - 85.25	Pole + Reinf.	TP25.346x25.305x0.775	Reinf. 4 Tension Rupture	64.4%	Pass
85.25 - 83	Pole + Reinf.	TP25.718x25.346x0.7625	Reinf. 4 Tension Rupture	64.5%	Pass
83 - 82.75	Pole + Reinf.	TP25.76x25.718x0.825	Reinf. 1 Tension Rupture	62.6%	Pass
82.75 - 82.5	Pole + Reinf.	TP25.801x25.76x0.65	Reinf. 2 Tension Rupture	73.0%	Pass
82.5 - 77.5	Pole + Reinf.	TP26.629x25.801x0.6375	Reinf. 2 Tension Rupture	72.8%	Pass
77.5 - 73.5	Pole + Reinf.	TP27.87x26.629x0.625	Reinf. 2 Tension Rupture	72.5%	Pass
73.5 - 69	Pole + Reinf.	TP27.482x26.791x0.6625	Reinf. 3 Tension Rupture	68.1%	Pass
69 - 64	Pole + Reinf.	TP28.249x27.482x0.6625	Reinf. 3 Tension Rupture	67.8%	Pass
64 - 59	Pole + Reinf.	TP29.017x28.249x0.65	Reinf. 3 Tension Rupture	67.4%	Pass
59 - 55.42	Pole + Reinf.	TP29.567x29.017x0.6375	Reinf. 3 Tension Rupture	67.0%	Pass
55.42 - 55.17	Pole + Reinf.	TP29.605x29.567x0.6375	Reinf. 3 Tension Rupture	66.9%	Pass
55.17 - 50.17	Pole + Reinf.	TP30.373x29.605x0.625	Reinf. 3 Tension Rupture	66.2%	Pass
50.17 - 47.17	Pole + Reinf.	TP30.834x30.373x0.625	Reinf. 3 Tension Rupture	65.7%	Pass
47.17 - 46.92	Pole	TP30.872x30.834x0.3125	Pole	88.3%	Pass
46.92 - 43.42	Pole	TP31.41x30.872x0.3125	Pole	87.2%	Pass
43.42 - 43.17	Pole	TP31.448x31.41x0.3125	Pole	87.1%	Pass
43.17 - 41.17	Pole	TP31.755x31.448x0.3125	Pole	86.3%	Pass
41.17 - 40.92	Pole + Reinf.	TP31.794x31.755x0.5875	Reinf. 8 Tension Rupture	64.6%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
40.92 - 35.92	Pole + Reinf.	TP32.561x31.794x0.5875	Reinf. 8 Tension Rupture	63.3%	Pass
35.92 - 35.67	Pole + Reinf.	TP33.24x32.561x0.5875	Reinf. 8 Tension Rupture	63.3%	Pass
35.67 - 30.5	Pole	TP32.757x31.975x0.375	Pole	67.2%	Pass
30.5 - 25.5	Pole	TP33.514x32.757x0.375	Pole	65.5%	Pass
25.5 - 20.5	Pole	TP34.271x33.514x0.375	Pole	63.6%	Pass
20.5 - 15.5	Pole	TP35.028x34.271x0.375	Pole	61.7%	Pass
15.5 - 10.5	Pole	TP35.785x35.028x0.375	Pole	59.8%	Pass
10.5 - 5.5	Pole	TP36.542x35.785x0.375	Pole	57.9%	Pass
5.5 - 0.5	Pole	TP37.299x36.542x0.375	Pole	56.0%	Pass
0.5 - 0	Pole	TP37.375x37.299x0.375	Pole	55.7%	Pass
88.67 - 87.75	Guy A@88.67 (15 deg)	1 5/8	54	80.4%	Pass
88.67 - 87.75	Guy B@88.67 (15 deg)	1 3/8	53	55.1%	Pass
88.67 - 87.75	Guy C@88.67 (-15 deg)	1 3/8	52	66.4%	Pass
				Summary	
			Pole	88.3%	Pass
			Reinforcement	82.9%	Pass
			Guy A	80.4%	Pass
			Guy B	55.1%	Pass
			Guy C	66.4%	Pass
			Overall	88.3%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	110.0	50.5	Pass
1,2	Guy Lug	88.7	85.5	Pass
1,2	Anchor Rods	-	52.2	Pass
1,2	Base plate	-	40.8	Pass
1,2	Mast Foundation Structural	-	37.1	Pass
1,2	Mast Foundation Soil Interaction	-	60.9	Pass
1,2	Guy Anchor Shaft (Inner)	-	80.9	Pass
1,2	Guy Anchor Structural (Inner)	-	71.9	Pass
1,2	Guy Anchor Soil Interaction (Inner)	-	67.9	Pass
1,2	Guy Anchor Shaft (Outer)	-	47.6	Pass
1,2	Guy Anchor Structural (Outer)	-	31.9	Pass
1,2	Guy Anchor Soil Interaction (Outer)	-	45.1	Pass

Structure Rating (max from all components) =	88.3%
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Notes:

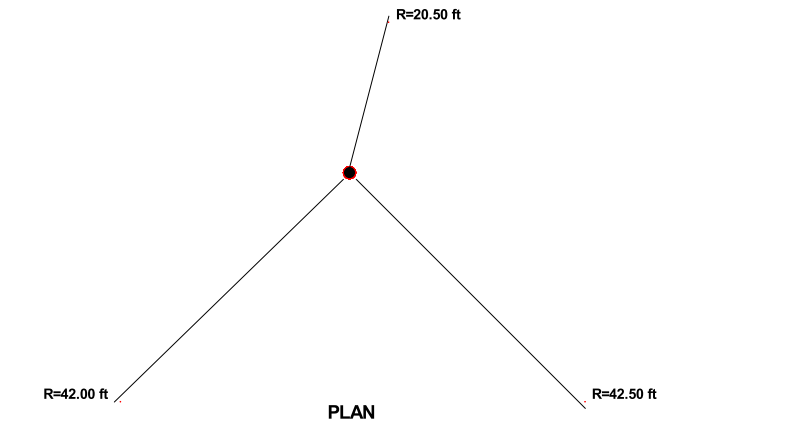
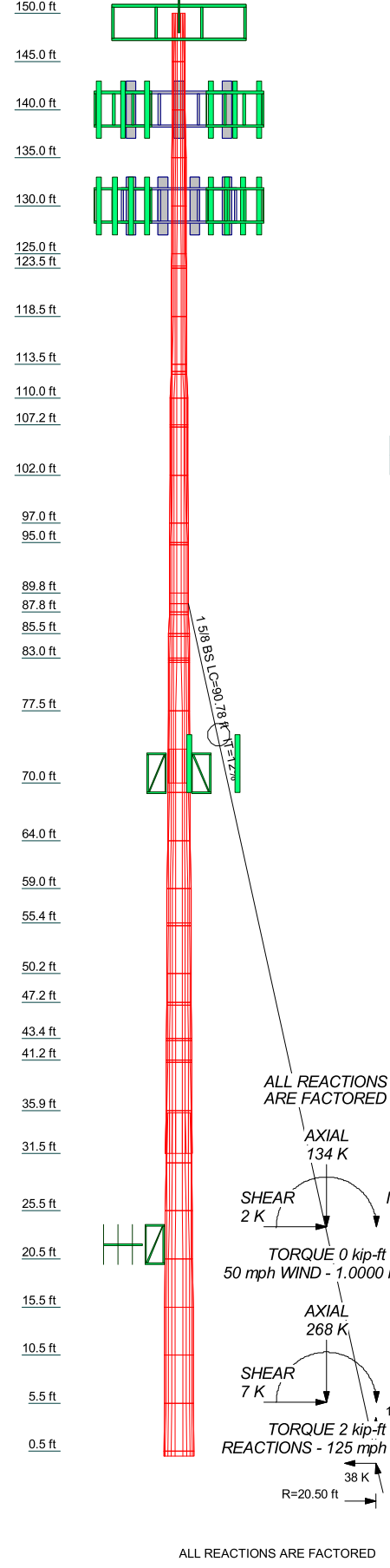
- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5

4.1) Recommendations

- 1) The tower and its base and anchor foundations have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

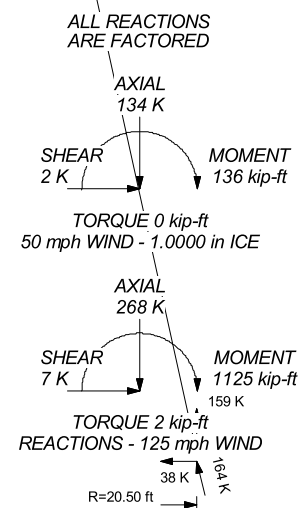
APPENDIX A
TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	12	0.1875					0.2
2	5.00	12	0.1875					0.2
3	5.00	12	0.1875					0.2
4	5.00	12	0.1875					0.2
5	5.00	12	0.1875					0.2
6	5.00	12	0.1875					0.2
7	5.00	12	0.1875					0.2
8	5.00	12	0.1875					0.4
9	5.00	12	0.1875					0.4
10	5.00	12	0.1875					0.4
11	5.00	12	0.1875					0.4
12	5.00	12	0.1875					0.4
13	5.00	12	0.1875					0.4
14	5.00	12	0.1875					0.4
15	5.00	12	0.1875					0.7
16	5.00	12	0.1875					0.7
17	5.00	12	0.1875					0.7
18	5.00	12	0.1875					0.7
19	5.00	12	0.1875					0.9
20	5.00	12	0.1875					0.9
21	5.00	12	0.1875					0.9
22	5.00	12	0.1875					0.9
23	5.00	12	0.1875					0.9
24	5.00	12	0.1875					0.9
25	5.00	12	0.1875					0.9
26	5.00	12	0.1875					0.9
27	5.00	12	0.1875					0.9
28	5.00	12	0.1875					0.9
29	5.00	12	0.1875					0.9
30	5.00	12	0.1875					0.9
31	5.00	12	0.1875					0.9
32	5.00	12	0.1875					0.9
33	5.00	12	0.1875					0.9
34	5.00	12	0.1875					0.9
35	5.00	12	0.1875					1.0
36	5.00	12	0.1875					1.0
37	5.00	12	0.1875					1.0
38	5.00	12	0.1875					1.0
39	5.00	12	0.1875					1.0
40	5.00	12	0.1875					1.0
41	5.00	12	0.1875					1.0
42	5.00	12	0.1875					1.0
43	5.00	12	0.1875					1.0
44	5.00	12	0.1875					1.0
45	5.00	12	0.1875					1.0
46	5.00	12	0.1875					1.0
47	5.00	12	0.1875					1.0
48	5.00	12	0.1875					1.0
49	5.00	12	0.1875					1.0
50	5.00	12	0.1875					1.0
51	5.00	12	0.1875					1.0



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 125 mph basic wind in accordance with the TIA-222-H Standard.
 4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
 5. Deflections are based upon a 60 mph wind.
 6. Tower Risk Category II.
 7. Topographic Category 1 with Crest Height of 0.00 ft
 8. TOWER RATING: 88.3%



Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job: Old Saybrook (BU 841289)		
	Project: TEP No. 55790.922308	Client: Crown Castle	Drawn by: RTP
Tower Engineering Professionals	Code: TIA-222-H	Date: 01/29/24	Scale: NTS
	Path:		Dwg No. E-1

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tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Old Saybrook (BU 841289)	Page 1 of 42
	Project TEP No. 55790.922308	Date 16:53:08 01/29/24
	Client Crown Castle	Designed by RTP

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower is located in Middlesex County, Connecticut.

Tower base elevation above sea level: 159.00 ft.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category B.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

TOWER RATING: 88.3%.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Safety factor used in guy design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.

Maximum demand-capacity ratio is: 1.05.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs 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 Appurtenances √ Alternative Appurt. EPA Calculation 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 Poles √ 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

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	Old Saybrook (BU 841289)	Page	2 of 42
	Project	TEP No. 55790.922308	Date	16:53:08 01/29/24
	Client	Crown Castle	Designed by	RTP

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	0.00	12	15.0000	15.7800	0.1875	0.7500	A572-65 (65 ksi)
L2	145.00-140.00	5.00	0.00	12	15.7800	16.5600	0.1875	0.7500	A572-65 (65 ksi)
L3	140.00-135.00	5.00	0.00	12	16.5600	17.3400	0.1875	0.7500	A572-65 (65 ksi)
L4	135.00-130.00	5.00	0.00	12	17.3400	18.1200	0.1875	0.7500	A572-65 (65 ksi)
L5	130.00-125.00	5.00	0.00	12	18.1200	18.9000	0.1875	0.7500	A572-65 (65 ksi)
L6	125.00-123.75	1.25	0.00	12	18.9000	19.0950	0.1875	0.7500	A572-65 (65 ksi)
L7	123.75-123.50	0.25	0.00	12	19.0950	19.1340	0.4562	1.8250	A572-65 (65 ksi)
L8	123.50-118.50	5.00	0.00	12	19.1340	19.9140	0.4375	1.7500	A572-65 (65 ksi)
L9	118.50-113.50	5.00	0.00	12	19.9140	20.6940	0.4313	1.7250	A572-65 (65 ksi)
L10	113.50-112.75	0.75	0.00	12	20.6940	20.8110	0.4250	1.7000	A572-65 (65 ksi)
L11	112.75-112.50	0.25	0.00	12	20.8110	20.8500	1.0625	4.2500	A572-65 (65 ksi)
L12	112.50-110.00	2.50	0.00	12	20.8500	21.2400	1.0375	4.1500	A572-65 (65 ksi)
L13	110.00-107.25	2.75	0.00	12	21.2400	21.6964	1.0750	4.3000	A572-65 (65 ksi)
L14	107.25-107.00	0.25	0.00	12	21.6964	21.7379	0.5500	2.2000	A572-65 (65 ksi)
L15	107.00-102.00	5.00	0.00	12	21.7379	22.5677	0.5375	2.1500	A572-65 (65 ksi)
L16	102.00-97.00	5.00	0.00	12	22.5677	23.3975	0.5250	2.1000	A572-65 (65 ksi)
L17	97.00-95.00	2.00	0.00	12	23.3975	23.7295	0.5188	2.0750	A572-65 (65 ksi)
L18	95.00-94.75	0.25	0.00	12	23.7295	23.7709	0.6500	2.6000	A572-65 (65 ksi)
L19	94.75-89.75	5.00	0.00	12	23.7709	24.6008	0.6250	2.5000	A572-65 (65 ksi)
L20	89.75-88.67	1.08	0.00	12	24.6008	24.7800	0.6250	2.5000	A572-65 (65 ksi)
L21	88.67-87.75	0.92	0.00	12	24.7800	24.9323	0.6250	2.5000	A572-65 (65 ksi)
L22	87.75-87.50	0.25	0.00	12	24.9323	24.9736	0.5875	2.3500	A572-65 (65 ksi)
L23	87.50-85.50	2.00	0.00	12	24.9736	25.3047	0.5750	2.3000	A572-65 (65 ksi)
L24	85.50-85.25	0.25	0.00	12	25.3047	25.3460	0.7750	3.1000	A572-65 (65 ksi)
L25	85.25-83.00	2.25	0.00	12	25.3460	25.7184	0.7625	3.0500	A572-65 (65 ksi)
L26	83.00-82.75	0.25	0.00	12	25.7184	25.7598	0.8250	3.3000	A572-65 (65 ksi)
L27	82.75-82.50	0.25	0.00	12	25.7598	25.8012	0.6500	2.6000	A572-65 (65 ksi)
L28	82.50-77.50	5.00	0.00	12	25.8012	26.6287	0.6375	2.5500	A572-65 (65 ksi)
L29	77.50-70.00	7.50	3.50	12	26.6287	27.8700	0.6250	2.5000	A572-65 (65 ksi)
L30	70.00-69.00	4.50	0.00	12	26.7907	27.4817	0.6625	2.6500	A572-65 (65 ksi)
L31	69.00-64.00	5.00	0.00	12	27.4817	28.2495	0.6625	2.6500	A572-65

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Old Saybrook (BU 841289)	Page	3 of 42
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	Client	Crown Castle	Designed by	RTP

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
L32	64.00-59.00	5.00	0.00	12	28.2495	29.0173	0.6500	2.6000	(65 ksi) A572-65
L33	59.00-55.42	3.58	0.00	12	29.0173	29.5670	0.6375	2.5500	(65 ksi) A572-65
L34	55.42-55.17	0.25	0.00	12	29.5670	29.6054	0.6375	2.5500	(65 ksi) A572-65
L35	55.17-50.17	5.00	0.00	12	29.6054	30.3731	0.6250	2.5000	(65 ksi) A572-65
L36	50.17-47.17	3.00	0.00	12	30.3731	30.8338	0.6250	2.5000	(65 ksi) A572-65
L37	47.17-46.92	0.25	0.00	12	30.8338	30.8722	0.3125	1.2500	(65 ksi) A572-65
L38	46.92-43.42	3.50	0.00	12	30.8722	31.4096	0.3125	1.2500	(65 ksi) A572-65
L39	43.42-43.17	0.25	0.00	12	31.4096	31.4480	0.3125	1.2500	(65 ksi) A572-65
L40	43.17-41.17	2.00	0.00	12	31.4480	31.7551	0.3125	1.2500	(65 ksi) A572-65
L41	41.17-40.92	0.25	0.00	12	31.7551	31.7935	0.5875	2.3500	(65 ksi) A572-65
L42	40.92-35.92	5.00	0.00	12	31.7935	32.5613	0.5875	2.3500	(65 ksi) A572-65
L43	35.92-31.50	4.42	4.17	12	32.5613	33.2400	0.5875	2.3500	(65 ksi) A572-65
L44	31.50-30.50	5.17	0.00	12	31.9747	32.7574	0.3750	1.5000	(65 ksi) A572-65
L45	30.50-25.50	5.00	0.00	12	32.7574	33.5144	0.3750	1.5000	(65 ksi) A572-65
L46	25.50-20.50	5.00	0.00	12	33.5144	34.2714	0.3750	1.5000	(65 ksi) A572-65
L47	20.50-15.50	5.00	0.00	12	34.2714	35.0284	0.3750	1.5000	(65 ksi) A572-65
L48	15.50-10.50	5.00	0.00	12	35.0284	35.7853	0.3750	1.5000	(65 ksi) A572-65
L49	10.50-5.50	5.00	0.00	12	35.7853	36.5423	0.3750	1.5000	(65 ksi) A572-65
L50	5.50-0.50	5.00	0.00	12	36.5423	37.2993	0.3750	1.5000	(65 ksi) A572-65
L51	0.50-0.00	0.50		12	37.2993	37.3750	0.3750	1.5000	(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	15.4630	8.9430	250.4541	5.3029	7.7700	32.2335	507.4880	4.4015	3.5175	18.76
	16.2705	9.4140	292.1395	5.5821	8.1740	35.7399	591.9539	4.6333	3.7265	19.875
L2	16.2705	9.4140	292.1395	5.5821	8.1740	35.7399	591.9539	4.6333	3.7265	19.875
	17.0780	9.8849	338.2113	5.8614	8.5781	39.4274	685.3078	4.8650	3.9356	20.99
L3	17.0780	9.8849	338.2113	5.8614	8.5781	39.4274	685.3078	4.8650	3.9356	20.99
	17.8855	10.3558	388.8887	6.1406	8.9821	43.2959	787.9940	5.0968	4.1446	22.105
L4	17.8855	10.3558	388.8887	6.1406	8.9821	43.2959	787.9940	5.0968	4.1446	22.105
	18.6931	10.8267	444.3914	6.4198	9.3862	47.3454	900.4574	5.3286	4.3537	23.22
L5	18.6931	10.8267	444.3914	6.4198	9.3862	47.3454	900.4574	5.3286	4.3537	23.22
	19.5006	11.2977	504.9386	6.6991	9.7902	51.5759	1023.1424	5.5604	4.5627	24.334

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	Old Saybrook (BU 841289)	Page	4 of 42
	Project	TEP No. 55790.922308	Date	16:53:08 01/29/24
	Client	Crown Castle	Designed by	RTP

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
L6	19.5006	11.2977	504.9386	6.6991	9.7902	51.5759	1023.1424	5.5604	4.5627	24.334
	19.7025	11.4154	520.8893	6.7689	9.8912	52.6618	1055.4629	5.6183	4.6150	24.613
L7	19.6077	27.3827	1214.2135	6.6727	9.8912	122.7568	2460.3257	13.4769	3.8947	8.536
	19.6480	27.4399	1221.8514	6.6866	9.9114	123.2772	2475.8021	13.5051	3.9052	8.559
L8	19.6546	26.3387	1175.1703	6.6933	9.9114	118.5674	2381.2137	12.9631	3.9554	9.041
	20.4622	27.4375	1328.4727	6.9726	10.3155	128.7847	2691.8458	13.5039	4.1645	9.519
L9	20.4644	27.0542	1310.7555	6.9748	10.3155	127.0672	2655.9461	13.3153	4.1812	9.696
	21.2719	28.1374	1474.5724	7.2541	10.7195	137.5599	2987.8834	13.8484	4.3902	10.18
L10	21.2741	27.7381	1454.5469	7.2563	10.7195	135.6918	2947.3063	13.6519	4.4070	10.369
	21.3952	27.8982	1479.8811	7.2982	10.7801	137.2790	2998.6402	13.7307	4.4383	10.443
L11	21.1703	67.5646	3363.3581	7.0700	10.7801	311.9970	6815.0753	33.2532	2.7298	2.569
	21.2107	67.6980	3383.3236	7.0839	10.8003	313.2620	6855.5310	33.3189	2.7403	2.579
L12	21.2195	66.1886	3316.2538	7.0929	10.8003	307.0520	6719.6294	32.5760	2.8073	2.706
	21.6233	67.4915	3515.9709	7.2325	11.0023	319.5663	7124.3103	33.2173	2.9118	2.807
L13	21.6100	69.8011	3622.8051	7.2191	11.0023	329.2765	7340.7852	34.3540	2.8113	2.615
	22.0825	71.3810	3874.4021	7.3825	11.2387	344.7365	7850.5890	35.1315	2.9336	2.729
L14	22.2677	37.4503	2137.5378	7.5704	11.2387	190.1938	4331.2311	18.4319	4.3406	7.892
	22.3107	37.5238	2150.1446	7.5853	11.2602	190.9504	4356.7758	18.4681	4.3518	7.912
L15	22.3151	36.6926	2104.9988	7.5897	11.2602	186.9411	4265.2983	18.0590	4.3853	8.159
	23.1742	38.1288	2361.9791	7.8868	11.6901	202.0500	4786.0100	18.7658	4.6076	8.572
L16	23.1786	37.2632	2310.9787	7.8913	11.6901	197.6873	4682.6693	18.3398	4.6411	8.84
	24.0377	38.6660	2581.9239	8.1884	12.1199	213.0315	5231.6778	19.0302	4.8635	9.264
L17	24.0399	38.2161	2553.2786	8.1906	12.1199	210.6680	5173.6347	18.8088	4.8803	9.408
	24.3835	38.7706	2666.0281	8.3094	12.2919	216.8939	5402.0958	19.0817	4.9692	9.579
L18	24.3372	48.3053	3284.2154	8.2624	12.2919	267.1863	6654.7107	23.7744	4.6175	7.104
	24.3802	48.3921	3301.9597	8.2773	12.3133	268.1610	6690.6656	23.8171	4.6286	7.121
L19	24.3890	46.5812	3185.2714	8.2862	12.3133	258.6844	6454.2234	22.9259	4.6956	7.513
	25.2481	48.2512	3540.2910	8.5833	12.7432	277.8182	7173.5894	23.7478	4.9180	7.869
L20	25.2481	48.2512	3540.2910	8.5833	12.7432	277.8182	7173.5894	23.7478	4.9180	7.869
	25.4337	48.6119	3620.2867	8.6475	12.8360	282.0408	7335.6824	23.9253	4.9660	7.946
L21	25.4337	48.6119	3620.2867	8.6475	12.8360	282.0408	7335.6824	23.9253	4.9660	7.946
	25.5913	48.9184	3689.1827	8.7020	12.9149	285.6529	7475.2843	24.0761	5.0068	8.011
L22	25.6045	46.0542	3483.9065	8.7154	12.9149	269.7584	7059.3391	22.6665	5.1073	8.693
	25.6474	46.1325	3501.7005	8.7302	12.9363	270.6870	7095.3946	22.7050	5.1184	8.712
L23	25.6518	45.1741	3432.4691	8.7347	12.9363	265.3353	6955.1131	22.2333	5.1519	8.96
	25.9945	45.7870	3574.0763	8.8532	13.1078	272.6677	7242.0475	22.5349	5.2406	9.114
L24	25.9239	61.2138	4701.2984	8.7816	13.1078	358.6639	9526.1052	30.1275	4.7046	6.071
	25.9668	61.3170	4725.1290	8.7964	13.1292	359.8935	9574.3924	30.1784	4.7157	6.085
L25	25.9712	60.3587	4656.0159	8.8009	13.1292	354.6294	9434.3506	29.7067	4.7492	6.229
	26.3567	61.2730	4870.8238	8.9342	13.3221	365.6187	9869.6096	30.1567	4.8490	6.359
L26	26.3346	66.1294	5230.5754	8.9118	13.3221	392.6227	10598.5638	32.5469	4.6815	5.675
	26.3775	66.2393	5256.7007	8.9267	13.3436	393.9500	10651.5008	32.6010	4.6926	5.688
L27	26.4392	52.5548	4229.4584	8.9893	13.3436	316.9659	8570.0293	25.8659	5.1616	7.941
	26.4820	52.6414	4250.4011	9.0041	13.3650	318.0246	8612.4649	25.9085	5.1727	7.958
L28	26.4865	51.6547	4174.8811	9.0086	13.3650	312.3740	8459.4409	25.4229	5.2062	8.167
	27.3432	53.3534	4600.4593	9.3049	13.7937	333.5196	9321.7778	26.2589	5.4280	8.514
L29	27.3476	52.3325	4516.7647	9.3093	13.7937	327.4520	9152.1899	25.7564	5.4615	8.738
	28.6327	54.8306	5194.9608	9.7537	14.4367	359.8451	10526.3990	26.9859	5.7942	9.271
L30	28.0585	55.7380	4856.8825	9.3539	13.8776	349.9801	9841.3607	27.4326	5.4044	8.158
	28.2175	57.2121	5252.5019	9.6013	14.2355	368.9712	10642.9930	28.1581	5.5896	8.437
L31	28.2175	57.2121	5252.5019	9.6013	14.2355	368.9712	10642.9930	28.1581	5.5896	8.437
	29.0123	58.8500	5716.6389	9.8761	14.6332	390.6613	11583.4603	28.9642	5.7954	8.748
L32	29.0167	57.7657	5616.4055	9.8806	14.6332	383.8116	11380.3602	28.4305	5.8289	8.967
	29.8116	59.3727	6098.2815	10.1555	15.0309	405.7152	12356.7717	29.2214	6.0346	9.284
L33	29.8160	58.2566	5988.9169	10.1600	15.0309	398.4392	12135.1694	28.6721	6.0681	9.519
	30.3851	59.3850	6343.7225	10.3568	15.3157	414.1974	12854.1016	29.2275	6.2155	9.75
L34	30.3851	59.3850	6343.7225	10.3568	15.3157	414.1974	12854.1016	29.2275	6.2155	9.75
	30.4249	59.4638	6369.0098	10.3705	15.3356	415.3092	12905.3405	29.2663	6.2257	9.766
L35	30.4293	58.3230	6252.2140	10.3750	15.3356	407.6932	12668.6806	28.7048	6.2592	10.015
	31.2241	59.8681	6762.4103	10.6498	15.7333	429.8154	13702.4767	29.4653	6.4650	10.344
L36	31.2241	59.8681	6762.4103	10.6498	15.7333	429.8154	13702.4767	29.4653	6.4650	10.344
	31.7010	60.7952	7081.4564	10.8148	15.9719	443.3694	14348.9505	29.9216	6.5885	10.542

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	<p style="text-align: center;">Job</p> <p style="text-align: center;">Old Saybrook (BU 841289)</p>	<p style="text-align: center;">Page</p> <p style="text-align: center;">5 of 42</p>
	<p style="text-align: center;">Project</p> <p style="text-align: center;">TEP No. 55790.922308</p>	<p style="text-align: center;">Date</p> <p style="text-align: center;">16:53:08 01/29/24</p>
	<p style="text-align: center;">Client</p> <p style="text-align: center;">Crown Castle</p>	<p style="text-align: center;">Designed by</p> <p style="text-align: center;">RTP</p>

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
L37	31.8113	30.7121	3651.7518	10.9266	15.9719	228.6359	7399.4391	15.1155	7.4260	23.763
	31.8510	30.7507	3665.5482	10.9404	15.9918	229.2143	7427.3944	15.1346	7.4362	23.796
L38	31.8510	30.7507	3665.5482	10.9404	15.9918	229.2143	7427.3944	15.1346	7.4362	23.796
	32.4074	31.2915	3862.3622	11.1328	16.2702	237.3889	7826.1929	15.4007	7.5803	24.257
L39	32.4074	31.2915	3862.3622	11.1328	16.2702	237.3889	7826.1929	15.4007	7.5803	24.257
	32.4472	31.3301	3876.6838	11.1465	16.2901	237.9782	7855.2123	15.4197	7.5906	24.29
L40	32.4472	31.3301	3876.6838	11.1465	16.2901	237.9782	7855.2123	15.4197	7.5906	24.29
	32.7651	31.6391	3992.5331	11.2565	16.4492	242.7196	8089.9544	15.5718	7.6729	24.553
L41	32.6681	58.9614	7310.7362	11.1580	16.4492	444.4444	14813.5337	29.0190	6.9359	11.806
	32.7078	59.0340	7337.7830	11.1718	16.4690	445.5500	14868.3377	29.0547	6.9462	11.823
L42	32.7078	59.0340	7337.7830	11.1718	16.4690	445.5500	14868.3377	29.0547	6.9462	11.823
	33.5027	60.4864	7892.8180	11.4466	16.8667	467.9514	15992.9890	29.7696	7.1519	12.173
L43	33.5027	60.4864	7892.8180	11.4466	16.8667	467.9514	15992.9890	29.7696	7.1519	12.173
	34.2053	61.7704	8406.1862	11.6896	17.2183	488.2118	17033.2123	30.4015	7.3338	12.483
L44	33.6239	38.1566	4863.1887	11.3127	16.5629	293.6197	9854.1388	18.7795	7.5642	20.171
	33.7807	39.1017	5233.5961	11.5929	16.9683	308.4331	10604.6847	19.2447	7.7740	20.731
L45	33.7807	39.1017	5233.5961	11.5929	16.9683	308.4331	10604.6847	19.2447	7.7740	20.731
	34.5644	40.0158	5609.2705	11.8639	17.3605	323.1063	11365.9028	19.6946	7.9769	21.272
L46	34.5644	40.0158	5609.2705	11.8639	17.3605	323.1063	11365.9028	19.6946	7.9769	21.272
	35.3480	40.9299	6002.5055	12.1349	17.7526	338.1204	12162.7036	20.1444	8.1797	21.813
L47	35.3480	40.9299	6002.5055	12.1349	17.7526	338.1204	12162.7036	20.1444	8.1797	21.813
	36.1317	41.8439	6413.7024	12.4059	18.1447	353.4755	12995.8999	20.5943	8.3826	22.354
L48	36.1317	41.8439	6413.7024	12.4059	18.1447	353.4755	12995.8999	20.5943	8.3826	22.354
	36.9154	42.7580	6843.2622	12.6769	18.5368	369.1716	13866.3045	21.0442	8.5855	22.895
L49	36.9154	42.7580	6843.2622	12.6769	18.5368	369.1716	13866.3045	21.0442	8.5855	22.895
	37.6991	43.6720	7291.5861	12.9479	18.9289	385.2088	14774.7303	21.4940	8.7883	23.436
L50	37.6991	43.6720	7291.5861	12.9479	18.9289	385.2088	14774.7303	21.4940	8.7883	23.436
	38.4828	44.5861	7759.0752	13.2189	19.3210	401.5869	15721.9899	21.9439	8.9912	23.977
L51	38.4828	44.5861	7759.0752	13.2189	19.3210	401.5869	15721.9899	21.9439	8.9912	23.977
	38.5612	44.6775	7806.8936	13.2460	19.3603	403.2434	15818.8830	21.9889	9.0115	24.031

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	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				1	1	1			
150.00-145.00									
L2				1	1	1			
145.00-140.00									
L3				1	1	1			
140.00-135.00									
L4				1	1	1			
135.00-130.00									
L5				1	1	1			
130.00-125.00									
L6				1	1	1			
125.00-123.75									
L7				1	1	0.909561			
123.75-123.50									
L8				1	1	0.926805			
123.50-118.50									
L9				1	1	0.92049			
118.50-113.50									
L10				1	1	0.930911			
113.50-112.75									
L11				1	1	0.544845			
112.75-112.50									
L12				1	1	0.550001			
112.50-110.00									
L13				1	1	0.583829			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	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
L43 35.92-31.50				1	1	0.939561			
L44 31.50-30.50				1	1	1			
L45 30.50-25.50				1	1	1			
L46 25.50-20.50				1	1	1			
L47 20.50-15.50				1	1	1			
L48 15.50-10.50				1	1	1			
L49 10.50-5.50				1	1	1			
L50 5.50-0.50				1	1	1			
L51 0.50-0.00				1	1	1			

Guy Data

Guy Elevation	Guy Grade	Guy Size	Initial Tension	%	Guy Modulus	Guy Weight	L_u	Anchor Radius	Anchor Azimuth Adj.	Anchor Elevation	End Fitting Efficiency
ft			K		ksi	plf	ft	ft	°	ft	%
88.67	BS	A 1 5/8	38.88	12%	24000	5.550	90.69	20.50	15.0000	0.00	100%
		B 1 3/8	27.84	12%	24000	3.970	97.79	42.50	15.0000	0.00	100%
		C 1 3/8	27.84	12%	24000	3.970	97.58	42.00	-15.0000	0.00	100%

Guy Data(cont'd)

Guy Elevation	Mount Type	Torque-Arm Spread	Torque-Arm Leg Angle	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
ft		ft	°				
88.67	Corner						

Guy Data (cont'd)

Guy Elevation	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
ft								
88.67	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	

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Guy Data (cont'd)

Guy Elevation ft	Cable Weight	Cable Weight	Cable Weight	Cable Weight	Tower Intercept	Tower Intercept	Tower Intercept	Tower Intercept
	A	B	C	D	A	B	C	D
88.67	K	K	K	K	ft	ft	ft	ft
	0.50	0.39	0.39		0.58	0.68	0.68	
					1.3 sec/pulse	1.4 sec/pulse	1.4 sec/pulse	

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
88.67	No	No			1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
88.67	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z ksf	q _z Ice ksf	Ice Thickness in
88.67	A	44.34	0	0	0.8755
	B	44.34	0	0	0.8755
	C	44.34	0	0	0.8755

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F _x K	F _y K	F _z K	M _x kip-ft	M _y kip-ft	M _z kip-ft
88.67	A	77.6172	39.37 38.88	2.07	38.47	-8.13	-38.49	0.00	-9.78
	B	64.9363	28.19 27.84	8.44	25.57	8.34	18.55	0.00	-18.79
	C	65.2020	28.19 27.84	-8.36	25.63	8.26	18.59	0.00	18.83

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			Sum:	2.15	89.67	8.46	-1.35	0.00	-9.74

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
88.67	A	77.6172	51.91 51.19	2.72	50.72	-10.71	-50.76	0.00	-12.89
	B	64.9363	37.14 36.58	11.11	33.70	10.97	24.45	0.00	-24.76
	C	65.2020	37.14 36.58	-11.00	33.77	10.86	24.50	0.00	24.81
			Sum:	2.83	118.20	11.12	-1.81	0.00	-12.84

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
88.67	A	77.6172	39.37 38.88	2.07	38.47	-8.13	-38.49	0.00	-9.78
	B	64.9363	28.19 27.84	8.44	25.57	8.34	18.55	0.00	-18.79
	C	65.2020	28.19 27.84	-8.36	25.63	8.26	18.59	0.00	18.83
			Sum:	2.15	89.67	8.46	-1.35	0.00	-9.74

Guy-Tensioning Information

		Temperature At Time Of Tensioning															
Guy Elevation	H	V	0 F		20 F		40 F		60 F		80 F		100 F		120 F		
			Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	
ft	ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	
88.67	A	19.47	88.67	39.565	0.57	39.337	0.58	39.108	0.58	38.880	0.58	38.652	0.59	38.424	0.59	38.196	0.59
	B	41.47	88.67	29.736	0.63	29.104	0.65	28.472	0.66	27.840	0.68	27.209	0.69	26.577	0.71	25.947	0.73
	C	40.97	88.67	29.699	0.63	29.079	0.65	28.459	0.66	27.840	0.68	27.221	0.69	26.602	0.71	25.984	0.72

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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 klf
140										
LDF6-50A(1-1/4)	A	No	Surface Ar (CaAa)	140.00 - 0.00	6	5	-0.250 -0.250	1.5500		0.00
HCS 6X12 4AWG(1-5/8)	A	No	Surface Ar (CaAa)	140.00 - 0.00	4	4	-0.250 -0.250	1.6600		0.00
***71**										
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	71.00 - 0.00	2	2	0.000 0.000	0.6250		0.00
22										
ATCB-B01(5/16)	C	No	Surface Ar (CaAa)	22.00 - 0.00	1	1	0.000 0.000	0.3150		0.00

PL 1x4	A	No	Surface Af (CaAa)	96.75 - 71.75	1	1	0.000 0.000	4.0000	10.0000	0.00
PL 1x4	C	No	Surface Af (CaAa)	96.75 - 71.75	1	1	0.000 0.000	4.0000	10.0000	0.00
**										
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	85.00 - 50.00	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	85.00 - 50.00	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	85.00 - 50.00	1	1	0.250 0.250	6.0000	14.0000	0.00
**										
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	110.00 - 85.00	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	110.00 - 85.00	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	110.00 - 80.00	1	1	0.000 0.000	6.5000	15.5000	0.00
**										
(Area) CCI-65FP-045100 (H)	A	No	Surface Af (CaAa)	125.75 - 110.75	1	1	0.250 0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	C	No	Surface Af (CaAa)	125.75 - 110.75	1	1	0.250 0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	B	No	Surface Af (CaAa)	125.75 - 110.75	1	1	0.250 0.250	4.5000	11.0000	0.00
**										
FJ CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	116.92 - 103.08	1	1	0.500 0.500	6.5000	15.5000	0.00
FJ CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	116.92 - 103.08	1	1	0.500 0.500	6.5000	15.5000	0.00
FJ CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	116.92 - 103.08	1	1	0.500 0.500	6.5000	15.5000	0.00
**										
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	50.00 - 29.92	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	50.00 - 29.92	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	50.00 - 29.92	1	1	0.250 0.250	6.5000	15.5000	0.00
**										
(Area) CCI-65FP-045100 (H)	A	No	Surface Af (CaAa)	87.00 - 41.92	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	C	No	Surface Af (CaAa)	87.00 - 41.92	1	1	-0.250 -0.250	4.5000	11.0000	0.00

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Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
149									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	149.00 - 0.00	12	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	149.00 - 0.00	3	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	149.00 - 0.00	6	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
130									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	130.00 - 0.00	11	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
HB158-21U6S12-XXM-01(1-5/8)	C	No	No	Inside Pole	130.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	150.00-145.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L2	145.00-140.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L3	140.00-135.00	A	0.000	0.000	7.195	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L4	135.00-130.00	A	0.000	0.000	7.195	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L5	130.00-125.00	A	0.000	0.000	7.757	0.000	0.07
		B	0.000	0.000	0.562	0.000	0.00
		C	0.000	0.000	0.562	0.000	0.11
L6	125.00-123.75	A	0.000	0.000	2.736	0.000	0.02
		B	0.000	0.000	0.938	0.000	0.00
		C	0.000	0.000	0.938	0.000	0.03
L7	123.75-123.50	A	0.000	0.000	0.547	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.01
L8	123.50-118.50	A	0.000	0.000	10.945	0.000	0.07
		B	0.000	0.000	3.750	0.000	0.00
		C	0.000	0.000	3.750	0.000	0.11
L9	118.50-113.50	A	0.000	0.000	14.650	0.000	0.07
		B	0.000	0.000	7.455	0.000	0.00

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L10	113.50-112.75	C	0.000	0.000	7.455	0.000	0.11
		A	0.000	0.000	2.454	0.000	0.01
		B	0.000	0.000	1.375	0.000	0.00
L11	112.75-112.50	C	0.000	0.000	1.375	0.000	0.02
		A	0.000	0.000	0.818	0.000	0.00
		B	0.000	0.000	0.458	0.000	0.00
L12	112.50-110.00	C	0.000	0.000	0.458	0.000	0.01
		A	0.000	0.000	7.618	0.000	0.03
		B	0.000	0.000	4.021	0.000	0.00
L13	110.00-107.25	C	0.000	0.000	4.021	0.000	0.05
		A	0.000	0.000	9.916	0.000	0.04
		B	0.000	0.000	5.958	0.000	0.00
L14	107.25-107.00	C	0.000	0.000	5.958	0.000	0.06
		A	0.000	0.000	0.901	0.000	0.00
		B	0.000	0.000	0.542	0.000	0.00
L15	107.00-102.00	C	0.000	0.000	0.542	0.000	0.01
		A	0.000	0.000	16.858	0.000	0.07
		B	0.000	0.000	9.663	0.000	0.00
L16	102.00-97.00	C	0.000	0.000	9.663	0.000	0.11
		A	0.000	0.000	12.612	0.000	0.07
		B	0.000	0.000	5.417	0.000	0.00
L17	97.00-95.00	C	0.000	0.000	5.417	0.000	0.11
		A	0.000	0.000	6.211	0.000	0.03
		B	0.000	0.000	2.167	0.000	0.00
L18	95.00-94.75	C	0.000	0.000	3.333	0.000	0.04
		A	0.000	0.000	0.797	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
L19	94.75-89.75	C	0.000	0.000	0.438	0.000	0.01
		A	0.000	0.000	15.945	0.000	0.07
		B	0.000	0.000	5.417	0.000	0.00
L20	89.75-88.67	C	0.000	0.000	8.750	0.000	0.11
		A	0.000	0.000	3.444	0.000	0.01
		B	0.000	0.000	1.170	0.000	0.00
L21	88.67-87.75	C	0.000	0.000	1.890	0.000	0.02
		A	0.000	0.000	2.934	0.000	0.01
		B	0.000	0.000	0.997	0.000	0.00
L22	87.75-87.50	C	0.000	0.000	1.610	0.000	0.02
		A	0.000	0.000	0.797	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
L23	87.50-85.50	C	0.000	0.000	0.438	0.000	0.01
		A	0.000	0.000	7.503	0.000	0.03
		B	0.000	0.000	2.167	0.000	0.00
L24	85.50-85.25	C	0.000	0.000	4.625	0.000	0.04
		A	0.000	0.000	0.985	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
L25	85.25-83.00	C	0.000	0.000	0.625	0.000	0.01
		A	0.000	0.000	8.696	0.000	0.03
		B	0.000	0.000	4.438	0.000	0.00
L26	83.00-82.75	C	0.000	0.000	5.458	0.000	0.05
		A	0.000	0.000	0.964	0.000	0.00
		B	0.000	0.000	0.521	0.000	0.00
L27	82.75-82.50	C	0.000	0.000	0.604	0.000	0.01
		A	0.000	0.000	0.964	0.000	0.00
		B	0.000	0.000	0.521	0.000	0.00
L28	82.50-77.50	C	0.000	0.000	0.604	0.000	0.01
		A	0.000	0.000	19.278	0.000	0.07
		B	0.000	0.000	7.708	0.000	0.00
L29	77.50-70.00	C	0.000	0.000	12.083	0.000	0.11
		A	0.000	0.000	27.751	0.000	0.10
		B	0.000	0.000	7.500	0.000	0.00
		C	0.000	0.000	17.083	0.000	0.16

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job Old Saybrook (BU 841289)	Page 13 of 42
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	Client Crown Castle	Designed by RTP

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L30	70.00-69.00	A	0.000	0.000	3.189	0.000	0.01
		B	0.000	0.000	1.000	0.000	0.00
		C	0.000	0.000	1.875	0.000	0.02
L31	69.00-64.00	A	0.000	0.000	15.945	0.000	0.07
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	9.375	0.000	0.11
L32	64.00-59.00	A	0.000	0.000	15.945	0.000	0.07
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	9.375	0.000	0.11
L33	59.00-55.42	A	0.000	0.000	11.417	0.000	0.05
		B	0.000	0.000	3.580	0.000	0.00
		C	0.000	0.000	6.713	0.000	0.08
L34	55.42-55.17	A	0.000	0.000	0.797	0.000	0.00
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.469	0.000	0.01
L35	55.17-50.17	A	0.000	0.000	15.945	0.000	0.07
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	9.375	0.000	0.11
L36	50.17-47.17	A	0.000	0.000	9.803	0.000	0.04
		B	0.000	0.000	3.236	0.000	0.00
		C	0.000	0.000	5.861	0.000	0.06
L37	47.17-46.92	A	0.000	0.000	0.818	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
		C	0.000	0.000	0.490	0.000	0.01
L38	46.92-43.42	A	0.000	0.000	11.453	0.000	0.05
		B	0.000	0.000	3.792	0.000	0.00
		C	0.000	0.000	6.854	0.000	0.08
L39	43.42-43.17	A	0.000	0.000	0.818	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
		C	0.000	0.000	0.490	0.000	0.01
L40	43.17-41.17	A	0.000	0.000	5.982	0.000	0.03
		B	0.000	0.000	2.167	0.000	0.00
		C	0.000	0.000	3.354	0.000	0.04
L41	41.17-40.92	A	0.000	0.000	0.631	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
		C	0.000	0.000	0.302	0.000	0.01
L42	40.92-35.92	A	0.000	0.000	12.612	0.000	0.07
		B	0.000	0.000	5.417	0.000	0.00
		C	0.000	0.000	6.042	0.000	0.11
L43	35.92-31.50	A	0.000	0.000	11.149	0.000	0.06
		B	0.000	0.000	4.788	0.000	0.00
		C	0.000	0.000	5.341	0.000	0.10
L44	31.50-30.50	A	0.000	0.000	2.522	0.000	0.01
		B	0.000	0.000	1.083	0.000	0.00
		C	0.000	0.000	1.208	0.000	0.02
L45	30.50-25.50	A	0.000	0.000	7.823	0.000	0.07
		B	0.000	0.000	0.628	0.000	0.00
		C	0.000	0.000	1.253	0.000	0.11
L46	25.50-20.50	A	0.000	0.000	7.195	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.672	0.000	0.11
L47	20.50-15.50	A	0.000	0.000	7.195	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.11
L48	15.50-10.50	A	0.000	0.000	7.195	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.11
L49	10.50-5.50	A	0.000	0.000	7.195	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.11
L50	5.50-0.50	A	0.000	0.000	7.195	0.000	0.07

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	Client Crown Castle	Designed by RTP

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L51	0.50-0.00	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.11
		A	0.000	0.000	0.720	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.078	0.000	0.01

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	150.00-145.00	A	0.987	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L2	145.00-140.00	A	0.984	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L3	140.00-135.00	A	0.980	0.000	0.000	11.445	0.000	0.15
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L4	135.00-130.00	A	0.977	0.000	0.000	11.436	0.000	0.15
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L5	130.00-125.00	A	0.973	0.000	0.000	12.135	0.000	0.16
		B		0.000	0.000	0.708	0.000	0.00
		C		0.000	0.000	0.708	0.000	0.11
L6	125.00-123.75	A	0.971	0.000	0.000	4.035	0.000	0.04
		B		0.000	0.000	1.180	0.000	0.01
		C		0.000	0.000	1.180	0.000	0.03
L7	123.75-123.50	A	0.970	0.000	0.000	0.807	0.000	0.01
		B		0.000	0.000	0.236	0.000	0.00
		C		0.000	0.000	0.236	0.000	0.01
L8	123.50-118.50	A	0.968	0.000	0.000	16.131	0.000	0.18
		B		0.000	0.000	4.718	0.000	0.03
		C		0.000	0.000	4.718	0.000	0.13
L9	118.50-113.50	A	0.964	0.000	0.000	20.180	0.000	0.20
		B		0.000	0.000	8.777	0.000	0.05
		C		0.000	0.000	8.777	0.000	0.16
L10	113.50-112.75	A	0.961	0.000	0.000	3.307	0.000	0.03
		B		0.000	0.000	1.597	0.000	0.01
		C		0.000	0.000	1.597	0.000	0.03
L11	112.75-112.50	A	0.961	0.000	0.000	1.102	0.000	0.01
		B		0.000	0.000	0.532	0.000	0.00
		C		0.000	0.000	0.532	0.000	0.01
L12	112.50-110.00	A	0.960	0.000	0.000	10.314	0.000	0.10
		B		0.000	0.000	4.617	0.000	0.03
		C		0.000	0.000	4.617	0.000	0.08
L13	110.00-107.25	A	0.958	0.000	0.000	13.034	0.000	0.12
		B		0.000	0.000	6.771	0.000	0.04
		C		0.000	0.000	6.771	0.000	0.10
L14	107.25-107.00	A	0.956	0.000	0.000	1.185	0.000	0.01
		B		0.000	0.000	0.615	0.000	0.00
		C		0.000	0.000	0.615	0.000	0.01
L15	107.00-102.00	A	0.954	0.000	0.000	22.402	0.000	0.21
		B		0.000	0.000	11.023	0.000	0.06
		C		0.000	0.000	11.023	0.000	0.17
L16	102.00-97.00	A	0.949	0.000	0.000	17.733	0.000	0.19
		B		0.000	0.000	6.366	0.000	0.04

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	Old Saybrook (BU 841289)	Page	15 of 42
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	Client	Crown Castle	Designed by	RTP

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
L17	97.00-95.00	C		0.000	0.000	6.366	0.000	0.14
		A	0.946	0.000	0.000	8.586	0.000	0.08
		B		0.000	0.000	2.545	0.000	0.01
		C		0.000	0.000	4.043	0.000	0.07
L18	95.00-94.75	A	0.945	0.000	0.000	1.100	0.000	0.01
		B		0.000	0.000	0.318	0.000	0.00
		C		0.000	0.000	0.532	0.000	0.01
L19	94.75-89.75	A	0.942	0.000	0.000	21.983	0.000	0.21
		B		0.000	0.000	6.359	0.000	0.03
		C		0.000	0.000	10.634	0.000	0.17
L20	89.75-88.67	A	0.939	0.000	0.000	4.745	0.000	0.05
		B		0.000	0.000	1.373	0.000	0.01
		C		0.000	0.000	2.296	0.000	0.04
L21	88.67-87.75	A	0.938	0.000	0.000	4.041	0.000	0.04
		B		0.000	0.000	1.169	0.000	0.01
		C		0.000	0.000	1.955	0.000	0.03
L22	87.75-87.50	A	0.937	0.000	0.000	1.098	0.000	0.01
		B		0.000	0.000	0.318	0.000	0.00
		C		0.000	0.000	0.531	0.000	0.01
L23	87.50-85.50	A	0.936	0.000	0.000	10.188	0.000	0.09
		B		0.000	0.000	2.541	0.000	0.01
		C		0.000	0.000	5.655	0.000	0.07
L24	85.50-85.25	A	0.935	0.000	0.000	1.332	0.000	0.01
		B		0.000	0.000	0.318	0.000	0.00
		C		0.000	0.000	0.765	0.000	0.01
L25	85.25-83.00	A	0.933	0.000	0.000	11.816	0.000	0.10
		B		0.000	0.000	5.231	0.000	0.03
		C		0.000	0.000	6.718	0.000	0.09
L26	83.00-82.75	A	0.932	0.000	0.000	1.310	0.000	0.01
		B		0.000	0.000	0.614	0.000	0.00
		C		0.000	0.000	0.744	0.000	0.01
L27	82.75-82.50	A	0.932	0.000	0.000	1.310	0.000	0.01
		B		0.000	0.000	0.614	0.000	0.00
		C		0.000	0.000	0.744	0.000	0.01
L28	82.50-77.50	A	0.929	0.000	0.000	26.185	0.000	0.23
		B		0.000	0.000	9.101	0.000	0.05
		C		0.000	0.000	14.869	0.000	0.19
L29	77.50-70.00	A	0.921	0.000	0.000	37.726	0.000	0.33
		B		0.000	0.000	8.882	0.000	0.05
		C		0.000	0.000	21.168	0.000	0.28
L30	70.00-69.00	A	0.916	0.000	0.000	4.378	0.000	0.04
		B		0.000	0.000	1.184	0.000	0.01
		C		0.000	0.000	2.505	0.000	0.04
L31	69.00-64.00	A	0.912	0.000	0.000	21.846	0.000	0.20
		B		0.000	0.000	5.912	0.000	0.03
		C		0.000	0.000	12.494	0.000	0.18
L32	64.00-59.00	A	0.905	0.000	0.000	21.814	0.000	0.20
		B		0.000	0.000	5.905	0.000	0.03
		C		0.000	0.000	12.471	0.000	0.17
L33	59.00-55.42	A	0.898	0.000	0.000	15.598	0.000	0.14
		B		0.000	0.000	4.223	0.000	0.02
		C		0.000	0.000	8.914	0.000	0.12
L34	55.42-55.17	A	0.895	0.000	0.000	1.089	0.000	0.01
		B		0.000	0.000	0.295	0.000	0.00
		C		0.000	0.000	0.622	0.000	0.01
L35	55.17-50.17	A	0.891	0.000	0.000	21.752	0.000	0.20
		B		0.000	0.000	5.891	0.000	0.03
		C		0.000	0.000	12.426	0.000	0.17
L36	50.17-47.17	A	0.884	0.000	0.000	13.268	0.000	0.12
		B		0.000	0.000	3.766	0.000	0.02
		C		0.000	0.000	7.678	0.000	0.11

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	Client Crown Castle	Designed by RTP

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
L37	47.17-46.92	A	0.881	0.000	0.000	1.106	0.000	0.01
		B		0.000	0.000	0.315	0.000	0.00
		C		0.000	0.000	0.641	0.000	0.01
L38	46.92-43.42	A	0.877	0.000	0.000	15.475	0.000	0.14
		B		0.000	0.000	4.406	0.000	0.02
		C		0.000	0.000	8.959	0.000	0.12
L39	43.42-43.17	A	0.873	0.000	0.000	1.105	0.000	0.01
		B		0.000	0.000	0.315	0.000	0.00
		C		0.000	0.000	0.639	0.000	0.01
L40	43.17-41.17	A	0.871	0.000	0.000	8.139	0.000	0.08
		B		0.000	0.000	2.515	0.000	0.01
		C		0.000	0.000	4.418	0.000	0.07
L41	41.17-40.92	A	0.869	0.000	0.000	0.873	0.000	0.01
		B		0.000	0.000	0.314	0.000	0.00
		C		0.000	0.000	0.408	0.000	0.01
L42	40.92-35.92	A	0.863	0.000	0.000	17.431	0.000	0.17
		B		0.000	0.000	6.280	0.000	0.03
		C		0.000	0.000	8.140	0.000	0.15
L43	35.92-31.50	A	0.852	0.000	0.000	15.374	0.000	0.15
		B		0.000	0.000	5.541	0.000	0.03
		C		0.000	0.000	7.173	0.000	0.13
L44	31.50-30.50	A	0.845	0.000	0.000	3.478	0.000	0.03
		B		0.000	0.000	1.254	0.000	0.01
		C		0.000	0.000	1.623	0.000	0.03
L45	30.50-25.50	A	0.836	0.000	0.000	11.809	0.000	0.14
		B		0.000	0.000	0.725	0.000	0.00
		C		0.000	0.000	2.552	0.000	0.12
L46	25.50-20.50	A	0.820	0.000	0.000	11.043	0.000	0.14
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.099	0.000	0.12
L47	20.50-15.50	A	0.800	0.000	0.000	10.994	0.000	0.14
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.739	0.000	0.12
L48	15.50-10.50	A	0.774	0.000	0.000	10.930	0.000	0.13
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.681	0.000	0.12
L49	10.50-5.50	A	0.738	0.000	0.000	10.838	0.000	0.13
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.598	0.000	0.12
L50	5.50-0.50	A	0.669	0.000	0.000	10.665	0.000	0.13
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.443	0.000	0.12
L51	0.50-0.00	A	0.522	0.000	0.000	1.030	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.211	0.000	0.01

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	0.0000	0.0000	0.0000	0.0000
L2	145.00-140.00	0.0000	0.0000	0.0000	0.0000
L3	140.00-135.00	-4.3763	0.0000	-4.3267	0.0000
L4	135.00-130.00	-4.4398	0.0000	-4.4312	0.0000
L5	130.00-125.00	-4.0883	0.0000	-4.1947	0.0000
L6	125.00-123.75	-2.7298	0.0000	-2.9990	0.0000

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Section	Elevation ft	CP _x	CP _z	CP _x	CP _z
		in	in	Ice in	Ice in
L7	123.75-123.50	-2.7434	0.0000	-3.0144	0.0000
L8	123.50-118.50	-2.7744	0.0000	-3.0556	0.0000
L9	118.50-113.50	-2.0299	0.0000	-2.4050	0.0000
L10	113.50-112.75	-1.8110	0.0000	-2.1958	0.0000
L11	112.75-112.50	-1.8097	0.0000	-2.1954	0.0000
L12	112.50-110.00	-1.9694	0.0000	-2.3826	0.0000
L13	110.00-107.25	-1.8180	-1.1544	-2.2107	-1.0681
L14	107.25-107.00	-1.8375	-1.1677	-2.2349	-1.0807
L15	107.00-102.00	-2.0110	-1.2796	-2.4213	-1.1726
L16	102.00-97.00	-2.8436	-1.8139	-3.2508	-1.5787
L17	97.00-95.00	-3.2279	-1.1498	-3.5772	-0.9744
L18	95.00-94.75	-3.2867	-1.0733	-3.6311	-0.9039
L19	94.75-89.75	-3.3243	-1.0867	-3.6772	-0.9166
L20	89.75-88.67	-3.3677	-1.1022	-3.7305	-0.9314
L21	88.67-87.75	-3.3846	-1.1081	-3.7479	-0.9362
L22	87.75-87.50	-3.3943	-1.1115	-3.7576	-0.9389
L23	87.50-85.50	-3.0747	-0.1492	-3.4229	-0.0473
L24	85.50-85.25	-2.9975	0.1240	-3.3410	0.2091
L25	85.25-83.00	-1.6223	0.6816	-2.0835	0.7035
L26	83.00-82.75	-1.4706	0.7500	-1.9476	0.7652
L27	82.75-82.50	-1.4714	0.7505	-1.9490	0.7659
L28	82.50-77.50	-2.1820	1.1556	-2.6149	1.1303
L29	77.50-70.00	-2.9100	1.5912	-3.2923	1.5419
L30	70.00-69.00	-2.5171	1.5258	-2.8435	1.6436
L31	69.00-64.00	-2.5421	1.5425	-2.8757	1.6621
L32	64.00-59.00	-2.5830	1.5698	-2.9291	1.6943
L33	59.00-55.42	-2.6175	1.5929	-2.9744	1.7215
L34	55.42-55.17	-2.6328	1.6031	-2.9944	1.7334
L35	55.17-50.17	-2.6535	1.6169	-3.0216	1.7496
L36	50.17-47.17	-2.6178	1.5969	-3.0059	1.7411
L37	47.17-46.92	-2.6233	1.6010	-3.0164	1.7473
L38	46.92-43.42	-2.6376	1.6105	-3.0351	1.7584
L39	43.42-43.17	-2.6518	1.6199	-3.0538	1.7693
L40	43.17-41.17	-2.7854	1.1616	-3.2029	1.3586
L41	41.17-40.92	-3.0566	0.2515	-3.4868	0.5524
L42	40.92-35.92	-3.0837	0.2539	-3.5143	0.5557
L43	35.92-31.50	-3.1321	0.2581	-3.5628	0.5611
L44	31.50-30.50	-3.1159	0.2567	-3.5460	0.5583
L45	30.50-25.50	-5.1191	0.4220	-5.1135	0.7999
L46	25.50-20.50	-5.6319	0.4999	-5.4329	0.9814
L47	20.50-15.50	-5.6693	0.5854	-5.3916	1.2740
L48	15.50-10.50	-5.7321	0.5925	-5.4483	1.2690
L49	10.50-5.50	-5.7938	0.5995	-5.5044	1.2544
L50	5.50-0.50	-5.8544	0.6064	-5.5618	1.2123
L51	0.50-0.00	-5.8872	0.6101	-5.6026	1.0942

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
L3	6	LDf6-50A(1-1/4)	135.00 - 140.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L3	7	HCS 6X12 4AWG(1-5/8)	135.00 - 140.00	1.0000	1.0000
L4	6	LDF6-50A(1-1/4)	130.00 - 135.00	1.0000	1.0000
L4	7	HCS 6X12 4AWG(1-5/8)	130.00 - 135.00	1.0000	1.0000
L5	6	LDF6-50A(1-1/4)	125.00 - 130.00	1.0000	1.0000
L5	7	HCS 6X12 4AWG(1-5/8)	125.00 - 130.00	1.0000	1.0000
L5	31	(Area) CCI-65FP-045100 (H)	125.00 - 125.75	1.0000	1.0000
L5	32	(Area) CCI-65FP-045100 (H)	125.00 - 125.75	1.0000	1.0000
L5	33	(Area) CCI-65FP-045100 (H)	125.00 - 125.75	1.0000	1.0000
L6	6	LDF6-50A(1-1/4)	123.75 - 125.00	1.0000	1.0000
L6	7	HCS 6X12 4AWG(1-5/8)	123.75 - 125.00	1.0000	1.0000
L6	31	(Area) CCI-65FP-045100 (H)	123.75 - 125.00	1.0000	1.0000
L6	32	(Area) CCI-65FP-045100 (H)	123.75 - 125.00	1.0000	1.0000
L6	33	(Area) CCI-65FP-045100 (H)	123.75 - 125.00	1.0000	1.0000
L7	6	LDF6-50A(1-1/4)	123.50 - 123.75	1.0000	1.0000
L7	7	HCS 6X12 4AWG(1-5/8)	123.50 - 123.75	1.0000	1.0000
L7	31	(Area) CCI-65FP-045100 (H)	123.50 - 123.75	1.0000	1.0000
L7	32	(Area) CCI-65FP-045100 (H)	123.50 - 123.75	1.0000	1.0000
L7	33	(Area) CCI-65FP-045100 (H)	123.50 - 123.75	1.0000	1.0000
L8	6	LDF6-50A(1-1/4)	118.50 - 123.50	1.0000	1.0000
L8	7	HCS 6X12 4AWG(1-5/8)	118.50 - 123.50	1.0000	1.0000
L8	31	(Area) CCI-65FP-045100 (H)	118.50 - 123.50	1.0000	1.0000
L8	32	(Area) CCI-65FP-045100 (H)	118.50 - 123.50	1.0000	1.0000
L8	33	(Area) CCI-65FP-045100 (H)	118.50 - 123.50	1.0000	1.0000
L9	6	LDF6-50A(1-1/4)	113.50 - 118.50	1.0000	1.0000
L9	7	HCS 6X12 4AWG(1-5/8)	113.50 - 118.50	1.0000	1.0000
L9	31	(Area) CCI-65FP-045100 (H)	113.50 - 118.50	1.0000	1.0000
L9	32	(Area) CCI-65FP-045100 (H)	113.50 - 118.50	1.0000	1.0000
L9	33	(Area) CCI-65FP-045100 (H)	113.50 - 118.50	1.0000	1.0000
L9	35	FJ CCI-65FP-065125 (H)	113.50 - 116.92	1.0000	1.0000
L9	36	FJ CCI-65FP-065125 (H)	113.50 - 116.92	1.0000	1.0000
L9	37	FJ CCI-65FP-065125 (H)	113.50 - 116.92	1.0000	1.0000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
L10	6	LDF6-50A(1-1/4)	112.75 - 113.50	1.0000	1.0000
L10	7	HCS 6X12 4AWG(1-5/8)	112.75 - 113.50	1.0000	1.0000
L10	31	(Area) CCI-65FP-045100 (H)	112.75 - 113.50	1.0000	1.0000
L10	32	(Area) CCI-65FP-045100 (H)	112.75 - 113.50	1.0000	1.0000
L10	33	(Area) CCI-65FP-045100 (H)	112.75 - 113.50	1.0000	1.0000
L10	35	FJ CCI-65FP-065125 (H)	112.75 - 113.50	1.0000	1.0000
L10	36	FJ CCI-65FP-065125 (H)	112.75 - 113.50	1.0000	1.0000
L10	37	FJ CCI-65FP-065125 (H)	112.75 - 113.50	1.0000	1.0000
L11	6	LDF6-50A(1-1/4)	112.50 - 112.75	1.0000	1.0000
L11	7	HCS 6X12 4AWG(1-5/8)	112.50 - 112.75	1.0000	1.0000
L11	31	(Area) CCI-65FP-045100 (H)	112.50 - 112.75	1.0000	1.0000
L11	32	(Area) CCI-65FP-045100 (H)	112.50 - 112.75	1.0000	1.0000
L11	33	(Area) CCI-65FP-045100 (H)	112.50 - 112.75	1.0000	1.0000
L11	35	FJ CCI-65FP-065125 (H)	112.50 - 112.75	1.0000	1.0000
L11	36	FJ CCI-65FP-065125 (H)	112.50 - 112.75	1.0000	1.0000
L11	37	FJ CCI-65FP-065125 (H)	112.50 - 112.75	1.0000	1.0000
L12	6	LDF6-50A(1-1/4)	110.00 - 112.50	1.0000	1.0000
L12	7	HCS 6X12 4AWG(1-5/8)	110.00 - 112.50	1.0000	1.0000
L12	31	(Area) CCI-65FP-045100 (H)	110.75 - 112.50	1.0000	1.0000
L12	32	(Area) CCI-65FP-045100 (H)	110.75 - 112.50	1.0000	1.0000
L12	33	(Area) CCI-65FP-045100 (H)	110.75 - 112.50	1.0000	1.0000
L12	35	FJ CCI-65FP-065125 (H)	110.00 - 112.50	1.0000	1.0000
L12	36	FJ CCI-65FP-065125 (H)	110.00 - 112.50	1.0000	1.0000
L12	37	FJ CCI-65FP-065125 (H)	110.00 - 112.50	1.0000	1.0000
L13	6	LDF6-50A(1-1/4)	107.25 - 110.00	1.0000	1.0000
L13	7	HCS 6X12 4AWG(1-5/8)	107.25 - 110.00	1.0000	1.0000
L13	27	(Area) CCI-65FP-065125 (H)	107.25 - 110.00	1.0000	1.0000
L13	28	(Area) CCI-65FP-065125 (H)	107.25 - 110.00	1.0000	1.0000
L13	29	(Area) CCI-65FP-065125 (H)	107.25 - 110.00	1.0000	1.0000
L13	35	FJ CCI-65FP-065125 (H)	107.25 - 110.00	1.0000	1.0000
L13	36	FJ CCI-65FP-065125 (H)	107.25 - 110.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L13	37	FJ CCI-65FP-065125 (H)	107.25 - 110.00	1.0000	1.0000
L14	6	LDF6-50A(1-1/4)	107.00 - 107.25	1.0000	1.0000
L14	7	HCS 6X12 4AWG(1-5/8)	107.00 - 107.25	1.0000	1.0000
L14	27	(Area) CCI-65FP-065125 (H)	107.00 - 107.25	1.0000	1.0000
L14	28	(Area) CCI-65FP-065125 (H)	107.00 - 107.25	1.0000	1.0000
L14	29	(Area) CCI-65FP-065125 (H)	107.00 - 107.25	1.0000	1.0000
L14	35	FJ CCI-65FP-065125 (H)	107.00 - 107.25	1.0000	1.0000
L14	36	FJ CCI-65FP-065125 (H)	107.00 - 107.25	1.0000	1.0000
L14	37	FJ CCI-65FP-065125 (H)	107.00 - 107.25	1.0000	1.0000
L15	6	LDF6-50A(1-1/4)	102.00 - 107.00	1.0000	1.0000
L15	7	HCS 6X12 4AWG(1-5/8)	102.00 - 107.00	1.0000	1.0000
L15	27	(Area) CCI-65FP-065125 (H)	102.00 - 107.00	1.0000	1.0000
L15	28	(Area) CCI-65FP-065125 (H)	102.00 - 107.00	1.0000	1.0000
L15	29	(Area) CCI-65FP-065125 (H)	102.00 - 107.00	1.0000	1.0000
L15	35	FJ CCI-65FP-065125 (H)	103.08 - 107.00	1.0000	1.0000
L15	36	FJ CCI-65FP-065125 (H)	103.08 - 107.00	1.0000	1.0000
L15	37	FJ CCI-65FP-065125 (H)	103.08 - 107.00	1.0000	1.0000
L16	6	LDF6-50A(1-1/4)	97.00 - 102.00	1.0000	1.0000
L16	7	HCS 6X12 4AWG(1-5/8)	97.00 - 102.00	1.0000	1.0000
L16	27	(Area) CCI-65FP-065125 (H)	97.00 - 102.00	1.0000	1.0000
L16	28	(Area) CCI-65FP-065125 (H)	97.00 - 102.00	1.0000	1.0000
L16	29	(Area) CCI-65FP-065125 (H)	97.00 - 102.00	1.0000	1.0000
L17	6	LDF6-50A(1-1/4)	95.00 - 97.00	1.0000	1.0000
L17	7	HCS 6X12 4AWG(1-5/8)	95.00 - 97.00	1.0000	1.0000
L17	20	PL 1x4	95.00 - 96.75	1.0000	1.0000
L17	21	PL 1x4	95.00 - 96.75	1.0000	1.0000
L17	27	(Area) CCI-65FP-065125 (H)	95.00 - 97.00	1.0000	1.0000
L17	28	(Area) CCI-65FP-065125 (H)	95.00 - 97.00	1.0000	1.0000
L17	29	(Area) CCI-65FP-065125 (H)	95.00 - 97.00	1.0000	1.0000
L18	6	LDF6-50A(1-1/4)	94.75 - 95.00	1.0000	1.0000
L18	7	HCS 6X12 4AWG(1-5/8)	94.75 - 95.00	1.0000	1.0000
L18	20	PL 1x4	94.75 - 95.00	1.0000	1.0000
L18	21	PL 1x4	94.75 - 95.00	1.0000	1.0000
L18	27	(Area) CCI-65FP-065125 (H)	94.75 - 95.00	1.0000	1.0000
L18	28	(Area) CCI-65FP-065125 (H)	94.75 - 95.00	1.0000	1.0000
L18	29	(Area) CCI-65FP-065125 (H)	94.75 - 95.00	1.0000	1.0000
L19	6	LDF6-50A(1-1/4)	89.75 - 94.75	1.0000	1.0000
L19	7	HCS 6X12 4AWG(1-5/8)	89.75 - 94.75	1.0000	1.0000
L19	20	PL 1x4	89.75 - 94.75	1.0000	1.0000
L19	21	PL 1x4	89.75 - 94.75	1.0000	1.0000
L19	27	(Area) CCI-65FP-065125 (H)	89.75 - 94.75	1.0000	1.0000
L19	28	(Area) CCI-65FP-065125 (H)	89.75 - 94.75	1.0000	1.0000
L19	29	(Area) CCI-65FP-065125 (H)	89.75 - 94.75	1.0000	1.0000
L20	6	LDF6-50A(1-1/4)	88.67 - 89.75	1.0000	1.0000
L20	7	HCS 6X12 4AWG(1-5/8)	88.67 - 89.75	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	20	PL 1x4	88.67 - 89.75	1.0000	1.0000
L20	21	PL 1x4	88.67 - 89.75	1.0000	1.0000
L20	27	(Area) CCI-65FP-065125 (H)	88.67 - 89.75	1.0000	1.0000
L20	28	(Area) CCI-65FP-065125 (H)	88.67 - 89.75	1.0000	1.0000
L20	29	(Area) CCI-65FP-065125 (H)	88.67 - 89.75	1.0000	1.0000
L21	6	LDF6-50A(1-1/4)	87.75 - 88.67	1.0000	1.0000
L21	7	HCS 6X12 4AWG(1-5/8)	87.75 - 88.67	1.0000	1.0000
L21	20	PL 1x4	87.75 - 88.67	1.0000	1.0000
L21	21	PL 1x4	87.75 - 88.67	1.0000	1.0000
L21	27	(Area) CCI-65FP-065125 (H)	87.75 - 88.67	1.0000	1.0000
L21	28	(Area) CCI-65FP-065125 (H)	87.75 - 88.67	1.0000	1.0000
L21	29	(Area) CCI-65FP-065125 (H)	87.75 - 88.67	1.0000	1.0000
L22	6	LDF6-50A(1-1/4)	87.50 - 87.75	1.0000	1.0000
L22	7	HCS 6X12 4AWG(1-5/8)	87.50 - 87.75	1.0000	1.0000
L22	20	PL 1x4	87.50 - 87.75	1.0000	1.0000
L22	21	PL 1x4	87.50 - 87.75	1.0000	1.0000
L22	27	(Area) CCI-65FP-065125 (H)	87.50 - 87.75	1.0000	1.0000
L22	28	(Area) CCI-65FP-065125 (H)	87.50 - 87.75	1.0000	1.0000
L22	29	(Area) CCI-65FP-065125 (H)	87.50 - 87.75	1.0000	1.0000
L23	6	LDF6-50A(1-1/4)	85.50 - 87.50	1.0000	1.0000
L23	7	HCS 6X12 4AWG(1-5/8)	85.50 - 87.50	1.0000	1.0000
L23	20	PL 1x4	85.50 - 87.50	1.0000	1.0000
L23	21	PL 1x4	85.50 - 87.50	1.0000	1.0000
L23	27	(Area) CCI-65FP-065125 (H)	85.50 - 87.50	1.0000	1.0000
L23	28	(Area) CCI-65FP-065125 (H)	85.50 - 87.50	1.0000	1.0000
L23	29	(Area) CCI-65FP-065125 (H)	85.50 - 87.50	1.0000	1.0000
L23	43	(Area) CCI-65FP-045100 (H)	85.50 - 87.00	1.0000	1.0000
L23	44	(Area) CCI-65FP-045100 (H)	85.50 - 87.00	1.0000	1.0000
L24	6	LDF6-50A(1-1/4)	85.25 - 85.50	1.0000	1.0000
L24	7	HCS 6X12 4AWG(1-5/8)	85.25 - 85.50	1.0000	1.0000
L24	20	PL 1x4	85.25 - 85.50	1.0000	1.0000
L24	21	PL 1x4	85.25 - 85.50	1.0000	1.0000
L24	27	(Area) CCI-65FP-065125 (H)	85.25 - 85.50	1.0000	1.0000
L24	28	(Area) CCI-65FP-065125 (H)	85.25 - 85.50	1.0000	1.0000
L24	29	(Area) CCI-65FP-065125 (H)	85.25 - 85.50	1.0000	1.0000
L24	43	(Area) CCI-65FP-045100 (H)	85.25 - 85.50	1.0000	1.0000
L24	44	(Area) CCI-65FP-045100 (H)	85.25 - 85.50	1.0000	1.0000
L25	6	LDF6-50A(1-1/4)	83.00 - 85.25	1.0000	1.0000
L25	7	HCS 6X12 4AWG(1-5/8)	83.00 - 85.25	1.0000	1.0000
L25	20	PL 1x4	83.00 - 85.25	1.0000	1.0000
L25	21	PL 1x4	83.00 - 85.25	1.0000	1.0000
L25	23	(Area) CCI-65FP-060100 (H)	83.00 - 85.00	1.0000	1.0000
L25	24	(Area) CCI-65FP-060100 (H)	83.00 - 85.00	1.0000	1.0000
L25	25	(Area) CCI-65FP-060100 (H)	83.00 - 85.00	1.0000	1.0000
L25	27	(Area) CCI-65FP-065125 (H)	85.00 - 85.25	1.0000	1.0000
L25	28	(Area) CCI-65FP-065125 (H)	85.00 - 85.25	1.0000	1.0000
L25	29	(Area) CCI-65FP-065125 (H)	83.00 - 85.25	1.0000	1.0000
L25	43	(Area) CCI-65FP-045100 (H)	83.00 - 85.25	1.0000	1.0000
L25	44	(Area) CCI-65FP-045100 (H)	83.00 - 85.25	1.0000	1.0000
L26	6	LDF6-50A(1-1/4)	82.75 - 83.00	1.0000	1.0000
L26	7	HCS 6X12 4AWG(1-5/8)	82.75 - 83.00	1.0000	1.0000
L26	20	PL 1x4	82.75 - 83.00	1.0000	1.0000
L26	21	PL 1x4	82.75 - 83.00	1.0000	1.0000
L26	23	(Area) CCI-65FP-060100 (H)	82.75 - 83.00	1.0000	1.0000
L26	24	(Area) CCI-65FP-060100 (H)	82.75 - 83.00	1.0000	1.0000
L26	25	(Area) CCI-65FP-060100 (H)	82.75 - 83.00	1.0000	1.0000
L26	29	(Area) CCI-65FP-065125 (H)	82.75 - 83.00	1.0000	1.0000
L26	43	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	1.0000	1.0000
L26	44	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	1.0000	1.0000
L27	6	LDF6-50A(1-1/4)	82.50 - 82.75	1.0000	1.0000
L27	7	HCS 6X12 4AWG(1-5/8)	82.50 - 82.75	1.0000	1.0000
L27	20	PL 1x4	82.50 - 82.75	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	21	PL 1x4	82.50 - 82.75	1.0000	1.0000
L27	23	(Area) CCI-65FP-060100 (H)	82.50 - 82.75	1.0000	1.0000
L27	24	(Area) CCI-65FP-060100 (H)	82.50 - 82.75	1.0000	1.0000
L27	25	(Area) CCI-65FP-060100 (H)	82.50 - 82.75	1.0000	1.0000
L27	29	(Area) CCI-65FP-065125 (H)	82.50 - 82.75	1.0000	1.0000
L27	43	(Area) CCI-65FP-045100 (H)	82.50 - 82.75	1.0000	1.0000
L27	44	(Area) CCI-65FP-045100 (H)	82.50 - 82.75	1.0000	1.0000
L28	6	LDF6-50A(1-1/4)	77.50 - 82.50	1.0000	1.0000
L28	7	HCS 6X12 4AWG(1-5/8)	77.50 - 82.50	1.0000	1.0000
L28	20	PL 1x4	77.50 - 82.50	1.0000	1.0000
L28	21	PL 1x4	77.50 - 82.50	1.0000	1.0000
L28	23	(Area) CCI-65FP-060100 (H)	77.50 - 82.50	1.0000	1.0000
L28	24	(Area) CCI-65FP-060100 (H)	77.50 - 82.50	1.0000	1.0000
L28	25	(Area) CCI-65FP-060100 (H)	77.50 - 82.50	1.0000	1.0000
L28	29	(Area) CCI-65FP-065125 (H)	80.00 - 82.50	1.0000	1.0000
L28	43	(Area) CCI-65FP-045100 (H)	77.50 - 82.50	1.0000	1.0000
L28	44	(Area) CCI-65FP-045100 (H)	77.50 - 82.50	1.0000	1.0000
L29	6	LDF6-50A(1-1/4)	70.00 - 77.50	1.0000	1.0000
L29	7	HCS 6X12 4AWG(1-5/8)	70.00 - 77.50	1.0000	1.0000
L29	14	LDF4-50A(1/2)	70.00 - 71.00	1.0000	1.0000
L29	20	PL 1x4	71.75 - 77.50	1.0000	1.0000
L29	21	PL 1x4	71.75 - 77.50	1.0000	1.0000
L29	23	(Area) CCI-65FP-060100 (H)	70.00 - 77.50	1.0000	1.0000
L29	24	(Area) CCI-65FP-060100 (H)	70.00 - 77.50	1.0000	1.0000
L29	25	(Area) CCI-65FP-060100 (H)	70.00 - 77.50	1.0000	1.0000
L29	43	(Area) CCI-65FP-045100 (H)	70.00 - 77.50	1.0000	1.0000
L29	44	(Area) CCI-65FP-045100 (H)	70.00 - 77.50	1.0000	1.0000
L30	6	LDF6-50A(1-1/4)	69.00 - 70.00	1.0000	1.0000
L30	7	HCS 6X12 4AWG(1-5/8)	69.00 - 70.00	1.0000	1.0000
L30	14	LDF4-50A(1/2)	69.00 - 70.00	1.0000	1.0000
L30	23	(Area) CCI-65FP-060100 (H)	69.00 - 70.00	1.0000	1.0000
L30	24	(Area) CCI-65FP-060100 (H)	69.00 - 70.00	1.0000	1.0000
L30	25	(Area) CCI-65FP-060100 (H)	69.00 - 70.00	1.0000	1.0000
L30	43	(Area) CCI-65FP-045100 (H)	69.00 - 70.00	1.0000	1.0000
L30	44	(Area) CCI-65FP-045100 (H)	69.00 - 70.00	1.0000	1.0000
L31	6	LDF6-50A(1-1/4)	64.00 - 69.00	1.0000	1.0000
L31	7	HCS 6X12 4AWG(1-5/8)	64.00 - 69.00	1.0000	1.0000
L31	14	LDF4-50A(1/2)	64.00 - 69.00	1.0000	1.0000
L31	23	(Area) CCI-65FP-060100 (H)	64.00 - 69.00	1.0000	1.0000
L31	24	(Area) CCI-65FP-060100 (H)	64.00 - 69.00	1.0000	1.0000
L31	25	(Area) CCI-65FP-060100 (H)	64.00 - 69.00	1.0000	1.0000
L31	43	(Area) CCI-65FP-045100 (H)	64.00 - 69.00	1.0000	1.0000
L31	44	(Area) CCI-65FP-045100 (H)	64.00 - 69.00	1.0000	1.0000
L32	6	LDF6-50A(1-1/4)	59.00 - 64.00	1.0000	1.0000
L32	7	HCS 6X12 4AWG(1-5/8)	59.00 - 64.00	1.0000	1.0000
L32	14	LDF4-50A(1/2)	59.00 - 64.00	1.0000	1.0000
L32	23	(Area) CCI-65FP-060100 (H)	59.00 - 64.00	1.0000	1.0000
L32	24	(Area) CCI-65FP-060100 (H)	59.00 - 64.00	1.0000	1.0000
L32	25	(Area) CCI-65FP-060100 (H)	59.00 - 64.00	1.0000	1.0000
L32	43	(Area) CCI-65FP-045100 (H)	59.00 - 64.00	1.0000	1.0000
L32	44	(Area) CCI-65FP-045100 (H)	59.00 - 64.00	1.0000	1.0000
L33	6	LDF6-50A(1-1/4)	55.42 - 59.00	1.0000	1.0000
L33	7	HCS 6X12 4AWG(1-5/8)	55.42 - 59.00	1.0000	1.0000
L33	14	LDF4-50A(1/2)	55.42 - 59.00	1.0000	1.0000
L33	23	(Area) CCI-65FP-060100 (H)	55.42 - 59.00	1.0000	1.0000
L33	24	(Area) CCI-65FP-060100 (H)	55.42 - 59.00	1.0000	1.0000
L33	25	(Area) CCI-65FP-060100 (H)	55.42 - 59.00	1.0000	1.0000
L33	43	(Area) CCI-65FP-045100 (H)	55.42 - 59.00	1.0000	1.0000
L33	44	(Area) CCI-65FP-045100 (H)	55.42 - 59.00	1.0000	1.0000
L34	6	LDF6-50A(1-1/4)	55.17 - 55.42	1.0000	1.0000
L34	7	HCS 6X12 4AWG(1-5/8)	55.17 - 55.42	1.0000	1.0000
L34	14	LDF4-50A(1/2)	55.17 - 55.42	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L34	23	(Area) CCI-65FP-060100 (H)	55.17 - 55.42	1.0000	1.0000
L34	24	(Area) CCI-65FP-060100 (H)	55.17 - 55.42	1.0000	1.0000
L34	25	(Area) CCI-65FP-060100 (H)	55.17 - 55.42	1.0000	1.0000
L34	43	(Area) CCI-65FP-045100 (H)	55.17 - 55.42	1.0000	1.0000
L34	44	(Area) CCI-65FP-045100 (H)	55.17 - 55.42	1.0000	1.0000
L35	6	LDF6-50A(1-1/4)	50.17 - 55.17	1.0000	1.0000
L35	7	HCS 6X12 4AWG(1-5/8)	50.17 - 55.17	1.0000	1.0000
L35	14	LDF4-50A(1/2)	50.17 - 55.17	1.0000	1.0000
L35	23	(Area) CCI-65FP-060100 (H)	50.17 - 55.17	1.0000	1.0000
L35	24	(Area) CCI-65FP-060100 (H)	50.17 - 55.17	1.0000	1.0000
L35	25	(Area) CCI-65FP-060100 (H)	50.17 - 55.17	1.0000	1.0000
L35	43	(Area) CCI-65FP-045100 (H)	50.17 - 55.17	1.0000	1.0000
L35	44	(Area) CCI-65FP-045100 (H)	50.17 - 55.17	1.0000	1.0000
L36	6	LDF6-50A(1-1/4)	47.17 - 50.17	1.0000	1.0000
L36	7	HCS 6X12 4AWG(1-5/8)	47.17 - 50.17	1.0000	1.0000
L36	14	LDF4-50A(1/2)	47.17 - 50.17	1.0000	1.0000
L36	23	(Area) CCI-65FP-060100 (H)	50.00 - 50.17	1.0000	1.0000
L36	24	(Area) CCI-65FP-060100 (H)	50.00 - 50.17	1.0000	1.0000
L36	25	(Area) CCI-65FP-060100 (H)	50.00 - 50.17	1.0000	1.0000
L36	39	(Area) CCI-65FP-065125 (H)	47.17 - 50.00	1.0000	1.0000
L36	40	(Area) CCI-65FP-065125 (H)	47.17 - 50.00	1.0000	1.0000
L36	41	(Area) CCI-65FP-065125 (H)	47.17 - 50.00	1.0000	1.0000
L36	43	(Area) CCI-65FP-045100 (H)	47.17 - 50.17	1.0000	1.0000
L36	44	(Area) CCI-65FP-045100 (H)	47.17 - 50.17	1.0000	1.0000
L37	6	LDF6-50A(1-1/4)	46.92 - 47.17	1.0000	1.0000
L37	7	HCS 6X12 4AWG(1-5/8)	46.92 - 47.17	1.0000	1.0000
L37	14	LDF4-50A(1/2)	46.92 - 47.17	1.0000	1.0000
L37	39	(Area) CCI-65FP-065125 (H)	46.92 - 47.17	1.0000	1.0000
L37	40	(Area) CCI-65FP-065125 (H)	46.92 - 47.17	1.0000	1.0000
L37	41	(Area) CCI-65FP-065125 (H)	46.92 - 47.17	1.0000	1.0000
L37	43	(Area) CCI-65FP-045100 (H)	46.92 - 47.17	1.0000	1.0000
L37	44	(Area) CCI-65FP-045100 (H)	46.92 - 47.17	1.0000	1.0000
L38	6	LDF6-50A(1-1/4)	43.42 - 46.92	1.0000	1.0000
L38	7	HCS 6X12 4AWG(1-5/8)	43.42 - 46.92	1.0000	1.0000
L38	14	LDF4-50A(1/2)	43.42 - 46.92	1.0000	1.0000
L38	39	(Area) CCI-65FP-065125 (H)	43.42 - 46.92	1.0000	1.0000
L38	40	(Area) CCI-65FP-065125 (H)	43.42 - 46.92	1.0000	1.0000
L38	41	(Area) CCI-65FP-065125 (H)	43.42 - 46.92	1.0000	1.0000
L38	43	(Area) CCI-65FP-045100 (H)	43.42 - 46.92	1.0000	1.0000
L38	44	(Area) CCI-65FP-045100 (H)	43.42 - 46.92	1.0000	1.0000
L39	6	LDF6-50A(1-1/4)	43.17 - 43.42	1.0000	1.0000
L39	7	HCS 6X12 4AWG(1-5/8)	43.17 - 43.42	1.0000	1.0000
L39	14	LDF4-50A(1/2)	43.17 - 43.42	1.0000	1.0000
L39	39	(Area) CCI-65FP-065125 (H)	43.17 - 43.42	1.0000	1.0000
L39	40	(Area) CCI-65FP-065125 (H)	43.17 - 43.42	1.0000	1.0000
L39	41	(Area) CCI-65FP-065125 (H)	43.17 - 43.42	1.0000	1.0000
L39	43	(Area) CCI-65FP-045100 (H)	43.17 - 43.42	1.0000	1.0000
L39	44	(Area) CCI-65FP-045100 (H)	43.17 - 43.42	1.0000	1.0000
L40	6	LDF6-50A(1-1/4)	41.17 - 43.17	1.0000	1.0000
L40	7	HCS 6X12 4AWG(1-5/8)	41.17 - 43.17	1.0000	1.0000
L40	14	LDF4-50A(1/2)	41.17 - 43.17	1.0000	1.0000
L40	39	(Area) CCI-65FP-065125 (H)	41.17 - 43.17	1.0000	1.0000
L40	40	(Area) CCI-65FP-065125 (H)	41.17 - 43.17	1.0000	1.0000
L40	41	(Area) CCI-65FP-065125 (H)	41.17 - 43.17	1.0000	1.0000
L40	43	(Area) CCI-65FP-045100 (H)	41.92 - 43.17	1.0000	1.0000
L40	44	(Area) CCI-65FP-045100 (H)	41.92 - 43.17	1.0000	1.0000
L41	6	LDF6-50A(1-1/4)	40.92 - 41.17	1.0000	1.0000
L41	7	HCS 6X12 4AWG(1-5/8)	40.92 - 41.17	1.0000	1.0000
L41	14	LDF4-50A(1/2)	40.92 - 41.17	1.0000	1.0000
L41	39	(Area) CCI-65FP-065125 (H)	40.92 - 41.17	1.0000	1.0000
L41	40	(Area) CCI-65FP-065125 (H)	40.92 - 41.17	1.0000	1.0000
L41	41	(Area) CCI-65FP-065125 (H)	40.92 - 41.17	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	6	LDF6-50A(1-1/4)	35.92 - 40.92	1.0000	1.0000
L42	7	HCS 6X12 4AWG(1-5/8)	35.92 - 40.92	1.0000	1.0000
L42	14	LDF4-50A(1/2)	35.92 - 40.92	1.0000	1.0000
L42	39	(Area) CCI-65FP-065125 (H)	35.92 - 40.92	1.0000	1.0000
L42	40	(Area) CCI-65FP-065125 (H)	35.92 - 40.92	1.0000	1.0000
L42	41	(Area) CCI-65FP-065125 (H)	35.92 - 40.92	1.0000	1.0000
L43	6	LDF6-50A(1-1/4)	31.50 - 35.92	1.0000	1.0000
L43	7	HCS 6X12 4AWG(1-5/8)	31.50 - 35.92	1.0000	1.0000
L43	14	LDF4-50A(1/2)	31.50 - 35.92	1.0000	1.0000
L43	39	(Area) CCI-65FP-065125 (H)	31.50 - 35.92	1.0000	1.0000
L43	40	(Area) CCI-65FP-065125 (H)	31.50 - 35.92	1.0000	1.0000
L43	41	(Area) CCI-65FP-065125 (H)	31.50 - 35.92	1.0000	1.0000
L44	6	LDF6-50A(1-1/4)	30.50 - 31.50	1.0000	1.0000
L44	7	HCS 6X12 4AWG(1-5/8)	30.50 - 31.50	1.0000	1.0000
L44	14	LDF4-50A(1/2)	30.50 - 31.50	1.0000	1.0000
L44	39	(Area) CCI-65FP-065125 (H)	30.50 - 31.50	1.0000	1.0000
L44	40	(Area) CCI-65FP-065125 (H)	30.50 - 31.50	1.0000	1.0000
L44	41	(Area) CCI-65FP-065125 (H)	30.50 - 31.50	1.0000	1.0000
L45	6	LDF6-50A(1-1/4)	25.50 - 30.50	1.0000	1.0000
L45	7	HCS 6X12 4AWG(1-5/8)	25.50 - 30.50	1.0000	1.0000
L45	14	LDF4-50A(1/2)	25.50 - 30.50	1.0000	1.0000
L45	39	(Area) CCI-65FP-065125 (H)	29.92 - 30.50	1.0000	1.0000
L45	40	(Area) CCI-65FP-065125 (H)	29.92 - 30.50	1.0000	1.0000
L45	41	(Area) CCI-65FP-065125 (H)	29.92 - 30.50	1.0000	1.0000
L46	6	LDF6-50A(1-1/4)	20.50 - 25.50	1.0000	1.0000
L46	7	HCS 6X12 4AWG(1-5/8)	20.50 - 25.50	1.0000	1.0000
L46	14	LDF4-50A(1/2)	20.50 - 25.50	1.0000	1.0000
L46	16	ATCB-B01(5/16)	20.50 - 22.00	1.0000	1.0000
L47	6	LDF6-50A(1-1/4)	15.50 - 20.50	1.0000	1.0000
L47	7	HCS 6X12 4AWG(1-5/8)	15.50 - 20.50	1.0000	1.0000
L47	14	LDF4-50A(1/2)	15.50 - 20.50	1.0000	1.0000
L47	16	ATCB-B01(5/16)	15.50 - 20.50	1.0000	1.0000
L48	6	LDF6-50A(1-1/4)	10.50 - 15.50	1.0000	1.0000
L48	7	HCS 6X12 4AWG(1-5/8)	10.50 - 15.50	1.0000	1.0000
L48	14	LDF4-50A(1/2)	10.50 - 15.50	1.0000	1.0000
L48	16	ATCB-B01(5/16)	10.50 - 15.50	1.0000	1.0000
L49	6	LDF6-50A(1-1/4)	5.50 - 10.50	1.0000	1.0000
L49	7	HCS 6X12 4AWG(1-5/8)	5.50 - 10.50	1.0000	1.0000
L49	14	LDF4-50A(1/2)	5.50 - 10.50	1.0000	1.0000
L49	16	ATCB-B01(5/16)	5.50 - 10.50	1.0000	1.0000
L50	6	LDF6-50A(1-1/4)	0.50 - 5.50	1.0000	1.0000
L50	7	HCS 6X12 4AWG(1-5/8)	0.50 - 5.50	1.0000	1.0000
L50	14	LDF4-50A(1/2)	0.50 - 5.50	1.0000	1.0000
L50	16	ATCB-B01(5/16)	0.50 - 5.50	1.0000	1.0000
L51	6	LDF6-50A(1-1/4)	0.00 - 0.50	1.0000	1.0000
L51	7	HCS 6X12 4AWG(1-5/8)	0.00 - 0.50	1.0000	1.0000
L51	14	LDF4-50A(1/2)	0.00 - 0.50	1.0000	1.0000
L51	16	ATCB-B01(5/16)	0.00 - 0.50	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
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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L5	31	(Area) CCI-65FP-045100 (H)	125.00 - 125.75	Auto	0.0000
L5	32	(Area) CCI-65FP-045100 (H)	125.00 - 125.75	Auto	0.0000
L5	33	(Area) CCI-65FP-045100 (H)	125.00 - 125.75	Auto	0.0000
L6	31	(Area) CCI-65FP-045100 (H)	123.75 - 125.00	Auto	0.0000
L6	32	(Area) CCI-65FP-045100 (H)	123.75 - 125.00	Auto	0.0000
L6	33	(Area) CCI-65FP-045100 (H)	123.75 - 125.00	Auto	0.0000
L7	31	(Area) CCI-65FP-045100 (H)	123.50 - 123.75	Auto	0.1333
L7	32	(Area) CCI-65FP-045100 (H)	123.50 - 123.75	Auto	0.1333
L7	33	(Area) CCI-65FP-045100 (H)	123.50 - 123.75	Auto	0.1333
L8	31	(Area) CCI-65FP-045100 (H)	118.50 - 123.50	Auto	0.0978
L8	32	(Area) CCI-65FP-045100 (H)	118.50 - 123.50	Auto	0.0978
L8	33	(Area) CCI-65FP-045100 (H)	118.50 - 123.50	Auto	0.0978
L9	31	(Area) CCI-65FP-045100 (H)	113.50 - 118.50	Auto	0.0476
L9	32	(Area) CCI-65FP-045100 (H)	113.50 - 118.50	Auto	0.0476
L9	33	(Area) CCI-65FP-045100 (H)	113.50 - 118.50	Auto	0.0476
L9	35	FJ CCI-65FP-065125 (H)	113.50 - 116.92	Auto	0.3356
L9	36	FJ CCI-65FP-065125 (H)	113.50 - 116.92	Manual	1.0000
L9	37	FJ CCI-65FP-065125 (H)	113.50 - 116.92	Manual	1.0000
L10	31	(Area) CCI-65FP-045100 (H)	112.75 - 113.50	Auto	0.0172
L10	32	(Area) CCI-65FP-045100 (H)	112.75 - 113.50	Auto	0.0172
L10	33	(Area) CCI-65FP-045100 (H)	112.75 - 113.50	Auto	0.0172
L10	35	FJ CCI-65FP-065125 (H)	112.75 - 113.50	Auto	0.3196
L10	36	FJ CCI-65FP-065125 (H)	112.75 - 113.50	Manual	1.0000
L10	37	FJ CCI-65FP-065125 (H)	112.75 - 113.50	Manual	1.0000
L11	31	(Area) CCI-65FP-045100 (H)	112.50 - 112.75	Auto	0.3922
L11	32	(Area) CCI-65FP-045100 (H)	112.50 - 112.75	Auto	0.3922
L11	33	(Area) CCI-65FP-045100 (H)	112.50 - 112.75	Auto	0.3922
L11	35	FJ CCI-65FP-065125 (H)	112.50 - 112.75	Auto	0.5792
L11	36	FJ CCI-65FP-065125 (H)	112.50 - 112.75	Manual	1.0000
L11	37	FJ CCI-65FP-065125 (H)	112.50 - 112.75	Manual	1.0000
L12	31	(Area) CCI-65FP-045100 (H)	110.75 -	Auto	0.3680

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L12	32	(Area) CCI-65FP-045100 (H)	112.50 110.75 - 112.50	Auto	0.3680
L12	33	(Area) CCI-65FP-045100 (H)	110.75 - 112.50	Auto	0.3680
L12	35	FJ CCI-65FP-065125 (H)	110.00 - 112.50	Auto	0.5601
L12	36	FJ CCI-65FP-065125 (H)	110.00 - 112.50	Manual	1.0000
L12	37	FJ CCI-65FP-065125 (H)	110.00 - 112.50	Manual	1.0000
L13	27	(Area) CCI-65FP-065125 (H)	107.25 - 110.00	Auto	0.5581
L13	28	(Area) CCI-65FP-065125 (H)	107.25 - 110.00	Auto	0.5581
L13	29	(Area) CCI-65FP-065125 (H)	107.25 - 110.00	Auto	0.5581
L13	35	FJ CCI-65FP-065125 (H)	107.25 - 110.00	Auto	0.5581
L13	36	FJ CCI-65FP-065125 (H)	107.25 - 110.00	Manual	1.0000
L13	37	FJ CCI-65FP-065125 (H)	107.25 - 110.00	Manual	1.0000
L14	27	(Area) CCI-65FP-065125 (H)	107.00 - 107.25	Auto	0.3314
L14	28	(Area) CCI-65FP-065125 (H)	107.00 - 107.25	Auto	0.3314
L14	29	(Area) CCI-65FP-065125 (H)	107.00 - 107.25	Auto	0.3314
L14	35	FJ CCI-65FP-065125 (H)	107.00 - 107.25	Auto	0.3314
L14	36	FJ CCI-65FP-065125 (H)	107.00 - 107.25	Manual	1.0000
L14	37	FJ CCI-65FP-065125 (H)	107.00 - 107.25	Manual	1.0000
L15	27	(Area) CCI-65FP-065125 (H)	102.00 - 107.00	Auto	0.3082
L15	28	(Area) CCI-65FP-065125 (H)	102.00 - 107.00	Auto	0.3082
L15	29	(Area) CCI-65FP-065125 (H)	102.00 - 107.00	Auto	0.3082
L15	35	FJ CCI-65FP-065125 (H)	103.08 - 107.00	Auto	0.3119
L15	36	FJ CCI-65FP-065125 (H)	103.08 - 107.00	Manual	1.0000
L15	37	FJ CCI-65FP-065125 (H)	103.08 - 107.00	Manual	1.0000
L16	27	(Area) CCI-65FP-065125 (H)	97.00 - 102.00	Auto	0.2689
L16	28	(Area) CCI-65FP-065125 (H)	97.00 - 102.00	Auto	0.2689
L16	29	(Area) CCI-65FP-065125 (H)	97.00 - 102.00	Auto	0.2689
L17	20	PL 1x4	95.00 - 96.75	Auto	0.0000
L17	21	PL 1x4	95.00 - 96.75	Auto	0.0000
L17	27	(Area) CCI-65FP-065125 (H)	95.00 - 97.00	Auto	0.2423
L17	28	(Area) CCI-65FP-065125 (H)	95.00 - 97.00	Auto	0.2423
L17	29	(Area) CCI-65FP-065125 (H)	95.00 - 97.00	Auto	0.2423
L18	20	PL 1x4	94.75 - 95.00	Auto	0.0000
L18	21	PL 1x4	94.75 - 95.00	Auto	0.0000
L18	27	(Area) CCI-65FP-065125 (H)	94.75 - 95.00	Auto	0.2888
L18	28	(Area) CCI-65FP-065125 (H)	94.75 - 95.00	Auto	0.2888
L18	29	(Area) CCI-65FP-065125 (H)	94.75 - 95.00	Auto	0.2888
L19	20	PL 1x4	89.75 - 94.75	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	21	PL 1x4	89.75 - 94.75	Auto	0.0000
L19	27	(Area) CCI-65FP-065125 (H)	89.75 - 94.75	Auto	0.2605
L19	28	(Area) CCI-65FP-065125 (H)	89.75 - 94.75	Auto	0.2605
L19	29	(Area) CCI-65FP-065125 (H)	89.75 - 94.75	Auto	0.2605
L20	20	PL 1x4	88.67 - 89.75	Auto	0.0000
L20	21	PL 1x4	88.67 - 89.75	Auto	0.0000
L20	27	(Area) CCI-65FP-065125 (H)	88.67 - 89.75	Auto	0.2397
L20	28	(Area) CCI-65FP-065125 (H)	88.67 - 89.75	Auto	0.2397
L20	29	(Area) CCI-65FP-065125 (H)	88.67 - 89.75	Auto	0.2397
L21	20	PL 1x4	87.75 - 88.67	Auto	0.0000
L21	21	PL 1x4	87.75 - 88.67	Auto	0.0000
L21	27	(Area) CCI-65FP-065125 (H)	87.75 - 88.67	Auto	0.2329
L21	28	(Area) CCI-65FP-065125 (H)	87.75 - 88.67	Auto	0.2329
L21	29	(Area) CCI-65FP-065125 (H)	87.75 - 88.67	Auto	0.2329
L22	20	PL 1x4	87.50 - 87.75	Auto	0.0000
L22	21	PL 1x4	87.50 - 87.75	Auto	0.0000
L22	27	(Area) CCI-65FP-065125 (H)	87.50 - 87.75	Auto	0.2134
L22	28	(Area) CCI-65FP-065125 (H)	87.50 - 87.75	Auto	0.2134
L22	29	(Area) CCI-65FP-065125 (H)	87.50 - 87.75	Auto	0.2134
L23	20	PL 1x4	85.50 - 87.50	Auto	0.0000
L23	21	PL 1x4	85.50 - 87.50	Auto	0.0000
L23	27	(Area) CCI-65FP-065125 (H)	85.50 - 87.50	Auto	0.2006
L23	28	(Area) CCI-65FP-065125 (H)	85.50 - 87.50	Auto	0.2006
L23	29	(Area) CCI-65FP-065125 (H)	85.50 - 87.50	Auto	0.2006
L23	43	(Area) CCI-65FP-045100 (H)	85.50 - 87.00	Auto	0.0000
L23	44	(Area) CCI-65FP-045100 (H)	85.50 - 87.00	Auto	0.0000
L24	20	PL 1x4	85.25 - 85.50	Auto	0.0000
L24	21	PL 1x4	85.25 - 85.50	Auto	0.0000
L24	27	(Area) CCI-65FP-065125 (H)	85.25 - 85.50	Auto	0.2754
L24	28	(Area) CCI-65FP-065125 (H)	85.25 - 85.50	Auto	0.2754
L24	29	(Area) CCI-65FP-065125 (H)	85.25 - 85.50	Auto	0.2754
L24	43	(Area) CCI-65FP-045100 (H)	85.25 - 85.50	Auto	0.0000
L24	44	(Area) CCI-65FP-045100 (H)	85.25 - 85.50	Auto	0.0000
L25	20	PL 1x4	83.00 - 85.25	Auto	0.0000
L25	21	PL 1x4	83.00 - 85.25	Auto	0.0000
L25	23	(Area) CCI-65FP-060100 (H)	83.00 - 85.00	Auto	0.1992
L25	24	(Area) CCI-65FP-060100 (H)	83.00 - 85.00	Auto	0.1992
L25	25	(Area) CCI-65FP-060100 (H)	83.00 - 85.00	Auto	0.1992
L25	27	(Area) CCI-65FP-065125 (H)	85.00 - 85.25	Auto	0.2685
L25	28	(Area) CCI-65FP-065125 (H)	85.00 - 85.25	Auto	0.2685
L25	29	(Area) CCI-65FP-065125 (H)	83.00 - 85.25	Auto	0.2617
L25	43	(Area) CCI-65FP-045100 (H)	83.00 - 85.25	Auto	0.0000
L25	44	(Area) CCI-65FP-045100 (H)	83.00 - 85.25	Auto	0.0000
L26	20	PL 1x4	82.75 - 83.00	Auto	0.0000
L26	21	PL 1x4	82.75 - 83.00	Auto	0.0000
L26	23	(Area) CCI-65FP-060100 (H)	82.75 - 83.00	Auto	0.2188
L26	24	(Area) CCI-65FP-060100 (H)	82.75 - 83.00	Auto	0.2188
L26	25	(Area) CCI-65FP-060100 (H)	82.75 - 83.00	Auto	0.2188
L26	29	(Area) CCI-65FP-065125 (H)	82.75 - 83.00	Auto	0.2789
L26	43	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	Auto	0.0000
L26	44	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	Auto	0.0000
L27	20	PL 1x4	82.50 - 82.75	Auto	0.0000
L27	21	PL 1x4	82.50 - 82.75	Auto	0.0000
L27	23	(Area) CCI-65FP-060100 (H)	82.50 - 82.75	Auto	0.1388
L27	24	(Area) CCI-65FP-060100 (H)	82.50 - 82.75	Auto	0.1388
L27	25	(Area) CCI-65FP-060100 (H)	82.50 - 82.75	Auto	0.1388
L27	29	(Area) CCI-65FP-065125 (H)	82.50 - 82.75	Auto	0.2051
L27	43	(Area) CCI-65FP-045100 (H)	82.50 - 82.75	Auto	0.0000
L27	44	(Area) CCI-65FP-045100 (H)	82.50 - 82.75	Auto	0.0000
L28	20	PL 1x4	77.50 - 82.50	Auto	0.0000
L28	21	PL 1x4	77.50 - 82.50	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L28	23	(Area) CCI-65FP-060100 (H)	77.50 - 82.50	Auto	0.1138
L28	24	(Area) CCI-65FP-060100 (H)	77.50 - 82.50	Auto	0.1138
L28	25	(Area) CCI-65FP-060100 (H)	77.50 - 82.50	Auto	0.1138
L28	29	(Area) CCI-65FP-065125 (H)	80.00 - 82.50	Auto	0.1905
L28	43	(Area) CCI-65FP-045100 (H)	77.50 - 82.50	Auto	0.0000
L28	44	(Area) CCI-65FP-045100 (H)	77.50 - 82.50	Auto	0.0000
L29	20	PL 1x4	71.75 - 77.50	Auto	0.0000
L29	21	PL 1x4	71.75 - 77.50	Auto	0.0000
L29	23	(Area) CCI-65FP-060100 (H)	70.00 - 77.50	Auto	0.0620
L29	24	(Area) CCI-65FP-060100 (H)	70.00 - 77.50	Auto	0.0620
L29	25	(Area) CCI-65FP-060100 (H)	70.00 - 77.50	Auto	0.0620
L29	43	(Area) CCI-65FP-045100 (H)	70.00 - 77.50	Auto	0.0000
L29	44	(Area) CCI-65FP-045100 (H)	70.00 - 77.50	Auto	0.0000
L30	23	(Area) CCI-65FP-060100 (H)	69.00 - 70.00	Auto	0.0718
L30	24	(Area) CCI-65FP-060100 (H)	69.00 - 70.00	Auto	0.0718
L30	25	(Area) CCI-65FP-060100 (H)	69.00 - 70.00	Auto	0.0718
L30	43	(Area) CCI-65FP-045100 (H)	69.00 - 70.00	Auto	0.0000
L30	44	(Area) CCI-65FP-045100 (H)	69.00 - 70.00	Auto	0.0000
L31	23	(Area) CCI-65FP-060100 (H)	64.00 - 69.00	Auto	0.0513
L31	24	(Area) CCI-65FP-060100 (H)	64.00 - 69.00	Auto	0.0513
L31	25	(Area) CCI-65FP-060100 (H)	64.00 - 69.00	Auto	0.0513
L31	43	(Area) CCI-65FP-045100 (H)	64.00 - 69.00	Auto	0.0000
L31	44	(Area) CCI-65FP-045100 (H)	64.00 - 69.00	Auto	0.0000
L32	23	(Area) CCI-65FP-060100 (H)	59.00 - 64.00	Auto	0.0119
L32	24	(Area) CCI-65FP-060100 (H)	59.00 - 64.00	Auto	0.0119
L32	25	(Area) CCI-65FP-060100 (H)	59.00 - 64.00	Auto	0.0119
L32	43	(Area) CCI-65FP-045100 (H)	59.00 - 64.00	Auto	0.0000
L32	44	(Area) CCI-65FP-045100 (H)	59.00 - 64.00	Auto	0.0000
L33	23	(Area) CCI-65FP-060100 (H)	55.42 - 59.00	Auto	0.0000
L33	24	(Area) CCI-65FP-060100 (H)	55.42 - 59.00	Auto	0.0000
L33	25	(Area) CCI-65FP-060100 (H)	55.42 - 59.00	Auto	0.0000
L33	43	(Area) CCI-65FP-045100 (H)	55.42 - 59.00	Auto	0.0000
L33	44	(Area) CCI-65FP-045100 (H)	55.42 - 59.00	Auto	0.0000
L34	23	(Area) CCI-65FP-060100 (H)	55.17 - 55.42	Auto	0.0000
L34	24	(Area) CCI-65FP-060100 (H)	55.17 - 55.42	Auto	0.0000
L34	25	(Area) CCI-65FP-060100 (H)	55.17 - 55.42	Auto	0.0000
L34	43	(Area) CCI-65FP-045100 (H)	55.17 - 55.42	Auto	0.0000
L34	44	(Area) CCI-65FP-045100 (H)	55.17 - 55.42	Auto	0.0000
L35	23	(Area) CCI-65FP-060100 (H)	50.17 - 55.17	Auto	0.0000
L35	24	(Area) CCI-65FP-060100 (H)	50.17 - 55.17	Auto	0.0000
L35	25	(Area) CCI-65FP-060100 (H)	50.17 - 55.17	Auto	0.0000
L35	43	(Area) CCI-65FP-045100 (H)	50.17 - 55.17	Auto	0.0000
L35	44	(Area) CCI-65FP-045100 (H)	50.17 - 55.17	Auto	0.0000
L36	23	(Area) CCI-65FP-060100 (H)	50.00 - 50.17	Auto	0.0000
L36	24	(Area) CCI-65FP-060100 (H)	50.00 - 50.17	Auto	0.0000
L36	25	(Area) CCI-65FP-060100 (H)	50.00 - 50.17	Auto	0.0000
L36	39	(Area) CCI-65FP-065125 (H)	47.17 - 50.00	Auto	0.0005
L36	40	(Area) CCI-65FP-065125 (H)	47.17 - 50.00	Auto	0.0005
L36	41	(Area) CCI-65FP-065125 (H)	47.17 - 50.00	Auto	0.0005
L36	43	(Area) CCI-65FP-045100 (H)	47.17 - 50.17	Auto	0.0000
L36	44	(Area) CCI-65FP-045100 (H)	47.17 - 50.17	Auto	0.0000
L37	39	(Area) CCI-65FP-065125 (H)	46.92 - 47.17	Auto	0.0000
L37	40	(Area) CCI-65FP-065125 (H)	46.92 - 47.17	Auto	0.0000
L37	41	(Area) CCI-65FP-065125 (H)	46.92 - 47.17	Auto	0.0000
L37	43	(Area) CCI-65FP-045100 (H)	46.92 - 47.17	Auto	0.0000
L37	44	(Area) CCI-65FP-045100 (H)	46.92 - 47.17	Auto	0.0000
L38	39	(Area) CCI-65FP-065125 (H)	43.42 - 46.92	Auto	0.0000
L38	40	(Area) CCI-65FP-065125 (H)	43.42 - 46.92	Auto	0.0000
L38	41	(Area) CCI-65FP-065125 (H)	43.42 - 46.92	Auto	0.0000
L38	43	(Area) CCI-65FP-045100 (H)	43.42 - 46.92	Auto	0.0000
L38	44	(Area) CCI-65FP-045100 (H)	43.42 - 46.92	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L39	39	(Area) CCI-65FP-065125 (H)	43.17 - 43.42	Auto	0.0000
L39	40	(Area) CCI-65FP-065125 (H)	43.17 - 43.42	Auto	0.0000
L39	41	(Area) CCI-65FP-065125 (H)	43.17 - 43.42	Auto	0.0000
L39	43	(Area) CCI-65FP-045100 (H)	43.17 - 43.42	Auto	0.0000
L39	44	(Area) CCI-65FP-045100 (H)	43.17 - 43.42	Auto	0.0000
L40	39	(Area) CCI-65FP-065125 (H)	41.17 - 43.17	Auto	0.0000
L40	40	(Area) CCI-65FP-065125 (H)	41.17 - 43.17	Auto	0.0000
L40	41	(Area) CCI-65FP-065125 (H)	41.17 - 43.17	Auto	0.0000
L40	43	(Area) CCI-65FP-045100 (H)	41.92 - 43.17	Auto	0.0000
L40	44	(Area) CCI-65FP-045100 (H)	41.92 - 43.17	Auto	0.0000
L41	39	(Area) CCI-65FP-065125 (H)	40.92 - 41.17	Auto	0.0000
L41	40	(Area) CCI-65FP-065125 (H)	40.92 - 41.17	Auto	0.0000
L41	41	(Area) CCI-65FP-065125 (H)	40.92 - 41.17	Auto	0.0000
L42	39	(Area) CCI-65FP-065125 (H)	35.92 - 40.92	Auto	0.0000
L42	40	(Area) CCI-65FP-065125 (H)	35.92 - 40.92	Auto	0.0000
L42	41	(Area) CCI-65FP-065125 (H)	35.92 - 40.92	Auto	0.0000
L43	39	(Area) CCI-65FP-065125 (H)	31.50 - 35.92	Auto	0.0000
L43	40	(Area) CCI-65FP-065125 (H)	31.50 - 35.92	Auto	0.0000
L43	41	(Area) CCI-65FP-065125 (H)	31.50 - 35.92	Auto	0.0000
L44	39	(Area) CCI-65FP-065125 (H)	30.50 - 31.50	Auto	0.0000
L44	40	(Area) CCI-65FP-065125 (H)	30.50 - 31.50	Auto	0.0000
L44	41	(Area) CCI-65FP-065125 (H)	30.50 - 31.50	Auto	0.0000
L45	39	(Area) CCI-65FP-065125 (H)	29.92 - 30.50	Auto	0.0000
L45	40	(Area) CCI-65FP-065125 (H)	29.92 - 30.50	Auto	0.0000
L45	41	(Area) CCI-65FP-065125 (H)	29.92 - 30.50	Auto	0.0000

Discrete Tower Loads

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	
6' x 15" dia. Top Hat	C	None			0.0000	151.00	No Ice	4.13	4.13	0.08
							1/2" Ice	6.05	6.05	0.14
							1" Ice	6.47	6.47	0.21
149 OPA65R-BU4B w/ Mount Pipe	A	From Centroid-Le g	4.00	0.00	0.0000	149.00	No Ice	4.00	4.24	0.08
							1/2" Ice	4.41	4.66	0.13
							1" Ice	4.84	5.09	0.18
OPA65R-BU8B w/ Mount Pipe	B	From Centroid-Le g	4.00	0.00	0.0000	149.00	No Ice	8.87	7.93	0.11
							1/2" Ice	9.68	8.73	0.19
							1" Ice	10.51	9.55	0.29
OPA65R-BU4B w/ Mount Pipe	C	From Centroid-Le g	4.00	0.00	0.0000	149.00	No Ice	4.00	4.24	0.08
							1/2" Ice	4.41	4.66	0.13
							1" Ice	4.84	5.09	0.18
SBNHH-1D65A w/ Mount Pipe	A	From Centroid-Le g	4.00	0.00	0.0000	149.00	No Ice	3.04	2.45	0.05
							1/2" Ice	3.34	2.75	0.10
							1" Ice	3.65	3.05	0.16
SBNHH-1D65A w/ Mount Pipe	B	From Centroid-Le g	4.00	0.00	0.0000	149.00	No Ice	3.04	2.45	0.05
							1/2" Ice	3.34	2.75	0.10
							1" Ice	3.65	3.05	0.16

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
SBNHH-1D65A w/ Mount Pipe	C	From	4.00	0.0000	149.00	No Ice	3.04	2.45	0.05
		Centroid-Le	0.00			1/2" Ice	3.34	2.75	0.10
		g	1.00			1" Ice	3.65	3.05	0.16
QS46512-2 w/ Mount Pipe	A	From	4.00	0.0000	149.00	No Ice	2.95	3.33	0.09
		Centroid-Le	0.00			1/2" Ice	3.25	3.63	0.15
		g	1.00			1" Ice	3.55	3.94	0.21
QS46512-2 w/ Mount Pipe	C	From	4.00	0.0000	149.00	No Ice	2.95	3.33	0.09
		Centroid-Le	0.00			1/2" Ice	3.25	3.63	0.15
		g	1.00			1" Ice	3.55	3.94	0.21
80010799 w/ Mount Pipe	B	From	4.00	0.0000	149.00	No Ice	9.91	6.15	0.14
		Centroid-Le	0.00			1/2" Ice	10.67	6.87	0.24
		g	1.00			1" Ice	11.44	7.60	0.36
TT19-08BP111-001	A	From	4.00	0.0000	149.00	No Ice	0.55	0.44	0.02
		Centroid-Le	0.00			1/2" Ice	0.64	0.53	0.02
		g	1.00			1" Ice	0.74	0.63	0.03
TT19-08BP111-001	B	From	4.00	0.0000	149.00	No Ice	0.55	0.44	0.02
		Centroid-Le	0.00			1/2" Ice	0.64	0.53	0.02
		g	1.00			1" Ice	0.74	0.63	0.03
TT19-08BP111-001	C	From	4.00	0.0000	149.00	No Ice	0.55	0.44	0.02
		Centroid-Le	0.00			1/2" Ice	0.64	0.53	0.02
		g	1.00			1" Ice	0.74	0.63	0.03
(2) DBC0061F1V51-2	A	From	4.00	0.0000	149.00	No Ice	0.43	0.41	0.03
		Centroid-Le	0.00			1/2" Ice	0.51	0.50	0.03
		g	1.00			1" Ice	0.61	0.59	0.04
(2) DBC0061F1V51-2	B	From	4.00	0.0000	149.00	No Ice	0.43	0.41	0.03
		Centroid-Le	0.00			1/2" Ice	0.51	0.50	0.03
		g	1.00			1" Ice	0.61	0.59	0.04
(2) DBC0061F1V51-2	C	From	4.00	0.0000	149.00	No Ice	0.43	0.41	0.03
		Centroid-Le	0.00			1/2" Ice	0.51	0.50	0.03
		g	1.00			1" Ice	0.61	0.59	0.04
RADIO 4449 B5/B12	A	From	4.00	0.0000	149.00	No Ice	1.64	1.30	0.07
		Centroid-Le	0.00			1/2" Ice	1.80	1.45	0.09
		g	1.00			1" Ice	1.97	1.60	0.11
RADIO 4449 B5/B12	B	From	4.00	0.0000	149.00	No Ice	1.64	1.30	0.07
		Centroid-Le	0.00			1/2" Ice	1.80	1.45	0.09
		g	1.00			1" Ice	1.97	1.60	0.11
RADIO 4449 B5/B12	C	From	4.00	0.0000	149.00	No Ice	1.64	1.30	0.07
		Centroid-Le	0.00			1/2" Ice	1.80	1.45	0.09
		g	1.00			1" Ice	1.97	1.60	0.11
RRUS 4415 B25	A	From	4.00	0.0000	149.00	No Ice	1.64	0.68	0.04
		Centroid-Le	0.00			1/2" Ice	1.80	0.79	0.06
		g	1.00			1" Ice	1.97	0.91	0.07
RRUS 4415 B25	B	From	4.00	0.0000	149.00	No Ice	1.64	0.68	0.04
		Centroid-Le	0.00			1/2" Ice	1.80	0.79	0.06
		g	1.00			1" Ice	1.97	0.91	0.07
RRUS 4415 B25	C	From	4.00	0.0000	149.00	No Ice	1.64	0.68	0.04
		Centroid-Le	0.00			1/2" Ice	1.80	0.79	0.06
		g	1.00			1" Ice	1.97	0.91	0.07
DC6-48-60-18-8C	A	From	4.00	0.0000	149.00	No Ice	1.14	1.14	0.03
		Centroid-Le	0.00			1/2" Ice	1.79	1.79	0.05
		g	1.00			1" Ice	2.00	2.00	0.07
DC6-48-60-18-8C	B	From	4.00	0.0000	149.00	No Ice	1.14	1.14	0.03
		Centroid-Le	0.00			1/2" Ice	1.79	1.79	0.05
		g	1.00			1" Ice	2.00	2.00	0.07
DC6-48-60-18-8C	C	From	4.00	0.0000	149.00	No Ice	1.14	1.14	0.03
		Centroid-Le	0.00			1/2" Ice	1.79	1.79	0.05
		g	1.00			1" Ice	2.00	2.00	0.07

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	Project	TEP No. 55790.922308	Date	16:53:08 01/29/24
	Client	Crown Castle	Designed by	RTP

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
RRUS 4426 B66	A	From	4.00	0.0000		149.00	No Ice	1.64	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.06
		g	1.00				1" Ice	1.97	0.08
RRUS 4426 B66	B	From	4.00	0.0000		149.00	No Ice	1.64	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.06
		g	1.00				1" Ice	1.97	0.08
RRUS 4426 B66	C	From	4.00	0.0000		149.00	No Ice	1.64	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.06
		g	1.00				1" Ice	1.97	0.08
RRUS 32	A	From	4.00	0.0000		149.00	No Ice	2.86	0.06
		Centroid-Le	0.00				1/2" Ice	3.08	0.08
		g	1.00				1" Ice	3.32	0.10
RRUS 32	B	From	4.00	0.0000		149.00	No Ice	2.86	0.06
		Centroid-Le	0.00				1/2" Ice	3.08	0.08
		g	1.00				1" Ice	3.32	0.10
RRUS 32	C	From	4.00	0.0000		149.00	No Ice	2.86	0.06
		Centroid-Le	0.00				1/2" Ice	3.08	0.08
		g	1.00				1" Ice	3.32	0.10
RRUS E2 B29	A	From	4.00	0.0000		149.00	No Ice	3.15	0.06
		Centroid-Le	0.00				1/2" Ice	3.36	0.08
		g	1.00				1" Ice	3.59	0.11
RRUS E2 B29	B	From	4.00	0.0000		149.00	No Ice	3.15	0.06
		Centroid-Le	0.00				1/2" Ice	3.36	0.08
		g	1.00				1" Ice	3.59	0.11
RRUS E2 B29	C	From	4.00	0.0000		149.00	No Ice	3.15	0.06
		Centroid-Le	0.00				1/2" Ice	3.36	0.08
		g	1.00				1" Ice	3.59	0.11
2.4" Dia x 6-ft Pipe	A	From	4.00	0.0000		149.00	No Ice	1.43	0.02
		Centroid-Le	0.00				1/2" Ice	1.93	0.03
		g	0.00				1" Ice	2.30	0.05
2.4" Dia x 6-ft Pipe	B	From	4.00	0.0000		149.00	No Ice	1.43	0.02
		Centroid-Le	0.00				1/2" Ice	1.93	0.03
		g	0.00				1" Ice	2.30	0.05
2.4" Dia x 6-ft Pipe	C	From	4.00	0.0000		149.00	No Ice	1.43	0.02
		Centroid-Le	0.00				1/2" Ice	1.93	0.03
		g	0.00				1" Ice	2.30	0.05
Platform Mount [LP 404-1_KCKR]	C	None		0.0000		149.00	No Ice	35.82	2.32
							1/2" Ice	45.85	3.02
							1" Ice	55.76	3.89
140									
AIR 21 B2A/B4P w/ Mount Pipe	A	From	4.00	0.0000		140.00	No Ice	3.14	0.10
		Centroid-Fa	0.00				1/2" Ice	3.45	0.15
		ce	1.00				1" Ice	3.76	0.21
AIR 21 B2A/B4P w/ Mount Pipe	B	From	4.00	0.0000		140.00	No Ice	3.14	0.10
		Centroid-Fa	0.00				1/2" Ice	3.45	0.15
		ce	1.00				1" Ice	3.76	0.21
AIR 21 B2A/B4P w/ Mount Pipe	C	From	4.00	0.0000		140.00	No Ice	3.14	0.10
		Centroid-Fa	0.00				1/2" Ice	3.45	0.15
		ce	1.00				1" Ice	3.76	0.21
AIR 21 B4A/B2P w/ Mount Pipe	A	From	4.00	0.0000		140.00	No Ice	3.14	0.10
		Centroid-Fa	0.00				1/2" Ice	3.45	0.15
		ce	1.00				1" Ice	3.76	0.21
AIR 21 B4A/B2P w/ Mount Pipe	B	From	4.00	0.0000		140.00	No Ice	3.14	0.10
		Centroid-Fa	0.00				1/2" Ice	3.45	0.15
		ce	1.00				1" Ice	3.76	0.21
AIR 21 B4A/B2P w/ Mount Pipe	C	From	4.00	0.0000		140.00	No Ice	3.14	0.10
		Centroid-Fa	0.00				1/2" Ice	3.45	0.15

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	Project TEP No. 55790.922308	Date 16:53:08 01/29/24
	Client Crown Castle	Designed by RTP

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
APXVAALL24_43-U-NA20 w/ Mount Pipe	A	ce	1.00		0.0000	140.00	1" Ice	3.76	3.18	0.21
		From	4.00				No Ice	14.69	6.87	0.18
		Centroid-Fa	0.00				1/2" Ice	15.46	7.55	0.31
APXVAALL24_43-U-NA20 w/ Mount Pipe	B	ce	1.00		0.0000	140.00	1" Ice	16.23	8.25	0.45
		From	4.00				No Ice	14.69	6.87	0.18
		Centroid-Fa	0.00				1/2" Ice	15.46	7.55	0.31
APXVAALL24_43-U-NA20 w/ Mount Pipe	C	ce	1.00		0.0000	140.00	1" Ice	16.23	8.25	0.45
		From	4.00				No Ice	14.69	6.87	0.18
		Centroid-Fa	0.00				1/2" Ice	15.46	7.55	0.31
KRY 112 144/1	A	ce	1.00		0.0000	140.00	1" Ice	16.23	8.25	0.45
		From	4.00				No Ice	0.35	0.17	0.01
		Centroid-Fa	0.00				1/2" Ice	0.43	0.23	0.01
KRY 112 144/1	B	ce	1.00		0.0000	140.00	1" Ice	0.51	0.30	0.02
		From	4.00				No Ice	0.35	0.17	0.01
		Centroid-Fa	0.00				1/2" Ice	0.43	0.23	0.01
KRY 112 144/1	C	ce	1.00		0.0000	140.00	1" Ice	0.51	0.30	0.02
		From	4.00				No Ice	0.35	0.17	0.01
		Centroid-Fa	0.00				1/2" Ice	0.43	0.23	0.01
RADIO 4449 B12/B71	A	ce	1.00		0.0000	140.00	1" Ice	0.51	0.30	0.02
		From	4.00				No Ice	1.64	1.15	0.08
		Centroid-Fa	0.00				1/2" Ice	1.80	1.29	0.09
RADIO 4449 B12/B71	B	ce	1.00		0.0000	140.00	1" Ice	1.97	1.44	0.11
		From	4.00				No Ice	1.64	1.15	0.08
		Centroid-Fa	0.00				1/2" Ice	1.80	1.29	0.09
RADIO 4449 B12/B71	C	ce	1.00		0.0000	140.00	1" Ice	1.97	1.44	0.11
		From	4.00				No Ice	1.64	1.15	0.08
		Centroid-Fa	0.00				1/2" Ice	1.80	1.29	0.09
Platform Mount [LP 303-1_HR-1]	C	ce	1.00		0.0000	140.00	1" Ice	1.97	1.44	0.11
		None					No Ice	17.09	17.09	1.50
							1/2" Ice	21.47	21.47	1.88
130										
BXA-80080/4CF w/ Mount Pipe	A	From	4.00		0.0000	130.00	No Ice	4.93	3.64	0.05
		Centroid-Le	0.00				1/2" Ice	5.46	4.14	0.09
		g	3.00				1" Ice	6.00	4.66	0.14
BXA-80080/4CF w/ Mount Pipe	B	From	4.00		0.0000	130.00	No Ice	4.93	3.64	0.05
		Centroid-Le	0.00				1/2" Ice	5.46	4.14	0.09
		g	3.00				1" Ice	6.00	4.66	0.14
BXA-80080/4CF w/ Mount Pipe	C	From	4.00		0.0000	130.00	No Ice	4.93	3.64	0.05
		Centroid-Le	0.00				1/2" Ice	5.46	4.14	0.09
		g	3.00				1" Ice	6.00	4.66	0.14
(2) JAHH-65B-R3B w/ Mount Pipe	A	From	4.00		0.0000	130.00	No Ice	5.50	4.38	0.10
		Centroid-Le	0.00				1/2" Ice	5.97	4.84	0.17
		g	3.00				1" Ice	6.45	5.30	0.25
(2) JAHH-45B-R3B w/ Mount Pipe	B	From	4.00		0.0000	130.00	No Ice	8.26	4.39	0.12
		Centroid-Le	0.00				1/2" Ice	8.83	4.91	0.20
		g	3.00				1" Ice	9.41	5.43	0.29
(2) JAHH-65B-R3B w/ Mount Pipe	C	From	4.00		0.0000	130.00	No Ice	5.50	4.38	0.10
		Centroid-Le	0.00				1/2" Ice	5.97	4.84	0.17
		g	3.00				1" Ice	6.45	5.30	0.25
MT6407-77A w/ Mount Pipe	A	From	4.00		0.0000	130.00	No Ice	5.94	3.10	0.10
		Centroid-Le	0.00				1/2" Ice	6.47	3.55	0.13
		g	3.00				1" Ice	7.02	4.02	0.18
MT6407-77A w/ Mount Pipe	B	From	4.00		0.0000	130.00	No Ice	5.94	3.10	0.10
		Centroid-Le	0.00				1/2" Ice	6.47	3.55	0.13
		g	3.00				1" Ice	7.02	4.02	0.18
MT6407-77A w/ Mount Pipe	C	From	4.00		0.0000	130.00	No Ice	5.94	3.10	0.10

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	Project TEP No. 55790.922308	Date 16:53:08 01/29/24
	Client Crown Castle	Designed by RTP

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
CBC78T-DS-43-2X	A	Centroid-Le	0.00			1/2" Ice	6.47	3.55	0.13
		g	3.00			1" Ice	7.02	4.02	0.18
		From	4.00	0.0000	130.00	No Ice	0.37	0.51	0.02
CBC78T-DS-43-2X	B	Centroid-Le	0.00			1/2" Ice	0.45	0.60	0.03
		g	3.00			1" Ice	0.53	0.70	0.04
		From	4.00	0.0000	130.00	No Ice	0.37	0.51	0.02
CBC78T-DS-43-2X	C	Centroid-Le	0.00			1/2" Ice	0.45	0.60	0.03
		g	3.00			1" Ice	0.53	0.70	0.04
		From	4.00	0.0000	130.00	No Ice	0.37	0.51	0.02
KA-6030	A	Centroid-Le	0.00			1/2" Ice	0.45	0.60	0.03
		g	3.00			1" Ice	0.53	0.70	0.04
		From	4.00	0.0000	130.00	No Ice	0.96	0.29	0.02
KA-6030	B	Centroid-Le	0.00			1/2" Ice	1.09	0.36	0.02
		g	3.00			1" Ice	1.22	0.45	0.03
		From	4.00	0.0000	130.00	No Ice	0.96	0.29	0.02
RF4440D-13A	A	Centroid-Le	0.00			1/2" Ice	1.09	0.36	0.02
		g	3.00			1" Ice	1.22	0.45	0.03
		From	4.00	0.0000	130.00	No Ice	1.87	1.13	0.07
RF4440D-13A	B	Centroid-Le	0.00			1/2" Ice	2.03	1.27	0.09
		g	3.00			1" Ice	2.21	1.41	0.11
		From	4.00	0.0000	130.00	No Ice	1.87	1.13	0.07
RF4440D-13A	C	Centroid-Le	0.00			1/2" Ice	2.03	1.27	0.09
		g	3.00			1" Ice	2.21	1.41	0.11
		From	4.00	0.0000	130.00	No Ice	1.87	1.13	0.07
RVZDC-6627-PF-48	A	Centroid-Le	0.00			1/2" Ice	2.03	1.27	0.09
		g	3.00			1" Ice	2.21	1.41	0.11
		From	4.00	0.0000	130.00	No Ice	3.79	2.51	0.03
RF4439D-25A	A	Centroid-Le	0.00			1/2" Ice	4.04	2.73	0.06
		g	3.00			1" Ice	4.30	2.95	0.10
		From	4.00	0.0000	130.00	No Ice	1.87	1.25	0.07
RF4439D-25A	B	Centroid-Le	0.00			1/2" Ice	2.03	1.39	0.09
		g	3.00			1" Ice	2.21	1.54	0.11
		From	4.00	0.0000	130.00	No Ice	1.87	1.25	0.07
RF4439D-25A	C	Centroid-Le	0.00			1/2" Ice	2.03	1.39	0.09
		g	3.00			1" Ice	2.21	1.54	0.11
		From	4.00	0.0000	130.00	No Ice	1.87	1.25	0.07
Miscellaneous [NA 510-1]	C	Centroid-Le	0.00			1/2" Ice	2.03	1.39	0.09
		g	3.00			1" Ice	2.21	1.54	0.11
		None		0.0000	130.00	No Ice	6.36	6.36	0.26
Platform Mount [LP 403-1_KCKR]	C	Centroid-Le	0.00			1/2" Ice	8.52	8.52	0.34
		g	3.00			1" Ice	10.62	10.62	0.46
		None		0.0000	130.00	No Ice	30.16	30.16	1.77
71 FMO	B	Centroid-Le	0.00			1/2" Ice	37.53	37.53	2.32
		g	1.00			1" Ice	45.13	45.13	2.97
		From Leg	3.00	0.0000	71.00	No Ice	8.40	8.40	0.01
FMO	C	Centroid-Le	0.00			1/2" Ice	8.81	8.81	0.18
		g	1.00			1" Ice	9.24	9.24	0.36
		From Leg	3.00	0.0000	71.00	No Ice	8.40	8.40	0.01
2.4" Dia. x 10-ft Mount Pipe	B	Centroid-Le	0.00			1/2" Ice	8.81	8.81	0.18
		g	1.00			1" Ice	9.24	9.24	0.36
		From Leg	3.00	0.0000	71.00	No Ice	2.38	2.38	0.04
2.4" Dia x 6-ft Pipe	B	Centroid-Le	0.00			1/2" Ice	3.40	3.40	0.05
		g	0.00			1" Ice	4.45	4.45	0.08
		From Leg	3.00	0.0000	71.00	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.93	1.93	0.03
			0.00			1" Ice	2.30	2.30	0.05

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	Project	TEP No. 55790.922308	Date	16:53:08 01/29/24
	Client	Crown Castle	Designed by	RTP

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			ft ft ft	°	ft	ft ²	ft ²	K	
2.4" Dia. x 10-ft Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	71.00	No Ice 1/2" Ice 1" Ice	2.38 3.40 4.45	2.38 3.40 4.45	0.04 0.05 0.08
2.4" Dia x 6-ft Pipe	C	From Leg	3.00 0.00 0.00	0.0000	71.00	No Ice 1/2" Ice 1" Ice	1.43 1.93 2.30	1.43 1.93 2.30	0.02 0.03 0.05
Side Arm Mount [SO 305-1]	B	From Leg	1.50 0.00 0.00	0.0000	71.00	No Ice 1/2" Ice 1" Ice	0.53 0.78 1.06	1.52 2.07 2.66	0.03 0.04 0.06
Side Arm Mount [SO 305-1]	C	From Leg	1.50 0.00 0.00	0.0000	71.00	No Ice 1/2" Ice 1" Ice	0.53 0.78 1.06	1.52 2.07 2.66	0.03 0.04 0.06
22 MYA-43012N	C	From Leg	3.00 0.00 0.00	0.0000	22.00	No Ice 1/2" Ice 1" Ice	0.62 1.12 1.62	0.62 1.12 1.62	0.01 0.01 0.02
2.4" Dia x 4-ft Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	22.00	No Ice 1/2" Ice 1" Ice	0.87 1.12 1.37	0.87 1.12 1.37	0.01 0.02 0.03
Side Arm Mount [SO 701-1]	C	From Leg	1.50 0.00 0.00	0.0000	22.00	No Ice 1/2" Ice 1" Ice	0.85 1.14 1.43	1.67 2.34 3.01	0.07 0.08 0.09

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy

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	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>RTP</p>

<i>Comb. No.</i>	<i>Description</i>
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Tower Deflections - Service Wind

<i>Section No.</i>	<i>Elevation ft</i>	<i>Horz. Deflection in</i>	<i>Gov. Load Comb.</i>	<i>Tilt °</i>	<i>Twist °</i>
L1	150 - 145	14.240	31	1.2701	0.0103
L2	145 - 140	12.918	31	1.2561	0.0091
L3	140 - 135	11.626	31	1.2161	0.0078
L4	135 - 130	10.389	31	1.1489	0.0065
L5	130 - 125	9.237	31	1.0567	0.0054
L6	125 - 123.75	8.198	31	0.9329	0.0046
L7	123.75 - 123.5	7.959	31	0.8983	0.0045
L8	123.5 - 118.5	7.912	31	0.8952	0.0044
L9	118.5 - 113.5	7.015	31	0.8258	0.0041
L10	113.5 - 112.75	6.196	31	0.7476	0.0038
L11	112.75 - 112.5	6.081	31	0.7353	0.0037
L12	112.5 - 110	6.042	31	0.7335	0.0037
L13	110 - 107.25	5.666	31	0.7144	0.0036
L14	107.25 - 107	5.264	31	0.6935	0.0036
L15	107 - 102	5.228	31	0.6900	0.0036
L16	102 - 97	4.550	31	0.6176	0.0033
L17	97 - 95	3.950	31	0.5417	0.0030
L18	95 - 94.75	3.733	31	0.5107	0.0029
L19	94.75 - 89.75	3.707	31	0.5075	0.0029
L20	89.75 - 88.67	3.217	31	0.4417	0.0027
L21	88.67 - 87.75	3.120	31	0.4277	0.0027
L22	87.75 - 87.5	3.040	31	0.4174	0.0026
L23	87.5 - 85.5	3.019	31	0.4145	0.0026
L24	85.5 - 85.25	2.853	31	0.3914	0.0025
L25	85.25 - 83	2.832	31	0.3893	0.0025
L26	83 - 82.75	2.656	31	0.3708	0.0025
L27	82.75 - 82.5	2.637	31	0.3690	0.0025
L28	82.5 - 77.5	2.618	31	0.3667	0.0024
L29	77.5 - 70	2.262	31	0.3242	0.0023
L30	73.5 - 69	2.006	31	0.2942	0.0022
L31	69 - 64	1.739	31	0.2762	0.0021
L32	64 - 59	1.468	31	0.2472	0.0019
L33	59 - 55.42	1.225	31	0.2215	0.0017
L34	55.42 - 55.17	1.067	31	0.2048	0.0016
L35	55.17 - 50.17	1.057	31	0.2037	0.0016
L36	50.17 - 47.17	0.856	31	0.1825	0.0014
L37	47.17 - 46.92	0.746	31	0.1711	0.0013
L38	46.92 - 43.42	0.737	31	0.1693	0.0013

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L39	43.42 - 43.17	0.623	31	0.1455	0.0011
L40	43.17 - 41.17	0.615	31	0.1439	0.0011
L41	41.17 - 40.92	0.558	31	0.1313	0.0010
L42	40.92 - 35.92	0.551	31	0.1304	0.0010
L43	35.92 - 31.5	0.423	31	0.1147	0.0009
L44	35.67 - 30.5	0.417	31	0.1139	0.0009
L45	30.5 - 25.5	0.299	31	0.1022	0.0008
L46	25.5 - 20.5	0.204	31	0.0816	0.0006
L47	20.5 - 15.5	0.131	28	0.0629	0.0005
L48	15.5 - 10.5	0.077	28	0.0458	0.0004
L49	10.5 - 5.5	0.036	28	0.0321	0.0002
L50	5.5 - 0.5	0.010	28	0.0173	0.0001
L51	0.5 - 0	0.000	1	0.0000	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.00	6' x 15"dia. Top Hat	31	14.240	1.2701	0.0103	9215
149.00	OPA65R-BU4B w/ Mount Pipe	31	13.975	1.2683	0.0101	9215
140.00	AIR 21 B2A/B4P w/ Mount Pipe	31	11.626	1.2161	0.0078	5098
130.00	BXA-80080/4CF w/ Mount Pipe	31	9.237	1.0567	0.0054	2647
88.67	Guy	31	3.120	0.4277	0.0027	4812
71.00	FMO	31	1.855	0.2837	0.0021	11478
22.00	MYA-43012N	28	0.150	0.0681	0.0005	15541

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	122.390	6	8.3624	0.1259
L2	145 - 140	113.713	6	8.3004	0.1223
L3	140 - 135	105.168	6	8.1140	0.1158
L4	135 - 130	96.880	6	7.7948	0.1069
L5	130 - 125	88.987	6	7.3536	0.0957
L6	125 - 123.75	81.623	6	6.7613	0.0833
L7	123.75 - 123.5	79.883	6	6.5950	0.0798
L8	123.5 - 118.5	79.540	6	6.5802	0.0795
L9	118.5 - 113.5	72.850	6	6.2467	0.0725
L10	113.5 - 112.75	66.529	6	5.8699	0.0645
L11	112.75 - 112.5	65.616	6	5.8104	0.0633
L12	112.5 - 110	65.313	6	5.8016	0.0631
L13	110 - 107.25	62.311	6	5.7096	0.0611
L14	107.25 - 107	59.064	6	5.6087	0.0590
L15	107 - 102	58.772	6	5.5919	0.0586
L16	102 - 97	53.119	6	5.2418	0.0511
L17	97 - 95	47.839	6	4.8743	0.0432
L18	95 - 94.75	45.835	6	4.7238	0.0399
L19	94.75 - 89.75	45.589	6	4.7085	0.0396
L20	89.75 - 88.67	40.838	6	4.3893	0.0327

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L21	88.67 - 87.75	39.856	6	4.3209	0.0312
L22	87.75 - 87.5	39.031	6	4.2675	0.0300
L23	87.5 - 85.5	38.809	6	4.2521	0.0297
L24	85.5 - 85.25	37.058	6	4.1275	0.0269
L25	85.25 - 83	36.843	6	4.1158	0.0267
L26	83 - 82.75	34.933	6	4.0100	0.0246
L27	82.75 - 82.5	34.724	6	3.9992	0.0244
L28	82.5 - 77.5	34.515	6	3.9859	0.0241
L29	77.5 - 70	30.491	6	3.7201	0.0196
L30	73.5 - 69	27.467	6	3.5134	0.0167
L31	69 - 64	24.216	6	3.3773	0.0149
L32	64 - 59	20.810	6	3.1390	0.0128
L33	59 - 55.42	17.650	6	2.9071	0.0111
L34	55.42 - 55.17	15.534	6	2.7448	0.0100
L35	55.17 - 50.17	15.390	6	2.7337	0.0099
L36	50.17 - 47.17	12.647	6	2.5127	0.0087
L37	47.17 - 46.92	11.110	6	2.3852	0.0080
L38	46.92 - 43.42	10.986	6	2.3650	0.0079
L39	43.42 - 43.17	9.356	6	2.0866	0.0066
L40	43.17 - 41.17	9.248	6	2.0671	0.0065
L41	41.17 - 40.92	8.415	6	1.9131	0.0058
L42	40.92 - 35.92	8.315	6	1.9027	0.0058
L43	35.92 - 31.5	6.430	6	1.7010	0.0050
L44	35.67 - 30.5	6.341	6	1.6912	0.0049
L45	30.5 - 25.5	4.581	6	1.5321	0.0044
L46	25.5 - 20.5	3.132	6	1.2400	0.0034
L47	20.5 - 15.5	1.979	6	0.9646	0.0026
L48	15.5 - 10.5	1.106	6	0.7055	0.0019
L49	10.5 - 5.5	0.496	6	0.4622	0.0012
L50	5.5 - 0.5	0.133	6	0.2341	0.0006
L51	0.5 - 0	0.001	6	0.0205	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.00	6' x 15"dia. Top Hat	6	122.390	8.3624	0.1415	2134
149.00	OPA65R-BU4B w/ Mount Pipe	6	120.651	8.3550	0.1405	2134
140.00	AIR 21 B2A/B4P w/ Mount Pipe	6	105.168	8.1140	0.1271	1171
130.00	BXA-80080/4CF w/ Mount Pipe	6	88.987	7.3536	0.1040	580
88.67	Guy	6	39.856	4.3209	0.0312	948
71.00	FMO	6	25.642	3.4364	0.0157	1508
22.00	MYA-43012N	6	2.294	1.0430	0.0029	1048

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
L21	88.67 (A) (54)	1 5/8 BS	38.88	324.00	164.12	204.12	0.952	1.184
	88.67 (B) (53)	1 3/8 BS	27.84	232.00	80.57	146.16	0.952	1.728

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Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
	88.67 (C) (52)	1 3/8 BS	27.84	232.00	97.08	146.16	0.952	1.434

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 145 (1)	TP15.78x15x0.1875	5.00	61.33	131.8	9.4140	-4.70	122.35	0.038
L2	145 - 140 (2)	TP16.56x15.78x0.1875	5.00	61.33	125.6	9.8849	-4.94	141.64	0.035
L3	140 - 135 (3)	TP17.34x16.56x0.1875	5.00	61.33	119.9	10.3558	-8.41	162.87	0.052
L4	135 - 130 (4)	TP18.12x17.34x0.1875	5.00	61.33	114.6	10.8267	-8.80	186.11	0.047
L5	130 - 125 (5)	TP18.9x18.12x0.1875	5.00	61.33	109.9	11.2977	-13.16	211.47	0.062
L6	125 - 123.75 (6)	TP19.095x18.9x0.1875	1.25	61.33	108.7	11.4154	-13.30	218.15	0.061
L7	123.75 - 123.5 (7)	TP19.134x19.095x0.4563	0.25	61.33	110.1	27.4399	-13.36	511.72	0.026
L8	123.5 - 118.5 (8)	TP19.914x19.134x0.4375	5.00	61.33	105.6	27.4375	-14.11	556.37	0.025
L9	118.5 - 113.5 (9)	TP20.694x19.914x0.4313	5.00	61.33	101.5	28.1374	-14.90	617.56	0.024
L10	113.5 - 112.75 (10)	TP20.811x20.694x0.425	0.75	61.33	100.8	27.8982	-15.02	619.78	0.024
L11	112.75 - 112.5 (11)	TP20.85x20.811x1.0625	0.25	61.33	103.9	67.6980	-15.07	1416.95	0.011
L12	112.5 - 110 (12)	TP21.24x20.85x1.0375	2.50	61.33	101.8	67.4915	-15.55	1472.51	0.011
L13	110 - 107.25 (13)	TP21.6964x21.24x1.075	2.75	61.33	99.7	71.3810	-16.12	1622.62	0.010
L14	107.25 - 107 (14)	TP21.7379x21.6964x0.55	0.25	61.33	97.0	37.5238	-16.18	897.12	0.018
L15	107 - 102 (15)	TP22.5677x21.7379x0.5375	5.00	61.33	93.3	38.1288	-17.76	974.87	0.018
L16	102 - 97 (16)	TP23.3975x22.5677x0.525	5.00	61.33	89.9	38.6660	-18.91	1049.57	0.018
L17	97 - 95 (17)	TP23.7295x23.3975x0.5188	2.00	61.33	88.6	38.7706	-19.38	1076.05	0.018
L18	95 - 94.75 (18)	TP23.7709x23.7295x0.65	0.25	61.33	88.9	48.3921	-19.45	1335.32	0.015
L19	94.75 - 89.75 (19)	TP24.6008x23.7709x0.625	5.00	61.33	85.7	48.2512	-20.78	1403.37	0.015
L20	89.75 - 88.67 (20)	TP24.78x24.6008x0.625	1.08	61.33	85.1	48.6119	-21.07	1428.55	0.015
L21	88.67 - 87.75 (21)	TP24.9323x24.78x0.625	0.92	88.67	123.0	48.6119	-245.04	725.35	0.338
L22	87.75 - 87.5 (22)	TP24.9736x24.9323x0.5875	0.25	88.67	122.1	46.0542	-245.28	698.02	0.351
L23	87.5 - 85.5 (23)	TP25.3047x24.9736x0.575	2.00	88.67	121.8	45.1741	-245.34	687.72	0.357
L24	85.5 - 85.25 (24)	TP25.346x25.3047x0.775	0.25	88.67	121.2	61.2138	-245.81	941.94	0.261
L25	85.25 - 83 (25)	TP25.7184x25.346x0.7625	2.25	88.67	120.9	60.3587	-245.89	932.86	0.264
L26	83 - 82.75 (26)	TP25.7598x25.7184x0.825	0.25	88.67	119.4	66.1294	-246.50	1047.98	0.235
L27	82.75 - 82.5 (27)	TP25.8012x25.7598x0.65	0.25	88.67	118.4	52.5548	-246.58	847.40	0.291
L28	82.5 - 77.5 (28)	TP26.6287x25.8012x0.6375	5.00	88.67	118.1	51.6547	-246.65	836.47	0.295
L29	77.5 - 70 (29)	TP27.87x26.6287x0.625	7.50	88.67	114.3	52.3325	-247.99	904.96	0.274

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L30	70 - 69 (30)	TP27.4817x26.7907x0.6625	4.50	88.67	111.5	56.8845	-250.98	1034.40	0.243
L31	69 - 64 (31)	TP28.2495x27.4817x0.6625	5.00	88.67	110.8	57.2121	-251.25	1052.37	0.239
L32	64 - 59 (32)	TP29.0173x28.2495x0.65	5.00	88.67	107.7	57.7657	-252.57	1125.28	0.224
L33	59 - 55.42 (33)	TP29.567x29.0173x0.6375	3.58	88.67	104.7	58.2566	-253.91	1199.92	0.212
L34	55.42 - 55.17 (34)	TP29.6054x29.567x0.6375	0.25	88.67	102.7	59.3850	-254.88	1271.01	0.201
L35	55.17 - 50.17 (35)	TP30.3731x29.6054x0.625	5.00	88.67	102.6	58.3230	-254.95	1252.67	0.204
L36	50.17 - 47.17 (36)	TP30.8338x30.3731x0.625	3.00	88.67	99.9	59.8681	-256.31	1354.89	0.189
L37	47.17 - 46.92 (37)	TP30.8722x30.8338x0.3125 (1.14 CR) - 37	0.25	88.67	97.4	30.7121	-257.14	729.46	0.353
L38	46.92 - 43.42 (38)	TP31.4096x30.8722x0.3125 (1.14 CR) - 38/2	3.50	88.67	97.3	30.7507	-257.19	732.03	0.351
L39	43.42 - 43.17 (39)	TP31.448x31.4096x0.3125 (1.11 CR) - 39	0.25	88.67	95.6	31.2915	-257.79	768.21	0.336
L40	43.17 - 41.17 (40)	TP31.7551x31.448x0.3125 (1.11 CR) - 40	2.00	88.67	95.5	31.3301	-257.83	770.81	0.334
L41	41.17 - 40.92 (41)	TP31.7935x31.7551x0.5875	0.25	88.67	95.4	58.9614	-258.18	1453.21	0.178
L42	40.92 - 35.92 (42)	TP32.5613x31.7935x0.5875	5.00	88.67	95.2	59.0340	-258.24	1458.09	0.177
L43	35.92 - 31.5 (43)	TP33.24x32.5613x0.5875	4.42	88.67	93.0	60.4864	-259.60	1556.36	0.167
L44	31.5 - 30.5 (44)	TP32.7574x31.9747x0.375	5.17	88.67	92.2	38.9189	-261.47	1014.57	0.258
L45	30.5 - 25.5 (45)	TP33.5144x32.7574x0.375	5.00	88.67	91.8	39.1017	-261.67	1027.05	0.255
L46	25.5 - 20.5 (46)	TP34.2714x33.5144x0.375	5.00	88.67	89.7	40.0158	-262.69	1089.77	0.241
L47	20.5 - 15.5 (47)	TP35.0284x34.2714x0.375	5.00	88.67	87.7	40.9299	-263.93	1152.94	0.229
L48	15.5 - 10.5 (48)	TP35.7853x35.0284x0.375	5.00	88.67	85.8	41.8439	-264.98	1216.51	0.218
L49	10.5 - 5.5 (49)	TP36.5423x35.7853x0.375	5.00	88.67	83.9	42.7580	-266.05	1280.40	0.208
L50	5.5 - 0.5 (50)	TP37.2993x36.5423x0.375	5.00	88.67	82.2	43.6720	-267.14	1344.55	0.199
L51	0.5 - 0 (51)	TP37.375x37.2993x0.375	0.50	88.67	80.5	44.5861	-268.19	1408.92	0.190

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	150 - 145 (1)	TP15.78x15x0.1875	26.71	218.67	0.122	0.00	218.67	0.000
L2	145 - 140 (2)	TP16.56x15.78x0.1875	56.75	237.63	0.239	0.00	237.63	0.000
L3	140 - 135 (3)	TP17.34x16.56x0.1875	105.51	257.00	0.411	0.00	257.00	0.000
L4	135 - 130 (4)	TP18.12x17.34x0.1875	153.83	276.72	0.556	0.00	276.72	0.000
L5	130 - 125 (5)	TP18.9x18.12x0.1875	234.67	296.74	0.791	0.00	296.74	0.000
L6	125 - 123.75 (6)	TP19.095x18.9x0.1875	253.06	301.79	0.839	0.00	301.79	0.000
L7	123.75 - 123.5 (7)	TP19.134x19.095x0.4563	257.01	757.23	0.339	0.00	757.23	0.000
L8	123.5 - 118.5 (8)	TP19.914x19.134x0.4375	331.37	791.06	0.419	0.00	791.06	0.000
L9	118.5 - 113.5 (9)	TP20.694x19.914x0.4313	407.58	844.96	0.482	0.00	844.96	0.000
L10	113.5 - 112.75	TP20.811x20.694x0.425	419.18	843.23	0.497	0.00	843.23	0.000

<p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	<p>Job</p> <p>Old Saybrook (BU 841289)</p>	<p>Page</p> <p>40 of 42</p>
	<p>Project</p> <p>TEP No. 55790.922308</p>	<p>Date</p> <p>16:53:08 01/29/24</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>RTP</p>

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M_{uy} kip-ft	ϕM_{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L11	112.75 - 112.5 (10)	TP20.85x20.811x1.0625	423.55	1924.21	0.220	0.00	1924.21	0.000
L12	112.5 - 110 (11)	TP21.24x20.85x1.0375	462.12	1962.93	0.235	0.00	1962.93	0.000
L13	110 - 107.25 (12)	TP21.6964x21.24x1.075	505.81	2117.54	0.239	0.00	2117.54	0.000
L14	107.25 - 107 (13)	TP21.7379x21.6964x0.55	510.05	1172.92	0.435	0.00	1172.92	0.000
L15	107 - 102 (15)	TP22.5677x21.7379x0.5375	592.13	1241.09	0.477	0.00	1241.09	0.000
L16	102 - 97 (16)	TP23.3975x22.5677x0.525	679.47	1308.55	0.519	0.00	1308.55	0.000
L17	97 - 95 (17)	TP23.7295x23.3975x0.5188	715.08	1332.27	0.537	0.00	1332.27	0.000
L18	95 - 94.75 (18)	TP23.7709x23.7295x0.65	719.60	1647.17	0.437	0.00	1647.17	0.000
L19	94.75 - 89.75 (19)	TP24.6008x23.7709x0.625	810.11	1706.50	0.475	0.00	1706.50	0.000
L20	89.75 - 88.67 (20)	TP24.78x24.6008x0.625	829.94	1732.43	0.479	0.00	1732.43	0.000
L21	88.67 - 87.75 (21)	TP24.9323x24.78x0.625	757.99	1732.43	0.438	0.00	1732.43	0.000
L22	87.75 - 87.5 (22)	TP24.9736x24.9323x0.5875	765.48	1656.99	0.462	0.00	1656.99	0.000
L23	87.5 - 85.5 (23)	TP25.3047x24.9736x0.575	767.75	1629.83	0.471	0.00	1629.83	0.000
L24	85.5 - 85.25 (24)	TP25.346x25.3047x0.775	783.67	2203.09	0.356	0.00	2203.09	0.000
L25	85.25 - 83 (25)	TP25.7184x25.346x0.7625	785.92	2178.31	0.361	0.00	2178.31	0.000
L26	83 - 82.75 (26)	TP25.7598x25.7184x0.825	803.23	2411.68	0.333	0.00	2411.68	0.000
L27	82.75 - 82.5 (27)	TP25.8012x25.7598x0.65	805.22	1946.97	0.414	0.00	1946.97	0.000
L28	82.5 - 77.5 (28)	TP26.6287x25.8012x0.6375	807.36	1918.76	0.421	0.00	1918.76	0.000
L29	77.5 - 70 (29)	TP27.87x26.6287x0.625	844.18	2011.38	0.420	0.00	2011.38	0.000
L30	70 - 69 (30)	TP27.4817x26.7907x0.6625	896.51	2240.22	0.400	0.00	2240.22	0.000
L31	69 - 64 (31)	TP28.2495x27.4817x0.6625	904.05	2266.41	0.399	0.00	2266.41	0.000
L32	64 - 59 (32)	TP29.0173x28.2495x0.65	940.19	2357.57	0.399	0.00	2357.57	0.000
L33	59 - 55.42 (33)	TP29.567x29.0173x0.6375	973.76	2447.42	0.398	0.00	2447.42	0.000
L34	55.42 - 55.17 (34)	TP29.6054x29.567x0.6375	996.11	2544.21	0.392	0.00	2544.21	0.000
L35	55.17 - 50.17 (35)	TP30.3731x29.6054x0.625	997.76	2504.26	0.398	0.00	2504.26	0.000
L36	50.17 - 47.17 (36)	TP30.8338x30.3731x0.625	1026.92	2640.14	0.389	0.00	2640.14	0.000
L37	47.17 - 46.92 (37)	TP30.8722x30.8338x0.3125	1043.25	1326.13	0.787	0.00	1326.13	0.000
L38	46.92 - 43.42 (38)	TP31.4096x30.8722x0.3125	1044.63	1328.88	0.786	0.00	1328.88	0.000
L39	43.42 - 43.17 (39)	TP31.448x31.4096x0.3125	1061.33	1367.32	0.776	0.00	1367.32	0.000
L40	43.17 - 41.17 (40)	TP31.7551x31.448x0.3125	1062.46	1370.07	0.775	0.00	1370.07	0.000
L41	41.17 - 40.92 (41)	TP31.7935x31.7551x0.5875	1070.40	2730.00	0.392	0.00	2730.00	0.000
L42	40.92 - 35.92 (42)	TP32.5613x31.7935x0.5875	1071.39	2736.79	0.391	0.00	2736.79	0.000
L43	35.92 - 31.5 (43)	TP33.24x32.5613x0.5875	1088.84	2874.39	0.379	0.00	2874.39	0.000
L44	31.5 - 30.5 (44)	TP32.7574x31.9747x0.375	1103.19	1850.68	0.596	0.00	1850.68	0.000
L45	30.5 - 25.5 (45)	TP33.5144x32.7574x0.375	1106.30	1865.48	0.593	0.00	1865.48	0.000
L46	25.5 - 20.5 (46)	TP34.2714x33.5144x0.375	1119.07	1939.93	0.577	0.00	1939.93	0.000
L47	20.5 - 15.5 (47)	TP35.0284x34.2714x0.375	1127.48	2015.12	0.560	0.00	2015.12	0.000
L48	15.5 - 10.5 (48)	TP35.7853x35.0284x0.375	1132.29	2090.98	0.542	0.00	2090.98	0.000
L49	10.5 - 5.5 (49)	TP36.5423x35.7853x0.375	1133.44	2167.50	0.523	0.00	2167.50	0.000

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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 $\frac{M_{uy}}{\phi M_{ny}}$
L50	5.5 - 0.5 (50)	TP37.2993x36.5423x0.375	1131.28	2244.61	0.504	0.00	2244.61	0.000
L51	0.5 - 0 (51)	TP37.375x37.2993x0.375	1126.16	2322.28	0.485	0.00	2322.28	0.000

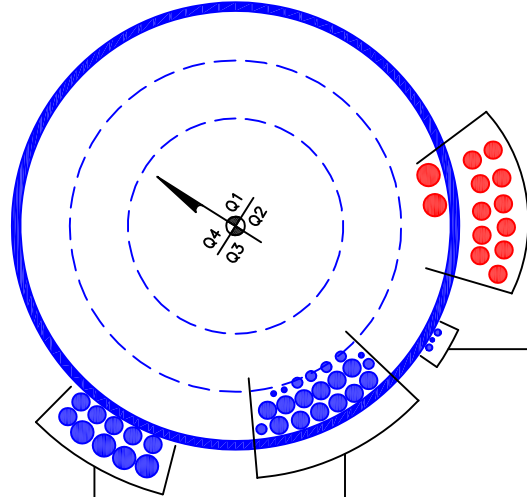
Pole Shear Design Data

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)	TP15.78x15x0.1875	5.92	165.22	0.036	0.02	226.60	0.000
L2	145 - 140 (2)	TP16.56x15.78x0.1875	6.23	173.48	0.036	0.02	249.84	0.000
L3	140 - 135 (3)	TP17.34x16.56x0.1875	9.61	181.75	0.053	0.03	274.21	0.000
L4	135 - 130 (4)	TP18.12x17.34x0.1875	9.90	190.01	0.052	0.03	299.72	0.000
L5	130 - 125 (5)	TP18.9x18.12x0.1875	14.78	198.27	0.075	0.42	326.36	0.001
L6	125 - 123.75 (6)	TP19.095x18.9x0.1875	14.81	200.34	0.074	0.42	333.20	0.001
L7	123.75 - 123.5 (7)	TP19.134x19.095x0.4563	17.14	481.57	0.036	0.42	791.20	0.001
L8	123.5 - 118.5 (8)	TP19.914x19.134x0.4375	15.24	481.53	0.032	0.42	824.96	0.001
L9	118.5 - 113.5 (9)	TP20.694x19.914x0.4313	15.57	493.81	0.032	0.42	880.15	0.000
L10	113.5 - 112.75 (10)	TP20.811x20.694x0.425	15.72	489.61	0.032	0.42	877.98	0.000
L11	112.75 - 112.5 (11)	TP20.85x20.811x1.0625	20.30	1188.10	0.017	0.42	2067.97	0.000
L12	112.5 - 110 (12)	TP21.24x20.85x1.0375	15.95	1184.48	0.013	0.42	2104.90	0.000
L13	110 - 107.25 (13)	TP21.6964x21.24x1.075	16.21	1252.74	0.013	0.42	2272.36	0.000
L14	107.25 - 107 (14)	TP21.7379x21.6964x0.55	18.82	658.54	0.029	0.42	1227.36	0.000
L15	107 - 102 (15)	TP22.5677x21.7379x0.5375	17.25	669.16	0.026	0.15	1296.72	0.000
L16	102 - 97 (16)	TP23.3975x22.5677x0.525	17.77	678.59	0.026	0.10	1365.28	0.000
L17	97 - 95 (17)	TP23.7295x23.3975x0.5188	17.93	680.42	0.026	0.08	1389.21	0.000
L18	95 - 94.75 (18)	TP23.7709x23.7295x0.65	18.37	849.28	0.022	0.08	1727.26	0.000
L19	94.75 - 89.75 (19)	TP24.6008x23.7709x0.625	18.37	846.81	0.022	0.08	1785.90	0.000
L20	89.75 - 88.67 (20)	TP24.78x24.6008x0.625	18.45	853.14	0.022	0.07	1812.70	0.000
L21	88.67 - 87.75 (21)	TP24.9323x24.78x0.625	9.50	858.52	0.011	3.10	1812.70	0.002
L22	87.75 - 87.5 (22)	TP24.9736x24.9323x0.5875	11.72	809.62	0.014	3.10	1730.82	0.002
L23	87.5 - 85.5 (23)	TP25.3047x24.9736x0.575	9.28	798.18	0.012	3.10	1701.50	0.002
L24	85.5 - 85.25 (24)	TP25.346x25.3047x0.775	11.94	1076.11	0.011	3.10	2318.03	0.001
L25	85.25 - 83 (25)	TP25.7184x25.346x0.7625	8.97	1067.32	0.008	3.10	2290.67	0.001
L26	83 - 82.75 (26)	TP25.7598x25.7184x0.825	11.80	1162.50	0.010	3.10	2541.30	0.001
L27	82.75 - 82.5 (27)	TP25.8012x25.7598x0.65	11.18	923.86	0.012	3.10	2037.19	0.002
L28	82.5 - 77.5 (28)	TP26.6287x25.8012x0.6375	8.70	912.50	0.010	3.10	2006.60	0.002
L29	77.5 - 70 (29)	TP27.87x26.6287x0.625	8.10	924.28	0.009	3.10	2100.79	0.001
L30	70 - 69 (30)	TP27.4817x26.7907x0.6625	8.49	1004.07	0.008	1.43	2341.66	0.001
L31	69 - 64 (31)	TP28.2495x27.4817x0.6625	8.38	1009.82	0.008	1.43	2368.71	0.001
L32	64 - 59 (32)	TP29.0173x28.2495x0.65	7.84	1019.43	0.008	1.43	2461.21	0.001
L33	59 - 55.42 (33)	TP29.567x29.0173x0.6375	7.28	1029.00	0.007	1.43	2552.29	0.001

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	Client	Crown Castle	Designed by	RTP

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 $\frac{T_u}{\phi T_n}$
L34	55.42 - 55.17 (34)	TP29.6054x29.567x0.6375	8.25	1043.59	0.008	1.43	2652.12	0.001
L35	55.17 - 50.17 (35)	TP30.3731x29.6054x0.625	6.92	1028.99	0.007	1.43	2609.28	0.001
L36	50.17 - 47.17 (36)	TP30.8338x30.3731x0.625	6.43	1056.11	0.006	1.43	2749.37	0.001
L37	47.17 - 46.92 (37)	TP30.8722x30.8338x0.3125	6.68	539.67	0.012	1.43	1447.07	0.001
L38	46.92 - 43.42 (38)	TP31.4096x30.8722x0.3125	5.96	542.84	0.011	1.43	1450.71	0.001
L39	43.42 - 43.17 (39)	TP31.448x31.4096x0.3125	5.63	549.84	0.010	1.43	1502.18	0.001
L40	43.17 - 41.17 (40)	TP31.7551x31.448x0.3125	5.10	552.55	0.009	1.43	1505.90	0.001
L41	41.17 - 40.92 (41)	TP31.7935x31.7551x0.5875	5.28	1036.05	0.005	1.43	2836.93	0.001
L42	40.92 - 35.92 (42)	TP32.5613x31.7935x0.5875	4.72	1041.14	0.005	1.43	2843.92	0.001
L43	35.92 - 31.5 (43)	TP33.24x32.5613x0.5875	4.72	1062.81	0.004	1.43	2985.58	0.000
L44	31.5 - 30.5 (44)	TP32.7574x31.9747x0.375	4.16	686.24	0.006	1.43	1936.47	0.001
L45	30.5 - 25.5 (45)	TP33.5144x32.7574x0.375	4.01	689.44	0.006	1.43	1954.71	0.001
L46	25.5 - 20.5 (46)	TP34.2714x33.5144x0.375	3.32	705.49	0.005	1.43	2047.17	0.001
L47	20.5 - 15.5 (47)	TP35.0284x34.2714x0.375	2.85	718.32	0.004	1.16	2141.76	0.001
L48	15.5 - 10.5 (48)	TP35.7853x35.0284x0.375	2.53	734.36	0.003	1.16	2238.48	0.001
L49	10.5 - 5.5 (49)	TP36.5423x35.7853x0.375	2.42	750.40	0.003	1.16	2337.35	0.000
L50	5.5 - 0.5 (50)	TP37.2993x36.5423x0.375	2.48	766.44	0.003	1.16	2438.35	0.000
L51	0.5 - 0 (51)	TP37.375x37.2993x0.375	2.62	782.49	0.003	1.16	2541.49	0.000

APPENDIX B
BASE LEVEL DRAWING



(OTHER CONSIDERED EQUIPMENT)
(6) 1-1/4" TO 140 FT LEVEL
(4) 1-5/8" TO 140 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(3) 3/8" TO 149 FT LEVEL
(6) 3/4" TO 149 FT LEVEL
(12) 1-1/4" TO 149 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(1) 5/16" TO 22 FT LEVEL
(2) 1/2" TO 71 FT LEVEL

(PROPOSED EQUIPMENT CONFIGURATION)
(11) 1-1/4" TO 130 FT LEVEL
(2) 1-5/8" TO 130 FT LEVEL

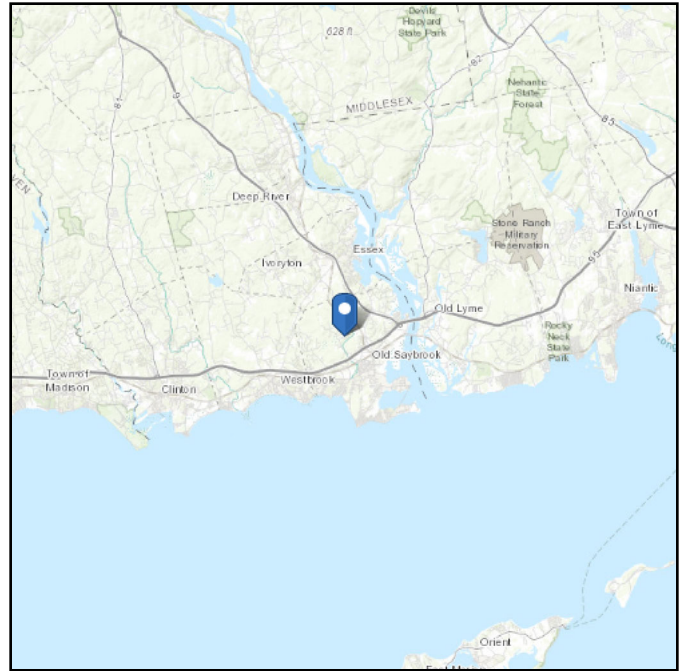
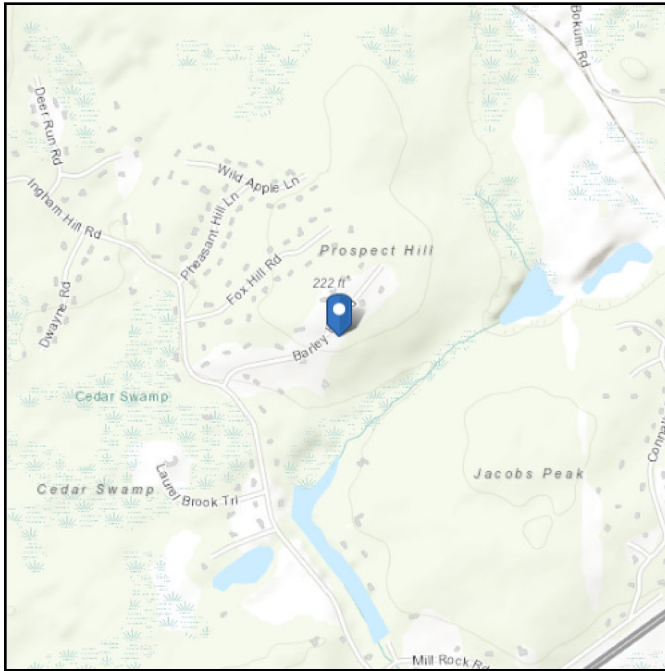
APPENDIX C
ADDITIONAL CALCULATIONS

ASCE Hazards Report

Address:
No Address at This Location

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

Latitude: 41.309875
Longitude: -72.397536
Elevation: 159.09754894282744 ft (NAVD 88)



Wind

Results:

Wind Speed	125 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	102 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Fri Jan 19 2024

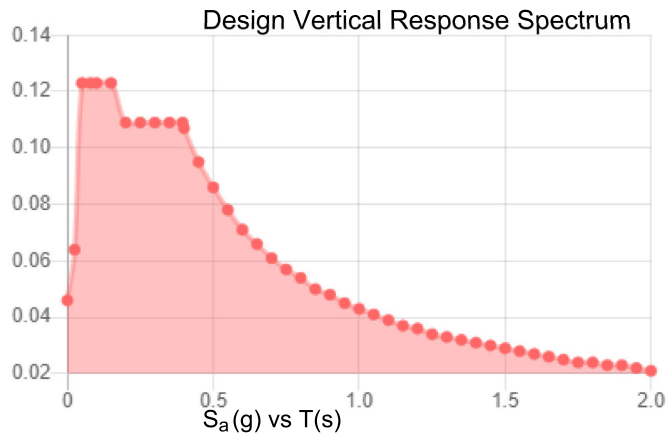
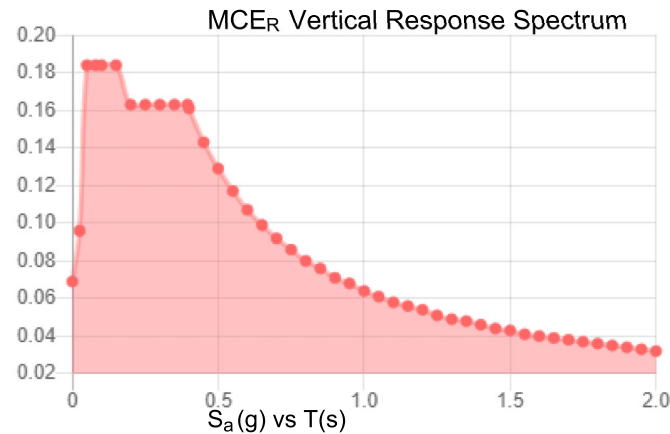
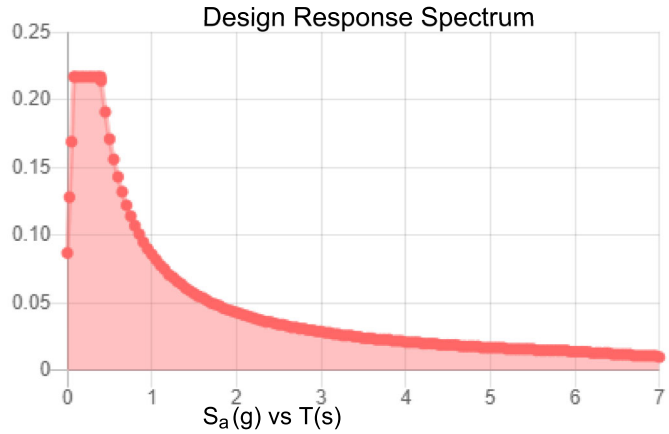
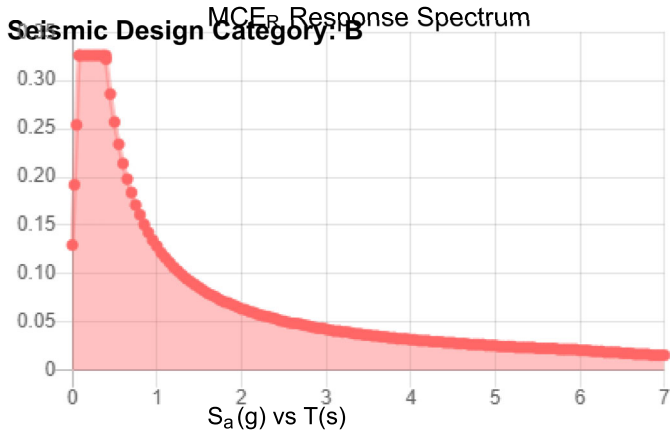
Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance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

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

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

Results:

S_s :	0.204	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.114
F_v :	2.4	PGA _M :	0.179
S_{MS} :	0.326	F_{PGA} :	1.573
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.217	C_v :	0.707



Data Accessed: Fri Jan 19 2024

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Fri Jan 19 2024

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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Site BU: 841289
Work Order: 2278740



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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	40	0	12	15	21.24	0.1875	Auto	A572-65
2	110	21.33	0	12	21.24	24.78	0.25	Auto	A572-65
3	88.67	18.67	3.5	12	24.78	27.87	0.25	Auto	A572-65
4	73.5	42	4.17	12	26.79	33.24	0.3125	Auto	A572-65
5	35.67	35.67	0	12	31.97	37.375	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	73	95	plate	PL 4 X 1	2			x				x					
2	47.17	83	plate	CCI-SFP-060100	1										x		
3	47.17	87.75	plate	CCI-SFP-060100	2		x				x						
4	82.75	107.25	plate	PL 6.5 X 1.25	1											x	
5	87.75	107.25	plate	CCI-SFP-065125	2		x				x						
6	107.25	112.75	plate	FJ 6.5 X 1.25	3	0.75				0.75				0			
7	112.75	123.75	plate	CCI-AFP-045100	3		x				x				x		
8	32.67	41.17	plate	CCI-CFP-065125	3		x				x				x		
9	43.42	55.42	plate	CCI-SFP-045100	2				x				x				
10	55.42	85.5	plate	CCI-SFP-045100	2				x				x				
11																	

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	4	1	4	0.5	Welded	n/a	PC 8.8 - M20 (100)	21.000	18.000	2.750	1.1875	A572-65
2	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
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	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
5	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
6	6.5	1.25	8.125	4.625	PC 8.8 - M20 (100)	75	PC 8.8 - M20 (100)	75.000	16.000	6.563	1.1875	A572-65
7	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
8	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
9	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
10	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	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 4 X 1	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	0	-	-	0	30	0.313	-
PL 6.5 X 1.25	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	11	N	3	3	-	-	-	-	-	-	-	-	-
CCI-CFP-065125	Top	11	N	3	3	-	0	-	-	-	-	-	-	-
	Bottom	11	N	3	3	-	-	-	-	-	-	-	-	-
FJ 6.5 X 1.25	Top	22	N	3.42857	3	-	-	-	-	-	-	-	-	-
	Bottom	22	N	3.42857	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 [Export to TNX](#)

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	150 - 145	5		12	15.000	15.780	0.1875	A572-65	1.000
2	145 - 140	5		12	15.780	16.560	0.1875	A572-65	1.000
3	140 - 135	5		12	16.560	17.340	0.1875	A572-65	1.000
4	135 - 130	5		12	17.340	18.120	0.1875	A572-65	1.000
5	130 - 125	5		12	18.120	18.900	0.1875	A572-65	1.000
6	125 - 123.75	1.25		12	18.900	19.095	0.1875	A572-65	1.000
7	123.75 - 123.5	0.25		12	19.095	19.134	0.45625	A572-65	0.910
8	123.5 - 118.5	5		12	19.134	19.914	0.4375	A572-65	0.927
9	118.5 - 113.5	5		12	19.914	20.694	0.43125	A572-65	0.920
10	113.5 - 112.75	0.75		12	20.694	20.811	0.425	A572-65	0.931
11	112.75 - 112.5	0.25		12	20.811	20.850	1.0625	A572-65	0.545
12	112.5 - 110	2.5	0	12	20.850	21.240	1.0375	A572-65	0.550
13	110 - 107.25	2.75		12	21.240	21.696	1.075	A572-65	0.584
14	107.25 - 107	0.25		12	21.696	21.738	0.55	A572-65	1.112
15	107 - 102	5		12	21.738	22.568	0.5375	A572-65	1.111
16	102 - 97	5		12	22.568	23.398	0.525	A572-65	1.113
17	97 - 95	2		12	23.398	23.729	0.51875	A572-65	1.117
18	95 - 94.75	0.25		12	23.729	23.771	0.65	A572-65	1.061
19	94.75 - 89.75	5		12	23.771	24.601	0.625	A572-65	1.078
20	89.75 - 88.67	1.08	0	12	24.601	24.780	0.625	A572-65	1.073
21	88.67 - 87.75	0.92		12	24.780	24.932	0.625	A572-65	1.069
22	87.75 - 87.5	0.25		12	24.932	24.974	0.5875	A572-65	1.042
23	87.5 - 85.5	2		12	24.974	25.305	0.575	A572-65	1.056
24	85.5 - 85.25	0.25		12	25.305	25.346	0.775	A572-65	0.936
25	85.25 - 83	2.25		12	25.346	25.718	0.7625	A572-65	0.941
26	83 - 82.75	0.25		12	25.718	25.760	0.825	A572-65	0.962
27	82.75 - 82.5	0.25		12	25.760	25.801	0.65	A572-65	1.057
28	82.5 - 77.5	5		12	25.801	26.629	0.6375	A572-65	1.055
29	77.5 - 73.5	7.5	3.5	12	26.629	27.870	0.625	A572-65	1.059
30	73.5 - 69	4.5		12	26.791	27.482	0.6625	A572-65	0.950
31	69 - 64	5		12	27.482	28.249	0.6625	A572-65	0.937
32	64 - 59	5		12	28.249	29.017	0.65	A572-65	0.942
33	59 - 55.42	3.58		12	29.017	29.567	0.6375	A572-65	0.951
34	55.42 - 55.17	0.25		12	29.567	29.605	0.6375	A572-65	0.950
35	55.17 - 50.17	5		12	29.605	30.373	0.625	A572-65	0.957
36	50.17 - 47.17	3		12	30.373	30.834	0.625	A572-65	0.950
37	47.17 - 46.92	0.25		12	30.834	30.872	0.3125	A572-65	1.000
38	46.92 - 43.42	3.5		12	30.872	31.410	0.3125	A572-65	1.000
39	43.42 - 43.17	0.25		12	31.410	31.448	0.3125	A572-65	1.000
40	43.17 - 41.17	2		12	31.448	31.755	0.3125	A572-65	1.000
41	41.17 - 40.92	0.25		12	31.755	31.794	0.5875	A572-65	0.950
42	40.92 - 35.92	5		12	31.794	32.561	0.5875	A572-65	0.940
43	35.92 - 35.67	4.42	4.17	12	32.561	33.240	0.5875	A572-65	0.940
44	35.67 - 30.5	5.17		12	31.975	32.757	0.375	A572-65	1.000
45	30.5 - 25.5	5		12	32.757	33.514	0.375	A572-65	1.000
46	25.5 - 20.5	5		12	33.514	34.271	0.375	A572-65	1.000
47	20.5 - 15.5	5		12	34.271	35.028	0.375	A572-65	1.000
48	15.5 - 10.5	5		12	35.028	35.785	0.375	A572-65	1.000
49	10.5 - 5.5	5		12	35.785	36.542	0.375	A572-65	1.000
50	5.5 - 0.5	5		12	36.542	37.299	0.375	A572-65	1.000
51	0.5 - 0	0.5		12	37.299	37.375	0.375	A572-65	1.000

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	150 - 145		4.70	26.71	5.92
2	145 - 140		4.94	56.75	6.23
3	140 - 135		8.41	105.51	9.61
4	135 - 130		8.80	153.83	9.90
5	130 - 125		13.16	234.67	14.78
6	125 - 123.75		13.30	253.06	14.81
7	123.75 - 123.5		13.36	257.01	17.14
8	123.5 - 118.5		14.11	331.37	15.24
9	118.5 - 113.5		14.90	407.58	15.57
10	113.5 - 112.75		15.02	419.18	15.72
11	112.75 - 112.5		15.07	423.55	20.30
12	112.5 - 110		15.55	462.13	15.95
13	110 - 107.25		16.12	505.81	16.21
14	107.25 - 107		16.18	510.04	18.82
15	107 - 102		17.76	592.13	17.25
16	102 - 97		18.91	679.47	17.77
17	97 - 95		19.38	715.08	17.93
18	95 - 94.75		19.45	719.60	18.37
19	94.75 - 89.75		20.78	810.11	18.37
20	89.75 - 88.67		21.07	829.94	18.45
21	88.67 - 87.75		21.07	829.94	18.45
22	87.75 - 87.5		245.33	768.10	11.72
23	87.5 - 85.5		245.81	784.08	9.12
24	85.5 - 85.25		245.88	786.34	11.94
25	85.25 - 83		246.50	803.65	8.86
26	83 - 82.75		246.58	805.86	11.80
27	82.75 - 82.5		246.64	807.71	11.18
28	82.5 - 77.5		247.99	844.31	8.22
29	77.5 - 73.5		249.07	871.64	7.75
30	73.5 - 69		251.24	904.17	8.49
31	69 - 64		252.57	940.30	7.95
32	64 - 59		253.91	973.84	7.42
33	59 - 55.42		254.88	996.31	7.04
34	55.42 - 55.17		254.95	997.96	8.25
35	55.17 - 50.17		256.31	1027.00	6.53
36	50.17 - 47.17		257.14	1043.36	6.25
37	47.17 - 46.92		257.18	1044.72	6.68
38	46.92 - 43.42		257.78	1061.41	5.41
39	43.42 - 43.17		257.83	1062.53	5.63
40	43.17 - 41.17		258.17	1070.49	4.88
41	41.17 - 40.92		258.24	1071.49	5.28
42	40.92 - 35.92		259.60	1088.92	4.39
43	35.92 - 35.67		259.67	1089.78	4.72
44	35.67 - 30.5		261.67	1106.32	4.16
45	30.5 - 25.5		262.69	1119.08	3.44
46	25.5 - 20.5		263.82	1127.49	2.93
47	20.5 - 15.5		264.88	1132.30	2.55
48	15.5 - 10.5		265.73	1133.49	2.40
49	10.5 - 5.5		265.95	1133.45	2.38
50	5.5 - 0.5		267.03	1131.29	2.40
51	0.5 - 0		268.14	1126.16	2.54

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.78x15x0.1875	Pole	12.5%	Pass
145 - 140	Pole	TP16.56x15.78x0.1875	Pole	23.6%	Pass
140 - 135	Pole	TP17.34x16.56x0.1875	Pole	40.6%	Pass
135 - 130	Pole	TP18.12x17.34x0.1875	Pole	54.4%	Pass
130 - 125	Pole	TP18.9x18.12x0.1875	Pole	77.5%	Pass
125 - 123.75	Pole	TP19.095x18.9x0.1875	Pole	82.1%	Pass
123.75 - 123.5	Pole + Reinf.	TP19.134x19.095x0.4563	Reinf. 7 Tension Rupture	57.0%	Pass
123.5 - 118.5	Pole + Reinf.	TP19.914x19.134x0.4375	Reinf. 7 Tension Rupture	69.2%	Pass
118.5 - 113.5	Pole + Reinf.	TP20.694x19.914x0.4313	Reinf. 7 Tension Rupture	80.4%	Pass
113.5 - 112.75	Pole + Reinf.	TP20.811x20.694x0.425	Reinf. 7 Tension Rupture	82.0%	Pass
112.75 - 112.5	Pole + Reinf.	TP20.85x20.811x1.0625	Reinf. 6 Tension Rupture	44.4%	Pass
112.5 - 110	Pole + Reinf.	TP21.24x20.85x1.0375	Reinf. 6 Tension Rupture	47.5%	Pass
110 - 107.25	Pole + Reinf.	TP21.696x21.24x1.075	Reinf. 6 Tension Rupture	47.7%	Pass
107.25 - 107	Pole + Reinf.	TP21.738x21.696x0.55	Reinf. 5 Tension Rupture	56.4%	Pass
107 - 102	Pole + Reinf.	TP22.568x21.738x0.5375	Reinf. 5 Tension Rupture	62.1%	Pass
102 - 97	Pole + Reinf.	TP23.398x22.568x0.525	Reinf. 5 Tension Rupture	67.7%	Pass
97 - 95	Pole + Reinf.	TP23.729x23.398x0.5188	Reinf. 5 Tension Rupture	69.8%	Pass
95 - 94.75	Pole + Reinf.	TP23.771x23.729x0.65	Reinf. 1 Tension Rupture	67.4%	Pass
94.75 - 89.75	Pole + Reinf.	TP24.601x23.771x0.625	Reinf. 1 Tension Rupture	72.4%	Pass
89.75 - 88.67	Pole + Reinf.	TP24.78x24.601x0.625	Reinf. 1 Tension Rupture	73.5%	Pass
88.67 - 87.75	Pole + Reinf.	TP24.932x24.78x0.625	Reinf. 1 Tension Rupture	72.9%	Pass
87.75 - 87.5	Pole + Reinf.	TP24.974x24.932x0.5875	Reinf. 1 Tension Rupture	82.8%	Pass
87.5 - 85.5	Pole + Reinf.	TP25.305x24.974x0.575	Reinf. 1 Tension Rupture	82.9%	Pass
85.5 - 85.25	Pole + Reinf.	TP25.346x25.305x0.775	Reinf. 4 Tension Rupture	64.4%	Pass
85.25 - 83	Pole + Reinf.	TP25.718x25.346x0.7625	Reinf. 4 Tension Rupture	64.5%	Pass
83 - 82.75	Pole + Reinf.	TP25.76x25.718x0.825	Reinf. 1 Tension Rupture	62.6%	Pass
82.75 - 82.5	Pole + Reinf.	TP25.801x25.76x0.65	Reinf. 2 Tension Rupture	73.0%	Pass
82.5 - 77.5	Pole + Reinf.	TP26.629x25.801x0.6375	Reinf. 2 Tension Rupture	72.8%	Pass
77.5 - 73.5	Pole + Reinf.	TP27.87x26.629x0.625	Reinf. 2 Tension Rupture	72.5%	Pass
73.5 - 69	Pole + Reinf.	TP27.482x26.791x0.6625	Reinf. 3 Tension Rupture	68.1%	Pass
69 - 64	Pole + Reinf.	TP28.249x27.482x0.6625	Reinf. 3 Tension Rupture	67.8%	Pass
64 - 59	Pole + Reinf.	TP29.017x28.249x0.65	Reinf. 3 Tension Rupture	67.4%	Pass
59 - 55.42	Pole + Reinf.	TP29.567x29.017x0.6375	Reinf. 3 Tension Rupture	67.0%	Pass
55.42 - 55.17	Pole + Reinf.	TP29.605x29.567x0.6375	Reinf. 3 Tension Rupture	66.9%	Pass
55.17 - 50.17	Pole + Reinf.	TP30.373x29.605x0.625	Reinf. 3 Tension Rupture	66.2%	Pass
50.17 - 47.17	Pole + Reinf.	TP30.834x30.373x0.625	Reinf. 3 Tension Rupture	65.7%	Pass
47.17 - 46.92	Pole	TP30.872x30.834x0.3125	Pole	88.3%	Pass
46.92 - 43.42	Pole	TP31.41x30.872x0.3125	Pole	87.2%	Pass
43.42 - 43.17	Pole	TP31.448x31.41x0.3125	Pole	87.1%	Pass
43.17 - 41.17	Pole	TP31.755x31.448x0.3125	Pole	86.3%	Pass
41.17 - 40.92	Pole + Reinf.	TP31.794x31.755x0.5875	Reinf. 8 Tension Rupture	64.6%	Pass
40.92 - 35.92	Pole + Reinf.	TP32.561x31.794x0.5875	Reinf. 8 Tension Rupture	63.3%	Pass
35.92 - 35.67	Pole + Reinf.	TP33.24x32.561x0.5875	Reinf. 8 Tension Rupture	63.3%	Pass
35.67 - 30.5	Pole	TP32.757x31.975x0.375	Pole	67.2%	Pass
30.5 - 25.5	Pole	TP33.514x32.757x0.375	Pole	65.5%	Pass
25.5 - 20.5	Pole	TP34.271x33.514x0.375	Pole	63.6%	Pass
20.5 - 15.5	Pole	TP35.028x34.271x0.375	Pole	61.7%	Pass
15.5 - 10.5	Pole	TP35.785x35.028x0.375	Pole	59.8%	Pass
10.5 - 5.5	Pole	TP36.542x35.785x0.375	Pole	57.9%	Pass
5.5 - 0.5	Pole	TP37.299x36.542x0.375	Pole	56.0%	Pass
0.5 - 0	Pole	TP37.375x37.299x0.375	Pole	55.7%	Pass
				Summary	
			Pole	88.3%	Pass
			Reinforcement	82.9%	Pass
			Overall	88.3%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*										
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
150 - 145	293	n/a	293	9.40	n/a	9.40	12.5%										
145 - 140	339	n/a	339	9.87	n/a	9.87	23.6%										
140 - 135	389	n/a	389	10.34	n/a	10.34	40.6%										
135 - 130	445	n/a	445	10.81	n/a	10.81	54.4%										
130 - 125	506	n/a	506	11.28	n/a	11.28	77.5%										
125 - 123.75	522	n/a	522	11.40	n/a	11.40	82.1%										
123.75 - 123.5	525	696	1221	11.42	13.50	24.92	34.6%							57.0%			
123.5 - 118.5	592	750	1342	11.89	13.50	25.39	42.6%							69.2%			
118.5 - 113.5	665	806	1472	12.36	13.50	25.86	50.4%							80.4%			
113.5 - 112.75	677	815	1492	12.43	13.50	25.93	51.5%							82.0%			
112.75 - 112.5	681	2728	3409	12.46	24.38	36.83	23.4%						44.4%				
112.5 - 110	720	2799	3519	12.69	24.38	37.07	25.3%						47.5%				
110 - 107.25	1015	2883	3898	17.24	24.38	41.61	23.1%						47.7%				
107.25 - 107	1038	1142	2180	17.27	24.38	41.65	45.8%				51.9%	56.4%					
107 - 102	1163	1223	2385	17.94	24.38	42.32	50.9%				57.2%	62.1%					
102 - 97	1296	1306	2602	18.61	24.38	42.98	56.1%				62.3%	67.7%					
97 - 95	1353	1340	2693	18.87	24.38	43.25	58.1%				64.3%	69.8%					
95 - 94.75	1367	1959	3326	18.91	32.38	51.28	47.4%	67.4%			62.2%	52.8%					
94.75 - 89.75	1516	2088	3604	19.57	32.38	51.95	51.5%	72.4%			66.8%	56.8%					
89.75 - 88.67	1549	2117	3666	19.72	32.38	52.09	52.4%	73.5%			67.7%	57.6%					
88.67 - 87.75	1578	2141	3719	19.84	32.38	52.22	52.1%	72.9%			67.1%	57.1%					
87.75 - 87.5	1568	1939	3507	19.87	28.13	48.00	58.2%	82.8%		68.9%	71.2%						
87.5 - 85.5	1632	1988	3620	20.14	28.13	48.27	58.5%	82.9%		69.0%	71.3%						
85.5 - 85.25	1652	3075	4727	20.17	37.13	57.30	46.8%	64.2%		57.2%	64.4%						63.9%
85.25 - 83	1727	3161	4888	20.47	37.13	57.60	47.1%	64.4%		57.4%	64.5%						64.0%
83 - 82.75	1711	3533	5244	20.51	43.13	63.63	41.3%	62.6%	49.4%	56.8%	51.8%						57.9%
82.75 - 82.5	1782	2538	4319	20.54	35.00	55.54	55.4%	65.7%	73.0%	62.8%							62.5%
82.5 - 77.5	1958	2696	4654	21.20	35.00	56.20	55.9%	65.7%	72.8%	62.8%							62.6%
77.5 - 73.5	2108	2826	4934	21.74	35.00	56.74	56.2%	65.6%	72.5%	62.6%							62.5%
73.5 - 69	2598	2717	5315	27.30	27.00	54.30	48.8%		68.1%	68.1%							67.1%
69 - 64	2824	2864	5688	28.07	27.00	55.07	49.0%		67.8%	67.8%							67.0%
64 - 59	3063	3015	6078	28.84	27.00	55.84	49.0%		67.4%	67.4%							66.7%
59 - 55.42	3242	3125	6367	29.40	27.00	56.40	49.0%		67.0%	67.0%							66.3%
55.42 - 55.17	3255	3133	6388	29.43	27.00	56.43	49.0%		66.9%	66.9%							66.3%
55.17 - 50.17	3517	3291	6808	30.21	27.00	57.21	48.9%		66.2%	66.2%							65.7%
50.17 - 47.17	3680	3388	7068	30.67	27.00	57.67	48.8%		65.7%	65.7%							65.3%
47.17 - 46.92	3671	n/a	3671	30.71	n/a	30.71	88.3%										
46.92 - 43.42	3868	n/a	3868	31.25	n/a	31.25	87.2%										
43.42 - 43.17	3882	n/a	3882	31.29	n/a	31.29	87.1%										
43.17 - 41.17	3998	n/a	3998	31.59	n/a	31.59	86.3%										
41.17 - 40.92	4013	3371	7384	31.63	24.38	56.01	46.4%								64.6%		
40.92 - 35.92	4313	3528	7841	32.40	24.38	56.78	45.9%								63.3%		
35.92 - 35.67	4329	3536	7864	32.44	24.38	56.82	45.9%								63.3%		
35.67 - 30.5	5241	n/a	5241	39.05	n/a	39.05	67.2%										
30.5 - 25.5	5617	n/a	5617	39.96	n/a	39.96	65.5%										
25.5 - 20.5	6011	n/a	6011	40.87	n/a	40.87	63.6%										
20.5 - 15.5	6422	n/a	6422	41.78	n/a	41.78	61.7%										
15.5 - 10.5	6853	n/a	6853	42.70	n/a	42.70	59.8%										
10.5 - 5.5	7301	n/a	7301	43.61	n/a	43.61	57.9%										
5.5 - 0.5	7770	n/a	7770	44.52	n/a	44.52	56.0%										
0.5 - 0	7817	n/a	7817	44.61	n/a	44.61	55.7%										

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

Monopole Flange Plate Connection

Elevation = 110 ft.

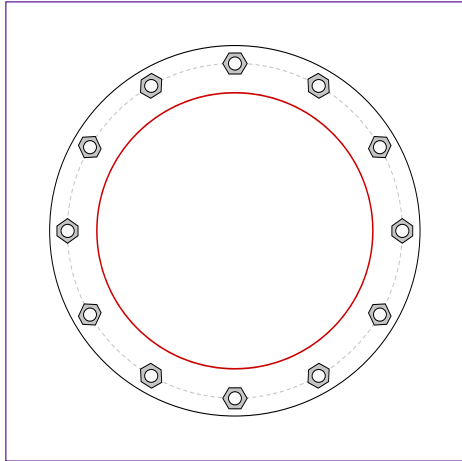


BU #	841289
Site Name	Old Saybrook
Order #	656560 Rev. 0
TIA-222 Revision	H

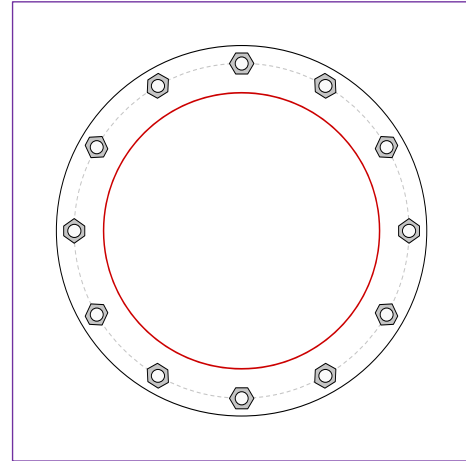
Applied Loads to Flange Connections		Applied Loads to Bridge Stiffeners	
Moment (kip-ft)	90.51	Moment (kip-ft)	371.62
Axial Force (kips)	15.55	Axial Force (kips)	0.00
Shear Force (kips)	15.95	Shear Force (kips)	0.00

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" \emptyset bolts (A354-BC N; Fy=109 ksi, Fu=125 ksi) on 25.75" BC

Top Plate Data

28.5" OD x 1" Plate (A572-65; Fy=65 ksi, Fu=80 ksi)

Top Stiffener Data

N/A

Top Pole Data

21.24" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bridge Stiffener Group 1 Data

(3) Bolted, 6.5"x1.25", A572-65, Lu=16", Neglect Flange in MOI:

Bottom Plate Data

28.5" OD x 1" Plate (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

21.24" x 0.25" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	12.76
Allowable (kips)	56.78
Stress Rating:	21.4% Pass

Top Plate Capacity

Max Stress (ksi):	14.84	(Flexural)
Allowable Stress (ksi):	58.50	
Stress Rating:	24.2%	Pass
Tension Side Stress Rating:	11.8%	Pass

Bottom Plate Capacity

Max Stress (ksi):	14.84	(Flexural)
Allowable Stress (ksi):	58.50	
Stress Rating:	24.2%	Pass
Tension Side Stress Rating:	11.8%	Pass

Bridge Stiffener Group 1 Analysis Capacity

Max Compression (kip):	208.63
Max Tension (kip):	208.63
Comp. Capacity (kip):	394.29
Tens. Capacity (kip):	393.75 (Rupture)
Comp. Stress Rating:	50.4% Pass
Tens. Stress Rating:	50.5% Pass



Capacity*: **85.5%** **PASS**

TEP #: 55790.922308

*Rating Per TIA-222-H Section 15.5

Analysis: RTP 01/29/24

Check: CS 01/29/24

Monopole Guy Lug Analysis_v1.0

Guy Loads

Guy Force:	164	k
Guy Height:	88.67	ft
Anchor Radius:	20.5	ft
Load Angle (From Tower):	13.0	degrees
Tensile Load:	164.00	
Vertical Force:	159.79	k
Horizontal Force:	36.94	k

Bolt Bearing on Lug (Shackle)

Plate Grade:	ASTM A572-55
Plate F_u :	70 ksi
Plate Thickness:	1.5 in
Hole Diameter:	3.5625 in
Clear Distance:	3.1305 in
Clear Edge Distance:	1.3493 in
Shackle Diameter:	3.5 in
ϕR_n :	224.20 ksi
Capacity:	69.7% PASS

Net Tension on Lug

Lug Radius:	3.1305 in
Net Area:	4.04775 in ²
ϕT_n :	212.51 k
Capacity:	73.5% PASS

Guy Lug Weld

Weld Strength:	70	ksi
Weld Length:	15	in
Weld Thickness:	4	1/16 in
Weld Type:	All-Around	
e_x :	2	in
C:	4.06	(AISC Table 8-6)
C_1 :	1	
a:	0.13	
k:	0.1	
ϕR_n :	182.70	k
Capacity:	85.5% PASS	

Guy Lug Connection

Connection Type:	Bolted
Bolt Type:	AJAX
Bolt Spacing:	3 in
Bolt Quantity:	10 (5 per row)

Shaft Bolt Shear and Tension

Shaft Grade:	ASTM A572-65
Shaft Thickness:	0.25 in
e_x :	3.25 in
Bolt Hole Diameter:	1.1875 in
Sleeve Diameter:	1.137792 in
ϕR_{nv} :	36.00 k/bolt (Bolt Shear)
Capacity:	42.3% PASS
ϕR_{nt} :	32.8725 k/bolt (Bolt Tension)
Capacity:	52.5% PASS
Interaction Capacity:	50.1% PASS

Bolt Bearing:

ϕ :	0.8
ϕR_n :	204.74 k/row (Bolt Bearing)
Capacity:	37.2% PASS

Monopole Base Plate Connection

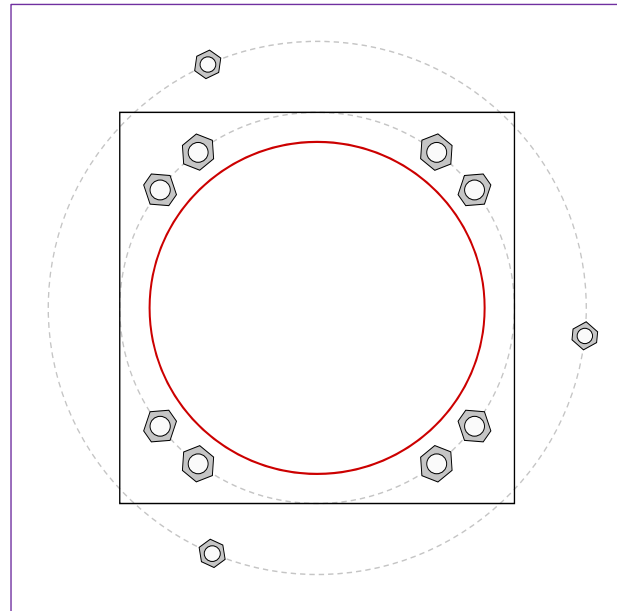


Site Info	
BU #	841289
Site Name	Old Saybrook
Order #	656560 Rev. 0

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

Applied Loads	
Moment (kip-ft)	1126.16
Axial Force (kips)	268.14
Shear Force (kips)	2.54

*TIA-222-H Section 15.5 Applied



Connection Properties Analysis Results

Anchor Rod Data

GROUP 1: (8) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 44" BC
Anchor Spacing: 6 in

GROUP 2: (3) 1-3/4" ϕ bolts (F1554-105 N; $F_y=105$ ksi, $F_u=125$ ksi) on 60" BC
pos. (deg): 114, 247, 354

Base Plate Data

44" W x 2.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi); Clip: 0 in

Stiffener Data

N/A

Pole Data

37.375" x 0.375" 12-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

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

GROUP 1:

$P_{u_c} = 147.15$	$\phi P_{n_c} = 268.39$	Stress Rating
$V_u = 0.32$	$\phi V_n = 120.77$	52.2%
$M_u = n/a$	$\phi M_n = n/a$	Pass

GROUP 2:

$P_{u_t} = 88.76$	$\phi P_{n_t} = 178.13$	Stress Rating
$V_u = 0$	$\phi V_n = 112.75$	47.5%
$M_u = n/a$	$\phi M_n = n/a$	Pass

Base Plate Summary

Max Stress (ksi):	23.13	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	40.8%	Pass

CClplate

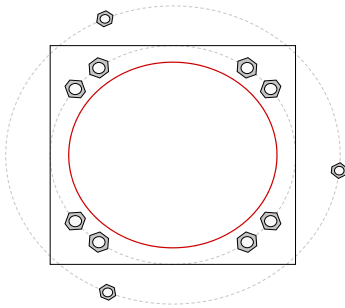
Elevation (ft) 0 (Base)

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

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

Custom Bolt Connection										
Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, n:	l_{br} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	37.1625202	2.25	A615-75	44	0.5	2	N-Included		No
2	1	52.8374798	2.25	A615-75	44	0.5	2	N-Included		No
3	1	127.16252	2.25	A615-75	44	0.5	2	N-Included		No
4	1	142.83748	2.25	A615-75	44	0.5	2	N-Included		No
5	1	217.16252	2.25	A615-75	44	0.5	2	N-Included		No
6	1	232.83748	2.25	A615-75	44	0.5	2	N-Included		No
7	1	307.16252	2.25	A615-75	44	0.5	2	N-Included		No
8	1	322.83748	2.25	A615-75	44	0.5	2	N-Included		No
9	2	114	1.75	F1554-105	60	0.5	1.25	N-Included		No
10	2	247	1.75	F1554-105	60	0.5	1.25	N-Included		No
11	2	354	1.75	F1554-105	60	0.5	1.25	N-Included		No

Plot Graphic



Pier and Pad Foundation



BU # :	841289
Site Name:	Old Saybrook
App. Number:	656560 Rev. 0

TIA-222 Revision:	H
Tower Type:	Guyed

Top & Bot. Pad Rein. Different?:	<input type="checkbox"/>
Block Foundation?:	<input type="checkbox"/>
Rectangular Pad?:	<input type="checkbox"/>

Superstructure Analysis Reactions		
Compression, P_{comp} :	268.1	kips
Base Shear, V_{u_comp} :	2.5	kips
Moment, M_u :	1126.2	ft-kips
Tower Height, H :	150	ft
BP Dist. Above Fdn, bp_{dist} :	4.5	in
Bolt Circle / Bearing Plate Width, BC :		in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	176.38	2.50	1.3%	Pass
<i>Bearing Pressure (ksf)</i>	18.00	7.77	41.1%	Pass
<i>Overtuning (kip*ft)</i>	1887.56	1149.64	60.9%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	12400.27	1142.45	8.8%	Pass
<i>Pier Compression (kip)</i>	22913.28	326.21	1.4%	Pass
<i>Pad Flexure (kip*ft)</i>	879.26	136.12	14.7%	Pass
<i>Pad Shear - 1-way (kips)</i>	303.90	0.00	0.0%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	1758.53	685.47	37.1%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	37.1%
Soil Rating*:	60.9%

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	8	ft
Ext. Above Grade, E :	0.3	ft
Pier Rebar Size, Sc :	11	
Pier Rebar Quantity, mc :	44	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	8.7	ft
Pad Width, W_1 :	12	ft
Pad Thickness, T :	2.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	7	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	13	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	135	pcf
Ultimate Gross Bearing, Q_{ult} :	30.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	42	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.4	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, gw :	2.7	ft

<-- Toggle between Gross and Net

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	841289
Site Name:	Old Saybrook
Order Number:	656560 Rev. 0
Location:	Inner

TIA-222 Revision: H



Design Reactions	
Shear, S:	38.00 kips
Uplift, Ua:	159.00 kips
Resultant Force, Rf:	163.48 kips
Tower Height, H:	150.00 ft
Guy Anchor Radius, R:	20.50 ft
Resultant Angle to Horizontal, θ:	76.6 deg

Guy Anchor Properties	
Depth to Bottom of Deadman, Da:	8 ft
Anchor Width, Wa:	5 ft
Anchor Thickness, Ta:	2 ft
Anchor Length, La:	37 ft
Concrete Volume, Vc:	13.7 yd ³
Toe Width, toe:	0 ft
Guyed Anchor Top Rebar Size, Sat:	9
No. of Bars in Top of Block:	12
Guyed Anchor Front Rebar Size, Saf:	9
No. of Bars in Front of Block:	4
Stirrup Size:	5
Anchor Shaft Diameter, ds:	1.75 in
Anchor Shaft Quantity, n:	2
Anchor Shaft Area Override:	
Shear Lag Factor, u:	1

Material Properties	
Rebar Grade, Fy:	60 ksi
Concrete Strength, Fc:	4 ksi
Wt. Avg. Concrete Density, δx:	0.088 kcf
Clear Cover, cc:	3 in
Anchor Shaft Grade, Fy':	50 ksi
Anchor Shaft Ultimate Strength, Fu':	65 ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	243.59	38.00	14.9%	Pass
Uplift Capacity (kips):	222.98	159.00	67.9%	Pass
Lateral Flexural Capacity (ft*kips):	978.13	175.75	17.1%	Pass
Uplift Flexural Capacity (ft*kips):	974.50	735.38	71.9%	Pass
Anchor Shaft (kips):	192.42	163.48	80.9%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	80.9%
Structural Rating:	71.9%
Soil Rating:	67.9%

Neglect Depth, Neg:	3.33 ft
Groundwater Level, gw:	2.7 ft

Soil Properties:					
Layer	φ, deg	c _u , ksf	δ, pcf	d, ft	N (blows/ft)
1	0	0.000	110	2.70	0.000
2	31	0.000	47.6	4.00	80
3	42	0.000	72.6	8.00	100

*key: φ = Internal Angle of Friction
 c_u = Cohesion / Undrained Shear Strength
 δ = Buoyant Soil Unit Weight
 d = Depth to Bottom of Layer
 Ultimate fs = Geotechnical Report-provided skin friction / adhesion
 N = SPT Blow Count

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	841289
Site Name:	Old Saybrook
Order Number:	656560 Rev. 0
Location:	Outer

TIA-222 Revision: H



Design Reactions	
Shear, S:	41.00 kips
Uplift, Ua:	87.00 kips
Resultant Force, Rf:	96.18 kips
Tower Height, H:	150.00 ft
Guy Anchor Radius, R:	42.00 ft
Resultant Angle to Horizontal, θ:	64.8 deg

Guy Anchor Properties	
Depth to Bottom of Deadman, Da:	8 ft
Anchor Width, Wa:	5 ft
Anchor Thickness, Ta:	2 ft
Anchor Length, La:	30 ft
Concrete Volume, Vc:	11.1 yd ³
Toe Width, toe:	0 ft
Guyed Anchor Top Rebar Size, Sat:	9
No. of Bars in Top of Block:	12
Guyed Anchor Front Rebar Size, Saf:	9
No. of Bars in Front of Block:	4
Stirrup Size:	5
Anchor Shaft Diameter, ds:	1.75 in
Anchor Shaft Quantity, n:	2
Anchor Shaft Area Override:	
Shear Lag Factor, u:	1

Material Properties	
Rebar Grade, Fy:	60 ksi
Concrete Strength, Fc:	4 ksi
Wt. Avg Concrete Density, δx:	0.088 kcf
Clear Cover, cc:	3 in
Anchor Shaft Grade, Fy':	50 ksi
Anchor Shaft Ultimate Strength, Fu':	65 ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	197.86	41.00	19.7%	Pass
Uplift Capacity (kips):	183.82	87.00	45.1%	Pass
Lateral Flexural Capacity (ft*kips):	978.13	153.75	15.0%	Pass
Uplift Flexural Capacity (ft*kips):	974.50	326.25	31.9%	Pass
Anchor Shaft (kips):	192.42	96.18	47.6%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	47.6%
Structural Rating:	31.9%
Soil Rating:	45.1%

Neglect Depth, Neg:	3.33 ft
Groundwater Level, gw:	2.7 ft

Soil Properties:					
Layer	φ, deg	c _u , ksf	δ, pcf	d, ft	N (blows/ft)
1	0	0.000	110	2.70	0.000
2	31	0.000	47.6	4.00	80
3	42	0.000	72.6	8.00	100

*key: φ = Internal Angle of Friction
 c_u = Cohesion / Undrained Shear Strength
 δ = Buoyant Soil Unit Weight
 d = Depth to Bottom of Layer
 Ultimate fs = Geotechnical Report-provided skin friction / adhesion
 N = SPT Blow Count