

Date: **September 21, 2021**



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

**Subject: Structural Analysis Report**

**Carrier Designation:** **AT&T Mobility Co-Locate**  
**Site Number:** CTL05098  
**Site Name:** BIC Drive (SSUSA)  
**FA Number:** 10071132

**Crown Castle Designation:** **BU Number:** 876342  
**Site Name:** BIC Drive (SSUSA)  
**JDE Job Number:** 649412  
**Work Order Number:** 2017883  
**Order Number:** 556513 Rev. 0

**Engineering Firm Designation:** **TEP Project Number:** 25566.601905

**Site Data:** **111 School House Road, A/k/a Bic Drive, Milford, New Haven County, CT 06460**  
**Latitude 41° 12' 46.06", Longitude -73° 5' 7.10"**  
**140 Foot - Monopole 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 - 82.8%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2012/2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Dennis Luna / WAT

Respectfully submitted by:

Shawn Hoffmeyer, P.E.



Electronic Copy

09/21/21

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## 1) INTRODUCTION

This tower is a 140-ft monopole tower designed by Paul J. Ford. This tower has been modified multiple times in the past to accommodate additional loading.

## 2) ANALYSIS CRITERIA

<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Wind Speed:</b>	125 mph
<b>Exposure Category:</b>	C
<b>Topographic Factor:</b>	1.0
<b>Ice Thickness:</b>	1.5 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Service Wind Speed:</b>	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)
122.0	125.0	3	Ericsson	AIR 6419 B77G w/ Mount Pipe	7 6 3	7/8 1-5/8 3/8
		3	Ericsson	AIR 6449 N77 w/ Mount Pipe		
		3	Cci Antennas	DMP65R-BU6D w/ Mount Pipe		
		3	Cci Antennas	TPA65R-BU6D w/ Mount Pipe		
		3	Commscope	WCS-IMFQ-AMT-43		
		2	Raycap	DC6-48-60-18-8F		
		3	Kaelus	DBC0061F1V51-2		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RADIO 4478 B14		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 8843 B2/B66A		
	1	Raycap	DC9-48-60-24-8C-EV			
122.0	1	Tower Mounts	Platform Mount [LP 1201-1_HR-1]			

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
140.0	140.0	3	RFS Celwave	APXVSPP18-C-A20 w/ Mount Pipe	3 1 1	1-1/4 1/2 1-5/8
		3	RFS Celwave	APXVTM14-C-120 w/ Mount Pipe		
		9	RFS Celwave	ACU-A20-N		
		3	Alcatel Lucent	TD-RRH8X20-25		
		1	Tower Mounts	Platform Mount [LP 1201-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
137.0	137.0	3	Alcatel Lucent	TME-1900MHz RRH (65MHz)	--	--
		3	Alcatel Lucent	TME-800MHZ RRH		
		3	Alcatel Lucent	TME-800MHz 2X50W RRH W/FILTER		
		1	Tower Mounts	Side Arm Mount [SO 103-3]		
115.0	116.0	3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	6 2 1	1-1/4 1-3/8 1-5/8
		3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	RFS Celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		3	Ericsson	RADIO 4449 B12/B71		
	115.0	3	Commscope	SDX1926Q-43		
		3	Andrew	ETW200VS12UB		
		1	Tower Mounts	Platform Mount [LP 1201-1_KCKR-HR-1]		
104.0	107.0	3	Samsung Telecom.	CBRS w/ Mount Pipe	8	1-5/8
	104.0	3	Andrew	LNx-6514DS-VTM w/ Mount Pipe		
		3	Samsung Telecom.	MT6407-77A w/ Mount Pipe		
		3	Commscope	JAHH-65B-R3B w/ Mount Pipe		
		3	Commscope	JAHH-65B-R3B		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
		3	RFS Celwave	FDJ85020Q4-S1		
		2	Raycap	RRFDC-3315-PF-48		
		1	Tower Mounts	Platform Mount [LP 1201-1_HR-1]		
95.0	95.0	1	Tower Mounts	Pipe Mount [PM 601-3]	6	1-5/8
80.0	82.0	1	Kathrein	OG-860/1920/GPS-A	1	1/2
	80.0	1	Tower Mounts	Side Arm Mount [SO 901-1]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Reference	Source
Geotechnical Report	1531894	CCISites
Tower Foundation Drawings	1631615	CCISites
Tower Manufacturer Drawings	1630877	CCISites
Post-Modification Inspection	2547672	CCISites
Tower Reinforcement Drawings	2547673	CCISites
Tower Reinforcement Drawings	5946424	CCISites
Tower Reinforcement Drawings	6173982	CCISites

Document	Reference	Source
Post-Modification Inspection	6234048	CCISites

### 3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

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

### 3.2) Assumptions

- 1) 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)<sup>1,2</sup>**

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.015x16x0.25	Pole	6.4%	1.050
135 - 130	Pole	TP18.03x17.015x0.25	Pole	12.6%	1.050
130 - 125	Pole	TP19.045x18.03x0.25	Pole	17.9%	1.050
125 - 120	Pole	TP20.061x19.045x0.25	Pole	29.2%	1.050
120 - 115	Pole	TP21.076x20.061x0.25	Pole	40.2%	1.050
115 - 110	Pole	TP22.091x21.076x0.25	Pole	55.8%	1.050
110 - 105	Pole	TP23.106x22.091x0.25	Pole	68.3%	1.050
105 - 104	Pole	TP23.309x23.106x0.25	Pole	70.7%	1.050
104 - 103.75	Pole + Reinf.	TP23.36x23.309x0.4625	Reinf. 14 Tension Rupture	65.3%	1.050
103.75 - 98.75	Pole + Reinf.	TP24.375x23.36x0.45	Reinf. 14 Tension Rupture	78.9%	1.050
98.75 - 98.25	Pole + Reinf.	TP24.476x24.375x0.45	Reinf. 14 Tension Rupture	80.2%	1.050
98.25 - 98	Pole + Reinf.	TP24.527x24.476x0.725	Reinf. 14 Tension Rupture	51.7%	1.050
98 - 97	Pole + Reinf.	TP24.73x24.527x0.725	Reinf. 14 Tension Rupture	53.4%	1.050
97 - 96.75	Pole + Reinf.	TP24.781x24.73x0.5125	Reinf. 9 Tension Rupture	64.0%	1.050
96.75 - 91.75	Pole + Reinf.	TP26.456x24.781x0.5	Reinf. 9 Tension Rupture	73.2%	1.050
91.75 - 88.17	Pole + Reinf.	TP26.023x25.296x0.5625	Reinf. 9 Tension Rupture	72.4%	1.050
88.17 - 87.92	Pole + Reinf.	TP26.074x26.023x0.7625	Reinf. 9 Tension Rupture	56.6%	1.050
87.92 - 82.92	Pole + Reinf.	TP27.089x26.074x0.7375	Reinf. 9 Tension Rupture	62.2%	1.050
82.92 - 77.92	Pole + Reinf.	TP28.104x27.089x0.725	Reinf. 9 Tension Rupture	67.5%	1.050

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
77.92 - 72.92	Pole + Reinf.	TP29.12x28.104x0.7125	Reinf. 9 Tension Rupture	72.4%	1.050
72.92 - 68.25	Pole + Reinf.	TP30.068x29.12x0.6875	Reinf. 9 Tension Rupture	76.6%	1.050
68.25 - 67.98	Pole + Reinf.	TP30.123x30.068x0.8125	Reinf. 8 Tension Rupture	65.1%	1.050
67.98 - 67.83	Pole + Reinf.	TP30.153x30.123x0.8125	Reinf. 8 Tension Rupture	65.2%	1.050
67.83 - 62.83	Pole + Reinf.	TP31.168x30.153x0.7875	Reinf. 12 Tension Rupture	69.0%	Pass
62.83 - 57.83	Pole + Reinf.	TP32.184x31.168x0.7625	Reinf. 12 Tension Rupture	72.7%	Pass
57.83 - 52.83	Pole + Reinf.	TP33.199x32.184x0.75	Reinf. 12 Tension Rupture	76.1%	Pass
52.83 - 51.5	Pole + Reinf.	TP34.332x33.199x0.75	Reinf. 12 Tension Rupture	77.0%	Pass
51.5 - 46.5	Pole + Reinf.	TP33.859x32.844x0.8	Reinf. 12 Tension Rupture	76.1%	Pass
46.5 - 41.5	Pole + Reinf.	TP34.874x33.859x0.8	Reinf. 12 Tension Rupture	78.8%	Pass
41.5 - 37.75	Pole + Reinf.	TP35.636x34.874x0.775	Reinf. 12 Tension Rupture	80.7%	Pass
37.75 - 37.5	Pole + Reinf.	TP35.686x35.636x0.85	Reinf. 12 Tension Rupture	75.4%	Pass
37.5 - 32.5	Pole + Reinf.	TP36.702x35.686x0.825	Reinf. 12 Tension Rupture	77.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.752x36.702x0.875	Reinf. 7 Tension Rupture	72.3%	Pass
32.25 - 27.75	Pole + Reinf.	TP37.666x36.752x0.8625	Reinf. 7 Tension Rupture	74.0%	Pass
27.75 - 27.5	Pole + Reinf.	TP37.717x37.666x0.8625	Reinf. 4 Tension Rupture	74.1%	Pass
27.5 - 23.25	Pole + Reinf.	TP38.58x37.717x0.85	Reinf. 4 Tension Rupture	75.6%	Pass
23.25 - 23	Pole + Reinf.	TP38.63x38.58x0.95	Reinf. 4 Tension Rupture	71.2%	Pass
23 - 20.75	Pole + Reinf.	TP39.087x38.63x0.95	Reinf. 4 Tension Rupture	72.0%	Pass
20.75 - 20.5	Pole + Reinf.	TP39.138x39.087x0.9	Reinf. 4 Tension Rupture	73.0%	Pass
20.5 - 15.5	Pole + Reinf.	TP40.153x39.138x0.875	Reinf. 4 Tension Rupture	74.6%	Pass
15.5 - 10.5	Pole + Reinf.	TP41.168x40.153x0.8625	Reinf. 4 Tension Rupture	76.1%	Pass
10.5 - 5.5	Pole + Reinf.	TP42.183x41.168x0.85	Reinf. 4 Tension Rupture	77.5%	Pass
5.5 - 2	Pole + Reinf.	TP42.894x42.183x0.8375	Reinf. 4 Tension Rupture	78.5%	Pass
2 - 1.75	Pole + Reinf.	TP42.945x42.894x0.825	Reinf. 4 Tension Rupture	80.0%	Pass
1.75 - 1.5	Pole + Reinf.	TP42.995x42.945x1.125	Reinf. 2 Compression	65.0%	Pass
1.5 - 0	Pole + Reinf.	TP43.3x42.995x1.1	Reinf. 2 Weldment	76.9%	Pass
				Summary	
			Pole	70.7	Pass
			Reinforcement	80.7	Pass
			<b>Overall</b>	<b>80.7</b>	<b>Pass</b>

**Table 5 - Tower Component Stresses vs. Capacity - LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	--	82.8	Pass
1,2	Base Plate	--	49.7	Pass
1,2	Base Foundation Structural	--	53.9	Pass
1,2	Base Foundation Soil Interaction	--	55.9	Pass

<b>Structure Rating (max from all components) =</b>	<b>82.8%</b>
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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

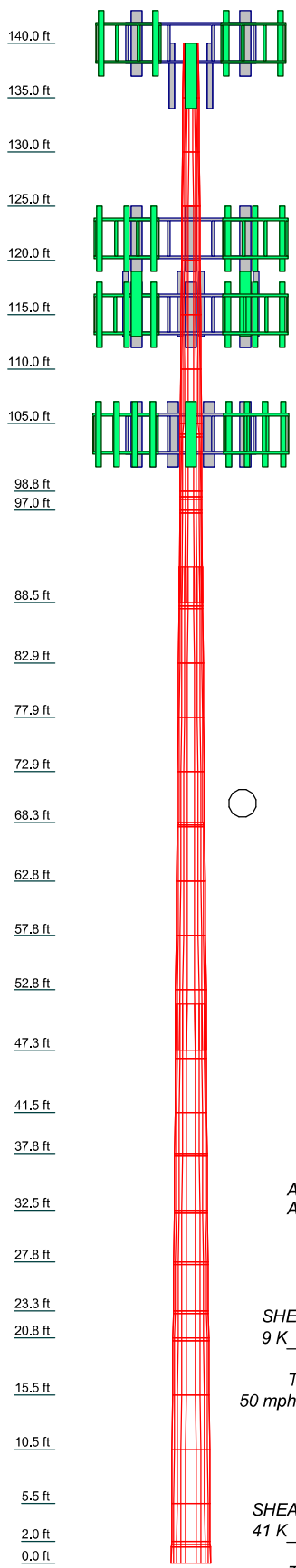
#### **4.1) Recommendations**

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

**APPENDIX A**  
**TNXTOWER OUTPUT**



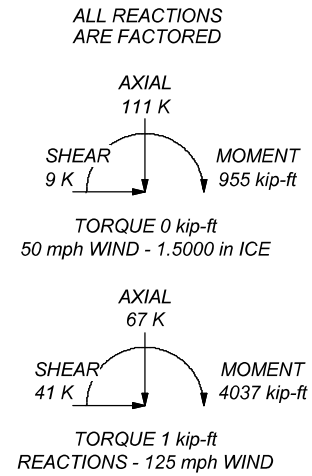
Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43					
Length (ft)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00		
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Thickness (in)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Socket Length (ft)	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25			
Top Dia (in)	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	
Bot Dia (in)	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682	40.1682
Grade	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	
Weight (K)	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	31.50	



MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

**TOWER DESIGN NOTES**

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 80.7%





Tower Engineering Professionals, Inc.

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Raleigh, NC 27603  
Phone: (919) 661-6351  
FAX: (919) 661-6350

Job: **BLC Drive (SSUSA) (BU 876342)**

Project: **TEP No. 25566.601905**

Client: Crown Castle	Drawn by: dluna	App'd:
Code: TIA-222-H	Date: 09/16/21	Scale: NTS
Path:		Dwg No. E-1

<b><i>tnxTower</i></b>  <b><i>Tower Engineering Professionals, Inc.</i></b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 1 of 54
	<b>Project</b> TEP No. 25566.601905	<b>Date</b> 15:08:40 09/16/21
	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

## 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 New Haven County, Connecticut.

Tower base elevation above sea level: 40.00 ft.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category C.

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

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56.00 pcf.

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

Temperature drop of 50.0000 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

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

Maximum demand-capacity ratio is: 1.05.

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

## Options

<ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>Include Bolts In Member Capacity</li> <li>Leg Bolts Are At Top Of Section</li> <li>Secondary Horizontal Braces Leg</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> </ul>	<ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>Use Clear Spans For KL/r</li> <li>Retension Guys To Initial Tension</li> <li>√ Bypass Mast Stability Checks</li> <li>√ Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>Autocalc Torque Arm Areas</li> <li>Add IBC .6D+W Combination</li> <li>√ Sort Capacity Reports By Component</li> <li>Triangulate Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KL/ry For 60 Deg. Angle Legs</li> </ul>	<ul style="list-style-type: none"> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>SR Leg Bolts Resist Compression</li> <li>All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feed Line Torque</li> <li>Include Angle Block Shear Check</li> <li>Use TIA-222-H Bracing Resist. Exemption</li> <li>Use TIA-222-H Tension Splice Exemption</li> <li style="background-color: #e0e0e0;">Poles</li> <li>√ Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul>
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<p><b>tnxTower</b></p> <p><b>Tower Engineering Professionals, Inc.</b>  326 Tyron Road  Raleigh, NC 27603  Phone: (919) 661-6351  FAX: (919) 661-6350</p>	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 2 of 54
	<b>Project</b> TEP No. 25566.601905	<b>Date</b> 15:08:40 09/16/21
	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

## Tapered Pole Section Geometry

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	140.00-135.00	5.00	0.00	12	16.0000	17.0151	0.2500	1.0000	A607-65 (65 ksi)
L2	135.00-130.00	5.00	0.00	12	17.0151	18.0303	0.2500	1.0000	A607-65 (65 ksi)
L3	130.00-125.00	5.00	0.00	12	18.0303	19.0454	0.2500	1.0000	A607-65 (65 ksi)
L4	125.00-120.00	5.00	0.00	12	19.0454	20.0606	0.2500	1.0000	A607-65 (65 ksi)
L5	120.00-115.00	5.00	0.00	12	20.0606	21.0757	0.2500	1.0000	A607-65 (65 ksi)
L6	115.00-110.00	5.00	0.00	12	21.0757	22.0909	0.2500	1.0000	A607-65 (65 ksi)
L7	110.00-105.00	5.00	0.00	12	22.0909	23.1060	0.2500	1.0000	A607-65 (65 ksi)
L8	105.00-104.00	1.00	0.00	12	23.1060	23.3090	0.2500	1.0000	A607-65 (65 ksi)
L9	104.00-103.75	0.25	0.00	12	23.3090	23.3598	0.4625	1.8500	A607-65 (65 ksi)
L10	103.75-98.75	5.00	0.00	12	23.3598	24.3750	0.4500	1.8000	A607-65 (65 ksi)
L11	98.75-98.25	0.50	0.00	12	24.3750	24.4765	0.4500	1.8000	A607-65 (65 ksi)
L12	98.25-98.00	0.25	0.00	12	24.4765	24.5272	0.7250	2.9000	A607-65 (65 ksi)
L13	98.00-97.00	1.00	0.00	12	24.5272	24.7303	0.7250	2.9000	A607-65 (65 ksi)
L14	97.00-96.75	0.25	0.00	12	24.7303	24.7810	0.5125	2.0500	A607-65 (65 ksi)
L15	96.75-88.50	8.25	3.25	12	24.7810	26.4560	0.5000	2.0000	A607-65 (65 ksi)
L16	88.50-88.17	3.58	0.00	12	25.2962	26.0231	0.5625	2.2500	A607-65 (65 ksi)
L17	88.17-87.92	0.25	0.00	12	26.0231	26.0738	0.7625	3.0500	A607-65 (65 ksi)
L18	87.92-82.92	5.00	0.00	12	26.0738	27.0891	0.7375	2.9500	A607-65 (65 ksi)
L19	82.92-77.92	5.00	0.00	12	27.0891	28.1044	0.7250	2.9000	A607-65 (65 ksi)
L20	77.92-72.92	5.00	0.00	12	28.1044	29.1196	0.7125	2.8500	A607-65 (65 ksi)
L21	72.92-68.25	4.67	0.00	12	29.1196	30.0679	0.6875	2.7500	A607-65 (65 ksi)
L22	68.25-67.98	0.27	0.00	12	30.0679	30.1227	0.8125	3.2500	A607-65 (65 ksi)
L23	67.98-67.83	0.15	0.00	12	30.1227	30.1532	0.8125	3.2500	A607-65 (65 ksi)
L24	67.83-62.83	5.00	0.00	12	30.1532	31.1684	0.7875	3.1500	A607-65 (65 ksi)
L25	62.83-57.83	5.00	0.00	12	31.1684	32.1837	0.7625	3.0500	A607-65 (65 ksi)
L26	57.83-52.83	5.00	0.00	12	32.1837	33.1990	0.7500	3.0000	A607-65 (65 ksi)
L27	52.83-47.25	5.58	4.25	12	33.1990	34.3320	0.7500	3.0000	A607-65 (65 ksi)
L28	47.25-46.50	5.00	0.00	12	32.8440	33.8592	0.8000	3.2000	A607-65 (65 ksi)
L29	46.50-41.50	5.00	0.00	12	33.8592	34.8743	0.8000	3.2000	A607-65 (65 ksi)

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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

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
L30	41.50-37.75	3.75	0.00	12	34.8743	35.6357	0.7750	3.1000	A607-65 (65 ksi)
L31	37.75-37.50	0.25	0.00	12	35.6357	35.6864	0.8500	3.4000	A607-65 (65 ksi)
L32	37.50-32.50	5.00	0.00	12	35.6864	36.7016	0.8250	3.3000	A607-65 (65 ksi)
L33	32.50-32.25	0.25	0.00	12	36.7016	36.7523	0.8750	3.5000	A607-65 (65 ksi)
L34	32.25-27.75	4.50	0.00	12	36.7523	37.6660	0.8625	3.4500	A607-65 (65 ksi)
L35	27.75-27.50	0.25	0.00	12	37.6660	37.7167	0.8625	3.4500	A607-65 (65 ksi)
L36	27.50-23.25	4.25	0.00	12	37.7167	38.5796	0.8500	3.4000	A607-65 (65 ksi)
L37	23.25-23.00	0.25	0.00	12	38.5796	38.6303	0.9500	3.8000	A607-65 (65 ksi)
L38	23.00-20.75	2.25	0.00	12	38.6303	39.0872	0.9500	3.8000	A607-65 (65 ksi)
L39	20.75-20.50	0.25	0.00	12	39.0872	39.1379	0.9000	3.6000	A607-65 (65 ksi)
L40	20.50-15.50	5.00	0.00	12	39.1379	40.1531	0.8750	3.5000	A607-65 (65 ksi)
L41	15.50-10.50	5.00	0.00	12	40.1531	41.1682	0.8625	3.4500	A607-65 (65 ksi)
L42	10.50-5.50	5.00	0.00	12	41.1682	42.1833	0.8500	3.4000	A607-65 (65 ksi)
L43	5.50-2.00	3.50	0.00	12	42.1833	42.8939	0.8375	3.3500	A607-65 (65 ksi)
L44	2.00-1.75	0.25	0.00	12	42.8939	42.9447	0.8250	3.3000	A607-65 (65 ksi)
L45	1.75-1.50	0.25	0.00	12	42.9447	42.9955	1.1250	4.5000	A607-65 (65 ksi)
L46	1.50-0.00	1.50		12	42.9955	43.3000	1.1000	4.4000	A607-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	16.4762	12.6788	401.4426	5.6385	8.2880	48.4366	813.4316	6.2401	3.6180	14.472
	17.5272	13.4959	484.1766	6.0019	8.8138	54.9336	981.0731	6.6423	3.8901	15.56
L2	17.5272	13.4959	484.1766	6.0019	8.8138	54.9336	981.0731	6.6423	3.8901	15.56
	18.5781	14.3131	577.5618	6.3653	9.3397	61.8395	1170.2967	7.0445	4.1621	16.648
L3	18.5781	14.3131	577.5618	6.3653	9.3397	61.8395	1170.2967	7.0445	4.1621	16.648
	19.6291	15.1303	682.2430	6.7288	9.8655	69.1542	1382.4093	7.4467	4.4342	17.737
L4	19.6291	15.1303	682.2430	6.7288	9.8655	69.1542	1382.4093	7.4467	4.4342	17.737
	20.6801	15.9475	798.8653	7.0922	10.3914	76.8777	1618.7177	7.8489	4.7062	18.825
L5	20.6801	15.9475	798.8653	7.0922	10.3914	76.8777	1618.7177	7.8489	4.7062	18.825
	21.7310	16.7647	928.0736	7.4556	10.9172	85.0100	1880.5287	8.2511	4.9783	19.913
L6	21.7310	16.7647	928.0736	7.4556	10.9172	85.0100	1880.5287	8.2511	4.9783	19.913
	22.7820	17.5819	1070.5128	7.8190	11.4431	93.5512	2169.1491	8.6533	5.2504	21.001
L7	22.7820	17.5819	1070.5128	7.8190	11.4431	93.5512	2169.1491	8.6533	5.2504	21.001
	23.8329	18.3991	1226.8278	8.1825	11.9689	102.5011	2485.8858	9.0555	5.5224	22.09
L8	23.8329	18.3991	1226.8278	8.1825	11.9689	102.5011	2485.8858	9.0555	5.5224	22.09
	24.0431	18.5625	1259.8127	8.2551	12.0741	104.3402	2552.7221	9.1359	5.5768	22.307
L9	23.9682	34.0242	2266.8112	8.1791	12.0741	187.7418	4593.1742	16.7457	5.0073	10.827

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L10	24.0207	34.0998	2281.9531	8.1972	12.1004	188.5853	4623.8556	16.7829	5.0209	10.856
	24.0251	33.1963	2223.9169	8.2017	12.1004	183.7890	4506.2586	16.3382	5.0544	11.232
	25.0761	34.6673	2532.8387	8.5651	12.6262	200.6014	5132.2179	17.0622	5.3265	11.837
L11	25.0761	34.6673	2532.8387	8.5651	12.6262	200.6014	5132.2179	17.0622	5.3265	11.837
	25.1812	34.8143	2565.2165	8.6015	12.6788	202.3231	5197.8241	17.1346	5.3537	11.897
L12	25.0841	55.4478	3992.5567	8.5030	12.6788	314.9000	8090.0023	27.2897	4.6167	6.368
	25.1367	55.5663	4018.2079	8.5212	12.7051	316.2673	8141.9786	27.3480	4.6303	6.387
L13	25.1367	55.5663	4018.2079	8.5212	12.7051	316.2673	8141.9786	27.3480	4.6303	6.387
	25.3469	56.0403	4121.9115	8.5939	12.8103	321.7661	8352.1101	27.5813	4.6847	6.462
L14	25.4219	39.9653	2991.8320	8.6700	12.8103	233.5495	6062.2627	19.6697	5.2542	10.252
	25.4744	40.0491	3010.6829	8.6881	12.8366	234.5396	6100.4598	19.7110	5.2678	10.279
L15	25.4788	39.0924	2941.7926	8.6926	12.8366	229.1729	5960.8694	19.2401	5.3013	10.603
	27.2129	41.7892	3593.5618	9.2922	13.7042	262.2232	7281.5305	20.5674	5.7502	11.5
L16	26.6733	44.7988	3498.0762	8.8546	13.1034	266.9593	7088.0507	22.0486	5.2719	9.372
	26.7427	46.1155	3815.6579	9.1149	13.4800	283.0616	7731.5574	22.6966	5.4667	9.719
L17	26.6721	62.0210	5051.4008	9.0433	13.4800	374.7342	10235.5075	30.5249	4.9307	6.466
	26.7247	62.1457	5081.9156	9.0615	13.5063	376.2639	10297.3388	30.5862	4.9443	6.484
L18	26.7335	60.1675	4929.8743	9.0704	13.5063	365.0068	9989.2620	29.6126	5.0113	6.795
	27.7845	62.5785	5546.5807	9.4339	14.0322	395.2764	11238.8763	30.7992	5.2834	7.164
L19	27.7890	61.5470	5460.3339	9.4384	14.0322	389.1300	11064.1169	30.2916	5.3169	7.334
	28.8400	63.9171	6115.7591	9.8018	14.5581	420.0942	12392.1861	31.4581	5.5890	7.709
L20	28.8444	62.8438	6018.5508	9.8063	14.5581	413.4169	12195.2156	30.9298	5.6225	7.891
	29.8955	65.1731	6712.8835	10.1698	15.0840	445.0342	13602.1219	32.0762	5.8946	8.273
L21	29.9043	62.9416	6494.4601	10.1787	15.0840	430.5537	13159.5370	30.9780	5.9616	8.671
	30.8861	65.0408	7166.1740	10.5182	15.5752	460.1025	14520.6114	32.0111	6.2157	9.041
L22	30.8420	76.5394	8361.4775	10.4734	15.5752	536.8467	16942.6203	37.6704	5.8807	7.238
	30.8987	76.6829	8408.5735	10.4931	15.6036	538.8879	17038.0497	37.7410	5.8954	7.256
L23	30.8987	76.6829	8408.5735	10.4931	15.6036	538.8879	17038.0497	37.7410	5.8954	7.256
	30.9302	76.7625	8434.8143	10.5040	15.6193	540.0236	17091.2205	37.7802	5.9036	7.266
L24	30.9391	74.4640	8196.1968	10.5129	15.6193	524.7465	16607.7168	36.6489	5.9706	7.582
	31.9901	77.0385	9076.0309	10.8764	16.1453	562.1486	18390.4993	37.9160	6.2426	7.927
L25	31.9990	74.6542	8809.6151	10.8853	16.1453	545.6474	17850.6686	36.7425	6.3096	8.275
	33.0500	77.1469	9721.8760	11.2488	16.6712	583.1554	19699.1565	37.9694	6.5817	8.632
L26	33.0544	75.9124	9573.9180	11.2533	16.6712	574.2803	19399.3535	37.3618	6.6152	8.82
	34.1055	78.3643	10531.8744	11.6167	17.1971	612.4228	21340.4329	38.5685	6.8873	9.183
L27	34.1055	78.3643	10531.8744	11.6167	17.1971	612.4228	21340.4329	38.5685	6.8873	9.183
	35.2785	81.1005	11674.0825	12.0224	17.7840	656.4383	23654.8561	39.9152	7.1910	9.588
L28	34.6137	82.5454	10818.6492	11.4718	17.0132	635.8972	21921.5163	40.6263	6.6582	8.323
	34.7714	85.1604	11879.7585	11.8352	17.5390	677.3319	24071.6116	41.9134	6.9303	8.663
L29	34.7714	85.1604	11879.7585	11.8352	17.5390	677.3319	24071.6116	41.9134	6.9303	8.663
	35.8223	87.7754	13008.0772	12.1986	18.0649	720.0749	26357.8911	43.2004	7.2023	9.003
L30	35.8312	85.0948	12629.3321	12.2076	18.0649	699.1091	25590.4509	41.8811	7.2693	9.38
	36.6194	86.9948	13494.3105	12.4801	18.4593	731.0314	27343.1315	42.8162	7.4734	9.643
L31	36.5929	95.2084	14704.8924	12.4533	18.4593	796.6126	29796.0987	46.8587	7.2724	8.556
	36.6455	95.3473	14769.3558	12.4714	18.4856	798.9668	29926.7191	46.9270	7.2860	8.572
L32	36.6543	92.6094	14365.8472	12.4804	18.4856	777.1385	29109.1012	45.5795	7.3530	8.913
	37.7052	95.3061	15657.7196	12.8438	19.0114	823.5958	31726.7849	46.9068	7.6250	9.242
L33	37.6876	100.9414	16537.3365	12.8259	19.0114	869.8636	33509.1272	49.6803	7.4910	8.561
	37.7401	101.0844	16607.7237	12.8441	19.0377	872.3595	33651.7509	49.7507	7.5046	8.577
L34	37.7446	99.6750	16387.5874	12.8486	19.0377	860.7964	33205.6949	49.0570	7.5381	8.74
	38.6904	102.2124	17671.2278	13.1756	19.5110	905.7075	35806.6985	50.3058	7.7830	9.024
L35	38.6904	102.2124	17671.2278	13.1756	19.5110	905.7075	35806.6985	50.3058	7.7830	9.024
	38.7430	102.3534	17744.4421	13.1938	19.5373	908.2361	35955.0504	50.3752	7.7966	9.04
L36	38.7474	100.9042	17505.0760	13.1983	19.5373	895.9843	35470.0298	49.6620	7.8301	9.212
	39.6407	103.2659	18763.1961	13.5072	19.9842	938.9004	38019.3223	50.8243	8.0613	9.484
L37	39.6054	115.1089	20804.3283	13.4714	19.9842	1041.0375	42155.2095	56.6531	7.7933	8.204
	39.6579	115.2642	20888.6285	13.4896	20.0105	1043.8825	42326.0245	56.7295	7.8069	8.218
L38	39.6579	115.2642	20888.6285	13.4896	20.0105	1043.8825	42326.0245	56.7295	7.8069	8.218
	40.1309	116.6616	21657.6007	13.6531	20.2471	1069.6619	43884.1706	57.4173	7.9294	8.347
L39	40.1485	110.6664	20598.5325	13.6710	20.2471	1017.3548	41738.2115	54.4666	8.0634	8.959
	40.2011	110.8135	20680.7785	13.6892	20.2734	1020.0923	41904.8641	54.5390	8.0770	8.974
L40	40.2099	107.8058	20145.7748	13.6981	20.2734	993.7029	40820.8016	53.0587	8.1440	9.307

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	<b>Project</b> TEP No. 25566.601905	<b>Date</b> 15:08:40 09/16/21
	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L41	41.2608	110.6659	21792.1381	14.0615	20.7993	1047.7351	44156.7800	54.4664	8.4160	9.618
	41.2652	109.1197	21501.3368	14.0660	20.7993	1033.7537	43567.5377	53.7054	8.4495	9.797
L42	42.3162	111.9390	23211.3454	14.4294	21.3251	1088.4505	47032.4786	55.0930	8.7216	10.112
	42.3206	110.3509	22896.2383	14.4339	21.3251	1073.6742	46393.9862	54.3114	8.7551	10.3
L43	43.3716	113.1294	24669.6127	14.7973	21.8510	1128.9939	49987.3235	55.6788	9.0271	10.62
	43.3760	111.4994	24328.8835	14.8018	21.8510	1113.4005	49296.9138	54.8766	9.0606	10.819
L44	44.1116	113.4157	25604.9685	15.0562	22.2191	1152.3874	51882.6081	55.8198	9.2511	11.046
	44.1160	111.7561	25245.3016	15.0607	22.2191	1136.2001	51153.8254	55.0030	9.2846	11.254
L45	44.1686	111.8910	25336.7890	15.0789	22.2454	1138.9699	51339.2038	55.0693	9.2982	11.271
	44.0628	151.4919	33817.1560	14.9715	22.2454	1520.1896	68522.7263	74.5597	8.4942	7.55
L46	44.1153	151.6757	33940.4386	14.9896	22.2716	1523.9304	68772.5302	74.6502	8.5078	7.562
	44.1241	148.3937	33245.6865	14.9986	22.2716	1492.7359	67364.7742	73.0349	8.5748	7.795
	44.4394	149.4724	33975.9696	15.1076	22.4294	1514.7962	68844.5258	73.5658	8.6564	7.869

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1				1	1	1			
140.00-135.00				1	1	1			
L2				1	1	1			
135.00-130.00				1	1	1			
L3				1	1	1			
130.00-125.00				1	1	1			
L4				1	1	1			
125.00-120.00				1	1	1			
L5				1	1	1			
120.00-115.00				1	1	1			
L6				1	1	1			
115.00-110.00				1	1	1			
L7				1	1	1			
110.00-105.00				1	1	1			
L8				1	1	1			
105.00-104.00				1	1	0.942021			
L9				1	1	0.950174			
104.00-103.75				1	1	0.948507			
L10				1	1	0.900489			
103.75-98.75				1	1	0.895789			
L11				1	1	0.916918			
98.75-98.25				1	1	0.921726			
L12				1	1	0.929093			
98.25-98.00				1	1	0.980317			
L13				1	1	0.989862			
98.00-97.00				1	1	0.985114			
L14				1	1	0.981806			
97.00-96.75				1	1	0.998472			
L15				1	1				
96.75-88.50				1	1				
L16				1	1				
88.50-88.17				1	1				
L17				1	1				
88.17-87.92				1	1				
L18				1	1				
87.92-82.92				1	1				
L19				1	1				
82.92-77.92				1	1				
L20				1	1				
77.92-72.92				1	1				
L21				1	1				
72.92-68.25				1	1				

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 6 of 54
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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

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 <sup>2</sup>	in					in	in	in
L22				1	1	0.958086			
68.25-67.98									
L23				1	1	0.957491			
67.98-67.83									
L24				1	1	0.967322			
67.83-62.83									
L25				1	1	0.979205			
62.83-57.83									
L26				1	1	0.97703			
57.83-52.83									
L27				1	1	0.972405			
52.83-47.25									
L28				1	1	0.985251			
47.25-46.50									
L29				1	1	0.969863			
46.50-41.50									
L30				1	1	0.989134			
41.50-37.75									
L31				1	1	0.961419			
37.75-37.50									
L32				1	1	0.974696			
37.50-32.50									
L33				1	1	0.982743			
32.50-32.25									
L34				1	1	0.982691			
32.25-27.75									
L35				1	1	0.981936			
27.75-27.50									
L36				1	1	0.983349			
27.50-23.25									
L37				1	1	1.0287			
23.25-23.00									
L38				1	1	1.0211			
23.00-20.75									
L39				1	1	0.982282			
20.75-20.50									
L40				1	1	0.994668			
20.50-15.50									
L41				1	1	0.994306			
15.50-10.50									
L42 10.50-5.50				1	1	0.994679			
L43 5.50-2.00				1	1	0.999733			
L44 2.00-1.75				1	1	0.950974			
L45 1.75-1.50				1	1	0.825204			
L46 1.50-0.00				1	1	0.839829			

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement	Total Number	Number Per Row	Start/End Position	Width or Diameter	Perimeter	Weight
				ft				in	in	plf
FB-L98B-034-XXX(3/8")	C	No	Surface Ar (CaAa)	122.00 - 0.00	3	3	0.500 0.500	0.3937		0.06
PWRT-606-S(7/8")	C	No	Surface Ar	122.00 -	7	7	0.500	0.9200		0.89

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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)	0.00			0.500			
**										
HCS 6X12 6AWG(1-3/8)	B	No	Surface Ar (CaAa)	115.00 - 0.00	2	2	0.500 0.500	1.3800		1.70
LDF6-50A(1-1/4)	B	No	Surface Ar (CaAa)	115.00 - 0.00	6	6	0.500 0.500	1.5500		0.60
**										
CR 50 1873(1-5/8)	C	No	Surface Ar (CaAa)	95.00 - 0.00	6	6	0.500 0.500	1.9800		0.83
**										
***Mods***										
MP3-08 (1.25in)	C	No	Surface Af (CaAa)	31.75 - 0.00	1	1	0.500 0.500	7.9300	21.4600	0.00
MP3-08 (1.25in)	A	No	Surface Af (CaAa)	31.75 - 0.00	1	1	0.500 0.500	7.9300	21.4600	0.00
***										
MP3-06 (1.25in)	C	No	Surface Af (CaAa)	26.75 - 0.00	1	1	-0.250 -0.250	6.8900	19.0000	0.00
MP3-06 (1.25in)	B	No	Surface Af (CaAa)	26.75 - 0.00	1	1	0.250 0.250	6.8900	19.0000	0.00
***										
MP3-08 (1.25in)	B	No	Surface Af (CaAa)	31.75 - 16.75	1	1	0.500 0.500	7.9300	21.4600	0.00
***										
MP3-08 (1.25in)	C	No	Surface Af (CaAa)	41.75 - 31.75	1	1	0.500 0.500	7.9300	21.4600	0.00
MP3-08 (1.25in)	B	No	Surface Af (CaAa)	41.75 - 31.75	1	1	0.500 0.500	7.9300	21.4600	0.00
MP3-08 (1.25in)	A	No	Surface Af (CaAa)	41.75 - 31.75	1	1	0.500 0.500	7.9300	21.4600	0.00
***										
MP3-06 (1.25in)	C	No	Surface Af (CaAa)	71.75 - 41.75	1	1	0.500 0.500	6.8900	19.0000	0.00
MP3-06 (1.25in)	B	No	Surface Af (CaAa)	71.75 - 41.75	1	1	0.500 0.500	6.8900	19.0000	0.00
MP3-06 (1.25in)	A	No	Surface Af (CaAa)	71.75 - 41.75	1	1	0.500 0.500	6.8900	19.0000	0.00
***										
MP3-05 (1.25in)	C	No	Surface Af (CaAa)	100.75 - 71.75	1	1	0.500 0.500	5.3300	14.8400	0.00
MP3-05 (1.25in)	B	No	Surface Af (CaAa)	100.75 - 71.75	1	1	0.500 0.500	5.3300	14.8400	0.00
MP3-05 (1.25in)	A	No	Surface Af (CaAa)	100.75 - 71.75	1	1	0.500 0.500	5.3300	14.8400	0.00
***										
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	35.50 - 0.00	1	1	0.000 0.000	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	35.50 - 0.00	1	1	0.000 0.000	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	35.50 - 0.00	1	1	0.250 0.250	6.5000	15.5000	0.00
***										
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.250 0.250	6.0000	14.0000	0.00
***										
(Area) CCI-65FP-060100	C	No	Surface Af	90.67 -	1	1	0.000	6.0000	14.0000	0.00



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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
(H)			(CaAa)	70.58			0.000			
(Area) CCI-65FP-060100	B	No	Surface Af	90.67 -	1	1	0.000	6.0000	14.0000	0.00
(H)			(CaAa)	70.58			0.000			
(Area) CCI-65FP-060100	A	No	Surface Af	90.67 -	1	1	0.250	6.0000	14.0000	0.00
(H)			(CaAa)	70.58			0.250			
***										
(Area) CCI-65FP-045100	A	No	Surface Af	105.50 -	1	1	0.000	4.5000	11.0000	0.00
(H)			(CaAa)	95.50			0.000			
(Area) CCI-65FP-045100	C	No	Surface Af	105.50 -	1	1	0.000	4.5000	11.0000	0.00
(H)			(CaAa)	95.50			0.000			
(Area) CCI-65FP-045100	B	No	Surface Af	105.50 -	1	1	0.000	4.5000	11.0000	0.00
(H)			(CaAa)	95.50			0.000			
***										

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>1</sub> ft <sup>2</sup> /ft	Weight plf
***									
LDF4-50A(1/2)	C	No	No	Inside Pole	140.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
LDF7-50A(1-5/8)	C	No	No	Inside Pole	140.00 - 0.00	1	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
HB114-1-0813U4-M 5J(1-1/4)	C	No	No	Inside Pole	140.00 - 0.00	3	No Ice	0.00	1.20
							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20
							2" Ice	0.00	1.20
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	122.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
2 1/2" (Nominal) Conduit	C	No	No	Inside Pole	122.00 - 0.00	2	No Ice	0.00	7.75
							1/2" Ice	0.00	7.75
							1" Ice	0.00	7.75
							2" Ice	0.00	7.75
HJ7-50A(1-5/8)	B	No	No	Inside Pole	115.00 - 0.00	1	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
							2" Ice	0.00	1.04
**									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	104.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
HB158-1-08U8-S8J 18(1-5/8)	A	No	No	Inside Pole	104.00 - 0.00	2	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
**									
LDF4-50A(1/2)	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.15

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
**								
***								

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L1	140.00-135.00	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	0.02
L2	135.00-130.00	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	0.02
L3	130.00-125.00	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	0.02
L4	125.00-120.00	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	1.524	0.000	0.08
L5	120.00-115.00	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	3.811	0.000	0.16
L6	115.00-110.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.030	0.000	0.04
		C	0.000	0.000	3.811	0.000	0.16
L7	110.00-105.00	A	0.000	0.000	0.375	0.000	0.00
		B	0.000	0.000	6.405	0.000	0.04
		C	0.000	0.000	4.186	0.000	0.16
L8	105.00-104.00	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	1.956	0.000	0.01
		C	0.000	0.000	1.512	0.000	0.03
L9	104.00-103.75	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.489	0.000	0.00
		C	0.000	0.000	0.378	0.000	0.01
L10	103.75-98.75	A	0.000	0.000	5.527	0.000	0.04
		B	0.000	0.000	11.557	0.000	0.04
		C	0.000	0.000	9.337	0.000	0.16
L11	98.75-98.25	A	0.000	0.000	0.819	0.000	0.00
		B	0.000	0.000	1.422	0.000	0.00
		C	0.000	0.000	1.200	0.000	0.02
L12	98.25-98.00	A	0.000	0.000	0.410	0.000	0.00
		B	0.000	0.000	0.711	0.000	0.00
		C	0.000	0.000	0.600	0.000	0.01
L13	98.00-97.00	A	0.000	0.000	1.638	0.000	0.01
		B	0.000	0.000	2.844	0.000	0.01
		C	0.000	0.000	2.400	0.000	0.03
L14	97.00-96.75	A	0.000	0.000	0.410	0.000	0.00
		B	0.000	0.000	0.711	0.000	0.00
		C	0.000	0.000	0.600	0.000	0.01
L15	96.75-88.50	A	0.000	0.000	10.436	0.000	0.06

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Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
		B	0.000	0.000	20.386	0.000	0.07
		C	0.000	0.000	24.446	0.000	0.29
L16	88.50-88.17	A	0.000	0.000	0.623	0.000	0.00
		B	0.000	0.000	1.021	0.000	0.00
		C	0.000	0.000	1.267	0.000	0.01
L17	88.17-87.92	A	0.000	0.000	0.472	0.000	0.00
		B	0.000	0.000	0.774	0.000	0.00
		C	0.000	0.000	0.960	0.000	0.01
L18	87.92-82.92	A	0.000	0.000	9.442	0.000	0.04
		B	0.000	0.000	15.472	0.000	0.04
		C	0.000	0.000	19.192	0.000	0.18
L19	82.92-77.92	A	0.000	0.000	9.442	0.000	0.04
		B	0.000	0.000	15.472	0.000	0.04
		C	0.000	0.000	19.192	0.000	0.18
L20	77.92-72.92	A	0.000	0.000	9.442	0.000	0.04
		B	0.000	0.000	15.472	0.000	0.04
		C	0.000	0.000	19.192	0.000	0.18
L21	72.92-68.25	A	0.000	0.000	9.729	0.000	0.04
		B	0.000	0.000	15.361	0.000	0.04
		C	0.000	0.000	18.836	0.000	0.17
L22	68.25-67.98	A	0.000	0.000	0.580	0.000	0.00
		B	0.000	0.000	0.906	0.000	0.00
		C	0.000	0.000	1.107	0.000	0.01
L23	67.98-67.83	A	0.000	0.000	0.322	0.000	0.00
		B	0.000	0.000	0.503	0.000	0.00
		C	0.000	0.000	0.615	0.000	0.01
L24	67.83-62.83	A	0.000	0.000	10.742	0.000	0.04
		B	0.000	0.000	16.772	0.000	0.04
		C	0.000	0.000	20.492	0.000	0.18
L25	62.83-57.83	A	0.000	0.000	10.742	0.000	0.04
		B	0.000	0.000	16.772	0.000	0.04
		C	0.000	0.000	20.492	0.000	0.18
L26	57.83-52.83	A	0.000	0.000	10.742	0.000	0.04
		B	0.000	0.000	16.772	0.000	0.04
		C	0.000	0.000	20.492	0.000	0.18
L27	52.83-47.25	A	0.000	0.000	11.988	0.000	0.04
		B	0.000	0.000	18.717	0.000	0.04
		C	0.000	0.000	22.869	0.000	0.20
L28	47.25-46.50	A	0.000	0.000	1.611	0.000	0.01
		B	0.000	0.000	2.516	0.000	0.01
		C	0.000	0.000	3.074	0.000	0.03
L29	46.50-41.50	A	0.000	0.000	10.726	0.000	0.04
		B	0.000	0.000	16.756	0.000	0.04
		C	0.000	0.000	20.476	0.000	0.18
L30	41.50-37.75	A	0.000	0.000	7.820	0.000	0.03
		B	0.000	0.000	12.342	0.000	0.03
		C	0.000	0.000	15.133	0.000	0.14
L31	37.75-37.50	A	0.000	0.000	0.521	0.000	0.00
		B	0.000	0.000	0.823	0.000	0.00
		C	0.000	0.000	1.009	0.000	0.01
L32	37.50-32.50	A	0.000	0.000	10.676	0.000	0.04
		B	0.000	0.000	16.706	0.000	0.04
		C	0.000	0.000	20.427	0.000	0.18
L33	32.50-32.25	A	0.000	0.000	0.542	0.000	0.00
		B	0.000	0.000	0.844	0.000	0.00
		C	0.000	0.000	1.030	0.000	0.01
L34	32.25-27.75	A	0.000	0.000	10.704	0.000	0.03
		B	0.000	0.000	15.814	0.000	0.04
		C	0.000	0.000	19.480	0.000	0.16
L35	27.75-27.50	A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.883	0.000	0.00

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	11 of 54
	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L36	27.50-23.25	C	0.000	0.000	1.089	0.000	0.01
		A	0.000	0.000	10.221	0.000	0.03
		B	0.000	0.000	19.029	0.000	0.03
L37	23.25-23.00	C	0.000	0.000	22.528	0.000	0.16
		A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	1.170	0.000	0.00
L38	23.00-20.75	C	0.000	0.000	1.376	0.000	0.01
		A	0.000	0.000	5.411	0.000	0.02
		B	0.000	0.000	10.530	0.000	0.02
L39	20.75-20.50	C	0.000	0.000	12.383	0.000	0.08
		A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	1.170	0.000	0.00
L40	20.50-15.50	C	0.000	0.000	1.376	0.000	0.01
		A	0.000	0.000	12.025	0.000	0.04
		B	0.000	0.000	21.848	0.000	0.04
L41	15.50-10.50	C	0.000	0.000	27.517	0.000	0.18
		A	0.000	0.000	12.025	0.000	0.04
		B	0.000	0.000	17.188	0.000	0.04
L42	10.50-5.50	C	0.000	0.000	27.517	0.000	0.18
		A	0.000	0.000	12.025	0.000	0.04
		B	0.000	0.000	17.188	0.000	0.04
L43	5.50-2.00	C	0.000	0.000	27.517	0.000	0.18
		A	0.000	0.000	8.418	0.000	0.03
		B	0.000	0.000	12.032	0.000	0.03
L44	2.00-1.75	C	0.000	0.000	19.262	0.000	0.13
		A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.859	0.000	0.00
L45	1.75-1.50	C	0.000	0.000	1.376	0.000	0.01
		A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.859	0.000	0.00
L46	1.50-0.00	C	0.000	0.000	1.376	0.000	0.01
		A	0.000	0.000	3.607	0.000	0.01
		B	0.000	0.000	5.157	0.000	0.01
		C	0.000	0.000	8.255	0.000	0.05

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L1	140.00-135.00	A	1.471	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L2	135.00-130.00	A	1.465	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	130.00-125.00	A	1.459	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L4	125.00-120.00	A	1.454	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	3.359	0.000	0.11
L5	120.00-115.00	A	1.448	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	8.382	0.000	0.23
L6	115.00-110.00	A	1.441	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.141	0.000	0.15
		C		0.000	0.000	8.367	0.000	0.23

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	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L7	110.00-105.00	A	1.435	0.000	0.000	0.456	0.000	0.00
		B		0.000	0.000	11.581	0.000	0.15
		C		0.000	0.000	8.806	0.000	0.24
L8	105.00-104.00	A	1.431	0.000	0.000	0.912	0.000	0.01
		B		0.000	0.000	3.135	0.000	0.04
		C		0.000	0.000	2.580	0.000	0.06
L9	104.00-103.75	A	1.430	0.000	0.000	0.228	0.000	0.00
		B		0.000	0.000	0.784	0.000	0.01
		C		0.000	0.000	0.645	0.000	0.01
L10	103.75-98.75	A	1.426	0.000	0.000	6.905	0.000	0.11
		B		0.000	0.000	18.009	0.000	0.21
		C		0.000	0.000	15.234	0.000	0.30
L11	98.75-98.25	A	1.422	0.000	0.000	1.042	0.000	0.01
		B		0.000	0.000	2.151	0.000	0.02
		C		0.000	0.000	1.874	0.000	0.03
L12	98.25-98.00	A	1.422	0.000	0.000	0.521	0.000	0.01
		B		0.000	0.000	1.076	0.000	0.01
		C		0.000	0.000	0.937	0.000	0.02
L13	98.00-97.00	A	1.421	0.000	0.000	2.084	0.000	0.03
		B		0.000	0.000	4.302	0.000	0.05
		C		0.000	0.000	3.747	0.000	0.07
L14	97.00-96.75	A	1.420	0.000	0.000	0.521	0.000	0.01
		B		0.000	0.000	1.075	0.000	0.01
		C		0.000	0.000	0.936	0.000	0.02
L15	96.75-88.50	A	1.414	0.000	0.000	13.583	0.000	0.19
		B		0.000	0.000	31.850	0.000	0.37
		C		0.000	0.000	39.222	0.000	0.66
L16	88.50-88.17	A	1.407	0.000	0.000	0.810	0.000	0.01
		B		0.000	0.000	1.540	0.000	0.02
		C		0.000	0.000	1.964	0.000	0.03
L17	88.17-87.92	A	1.406	0.000	0.000	0.613	0.000	0.01
		B		0.000	0.000	1.165	0.000	0.01
		C		0.000	0.000	1.486	0.000	0.02
L18	87.92-82.92	A	1.402	0.000	0.000	12.246	0.000	0.15
		B		0.000	0.000	23.289	0.000	0.25
		C		0.000	0.000	29.692	0.000	0.45
L19	82.92-77.92	A	1.394	0.000	0.000	12.229	0.000	0.14
		B		0.000	0.000	23.251	0.000	0.25
		C		0.000	0.000	29.644	0.000	0.45
L20	77.92-72.92	A	1.385	0.000	0.000	12.211	0.000	0.14
		B		0.000	0.000	23.211	0.000	0.25
		C		0.000	0.000	29.593	0.000	0.45
L21	72.92-68.25	A	1.376	0.000	0.000	12.298	0.000	0.14
		B		0.000	0.000	22.551	0.000	0.24
		C		0.000	0.000	28.500	0.000	0.43
L22	68.25-67.98	A	1.371	0.000	0.000	0.728	0.000	0.01
		B		0.000	0.000	1.320	0.000	0.01
		C		0.000	0.000	1.664	0.000	0.02
L23	67.98-67.83	A	1.370	0.000	0.000	0.404	0.000	0.00
		B		0.000	0.000	0.733	0.000	0.01
		C		0.000	0.000	0.924	0.000	0.01
L24	67.83-62.83	A	1.365	0.000	0.000	13.472	0.000	0.15
		B		0.000	0.000	24.422	0.000	0.26
		C		0.000	0.000	30.779	0.000	0.46
L25	62.83-57.83	A	1.354	0.000	0.000	13.450	0.000	0.15
		B		0.000	0.000	24.373	0.000	0.25
		C		0.000	0.000	30.717	0.000	0.45
L26	57.83-52.83	A	1.343	0.000	0.000	13.427	0.000	0.15
		B		0.000	0.000	24.321	0.000	0.25
		C		0.000	0.000	30.650	0.000	0.45
L27	52.83-47.25	A	1.329	0.000	0.000	14.954	0.000	0.17

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	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
		B		0.000	0.000	27.075	0.000	0.28
		C		0.000	0.000	34.119	0.000	0.50
L28	47.25-46.50	A	1.321	0.000	0.000	2.010	0.000	0.02
		B		0.000	0.000	3.639	0.000	0.04
		C		0.000	0.000	4.586	0.000	0.07
L29	46.50-41.50	A	1.312	0.000	0.000	13.321	0.000	0.15
		B		0.000	0.000	24.139	0.000	0.25
		C		0.000	0.000	30.430	0.000	0.44
L30	41.50-37.75	A	1.299	0.000	0.000	9.330	0.000	0.11
		B		0.000	0.000	17.418	0.000	0.19
		C		0.000	0.000	22.124	0.000	0.33
L31	37.75-37.50	A	1.292	0.000	0.000	0.622	0.000	0.01
		B		0.000	0.000	1.160	0.000	0.01
		C		0.000	0.000	1.473	0.000	0.02
L32	37.50-32.50	A	1.282	0.000	0.000	12.666	0.000	0.15
		B		0.000	0.000	23.410	0.000	0.25
		C		0.000	0.000	29.663	0.000	0.44
L33	32.50-32.25	A	1.273	0.000	0.000	0.641	0.000	0.01
		B		0.000	0.000	1.177	0.000	0.01
		C		0.000	0.000	1.489	0.000	0.02
L34	32.25-27.75	A	1.263	0.000	0.000	12.921	0.000	0.14
		B		0.000	0.000	21.774	0.000	0.22
		C		0.000	0.000	28.152	0.000	0.40
L35	27.75-27.50	A	1.253	0.000	0.000	0.727	0.000	0.01
		B		0.000	0.000	1.212	0.000	0.01
		C		0.000	0.000	1.571	0.000	0.02
L36	27.50-23.25	A	1.242	0.000	0.000	12.332	0.000	0.13
		B		0.000	0.000	25.455	0.000	0.25
		C		0.000	0.000	31.539	0.000	0.41
L37	23.25-23.00	A	1.230	0.000	0.000	0.724	0.000	0.01
		B		0.000	0.000	1.556	0.000	0.01
		C		0.000	0.000	1.913	0.000	0.02
L38	23.00-20.75	A	1.224	0.000	0.000	6.513	0.000	0.07
		B		0.000	0.000	13.989	0.000	0.13
		C		0.000	0.000	17.196	0.000	0.22
L39	20.75-20.50	A	1.216	0.000	0.000	0.723	0.000	0.01
		B		0.000	0.000	1.553	0.000	0.01
		C		0.000	0.000	1.908	0.000	0.02
L40	20.50-15.50	A	1.200	0.000	0.000	14.425	0.000	0.15
		B		0.000	0.000	29.250	0.000	0.27
		C		0.000	0.000	38.054	0.000	0.48
L41	15.50-10.50	A	1.161	0.000	0.000	14.348	0.000	0.14
		B		0.000	0.000	23.923	0.000	0.22
		C		0.000	0.000	37.795	0.000	0.47
L42	10.50-5.50	A	1.106	0.000	0.000	14.238	0.000	0.14
		B		0.000	0.000	23.675	0.000	0.21
		C		0.000	0.000	37.423	0.000	0.45
L43	5.50-2.00	A	1.026	0.000	0.000	9.853	0.000	0.09
		B		0.000	0.000	16.318	0.000	0.14
		C		0.000	0.000	25.815	0.000	0.30
L44	2.00-1.75	A	0.957	0.000	0.000	0.697	0.000	0.01
		B		0.000	0.000	1.150	0.000	0.01
		C		0.000	0.000	1.821	0.000	0.02
L45	1.75-1.50	A	0.944	0.000	0.000	0.696	0.000	0.01
		B		0.000	0.000	1.147	0.000	0.01
		C		0.000	0.000	1.816	0.000	0.02
L46	1.50-0.00	A	0.873	0.000	0.000	4.131	0.000	0.03
		B		0.000	0.000	6.788	0.000	0.05
		C		0.000	0.000	10.755	0.000	0.12

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## Feed Line Center of Pressure

Section	Elevation	CP <sub>x</sub>	CP <sub>z</sub>	CP <sub>x</sub> Ice	CP <sub>z</sub> Ice
	ft	in	in	in	in
L1	140.00-135.00	0.0000	0.0000	0.0000	0.0000
L2	135.00-130.00	0.0000	0.0000	0.0000	0.0000
L3	130.00-125.00	0.0000	0.0000	0.0000	0.0000
L4	125.00-120.00	-1.4375	0.8300	-1.7987	1.0385
L5	120.00-115.00	-2.8941	1.6709	-3.1124	1.7969
L6	115.00-110.00	1.2496	3.0120	0.7247	2.6473
L7	110.00-105.00	1.2025	2.9058	0.7223	2.6457
L8	105.00-104.00	0.8135	1.9685	0.5739	2.1053
L9	104.00-103.75	0.8169	1.9773	0.5764	2.1151
L10	103.75-98.75	0.7056	1.7099	0.5205	1.9123
L11	98.75-98.25	0.5869	1.4239	0.4540	1.6698
L12	98.25-98.00	0.5887	1.4284	0.4553	1.6749
L13	98.00-97.00	0.5907	1.4337	0.4571	1.6816
L14	97.00-96.75	0.5924	1.4381	0.4586	1.6875
L15	96.75-88.50	-0.3433	1.9973	-0.4347	2.1303
L16	88.50-88.17	0.1542	1.2365	-0.0850	1.5436
L17	88.17-87.92	0.1546	1.2392	-0.0850	1.5465
L18	87.92-82.92	0.1577	1.2575	-0.0859	1.5712
L19	82.92-77.92	0.1636	1.2922	-0.0876	1.6178
L20	77.92-72.92	0.1695	1.3263	-0.0892	1.6639
L21	72.92-68.25	0.1663	1.2915	-0.0879	1.6562
L22	68.25-67.98	0.1663	1.2866	-0.0878	1.6615
L23	67.98-67.83	0.1666	1.2879	-0.0878	1.6633
L24	67.83-62.83	0.1693	1.3041	-0.0886	1.6855
L25	62.83-57.83	0.1746	1.3352	-0.0900	1.7281
L26	57.83-52.83	0.1798	1.3659	-0.0913	1.7701
L27	52.83-47.25	0.1852	1.3980	-0.0926	1.8138
L28	47.25-46.50	0.1854	1.3987	-0.0926	1.8149
L29	46.50-41.50	0.1884	1.4170	-0.0931	1.8399
L30	41.50-37.75	0.1956	1.4641	-0.0966	1.9247
L31	37.75-37.50	0.1977	1.4762	-0.0970	1.9410
L32	37.50-32.50	0.2592	1.4259	-0.0571	1.9157
L33	32.50-32.25	0.3008	1.3978	-0.0305	1.9055
L34	32.25-27.75	0.2485	1.2121	-0.0965	1.6314
L35	27.75-27.50	0.2447	1.1996	-0.1044	1.6119
L36	27.50-23.25	2.6233	2.4497	1.8679	2.5947
L37	23.25-23.00	3.0809	2.6978	2.2586	2.8011
L38	23.00-20.75	3.0963	2.7110	2.2713	2.8153
L39	20.75-20.50	3.1113	2.7239	2.2839	2.8294
L40	20.50-15.50	3.0351	2.2448	2.2174	2.4818
L41	15.50-10.50	2.7416	0.6273	1.9684	1.3124
L42	10.50-5.50	2.7935	0.6371	2.0142	1.3252
L43	5.50-2.00	2.8371	0.6453	2.0575	1.3281
L44	2.00-1.75	2.8562	0.6489	2.0810	1.3216
L45	1.75-1.50	2.8603	0.6497	2.0858	1.3204
L46	1.50-0.00	2.8691	0.6514	2.1022	1.3083

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

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 15 of 54
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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

## Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L4	9	FB-L98B-034-XXX(3/8")	120.00 - 122.00	1.0000	1.0000
L4	11	PWRT-606-S(7/8")	120.00 - 122.00	1.0000	1.0000
L5	9	FB-L98B-034-XXX(3/8")	115.00 - 120.00	1.0000	1.0000
L5	11	PWRT-606-S(7/8")	115.00 - 120.00	1.0000	1.0000
L6	9	FB-L98B-034-XXX(3/8")	110.00 - 115.00	1.0000	1.0000
L6	11	PWRT-606-S(7/8")	110.00 - 115.00	1.0000	1.0000
L6	19	HCS 6X12 6AWG(1-3/8)	110.00 - 115.00	1.0000	1.0000
L6	21	LDF6-50A(1-1/4)	110.00 - 115.00	1.0000	1.0000
L7	9	FB-L98B-034-XXX(3/8")	105.00 - 110.00	1.0000	1.0000
L7	11	PWRT-606-S(7/8")	105.00 - 110.00	1.0000	1.0000
L7	19	HCS 6X12 6AWG(1-3/8)	105.00 - 110.00	1.0000	1.0000
L7	21	LDF6-50A(1-1/4)	105.00 - 110.00	1.0000	1.0000
L7	66	(Area) CCI-65FP-045100 (H)	105.00 - 105.50	1.0000	1.0000
L7	67	(Area) CCI-65FP-045100 (H)	105.00 - 105.50	1.0000	1.0000
L7	68	(Area) CCI-65FP-045100 (H)	105.00 - 105.50	1.0000	1.0000
L8	9	FB-L98B-034-XXX(3/8")	104.00 - 105.00	1.0000	1.0000
L8	11	PWRT-606-S(7/8")	104.00 - 105.00	1.0000	1.0000
L8	19	HCS 6X12 6AWG(1-3/8)	104.00 - 105.00	1.0000	1.0000
L8	21	LDF6-50A(1-1/4)	104.00 - 105.00	1.0000	1.0000
L8	66	(Area) CCI-65FP-045100 (H)	104.00 - 105.00	1.0000	1.0000
L8	67	(Area) CCI-65FP-045100 (H)	104.00 - 105.00	1.0000	1.0000
L8	68	(Area) CCI-65FP-045100 (H)	104.00 - 105.00	1.0000	1.0000
L9	9	FB-L98B-034-XXX(3/8")	103.75 - 104.00	1.0000	1.0000
L9	11	PWRT-606-S(7/8")	103.75 - 104.00	1.0000	1.0000
L9	19	HCS 6X12 6AWG(1-3/8)	103.75 - 104.00	1.0000	1.0000
L9	21	LDF6-50A(1-1/4)	103.75 - 104.00	1.0000	1.0000
L9	66	(Area) CCI-65FP-045100 (H)	103.75 - 104.00	1.0000	1.0000
L9	67	(Area) CCI-65FP-045100 (H)	103.75 - 104.00	1.0000	1.0000
L9	68	(Area) CCI-65FP-045100 (H)	103.75 - 104.00	1.0000	1.0000
L10	9	FB-L98B-034-XXX(3/8")	98.75 - 103.75	1.0000	1.0000



<p><b>tnxTower</b></p> <p><b>Tower Engineering Professionals, Inc.</b>  326 Tyron Road  Raleigh, NC 27603  Phone: (919) 661-6351  FAX: (919) 661-6350</p>	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 16 of 54
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L10	11	PWRT-606-S(7/8")	98.75 - 103.75	1.0000	1.0000
L10	19	HCS 6X12 6AWG(1-3/8)	98.75 - 103.75	1.0000	1.0000
L10	21	LDF6-50A(1-1/4)	98.75 - 103.75	1.0000	1.0000
L10	50	MP3-05 (1.25in)	98.75 - 100.75	1.0000	1.0000
L10	51	MP3-05 (1.25in)	98.75 - 100.75	1.0000	1.0000
L10	52	MP3-05 (1.25in)	98.75 - 100.75	1.0000	1.0000
L10	66	(Area) CCI-65FP-045100 (H)	98.75 - 103.75	1.0000	1.0000
L10	67	(Area) CCI-65FP-045100 (H)	98.75 - 103.75	1.0000	1.0000
L10	68	(Area) CCI-65FP-045100 (H)	98.75 - 103.75	1.0000	1.0000
L11	9	FB-L98B-034-XXX(3/8")	98.25 - 98.75	1.0000	1.0000
L11	11	PWRT-606-S(7/8")	98.25 - 98.75	1.0000	1.0000
L11	19	HCS 6X12 6AWG(1-3/8)	98.25 - 98.75	1.0000	1.0000
L11	21	LDF6-50A(1-1/4)	98.25 - 98.75	1.0000	1.0000
L11	50	MP3-05 (1.25in)	98.25 - 98.75	1.0000	1.0000
L11	51	MP3-05 (1.25in)	98.25 - 98.75	1.0000	1.0000
L11	52	MP3-05 (1.25in)	98.25 - 98.75	1.0000	1.0000
L11	66	(Area) CCI-65FP-045100 (H)	98.25 - 98.75	1.0000	1.0000
L11	67	(Area) CCI-65FP-045100 (H)	98.25 - 98.75	1.0000	1.0000
L11	68	(Area) CCI-65FP-045100 (H)	98.25 - 98.75	1.0000	1.0000
L12	9	FB-L98B-034-XXX(3/8")	98.00 - 98.25	1.0000	1.0000
L12	11	PWRT-606-S(7/8")	98.00 - 98.25	1.0000	1.0000
L12	19	HCS 6X12 6AWG(1-3/8)	98.00 - 98.25	1.0000	1.0000
L12	21	LDF6-50A(1-1/4)	98.00 - 98.25	1.0000	1.0000
L12	50	MP3-05 (1.25in)	98.00 - 98.25	1.0000	1.0000
L12	51	MP3-05 (1.25in)	98.00 - 98.25	1.0000	1.0000
L12	52	MP3-05 (1.25in)	98.00 - 98.25	1.0000	1.0000
L12	66	(Area) CCI-65FP-045100 (H)	98.00 - 98.25	1.0000	1.0000
L12	67	(Area) CCI-65FP-045100 (H)	98.00 - 98.25	1.0000	1.0000
L12	68	(Area) CCI-65FP-045100 (H)	98.00 - 98.25	1.0000	1.0000
L13	9	FB-L98B-034-XXX(3/8")	97.00 - 98.00	1.0000	1.0000
L13	11	PWRT-606-S(7/8")	97.00 - 98.00	1.0000	1.0000
L13	19	HCS 6X12 6AWG(1-3/8)	97.00 - 98.00	1.0000	1.0000
L13	21	LDF6-50A(1-1/4)	97.00 - 98.00	1.0000	1.0000
L13	50	MP3-05 (1.25in)	97.00 - 98.00	1.0000	1.0000
L13	51	MP3-05 (1.25in)	97.00 - 98.00	1.0000	1.0000
L13	52	MP3-05 (1.25in)	97.00 - 98.00	1.0000	1.0000
L13	66	(Area) CCI-65FP-045100 (H)	97.00 - 98.00	1.0000	1.0000
L13	67	(Area) CCI-65FP-045100 (H)	97.00 - 98.00	1.0000	1.0000
L13	68	(Area) CCI-65FP-045100 (H)	97.00 - 98.00	1.0000	1.0000
L14	9	FB-L98B-034-XXX(3/8")	96.75 - 97.00	1.0000	1.0000
L14	11	PWRT-606-S(7/8")	96.75 - 97.00	1.0000	1.0000
L14	19	HCS 6X12 6AWG(1-3/8)	96.75 - 97.00	1.0000	1.0000
L14	21	LDF6-50A(1-1/4)	96.75 - 97.00	1.0000	1.0000
L14	50	MP3-05 (1.25in)	96.75 - 97.00	1.0000	1.0000
L14	51	MP3-05 (1.25in)	96.75 - 97.00	1.0000	1.0000
L14	52	MP3-05 (1.25in)	96.75 - 97.00	1.0000	1.0000
L14	66	(Area) CCI-65FP-045100 (H)	96.75 - 97.00	1.0000	1.0000
L14	67	(Area) CCI-65FP-045100 (H)	96.75 - 97.00	1.0000	1.0000
L14	68	(Area) CCI-65FP-045100 (H)	96.75 - 97.00	1.0000	1.0000
L15	9	FB-L98B-034-XXX(3/8")	88.50 - 96.75	1.0000	1.0000
L15	11	PWRT-606-S(7/8")	88.50 - 96.75	1.0000	1.0000
L15	19	HCS 6X12 6AWG(1-3/8)	88.50 - 96.75	1.0000	1.0000
L15	21	LDF6-50A(1-1/4)	88.50 - 96.75	1.0000	1.0000
L15	29	CR 50 1873(1-5/8)	88.50 - 95.00	1.0000	1.0000
L15	50	MP3-05 (1.25in)	88.50 - 96.75	1.0000	1.0000
L15	51	MP3-05 (1.25in)	88.50 - 96.75	1.0000	1.0000
L15	52	MP3-05 (1.25in)	88.50 - 96.75	1.0000	1.0000
L15	62	(Area) CCI-65FP-060100 (H)	88.50 - 90.67	1.0000	1.0000
L15	63	(Area) CCI-65FP-060100 (H)	88.50 - 90.67	1.0000	1.0000
L15	64	(Area) CCI-65FP-060100 (H)	88.50 - 90.67	1.0000	1.0000
L15	66	(Area) CCI-65FP-045100 (H)	95.50 - 96.75	1.0000	1.0000
L15	67	(Area) CCI-65FP-045100 (H)	95.50 - 96.75	1.0000	1.0000

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 17 of 54
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L15	68	(Area) CCI-65FP-045100 (H)	95.50 - 96.75	1.0000	1.0000
L16	9	FB-L98B-034-XXX(3/8")	88.17 - 88.50	1.0000	1.0000
L16	11	PWRT-606-S(7/8")	88.17 - 88.50	1.0000	1.0000
L16	19	HCS 6X12 6AWG(1-3/8)	88.17 - 88.50	1.0000	1.0000
L16	21	LDF6-50A(1-1/4)	88.17 - 88.50	1.0000	1.0000
L16	29	CR 50 1873(1-5/8)	88.17 - 88.50	1.0000	1.0000
L16	50	MP3-05 (1.25in)	88.17 - 88.50	1.0000	1.0000
L16	51	MP3-05 (1.25in)	88.17 - 88.50	1.0000	1.0000
L16	52	MP3-05 (1.25in)	88.17 - 88.50	1.0000	1.0000
L16	62	(Area) CCI-65FP-060100 (H)	88.17 - 88.50	1.0000	1.0000
L16	63	(Area) CCI-65FP-060100 (H)	88.17 - 88.50	1.0000	1.0000
L16	64	(Area) CCI-65FP-060100 (H)	88.17 - 88.50	1.0000	1.0000
L17	9	FB-L98B-034-XXX(3/8")	87.92 - 88.17	1.0000	1.0000
L17	11	PWRT-606-S(7/8")	87.92 - 88.17	1.0000	1.0000
L17	19	HCS 6X12 6AWG(1-3/8)	87.92 - 88.17	1.0000	1.0000
L17	21	LDF6-50A(1-1/4)	87.92 - 88.17	1.0000	1.0000
L17	29	CR 50 1873(1-5/8)	87.92 - 88.17	1.0000	1.0000
L17	50	MP3-05 (1.25in)	87.92 - 88.17	1.0000	1.0000
L17	51	MP3-05 (1.25in)	87.92 - 88.17	1.0000	1.0000
L17	52	MP3-05 (1.25in)	87.92 - 88.17	1.0000	1.0000
L17	62	(Area) CCI-65FP-060100 (H)	87.92 - 88.17	1.0000	1.0000
L17	63	(Area) CCI-65FP-060100 (H)	87.92 - 88.17	1.0000	1.0000
L17	64	(Area) CCI-65FP-060100 (H)	87.92 - 88.17	1.0000	1.0000
L18	9	FB-L98B-034-XXX(3/8")	82.92 - 87.92	1.0000	1.0000
L18	11	PWRT-606-S(7/8")	82.92 - 87.92	1.0000	1.0000
L18	19	HCS 6X12 6AWG(1-3/8)	82.92 - 87.92	1.0000	1.0000
L18	21	LDF6-50A(1-1/4)	82.92 - 87.92	1.0000	1.0000
L18	29	CR 50 1873(1-5/8)	82.92 - 87.92	1.0000	1.0000
L18	50	MP3-05 (1.25in)	82.92 - 87.92	1.0000	1.0000
L18	51	MP3-05 (1.25in)	82.92 - 87.92	1.0000	1.0000
L18	52	MP3-05 (1.25in)	82.92 - 87.92	1.0000	1.0000
L18	62	(Area) CCI-65FP-060100 (H)	82.92 - 87.92	1.0000	1.0000
L18	63	(Area) CCI-65FP-060100 (H)	82.92 - 87.92	1.0000	1.0000
L18	64	(Area) CCI-65FP-060100 (H)	82.92 - 87.92	1.0000	1.0000
L19	9	FB-L98B-034-XXX(3/8")	77.92 - 82.92	1.0000	1.0000
L19	11	PWRT-606-S(7/8")	77.92 - 82.92	1.0000	1.0000
L19	19	HCS 6X12 6AWG(1-3/8)	77.92 - 82.92	1.0000	1.0000
L19	21	LDF6-50A(1-1/4)	77.92 - 82.92	1.0000	1.0000
L19	29	CR 50 1873(1-5/8)	77.92 - 82.92	1.0000	1.0000
L19	50	MP3-05 (1.25in)	77.92 - 82.92	1.0000	1.0000
L19	51	MP3-05 (1.25in)	77.92 - 82.92	1.0000	1.0000
L19	52	MP3-05 (1.25in)	77.92 - 82.92	1.0000	1.0000
L19	62	(Area) CCI-65FP-060100 (H)	77.92 - 82.92	1.0000	1.0000
L19	63	(Area) CCI-65FP-060100 (H)	77.92 - 82.92	1.0000	1.0000
L19	64	(Area) CCI-65FP-060100 (H)	77.92 - 82.92	1.0000	1.0000
L20	9	FB-L98B-034-XXX(3/8")	72.92 - 77.92	1.0000	1.0000
L20	11	PWRT-606-S(7/8")	72.92 - 77.92	1.0000	1.0000
L20	19	HCS 6X12 6AWG(1-3/8)	72.92 - 77.92	1.0000	1.0000
L20	21	LDF6-50A(1-1/4)	72.92 - 77.92	1.0000	1.0000
L20	29	CR 50 1873(1-5/8)	72.92 - 77.92	1.0000	1.0000
L20	50	MP3-05 (1.25in)	72.92 - 77.92	1.0000	1.0000
L20	51	MP3-05 (1.25in)	72.92 - 77.92	1.0000	1.0000
L20	52	MP3-05 (1.25in)	72.92 - 77.92	1.0000	1.0000
L20	62	(Area) CCI-65FP-060100 (H)	72.92 - 77.92	1.0000	1.0000
L20	63	(Area) CCI-65FP-060100 (H)	72.92 - 77.92	1.0000	1.0000
L20	64	(Area) CCI-65FP-060100 (H)	72.92 - 77.92	1.0000	1.0000
L21	9	FB-L98B-034-XXX(3/8")	68.25 - 72.92	1.0000	1.0000
L21	11	PWRT-606-S(7/8")	68.25 - 72.92	1.0000	1.0000
L21	19	HCS 6X12 6AWG(1-3/8)	68.25 - 72.92	1.0000	1.0000
L21	21	LDF6-50A(1-1/4)	68.25 - 72.92	1.0000	1.0000
L21	29	CR 50 1873(1-5/8)	68.25 - 72.92	1.0000	1.0000
L21	46	MP3-06 (1.25in)	68.25 - 71.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
L21	47	MP3-06 (1.25in)	68.25 - 71.75	1.0000	1.0000
L21	48	MP3-06 (1.25in)	68.25 - 71.75	1.0000	1.0000
L21	50	MP3-05 (1.25in)	71.75 - 72.92	1.0000	1.0000
L21	51	MP3-05 (1.25in)	71.75 - 72.92	1.0000	1.0000
L21	52	MP3-05 (1.25in)	71.75 - 72.92	1.0000	1.0000
L21	58	(Area) CCI-65FP-060100 (H)	68.25 - 70.58	1.0000	1.0000
L21	59	(Area) CCI-65FP-060100 (H)	68.25 - 70.58	1.0000	1.0000
L21	60	(Area) CCI-65FP-060100 (H)	68.25 - 70.58	1.0000	1.0000
L21	62	(Area) CCI-65FP-060100 (H)	70.58 - 72.92	1.0000	1.0000
L21	63	(Area) CCI-65FP-060100 (H)	70.58 - 72.92	1.0000	1.0000
L21	64	(Area) CCI-65FP-060100 (H)	70.58 - 72.92	1.0000	1.0000
L22	9	FB-L98B-034-XXX(3/8")	67.98 - 68.25	1.0000	1.0000
L22	11	PWRT-606-S(7/8")	67.98 - 68.25	1.0000	1.0000
L22	19	HCS 6X12 6AWG(1-3/8)	67.98 - 68.25	1.0000	1.0000
L22	21	LDF6-50A(1-1/4)	67.98 - 68.25	1.0000	1.0000
L22	29	CR 50 1873(1-5/8)	67.98 - 68.25	1.0000	1.0000
L22	46	MP3-06 (1.25in)	67.98 - 68.25	1.0000	1.0000
L22	47	MP3-06 (1.25in)	67.98 - 68.25	1.0000	1.0000
L22	48	MP3-06 (1.25in)	67.98 - 68.25	1.0000	1.0000
L22	58	(Area) CCI-65FP-060100 (H)	67.98 - 68.25	1.0000	1.0000
L22	59	(Area) CCI-65FP-060100 (H)	67.98 - 68.25	1.0000	1.0000
L22	60	(Area) CCI-65FP-060100 (H)	67.98 - 68.25	1.0000	1.0000
L23	9	FB-L98B-034-XXX(3/8")	67.83 - 67.98	1.0000	1.0000
L23	11	PWRT-606-S(7/8")	67.83 - 67.98	1.0000	1.0000
L23	19	HCS 6X12 6AWG(1-3/8)	67.83 - 67.98	1.0000	1.0000
L23	21	LDF6-50A(1-1/4)	67.83 - 67.98	1.0000	1.0000
L23	29	CR 50 1873(1-5/8)	67.83 - 67.98	1.0000	1.0000
L23	46	MP3-06 (1.25in)	67.83 - 67.98	1.0000	1.0000
L23	47	MP3-06 (1.25in)	67.83 - 67.98	1.0000	1.0000
L23	48	MP3-06 (1.25in)	67.83 - 67.98	1.0000	1.0000
L23	58	(Area) CCI-65FP-060100 (H)	67.83 - 67.98	1.0000	1.0000
L23	59	(Area) CCI-65FP-060100 (H)	67.83 - 67.98	1.0000	1.0000
L23	60	(Area) CCI-65FP-060100 (H)	67.83 - 67.98	1.0000	1.0000
L24	9	FB-L98B-034-XXX(3/8")	62.83 - 67.83	1.0000	1.0000
L24	11	PWRT-606-S(7/8")	62.83 - 67.83	1.0000	1.0000
L24	19	HCS 6X12 6AWG(1-3/8)	62.83 - 67.83	1.0000	1.0000
L24	21	LDF6-50A(1-1/4)	62.83 - 67.83	1.0000	1.0000
L24	29	CR 50 1873(1-5/8)	62.83 - 67.83	1.0000	1.0000
L24	46	MP3-06 (1.25in)	62.83 - 67.83	1.0000	1.0000
L24	47	MP3-06 (1.25in)	62.83 - 67.83	1.0000	1.0000
L24	48	MP3-06 (1.25in)	62.83 - 67.83	1.0000	1.0000
L24	58	(Area) CCI-65FP-060100 (H)	62.83 - 67.83	1.0000	1.0000
L24	59	(Area) CCI-65FP-060100 (H)	62.83 - 67.83	1.0000	1.0000
L24	60	(Area) CCI-65FP-060100 (H)	62.83 - 67.83	1.0000	1.0000
L25	9	FB-L98B-034-XXX(3/8")	57.83 - 62.83	1.0000	1.0000
L25	11	PWRT-606-S(7/8")	57.83 - 62.83	1.0000	1.0000
L25	19	HCS 6X12 6AWG(1-3/8)	57.83 - 62.83	1.0000	1.0000
L25	21	LDF6-50A(1-1/4)	57.83 - 62.83	1.0000	1.0000
L25	29	CR 50 1873(1-5/8)	57.83 - 62.83	1.0000	1.0000
L25	46	MP3-06 (1.25in)	57.83 - 62.83	1.0000	1.0000
L25	47	MP3-06 (1.25in)	57.83 - 62.83	1.0000	1.0000
L25	48	MP3-06 (1.25in)	57.83 - 62.83	1.0000	1.0000
L25	58	(Area) CCI-65FP-060100 (H)	57.83 - 62.83	1.0000	1.0000
L25	59	(Area) CCI-65FP-060100 (H)	57.83 - 62.83	1.0000	1.0000
L25	60	(Area) CCI-65FP-060100 (H)	57.83 - 62.83	1.0000	1.0000
L26	9	FB-L98B-034-XXX(3/8")	52.83 - 57.83	1.0000	1.0000
L26	11	PWRT-606-S(7/8")	52.83 - 57.83	1.0000	1.0000
L26	19	HCS 6X12 6AWG(1-3/8)	52.83 - 57.83	1.0000	1.0000
L26	21	LDF6-50A(1-1/4)	52.83 - 57.83	1.0000	1.0000
L26	29	CR 50 1873(1-5/8)	52.83 - 57.83	1.0000	1.0000
L26	46	MP3-06 (1.25in)	52.83 - 57.83	1.0000	1.0000
L26	47	MP3-06 (1.25in)	52.83 - 57.83	1.0000	1.0000

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 19 of 54
	<b>Project</b> TEP No. 25566.601905	<b>Date</b> 15:08:40 09/16/21
	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L26	48	MP3-06 (1.25in)	52.83 - 57.83	1.0000	1.0000
L26	58	(Area) CCI-65FP-060100 (H)	52.83 - 57.83	1.0000	1.0000
L26	59	(Area) CCI-65FP-060100 (H)	52.83 - 57.83	1.0000	1.0000
L26	60	(Area) CCI-65FP-060100 (H)	52.83 - 57.83	1.0000	1.0000
L27	9	FB-L98B-034-XXX(3/8")	47.25 - 52.83	1.0000	1.0000
L27	11	PWRT-606-S(7/8")	47.25 - 52.83	1.0000	1.0000
L27	19	HCS 6X12 6AWG(1-3/8)	47.25 - 52.83	1.0000	1.0000
L27	21	LDF6-50A(1-1/4)	47.25 - 52.83	1.0000	1.0000
L27	29	CR 50 1873(1-5/8)	47.25 - 52.83	1.0000	1.0000
L27	46	MP3-06 (1.25in)	47.25 - 52.83	1.0000	1.0000
L27	47	MP3-06 (1.25in)	47.25 - 52.83	1.0000	1.0000
L27	48	MP3-06 (1.25in)	47.25 - 52.83	1.0000	1.0000
L27	58	(Area) CCI-65FP-060100 (H)	47.25 - 52.83	1.0000	1.0000
L27	59	(Area) CCI-65FP-060100 (H)	47.25 - 52.83	1.0000	1.0000
L27	60	(Area) CCI-65FP-060100 (H)	47.25 - 52.83	1.0000	1.0000
L28	9	FB-L98B-034-XXX(3/8")	46.50 - 47.25	1.0000	1.0000
L28	11	PWRT-606-S(7/8")	46.50 - 47.25	1.0000	1.0000
L28	19	HCS 6X12 6AWG(1-3/8)	46.50 - 47.25	1.0000	1.0000
L28	21	LDF6-50A(1-1/4)	46.50 - 47.25	1.0000	1.0000
L28	29	CR 50 1873(1-5/8)	46.50 - 47.25	1.0000	1.0000
L28	46	MP3-06 (1.25in)	46.50 - 47.25	1.0000	1.0000
L28	47	MP3-06 (1.25in)	46.50 - 47.25	1.0000	1.0000
L28	48	MP3-06 (1.25in)	46.50 - 47.25	1.0000	1.0000
L28	58	(Area) CCI-65FP-060100 (H)	46.50 - 47.25	1.0000	1.0000
L28	59	(Area) CCI-65FP-060100 (H)	46.50 - 47.25	1.0000	1.0000
L28	60	(Area) CCI-65FP-060100 (H)	46.50 - 47.25	1.0000	1.0000
L29	9	FB-L98B-034-XXX(3/8")	41.50 - 46.50	1.0000	1.0000
L29	11	PWRT-606-S(7/8")	41.50 - 46.50	1.0000	1.0000
L29	19	HCS 6X12 6AWG(1-3/8)	41.50 - 46.50	1.0000	1.0000
L29	21	LDF6-50A(1-1/4)	41.50 - 46.50	1.0000	1.0000
L29	29	CR 50 1873(1-5/8)	41.50 - 46.50	1.0000	1.0000
L29	42	MP3-08 (1.25in)	41.50 - 41.75	1.0000	1.0000
L29	43	MP3-08 (1.25in)	41.50 - 41.75	1.0000	1.0000
L29	44	MP3-08 (1.25in)	41.50 - 41.75	1.0000	1.0000
L29	46	MP3-06 (1.25in)	41.75 - 46.50	1.0000	1.0000
L29	47	MP3-06 (1.25in)	41.75 - 46.50	1.0000	1.0000
L29	48	MP3-06 (1.25in)	41.75 - 46.50	1.0000	1.0000
L29	58	(Area) CCI-65FP-060100 (H)	41.50 - 46.50	1.0000	1.0000
L29	59	(Area) CCI-65FP-060100 (H)	41.50 - 46.50	1.0000	1.0000
L29	60	(Area) CCI-65FP-060100 (H)	41.50 - 46.50	1.0000	1.0000
L30	9	FB-L98B-034-XXX(3/8")	37.75 - 41.50	1.0000	1.0000
L30	11	PWRT-606-S(7/8")	37.75 - 41.50	1.0000	1.0000
L30	19	HCS 6X12 6AWG(1-3/8)	37.75 - 41.50	1.0000	1.0000
L30	21	LDF6-50A(1-1/4)	37.75 - 41.50	1.0000	1.0000
L30	29	CR 50 1873(1-5/8)	37.75 - 41.50	1.0000	1.0000
L30	42	MP3-08 (1.25in)	37.75 - 41.50	1.0000	1.0000
L30	43	MP3-08 (1.25in)	37.75 - 41.50	1.0000	1.0000
L30	44	MP3-08 (1.25in)	37.75 - 41.50	1.0000	1.0000
L30	58	(Area) CCI-65FP-060100 (H)	37.75 - 41.50	1.0000	1.0000
L30	59	(Area) CCI-65FP-060100 (H)	37.75 - 41.50	1.0000	1.0000
L30	60	(Area) CCI-65FP-060100 (H)	37.75 - 41.50	1.0000	1.0000
L31	9	FB-L98B-034-XXX(3/8")	37.50 - 37.75	1.0000	1.0000
L31	11	PWRT-606-S(7/8")	37.50 - 37.75	1.0000	1.0000
L31	19	HCS 6X12 6AWG(1-3/8)	37.50 - 37.75	1.0000	1.0000
L31	21	LDF6-50A(1-1/4)	37.50 - 37.75	1.0000	1.0000
L31	29	CR 50 1873(1-5/8)	37.50 - 37.75	1.0000	1.0000
L31	42	MP3-08 (1.25in)	37.50 - 37.75	1.0000	1.0000
L31	43	MP3-08 (1.25in)	37.50 - 37.75	1.0000	1.0000
L31	44	MP3-08 (1.25in)	37.50 - 37.75	1.0000	1.0000
L31	58	(Area) CCI-65FP-060100 (H)	37.50 - 37.75	1.0000	1.0000
L31	59	(Area) CCI-65FP-060100 (H)	37.50 - 37.75	1.0000	1.0000
L31	60	(Area) CCI-65FP-060100 (H)	37.50 - 37.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L32	9	FB-L98B-034-XXX(3/8")	32.50 - 37.50	1.0000	1.0000
L32	11	PWRT-606-S(7/8")	32.50 - 37.50	1.0000	1.0000
L32	19	HCS 6X12 6AWG(1-3/8)	32.50 - 37.50	1.0000	1.0000
L32	21	LDF6-50A(1-1/4)	32.50 - 37.50	1.0000	1.0000
L32	29	CR 50 1873(1-5/8)	32.50 - 37.50	1.0000	1.0000
L32	42	MP3-08 (1.25in)	32.50 - 37.50	1.0000	1.0000
L32	43	MP3-08 (1.25in)	32.50 - 37.50	1.0000	1.0000
L32	44	MP3-08 (1.25in)	32.50 - 37.50	1.0000	1.0000
L32	54	(Area) CCI-65FP-065125 (H)	32.50 - 35.50	1.0000	1.0000
L32	55	(Area) CCI-65FP-065125 (H)	32.50 - 35.50	1.0000	1.0000
L32	56	(Area) CCI-65FP-065125 (H)	32.50 - 35.50	1.0000	1.0000
L32	58	(Area) CCI-65FP-060100 (H)	35.50 - 37.50	1.0000	1.0000
L32	59	(Area) CCI-65FP-060100 (H)	35.50 - 37.50	1.0000	1.0000
L32	60	(Area) CCI-65FP-060100 (H)	35.50 - 37.50	1.0000	1.0000
L33	9	FB-L98B-034-XXX(3/8")	32.25 - 32.50	1.0000	1.0000
L33	11	PWRT-606-S(7/8")	32.25 - 32.50	1.0000	1.0000
L33	19	HCS 6X12 6AWG(1-3/8)	32.25 - 32.50	1.0000	1.0000
L33	21	LDF6-50A(1-1/4)	32.25 - 32.50	1.0000	1.0000
L33	29	CR 50 1873(1-5/8)	32.25 - 32.50	1.0000	1.0000
L33	42	MP3-08 (1.25in)	32.25 - 32.50	1.0000	1.0000
L33	43	MP3-08 (1.25in)	32.25 - 32.50	1.0000	1.0000
L33	44	MP3-08 (1.25in)	32.25 - 32.50	1.0000	1.0000
L33	54	(Area) CCI-65FP-065125 (H)	32.25 - 32.50	1.0000	1.0000
L33	55	(Area) CCI-65FP-065125 (H)	32.25 - 32.50	1.0000	1.0000
L33	56	(Area) CCI-65FP-065125 (H)	32.25 - 32.50	1.0000	1.0000
L34	9	FB-L98B-034-XXX(3/8")	27.75 - 32.25	1.0000	1.0000
L34	11	PWRT-606-S(7/8")	27.75 - 32.25	1.0000	1.0000
L34	19	HCS 6X12 6AWG(1-3/8)	27.75 - 32.25	1.0000	1.0000
L34	21	LDF6-50A(1-1/4)	27.75 - 32.25	1.0000	1.0000
L34	29	CR 50 1873(1-5/8)	27.75 - 32.25	1.0000	1.0000
L34	34	MP3-08 (1.25in)	27.75 - 31.75	1.0000	1.0000
L34	35	MP3-08 (1.25in)	27.75 - 31.75	1.0000	1.0000
L34	40	MP3-08 (1.25in)	27.75 - 31.75	1.0000	1.0000
L34	42	MP3-08 (1.25in)	31.75 - 32.25	1.0000	1.0000
L34	43	MP3-08 (1.25in)	31.75 - 32.25	1.0000	1.0000
L34	44	MP3-08 (1.25in)	31.75 - 32.25	1.0000	1.0000
L34	54	(Area) CCI-65FP-065125 (H)	27.75 - 32.25	1.0000	1.0000
L34	55	(Area) CCI-65FP-065125 (H)	27.75 - 32.25	1.0000	1.0000
L34	56	(Area) CCI-65FP-065125 (H)	27.75 - 32.25	1.0000	1.0000
L35	9	FB-L98B-034-XXX(3/8")	27.50 - 27.75	1.0000	1.0000
L35	11	PWRT-606-S(7/8")	27.50 - 27.75	1.0000	1.0000
L35	19	HCS 6X12 6AWG(1-3/8)	27.50 - 27.75	1.0000	1.0000
L35	21	LDF6-50A(1-1/4)	27.50 - 27.75	1.0000	1.0000
L35	29	CR 50 1873(1-5/8)	27.50 - 27.75	1.0000	1.0000
L35	34	MP3-08 (1.25in)	27.50 - 27.75	1.0000	1.0000
L35	35	MP3-08 (1.25in)	27.50 - 27.75	1.0000	1.0000
L35	40	MP3-08 (1.25in)	27.50 - 27.75	1.0000	1.0000
L35	54	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	1.0000	1.0000
L35	55	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	1.0000	1.0000
L35	56	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	1.0000	1.0000
L36	9	FB-L98B-034-XXX(3/8")	23.25 - 27.50	1.0000	1.0000
L36	11	PWRT-606-S(7/8")	23.25 - 27.50	1.0000	1.0000
L36	19	HCS 6X12 6AWG(1-3/8)	23.25 - 27.50	1.0000	1.0000
L36	21	LDF6-50A(1-1/4)	23.25 - 27.50	1.0000	1.0000
L36	29	CR 50 1873(1-5/8)	23.25 - 27.50	1.0000	1.0000
L36	34	MP3-08 (1.25in)	23.25 - 27.50	1.0000	1.0000
L36	35	MP3-08 (1.25in)	23.25 - 27.50	1.0000	1.0000
L36	37	MP3-06 (1.25in)	23.25 - 26.75	1.0000	1.0000
L36	38	MP3-06 (1.25in)	23.25 - 26.75	1.0000	1.0000
L36	40	MP3-08 (1.25in)	23.25 - 27.50	1.0000	1.0000
L36	54	(Area) CCI-65FP-065125 (H)	23.25 - 27.50	1.0000	1.0000
L36	55	(Area) CCI-65FP-065125 (H)	23.25 - 27.50	1.0000	1.0000

<p><b>tnxTower</b></p> <p><b>Tower Engineering Professionals, Inc.</b>  326 Tyron Road  Raleigh, NC 27603  Phone: (919) 661-6351  FAX: (919) 661-6350</p>	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 21 of 54
	<b>Project</b> TEP No. 25566.601905	<b>Date</b> 15:08:40 09/16/21
	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
L36	56	(Area) CCI-65FP-065125 (H)	23.25 - 27.50	1.0000	1.0000
L37	9	FB-L98B-034-XXX(3/8")	23.00 - 23.25	1.0000	1.0000
L37	11	PWRT-606-S(7/8")	23.00 - 23.25	1.0000	1.0000
L37	19	HCS 6X12 6AWG(1-3/8)	23.00 - 23.25	1.0000	1.0000
L37	21	LDF6-50A(1-1/4)	23.00 - 23.25	1.0000	1.0000
L37	29	CR 50 1873(1-5/8)	23.00 - 23.25	1.0000	1.0000
L37	34	MP3-08 (1.25in)	23.00 - 23.25	1.0000	1.0000
L37	35	MP3-08 (1.25in)	23.00 - 23.25	1.0000	1.0000
L37	37	MP3-06 (1.25in)	23.00 - 23.25	1.0000	1.0000
L37	38	MP3-06 (1.25in)	23.00 - 23.25	1.0000	1.0000
L37	40	MP3-08 (1.25in)	23.00 - 23.25	1.0000	1.0000
L37	54	(Area) CCI-65FP-065125 (H)	23.00 - 23.25	1.0000	1.0000
L37	55	(Area) CCI-65FP-065125 (H)	23.00 - 23.25	1.0000	1.0000
L37	56	(Area) CCI-65FP-065125 (H)	23.00 - 23.25	1.0000	1.0000
L38	9	FB-L98B-034-XXX(3/8")	20.75 - 23.00	1.0000	1.0000
L38	11	PWRT-606-S(7/8")	20.75 - 23.00	1.0000	1.0000
L38	19	HCS 6X12 6AWG(1-3/8)	20.75 - 23.00	1.0000	1.0000
L38	21	LDF6-50A(1-1/4)	20.75 - 23.00	1.0000	1.0000
L38	29	CR 50 1873(1-5/8)	20.75 - 23.00	1.0000	1.0000
L38	34	MP3-08 (1.25in)	20.75 - 23.00	1.0000	1.0000
L38	35	MP3-08 (1.25in)	20.75 - 23.00	1.0000	1.0000
L38	37	MP3-06 (1.25in)	20.75 - 23.00	1.0000	1.0000
L38	38	MP3-06 (1.25in)	20.75 - 23.00	1.0000	1.0000
L38	40	MP3-08 (1.25in)	20.75 - 23.00	1.0000	1.0000
L38	54	(Area) CCI-65FP-065125 (H)	20.75 - 23.00	1.0000	1.0000
L38	55	(Area) CCI-65FP-065125 (H)	20.75 - 23.00	1.0000	1.0000
L38	56	(Area) CCI-65FP-065125 (H)	20.75 - 23.00	1.0000	1.0000
L39	9	FB-L98B-034-XXX(3/8")	20.50 - 20.75	1.0000	1.0000
L39	11	PWRT-606-S(7/8")	20.50 - 20.75	1.0000	1.0000
L39	19	HCS 6X12 6AWG(1-3/8)	20.50 - 20.75	1.0000	1.0000
L39	21	LDF6-50A(1-1/4)	20.50 - 20.75	1.0000	1.0000
L39	29	CR 50 1873(1-5/8)	20.50 - 20.75	1.0000	1.0000
L39	34	MP3-08 (1.25in)	20.50 - 20.75	1.0000	1.0000
L39	35	MP3-08 (1.25in)	20.50 - 20.75	1.0000	1.0000
L39	37	MP3-06 (1.25in)	20.50 - 20.75	1.0000	1.0000
L39	38	MP3-06 (1.25in)	20.50 - 20.75	1.0000	1.0000
L39	40	MP3-08 (1.25in)	20.50 - 20.75	1.0000	1.0000
L39	54	(Area) CCI-65FP-065125 (H)	20.50 - 20.75	1.0000	1.0000
L39	55	(Area) CCI-65FP-065125 (H)	20.50 - 20.75	1.0000	1.0000
L39	56	(Area) CCI-65FP-065125 (H)	20.50 - 20.75	1.0000	1.0000
L40	9	FB-L98B-034-XXX(3/8")	15.50 - 20.50	1.0000	1.0000
L40	11	PWRT-606-S(7/8")	15.50 - 20.50	1.0000	1.0000
L40	19	HCS 6X12 6AWG(1-3/8)	15.50 - 20.50	1.0000	1.0000
L40	21	LDF6-50A(1-1/4)	15.50 - 20.50	1.0000	1.0000
L40	29	CR 50 1873(1-5/8)	15.50 - 20.50	1.0000	1.0000
L40	34	MP3-08 (1.25in)	15.50 - 20.50	1.0000	1.0000
L40	35	MP3-08 (1.25in)	15.50 - 20.50	1.0000	1.0000
L40	37	MP3-06 (1.25in)	15.50 - 20.50	1.0000	1.0000
L40	38	MP3-06 (1.25in)	15.50 - 20.50	1.0000	1.0000
L40	40	MP3-08 (1.25in)	16.75 - 20.50	1.0000	1.0000
L40	54	(Area) CCI-65FP-065125 (H)	15.50 - 20.50	1.0000	1.0000
L40	55	(Area) CCI-65FP-065125 (H)	15.50 - 20.50	1.0000	1.0000
L40	56	(Area) CCI-65FP-065125 (H)	15.50 - 20.50	1.0000	1.0000
L41	9	FB-L98B-034-XXX(3/8")	10.50 - 15.50	1.0000	1.0000
L41	11	PWRT-606-S(7/8")	10.50 - 15.50	1.0000	1.0000
L41	19	HCS 6X12 6AWG(1-3/8)	10.50 - 15.50	1.0000	1.0000
L41	21	LDF6-50A(1-1/4)	10.50 - 15.50	1.0000	1.0000
L41	29	CR 50 1873(1-5/8)	10.50 - 15.50	1.0000	1.0000
L41	34	MP3-08 (1.25in)	10.50 - 15.50	1.0000	1.0000
L41	35	MP3-08 (1.25in)	10.50 - 15.50	1.0000	1.0000
L41	37	MP3-06 (1.25in)	10.50 - 15.50	1.0000	1.0000
L41	38	MP3-06 (1.25in)	10.50 - 15.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L41	54	(Area) CCI-65FP-065125 (H)	10.50 - 15.50	1.0000	1.0000
L41	55	(Area) CCI-65FP-065125 (H)	10.50 - 15.50	1.0000	1.0000
L41	56	(Area) CCI-65FP-065125 (H)	10.50 - 15.50	1.0000	1.0000
L42	9	FB-L98B-034-XXX(3/8")	5.50 - 10.50	1.0000	1.0000
L42	11	PWRT-606-S(7/8")	5.50 - 10.50	1.0000	1.0000
L42	19	HCS 6X12 6AWG(1-3/8)	5.50 - 10.50	1.0000	1.0000
L42	21	LDF6-50A(1-1/4)	5.50 - 10.50	1.0000	1.0000
L42	29	CR 50 1873(1-5/8)	5.50 - 10.50	1.0000	1.0000
L42	34	MP3-08 (1.25in)	5.50 - 10.50	1.0000	1.0000
L42	35	MP3-08 (1.25in)	5.50 - 10.50	1.0000	1.0000
L42	37	MP3-06 (1.25in)	5.50 - 10.50	1.0000	1.0000
L42	38	MP3-06 (1.25in)	5.50 - 10.50	1.0000	1.0000
L42	54	(Area) CCI-65FP-065125 (H)	5.50 - 10.50	1.0000	1.0000
L42	55	(Area) CCI-65FP-065125 (H)	5.50 - 10.50	1.0000	1.0000
L42	56	(Area) CCI-65FP-065125 (H)	5.50 - 10.50	1.0000	1.0000
L43	9	FB-L98B-034-XXX(3/8")	2.00 - 5.50	1.0000	1.0000
L43	11	PWRT-606-S(7/8")	2.00 - 5.50	1.0000	1.0000
L43	19	HCS 6X12 6AWG(1-3/8)	2.00 - 5.50	1.0000	1.0000
L43	21	LDF6-50A(1-1/4)	2.00 - 5.50	1.0000	1.0000
L43	29	CR 50 1873(1-5/8)	2.00 - 5.50	1.0000	1.0000
L43	34	MP3-08 (1.25in)	2.00 - 5.50	1.0000	1.0000
L43	35	MP3-08 (1.25in)	2.00 - 5.50	1.0000	1.0000
L43	37	MP3-06 (1.25in)	2.00 - 5.50	1.0000	1.0000
L43	38	MP3-06 (1.25in)	2.00 - 5.50	1.0000	1.0000
L43	54	(Area) CCI-65FP-065125 (H)	2.00 - 5.50	1.0000	1.0000
L43	55	(Area) CCI-65FP-065125 (H)	2.00 - 5.50	1.0000	1.0000
L43	56	(Area) CCI-65FP-065125 (H)	2.00 - 5.50	1.0000	1.0000
L44	9	FB-L98B-034-XXX(3/8")	1.75 - 2.00	1.0000	1.0000
L44	11	PWRT-606-S(7/8")	1.75 - 2.00	1.0000	1.0000
L44	19	HCS 6X12 6AWG(1-3/8)	1.75 - 2.00	1.0000	1.0000
L44	21	LDF6-50A(1-1/4)	1.75 - 2.00	1.0000	1.0000
L44	29	CR 50 1873(1-5/8)	1.75 - 2.00	1.0000	1.0000
L44	34	MP3-08 (1.25in)	1.75 - 2.00	1.0000	1.0000
L44	35	MP3-08 (1.25in)	1.75 - 2.00	1.0000	1.0000
L44	37	MP3-06 (1.25in)	1.75 - 2.00	1.0000	1.0000
L44	38	MP3-06 (1.25in)	1.75 - 2.00	1.0000	1.0000
L44	54	(Area) CCI-65FP-065125 (H)	1.75 - 2.00	1.0000	1.0000
L44	55	(Area) CCI-65FP-065125 (H)	1.75 - 2.00	1.0000	1.0000
L44	56	(Area) CCI-65FP-065125 (H)	1.75 - 2.00	1.0000	1.0000
L45	9	FB-L98B-034-XXX(3/8")	1.50 - 1.75	1.0000	1.0000
L45	11	PWRT-606-S(7/8")	1.50 - 1.75	1.0000	1.0000
L45	19	HCS 6X12 6AWG(1-3/8)	1.50 - 1.75	1.0000	1.0000
L45	21	LDF6-50A(1-1/4)	1.50 - 1.75	1.0000	1.0000
L45	29	CR 50 1873(1-5/8)	1.50 - 1.75	1.0000	1.0000
L45	34	MP3-08 (1.25in)	1.50 - 1.75	1.0000	1.0000
L45	35	MP3-08 (1.25in)	1.50 - 1.75	1.0000	1.0000
L45	37	MP3-06 (1.25in)	1.50 - 1.75	1.0000	1.0000
L45	38	MP3-06 (1.25in)	1.50 - 1.75	1.0000	1.0000
L45	54	(Area) CCI-65FP-065125 (H)	1.50 - 1.75	1.0000	1.0000
L45	55	(Area) CCI-65FP-065125 (H)	1.50 - 1.75	1.0000	1.0000
L45	56	(Area) CCI-65FP-065125 (H)	1.50 - 1.75	1.0000	1.0000
L46	9	FB-L98B-034-XXX(3/8")	0.00 - 1.50	1.0000	1.0000
L46	11	PWRT-606-S(7/8")	0.00 - 1.50	1.0000	1.0000
L46	19	HCS 6X12 6AWG(1-3/8)	0.00 - 1.50	1.0000	1.0000
L46	21	LDF6-50A(1-1/4)	0.00 - 1.50	1.0000	1.0000
L46	29	CR 50 1873(1-5/8)	0.00 - 1.50	1.0000	1.0000
L46	34	MP3-08 (1.25in)	0.00 - 1.50	1.0000	1.0000
L46	35	MP3-08 (1.25in)	0.00 - 1.50	1.0000	1.0000
L46	37	MP3-06 (1.25in)	0.00 - 1.50	1.0000	1.0000
L46	38	MP3-06 (1.25in)	0.00 - 1.50	1.0000	1.0000
L46	54	(Area) CCI-65FP-065125 (H)	0.00 - 1.50	1.0000	1.0000
L46	55	(Area) CCI-65FP-065125 (H)	0.00 - 1.50	1.0000	1.0000

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 23 of 54
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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L46	56	(Area) CCI-65FP-065125 (H)	0.00 - 1.50	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
L7	66	(Area) CCI-65FP-045100 (H)	105.00 - 105.50	Auto	0.0000
L7	67	(Area) CCI-65FP-045100 (H)	105.00 - 105.50	Auto	0.0000
L7	68	(Area) CCI-65FP-045100 (H)	105.00 - 105.50	Auto	0.0000
L8	66	(Area) CCI-65FP-045100 (H)	104.00 - 105.00	Auto	0.0000
L8	67	(Area) CCI-65FP-045100 (H)	104.00 - 105.00	Auto	0.0000
L8	68	(Area) CCI-65FP-045100 (H)	104.00 - 105.00	Auto	0.0000
L9	66	(Area) CCI-65FP-045100 (H)	103.75 - 104.00	Auto	0.0000
L9	67	(Area) CCI-65FP-045100 (H)	103.75 - 104.00	Auto	0.0000
L9	68	(Area) CCI-65FP-045100 (H)	103.75 - 104.00	Auto	0.0000
L10	50	MP3-05 (1.25in)	98.75 - 100.75	Auto	0.0109
L10	51	MP3-05 (1.25in)	98.75 - 100.75	Auto	0.0109
L10	52	MP3-05 (1.25in)	98.75 - 100.75	Auto	0.0109
L10	66	(Area) CCI-65FP-045100 (H)	98.75 - 103.75	Auto	0.0000
L10	67	(Area) CCI-65FP-045100 (H)	98.75 - 103.75	Auto	0.0000
L10	68	(Area) CCI-65FP-045100 (H)	98.75 - 103.75	Auto	0.0000
L11	50	MP3-05 (1.25in)	98.25 - 98.75	Auto	0.0000
L11	51	MP3-05 (1.25in)	98.25 - 98.75	Auto	0.0000
L11	52	MP3-05 (1.25in)	98.25 - 98.75	Auto	0.0000
L11	66	(Area) CCI-65FP-045100 (H)	98.25 - 98.75	Auto	0.0000
L11	67	(Area) CCI-65FP-045100 (H)	98.25 - 98.75	Auto	0.0000
L11	68	(Area) CCI-65FP-045100 (H)	98.25 - 98.75	Auto	0.0000
L12	50	MP3-05 (1.25in)	98.00 - 98.25	Auto	0.1326
L12	51	MP3-05 (1.25in)	98.00 - 98.25	Auto	0.1326
L12	52	MP3-05 (1.25in)	98.00 - 98.25	Auto	0.1326
L12	66	(Area) CCI-65FP-045100 (H)	98.00 - 98.25	Auto	0.0000
L12	67	(Area) CCI-65FP-045100 (H)	98.00 - 98.25	Auto	0.0000
L12	68	(Area) CCI-65FP-045100 (H)	98.00 - 98.25	Auto	0.0000
L13	50	MP3-05 (1.25in)	97.00 - 98.00	Auto	0.1262
L13	51	MP3-05 (1.25in)	97.00 - 98.00	Auto	0.1262
L13	52	MP3-05 (1.25in)	97.00 - 98.00	Auto	0.1262
L13	66	(Area) CCI-65FP-045100 (H)	97.00 - 98.00	Auto	0.0000
L13	67	(Area) CCI-65FP-045100 (H)	97.00 - 98.00	Auto	0.0000
L13	68	(Area) CCI-65FP-045100 (H)	97.00 - 98.00	Auto	0.0000
L14	50	MP3-05 (1.25in)	96.75 - 97.00	Auto	0.0129
L14	51	MP3-05 (1.25in)	96.75 - 97.00	Auto	0.0129
L14	52	MP3-05 (1.25in)	96.75 - 97.00	Auto	0.0129
L14	66	(Area) CCI-65FP-045100 (H)	96.75 - 97.00	Auto	0.0000
L14	67	(Area) CCI-65FP-045100 (H)	96.75 - 97.00	Auto	0.0000



<i>Tower Section</i>	<i>Attachment Record No.</i>	<i>Description</i>	<i>Attachment Segment Elev.</i>	<i>Ratio Calculation Method</i>	<i>Effective Width Ratio</i>
L14	68	(Area) CCI-65FP-045100 (H)	96.75 - 97.00	Auto	0.0000
L15	50	MP3-05 (1.25in)	88.50 - 96.75	Auto	0.0002
L15	51	MP3-05 (1.25in)	88.50 - 96.75	Auto	0.0002
L15	52	MP3-05 (1.25in)	88.50 - 96.75	Auto	0.0002
L15	62	(Area) CCI-65FP-060100 (H)	88.50 - 90.67	Auto	0.0515
L15	63	(Area) CCI-65FP-060100 (H)	88.50 - 90.67	Auto	0.0515
L15	64	(Area) CCI-65FP-060100 (H)	88.50 - 90.67	Auto	0.0515
L15	66	(Area) CCI-65FP-045100 (H)	95.50 - 96.75	Auto	0.0000
L15	67	(Area) CCI-65FP-045100 (H)	95.50 - 96.75	Auto	0.0000
L15	68	(Area) CCI-65FP-045100 (H)	95.50 - 96.75	Auto	0.0000
L16	50	MP3-05 (1.25in)	88.17 - 88.50	Auto	0.0000
L16	51	MP3-05 (1.25in)	88.17 - 88.50	Auto	0.0000
L16	52	MP3-05 (1.25in)	88.17 - 88.50	Auto	0.0000
L16	62	(Area) CCI-65FP-060100 (H)	88.17 - 88.50	Auto	0.0904
L16	63	(Area) CCI-65FP-060100 (H)	88.17 - 88.50	Auto	0.0904
L16	64	(Area) CCI-65FP-060100 (H)	88.17 - 88.50	Auto	0.0904
L17	50	MP3-05 (1.25in)	87.92 - 88.17	Auto	0.0736
L17	51	MP3-05 (1.25in)	87.92 - 88.17	Auto	0.0736
L17	52	MP3-05 (1.25in)	87.92 - 88.17	Auto	0.0736
L17	62	(Area) CCI-65FP-060100 (H)	87.92 - 88.17	Auto	0.1771
L17	63	(Area) CCI-65FP-060100 (H)	87.92 - 88.17	Auto	0.1771
L17	64	(Area) CCI-65FP-060100 (H)	87.92 - 88.17	Auto	0.1771
L18	50	MP3-05 (1.25in)	82.92 - 87.92	Auto	0.0343
L18	51	MP3-05 (1.25in)	82.92 - 87.92	Auto	0.0343
L18	52	MP3-05 (1.25in)	82.92 - 87.92	Auto	0.0343
L18	62	(Area) CCI-65FP-060100 (H)	82.92 - 87.92	Auto	0.1421
L18	63	(Area) CCI-65FP-060100 (H)	82.92 - 87.92	Auto	0.1421
L18	64	(Area) CCI-65FP-060100 (H)	82.92 - 87.92	Auto	0.1421
L19	50	MP3-05 (1.25in)	77.92 - 82.92	Auto	0.0001
L19	51	MP3-05 (1.25in)	77.92 - 82.92	Auto	0.0001
L19	52	MP3-05 (1.25in)	77.92 - 82.92	Auto	0.0001
L19	62	(Area) CCI-65FP-060100 (H)	77.92 - 82.92	Auto	0.0912
L19	63	(Area) CCI-65FP-060100 (H)	77.92 - 82.92	Auto	0.0912
L19	64	(Area) CCI-65FP-060100 (H)	77.92 - 82.92	Auto	0.0912
L20	50	MP3-05 (1.25in)	72.92 - 77.92	Auto	0.0000
L20	51	MP3-05 (1.25in)	72.92 - 77.92	Auto	0.0000
L20	52	MP3-05 (1.25in)	72.92 - 77.92	Auto	0.0000
L20	62	(Area) CCI-65FP-060100 (H)	72.92 - 77.92	Auto	0.0402
L20	63	(Area) CCI-65FP-060100 (H)	72.92 - 77.92	Auto	0.0402
L20	64	(Area) CCI-65FP-060100 (H)	72.92 - 77.92	Auto	0.0402
L21	46	MP3-06 (1.25in)	68.25 - 71.75	Auto	0.1117
L21	47	MP3-06 (1.25in)	68.25 - 71.75	Auto	0.1117
L21	48	MP3-06 (1.25in)	68.25 - 71.75	Auto	0.1117
L21	50	MP3-05 (1.25in)	71.75 - 72.92	Auto	0.0000
L21	51	MP3-05 (1.25in)	71.75 - 72.92	Auto	0.0000
L21	52	MP3-05 (1.25in)	71.75 - 72.92	Auto	0.0000
L21	58	(Area) CCI-65FP-060100 (H)	68.25 - 70.58	Auto	0.0000
L21	59	(Area) CCI-65FP-060100 (H)	68.25 - 70.58	Auto	0.0000
L21	60	(Area) CCI-65FP-060100 (H)	68.25 - 70.58	Auto	0.0000
L21	62	(Area) CCI-65FP-060100 (H)	70.58 - 72.92	Auto	0.0010
L21	63	(Area) CCI-65FP-060100 (H)	70.58 - 72.92	Auto	0.0010
L21	64	(Area) CCI-65FP-060100 (H)	70.58 - 72.92	Auto	0.0010
L22	46	MP3-06 (1.25in)	67.98 - 68.25	Auto	0.1454
L22	47	MP3-06 (1.25in)	67.98 - 68.25	Auto	0.1454
L22	48	MP3-06 (1.25in)	67.98 - 68.25	Auto	0.1454
L22	58	(Area) CCI-65FP-060100 (H)	67.98 - 68.25	Auto	0.0187
L22	59	(Area) CCI-65FP-060100 (H)	67.98 - 68.25	Auto	0.0187
L22	60	(Area) CCI-65FP-060100 (H)	67.98 - 68.25	Auto	0.0187
L23	46	MP3-06 (1.25in)	67.83 - 67.98	Auto	0.1438
L23	47	MP3-06 (1.25in)	67.83 - 67.98	Auto	0.1438
L23	48	MP3-06 (1.25in)	67.83 - 67.98	Auto	0.1438

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	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>dluna</p>

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L23	58	(Area) CCI-65FP-060100 (H)	67.83 - 67.98	Auto	0.0168
L23	59	(Area) CCI-65FP-060100 (H)	67.83 - 67.98	Auto	0.0168
L23	60	(Area) CCI-65FP-060100 (H)	67.83 - 67.98	Auto	0.0168
L24	46	MP3-06 (1.25in)	62.83 - 67.83	Auto	0.1137
L24	47	MP3-06 (1.25in)	62.83 - 67.83	Auto	0.1137
L24	48	MP3-06 (1.25in)	62.83 - 67.83	Auto	0.1137
L24	58	(Area) CCI-65FP-060100 (H)	62.83 - 67.83	Auto	0.0003
L24	59	(Area) CCI-65FP-060100 (H)	62.83 - 67.83	Auto	0.0003
L24	60	(Area) CCI-65FP-060100 (H)	62.83 - 67.83	Auto	0.0003
L25	46	MP3-06 (1.25in)	57.83 - 62.83	Auto	0.0645
L25	47	MP3-06 (1.25in)	57.83 - 62.83	Auto	0.0645
L25	48	MP3-06 (1.25in)	57.83 - 62.83	Auto	0.0645
L25	58	(Area) CCI-65FP-060100 (H)	57.83 - 62.83	Auto	0.0000
L25	59	(Area) CCI-65FP-060100 (H)	57.83 - 62.83	Auto	0.0000
L25	60	(Area) CCI-65FP-060100 (H)	57.83 - 62.83	Auto	0.0000
L26	46	MP3-06 (1.25in)	52.83 - 57.83	Auto	0.0201
L26	47	MP3-06 (1.25in)	52.83 - 57.83	Auto	0.0201
L26	48	MP3-06 (1.25in)	52.83 - 57.83	Auto	0.0201
L26	58	(Area) CCI-65FP-060100 (H)	52.83 - 57.83	Auto	0.0000
L26	59	(Area) CCI-65FP-060100 (H)	52.83 - 57.83	Auto	0.0000
L26	60	(Area) CCI-65FP-060100 (H)	52.83 - 57.83	Auto	0.0000
L27	46	MP3-06 (1.25in)	47.25 - 52.83	Auto	0.0000
L27	47	MP3-06 (1.25in)	47.25 - 52.83	Auto	0.0000
L27	48	MP3-06 (1.25in)	47.25 - 52.83	Auto	0.0000
L27	58	(Area) CCI-65FP-060100 (H)	47.25 - 52.83	Auto	0.0000
L27	59	(Area) CCI-65FP-060100 (H)	47.25 - 52.83	Auto	0.0000
L27	60	(Area) CCI-65FP-060100 (H)	47.25 - 52.83	Auto	0.0000
L28	46	MP3-06 (1.25in)	46.50 - 47.25	Auto	0.0000
L28	47	MP3-06 (1.25in)	46.50 - 47.25	Auto	0.0000
L28	48	MP3-06 (1.25in)	46.50 - 47.25	Auto	0.0000
L28	58	(Area) CCI-65FP-060100 (H)	46.50 - 47.25	Auto	0.0000
L28	59	(Area) CCI-65FP-060100 (H)	46.50 - 47.25	Auto	0.0000
L28	60	(Area) CCI-65FP-060100 (H)	46.50 - 47.25	Auto	0.0000
L29	42	MP3-08 (1.25in)	41.50 - 41.75	Auto	0.0926
L29	43	MP3-08 (1.25in)	41.50 - 41.75	Auto	0.0926
L29	44	MP3-08 (1.25in)	41.50 - 41.75	Auto	0.0926
L29	46	MP3-06 (1.25in)	41.75 - 46.50	Auto	0.0000
L29	47	MP3-06 (1.25in)	41.75 - 46.50	Auto	0.0000
L29	48	MP3-06 (1.25in)	41.75 - 46.50	Auto	0.0000
L29	58	(Area) CCI-65FP-060100 (H)	41.50 - 46.50	Auto	0.0000
L29	59	(Area) CCI-65FP-060100 (H)	41.50 - 46.50	Auto	0.0000
L29	60	(Area) CCI-65FP-060100 (H)	41.50 - 46.50	Auto	0.0000
L30	42	MP3-08 (1.25in)	37.75 - 41.50	Auto	0.0704
L30	43	MP3-08 (1.25in)	37.75 - 41.50	Auto	0.0704
L30	44	MP3-08 (1.25in)	37.75 - 41.50	Auto	0.0704
L30	58	(Area) CCI-65FP-060100 (H)	37.75 - 41.50	Auto	0.0000
L30	59	(Area) CCI-65FP-060100 (H)	37.75 - 41.50	Auto	0.0000
L30	60	(Area) CCI-65FP-060100 (H)	37.75 - 41.50	Auto	0.0000
L31	42	MP3-08 (1.25in)	37.50 - 37.75	Auto	0.0821
L31	43	MP3-08 (1.25in)	37.50 - 37.75	Auto	0.0821
L31	44	MP3-08 (1.25in)	37.50 - 37.75	Auto	0.0821
L31	58	(Area) CCI-65FP-060100 (H)	37.50 - 37.75	Auto	0.0000
L31	59	(Area) CCI-65FP-060100 (H)	37.50 - 37.75	Auto	0.0000
L31	60	(Area) CCI-65FP-060100 (H)	37.50 - 37.75	Auto	0.0000
L32	42	MP3-08 (1.25in)	32.50 - 37.50	Auto	0.0556
L32	43	MP3-08 (1.25in)	32.50 - 37.50	Auto	0.0556
L32	44	MP3-08 (1.25in)	32.50 - 37.50	Auto	0.0556
L32	54	(Area) CCI-65FP-065125 (H)	32.50 - 35.50	Auto	0.0000
L32	55	(Area) CCI-65FP-065125 (H)	32.50 - 35.50	Auto	0.0000
L32	56	(Area) CCI-65FP-065125 (H)	32.50 - 35.50	Auto	0.0000
L32	58	(Area) CCI-65FP-060100 (H)	35.50 - 37.50	Auto	0.0000

<p><b>tnxTower</b></p> <p><b>Tower Engineering Professionals, Inc.</b>  326 Tyron Road  Raleigh, NC 27603  Phone: (919) 661-6351  FAX: (919) 661-6350</p>	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 26 of 54
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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L32	59	(Area) CCI-65FP-060100 (H)	35.50 - 37.50	Auto	0.0000
L32	60	(Area) CCI-65FP-060100 (H)	35.50 - 37.50	Auto	0.0000
L33	42	MP3-08 (1.25in)	32.25 - 32.50	Auto	0.0545
L33	43	MP3-08 (1.25in)	32.25 - 32.50	Auto	0.0545
L33	44	MP3-08 (1.25in)	32.25 - 32.50	Auto	0.0545
L33	54	(Area) CCI-65FP-065125 (H)	32.25 - 32.50	Auto	0.0000
L33	55	(Area) CCI-65FP-065125 (H)	32.25 - 32.50	Auto	0.0000
L33	56	(Area) CCI-65FP-065125 (H)	32.25 - 32.50	Auto	0.0000
L34	34	MP3-08 (1.25in)	27.75 - 31.75	Auto	0.0323
L34	35	MP3-08 (1.25in)	27.75 - 31.75	Auto	0.0323
L34	40	MP3-08 (1.25in)	27.75 - 31.75	Auto	0.0323
L34	42	MP3-08 (1.25in)	31.75 - 32.25	Auto	0.0477
L34	43	MP3-08 (1.25in)	31.75 - 32.25	Auto	0.0477
L34	44	MP3-08 (1.25in)	31.75 - 32.25	Auto	0.0477
L34	54	(Area) CCI-65FP-065125 (H)	27.75 - 32.25	Auto	0.0000
L34	55	(Area) CCI-65FP-065125 (H)	27.75 - 32.25	Auto	0.0000
L34	56	(Area) CCI-65FP-065125 (H)	27.75 - 32.25	Auto	0.0000
L35	34	MP3-08 (1.25in)	27.50 - 27.75	Auto	0.0177
L35	35	MP3-08 (1.25in)	27.50 - 27.75	Auto	0.0177
L35	40	MP3-08 (1.25in)	27.50 - 27.75	Auto	0.0177
L35	54	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	Auto	0.0000
L35	55	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	Auto	0.0000
L35	56	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	Auto	0.0000
L36	34	MP3-08 (1.25in)	23.25 - 27.50	Auto	0.0027
L36	35	MP3-08 (1.25in)	23.25 - 27.50	Auto	0.0027
L36	37	MP3-06 (1.25in)	23.25 - 26.75	Auto	0.0000
L36	38	MP3-06 (1.25in)	23.25 - 26.75	Auto	0.0000
L36	40	MP3-08 (1.25in)	23.25 - 27.50	Auto	0.0027
L36	54	(Area) CCI-65FP-065125 (H)	23.25 - 27.50	Auto	0.0000
L36	55	(Area) CCI-65FP-065125 (H)	23.25 - 27.50	Auto	0.0000
L36	56	(Area) CCI-65FP-065125 (H)	23.25 - 27.50	Auto	0.0000
L37	34	MP3-08 (1.25in)	23.00 - 23.25	Auto	0.0164
L37	35	MP3-08 (1.25in)	23.00 - 23.25	Auto	0.0164
L37	37	MP3-06 (1.25in)	23.00 - 23.25	Auto	0.0000
L37	38	MP3-06 (1.25in)	23.00 - 23.25	Auto	0.0000
L37	40	MP3-08 (1.25in)	23.00 - 23.25	Auto	0.0164
L37	54	(Area) CCI-65FP-065125 (H)	23.00 - 23.25	Auto	0.0000
L37	55	(Area) CCI-65FP-065125 (H)	23.00 - 23.25	Auto	0.0000
L37	56	(Area) CCI-65FP-065125 (H)	23.00 - 23.25	Auto	0.0000
L38	34	MP3-08 (1.25in)	20.75 - 23.00	Auto	0.0078
L38	35	MP3-08 (1.25in)	20.75 - 23.00	Auto	0.0078
L38	37	MP3-06 (1.25in)	20.75 - 23.00	Auto	0.0000
L38	38	MP3-06 (1.25in)	20.75 - 23.00	Auto	0.0000
L38	40	MP3-08 (1.25in)	20.75 - 23.00	Auto	0.0078
L38	54	(Area) CCI-65FP-065125 (H)	20.75 - 23.00	Auto	0.0000
L38	55	(Area) CCI-65FP-065125 (H)	20.75 - 23.00	Auto	0.0000
L38	56	(Area) CCI-65FP-065125 (H)	20.75 - 23.00	Auto	0.0000
L39	34	MP3-08 (1.25in)	20.50 - 20.75	Auto	0.0000
L39	35	MP3-08 (1.25in)	20.50 - 20.75	Auto	0.0000
L39	37	MP3-06 (1.25in)	20.50 - 20.75	Auto	0.0000
L39	38	MP3-06 (1.25in)	20.50 - 20.75	Auto	0.0000
L39	40	MP3-08 (1.25in)	20.50 - 20.75	Auto	0.0000
L39	54	(Area) CCI-65FP-065125 (H)	20.50 - 20.75	Auto	0.0000
L39	55	(Area) CCI-65FP-065125 (H)	20.50 - 20.75	Auto	0.0000
L39	56	(Area) CCI-65FP-065125 (H)	20.50 - 20.75	Auto	0.0000
L40	34	MP3-08 (1.25in)	15.50 - 20.50	Auto	0.0000
L40	35	MP3-08 (1.25in)	15.50 - 20.50	Auto	0.0000
L40	37	MP3-06 (1.25in)	15.50 - 20.50	Auto	0.0000
L40	38	MP3-06 (1.25in)	15.50 - 20.50	Auto	0.0000
L40	40	MP3-08 (1.25in)	16.75 - 20.50	Auto	0.0000
L40	54	(Area) CCI-65FP-065125 (H)	15.50 - 20.50	Auto	0.0000

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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L40	55	(Area) CCI-65FP-065125 (H)	15.50 - 20.50	Auto	0.0000
L40	56	(Area) CCI-65FP-065125 (H)	15.50 - 20.50	Auto	0.0000
L41	34	MP3-08 (1.25in)	10.50 - 15.50	Auto	0.0000
L41	35	MP3-08 (1.25in)	10.50 - 15.50	Auto	0.0000
L41	37	MP3-06 (1.25in)	10.50 - 15.50	Auto	0.0000
L41	38	MP3-06 (1.25in)	10.50 - 15.50	Auto	0.0000
L41	54	(Area) CCI-65FP-065125 (H)	10.50 - 15.50	Auto	0.0000
L41	55	(Area) CCI-65FP-065125 (H)	10.50 - 15.50	Auto	0.0000
L41	56	(Area) CCI-65FP-065125 (H)	10.50 - 15.50	Auto	0.0000
L42	34	MP3-08 (1.25in)	5.50 - 10.50	Auto	0.0000
L42	35	MP3-08 (1.25in)	5.50 - 10.50	Auto	0.0000
L42	37	MP3-06 (1.25in)	5.50 - 10.50	Auto	0.0000
L42	38	MP3-06 (1.25in)	5.50 - 10.50	Auto	0.0000
L42	54	(Area) CCI-65FP-065125 (H)	5.50 - 10.50	Auto	0.0000
L42	55	(Area) CCI-65FP-065125 (H)	5.50 - 10.50	Auto	0.0000
L42	56	(Area) CCI-65FP-065125 (H)	5.50 - 10.50	Auto	0.0000
L43	34	MP3-08 (1.25in)	2.00 - 5.50	Auto	0.0000
L43	35	MP3-08 (1.25in)	2.00 - 5.50	Auto	0.0000
L43	37	MP3-06 (1.25in)	2.00 - 5.50	Auto	0.0000
L43	38	MP3-06 (1.25in)	2.00 - 5.50	Auto	0.0000
L43	54	(Area) CCI-65FP-065125 (H)	2.00 - 5.50	Auto	0.0000
L43	55	(Area) CCI-65FP-065125 (H)	2.00 - 5.50	Auto	0.0000
L43	56	(Area) CCI-65FP-065125 (H)	2.00 - 5.50	Auto	0.0000
L44	34	MP3-08 (1.25in)	1.75 - 2.00	Auto	0.0000
L44	35	MP3-08 (1.25in)	1.75 - 2.00	Auto	0.0000
L44	37	MP3-06 (1.25in)	1.75 - 2.00	Auto	0.0000
L44	38	MP3-06 (1.25in)	1.75 - 2.00	Auto	0.0000
L44	54	(Area) CCI-65FP-065125 (H)	1.75 - 2.00	Auto	0.0000
L44	55	(Area) CCI-65FP-065125 (H)	1.75 - 2.00	Auto	0.0000
L44	56	(Area) CCI-65FP-065125 (H)	1.75 - 2.00	Auto	0.0000
L45	34	MP3-08 (1.25in)	1.50 - 1.75	Auto	0.0000
L45	35	MP3-08 (1.25in)	1.50 - 1.75	Auto	0.0000
L45	37	MP3-06 (1.25in)	1.50 - 1.75	Auto	0.0000
L45	38	MP3-06 (1.25in)	1.50 - 1.75	Auto	0.0000
L45	54	(Area) CCI-65FP-065125 (H)	1.50 - 1.75	Auto	0.0000
L45	55	(Area) CCI-65FP-065125 (H)	1.50 - 1.75	Auto	0.0000
L45	56	(Area) CCI-65FP-065125 (H)	1.50 - 1.75	Auto	0.0000
L46	34	MP3-08 (1.25in)	0.00 - 1.50	Auto	0.0000
L46	35	MP3-08 (1.25in)	0.00 - 1.50	Auto	0.0000
L46	37	MP3-06 (1.25in)	0.00 - 1.50	Auto	0.0000
L46	38	MP3-06 (1.25in)	0.00 - 1.50	Auto	0.0000
L46	54	(Area) CCI-65FP-065125 (H)	0.00 - 1.50	Auto	0.0000
L46	55	(Area) CCI-65FP-065125 (H)	0.00 - 1.50	Auto	0.0000
L46	56	(Area) CCI-65FP-065125 (H)	0.00 - 1.50	Auto	0.0000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>Front</sub>	C <sub>A</sub> A <sub>Side</sub>	Weight
			ft ft ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K

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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	4.60	4.01	0.10
			0.00	0.00		1/2" Ice	5.05	4.45	0.16
			0.00	0.00		1" Ice	5.50	4.89	0.23
						2" Ice	6.44	5.82	0.42
APXVSPP18-C-A20 w/ Mount Pipe	B	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	4.60	4.01	0.10
			0.00	0.00		1/2" Ice	5.05	4.45	0.16
			0.00	0.00		1" Ice	5.50	4.89	0.23
						2" Ice	6.44	5.82	0.42
APXVSPP18-C-A20 w/ Mount Pipe	C	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	4.60	4.01	0.10
			0.00	0.00		1/2" Ice	5.05	4.45	0.16
			0.00	0.00		1" Ice	5.50	4.89	0.23
						2" Ice	6.44	5.82	0.42
APXVTM14-C-120 w/ Mount Pipe	A	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	4.09	2.86	0.08
			0.00	0.00		1/2" Ice	4.48	3.23	0.13
			0.00	0.00		1" Ice	4.88	3.61	0.19
						2" Ice	5.71	4.40	0.33
APXVTM14-C-120 w/ Mount Pipe	B	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	4.09	2.86	0.08
			0.00	0.00		1/2" Ice	4.48	3.23	0.13
			0.00	0.00		1" Ice	4.88	3.61	0.19
						2" Ice	5.71	4.40	0.33
APXVTM14-C-120 w/ Mount Pipe	C	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	4.09	2.86	0.08
			0.00	0.00		1/2" Ice	4.48	3.23	0.13
			0.00	0.00		1" Ice	4.88	3.61	0.19
						2" Ice	5.71	4.40	0.33
(3) ACU-A20-N	A	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	0.07	0.12	0.00
			0.00	0.00		1/2" Ice	0.10	0.16	0.00
			0.00	0.00		1" Ice	0.15	0.21	0.00
						2" Ice	0.26	0.34	0.01
(3) ACU-A20-N	B	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	0.07	0.12	0.00
			0.00	0.00		1/2" Ice	0.10	0.16	0.00
			0.00	0.00		1" Ice	0.15	0.21	0.00
						2" Ice	0.26	0.34	0.01
(3) ACU-A20-N	C	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	0.07	0.12	0.00
			0.00	0.00		1/2" Ice	0.10	0.16	0.00
			0.00	0.00		1" Ice	0.15	0.21	0.00
						2" Ice	0.26	0.34	0.01
TD-RRH8X20-25	A	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	3.70	1.29	0.07
			0.00	0.00		1/2" Ice	3.95	1.46	0.09
			0.00	0.00		1" Ice	4.20	1.64	0.12
						2" Ice	4.72	2.02	0.18
TD-RRH8X20-25	B	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	3.70	1.29	0.07
			0.00	0.00		1/2" Ice	3.95	1.46	0.09
			0.00	0.00		1" Ice	4.20	1.64	0.12
						2" Ice	4.72	2.02	0.18
TD-RRH8X20-25	C	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	3.70	1.29	0.07
			0.00	0.00		1/2" Ice	3.95	1.46	0.09
			0.00	0.00		1" Ice	4.20	1.64	0.12
						2" Ice	4.72	2.02	0.18
Platform Mount [LP 1201-1]	C	None		0.0000	140.00	No Ice	18.38	18.38	2.10
						1/2" Ice	22.11	22.11	2.65
						1" Ice	25.87	25.87	3.26
						2" Ice	33.47	33.47	4.66
(2) 2.4" Dia. x 6-ft	A	From Centroid-Fa ce	4.00	0.0000	140.00	No Ice	1.43	1.43	0.02
			0.00	0.00		1/2" Ice	1.92	1.92	0.03
			0.00	0.00		1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09
(2) 2.4" Dia. x 6-ft	B	From	4.00	0.0000	140.00	No Ice	1.43	1.43	0.02

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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral						Vert
(2) 2.4" Dia. x 6-ft	C	Centroid-Face	0.00	0.00	0.0000	140.00	1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
			0.00	0.00			2" Ice	3.06	3.06	0.09
			4.00	0.00			No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09	
**										
TME-1900MHz RRH (65MHz)	A	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.31	2.38	0.06
			0.00	0.00			1/2" Ice	2.52	2.58	0.08
			0.00	0.00			1" Ice	2.73	2.79	0.11
			0.00	0.00			2" Ice	3.17	3.24	0.18
TME-1900MHz RRH (65MHz)	B	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.31	2.38	0.06
			0.00	0.00			1/2" Ice	2.52	2.58	0.08
			0.00	0.00			1" Ice	2.73	2.79	0.11
			0.00	0.00			2" Ice	3.17	3.24	0.18
TME-1900MHz RRH (65MHz)	C	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.31	2.38	0.06
			0.00	0.00			1/2" Ice	2.52	2.58	0.08
			0.00	0.00			1" Ice	2.73	2.79	0.11
			0.00	0.00			2" Ice	3.17	3.24	0.18
TME-800MHz RRH	A	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.13	1.77	0.05
			0.00	0.00			1/2" Ice	2.32	1.95	0.07
			0.00	0.00			1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
TME-800MHz RRH	B	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.13	1.77	0.05
			0.00	0.00			1/2" Ice	2.32	1.95	0.07
			0.00	0.00			1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
TME-800MHz RRH	C	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.13	1.77	0.05
			0.00	0.00			1/2" Ice	2.32	1.95	0.07
			0.00	0.00			1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
TME-800MHz 2X50W RRH W/FILTER	A	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.06	1.93	0.06
			0.00	0.00			1/2" Ice	2.24	2.11	0.09
			0.00	0.00			1" Ice	2.43	2.29	0.11
			0.00	0.00			2" Ice	2.83	2.68	0.17
TME-800MHz 2X50W RRH W/FILTER	B	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.06	1.93	0.06
			0.00	0.00			1/2" Ice	2.24	2.11	0.09
			0.00	0.00			1" Ice	2.43	2.29	0.11
			0.00	0.00			2" Ice	2.83	2.68	0.17
TME-800MHz 2X50W RRH W/FILTER	C	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	2.06	1.93	0.06
			0.00	0.00			1/2" Ice	2.24	2.11	0.09
			0.00	0.00			1" Ice	2.43	2.29	0.11
			0.00	0.00			2" Ice	2.83	2.68	0.17
(2) 2.4" Dia. x 4-ft	A	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
			0.00	0.00			2" Ice	1.91	1.91	0.06
(2) 2.4" Dia. x 4-ft	B	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
			0.00	0.00			2" Ice	1.91	1.91	0.06
(2) 2.4" Dia. x 4-ft	C	From Centroid-Face	2.00	0.00	0.0000	137.00	No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
			0.00	0.00			2" Ice	1.91	1.91	0.06
Side Arm Mount [SO 103-3]	C	None			0.0000	137.00	No Ice	7.64	7.64	0.23

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	30 of 54
	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
							1/2" Ice	8.80	8.80	0.36
							1" Ice	10.16	10.16	0.52
							2" Ice	13.36	13.36	0.94
**										
AIR 6419 B77G w/ Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.87 4.18 4.50 5.16	2.32 2.72 3.13 4.01	0.08 0.11 0.15 0.25	
AIR 6419 B77G w/ Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.87 4.18 4.50 5.16	2.32 2.72 3.13 4.01	0.08 0.11 0.15 0.25	
AIR 6419 B77G w/ Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.87 4.18 4.50 5.16	2.32 2.72 3.13 4.01	0.08 0.11 0.15 0.25	
AIR 6449 N77 w/ Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.26 4.58 4.91 5.61	3.47 3.91 4.37 5.34	0.10 0.14 0.19 0.30	
AIR 6449 N77 w/ Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.26 4.58 4.91 5.61	3.47 3.91 4.37 5.34	0.10 0.14 0.19 0.30	
AIR 6449 N77 w/ Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.26 4.58 4.91 5.61	3.47 3.91 4.37 5.34	0.10 0.14 0.19 0.30	
DMP65R-BU6D w/ Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.96 12.70 13.46 15.02	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53	
DMP65R-BU6D w/ Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.96 12.70 13.46 15.02	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53	
DMP65R-BU6D w/ Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.96 12.70 13.46 15.02	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53	
TPA65R-BU6D w/ Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	0.10 0.19 0.28 0.52	
TPA65R-BU6D w/ Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	0.10 0.19 0.28 0.52	
TPA65R-BU6D w/ Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	0.10 0.19 0.28 0.52	
WCS-IMFQ-AMT-43	A	From Centroid-Fa ce	4.00 0.00 3.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.38 0.47 0.55 0.75	0.55 0.65 0.75 0.97	0.02 0.02 0.03 0.05	
WCS-IMFQ-AMT-43	B	From	4.00	0.0000	122.00	No Ice	0.38	0.55	0.02	

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	31 of 54
	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C<sub>AA</sub> Front</i> <i>ft<sup>2</sup></i>	<i>C<sub>AA</sub> Side</i> <i>ft<sup>2</sup></i>	<i>Weight</i> <i>K</i>	
		Centroid-Fa	0.00			1/2" Ice	0.47	0.65	0.02
		ce	3.00			1" Ice	0.55	0.75	0.03
						2" Ice	0.75	0.97	0.05
WCS-IMFQ-AMT-43	C	From	4.00	0.0000	122.00	No Ice	0.38	0.55	0.02
		Centroid-Fa	0.00			1/2" Ice	0.47	0.65	0.02
		ce	3.00			1" Ice	0.55	0.75	0.03
						2" Ice	0.75	0.97	0.05
DC6-48-60-18-8F	A	From	4.00	0.0000	122.00	No Ice	1.21	1.21	0.03
		Centroid-Fa	0.00			1/2" Ice	1.89	1.89	0.05
		ce	3.00			1" Ice	2.11	2.11	0.08
						2" Ice	2.57	2.57	0.14
DC6-48-60-18-8F	B	From	4.00	0.0000	122.00	No Ice	1.21	1.21	0.03
		Centroid-Fa	0.00			1/2" Ice	1.89	1.89	0.05
		ce	3.00			1" Ice	2.11	2.11	0.08
						2" Ice	2.57	2.57	0.14
DBC0061F1V51-2	A	From	4.00	0.0000	122.00	No Ice	0.43	0.41	0.03
		Centroid-Fa	0.00			1/2" Ice	0.51	0.50	0.03
		ce	3.00			1" Ice	0.61	0.59	0.04
						2" Ice	0.81	0.79	0.06
DBC0061F1V51-2	B	From	4.00	0.0000	122.00	No Ice	0.43	0.41	0.03
		Centroid-Fa	0.00			1/2" Ice	0.51	0.50	0.03
		ce	3.00			1" Ice	0.61	0.59	0.04
						2" Ice	0.81	0.79	0.06
DBC0061F1V51-2	C	From	4.00	0.0000	122.00	No Ice	0.43	0.41	0.03
		Centroid-Fa	0.00			1/2" Ice	0.51	0.50	0.03
		ce	3.00			1" Ice	0.61	0.59	0.04
						2" Ice	0.81	0.79	0.06
RRUS 32 B30	A	From	4.00	0.0000	122.00	No Ice	2.73	1.67	0.05
		Centroid-Fa	0.00			1/2" Ice	2.95	1.86	0.07
		ce	3.00			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B30	B	From	4.00	0.0000	122.00	No Ice	2.73	1.67	0.05
		Centroid-Fa	0.00			1/2" Ice	2.95	1.86	0.07
		ce	3.00			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RRUS 32 B30	C	From	4.00	0.0000	122.00	No Ice	2.73	1.67	0.05
		Centroid-Fa	0.00			1/2" Ice	2.95	1.86	0.07
		ce	3.00			1" Ice	3.18	2.05	0.10
						2" Ice	3.66	2.46	0.16
RADIO 4478 B14	A	From	4.00	0.0000	122.00	No Ice	2.02	1.25	0.06
		Centroid-Fa	0.00			1/2" Ice	2.20	1.40	0.08
		ce	3.00			1" Ice	2.39	1.55	0.10
						2" Ice	2.78	1.89	0.15
RADIO 4478 B14	B	From	4.00	0.0000	122.00	No Ice	2.02	1.25	0.06
		Centroid-Fa	0.00			1/2" Ice	2.20	1.40	0.08
		ce	3.00			1" Ice	2.39	1.55	0.10
						2" Ice	2.78	1.89	0.15
RADIO 4478 B14	C	From	4.00	0.0000	122.00	No Ice	2.02	1.25	0.06
		Centroid-Fa	0.00			1/2" Ice	2.20	1.40	0.08
		ce	3.00			1" Ice	2.39	1.55	0.10
						2" Ice	2.78	1.89	0.15
RRUS 4449 B5/B12	A	From	4.00	0.0000	122.00	No Ice	1.97	1.41	0.07
		Centroid-Fa	0.00			1/2" Ice	2.14	1.56	0.09
		ce	3.00			1" Ice	2.33	1.73	0.11
						2" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	B	From	4.00	0.0000	122.00	No Ice	1.97	1.41	0.07
		Centroid-Fa	0.00			1/2" Ice	2.14	1.56	0.09



<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	32 of 54
	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight
			Horz	Vert			Front	Side	
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
		cc	3.00			1" Ice	2.33	1.73	0.11
						2" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	C	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.97	1.41
			3.00	0.00			1/2" Ice	2.14	1.56
				3.00			1" Ice	2.33	1.73
							2" Ice	2.72	2.07
RRUS 8843 B2/B66A	A	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.64	1.35
			3.00	0.00			1/2" Ice	1.80	1.50
				3.00			1" Ice	1.97	1.65
							2" Ice	2.32	1.99
RRUS 8843 B2/B66A	B	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.64	1.35
			3.00	0.00			1/2" Ice	1.80	1.50
				3.00			1" Ice	1.97	1.65
							2" Ice	2.32	1.99
RRUS 8843 B2/B66A	C	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.64	1.35
			3.00	0.00			1/2" Ice	1.80	1.50
				3.00			1" Ice	1.97	1.65
							2" Ice	2.32	1.99
DC9-48-60-24-8C-EV	C	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.14	1.14
			3.00	0.00			1/2" Ice	1.79	1.79
				3.00			1" Ice	2.00	2.00
							2" Ice	2.45	2.45
Platform Mount [LP 1201-1_HR-1]	C	None			0.0000	122.00	No Ice	26.39	26.39
							1/2" Ice	31.40	31.40
							1" Ice	36.20	36.20
							2" Ice	45.40	45.40
(2) SitePro1 SFS-V-L	A	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	4.24	3.96
			0.00	0.00			1/2" Ice	4.78	4.46
				0.00			1" Ice	5.44	5.06
							2" Ice	6.40	5.96
(2) SitePro1 SFS-V-L	B	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	4.24	3.96
			0.00	0.00			1/2" Ice	4.78	4.46
				0.00			1" Ice	5.44	5.06
							2" Ice	6.40	5.96
(2) SitePro1 SFS-V-L	C	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	4.24	3.96
			0.00	0.00			1/2" Ice	4.78	4.46
				0.00			1" Ice	5.44	5.06
							2" Ice	6.40	5.96
(3) 2.4" Dia. x 6-ft	A	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.43	1.43
			0.00	0.00			1/2" Ice	1.92	1.92
				0.00			1" Ice	2.29	2.29
							2" Ice	3.06	3.06
(3) 2.4" Dia. x 6-ft	B	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.43	1.43
			0.00	0.00			1/2" Ice	1.92	1.92
				0.00			1" Ice	2.29	2.29
							2" Ice	3.06	3.06
(3) 2.4" Dia. x 6-ft	C	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.43	1.43
			0.00	0.00			1/2" Ice	1.92	1.92
				0.00			1" Ice	2.29	2.29
							2" Ice	3.06	3.06
2.4" x 8' Pipe	A	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.90	1.90
			0.00	0.00			1/2" Ice	2.73	2.73
				0.00			1" Ice	3.42	3.42
							2" Ice	4.46	4.46
2.4" x 8' Pipe	B	From Centroid-Face	4.00	0.00	0.0000	122.00	No Ice	1.90	1.90
			0.00	0.00			1/2" Ice	2.73	2.73
				0.00			1" Ice	3.42	3.42

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	33 of 54
	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
2.4" x 8' Pipe	C	From Centroid-Face	4.00	0.00	0.0000	122.00	2" Ice	4.46	4.46	0.13
			0.00	0.00			No Ice	1.90	1.90	0.03
			0.00	0.00			1/2" Ice	2.73	2.73	0.05
			0.00	0.00			1" Ice	3.42	3.42	0.07
			0.00	0.00			2" Ice	4.46	4.46	0.13
**										
**										
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	3.76	3.15	0.19
			0.00	1.00			1/2" Ice	4.12	3.49	0.25
			1.00	1.00			1" Ice	4.48	3.84	0.32
			1.00	1.00			2" Ice	5.24	4.58	0.48
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	3.76	3.15	0.19
			0.00	1.00			1/2" Ice	4.12	3.49	0.25
			1.00	1.00			1" Ice	4.48	3.84	0.32
			1.00	1.00			2" Ice	5.24	4.58	0.48
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	3.76	3.15	0.19
			0.00	1.00			1/2" Ice	4.12	3.49	0.25
			1.00	1.00			1" Ice	4.48	3.84	0.32
			1.00	1.00			2" Ice	5.24	4.58	0.48
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	5.19	2.71	0.13
			0.00	1.00			1/2" Ice	5.59	3.04	0.17
			1.00	1.00			1" Ice	6.02	3.38	0.23
			1.00	1.00			2" Ice	6.90	4.12	0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	5.19	2.71	0.13
			0.00	1.00			1/2" Ice	5.59	3.04	0.17
			1.00	1.00			1" Ice	6.02	3.38	0.23
			1.00	1.00			2" Ice	6.90	4.12	0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	5.19	2.71	0.13
			0.00	1.00			1/2" Ice	5.59	3.04	0.17
			1.00	1.00			1" Ice	6.02	3.38	0.23
			1.00	1.00			2" Ice	6.90	4.12	0.35
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	14.69	6.87	0.19
			0.00	1.00			1/2" Ice	15.46	7.55	0.31
			1.00	1.00			1" Ice	16.23	8.25	0.46
			1.00	1.00			2" Ice	17.82	9.67	0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	14.69	6.87	0.19
			0.00	1.00			1/2" Ice	15.46	7.55	0.31
			1.00	1.00			1" Ice	16.23	8.25	0.46
			1.00	1.00			2" Ice	17.82	9.67	0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	14.69	6.87	0.19
			0.00	1.00			1/2" Ice	15.46	7.55	0.31
			1.00	1.00			1" Ice	16.23	8.25	0.46
			1.00	1.00			2" Ice	17.82	9.67	0.79
RADIO 4449 B12/B71	A	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	1.64	1.15	0.08
			0.00	1.00			1/2" Ice	1.80	1.29	0.09
			1.00	1.00			1" Ice	1.97	1.44	0.11
			1.00	1.00			2" Ice	2.33	1.75	0.16
RADIO 4449 B12/B71	B	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	1.64	1.15	0.08
			0.00	1.00			1/2" Ice	1.80	1.29	0.09
			1.00	1.00			1" Ice	1.97	1.44	0.11
			1.00	1.00			2" Ice	2.33	1.75	0.16
RADIO 4449 B12/B71	C	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	1.64	1.15	0.08
			0.00	1.00			1/2" Ice	1.80	1.29	0.09
			1.00	1.00			1" Ice	1.97	1.44	0.11
			1.00	1.00			2" Ice	2.33	1.75	0.16
SDX1926Q-43	A	From Centroid-Face	4.00	0.00	0.0000	115.00	No Ice	0.24	0.10	0.01
			0.00	0.00			1/2" Ice	0.31	0.14	0.01

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 34 of 54
	<b>Project</b> TEP No. 25566.601905	<b>Date</b> 15:08:40 09/16/21
	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
		cc	1.00			1" Ice 0.38	0.19	0.01
						2" Ice 0.55	0.32	0.02
SDX1926Q-43	B	From Centroid-Face	4.00 0.00 1.00	0.0000	115.00	No Ice 0.24 1/2" Ice 0.31 1" Ice 0.38 2" Ice 0.55	0.10 0.14 0.19 0.32	0.01 0.01 0.01 0.02
SDX1926Q-43	C	From Centroid-Face	4.00 0.00 1.00	0.0000	115.00	No Ice 0.24 1/2" Ice 0.31 1" Ice 0.38 2" Ice 0.55	0.10 0.14 0.19 0.32	0.01 0.01 0.01 0.02
ETW200VS12UB	A	From Centroid-Face	4.00 0.00 0.00	0.0000	115.00	No Ice 0.40 1/2" Ice 0.49 1" Ice 0.57 2" Ice 0.77	0.17 0.23 0.29 0.45	0.01 0.01 0.02 0.03
ETW200VS12UB	B	From Centroid-Face	4.00 0.00 0.00	0.0000	115.00	No Ice 0.40 1/2" Ice 0.49 1" Ice 0.57 2" Ice 0.77	0.17 0.23 0.29 0.45	0.01 0.01 0.02 0.03
ETW200VS12UB	C	From Centroid-Face	4.00 0.00 0.00	0.0000	115.00	No Ice 0.40 1/2" Ice 0.49 1" Ice 0.57 2" Ice 0.77	0.17 0.23 0.29 0.45	0.01 0.01 0.02 0.03
RRUS 4415 B25_CCIV2	A	From Leg	4.00 0.00 1.00	0.0000	115.00	No Ice 1.84 1/2" Ice 2.01 1" Ice 2.19 2" Ice 2.57	0.82 0.94 1.07 1.37	0.05 0.06 0.08 0.12
RRUS 4415 B25_CCIV2	B	From Leg	4.00 0.00 1.00	0.0000	115.00	No Ice 1.84 1/2" Ice 2.01 1" Ice 2.19 2" Ice 2.57	0.82 0.94 1.07 1.37	0.05 0.06 0.08 0.12
RRUS 4415 B25_CCIV2	C	From Leg	4.00 0.00 1.00	0.0000	115.00	No Ice 1.84 1/2" Ice 2.01 1" Ice 2.19 2" Ice 2.57	0.82 0.94 1.07 1.37	0.05 0.06 0.08 0.12
Platform Mount [LP 1201-1_KCKR-HR-1]	C	None		0.0000	115.00	No Ice 37.61 1/2" Ice 45.62 1" Ice 53.59 2" Ice 69.65	37.61 45.62 53.59 69.65	2.63 3.48 4.46 6.85
2.4" Dia. x 9-ft Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	115.00	No Ice 2.16 1/2" Ice 3.09 1" Ice 4.03 2" Ice 5.14	2.16 3.09 4.03 5.14	0.04 0.05 0.08 0.14
2.4" Dia. x 9-ft Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	115.00	No Ice 2.16 1/2" Ice 3.09 1" Ice 4.03 2" Ice 5.14	2.16 3.09 4.03 5.14	0.04 0.05 0.08 0.14
2.4" Dia. x 9-ft Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	115.00	No Ice 2.16 1/2" Ice 3.09 1" Ice 4.03 2" Ice 5.14	2.16 3.09 4.03 5.14	0.04 0.05 0.08 0.14
**								
LNx-6514DS-VTM w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 4.09 1/2" Ice 4.49 1" Ice 4.89 2" Ice 5.71	3.30 3.68 4.06 4.87	0.06 0.13 0.20 0.38
LNx-6514DS-VTM w/ Mount Pipe	B	From Centroid-Face	4.00 0.00	0.0000	104.00	No Ice 4.09 1/2" Ice 4.49	3.30 3.68	0.06 0.13

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	35 of 54
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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>	<i>C<sub>AA</sub> Front</i> <i>ft<sup>2</sup></i>	<i>C<sub>AA</sub> Side</i> <i>ft<sup>2</sup></i>	<i>Weight</i> <i>K</i>
		cc	0.00			1" Ice 4.89	4.06	0.20
						2" Ice 5.71	4.87	0.38
LNX-6514DS-VTM w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 4.09	3.30	0.06
						1/2" Ice 4.49	3.68	0.13
						1" Ice 4.89	4.06	0.20
						2" Ice 5.71	4.87	0.38
CBRS w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 3.00	0.0000	104.00	No Ice 1.45	0.99	0.03
						1/2" Ice 1.67	1.18	0.05
						1" Ice 1.90	1.39	0.07
						2" Ice 2.42	1.85	0.12
CBRS w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 3.00	0.0000	104.00	No Ice 1.45	0.99	0.03
						1/2" Ice 1.67	1.18	0.05
						1" Ice 1.90	1.39	0.07
						2" Ice 2.42	1.85	0.12
CBRS w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 3.00	0.0000	104.00	No Ice 1.45	0.99	0.03
						1/2" Ice 1.67	1.18	0.05
						1" Ice 1.90	1.39	0.07
						2" Ice 2.42	1.85	0.12
MT6407-77A w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 4.91	2.68	0.10
						1/2" Ice 5.26	3.14	0.14
						1" Ice 5.61	3.62	0.18
						2" Ice 6.36	4.63	0.29
MT6407-77A w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 4.91	2.68	0.10
						1/2" Ice 5.26	3.14	0.14
						1" Ice 5.61	3.62	0.18
						2" Ice 6.36	4.63	0.29
MT6407-77A w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 4.91	2.68	0.10
						1/2" Ice 5.26	3.14	0.14
						1" Ice 5.61	3.62	0.18
						2" Ice 6.36	4.63	0.29
JAHH-65B-R3B w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 5.50	4.38	0.10
						1/2" Ice 5.97	4.84	0.17
						1" Ice 6.45	5.30	0.25
						2" Ice 7.44	6.26	0.46
JAHH-65B-R3B w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 5.50	4.38	0.10
						1/2" Ice 5.97	4.84	0.17
						1" Ice 6.45	5.30	0.25
						2" Ice 7.44	6.26	0.46
JAHH-65B-R3B w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 5.50	4.38	0.10
						1/2" Ice 5.97	4.84	0.17
						1" Ice 6.45	5.30	0.25
						2" Ice 7.44	6.26	0.46
JAHH-65B-R3B	A	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 5.29	3.05	0.06
						1/2" Ice 5.75	3.48	0.12
						1" Ice 6.22	3.93	0.19
						2" Ice 7.20	4.84	0.33
JAHH-65B-R3B	B	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 5.29	3.05	0.06
						1/2" Ice 5.75	3.48	0.12
						1" Ice 6.22	3.93	0.19
						2" Ice 7.20	4.84	0.33
JAHH-65B-R3B	C	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 5.29	3.05	0.06
						1/2" Ice 5.75	3.48	0.12
						1" Ice 6.22	3.93	0.19
						2" Ice 7.20	4.84	0.33
RFV01U-D1A	A	From Centroid-Face	4.00 0.00 0.00	0.0000	104.00	No Ice 1.88	1.25	0.08
						1/2" Ice 2.05	1.39	0.10
						1" Ice 2.22	1.54	0.12

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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
RFV01U-D1A	B	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	2.60	1.86	0.18
			0.00	0.00			No Ice	1.88	1.25	0.08
			0.00	0.00			1/2" Ice	2.05	1.39	0.10
			0.00	0.00			1" Ice	2.22	1.54	0.12
RFV01U-D1A	C	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	2.60	1.86	0.18
			0.00	0.00			No Ice	1.88	1.25	0.08
			0.00	0.00			1/2" Ice	2.05	1.39	0.10
			0.00	0.00			1" Ice	2.22	1.54	0.12
RFV01U-D2A	A	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	2.60	1.86	0.18
			0.00	0.00			No Ice	1.88	1.01	0.07
			0.00	0.00			1/2" Ice	2.05	1.14	0.09
			0.00	0.00			1" Ice	2.22	1.28	0.11
RFV01U-D2A	B	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	2.60	1.59	0.15
			0.00	0.00			No Ice	1.88	1.01	0.07
			0.00	0.00			1/2" Ice	2.05	1.14	0.09
			0.00	0.00			1" Ice	2.22	1.28	0.11
RFV01U-D2A	C	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	2.60	1.59	0.15
			0.00	0.00			No Ice	1.88	1.01	0.07
			0.00	0.00			1/2" Ice	2.05	1.14	0.09
			0.00	0.00			1" Ice	2.22	1.28	0.11
FDJ85020Q4-S1	A	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	2.60	1.59	0.15
			0.00	0.00			No Ice	0.96	0.36	0.02
			0.00	0.00			1/2" Ice	1.09	0.43	0.03
			0.00	0.00			1" Ice	1.24	0.52	0.04
FDJ85020Q4-S1	B	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	1.54	0.71	0.08
			0.00	0.00			No Ice	0.96	0.36	0.02
			0.00	0.00			1/2" Ice	1.09	0.43	0.03
			0.00	0.00			1" Ice	1.24	0.52	0.04
FDJ85020Q4-S1	C	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	1.54	0.71	0.08
			0.00	0.00			No Ice	0.96	0.36	0.02
			0.00	0.00			1/2" Ice	1.09	0.43	0.03
			0.00	0.00			1" Ice	1.24	0.52	0.04
RRFDC-3315-PF-48	A	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	1.54	0.71	0.08
			0.00	0.00			No Ice	3.36	2.19	0.02
			0.00	0.00			1/2" Ice	3.60	2.39	0.05
			0.00	0.00			1" Ice	3.84	2.61	0.08
RRFDC-3315-PF-48	B	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	4.34	3.05	0.16
			0.00	0.00			No Ice	3.36	2.19	0.02
			0.00	0.00			1/2" Ice	3.60	2.39	0.05
			0.00	0.00			1" Ice	3.84	2.61	0.08
Platform Mount [LP 1201-1_HR-1]	C	None			0.0000	104.00	2" Ice	4.34	3.05	0.16
							No Ice	26.39	26.39	2.36
							1/2" Ice	31.40	31.40	3.06
							1" Ice	36.20	36.20	3.86
SitePro1 SFS-V-L	A	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	45.40	45.40	5.76
			0.00	0.00			No Ice	4.24	3.96	0.08
			0.00	0.00			1/2" Ice	4.78	4.46	0.10
			0.00	0.00			1" Ice	5.44	5.06	0.14
SitePro1 SFS-V-L	B	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	6.40	5.96	0.17
			0.00	0.00			No Ice	4.24	3.96	0.08
			0.00	0.00			1/2" Ice	4.78	4.46	0.10
			0.00	0.00			1" Ice	5.44	5.06	0.14
SitePro1 SFS-V-L	C	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	2" Ice	6.40	5.96	0.17
			0.00	0.00			No Ice	4.24	3.96	0.08
			0.00	0.00			1/2" Ice	4.78	4.46	0.10
			0.00	0.00			1" Ice	5.44	5.06	0.14
						2" Ice	6.40	5.96	0.17	

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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
2.4" Dia. x 6-ft	A	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
							No Ice	1.43	1.43	0.02
2.4" Dia. x 6-ft	B	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
							No Ice	1.43	1.43	0.02
2.4" Dia. x 6-ft	C	From Centroid-Fa ce	4.00	0.00	0.0000	104.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
							No Ice	1.43	1.43	0.02
**										
Pipe Mount [PM 601-3]	C	None			0.0000	95.00	No Ice	3.17	3.17	0.20
							1/2" Ice	3.79	3.79	0.23
							1" Ice	4.42	4.42	0.28
							2" Ice	5.76	5.76	0.40
							No Ice	3.17	3.17	0.20
**										
OG-860/1920/GPS-A	A	From Centroid-Fa ce	3.00	0.00	0.0000	80.00	No Ice	0.31	0.37	0.00
			0.00	2.00			1/2" Ice	0.40	0.46	0.01
							1" Ice	0.49	0.55	0.01
							2" Ice	0.70	0.77	0.02
							No Ice	0.33	0.62	0.11
Side Arm Mount [SO 901-1]	A	None			0.0000	80.00	No Ice	0.33	0.62	0.11
							1/2" Ice	0.46	0.78	0.11
							1" Ice	0.62	0.97	0.12
							2" Ice	1.01	1.43	0.15
							No Ice	1.43	1.43	0.02
2.4" Dia. x 6-ft	A	From Centroid-Fa ce	3.00	0.00	0.0000	80.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
			0.00	0.00			1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
							No Ice	1.43	1.43	0.02
**										

## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice

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Comb. No.	Description
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	140 - 135	Pole	Max Tension	26	0.00	0.00	0.00
			Max. Compression	26	-10.00	0.00	0.00
			Max. Mx	8	-4.22	-20.75	0.00
			Max. My	14	-4.22	-0.00	-20.74
			Max. Vy	8	5.28	-20.75	0.00
			Max. Vx	14	5.27	-0.00	-20.74
			Max. Torque	19			0.00
L2	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-10.49	0.00	0.00
			Max. Mx	8	-4.49	-48.13	0.00
			Max. My	14	-4.49	-0.00	-48.12
			Max. Vy	8	5.68	-48.13	0.00
			Max. Vx	14	5.68	-0.00	-48.12
			Max. Torque	18			0.00
L3	130 - 125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-11.00	0.00	0.00
			Max. Mx	8	-4.78	-77.59	0.00
			Max. My	14	-4.79	-0.00	-77.57

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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L4	125 - 120	Pole	Max. Vy	8	6.11	-77.59	0.00
			Max. Vx	14	6.10	-0.00	-77.57
			Max. Torque	18			0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.00	0.00	0.01
			Max. Mx	8	-10.61	-138.33	-0.01
			Max. My	14	-10.62	-0.00	-138.32
			Max. Vy	8	14.64	-138.33	-0.01
L5	120 - 115	Pole	Max. Vx	14	14.63	-0.00	-138.32
			Max. Torque	20			-0.01
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.80	0.00	-0.09
			Max. Mx	8	-11.16	-212.57	-0.05
			Max. My	14	-11.16	-0.00	-212.58
			Max. Vy	8	15.07	-212.57	-0.05
			Max. Vx	14	15.07	-0.00	-212.58
L6	115 - 110	Pole	Max. Torque	20			-0.01
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.20	-0.13	-0.13
			Max. Mx	8	-16.94	-318.72	-0.06
			Max. My	14	-16.95	-0.04	-318.69
			Max. Vy	8	20.91	-318.72	-0.06
			Max. Vx	14	20.91	-0.04	-318.69
			Max. Torque	20			-0.01
L7	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.22	-0.26	-0.16
			Max. Mx	8	-17.67	-424.22	-0.08
			Max. My	14	-17.67	-0.08	-424.15
			Max. Vy	8	21.30	-424.22	-0.08
			Max. Vx	14	21.30	-0.08	-424.15
			Max. Torque	20			-0.01
			Max Tension	1	0.00	0.00	0.00
L8	105 - 104	Pole	Max. Compression	26	-39.45	-0.28	-0.17
			Max. Mx	8	-17.82	-445.55	-0.08
			Max. My	14	-17.82	-0.08	-445.48
			Max. Vy	8	21.38	-445.55	-0.08
			Max. Vx	14	21.37	-0.08	-445.48
			Max. Torque	20			-0.01
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.49	-0.29	0.30
L9	104 - 103.75	Pole	Max. Mx	8	-22.55	-452.66	-0.02
			Max. My	2	-22.56	-0.09	452.48
			Max. Vy	8	26.66	-452.66	-0.02
			Max. Vx	14	26.60	-0.09	-452.48
			Max. Torque	20			-0.37
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.04	-0.42	0.27
			Max. Mx	8	-23.58	-587.06	-0.03
L10	103.75 - 98.75	Pole	Max. My	14	-23.59	-0.13	-586.59
			Max. Vy	8	27.11	-587.06	-0.03
			Max. Vx	14	27.05	-0.13	-586.59
			Max. Torque	20			-0.37
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.21	-0.44	0.26
			Max. Mx	8	-23.69	-600.62	-0.03
			Max. My	14	-23.71	-0.13	-600.12
L11	98.75 - 98.25	Pole	Max. Vy	8	27.15	-600.62	-0.03
			Max. Vx	14	27.09	-0.13	-600.12
			Max. Torque	20			-0.37
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.31	-0.45	0.26
			Max. Mx	8	-23.69	-600.62	-0.03
			Max. My	14	-23.71	-0.13	-600.12
			Max. Vy	8	27.15	-600.62	-0.03
L12	98.25 - 98	Pole	Max. Vx	14	27.09	-0.13	-600.12
			Max. Torque	20			-0.37
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.31	-0.45	0.26



<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	40 of 54
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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-23.77	-607.41	-0.03
			Max. My	14	-23.78	-0.13	-606.90
			Max. Vy	8	27.17	-607.41	-0.03
			Max. Vx	14	27.12	-0.13	-606.90
			Max. Torque	20			-0.37
L13	98 - 97	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.72	-0.47	0.25
			Max. Mx	8	-24.03	-634.64	-0.04
			Max. My	14	-24.04	-0.14	-634.06
			Max. Vy	8	27.29	-634.64	-0.04
			Max. Vx	14	27.22	-0.14	-634.06
			Max. Torque	20			-0.37
L14	97 - 96.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.80	-0.48	0.25
			Max. Mx	8	-24.09	-641.47	-0.04
			Max. My	14	-24.11	-0.14	-640.87
			Max. Vy	8	27.31	-641.47	-0.04
			Max. Vx	14	27.24	-0.14	-640.87
			Max. Torque	20			-0.37
L15	96.75 - 88.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.95	-0.63	0.11
			Max. Mx	8	-25.47	-779.71	-0.08
			Max. My	14	-25.48	-0.19	-778.79
			Max. Vy	8	27.94	-779.71	-0.08
			Max. Vx	14	27.88	-0.19	-778.79
			Max. Torque	20			-0.37
L16	88.5 - 88.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.97	-0.74	0.00
			Max. Mx	8	-26.86	-880.48	-0.12
			Max. My	14	-26.87	-0.22	-879.32
			Max. Vy	8	28.35	-880.48	-0.12
			Max. Vx	14	28.28	-0.22	-879.32
			Max. Torque	20			-0.37
L17	88.17 - 87.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.09	-0.74	-0.00
			Max. Mx	8	-26.94	-887.57	-0.12
			Max. My	14	-26.95	-0.22	-886.39
			Max. Vy	8	28.38	-887.57	-0.12
			Max. Vx	14	28.31	-0.22	-886.39
			Max. Torque	20			-0.37
L18	87.92 - 82.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.47	-0.91	-0.16
			Max. Mx	8	-28.57	-1030.78	-0.18
			Max. My	14	-28.58	-0.26	-1029.21
			Max. Vy	8	28.91	-1030.78	-0.18
			Max. Vx	14	28.82	-0.26	-1029.21
			Max. Torque	20			-0.37
L19	82.92 - 77.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.13	-0.86	-0.20
			Max. Mx	8	-30.39	-1176.77	-0.20
			Max. My	14	-30.40	-0.25	-1174.76
			Max. Vy	8	29.53	-1176.77	-0.20
			Max. Vx	14	29.43	-0.25	-1174.76
			Max. Torque	6			0.50
L20	77.92 - 72.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.56	-1.03	-0.37
			Max. Mx	8	-32.09	-1325.66	-0.25
			Max. My	14	-32.10	-0.29	-1323.12
			Max. Vy	8	30.04	-1325.66	-0.25
			Max. Vx	14	29.92	-0.29	-1323.12
			Max. Torque	6			0.50

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L21	72.92 - 68.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.89	-1.20	-0.53
			Max. Mx	8	-33.71	-1467.01	-0.31
			Max. My	14	-33.72	-0.33	-1463.90
			Max. Vy	8	30.52	-1467.01	-0.31
			Max. Vx	14	30.38	-0.33	-1463.90
			Max. Torque	6			0.50
L22	68.25 - 67.98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.03	-1.21	-0.54
			Max. Mx	8	-33.82	-1475.25	-0.31
			Max. My	14	-33.84	-0.33	-1472.11
			Max. Vy	8	30.53	-1475.25	-0.31
			Max. Vx	14	30.40	-0.33	-1472.11
			Max. Torque	6			0.50
L23	67.98 - 67.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.11	-1.21	-0.55
			Max. Mx	8	-33.88	-1479.83	-0.31
			Max. My	14	-33.90	-0.34	-1476.67
			Max. Vy	8	30.56	-1479.83	-0.31
			Max. Vx	14	30.42	-0.34	-1476.67
			Max. Torque	6			0.50
L24	67.83 - 62.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.80	-1.39	-0.72
			Max. Mx	8	-35.78	-1633.92	-0.37
			Max. My	14	-35.80	-0.38	-1630.01
			Max. Vy	8	31.09	-1633.92	-0.37
			Max. Vx	14	30.93	-0.38	-1630.01
			Max. Torque	6			0.50
L25	62.83 - 57.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.51	-1.58	-0.91
			Max. Mx	8	-37.73	-1790.63	-0.43
			Max. My	14	-37.74	-0.43	-1785.88
			Max. Vy	8	31.61	-1790.63	-0.43
			Max. Vx	14	31.43	-0.43	-1785.88
			Max. Torque	6			0.50
L26	57.83 - 52.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.24	-1.77	-1.09
			Max. Mx	8	-39.70	-1949.89	-0.50
			Max. My	14	-39.71	-0.48	-1944.20
			Max. Vy	8	32.11	-1949.89	-0.50
			Max. Vx	14	31.91	-0.48	-1944.20
			Max. Torque	6			0.50
L27	52.83 - 47.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.97	-1.82	-1.15
			Max. Mx	8	-40.22	-1992.67	-0.51
			Max. My	14	-40.24	-0.49	-1986.73
			Max. Vy	8	32.25	-1992.67	-0.51
			Max. Vx	14	32.05	-0.49	-1986.73
			Max. Torque	6			0.50
L28	47.25 - 46.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.44	-2.02	-1.34
			Max. Mx	8	-43.64	-2155.44	-0.58
			Max. My	14	-43.65	-0.54	-2148.50
			Max. Vy	8	32.86	-2155.44	-0.58
			Max. Vx	14	32.65	-0.54	-2148.50
			Max. Torque	6			0.50
L29	46.5 - 41.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.34	-2.22	-1.53
			Max. Mx	8	-45.79	-2320.85	-0.65
			Max. My	14	-45.80	-0.59	-2312.89
			Max. Vy	8	33.32	-2320.85	-0.65

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L30	41.5 - 37.75	Pole	Max. Vx	14	33.11	-0.59	-2312.89
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.54	-2.37	-1.68
			Max. Mx	8	-47.42	-2446.41	-0.70
			Max. My	14	-47.43	-0.63	-2437.67
			Max. Vy	8	33.67	-2446.41	-0.70
			Max. Vx	14	33.45	-0.63	-2437.67
L31	37.75 - 37.5	Pole	Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.69	-2.38	-1.69
			Max. Mx	8	-47.55	-2454.83	-0.70
			Max. My	14	-47.56	-0.63	-2446.04
			Max. Vy	8	33.67	-2454.83	-0.70
			Max. Vx	14	33.46	-0.63	-2446.04
			Max. Torque	6			0.50
L32	37.5 - 32.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.76	-2.58	-1.89
			Max. Mx	8	-49.85	-2624.35	-0.77
			Max. My	14	-49.86	-0.69	-2614.46
			Max. Vy	8	34.14	-2624.35	-0.77
			Max. Vx	14	33.91	-0.69	-2614.46
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
L33	32.5 - 32.25	Pole	Max. Compression	26	-88.93	-2.59	-1.90
			Max. Mx	8	-49.99	-2632.88	-0.78
			Max. My	14	-49.99	-0.69	-2622.94
			Max. Vy	8	34.15	-2632.88	-0.78
			Max. Vx	14	33.92	-0.69	-2622.94
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.83	-2.78	-2.08
L34	32.25 - 27.75	Pole	Max. Mx	8	-52.19	-2787.49	-0.84
			Max. My	14	-52.19	-0.74	-2776.52
			Max. Vy	8	34.57	-2787.49	-0.84
			Max. Vx	14	34.33	-0.74	-2776.52
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.99	-2.79	-2.09
			Max. Mx	8	-52.32	-2796.13	-0.85
L35	27.75 - 27.5	Pole	Max. My	14	-52.33	-0.74	-2785.11
			Max. Vy	8	34.58	-2796.13	-0.85
			Max. Vx	14	34.34	-0.74	-2785.11
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-94.82	-3.07	-2.32
			Max. Mx	8	-54.43	-2943.86	-0.91
			Max. My	14	-54.43	-0.79	-2931.84
L36	27.5 - 23.25	Pole	Max. Vy	8	34.95	-2943.86	-0.91
			Max. Vx	14	34.71	-0.79	-2931.84
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.01	-3.09	-2.34
			Max. Mx	8	-54.58	-2952.60	-0.91
			Max. My	14	-54.59	-0.79	-2940.52
			Max. Vy	8	34.96	-2952.60	-0.91
L37	23.25 - 23	Pole	Max. Vx	14	34.72	-0.79	-2940.52
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.67	-3.26	-2.47
			Max. Mx	8	-55.85	-3031.48	-0.95

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L39	20.75 - 20.5	Pole	Max. My	14	-55.85	-0.82	-3018.86
			Max. Vy	8	35.16	-3031.48	-0.95
			Max. Vx	14	34.92	-0.82	-3018.86
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.85	-3.27	-2.48
			Max. Mx	8	-55.99	-3040.27	-0.95
			Max. My	14	-56.00	-0.82	-3027.60
			Max. Vy	8	35.17	-3040.27	-0.95
L40	20.5 - 15.5	Pole	Max. Vx	14	34.93	-0.82	-3027.60
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.33	-3.60	-2.77
			Max. Mx	8	-58.64	-3217.10	-1.03
			Max. My	14	-58.64	-0.88	-3203.24
			Max. Vy	8	35.57	-3217.10	-1.03
			Max. Vx	14	35.33	-0.88	-3203.24
			Max. Torque	6			0.50
L41	15.5 - 10.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.76	-3.82	-3.03
			Max. Mx	8	-61.32	-3395.80	-1.11
			Max. My	14	-61.32	-0.94	-3380.75
			Max. Vy	8	35.93	-3395.80	-1.11
			Max. Vx	14	35.69	-0.94	-3380.75
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-107.18	-4.04	-3.29
L42	10.5 - 5.5	Pole	Max. Mx	8	-64.03	-3576.30	-1.19
			Max. My	14	-64.03	-1.00	-3560.07
			Max. Vy	8	36.29	-3576.30	-1.19
			Max. Vx	14	36.05	-1.00	-3560.07
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-109.55	-4.18	-3.46
			Max. Mx	8	-65.94	-3703.71	-1.24
			Max. My	14	-65.94	-1.05	-3686.65
L43	5.5 - 2	Pole	Max. Vy	8	36.54	-3703.71	-1.24
			Max. Vx	14	36.30	-1.05	-3686.65
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-109.71	-4.19	-3.47
			Max. Mx	8	-66.09	-3712.84	-1.25
			Max. My	14	-66.09	-1.05	-3695.73
			Max. Vy	8	36.54	-3712.84	-1.25
			Max. Vx	14	36.30	-1.05	-3695.73
L44	2 - 1.75	Pole	Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-109.89	-4.20	-3.48
			Max. Mx	8	-66.24	-3721.98	-1.25
			Max. My	14	-66.24	-1.05	-3704.81
			Max. Vy	8	36.56	-3721.98	-1.25
			Max. Vx	14	36.32	-1.05	-3704.81
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
L45	1.75 - 1.5	Pole	Max. Compression	26	-110.95	-4.26	-3.55
			Max. Mx	8	-67.11	-3776.92	-1.28
			Max. My	14	-67.11	-1.07	-3759.40
			Max. Vy	8	36.70	-3776.92	-1.28
			Max. Vx	14	36.46	-1.07	-3759.40
			Max. Torque	6			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.95	-4.26	-3.55
			Max. Mx	8	-67.11	-3776.92	-1.28
L46	1.5 - 0	Pole	Max. My	14	-67.11	-1.07	-3759.40
			Max. Vy	8	36.70	-3776.92	-1.28
			Max. Vx	14	36.46	-1.07	-3759.40
			Max. Torque	6			0.50

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 44 of 54
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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	32	110.95	-4.39	-7.60
	Max. H <sub>x</sub>	20	67.13	36.67	-0.00
	Max. H <sub>z</sub>	2	67.13	-0.00	36.44
	Max. M <sub>x</sub>	2	3756.69	-0.00	36.44
	Max. M <sub>z</sub>	8	3776.92	-36.67	0.00
	Max. Torsion	6	0.50	-31.59	18.22
	Min. Vert	19	50.35	31.59	-18.22
	Min. H <sub>x</sub>	8	67.13	-36.67	0.00
	Min. H <sub>z</sub>	14	67.13	0.00	-36.44
	Min. M <sub>x</sub>	14	-3759.40	0.00	-36.44
	Min. M <sub>z</sub>	20	-3774.62	36.67	-0.00
	Min. Torsion	18	-0.50	31.59	-18.22

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	55.94	0.00	0.00	1.09	-0.92	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	67.13	0.00	-36.44	-3756.69	-1.24	-0.18
0.9 Dead+1.0 Wind 0 deg - No Ice	50.35	0.00	-36.44	-3706.67	-0.94	-0.18
1.2 Dead+1.0 Wind 30 deg - No Ice	67.13	19.31	-33.40	-3383.07	-1957.74	-0.38
0.9 Dead+1.0 Wind 30 deg - No Ice	50.35	19.31	-33.40	-3338.61	-1931.54	-0.38
1.2 Dead+1.0 Wind 60 deg - No Ice	67.13	31.59	-18.22	-1877.73	-3260.15	-0.50
0.9 Dead+1.0 Wind 60 deg - No Ice	50.35	31.59	-18.22	-1852.89	-3216.17	-0.50
1.2 Dead+1.0 Wind 90 deg - No Ice	67.13	36.67	-0.00	1.28	-3776.92	-0.47
0.9 Dead+1.0 Wind 90 deg - No Ice	50.35	36.67	-0.00	0.93	-3726.08	-0.47
1.2 Dead+1.0 Wind 120 deg - No Ice	67.13	31.59	18.22	1880.30	-3260.05	-0.32
0.9 Dead+1.0 Wind 120 deg - No Ice	50.35	31.59	18.22	1854.77	-3216.08	-0.32
1.2 Dead+1.0 Wind 150 deg - No Ice	67.13	20.50	35.47	3495.12	-2020.77	0.03
0.9 Dead+1.0 Wind 150 deg - No Ice	50.35	20.50	35.47	3449.16	-1994.10	0.03
1.2 Dead+1.0 Wind 180 deg - No Ice	67.13	-0.00	36.44	3759.40	-1.07	0.18
0.9 Dead+1.0 Wind 180 deg - No Ice	50.35	-0.00	36.44	3708.68	-0.77	0.18
1.2 Dead+1.0 Wind 210 deg - No Ice	67.13	-19.31	33.40	3385.79	1955.43	0.38
0.9 Dead+1.0 Wind 210 deg - No Ice	50.35	-19.31	33.40	3340.63	1929.82	0.38

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	<p><b>Client</b></p> <p>Crown Castle</p>	<p><b>Designed by</b></p> <p>dluna</p>

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 240 deg - No Ice	67.13	-31.59	18.22	1880.45	3257.84	0.50
0.9 Dead+1.0 Wind 240 deg - No Ice	50.35	-31.59	18.22	1854.91	3214.46	0.50
1.2 Dead+1.0 Wind 270 deg - No Ice	67.13	-36.67	0.00	1.45	3774.62	0.47
0.9 Dead+1.0 Wind 270 deg - No Ice	50.35	-36.67	0.00	1.09	3724.38	0.47
1.2 Dead+1.0 Wind 300 deg - No Ice	67.13	-31.59	-18.22	-1877.59	3257.76	0.32
0.9 Dead+1.0 Wind 300 deg - No Ice	50.35	-31.59	-18.22	-1852.75	3214.38	0.32
1.2 Dead+1.0 Wind 330 deg - No Ice	67.13	-20.50	-35.47	-3492.42	2018.47	-0.03
0.9 Dead+1.0 Wind 330 deg - No Ice	50.35	-20.50	-35.47	-3447.15	1992.40	-0.03
1.2 Dead+1.0 Ice+1.0 Temp	110.95	0.00	0.00	3.55	-4.26	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	110.95	0.00	-8.24	-902.49	-4.68	-0.05
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	110.95	4.13	-7.15	-783.24	-459.53	-0.10
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	110.95	7.14	-4.12	-449.35	-790.34	-0.13
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	110.95	8.24	-0.00	3.79	-911.88	-0.12
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	110.95	7.14	4.12	456.94	-790.32	-0.08
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	110.95	4.39	7.60	826.21	-479.92	0.04
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	110.95	-0.00	8.24	910.11	-4.65	0.05
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	110.95	-4.13	7.15	790.86	450.21	0.10
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	110.95	-7.14	4.12	456.97	781.02	0.13
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	110.95	-8.24	0.00	3.83	902.55	0.12
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	110.95	-7.14	-4.12	-449.33	781.00	0.08
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	110.95	-4.39	-7.60	-818.59	470.60	-0.04
Dead+Wind 0 deg - Service	55.94	0.00	-7.91	-808.74	-0.97	-0.04
Dead+Wind 30 deg - Service	55.94	4.19	-7.25	-728.32	-422.66	-0.08
Dead+Wind 60 deg - Service	55.94	6.86	-3.96	-403.82	-703.28	-0.11
Dead+Wind 90 deg - Service	55.94	7.96	-0.00	1.11	-814.65	-0.10
Dead+Wind 120 deg - Service	55.94	6.86	3.95	406.04	-703.26	-0.07
Dead+Wind 150 deg - Service	55.94	4.45	7.70	754.22	-436.29	0.01
Dead+Wind 180 deg - Service	55.94	-0.00	7.91	810.99	-0.94	0.04
Dead+Wind 210 deg - Service	55.94	-4.19	7.25	730.57	420.75	0.08
Dead+Wind 240 deg - Service	55.94	-6.86	3.96	406.07	701.37	0.11
Dead+Wind 270 deg - Service	55.94	-7.96	0.00	1.14	812.74	0.10
Dead+Wind 300 deg - Service	55.94	-6.86	-3.95	-403.79	701.35	0.07
Dead+Wind 330 deg - Service	55.94	-4.45	-7.70	-751.97	434.38	-0.01

## Solution Summary

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	46 of 54
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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-55.94	0.00	0.00	55.94	0.00	0.000%
2	0.00	-67.13	-36.44	-0.00	67.13	36.44	0.000%
3	0.00	-50.35	-36.44	-0.00	50.35	36.44	0.000%
4	19.31	-67.13	-33.40	-19.31	67.13	33.40	0.000%
5	19.31	-50.35	-33.40	-19.31	50.35	33.40	0.000%
6	31.59	-67.13	-18.22	-31.59	67.13	18.22	0.000%
7	31.59	-50.35	-18.22	-31.59	50.35	18.22	0.000%
8	36.67	-67.13	-0.00	-36.67	67.13	0.00	0.000%
9	36.67	-50.35	-0.00	-36.67	50.35	0.00	0.000%
10	31.59	-67.13	18.22	-31.59	67.13	-18.22	0.000%
11	31.59	-50.35	18.22	-31.59	50.35	-18.22	0.000%
12	20.50	-67.13	35.47	-20.50	67.13	-35.47	0.000%
13	20.50	-50.35	35.47	-20.50	50.35	-35.47	0.000%
14	-0.00	-67.13	36.44	0.00	67.13	-36.44	0.000%
15	-0.00	-50.35	36.44	0.00	50.35	-36.44	0.000%
16	-19.31	-67.13	33.40	19.31	67.13	-33.40	0.000%
17	-19.31	-50.35	33.40	19.31	50.35	-33.40	0.000%
18	-31.59	-67.13	18.22	31.59	67.13	-18.22	0.000%
19	-31.59	-50.35	18.22	31.59	50.35	-18.22	0.000%
20	-36.67	-67.13	0.00	36.67	67.13	-0.00	0.000%
21	-36.67	-50.35	0.00	36.67	50.35	-0.00	0.000%
22	-31.59	-67.13	-18.22	31.59	67.13	18.22	0.000%
23	-31.59	-50.35	-18.22	31.59	50.35	18.22	0.000%
24	-20.50	-67.13	-35.47	20.50	67.13	35.47	0.000%
25	-20.50	-50.35	-35.47	20.50	50.35	35.47	0.000%
26	0.00	-110.95	0.00	0.00	110.95	0.00	0.000%
27	0.00	-110.95	-8.24	-0.00	110.95	8.24	0.000%
28	4.13	-110.95	-7.15	-4.13	110.95	7.15	0.000%
29	7.14	-110.95	-4.12	-7.14	110.95	4.12	0.000%
30	8.24	-110.95	-0.00	-8.24	110.95	0.00	0.000%
31	7.14	-110.95	4.12	-7.14	110.95	-4.12	0.000%
32	4.39	-110.95	7.60	-4.39	110.95	-7.60	0.000%
33	-0.00	-110.95	8.24	0.00	110.95	-8.24	0.000%
34	-4.13	-110.95	7.15	4.13	110.95	-7.15	0.000%
35	-7.14	-110.95	4.12	7.14	110.95	-4.12	0.000%
36	-8.24	-110.95	0.00	8.24	110.95	-0.00	0.000%
37	-7.14	-110.95	-4.12	7.14	110.95	4.12	0.000%
38	-4.39	-110.95	-7.60	4.39	110.95	7.60	0.000%
39	0.00	-55.94	-7.91	-0.00	55.94	7.91	0.000%
40	4.19	-55.94	-7.25	-4.19	55.94	7.25	0.000%
41	6.86	-55.94	-3.96	-6.86	55.94	3.96	0.000%
42	7.96	-55.94	-0.00	-7.96	55.94	0.00	0.000%
43	6.86	-55.94	3.95	-6.86	55.94	-3.95	0.000%
44	4.45	-55.94	7.70	-4.45	55.94	-7.70	0.000%
45	-0.00	-55.94	7.91	0.00	55.94	-7.91	0.000%
46	-4.19	-55.94	7.25	4.19	55.94	-7.25	0.000%
47	-6.86	-55.94	3.96	6.86	55.94	-3.96	0.000%
48	-7.96	-55.94	0.00	7.96	55.94	-0.00	0.000%
49	-6.86	-55.94	-3.95	6.86	55.94	3.95	0.000%
50	-4.45	-55.94	-7.70	4.45	55.94	7.70	0.000%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001

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2	Yes	5	0.00000001	0.00043772
3	Yes	5	0.00000001	0.00016291
4	Yes	7	0.00000001	0.00015462
5	Yes	6	0.00000001	0.00080916
6	Yes	7	0.00000001	0.00014980
7	Yes	6	0.00000001	0.00078891
8	Yes	5	0.00000001	0.00057819
9	Yes	5	0.00000001	0.00024657
10	Yes	7	0.00000001	0.00014819
11	Yes	6	0.00000001	0.00077983
12	Yes	7	0.00000001	0.00015945
13	Yes	6	0.00000001	0.00083030
14	Yes	5	0.00000001	0.00043874
15	Yes	5	0.00000001	0.00016351
16	Yes	7	0.00000001	0.00015612
17	Yes	6	0.00000001	0.00081737
18	Yes	7	0.00000001	0.00014777
19	Yes	6	0.00000001	0.00077771
20	Yes	5	0.00000001	0.00057561
21	Yes	5	0.00000001	0.00024521
22	Yes	7	0.00000001	0.00014935
23	Yes	6	0.00000001	0.00078662
24	Yes	7	0.00000001	0.00015914
25	Yes	6	0.00000001	0.00082901
26	Yes	4	0.00000001	0.00000001
27	Yes	7	0.00000001	0.00023220
28	Yes	7	0.00000001	0.00028156
29	Yes	7	0.00000001	0.00028127
30	Yes	7	0.00000001	0.00023393
31	Yes	7	0.00000001	0.00028221
32	Yes	7	0.00000001	0.00029325
33	Yes	7	0.00000001	0.00023331
34	Yes	7	0.00000001	0.00028098
35	Yes	7	0.00000001	0.00027977
36	Yes	7	0.00000001	0.00023199
37	Yes	7	0.00000001	0.00027879
38	Yes	7	0.00000001	0.00028950
39	Yes	5	0.00000001	0.00007820
40	Yes	5	0.00000001	0.00047982
41	Yes	5	0.00000001	0.00046313
42	Yes	5	0.00000001	0.00008048
43	Yes	5	0.00000001	0.00045068
44	Yes	5	0.00000001	0.00050866
45	Yes	5	0.00000001	0.00007835
46	Yes	5	0.00000001	0.00049223
47	Yes	5	0.00000001	0.00044663
48	Yes	5	0.00000001	0.00008032
49	Yes	5	0.00000001	0.00045853
50	Yes	5	0.00000001	0.00050416

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	21.9900	44	1.4876	0.0004
L2	135 - 130	20.4347	44	1.4814	0.0004
L3	130 - 125	18.8929	44	1.4618	0.0004
L4	125 - 120	17.3774	44	1.4315	0.0004
L5	120 - 115	15.8988	44	1.3897	0.0004



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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L6	115 - 110	14.4747	44	1.3277	0.0004
L7	110 - 105	13.1256	44	1.2460	0.0004
L8	105 - 104	11.8715	44	1.1470	0.0004
L9	104 - 103.75	11.6335	44	1.1258	0.0004
L10	103.75 - 98.75	11.5746	44	1.1228	0.0004
L11	98.75 - 98.25	10.4332	44	1.0559	0.0004
L12	98.25 - 98	10.3230	44	1.0488	0.0004
L13	98 - 97	10.2681	44	1.0465	0.0004
L14	97 - 96.75	10.0499	44	1.0373	0.0003
L15	96.75 - 88.5	9.9957	44	1.0341	0.0003
L16	91.75 - 88.17	8.9489	44	0.9646	0.0003
L17	88.17 - 87.92	8.2352	44	0.9367	0.0003
L18	87.92 - 82.92	8.1862	44	0.9341	0.0003
L19	82.92 - 77.92	7.2375	44	0.8777	0.0003
L20	77.92 - 72.92	6.3491	44	0.8188	0.0002
L21	72.92 - 68.25	5.5236	44	0.7578	0.0002
L22	68.25 - 67.98	4.8116	44	0.6983	0.0002
L23	67.98 - 67.83	4.7722	44	0.6953	0.0002
L24	67.83 - 62.83	4.7503	44	0.6937	0.0002
L25	62.83 - 57.83	4.0535	44	0.6373	0.0002
L26	57.83 - 52.83	3.4166	44	0.5791	0.0001
L27	52.83 - 47.25	2.8409	44	0.5203	0.0001
L28	51.5 - 46.5	2.6982	44	0.5048	0.0001
L29	46.5 - 41.5	2.1850	44	0.4714	0.0001
L30	41.5 - 37.75	1.7216	44	0.4139	0.0001
L31	37.75 - 37.5	1.4137	44	0.3701	0.0001
L32	37.5 - 32.5	1.3944	44	0.3675	0.0001
L33	32.5 - 32.25	1.0381	44	0.3131	0.0001
L34	32.25 - 27.75	1.0218	44	0.3105	0.0001
L35	27.75 - 27.5	0.7509	44	0.2643	0.0000
L36	27.5 - 23.25	0.7371	44	0.2618	0.0000
L37	23.25 - 23	0.5235	44	0.2183	0.0000
L38	23 - 20.75	0.5121	44	0.2160	0.0000
L39	20.75 - 20.5	0.4152	44	0.1955	0.0000
L40	20.5 - 15.5	0.4050	44	0.1931	0.0000
L41	15.5 - 10.5	0.2282	44	0.1446	0.0000
L42	10.5 - 5.5	0.1021	44	0.0964	0.0000
L43	5.5 - 2	0.0263	44	0.0485	0.0000
L44	2 - 1.75	0.0031	44	0.0151	0.0000
L45	1.75 - 1.5	0.0023	44	0.0127	0.0000
L46	1.5 - 0	0.0017	44	0.0109	0.0000

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	APXVSP18-C-A20 w/ Mount Pipe	44	21.9900	1.4876	0.0004	22204
137.00	TME-1900MHz RRH (65MHz)	44	21.0560	1.4850	0.0004	22204
122.00	AIR 6419 B77G w/ Mount Pipe	44	16.4848	1.4084	0.0004	6427
115.00	AIR 32 B2A/B66AA w/ Mount Pipe	44	14.4747	1.3277	0.0004	4005
104.00	LNx-6514DS-VTM w/ Mount Pipe	44	11.6335	1.1258	0.0004	3405
95.00	Pipe Mount [PM 601-3]	44	9.6215	1.0083	0.0003	4546
80.00	OG-860/1920/GPS-A	44	6.7112	0.8434	0.0002	4856

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b> BLC Drive (SSUSA) (BU 876342)	<b>Page</b> 49 of 54
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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	101.9255	12	6.9158	0.0020
L2	135 - 130	94.7237	12	6.8867	0.0020
L3	130 - 125	87.5845	12	6.7954	0.0020
L4	125 - 120	80.5669	12	6.6538	0.0020
L5	120 - 115	73.7191	12	6.4591	0.0020
L6	115 - 110	67.1228	12	6.1704	0.0020
L7	110 - 105	60.8719	12	5.7904	0.0020
L8	105 - 104	55.0594	12	5.3298	0.0020
L9	104 - 103.75	53.9561	12	5.2314	0.0020
L10	103.75 - 98.75	53.6832	12	5.2174	0.0019
L11	98.75 - 98.25	48.3912	12	4.9061	0.0017
L12	98.25 - 98	47.8802	12	4.8731	0.0016
L13	98 - 97	47.6259	12	4.8624	0.0016
L14	97 - 96.75	46.6141	12	4.8194	0.0016
L15	96.75 - 88.5	46.3627	12	4.8043	0.0016
L16	91.75 - 88.17	41.5081	12	4.4810	0.0014
L17	88.17 - 87.92	38.1983	12	4.3514	0.0013
L18	87.92 - 82.92	37.9711	12	4.3390	0.0013
L19	82.92 - 77.92	33.5708	12	4.0767	0.0012
L20	77.92 - 72.92	29.4504	12	3.8026	0.0011
L21	72.92 - 68.25	25.6211	12	3.5189	0.0010
L22	68.25 - 67.98	22.3177	12	3.2422	0.0008
L23	67.98 - 67.83	22.1349	12	3.2285	0.0008
L24	67.83 - 62.83	22.0337	12	3.2209	0.0008
L25	62.83 - 57.83	18.8009	12	2.9585	0.0007
L26	57.83 - 52.83	15.8464	12	2.6883	0.0006
L27	52.83 - 47.25	13.1759	12	2.4150	0.0005
L28	51.5 - 46.5	12.5136	12	2.3427	0.0005
L29	46.5 - 41.5	10.1333	12	2.1874	0.0005
L30	41.5 - 37.75	7.9833	12	1.9207	0.0004
L31	37.75 - 37.5	6.5552	12	1.7172	0.0003
L32	37.5 - 32.5	6.4656	12	1.7048	0.0003
L33	32.5 - 32.25	4.8133	12	1.4523	0.0003
L34	32.25 - 27.75	4.7375	12	1.4405	0.0003
L35	27.75 - 27.5	3.4814	12	1.2260	0.0002
L36	27.5 - 23.25	3.4175	12	1.2142	0.0002
L37	23.25 - 23	2.4269	12	1.0123	0.0002
L38	23 - 20.75	2.3742	12	1.0017	0.0002
L39	20.75 - 20.5	1.9246	12	0.9065	0.0002
L40	20.5 - 15.5	1.8774	12	0.8954	0.0002
L41	15.5 - 10.5	1.0579	12	0.6704	0.0001
L42	10.5 - 5.5	0.4733	12	0.4469	0.0001
L43	5.5 - 2	0.1220	12	0.2247	0.0000
L44	2 - 1.75	0.0141	12	0.0698	0.0000
L45	1.75 - 1.5	0.0108	12	0.0586	0.0000
L46	1.5 - 0	0.0079	12	0.0503	0.0000

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	APXVSPP18-C-A20 w/ Mount Pipe	12	101.9255	6.9158	0.0020	4886

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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
137.00	TME-1900MHz RRH (65MHz)	12	97.6005	6.9036	0.0020	4886
122.00	AIR 6419 B77G w/ Mount Pipe	12	76.4332	6.5461	0.0020	1415
115.00	AIR 32 B2A/B66AA w/ Mount Pipe	12	67.1228	6.1704	0.0020	881
104.00	LNx-6514DS-VTM w/ Mount Pipe	12	53.9561	5.2314	0.0020	744
95.00	Pipe Mount [PM 601-3]	12	44.6273	4.6845	0.0015	991
80.00	OG-860/1920/GPS-A	12	31.1298	3.9171	0.0012	1054

## Compression Checks

## Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> /φP <sub>n</sub>
L1	140 - 135 (1)	TP17.0151x16x0.25	5.00	0.00	0.0	13.4959	-4.20	789.51	0.005
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	5.00	0.00	0.0	14.3131	-4.47	837.32	0.005
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	5.00	0.00	0.0	15.1303	-4.77	885.12	0.005
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	5.00	0.00	0.0	15.9475	-10.57	932.93	0.011
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	5.00	0.00	0.0	16.7647	-11.12	980.74	0.011
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	5.00	0.00	0.0	17.5819	-16.88	1028.54	0.016
L7	110 - 105 (7)	TP23.106x22.0909x0.25	5.00	0.00	0.0	18.3991	-17.62	1076.35	0.016
L8	105 - 104 (8)	TP23.309x23.106x0.25	1.00	0.00	0.0	18.5625	-17.77	1085.91	0.016
L9	104 - 103.75 (9)	TP23.3598x23.309x0.4625	0.25	0.00	0.0	34.0998	-22.50	1994.84	0.011
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	5.00	0.00	0.0	34.6673	-23.52	2028.03	0.012
L11	98.75 - 98.25 (11)	TP24.4765x24.375x0.45	0.50	0.00	0.0	34.8144	-23.63	2036.64	0.012
L12	98.25 - 98 (12)	TP24.5272x24.4765x0.725	0.25	0.00	0.0	55.5663	-23.70	3250.63	0.007
L13	98 - 97 (13)	TP24.7303x24.5272x0.725	1.00	0.00	0.0	56.0403	-23.96	3278.36	0.007
L14	97 - 96.75 (14)	TP24.781x24.7303x0.5125	0.25	0.00	0.0	40.0491	-24.02	2342.87	0.010
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	8.25	0.00	0.0	40.7268	-25.39	2382.52	0.011
L16	88.5 - 88.17 (16)	TP26.0231x25.2962x0.5625	3.58	0.00	0.0	46.1155	-26.77	2697.76	0.010
L17	88.17 - 87.92 (17)	TP26.0738x26.0231x0.7625	0.25	0.00	0.0	62.1457	-26.85	3635.52	0.007
L18	87.92 - 82.92 (18)	TP27.0891x26.0738x0.7375	5.00	0.00	0.0	62.5785	-28.48	3660.84	0.008
L19	82.92 - 77.92 (19)	TP28.1044x27.0891x0.725	5.00	0.00	0.0	63.9171	-30.23	3739.15	0.008
L20	77.92 - 72.92 (20)	TP29.1196x28.1044x0.7125	5.00	0.00	0.0	65.1731	-31.92	3812.63	0.008
L21	72.92 - 68.25 (21)	TP30.0679x29.1196x0.6875	4.67	0.00	0.0	65.0408	-33.52	3804.89	0.009
L22	68.25 - 67.98 (22)	TP30.1227x30.0679x0.8125	0.27	0.00	0.0	76.6829	-33.64	4485.95	0.007
L23	67.98 - 67.83 (23)	TP30.1532x30.1227x0.8125	0.15	0.00	0.0	76.7625	-33.70	4490.61	0.008
L24	67.83 - 62.83 (24)	TP31.1684x30.1532x0.7875	5.00	0.00	0.0	77.0385	-35.60	4506.75	0.008
L25	62.83 - 57.83 (25)	TP32.1837x31.1684x0.7625	5.00	0.00	0.0	77.1469	-37.54	4513.09	0.008
L26	57.83 - 52.83	TP33.199x32.1837x0.75	5.00	0.00	0.0	78.3643	-39.51	4584.31	0.009

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	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
L27	52.83 - 47.25	TP34.332x33.199x0.75	5.58	0.00	0.0	79.0164	-40.04	4622.46	0.009
L28	47.25 - 46.5	TP33.8592x32.844x0.8	5.00	0.00	0.0	85.1604	-43.46	4981.88	0.009
L29	46.5 - 41.5 (29)	TP34.8743x33.8592x0.8	5.00	0.00	0.0	87.7754	-45.62	5134.86	0.009
L30	41.5 - 37.75	TP35.6357x34.8743x0.775	3.75	0.00	0.0	86.9948	-47.27	5089.20	0.009
L31	37.75 - 37.5	TP35.6864x35.6357x0.85	0.25	0.00	0.0	95.3473	-47.40	5577.82	0.008
L32	37.5 - 32.5 (32)	TP36.7016x35.6864x0.825	5.00	0.00	0.0	95.3061	-49.71	5575.41	0.009
L33	32.5 - 32.25	TP36.7523x36.7016x0.875	0.25	0.00	0.0	101.084	-49.85	5913.44	0.008
L34	32.25 - 27.75	TP37.666x36.7523x0.8625	4.50	0.00	0.0	102.212	-52.07	5979.43	0.009
L35	27.75 - 27.5	TP37.7167x37.666x0.8625	0.25	0.00	0.0	102.353	-52.20	5987.67	0.009
L36	27.5 - 23.25	TP38.5796x37.7167x0.85	4.25	0.00	0.0	103.266	-54.32	6041.05	0.009
L37	23.25 - 23 (37)	TP38.6303x38.5796x0.95	0.25	0.00	0.0	115.264	-54.48	6742.95	0.008
L38	23 - 20.75 (38)	TP39.0872x38.6303x0.95	2.25	0.00	0.0	116.662	-55.75	6824.70	0.008
L39	20.75 - 20.5	TP39.1379x39.0872x0.9	0.25	0.00	0.0	110.813	-55.90	6482.59	0.009
L40	20.5 - 15.5 (40)	TP40.1531x39.1379x0.875	5.00	0.00	0.0	110.666	-58.56	6473.96	0.009
L41	15.5 - 10.5 (41)	TP41.1682x40.1531x0.8625	5.00	0.00	0.0	111.939	-61.27	6548.43	0.009
L42	10.5 - 5.5 (42)	TP42.1833x41.1682x0.85	5.00	0.00	0.0	113.129	-64.00	6618.07	0.010
L43	5.5 - 2 (43)	TP42.8939x42.1833x0.8375	3.50	0.00	0.0	113.416	-65.93	6634.82	0.010
L44	2 - 1.75 (44)	TP42.9447x42.8939x0.825	0.25	0.00	0.0	111.891	-66.08	6545.62	0.010
L45	1.75 - 1.5 (45)	TP42.9955x42.9447x1.125	0.25	0.00	0.0	151.676	-66.23	8873.03	0.007
L46	1.5 - 0 (46)	TP43.3x42.9955x1.1	1.50	0.00	0.0	149.472	-67.11	8744.14	0.008

### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft	φM <sub>ux</sub> kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M <sub>uy</sub> kip-ft	φM <sub>uy</sub> kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	140 - 135 (1)	TP17.0151x16x0.25	20.80	337.43	0.062	0.00	337.43	0.000
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	48.24	379.85	0.127	0.00	379.85	0.000
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	77.77	424.78	0.183	0.00	424.78	0.000
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	138.62	472.22	0.294	0.00	472.22	0.000
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	213.04	519.85	0.410	0.00	519.85	0.000
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	319.43	563.75	0.567	0.00	563.75	0.000
L7	110 - 105 (7)	TP23.106x22.0909x0.25	425.17	608.56	0.699	0.00	608.56	0.000
L8	105 - 104 (8)	TP23.309x23.106x0.25	446.61	617.62	0.723	0.00	617.62	0.000
L9	104 - 103.75 (9)	TP23.3598x23.309x0.4625	453.76	1158.38	0.392	0.00	1158.38	0.000
L10	103.75 - 98.75	TP24.375x23.3598x0.45	589.00	1232.19	0.478	0.00	1232.19	0.000

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Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$\phi M_{ux}$ kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	$M_{uy}$ kip-ft	$\phi M_{uy}$ kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L11	(10) 98.75 - 98.25	TP24.4765x24.375x0.45	602.68	1242.77	0.485	0.00	1242.77	0.000
L12	(11) 98.25 - 98 (12)	TP24.5272x24.4765x0.725	609.54	1942.68	0.314	0.00	1942.68	0.000
L13	98 - 97 (13)	TP24.7303x24.5272x0.725	637.08	1976.45	0.322	0.00	1976.45	0.000
L14	97 - 96.75 (14)	TP24.781x24.7303x0.5125	643.99	1440.66	0.447	0.00	1440.66	0.000
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	784.28	1529.10	0.513	0.00	1529.10	0.000
L16	88.5 - 88.17 (16)	TP26.0231x25.2962x0.5625	886.93	1738.71	0.510	0.00	1738.71	0.000
L17	88.17 - 87.92 (17)	TP26.0738x26.0231x0.7625	894.17	2311.20	0.387	0.00	2311.20	0.000
L18	87.92 - 82.92 (18)	TP27.0891x26.0738x0.7375	1040.58	2427.98	0.429	0.00	2427.98	0.000
L19	82.92 - 77.92 (19)	TP28.1044x27.0891x0.725	1191.03	2580.43	0.462	0.00	2580.43	0.000
L20	77.92 - 72.92 (20)	TP29.1196x28.1044x0.7125	1347.15	2733.63	0.493	0.00	2733.63	0.000
L21	72.92 - 68.25 (21)	TP30.0679x29.1196x0.6875	1496.72	2826.18	0.530	0.00	2826.18	0.000
L22	68.25 - 67.98 (22)	TP30.1227x30.0679x0.8125	1505.47	3310.12	0.455	0.00	3310.12	0.000
L23	67.98 - 67.83 (23)	TP30.1532x30.1227x0.8125	1510.34	3317.09	0.455	0.00	3317.09	0.000
L24	67.83 - 62.83 (24)	TP31.1684x30.1532x0.7875	1674.93	3453.00	0.485	0.00	3453.00	0.000
L25	62.83 - 57.83 (25)	TP32.1837x31.1684x0.7625	1843.77	3582.03	0.515	0.00	3582.03	0.000
L26	57.83 - 52.83 (26)	TP33.199x32.1837x0.75	2016.80	3761.81	0.536	0.00	3761.81	0.000
L27	52.83 - 47.25 (27)	TP34.332x33.199x0.75	2063.50	3825.40	0.539	0.00	3825.40	0.000
L28	47.25 - 46.5 (28)	TP33.8592x32.844x0.8	2241.46	4160.51	0.539	0.00	4160.51	0.000
L29	46.5 - 41.5 (29)	TP34.8743x33.8592x0.8	2422.81	4423.06	0.548	0.00	4423.06	0.000
L30	41.5 - 37.75 (30)	TP35.6357x34.8743x0.775	2560.80	4490.36	0.570	0.00	4490.36	0.000
L31	37.75 - 37.5 (31)	TP35.6864x35.6357x0.85	2570.06	4907.65	0.524	0.00	4907.65	0.000
L32	37.5 - 32.5 (32)	TP36.7016x35.6864x0.825	2756.80	5058.93	0.545	0.00	5058.93	0.000
L33	32.5 - 32.25 (33)	TP36.7523x36.7016x0.875	2766.21	5358.47	0.516	0.00	5358.47	0.000
L34	32.25 - 27.75 (34)	TP37.666x36.7523x0.8625	2936.93	5563.31	0.528	0.00	5563.31	0.000
L35	27.75 - 27.5 (35)	TP37.7167x37.666x0.8625	2946.49	5578.84	0.528	0.00	5578.84	0.000
L36	27.5 - 23.25 (36)	TP38.5796x37.7167x0.85	3109.99	5767.19	0.539	0.00	5767.19	0.000
L37	23.25 - 23 (37)	TP38.6303x38.5796x0.95	3119.68	6412.05	0.487	0.00	6412.05	0.000
L38	23 - 20.75 (38)	TP39.0872x38.6303x0.95	3207.12	6570.40	0.488	0.00	6570.40	0.000
L39	20.75 - 20.5 (39)	TP39.1379x39.0872x0.9	3216.87	6265.92	0.513	0.00	6265.92	0.000
L40	20.5 - 15.5 (40)	TP40.1531x39.1379x0.875	3413.23	6435.72	0.530	0.00	6435.72	0.000
L41	15.5 - 10.5 (41)	TP41.1682x40.1531x0.8625	3612.07	6685.81	0.540	0.00	6685.81	0.000
L42	10.5 - 5.5 (42)	TP42.1833x41.1682x0.85	3813.26	6934.84	0.550	0.00	6934.84	0.000
L43	5.5 - 2 (43)	TP42.8939x42.1833x0.8375	3955.47	7078.54	0.559	0.00	7078.54	0.000
L44	2 - 1.75 (44)	TP42.9447x42.8939x0.825	3965.67	6996.12	0.567	0.00	6996.12	0.000
L45	1.75 - 1.5 (45)	TP42.9955x42.9447x1.125	3975.88	9360.75	0.425	0.00	9360.75	0.000
L46	1.5 - 0 (46)	TP43.3x42.9955x1.1	4037.25	9304.67	0.434	0.00	9304.67	0.000

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	<b>Client</b> Crown Castle	<b>Designed by</b> dluna

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140 - 135 (1)	TP17.0151x16x0.25	5.29	236.85	0.022	0.00	349.29	0.000
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	5.70	251.20	0.023	0.00	392.87	0.000
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	6.12	265.54	0.023	0.00	439.01	0.000
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	14.67	279.88	0.052	0.00	487.72	0.000
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	15.10	294.22	0.051	0.00	538.98	0.000
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	20.96	308.56	0.068	0.00	592.81	0.000
L7	110 - 105 (7)	TP23.106x22.0909x0.25	21.41	322.90	0.066	0.01	649.19	0.000
L8	105 - 104 (8)	TP23.309x23.106x0.25	21.51	325.77	0.066	0.01	660.78	0.000
L9	104 - 103.75 (9)	TP23.3598x23.309x0.4625	26.77	598.45	0.045	0.19	1205.35	0.000
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	27.35	608.41	0.045	0.19	1280.41	0.000
L11	98.75 - 98.25 (11)	TP24.4765x24.375x0.45	27.42	610.99	0.045	0.19	1291.29	0.000
L12	98.25 - 98 (12)	TP24.5272x24.4765x0.725	27.45	975.19	0.028	0.19	2041.77	0.000
L13	98 - 97 (13)	TP24.7303x24.5272x0.725	27.63	983.51	0.028	0.18	2076.75	0.000
L14	97 - 96.75 (14)	TP24.781x24.7303x0.5125	27.66	702.86	0.039	0.18	1500.42	0.000
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	28.43	714.76	0.040	0.18	1590.42	0.000
L16	88.5 - 88.17 (16)	TP26.0231x25.2962x0.5625	28.94	809.33	0.036	0.18	1812.56	0.000
L17	88.17 - 87.92 (17)	TP26.0738x26.0231x0.7625	28.97	1090.66	0.027	0.18	2428.31	0.000
L18	87.92 - 82.92 (18)	TP27.0891x26.0738x0.7375	29.62	1098.25	0.027	0.18	2545.71	0.000
L19	82.92 - 77.92 (19)	TP28.1044x27.0891x0.725	30.81	1121.75	0.027	0.02	2701.58	0.000
L20	77.92 - 72.92 (20)	TP29.1196x28.1044x0.7125	31.64	1143.79	0.028	0.01	2858.07	0.000
L21	72.92 - 68.25 (21)	TP30.0679x29.1196x0.6875	32.42	1141.47	0.028	0.00	2949.99	0.000
L22	68.25 - 67.98 (22)	TP30.1227x30.0679x0.8125	32.45	1345.78	0.024	0.00	3469.72	0.000
L23	67.98 - 67.83 (23)	TP30.1532x30.1227x0.8125	32.48	1347.18	0.024	0.00	3476.93	0.000
L24	67.83 - 62.83 (24)	TP31.1684x30.1532x0.7875	33.35	1352.03	0.025	0.01	3613.15	0.000
L25	62.83 - 57.83 (25)	TP32.1837x31.1684x0.7625	34.19	1353.93	0.025	0.02	3742.13	0.000
L26	57.83 - 52.83 (26)	TP33.199x32.1837x0.75	35.03	1375.29	0.025	0.03	3925.51	0.000
L27	52.83 - 47.25 (27)	TP34.332x33.199x0.75	35.20	1386.74	0.025	0.03	3991.12	0.000
L28	47.25 - 46.5 (28)	TP33.8592x32.844x0.8	35.96	1494.57	0.024	0.03	4346.17	0.000
L29	46.5 - 41.5 (29)	TP34.8743x33.8592x0.8	36.58	1540.46	0.024	0.03	4617.18	0.000
L30	41.5 - 37.75 (30)	TP35.6357x34.8743x0.775	37.03	1526.76	0.024	0.03	4681.73	0.000
L31	37.75 - 37.5 (31)	TP35.6864x35.6357x0.85	37.04	1673.35	0.022	0.03	5127.66	0.000
L32	37.5 - 32.5 (32)	TP36.7016x35.6864x0.825	37.65	1672.62	0.023	0.03	5278.48	0.000
L33	32.5 - 32.25 (33)	TP36.7523x36.7016x0.875	37.66	1774.03	0.021	0.03	5598.62	0.000
L34	32.25 - 27.75 (34)	TP37.666x36.7523x0.8625	38.21	1793.83	0.021	0.03	5807.23	0.000

<b>tnxTower</b>  <b>Tower Engineering Professionals, Inc.</b> 326 Tyron Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	<b>Job</b>	BLC Drive (SSUSA) (BU 876342)	<b>Page</b>	54 of 54
	<b>Project</b>	TEP No. 25566.601905	<b>Date</b>	15:08:40 09/16/21
	<b>Client</b>	Crown Castle	<b>Designed by</b>	dluna

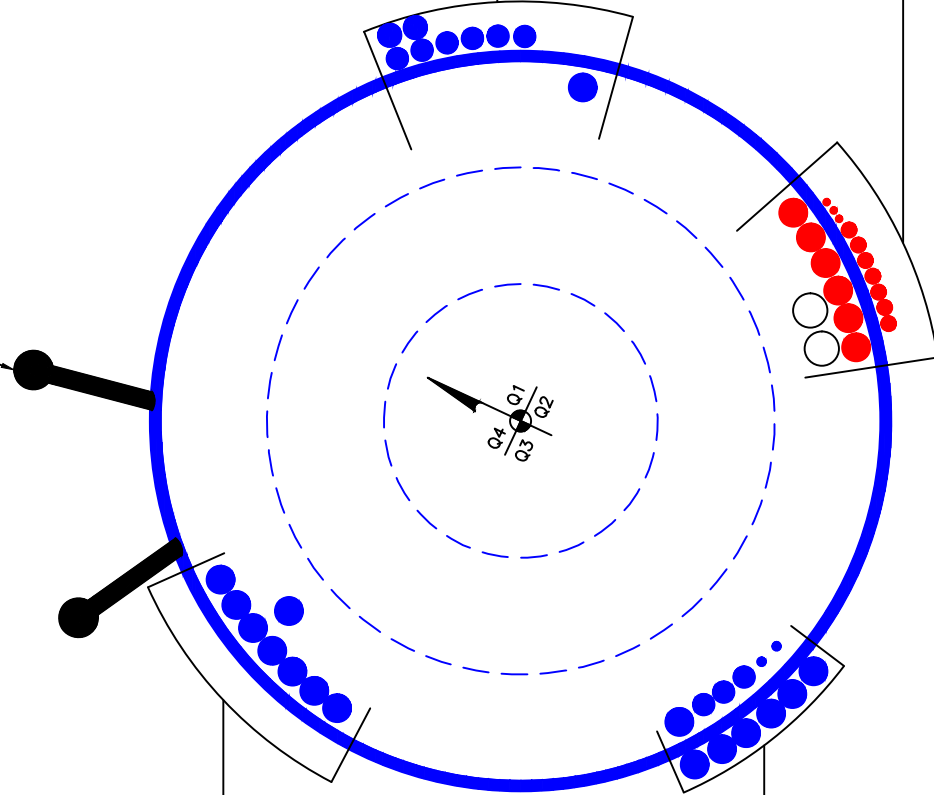
Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L35	27.75 - 27.5 (35)	TP37.7167x37.666x0.8625	38.22	1796.30	0.021	0.03	5823.26	0.000
L36	27.5 - 23.25 (36)	TP38.5796x37.7167x0.85	38.71	1812.32	0.021	0.03	6014.72	0.000
L37	23.25 - 23 (37)	TP38.6303x38.5796x0.95	38.72	2022.89	0.019	0.03	6704.81	0.000
L38	23 - 20.75 (38)	TP39.0872x38.6303x0.95	38.99	2047.41	0.019	0.03	6868.36	0.000
L39	20.75 - 20.5 (39)	TP39.1379x39.0872x0.9	39.00	1944.78	0.020	0.03	6541.29	0.000
L40	20.5 - 15.5 (40)	TP40.1531x39.1379x0.875	39.53	1942.19	0.020	0.03	6710.28	0.000
L41	15.5 - 10.5 (41)	TP41.1682x40.1531x0.8625	40.01	1964.53	0.020	0.03	6965.06	0.000
L42	10.5 - 5.5 (42)	TP42.1833x41.1682x0.85	40.47	1985.42	0.020	0.03	7218.60	0.000
L43	5.5 - 2 (43)	TP42.8939x42.1833x0.8375	40.80	1990.45	0.020	0.03	7363.47	0.000
L44	2 - 1.75 (44)	TP42.9447x42.8939x0.825	40.80	1963.69	0.021	0.03	7275.41	0.000
L45	1.75 - 1.5 (45)	TP42.9955x42.9447x1.125	40.82	2661.91	0.015	0.03	9803.92	0.000
L46	1.5 - 0 (46)	TP43.3x42.9955x1.1	41.00	2623.24	0.016	0.03	9737.58	0.000

**APPENDIX B**  
**BASE LEVEL DRAWING**





CLIMBING PEGS



(OTHER CONSIDERED EQUIPMENT)  
(8) 1-5/8" TO 104 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)  
(6) 1-5/8" TO 95 FT LEVEL  
(OTHER CONSIDERED EQUIPMENT)  
(1) 1/2" TO 80 FT LEVEL  
(1) 1/2" TO 140 FT LEVEL  
(3) 1-1/4" TO 140 FT LEVEL  
(1) 1-5/8" TO 140 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)  
(6) 1-1/4" TO 115 FT LEVEL  
(2) 1-3/8" TO 115 FT LEVEL  
(1) 1-5/8" TO 115 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)  
(2) 2" CONDUITS  
(PROPOSED EQUIPMENT CONFIGURATION)  
(3) 3/8" TO 122 FT LEVEL  
(7) 7/8" TO 122 FT LEVEL  
(6) 1-5/8" TO 122 FT LEVEL

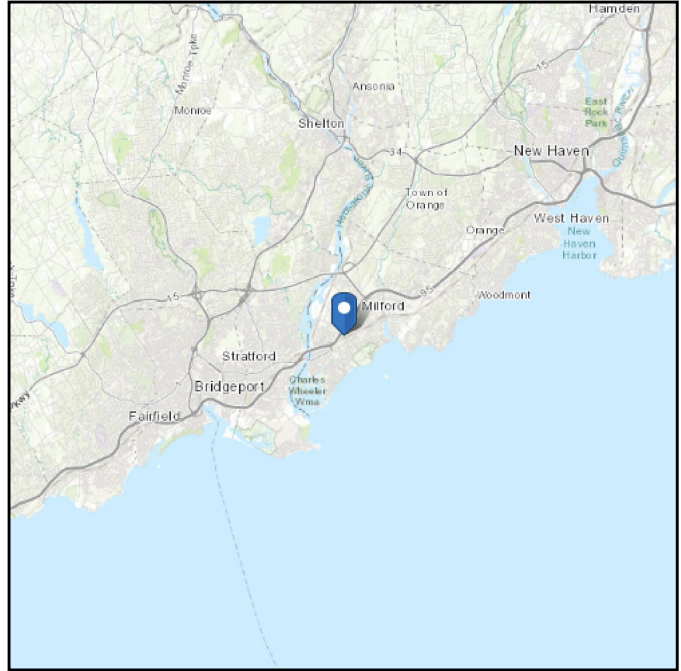
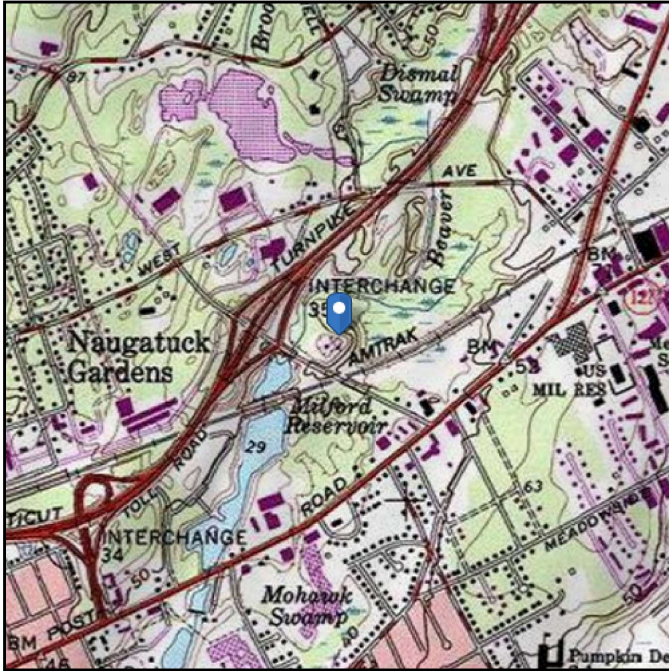
**APPENDIX C**  
**ADDITIONAL CALCULATIONS**

# ASCE 7 Hazards Report

**Address:**  
No Address at This  
Location

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

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



## Wind

### Results:

Wind Speed:	124 Vmph (Used 125 as per Jurisdiction requirement.)
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	100 Vmph

**Data Source:** ASCE/SEI 7-2021 Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

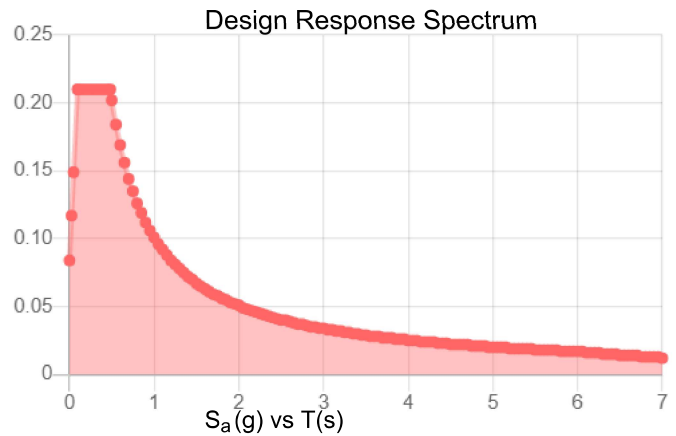
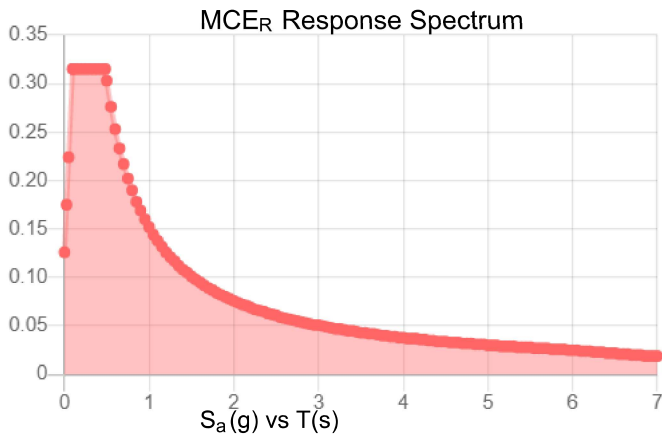
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

**Site Soil Class:** D - Stiff Soil

**Results:**

$S_s$ :	0.197	$S_{DS}$ :	0.21
$S_1$ :	0.063	$S_{D1}$ :	0.101
$F_a$ :	1.6	$T_L$ :	6
$F_v$ :	2.4	PGA :	0.105
$S_{MS}$ :	0.315	PGA <sub>M</sub> :	0.167
$S_{M1}$ :	0.152	$F_{PGA}$ :	1.59
		$I_e$ :	1

**Seismic Design Category** B



**Data Accessed:**

Wed Sep 15 2021

**Date Source:**

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

## Ice

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### Results:

Ice Thickness: 0.75 in. (Used 1.5 in. as per Jurisdiction requirements.)  
Concurrent Temperature: 15 F  
Gust Speed: 50 mph

**Data Source:** Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8 Wed Sep 15

**Date Accessed:** 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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Site BU: 876342  
Work Order: 556513



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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	140	51.5	3.25	12	16	26.456	0.25	Auto	A607-65
2	91.75	44.5	4.25	12	25.30	34.332	0.3125	Auto	A607-65
3	51.5	51.5	0	12	32.84	43.3	0.375	Auto	A607-65

**Reinforcement Configuration**

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	1.75	plate	(TS) 1.25x11.50 (65ksi)	2					c			c				
2	0	1.75	plate	(TS) 1.25x9.875 (65ksi)	2		c									c	
3	0	1.75	plate	(TS) 1.25x7.75 (65ksi)	4			c			c	c			c		
4	1.75	27.75	channel	MP3-08 (1.25in)	2			x								x	
5	1.75	23.25	channel	MP3-06 (1.25in)	2					x			x				
6	20.75	27.75	channel	MP3-08 (1.25in)	1							x					
7	27.75	37.75	channel	MP3-08 (1.25in)	3			x				x				x	
8	37.75	68.25	channel	MP3-06 (1.25in)	3			x				x				x	
9	68.25	98.25	channel	MP3-05 (1.25in)	3			x				x				x	
10	0	2	plate	(TS) 1.25x7.75 (65ksi)	3					x				x			x
11	2	32.5	plate	CCI-WCFP-065125	3					x				x			x
12	32.5	68.08	plate	CCI-AFP-060100	3					x				x			x
13	68.08	88.17	plate	CCI-AFP-060100	3					x				x			x
14	97	104	plate	CCI-SFP-045100	3	x				x				x			
15																	

**Reinforcement Details**

	B (in)	H (in)	Gross Area (in <sup>2</sup> )	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in <sup>2</sup> )	Bolt Hole Size (in)	Reinforcement Material
1	1.25	7.125	8.90625	4.3125	Welded	n/a	Welded	n/a	0.750	8.906	0.0000	A572-65
2	1.25	6.125	7.65625	3.8125	Welded	n/a	Welded	n/a	0.750	7.656	0.0000	A572-65
3	1.25	4.625	5.78125	3.0625	Welded	n/a	Welded	n/a	0.750	5.781	0.0000	A572-65
4	7.93	2.8	10.32	0.95	PC 8.8 - M20 (100)	47	PC 8.8 - M20 (100)	47.000	24.000	9.323	1.2500	A572-65
5	6.89	2.61	8.47	0.93	PC 8.8 - M20 (100)	41	PC 8.8 - M20 (100)	41.000	24.000	7.630	1.2500	A572-65
6	7.93	2.8	10.32	0.95	PC 8.8 - M20 (100)	47	PC 8.8 - M20 (100)	47.000	24.000	9.323	1.2500	A572-65
7	7.93	2.8	10.32	0.95	PC 8.8 - M20 (100)	47	PC 8.8 - M20 (100)	47.000	24.000	9.323	1.2500	A572-65
8	6.89	2.61	8.47	0.93	PC 8.8 - M20 (100)	41	PC 8.8 - M20 (100)	41.000	24.000	7.630	1.2500	A572-65
9	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	4.994	1.2500	A572-65
10	1.25	4.625	5.78125	3.0625	Welded	n/a	Welded	n/a	0.750	5.781	0.0000	A572-65
11	6.5	1.25	8.125	0.625	Welded	n/a	PC 8.8 - M20 (100)	36.000	19.000	6.563	1.1875	A572-65
12	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
13	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
14	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)
CCI-WCFP-065125	Top	12	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	None	-	-	-	-	42	0.375	-
(TS) 1.25x7.75 (65ksi)	Top	-	-	-	-	70	None	-	-	-	-	60	0.313	-
	Bottom	-	-	-	-	70	PJP Groove	14	0.5	45	0.5	-	-	-
(TS) 1.25x9.875 (65ksi)	Top	-	-	-	-	70	None	-	-	-	-	60	0.313	-
	Bottom	-	-	-	-	70	PJP Groove	18.25	0.5	45	0.5	-	-	-
(TS) 1.25x11.50 (65ksi)	Top	-	-	-	-	70	None	-	-	-	-	60	0.313	-
	Bottom	-	-	-	-	70	PJP Groove	21.5	0.5	45	0.5	-	-	-

# TNX Geometry Input

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

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	140 - 135	5		12	16.000	17.015	0.25	A607-65	1.000
2	135 - 130	5		12	17.015	18.030	0.25	A607-65	1.000
3	130 - 125	5		12	18.030	19.045	0.25	A607-65	1.000
4	125 - 120	5		12	19.045	20.061	0.25	A607-65	1.000
5	120 - 115	5		12	20.061	21.076	0.25	A607-65	1.000
6	115 - 110	5		12	21.076	22.091	0.25	A607-65	1.000
7	110 - 105	5		12	22.091	23.106	0.25	A607-65	1.000
8	105 - 104	1		12	23.106	23.309	0.25	A607-65	1.000
9	104 - 103.75	0.25		12	23.309	23.360	0.4625	A607-65	0.942
10	103.75 - 98.75	5		12	23.360	24.375	0.45	A607-65	0.950
11	98.75 - 98.25	0.5		12	24.375	24.476	0.45	A607-65	0.949
12	98.25 - 98	0.25		12	24.476	24.527	0.725	A607-65	0.900
13	98 - 97	1		12	24.527	24.730	0.725	A607-65	0.896
14	97 - 96.75	0.25		12	24.730	24.781	0.5125	A607-65	0.917
15	96.75 - 91.75	8.25	3.25	12	24.781	26.456	0.5	A607-65	0.922
16	91.75 - 88.17	3.58		12	25.296	26.023	0.5625	A607-65	0.929
17	88.17 - 87.92	0.25		12	26.023	26.074	0.7625	A607-65	0.980
18	87.92 - 82.92	5		12	26.074	27.089	0.7375	A607-65	0.990
19	82.92 - 77.92	5		12	27.089	28.104	0.725	A607-65	0.985
20	77.92 - 72.92	5		12	28.104	29.120	0.7125	A607-65	0.982
21	72.92 - 68.25	4.67		12	29.120	30.068	0.6875	A607-65	0.998
22	68.25 - 67.98	0.27		12	30.068	30.123	0.8125	A607-65	0.958
23	67.98 - 67.83	0.15		12	30.123	30.153	0.8125	A607-65	0.957
24	67.83 - 62.83	5		12	30.153	31.168	0.7875	A607-65	0.967
25	62.83 - 57.83	5		12	31.168	32.184	0.7625	A607-65	0.979
26	57.83 - 52.83	5		12	32.184	33.199	0.75	A607-65	0.977
27	52.83 - 51.5	5.58	4.25	12	33.199	34.332	0.75	A607-65	0.972
28	51.5 - 46.5	5		12	32.844	33.859	0.8	A607-65	0.985
29	46.5 - 41.5	5		12	33.859	34.874	0.8	A607-65	0.970
30	41.5 - 37.75	3.75		12	34.874	35.636	0.775	A607-65	0.989
31	37.75 - 37.5	0.25		12	35.636	35.686	0.85	A607-65	0.961
32	37.5 - 32.5	5		12	35.686	36.702	0.825	A607-65	0.975
33	32.5 - 32.25	0.25		12	36.702	36.752	0.875	A607-65	0.983
34	32.25 - 27.75	4.5		12	36.752	37.666	0.8625	A607-65	0.983
35	27.75 - 27.5	0.25		12	37.666	37.717	0.8625	A607-65	0.982
36	27.5 - 23.25	4.25		12	37.717	38.580	0.85	A607-65	0.983
37	23.25 - 23	0.25		12	38.580	38.630	0.95	A607-65	1.029
38	23 - 20.75	2.25		12	38.630	39.087	0.95	A607-65	1.021
39	20.75 - 20.5	0.25		12	39.087	39.138	0.9	A607-65	0.982
40	20.5 - 15.5	5		12	39.138	40.153	0.875	A607-65	0.995
41	15.5 - 10.5	5		12	40.153	41.168	0.8625	A607-65	0.994
42	10.5 - 5.5	5		12	41.168	42.183	0.85	A607-65	0.995
43	5.5 - 2	3.5		12	42.183	42.894	0.8375	A607-65	1.000
44	2 - 1.75	0.25		12	42.894	42.945	0.825	A607-65	0.951
45	1.75 - 1.5	0.25		12	42.945	42.995	1.125	A607-65	0.825
46	1.5 - 0	1.5		12	42.995	43.300	1.1	A607-65	0.840

## TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P <sub>u</sub> (K)	M <sub>ux</sub> (kip-ft)	V <sub>u</sub> (K)
1	140 - 135		4.20	20.80	5.29
2	135 - 130		4.47	48.24	5.70
3	130 - 125		4.77	77.77	6.12
4	125 - 120		10.57	138.62	14.67
5	120 - 115		11.12	213.05	15.10
6	115 - 110		16.88	319.43	20.96
7	110 - 105		17.61	425.17	21.35
8	105 - 104		17.77	446.61	21.51
9	104 - 103.75		22.50	453.76	26.77
10	103.75 - 98.75		23.52	589.00	27.35
11	98.75 - 98.25		23.63	602.68	27.42
12	98.25 - 98		23.70	609.54	27.45
13	98 - 97		23.96	637.08	27.63
14	97 - 96.75		24.02	643.98	27.66
15	96.75 - 91.75		25.39	784.28	28.43
16	91.75 - 88.17		26.77	886.93	28.94
17	88.17 - 87.92		26.85	894.17	28.97
18	87.92 - 82.92		28.48	1040.58	29.62
19	82.92 - 77.92		30.23	1191.03	30.81
20	77.92 - 72.92		31.92	1347.15	31.64
21	72.92 - 68.25		33.52	1496.71	32.42
22	68.25 - 67.98		33.64	1505.47	32.45
23	67.98 - 67.83		33.70	1510.34	32.48
24	67.83 - 62.83		35.60	1674.93	33.35
25	62.83 - 57.83		37.54	1843.77	34.19
26	57.83 - 52.83		39.51	2016.80	35.03
27	52.83 - 51.5		40.04	2063.50	35.20
28	51.5 - 46.5		43.46	2241.46	35.96
29	46.5 - 41.5		45.62	2422.81	36.58
30	41.5 - 37.75		47.27	2560.80	37.03
31	37.75 - 37.5		47.40	2570.06	37.04
32	37.5 - 32.5		49.71	2756.80	37.65
33	32.5 - 32.25		49.85	2766.21	37.66
34	32.25 - 27.75		52.07	2936.94	38.21
35	27.75 - 27.5		52.20	2946.49	38.22
36	27.5 - 23.25		54.32	3109.99	38.71
37	23.25 - 23		54.48	3119.67	38.72
38	23 - 20.75		55.75	3207.12	38.99
39	20.75 - 20.5		55.90	3216.87	39.00
40	20.5 - 15.5		58.56	3413.24	39.53
41	15.5 - 10.5		61.27	3612.07	40.01
42	10.5 - 5.5		64.00	3813.26	40.47
43	5.5 - 2		65.93	3955.47	40.80
44	2 - 1.75		66.08	3965.67	40.80
45	1.75 - 1.5		66.23	3975.88	40.82
46	1.5 - 0		67.11	4037.25	41.00



# Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.015x16x0.25	Pole	6.4%	Pass
135 - 130	Pole	TP18.03x17.015x0.25	Pole	12.6%	Pass
130 - 125	Pole	TP19.045x18.03x0.25	Pole	17.9%	Pass
125 - 120	Pole	TP20.061x19.045x0.25	Pole	29.2%	Pass
120 - 115	Pole	TP21.076x20.061x0.25	Pole	40.2%	Pass
115 - 110	Pole	TP22.091x21.076x0.25	Pole	55.8%	Pass
110 - 105	Pole	TP23.106x22.091x0.25	Pole	68.3%	Pass
105 - 104	Pole	TP23.309x23.106x0.25	Pole	70.7%	Pass
104 - 103.75	Pole + Reinf.	TP23.36x23.309x0.4625	Reinf. 14 Tension Rupture	65.3%	Pass
103.75 - 98.75	Pole + Reinf.	TP24.375x23.36x0.45	Reinf. 14 Tension Rupture	78.9%	Pass
98.75 - 98.25	Pole + Reinf.	TP24.476x24.375x0.45	Reinf. 14 Tension Rupture	80.2%	Pass
98.25 - 98	Pole + Reinf.	TP24.527x24.476x0.725	Reinf. 14 Tension Rupture	51.7%	Pass
98 - 97	Pole + Reinf.	TP24.73x24.527x0.725	Reinf. 14 Tension Rupture	53.4%	Pass
97 - 96.75	Pole + Reinf.	TP24.781x24.73x0.5125	Reinf. 9 Tension Rupture	64.0%	Pass
96.75 - 91.75	Pole + Reinf.	TP26.456x24.781x0.5	Reinf. 9 Tension Rupture	73.2%	Pass
91.75 - 88.17	Pole + Reinf.	TP26.023x25.296x0.5625	Reinf. 9 Tension Rupture	72.4%	Pass
88.17 - 87.92	Pole + Reinf.	TP26.074x26.023x0.7625	Reinf. 9 Tension Rupture	56.6%	Pass
87.92 - 82.92	Pole + Reinf.	TP27.089x26.074x0.7375	Reinf. 9 Tension Rupture	62.2%	Pass
82.92 - 77.92	Pole + Reinf.	TP28.104x27.089x0.725	Reinf. 9 Tension Rupture	67.5%	Pass
77.92 - 72.92	Pole + Reinf.	TP29.12x28.104x0.7125	Reinf. 9 Tension Rupture	72.4%	Pass
72.92 - 68.25	Pole + Reinf.	TP30.068x29.12x0.6875	Reinf. 9 Tension Rupture	76.6%	Pass
68.25 - 67.98	Pole + Reinf.	TP30.123x30.068x0.8125	Reinf. 8 Tension Rupture	65.1%	Pass
67.98 - 67.83	Pole + Reinf.	TP30.153x30.123x0.8125	Reinf. 8 Tension Rupture	65.2%	Pass
67.83 - 62.83	Pole + Reinf.	TP31.168x30.153x0.7875	Reinf. 12 Tension Rupture	69.0%	Pass
62.83 - 57.83	Pole + Reinf.	TP32.184x31.168x0.7625	Reinf. 12 Tension Rupture	72.7%	Pass
57.83 - 52.83	Pole + Reinf.	TP33.199x32.184x0.75	Reinf. 12 Tension Rupture	76.1%	Pass
52.83 - 51.5	Pole + Reinf.	TP34.332x33.199x0.75	Reinf. 12 Tension Rupture	77.0%	Pass
51.5 - 46.5	Pole + Reinf.	TP33.859x32.844x0.8	Reinf. 12 Tension Rupture	76.1%	Pass
46.5 - 41.5	Pole + Reinf.	TP34.874x33.859x0.8	Reinf. 12 Tension Rupture	78.8%	Pass
41.5 - 37.75	Pole + Reinf.	TP35.636x34.874x0.775	Reinf. 12 Tension Rupture	80.7%	Pass
37.75 - 37.5	Pole + Reinf.	TP35.686x35.636x0.85	Reinf. 12 Tension Rupture	75.4%	Pass
37.5 - 32.5	Pole + Reinf.	TP36.702x35.686x0.825	Reinf. 12 Tension Rupture	77.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.752x36.702x0.875	Reinf. 7 Tension Rupture	72.3%	Pass
32.25 - 27.75	Pole + Reinf.	TP37.666x36.752x0.8625	Reinf. 7 Tension Rupture	74.0%	Pass
27.75 - 27.5	Pole + Reinf.	TP37.717x37.666x0.8625	Reinf. 4 Tension Rupture	74.1%	Pass
27.5 - 23.25	Pole + Reinf.	TP38.58x37.717x0.85	Reinf. 4 Tension Rupture	75.6%	Pass
23.25 - 23	Pole + Reinf.	TP38.63x38.58x0.95	Reinf. 4 Tension Rupture	71.2%	Pass
23 - 20.75	Pole + Reinf.	TP39.087x38.63x0.95	Reinf. 4 Tension Rupture	72.0%	Pass
20.75 - 20.5	Pole + Reinf.	TP39.138x39.087x0.9	Reinf. 4 Tension Rupture	73.0%	Pass
20.5 - 15.5	Pole + Reinf.	TP40.153x39.138x0.875	Reinf. 4 Tension Rupture	74.6%	Pass
15.5 - 10.5	Pole + Reinf.	TP41.168x40.153x0.8625	Reinf. 4 Tension Rupture	76.1%	Pass
10.5 - 5.5	Pole + Reinf.	TP42.183x41.168x0.85	Reinf. 4 Tension Rupture	77.5%	Pass
5.5 - 2	Pole + Reinf.	TP42.894x42.183x0.8375	Reinf. 4 Tension Rupture	78.5%	Pass
2 - 1.75	Pole + Reinf.	TP42.945x42.894x0.825	Reinf. 4 Tension Rupture	80.0%	Pass
1.75 - 1.5	Pole + Reinf.	TP42.995x42.945x1.125	Reinf. 2 Compression	65.0%	Pass
1.5 - 0	Pole + Reinf.	TP43.3x42.995x1.1	Reinf. 2 Weldment	76.9%	Pass
				Summary	
			Pole	70.7%	Pass
			Reinforcement	80.7%	Pass
			Overall	80.7%	Pass

# Additional Calculations

Section Elevation (ft)	Moment of Inertia (in <sup>4</sup> )			Area (in <sup>2</sup> )			% Capacity*															
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	
140 - 135	485	n/a	485	13.48	n/a	13.48	6.4%															
135 - 130	578	n/a	578	14.29	n/a	14.29	12.6%															
130 - 125	683	n/a	683	15.11	n/a	15.11	17.9%															
125 - 120	800	n/a	800	15.92	n/a	15.92	29.2%															
120 - 115	929	n/a	929	16.74	n/a	16.74	40.2%															
115 - 110	1072	n/a	1072	17.56	n/a	17.56	55.8%															
110 - 105	1228	n/a	1228	18.37	n/a	18.37	68.3%															
105 - 104	1262	n/a	1262	18.54	n/a	18.54	70.7%															
104 - 103.75	1270	1013	2283	18.58	13.50	32.08	38.8%															65.3%
103.75 - 98.75	1445	1099	2543	19.39	13.50	32.89	47.6%															78.9%
98.75 - 98.25	1463	1107	2570	19.47	13.50	32.97	48.4%															80.2%
98.25 - 98	1472	2567	4039	19.52	30.45	49.97	31.2%									44.6%						51.7%
98 - 97	1509	2607	4116	19.68	30.45	50.13	32.4%									46.1%						53.4%
97 - 96.75	1519	1483	3002	19.72	16.95	36.67	44.9%									64.0%						
96.75 - 91.75	1715	1599	3314	20.54	16.95	37.49	52.2%									73.2%						
91.75 - 88.17	2186	1625	3811	25.83	16.95	42.78	48.1%									72.4%						
88.17 - 87.92	2209	2860	5069	25.89	34.95	60.84	39.3%									56.6%						54.7%
87.92 - 82.92	2481	3142	5622	26.91	34.95	61.86	42.9%									62.2%						60.3%
82.92 - 77.92	2774	3367	6141	27.93	34.95	62.88	47.1%									67.5%						65.5%
77.92 - 72.92	3088	3601	6689	28.95	34.95	63.90	51.2%									72.4%						70.4%
72.92 - 68.25	3403	3826	7229	29.90	34.95	64.85	54.9%									76.6%						74.7%
68.25 - 67.98	3419	4981	8399	29.95	43.41	73.36	47.4%									65.1%						65.0%
67.98 - 67.83	3429	4990	8419	29.98	43.41	73.39	47.5%									65.2%						65.1%
67.83 - 62.83	3791	5311	9102	31.00	43.41	74.41	51.0%									69.0%						69.0%
62.83 - 57.83	4177	5643	9819	32.02	43.41	75.43	54.3%									72.5%						72.7%
57.83 - 52.83	4588	5984	10572	33.04	43.41	76.45	57.6%									75.8%						76.1%
52.83 - 51.5	4702	6077	10779	33.32	43.41	76.73	58.5%									76.6%						77.0%
51.5 - 46.5	5809	6214	12023	40.37	43.41	83.78	53.9%									75.2%						76.1%
46.5 - 41.5	6353	6572	12925	41.60	43.41	85.01	56.4%									77.8%						78.8%
41.5 - 37.75	6782	6848	13630	42.52	43.41	85.93	58.1%									79.5%						80.7%
37.75 - 37.5	6810	7877	14687	42.58	48.96	91.54	54.1%									73.7%						75.4%
37.5 - 32.5	7414	8308	15721	43.80	48.96	92.76	56.3%									75.8%						77.7%
32.5 - 32.25	7455	9253	16708	43.86	55.34	99.20	53.7%									72.3%						71.8%
32.25 - 27.75	8030	9695	17724	44.96	55.34	100.30	55.6%									74.0%						73.7%
27.75 - 27.5	8063	9720	17782	45.03	55.34	100.36	55.7%															73.8%
27.5 - 23.25	8634	10146	18780	46.07	55.34	101.40	57.4%															75.4%
23.25 - 23	8845	12429	21274	46.13	72.28	118.40	54.2%															66.9%
23 - 20.75	9163	12712	21875	46.68	72.28	118.95	55.0%															67.7%
20.75 - 20.5	9060	11536	20596	46.74	61.96	108.69	57.0%															72.4%
20.5 - 15.5	9789	12114	21903	47.96	61.96	109.92	58.9%															74.0%
15.5 - 10.5	10556	12706	23261	49.19	61.96	111.14	60.8%															75.6%
10.5 - 5.5	11361	13312	24673	50.41	61.96	112.37	62.7%															77.1%
5.5 - 2	11949	13745	25694	51.27	61.96	113.22	63.9%															78.0%
2 - 1.75	11982	13233	25215	51.33	54.92	106.25	65.2%															74.0%
1.75 - 1.5	12169	21835	34004	51.39	73.59	124.98	50.4%	56.8%	65.0%	58.9%												57.1%
1.5 - 0	12430	22103	34532	51.76	73.59	125.35	50.9%	66.4%	76.9%	68.7%												66.6%

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

# Monopole Base Plate Connection

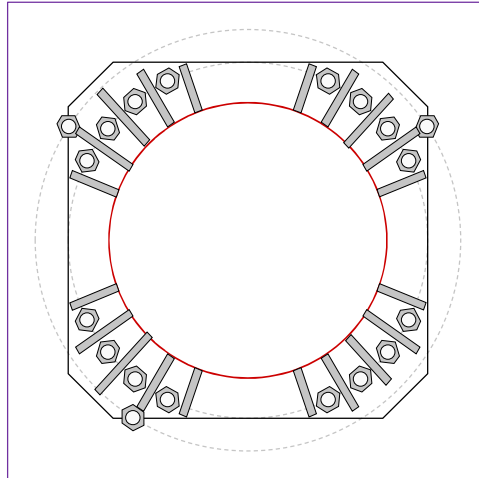


Site Info	
BU #	876342
Site Name	BIC Drive (SSUSA)
Order #	556513

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
$I_{gr}$ (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	4037.25
Axial Force (kips)	67.11
Shear Force (kips)	41.00

\*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
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**Anchor Rod Data**  
 GROUP 1: (16) 2-1/4"  $\phi$  bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 56" BC  
 Anchor Spacing: 6 in  
 GROUP 2: (3) 2-1/4"  $\phi$  bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 66.3" BC  
 pos. (deg): 32.7, 147.3, 237.3

**Base Plate Data**  
 56" W x 3" Plate (A572-60; Fy=60 ksi, Fu=75 ksi); Clip: 7 in

**Stiffener Data**  
 Group 1: (4) 18"H x 7.75"W x 1.25"T, Notch: 0.75"  
 plate: Fy= 65 ksi ; weld: Fy= 70 ksi  
 horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet  
 vert. weld: 0.3125" fillet

Group 2: (8) 21"H x 9.875"W x 1.25"T, Notch: 0.75"  
 plate: Fy= 65 ksi ; weld: Fy= 70 ksi  
 horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet  
 vert. weld: 0.3125" fillet

Group 3: (2) 60"H x 11.5"W x 1.25"T, Notch: 0.75"  
 plate: Fy= 65 ksi ; weld: Fy= 70 ksi  
 horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet  
 vert. weld: 0.3125" fillet

Group 4: (4) 60"H x 7.75"W x 1.25"T, Notch: 0.75"  
 plate: Fy= 65 ksi ; weld: Fy= 70 ksi  
 horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet  
 vert. weld: 0.3125" fillet

Group 5: (2) 60"H x 9.875"W x 1.25"T, Notch: 0.75"  
 plate: Fy= 65 ksi ; weld: Fy= 70 ksi  
 horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet  
 vert. weld: 0.3125" fillet

**Pole Data**  
 43.3" x 1.1" 12-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

**Anchor Rod Summary** (units of kips, kip-in)  
 GROUP 1:  
 Pu\_t = 185.72       $\phi Pn_t$  = 243.75      **Stress Rating**  
 Vu = 2.56           $\phi Vn$  = 149.1          **72.6%**  
 Mu = n/a             $\phi Mn$  = n/a            **Pass**

GROUP 2:  
 Pu\_c = 207.26       $\phi Pn_c$  = 238.53      **Stress Rating**  
 Vu = 0               $\phi Vn$  = 169.08      **82.8%**  
 Mu = 0               $\phi Mn$  = 179.4          **Pass**

**Base Plate Summary**  
 Max Stress (ksi): 4.16 (Shear)  
 Allowable Stress (ksi): 33.75  
 Stress Rating: **11.7%** **Pass**

**Stiffener Summary**  
 Horizontal Weld: **39.7%** **Pass**  
 Vertical Weld: **49.7%** **Pass**  
 Plate Flexure+Shear: **7.0%** **Pass**  
 Plate Tension+Shear: **17.9%** **Pass**  
 Plate Compression: **25.7%** **Pass**

**Pole Summary**  
 Punching Shear: **4.8%** **Pass**

# CCIplate

Elevation (ft) 0 (Base)

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

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

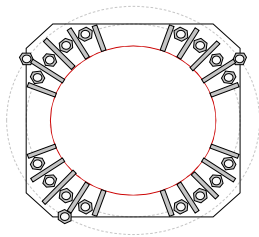
## Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η <sub>t</sub>	l <sub>v</sub> (in):	Thread Type	Area Override, in <sup>2</sup>	Tension Only
1	1	26.5480305	2.25	A615-75	56	0.5	2.25	N-Included		No
2	1	38.8493602	2.25	A615-75	56	0.5	2.25	N-Included		No
3	1	51.1506398	2.25	A615-75	56	0.5	2.25	N-Included		No
4	1	63.4519195	2.25	A615-75	56	0.5	2.25	N-Included		No
5	1	116.548081	2.25	A615-75	56	0.5	2.25	N-Included		No
6	1	128.84936	2.25	A615-75	56	0.5	2.25	N-Included		No
7	1	141.15064	2.25	A615-75	56	0.5	2.25	N-Included		No
8	1	153.451919	2.25	A615-75	56	0.5	2.25	N-Included		No
9	1	206.348081	2.25	A615-75	56	0.5	2.25	N-Included		No
10	1	218.84936	2.25	A615-75	56	0.5	2.25	N-Included		No
11	1	231.15064	2.25	A615-75	56	0.5	2.25	N-Included		No
12	1	243.451919	2.25	A615-75	56	0.5	2.25	N-Included		No
13	1	296.548081	2.25	A615-75	56	0.5	2.25	N-Included		No
14	1	308.84936	2.25	A615-75	56	0.5	2.25	N-Included		No
15	1	321.15064	2.25	A615-75	56	0.5	2.25	N-Included		No
16	1	333.451919	2.25	A615-75	56	0.5	2.25	N-Included		No
17	2	32.8987203	2.25	A193 Gr. B7	66.3	0.5	25.5	N-Included		No
18	2	147.30128	2.25	A193 Gr. B7	66.3	0.5	25.5	N-Included		No
19	2	237.30128	2.25	A193 Gr. B7	66.3	0.5	25.5	N-Included		No

## Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	20.3974407	7.75	18	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
2	2	32.6987203	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
3	5	45	9.875	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
4	2	57.3012797	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
5	4	69.6025593	7.75	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
6	1	110.397441	7.75	18	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
7	2	122.69872	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
8	3	135	11.5	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
9	2	147.30128	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
10	4	159.602559	7.75	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
11	4	200.397441	7.75	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
12	2	212.69872	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
13	3	225	11.5	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
14	2	237.30128	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
15	1	249.602559	7.75	18	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
16	4	290.397441	7.75	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
17	2	302.69872	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
18	5	315	9.875	60	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
19	2	327.30128	9.875	21	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70
20	1	339.602559	7.75	18	1.25	0.75	0.75	65	Both	0.5	45	0.5	0.3125	70

## Plot Graphic



# Pier and Pad Foundation



**BU #:** 876342  
**Site Name:** BLC Drive (SSUSA)  
**App. Number:** 556513

**TIA-222 Revision:** H  
**Tower Type:** Monopole

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

Superstructure Analysis Reactions		
Compression, $P_{comp}$ :	67.13	kips
Base Shear, $Vu_{comp}$ :	40.97	kips
Moment, $M_u$ :	4037.25	ft-kips
Tower Height, $H$ :	140	ft
BP Dist. Above Fdn, $bp_{dist}$ :	4.5	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	420.65	40.97	9.3%	Pass
<i>Bearing Pressure (ksf)</i>	23.36	3.43	14.7%	Pass
<i>Overturning (kip*ft)</i>	8022.38	4482.80	55.9%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	7607.65	4303.56	53.9%	Pass
<i>Pier Compression (kip)</i>	23390.64	124.46	0.5%	Pass
<i>Pad Flexure (kip*ft)</i>	6392.21	1613.03	24.0%	Pass
<i>Pad Shear - 1-way (kips)</i>	951.31	240.04	24.0%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.027	15.5%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	10602.90	2582.13	23.2%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$ :	7	ft
Ext. Above Grade, $E$ :	0.5	ft
Pier Rebar Size, $Sc$ :	11	
Pier Rebar Quantity, $mc$ :	32	
Pier Tie/Spiral Size, $St$ :	5	
Pier Tie/Spiral Quantity, $mt$ :	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $cc_{pier}$ :	3	in

\*Rating per TIA-222-H Section 15.5

Structural Rating*:	53.9%
Soil Rating*:	55.9%

Pad Properties		
Depth, $D$ :	10	ft
Pad Width, $W_1$ :	22.5	ft
Pad Thickness, $T$ :	4	ft
Pad Rebar Size (Bottom dir. 2), $Sp_2$ :	11	
Pad Rebar Quantity (Bottom dir. 2), $mp_2$ :	22	
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, $\delta_c$ :	150	pcf

Soil Properties		
Total Soil Unit Weight, $\gamma$ :	115	pcf
Ultimate Net Bearing, $Q_{net}$ :	30.000	ksf
Cohesion, $C_u$ :	0.000	ksf
Friction Angle, $\phi$ :	32	degrees
SPT Blow Count, $N_{blows}$ :	12	
Base Friction, $\mu$ :	0.4	
Neglected Depth, $N$ :	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, $gw$ :	N/A	ft

<-- Toggle between Gross and Net