



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

November 4, 2022

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

RE: **EM-VER-094-220818** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 123 Costello Road, Newington, Connecticut.

Dear Denise Sabo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of November 1, 2022 submitted in response to the Council's September 16, 2022 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

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

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/MP/emr

From: Deborah Chase <deborah@northeastsitesolutions.com>
Sent: Tuesday, November 1, 2022 3:01 PM
To: CSC-DL Siting Council <Siting.Council@ct.gov>; Bachman, Melanie <Melanie.Bachman@ct.gov>; Robidoux, Evan <Evan.Robidoux@ct.gov>; Fontaine, Lisa <Lisa.Fontaine@ct.gov>
Cc: Denise <denise@northeastsitesolutions.com>
Subject: RE: 881364 Crown VZW - RE: Council Extension Letter for EM-VER-094-220818 (123 Costello Road, Newington)
Importance: High

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Hello

We are sending the revised Structural Analysis per the attached incomplete letter for the above referenced site.

I have also attached the mailing label.

Please let me know if there are any questions.

Thank you

Deborah Chase

Senior Project Coordinator & Analyst

Mobile: 860-490-8839

🌳 Save a tree. Refuse. Reduce. Reuse. Recycle.



Date: **March 29, 2022**



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

Subject: Structural Analysis Report

Carrier Designation: **Verizon Wireless Co-Locate**
Site Number: 468297
Site Name: NEWINGTON 2 CT

Crown Castle Designation: **BU Number:** 881364
Site Name: Newington
JDE Job Number: 707821
Work Order Number: 2095864
Order Number: 607158 Rev. 2

Engineering Firm Designation: **TEP Project Number:** 65292.679311

Site Data: **123 Costelo Road, Newington, Hartford County, CT 06111**
Latitude 41° 39' 18.72", Longitude -72° 43' 17.19"
145 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 – 70.6%

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Tari L. Vicenty / RAL

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

03/29/2022

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1) INTRODUCTION

This tower is a 145-ft monopole tower designed by Summit. The tower has been modified per reinforcement drawings prepared by Paul J. Ford and Company in November of 2015.

2) ANALYSIS CRITERIA

| | |
|-----------------------------|-----------|
| TIA-222 Revision: | TIA-222-H |
| Risk Category: | II |
| Wind Speed: | 118 mph |
| Exposure Category: | C |
| Topographic Factor: | 1.0 |
| Ice Thickness: | 1.5 in |
| Wind Speed with Ice: | 50 mph |
| Service Wind Speed: | 60 mph |

Table 1 - Proposed Equipment Configuration

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) |
|---------------------|----------------------------|--------------------|----------------------|--------------------------------------|----------------------|---------------------|
| 114.0 | 116.0 | 3 | Samsung Telecom. | MT6407-77A w/ Mount Pipe | 1 8 | 1/2 1-5/8 |
| | 114.0 | 6 | Andrew | SBNHH-1D65B w/ Mount Pipe | | |
| | | 3 | Andrew | LNx-6513DS-A1M w/ Mount Pipe | | |
| | | 1 | RFS Celwave | DB-T1-6Z-8AB-0Z | | |
| | | 3 | Samsung Telecom. | RFV01U-D2A | | |
| | | 3 | Samsung Telecom. | RFV01U-D1A | | |
| | | 1 | Lucent | KS24019-L112A | | |
| | | 1 | Tower Mounts | Platform Mount [LP 1201-1_KCKR-HR-1] | | |
| | 113.0 | 3 | Samsung Telecom. | XXDWMM-12.5-65-8T-CBRS w/ Mount Pipe | | |

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) |
|---------------------|----------------------------|--------------------|----------------------|----------------------------|----------------------|---------------------|
| 133.0 | 139.0 | 2 | Andrew | VHLP2.5-11 | 6 2 | 5/16 1/2 |
| | | 2 | Dragonwave | HORIZON COMPACT | | |
| | 135.0 | 3 | Argus Technologies | LLPX310R-V1 w/ Mount Pipe | | |
| | | 1 | Motorola | TIMING 2000 | | |
| | | 3 | Samsung Telecom. | WIMAX DAP HEAD | | |
| | 133.0 | 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) |
|---------------------|----------------------------|--------------------|----------------------|-------------------------------|----------------------|-----------------------|
| 124.0 | 124.0 | 3 | RFS Celwave | APXVSPP18-C-A20 w/ Mount Pipe | 4 | 1-1/4 |
| | | 3 | RFS Celwave | APXVTM14-C-120 w/ Mount Pipe | | |
| | | 3 | Alcatel Lucent | TD-RRH8x20-25 | | |
| | | 3 | RFS Celwave | IBC1900HG-2A | | |
| | | 3 | RFS Celwave | IBC1900BB-1 | | |
| | | 1 | Tower Mounts | Platform Mount [LP 1201-1] | | |
| 122.0 | 122.0 | 3 | Alcatel Lucent | PCS 1900MHz 4x45W-65MHz | - | - |
| | | 1 | Tower Mounts | Pipe Mount [PM 601-3] | | |
| | 118.0 | 3 | Alcatel Lucent | 800MHz 2X50W RRH W/FILTER | | |
| 105.0 | 105.0 | 3 | Ericsson | AIR 6419 B77G w/ Mount Pipe | 6 6 2 | 1-5/8 13/16 3/8 |
| | | 3 | CCI Antennas | DMP65R-BU6D w/ Mount Pipe | | |
| | | 3 | Quintel Technology | QD6616-7 w/ Mount Pipe | | |
| | | 3 | Ericsson | AIR 6449 B77D w/ Mount Pipe | | |
| | | 2 | Raycap | DC6-48-60-18-8F | | |
| | | 1 | Raycap | DC6-48-60-0-8F | | |
| | | 3 | Ericsson | RRUS 8843 B2/B66A | | |
| | | 3 | Ericsson | RRUS 4449 B5/B12 | | |
| | | 3 | Ericsson | RRUS 4478 B14 | | |
| | | 3 | Ericsson | RRUS 32 B30 | | |
| | | 1 | Tower Mounts | Site Pro 1 F3P-HRK12 | | |
| | | 1 | Tower Mounts | Site Pro 1 F3P-12[W] | | |
| 94.0 | 95.0 | 3 | Ericsson | AIR -32 B2A/B66AA | 13 | 1-5/8 |
| | | 3 | RFS Celwave | APXVAARR24_43-U-NA20 | | |
| | | 3 | Ericsson | AIR 3246 B66 | | |
| | | 3 | Ericsson | RADIO 4449 B12/B71 | | |
| | 94.0 | 3 | Ericsson | KRY 112 144/1 | | |
| | | 1 | Tower Mounts | Platform Mount [LP 302-1] | | |
| 80.0 | 80.0 | 2 | Tower Mounts | Side Arm Mount [SO 701-1] | - | - |
| 77.0 | 77.0 | 1 | Symmetricom | 58532A | 1 | 1/2 |
| | | 1 | Tower Mounts | Side Arm Mount [SO 701-1] | | |

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

| Document | Reference | Source |
|------------------------------|-----------|----------|
| Geotechnical Report | 1425352 | CCISites |
| Tower Foundation Drawings | 1425473 | CCISites |
| Tower Manufacturer Drawings | 1425417 | CCISites |
| Previous Structural Analysis | 2700302 | CCISites |

| Document | Reference | Source |
|------------------------------|-----------|----------|
| Tower Reinforcement Drawings | 5976614 | CCISites |
| Post-Modification Inspection | 6120832 | 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.
- 3) The flange bolt diameter and grade were assumed per the previous analysis by Crown Castle dated August 11, 2010 (CCI Doc ID#2700302).

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)

| Elevation (ft) | Component Type | Size | Critical Element | % Capacity | Pass / Fail |
|----------------|----------------|------------------------|------------------|------------|-------------|
| 145 - 140 | Pole | TP24.923x24x0.1875 | Pole | 0.2% | Pass |
| 140 - 135 | Pole | TP25.847x24.923x0.1875 | Pole | 1.3% | Pass |
| 135 - 130 | Pole | TP26.77x25.847x0.1875 | Pole | 4.3% | Pass |
| 130 - 125 | Pole | TP27.825x26.9x0.25 | Pole | 5.1% | Pass |
| 125 - 120 | Pole | TP28.75x27.825x0.25 | Pole | 8.7% | Pass |
| 120 - 115 | Pole | TP29.675x28.75x0.25 | Pole | 12.3% | Pass |
| 115 - 110 | Pole | TP30.599x29.675x0.25 | Pole | 17.8% | Pass |
| 110 - 105 | Pole | TP31.524x30.599x0.25 | Pole | 22.8% | Pass |
| 105 - 100 | Pole | TP32.449x31.524x0.25 | Pole | 30.2% | Pass |
| 100 - 95 | Pole | TP33.374x32.449x0.25 | Pole | 36.7% | Pass |
| 95 - 90 | Pole | TP34.299x33.374x0.25 | Pole | 44.3% | Pass |
| 90 - 89.25 | Pole | TP35.27x34.299x0.25 | Pole | 45.4% | Pass |
| 89.25 - 84.25 | Pole | TP34.862x33.938x0.3125 | Pole | 39.9% | Pass |
| 84.25 - 79.25 | Pole | TP35.787x34.862x0.3125 | Pole | 44.8% | Pass |
| 79.25 - 74.25 | Pole | TP36.712x35.787x0.3125 | Pole | 49.3% | Pass |
| 74.25 - 69.25 | Pole | TP37.636x36.712x0.3125 | Pole | 53.5% | Pass |
| 69.25 - 64.25 | Pole | TP38.561x37.636x0.3125 | Pole | 57.4% | Pass |
| 64.25 - 59.25 | Pole | TP39.486x38.561x0.3125 | Pole | 61.1% | Pass |

| Elevation (ft) | Component Type | Size | Critical Element | % Capacity | Pass / Fail |
|----------------|----------------|------------------------|--------------------------|--------------|-------------|
| 59.25 - 54.25 | Pole | TP40.411x39.486x0.3125 | Pole | 64.6% | Pass |
| 54.25 - 50.08 | Pole | TP41.181x40.411x0.3125 | Pole | 67.3% | Pass |
| 50.08 - 49.83 | Pole + Reinf. | TP41.227x41.181x0.4375 | Reinf. 2 Tension Rupture | 66.9% | Pass |
| 49.83 - 49.5 | Pole + Reinf. | TP42.26x41.227x0.4375 | Reinf. 2 Tension Rupture | 67.1% | Pass |
| 49.5 - 43.25 | Pole + Reinf. | TP41.695x40.664x0.5 | Reinf. 2 Tension Rupture | 64.3% | Pass |
| 43.25 - 38.25 | Pole + Reinf. | TP42.52x41.695x0.5 | Reinf. 2 Tension Rupture | 67.0% | Pass |
| 38.25 - 33.25 | Pole + Reinf. | TP43.345x42.52x0.4938 | Reinf. 2 Tension Rupture | 69.6% | Pass |
| 33.25 - 31.25 | Pole + Reinf. | TP43.675x43.345x0.4875 | Reinf. 2 Tension Rupture | 70.6% | Pass |
| 31.25 - 31 | Pole + Reinf. | TP43.716x43.675x0.5875 | Reinf. 1 Compression | 55.0% | Pass |
| 31 - 26 | Pole + Reinf. | TP44.541x43.716x0.5875 | Reinf. 1 Compression | 57.0% | Pass |
| 26 - 21 | Pole + Reinf. | TP45.366x44.541x0.575 | Reinf. 1 Compression | 58.9% | Pass |
| 21 - 16 | Pole + Reinf. | TP46.191x45.366x0.575 | Reinf. 1 Compression | 60.7% | Pass |
| 16 - 11 | Pole + Reinf. | TP47.015x46.191x0.575 | Reinf. 1 Compression | 62.4% | Pass |
| 11 - 6 | Pole + Reinf. | TP47.84x47.015x0.5625 | Reinf. 1 Compression | 64.0% | Pass |
| 6 - 1 | Pole + Reinf. | TP48.665x47.84x0.5625 | Reinf. 1 Compression | 65.6% | Pass |
| 1 - 0 | Pole + Reinf. | TP48.83x48.665x0.5625 | Reinf. 1 Compression | 65.9% | Pass |
| | | | | Summary | |
| | | | Pole | 67.3% | Pass |
| | | | Reinforcement | 70.6% | Pass |
| | | | Overall | 70.6% | Pass |

Table 5 - Tower Component Stresses vs. Capacity - LC7

| Notes | Component | Elevation (ft) | % Capacity | Pass / Fail |
|-------|----------------------------------|----------------|------------|-------------|
| 1,2 | Flange Connection | 130.0 | 5.9 | Pass |
| 1,2 | Anchor Rods | - | 61.6 | Pass |
| 1,2 | Base Plate | - | 65.8 | Pass |
| 1,2 | Base Foundation Structural | - | 58.3 | Pass |
| 1,2 | Base Foundation Soil Interaction | - | 44.3 | Pass |

| | |
|---|--------------|
| Structure Rating (max from all components) = | 70.6% |
|---|--------------|

Notes:

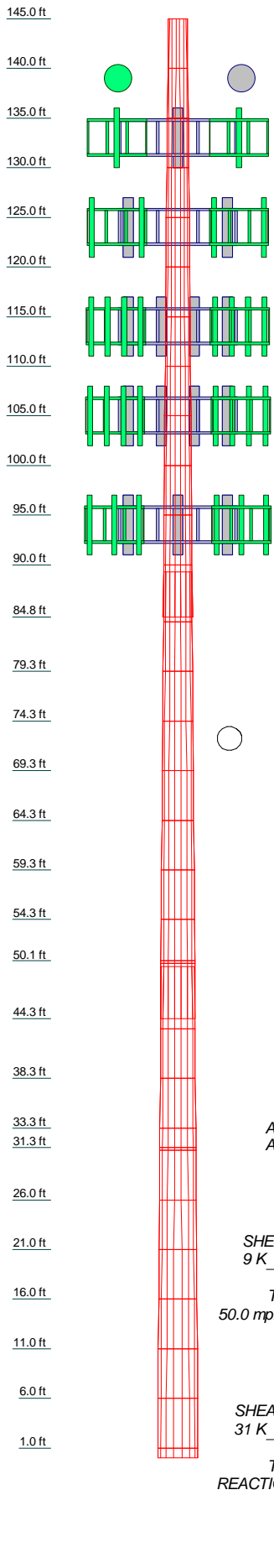
- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5

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

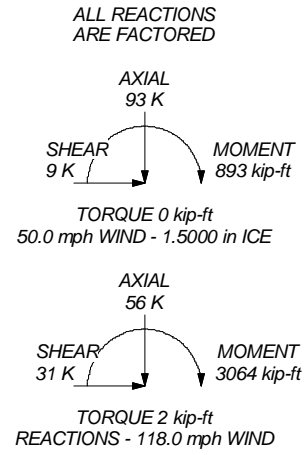
| Section | Length (ft) | Number of Sides | Thickness (in) | Socket Length (ft) | Top Dia (in) | Bot Dia (in) | Grade | Weight (K) |
|---------|-------------|-----------------|----------------|--------------------|--------------|--------------|-------|------------|
| 1 | 5.00 | 18 | 0.1875 | | 24.0000 | 24.0000 | | 0.2 |
| 2 | 5.00 | 18 | 0.1875 | | 24.9233 | 24.9233 | | 0.3 |
| 3 | 5.00 | 18 | 0.1875 | | 25.8467 | 25.8467 | | 0.3 |
| 4 | 5.00 | 18 | 0.2500 | | 26.7700 | 26.7700 | | 0.4 |
| 5 | 5.00 | 18 | 0.2500 | | 27.6933 | 27.6933 | | 0.4 |
| 6 | 5.00 | 18 | 0.2500 | | 28.6167 | 28.6167 | | 0.4 |
| 7 | 5.00 | 18 | 0.2500 | | 29.5400 | 29.5400 | | 0.4 |
| 8 | 5.00 | 18 | 0.2500 | | 30.4633 | 30.4633 | | 0.4 |
| 9 | 5.00 | 18 | 0.2500 | | 31.3867 | 31.3867 | | 0.4 |
| 10 | 5.00 | 18 | 0.2500 | | 32.3100 | 32.3100 | | 0.4 |
| 11 | 5.00 | 18 | 0.2500 | | 33.2333 | 33.2333 | | 0.4 |
| 12 | 5.00 | 18 | 0.2500 | 4.50 | 34.1567 | 34.1567 | | 0.5 |
| 13 | 5.00 | 18 | 0.2500 | | 35.0800 | 35.0800 | | 0.5 |
| 14 | 5.00 | 18 | 0.3125 | | 36.0033 | 36.0033 | | 0.6 |
| 15 | 5.00 | 18 | 0.3125 | | 36.9267 | 36.9267 | | 0.6 |
| 16 | 5.00 | 18 | 0.3125 | | 37.8500 | 37.8500 | | 0.6 |
| 17 | 5.00 | 18 | 0.3125 | | 38.7733 | 38.7733 | | 0.6 |
| 18 | 5.00 | 18 | 0.3125 | | 39.6967 | 39.6967 | | 0.7 |
| 19 | 5.00 | 18 | 0.3125 | | 40.6200 | 40.6200 | | 0.7 |
| 20 | 5.00 | 18 | 0.3125 | | 41.5433 | 41.5433 | | 0.7 |
| 21 | 5.00 | 18 | 0.3125 | | 42.4667 | 42.4667 | | 0.6 |
| 22 | 5.00 | 18 | 0.3125 | 5.25 | 43.3900 | 43.3900 | | 1.1 |
| 23 | 5.00 | 18 | 0.5000 | | 44.3133 | 44.3133 | | 1.1 |
| 24 | 5.00 | 18 | 0.5000 | | 45.2367 | 45.2367 | | 1.1 |
| 25 | 5.00 | 18 | 0.5000 | | 46.1600 | 46.1600 | | 1.2 |
| 26 | 5.00 | 18 | 0.5000 | | 47.0833 | 47.0833 | | 1.2 |
| 27 | 5.00 | 18 | 0.5000 | | 48.0067 | 48.0067 | | 1.4 |
| 28 | 5.00 | 18 | 0.5000 | | 48.9300 | 48.9300 | | 1.4 |
| 29 | 5.00 | 18 | 0.5000 | | 49.8533 | 49.8533 | | 1.4 |
| 30 | 5.00 | 18 | 0.5000 | | 50.7767 | 50.7767 | | 1.5 |
| 31 | 5.00 | 18 | 0.5000 | | 51.7000 | 51.7000 | | 1.5 |
| 32 | 5.00 | 18 | 0.5000 | | 52.6233 | 52.6233 | | 1.5 |
| 33 | 5.00 | 18 | 0.5000 | | 53.5467 | 53.5467 | | 1.5 |
| 34 | 5.00 | 18 | 0.5000 | | 54.4700 | 54.4700 | | 1.5 |




MATERIAL STRENGTH

| GRADE | Fy | Fu | GRADE | Fy | Fu |
|---------|--------|--------|-------|----|----|
| A607-65 | 65 ksi | 80 ksi | | | |

- ### TOWER DESIGN NOTES
1. Tower is located in Hartford County, Connecticut.
 2. Tower designed for Exposure C to the TIA-222-H Standard.
 3. Tower designed for a 118.0 mph basic wind in accordance with the TIA-222-H Standard.
 4. Tower is also designed for a 50.0 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
 5. Deflections are based upon a 60.0 mph wind.
 6. Tower Risk Category II.
 7. Topographic Category 1 with Crest Height of 0.00 ft



| | | |
|--|---|---|
|  Tower Engineering Professionals | Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job: Newington (BU 881364) Project: TEP No. 65292.679311 |
| | Client: Crown Castle Code: TIA-222-H Path: | Drawn by: Tari L. Vicenty Date: 03/29/22 |

| | | |
|--|--|---------------------------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job Newington (BU 881364) | Page 1 of 28 |
| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Tower base elevation above sea level: 142.00 ft.

Basic wind speed of 118.0 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 pcf.

A wind speed of 50.0 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60.0 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"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 2 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

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 | 145.00-140.00 | 5.00 | 0.00 | 18 | 24.0000 | 24.9233 | 0.1875 | 0.7500 | A607-65 (65 ksi) |
| L2 | 140.00-135.00 | 5.00 | 0.00 | 18 | 24.9233 | 25.8467 | 0.1875 | 0.7500 | A607-65 (65 ksi) |
| L3 | 135.00-130.00 | 5.00 | 0.00 | 18 | 25.8467 | 26.7700 | 0.1875 | 0.7500 | A607-65 (65 ksi) |
| L4 | 130.00-125.00 | 5.00 | 0.00 | 18 | 26.9000 | 27.8249 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L5 | 125.00-120.00 | 5.00 | 0.00 | 18 | 27.8249 | 28.7497 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L6 | 120.00-115.00 | 5.00 | 0.00 | 18 | 28.7497 | 29.6746 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L7 | 115.00-110.00 | 5.00 | 0.00 | 18 | 29.6746 | 30.5994 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L8 | 110.00-105.00 | 5.00 | 0.00 | 18 | 30.5994 | 31.5243 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L9 | 105.00-100.00 | 5.00 | 0.00 | 18 | 31.5243 | 32.4492 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L10 | 100.00-95.00 | 5.00 | 0.00 | 18 | 32.4492 | 33.3740 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L11 | 95.00-90.00 | 5.00 | 0.00 | 18 | 33.3740 | 34.2989 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L12 | 90.00-84.75 | 5.25 | 4.50 | 18 | 34.2989 | 35.2700 | 0.2500 | 1.0000 | A607-65 (65 ksi) |
| L13 | 84.75-84.25 | 5.00 | 0.00 | 18 | 33.9376 | 34.8623 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L14 | 84.25-79.25 | 5.00 | 0.00 | 18 | 34.8623 | 35.7870 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L15 | 79.25-74.25 | 5.00 | 0.00 | 18 | 35.7870 | 36.7117 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L16 | 74.25-69.25 | 5.00 | 0.00 | 18 | 36.7117 | 37.6365 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L17 | 69.25-64.25 | 5.00 | 0.00 | 18 | 37.6365 | 38.5612 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L18 | 64.25-59.25 | 5.00 | 0.00 | 18 | 38.5612 | 39.4859 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L19 | 59.25-54.25 | 5.00 | 0.00 | 18 | 39.4859 | 40.4106 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L20 | 54.25-50.08 | 4.17 | 0.00 | 18 | 40.4106 | 41.1812 | 0.3125 | 1.2500 | A607-65 (65 ksi) |
| L21 | 50.08-49.83 | 0.25 | 0.00 | 18 | 41.1812 | 41.2275 | 0.4375 | 1.7500 | A607-65 (65 ksi) |
| L22 | 49.83-44.25 | 5.58 | 5.25 | 18 | 41.2275 | 42.2600 | 0.4375 | 1.7500 | A607-65 (65 ksi) |
| L23 | 44.25-43.25 | 6.25 | 0.00 | 18 | 40.6641 | 41.6951 | 0.5000 | 2.0000 | A607-65 (65 ksi) |
| L24 | 43.25-38.25 | 5.00 | 0.00 | 18 | 41.6951 | 42.5200 | 0.5000 | 2.0000 | A607-65 (65 ksi) |
| L25 | 38.25-33.25 | 5.00 | 0.00 | 18 | 42.5200 | 43.3448 | 0.4938 | 1.9750 | A607-65 (65 ksi) |
| L26 | 33.25-31.25 | 2.00 | 0.00 | 18 | 43.3448 | 43.6747 | 0.4875 | 1.9500 | A607-65 (65 ksi) |
| L27 | 31.25-31.00 | 0.25 | 0.00 | 18 | 43.6747 | 43.7160 | 0.5875 | 2.3500 | A607-65 (65 ksi) |
| L28 | 31.00-26.00 | 5.00 | 0.00 | 18 | 43.7160 | 44.5408 | 0.5875 | 2.3500 | A607-65 (65 ksi) |
| L29 | 26.00-21.00 | 5.00 | 0.00 | 18 | 44.5408 | 45.3657 | 0.5750 | 2.3000 | A607-65 (65 ksi) |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 3 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| 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 | 21.00-16.00 | 5.00 | 0.00 | 18 | 45.3657 | 46.1905 | 0.5750 | 2.3000 | A607-65 (65 ksi) |
| L31 | 16.00-11.00 | 5.00 | 0.00 | 18 | 46.1905 | 47.0153 | 0.5750 | 2.3000 | A607-65 (65 ksi) |
| L32 | 11.00-6.00 | 5.00 | 0.00 | 18 | 47.0153 | 47.8402 | 0.5625 | 2.2500 | A607-65 (65 ksi) |
| L33 | 6.00-1.00 | 5.00 | 0.00 | 18 | 47.8402 | 48.6650 | 0.5625 | 2.2500 | A607-65 (65 ksi) |
| L34 | 1.00-0.00 | 1.00 | | 18 | 48.6650 | 48.8300 | 0.5625 | 2.2500 | A607-65 (65 ksi) |

Tapered Pole Properties

| Section | Tip Dia. in | Area in ² | I in ⁴ | r in | C in | I/C in ³ | J in ⁴ | It/Q in ² | w in | w/t |
|---------|----------------|-------------------------|----------------------|---------|---------|------------------------|----------------------|-------------------------|---------|--------|
| L1 | 24.3413 | 14.1714 | 1015.2211 | 8.4534 | 12.1920 | 83.2694 | 2031.7780 | 7.0871 | 3.8940 | 20.768 |
| | 25.2789 | 14.7209 | 1137.9555 | 8.7812 | 12.6611 | 89.8784 | 2277.4084 | 7.3619 | 4.0565 | 21.635 |
| L2 | 25.2789 | 14.7209 | 1137.9555 | 8.7812 | 12.6611 | 89.8784 | 2277.4084 | 7.3619 | 4.0565 | 21.635 |
| | 26.2165 | 15.2704 | 1270.2034 | 9.1090 | 13.1301 | 96.7398 | 2542.0783 | 7.6367 | 4.2190 | 22.501 |
| L3 | 26.2165 | 15.2704 | 1270.2034 | 9.1090 | 13.1301 | 96.7398 | 2542.0783 | 7.6367 | 4.2190 | 22.501 |
| | 27.1540 | 15.8199 | 1412.3200 | 9.4368 | 13.5992 | 103.8535 | 2826.4984 | 7.9115 | 4.3815 | 23.368 |
| L4 | 27.2764 | 21.1468 | 1897.4748 | 9.4608 | 13.6652 | 138.8545 | 3797.4464 | 10.5754 | 4.2944 | 17.178 |
| | 28.2155 | 21.8807 | 2101.9599 | 9.7891 | 14.1350 | 148.7057 | 4206.6855 | 10.9424 | 4.4572 | 17.829 |
| L5 | 28.2155 | 21.8807 | 2101.9599 | 9.7891 | 14.1350 | 148.7057 | 4206.6855 | 10.9424 | 4.4572 | 17.829 |
| | 29.1547 | 22.6145 | 2320.6323 | 10.1174 | 14.6049 | 158.8945 | 4644.3181 | 11.3094 | 4.6200 | 18.48 |
| L6 | 29.1547 | 22.6145 | 2320.6323 | 10.1174 | 14.6049 | 158.8945 | 4644.3181 | 11.3094 | 4.6200 | 18.48 |
| | 30.0938 | 23.3484 | 2553.9680 | 10.4457 | 15.0747 | 169.4209 | 5111.2965 | 11.6764 | 4.7827 | 19.131 |
| L7 | 30.0938 | 23.3484 | 2553.9680 | 10.4457 | 15.0747 | 169.4209 | 5111.2965 | 11.6764 | 4.7827 | 19.131 |
| | 31.0329 | 24.0823 | 2802.4428 | 10.7741 | 15.5445 | 180.2849 | 5608.5730 | 12.0434 | 4.9455 | 19.782 |
| L8 | 31.0329 | 24.0823 | 2802.4428 | 10.7741 | 15.5445 | 180.2849 | 5608.5730 | 12.0434 | 4.9455 | 19.782 |
| | 31.9721 | 24.8162 | 3066.5325 | 11.1024 | 16.0143 | 191.4865 | 6137.0999 | 12.4104 | 5.1083 | 20.433 |
| L9 | 31.9721 | 24.8162 | 3066.5325 | 11.1024 | 16.0143 | 191.4865 | 6137.0999 | 12.4104 | 5.1083 | 20.433 |
| | 32.9112 | 25.5500 | 3346.7129 | 11.4307 | 16.4842 | 203.0258 | 6697.8296 | 12.7774 | 5.2711 | 21.084 |
| L10 | 32.9112 | 25.5500 | 3346.7129 | 11.4307 | 16.4842 | 203.0258 | 6697.8296 | 12.7774 | 5.2711 | 21.084 |
| | 33.8503 | 26.2839 | 3643.4601 | 11.7590 | 16.9540 | 214.9026 | 7291.7143 | 13.1445 | 5.4338 | 21.735 |
| L11 | 33.8503 | 26.2839 | 3643.4601 | 11.7590 | 16.9540 | 214.9026 | 7291.7143 | 13.1445 | 5.4338 | 21.735 |
| | 34.7894 | 27.0178 | 3957.2496 | 12.0874 | 17.4238 | 227.1170 | 7919.7063 | 13.5115 | 5.5966 | 22.386 |
| L12 | 34.7894 | 27.0178 | 3957.2496 | 12.0874 | 17.4238 | 227.1170 | 7919.7063 | 13.5115 | 5.5966 | 22.386 |
| | 35.7755 | 27.7884 | 4305.5913 | 12.4321 | 17.9172 | 240.3055 | 8616.8481 | 13.8968 | 5.7675 | 23.07 |
| L13 | 35.2580 | 33.3519 | 4764.1573 | 11.9369 | 17.2403 | 276.3382 | 9534.5834 | 16.6791 | 5.4230 | 17.354 |
| | 35.3519 | 34.2691 | 5168.1159 | 12.2652 | 17.7101 | 291.8180 | 10343.0321 | 17.1378 | 5.5858 | 17.874 |
| L14 | 35.3519 | 34.2691 | 5168.1159 | 12.2652 | 17.7101 | 291.8180 | 10343.0321 | 17.1378 | 5.5858 | 17.874 |
| | 36.2909 | 35.1863 | 5594.2871 | 12.5935 | 18.1798 | 307.7197 | 11195.9354 | 17.5965 | 5.7485 | 18.395 |
| L15 | 36.2909 | 35.1863 | 5594.2871 | 12.5935 | 18.1798 | 307.7197 | 11195.9354 | 17.5965 | 5.7485 | 18.395 |
| | 37.2299 | 36.1035 | 6043.2656 | 12.9217 | 18.6496 | 324.0432 | 12094.4831 | 18.0552 | 5.9113 | 18.916 |
| L16 | 37.2299 | 36.1035 | 6043.2656 | 12.9217 | 18.6496 | 324.0432 | 12094.4831 | 18.0552 | 5.9113 | 18.916 |
| | 38.1689 | 37.0207 | 6515.6458 | 13.2500 | 19.1193 | 340.7886 | 13039.8651 | 18.5139 | 6.0740 | 19.437 |
| L17 | 38.1689 | 37.0207 | 6515.6458 | 13.2500 | 19.1193 | 340.7886 | 13039.8651 | 18.5139 | 6.0740 | 19.437 |
| | 39.1078 | 37.9379 | 7012.0222 | 13.5783 | 19.5891 | 357.9558 | 14033.2711 | 18.9726 | 6.2368 | 19.958 |
| L18 | 39.1078 | 37.9379 | 7012.0222 | 13.5783 | 19.5891 | 357.9558 | 14033.2711 | 18.9726 | 6.2368 | 19.958 |
| | 40.0468 | 38.8551 | 7532.9894 | 13.9065 | 20.0588 | 375.5449 | 15075.8909 | 19.4312 | 6.3995 | 20.478 |
| L19 | 40.0468 | 38.8551 | 7532.9894 | 13.9065 | 20.0588 | 375.5449 | 15075.8909 | 19.4312 | 6.3995 | 20.478 |
| | 40.9858 | 39.7723 | 8079.1418 | 14.2348 | 20.5286 | 393.5559 | 16168.9144 | 19.8899 | 6.5623 | 20.999 |
| L20 | 40.9858 | 39.7723 | 8079.1418 | 14.2348 | 20.5286 | 393.5559 | 16168.9144 | 19.8899 | 6.5623 | 20.999 |
| | 41.7683 | 40.5367 | 8553.9752 | 14.5084 | 20.9201 | 408.8885 | 17119.2059 | 20.2722 | 6.6979 | 21.433 |
| L21 | 41.7683 | 40.5367 | 8553.9752 | 14.5084 | 20.9201 | 408.8885 | 17119.2059 | 20.2722 | 6.6979 | 21.433 |
| | 41.7490 | 56.5778 | 11866.0166 | 14.4640 | 20.9201 | 567.2074 | 23747.6468 | 28.2943 | 6.4779 | 14.807 |

| | | |
|--|--|---------------------------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job Newington (BU 881364) | Page 5 of 28 |
| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

| 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 in | Double Angle Stitch Bolt Spacing Horizontals in | Double Angle Stitch Bolt Spacing Redundants in |
|-----------------|------------------------|------------------|--------------|----------------------|----------------------|--------------|---|---|--|
| ft | ft ² | in | | | | | | | |
| L15 | | | | 1 | 1 | 1 | | | |
| 79.25-74.25 | | | | | | | | | |
| L16 | | | | 1 | 1 | 1 | | | |
| 74.25-69.25 | | | | | | | | | |
| L17 | | | | 1 | 1 | 1 | | | |
| 69.25-64.25 | | | | | | | | | |
| L18 | | | | 1 | 1 | 1 | | | |
| 64.25-59.25 | | | | | | | | | |
| L19 | | | | 1 | 1 | 1 | | | |
| 59.25-54.25 | | | | | | | | | |
| L20 | | | | 1 | 1 | 1 | | | |
| 54.25-50.08 | | | | | | | | | |
| L21 | | | | 1 | 1 | 1.03427 | | | |
| 50.08-49.83 | | | | | | | | | |
| L22 | | | | 1 | 1 | 1.03379 | | | |
| 49.83-44.25 | | | | | | | | | |
| L23 | | | | 1 | 1 | 1.02761 | | | |
| 44.25-43.25 | | | | | | | | | |
| L24 | | | | 1 | 1 | 1.02216 | | | |
| 43.25-38.25 | | | | | | | | | |
| L25 | | | | 1 | 1 | 1.02965 | | | |
| 38.25-33.25 | | | | | | | | | |
| L26 | | | | 1 | 1 | 1.04061 | | | |
| 33.25-31.25 | | | | | | | | | |
| L27 | | | | 1 | 1 | 1.0378 | | | |
| 31.25-31.00 | | | | | | | | | |
| L28 | | | | 1 | 1 | 1.0303 | | | |
| 31.00-26.00 | | | | | | | | | |
| L29 | | | | 1 | 1 | 1.04503 | | | |
| 26.00-21.00 | | | | | | | | | |
| L30 | | | | 1 | 1 | 1.03793 | | | |
| 21.00-16.00 | | | | | | | | | |
| L31 | | | | 1 | 1 | 1.03108 | | | |
| 16.00-11.00 | | | | | | | | | |
| L32 | | | | 1 | 1 | 1.04695 | | | |
| 11.00-6.00 | | | | | | | | | |
| L33 | | | | 1 | 1 | 1.04043 | | | |
| 6.00-1.00 | | | | | | | | | |
| L34 | | | | 1 | 1 | 1.03915 | | | |
| 1.00-0.00 | | | | | | | | | |

Feed Line/Linear Appurtenances - Entered As Round Or Flat

| Description | Sector | Exclude From Torque Calculation | Component Type | Placement ft | Total Number | Number Per Row | Start/End Position | Width or Diameter in | Perimeter in | Weight plf |
|----------------------------|--------|---------------------------------|-------------------|---------------|--------------|----------------|--------------------|----------------------|--------------|------------|
| **94** | | | | | | | | | | |
| HJ7-50A(1-5/8) | A | No | Surface Ar (CaAa) | 94.00 - 0.00 | 10 | 7 | -0.250 -0.250 | 1.9800 | | 1.04 |
| **77** | | | | | | | | | | |
| LDF4-50A(1/2) | A | No | Surface Ar (CaAa) | 77.00 - 0.00 | 1 | 1 | 0.250 0.250 | 0.6250 | | 0.15 |
| *** | | | | | | | | | | |
| Safety Line 3/8 | A | No | Surface Ar (CaAa) | 145.00 - 0.00 | 1 | 1 | 0.500 0.500 | 0.3750 | | 0.22 |
| *** | | | | | | | | | | |
| (Area) CCI-65FP-085125 (H) | A | No | Surface Af (CaAa) | 35.50 - 0.50 | 1 | 1 | 0.167 | 8.5000 | 19.5000 | 0.00 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 6 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| 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 |
|----------------------------|--------|---------------------------------|-------------------|-----------------|--------------|----------------|--------------------|-------------------------|-----------------|---------------|
| (Area) CCI-65FP-085125 (H) | B | No | Surface Af (CaAa) | 35.50 - 0.50 | 1 | 1 | 0.167 0.330 | 8.5000 | 19.5000 | 0.00 |
| (Area) CCI-65FP-085125 (H) | C | No | Surface Af (CaAa) | 35.50 - 0.50 | 1 | 1 | 0.167 0.167 | 8.5000 | 19.5000 | 0.00 |
| (Area) CCI-65FP-060100 (H) | A | No | Surface Af (CaAa) | 60.58 - 35.50 | 1 | 1 | 0.167 0.167 | 6.0000 | 14.0000 | 0.00 |
| (Area) CCI-65FP-060100 (H) | B | No | Surface Af (CaAa) | 60.58 - 35.50 | 1 | 1 | 0.330 0.330 | 6.0000 | 14.0000 | 0.00 |
| (Area) CCI-65FP-060100 (H) | C | No | Surface Af (CaAa) | 60.58 - 35.50 | 1 | 1 | 0.167 0.167 | 6.0000 | 14.0000 | 0.00 |

Feed Line/Linear Appurtenances - Entered As Area

| Description | Face or Leg | Allow Shield | Exclude From Torque Calculation | Component Type | Placement ft | Total Number | | C _{AA} ft ² /ft | Weight plf |
|--------------------------|-------------|--------------|---------------------------------|----------------|-----------------|--------------|--|--|------------------------------|
| **133** | | | | | | | | | |
| ATCB-B01-005(5/16") | C | No | No | Inside Pole | 133.00 - 0.00 | 6 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.07 0.07 0.07 0.07 |
| FSJ4-50B(1/2) | C | No | No | Inside Pole | 133.00 - 0.00 | 2 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.14 0.14 0.14 0.14 |
| 2" Flexible Conduit | C | No | No | Inside Pole | 133.00 - 0.00 | 2 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.34 0.34 0.34 0.34 |
| **124** | | | | | | | | | |
| HB114-1-08U4-M5J(1 1/4") | C | No | No | Inside Pole | 124.00 - 0.00 | 4 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 1.08 1.08 1.08 1.08 |
| **114** | | | | | | | | | |
| LDF4-50A(1/2) | C | No | No | Inside Pole | 114.00 - 0.00 | 1 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.15 0.15 0.15 0.15 |
| LDF7-50A(1-5/8) | C | No | No | Inside Pole | 114.00 - 0.00 | 8 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.82 0.82 0.82 0.82 |
| **105** | | | | | | | | | |
| PWRT-608-S(13/16) | C | No | No | Inside Pole | 105.00 - 0.00 | 6 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.62 0.62 0.62 0.62 |
| LCF158-50A(1-5/8) | C | No | No | Inside Pole | 105.00 - 0.00 | 6 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.00 0.00 0.00 0.00 | 0.80 0.80 0.80 0.80 |
| FB-L98B-002-75000(3/8) | C | No | No | Inside Pole | 105.00 - 0.00 | 2 | No Ice 1/2" Ice 1" Ice | 0.00 0.00 0.00 | 0.06 0.06 0.06 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 7 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Allow Shield | Exclude From Torque Calculation | Component Type | Placement ft | Total Number | | C _{AA} ft ² /ft | Weight plf |
|---------------------|-------------|--------------|---------------------------------|----------------|---------------|--------------|----------|-------------------------------------|------------|
| 2" Flexible Conduit | C | No | No | Inside Pole | 105.00 - 0.00 | 2 | 2" Ice | 0.00 | 0.06 |
| | | | | | | | No Ice | 0.00 | 0.34 |
| | | | | | | | 1/2" Ice | 0.00 | 0.34 |
| | | | | | | | 1" Ice | 0.00 | 0.34 |
| HJ7-50A(1-5/8) | A | No | No | Inside Pole | 94.00 - 0.00 | 3 | 2" Ice | 0.00 | 0.34 |
| | | | | | | | 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 |
| *** | | | | | | | | | |

Feed Line/Linear Appurtenances Section Areas

| Tower Section | Tower Elevation ft | Face | A _R ft ² | A _F ft ² | C _{AA} In Face ft ² | C _{AA} Out Face ft ² | Weight K |
|---------------|--------------------|------|--------------------------------|--------------------------------|---|--|----------|
| L1 | 145.00-140.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L2 | 140.00-135.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L3 | 135.00-130.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L4 | 130.00-125.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.01 |
| L5 | 125.00-120.00 | A | 0.000 | 0.000 | 0.188 | 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 |
| L6 | 120.00-115.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.03 |
| L7 | 115.00-110.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.06 |
| L8 | 110.00-105.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.06 |
| L9 | 105.00-100.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L10 | 100.00-95.00 | A | 0.000 | 0.000 | 0.188 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L11 | 95.00-90.00 | A | 0.000 | 0.000 | 5.731 | 0.000 | 0.06 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L12 | 90.00-84.75 | A | 0.000 | 0.000 | 7.473 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L13 | 84.75-84.25 | A | 0.000 | 0.000 | 0.712 | 0.000 | 0.01 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.01 |
| L14 | 84.25-79.25 | A | 0.000 | 0.000 | 7.117 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 8 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Tower Section | Tower Elevation ft | Face | A _R ft ² | A _F ft ² | C _{AA} In Face ft ² | C _{AA} Out Face ft ² | Weight K |
|---------------|-----------------------|------|-----------------------------------|-----------------------------------|---|--|-------------|
| L15 | 79.25-74.25 | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 7.289 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L16 | 74.25-69.25 | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 7.430 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L17 | 69.25-64.25 | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 7.430 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L18 | 64.25-59.25 | C | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 8.763 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 1.333 | 0.000 | 0.00 |
| L19 | 59.25-54.25 | C | 0.000 | 0.000 | 1.333 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 12.430 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 5.000 | 0.000 | 0.00 |
| L20 | 54.25-50.08 | C | 0.000 | 0.000 | 5.000 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 10.359 | 0.000 | 0.06 |
| | | B | 0.000 | 0.000 | 4.167 | 0.000 | 0.00 |
| L21 | 50.08-49.83 | C | 0.000 | 0.000 | 4.167 | 0.000 | 0.09 |
| | | A | 0.000 | 0.000 | 0.622 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.250 | 0.000 | 0.00 |
| L22 | 49.83-44.25 | C | 0.000 | 0.000 | 0.250 | 0.000 | 0.01 |
| | | A | 0.000 | 0.000 | 13.879 | 0.000 | 0.08 |
| | | B | 0.000 | 0.000 | 5.583 | 0.000 | 0.00 |
| L23 | 44.25-43.25 | C | 0.000 | 0.000 | 5.583 | 0.000 | 0.12 |
| | | A | 0.000 | 0.000 | 2.486 | 0.000 | 0.01 |
| | | B | 0.000 | 0.000 | 1.000 | 0.000 | 0.00 |
| L24 | 43.25-38.25 | C | 0.000 | 0.000 | 1.000 | 0.000 | 0.02 |
| | | A | 0.000 | 0.000 | 12.430 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 5.000 | 0.000 | 0.00 |
| L25 | 38.25-33.25 | C | 0.000 | 0.000 | 5.000 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 13.368 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 5.938 | 0.000 | 0.00 |
| L26 | 33.25-31.25 | C | 0.000 | 0.000 | 5.938 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 5.805 | 0.000 | 0.03 |
| | | B | 0.000 | 0.000 | 2.833 | 0.000 | 0.00 |
| L27 | 31.25-31.00 | C | 0.000 | 0.000 | 2.833 | 0.000 | 0.04 |
| | | A | 0.000 | 0.000 | 0.726 | 0.000 | 0.00 |
| | | B | 0.000 | 0.000 | 0.354 | 0.000 | 0.00 |
| L28 | 31.00-26.00 | C | 0.000 | 0.000 | 0.354 | 0.000 | 0.01 |
| | | A | 0.000 | 0.000 | 14.513 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 7.083 | 0.000 | 0.00 |
| L29 | 26.00-21.00 | C | 0.000 | 0.000 | 7.083 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 7.083 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 7.083 | 0.000 | 0.00 |
| L30 | 21.00-16.00 | C | 0.000 | 0.000 | 7.083 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 14.513 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 7.083 | 0.000 | 0.00 |
| L31 | 16.00-11.00 | C | 0.000 | 0.000 | 7.083 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 14.513 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 7.083 | 0.000 | 0.00 |
| L32 | 11.00-6.00 | C | 0.000 | 0.000 | 7.083 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 14.513 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 7.083 | 0.000 | 0.00 |
| L33 | 6.00-1.00 | C | 0.000 | 0.000 | 7.083 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 14.513 | 0.000 | 0.07 |
| | | B | 0.000 | 0.000 | 7.083 | 0.000 | 0.00 |
| L34 | 1.00-0.00 | C | 0.000 | 0.000 | 7.083 | 0.000 | 0.11 |
| | | A | 0.000 | 0.000 | 2.194 | 0.000 | 0.01 |
| | | B | 0.000 | 0.000 | 0.708 | 0.000 | 0.00 |
| | | C | 0.000 | 0.000 | 0.708 | 0.000 | 0.02 |

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| | Client Crown Castle | Designed by Tari L. Vicenty |

Feed Line/Linear Appurtenances Section Areas - With Ice

| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A _R ft ² | A _F ft ² | C _{AA} In Face ft ² | C _{AA} Out Face ft ² | Weight K |
|---------------|-----------------------|-------------|---------------------|-----------------------------------|-----------------------------------|---|--|-------------|
| L1 | 145.00-140.00 | A | 1.476 | 0.000 | 0.000 | 1.663 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L2 | 140.00-135.00 | A | 1.471 | 0.000 | 0.000 | 1.658 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L3 | 135.00-130.00 | A | 1.465 | 0.000 | 0.000 | 1.653 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| L4 | 130.00-125.00 | A | 1.460 | 0.000 | 0.000 | 1.647 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.01 |
| L5 | 125.00-120.00 | A | 1.454 | 0.000 | 0.000 | 1.641 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.02 |
| L6 | 120.00-115.00 | A | 1.448 | 0.000 | 0.000 | 1.635 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.03 |
| L7 | 115.00-110.00 | A | 1.441 | 0.000 | 0.000 | 1.629 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.06 |
| L8 | 110.00-105.00 | A | 1.435 | 0.000 | 0.000 | 1.622 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.06 |
| L9 | 105.00-100.00 | A | 1.428 | 0.000 | 0.000 | 1.615 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L10 | 100.00-95.00 | A | 1.421 | 0.000 | 0.000 | 1.608 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L11 | 95.00-90.00 | A | 1.413 | 0.000 | 0.000 | 9.944 | 0.000 | 0.16 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L12 | 90.00-84.75 | A | 1.405 | 0.000 | 0.000 | 12.613 | 0.000 | 0.21 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L13 | 84.75-84.25 | A | 1.401 | 0.000 | 0.000 | 1.201 | 0.000 | 0.02 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.01 |
| L14 | 84.25-79.25 | A | 1.396 | 0.000 | 0.000 | 11.991 | 0.000 | 0.20 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L15 | 79.25-74.25 | A | 1.387 | 0.000 | 0.000 | 12.906 | 0.000 | 0.21 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L16 | 74.25-69.25 | A | 1.378 | 0.000 | 0.000 | 13.641 | 0.000 | 0.22 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L17 | 69.25-64.25 | A | 1.368 | 0.000 | 0.000 | 13.609 | 0.000 | 0.21 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.000 | 0.000 | 0.11 |
| L18 | 64.25-59.25 | A | 1.357 | 0.000 | 0.000 | 15.269 | 0.000 | 0.23 |
| | | B | | 0.000 | 0.000 | 1.695 | 0.000 | 0.01 |
| | | C | | 0.000 | 0.000 | 1.695 | 0.000 | 0.12 |
| L19 | 59.25-54.25 | A | 1.346 | 0.000 | 0.000 | 19.883 | 0.000 | 0.26 |
| | | B | | 0.000 | 0.000 | 6.346 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 6.346 | 0.000 | 0.16 |
| L20 | 54.25-50.08 | A | 1.335 | 0.000 | 0.000 | 16.531 | 0.000 | 0.22 |

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| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A _R ft ² | A _F ft ² | C _{AA} In Face ft ² | C _{AA} Out Face ft ² | Weight K |
|---------------|-----------------------|-------------|---------------------|-----------------------------------|-----------------------------------|---|--|-------------|
| | | B | | 0.000 | 0.000 | 5.279 | 0.000 | 0.04 |
| | | C | | 0.000 | 0.000 | 5.279 | 0.000 | 0.13 |
| L21 | 50.08-49.83 | A | 1.329 | 0.000 | 0.000 | 0.991 | 0.000 | 0.01 |
| | | B | | 0.000 | 0.000 | 0.316 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.316 | 0.000 | 0.01 |
| L22 | 49.83-44.25 | A | 1.321 | 0.000 | 0.000 | 22.083 | 0.000 | 0.29 |
| | | B | | 0.000 | 0.000 | 7.058 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 7.058 | 0.000 | 0.18 |
| L23 | 44.25-43.25 | A | 1.311 | 0.000 | 0.000 | 3.955 | 0.000 | 0.05 |
| | | B | | 0.000 | 0.000 | 1.264 | 0.000 | 0.01 |
| | | C | | 0.000 | 0.000 | 1.264 | 0.000 | 0.03 |
| L24 | 43.25-38.25 | A | 1.302 | 0.000 | 0.000 | 19.697 | 0.000 | 0.25 |
| | | B | | 0.000 | 0.000 | 6.302 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 6.302 | 0.000 | 0.16 |
| L25 | 38.25-33.25 | A | 1.285 | 0.000 | 0.000 | 20.562 | 0.000 | 0.26 |
| | | B | | 0.000 | 0.000 | 7.223 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 7.223 | 0.000 | 0.16 |
| L26 | 33.25-31.25 | A | 1.272 | 0.000 | 0.000 | 8.661 | 0.000 | 0.11 |
| | | B | | 0.000 | 0.000 | 3.342 | 0.000 | 0.02 |
| | | C | | 0.000 | 0.000 | 3.342 | 0.000 | 0.07 |
| L27 | 31.25-31.00 | A | 1.268 | 0.000 | 0.000 | 1.082 | 0.000 | 0.01 |
| | | B | | 0.000 | 0.000 | 0.418 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.418 | 0.000 | 0.01 |
| L28 | 31.00-26.00 | A | 1.256 | 0.000 | 0.000 | 21.586 | 0.000 | 0.26 |
| | | B | | 0.000 | 0.000 | 8.340 | 0.000 | 0.06 |
| | | C | | 0.000 | 0.000 | 8.340 | 0.000 | 0.17 |
| L29 | 26.00-21.00 | A | 1.232 | 0.000 | 0.000 | 21.484 | 0.000 | 0.26 |
| | | B | | 0.000 | 0.000 | 8.316 | 0.000 | 0.06 |
| | | C | | 0.000 | 0.000 | 8.316 | 0.000 | 0.17 |
| L30 | 21.00-16.00 | A | 1.203 | 0.000 | 0.000 | 21.360 | 0.000 | 0.25 |
| | | B | | 0.000 | 0.000 | 8.287 | 0.000 | 0.06 |
| | | C | | 0.000 | 0.000 | 8.287 | 0.000 | 0.17 |
| L31 | 16.00-11.00 | A | 1.166 | 0.000 | 0.000 | 21.201 | 0.000 | 0.25 |
| | | B | | 0.000 | 0.000 | 8.249 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 8.249 | 0.000 | 0.16 |
| L32 | 11.00-6.00 | A | 1.113 | 0.000 | 0.000 | 20.977 | 0.000 | 0.24 |
| | | B | | 0.000 | 0.000 | 8.197 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 8.197 | 0.000 | 0.16 |
| L33 | 6.00-1.00 | A | 1.019 | 0.000 | 0.000 | 20.575 | 0.000 | 0.22 |
| | | B | | 0.000 | 0.000 | 8.102 | 0.000 | 0.05 |
| | | C | | 0.000 | 0.000 | 8.102 | 0.000 | 0.16 |
| L34 | 1.00-0.00 | A | 0.839 | 0.000 | 0.000 | 3.170 | 0.000 | 0.03 |
| | | B | | 0.000 | 0.000 | 0.792 | 0.000 | 0.00 |
| | | C | | 0.000 | 0.000 | 0.792 | 0.000 | 0.03 |

Feed Line Center of Pressure

| Section | Elevation ft | CP _X in | CP _Z in | CP _X Ice in | CP _Z Ice in |
|---------|-----------------|-----------------------|-----------------------|------------------------------|------------------------------|
| L1 | 145.00-140.00 | 0.0000 | -0.3011 | 0.0000 | -1.3288 |
| L2 | 140.00-135.00 | 0.0000 | -0.3012 | 0.0000 | -1.3345 |
| L3 | 135.00-130.00 | 0.0000 | -0.3012 | 0.0000 | -1.3395 |
| L4 | 130.00-125.00 | 0.0000 | -0.3014 | 0.0000 | -1.3453 |
| L5 | 125.00-120.00 | 0.0000 | -0.3015 | 0.0000 | -1.3488 |
| L6 | 120.00-115.00 | 0.0000 | -0.3016 | 0.0000 | -1.3518 |
| L7 | 115.00-110.00 | 0.0000 | -0.3016 | 0.0000 | -1.3541 |
| L8 | 110.00-105.00 | 0.0000 | -0.3017 | 0.0000 | -1.3558 |

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|--|----------------|-----------------------|--------------------|-------------------|
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| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Section | Elevation | CP _x | CP _z | CP _x | CP _z |
|---------|---------------|-----------------|-----------------|-----------------|-----------------|
| | | in | in | Ice in | Ice in |
| L9 | 105.00-100.00 | 0.0000 | -0.3017 | 0.0000 | -1.3569 |
| L10 | 100.00-95.00 | 0.0000 | -0.3018 | 0.0000 | -1.3575 |
| L11 | 95.00-90.00 | -6.4951 | -0.1983 | -5.1118 | -0.8856 |
| L12 | 90.00-84.75 | -7.3589 | -0.1807 | -5.9273 | -0.8223 |
| L13 | 84.75-84.25 | -7.3629 | -0.1808 | -5.9310 | -0.8229 |
| L14 | 84.25-79.25 | -7.4148 | -0.1823 | -5.9634 | -0.8246 |
| L15 | 79.25-74.25 | -7.5238 | -0.3307 | -6.1070 | -1.2301 |
| L16 | 74.25-69.25 | -7.6287 | -0.4528 | -6.2333 | -1.5493 |
| L17 | 69.25-64.25 | -7.7196 | -0.4591 | -6.2937 | -1.5601 |
| L18 | 64.25-59.25 | -6.6168 | 0.3606 | -5.7267 | -0.8598 |
| L19 | 59.25-54.25 | -4.8709 | 1.6328 | -4.6423 | 0.4356 |
| L20 | 54.25-50.08 | -4.9404 | 1.6584 | -4.6974 | 0.4470 |
| L21 | 50.08-49.83 | -4.9741 | 1.6708 | -4.7243 | 0.4528 |
| L22 | 49.83-44.25 | -5.0177 | 1.6869 | -4.7585 | 0.4605 |
| L23 | 44.25-43.25 | -5.0075 | 1.6831 | -4.7514 | 0.4597 |
| L24 | 43.25-38.25 | -5.0473 | 1.6978 | -4.7812 | 0.4727 |
| L25 | 38.25-33.25 | -4.8180 | 1.9455 | -4.6643 | 0.6897 |
| L26 | 33.25-31.25 | -4.5542 | 2.1958 | -4.5126 | 0.9255 |
| L27 | 31.25-31.00 | -4.5682 | 2.2031 | -4.5241 | 0.9306 |
| L28 | 31.00-26.00 | -4.6002 | 2.2197 | -4.5492 | 0.9424 |
| L29 | 26.00-21.00 | -4.6606 | 2.2512 | -4.5960 | 0.9666 |
| L30 | 21.00-16.00 | -4.7206 | 2.2824 | -4.6414 | 0.9939 |
| L31 | 16.00-11.00 | -4.7800 | 2.3133 | -4.6850 | 1.0262 |
| L32 | 11.00-6.00 | -4.8390 | 2.3440 | -4.7256 | 1.0678 |
| L33 | 6.00-1.00 | -4.8955 | 2.3735 | -4.7595 | 1.1354 |
| L34 | 1.00-0.00 | -6.0714 | 1.4062 | -5.5465 | 0.2876 |

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

Shielding Factor Ka

| Tower Section | Feed Line Record No. | Description | Feed Line Segment Elev. | K _a No Ice | K _a Ice |
|---------------|----------------------|-----------------|-------------------------|-----------------------|--------------------|
| L1 | 26 | Safety Line 3/8 | 140.00 - 145.00 | 1.0000 | 1.0000 |
| L2 | 26 | Safety Line 3/8 | 135.00 - 140.00 | 1.0000 | 1.0000 |
| L3 | 26 | Safety Line 3/8 | 130.00 - 135.00 | 1.0000 | 1.0000 |
| L4 | 26 | Safety Line 3/8 | 125.00 - 130.00 | 1.0000 | 1.0000 |
| L5 | 26 | Safety Line 3/8 | 120.00 - 125.00 | 1.0000 | 1.0000 |
| L6 | 26 | Safety Line 3/8 | 115.00 - 120.00 | 1.0000 | 1.0000 |
| L7 | 26 | Safety Line 3/8 | 110.00 - 115.00 | 1.0000 | 1.0000 |
| L8 | 26 | Safety Line 3/8 | 105.00 - 110.00 | 1.0000 | 1.0000 |
| L9 | 26 | Safety Line 3/8 | 100.00 - 105.00 | 1.0000 | 1.0000 |
| L10 | 26 | Safety Line 3/8 | 95.00 - 100.00 | 1.0000 | 1.0000 |
| L11 | 20 | HJ7-50A(1-5/8) | 90.00 - 94.00 | 1.0000 | 1.0000 |
| L11 | 26 | Safety Line 3/8 | 90.00 - 95.00 | 1.0000 | 1.0000 |
| L12 | 20 | HJ7-50A(1-5/8) | 84.75 - 90.00 | 1.0000 | 1.0000 |
| L12 | 26 | Safety Line 3/8 | 84.75 - 90.00 | 1.0000 | 1.0000 |
| L13 | 20 | HJ7-50A(1-5/8) | 84.25 - 84.75 | 1.0000 | 1.0000 |
| L13 | 26 | Safety Line 3/8 | 84.25 - 84.75 | 1.0000 | 1.0000 |
| L14 | 20 | HJ7-50A(1-5/8) | 79.25 - 84.25 | 1.0000 | 1.0000 |
| L14 | 26 | Safety Line 3/8 | 79.25 - 84.25 | 1.0000 | 1.0000 |
| L15 | 20 | HJ7-50A(1-5/8) | 74.25 - 79.25 | 1.0000 | 1.0000 |
| L15 | 24 | LDF4-50A(1/2) | 74.25 - 77.00 | 1.0000 | 1.0000 |
| L15 | 26 | Safety Line 3/8 | 74.25 - 79.25 | 1.0000 | 1.0000 |
| L16 | 20 | HJ7-50A(1-5/8) | 69.25 - 74.25 | 1.0000 | 1.0000 |
| L16 | 24 | LDF4-50A(1/2) | 69.25 - 74.25 | 1.0000 | 1.0000 |
| L16 | 26 | Safety Line 3/8 | 69.25 - 74.25 | 1.0000 | 1.0000 |
| L17 | 20 | HJ7-50A(1-5/8) | 64.25 - 69.25 | 1.0000 | 1.0000 |

| | | |
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| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job Newington (BU 881364) | Page 12 of 28 |
| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

| Tower Section | Feed Line Record No. | Description | Feed Line Segment Elev. | K _a No Ice | K _a Ice |
|---------------|----------------------|----------------------------|-------------------------|-----------------------|--------------------|
| L17 | 24 | LDF4-50A(1/2) | 64.25 - 69.25 | 1.0000 | 1.0000 |
| L17 | 26 | Safety Line 3/8 | 64.25 - 69.25 | 1.0000 | 1.0000 |
| L18 | 20 | HJ7-50A(1-5/8) | 59.25 - 64.25 | 1.0000 | 1.0000 |
| L18 | 24 | LDF4-50A(1/2) | 59.25 - 64.25 | 1.0000 | 1.0000 |
| L18 | 26 | Safety Line 3/8 | 59.25 - 64.25 | 1.0000 | 1.0000 |
| L18 | 31 | (Area) CCI-65FP-060100 (H) | 59.25 - 60.58 | 1.0000 | 1.0000 |
| L18 | 32 | (Area) CCI-65FP-060100 (H) | 59.25 - 60.58 | 1.0000 | 1.0000 |
| L18 | 33 | (Area) CCI-65FP-060100 (H) | 59.25 - 60.58 | 1.0000 | 1.0000 |
| L19 | 20 | HJ7-50A(1-5/8) | 54.25 - 59.25 | 1.0000 | 1.0000 |
| L19 | 24 | LDF4-50A(1/2) | 54.25 - 59.25 | 1.0000 | 1.0000 |
| L19 | 26 | Safety Line 3/8 | 54.25 - 59.25 | 1.0000 | 1.0000 |
| L19 | 31 | (Area) CCI-65FP-060100 (H) | 54.25 - 59.25 | 1.0000 | 1.0000 |
| L19 | 32 | (Area) CCI-65FP-060100 (H) | 54.25 - 59.25 | 1.0000 | 1.0000 |
| L19 | 33 | (Area) CCI-65FP-060100 (H) | 54.25 - 59.25 | 1.0000 | 1.0000 |
| L20 | 20 | HJ7-50A(1-5/8) | 50.08 - 54.25 | 1.0000 | 1.0000 |
| L20 | 24 | LDF4-50A(1/2) | 50.08 - 54.25 | 1.0000 | 1.0000 |
| L20 | 26 | Safety Line 3/8 | 50.08 - 54.25 | 1.0000 | 1.0000 |
| L20 | 31 | (Area) CCI-65FP-060100 (H) | 50.08 - 54.25 | 1.0000 | 1.0000 |
| L20 | 32 | (Area) CCI-65FP-060100 (H) | 50.08 - 54.25 | 1.0000 | 1.0000 |
| L20 | 33 | (Area) CCI-65FP-060100 (H) | 50.08 - 54.25 | 1.0000 | 1.0000 |
| L21 | 20 | HJ7-50A(1-5/8) | 49.83 - 50.08 | 1.0000 | 1.0000 |
| L21 | 24 | LDF4-50A(1/2) | 49.83 - 50.08 | 1.0000 | 1.0000 |
| L21 | 26 | Safety Line 3/8 | 49.83 - 50.08 | 1.0000 | 1.0000 |
| L21 | 31 | (Area) CCI-65FP-060100 (H) | 49.83 - 50.08 | 1.0000 | 1.0000 |
| L21 | 32 | (Area) CCI-65FP-060100 (H) | 49.83 - 50.08 | 1.0000 | 1.0000 |
| L21 | 33 | (Area) CCI-65FP-060100 (H) | 49.83 - 50.08 | 1.0000 | 1.0000 |
| L22 | 20 | HJ7-50A(1-5/8) | 44.25 - 49.83 | 1.0000 | 1.0000 |
| L22 | 24 | LDF4-50A(1/2) | 44.25 - 49.83 | 1.0000 | 1.0000 |
| L22 | 26 | Safety Line 3/8 | 44.25 - 49.83 | 1.0000 | 1.0000 |
| L22 | 31 | (Area) CCI-65FP-060100 (H) | 44.25 - 49.83 | 1.0000 | 1.0000 |
| L22 | 32 | (Area) CCI-65FP-060100 (H) | 44.25 - 49.83 | 1.0000 | 1.0000 |
| L22 | 33 | (Area) CCI-65FP-060100 (H) | 44.25 - 49.83 | 1.0000 | 1.0000 |
| L23 | 20 | HJ7-50A(1-5/8) | 43.25 - 44.25 | 1.0000 | 1.0000 |
| L23 | 24 | LDF4-50A(1/2) | 43.25 - 44.25 | 1.0000 | 1.0000 |
| L23 | 26 | Safety Line 3/8 | 43.25 - 44.25 | 1.0000 | 1.0000 |
| L23 | 31 | (Area) CCI-65FP-060100 (H) | 43.25 - 44.25 | 1.0000 | 1.0000 |
| L23 | 32 | (Area) CCI-65FP-060100 (H) | 43.25 - 44.25 | 1.0000 | 1.0000 |
| L23 | 33 | (Area) CCI-65FP-060100 (H) | 43.25 - 44.25 | 1.0000 | 1.0000 |
| L24 | 20 | HJ7-50A(1-5/8) | 38.25 - 43.25 | 1.0000 | 1.0000 |
| L24 | 24 | LDF4-50A(1/2) | 38.25 - 43.25 | 1.0000 | 1.0000 |
| L24 | 26 | Safety Line 3/8 | 38.25 - 43.25 | 1.0000 | 1.0000 |
| L24 | 31 | (Area) CCI-65FP-060100 (H) | 38.25 - 43.25 | 1.0000 | 1.0000 |
| L24 | 32 | (Area) CCI-65FP-060100 (H) | 38.25 - 43.25 | 1.0000 | 1.0000 |
| L24 | 33 | (Area) CCI-65FP-060100 (H) | 38.25 - 43.25 | 1.0000 | 1.0000 |
| L25 | 20 | HJ7-50A(1-5/8) | 33.25 - 38.25 | 1.0000 | 1.0000 |
| L25 | 24 | LDF4-50A(1/2) | 33.25 - 38.25 | 1.0000 | 1.0000 |
| L25 | 26 | Safety Line 3/8 | 33.25 - 38.25 | 1.0000 | 1.0000 |
| L25 | 28 | (Area) CCI-65FP-085125 (H) | 33.25 - 35.50 | 1.0000 | 1.0000 |
| L25 | 29 | (Area) CCI-65FP-085125 (H) | 33.25 - 35.50 | 1.0000 | 1.0000 |
| L25 | 30 | (Area) CCI-65FP-085125 (H) | 33.25 - 35.50 | 1.0000 | 1.0000 |
| L25 | 31 | (Area) CCI-65FP-060100 (H) | 35.50 - 38.25 | 1.0000 | 1.0000 |
| L25 | 32 | (Area) CCI-65FP-060100 (H) | 35.50 - 38.25 | 1.0000 | 1.0000 |
| L25 | 33 | (Area) CCI-65FP-060100 (H) | 35.50 - 38.25 | 1.0000 | 1.0000 |
| L26 | 20 | HJ7-50A(1-5/8) | 31.25 - 33.25 | 1.0000 | 1.0000 |
| L26 | 24 | LDF4-50A(1/2) | 31.25 - 33.25 | 1.0000 | 1.0000 |
| L26 | 26 | Safety Line 3/8 | 31.25 - 33.25 | 1.0000 | 1.0000 |
| L26 | 28 | (Area) CCI-65FP-085125 (H) | 31.25 - 33.25 | 1.0000 | 1.0000 |
| L26 | 29 | (Area) CCI-65FP-085125 (H) | 31.25 - 33.25 | 1.0000 | 1.0000 |
| L26 | 30 | (Area) CCI-65FP-085125 (H) | 31.25 - 33.25 | 1.0000 | 1.0000 |
| L27 | 20 | HJ7-50A(1-5/8) | 31.00 - 31.25 | 1.0000 | 1.0000 |
| L27 | 24 | LDF4-50A(1/2) | 31.00 - 31.25 | 1.0000 | 1.0000 |
| L27 | 26 | Safety Line 3/8 | 31.00 - 31.25 | 1.0000 | 1.0000 |

| | | |
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| <p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p> | <p>Job</p> <p>Newington (BU 881364)</p> | <p>Page</p> <p>13 of 28</p> |
| | <p>Project</p> <p>TEP No. 65292.679311</p> | <p>Date</p> <p>11:34:30 03/29/22</p> |
| | <p>Client</p> <p>Crown Castle</p> | <p>Designed by</p> <p>Tari L. Vicenty</p> |

| Tower Section | Feed Line Record No. | Description | Feed Line Segment Elev. | K _a No Ice | K _a Ice |
|---------------|----------------------|----------------------------|-------------------------|-----------------------|--------------------|
| L27 | 28 | (Area) CCI-65FP-085125 (H) | 31.00 - 31.25 | 1.0000 | 1.0000 |
| L27 | 29 | (Area) CCI-65FP-085125 (H) | 31.00 - 31.25 | 1.0000 | 1.0000 |
| L27 | 30 | (Area) CCI-65FP-085125 (H) | 31.00 - 31.25 | 1.0000 | 1.0000 |
| L28 | 20 | HJ7-50A(1-5/8) | 26.00 - 31.00 | 1.0000 | 1.0000 |
| L28 | 24 | LDF4-50A(1/2) | 26.00 - 31.00 | 1.0000 | 1.0000 |
| L28 | 26 | Safety Line 3/8 | 26.00 - 31.00 | 1.0000 | 1.0000 |
| L28 | 28 | (Area) CCI-65FP-085125 (H) | 26.00 - 31.00 | 1.0000 | 1.0000 |
| L28 | 29 | (Area) CCI-65FP-085125 (H) | 26.00 - 31.00 | 1.0000 | 1.0000 |
| L28 | 30 | (Area) CCI-65FP-085125 (H) | 26.00 - 31.00 | 1.0000 | 1.0000 |
| L29 | 20 | HJ7-50A(1-5/8) | 21.00 - 26.00 | 1.0000 | 1.0000 |
| L29 | 24 | LDF4-50A(1/2) | 21.00 - 26.00 | 1.0000 | 1.0000 |
| L29 | 26 | Safety Line 3/8 | 21.00 - 26.00 | 1.0000 | 1.0000 |
| L29 | 28 | (Area) CCI-65FP-085125 (H) | 21.00 - 26.00 | 1.0000 | 1.0000 |
| L29 | 29 | (Area) CCI-65FP-085125 (H) | 21.00 - 26.00 | 1.0000 | 1.0000 |
| L29 | 30 | (Area) CCI-65FP-085125 (H) | 21.00 - 26.00 | 1.0000 | 1.0000 |
| L30 | 20 | HJ7-50A(1-5/8) | 16.00 - 21.00 | 1.0000 | 1.0000 |
| L30 | 24 | LDF4-50A(1/2) | 16.00 - 21.00 | 1.0000 | 1.0000 |
| L30 | 26 | Safety Line 3/8 | 16.00 - 21.00 | 1.0000 | 1.0000 |
| L30 | 28 | (Area) CCI-65FP-085125 (H) | 16.00 - 21.00 | 1.0000 | 1.0000 |
| L30 | 29 | (Area) CCI-65FP-085125 (H) | 16.00 - 21.00 | 1.0000 | 1.0000 |
| L30 | 30 | (Area) CCI-65FP-085125 (H) | 16.00 - 21.00 | 1.0000 | 1.0000 |
| L31 | 20 | HJ7-50A(1-5/8) | 11.00 - 16.00 | 1.0000 | 1.0000 |
| L31 | 24 | LDF4-50A(1/2) | 11.00 - 16.00 | 1.0000 | 1.0000 |
| L31 | 26 | Safety Line 3/8 | 11.00 - 16.00 | 1.0000 | 1.0000 |
| L31 | 28 | (Area) CCI-65FP-085125 (H) | 11.00 - 16.00 | 1.0000 | 1.0000 |
| L31 | 29 | (Area) CCI-65FP-085125 (H) | 11.00 - 16.00 | 1.0000 | 1.0000 |
| L31 | 30 | (Area) CCI-65FP-085125 (H) | 11.00 - 16.00 | 1.0000 | 1.0000 |
| L32 | 20 | HJ7-50A(1-5/8) | 6.00 - 11.00 | 1.0000 | 1.0000 |
| L32 | 24 | LDF4-50A(1/2) | 6.00 - 11.00 | 1.0000 | 1.0000 |
| L32 | 26 | Safety Line 3/8 | 6.00 - 11.00 | 1.0000 | 1.0000 |
| L32 | 28 | (Area) CCI-65FP-085125 (H) | 6.00 - 11.00 | 1.0000 | 1.0000 |
| L32 | 29 | (Area) CCI-65FP-085125 (H) | 6.00 - 11.00 | 1.0000 | 1.0000 |
| L32 | 30 | (Area) CCI-65FP-085125 (H) | 6.00 - 11.00 | 1.0000 | 1.0000 |
| L33 | 20 | HJ7-50A(1-5/8) | 1.00 - 6.00 | 1.0000 | 1.0000 |
| L33 | 24 | LDF4-50A(1/2) | 1.00 - 6.00 | 1.0000 | 1.0000 |
| L33 | 26 | Safety Line 3/8 | 1.00 - 6.00 | 1.0000 | 1.0000 |
| L33 | 28 | (Area) CCI-65FP-085125 (H) | 1.00 - 6.00 | 1.0000 | 1.0000 |
| L33 | 29 | (Area) CCI-65FP-085125 (H) | 1.00 - 6.00 | 1.0000 | 1.0000 |
| L33 | 30 | (Area) CCI-65FP-085125 (H) | 1.00 - 6.00 | 1.0000 | 1.0000 |
| L34 | 20 | HJ7-50A(1-5/8) | 0.00 - 1.00 | 1.0000 | 1.0000 |
| L34 | 24 | LDF4-50A(1/2) | 0.00 - 1.00 | 1.0000 | 1.0000 |
| L34 | 26 | Safety Line 3/8 | 0.00 - 1.00 | 1.0000 | 1.0000 |
| L34 | 28 | (Area) CCI-65FP-085125 (H) | 0.50 - 1.00 | 1.0000 | 1.0000 |
| L34 | 29 | (Area) CCI-65FP-085125 (H) | 0.50 - 1.00 | 1.0000 | 1.0000 |
| L34 | 30 | (Area) CCI-65FP-085125 (H) | 0.50 - 1.00 | 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 |
|---------------|-----------------------|----------------------------|--------------------------|--------------------------|-----------------------|
| L18 | 31 | (Area) CCI-65FP-060100 (H) | 59.25 - 60.58 | Auto | 0.0000 |
| L18 | 32 | (Area) CCI-65FP-060100 (H) | 59.25 - 60.58 | Auto | 0.0000 |
| L18 | 33 | (Area) CCI-65FP-060100 (H) | 59.25 - 60.58 | Auto | 0.0000 |
| L19 | 31 | (Area) CCI-65FP-060100 (H) | 54.25 - 59.25 | Auto | 0.0000 |
| L19 | 32 | (Area) CCI-65FP-060100 (H) | 54.25 - 59.25 | Auto | 0.0000 |
| L19 | 33 | (Area) CCI-65FP-060100 (H) | 54.25 - 59.25 | Auto | 0.0000 |
| L20 | 31 | (Area) CCI-65FP-060100 (H) | 50.08 - 54.25 | Auto | 0.0000 |

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| <p>tnxTower</p> <p>Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p> | <p>Job</p> <p>Newington (BU 881364)</p> | <p>Page</p> <p>14 of 28</p> |
| | <p>Project</p> <p>TEP No. 65292.679311</p> | <p>Date</p> <p>11:34:30 03/29/22</p> |
| | <p>Client</p> <p>Crown Castle</p> | <p>Designed by</p> <p>Tari L. Vicenty</p> |

| Tower Section | Attachment Record No. | Description | Attachment Segment Elev. | Ratio Calculation Method | Effective Width Ratio |
|---------------|-----------------------|----------------------------|--------------------------|--------------------------|-----------------------|
| L20 | 32 | (Area) CCI-65FP-060100 (H) | 50.08 - 54.25 | Auto | 0.0000 |
| L20 | 33 | (Area) CCI-65FP-060100 (H) | 50.08 - 54.25 | Auto | 0.0000 |
| L21 | 31 | (Area) CCI-65FP-060100 (H) | 49.83 - 50.08 | Auto | 0.0000 |
| L21 | 32 | (Area) CCI-65FP-060100 (H) | 49.83 - 50.08 | Auto | 0.0000 |
| L21 | 33 | (Area) CCI-65FP-060100 (H) | 49.83 - 50.08 | Auto | 0.0000 |
| L22 | 31 | (Area) CCI-65FP-060100 (H) | 44.25 - 49.83 | Auto | 0.0000 |
| L22 | 32 | (Area) CCI-65FP-060100 (H) | 44.25 - 49.83 | Auto | 0.0000 |
| L22 | 33 | (Area) CCI-65FP-060100 (H) | 44.25 - 49.83 | Auto | 0.0000 |
| L23 | 31 | (Area) CCI-65FP-060100 (H) | 43.25 - 44.25 | Auto | 0.0000 |
| L23 | 32 | (Area) CCI-65FP-060100 (H) | 43.25 - 44.25 | Auto | 0.0000 |
| L23 | 33 | (Area) CCI-65FP-060100 (H) | 43.25 - 44.25 | Auto | 0.0000 |
| L24 | 31 | (Area) CCI-65FP-060100 (H) | 38.25 - 43.25 | Auto | 0.0000 |
| L24 | 32 | (Area) CCI-65FP-060100 (H) | 38.25 - 43.25 | Auto | 0.0000 |
| L24 | 33 | (Area) CCI-65FP-060100 (H) | 38.25 - 43.25 | Auto | 0.0000 |
| L25 | 28 | (Area) CCI-65FP-085125 (H) | 33.25 - 35.50 | Auto | 0.2086 |
| L25 | 29 | (Area) CCI-65FP-085125 (H) | 33.25 - 35.50 | Auto | 0.2086 |
| L25 | 30 | (Area) CCI-65FP-085125 (H) | 33.25 - 35.50 | Auto | 0.2086 |
| L25 | 31 | (Area) CCI-65FP-060100 (H) | 35.50 - 38.25 | Auto | 0.0000 |
| L25 | 32 | (Area) CCI-65FP-060100 (H) | 35.50 - 38.25 | Auto | 0.0000 |
| L25 | 33 | (Area) CCI-65FP-060100 (H) | 35.50 - 38.25 | Auto | 0.0000 |
| L26 | 28 | (Area) CCI-65FP-085125 (H) | 31.25 - 33.25 | Auto | 0.2000 |
| L26 | 29 | (Area) CCI-65FP-085125 (H) | 31.25 - 33.25 | Auto | 0.2000 |
| L26 | 30 | (Area) CCI-65FP-085125 (H) | 31.25 - 33.25 | Auto | 0.2000 |
| L27 | 28 | (Area) CCI-65FP-085125 (H) | 31.00 - 31.25 | Auto | 0.2169 |
| L27 | 29 | (Area) CCI-65FP-085125 (H) | 31.00 - 31.25 | Auto | 0.2169 |
| L27 | 30 | (Area) CCI-65FP-085125 (H) | 31.00 - 31.25 | Auto | 0.2169 |
| L28 | 28 | (Area) CCI-65FP-085125 (H) | 26.00 - 31.00 | Auto | 0.2079 |
| L28 | 29 | (Area) CCI-65FP-085125 (H) | 26.00 - 31.00 | Auto | 0.2079 |
| L28 | 30 | (Area) CCI-65FP-085125 (H) | 26.00 - 31.00 | Auto | 0.2079 |
| L29 | 28 | (Area) CCI-65FP-085125 (H) | 21.00 - 26.00 | Auto | 0.1883 |
| L29 | 29 | (Area) CCI-65FP-085125 (H) | 21.00 - 26.00 | Auto | 0.1883 |
| L29 | 30 | (Area) CCI-65FP-085125 (H) | 21.00 - 26.00 | Auto | 0.1883 |
| L30 | 28 | (Area) CCI-65FP-085125 (H) | 16.00 - 21.00 | Auto | 0.1712 |
| L30 | 29 | (Area) CCI-65FP-085125 (H) | 16.00 - 21.00 | Auto | 0.1712 |
| L30 | 30 | (Area) CCI-65FP-085125 (H) | 16.00 - 21.00 | Auto | 0.1712 |
| L31 | 28 | (Area) CCI-65FP-085125 (H) | 11.00 - 16.00 | Auto | 0.1541 |
| L31 | 29 | (Area) CCI-65FP-085125 (H) | 11.00 - 16.00 | Auto | 0.1541 |
| L31 | 30 | (Area) CCI-65FP-085125 (H) | 11.00 - 16.00 | Auto | 0.1541 |
| L32 | 28 | (Area) CCI-65FP-085125 (H) | 6.00 - 11.00 | Auto | 0.1344 |
| L32 | 29 | (Area) CCI-65FP-085125 (H) | 6.00 - 11.00 | Auto | 0.1344 |
| L32 | 30 | (Area) CCI-65FP-085125 (H) | 6.00 - 11.00 | Auto | 0.1344 |
| L33 | 28 | (Area) CCI-65FP-085125 (H) | 1.00 - 6.00 | Auto | 0.1174 |
| L33 | 29 | (Area) CCI-65FP-085125 (H) | 1.00 - 6.00 | Auto | 0.1174 |
| L33 | 30 | (Area) CCI-65FP-085125 (H) | 1.00 - 6.00 | Auto | 0.1174 |
| L34 | 28 | (Area) CCI-65FP-085125 (H) | 0.50 - 1.00 | Auto | 0.1080 |
| L34 | 29 | (Area) CCI-65FP-085125 (H) | 0.50 - 1.00 | Auto | 0.1080 |
| L34 | 30 | (Area) CCI-65FP-085125 (H) | 0.50 - 1.00 | Auto | 0.1080 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert | Azimuth Adjustment | Placement | C _A A _A Front | C _A A _A Side | Weight |
|-------------|-------------|-------------|----------------------------|--------------------|-----------|-------------------------------------|------------------------------------|--------|
| | | | ft ft ft | ° | ft | ft ² | ft ² | K |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 15 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | CAAA Front | CAAA Side | Weight |
|-------------------------------|-------------|------------------------|----------------------|---------|--------------------|--|----------------------------------|----------------------------------|------------------------------|
| | | | Horz | Lateral | | | | | |
| **133** | | | | | | | | | |
| LLPX310R-V1 w/ Mount Pipe | A | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 3.88 4.29 4.72 5.61 | 2.36 2.73 3.12 3.94 | 0.06 0.09 0.13 0.24 |
| LLPX310R-V1 w/ Mount Pipe | B | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 3.88 4.29 4.72 5.61 | 2.36 2.73 3.12 3.94 | 0.06 0.09 0.13 0.24 |
| LLPX310R-V1 w/ Mount Pipe | C | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 3.88 4.29 4.72 5.61 | 2.36 2.73 3.12 3.94 | 0.06 0.09 0.13 0.24 |
| TIMING 2000 | B | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.13 0.18 0.24 0.37 | 0.11 0.15 0.20 0.33 | 0.00 0.00 0.01 0.01 |
| WIMAX DAP HEAD | A | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 1.55 1.70 1.87 2.22 | 0.68 0.80 0.92 1.19 | 0.03 0.04 0.06 0.09 |
| WIMAX DAP HEAD | B | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 1.55 1.70 1.87 2.22 | 0.68 0.80 0.92 1.19 | 0.03 0.04 0.06 0.09 |
| WIMAX DAP HEAD | C | From Centroid-Fa ce | 4.00 0.00 2.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 1.55 1.70 1.87 2.22 | 0.68 0.80 0.92 1.19 | 0.03 0.04 0.06 0.09 |
| HORIZON COMPACT | B | From Centroid-Fa ce | 4.00 0.00 6.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.72 0.83 0.94 1.19 | 0.37 0.45 0.54 0.74 | 0.01 0.02 0.03 0.05 |
| HORIZON COMPACT | C | From Centroid-Fa ce | 4.00 0.00 6.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 0.72 0.83 0.94 1.19 | 0.37 0.45 0.54 0.74 | 0.01 0.02 0.03 0.05 |
| (3) 2.375" OD x 6' Mount Pipe | A | From Centroid-Fa ce | 4.00 0.00 0.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 1.43 1.92 2.29 3.06 | 1.43 1.92 2.29 3.06 | 0.03 0.04 0.05 0.09 |
| (3) 2.375" OD x 6' Mount Pipe | B | From Centroid-Fa ce | 4.00 0.00 0.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 1.43 1.92 2.29 3.06 | 1.43 1.92 2.29 3.06 | 0.03 0.04 0.05 0.09 |
| (3) 2.375" OD x 6' Mount Pipe | C | From Centroid-Fa ce | 4.00 0.00 0.00 | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 1.43 1.92 2.29 3.06 | 1.43 1.92 2.29 3.06 | 0.03 0.04 0.05 0.09 |
| Platform Mount [LP 1201-1] | C | None | | 0.000 | 133.00 | No Ice 1/2" Ice 1" Ice 2" Ice | 18.38 22.11 25.87 33.47 | 18.38 22.11 25.87 33.47 | 2.10 2.65 3.26 4.66 |
| **124** | | | | | | | | | |
| APXVSPP18-C-A20 w/ Mount Pipe | A | From Centroid-Le g | 4.00 0.00 0.00 | 0.000 | 124.00 | No Ice 1/2" Ice 1" Ice | 4.60 5.05 5.50 | 4.01 4.45 4.89 | 0.10 0.16 0.23 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 16 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | CAAA Front | CAAA Side | Weight | |
|----------------------------------|-------------|--------------------------|----------|------|--------------------|-----------|-----------------|-----------------|--------|------|
| | | | Horz | Vert | | | | | | ft |
| | | | Lateral | | ° | ft | ft ² | ft ² | K | |
| | | | ft | ft | | | | | | |
| APXVSPP18-C-A20 w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 6.44 | 5.82 | 0.42 |
| | | | 0.00 | 0.00 | | | 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 |
| APXVSPP18-C-A20 w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 6.44 | 5.82 | 0.42 |
| | | | 0.00 | 0.00 | | | 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 |
| APXVTM14-C-120 w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 6.44 | 5.82 | 0.42 |
| | | | 0.00 | 0.00 | | | 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 |
| APXVTM14-C-120 w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 5.71 | 4.40 | 0.33 |
| | | | 0.00 | 0.00 | | | 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 |
| APXVTM14-C-120 w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 5.71 | 4.40 | 0.33 |
| | | | 0.00 | 0.00 | | | 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 |
| TD-RRH8x20-25 | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 5.71 | 4.40 | 0.33 |
| | | | 0.00 | 0.00 | | | 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 |
| TD-RRH8x20-25 | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 4.72 | 2.02 | 0.18 |
| | | | 0.00 | 0.00 | | | 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 |
| TD-RRH8x20-25 | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 4.72 | 2.02 | 0.18 |
| | | | 0.00 | 0.00 | | | 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 |
| IBC1900HG-2A | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 4.72 | 2.02 | 0.18 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |
| IBC1900HG-2A | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 1.51 | 0.89 | 0.06 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |
| IBC1900HG-2A | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 1.51 | 0.89 | 0.06 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |
| IBC1900BB-1 | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 1.51 | 0.89 | 0.06 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |
| IBC1900BB-1 | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 1.51 | 0.89 | 0.06 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |
| IBC1900BB-1 | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 1.51 | 0.89 | 0.06 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |
| IBC1900BB-1 | | g | 4.00 | 0.00 | 0.000 | 124.00 | 2" Ice | 1.51 | 0.89 | 0.06 |
| | | | 0.00 | 0.00 | | | No Ice | 0.97 | 0.46 | 0.02 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.09 | 0.56 | 0.03 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.22 | 0.66 | 0.04 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 17 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | CAAA Front | CAAA Side | Weight | |
|------------------------------|-------------|--------------------|----------|---------|--------------------|-----------|------------|-----------|--------|------|
| | | | Horz | Lateral | | | | | | Vert |
| 2.375" OD x 6' Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | No Ice | 1.43 | 1.43 | 0.03 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.92 | 1.92 | 0.04 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.29 | 2.29 | 0.05 |
| | | | | | | | 2" Ice | 3.06 | 3.06 | 0.09 |
| 2.375" OD x 6' Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | No Ice | 1.43 | 1.43 | 0.03 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.92 | 1.92 | 0.04 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.29 | 2.29 | 0.05 |
| | | | | | | | 2" Ice | 3.06 | 3.06 | 0.09 |
| 2.375" OD x 6' Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 124.00 | No Ice | 1.43 | 1.43 | 0.03 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.92 | 1.92 | 0.04 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.29 | 2.29 | 0.05 |
| | | | | | | | 2" Ice | 3.06 | 3.06 | 0.09 |
| Platform Mount [LP 1201-1] | C | None | | | 0.000 | 124.00 | 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 |
| **122** | | | | | | | | | | |
| 800MHz 2X50W RRH W/FILTER | A | From Leg | 1.00 | 0.00 | 0.000 | 122.00 | No Ice | 2.06 | 1.93 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.24 | 2.11 | 0.09 |
| | | | -4.00 | -4.00 | | | 1" Ice | 2.43 | 2.29 | 0.11 |
| | | | | | | | 2" Ice | 2.83 | 2.68 | 0.17 |
| 800MHz 2X50W RRH W/FILTER | B | From Leg | 1.00 | 0.00 | 0.000 | 122.00 | No Ice | 2.06 | 1.93 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.24 | 2.11 | 0.09 |
| | | | -4.00 | -4.00 | | | 1" Ice | 2.43 | 2.29 | 0.11 |
| | | | | | | | 2" Ice | 2.83 | 2.68 | 0.17 |
| 800MHz 2X50W RRH W/FILTER | C | From Leg | 1.00 | 0.00 | 0.000 | 122.00 | No Ice | 2.06 | 1.93 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.24 | 2.11 | 0.09 |
| | | | -4.00 | -4.00 | | | 1" Ice | 2.43 | 2.29 | 0.11 |
| | | | | | | | 2" Ice | 2.83 | 2.68 | 0.17 |
| PCS 1900MHz 4x45W-65MHz | A | From Leg | 1.00 | 0.00 | 0.000 | 122.00 | No Ice | 2.32 | 2.24 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.53 | 2.44 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.74 | 2.65 | 0.11 |
| | | | | | | | 2" Ice | 3.19 | 3.09 | 0.17 |
| PCS 1900MHz 4x45W-65MHz | B | From Leg | 1.00 | 0.00 | 0.000 | 122.00 | No Ice | 2.32 | 2.24 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.53 | 2.44 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.74 | 2.65 | 0.11 |
| | | | | | | | 2" Ice | 3.19 | 3.09 | 0.17 |
| PCS 1900MHz 4x45W-65MHz | C | From Leg | 1.00 | 0.00 | 0.000 | 122.00 | No Ice | 2.32 | 2.24 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.53 | 2.44 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.74 | 2.65 | 0.11 |
| | | | | | | | 2" Ice | 3.19 | 3.09 | 0.17 |
| Pipe Mount [PM 601-3] | C | None | | | 0.000 | 122.00 | 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 |
| **114** | | | | | | | | | | |
| KS24019-L112A | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | No Ice | 0.08 | 0.08 | 0.01 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 0.13 | 0.13 | 0.01 |
| | | | 0.00 | 0.00 | | | 1" Ice | 0.19 | 0.19 | 0.01 |
| | | | | | | | 2" Ice | 0.35 | 0.35 | 0.02 |
| LNX-6513DS-A1M w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | No Ice | 2.84 | 2.29 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 3.12 | 2.57 | 0.11 |
| | | | 0.00 | 0.00 | | | 1" Ice | 3.41 | 2.85 | 0.17 |
| | | | | | | | 2" Ice | 4.02 | 3.44 | 0.31 |
| LNX-6513DS-A1M w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | No Ice | 2.84 | 2.29 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 3.12 | 2.57 | 0.11 |
| | | | 0.00 | 0.00 | | | 1" Ice | 3.41 | 2.85 | 0.17 |
| | | | | | | | 2" Ice | 4.02 | 3.44 | 0.31 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 18 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | CAAA | | Weight | |
|--|-------------|--------------------------|----------|-------|--------------------|-----------|-----------------|-----------------|--------|------|
| | | | Horz | Vert | | | Front | Side | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | K | |
| LNX-6513DS-A1M w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 4.02 | 3.44 | 0.31 |
| | | | 0.00 | 0.00 | | | No Ice | 2.84 | 2.29 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 3.12 | 2.57 | 0.11 |
| | | | 0.00 | 0.00 | | | 1" Ice | 3.41 | 2.85 | 0.17 |
| XXDWMM-12.5-65-8T-CBR S w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 4.02 | 3.44 | 0.31 |
| | | | 0.00 | -1.00 | | | No Ice | 1.18 | 1.03 | 0.03 |
| | | | 0.00 | -1.00 | | | 1/2" Ice | 1.38 | 1.28 | 0.05 |
| | | | 0.00 | -1.00 | | | 1" Ice | 1.58 | 1.55 | 0.06 |
| XXDWMM-12.5-65-8T-CBR S w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 2.03 | 2.13 | 0.11 |
| | | | 0.00 | -1.00 | | | No Ice | 1.18 | 1.03 | 0.03 |
| | | | 0.00 | -1.00 | | | 1/2" Ice | 1.38 | 1.28 | 0.05 |
| | | | 0.00 | -1.00 | | | 1" Ice | 1.58 | 1.55 | 0.06 |
| XXDWMM-12.5-65-8T-CBR S w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 2.03 | 2.13 | 0.11 |
| | | | 0.00 | -1.00 | | | No Ice | 1.18 | 1.03 | 0.03 |
| | | | 0.00 | -1.00 | | | 1/2" Ice | 1.38 | 1.28 | 0.05 |
| | | | 0.00 | -1.00 | | | 1" Ice | 1.58 | 1.55 | 0.06 |
| (2) SBNHH-1D65B w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 2.03 | 2.13 | 0.11 |
| | | | 0.00 | 1.00 | | | No Ice | 4.09 | 3.30 | 0.07 |
| | | | 0.00 | 1.00 | | | 1/2" Ice | 4.49 | 3.68 | 0.13 |
| | | | 0.00 | 1.00 | | | 1" Ice | 4.89 | 4.07 | 0.20 |
| (2) SBNHH-1D65B w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 5.72 | 4.87 | 0.39 |
| | | | 0.00 | 1.00 | | | No Ice | 4.09 | 3.30 | 0.07 |
| | | | 0.00 | 1.00 | | | 1/2" Ice | 4.49 | 3.68 | 0.13 |
| | | | 0.00 | 1.00 | | | 1" Ice | 4.89 | 4.07 | 0.20 |
| (2) SBNHH-1D65B w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 5.72 | 4.87 | 0.39 |
| | | | 0.00 | 1.00 | | | No Ice | 4.09 | 3.30 | 0.07 |
| | | | 0.00 | 1.00 | | | 1/2" Ice | 4.49 | 3.68 | 0.13 |
| | | | 0.00 | 1.00 | | | 1" Ice | 4.89 | 4.07 | 0.20 |
| MT6407-77A w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 5.72 | 4.87 | 0.39 |
| | | | 0.00 | 2.00 | | | No Ice | 4.91 | 2.68 | 0.10 |
| | | | 0.00 | 2.00 | | | 1/2" Ice | 5.26 | 3.14 | 0.14 |
| | | | 0.00 | 2.00 | | | 1" Ice | 5.61 | 3.62 | 0.18 |
| MT6407-77A w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 6.36 | 4.63 | 0.29 |
| | | | 0.00 | 2.00 | | | No Ice | 4.91 | 2.68 | 0.10 |
| | | | 0.00 | 2.00 | | | 1/2" Ice | 5.26 | 3.14 | 0.14 |
| | | | 0.00 | 2.00 | | | 1" Ice | 5.61 | 3.62 | 0.18 |
| MT6407-77A w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 6.36 | 4.63 | 0.29 |
| | | | 0.00 | 2.00 | | | No Ice | 4.91 | 2.68 | 0.10 |
| | | | 0.00 | 2.00 | | | 1/2" Ice | 5.26 | 3.14 | 0.14 |
| | | | 0.00 | 2.00 | | | 1" Ice | 5.61 | 3.62 | 0.18 |
| DB-T1-6Z-8AB-0Z | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 6.36 | 4.63 | 0.29 |
| | | | 0.00 | 0.00 | | | No Ice | 4.80 | 2.00 | 0.04 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 5.07 | 2.19 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 5.35 | 2.39 | 0.12 |
| (2) RFV01U-D2A | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 5.93 | 2.81 | 0.21 |
| | | | 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-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 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 |
| (2) RFV01U-D1A | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 2" Ice | 2.60 | 1.59 | 0.15 |
| | | | 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 |
| | | | | | | 2" Ice | 2.60 | 1.86 | 0.18 | |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 19 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | CAAA Front | CAAA Side | Weight | |
|--------------------------------------|-------------|--------------------|----------|------|--------------------|-----------|-----------------|-----------------|--------|------|
| | | | Horz | Vert | | | | | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | K | |
| RFV01U-D1A | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 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 |
| | | | 0.00 | 0.00 | | | 2" Ice | 2.60 | 1.86 | 0.18 |
| 6' x 2" Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 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 |
| | | | 0.00 | 0.00 | | | 2" Ice | 3.06 | 3.06 | 0.09 |
| 6' x 2" Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 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 |
| | | | 0.00 | 0.00 | | | 2" Ice | 3.06 | 3.06 | 0.09 |
| 6' x 2" Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 114.00 | 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 |
| | | | 0.00 | 0.00 | | | 2" Ice | 3.06 | 3.06 | 0.09 |
| Platform Mount [LP 1201-1_KCKR-HR-1] | C | None | | | 0.000 | 114.00 | No Ice | 37.61 | 37.61 | 2.63 |
| | | | | | | | 1/2" Ice | 45.62 | 45.62 | 3.48 |
| | | | | | | | 1" Ice | 53.59 | 53.59 | 4.46 |
| | | | | | | | 2" Ice | 69.65 | 69.65 | 6.85 |
| *** | | | | | | | | | | |
| **105** | | | | | | | | | | |
| AIR 6419 B77G w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 4.32 | 2.49 | 0.08 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 4.74 | 2.84 | 0.11 |
| | | | 0.00 | 0.00 | | | 1" Ice | 5.17 | 3.21 | 0.15 |
| | | | 0.00 | 0.00 | | | 2" Ice | 6.09 | 4.00 | 0.24 |
| AIR 6419 B77G w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 4.32 | 2.49 | 0.08 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 4.74 | 2.84 | 0.11 |
| | | | 0.00 | 0.00 | | | 1" Ice | 5.17 | 3.21 | 0.15 |
| | | | 0.00 | 0.00 | | | 2" Ice | 6.09 | 4.00 | 0.24 |
| AIR 6419 B77G w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 4.32 | 2.49 | 0.08 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 4.74 | 2.84 | 0.11 |
| | | | 0.00 | 0.00 | | | 1" Ice | 5.17 | 3.21 | 0.15 |
| | | | 0.00 | 0.00 | | | 2" Ice | 6.09 | 4.00 | 0.24 |
| DMP65R-BU6D w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 11.96 | 5.97 | 0.11 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 12.70 | 6.63 | 0.20 |
| | | | 0.00 | 0.00 | | | 1" Ice | 13.46 | 7.30 | 0.30 |
| | | | 0.00 | 0.00 | | | 2" Ice | 15.02 | 8.69 | 0.53 |
| DMP65R-BU6D w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 11.96 | 5.97 | 0.11 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 12.70 | 6.63 | 0.20 |
| | | | 0.00 | 0.00 | | | 1" Ice | 13.46 | 7.30 | 0.30 |
| | | | 0.00 | 0.00 | | | 2" Ice | 15.02 | 8.69 | 0.53 |
| DMP65R-BU6D w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 11.96 | 5.97 | 0.11 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 12.70 | 6.63 | 0.20 |
| | | | 0.00 | 0.00 | | | 1" Ice | 13.46 | 7.30 | 0.30 |
| | | | 0.00 | 0.00 | | | 2" Ice | 15.02 | 8.69 | 0.53 |
| QD6616-7 w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 12.56 | 6.93 | 0.16 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 13.30 | 7.60 | 0.25 |
| | | | 0.00 | 0.00 | | | 1" Ice | 14.06 | 8.28 | 0.36 |
| | | | 0.00 | 0.00 | | | 2" Ice | 15.63 | 9.68 | 0.61 |
| QD6616-7 w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 12.56 | 6.93 | 0.16 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 13.30 | 7.60 | 0.25 |
| | | | 0.00 | 0.00 | | | 1" Ice | 14.06 | 8.28 | 0.36 |
| | | | 0.00 | 0.00 | | | 2" Ice | 15.63 | 9.68 | 0.61 |
| QD6616-7 w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | No Ice | 12.56 | 6.93 | 0.16 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 13.30 | 7.60 | 0.25 |
| | | | 0.00 | 0.00 | | | 1" Ice | 14.06 | 8.28 | 0.36 |

| | | |
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| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job Newington (BU 881364) | Page 20 of 28 |
| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight | |
|-----------------------------|-------------|--------------------|----------|------|--------------------|-----------|-----------------------|----------------------|--------|------|
| | | | Horz | Vert | | | | | | |
| | | | ft | ft | ° | ft | ft ² | ft ² | K | |
| AIR 6449 B77D w/ Mount Pipe | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 15.63 | 9.68 | 0.61 |
| | | | 0.00 | 0.00 | | | No Ice | 3.58 | 2.31 | 0.09 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 3.92 | 2.60 | 0.13 |
| | | | 0.00 | 0.00 | | | 1" Ice | 4.27 | 2.91 | 0.17 |
| AIR 6449 B77D w/ Mount Pipe | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 5.02 | 3.57 | 0.28 |
| | | | 0.00 | 0.00 | | | No Ice | 3.58 | 2.31 | 0.09 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 3.92 | 2.60 | 0.13 |
| | | | 0.00 | 0.00 | | | 1" Ice | 4.27 | 2.91 | 0.17 |
| AIR 6449 B77D w/ Mount Pipe | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 5.02 | 3.57 | 0.28 |
| | | | 0.00 | 0.00 | | | No Ice | 3.58 | 2.31 | 0.09 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 3.92 | 2.60 | 0.13 |
| | | | 0.00 | 0.00 | | | 1" Ice | 4.27 | 2.91 | 0.17 |
| (2) DC6-48-60-18-8F | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 5.02 | 3.57 | 0.28 |
| | | | 0.00 | 0.00 | | | No Ice | 1.21 | 1.21 | 0.03 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.89 | 1.89 | 0.05 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.11 | 2.11 | 0.08 |
| DC6-48-60-0-8F | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.57 | 2.57 | 0.14 |
| | | | 0.00 | 0.00 | | | No Ice | 0.92 | 0.92 | 0.03 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.46 | 1.46 | 0.05 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.64 | 1.64 | 0.07 |
| RRUS 8843 B2/B66A | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.04 | 2.04 | 0.12 |
| | | | 0.00 | 0.00 | | | No Ice | 1.64 | 1.35 | 0.07 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.80 | 1.50 | 0.09 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.97 | 1.65 | 0.11 |
| RRUS 8843 B2/B66A | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.32 | 1.99 | 0.16 |
| | | | 0.00 | 0.00 | | | No Ice | 1.64 | 1.35 | 0.07 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.80 | 1.50 | 0.09 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.97 | 1.65 | 0.11 |
| RRUS 8843 B2/B66A | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.32 | 1.99 | 0.16 |
| | | | 0.00 | 0.00 | | | No Ice | 1.64 | 1.35 | 0.07 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 1.80 | 1.50 | 0.09 |
| | | | 0.00 | 0.00 | | | 1" Ice | 1.97 | 1.65 | 0.11 |
| RRUS 4449 B5/B12 | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.32 | 1.99 | 0.16 |
| | | | 0.00 | 0.00 | | | No Ice | 1.97 | 1.41 | 0.07 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.14 | 1.56 | 0.09 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.33 | 1.73 | 0.11 |
| RRUS 4449 B5/B12 | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.72 | 2.07 | 0.16 |
| | | | 0.00 | 0.00 | | | No Ice | 1.97 | 1.41 | 0.07 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.14 | 1.56 | 0.09 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.33 | 1.73 | 0.11 |
| RRUS 4449 B5/B12 | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.72 | 2.07 | 0.16 |
| | | | 0.00 | 0.00 | | | No Ice | 1.97 | 1.41 | 0.07 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.14 | 1.56 | 0.09 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.33 | 1.73 | 0.11 |
| RRUS 4478 B14 | A | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.72 | 2.07 | 0.16 |
| | | | 0.00 | 0.00 | | | No Ice | 1.84 | 1.06 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.01 | 1.20 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.19 | 1.34 | 0.09 |
| RRUS 4478 B14 | B | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.57 | 1.66 | 0.14 |
| | | | 0.00 | 0.00 | | | No Ice | 1.84 | 1.06 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.01 | 1.20 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.19 | 1.34 | 0.09 |
| RRUS 4478 B14 | C | From Centroid-Le g | 4.00 | 0.00 | 0.000 | 105.00 | 2" Ice | 2.57 | 1.66 | 0.14 |
| | | | 0.00 | 0.00 | | | No Ice | 1.84 | 1.06 | 0.06 |
| | | | 0.00 | 0.00 | | | 1/2" Ice | 2.01 | 1.20 | 0.08 |
| | | | 0.00 | 0.00 | | | 1" Ice | 2.19 | 1.34 | 0.09 |
| | | | | | | 2" Ice | 2.57 | 1.66 | 0.14 | |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 21 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | CAAA Front | CAAA Side | Weight | |
|----------------------|-------------|---------------------|----------|------|--------------------|-----------|-----------------|-----------------|--------|------|
| | | | Horz | Vert | | | | | | ft |
| | | | Lateral | | ° | ft | ft ² | ft ² | K | |
| RRUS 32 B30 | A | From Centroid-Le g | 4.00 | 0.00 | 0.00 | 105.00 | No Ice | 2.73 | 1.67 | 0.05 |
| | | | | | | | 1/2" Ice | 2.95 | 1.86 | 0.07 |
| | | | | | | | 1" Ice | 3.18 | 2.05 | 0.10 |
| | | | | | | | 2" Ice | 3.66 | 2.46 | 0.16 |
| RRUS 32 B30 | B | From Centroid-Le g | 4.00 | 0.00 | 0.00 | 105.00 | No Ice | 2.73 | 1.67 | 0.05 |
| | | | | | | | 1/2" Ice | 2.95 | 1.86 | 0.07 |
| | | | | | | | 1" Ice | 3.18 | 2.05 | 0.10 |
| | | | | | | | 2" Ice | 3.66 | 2.46 | 0.16 |
| RRUS 32 B30 | C | From Centroid-Le g | 4.00 | 0.00 | 0.00 | 105.00 | No Ice | 2.73 | 1.67 | 0.05 |
| | | | | | | | 1/2" Ice | 2.95 | 1.86 | 0.07 |
| | | | | | | | 1" Ice | 3.18 | 2.05 | 0.10 |
| | | | | | | | 2" Ice | 3.66 | 2.46 | 0.16 |
| Site Pro 1 F3P-HRK12 | C | None | | | 0.00 | 105.00 | No Ice | 5.38 | 4.64 | 0.41 |
| | | | | | | | 1/2" Ice | 7.22 | 6.35 | 0.50 |
| | | | | | | | 1" Ice | 8.88 | 8.13 | 0.59 |
| | | | | | | | 2" Ice | 12.20 | 11.69 | 0.77 |
| Site Pro 1 F3P-12[W] | C | None | | | 0.00 | 105.00 | No Ice | 25.52 | 25.41 | 2.00 |
| | | | | | | | 1/2" Ice | 31.74 | 32.27 | 2.60 |
| | | | | | | | 1" Ice | 40.10 | 39.68 | 3.41 |
| | | | | | | | 2" Ice | 50.42 | 52.85 | 4.40 |
| *** | | | | | | | | | | |
| **94** | | | | | | | | | | |
| AIR -32 B2A/B66AA | A | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 3.86 | 2.51 | 0.17 |
| | | | | | | | 1/2" Ice | 4.23 | 2.86 | 0.22 |
| | | | | | | | 1" Ice | 4.61 | 3.22 | 0.27 |
| | | | | | | | 2" Ice | 5.41 | 3.97 | 0.40 |
| AIR -32 B2A/B66AA | B | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 3.86 | 2.51 | 0.17 |
| | | | | | | | 1/2" Ice | 4.23 | 2.86 | 0.22 |
| | | | | | | | 1" Ice | 4.61 | 3.22 | 0.27 |
| | | | | | | | 2" Ice | 5.41 | 3.97 | 0.40 |
| AIR -32 B2A/B66AA | C | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 3.86 | 2.51 | 0.17 |
| | | | | | | | 1/2" Ice | 4.23 | 2.86 | 0.22 |
| | | | | | | | 1" Ice | 4.61 | 3.22 | 0.27 |
| | | | | | | | 2" Ice | 5.41 | 3.97 | 0.40 |
| APXVAARR24_43-U-NA20 | A | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 14.67 | 5.32 | 0.15 |
| | | | | | | | 1/2" Ice | 15.43 | 5.99 | 0.27 |
| | | | | | | | 1" Ice | 16.21 | 6.68 | 0.39 |
| | | | | | | | 2" Ice | 17.81 | 8.08 | 0.66 |
| APXVAARR24_43-U-NA20 | B | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 14.67 | 5.32 | 0.15 |
| | | | | | | | 1/2" Ice | 15.43 | 5.99 | 0.27 |
| | | | | | | | 1" Ice | 16.21 | 6.68 | 0.39 |
| | | | | | | | 2" Ice | 17.81 | 8.08 | 0.66 |
| APXVAARR24_43-U-NA20 | C | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 14.67 | 5.32 | 0.15 |
| | | | | | | | 1/2" Ice | 15.43 | 5.99 | 0.27 |
| | | | | | | | 1" Ice | 16.21 | 6.68 | 0.39 |
| | | | | | | | 2" Ice | 17.81 | 8.08 | 0.66 |
| AIR 3246 B66 | A | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 7.31 | 4.30 | 0.18 |
| | | | | | | | 1/2" Ice | 7.90 | 4.84 | 0.23 |
| | | | | | | | 1" Ice | 8.51 | 5.40 | 0.30 |
| | | | | | | | 2" Ice | 9.77 | 6.56 | 0.43 |
| AIR 3246 B66 | B | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 7.31 | 4.30 | 0.18 |
| | | | | | | | 1/2" Ice | 7.90 | 4.84 | 0.23 |
| | | | | | | | 1" Ice | 8.51 | 5.40 | 0.30 |
| | | | | | | | 2" Ice | 9.77 | 6.56 | 0.43 |
| AIR 3246 B66 | C | From Centroid-Fa ce | 4.00 | 0.00 | 0.00 | 94.00 | No Ice | 7.31 | 4.30 | 0.18 |
| | | | | | | | 1/2" Ice | 7.90 | 4.84 | 0.23 |
| | | | | | | | 1" Ice | 8.51 | 5.40 | 0.30 |

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| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job Newington (BU 881364) | Page 22 of 28 |
| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

| Description | Face or Leg | Offset Type | Offsets: | | | Azimuth Adjustment | Placement | CAAA | | Weight |
|---------------------------|-------------|--------------------|----------|---------|-------|--------------------|-----------|-----------------|-----------------|--------|
| | | | Horz | Lateral | Vert | | | Front | Side | |
| | | | ft | ft | ft | ° | ft | ft ² | ft ² | K |
| RADIO 4449 B12/B71 | A | From Centroid-Face | 4.00 | 0.00 | 94.00 | 0.000 | 2" Ice | 9.77 | 6.56 | 0.43 |
| | | | 0.00 | | | | No Ice | 1.64 | 1.15 | 0.08 |
| | | | 1.00 | | | | 1/2" Ice | 1.80 | 1.29 | 0.09 |
| | | | | | | | 1" Ice | 1.97 | 1.44 | 0.11 |
| | | | | | | | 2" Ice | 2.33 | 1.75 | 0.16 |
| RADIO 4449 B12/B71 | B | From Centroid-Face | 4.00 | 0.000 | 94.00 | 0.000 | No Ice | 1.64 | 1.15 | 0.08 |
| | | | 0.00 | | | | 1/2" Ice | 1.80 | 1.29 | 0.09 |
| | | | 1.00 | | | | 1" Ice | 1.97 | 1.44 | 0.11 |
| | | | | | | | 2" Ice | 2.33 | 1.75 | 0.16 |
| | | | | | | | No Ice | 1.64 | 1.15 | 0.08 |
| RADIO 4449 B12/B71 | C | From Centroid-Face | 4.00 | 0.000 | 94.00 | 0.000 | 1/2" Ice | 1.80 | 1.29 | 0.09 |
| | | | 0.00 | | | | 1" Ice | 1.97 | 1.44 | 0.11 |
| | | | 1.00 | | | | 2" Ice | 2.33 | 1.75 | 0.16 |
| | | | | | | | No Ice | 1.64 | 1.15 | 0.08 |
| | | | | | | | 1/2" Ice | 1.80 | 1.29 | 0.09 |
| KRY 112 144/1 | A | From Centroid-Face | 4.00 | 0.000 | 94.00 | 0.000 | 1" Ice | 1.97 | 1.44 | 0.11 |
| | | | 0.00 | | | | 2" Ice | 2.33 | 1.75 | 0.16 |
| | | | 0.00 | | | | No Ice | 0.35 | 0.17 | 0.01 |
| | | | | | | | 1/2" Ice | 0.43 | 0.23 | 0.01 |
| | | | | | | | 1" Ice | 0.51 | 0.30 | 0.02 |
| KRY 112 144/1 | B | From Centroid-Face | 4.00 | 0.000 | 94.00 | 0.000 | 2" Ice | 0.70 | 0.46 | 0.03 |
| | | | 0.00 | | | | No Ice | 0.35 | 0.17 | 0.01 |
| | | | 0.00 | | | | 1/2" Ice | 0.43 | 0.23 | 0.01 |
| | | | | | | | 1" Ice | 0.51 | 0.30 | 0.02 |
| | | | | | | | 2" Ice | 0.70 | 0.46 | 0.03 |
| KRY 112 144/1 | C | From Centroid-Face | 4.00 | 0.000 | 94.00 | 0.000 | No Ice | 0.35 | 0.17 | 0.01 |
| | | | 0.00 | | | | 1/2" Ice | 0.43 | 0.23 | 0.01 |
| | | | 0.00 | | | | 1" Ice | 0.51 | 0.30 | 0.02 |
| | | | | | | | 2" Ice | 0.70 | 0.46 | 0.03 |
| | | | | | | | No Ice | 0.35 | 0.17 | 0.01 |
| Platform Mount [LP 302-1] | C | None | | 0.000 | 94.00 | 0.000 | 1/2" Ice | 33.67 | 33.67 | 2.26 |
| | | | | | | | No Ice | 26.56 | 26.56 | 1.71 |
| | | | | | | | 1" Ice | 40.39 | 40.39 | 2.95 |
| | | | | | | | 2" Ice | 53.23 | 53.23 | 4.70 |
| | | | | | | | No Ice | 0.85 | 1.67 | 0.07 |
| Side Arm Mount [SO 701-1] | A | From Leg | 2.00 | 0.000 | 80.00 | 0.000 | 1/2" Ice | 1.14 | 2.34 | 0.08 |
| | | | 0.00 | | | | 1" Ice | 1.43 | 3.01 | 0.09 |
| | | | 0.00 | | | | 2" Ice | 2.01 | 4.35 | 0.12 |
| | | | | | | | No Ice | 0.85 | 1.67 | 0.07 |
| | | | | | | | 1/2" Ice | 1.14 | 2.34 | 0.08 |
| Side Arm Mount [SO 701-1] | C | From Face | 2.00 | 0.000 | 80.00 | 0.000 | 1" Ice | 1.43 | 3.01 | 0.09 |
| | | | 0.00 | | | | 2" Ice | 2.01 | 4.35 | 0.12 |
| | | | 0.00 | | | | No Ice | 0.85 | 1.67 | 0.07 |
| | | | | | | | 1/2" Ice | 1.14 | 2.34 | 0.08 |
| | | | | | | | 1" Ice | 1.43 | 3.01 | 0.09 |
| Side Arm Mount [SO 701-1] | A | From Leg | 2.00 | 0.000 | 77.00 | 0.000 | 2" Ice | 2.01 | 4.35 | 0.12 |
| | | | 0.00 | | | | No Ice | 0.85 | 1.67 | 0.07 |
| | | | 0.00 | | | | 1/2" Ice | 1.14 | 2.34 | 0.08 |
| | | | | | | | 1" Ice | 1.43 | 3.01 | 0.09 |
| | | | | | | | 2" Ice | 2.01 | 4.35 | 0.12 |
| 58532A | A | From Leg | 4.00 | 0.000 | 77.00 | 0.000 | No Ice | 0.19 | 0.19 | 0.00 |
| | | | 0.00 | | | | 1/2" Ice | 0.25 | 0.25 | 0.00 |
| | | | 0.00 | | | | 1" Ice | 0.31 | 0.31 | 0.01 |
| | | | | | | | 2" Ice | 0.47 | 0.47 | 0.02 |
| | | | | | | | No Ice | 0.85 | 1.67 | 0.07 |

Dishes

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 23 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Description | Face or Leg | Dish Type | Offset Type | Offsets: Horz Lateral Vert ft | Azimuth Adjustment ° | 3 dB Beam Width ° | Elevation ft | Outside Diameter ft | Aperture Area ft ² | Weight K | | |
|-------------|-------------|--------------------------|-------------|-------------------------------|----------------------|-------------------|--------------|---------------------|-------------------------------|----------|------|------|
| VHLP2.5-11 | B | Paraboloid w/Shroud (HP) | From | 4.00 | -47.000 | | 133.00 | 2.92 | No Ice | 6.68 | 0.05 | |
| | | | Centroid | 6.00 | | | | | 1/2" Ice | 7.07 | 0.08 | |
| | | | -Face | 6.00 | | | | | | 1" Ice | 7.46 | 0.12 |
| | | | | | | | | | | 2" Ice | 8.23 | 0.19 |
| VHLP2.5-11 | C | Paraboloid w/Shroud (HP) | From | 4.00 | 23.000 | | 133.00 | 2.92 | No Ice | 6.68 | 0.05 | |
| | | | Centroid | 6.00 | | | | | 1/2" Ice | 7.07 | 0.08 | |
| | | | -Face | 6.00 | | | | | | 1" Ice | 7.46 | 0.12 |
| | | | | | | | | | | 2" Ice | 8.23 | 0.19 |

Load Combinations

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

| | | |
|--|--|---------------------------------------|
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| | Client Crown Castle | Designed by Tari L. Vicenty |

| Comb. No. | Description |
|-----------|-----------------------------|
| 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 Tower Deflections - Service Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|-------------|-----------------|---------------------------|-----------------------|-----------|------------|
| L1 | 145 - 140 | 18.56 | 39 | 1.015 | 0.003 |
| L2 | 140 - 135 | 17.50 | 39 | 1.015 | 0.003 |
| L3 | 135 - 130 | 16.44 | 39 | 1.013 | 0.002 |
| L4 | 130 - 125 | 15.38 | 39 | 1.010 | 0.002 |
| L5 | 125 - 120 | 14.33 | 39 | 1.004 | 0.002 |
| L6 | 120 - 115 | 13.28 | 39 | 0.995 | 0.001 |
| L7 | 115 - 110 | 12.24 | 39 | 0.982 | 0.001 |
| L8 | 110 - 105 | 11.22 | 39 | 0.963 | 0.001 |
| L9 | 105 - 100 | 10.23 | 39 | 0.938 | 0.001 |
| L10 | 100 - 95 | 9.26 | 39 | 0.906 | 0.001 |
| L11 | 95 - 90 | 8.33 | 39 | 0.868 | 0.001 |
| L12 | 90 - 84.75 | 7.45 | 39 | 0.822 | 0.001 |
| L13 | 89.25 - 84.25 | 7.32 | 39 | 0.815 | 0.001 |
| L14 | 84.25 - 79.25 | 6.48 | 39 | 0.789 | 0.000 |
| L15 | 79.25 - 74.25 | 5.68 | 39 | 0.740 | 0.000 |
| L16 | 74.25 - 69.25 | 4.93 | 39 | 0.688 | 0.000 |
| L17 | 69.25 - 64.25 | 4.24 | 39 | 0.632 | 0.000 |
| L18 | 64.25 - 59.25 | 3.61 | 39 | 0.574 | 0.000 |
| L19 | 59.25 - 54.25 | 3.04 | 39 | 0.514 | 0.000 |
| L20 | 54.25 - 50.083 | 2.53 | 39 | 0.452 | 0.000 |
| L21 | 50.083 - 49.833 | 2.16 | 39 | 0.399 | 0.000 |
| L22 | 49.833 - 44.25 | 2.14 | 39 | 0.397 | 0.000 |
| L23 | 49.5 - 43.25 | 2.11 | 39 | 0.394 | 0.000 |
| L24 | 43.25 - 38.25 | 1.61 | 39 | 0.361 | 0.000 |
| L25 | 38.25 - 33.25 | 1.26 | 39 | 0.317 | 0.000 |
| L26 | 33.25 - 31.25 | 0.95 | 39 | 0.272 | 0.000 |
| L27 | 31.25 - 31 | 0.84 | 39 | 0.254 | 0.000 |
| L28 | 31 - 26 | 0.83 | 39 | 0.252 | 0.000 |
| L29 | 26 - 21 | 0.58 | 39 | 0.213 | 0.000 |
| L30 | 21 - 16 | 0.38 | 39 | 0.172 | 0.000 |
| L31 | 16 - 11 | 0.22 | 39 | 0.132 | 0.000 |
| L32 | 11 - 6 | 0.11 | 39 | 0.091 | 0.000 |
| L33 | 6 - 1 | 0.03 | 39 | 0.050 | 0.000 |
| L34 | 1 - 0 | 0.00 | 39 | 0.008 | 0.000 |

Critical Deflections and Radius of Curvature - Service Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|------------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 139.00 | VHLP2.5-11 | 39 | 17.29 | 1.015 | 0.005 | 355541 |
| 133.00 | LLPX310R-V1 w/ Mount Pipe | 39 | 16.02 | 1.012 | 0.004 | 84353 |
| 124.00 | APXVSP18-C-A20 w/ Mount Pipe | 39 | 14.12 | 1.003 | 0.003 | 34652 |

| | | |
|--|--|---------------------------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job Newington (BU 881364) | Page 25 of 28 |
| | Project TEP No. 65292.679311 | Date 11:34:30 03/29/22 |
| | Client Crown Castle | Designed by Tari L. Vicenty |

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-----------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 122.00 | 800MHz 2X50W RRH W/FILTER | 39 | 13.70 | 0.999 | 0.003 | 28884 |
| 114.00 | KS24019-L112A | 39 | 12.04 | 0.978 | 0.003 | 16274 |
| 105.00 | AIR 6419 B77G w/ Mount Pipe | 39 | 10.23 | 0.938 | 0.002 | 10092 |
| 94.00 | AIR -32 B2A/B66AA | 39 | 8.15 | 0.859 | 0.001 | 6625 |
| 80.00 | Side Arm Mount [SO 701-1] | 39 | 5.79 | 0.748 | 0.001 | 5810 |
| 77.00 | Side Arm Mount [SO 701-1] | 39 | 5.33 | 0.716 | 0.001 | 5436 |

Maximum Tower Deflections - Design Wind

| Section No. | Elevation ft | Horz. Deflection in | Gov. Load Comb. | Tilt ° | Twist ° |
|----------------|-----------------|---------------------------|-----------------------|-----------|------------|
| L1 | 145 - 140 | 76.81 | 2 | 4.205 | 0.013 |
| L2 | 140 - 135 | 72.41 | 2 | 4.204 | 0.013 |
| L3 | 135 - 130 | 68.01 | 2 | 4.200 | 0.011 |
| L4 | 130 - 125 | 63.63 | 2 | 4.185 | 0.010 |
| L5 | 125 - 120 | 59.26 | 2 | 4.162 | 0.009 |
| L6 | 120 - 115 | 54.92 | 2 | 4.124 | 0.007 |
| L7 | 115 - 110 | 50.64 | 2 | 4.067 | 0.006 |
| L8 | 110 - 105 | 46.42 | 2 | 3.988 | 0.005 |
| L9 | 105 - 100 | 42.30 | 2 | 3.884 | 0.004 |
| L10 | 100 - 95 | 38.30 | 2 | 3.752 | 0.004 |
| L11 | 95 - 90 | 34.46 | 2 | 3.591 | 0.003 |
| L12 | 90 - 84.75 | 30.79 | 2 | 3.404 | 0.003 |
| L13 | 89.25 - 84.25 | 30.26 | 2 | 3.373 | 0.002 |
| L14 | 84.25 - 79.25 | 26.78 | 2 | 3.265 | 0.002 |
| L15 | 79.25 - 74.25 | 23.47 | 2 | 3.063 | 0.002 |
| L16 | 74.25 - 69.25 | 20.38 | 2 | 2.846 | 0.002 |
| L17 | 69.25 - 64.25 | 17.52 | 2 | 2.616 | 0.001 |
| L18 | 64.25 - 59.25 | 14.90 | 2 | 2.375 | 0.001 |
| L19 | 59.25 - 54.25 | 12.55 | 2 | 2.125 | 0.001 |
| L20 | 54.25 - 50.083 | 10.46 | 2 | 1.868 | 0.001 |
| L21 | 50.083 - 49.833 | 8.92 | 2 | 1.649 | 0.001 |
| L22 | 49.833 - 44.25 | 8.83 | 2 | 1.640 | 0.001 |
| L23 | 49.5 - 43.25 | 8.72 | 2 | 1.627 | 0.001 |
| L24 | 43.25 - 38.25 | 6.67 | 2 | 1.494 | 0.001 |
| L25 | 38.25 - 33.25 | 5.20 | 2 | 1.311 | 0.000 |
| L26 | 33.25 - 31.25 | 3.92 | 2 | 1.124 | 0.000 |
| L27 | 31.25 - 31 | 3.47 | 2 | 1.047 | 0.000 |
| L28 | 31 - 26 | 3.41 | 2 | 1.039 | 0.000 |
| L29 | 26 - 21 | 2.41 | 2 | 0.878 | 0.000 |
| L30 | 21 - 16 | 1.58 | 2 | 0.712 | 0.000 |
| L31 | 16 - 11 | 0.92 | 2 | 0.545 | 0.000 |
| L32 | 11 - 6 | 0.44 | 2 | 0.378 | 0.000 |
| L33 | 6 - 1 | 0.13 | 2 | 0.206 | 0.000 |
| L34 | 1 - 0 | 0.00 | 2 | 0.034 | 0.000 |

Critical Deflections and Radius of Curvature - Design Wind

| Elevation ft | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------------|-------------------------------|-----------------------|------------------|-----------|------------|------------------------------|
| 139.00 | VHLP2.5-11 | 2 | 71.53 | 4.204 | 0.020 | 104586 |
| 133.00 | LLPX310R-V1 w/ Mount Pipe | 2 | 66.26 | 4.195 | 0.017 | 22515 |
| 124.00 | APXVSPP18-C-A20 w/ Mount Pipe | 2 | 58.39 | 4.156 | 0.013 | 8613 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
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| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Elevation | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------|-----------------------------|-----------------|---------------|--------|---------|------------------------|
| 122.00 | 800MHz 2X50W RRH W/FILTER | 2 | 56.65 | 4.142 | 0.013 | 7145 |
| 114.00 | KS24019-L112A | 2 | 49.79 | 4.053 | 0.011 | 3989 |
| 105.00 | AIR 6419 B77G w/ Mount Pipe | 2 | 42.30 | 3.884 | 0.008 | 2457 |
| 94.00 | AIR -32 B2A/B66AA | 2 | 33.71 | 3.557 | 0.006 | 1608 |
| 80.00 | Side Arm Mount [SO 701-1] | 2 | 23.95 | 3.097 | 0.004 | 1408 |
| 77.00 | Side Arm Mount [SO 701-1] | 2 | 22.05 | 2.964 | 0.004 | 1318 |

Compression Checks

Pole Design Data

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | A in ² | P _u K | φP _n K | Ratio P _u /φP _n |
|-------------|----------------------|--------------------------|------|-------------------|------|-------------------|------------------|-------------------|---------------------------------------|
| L1 | 145 - 140 (1) | TP24.9233x24x0.1875 | 5.00 | 0.00 | 0.0 | 14.7209 | -0.27 | 861.17 | 0.000 |
| L2 | 140 - 135 (2) | TP25.8467x24.9233x0.1875 | 5.00 | 0.00 | 0.0 | 15.2704 | -0.62 | 893.32 | 0.001 |
| L3 | 135 - 130 (3) | TP26.77x25.8467x0.1875 | 5.00 | 0.00 | 0.0 | 15.8199 | -3.95 | 925.47 | 0.004 |
| L4 | 130 - 125 (4) | TP27.8249x26.9x0.25 | 5.00 | 0.00 | 0.0 | 21.8807 | -4.37 | 1280.02 | 0.003 |
| L5 | 125 - 120 (5) | TP28.7497x27.8249x0.25 | 5.00 | 0.00 | 0.0 | 22.6145 | -8.91 | 1322.95 | 0.007 |
| L6 | 120 - 115 (6) | TP29.6746x28.7497x0.25 | 5.00 | 0.00 | 0.0 | 23.3484 | -9.39 | 1365.88 | 0.007 |
| L7 | 115 - 110 (7) | TP30.5994x29.6746x0.25 | 5.00 | 0.00 | 0.0 | 24.0823 | -14.63 | 1408.81 | 0.010 |
| L8 | 110 - 105 (8) | TP31.5243x30.5994x0.25 | 5.00 | 0.00 | 0.0 | 24.8162 | -15.20 | 1451.75 | 0.010 |
| L9 | 105 - 100 (9) | TP32.4492x31.5243x0.25 | 5.00 | 0.00 | 0.0 | 25.5500 | -21.00 | 1494.68 | 0.014 |
| L10 | 100 - 95 (10) | TP33.374x32.4492x0.25 | 5.00 | 0.00 | 0.0 | 26.2839 | -21.68 | 1537.61 | 0.014 |
| L11 | 95 - 90 (11) | TP34.2989x33.374x0.25 | 5.00 | 0.00 | 0.0 | 27.0178 | -26.45 | 1580.54 | 0.017 |
| L12 | 90 - 84.75 (12) | TP35.27x34.2989x0.25 | 5.25 | 0.00 | 0.0 | 27.1279 | -26.57 | 1586.98 | 0.017 |
| L13 | 84.75 - 84.25 (13) | TP34.8623x33.9376x0.3125 | 5.00 | 0.00 | 0.0 | 34.2691 | -28.00 | 2004.74 | 0.014 |
| L14 | 84.25 - 79.25 (14) | TP35.787x34.8623x0.3125 | 5.00 | 0.00 | 0.0 | 35.1863 | -29.12 | 2058.40 | 0.014 |
| L15 | 79.25 - 74.25 (15) | TP36.7117x35.787x0.3125 | 5.00 | 0.00 | 0.0 | 36.1035 | -30.21 | 2112.06 | 0.014 |
| L16 | 74.25 - 69.25 (16) | TP37.6365x36.7117x0.3125 | 5.00 | 0.00 | 0.0 | 37.0207 | -31.25 | 2165.71 | 0.014 |
| L17 | 69.25 - 64.25 (17) | TP38.5612x37.6365x0.3125 | 5.00 | 0.00 | 0.0 | 37.9379 | -32.31 | 2219.37 | 0.015 |
| L18 | 64.25 - 59.25 (18) | TP39.4859x38.5612x0.3125 | 5.00 | 0.00 | 0.0 | 38.8551 | -33.41 | 2273.02 | 0.015 |
| L19 | 59.25 - 54.25 (19) | TP40.4106x39.4859x0.3125 | 5.00 | 0.00 | 0.0 | 39.7723 | -34.53 | 2326.68 | 0.015 |
| L20 | 54.25 - 50.083 (20) | TP41.1812x40.4106x0.3125 | 4.17 | 0.00 | 0.0 | 40.5367 | -35.48 | 2371.40 | 0.015 |
| L21 | 50.083 - 49.833 (21) | TP41.2275x41.1812x0.4375 | 0.25 | 0.00 | 0.0 | 56.6420 | -35.56 | 3313.56 | 0.011 |
| L22 | 49.833 - 44.25 (22) | TP42.26x41.2275x0.4375 | 5.58 | 0.00 | 0.0 | 56.7275 | -35.66 | 3318.56 | 0.011 |
| L23 | 44.25 - 43.25 (23) | TP41.6951x40.6641x0.5 | 6.25 | 0.00 | 0.0 | 65.3766 | -38.93 | 3824.53 | 0.010 |
| L24 | 43.25 - 38.25 (24) | TP42.52x41.6951x0.5 | 5.00 | 0.00 | 0.0 | 66.6857 | -40.60 | 3901.11 | 0.010 |
| L25 | 38.25 - 33.25 (25) | TP43.3448x42.52x0.4938 | 5.00 | 0.00 | 0.0 | 67.1545 | -42.30 | 3928.54 | 0.011 |
| L26 | 33.25 - 31.25 (26) | TP43.6747x43.3448x0.4875 | 2.00 | 0.00 | 0.0 | 66.8247 | -42.98 | 3909.24 | 0.011 |
| L27 | 31.25 - 31 (27) | TP43.716x43.6747x0.5875 | 0.25 | 0.00 | 0.0 | 80.4227 | -43.09 | 4704.73 | 0.009 |
| L28 | 31 - 26 (28) | TP44.5408x43.716x0.5875 | 5.00 | 0.00 | 0.0 | 81.9608 | -45.08 | 4794.71 | 0.009 |
| L29 | 26 - 21 (29) | TP45.3657x44.5408x0.575 | 5.00 | 0.00 | 0.0 | 81.7452 | -47.10 | 4782.09 | 0.010 |
| L30 | 21 - 16 (30) | TP46.1905x45.3657x0.575 | 5.00 | 0.00 | 0.0 | 83.2506 | -49.14 | 4870.16 | 0.010 |
| L31 | 16 - 11 (31) | TP47.0153x46.1905x0.575 | 5.00 | 0.00 | 0.0 | 84.7560 | -51.21 | 4958.22 | 0.010 |
| L32 | 11 - 6 (32) | TP47.8402x47.0153x0.5625 | 5.00 | 0.00 | 0.0 | 84.4084 | -53.30 | 4937.89 | 0.011 |
| L33 | 6 - 1 (33) | TP48.665x47.8402x0.5625 | 5.00 | 0.00 | 0.0 | 85.8811 | -55.42 | 5024.04 | 0.011 |
| L34 | 1 - 0 (34) | TP48.83x48.665x0.5625 | 1.00 | 0.00 | 0.0 | 86.1756 | -55.84 | 5041.27 | 0.011 |

Pole Bending Design Data

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 27 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Section No. | Elevation ft | Size | M_{ux} | ϕM_{ux} | Ratio | M_{uy} | ϕM_{uy} | Ratio |
|-------------|----------------------|--------------------------|----------|---------------|------------------------------|----------|---------------|------------------------------|
| | | | kip-ft | kip-ft | $\frac{M_{ux}}{\phi M_{ux}}$ | kip-ft | kip-ft | $\frac{M_{uy}}{\phi M_{uy}}$ |
| L1 | 145 - 140 (1) | TP24.9233x24x0.1875 | 0.95 | 505.02 | 0.002 | 0.00 | 505.02 | 0.000 |
| L2 | 140 - 135 (2) | TP25.8467x24.9233x0.1875 | 7.14 | 536.18 | 0.013 | 0.00 | 536.18 | 0.000 |
| L3 | 135 - 130 (3) | TP26.77x25.8467x0.1875 | 23.25 | 567.67 | 0.041 | 0.00 | 567.67 | 0.000 |
| L4 | 130 - 125 (4) | TP27.8249x26.9x0.25 | 44.44 | 885.50 | 0.050 | 0.00 | 885.50 | 0.000 |
| L5 | 125 - 120 (5) | TP28.7497x27.8249x0.25 | 78.57 | 937.04 | 0.084 | 0.00 | 937.04 | 0.000 |
| L6 | 120 - 115 (6) | TP29.6746x28.7497x0.25 | 120.36 | 989.38 | 0.122 | 0.00 | 989.38 | 0.000 |
| L7 | 115 - 110 (7) | TP30.5994x29.6746x0.25 | 182.88 | 1042.47 | 0.175 | 0.00 | 1042.47 | 0.000 |
| L8 | 110 - 105 (8) | TP31.5243x30.5994x0.25 | 250.39 | 1096.25 | 0.228 | 0.00 | 1096.25 | 0.000 |
| L9 | 105 - 100 (9) | TP32.4492x31.5243x0.25 | 346.32 | 1150.65 | 0.301 | 0.00 | 1150.65 | 0.000 |
| L10 | 100 - 95 (10) | TP33.374x32.4492x0.25 | 444.79 | 1205.62 | 0.369 | 0.00 | 1205.62 | 0.000 |
| L11 | 95 - 90 (11) | TP34.2989x33.374x0.25 | 561.97 | 1261.10 | 0.446 | 0.00 | 1261.10 | 0.000 |
| L12 | 90 - 84.75 (12) | TP35.27x34.2989x0.25 | 579.94 | 1269.46 | 0.457 | 0.00 | 1269.46 | 0.000 |
| L13 | 84.75 - 84.25 (13) | TP34.8623x33.9376x0.3125 | 701.17 | 1736.51 | 0.404 | 0.00 | 1736.51 | 0.000 |
| L14 | 84.25 - 79.25 (14) | TP35.787x34.8623x0.3125 | 825.04 | 1816.99 | 0.454 | 0.00 | 1816.99 | 0.000 |
| L15 | 79.25 - 74.25 (15) | TP36.7117x35.787x0.3125 | 951.70 | 1898.49 | 0.501 | 0.00 | 1898.49 | 0.000 |
| L16 | 74.25 - 69.25 (16) | TP37.6365x36.7117x0.3125 | 1080.25 | 1980.94 | 0.545 | 0.00 | 1980.94 | 0.000 |
| L17 | 69.25 - 64.25 (17) | TP38.5612x37.6365x0.3125 | 1210.80 | 2064.29 | 0.587 | 0.00 | 2064.29 | 0.000 |
| L18 | 64.25 - 59.25 (18) | TP39.4859x38.5612x0.3125 | 1343.30 | 2148.47 | 0.625 | 0.00 | 2148.47 | 0.000 |
| L19 | 59.25 - 54.25 (19) | TP40.4106x39.4859x0.3125 | 1477.75 | 2233.43 | 0.662 | 0.00 | 2233.43 | 0.000 |
| L20 | 54.25 - 50.083 (20) | TP41.1812x40.4106x0.3125 | 1591.28 | 2304.79 | 0.690 | 0.00 | 2304.79 | 0.000 |
| L21 | 50.083 - 49.833 (21) | TP41.2275x41.1812x0.4375 | 1598.13 | 3519.74 | 0.454 | 0.00 | 3519.74 | 0.000 |
| L22 | 49.833 - 44.25 (22) | TP42.26x41.2275x0.4375 | 1607.27 | 3530.43 | 0.455 | 0.00 | 3530.43 | 0.000 |
| L23 | 44.25 - 43.25 (23) | TP41.6951x40.6641x0.5 | 1780.86 | 4097.14 | 0.435 | 0.00 | 4097.14 | 0.000 |
| L24 | 43.25 - 38.25 (24) | TP42.52x41.6951x0.5 | 1922.27 | 4263.86 | 0.451 | 0.00 | 4263.86 | 0.000 |
| L25 | 38.25 - 33.25 (25) | TP43.3448x42.52x0.4938 | 2065.66 | 4380.40 | 0.472 | 0.00 | 4380.40 | 0.000 |
| L26 | 33.25 - 31.25 (26) | TP43.6747x43.3448x0.4875 | 2123.55 | 4394.09 | 0.483 | 0.00 | 4394.09 | 0.000 |
| L27 | 31.25 - 31 (27) | TP43.716x43.6747x0.5875 | 2130.81 | 5268.89 | 0.404 | 0.00 | 5268.89 | 0.000 |
| L28 | 31 - 26 (28) | TP44.5408x43.716x0.5875 | 2276.98 | 5473.73 | 0.416 | 0.00 | 5473.73 | 0.000 |
| L29 | 26 - 21 (29) | TP45.3657x44.5408x0.575 | 2425.02 | 5566.24 | 0.436 | 0.00 | 5566.24 | 0.000 |
| L30 | 21 - 16 (30) | TP46.1905x45.3657x0.575 | 2574.77 | 5774.47 | 0.446 | 0.00 | 5774.47 | 0.000 |
| L31 | 16 - 11 (31) | TP47.0153x46.1905x0.575 | 2726.10 | 5986.51 | 0.455 | 0.00 | 5986.51 | 0.000 |
| L32 | 11 - 6 (32) | TP47.8402x47.0153x0.5625 | 2878.92 | 6072.36 | 0.474 | 0.00 | 6072.36 | 0.000 |
| L33 | 6 - 1 (33) | TP48.665x47.8402x0.5625 | 3033.19 | 6287.36 | 0.482 | 0.00 | 6287.36 | 0.000 |
| L34 | 1 - 0 (34) | TP48.83x48.665x0.5625 | 3064.22 | 6330.81 | 0.484 | 0.00 | 6330.81 | 0.000 |

Pole Shear Design Data

| Section No. | Elevation ft | Size | Actual | ϕV_n | Ratio | Actual | ϕT_n | Ratio |
|-------------|--------------------|--------------------------|------------|------------|------------------------|-----------------|------------|------------------------|
| | | | V_u K | K | $\frac{V_u}{\phi V_n}$ | T_u kip-ft | kip-ft | $\frac{T_u}{\phi T_n}$ |
| L1 | 145 - 140 (1) | TP24.9233x24x0.1875 | 0.38 | 258.35 | 0.001 | 0.00 | 559.65 | 0.000 |
| L2 | 140 - 135 (2) | TP25.8467x24.9233x0.1875 | 1.49 | 268.00 | 0.006 | 1.15 | 602.21 | 0.002 |
| L3 | 135 - 130 (3) | TP26.77x25.8467x0.1875 | 4.03 | 277.64 | 0.015 | 1.89 | 646.33 | 0.003 |
| L4 | 130 - 125 (4) | TP27.8249x26.9x0.25 | 4.45 | 384.01 | 0.012 | 1.89 | 927.33 | 0.002 |
| L5 | 125 - 120 (5) | TP28.7497x27.8249x0.25 | 8.14 | 396.88 | 0.021 | 1.89 | 990.57 | 0.002 |
| L6 | 120 - 115 (6) | TP29.6746x28.7497x0.25 | 8.58 | 409.76 | 0.021 | 1.89 | 1055.91 | 0.002 |
| L7 | 115 - 110 (7) | TP30.5994x29.6746x0.25 | 13.28 | 422.64 | 0.031 | 2.15 | 1123.33 | 0.002 |
| L8 | 110 - 105 (8) | TP31.5243x30.5994x0.25 | 13.73 | 435.52 | 0.032 | 2.15 | 1192.83 | 0.002 |
| L9 | 105 - 100 (9) | TP32.4492x31.5243x0.25 | 19.48 | 448.40 | 0.043 | 1.89 | 1264.43 | 0.001 |
| L10 | 100 - 95 (10) | TP33.374x32.4492x0.25 | 19.92 | 461.28 | 0.043 | 1.89 | 1338.11 | 0.001 |
| L11 | 95 - 90 (11) | TP34.2989x33.374x0.25 | 23.94 | 474.16 | 0.050 | 1.89 | 1413.88 | 0.001 |
| L12 | 90 - 84.75 (12) | TP35.27x34.2989x0.25 | 24.00 | 476.09 | 0.050 | 1.89 | 1425.42 | 0.001 |
| L13 | 84.75 - 84.25 (13) | TP34.8623x33.9376x0.3125 | 24.50 | 601.42 | 0.041 | 1.89 | 1819.72 | 0.001 |
| L14 | 84.25 - 79.25 (14) | TP35.787x34.8623x0.3125 | 25.04 | 617.52 | 0.041 | 0.60 | 1918.44 | 0.000 |
| L15 | 79.25 - 74.25 (15) | TP36.7117x35.787x0.3125 | 25.51 | 633.62 | 0.040 | 0.60 | 2019.76 | 0.000 |
| L16 | 74.25 - 69.25 (16) | TP37.6365x36.7117x0.3125 | 25.92 | 649.71 | 0.040 | 0.60 | 2123.68 | 0.000 |
| L17 | 69.25 - 64.25 (17) | TP38.5612x37.6365x0.3125 | 26.31 | 665.81 | 0.040 | 0.60 | 2230.22 | 0.000 |
| L18 | 64.25 - 59.25 (18) | TP39.4859x38.5612x0.3125 | 26.70 | 681.91 | 0.039 | 0.60 | 2339.36 | 0.000 |

| | | | | |
|--|----------------|-----------------------|--------------------|-------------------|
| tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350 | Job | Newington (BU 881364) | Page | 28 of 28 |
| | Project | TEP No. 65292.679311 | Date | 11:34:30 03/29/22 |
| | Client | Crown Castle | Designed by | Tari L. Vicenty |

| Section No. | Elevation ft | Size | Actual V_u K | ϕV_n K | Ratio $\frac{V_u}{\phi V_n}$ | Actual T_u kip-ft | ϕT_n kip-ft | Ratio $\frac{T_u}{\phi T_n}$ |
|-------------|----------------------|--------------------------|----------------------|-----------------|---------------------------------|---------------------------|----------------------|---------------------------------|
| L19 | 59.25 - 54.25 (19) | TP40.4106x39.4859x0.3125 | 27.09 | 698.00 | 0.039 | 0.60 | 2451.10 | 0.000 |
| L20 | 54.25 - 50.083 (20) | TP41.1812x40.4106x0.3125 | 27.41 | 711.42 | 0.039 | 0.60 | 2546.22 | 0.000 |
| L21 | 50.083 - 49.833 (21) | TP41.2275x41.1812x0.4375 | 27.42 | 994.07 | 0.028 | 0.60 | 3550.98 | 0.000 |
| L22 | 49.833 - 44.25 (22) | TP42.26x41.2275x0.4375 | 27.44 | 995.57 | 0.028 | 0.60 | 3561.72 | 0.000 |
| L23 | 44.25 - 43.25 (23) | TP41.6951x40.6641x0.5 | 28.08 | 1147.36 | 0.024 | 0.60 | 4139.28 | 0.000 |
| L24 | 43.25 - 38.25 (24) | TP42.52x41.6951x0.5 | 28.49 | 1170.33 | 0.024 | 0.60 | 4306.71 | 0.000 |
| L25 | 38.25 - 33.25 (25) | TP43.3448x42.52x0.4938 | 28.87 | 1178.56 | 0.024 | 0.60 | 4422.77 | 0.000 |
| L26 | 33.25 - 31.25 (26) | TP43.6747x43.3448x0.4875 | 29.02 | 1172.77 | 0.025 | 0.60 | 4435.57 | 0.000 |
| L27 | 31.25 - 31 (27) | TP43.716x43.6747x0.5875 | 29.03 | 1411.42 | 0.021 | 0.60 | 5330.89 | 0.000 |
| L28 | 31 - 26 (28) | TP44.5408x43.716x0.5875 | 29.43 | 1438.41 | 0.020 | 0.60 | 5536.76 | 0.000 |
| L29 | 26 - 21 (29) | TP45.3657x44.5408x0.575 | 29.79 | 1434.63 | 0.021 | 0.60 | 5627.38 | 0.000 |
| L30 | 21 - 16 (30) | TP46.1905x45.3657x0.575 | 30.12 | 1461.05 | 0.021 | 0.60 | 5836.56 | 0.000 |
| L31 | 16 - 11 (31) | TP47.0153x46.1905x0.575 | 30.42 | 1487.47 | 0.020 | 0.60 | 6049.55 | 0.000 |
| L32 | 11 - 6 (32) | TP47.8402x47.0153x0.5625 | 30.71 | 1481.37 | 0.021 | 0.60 | 6133.37 | 0.000 |
| L33 | 6 - 1 (33) | TP48.665x47.8402x0.5625 | 31.00 | 1507.21 | 0.021 | 0.60 | 6349.25 | 0.000 |
| L34 | 1 - 0 (34) | TP48.83x48.665x0.5625 | 31.06 | 1512.38 | 0.021 | 0.60 | 6392.87 | 0.000 |

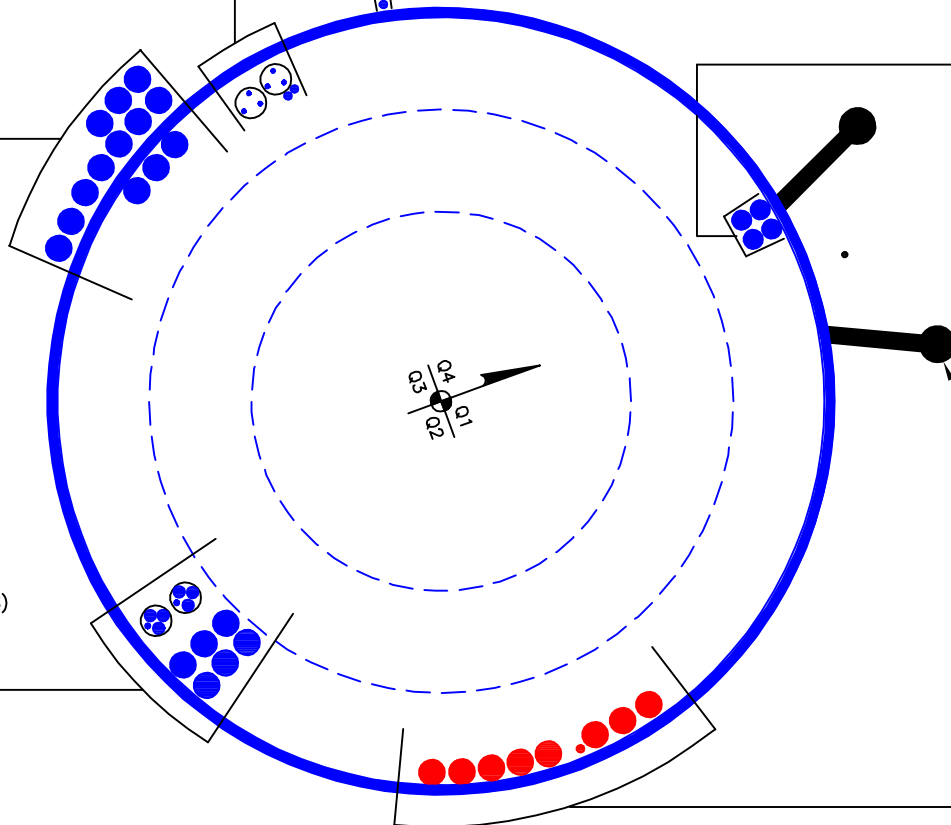
APPENDIX B
BASE LEVEL DRAWING

(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 77 FT LEVEL

(OTHER CONSIDERED EQUIPMENT—IN CONDUITS)
(6) 5/16" TO 133 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 1/2" TO 133 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 94 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(4) 1-1/4" TO 124 FT LEVEL



CLIMBING PEGS
W/ SAFETY CLIMB

(OTHER CONSIDERED EQUIPMENT—IN CONDUITS)
(2) 3/8" TO 105 FT LEVEL
(6) 13/16" TO 105 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 105 FT LEVEL

(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1/2" TO 114 FT LEVEL
(8) 1-5/8" TO 114 FT LEVEL

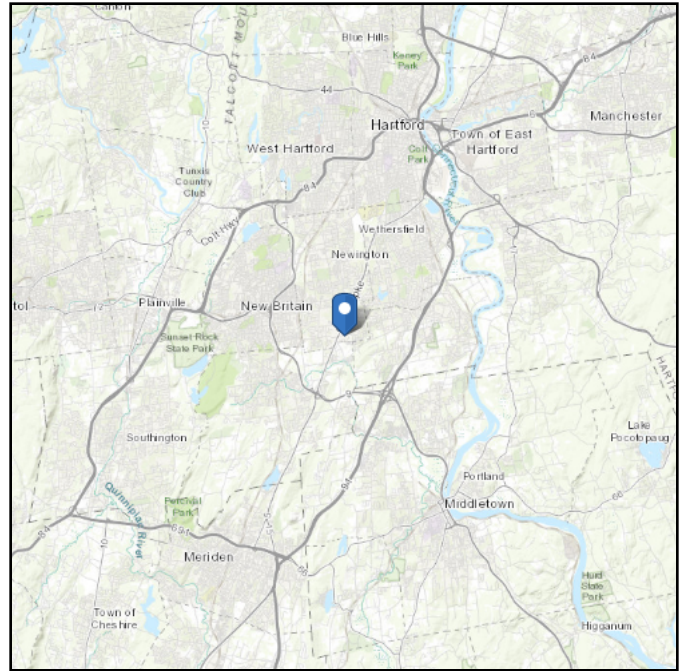
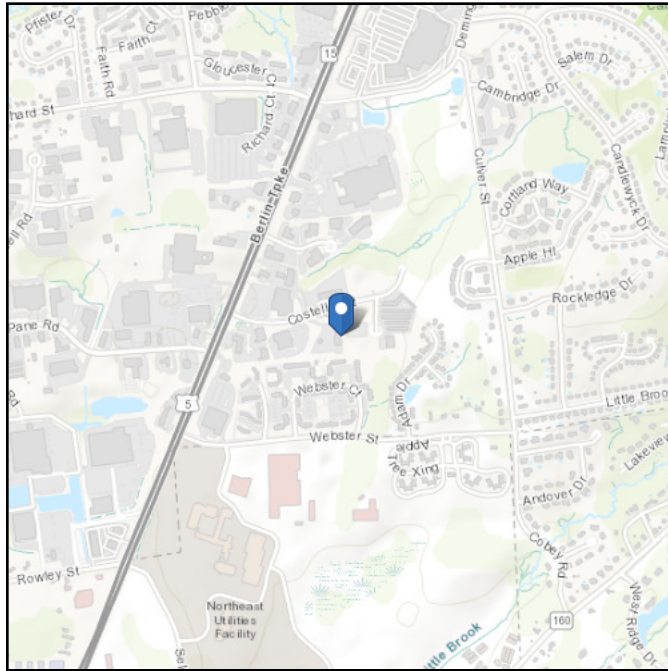
APPENDIX C
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 141.56 ft (NAVD 88)
Latitude: 41.6552
Longitude: -72.721442



Wind

Results:

| | |
|--------------|----------|
| Wind Speed | 118 Vmph |
| 10-year MRI | 75 Vmph |
| 25-year MRI | 84 Vmph |
| 50-year MRI | 90 Vmph |
| 100-year MRI | 98 Vmph |

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Mar 25 2022

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

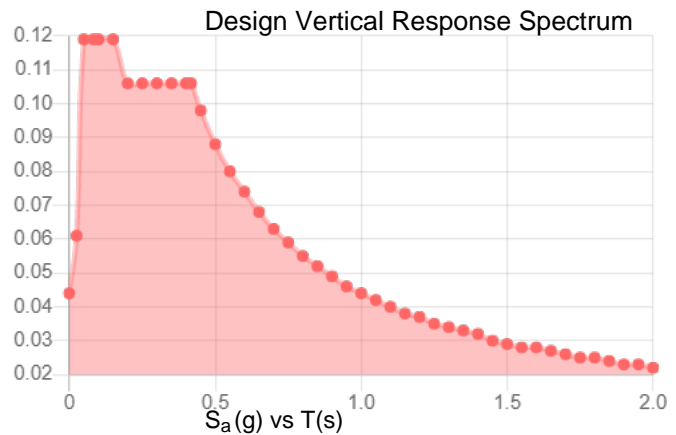
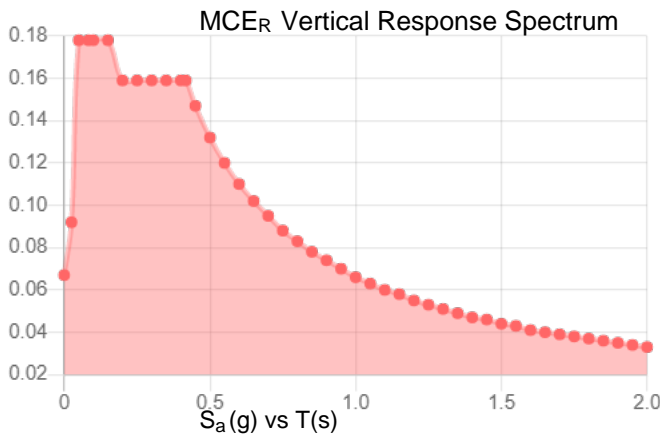
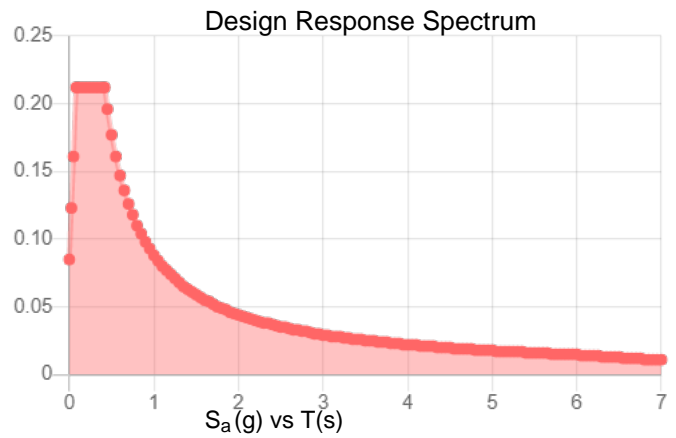
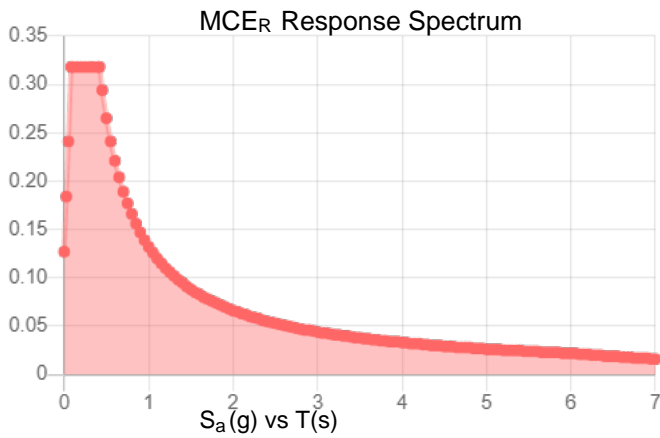
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

| | | | |
|------------|-------|--------------------|-------|
| S_s : | 0.198 | S_{D1} : | 0.088 |
| S_1 : | 0.055 | T_L : | 6 |
| F_a : | 1.6 | PGA : | 0.109 |
| F_v : | 2.4 | PGA _M : | 0.172 |
| S_{MS} : | 0.318 | F_{PGA} : | 1.582 |
| S_{M1} : | 0.132 | I_e : | 1 |
| S_{DS} : | 0.212 | C_v : | 0.7 |

Seismic Design Category B



Data Accessed: Fri Mar 25 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

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

Date Accessed: Fri Mar 25 2022

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

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

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: 881364
Work Order: 2095864

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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 | 145 | 15 | 0 | 18 | 24 | 26.77 | 0.1875 | Auto | A607-65 |
| 2 | 130 | 45.25 | 4.5 | 18 | 26.90 | 35.27 | 0.25 | Auto | A607-65 |
| 3 | 89.25 | 45 | 5.25 | 18 | 33.94 | 42.26 | 0.3125 | Auto | A607-65 |
| 4 | 49.5 | 49.5 | 0 | 18 | 40.66 | 48.83 | 0.375 | Auto | A607-65 |

Reinforcement Configuration

| | Bottom Effective Elevation (ft) | Top Effective Elevation (ft) | Type | Model | Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|----|---------------------------------|------------------------------|-------|----------------|--------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| 1 | 0 | 31.25 | plate | CCI-AFP-085125 | 3 | | | x | | | | | | x | | | | | x | | | | |
| 2 | 31.25 | 50.083 | plate | CCI-AFP-060100 | 3 | | | x | | | | | | x | | | | | x | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | |

Reinforcement Details

| | B (in) | H (in) | Gross Area (in ²) | Pole Face to Centroid (in) | Bottom Termination Type | Bottom Termination Length (in) | Top Termination Type | Top Termination Length (in) | Lu (in) | Net Area (in ²) | Bolt Hole Size (in) | Reinforcement Material |
|---|--------|--------|-------------------------------|----------------------------|-------------------------|--------------------------------|----------------------|-----------------------------|---------|-----------------------------|---------------------|------------------------|
| 1 | 8.5 | 1.25 | 10.625 | 0.625 | PC 8.8 - M20 (100) | 51 | PC 8.8 - M20 (100) | 51.000 | 17.000 | 9.063 | 1.1875 | A572-65 |
| 2 | 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 |

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 | 145 - 140 | 5 | | 18 | 24.000 | 24.923 | 0.1875 | A607-65 | 1.000 |
| 2 | 140 - 135 | 5 | | 18 | 24.923 | 25.847 | 0.1875 | A607-65 | 1.000 |
| 3 | 135 - 130 | 5 | 0 | 18 | 25.847 | 26.770 | 0.1875 | A607-65 | 1.000 |
| 4 | 130 - 125 | 5 | | 18 | 26.900 | 27.825 | 0.25 | A607-65 | 1.000 |
| 5 | 125 - 120 | 5 | | 18 | 27.825 | 28.750 | 0.25 | A607-65 | 1.000 |
| 6 | 120 - 115 | 5 | | 18 | 28.750 | 29.675 | 0.25 | A607-65 | 1.000 |
| 7 | 115 - 110 | 5 | | 18 | 29.675 | 30.599 | 0.25 | A607-65 | 1.000 |
| 8 | 110 - 105 | 5 | | 18 | 30.599 | 31.524 | 0.25 | A607-65 | 1.000 |
| 9 | 105 - 100 | 5 | | 18 | 31.524 | 32.449 | 0.25 | A607-65 | 1.000 |
| 10 | 100 - 95 | 5 | | 18 | 32.449 | 33.374 | 0.25 | A607-65 | 1.000 |
| 11 | 95 - 90 | 5 | | 18 | 33.374 | 34.299 | 0.25 | A607-65 | 1.000 |
| 12 | 90 - 89.25 | 5.25 | 4.5 | 18 | 34.299 | 35.270 | 0.25 | A607-65 | 1.000 |
| 13 | 89.25 - 84.25 | 5 | | 18 | 33.938 | 34.862 | 0.3125 | A607-65 | 1.000 |
| 14 | 84.25 - 79.25 | 5 | | 18 | 34.862 | 35.787 | 0.3125 | A607-65 | 1.000 |
| 15 | 79.25 - 74.25 | 5 | | 18 | 35.787 | 36.712 | 0.3125 | A607-65 | 1.000 |
| 16 | 74.25 - 69.25 | 5 | | 18 | 36.712 | 37.636 | 0.3125 | A607-65 | 1.000 |
| 17 | 69.25 - 64.25 | 5 | | 18 | 37.636 | 38.561 | 0.3125 | A607-65 | 1.000 |
| 18 | 64.25 - 59.25 | 5 | | 18 | 38.561 | 39.486 | 0.3125 | A607-65 | 1.000 |
| 19 | 59.25 - 54.25 | 5 | | 18 | 39.486 | 40.411 | 0.3125 | A607-65 | 1.000 |
| 20 | 54.25 - 50.083 | 4.167 | | 18 | 40.411 | 41.181 | 0.3125 | A607-65 | 1.000 |
| 21 | 50.083 - 49.833 | 0.25 | | 18 | 41.181 | 41.227 | 0.4375 | A607-65 | 1.034 |
| 22 | 49.833 - 49.5 | 5.583 | 5.25 | 18 | 41.227 | 42.260 | 0.4375 | A607-65 | 1.034 |
| 23 | 49.5 - 43.25 | 6.25 | | 18 | 40.664 | 41.695 | 0.5 | A607-65 | 1.028 |
| 24 | 43.25 - 38.25 | 5 | | 18 | 41.695 | 42.520 | 0.5 | A607-65 | 1.022 |
| 25 | 38.25 - 33.25 | 5 | | 18 | 42.520 | 43.345 | 0.49375 | A607-65 | 1.030 |
| 26 | 33.25 - 31.25 | 2 | | 18 | 43.345 | 43.675 | 0.4875 | A607-65 | 1.041 |
| 27 | 31.25 - 31 | 0.25 | | 18 | 43.675 | 43.716 | 0.5875 | A607-65 | 1.038 |
| 28 | 31 - 26 | 5 | | 18 | 43.716 | 44.541 | 0.5875 | A607-65 | 1.030 |
| 29 | 26 - 21 | 5 | | 18 | 44.541 | 45.366 | 0.575 | A607-65 | 1.045 |
| 30 | 21 - 16 | 5 | | 18 | 45.366 | 46.191 | 0.575 | A607-65 | 1.038 |
| 31 | 16 - 11 | 5 | | 18 | 46.191 | 47.015 | 0.575 | A607-65 | 1.031 |
| 32 | 11 - 6 | 5 | | 18 | 47.015 | 47.840 | 0.5625 | A607-65 | 1.047 |
| 33 | 6 - 1 | 5 | | 18 | 47.840 | 48.665 | 0.5625 | A607-65 | 1.040 |
| 34 | 1 - 0 | 1 | | 18 | 48.665 | 48.830 | 0.5625 | A607-65 | 1.039 |

TNX Section Forces

| Increment (ft): | | TNX Output | | |
|-----------------|---------------------|----------------|--------------------------|--------------------|
| | 5 | P _u | M _{ux} (kip-ft) | V _u (K) |
| | Section Height (ft) | (K) | | |
| 1 | 145 - 140 | 0.27 | 0.95 | 0.38 |
| 2 | 140 - 135 | 0.62 | 7.14 | 1.49 |
| 3 | 135 - 130 | 3.95 | 23.25 | 4.03 |
| 4 | 130 - 125 | 4.37 | 44.44 | 4.45 |
| 5 | 125 - 120 | 8.91 | 78.57 | 8.14 |
| 6 | 120 - 115 | 9.39 | 120.35 | 8.58 |
| 7 | 115 - 110 | 14.63 | 182.88 | 13.28 |
| 8 | 110 - 105 | 15.20 | 250.39 | 13.73 |
| 9 | 105 - 100 | 21.00 | 346.32 | 19.48 |
| 10 | 100 - 95 | 21.68 | 444.79 | 19.92 |
| 11 | 95 - 90 | 26.45 | 561.97 | 23.94 |
| 12 | 90 - 89.25 | 26.57 | 579.94 | 24.00 |
| 13 | 89.25 - 84.25 | 28.00 | 701.25 | 24.53 |
| 14 | 84.25 - 79.25 | 29.12 | 825.04 | 25.04 |
| 15 | 79.25 - 74.25 | 30.21 | 951.70 | 25.51 |
| 16 | 74.25 - 69.25 | 31.25 | 1080.25 | 25.92 |
| 17 | 69.25 - 64.25 | 32.31 | 1210.80 | 26.31 |
| 18 | 64.25 - 59.25 | 33.41 | 1343.30 | 26.70 |
| 19 | 59.25 - 54.25 | 34.53 | 1477.75 | 27.09 |
| 20 | 54.25 - 50.083 | 35.48 | 1591.27 | 27.41 |
| 21 | 50.083 - 49.833 | 35.56 | 1598.13 | 27.42 |
| 22 | 49.833 - 49.5 | 35.66 | 1607.26 | 27.44 |
| 23 | 49.5 - 43.25 | 38.93 | 1780.86 | 28.08 |
| 24 | 43.25 - 38.25 | 40.60 | 1922.27 | 28.49 |
| 25 | 38.25 - 33.25 | 42.30 | 2065.66 | 28.87 |
| 26 | 33.25 - 31.25 | 42.98 | 2123.55 | 29.02 |
| 27 | 31.25 - 31 | 43.09 | 2130.81 | 29.03 |
| 28 | 31 - 26 | 45.08 | 2276.98 | 29.43 |
| 29 | 26 - 21 | 47.10 | 2425.02 | 29.79 |
| 30 | 21 - 16 | 49.14 | 2574.77 | 30.12 |
| 31 | 16 - 11 | 51.21 | 2726.10 | 30.42 |
| 32 | 11 - 6 | 53.30 | 2878.92 | 30.71 |
| 33 | 6 - 1 | 55.42 | 3033.19 | 31.00 |
| 34 | 1 - 0 | 55.84 | 3064.22 | 31.06 |

Analysis Results

| Elevation (ft) | Component Type | Size | Critical Element | % Capacity | Pass / Fail |
|----------------|----------------|------------------------|--------------------------|------------|-------------|
| 145 - 140 | Pole | TP24.923x24x0.1875 | Pole | 0.2% | Pass |
| 140 - 135 | Pole | TP25.847x24.923x0.1875 | Pole | 1.3% | Pass |
| 135 - 130 | Pole | TP26.77x25.847x0.1875 | Pole | 4.3% | Pass |
| 130 - 125 | Pole | TP27.825x26.9x0.25 | Pole | 5.1% | Pass |
| 125 - 120 | Pole | TP28.75x27.825x0.25 | Pole | 8.7% | Pass |
| 120 - 115 | Pole | TP29.675x28.75x0.25 | Pole | 12.3% | Pass |
| 115 - 110 | Pole | TP30.599x29.675x0.25 | Pole | 17.8% | Pass |
| 110 - 105 | Pole | TP31.524x30.599x0.25 | Pole | 22.8% | Pass |
| 105 - 100 | Pole | TP32.449x31.524x0.25 | Pole | 30.2% | Pass |
| 100 - 95 | Pole | TP33.374x32.449x0.25 | Pole | 36.7% | Pass |
| 95 - 90 | Pole | TP34.299x33.374x0.25 | Pole | 44.3% | Pass |
| 90 - 89.25 | Pole | TP35.27x34.299x0.25 | Pole | 45.4% | Pass |
| 89.25 - 84.25 | Pole | TP34.862x33.938x0.3125 | Pole | 39.9% | Pass |
| 84.25 - 79.25 | Pole | TP35.787x34.862x0.3125 | Pole | 44.8% | Pass |
| 79.25 - 74.25 | Pole | TP36.712x35.787x0.3125 | Pole | 49.3% | Pass |
| 74.25 - 69.25 | Pole | TP37.636x36.712x0.3125 | Pole | 53.5% | Pass |
| 69.25 - 64.25 | Pole | TP38.561x37.636x0.3125 | Pole | 57.4% | Pass |
| 64.25 - 59.25 | Pole | TP39.486x38.561x0.3125 | Pole | 61.1% | Pass |
| 59.25 - 54.25 | Pole | TP40.411x39.486x0.3125 | Pole | 64.6% | Pass |
| 54.25 - 50.08 | Pole | TP41.181x40.411x0.3125 | Pole | 67.3% | Pass |
| 50.08 - 49.83 | Pole + Reinf. | TP41.227x41.181x0.4375 | Reinf. 2 Tension Rupture | 66.9% | Pass |
| 49.83 - 49.5 | Pole + Reinf. | TP42.26x41.227x0.4375 | Reinf. 2 Tension Rupture | 67.1% | Pass |
| 49.5 - 43.25 | Pole + Reinf. | TP41.695x40.664x0.5 | Reinf. 2 Tension Rupture | 64.3% | Pass |
| 43.25 - 38.25 | Pole + Reinf. | TP42.52x41.695x0.5 | Reinf. 2 Tension Rupture | 67.0% | Pass |
| 38.25 - 33.25 | Pole + Reinf. | TP43.345x42.52x0.4938 | Reinf. 2 Tension Rupture | 69.6% | Pass |
| 33.25 - 31.25 | Pole + Reinf. | TP43.675x43.345x0.4875 | Reinf. 2 Tension Rupture | 70.6% | Pass |
| 31.25 - 31 | Pole + Reinf. | TP43.716x43.675x0.5875 | Reinf. 1 Compression | 55.0% | Pass |
| 31 - 26 | Pole + Reinf. | TP44.541x43.716x0.5875 | Reinf. 1 Compression | 57.0% | Pass |
| 26 - 21 | Pole + Reinf. | TP45.366x44.541x0.575 | Reinf. 1 Compression | 58.9% | Pass |
| 21 - 16 | Pole + Reinf. | TP46.191x45.366x0.575 | Reinf. 1 Compression | 60.7% | Pass |
| 16 - 11 | Pole + Reinf. | TP47.015x46.191x0.575 | Reinf. 1 Compression | 62.4% | Pass |
| 11 - 6 | Pole + Reinf. | TP47.84x47.015x0.5625 | Reinf. 1 Compression | 64.0% | Pass |
| 6 - 1 | Pole + Reinf. | TP48.665x47.84x0.5625 | Reinf. 1 Compression | 65.6% | Pass |
| 1 - 0 | Pole + Reinf. | TP48.83x48.665x0.5625 | Reinf. 1 Compression | 65.9% | Pass |
| | | | | Summary | |
| | | | Pole | 67.3% | Pass |
| | | | Reinforcement | 70.6% | Pass |
| | | | Overall | 70.6% | Pass |

Additional Calculations

| Section Elevation (ft) | Moment of Inertia (in ⁴) | | | Area (in ²) | | | % Capacity* (100% Max. Allowable) | | |
|---------------------------|--------------------------------------|--------|-------|-------------------------|--------|-------|--------------------------------------|-------|-------|
| | Pole | Reinf. | Total | Pole | Reinf. | Total | Pole | R1 | R2 |
| 145 - 140 | 1138 | n/a | 1138 | 14.72 | n/a | 14.72 | 0.2% | | |
| 140 - 135 | 1270 | n/a | 1270 | 15.27 | n/a | 15.27 | 1.3% | | |
| 135 - 130 | 1412 | n/a | 1412 | 15.82 | n/a | 15.82 | 4.3% | | |
| 130 - 125 | 2101 | n/a | 2101 | 21.88 | n/a | 21.88 | 5.1% | | |
| 125 - 120 | 2320 | n/a | 2320 | 22.61 | n/a | 22.61 | 8.7% | | |
| 120 - 115 | 2553 | n/a | 2553 | 23.35 | n/a | 23.35 | 12.3% | | |
| 115 - 110 | 2801 | n/a | 2801 | 24.08 | n/a | 24.08 | 17.8% | | |
| 110 - 105 | 3065 | n/a | 3065 | 24.82 | n/a | 24.82 | 22.8% | | |
| 105 - 100 | 3346 | n/a | 3346 | 25.55 | n/a | 25.55 | 30.2% | | |
| 100 - 95 | 3642 | n/a | 3642 | 26.28 | n/a | 26.28 | 36.7% | | |
| 95 - 90 | 3956 | n/a | 3956 | 27.02 | n/a | 27.02 | 44.3% | | |
| 90 - 89.25 | 4004 | n/a | 4004 | 27.13 | n/a | 27.13 | 45.4% | | |
| 89.25 - 84.25 | 5166 | n/a | 5166 | 34.27 | n/a | 34.27 | 39.9% | | |
| 84.25 - 79.25 | 5592 | n/a | 5592 | 35.19 | n/a | 35.19 | 44.8% | | |
| 79.25 - 74.25 | 6041 | n/a | 6041 | 36.10 | n/a | 36.10 | 49.3% | | |
| 74.25 - 69.25 | 6513 | n/a | 6513 | 37.02 | n/a | 37.02 | 53.5% | | |
| 69.25 - 64.25 | 7010 | n/a | 7010 | 37.94 | n/a | 37.94 | 57.4% | | |
| 64.25 - 59.25 | 7530 | n/a | 7530 | 38.85 | n/a | 38.85 | 61.1% | | |
| 59.25 - 54.25 | 8076 | n/a | 8076 | 39.77 | n/a | 39.77 | 64.6% | | |
| 54.25 - 50.08 | 8551 | n/a | 8551 | 40.54 | n/a | 40.54 | 67.3% | | |
| 50.08 - 49.83 | 8599 | 3298 | 11896 | 40.58 | 18.00 | 58.58 | 50.0% | | 66.9% |
| 49.83 - 49.5 | 8638 | 3307 | 11945 | 40.64 | 18.00 | 58.64 | 50.2% | | 67.1% |
| 49.5 - 43.25 | 10623 | 3375 | 13998 | 49.18 | 18.00 | 67.18 | 45.2% | | 64.3% |
| 43.25 - 38.25 | 11271 | 3506 | 14777 | 50.16 | 18.00 | 68.16 | 47.3% | | 67.0% |
| 38.25 - 33.25 | 11945 | 3640 | 15585 | 51.14 | 18.00 | 69.14 | 49.4% | | 69.6% |
| 33.25 - 31.25 | 12222 | 3694 | 15916 | 51.54 | 18.00 | 69.54 | 50.2% | | 70.6% |
| 31.25 - 31 | 12280 | 6654 | 18934 | 51.58 | 31.88 | 83.46 | 42.9% | 55.0% | |
| 31 - 26 | 12994 | 6897 | 19890 | 52.57 | 31.88 | 84.44 | 44.7% | 57.0% | |
| 26 - 21 | 13734 | 7145 | 20879 | 53.55 | 31.88 | 85.42 | 46.5% | 58.9% | |
| 21 - 16 | 14502 | 7397 | 21899 | 54.53 | 31.88 | 86.40 | 48.1% | 60.7% | |
| 16 - 11 | 15299 | 7653 | 22952 | 55.51 | 31.88 | 87.39 | 49.8% | 62.4% | |
| 11 - 6 | 16124 | 7914 | 24038 | 56.49 | 31.88 | 88.37 | 51.3% | 64.0% | |
| 6 - 1 | 16978 | 8179 | 25157 | 57.48 | 31.88 | 89.35 | 52.9% | 65.6% | |
| 1 - 0 | 17152 | 8233 | 25385 | 57.67 | 31.88 | 89.55 | 53.2% | 65.9% | |

Note: Section capacity checked assuming all reinforcements are effective and using 5 degree increments.

*Rating per TIA-222-H Section 15.5.

Monopole Flange Plate Connection

Elevation = 130 ft.

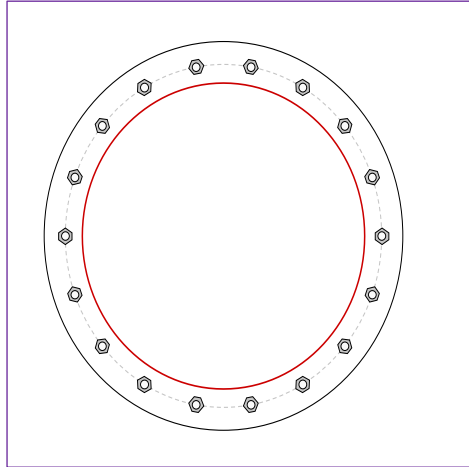


| | |
|------------------|---------------|
| BU # | 881364 |
| Site Name | Newington |
| Order # | 607158 Rev. 2 |
| TIA-222 Revision | H |

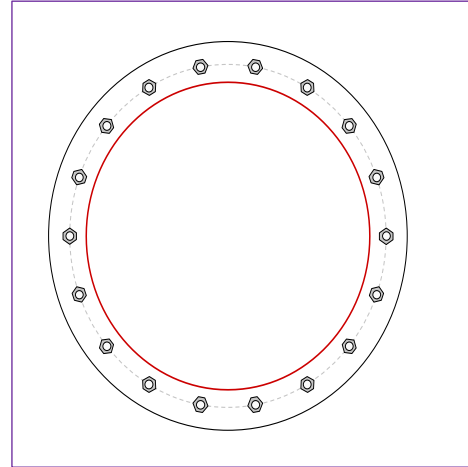
| Applied Loads | |
|--------------------|-------|
| Moment (kip-ft) | 23.25 |
| Axial Force (kips) | 3.95 |
| Shear Force (kips) | 4.03 |

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(18) 3/4" \emptyset bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 30" BC

Top Plate Data

34" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

26.77" x 0.1875" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Bottom Plate Data

34" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

26.9" x 0.25" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

| | |
|------------------|------------------|
| Max Load (kips) | 1.85 |
| Allowable (kips) | 30.06 |
| Stress Rating: | 5.9% Pass |

Top Plate Capacity

| | | |
|-----------------------------|-------|-------------|
| Max Stress (ksi): | 0.89 | (Flexural) |
| Allowable Stress (ksi): | 45.00 | |
| Stress Rating: | 1.9% | Pass |
| Tension Side Stress Rating: | 0.8% | Pass |

Bottom Plate Capacity

| | | |
|-----------------------------|-------|-------------|
| Max Stress (ksi): | 0.85 | (Flexural) |
| Allowable Stress (ksi): | 45.00 | |
| Stress Rating: | 1.8% | Pass |
| Tension Side Stress Rating: | 0.7% | Pass |

Monopole Base Plate Connection

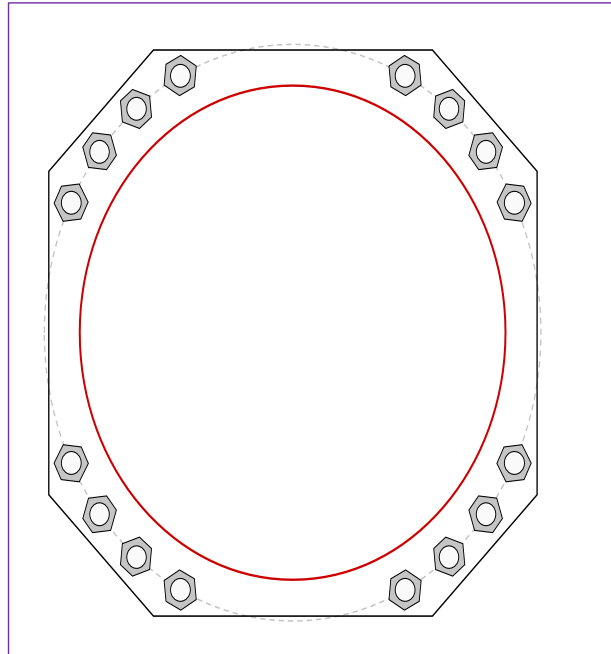


| Site Info | |
|-----------|---------------|
| BU # | 881364 |
| Site Name | Newington |
| Order # | 607158 Rev. 2 |

| Analysis Considerations | |
|-------------------------|-------|
| TIA-222 Revision | H |
| Grout Considered: | No |
| l_{ar} (in) | 1.375 |

| Applied Loads | |
|--------------------|---------|
| Moment (kip-ft) | 3064.22 |
| Axial Force (kips) | 55.84 |
| Shear Force (kips) | 31.06 |

*TIA-222-H Section 15.5 Applied



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

| Anchor Rod Data |
|--|
| (16) 2-1/4" ϕ bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 57" BC <i>Anchor Spacing: 6 in</i> |
| Base Plate Data |
| 56" W x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi); Clip: 12 in |
| Stiffener Data |
| N/A |
| Pole Data |
| 48.83" x 0.375" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi) |

| Anchor Rod Summary | <i>(units of kips, kip-in)</i> | |
|-------------------------|--------------------------------|----------------------|
| Pu_t = 157.68 | $\phi Pn_t = 243.75$ | Stress Rating |
| Vu = 1.94 | $\phi Vn = 149.1$ | 61.6% |
| Mu = n/a | $\phi Mn = n/a$ | Pass |
| Base Plate Summary | | |
| Max Stress (ksi): | 31.07 | (Flexural) |
| Allowable Stress (ksi): | 45 | |
| Stress Rating: | 65.8% | Pass |

Drilled Pier Foundation

| | |
|-------------------|---------------|
| BU #: | 881364 |
| Site Name: | Newington |
| Order Number: | 607158 Rev. 2 |
| TIA-222 Revision: | H |
| Tower Type: | Monopole |

Report File: _____



| Applied Loads | | |
|--------------------|-------|--------|
| | Comp. | Uplift |
| Moment (kip-ft) | 3064 | |
| Axial Force (kips) | 56 | |
| Shear Force (kips) | 31 | |

| Material Properties | | |
|---------------------------------------|----|-----|
| Concrete Strength, f _c : | 3 | ksi |
| Rebar Strength, F _y : | 60 | ksi |
| Tie Yield Strength, F _{yt} : | 40 | ksi |

| Pier Design Data | |
|---|--------|
| Depth | 25 ft |
| Ext. Above Grade | 0.5 ft |
| Pier Section 1 | |
| <i>From 0.5' above grade to 25' below grade</i> | |
| Pier Diameter | 7 ft |
| Rebar Quantity | 28 |
| Rebar Size | 11 |
| Clear Cover to Ties | 4 in |
| Tie Size | 5 |
| Tie Spacing | 18 in |

| Rebar 2, F _y Override (ksi) | Rebar 3, F _y Override (ksi) |
|--|--|
| | |

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

| Analysis Results | | |
|--------------------------------|-------------|--------|
| Soil Lateral Check | | |
| | Compression | Uplift |
| D _{v=0} (ft from TOC) | 6.09 | - |
| Soil Safety Factor | 2.86 | - |
| Max Moment (kip-ft) | 3270.10 | - |
| Rating* | 44.3% | - |
| Soil Vertical Check | | |
| | Compression | Uplift |
| Skin Friction (kips) | 349.66 | - |
| End Bearing (kips) | 346.36 | - |
| Weight of Concrete (kips) | 133.40 | - |
| Total Capacity (kips) | 696.02 | - |
| Axial (kips) | 189.40 | - |
| Rating* | 25.9% | - |
| Reinforced Concrete Flexure | | |
| | Compression | Uplift |
| Critical Depth (ft from TOC) | 6.01 | - |
| Critical Moment (kip-ft) | 3270.03 | - |
| Critical Moment Capacity | 6700.65 | - |
| Rating* | 46.5% | - |
| Reinforced Concrete Shear | | |
| | Compression | Uplift |
| Critical Depth (ft from TOC) | 17.45 | - |
| Critical Shear (kip) | 348.23 | - |
| Critical Shear Capacity | 569.26 | - |
| Rating* | 58.3% | - |

| | |
|-------------------------------|-------|
| Structural Foundation Rating* | 58.3% |
| Soil Interaction Rating* | 44.3% |


*Rating per TIA-222-H Section 15.5

| Check Limitation | |
|---------------------------------------|-------------------------------------|
| Apply TIA-222-H Section 15.5: | <input checked="" type="checkbox"/> |
| N/A | <input type="checkbox"/> |
| Additional Longitudinal Rebar | |
| Input Effective Depths (else Actual): | <input type="checkbox"/> |
| Shear Design Options | |
| Check Shear along Depth of Pier: | <input checked="" type="checkbox"/> |
| Utilize Shear-Friction Methodology: | <input type="checkbox"/> |
| Override Critical Depth: | <input type="checkbox"/> |

[Go to Soil Calculations](#)

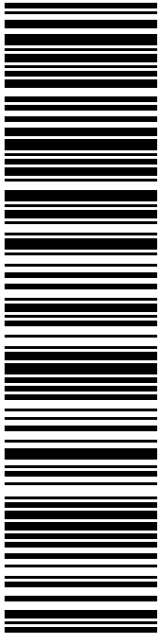
| Soil Profile | | | | |
|-------------------|----|-------------|---|--|
| Groundwater Depth | 10 | # of Layers | 5 | |

| Layer | Top (ft) | Bottom (ft) | Thickness (ft) | γ _{soil} (pcf) | γ _{concrete} (pcf) | Cohesion (ksf) | Angle of Friction (degrees) | Calculated Ultimate Skin Friction Comp (ksf) | Calculated Ultimate Skin Friction Uplift (ksf) | Ultimate Skin Friction Comp Override (ksf) | Ultimate Skin Friction Uplift Override (ksf) | Ult. Gross Bearing Capacity (ksf) | SPT Blow Count | Soil Type |
|-------|----------|-------------|----------------|-------------------------|-----------------------------|----------------|-----------------------------|--|--|--|--|-----------------------------------|----------------|--------------|
| 1 | 0 | 3.5 | 3.5 | 125 | 150 | 0 | | 0.000 | 0.000 | 0.00 | 0.00 | | | Cohesionless |
| 2 | 3.5 | 10 | 6.5 | 125 | 150 | | 34 | 0.000 | 0.000 | 0.80 | 0.80 | | | Cohesionless |
| 3 | 10 | 12 | 2 | 65 | 87.6 | | 34 | 0.000 | 0.000 | 0.80 | 0.80 | | | Cohesionless |
| 4 | 12 | 15 | 3 | 65 | 87.6 | | 30 | 0.000 | 0.000 | 0.80 | 0.80 | | | Cohesionless |
| 5 | 15 | 25 | 10 | 65 | 87.6 | | 30 | 0.000 | 0.000 | 1.20 | 1.20 | 12 | | Cohesionless |



EVAN ROBIDOUX
CT SITING COUNCIL
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| Expected | | | |
| Delivery Date: | 11/03/2022 | | |

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