



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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www.ct.gov/csc

VIA ELECTRONIC MAIL

March 14, 2019

Anne Marie Zsamba
Real Estate Specialist
Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

RE: **EM-AT&T-084-190221** – AT&T notice of intent to modify an existing telecommunications facility located at 528 Wheelers Farm Road, Milford, Connecticut.

Dear Ms. Zsamba:

The Connecticut Siting Council (Council) is in receipt of your correspondence of March 12, 2019 submitted in response to the Council's February 25, 2019 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/IN/emr



Robidoux, Evan

From: Zsamba, Anne Marie <AnneMarie.Zsamba@crowncastle.com>
Sent: Tuesday, March 12, 2019 11:08 AM
To: CSC-DL Siting Council; Robidoux, Evan
Subject: Response to Council Incomplete Letter for EM-AT&T-094-190221-CostelloRd-Newington
Attachments: 876320 Response to CSC Incomplete letter 3.12.19.pdf

Good morning,

Attached please find AT&T's response to the Council's incomplete letter received February 25, 2019. Thank you.

ANNE MARIE ZSAMBA

Real Estate Specialist

T: (201) 236-9224 | M: (518) 350-3639

CROWN CASTLE

3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065

CrownCastle.com

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Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

March 12, 2019

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

**RE: Notice of Exempt Modification for Sprint Crown Site BU: 876320
AT&T Site ID: 10035336
528 Wheelers Farm Road, Milford, New Haven County, CT 06460
Latitude: 41° 14' 54.35"/ Longitude: -73° 4' 44.67"**

Dear Ms. Bachman:

I am in receipt of your correspondence dated February 25, 2019, addressed to Ms. Badawi, for the above noted exempt modification application filed on behalf of AT&T.

Attached for submission and in response to the Council's incomplete letter, please find an updated structural analysis report which accurately captures the installation of six Kathrein Antennas (Model No. 80010965). Additionally, attached please find revised construction drawings. Sheet C-3 reflects a total of 18 remote radio units when factoring in the TMAs. Sheet C-4 matches this number. The MA as submitted reflects 12 RRUs and 6 TMAs for a total count of 18 as well.

Upon your review of the enclosed, please confirm that the Council acknowledges our application to be complete. I thank you for your continued time and attention to this matter.

Sincerely,

Anne Marie Zsamba, Esq.
Real Estate Specialist
3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065
(201) 236-9224
annemarie.zsamba@crowncastle.com

Enclosures

Date: **January 15, 2019**

Steve Tuttle
Crown Castle
8 Parkmeadow Drive
Pittsford, NY 14534



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

Subject: Structural Analysis Report

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: 10035336
Carrier Site Name: CT2083

Crown Castle Designation: **Crown Castle BU Number:** 876320
Crown Castle Site Name: 528 Wheelers Farm Rd
Crown Castle JDE Job Number: 531063
Crown Castle Work Order Number: 1682011
Crown Castle Order Number: 459071 Rev. 1

Engineering Firm Designation: **TEP Project Number:** 25570.206199

Site Data: **528 Wheelers Farm Road, Milford, New Haven County, CT 06460**
Latitude 41° 14' 54.35", Longitude -73° 4' 44.67"
120 Foot - Monopole Tower

Dear Steve Tuttle,

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:

LC5: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Todd Lester, P.E. / PRS

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

01/15/2019

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1) INTRODUCTION

This tower is a 120-ft Monopole Tower designed by Paul J. Ford and Company. The tower has been modified multiple times in the past to accommodate additional loading. Shaft reinforcement designed by Semaan Engineering in February of 2004 was considered ineffective. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 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)
96.0	98.0	3	Powerwave Technologies	7770.00 w/ Mount Pipe	3 6 12	3/8 3/4 1-1/4
		6	Kathrein	80010965 w/ Mount Pipe		
		3	Quintel Technology	QS66512-2 w/ Mount Pipe		
		1	Commscope	WCS-IMFQ-AMT		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 4449 B5/B12		
		6	Powerwave Technologies	LGP21401		
		3	Raycap	DC6-48-60-18-8F		
	6	Kaelus	DBC0061F1V51-2			
	96.0	1	Tower Mounts	Miscellaneous [NA 507-1]		
		1	Tower Mounts	Platform Mount [LP 712-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
122.0	125.0	2	Andrew	VHLP2-11	6 1 3 4	5/16 1/8 7983A 1-1/4
	123.0	1	MTI Wireless Edge	MT-485025		
		1	Andrew	PX2F-52		
	122.0	3	Argus Technologies	LLPX310R w/ Mount Pipe		
		3	Samsung Telecommunications	FDD_R6_RRH		
		1	Tower Mounts	Miscellaneous [NA 507-1]		
		1	Tower Mounts	Platform Mount [LP 712-1]		
	121.0	3	RFS Celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		3	RFS Celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		2	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
		1	Alcatel Lucent	800MHZ RRH		
		3	Alcatel Lucent	TD-RRH8x20-25		
	120.0	9	RFS Celwave	ACU-A20-N		
		1	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
		2	Alcatel Lucent	800MHZ RRH		
		3	Alcatel Lucent	800 External Notch Filter		
113.0	116.0	1	Trimble	ACUTIME 2000	14	1-5/8
	114.0	2	Commscope	SBNHH-1D65B w/ Mount Pipe		
		4	Commscope	SBNHH-1D45B w/ Mount Pipe		
		3	Antel	BXA-171063/8CF w/ Mount Pipe		
		2	Andrew	DB846F65ZAXY w/ Mount Pipe		
		4	Antel	LPA-80063/4CF w/ Mount Pipe		
		2	RFS Celwave	DB-T1-6Z-8AB-0Z		
		3	Alcatel Lucent	RRH2X60-1900		
		3	Alcatel Lucent	RRH2x60-700		
		3	Alcatel Lucent	AWS-3 RRH4x45		
		6	RFS Celwave	FD9R6004/2C-3L		
113.0	1	Tower Mounts	Platform Mount [LP 305-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
105.0	107.0	3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	7	1-5/8
		3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe		
		3	Commscope	LNx-6515DS-VTM w/ Mount Pipe		
		1	Ericsson	KRY 112 144/1		
	105.0	3	Ericsson	RRUS 11 B12		
		2	Ericsson	KRY 112 144/1		
		1	Tower Mounts	Platform Mount [LP 1201-1]		
82.0	82.0	-	-	-	12	7/8
75.0	76.0	1	Trimble	ACUTIME 2000	1	1/2
	75.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Supplemental Geotechnical Report	FDH, Inc.	1613534	CCISites
Tower Foundation Drawings	Paul J. Ford and Co.	1614583	CCISites
Tower Manufacturer Drawings	Paul J. Ford and Co.	1614557	CCISites
Tower Reinforcement Drawings	Semaan Engineering Solutions	1613579	CCISites
Post Modification Inspection	Semaan Engineering Solutions	3350209	CCISites
Tower Reinforcement Drawings	B&T Engineering	2460630	CCISites
Post Modification Inspection	B&T Engineering	2460628	CCISites
Tower Reinforcement Drawings	B&T Engineering	3349207	CCISites
Post Modification Inspection	B&T Engineering	3349204	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	3338935	CCISites
Post Modification Inspection	Tower Engineering Professionals	3753892	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	4961357	CCISites
Post Modification Inspection	SGS, Inc.	5760332	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Co.	5873963	CCISites
Post Modification Inspection	FDH Velocitel	6112300	CCISites

3.1) Analysis Method

tnxTower (version 8.0.5.0), 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.

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 foundation were built and maintained in accordance with the manufacturer's specification.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
- 3) All tower components are in sufficient condition to carry their full design capacity.
- 4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
- 6) The existing base plate grout was not considered in this analysis.
- 7) The shaft modifications designed by Semaan Engineering in February of 2004 were determined to be ineffective and not considered structurally in this analysis.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

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

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP23.01x22x0.25	Pole	8.4%	Pass
115 - 110	Pole	TP24.02x23.01x0.25	Pole	18.5%	Pass
110 - 105	Pole	TP25.031x24.02x0.25	Pole	28.5%	Pass
105 - 100	Pole	TP26.041x25.031x0.25	Pole	41.8%	Pass
100 - 99.25	Pole	TP26.193x26.041x0.25	Pole	43.5%	Pass
99.25 - 99	Pole + Reinf.	TP26.243x26.193x0.3625	Reinf. 14 Tension Rupture	40.5%	Pass
99 - 94	Pole + Reinf.	TP27.253x26.243x0.3563	Reinf. 14 Tension Rupture	53.8%	Pass
94 - 90.08	Pole + Reinf.	TP28.045x27.253x0.35	Reinf. 14 Tension Rupture	64.3%	Pass
90.08 - 89.83	Pole + Reinf.	TP28.096x28.045x0.5125	Reinf. 11 Tension Rupture	53.3%	Pass
89.83 - 89.5	Pole + Reinf.	TP28.162x28.096x0.5125	Reinf. 11 Tension Rupture	54.0%	Pass
89.5 - 89.25	Pole + Reinf.	TP28.213x28.162x0.725	Reinf. 15 Tension Rupture	41.8%	Pass
89.25 - 84.25	Pole + Reinf.	TP29.223x28.213x0.7	Reinf. 15 Tension Rupture	50.0%	Pass
84.25 - 81.75	Pole + Reinf.	TP30.486x29.223x0.7	Reinf. 15 Tension Rupture	54.0%	Pass
81.75 - 77	Pole + Reinf.	TP30.188x29.228x0.8625	Reinf. 17 Tension Rupture	48.6%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
77 - 76.75	Pole + Reinf.	TP30.239x30.188x0.8625	Reinf. 17 Tension Rupture	48.9%	Pass
76.75 - 76.5	Pole + Reinf.	TP30.289x30.239x0.9625	Reinf. 14 Tension Rupture	45.9%	Pass
76.5 - 75.5	Pole + Reinf.	TP30.491x30.289x0.9625	Reinf. 14 Tension Rupture	47.0%	Pass
75.5 - 75.25	Pole + Reinf.	TP30.542x30.491x0.7625	Reinf. 17 Tension Rupture	54.1%	Pass
75.25 - 74.5	Pole + Reinf.	TP30.693x30.542x0.7625	Reinf. 17 Tension Rupture	55.0%	Pass
74.5 - 74.25	Pole + Reinf.	TP30.744x30.693x0.8375	Reinf. 17 Tension Rupture	58.0%	Pass
74.25 - 72	Pole + Reinf.	TP31.198x30.744x0.825	Reinf. 17 Tension Rupture	60.8%	Pass
72 - 71.75	Pole + Reinf.	TP31.249x31.198x0.7625	Reinf. 17 Tension Rupture	58.3%	Pass
71.75 - 70.5	Pole + Reinf.	TP31.501x31.249x0.7625	Reinf. 17 Tension Rupture	59.8%	Pass
70.5 - 70.25	Pole + Reinf.	TP31.552x31.501x0.7875	Reinf. 17 Tension Rupture	59.8%	Pass
70.25 - 70	Pole + Reinf.	TP31.602x31.552x0.7875	Reinf. 17 Tension Rupture	60.1%	Pass
70 - 69.75	Pole + Reinf.	TP31.653x31.602x0.725	Reinf. 17 Tension Rupture	62.3%	Pass
69.75 - 69.5	Pole + Reinf.	TP31.703x31.653x0.875	Reinf. 4 Tension Rupture	52.9%	Pass
69.5 - 69.25	Pole + Reinf.	TP31.754x31.703x0.75	Reinf. 4 Tension Rupture	59.1%	Pass
69.25 - 64.25	Pole + Reinf.	TP32.764x31.754x0.7375	Reinf. 4 Tension Rupture	64.5%	Pass
64.25 - 59.25	Pole + Reinf.	TP33.774x32.764x0.7125	Reinf. 4 Tension Rupture	69.5%	Pass
59.25 - 56	Pole + Reinf.	TP34.431x33.774x0.7125	Reinf. 4 Tension Rupture	72.7%	Pass
56 - 55.75	Pole + Reinf.	TP34.481x34.431x0.8125	Reinf. 7 Tension Rupture	70.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP34.532x34.481x0.8125	Reinf. 7 Tension Rupture	70.2%	Pass
55.5 - 55.25	Pole + Reinf.	TP34.582x34.532x0.8875	Reinf. 7 Tension Rupture	63.2%	Pass
55.25 - 54	Pole + Reinf.	TP34.835x34.582x0.875	Reinf. 7 Tension Rupture	64.3%	Pass
54 - 53.75	Pole + Reinf.	TP34.885x34.835x0.75	Reinf. 7 Tension Rupture	73.8%	Pass
53.75 - 53.5	Pole + Reinf.	TP34.936x34.885x0.7375	Reinf. 7 Tension Rupture	74.0%	Pass
53.5 - 53.25	Pole + Reinf.	TP34.986x34.936x0.6625	Reinf. 4 Tension Rupture	79.5%	Pass
53.25 - 53	Pole + Reinf.	TP35.037x34.986x0.6	Reinf. 12 Tension Rupture	82.1%	Pass
53 - 48	Pole + Reinf.	TP36.047x35.037x0.5875	Reinf. 12 Tension Rupture	87.2%	Pass
48 - 44.5	Pole + Reinf.	TP37.714x36.047x0.5875	Reinf. 12 Tension Rupture	90.5%	Pass
44.5 - 38.75	Pole + Reinf.	TP37.291x36.129x0.6625	Reinf. 4 Tension Rupture	88.4%	Pass
38.75 - 34.75	Pole + Reinf.	TP38.099x37.291x0.6625	Reinf. 4 Tension Rupture	91.3%	Pass
34.75 - 34.5	Pole + Reinf.	TP38.15x38.099x0.825	Reinf. 3 Tension Rupture	73.2%	Pass
34.5 - 33.75	Pole + Reinf.	TP38.301x38.15x0.825	Reinf. 3 Tension Rupture	73.7%	Pass
33.75 - 33.5	Pole + Reinf.	TP38.352x38.301x0.625	Reinf. 6 Tension Rupture	90.7%	Pass
33.5 - 28.5	Pole + Reinf.	TP39.362x38.352x0.6125	Reinf. 6 Tension Rupture	93.9%	Pass
28.5 - 24	Pole + Reinf.	TP40.271x39.362x0.6625	Reinf. 3 Tension Rupture	96.9%	Pass
24 - 23.75	Pole + Reinf.	TP40.322x40.271x0.7	Reinf. 3 Tension Rupture	92.6%	Pass
23.75 - 18.75	Pole + Reinf.	TP41.332x40.322x0.6875	Reinf. 3 Tension Rupture	95.6%	Pass
18.75 - 14.25	Pole + Reinf.	TP42.241x41.332x0.675	Reinf. 3 Tension Rupture	98.2%	Pass
14.25 - 14	Pole + Reinf.	TP42.291x42.241x0.775	Reinf. 3 Tension Rupture	85.2%	Pass
14 - 9	Pole + Reinf.	TP43.302x42.291x0.7625	Reinf. 3 Tension Rupture	87.7%	Pass
9 - 4.75	Pole + Reinf.	TP44.16x43.302x0.75	Reinf. 3 Tension Rupture	89.7%	Pass
4.75 - 4.5	Pole + Reinf.	TP44.211x44.16x0.6625	Reinf. 5 Tension Rupture	97.8%	Pass
4.5 - 0	Pole + Reinf.	TP45.12x44.211x0.65	Reinf. 5 Tension Rupture	100.0%	Pass
				Summary	
			Pole	82.0%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
			Reinforcement	100.0%	Pass
			Overall	100.0%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	73.0	Pass
1,2	Base Plate	-	55.1	Pass
1,2	Base Foundation Soil Interaction	-	64.4	Pass
1,2	Base Foundation Structural	-	56.3	Pass

Structure Rating (max from all components) =	100.0%
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Notes:

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

4.1) Recommendations

- 1) If the load differs from that described in Tables 1 and 2 of this report, the referenced drawings, or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) 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

tnxTower Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 1 of 58
	Project TEP No. 25570.206199	Date 11:31:04 01/15/19
	Client Crown Castle	Designed by tmlester

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Tower base elevation above sea level: 213.000 ft.

Basic wind speed of 125 mph.

Risk Category II.

Exposure Category C.

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

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56.00 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.05.

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

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

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
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Tapered Pole Section Geometry

tnxTower**Tower Engineering
Professionals, Inc.**326 Tryon Road
Raleigh, NC 27603
Phone: (919) 661-6351
FAX: (919) 661-6350

Job	528 Wheelers Farm Rd (BU 876320)	Page	2 of 58
Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
Client	Crown Castle	Designed by	tmlester

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	120.000-115.000	5.000	0.00	12	22.0000	23.0103	0.2500	1.0000	A607-60 (60 ksi)
L2	115.000-110.000	5.000	0.00	12	23.0103	24.0205	0.2500	1.0000	A607-60 (60 ksi)
L3	110.000-105.000	5.000	0.00	12	24.0205	25.0307	0.2500	1.0000	A607-60 (60 ksi)
L4	105.000-100.000	5.000	0.00	12	25.0307	26.0410	0.2500	1.0000	A607-60 (60 ksi)
L5	100.000-99.250	0.750	0.00	12	26.0410	26.1925	0.2500	1.0000	A607-60 (60 ksi)
L6	99.250-99.000	0.250	0.00	12	26.1925	26.2430	0.3625	1.4500	A607-60 (60 ksi)
L7	99.000-94.000	5.000	0.00	12	26.2430	27.2533	0.3563	1.4250	A607-60 (60 ksi)
L8	94.000-90.080	3.920	0.00	12	27.2533	28.0453	0.3500	1.4000	A607-60 (60 ksi)
L9	90.080-89.830	0.250	0.00	12	28.0453	28.0958	0.5125	2.0500	A607-60 (60 ksi)
L10	89.830-89.500	0.330	0.00	12	28.0958	28.1625	0.5125	2.0500	A607-60 (60 ksi)
L11	89.500-89.250	0.250	0.00	12	28.1625	28.2130	0.7250	2.9000	A607-60 (60 ksi)
L12	89.250-84.250	5.000	0.00	12	28.2130	29.2232	0.7000	2.8000	A607-60 (60 ksi)
L13	84.250-78.000	6.250	3.75	12	29.2232	30.4860	0.7000	2.8000	A607-60 (60 ksi)
L14	78.000-77.000	4.750	0.00	12	29.2283	30.1880	0.8625	3.4500	A607-60 (60 ksi)
L15	77.000-76.750	0.250	0.00	12	30.1880	30.2385	0.8625	3.4500	A607-60 (60 ksi)
L16	76.750-76.500	0.250	0.00	12	30.2385	30.2890	0.9625	3.8500	A607-60 (60 ksi)
L17	76.500-75.500	1.000	0.00	12	30.2890	30.4911	0.9625	3.8500	A607-60 (60 ksi)
L18	75.500-75.250	0.250	0.00	12	30.4911	30.5416	0.7625	3.0500	A607-60 (60 ksi)
L19	75.250-74.500	0.750	0.00	12	30.5416	30.6931	0.7625	3.0500	A607-60 (60 ksi)
L20	74.500-74.250	0.250	0.00	12	30.6931	30.7436	0.8375	3.3500	A607-60 (60 ksi)
L21	74.250-72.000	2.250	0.00	12	30.7436	31.1982	0.8250	3.3000	A607-60 (60 ksi)
L22	72.000-71.750	0.250	0.00	12	31.1982	31.2487	0.7625	3.0500	A607-60 (60 ksi)
L23	71.750-70.500	1.250	0.00	12	31.2487	31.5013	0.7625	3.0500	A607-60 (60 ksi)
L24	70.500-70.250	0.250	0.00	12	31.5013	31.5518	0.7875	3.1500	A607-60 (60 ksi)
L25	70.250-70.000	0.250	0.00	12	31.5518	31.6023	0.7875	3.1500	A607-60 (60 ksi)
L26	70.000-69.750	0.250	0.00	12	31.6023	31.6528	0.7250	2.9000	A607-60 (60 ksi)
L27	69.750-69.500	0.250	0.00	12	31.6528	31.7033	0.8750	3.5000	A607-60 (60 ksi)
L28	69.500-69.250	0.250	0.00	12	31.7033	31.7538	0.7500	3.0000	A607-60 (60 ksi)
L29	69.250-64.250	5.000	0.00	12	31.7538	32.7640	0.7375	2.9500	A607-60 (60 ksi)
L30	64.250-59.250	5.000	0.00	12	32.7640	33.7742	0.7125	2.8500	A607-60 (60 ksi)

<p>tnxTower</p> <p>Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job 528 Wheelers Farm Rd (BU 876320)	Page 3 of 58
	Project TEP No. 25570.206199	Date 11:31:04 01/15/19
	Client Crown Castle	Designed by tmlester

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
L31	59.250-56.000	3.250	0.00	12	33.7742	34.4309	0.7125	2.8500	A607-60 (60 ksi)
L32	56.000-55.750	0.250	0.00	12	34.4309	34.4814	0.8125	3.2500	A607-60 (60 ksi)
L33	55.750-55.500	0.250	0.00	12	34.4814	34.5319	0.8125	3.2500	A607-60 (60 ksi)
L34	55.500-55.250	0.250	0.00	12	34.5319	34.5824	0.8875	3.5500	A607-60 (60 ksi)
L35	55.250-54.000	1.250	0.00	12	34.5824	34.8349	0.8750	3.5000	A607-60 (60 ksi)
L36	54.000-53.750	0.250	0.00	12	34.8349	34.8854	0.7500	3.0000	A607-60 (60 ksi)
L37	53.750-53.500	0.250	0.00	12	34.8854	34.9360	0.7375	2.9500	A607-60 (60 ksi)
L38	53.500-53.250	0.250	0.00	12	34.9360	34.9865	0.6625	2.6500	A607-60 (60 ksi)
L39	53.250-53.000	0.250	0.00	12	30.0000	34.9865	0.6000	2.4000	A607-60 (60 ksi)
L40	53.000-48.000	5.000	0.00	12	35.0370	36.0472	0.5875	2.3500	A607-60 (60 ksi)
L41	48.000-39.750	8.250	4.75	12	36.0472	37.7140	0.5875	2.3500	A607-60 (60 ksi)
L42	39.750-38.750	5.750	0.00	12	36.1293	37.2910	0.6625	2.6500	A607-60 (60 ksi)
L43	38.750-34.750	4.000	0.00	12	37.2910	38.0992	0.6625	2.6500	A607-60 (60 ksi)
L44	34.750-34.500	0.250	0.00	12	38.0992	38.1497	0.8250	3.3000	A607-60 (60 ksi)
L45	34.500-33.750	0.750	0.00	12	38.1497	38.3012	0.8250	3.3000	A607-60 (60 ksi)
L46	33.750-33.500	0.250	0.00	12	38.3012	38.3517	0.6250	2.5000	A607-60 (60 ksi)
L47	33.500-28.500	5.000	0.00	12	38.3517	39.3619	0.6125	2.0000	A607-60 (60 ksi)
L48	28.500-24.000	4.500	0.00	12	39.3619	40.2711	0.6625	2.6500	A607-60 (60 ksi)
L49	24.000-23.750	0.250	0.00	12	40.2711	40.3216	0.7000	2.0000	A607-60 (60 ksi)
L50	23.750-18.750	5.000	0.00	12	40.3216	41.3318	0.6875	2.7500	A607-60 (60 ksi)
L51	18.750-14.250	4.500	0.00	12	41.3318	42.2410	0.6750	2.7000	A607-60 (60 ksi)
L52	14.250-14.000	0.250	0.00	12	42.2410	42.2915	0.5000	3.1000	A607-60 (60 ksi)
L53	14.000-9.000	5.000	0.00	12	42.2915	43.3017	0.7625	3.0500	A607-60 (60 ksi)
L54	9.000-4.750	4.250	0.00	12	43.3017	44.1603	0.7500	3.0000	A607-60 (60 ksi)
L55	4.750-4.500	0.250	0.00	12	44.1603	44.2108	0.6625	2.6500	A607-60 (60 ksi)
L56	4.500-0.000	4.500		12	44.2108	45.1200	0.6500	2.6000	A607-60 (60 ksi)

Tapered Pole Properties

Job	528 Wheelers Farm Rd (BU 876320)	Page	4 of 58
Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
Client	Crown Castle	Designed by	tmlester

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	22.6879	17.5088	1057.2104	7.7865	11.3960	92.7702	2142.1948	8.6173	5.2260	20.904
	23.7338	18.3220	1211.4731	8.1482	11.9193	101.6395	2454.7729	9.0175	5.4968	21.987
L2	23.7338	18.3220	1211.4731	8.1482	11.9193	101.6395	2454.7729	9.0175	5.4968	21.987
	24.7797	19.1353	1380.0561	8.5098	12.4426	110.9136	2796.3677	9.4178	5.7675	23.07
L3	24.7797	19.1353	1380.0561	8.5098	12.4426	110.9136	2796.3677	9.4178	5.7675	23.07
	25.8255	19.9485	1563.5952	8.8715	12.9659	120.5927	3168.2678	9.8180	6.0382	24.153
L4	25.8255	19.9485	1563.5952	8.8715	12.9659	120.5927	3168.2678	9.8180	6.0382	24.153
	26.8714	20.7617	1762.7258	9.2332	13.4892	130.6766	3571.7603	10.2183	6.3090	25.236
L5	26.8714	20.7617	1762.7258	9.2332	13.4892	130.6766	3571.7603	10.2183	6.3090	25.236
	27.0283	20.8837	1793.9794	9.2874	13.5677	132.2241	3635.0887	10.2783	6.3496	25.398
L6	26.9886	30.1501	2567.5754	9.2471	13.5677	189.2415	5202.6038	14.8389	6.0481	16.684
	27.0409	30.2090	2582.6680	9.2652	13.5939	189.9875	5233.1855	14.8680	6.0616	16.722
L7	27.0431	29.6954	2539.9785	9.2675	13.5939	186.8472	5146.6850	14.6152	6.0784	17.062
	28.0890	30.8542	2849.1035	9.6291	14.1172	201.8181	5773.0561	15.1855	6.3491	17.822
L8	28.0912	30.3200	2801.0709	9.6314	14.1172	198.4157	5675.7291	14.9226	6.3659	18.188
	28.9111	31.2126	3055.8133	9.9149	14.5275	210.3475	6191.9062	15.3619	6.5781	18.795
L9	28.8538	45.4360	4396.2821	9.8567	14.5275	302.6190	8908.0595	22.3622	6.1426	11.986
	28.9061	45.5193	4420.5230	9.8748	14.5536	303.7405	8957.1780	22.4032	6.1562	12.012
L10	28.9061	45.5193	4420.5230	9.8748	14.5536	303.7405	8957.1780	22.4032	6.1562	12.012
	28.9751	45.6293	4452.6572	9.8987	14.5882	305.2242	9022.2907	22.4574	6.1740	12.047
L11	28.9002	64.0528	6154.7666	9.8226	14.5882	421.9017	12471.2258	31.5248	5.6045	7.73
	28.9525	64.1707	6188.8211	9.8407	14.6143	423.4765	12540.2294	31.5829	5.6181	7.749
L12	28.9613	62.0142	5991.7320	9.8496	14.6143	409.9905	12140.8735	30.5215	5.6851	8.122
	30.0072	64.2913	6676.2859	10.2113	15.1376	441.0393	13527.9652	31.6422	5.9558	8.508
L13	30.0072	64.2913	6676.2859	10.2113	15.1376	441.0393	13527.9652	31.6422	5.9558	8.508
	31.3145	67.1376	7602.8499	10.6634	15.7917	481.4445	15405.4352	33.0431	6.2942	8.992
L14	30.7395	78.7790	8090.7194	10.1550	15.1403	534.3840	16393.9909	38.7726	5.5217	6.402
	30.9487	81.4443	8940.0063	10.4985	15.6374	571.7070	18114.8765	40.0844	5.7789	6.7
L15	30.9487	81.4443	8940.0063	10.4985	15.6374	571.7070	18114.8765	40.0844	5.7789	6.7
	31.0010	81.5846	8986.2805	10.5166	15.6636	573.7063	18208.6405	40.1534	5.7924	6.716
L16	30.9657	90.7337	9926.1045	10.4808	15.6636	633.7070	20112.9788	44.6564	5.5244	5.74
	31.0180	90.8903	9977.5698	10.4989	15.6897	635.9304	20217.2615	44.7334	5.5380	5.754
L17	31.0180	90.8903	9977.5698	10.4989	15.6897	635.9304	20217.2615	44.7334	5.5380	5.754
	31.2271	91.5164	10185.2089	10.5712	15.7944	644.8630	20637.9945	45.0416	5.5921	5.81
L18	31.2977	72.9911	8233.8672	10.6428	15.7944	521.3164	16684.0473	35.9240	6.1281	8.037
	31.3500	73.1151	8275.9075	10.6609	15.8205	523.1116	16769.2324	35.9850	6.1416	8.055
L19	31.3500	73.1151	8275.9075	10.6609	15.8205	523.1116	16769.2324	35.9850	6.1416	8.055
	31.5069	73.4871	8402.8866	10.7152	15.8990	528.5156	17026.5265	36.1681	6.1823	8.108
L20	31.4804	80.5131	9160.1928	10.6883	15.8990	576.1478	18561.0341	39.6261	5.9813	7.142
	31.5327	80.6493	9206.7634	10.7064	15.9252	578.1256	18655.3987	39.6932	5.9948	7.158
L21	31.5371	79.4788	9080.7261	10.7109	15.9252	570.2112	18400.0129	39.1171	6.0283	7.307
	32.0077	80.6864	9500.9707	10.8736	16.1607	587.9068	19251.5424	39.7114	6.1501	7.455
L22	32.0298	74.7273	8835.5199	10.8960	16.1607	546.7297	17903.1588	36.7785	6.3176	8.285
	32.0821	74.8513	8879.5823	10.9141	16.1868	548.5680	17992.4411	36.8395	6.3312	8.303
L23	32.0821	74.8513	8879.5823	10.9141	16.1868	548.5680	17992.4411	36.8395	6.3312	8.303
	32.3435	75.4714	9102.0927	11.0045	16.3177	557.8063	18443.3075	37.1447	6.3988	8.392
L24	32.3347	77.8824	9377.6041	10.9955	16.3177	574.6905	19001.5683	38.3314	6.3318	8.04
	32.3870	78.0105	9423.9458	11.0136	16.3438	576.6059	19095.4691	38.3944	6.3454	8.058
L25	32.3870	78.0105	9423.9458	11.0136	16.3438	576.6059	19095.4691	38.3944	6.3454	8.058
	32.4393	78.1386	9470.4398	11.0317	16.3700	578.5246	19189.6786	38.4574	6.3589	8.075
L26	32.4613	72.0830	8771.9770	11.0541	16.3700	535.8573	17774.4036	35.4771	6.5264	9.002
	32.5136	72.2010	8815.0959	11.0722	16.3962	537.6320	17861.7741	35.5351	6.5400	9.021
L27	32.4607	86.7165	10484.8621	11.0185	16.3962	639.4709	21245.1731	42.6792	6.1380	7.015
	32.5130	86.8588	10536.5675	11.0365	16.4223	641.6006	21349.9424	42.7492	6.1515	7.03
L28	32.5571	74.7523	9141.6482	11.0813	16.4223	556.6601	18523.4576	36.7908	6.4865	8.649
	32.6094	74.8742	9186.4736	11.0994	16.4485	558.4998	18614.2861	36.8508	6.5000	8.667
L29	32.6138	73.6560	9044.2962	11.1038	16.4485	549.8560	18326.1962	36.2512	6.5335	8.859
	33.6596	76.0550	9957.1071	11.4655	16.9718	586.6867	20175.7986	37.4319	6.8043	9.226
L30	33.6685	73.5342	9642.1229	11.4744	16.9718	568.1273	19537.5551	36.1913	6.8713	9.644
	34.7143	75.8519	10582.8612	11.8361	17.4950	604.9061	21443.7459	37.3320	7.1420	10.024
L31	34.7143	75.8519	10582.8612	11.8361	17.4950	604.9061	21443.7459	37.3320	7.1420	10.024
	35.3941	77.3583	11226.0174	12.0712	17.8352	629.4311	22746.9548	38.0734	7.3180	10.271

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Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
Client	Crown Castle	Designed by	tmlester

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L32	35.3588	87.9540	12688.0375	12.0354	17.8352	711.4050	25709.4038	43.2883	7.0500	8.677
	35.4111	88.0862	12745.3130	12.0535	17.8613	713.5696	25825.4595	43.3533	7.0635	8.694
L33	35.4111	88.0862	12745.3130	12.0535	17.8613	713.5696	25825.4595	43.3533	7.0635	8.694
	35.4634	88.2183	12802.7606	12.0715	17.8875	715.7375	25941.8640	43.4184	7.0770	8.71
L34	35.4369	96.1472	13891.4462	12.0447	17.8875	776.6003	28147.8362	47.3207	6.8760	7.748
	35.4892	96.2915	13954.1055	12.0628	17.9137	778.9639	28274.8009	47.3918	6.8896	7.763
L35	35.4936	94.9705	13772.8857	12.0672	17.9137	768.8476	27907.6005	46.7416	6.9231	7.912
	35.7551	95.6821	14084.7866	12.1577	18.0445	780.5587	28539.5963	47.0918	6.9908	7.989
L36	35.7992	82.3151	12206.4772	12.2024	18.0445	676.4655	24733.6321	40.5130	7.3258	9.768
	35.8515	82.4371	12260.8235	12.2205	18.0707	678.4935	24843.7524	40.5730	7.3393	9.786
L37	35.8559	81.0928	12069.7261	12.2250	18.0707	667.9184	24456.5373	39.9114	7.3728	9.997
	35.9082	81.2128	12123.3642	12.2430	18.0968	669.9167	24565.2227	39.9705	7.3863	10.015
L38	35.9347	73.1138	10962.2881	12.2699	18.0968	605.7576	22212.5677	35.9844	7.5873	11.453
	35.9869	73.2216	11010.8261	12.2880	18.1230	607.5613	22310.9189	36.0374	7.6009	11.473
L39	30.8466	56.8008	6266.6446	10.5252	15.5400	403.2590	12697.9209	27.9556	6.4320	10.72
	36.0090	66.4346	10026.6422	12.3104	18.1230	553.2555	20316.6954	32.6971	7.7684	12.947
L40	36.0657	65.1698	9871.8231	12.3329	18.1492	543.9275	20002.9900	32.0746	7.8154	13.303
	37.1115	67.0808	10765.9857	12.6946	18.6724	576.5711	21814.8058	33.0151	8.0861	13.764
L41	37.1115	67.0808	10765.9857	12.6946	18.6724	576.5711	21814.8058	33.0151	8.0861	13.764
	38.8372	70.2341	12356.6777	13.2913	19.5359	632.5129	25037.9792	34.5671	8.5329	14.524
L42	38.1636	75.6596	12147.7009	12.6971	18.7150	649.0896	24614.5354	37.2373	7.9072	11.935
	38.3728	78.1378	13380.9250	13.1130	19.3168	692.7109	27113.3819	38.4571	8.2185	12.405
L43	38.3728	78.1378	13380.9250	13.1130	19.3168	692.7109	27113.3819	38.4571	8.2185	12.405
	39.2095	79.8618	14286.2985	13.4023	19.7354	723.8929	28947.9140	39.3055	8.4351	12.732
L44	39.1521	99.0189	17559.8216	13.3442	19.7354	889.7637	35580.9593	48.7341	7.9996	9.696
	39.2044	99.1530	17631.3026	13.3622	19.7615	892.2029	35725.7991	48.8001	8.0131	9.713
L45	39.2044	99.1530	17631.3026	13.3622	19.7615	892.2029	35725.7991	48.8001	8.0131	9.713
	39.3613	99.5556	17846.9117	13.4165	19.8400	899.5405	36162.6816	48.9982	8.0537	9.762
L46	39.4319	75.8234	13738.0084	13.4881	19.8400	692.4388	27836.9296	37.3180	8.5897	13.744
	39.4842	75.9250	13793.3343	13.5062	19.8662	694.3118	27949.0348	37.3680	8.6033	13.765
L47	39.5203	74.4312	13530.9083	13.5106	19.8662	681.1022	27417.2886	36.6328	8.8780	14.495
	40.5661	76.4235	14646.8241	13.8723	20.3895	718.3522	29678.4366	37.6133	9.1487	14.937
L48	40.5168	82.5555	15781.2357	13.8544	20.3895	773.9894	31977.0620	40.6313	8.7735	13.243
	41.4580	84.4950	16919.8231	14.1799	20.8604	811.0968	34284.1489	41.5859	9.0172	13.611
L49	41.5012	89.1932	17826.8196	14.1664	20.8604	854.5761	36121.9695	43.8982	9.3455	13.351
	41.5535	89.3071	17895.1698	14.1845	20.8866	856.7780	36260.4657	43.9542	9.3590	13.37
L50	41.5015	87.7400	17592.2530	14.1890	20.8866	842.2751	35646.6740	43.1830	8.9637	13.038
	42.5473	89.9763	18971.9986	14.5507	21.4099	886.1335	38442.4128	44.2836	9.2344	13.432
L51	42.5517	88.3675	18644.2445	14.5551	21.4099	870.8249	37778.2941	43.4918	9.2679	13.73
	43.4929	90.3436	19923.1961	14.8806	21.8808	910.5326	40369.7967	44.4644	9.5116	14.091
L52	43.5547	67.2029	14945.1093	14.9433	21.8808	683.0234	30282.8432	33.0752	9.9806	19.961
	43.6070	67.2843	14999.4283	14.9613	21.9070	684.6872	30392.9083	33.1153	9.9941	19.988
L53	43.5144	101.9640	22445.7999	14.8674	21.9070	1024.5958	45481.2759	50.1836	9.2906	12.184
	44.5602	104.4443	24123.9455	15.2290	22.4303	1075.5090	48881.6539	51.4043	9.5613	12.539
L54	44.5646	102.7623	23749.3947	15.2335	22.4303	1058.8106	48122.7125	50.5765	9.5948	12.793
	45.4536	104.8359	25216.3397	15.5409	22.8750	1102.3514	51095.1408	51.5971	9.8250	13.1
L55	45.4844	92.7917	22409.3975	15.5722	22.8750	979.6438	45407.5148	45.6693	10.0595	15.184
	45.5367	92.8995	22487.5525	15.5903	22.9012	981.9373	45565.8780	45.7223	10.0730	15.205
L56	45.5411	91.1728	22082.2635	15.5948	22.9012	964.2401	44744.6526	44.8725	10.1065	15.548
	46.4824	93.0757	23493.9785	15.9203	23.3722	1005.2121	47605.1700	45.8090	10.3502	15.923

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 120.000-115.0				1	1	1			
00 L2 115.000-110.0				1	1	1			

<p>tnxTower</p> <p>Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job 528 Wheelers Farm Rd (BU 876320)	Page 6 of 58
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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
00									
L3				1	1	1			
110.000-105.000									
L4				1	1	1			
105.000-100.000									
L5				1	1	1			
100.000-99.250									
L6				1	1	1.18991			
99.250-99.000									
L7				1	1	1.19138			
99.000-94.000									
L8				1	1	1.19813			
94.000-90.080									
L9				1	1	1.02045			
90.080-89.830									
L10				1	1	1.01917			
89.830-89.500									
L11				1	1	0.912595			
89.500-89.250									
L12				1	1	0.923531			
89.250-84.250									
L13				1	1	0.913676			
84.250-78.000									
L14				1	1	0.996207			
78.000-77.000									
L15				1	1	0.995117			
77.000-76.750									
L16				1	1	0.948882			
76.750-76.500									
L17				1	1	0.944611			
76.500-75.500									
L18				1	1	1.04608			
75.500-75.250									
L19				1	1	1.04286			
75.250-74.500									
L20				1	1	0.888787			
74.500-74.250									
L21				1	1	0.894048			
74.250-72.000									
L22				1	1	1.07313			
72.000-71.750									
L23				1	1	1.06768			
71.750-70.500									
L24				1	1	1.09135			
70.500-70.250									
L25				1	1	1.09021			
70.250-70.000									
L26				1	1	1.11122			
70.000-69.750									
L27				1	1	0.981926			
69.750-69.500									
L28				1	1	0.979276			
69.500-69.250									
L29				1	1	0.977438			
69.250-64.250									
L30				1	1	0.993457			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
64.250-59.250									
L31				1	1	0.982651			
59.250-56.000									
L32				1	1	1.01703			
56.000-55.750									
L33				1	1	1.01608			
55.750-55.500									
L34				1	1	0.978222			
55.500-55.250									
L35				1	1	0.987109			
55.250-54.000									
L36				1	1	1.03699			
54.000-53.750									
L37				1	1	1.05325			
53.750-53.500									
L38				1	1	1.10735			
53.500-53.250									
L39				1	1	1.09715			
53.250-53.000									
L40				1	1	1.10333			
53.000-48.000									
L41				1	1	1.09216			
48.000-39.750									
L42				1	1	0.976499			
39.750-38.750									
L43				1	1	1			
38.750-34.750									
L44				1	1	0.981987			
34.750-34.500									
L45				1	1	0.979855			
34.500-33.750									
L46				1	1	1.02183			
33.750-33.500									
L47				1	1	1.03112			
33.500-28.500									
L48				1	1	0.945617			
28.500-24.000									
L49				1	1	0.949621			
24.000-23.750									
L50				1	1	0.956115			
23.750-18.750									
L51				1	1	0.964379			
18.750-14.250									
L52				1	1	0.954431			
14.250-14.000									
L53				1	1	0.958435			
14.000-9.000									
L54				1	1	0.964744			
9.000-4.750									
L55				1	1	1.03546			
4.750-4.500									
L56				1	1	1.04529			
4.500-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

tnxTower**Tower Engineering
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Raleigh, NC 27603
Phone: (919) 661-6351
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Date

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Client

Crown Castle

Designed by

tmlester

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
3" Flexible Conduit	B	No	Surface Ar (CaAa)	120.000 - 0.000	2	2	0.250 0.250	3.0000		1.04
HB114-1-0813U4-M5J(1-1/4)	B	No	Surface Ar (CaAa)	120.000 - 0.000	4	4	0.250 0.250	1.5400		1.20
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	113.000 - 0.000	14	7	-0.250 -0.250	1.9800		0.82

LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	105.000 - 0.000	7	6	0.500 0.500	1.9800		0.82

Safety Line 3/8	C	No	Surface Ar (CaAa)	120.000 - 0.000	1	1	0.000 0.000	0.3750		0.22
Existing Mods										
(Area) Aero MP3-04	A	No	Surface Af (CaAa)	25.500 - 0.000	1	1	-0.250 -0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04	A	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.500 0.500	4.7800	9.5600	0.00
(Area) Aero MP3-04	B	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.250 0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04	C	No	Surface Af (CaAa)	25.500 - 0.000	1	1	0.000 0.000	4.7800	9.5600	0.00
*										
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	45.500 - 25.500	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	45.500 - 25.500	1	1	0.500 0.500	4.0600	8.1200	0.00
(Area) Aero MP3-03	B	No	Surface Af (CaAa)	45.500 - 25.500	1	1	0.250 0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	C	No	Surface Af (CaAa)	45.500 - 25.500	1	1	0.000 0.000	4.0600	8.1200	0.00
*										
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	56.000 - 45.500	1	1	-0.250 -0.250	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	57.250 - 56.000	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	56.000 - 45.500	1	1	0.500 0.500	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	57.250 - 56.000	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-045100	B	No	Surface Af (CaAa)	50.500 - 45.500	1	1	0.250 0.250	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	C	No	Surface Af (CaAa)	56.000 - 45.500	1	1	0.000 0.000	4.5000	9.0000	0.00
(Area) CCI-65FP-045100	C	No	Surface Af (CaAa)	57.250 - 56.000	1	1	0.000 0.000	4.5000	11.0000	0.00
*										
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	68.250 - 57.250	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) CCI-65FP-045100	A	No	Surface Af (CaAa)	68.250 - 57.250	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-065125	B	No	Surface Af (CaAa)	56.000 - 50.500	1	1	0.250 0.250	6.5000	13.0000	0.00
(Area) CCI-65FP-065125	B	No	Surface Af (CaAa)	74.750 - 56.000	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-045100	C	No	Surface Af (CaAa)	68.250 - 57.250	1	1	0.000 0.000	4.5000	11.0000	0.00
*										
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	78.250 - 68.250	1	1	-0.250 -0.250	4.0000	10.5000	0.00

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	Client		Crown Castle		Designed by		tmlester	

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-045125	A	No	Surface Af (CaAa)	80.000 - 68.250	1	1	0.500 0.500	4.0000	10.5000	0.00
(Area) CCI-65FP-045125	B	No	Surface Af (CaAa)	80.000 - 74.750	1	1	0.250 0.250	4.0000	10.5000	0.00
(Area) CCI-65FP-045125	C	No	Surface Af (CaAa)	80.000 - 68.250	1	1	0.000 0.000	4.0000	10.5000	0.00
*										
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	100.750 - 78.250	1	1	-0.250 -0.250	4.0000	10.5000	0.00
(Area) CCI-65FP-045125	A	No	Surface Af (CaAa)	100.750 - 80.000	1	1	0.500 0.500	4.0000	10.5000	0.00
*										
(Area) CCI-65FP-060100	B	No	Surface Af (CaAa)	92.080 - 80.000	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100	C	No	Surface Af (CaAa)	92.080 - 80.000	1	1	0.000 0.000	6.0000	14.0000	0.00
Proposed Mods										
**										
PL 1 x 5	A	No	Surface Af (CaAa)	72.000 - 2.500	1	1	-0.250 -0.250	5.0000	10.0000	0.00
PL 1 x 5	A	No	Surface Af (CaAa)	72.000 - 2.500	1	1	0.500 0.500	5.0000	10.0000	0.00
PL 1 x 5	B	No	Surface Af (CaAa)	72.000 - 2.500	1	1	0.250 0.250	5.0000	10.0000	0.00
PL 1 x 5	C	No	Surface Af (CaAa)	72.000 - 2.500	1	1	0.000 0.000	5.0000	10.0000	0.00
**										
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	16.500 - 0.000	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	A	No	Surface Af (CaAa)	16.500 - 0.000	1	1	0.500 0.500	4.0600	8.1200	0.00
(Area) Aero MP3-03	B	No	Surface Af (CaAa)	16.500 - 0.000	1	1	0.250 0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03	C	No	Surface Af (CaAa)	16.500 - 0.000	1	1	0.000 0.000	4.0600	8.1200	0.00
**										
C6x10.5	A	No	Surface Af (CaAa)	56.000 - 0.000	1	1	-0.250 -0.250	6.0000	16.0600	10.50
C6x10.5	A	No	Surface Af (CaAa)	56.000 - 0.000	1	1	0.500 0.500	6.0000	16.0600	10.50
C6x10.5	B	No	Surface Af (CaAa)	56.000 - 0.000	1	1	0.250 0.250	6.0000	16.0600	10.50
C6x10.5	C	No	Surface Af (CaAa)	56.000 - 0.000	1	1	0.000 0.000	6.0000	16.0600	10.50

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf

1266A(1/8)	B	No	No	CaAa (Out Of Face)	120.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.01 0.41 1.41 5.25
7983A(ELLIPTICA)	B	No	No	CaAa (Out	120.000 - 0.000	3	No Ice	0.000	0.08

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
L)				Of Face)			1/2" Ice	0.000	0.74
							1" Ice	0.000	2.01
							2" Ice	0.000	6.37
9207(5/16)	B	No	No	Inside Pole	120.000 - 0.000	6	No Ice	0.000	0.06
							1/2" Ice	0.000	0.06
							1" Ice	0.000	0.06
							2" Ice	0.000	0.06

LDF6-50A(1 1/4")	C	No	No	Inside Pole	96.000 - 0.000	12	No Ice	0.000	0.66
							1/2" Ice	0.000	0.66
							1" Ice	0.000	0.66
							2" Ice	0.000	0.66
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	96.000 - 0.000	3	No Ice	0.000	0.06
							1/2" Ice	0.000	0.06
							1" Ice	0.000	0.06
							2" Ice	0.000	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	96.000 - 0.000	6	No Ice	0.000	0.58
							1/2" Ice	0.000	0.58
							1" Ice	0.000	0.58
							2" Ice	0.000	0.58
2" Flexible Conduit	C	No	No	Inside Pole	96.000 - 0.000	2	No Ice	0.000	0.34
							1/2" Ice	0.000	0.34
							1" Ice	0.000	0.34
							2" Ice	0.000	0.34

LDF5-50A(7/8)	C	No	No	Inside Pole	82.000 - 0.000	12	No Ice	0.000	0.33
							1/2" Ice	0.000	0.33
							1" Ice	0.000	0.33
							2" Ice	0.000	0.33

LDF4-50A(1/2)	C	No	No	Inside Pole	75.000 - 0.000	1	No Ice	0.000	0.15
							1/2" Ice	0.000	0.15
							1" Ice	0.000	0.15
							2" Ice	0.000	0.15

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	120.000-115.000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00
L2	115.000-110.000	A	0.000	0.000	4.158	0.000	0.03
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00
L3	110.000-105.000	A	0.000	0.000	6.930	0.000	0.06
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00
L4	105.000-100.000	A	0.000	0.000	13.870	0.000	0.09
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.00

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L5	100.000-99.250	A	0.000	0.000	2.930	0.000	0.01
		B	0.000	0.000	0.912	0.000	0.01
		C	0.000	0.000	0.028	0.000	0.00
L6	99.250-99.000	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.304	0.000	0.00
		C	0.000	0.000	0.009	0.000	0.00
L7	99.000-94.000	A	0.000	0.000	19.537	0.000	0.09
		B	0.000	0.000	6.080	0.000	0.04
		C	0.000	0.000	0.188	0.000	0.03
L8	94.000-90.080	A	0.000	0.000	15.317	0.000	0.07
		B	0.000	0.000	6.728	0.000	0.03
		C	0.000	0.000	2.108	0.000	0.05
L9	90.080-89.830	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.549	0.000	0.00
		C	0.000	0.000	0.255	0.000	0.00
L10	89.830-89.500	A	0.000	0.000	1.289	0.000	0.01
		B	0.000	0.000	0.725	0.000	0.00
		C	0.000	0.000	0.336	0.000	0.00
L11	89.500-89.250	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.549	0.000	0.00
		C	0.000	0.000	0.255	0.000	0.00
L12	89.250-84.250	A	0.000	0.000	19.537	0.000	0.09
		B	0.000	0.000	10.983	0.000	0.04
		C	0.000	0.000	5.090	0.000	0.06
L13	84.250-78.000	A	0.000	0.000	24.421	0.000	0.11
		B	0.000	0.000	12.879	0.000	0.05
		C	0.000	0.000	5.735	0.000	0.09
L14	78.000-77.000	A	0.000	0.000	3.907	0.000	0.02
		B	0.000	0.000	1.772	0.000	0.01
		C	0.000	0.000	0.704	0.000	0.02
L15	77.000-76.750	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.443	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L16	76.750-76.500	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.443	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L17	76.500-75.500	A	0.000	0.000	3.907	0.000	0.02
		B	0.000	0.000	1.772	0.000	0.01
		C	0.000	0.000	0.704	0.000	0.02
L18	75.500-75.250	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.443	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L19	75.250-74.500	A	0.000	0.000	2.930	0.000	0.01
		B	0.000	0.000	1.461	0.000	0.01
		C	0.000	0.000	0.528	0.000	0.01
L20	74.500-74.250	A	0.000	0.000	0.977	0.000	0.00
		B	0.000	0.000	0.575	0.000	0.00
		C	0.000	0.000	0.176	0.000	0.00
L21	74.250-72.000	A	0.000	0.000	8.791	0.000	0.04
		B	0.000	0.000	5.173	0.000	0.02
		C	0.000	0.000	1.584	0.000	0.04
L22	72.000-71.750	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L23	71.750-70.500	A	0.000	0.000	6.967	0.000	0.02
		B	0.000	0.000	3.916	0.000	0.01
		C	0.000	0.000	1.922	0.000	0.02
L24	70.500-70.250	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L25	70.250-70.000	A	0.000	0.000	1.394	0.000	0.00

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	Client	Crown Castle	Designed by	tmlester

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
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L26	70.000-69.750	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L27	69.750-69.500	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L28	69.500-69.250	A	0.000	0.000	1.394	0.000	0.00
		B	0.000	0.000	0.783	0.000	0.00
		C	0.000	0.000	0.384	0.000	0.00
L29	69.250-64.250	A	0.000	0.000	28.537	0.000	0.09
		B	0.000	0.000	15.663	0.000	0.04
		C	0.000	0.000	8.021	0.000	0.08
L30	64.250-59.250	A	0.000	0.000	28.703	0.000	0.09
		B	0.000	0.000	15.663	0.000	0.04
		C	0.000	0.000	8.104	0.000	0.08
L31	59.250-56.000	A	0.000	0.000	17.939	0.000	0.06
		B	0.000	0.000	10.181	0.000	0.02
		C	0.000	0.000	4.908	0.000	0.05
L32	56.000-55.750	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L33	55.750-55.500	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L34	55.500-55.250	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L35	55.250-54.000	A	0.000	0.000	9.676	0.000	0.05
		B	0.000	0.000	4.831	0.000	0.02
		C	0.000	0.000	3.276	0.000	0.03
L36	54.000-53.750	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L37	53.750-53.500	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L38	53.500-53.250	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L39	53.250-53.000	A	0.000	0.000	1.935	0.000	0.01
		B	0.000	0.000	0.966	0.000	0.00
		C	0.000	0.000	0.655	0.000	0.01
L40	53.000-48.000	A	0.000	0.000	38.703	0.000	0.19
		B	0.000	0.000	18.795	0.000	0.09
		C	0.000	0.000	13.104	0.000	0.14
L41	48.000-39.750	A	0.000	0.000	63.017	0.000	0.32
		B	0.000	0.000	30.558	0.000	0.15
		C	0.000	0.000	21.200	0.000	0.22
L42	39.750-38.750	A	0.000	0.000	7.594	0.000	0.04
		B	0.000	0.000	3.726	0.000	0.02
		C	0.000	0.000	2.547	0.000	0.03
L43	38.750-34.750	A	0.000	0.000	30.376	0.000	0.15
		B	0.000	0.000	14.904	0.000	0.07
		C	0.000	0.000	10.190	0.000	0.11
L44	34.750-34.500	A	0.000	0.000	1.899	0.000	0.01
		B	0.000	0.000	0.931	0.000	0.00
		C	0.000	0.000	0.637	0.000	0.01
L45	34.500-33.750	A	0.000	0.000	5.696	0.000	0.03
		B	0.000	0.000	2.795	0.000	0.01

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	Client	Crown Castle	Designed by	tmlester

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
L46	33.750-33.500	C	0.000	0.000	1.911	0.000	0.02
		A	0.000	0.000	1.899	0.000	0.01
		B	0.000	0.000	0.931	0.000	0.00
L47	33.500-28.500	C	0.000	0.000	0.637	0.000	0.01
		A	0.000	0.000	37.970	0.000	0.19
		B	0.000	0.000	18.630	0.000	0.09
L48	28.500-24.000	C	0.000	0.000	12.738	0.000	0.14
		A	0.000	0.000	34.533	0.000	0.17
		B	0.000	0.000	16.947	0.000	0.08
L49	24.000-23.750	C	0.000	0.000	11.644	0.000	0.12
		A	0.000	0.000	1.958	0.000	0.01
		B	0.000	0.000	0.961	0.000	0.00
L50	23.750-18.750	C	0.000	0.000	0.667	0.000	0.01
		A	0.000	0.000	39.170	0.000	0.19
		B	0.000	0.000	19.230	0.000	0.09
L51	18.750-14.250	C	0.000	0.000	13.338	0.000	0.14
		A	0.000	0.000	38.298	0.000	0.17
		B	0.000	0.000	18.829	0.000	0.08
L52	14.250-14.000	C	0.000	0.000	13.526	0.000	0.12
		A	0.000	0.000	2.297	0.000	0.01
		B	0.000	0.000	1.131	0.000	0.00
L53	14.000-9.000	C	0.000	0.000	0.836	0.000	0.01
		A	0.000	0.000	45.937	0.000	0.19
		B	0.000	0.000	22.613	0.000	0.09
L54	9.000-4.750	C	0.000	0.000	16.721	0.000	0.14
		A	0.000	0.000	39.046	0.000	0.16
		B	0.000	0.000	19.221	0.000	0.08
L55	4.750-4.500	C	0.000	0.000	14.213	0.000	0.12
		A	0.000	0.000	2.297	0.000	0.01
		B	0.000	0.000	1.131	0.000	0.00
L56	4.500-0.000	C	0.000	0.000	0.836	0.000	0.01
		A	0.000	0.000	37.176	0.000	0.17
		B	0.000	0.000	18.269	0.000	0.08
		C	0.000	0.000	12.965	0.000	0.12

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	120.000-115.000	A	1.448	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	11.219	0.000	0.23
		C		0.000	0.000	1.635	0.000	0.02
L2	115.000-110.000	A	1.441	0.000	0.000	6.279	0.000	0.11
		B		0.000	0.000	11.203	0.000	0.23
		C		0.000	0.000	1.629	0.000	0.02
L3	110.000-105.000	A	1.435	0.000	0.000	10.456	0.000	0.19
		B		0.000	0.000	11.187	0.000	0.22
		C		0.000	0.000	1.622	0.000	0.02
L4	105.000-100.000	A	1.428	0.000	0.000	21.086	0.000	0.33
		B		0.000	0.000	11.170	0.000	0.22
		C		0.000	0.000	1.615	0.000	0.02
L5	100.000-99.250	A	1.424	0.000	0.000	4.374	0.000	0.06
		B		0.000	0.000	1.674	0.000	0.03
		C		0.000	0.000	0.242	0.000	0.00
L6	99.250-99.000	A	1.423	0.000	0.000	1.458	0.000	0.02
		B		0.000	0.000	0.558	0.000	0.01
		C		0.000	0.000	0.081	0.000	0.00

<p>tnxTower</p> <p><i>Tower Engineering Professionals, Inc.</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job 528 Wheelers Farm Rd (BU 876320)	Page 14 of 58
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	Client Crown Castle	Designed by tmlester

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
L7	99.000-94.000	A	1.419	0.000	0.000	29.141	0.000	0.40
		B		0.000	0.000	11.148	0.000	0.22
		C		0.000	0.000	1.607	0.000	0.04
L8	94.000-90.080	A	1.413	0.000	0.000	22.823	0.000	0.32
		B		0.000	0.000	10.985	0.000	0.19
		C		0.000	0.000	3.513	0.000	0.08
L9	90.080-89.830	A	1.409	0.000	0.000	1.455	0.000	0.02
		B		0.000	0.000	0.838	0.000	0.01
		C		0.000	0.000	0.362	0.000	0.01
L10	89.830-89.500	A	1.409	0.000	0.000	1.920	0.000	0.03
		B		0.000	0.000	1.107	0.000	0.02
		C		0.000	0.000	0.478	0.000	0.01
L11	89.500-89.250	A	1.409	0.000	0.000	1.455	0.000	0.02
		B		0.000	0.000	0.838	0.000	0.01
		C		0.000	0.000	0.362	0.000	0.01
L12	89.250-84.250	A	1.404	0.000	0.000	29.074	0.000	0.40
		B		0.000	0.000	16.752	0.000	0.27
		C		0.000	0.000	7.233	0.000	0.13
L13	84.250-78.000	A	1.395	0.000	0.000	36.190	0.000	0.50
		B		0.000	0.000	20.063	0.000	0.33
		C		0.000	0.000	8.584	0.000	0.17
L14	78.000-77.000	A	1.389	0.000	0.000	5.677	0.000	0.08
		B		0.000	0.000	2.924	0.000	0.05
		C		0.000	0.000	1.225	0.000	0.03
L15	77.000-76.750	A	1.388	0.000	0.000	1.418	0.000	0.02
		B		0.000	0.000	0.730	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L16	76.750-76.500	A	1.387	0.000	0.000	1.418	0.000	0.02
		B		0.000	0.000	0.730	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L17	76.500-75.500	A	1.386	0.000	0.000	5.670	0.000	0.08
		B		0.000	0.000	2.919	0.000	0.05
		C		0.000	0.000	1.221	0.000	0.03
L18	75.500-75.250	A	1.385	0.000	0.000	1.417	0.000	0.02
		B		0.000	0.000	0.729	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L19	75.250-74.500	A	1.384	0.000	0.000	4.251	0.000	0.06
		B		0.000	0.000	2.351	0.000	0.04
		C		0.000	0.000	0.915	0.000	0.02
L20	74.500-74.250	A	1.383	0.000	0.000	1.417	0.000	0.02
		B		0.000	0.000	0.892	0.000	0.01
		C		0.000	0.000	0.305	0.000	0.01
L21	74.250-72.000	A	1.381	0.000	0.000	12.748	0.000	0.18
		B		0.000	0.000	8.024	0.000	0.12
		C		0.000	0.000	2.744	0.000	0.06
L22	72.000-71.750	A	1.378	0.000	0.000	1.971	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.582	0.000	0.01
L23	71.750-70.500	A	1.377	0.000	0.000	9.851	0.000	0.12
		B		0.000	0.000	5.840	0.000	0.08
		C		0.000	0.000	2.909	0.000	0.05
L24	70.500-70.250	A	1.375	0.000	0.000	1.970	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.582	0.000	0.01
L25	70.250-70.000	A	1.375	0.000	0.000	1.970	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.582	0.000	0.01
L26	70.000-69.750	A	1.374	0.000	0.000	1.969	0.000	0.02
		B		0.000	0.000	1.168	0.000	0.02
		C		0.000	0.000	0.581	0.000	0.01
L27	69.750-69.500	A	1.374	0.000	0.000	1.969	0.000	0.02

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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	1.167	0.000	0.02
		C		0.000	0.000	0.581	0.000	0.01
L28	69.500-69.250	A	1.373	0.000	0.000	1.969	0.000	0.02
		B		0.000	0.000	1.167	0.000	0.02
		C		0.000	0.000	0.581	0.000	0.01
L29	69.250-64.250	A	1.368	0.000	0.000	39.831	0.000	0.47
		B		0.000	0.000	23.323	0.000	0.31
		C		0.000	0.000	11.745	0.000	0.18
L30	64.250-59.250	A	1.357	0.000	0.000	39.892	0.000	0.47
		B		0.000	0.000	23.277	0.000	0.31
		C		0.000	0.000	11.751	0.000	0.18
L31	59.250-56.000	A	1.348	0.000	0.000	25.081	0.000	0.30
		B		0.000	0.000	15.103	0.000	0.20
		C		0.000	0.000	7.215	0.000	0.12
L32	56.000-55.750	A	1.344	0.000	0.000	2.620	0.000	0.03
		B		0.000	0.000	1.381	0.000	0.02
		C		0.000	0.000	0.901	0.000	0.01
L33	55.750-55.500	A	1.343	0.000	0.000	2.620	0.000	0.03
		B		0.000	0.000	1.381	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L34	55.500-55.250	A	1.343	0.000	0.000	2.620	0.000	0.03
		B		0.000	0.000	1.381	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L35	55.250-54.000	A	1.341	0.000	0.000	13.096	0.000	0.17
		B		0.000	0.000	6.901	0.000	0.10
		C		0.000	0.000	4.500	0.000	0.07
L36	54.000-53.750	A	1.339	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.380	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L37	53.750-53.500	A	1.338	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.380	0.000	0.02
		C		0.000	0.000	0.900	0.000	0.01
L38	53.500-53.250	A	1.338	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.379	0.000	0.02
		C		0.000	0.000	0.899	0.000	0.01
L39	53.250-53.000	A	1.337	0.000	0.000	2.618	0.000	0.03
		B		0.000	0.000	1.379	0.000	0.02
		C		0.000	0.000	0.899	0.000	0.01
L40	53.000-48.000	A	1.330	0.000	0.000	52.303	0.000	0.67
		B		0.000	0.000	27.019	0.000	0.39
		C		0.000	0.000	17.963	0.000	0.28
L41	48.000-39.750	A	1.312	0.000	0.000	86.270	0.000	1.08
		B		0.000	0.000	44.666	0.000	0.63
		C		0.000	0.000	29.631	0.000	0.45
L42	39.750-38.750	A	1.297	0.000	0.000	10.467	0.000	0.13
		B		0.000	0.000	5.473	0.000	0.08
		C		0.000	0.000	3.597	0.000	0.05
L43	38.750-34.750	A	1.289	0.000	0.000	41.714	0.000	0.52
		B		0.000	0.000	21.791	0.000	0.30
		C		0.000	0.000	14.314	0.000	0.22
L44	34.750-34.500	A	1.281	0.000	0.000	2.604	0.000	0.03
		B		0.000	0.000	1.360	0.000	0.02
		C		0.000	0.000	0.893	0.000	0.01
L45	34.500-33.750	A	1.279	0.000	0.000	7.809	0.000	0.10
		B		0.000	0.000	4.078	0.000	0.06
		C		0.000	0.000	2.678	0.000	0.04
L46	33.750-33.500	A	1.277	0.000	0.000	2.602	0.000	0.03
		B		0.000	0.000	1.359	0.000	0.02
		C		0.000	0.000	0.892	0.000	0.01
L47	33.500-28.500	A	1.267	0.000	0.000	51.957	0.000	0.64
		B		0.000	0.000	27.119	0.000	0.37

<p>tnxTower</p> <p>Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	528 Wheelers Farm Rd (BU 876320)	Page	16 of 58
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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
L48	28.500-24.000	C		0.000	0.000	17.806	0.000	0.27
		A	1.246	0.000	0.000	46.962	0.000	0.57
		B		0.000	0.000	24.483	0.000	0.33
		C		0.000	0.000	16.130	0.000	0.24
L49	24.000-23.750	A	1.234	0.000	0.000	2.644	0.000	0.03
		B		0.000	0.000	1.377	0.000	0.02
		C		0.000	0.000	0.914	0.000	0.01
L50	23.750-18.750	A	1.220	0.000	0.000	52.758	0.000	0.62
		B		0.000	0.000	27.460	0.000	0.36
		C		0.000	0.000	18.218	0.000	0.26
L51	18.750-14.250	A	1.190	0.000	0.000	51.364	0.000	0.58
		B		0.000	0.000	26.621	0.000	0.33
		C		0.000	0.000	18.344	0.000	0.25
L52	14.250-14.000	A	1.171	0.000	0.000	3.073	0.000	0.03
		B		0.000	0.000	1.587	0.000	0.02
		C		0.000	0.000	1.129	0.000	0.01
L53	14.000-9.000	A	1.147	0.000	0.000	61.201	0.000	0.65
		B		0.000	0.000	31.591	0.000	0.36
		C		0.000	0.000	22.458	0.000	0.28
L54	9.000-4.750	A	1.090	0.000	0.000	51.507	0.000	0.53
		B		0.000	0.000	26.534	0.000	0.29
		C		0.000	0.000	18.844	0.000	0.23
L55	4.750-4.500	A	1.048	0.000	0.000	3.008	0.000	0.03
		B		0.000	0.000	1.547	0.000	0.02
		C		0.000	0.000	1.098	0.000	0.01
L56	4.500-0.000	A	0.974	0.000	0.000	48.306	0.000	0.49
		B		0.000	0.000	24.850	0.000	0.27
		C		0.000	0.000	16.863	0.000	0.22

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	120.000-115.000	4.2124	0.1200	4.2931	0.5780
L2	115.000-110.000	0.9230	0.0993	1.4048	0.4752
L3	110.000-105.000	-0.6682	0.0903	0.0197	0.4315
L4	105.000-100.000	-0.5408	-2.6637	0.0120	-1.9693
L5	100.000-99.250	-0.5100	-2.8181	-0.0238	-2.1817
L6	99.250-99.000	-0.5107	-2.8253	-0.0235	-2.1882
L7	99.000-94.000	-0.5128	-2.8553	-0.0216	-2.2185
L8	94.000-90.080	0.3415	-1.3958	0.5321	-1.2826
L9	90.080-89.830	1.0063	-0.2451	0.9936	-0.4797
L10	89.830-89.500	1.0081	-0.2450	0.9955	-0.4801
L11	89.500-89.250	1.0106	-0.2450	0.9978	-0.4807
L12	89.250-84.250	1.0266	-0.2441	1.0147	-0.4843
L13	84.250-78.000	0.8742	-0.5064	0.9284	-0.6171
L14	78.000-77.000	0.4612	-1.1044	0.7537	-0.9368
L15	77.000-76.750	0.4631	-1.1065	0.7549	-0.9409
L16	76.750-76.500	0.4641	-1.1078	0.7562	-0.9420
L17	76.500-75.500	0.4660	-1.1098	0.7589	-0.9445
L18	75.500-75.250	0.4676	-1.1110	0.7613	-0.9464
L19	75.250-74.500	0.7498	-0.9536	0.9710	-0.8307
L20	74.500-74.250	1.2840	-0.6536	1.3725	-0.6064
L21	74.250-72.000	1.2920	-0.6554	1.3818	-0.6090
L22	72.000-71.750	1.9333	0.4703	1.9184	0.3496
L23	71.750-70.500	1.9410	0.4729	1.9265	0.3516

tnxTower Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 17 of 58
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Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L24	70.500-70.250	1.9488	0.4755	1.9346	0.3537
L25	70.250-70.000	1.9513	0.4764	1.9373	0.3544
L26	70.000-69.750	1.9535	0.4772	1.9398	0.3551
L27	69.750-69.500	1.9568	0.4782	1.9429	0.3559
L28	69.500-69.250	1.9588	0.4790	1.9452	0.3565
L29	69.250-64.250	1.9572	0.5195	1.9297	0.3880
L30	64.250-59.250	1.9996	0.5449	1.9702	0.4082
L31	59.250-56.000	2.0930	0.5041	2.0512	0.3757
L32	56.000-55.750	2.2927	1.2704	2.2187	1.0515
L33	55.750-55.500	2.2955	1.2721	2.2216	1.0530
L34	55.500-55.250	2.2987	1.2740	2.2246	1.0546
L35	55.250-54.000	2.3071	1.2790	2.2331	1.0590
L36	54.000-53.750	2.3151	1.2839	2.2413	1.0633
L37	53.750-53.500	2.3179	1.2855	2.2441	1.0647
L38	53.500-53.250	2.3204	1.2870	2.2467	1.0661
L39	53.250-53.000	2.1799	1.2028	2.1026	0.9901
L40	53.000-48.000	2.2616	1.2616	2.2152	1.0507
L41	48.000-39.750	2.3058	1.2663	2.3036	1.1006
L42	39.750-38.750	2.3509	1.2794	2.3559	1.1292
L43	38.750-34.750	2.3774	1.2950	2.3803	1.1404
L44	34.750-34.500	2.4005	1.3086	2.4034	1.1520
L45	34.500-33.750	2.4058	1.3117	2.4087	1.1547
L46	33.750-33.500	2.4101	1.3143	2.4134	1.1570
L47	33.500-28.500	2.4371	1.3303	2.4407	1.1707
L48	28.500-24.000	2.5080	1.3910	2.5047	1.2179
L49	24.000-23.750	2.5726	1.4660	2.5569	1.2745
L50	23.750-18.750	2.6009	1.4833	2.5842	1.2883
L51	18.750-14.250	2.8158	1.7581	2.7933	1.5614
L52	14.250-14.000	2.9834	1.9863	2.9575	1.7921
L53	14.000-9.000	3.0157	2.0086	2.9865	1.8092
L54	9.000-4.750	3.0700	2.0463	3.0324	1.8350
L55	4.750-4.500	3.0960	2.0642	3.0511	1.8443
L56	4.500-0.000	2.9076	1.7668	2.8603	1.5372

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	6	3" Flexible Conduit	115.00 - 120.00	1.0000	1.0000
L1	8	HB114-1-0813U4-M5J(1-1/4)	115.00 - 120.00	1.0000	1.0000
L1	32	Safety Line 3/8	115.00 - 120.00	1.0000	1.0000
L2	6	3" Flexible Conduit	110.00 - 115.00	1.0000	1.0000
L2	8	HB114-1-0813U4-M5J(1-1/4)	110.00 - 115.00	1.0000	1.0000
L2	12	LDF7-50A(1-5/8)	110.00 - 113.00	1.0000	1.0000
L2	32	Safety Line 3/8	110.00 - 115.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L3	6	3" Flexible Conduit	105.00 - 110.00	1.0000	1.0000
L3	8	HB114-1-0813U4-M5J(1-1/4)	105.00 - 110.00	1.0000	1.0000
L3	12	LDF7-50A(1-5/8)	105.00 - 110.00	1.0000	1.0000
L3	32	Safety Line 3/8	105.00 - 110.00	1.0000	1.0000
L4	6	3" Flexible Conduit	100.00 - 105.00	1.0000	1.0000
L4	8	HB114-1-0813U4-M5J(1-1/4)	100.00 - 105.00	1.0000	1.0000
L4	12	LDF7-50A(1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	15	LDF7-50A(1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	32	Safety Line 3/8	100.00 - 105.00	1.0000	1.0000
L4	64	(Area) CCI-65FP-045125	100.00 - 100.75	1.0000	1.0000
L4	65	(Area) CCI-65FP-045125	100.00 - 100.75	1.0000	1.0000
L5	6	3" Flexible Conduit	99.25 - 100.00	1.0000	1.0000
L5	8	HB114-1-0813U4-M5J(1-1/4)	99.25 - 100.00	1.0000	1.0000
L5	12	LDF7-50A(1-5/8)	99.25 - 100.00	1.0000	1.0000
L5	15	LDF7-50A(1-5/8)	99.25 - 100.00	1.0000	1.0000
L5	32	Safety Line 3/8	99.25 - 100.00	1.0000	1.0000
L5	64	(Area) CCI-65FP-045125	99.25 - 100.00	1.0000	1.0000
L5	65	(Area) CCI-65FP-045125	99.25 - 100.00	1.0000	1.0000
L6	6	3" Flexible Conduit	99.00 - 99.25	1.0000	1.0000
L6	8	HB114-1-0813U4-M5J(1-1/4)	99.00 - 99.25	1.0000	1.0000
L6	12	LDF7-50A(1-5/8)	99.00 - 99.25	1.0000	1.0000
L6	15	LDF7-50A(1-5/8)	99.00 - 99.25	1.0000	1.0000
L6	32	Safety Line 3/8	99.00 - 99.25	1.0000	1.0000
L6	64	(Area) CCI-65FP-045125	99.00 - 99.25	1.0000	1.0000
L6	65	(Area) CCI-65FP-045125	99.00 - 99.25	1.0000	1.0000
L7	6	3" Flexible Conduit	94.00 - 99.00	1.0000	1.0000
L7	8	HB114-1-0813U4-M5J(1-1/4)	94.00 - 99.00	1.0000	1.0000
L7	12	LDF7-50A(1-5/8)	94.00 - 99.00	1.0000	1.0000
L7	15	LDF7-50A(1-5/8)	94.00 - 99.00	1.0000	1.0000
L7	32	Safety Line 3/8	94.00 - 99.00	1.0000	1.0000
L7	64	(Area) CCI-65FP-045125	94.00 - 99.00	1.0000	1.0000
L7	65	(Area) CCI-65FP-045125	94.00 - 99.00	1.0000	1.0000
L8	6	3" Flexible Conduit	90.08 - 94.00	1.0000	1.0000
L8	8	HB114-1-0813U4-M5J(1-1/4)	90.08 - 94.00	1.0000	1.0000
L8	12	LDF7-50A(1-5/8)	90.08 - 94.00	1.0000	1.0000
L8	15	LDF7-50A(1-5/8)	90.08 - 94.00	1.0000	1.0000
L8	32	Safety Line 3/8	90.08 - 94.00	1.0000	1.0000
L8	64	(Area) CCI-65FP-045125	90.08 - 94.00	1.0000	1.0000
L8	65	(Area) CCI-65FP-045125	90.08 - 94.00	1.0000	1.0000
L8	67	(Area) CCI-65FP-060100	90.08 - 92.08	1.0000	1.0000
L8	68	(Area) CCI-65FP-060100	90.08 - 92.08	1.0000	1.0000
L9	6	3" Flexible Conduit	89.83 - 90.08	1.0000	1.0000
L9	8	HB114-1-0813U4-M5J(1-1/4)	89.83 - 90.08	1.0000	1.0000
L9	12	LDF7-50A(1-5/8)	89.83 - 90.08	1.0000	1.0000
L9	15	LDF7-50A(1-5/8)	89.83 - 90.08	1.0000	1.0000
L9	32	Safety Line 3/8	89.83 - 90.08	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L9	64	(Area) CCI-65FP-045125	89.83 - 90.08	1.0000	1.0000
L9	65	(Area) CCI-65FP-045125	89.83 - 90.08	1.0000	1.0000
L9	67	(Area) CCI-65FP-060100	89.83 - 90.08	1.0000	1.0000
L9	68	(Area) CCI-65FP-060100	89.83 - 90.08	1.0000	1.0000
L10	6	3" Flexible Conduit	89.50 - 89.83	1.0000	1.0000
L10	8	HB114-1-0813U4-M5J(1-1/4)	89.50 - 89.83	1.0000	1.0000
L10	12	LDF7-50A(1-5/8)	89.50 - 89.83	1.0000	1.0000
L10	15	LDF7-50A(1-5/8)	89.50 - 89.83	1.0000	1.0000
L10	32	Safety Line 3/8	89.50 - 89.83	1.0000	1.0000
L10	64	(Area) CCI-65FP-045125	89.50 - 89.83	1.0000	1.0000
L10	65	(Area) CCI-65FP-045125	89.50 - 89.83	1.0000	1.0000
L10	67	(Area) CCI-65FP-060100	89.50 - 89.83	1.0000	1.0000
L10	68	(Area) CCI-65FP-060100	89.50 - 89.83	1.0000	1.0000
L11	6	3" Flexible Conduit	89.25 - 89.50	1.0000	1.0000
L11	8	HB114-1-0813U4-M5J(1-1/4)	89.25 - 89.50	1.0000	1.0000
L11	12	LDF7-50A(1-5/8)	89.25 - 89.50	1.0000	1.0000
L11	15	LDF7-50A(1-5/8)	89.25 - 89.50	1.0000	1.0000
L11	32	Safety Line 3/8	89.25 - 89.50	1.0000	1.0000
L11	64	(Area) CCI-65FP-045125	89.25 - 89.50	1.0000	1.0000
L11	65	(Area) CCI-65FP-045125	89.25 - 89.50	1.0000	1.0000
L11	67	(Area) CCI-65FP-060100	89.25 - 89.50	1.0000	1.0000
L11	68	(Area) CCI-65FP-060100	89.25 - 89.50	1.0000	1.0000
L12	6	3" Flexible Conduit	84.25 - 89.25	1.0000	1.0000
L12	8	HB114-1-0813U4-M5J(1-1/4)	84.25 - 89.25	1.0000	1.0000
L12	12	LDF7-50A(1-5/8)	84.25 - 89.25	1.0000	1.0000
L12	15	LDF7-50A(1-5/8)	84.25 - 89.25	1.0000	1.0000
L12	32	Safety Line 3/8	84.25 - 89.25	1.0000	1.0000
L12	64	(Area) CCI-65FP-045125	84.25 - 89.25	1.0000	1.0000
L12	65	(Area) CCI-65FP-045125	84.25 - 89.25	1.0000	1.0000
L12	67	(Area) CCI-65FP-060100	84.25 - 89.25	1.0000	1.0000
L12	68	(Area) CCI-65FP-060100	84.25 - 89.25	1.0000	1.0000
L13	6	3" Flexible Conduit	78.00 - 84.25	1.0000	1.0000
L13	8	HB114-1-0813U4-M5J(1-1/4)	78.00 - 84.25	1.0000	1.0000
L13	12	LDF7-50A(1-5/8)	78.00 - 84.25	1.0000	1.0000
L13	15	LDF7-50A(1-5/8)	78.00 - 84.25	1.0000	1.0000
L13	32	Safety Line 3/8	78.00 - 84.25	1.0000	1.0000
L13	59	(Area) CCI-65FP-045125	78.00 - 78.25	1.0000	1.0000
L13	60	(Area) CCI-65FP-045125	78.00 - 80.00	1.0000	1.0000
L13	61	(Area) CCI-65FP-045125	78.00 - 80.00	1.0000	1.0000
L13	62	(Area) CCI-65FP-045125	78.00 - 80.00	1.0000	1.0000
L13	64	(Area) CCI-65FP-045125	78.25 - 84.25	1.0000	1.0000
L13	65	(Area) CCI-65FP-045125	80.00 - 84.25	1.0000	1.0000
L13	67	(Area) CCI-65FP-060100	80.00 - 84.25	1.0000	1.0000
L13	68	(Area) CCI-65FP-060100	80.00 - 84.25	1.0000	1.0000
L15	6	3" Flexible Conduit	76.75 - 77.00	1.0000	1.0000
L15	8	HB114-1-0813U4-M5J(1-1/4)	76.75 - 77.00	1.0000	1.0000
L15	12	LDF7-50A(1-5/8)	76.75 - 77.00	1.0000	1.0000
L15	15	LDF7-50A(1-5/8)	76.75 - 77.00	1.0000	1.0000
L15	32	Safety Line 3/8	76.75 - 77.00	1.0000	1.0000
L15	59	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L15	60	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L15	61	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L15	62	(Area) CCI-65FP-045125	76.75 - 77.00	1.0000	1.0000
L16	6	3" Flexible Conduit	76.50 - 76.75	1.0000	1.0000
L16	8	HB114-1-0813U4-M5J(1-1/4)	76.50 - 76.75	1.0000	1.0000
L16	12	LDF7-50A(1-5/8)	76.50 - 76.75	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L16	15	LDF7-50A(1-5/8)	76.50 - 76.75	1.0000	1.0000
L16	32	Safety Line 3/8	76.50 - 76.75	1.0000	1.0000
L16	59	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L16	60	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L16	61	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L16	62	(Area) CCI-65FP-045125	76.50 - 76.75	1.0000	1.0000
L17	6	3" Flexible Conduit	75.50 - 76.50	1.0000	1.0000
L17	8	HB114-1-0813U4-M5J(1-1/4)	75.50 - 76.50	1.0000	1.0000
L17	12	LDF7-50A(1-5/8)	75.50 - 76.50	1.0000	1.0000
L17	15	LDF7-50A(1-5/8)	75.50 - 76.50	1.0000	1.0000
L17	32	Safety Line 3/8	75.50 - 76.50	1.0000	1.0000
L17	59	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L17	60	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L17	61	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L17	62	(Area) CCI-65FP-045125	75.50 - 76.50	1.0000	1.0000
L18	6	3" Flexible Conduit	75.25 - 75.50	1.0000	1.0000
L18	8	HB114-1-0813U4-M5J(1-1/4)	75.25 - 75.50	1.0000	1.0000
L18	12	LDF7-50A(1-5/8)	75.25 - 75.50	1.0000	1.0000
L18	15	LDF7-50A(1-5/8)	75.25 - 75.50	1.0000	1.0000
L18	32	Safety Line 3/8	75.25 - 75.50	1.0000	1.0000
L18	59	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L18	60	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L18	61	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L18	62	(Area) CCI-65FP-045125	75.25 - 75.50	1.0000	1.0000
L19	6	3" Flexible Conduit	74.50 - 75.25	1.0000	1.0000
L19	8	HB114-1-0813U4-M5J(1-1/4)	74.50 - 75.25	1.0000	1.0000
L19	12	LDF7-50A(1-5/8)	74.50 - 75.25	1.0000	1.0000
L19	15	LDF7-50A(1-5/8)	74.50 - 75.25	1.0000	1.0000
L19	32	Safety Line 3/8	74.50 - 75.25	1.0000	1.0000
L19	56	(Area) CCI-65FP-065125	74.50 - 74.75	1.0000	1.0000
L19	59	(Area) CCI-65FP-045125	74.50 - 75.25	1.0000	1.0000
L19	60	(Area) CCI-65FP-045125	74.50 - 75.25	1.0000	1.0000
L19	61	(Area) CCI-65FP-045125	74.75 - 75.25	1.0000	1.0000
L19	62	(Area) CCI-65FP-045125	74.50 - 75.25	1.0000	1.0000
L20	6	3" Flexible Conduit	74.25 - 74.50	1.0000	1.0000
L20	8	HB114-1-0813U4-M5J(1-1/4)	74.25 - 74.50	1.0000	1.0000
L20	12	LDF7-50A(1-5/8)	74.25 - 74.50	1.0000	1.0000
L20	15	LDF7-50A(1-5/8)	74.25 - 74.50	1.0000	1.0000
L20	32	Safety Line 3/8	74.25 - 74.50	1.0000	1.0000
L20	56	(Area) CCI-65FP-065125	74.25 - 74.50	1.0000	1.0000
L20	59	(Area) CCI-65FP-045125	74.25 - 74.50	1.0000	1.0000
L20	60	(Area) CCI-65FP-045125	74.25 - 74.50	1.0000	1.0000
L20	62	(Area) CCI-65FP-045125	74.25 - 74.50	1.0000	1.0000
L21	6	3" Flexible Conduit	72.00 - 74.25	1.0000	1.0000
L21	8	HB114-1-0813U4-M5J(1-1/4)	72.00 - 74.25	1.0000	1.0000
L21	12	LDF7-50A(1-5/8)	72.00 - 74.25	1.0000	1.0000
L21	15	LDF7-50A(1-5/8)	72.00 - 74.25	1.0000	1.0000
L21	32	Safety Line 3/8	72.00 - 74.25	1.0000	1.0000
L21	56	(Area) CCI-65FP-065125	72.00 - 74.25	1.0000	1.0000
L21	59	(Area) CCI-65FP-045125	72.00 - 74.25	1.0000	1.0000
L21	60	(Area) CCI-65FP-045125	72.00 - 74.25	1.0000	1.0000
L21	62	(Area) CCI-65FP-045125	72.00 - 74.25	1.0000	1.0000
L22	6	3" Flexible Conduit	71.75 - 72.00	1.0000	1.0000
L22	8	HB114-1-0813U4-M5J(1-1/4)	71.75 - 72.00	1.0000	1.0000
L22	12	LDF7-50A(1-5/8)	71.75 - 72.00	1.0000	1.0000
L22	15	LDF7-50A(1-5/8)	71.75 - 72.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L22	32	Safety Line 3/8	71.75 - 72.00	1.0000	1.0000
L22	56	(Area) CCI-65FP-065125	71.75 - 72.00	1.0000	1.0000
L22	59	(Area) CCI-65FP-045125	71.75 - 72.00	1.0000	1.0000
L22	60	(Area) CCI-65FP-045125	71.75 - 72.00	1.0000	1.0000
L22	62	(Area) CCI-65FP-045125	71.75 - 72.00	1.0000	1.0000
L22	75	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L22	76	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L22	77	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L22	78	PL 1 x 5	71.75 - 72.00	1.0000	1.0000
L23	6	3" Flexible Conduit	70.50 - 71.75	1.0000	1.0000
L23	8	HB114-1-0813U4-M5J(1-1/4)	70.50 - 71.75	1.0000	1.0000
L23	12	LDF7-50A(1-5/8)	70.50 - 71.75	1.0000	1.0000
L23	15	LDF7-50A(1-5/8)	70.50 - 71.75	1.0000	1.0000
L23	32	Safety Line 3/8	70.50 - 71.75	1.0000	1.0000
L23	56	(Area) CCI-65FP-065125	70.50 - 71.75	1.0000	1.0000
L23	59	(Area) CCI-65FP-045125	70.50 - 71.75	1.0000	1.0000
L23	60	(Area) CCI-65FP-045125	70.50 - 71.75	1.0000	1.0000
L23	62	(Area) CCI-65FP-045125	70.50 - 71.75	1.0000	1.0000
L23	75	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L23	76	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L23	77	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L23	78	PL 1 x 5	70.50 - 71.75	1.0000	1.0000
L24	6	3" Flexible Conduit	70.25 - 70.50	1.0000	1.0000
L24	8	HB114-1-0813U4-M5J(1-1/4)	70.25 - 70.50	1.0000	1.0000
L24	12	LDF7-50A(1-5/8)	70.25 - 70.50	1.0000	1.0000
L24	15	LDF7-50A(1-5/8)	70.25 - 70.50	1.0000	1.0000
L24	32	Safety Line 3/8	70.25 - 70.50	1.0000	1.0000
L24	56	(Area) CCI-65FP-065125	70.25 - 70.50	1.0000	1.0000
L24	59	(Area) CCI-65FP-045125	70.25 - 70.50	1.0000	1.0000
L24	60	(Area) CCI-65FP-045125	70.25 - 70.50	1.0000	1.0000
L24	62	(Area) CCI-65FP-045125	70.25 - 70.50	1.0000	1.0000
L24	75	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L24	76	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L24	77	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L24	78	PL 1 x 5	70.25 - 70.50	1.0000	1.0000
L25	6	3" Flexible Conduit	70.00 - 70.25	1.0000	1.0000
L25	8	HB114-1-0813U4-M5J(1-1/4)	70.00 - 70.25	1.0000	1.0000
L25	12	LDF7-50A(1-5/8)	70.00 - 70.25	1.0000	1.0000
L25	15	LDF7-50A(1-5/8)	70.00 - 70.25	1.0000	1.0000
L25	32	Safety Line 3/8	70.00 - 70.25	1.0000	1.0000
L25	56	(Area) CCI-65FP-065125	70.00 - 70.25	1.0000	1.0000
L25	59	(Area) CCI-65FP-045125	70.00 - 70.25	1.0000	1.0000
L25	60	(Area) CCI-65FP-045125	70.00 - 70.25	1.0000	1.0000
L25	62	(Area) CCI-65FP-045125	70.00 - 70.25	1.0000	1.0000
L25	75	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L25	76	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L25	77	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L25	78	PL 1 x 5	70.00 - 70.25	1.0000	1.0000
L26	6	3" Flexible Conduit	69.75 - 70.00	1.0000	1.0000
L26	8	HB114-1-0813U4-M5J(1-1/4)	69.75 - 70.00	1.0000	1.0000
L26	12	LDF7-50A(1-5/8)	69.75 - 70.00	1.0000	1.0000
L26	15	LDF7-50A(1-5/8)	69.75 - 70.00	1.0000	1.0000
L26	32	Safety Line 3/8	69.75 - 70.00	1.0000	1.0000
L26	56	(Area) CCI-65FP-065125	69.75 - 70.00	1.0000	1.0000
L26	59	(Area) CCI-65FP-045125	69.75 - 70.00	1.0000	1.0000
L26	60	(Area) CCI-65FP-045125	69.75 - 70.00	1.0000	1.0000
L26	62	(Area) CCI-65FP-045125	69.75 - 70.00	1.0000	1.0000
L26	75	PL 1 x 5	69.75 - 70.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L26	76	PL 1 x 5	69.75 - 70.00	1.0000	1.0000
L26	77	PL 1 x 5	69.75 - 70.00	1.0000	1.0000
L26	78	PL 1 x 5	69.75 - 70.00	1.0000	1.0000
L27	6	3" Flexible Conduit	69.50 - 69.75	1.0000	1.0000
L27	8	HB114-1-0813U4-M5J(1-1/4)	69.50 - 69.75	1.0000	1.0000
L27	12	LDF7-50A(1-5/8)	69.50 - 69.75	1.0000	1.0000
L27	15	LDF7-50A(1-5/8)	69.50 - 69.75	1.0000	1.0000
L27	32	Safety Line 3/8	69.50 - 69.75	1.0000	1.0000
L27	56	(Area) CCI-65FP-065125	69.50 - 69.75	1.0000	1.0000
L27	59	(Area) CCI-65FP-045125	69.50 - 69.75	1.0000	1.0000
L27	60	(Area) CCI-65FP-045125	69.50 - 69.75	1.0000	1.0000
L27	62	(Area) CCI-65FP-045125	69.50 - 69.75	1.0000	1.0000
L27	75	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L27	76	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L27	77	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L27	78	PL 1 x 5	69.50 - 69.75	1.0000	1.0000
L28	6	3" Flexible Conduit	69.25 - 69.50	1.0000	1.0000
L28	8	HB114-1-0813U4-M5J(1-1/4)	69.25 - 69.50	1.0000	1.0000
L28	12	LDF7-50A(1-5/8)	69.25 - 69.50	1.0000	1.0000
L28	15	LDF7-50A(1-5/8)	69.25 - 69.50	1.0000	1.0000
L28	32	Safety Line 3/8	69.25 - 69.50	1.0000	1.0000
L28	56	(Area) CCI-65FP-065125	69.25 - 69.50	1.0000	1.0000
L28	59	(Area) CCI-65FP-045125	69.25 - 69.50	1.0000	1.0000
L28	60	(Area) CCI-65FP-045125	69.25 - 69.50	1.0000	1.0000
L28	62	(Area) CCI-65FP-045125	69.25 - 69.50	1.0000	1.0000
L28	75	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L28	76	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L28	77	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L28	78	PL 1 x 5	69.25 - 69.50	1.0000	1.0000
L29	6	3" Flexible Conduit	64.25 - 69.25	1.0000	1.0000
L29	8	HB114-1-0813U4-M5J(1-1/4)	64.25 - 69.25	1.0000	1.0000
L29	12	LDF7-50A(1-5/8)	64.25 - 69.25	1.0000	1.0000
L29	15	LDF7-50A(1-5/8)	64.25 - 69.25	1.0000	1.0000
L29	32	Safety Line 3/8	64.25 - 69.25	1.0000	1.0000
L29	53	(Area) CCI-65FP-045100	64.25 - 68.25	1.0000	1.0000
L29	54	(Area) CCI-65FP-045100	64.25 - 68.25	1.0000	1.0000
L29	56	(Area) CCI-65FP-065125	64.25 - 69.25	1.0000	1.0000
L29	57	(Area) CCI-65FP-045100	64.25 - 68.25	1.0000	1.0000
L29	59	(Area) CCI-65FP-045125	68.25 - 69.25	1.0000	1.0000
L29	60	(Area) CCI-65FP-045125	68.25 - 69.25	1.0000	1.0000
L29	62	(Area) CCI-65FP-045125	68.25 - 69.25	1.0000	1.0000
L29	75	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L29	76	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L29	77	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L29	78	PL 1 x 5	64.25 - 69.25	1.0000	1.0000
L30	6	3" Flexible Conduit	59.25 - 64.25	1.0000	1.0000
L30	8	HB114-1-0813U4-M5J(1-1/4)	59.25 - 64.25	1.0000	1.0000
L30	12	LDF7-50A(1-5/8)	59.25 - 64.25	1.0000	1.0000
L30	15	LDF7-50A(1-5/8)	59.25 - 64.25	1.0000	1.0000
L30	32	Safety Line 3/8	59.25 - 64.25	1.0000	1.0000
L30	53	(Area) CCI-65FP-045100	59.25 - 64.25	1.0000	1.0000
L30	54	(Area) CCI-65FP-045100	59.25 - 64.25	1.0000	1.0000
L30	56	(Area) CCI-65FP-065125	59.25 - 64.25	1.0000	1.0000
L30	57	(Area) CCI-65FP-045100	59.25 - 64.25	1.0000	1.0000
L30	75	PL 1 x 5	59.25 - 64.25	1.0000	1.0000
L30	76	PL 1 x 5	59.25 - 64.25	1.0000	1.0000
L30	77	PL 1 x 5	59.25 - 64.25	1.0000	1.0000
L30	78	PL 1 x 5	59.25 - 64.25	1.0000	1.0000

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Client	Crown Castle	Designed by	tmlester

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L31	6	3" Flexible Conduit	56.00 - 59.25	1.0000	1.0000
L31	8	HB114-1-0813U4-M5J(1-1/4)	56.00 - 59.25	1.0000	1.0000
L31	12	LDF7-50A(1-5/8)	56.00 - 59.25	1.0000	1.0000
L31	15	LDF7-50A(1-5/8)	56.00 - 59.25	1.0000	1.0000
L31	32	Safety Line 3/8	56.00 - 59.25	1.0000	1.0000
L31	46	(Area) CCI-65FP-045100	56.00 - 57.25	1.0000	1.0000
L31	48	(Area) CCI-65FP-045100	56.00 - 57.25	1.0000	1.0000
L31	51	(Area) CCI-65FP-045100	56.00 - 57.25	1.0000	1.0000
L31	53	(Area) CCI-65FP-045100	57.25 - 59.25	1.0000	1.0000
L31	54	(Area) CCI-65FP-045100	57.25 - 59.25	1.0000	1.0000
L31	56	(Area) CCI-65FP-065125	56.00 - 59.25	1.0000	1.0000
L31	57	(Area) CCI-65FP-045100	57.25 - 59.25	1.0000	1.0000
L31	75	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L31	76	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L31	77	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L31	78	PL 1 x 5	56.00 - 59.25	1.0000	1.0000
L32	6	3" Flexible Conduit	55.75 - 56.00	1.0000	1.0000
L32	8	HB114-1-0813U4-M5J(1-1/4)	55.75 - 56.00	1.0000	1.0000
L32	12	LDF7-50A(1-5/8)	55.75 - 56.00	1.0000	1.0000
L32	15	LDF7-50A(1-5/8)	55.75 - 56.00	1.0000	1.0000
L32	32	Safety Line 3/8	55.75 - 56.00	1.0000	1.0000
L32	45	(Area) CCI-65FP-045100	55.75 - 56.00	1.0000	1.0000
L32	47	(Area) CCI-65FP-045100	55.75 - 56.00	1.0000	1.0000
L32	50	(Area) CCI-65FP-045100	55.75 - 56.00	1.0000	1.0000
L32	55	(Area) CCI-65FP-065125	55.75 - 56.00	1.0000	1.0000
L32	75	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	76	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	77	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	78	PL 1 x 5	55.75 - 56.00	1.0000	1.0000
L32	85	C6x10.5	55.75 - 56.00	1.0000	1.0000
L32	86	C6x10.5	55.75 - 56.00	1.0000	1.0000
L32	87	C6x10.5	55.75 - 56.00	1.0000	1.0000
L32	88	C6x10.5	55.75 - 56.00	1.0000	1.0000
L33	6	3" Flexible Conduit	55.50 - 55.75	1.0000	1.0000
L33	8	HB114-1-0813U4-M5J(1-1/4)	55.50 - 55.75	1.0000	1.0000
L33	12	LDF7-50A(1-5/8)	55.50 - 55.75	1.0000	1.0000
L33	15	LDF7-50A(1-5/8)	55.50 - 55.75	1.0000	1.0000
L33	32	Safety Line 3/8	55.50 - 55.75	1.0000	1.0000
L33	45	(Area) CCI-65FP-045100	55.50 - 55.75	1.0000	1.0000
L33	47	(Area) CCI-65FP-045100	55.50 - 55.75	1.0000	1.0000
L33	50	(Area) CCI-65FP-045100	55.50 - 55.75	1.0000	1.0000
L33	55	(Area) CCI-65FP-065125	55.50 - 55.75	1.0000	1.0000
L33	75	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	76	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	77	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	78	PL 1 x 5	55.50 - 55.75	1.0000	1.0000
L33	85	C6x10.5	55.50 - 55.75	1.0000	1.0000
L33	86	C6x10.5	55.50 - 55.75	1.0000	1.0000
L33	87	C6x10.5	55.50 - 55.75	1.0000	1.0000
L33	88	C6x10.5	55.50 - 55.75	1.0000	1.0000
L34	6	3" Flexible Conduit	55.25 - 55.50	1.0000	1.0000
L34	8	HB114-1-0813U4-M5J(1-1/4)	55.25 - 55.50	1.0000	1.0000
L34	12	LDF7-50A(1-5/8)	55.25 - 55.50	1.0000	1.0000
L34	15	LDF7-50A(1-5/8)	55.25 - 55.50	1.0000	1.0000
L34	32	Safety Line 3/8	55.25 - 55.50	1.0000	1.0000
L34	45	(Area) CCI-65FP-045100	55.25 - 55.50	1.0000	1.0000
L34	47	(Area) CCI-65FP-045100	55.25 - 55.50	1.0000	1.0000
L34	50	(Area) CCI-65FP-045100	55.25 - 55.50	1.0000	1.0000

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Client	Crown Castle	Designed by	tmlester

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L34	55	(Area) CCI-65FP-065125	55.25 - 55.50	1.0000	1.0000
L34	75	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	76	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	77	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	78	PL 1 x 5	55.25 - 55.50	1.0000	1.0000
L34	85	C6x10.5	55.25 - 55.50	1.0000	1.0000
L34	86	C6x10.5	55.25 - 55.50	1.0000	1.0000
L34	87	C6x10.5	55.25 - 55.50	1.0000	1.0000
L34	88	C6x10.5	55.25 - 55.50	1.0000	1.0000
L35	6	3" Flexible Conduit	54.00 - 55.25	1.0000	1.0000
L35	8	HB114-1-0813U4-M5J(1-1/4)	54.00 - 55.25	1.0000	1.0000
L35	12	LDF7-50A(1-5/8)	54.00 - 55.25	1.0000	1.0000
L35	15	LDF7-50A(1-5/8)	54.00 - 55.25	1.0000	1.0000
L35	32	Safety Line 3/8	54.00 - 55.25	1.0000	1.0000
L35	45	(Area) CCI-65FP-045100	54.00 - 55.25	1.0000	1.0000
L35	47	(Area) CCI-65FP-045100	54.00 - 55.25	1.0000	1.0000
L35	50	(Area) CCI-65FP-045100	54.00 - 55.25	1.0000	1.0000
L35	55	(Area) CCI-65FP-065125	54.00 - 55.25	1.0000	1.0000
L35	75	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	76	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	77	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	78	PL 1 x 5	54.00 - 55.25	1.0000	1.0000
L35	85	C6x10.5	54.00 - 55.25	1.0000	1.0000
L35	86	C6x10.5	54.00 - 55.25	1.0000	1.0000
L35	87	C6x10.5	54.00 - 55.25	1.0000	1.0000
L35	88	C6x10.5	54.00 - 55.25	1.0000	1.0000
L36	6	3" Flexible Conduit	53.75 - 54.00	1.0000	1.0000
L36	8	HB114-1-0813U4-M5J(1-1/4)	53.75 - 54.00	1.0000	1.0000
L36	12	LDF7-50A(1-5/8)	53.75 - 54.00	1.0000	1.0000
L36	15	LDF7-50A(1-5/8)	53.75 - 54.00	1.0000	1.0000
L36	32	Safety Line 3/8	53.75 - 54.00	1.0000	1.0000
L36	45	(Area) CCI-65FP-045100	53.75 - 54.00	1.0000	1.0000
L36	47	(Area) CCI-65FP-045100	53.75 - 54.00	1.0000	1.0000
L36	50	(Area) CCI-65FP-045100	53.75 - 54.00	1.0000	1.0000
L36	55	(Area) CCI-65FP-065125	53.75 - 54.00	1.0000	1.0000
L36	75	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	76	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	77	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	78	PL 1 x 5	53.75 - 54.00	1.0000	1.0000
L36	85	C6x10.5	53.75 - 54.00	1.0000	1.0000
L36	86	C6x10.5	53.75 - 54.00	1.0000	1.0000
L36	87	C6x10.5	53.75 - 54.00	1.0000	1.0000
L36	88	C6x10.5	53.75 - 54.00	1.0000	1.0000
L37	6	3" Flexible Conduit	53.50 - 53.75	1.0000	1.0000
L37	8	HB114-1-0813U4-M5J(1-1/4)	53.50 - 53.75	1.0000	1.0000
L37	12	LDF7-50A(1-5/8)	53.50 - 53.75	1.0000	1.0000
L37	15	LDF7-50A(1-5/8)	53.50 - 53.75	1.0000	1.0000
L37	32	Safety Line 3/8	53.50 - 53.75	1.0000	1.0000
L37	45	(Area) CCI-65FP-045100	53.50 - 53.75	1.0000	1.0000
L37	47	(Area) CCI-65FP-045100	53.50 - 53.75	1.0000	1.0000
L37	50	(Area) CCI-65FP-045100	53.50 - 53.75	1.0000	1.0000
L37	55	(Area) CCI-65FP-065125	53.50 - 53.75	1.0000	1.0000
L37	75	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	76	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	77	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	78	PL 1 x 5	53.50 - 53.75	1.0000	1.0000
L37	85	C6x10.5	53.50 - 53.75	1.0000	1.0000
L37	86	C6x10.5	53.50 - 53.75	1.0000	1.0000
L37	87	C6x10.5	53.50 - 53.75	1.0000	1.0000
L37	88	C6x10.5	53.50 - 53.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L37	88	C6x10.5	53.50 - 53.75	1.0000	1.0000
L38	6	3" Flexible Conduit	53.25 - 53.50	1.0000	1.0000
L38	8	HB114-1-0813U4-M5J(1-1/4)	53.25 - 53.50	1.0000	1.0000
L38	12	LDF7-50A(1-5/8)	53.25 - 53.50	1.0000	1.0000
L38	15	LDF7-50A(1-5/8)	53.25 - 53.50	1.0000	1.0000
L38	32	Safety Line 3/8	53.25 - 53.50	1.0000	1.0000
L38	45	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
L38	47	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
L38	50	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
L38	55	(Area) CCI-65FP-065125	53.25 - 53.50	1.0000	1.0000
L38	75	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	76	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	77	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	78	PL 1 x 5	53.25 - 53.50	1.0000	1.0000
L38	85	C6x10.5	53.25 - 53.50	1.0000	1.0000
L38	86	C6x10.5	53.25 - 53.50	1.0000	1.0000
L38	87	C6x10.5	53.25 - 53.50	1.0000	1.0000
L38	88	C6x10.5	53.25 - 53.50	1.0000	1.0000
L39	6	3" Flexible Conduit	53.00 - 53.25	1.0000	1.0000
L39	8	HB114-1-0813U4-M5J(1-1/4)	53.00 - 53.25	1.0000	1.0000
L39	12	LDF7-50A(1-5/8)	53.00 - 53.25	1.0000	1.0000
L39	15	LDF7-50A(1-5/8)	53.00 - 53.25	1.0000	1.0000
L39	32	Safety Line 3/8	53.00 - 53.25	1.0000	1.0000
L39	45	(Area) CCI-65FP-045100	53.00 - 53.25	1.0000	1.0000
L39	47	(Area) CCI-65FP-045100	53.00 - 53.25	1.0000	1.0000
L39	50	(Area) CCI-65FP-045100	53.00 - 53.25	1.0000	1.0000
L39	55	(Area) CCI-65FP-065125	53.00 - 53.25	1.0000	1.0000
L39	75	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	76	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	77	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	78	PL 1 x 5	53.00 - 53.25	1.0000	1.0000
L39	85	C6x10.5	53.00 - 53.25	1.0000	1.0000
L39	86	C6x10.5	53.00 - 53.25	1.0000	1.0000
L39	87	C6x10.5	53.00 - 53.25	1.0000	1.0000
L39	88	C6x10.5	53.00 - 53.25	1.0000	1.0000
L40	6	3" Flexible Conduit	48.00 - 53.00	1.0000	1.0000
L40	8	HB114-1-0813U4-M5J(1-1/4)	48.00 - 53.00	1.0000	1.0000
L40	12	LDF7-50A(1-5/8)	48.00 - 53.00	1.0000	1.0000
L40	15	LDF7-50A(1-5/8)	48.00 - 53.00	1.0000	1.0000
L40	32	Safety Line 3/8	48.00 - 53.00	1.0000	1.0000
L40	45	(Area) CCI-65FP-045100	48.00 - 53.00	1.0000	1.0000
L40	47	(Area) CCI-65FP-045100	48.00 - 53.00	1.0000	1.0000
L40	49	(Area) CCI-65FP-045100	48.00 - 50.50	1.0000	1.0000
L40	50	(Area) CCI-65FP-045100	48.00 - 53.00	1.0000	1.0000
L40	55	(Area) CCI-65FP-065125	50.50 - 53.00	1.0000	1.0000
L40	75	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	76	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	77	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	78	PL 1 x 5	48.00 - 53.00	1.0000	1.0000
L40	85	C6x10.5	48.00 - 53.00	1.0000	1.0000
L40	86	C6x10.5	48.00 - 53.00	1.0000	1.0000
L40	87	C6x10.5	48.00 - 53.00	1.0000	1.0000
L40	88	C6x10.5	48.00 - 53.00	1.0000	1.0000
L41	6	3" Flexible Conduit	39.75 - 48.00	1.0000	1.0000
L41	8	HB114-1-0813U4-M5J(1-1/4)	39.75 - 48.00	1.0000	1.0000
L41	12	LDF7-50A(1-5/8)	39.75 - 48.00	1.0000	1.0000
L41	15	LDF7-50A(1-5/8)	39.75 - 48.00	1.0000	1.0000
L41	32	Safety Line 3/8	39.75 - 48.00	1.0000	1.0000

tnxTower**Tower Engineering
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Phone: (919) 661-6351
FAX: (919) 661-6350**Job**

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Project

TEP No. 25570.206199

Date

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Client

Crown Castle

Designed by

tmlester

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L41	40	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	41	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	42	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	43	(Area) Aero MP3-03	39.75 - 45.50	1.0000	1.0000
L41	45	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	47	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	49	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	50	(Area) CCI-65FP-045100	45.50 - 48.00	1.0000	1.0000
L41	75	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	76	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	77	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	78	PL 1 x 5	39.75 - 48.00	1.0000	1.0000
L41	85	C6x10.5	39.75 - 48.00	1.0000	1.0000
L41	86	C6x10.5	39.75 - 48.00	1.0000	1.0000
L41	87	C6x10.5	39.75 - 48.00	1.0000	1.0000
L41	88	C6x10.5	39.75 - 48.00	1.0000	1.0000
L43	6	3" Flexible Conduit	34.75 - 38.75	1.0000	1.0000
L43	8	HB114-1-0813U4-M5J(1-1/4)	34.75 - 38.75	1.0000	1.0000
L43	12	LDF7-50A(1-5/8)	34.75 - 38.75	1.0000	1.0000
L43	15	LDF7-50A(1-5/8)	34.75 - 38.75	1.0000	1.0000
L43	32	Safety Line 3/8	34.75 - 38.75	1.0000	1.0000
L43	40	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	41	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	42	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	43	(Area) Aero MP3-03	34.75 - 38.75	1.0000	1.0000
L43	75	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	76	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	77	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	78	PL 1 x 5	34.75 - 38.75	1.0000	1.0000
L43	85	C6x10.5	34.75 - 38.75	1.0000	1.0000
L43	86	C6x10.5	34.75 - 38.75	1.0000	1.0000
L43	87	C6x10.5	34.75 - 38.75	1.0000	1.0000
L43	88	C6x10.5	34.75 - 38.75	1.0000	1.0000
L44	6	3" Flexible Conduit	34.50 - 34.75	1.0000	1.0000
L44	8	HB114-1-0813U4-M5J(1-1/4)	34.50 - 34.75	1.0000	1.0000
L44	12	LDF7-50A(1-5/8)	34.50 - 34.75	1.0000	1.0000
L44	15	LDF7-50A(1-5/8)	34.50 - 34.75	1.0000	1.0000
L44	32	Safety Line 3/8	34.50 - 34.75	1.0000	1.0000
L44	40	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	41	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	42	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	43	(Area) Aero MP3-03	34.50 - 34.75	1.0000	1.0000
L44	75	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	76	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	77	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	78	PL 1 x 5	34.50 - 34.75	1.0000	1.0000
L44	85	C6x10.5	34.50 - 34.75	1.0000	1.0000
L44	86	C6x10.5	34.50 - 34.75	1.0000	1.0000
L44	87	C6x10.5	34.50 - 34.75	1.0000	1.0000
L44	88	C6x10.5	34.50 - 34.75	1.0000	1.0000
L45	6	3" Flexible Conduit	33.75 - 34.50	1.0000	1.0000
L45	8	HB114-1-0813U4-M5J(1-1/4)	33.75 - 34.50	1.0000	1.0000
L45	12	LDF7-50A(1-5/8)	33.75 - 34.50	1.0000	1.0000
L45	15	LDF7-50A(1-5/8)	33.75 - 34.50	1.0000	1.0000
L45	32	Safety Line 3/8	33.75 - 34.50	1.0000	1.0000
L45	40	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000
L45	41	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000
L45	42	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000
L45	43	(Area) Aero MP3-03	33.75 - 34.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	75	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	76	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	77	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	78	PL 1 x 5	33.75 - 34.50	1.0000	1.0000
L45	85	C6x10.5	33.75 - 34.50	1.0000	1.0000
L45	86	C6x10.5	33.75 - 34.50	1.0000	1.0000
L45	87	C6x10.5	33.75 - 34.50	1.0000	1.0000
L45	88	C6x10.5	33.75 - 34.50	1.0000	1.0000
L46	6	3" Flexible Conduit	33.50 - 33.75	1.0000	1.0000
L46	8	HB114-1-0813U4-M5J(1-1/4)	33.50 - 33.75	1.0000	1.0000
L46	12	LDF7-50A(1-5/8)	33.50 - 33.75	1.0000	1.0000
L46	15	LDF7-50A(1-5/8)	33.50 - 33.75	1.0000	1.0000
L46	32	Safety Line 3/8	33.50 - 33.75	1.0000	1.0000
L46	40	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	41	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	42	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	43	(Area) Aero MP3-03	33.50 - 33.75	1.0000	1.0000
L46	75	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	76	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	77	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	78	PL 1 x 5	33.50 - 33.75	1.0000	1.0000
L46	85	C6x10.5	33.50 - 33.75	1.0000	1.0000
L46	86	C6x10.5	33.50 - 33.75	1.0000	1.0000
L46	87	C6x10.5	33.50 - 33.75	1.0000	1.0000
L46	88	C6x10.5	33.50 - 33.75	1.0000	1.0000
L47	6	3" Flexible Conduit	28.50 - 33.50	1.0000	1.0000
L47	8	HB114-1-0813U4-M5J(1-1/4)	28.50 - 33.50	1.0000	1.0000
L47	12	LDF7-50A(1-5/8)	28.50 - 33.50	1.0000	1.0000
L47	15	LDF7-50A(1-5/8)	28.50 - 33.50	1.0000	1.0000
L47	32	Safety Line 3/8	28.50 - 33.50	1.0000	1.0000
L47	40	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	41	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	42	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	43	(Area) Aero MP3-03	28.50 - 33.50	1.0000	1.0000
L47	75	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	76	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	77	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	78	PL 1 x 5	28.50 - 33.50	1.0000	1.0000
L47	85	C6x10.5	28.50 - 33.50	1.0000	1.0000
L47	86	C6x10.5	28.50 - 33.50	1.0000	1.0000
L47	87	C6x10.5	28.50 - 33.50	1.0000	1.0000
L47	88	C6x10.5	28.50 - 33.50	1.0000	1.0000
L48	6	3" Flexible Conduit	24.00 - 28.50	1.0000	1.0000
L48	8	HB114-1-0813U4-M5J(1-1/4)	24.00 - 28.50	1.0000	1.0000
L48	12	LDF7-50A(1-5/8)	24.00 - 28.50	1.0000	1.0000
L48	15	LDF7-50A(1-5/8)	24.00 - 28.50	1.0000	1.0000
L48	32	Safety Line 3/8	24.00 - 28.50	1.0000	1.0000
L48	35	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	36	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	37	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	38	(Area) Aero MP3-04	24.00 - 25.50	1.0000	1.0000
L48	40	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	41	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	42	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	43	(Area) Aero MP3-03	25.50 - 28.50	1.0000	1.0000
L48	75	PL 1 x 5	24.00 - 28.50	1.0000	1.0000
L48	76	PL 1 x 5	24.00 - 28.50	1.0000	1.0000
L48	77	PL 1 x 5	24.00 - 28.50	1.0000	1.0000
L48	78	PL 1 x 5	24.00 - 28.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L48	85	C6x10.5	24.00 - 28.50	1.0000	1.0000
L48	86	C6x10.5	24.00 - 28.50	1.0000	1.0000
L48	87	C6x10.5	24.00 - 28.50	1.0000	1.0000
L48	88	C6x10.5	24.00 - 28.50	1.0000	1.0000
L49	6	3" Flexible Conduit	23.75 - 24.00	1.0000	1.0000
L49	8	HB114-1-0813U4-M5J(1-1/4)	23.75 - 24.00	1.0000	1.0000
L49	12	LDF7-50A(1-5/8)	23.75 - 24.00	1.0000	1.0000
L49	15	LDF7-50A(1-5/8)	23.75 - 24.00	1.0000	1.0000
L49	32	Safety Line 3/8	23.75 - 24.00	1.0000	1.0000
L49	35	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	36	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	37	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	38	(Area) Aero MP3-04	23.75 - 24.00	1.0000	1.0000
L49	75	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	76	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	77	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	78	PL 1 x 5	23.75 - 24.00	1.0000	1.0000
L49	85	C6x10.5	23.75 - 24.00	1.0000	1.0000
L49	86	C6x10.5	23.75 - 24.00	1.0000	1.0000
L49	87	C6x10.5	23.75 - 24.00	1.0000	1.0000
L49	88	C6x10.5	23.75 - 24.00	1.0000	1.0000
L50	6	3" Flexible Conduit	18.75 - 23.75	1.0000	1.0000
L50	8	HB114-1-0813U4-M5J(1-1/4)	18.75 - 23.75	1.0000	1.0000
L50	12	LDF7-50A(1-5/8)	18.75 - 23.75	1.0000	1.0000
L50	15	LDF7-50A(1-5/8)	18.75 - 23.75	1.0000	1.0000
L50	32	Safety Line 3/8	18.75 - 23.75	1.0000	1.0000
L50	35	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	36	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	37	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	38	(Area) Aero MP3-04	18.75 - 23.75	1.0000	1.0000
L50	75	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	76	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	77	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	78	PL 1 x 5	18.75 - 23.75	1.0000	1.0000
L50	85	C6x10.5	18.75 - 23.75	1.0000	1.0000
L50	86	C6x10.5	18.75 - 23.75	1.0000	1.0000
L50	87	C6x10.5	18.75 - 23.75	1.0000	1.0000
L50	88	C6x10.5	18.75 - 23.75	1.0000	1.0000
L51	6	3" Flexible Conduit	14.25 - 18.75	1.0000	1.0000
L51	8	HB114-1-0813U4-M5J(1-1/4)	14.25 - 18.75	1.0000	1.0000
L51	12	LDF7-50A(1-5/8)	14.25 - 18.75	1.0000	1.0000
L51	15	LDF7-50A(1-5/8)	14.25 - 18.75	1.0000	1.0000
L51	32	Safety Line 3/8	14.25 - 18.75	1.0000	1.0000
L51	35	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	36	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	37	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	38	(Area) Aero MP3-04	14.25 - 18.75	1.0000	1.0000
L51	75	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	76	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	77	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	78	PL 1 x 5	14.25 - 18.75	1.0000	1.0000
L51	80	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	81	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	82	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	83	(Area) Aero MP3-03	14.25 - 16.50	1.0000	1.0000
L51	85	C6x10.5	14.25 - 18.75	1.0000	1.0000
L51	86	C6x10.5	14.25 - 18.75	1.0000	1.0000
L51	87	C6x10.5	14.25 - 18.75	1.0000	1.0000
L51	88	C6x10.5	14.25 - 18.75	1.0000	1.0000

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
L52	6	3" Flexible Conduit	14.00 - 14.25	1.0000	1.0000
L52	8	HB114-1-0813U4-M5J(1-1/4)	14.00 - 14.25	1.0000	1.0000
L52	12	LDF7-50A(1-5/8)	14.00 - 14.25	1.0000	1.0000
L52	15	LDF7-50A(1-5/8)	14.00 - 14.25	1.0000	1.0000
L52	32	Safety Line 3/8	14.00 - 14.25	1.0000	1.0000
L52	35	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	36	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	37	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	38	(Area) Aero MP3-04	14.00 - 14.25	1.0000	1.0000
L52	75	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	76	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	77	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	78	PL 1 x 5	14.00 - 14.25	1.0000	1.0000
L52	80	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	81	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	82	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	83	(Area) Aero MP3-03	14.00 - 14.25	1.0000	1.0000
L52	85	C6x10.5	14.00 - 14.25	1.0000	1.0000
L52	86	C6x10.5	14.00 - 14.25	1.0000	1.0000
L52	87	C6x10.5	14.00 - 14.25	1.0000	1.0000
L52	88	C6x10.5	14.00 - 14.25	1.0000	1.0000
L53	6	3" Flexible Conduit	9.00 - 14.00	1.0000	1.0000
L53	8	HB114-1-0813U4-M5J(1-1/4)	9.00 - 14.00	1.0000	1.0000
L53	12	LDF7-50A(1-5/8)	9.00 - 14.00	1.0000	1.0000
L53	15	LDF7-50A(1-5/8)	9.00 - 14.00	1.0000	1.0000
L53	32	Safety Line 3/8	9.00 - 14.00	1.0000	1.0000
L53	35	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	36	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	37	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	38	(Area) Aero MP3-04	9.00 - 14.00	1.0000	1.0000
L53	75	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	76	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	77	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	78	PL 1 x 5	9.00 - 14.00	1.0000	1.0000
L53	80	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	81	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	82	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	83	(Area) Aero MP3-03	9.00 - 14.00	1.0000	1.0000
L53	85	C6x10.5	9.00 - 14.00	1.0000	1.0000
L53	86	C6x10.5	9.00 - 14.00	1.0000	1.0000
L53	87	C6x10.5	9.00 - 14.00	1.0000	1.0000
L53	88	C6x10.5	9.00 - 14.00	1.0000	1.0000
L54	6	3" Flexible Conduit	4.75 - 9.00	1.0000	1.0000
L54	8	HB114-1-0813U4-M5J(1-1/4)	4.75 - 9.00	1.0000	1.0000
L54	12	LDF7-50A(1-5/8)	4.75 - 9.00	1.0000	1.0000
L54	15	LDF7-50A(1-5/8)	4.75 - 9.00	1.0000	1.0000
L54	32	Safety Line 3/8	4.75 - 9.00	1.0000	1.0000
L54	35	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	36	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	37	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	38	(Area) Aero MP3-04	4.75 - 9.00	1.0000	1.0000
L54	75	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	76	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	77	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	78	PL 1 x 5	4.75 - 9.00	1.0000	1.0000
L54	80	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000
L54	81	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000
L54	82	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000
L54	83	(Area) Aero MP3-03	4.75 - 9.00	1.0000	1.0000

<p>tnxTower</p> <p><i>Tower Engineering Professionals, Inc.</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job 528 Wheelers Farm Rd (BU 876320)	Page 30 of 58
	Project TEP No. 25570.206199	Date 11:31:04 01/15/19
	Client Crown Castle	Designed by tmlester

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L54	85	C6x10.5	4.75 - 9.00	1.0000	1.0000
L54	86	C6x10.5	4.75 - 9.00	1.0000	1.0000
L54	87	C6x10.5	4.75 - 9.00	1.0000	1.0000
L54	88	C6x10.5	4.75 - 9.00	1.0000	1.0000
L55	6	3" Flexible Conduit	4.50 - 4.75	1.0000	1.0000
L55	8	HB114-1-0813U4-M5J(1-1/4)	4.50 - 4.75	1.0000	1.0000
L55	12	LDF7-50A(1-5/8)	4.50 - 4.75	1.0000	1.0000
L55	15	LDF7-50A(1-5/8)	4.50 - 4.75	1.0000	1.0000
L55	32	Safety Line 3/8	4.50 - 4.75	1.0000	1.0000
L55	35	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	36	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	37	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	38	(Area) Aero MP3-04	4.50 - 4.75	1.0000	1.0000
L55	75	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	76	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	77	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	78	PL 1 x 5	4.50 - 4.75	1.0000	1.0000
L55	80	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	81	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	82	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	83	(Area) Aero MP3-03	4.50 - 4.75	1.0000	1.0000
L55	85	C6x10.5	4.50 - 4.75	1.0000	1.0000
L55	86	C6x10.5	4.50 - 4.75	1.0000	1.0000
L55	87	C6x10.5	4.50 - 4.75	1.0000	1.0000
L55	88	C6x10.5	4.50 - 4.75	1.0000	1.0000
L56	6	3" Flexible Conduit	0.00 - 4.50	1.0000	1.0000
L56	8	HB114-1-0813U4-M5J(1-1/4)	0.00 - 4.50	1.0000	1.0000
L56	12	LDF7-50A(1-5/8)	0.00 - 4.50	1.0000	1.0000
L56	15	LDF7-50A(1-5/8)	0.00 - 4.50	1.0000	1.0000
L56	32	Safety Line 3/8	0.00 - 4.50	1.0000	1.0000
L56	35	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	36	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	37	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	38	(Area) Aero MP3-04	0.00 - 4.50	1.0000	1.0000
L56	75	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	76	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	77	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	78	PL 1 x 5	2.50 - 4.50	1.0000	1.0000
L56	80	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	81	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	82	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	83	(Area) Aero MP3-03	0.00 - 4.50	1.0000	1.0000
L56	85	C6x10.5	0.00 - 4.50	1.0000	1.0000
L56	86	C6x10.5	0.00 - 4.50	1.0000	1.0000
L56	87	C6x10.5	0.00 - 4.50	1.0000	1.0000
L56	88	C6x10.5	0.00 - 4.50	1.0000	1.0000

Discrete Tower Loads

tnxTower Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job		528 Wheelers Farm Rd (BU 876320)		Page		31 of 58	
	Project		TEP No. 25570.206199		Date		11:31:04 01/15/19	
	Client		Crown Castle		Designed by		tmlester	

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

Pipe 6" x 10'	C	From Leg	0.00	0.00	0.00	120.000	No Ice 3.232	3.232	0.19
			0.00				1/2" Ice 6.050	6.050	0.23
			5.00				1" Ice 6.665	6.665	0.28
							2" Ice 7.922	7.922	0.40
122									
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Centroid-Le g	4.000	-6.00	30.00	122.000	No Ice 6.580	4.959	0.08
			-1.00				1/2" Ice 7.031	5.754	0.13
							1" Ice 7.473	6.472	0.19
							2" Ice 8.385	7.941	0.34
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Centroid-Le g	4.000	-6.00	10.00	122.000	No Ice 6.580	4.959	0.08
			-1.00				1/2" Ice 7.031	5.754	0.13
							1" Ice 7.473	6.472	0.19
							2" Ice 8.385	7.941	0.34
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Centroid-Le g	4.000	2.00	30.00	122.000	No Ice 6.580	4.959	0.08
			-1.00				1/2" Ice 7.031	5.754	0.13
							1" Ice 7.473	6.472	0.19
							2" Ice 8.385	7.941	0.34
APXVSPP18-C-A20 w/ Mount Pipe	A	From Centroid-Le g	4.000	-2.00	30.00	122.000	No Ice 8.262	6.946	0.08
			-1.00				1/2" Ice 8.822	8.127	0.15
							1" Ice 9.346	9.021	0.23
							2" Ice 10.418	10.844	0.41
APXVSPP18-C-A20 w/ Mount Pipe	B	From Centroid-Le g	4.000	-2.00	10.00	122.000	No Ice 8.262	6.946	0.08
			-1.00				1/2" Ice 8.822	8.127	0.15
							1" Ice 9.346	9.021	0.23
							2" Ice 10.418	10.844	0.41
APXVSPP18-C-A20 w/ Mount Pipe	C	From Centroid-Le g	4.000	-2.00	30.00	122.000	No Ice 8.262	6.946	0.08
			-1.00				1/2" Ice 8.822	8.127	0.15
							1" Ice 9.346	9.021	0.23
							2" Ice 10.418	10.844	0.41
LLPX310R w/ Mount Pipe	A	From Centroid-Le g	4.000	0.00	30.00	122.000	No Ice 4.455	2.874	0.04
			0.00				1/2" Ice 4.787	3.398	0.08
							1" Ice 5.129	3.937	0.12
							2" Ice 5.837	5.048	0.23
LLPX310R w/ Mount Pipe	B	From Centroid-Le g	4.000	0.00	30.00	122.000	No Ice 4.455	2.874	0.04
			0.00				1/2" Ice 4.787	3.398	0.08
							1" Ice 5.129	3.937	0.12
							2" Ice 5.837	5.048	0.23
LLPX310R w/ Mount Pipe	C	From Centroid-Le g	4.000	0.00	30.00	122.000	No Ice 4.455	2.874	0.04
			0.00				1/2" Ice 4.787	3.398	0.08
							1" Ice 5.129	3.937	0.12
							2" Ice 5.837	5.048	0.23
MT-485025	C	From Centroid-Le g	4.000	-6.00	30.00	122.000	No Ice 2.075	0.236	0.01
			1.00				1/2" Ice 2.269	0.333	0.01
							1" Ice 2.471	0.451	0.03
							2" Ice 2.902	0.712	0.06
(3) ACU-A20-N	A	From Centroid-Le g	4.000	-2.00	30.00	122.000	No Ice 0.067	0.117	0.00
			-2.00				1/2" Ice 0.104	0.162	0.00
							1" Ice 0.148	0.215	0.00
							2" Ice 0.259	0.343	0.01
(3) ACU-A20-N	B	From Centroid-Le g	4.000	-2.00	10.00	122.000	No Ice 0.067	0.117	0.00
			-2.00				1/2" Ice 0.104	0.162	0.00
							1" Ice 0.148	0.215	0.00
							2" Ice 0.259	0.343	0.01
(3) ACU-A20-N	C	From Centroid-Le g	4.000	-2.00	30.00	122.000	No Ice 0.067	0.117	0.00
			-2.00				1/2" Ice 0.104	0.162	0.00
							1" Ice 0.148	0.215	0.00

tnxTower Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	32 of 58
	Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
	Client	Crown Castle	Designed by	tmlster

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight
			Horz	Vert					
PCS 1900MHz 4x45W-65MHz	A	From Centroid-Le g	4.000	30.00	122.000	2" Ice	0.259	0.343	0.01
			-2.00			No Ice	2.322	2.238	0.06
			-1.00			1/2" Ice	2.527	2.441	0.08
						1" Ice	2.739	2.651	0.11
						2" Ice	3.185	3.093	0.17
PCS 1900MHz 4x45W-65MHz	B	From Centroid-Le g	4.000	10.00	122.000	No Ice	2.322	2.238	0.06
			-2.00			1/2" Ice	2.527	2.441	0.08
			-2.00			1" Ice	2.739	2.651	0.11
						2" Ice	3.185	3.093	0.17
						No Ice	2.322	2.238	0.06
PCS 1900MHz 4x45W-65MHz	C	From Centroid-Le g	4.000	30.00	122.000	1/2" Ice	2.527	2.441	0.08
			-2.00			1" Ice	2.739	2.651	0.11
			-1.00			2" Ice	3.185	3.093	0.17
						No Ice	2.322	2.238	0.06
						1/2" Ice	2.527	2.441	0.08
800MHZ RRH	A	From Centroid-Le g	4.000	30.00	122.000	1" Ice	2.739	2.651	0.11
			-2.00			2" Ice	3.185	3.093	0.17
			-2.00			No Ice	2.134	1.773	0.05
						1/2" Ice	2.320	1.946	0.07
						1" Ice	2.512	2.127	0.10
800MHZ RRH	B	From Centroid-Le g	4.000	10.00	122.000	2" Ice	2.920	2.510	0.16
			-2.00			No Ice	2.134	1.773	0.05
			-1.00			1/2" Ice	2.320	1.946	0.07
						1" Ice	2.512	2.127	0.10
						2" Ice	2.920	2.510	0.16
800MHZ RRH	C	From Centroid-Le g	4.000	30.00	122.000	No Ice	2.134	1.773	0.05
			-2.00			1/2" Ice	2.320	1.946	0.07
			-2.00			1" Ice	2.512	2.127	0.10
						2" Ice	2.920	2.510	0.16
						No Ice	0.660	0.321	0.01
800 EXTERNAL NOTCH FILTER	A	From Centroid-Le g	4.000	30.00	122.000	1/2" Ice	0.763	0.398	0.02
			-2.00			1" Ice	0.873	0.483	0.02
			-2.00			2" Ice	1.115	0.674	0.04
						No Ice	0.660	0.321	0.01
						1/2" Ice	0.763	0.398	0.02
800 EXTERNAL NOTCH FILTER	B	From Centroid-Le g	4.000	10.00	122.000	1" Ice	0.873	0.483	0.02
			-2.00			2" Ice	1.115	0.674	0.04
			-2.00			No Ice	0.660	0.321	0.01
						1/2" Ice	0.763	0.398	0.02
						1" Ice	0.873	0.483	0.02
800 EXTERNAL NOTCH FILTER	C	From Centroid-Le g	4.000	30.00	122.000	2" Ice	1.115	0.674	0.04
			-2.00			No Ice	0.660	0.321	0.01
			-2.00			1/2" Ice	0.763	0.398	0.02
						1" Ice	0.873	0.483	0.02
						2" Ice	1.115	0.674	0.04
FDD_R6_RRH	A	From Centroid-Le g	4.000	25.00	122.000	No Ice	1.533	0.684	0.03
			0.00			1/2" Ice	1.690	0.800	0.04
			0.00			1" Ice	1.854	0.923	0.06
						2" Ice	2.204	1.193	0.09
						No Ice	1.533	0.684	0.03
FDD_R6_RRH	B	From Centroid-Le g	4.000	10.00	122.000	1/2" Ice	1.690	0.800	0.04
			0.00			1" Ice	1.854	0.923	0.06
			0.00			2" Ice	2.204	1.193	0.09
						No Ice	1.533	0.684	0.03
						1/2" Ice	1.690	0.800	0.04
FDD_R6_RRH	C	From Centroid-Le g	4.000	30.00	122.000	1" Ice	1.854	0.923	0.06
			0.00			2" Ice	2.204	1.193	0.09
			0.00			No Ice	1.533	0.684	0.03
						1/2" Ice	1.690	0.800	0.04
						1" Ice	1.854	0.923	0.06
TD-RRH8x20-25	A	From Centroid-Le g	4.000	37.00	122.000	2" Ice	2.204	1.193	0.09
			2.00			No Ice	3.704	1.294	0.07
			-1.00			1/2" Ice	3.946	1.465	0.09
						1" Ice	4.196	1.642	0.12
						2" Ice	4.717	2.019	0.18
TD-RRH8x20-25	B	From Centroid-Le g	4.000	30.00	122.000	No Ice	3.704	1.294	0.07
			2.00			1/2" Ice	3.946	1.465	0.09
			-1.00			1" Ice	4.196	1.642	0.12
						2" Ice	4.717	2.019	0.18
						No Ice	3.704	1.294	0.07

tnxTower Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	528 Wheelers Farm Rd (BU 876320)	Page	35 of 58
	Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
	Client	Crown Castle	Designed by	tmlster

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight	
			Horz Lateral	Vert						°
Platform Mount [LP 305-1]	C	Centroid-Le g	None	3.00 1.00	0.00	113.000	1/2" Ice	3.345	3.878	0.11
							1" Ice	3.595	4.139	0.15
							2" Ice	4.117	4.684	0.24
							No Ice	18.010	18.010	1.12
							1/2" Ice	23.330	23.330	1.35
							1" Ice	28.650	28.650	1.58
						2" Ice	39.290	39.290	2.05	
105										
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Centroid-Le g	4.000 6.00 2.00	30.00	105.000	No Ice	6.329	5.642	0.11	
						1/2" Ice	6.775	6.426	0.17	
						1" Ice	7.214	7.131	0.23	
						2" Ice	8.117	8.591	0.38	
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Centroid-Le g	4.000 6.00 2.00	30.00	105.000	No Ice	6.329	5.642	0.11	
						1/2" Ice	6.775	6.426	0.17	
						1" Ice	7.214	7.131	0.23	
						2" Ice	8.117	8.591	0.38	
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Centroid-Le g	4.000 6.00 2.00	30.00	105.000	No Ice	6.329	5.642	0.11	
						1/2" Ice	6.775	6.426	0.17	
						1" Ice	7.214	7.131	0.23	
						2" Ice	8.117	8.591	0.38	
AIR 32 B2a/B66Aa w/ Mount Pipe	A	From Centroid-Le g	4.000 -6.00 2.00	30.00	105.000	No Ice	6.747	6.070	0.15	
						1/2" Ice	7.202	6.867	0.21	
						1" Ice	7.648	7.583	0.28	
						2" Ice	8.565	9.063	0.44	
AIR 32 B2a/B66Aa w/ Mount Pipe	B	From Centroid-Le g	4.000 -6.00 2.00	30.00	105.000	No Ice	6.747	6.070	0.15	
						1/2" Ice	7.202	6.867	0.21	
						1" Ice	7.648	7.583	0.28	
						2" Ice	8.565	9.063	0.44	
AIR 32 B2a/B66Aa w/ Mount Pipe	C	From Centroid-Le g	4.000 -6.00 2.00	30.00	105.000	No Ice	6.747	6.070	0.15	
						1/2" Ice	7.202	6.867	0.21	
						1" Ice	7.648	7.583	0.28	
						2" Ice	8.565	9.063	0.44	
KRY 112 144/1	A	From Centroid-Le g	4.000 6.00 0.00	30.00	105.000	No Ice	0.352	0.162	0.01	
						1/2" Ice	0.428	0.219	0.01	
						1" Ice	0.512	0.285	0.02	
						2" Ice	0.701	0.437	0.03	
KRY 112 144/1	B	From Centroid-Le g	4.000 6.00 0.00	30.00	105.000	No Ice	0.352	0.162	0.01	
						1/2" Ice	0.428	0.219	0.01	
						1" Ice	0.512	0.285	0.02	
						2" Ice	0.701	0.437	0.03	
KRY 112 144/1	C	From Centroid-Le g	4.000 6.00 2.00	30.00	105.000	No Ice	0.352	0.162	0.01	
						1/2" Ice	0.428	0.219	0.01	
						1" Ice	0.512	0.285	0.02	
						2" Ice	0.701	0.437	0.03	
LNX-6515DS-VTM w/ Mount Pipe	A	From Centroid-Le g	4.000 0.00 2.00	30.00	105.000	No Ice	11.683	9.842	0.08	
						1/2" Ice	12.404	11.366	0.17	
						1" Ice	13.135	12.914	0.27	
						2" Ice	14.512	15.267	0.51	
LNX-6515DS-VTM w/ Mount Pipe	B	From Centroid-Le g	4.000 0.00 2.00	30.00	105.000	No Ice	11.683	9.842	0.08	
						1/2" Ice	12.404	11.366	0.17	
						1" Ice	13.135	12.914	0.27	
						2" Ice	14.512	15.267	0.51	
LNX-6515DS-VTM w/ Mount Pipe	C	From Centroid-Le g	4.000 0.00 2.00	30.00	105.000	No Ice	11.683	9.842	0.08	
						1/2" Ice	12.404	11.366	0.17	
						1" Ice	13.135	12.914	0.27	
						2" Ice	14.512	15.267	0.51	
RRUS 11 B12	A	From	4.000	30.00	105.000	No Ice	2.791	1.192	0.05	

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	Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
	Client	Crown Castle	Designed by	tmlester

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
RRUS 11 B12	B	Centroid-Le	0.00			1/2" Ice	2.998	1.340	0.07
		g	2.00			1" Ice	3.213	1.496	0.10
						2" Ice	3.666	1.839	0.15
		From	4.000	30.00	105.000	No Ice	2.791	1.192	0.05
RRUS 11 B12	C	Centroid-Le	0.00			1/2" Ice	2.998	1.340	0.07
		g	2.00			1" Ice	3.213	1.496	0.10
						2" Ice	3.666	1.839	0.15
		From	4.000	30.00	105.000	No Ice	2.791	1.192	0.05
Platform Mount [LP 1201-1]	C	Centroid-Le	0.00			1/2" Ice	2.998	1.340	0.07
		g	2.00			1" Ice	3.213	1.496	0.10
						2" Ice	3.666	1.839	0.15
		None		0.00	105.000	No Ice	23.100	23.100	2.10
					1/2" Ice	26.800	26.800	2.50	
					1" Ice	30.500	30.500	2.90	
					2" Ice	37.900	37.900	3.70	
97									
96									
7770.00 w/ Mount Pipe	A	From	4.000	23.00	96.000	No Ice	5.746	4.254	0.06
		Centroid-Le	-6.00			1/2" Ice	6.179	5.014	0.10
		g	2.00			1" Ice	6.607	5.711	0.16
						2" Ice	7.488	7.155	0.29
7770.00 w/ Mount Pipe	B	From	4.000	23.00	96.000	No Ice	5.746	4.254	0.06
		Centroid-Le	-6.00			1/2" Ice	6.179	5.014	0.10
		g	2.00			1" Ice	6.607	5.711	0.16
						2" Ice	7.488	7.155	0.29
7770.00 w/ Mount Pipe	C	From	4.000	23.00	96.000	No Ice	5.746	4.254	0.06
		Centroid-Le	-6.00			1/2" Ice	6.179	5.014	0.10
		g	2.00			1" Ice	6.607	5.711	0.16
						2" Ice	7.488	7.155	0.29
QS66512-2 w/ Mount Pipe	A	From	4.000	30.00	96.000	No Ice	8.371	8.463	0.14
		Centroid-Le	6.00			1/2" Ice	8.931	9.657	0.21
		g	2.00			1" Ice	9.457	10.548	0.30
						2" Ice	10.531	12.352	0.49
QS66512-2 w/ Mount Pipe	B	From	4.000	30.00	96.000	No Ice	8.371	8.463	0.14
		Centroid-Le	6.00			1/2" Ice	8.931	9.657	0.21
		g	2.00			1" Ice	9.457	10.548	0.30
						2" Ice	10.531	12.352	0.49
QS66512-2 w/ Mount Pipe	C	From	4.000	30.00	96.000	No Ice	8.371	8.463	0.14
		Centroid-Le	6.00			1/2" Ice	8.931	9.657	0.21
		g	2.00			1" Ice	9.457	10.548	0.30
						2" Ice	10.531	12.352	0.49
(2) 80010965 w/ Mount Pipe	A	From	4.000	30.00	96.000	No Ice	14.051	7.628	0.13
		Centroid-Le	0.00			1/2" Ice	14.688	8.903	0.22
		g	2.00			1" Ice	15.303	9.963	0.33
						2" Ice	16.530	11.925	0.57
(2) 80010965 w/ Mount Pipe	B	From	4.000	30.00	96.000	No Ice	14.051	7.628	0.13
		Centroid-Le	0.00			1/2" Ice	14.688	8.903	0.22
		g	2.00			1" Ice	15.303	9.963	0.33
						2" Ice	16.530	11.925	0.57
(2) 80010965 w/ Mount Pipe	C	From	4.000	30.00	96.000	No Ice	14.051	7.628	0.13
		Centroid-Le	0.00			1/2" Ice	14.688	8.903	0.22
		g	2.00			1" Ice	15.303	9.963	0.33
						2" Ice	16.530	11.925	0.57
WCS-IMFQ-AMT	C	From	4.000	30.00	96.000	No Ice	0.989	0.644	0.03
		Centroid-Le	-2.00			1/2" Ice	1.114	0.748	0.04
		g	2.00			1" Ice	1.246	0.860	0.05
						2" Ice	1.533	1.105	0.08

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	Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
	Client	Crown Castle	Designed by	tmlster

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
RRUS 8843 B2/B66A	A	From Centroid-Le g	4.000	23.00	96.000	No Ice	1.639	1.353	0.07
			-6.00			1/2" Ice	1.799	1.500	0.09
			2.00			1" Ice	1.966	1.655	0.11
						2" Ice	2.323	1.986	0.16
RRUS 8843 B2/B66A	B	From Centroid-Le g	4.000	23.00	96.000	No Ice	1.639	1.353	0.07
			-6.00			1/2" Ice	1.799	1.500	0.09
			2.00			1" Ice	1.966	1.655	0.11
						2" Ice	2.323	1.986	0.16
RRUS 8843 B2/B66A	C	From Centroid-Le g	4.000	23.00	96.000	No Ice	1.639	1.353	0.07
			-6.00			1/2" Ice	1.799	1.500	0.09
			2.00			1" Ice	1.966	1.655	0.11
						2" Ice	2.323	1.986	0.16
RRUS 32	A	From Centroid-Le g	4.000	30.00	96.000	No Ice	2.857	1.777	0.06
			-2.00			1/2" Ice	3.083	1.968	0.08
			2.00			1" Ice	3.316	2.166	0.10
						2" Ice	3.805	2.583	0.16
RRUS 32	B	From Centroid-Le g	4.000	30.00	96.000	No Ice	2.857	1.777	0.06
			-2.00			1/2" Ice	3.083	1.968	0.08
			2.00			1" Ice	3.316	2.166	0.10
						2" Ice	3.805	2.583	0.16
RRUS 32	C	From Centroid-Le g	4.000	30.00	96.000	No Ice	2.857	1.777	0.06
			-2.00			1/2" Ice	3.083	1.968	0.08
			2.00			1" Ice	3.316	2.166	0.10
						2" Ice	3.805	2.583	0.16
RRUS 4478 B14	A	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.843	1.059	0.06
			2.00			1/2" Ice	2.012	1.197	0.08
			2.00			1" Ice	2.190	1.342	0.09
						2" Ice	2.566	1.656	0.14
RRUS 4478 B14	B	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.843	1.059	0.06
			2.00			1/2" Ice	2.012	1.197	0.08
			2.00			1" Ice	2.190	1.342	0.09
						2" Ice	2.566	1.656	0.14
RRUS 4478 B14	C	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.843	1.059	0.06
			2.00			1/2" Ice	2.012	1.197	0.08
			2.00			1" Ice	2.190	1.342	0.09
						2" Ice	2.566	1.656	0.14
RRUS 4449 B5/B12	A	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.968	1.408	0.07
			6.00			1/2" Ice	2.144	1.564	0.09
			2.00			1" Ice	2.328	1.727	0.11
						2" Ice	2.718	2.075	0.16
RRUS 4449 B5/B12	B	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.968	1.408	0.07
			6.00			1/2" Ice	2.144	1.564	0.09
			2.00			1" Ice	2.328	1.727	0.11
						2" Ice	2.718	2.075	0.16
RRUS 4449 B5/B12	C	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.968	1.408	0.07
			6.00			1/2" Ice	2.144	1.564	0.09
			2.00			1" Ice	2.328	1.727	0.11
						2" Ice	2.718	2.075	0.16
LGP21401	A	From Centroid-Le g	4.000	23.00	96.000	No Ice	1.104	0.207	0.01
			-6.00			1/2" Ice	1.239	0.274	0.02
			2.00			1" Ice	1.381	0.348	0.03
						2" Ice	1.688	0.521	0.05
LGP21401	A	From Centroid-Le g	4.000	30.00	96.000	No Ice	1.104	0.207	0.01
			6.00			1/2" Ice	1.239	0.274	0.02
			2.00			1" Ice	1.381	0.348	0.03
						2" Ice	1.688	0.521	0.05
LGP21401	B	From	4.000	23.00	96.000	No Ice	1.104	0.207	0.01

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	Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
	Client	Crown Castle	Designed by	tmlester

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			Lateral		°	ft	ft ²	ft ²	K
		Centroid-Le	-6.00			1/2" Ice	1.239	0.274	0.02
		g	2.00			1" Ice	1.381	0.348	0.03
						2" Ice	1.688	0.521	0.05
LGP21401	B	From	4.000		30.00	No Ice	1.104	0.207	0.01
		Centroid-Le	6.00			1/2" Ice	1.239	0.274	0.02
		g	2.00			1" Ice	1.381	0.348	0.03
						2" Ice	1.688	0.521	0.05
LGP21401	C	From	4.000		23.00	No Ice	1.104	0.207	0.01
		Centroid-Le	-6.00			1/2" Ice	1.239	0.274	0.02
		g	2.00			1" Ice	1.381	0.348	0.03
						2" Ice	1.688	0.521	0.05
LGP21401	C	From	4.000		30.00	No Ice	1.104	0.207	0.01
		Centroid-Le	6.00			1/2" Ice	1.239	0.274	0.02
		g	2.00			1" Ice	1.381	0.348	0.03
						2" Ice	1.688	0.521	0.05
DC6-48-60-18-8F	A	From	4.000		23.00	No Ice	1.212	1.212	0.03
		Centroid-Le	-6.00			1/2" Ice	1.892	1.892	0.05
		g	2.00			1" Ice	2.105	2.105	0.08
						2" Ice	2.570	2.570	0.14
DC6-48-60-18-8F	B	From	4.000		23.00	No Ice	1.212	1.212	0.03
		Centroid-Le	-6.00			1/2" Ice	1.892	1.892	0.05
		g	2.00			1" Ice	2.105	2.105	0.08
						2" Ice	2.570	2.570	0.14
DC6-48-60-18-8F	C	From	4.000		23.00	No Ice	1.212	1.212	0.03
		Centroid-Le	-6.00			1/2" Ice	1.892	1.892	0.05
		g	2.00			1" Ice	2.105	2.105	0.08
						2" Ice	2.570	2.570	0.14
DBC0061F1V51-2	A	From	4.000		23.00	No Ice	0.430	0.413	0.03
		Centroid-Le	-6.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	A	From	4.000		30.00	No Ice	0.430	0.413	0.03
		Centroid-Le	-2.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	B	From	4.000		23.00	No Ice	0.430	0.413	0.03
		Centroid-Le	-6.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	B	From	4.000		30.00	No Ice	0.430	0.413	0.03
		Centroid-Le	-2.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	C	From	4.000		23.00	No Ice	0.430	0.413	0.03
		Centroid-Le	-6.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
DBC0061F1V51-2	C	From	4.000		30.00	No Ice	0.430	0.413	0.03
		Centroid-Le	-2.00			1/2" Ice	0.514	0.496	0.03
		g	2.00			1" Ice	0.605	0.586	0.04
						2" Ice	0.810	0.788	0.06
2.4" Dia x 6-ft Pipe	A	From	4.000		0.00	No Ice	1.428	1.428	0.02
		Centroid-Le	2.00			1/2" Ice	1.927	1.927	0.03
		g	0.00			1" Ice	2.296	2.296	0.05
						2" Ice	3.061	3.061	0.09
2.4" Dia x 6-ft Pipe	B	From	4.000		0.00	No Ice	1.428	1.428	0.02
		Centroid-Le	2.00			1/2" Ice	1.927	1.927	0.03

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	Project	TEP No. 25570.206199	Date	11:31:04 01/15/19
	Client	Crown Castle	Designed by	tmlester

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA		Weight
			Horz	Lateral			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	K
			g	0.00			1" Ice	2.296	0.05
							2" Ice	3.061	0.09
2.4" Dia x 6-ft Pipe	C	From Centroid-Le g	4.000	0.00	96.000	No Ice	1.428	1.428	0.02
			2.00			1/2" Ice	1.927	1.927	0.03
			0.00			1" Ice	2.296	2.296	0.05
						2" Ice	3.061	3.061	0.09
Miscellaneous [NA 507-1]	C	None		0.00	96.000	No Ice	4.800	4.800	0.25
						1/2" Ice	6.700	6.700	0.29
						1" Ice	8.600	8.600	0.34
						2" Ice	12.400	12.400	0.44
Platform Mount [LP 712-1]	C	None		0.00	96.000	No Ice	24.530	24.530	1.34
						1/2" Ice	29.940	29.940	1.65
						1" Ice	35.350	35.350	1.96
						2" Ice	46.170	46.170	2.58
75									
ACUTIME 2000	A	From Leg	3.000	0.00	75.000	No Ice	0.255	0.255	0.00
			0.00			1/2" Ice	0.320	0.320	0.00
			1.00			1" Ice	0.393	0.393	0.01
						2" Ice	0.561	0.561	0.02
Side Arm Mount [SO 701-1]	A	From Leg	0.500	0.00	75.000	No Ice	0.850	1.670	0.07
			0.00			1/2" Ice	1.140	2.340	0.08
			0.00			1" Ice	1.430	3.010	0.09
						2" Ice	2.010	4.350	0.12

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							
				ft	ft	°	°	ft	ft	ft ²	K	
PX2F-52	A	Paraboloid w/Radome	From Centroid -Leg	4.000	0.00	25.00		122.000	2.092	No Ice	3.440	0.02
				1.00						1/2" Ice	3.720	0.04
										1" Ice	3.990	0.06
										2" Ice	4.550	0.09
VHLP2-11	A	Paraboloid w/Shroud (HP)	From Centroid -Leg	4.000	2.00	37.00		122.000	2.000	No Ice	3.720	0.03
				3.00						1/2" Ice	4.010	0.05
										1" Ice	4.300	0.07
										2" Ice	4.880	0.11
VHLP2-11	B	Paraboloid w/Shroud (HP)	From Centroid -Leg	4.000	0.00	10.00		122.000	2.000	No Ice	3.720	0.03
				3.00						1/2" Ice	4.010	0.05
										1" Ice	4.300	0.07
										2" Ice	4.880	0.11

Load Combinations

Comb. No.	Description
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tnxTower Tower Engineering Professionals, Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job 528 Wheelers Farm Rd (BU 876320)	Page 40 of 58
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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
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 115	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-8.90	0.83	2.20
			Max. Mx	20	-3.71	48.19	0.27

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L2	115 - 110	Pole	Max. My	2	-3.71	0.82	46.86
			Max. Vy	20	-7.50	48.19	0.27
			Max. Vx	14	7.39	0.30	-45.80
			Max. Torque	18			-3.09
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.89	1.77	4.79
			Max. Mx	20	-6.75	114.48	1.52
			Max. My	2	-6.78	1.83	111.04
			Max. Vy	20	-15.05	114.48	1.52
			Max. Vx	14	14.58	0.45	-107.80
L3	110 - 105	Pole	Max. Torque	18			-5.16
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.97	1.78	4.99
			Max. Mx	20	-7.26	191.08	1.80
			Max. My	2	-7.25	2.52	186.00
			Max. Vy	20	-15.58	191.08	1.80
			Max. Vx	14	15.51	0.13	-182.93
			Max. Torque	18			-5.16
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.63	1.95	5.30
L4	105 - 100	Pole	Max. Mx	20	-11.47	299.46	2.11
			Max. My	2	-11.43	3.26	294.48
			Max. Vy	20	-20.76	299.46	2.11
			Max. Vx	14	20.99	-0.15	-291.53
			Max. Torque	18			-5.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.83	1.99	5.35
			Max. Mx	20	-11.57	315.08	2.15
			Max. My	2	-11.52	3.37	310.24
			Max. Vy	20	-20.88	315.08	2.15
L5	100 - 99.25	Pole	Max. Vx	14	21.13	-0.19	-307.31
			Max. Torque	18			-5.14
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.91	2.00	5.37
			Max. Mx	20	-11.61	320.31	2.17
			Max. My	2	-11.57	3.40	315.52
			Max. Vy	20	-20.92	320.31	2.17
			Max. Vx	14	21.18	-0.20	-312.59
			Max. Torque	18			-5.14
			Max Tension	1	0.00	0.00	0.00
L6	99.25 - 99	Pole	Max. Compression	26	-39.98	2.42	5.49
			Max. Mx	20	-17.02	452.97	2.35
			Max. My	2	-16.96	4.23	449.24
			Max. Vy	20	-29.20	452.97	2.35
			Max. Vx	14	29.58	-0.40	-446.70
			Max. Torque	18			-5.14
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.40	2.59	5.78
			Max. Mx	20	-17.84	568.82	2.60
			Max. My	2	-17.76	4.81	566.56
L7	99 - 94	Pole	Max. Vy	20	-29.89	568.82	2.60
			Max. Vx	14	30.37	-0.62	-564.11
			Max. Torque	18			-5.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.50	2.60	5.80
			Max. Mx	20	-17.91	576.30	2.61
			Max. My	2	-17.84	4.85	574.14
			Max. Vy	20	-29.93	576.30	2.61
			Max. Vx	14	30.42	-0.63	-571.70
			Max. Torque	18			-5.03
L8	94 - 90.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.50	2.60	5.80
L9	90.08 - 89.83	Pole	Max. Mx	20	-17.91	576.30	2.61
			Max. My	2	-17.84	4.85	574.14
			Max. Vy	20	-29.93	576.30	2.61
			Max. Vx	14	30.42	-0.63	-571.70
			Max. Torque	18			-5.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.50	2.60	5.80
			Max. Mx	20	-17.91	576.30	2.61
			Max. My	2	-17.84	4.85	574.14
			Max. Vy	20	-29.93	576.30	2.61
L10	89.83 - 89.5	Pole	Max. Vx	14	30.42	-0.63	-571.70
			Max. Torque	18			-5.03
L10	89.83 - 89.5	Pole	Max Tension	1	0.00	0.00	0.00

<p>tnxTower</p> <p><i>Tower Engineering Professionals, Inc.</i></p> <p>326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	<p>Job</p> <p>528 Wheelers Farm Rd (BU 876320)</p>	<p>Page</p> <p>42 of 58</p>
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	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>tmlester</p>

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L11	89.5 - 89.25	Pole	Max. Compression	26	-41.63	2.61	5.82
			Max. Mx	20	-17.99	586.19	2.63
			Max. My	2	-17.92	4.90	584.18
			Max. Vy	20	-29.99	586.19	2.63
			Max. Vx	14	30.49	-0.65	-581.74
			Max. Torque	18			-5.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.75	2.62	5.84
			Max. Mx	20	-18.06	593.70	2.65
			Max. My	2	-17.99	4.94	591.80
L12	89.25 - 84.25	Pole	Max. Vy	20	-30.04	593.70	2.65
			Max. Vx	14	30.54	-0.66	-589.36
			Max. Torque	18			-5.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.04	2.80	6.18
			Max. Mx	20	-19.49	746.33	2.96
			Max. My	2	-19.41	5.69	746.98
			Max. Vy	20	-30.99	746.33	2.96
			Max. Vx	14	31.62	-0.94	-744.65
			Max. Torque	18			-5.03
L13	84.25 - 78	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.21	2.90	6.36
			Max. Mx	20	-20.23	824.43	3.12
			Max. My	2	-20.14	6.06	826.60
			Max. Vy	20	-31.47	824.43	3.12
			Max. Vx	14	32.16	-1.07	-824.32
			Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.95	3.08	6.70
			Max. Mx	20	-22.92	976.42	3.42
L14	78 - 77	Pole	Max. My	2	-22.83	6.78	981.90
			Max. Vy	20	-32.49	976.42	3.42
			Max. Vx	14	33.30	-1.33	-979.71
			Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.09	3.09	6.71
			Max. Mx	20	-23.03	984.55	3.44
			Max. My	2	-22.93	6.81	990.22
			Max. Vy	20	-32.53	984.55	3.44
			Max. Vx	14	33.35	-1.35	-988.03
L15	77 - 76.75	Pole	Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.23	3.10	6.73
			Max. Mx	20	-23.13	992.69	3.45
			Max. My	2	-23.03	6.85	998.56
			Max. Vy	20	-32.58	992.69	3.45
			Max. Vx	14	33.41	-1.36	-996.37
			Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.80	3.15	6.81
L16	76.75 - 76.5	Pole	Max. Mx	20	-23.53	1025.38	3.52
			Max. My	2	-23.43	7.00	1032.04
			Max. Vy	20	-32.78	1025.38	3.52
			Max. Vx	14	33.64	-1.42	-1029.87
			Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.94	3.16	6.82
			Max. Mx	20	-23.63	1033.59	3.53
			Max. My	2	-23.53	7.04	1040.44
			Max. Vy	20	-32.83	1033.59	3.53
L17	76.5 - 75.5	Pole	Max. Vx	14	33.69	-1.43	-1038.28
			Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.94	3.16	6.82
			Max. Mx	20	-23.63	1033.59	3.53
L18	75.5 - 75.25	Pole	Max. My	2	-23.53	7.04	1040.44
			Max. Vy	20	-32.83	1033.59	3.53
			Max. Vx	14	33.69	-1.43	-1038.28
			Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L19	75.25 - 74.5	Pole	Max. Torque	18			-5.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.47	3.19	7.15
			Max. Mx	20	-23.97	1058.33	3.71
			Max. My	2	-23.88	7.15	1065.92
			Max. Vy	20	-33.07	1058.33	3.71
			Max. Vx	14	33.91	-1.47	-1063.49
L20	74.5 - 74.25	Pole	Max. Torque	18			-5.19
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.60	3.20	7.17
			Max. Mx	20	-24.07	1066.61	3.73
			Max. My	2	-23.97	7.19	1074.39
			Max. Vy	20	-33.12	1066.61	3.73
			Max. Vx	14	33.96	-1.49	-1071.97
L21	74.25 - 72	Pole	Max. Torque	18			-5.19
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.76	3.28	7.34
			Max. Mx	20	-24.84	1141.65	3.87
			Max. My	2	-24.75	7.53	1151.27
			Max. Vy	20	-33.56	1141.65	3.87
			Max. Vx	14	34.46	-1.61	-1148.88
L22	72 - 71.75	Pole	Max. Torque	18			-5.19
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.91	3.29	7.36
			Max. Mx	20	-24.95	1150.04	3.89
			Max. My	2	-24.85	7.57	1159.88
			Max. Vy	20	-33.60	1150.04	3.89
			Max. Vx	14	34.51	-1.62	-1157.49
L23	71.75 - 70.5	Pole	Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.64	3.34	7.46
			Max. Mx	20	-25.42	1192.22	3.97
			Max. My	2	-25.32	7.76	1203.14
			Max. Vy	20	-33.86	1192.22	3.97
			Max. Vx	14	34.79	-1.69	-1200.77
L24	70.5 - 70.25	Pole	Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.79	3.35	7.48
			Max. Mx	20	-25.54	1200.70	3.98
			Max. My	2	-25.44	7.80	1211.83
			Max. Vy	20	-33.91	1200.70	3.98
			Max. Vx	14	34.84	-1.71	-1209.47
L25	70.25 - 70	Pole	Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.94	3.36	7.50
			Max. Mx	20	-25.64	1209.18	4.00
			Max. My	2	-25.54	7.83	1220.54
			Max. Vy	20	-33.96	1209.18	4.00
			Max. Vx	14	34.90	-1.72	-1218.18
L26	70 - 69.75	Pole	Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.09	3.37	7.52
			Max. Mx	20	-25.73	1217.68	4.01
			Max. My	2	-25.64	7.87	1229.26
			Max. Vy	20	-34.01	1217.68	4.01
			Max. Vx	14	34.95	-1.73	-1226.91
L27	69.75 - 69.5	Pole	Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.24	3.38	7.54
			Max. Mx	20	-25.84	1226.19	4.03
			Max. My	2	-25.74	7.91	1237.99

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L28	69.5 - 69.25	Pole	Max. Vy	20	-34.06	1226.19	4.03
			Max. Vx	14	35.01	-1.75	-1235.65
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.38	3.39	7.56
			Max. Mx	20	-25.93	1234.72	4.05
			Max. My	2	-25.83	7.95	1246.74
			Max. Vy	20	-34.11	1234.72	4.05
L29	69.25 - 64.25	Pole	Max. Vx	14	35.06	-1.76	-1244.40
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.17	3.61	7.97
			Max. Mx	20	-27.73	1407.30	4.37
			Max. My	2	-27.62	8.70	1424.57
			Max. Vy	20	-34.91	1407.30	4.37
			Max. Vx	14	36.16	-2.03	-1422.31
L30	64.25 - 59.25	Pole	Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.98	3.83	8.38
			Max. Mx	20	-29.58	1583.82	4.68
			Max. My	2	-29.46	9.46	1607.81
			Max. Vy	20	-35.69	1583.82	4.68
			Max. Vx	14	37.23	-2.30	-1605.62
			Max. Torque	18			-5.18
L31	59.25 - 56	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.81	3.97	8.65
			Max. Mx	20	-30.80	1700.66	4.89
			Max. My	2	-30.68	9.96	1729.79
			Max. Vy	20	-36.20	1700.66	4.89
			Max. Vx	14	37.93	-2.48	-1727.65
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
L32	56 - 55.75	Pole	Max. Compression	26	-60.99	3.98	8.68
			Max. Mx	20	-30.93	1709.72	4.91
			Max. My	2	-30.81	10.00	1739.27
			Max. Vy	20	-36.24	1709.72	4.91
			Max. Vx	14	37.98	-2.49	-1737.13
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.17	4.00	8.70
L33	55.75 - 55.5	Pole	Max. Mx	20	-31.05	1718.80	4.93
			Max. My	2	-30.93	10.03	1748.77
			Max. Vy	20	-36.30	1718.80	4.93
			Max. Vx	14	38.04	-2.50	-1746.62
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.35	4.01	8.73
			Max. Mx	20	-31.18	1727.89	4.95
L34	55.5 - 55.25	Pole	Max. My	2	-31.05	10.07	1758.27
			Max. Vy	20	-36.35	1727.89	4.95
			Max. Vx	14	38.10	-2.51	-1756.13
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.27	4.08	8.85
			Max. Mx	20	-31.79	1773.53	5.04
			Max. My	2	-31.66	10.27	1806.05
L35	55.25 - 54	Pole	Max. Vy	20	-36.64	1773.53	5.04
			Max. Vx	14	38.40	-2.57	-1803.89
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.44	4.10	8.88
			Max. Mx	20	-31.79	1773.53	5.04
			Max. My	2	-31.66	10.27	1806.05
			Max. Vy	20	-36.64	1773.53	5.04
L36	54 - 53.75	Pole	Max. Vx	14	38.40	-2.57	-1803.89
			Max. Torque	18			-5.18
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.44	4.10	8.88

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	Client	Crown Castle	Designed by	tmlester

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-31.91	1782.70	5.06
			Max. My	2	-31.79	10.31	1815.64
			Max. Vy	20	-36.68	1782.70	5.06
			Max. Vx	14	38.45	-2.58	-1813.49
			Max. Torque	18			-5.18
L37	53.75 - 53.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.62	4.11	8.90
			Max. Mx	20	-32.03	1791.88	5.08
			Max. My	2	-31.91	10.35	1825.26
			Max. Vy	20	-36.73	1791.88	5.08
			Max. Vx	14	38.51	-2.59	-1823.10
			Max. Torque	18			-5.18
L38	53.5 - 53.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.79	4.13	8.93
			Max. Mx	20	-32.14	1801.07	5.10
			Max. My	2	-32.02	10.39	1834.89
			Max. Vy	20	-36.79	1801.07	5.10
			Max. Vx	14	38.57	-2.61	-1832.73
			Max. Torque	18			-5.18
L39	53.25 - 53	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.94	4.14	8.95
			Max. Mx	20	-32.24	1810.28	5.11
			Max. My	2	-32.12	10.43	1844.53
			Max. Vy	20	-36.84	1810.28	5.11
			Max. Vx	14	38.62	-2.62	-1842.37
			Max. Torque	18			-5.18
L40	53 - 48	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.16	4.45	9.46
			Max. Mx	20	-34.34	1997.08	5.48
			Max. My	2	-34.23	11.23	2040.28
			Max. Vy	20	-37.85	1997.08	5.48
			Max. Vx	14	39.75	-2.85	-2038.08
			Max. Torque	18			-5.18
L41	48 - 39.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.41	4.67	9.82
			Max. Mx	20	-35.84	2130.79	5.74
			Max. My	2	-35.73	11.79	2180.56
			Max. Vy	20	-38.53	2130.79	5.74
			Max. Vx	14	40.50	-3.00	-2178.34
			Max. Torque	18			-5.18
L42	39.75 - 38.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.91	5.03	10.41
			Max. Mx	20	-39.73	2356.06	6.17
			Max. My	2	-39.62	12.71	2417.23
			Max. Vy	20	-39.78	2356.06	6.17
			Max. Vx	14	41.87	-3.26	-2414.95
			Max. Torque	18			-5.18
L43	38.75 - 34.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.55	5.29	10.82
			Max. Mx	20	-41.53	2516.69	6.47
			Max. My	2	-41.43	13.34	2586.21
			Max. Vy	20	-40.52	2516.69	6.47
			Max. Vx	14	42.70	-3.44	-2583.88
			Max. Torque	18			-5.18
L44	34.75 - 34.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.73	5.30	10.85
			Max. Mx	20	-41.68	2526.82	6.49
			Max. My	2	-41.57	13.38	2596.88
			Max. Vy	20	-40.55	2526.82	6.49
			Max. Vx	14	42.74	-3.45	-2594.55
			Max. Torque	18			-5.17

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L45	34.5 - 33.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.28	5.35	10.93
			Max. Mx	20	-42.06	2557.31	6.55
			Max. My	2	-41.96	13.50	2628.97
			Max. Vy	20	-40.70	2557.31	6.55
			Max. Vx	14	42.90	-3.49	-2626.64
			Max. Torque	18			-5.17
L46	33.75 - 33.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.44	5.37	10.95
			Max. Mx	20	-42.18	2567.50	6.57
			Max. My	2	-42.08	13.54	2639.70
			Max. Vy	20	-40.74	2567.50	6.57
			Max. Vx	14	42.95	-3.50	-2637.36
			Max. Torque	18			-5.17
L47	33.5 - 28.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.71	5.69	11.47
			Max. Mx	20	-44.42	2773.52	6.94
			Max. My	2	-44.33	14.34	2856.73
			Max. Vy	20	-41.64	2773.52	6.94
			Max. Vx	14	43.94	-3.72	-2854.33
			Max. Torque	18			-5.17
L48	28.5 - 24	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.65	5.97	11.90
			Max. Mx	20	-46.46	2962.65	7.28
			Max. My	2	-46.38	15.05	3056.19
			Max. Vy	20	-42.41	2962.65	7.28
			Max. Vx	14	44.80	-3.91	-3053.72
			Max. Torque	18			-5.17
L49	24 - 23.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.82	5.98	11.93
			Max. Mx	20	-46.60	2973.26	7.29
			Max. My	2	-46.52	15.09	3067.38
			Max. Vy	20	-42.44	2973.26	7.29
			Max. Vx	14	44.83	-3.92	-3064.91
			Max. Torque	18			-5.17
L50	23.75 - 18.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.21	6.30	12.42
			Max. Mx	20	-48.98	3187.15	7.67
			Max. My	2	-48.92	15.89	3293.66
			Max. Vy	20	-43.09	3187.15	7.67
			Max. Vx	14	45.76	-4.14	-3291.12
			Max. Torque	18			-5.17
L51	18.75 - 14.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.31	6.60	12.88
			Max. Mx	20	-51.17	3382.29	8.01
			Max. My	2	-51.12	16.60	3501.13
			Max. Vy	20	-43.63	3382.29	8.01
			Max. Vx	14	46.54	-4.33	-3498.50
			Max. Torque	18			-5.17
L52	14.25 - 14	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.46	6.61	12.90
			Max. Mx	20	-51.29	3393.21	8.03
			Max. My	2	-51.24	16.64	3512.75
			Max. Vy	20	-43.64	3393.21	8.03
			Max. Vx	14	46.56	-4.34	-3510.12
			Max. Torque	18			-5.17
L53	14 - 9	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-94.17	6.95	13.43
			Max. Mx	20	-53.95	3613.08	8.40
			Max. My	2	-53.91	17.42	3747.60
			Max. Vy	20	-44.27	3613.08	8.40

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L54	9 - 4.75	Pole	Max. Vx	14	47.45	-4.55	-3744.88
			Max. Torque	18			-5.17
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.30	7.25	13.86
			Max. Mx	20	-56.25	3802.40	8.72
			Max. My	2	-56.23	18.09	3950.67
			Max. Vy	20	-44.80	3802.40	8.72
			Max. Vx	14	48.20	-4.72	-3947.86
L55	4.75 - 4.5	Pole	Max. Torque	18			-5.17
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.48	7.26	13.89
			Max. Mx	20	-56.40	3813.61	8.74
			Max. My	2	-56.38	18.13	3962.71
			Max. Vy	20	-44.82	3813.61	8.74
			Max. Vx	14	48.22	-4.73	-3959.90
			Max. Torque	18			-5.17
L56	4.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.55	7.56	14.33
			Max. Mx	20	-58.77	4016.55	9.08
			Max. My	2	-58.77	18.84	4181.26
			Max. Vy	20	-45.35	4016.55	9.08
			Max. Vx	14	48.99	-4.91	-4178.35
			Max. Torque	18			-5.17

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	100.55	0.03	10.46
	Max. H _x	21	44.10	45.32	0.04
	Max. H _z	2	58.79	0.13	48.90
	Max. M _x	2	4181.26	0.13	48.90
	Max. M _z	8	3992.60	-45.16	-0.09
	Max. Torsion	6	4.91	-37.83	21.26
	Min. Vert	5	44.10	-21.79	36.95
	Min. H _x	8	58.79	-45.16	-0.09
	Min. H _z	14	58.79	-0.07	-48.96
	Min. M _x	14	-4178.35	-0.07	-48.96
	Min. M _z	20	-4016.55	45.32	0.04
	Min. Torsion	18	-5.17	37.99	-21.34

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	49.00	0.00	0.00	-4.28	2.81	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	58.79	-0.13	-48.90	-4181.26	18.84	-1.20
0.9 Dead+1.0 Wind 0 deg - No Ice	44.10	-0.13	-48.90	-4146.71	17.81	-1.18
1.2 Dead+1.0 Wind 30 deg - No Ice	58.79	21.79	-36.95	-3243.75	-1920.00	-4.17

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Ice						
0.9 Dead+1.0 Wind 30 deg - No Ice	44.10	21.79	-36.95	-3216.30	-1905.34	-4.14
1.2 Dead+1.0 Wind 60 deg - No Ice	58.79	37.83	-21.26	-1865.95	-3339.77	-4.91
0.9 Dead+1.0 Wind 60 deg - No Ice	44.10	37.83	-21.26	-1849.62	-3313.63	-4.88
1.2 Dead+1.0 Wind 90 deg - No Ice	58.79	45.16	0.09	4.97	-3992.60	-4.37
0.9 Dead+1.0 Wind 90 deg - No Ice	44.10	45.16	0.09	6.23	-3961.32	-4.33
1.2 Dead+1.0 Wind 120 deg - No Ice	58.79	38.04	21.48	1880.89	-3361.08	-2.70
0.9 Dead+1.0 Wind 120 deg - No Ice	44.10	38.04	21.48	1867.04	-3334.76	-2.68
1.2 Dead+1.0 Wind 150 deg - No Ice	58.79	21.96	37.21	3263.04	-1939.00	-0.07
0.9 Dead+1.0 Wind 150 deg - No Ice	44.10	21.96	37.21	3238.05	-1924.19	-0.07
1.2 Dead+1.0 Wind 180 deg - No Ice	58.79	0.07	48.96	4178.35	-4.91	1.26
0.9 Dead+1.0 Wind 180 deg - No Ice	44.10	0.07	48.96	4146.45	-5.72	1.24
1.2 Dead+1.0 Wind 210 deg - No Ice	58.79	-21.86	37.09	3247.93	1933.95	4.21
0.9 Dead+1.0 Wind 210 deg - No Ice	44.10	-21.86	37.09	3223.07	1917.46	4.18
1.2 Dead+1.0 Wind 240 deg - No Ice	58.79	-37.99	21.34	1863.06	3362.95	5.17
0.9 Dead+1.0 Wind 240 deg - No Ice	44.10	-37.99	21.34	1849.37	3334.90	5.13
1.2 Dead+1.0 Wind 270 deg - No Ice	58.79	-45.32	-0.04	-9.08	4016.55	4.47
0.9 Dead+1.0 Wind 270 deg - No Ice	44.10	-45.32	-0.04	-7.70	3983.36	4.43
1.2 Dead+1.0 Wind 300 deg - No Ice	58.79	-38.01	-21.45	-1886.97	3364.14	2.79
0.9 Dead+1.0 Wind 300 deg - No Ice	44.10	-38.01	-21.45	-1870.45	3336.08	2.77
1.2 Dead+1.0 Wind 330 deg - No Ice	58.79	-21.98	-37.12	-3260.20	1947.99	0.25
0.9 Dead+1.0 Wind 330 deg - No Ice	44.10	-21.98	-37.12	-3232.62	1931.38	0.25
1.2 Dead+1.0 Ice+1.0 Temp	100.55	-0.00	-0.00	-14.33	7.56	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	100.55	-0.03	-10.46	-948.73	11.20	-0.07
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	100.55	4.41	-7.54	-730.86	-413.11	-0.88
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	100.55	7.67	-4.34	-425.97	-723.96	-1.11
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	100.55	9.47	0.02	-11.90	-880.08	-1.03
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	100.55	7.68	4.37	401.34	-725.75	-0.71
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	100.55	4.44	7.57	705.52	-416.03	-0.14
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	100.55	0.02	10.47	921.43	5.46	0.09
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	100.55	-4.43	7.57	704.88	429.71	0.89
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	100.55	-7.70	4.35	398.61	742.41	1.16

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	100.55	-9.50	-0.01	-15.65	898.68	1.05
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	100.55	-7.70	-4.38	-430.94	743.05	0.73
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	100.55	-4.46	-7.58	-734.51	433.33	0.18
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	49.00	-0.03	-10.61	-906.62	6.19	-0.26
Dead+Wind 30 deg - Service	49.00	4.73	-8.02	-703.91	-412.61	-0.90
Dead+Wind 60 deg - Service	49.00	8.21	-4.61	-406.31	-719.31	-1.07
Dead+Wind 90 deg - Service	49.00	9.80	0.02	-2.16	-860.41	-0.95
Dead+Wind 120 deg - Service	49.00	8.25	4.66	403.07	-723.93	-0.59
Dead+Wind 150 deg - Service	49.00	4.77	8.08	701.62	-416.72	-0.02
Dead+Wind 180 deg - Service	49.00	0.02	10.62	899.52	1.06	0.27
Dead+Wind 210 deg - Service	49.00	-4.74	8.05	698.35	419.87	0.92
Dead+Wind 240 deg - Service	49.00	-8.24	4.63	399.22	728.57	1.12
Dead+Wind 270 deg - Service	49.00	-9.83	-0.01	-5.20	869.84	0.97
Dead+Wind 300 deg - Service	49.00	-8.25	-4.66	-410.85	728.83	0.61
Dead+Wind 330 deg - Service	49.00	-4.77	-8.05	-707.47	422.90	0.05

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-49.00	0.00	0.00	49.00	0.00	0.000%
2	-0.13	-58.79	-48.90	0.13	58.79	48.90	0.000%
3	-0.13	-44.10	-48.90	0.13	44.10	48.90	0.000%
4	21.79	-58.79	-36.95	-21.79	58.79	36.95	0.000%
5	21.79	-44.10	-36.95	-21.79	44.10	36.95	0.000%
6	37.83	-58.79	-21.26	-37.83	58.79	21.26	0.000%
7	37.83	-44.10	-21.26	-37.83	44.10	21.26	0.000%
8	45.16	-58.79	0.09	-45.16	58.79	-0.09	0.000%
9	45.16	-44.10	0.09	-45.16	44.10	-0.09	0.000%
10	38.04	-58.79	21.48	-38.04	58.79	-21.48	0.000%
11	38.04	-44.10	21.48	-38.04	44.10	-21.48	0.000%
12	21.96	-58.79	37.21	-21.96	58.79	-37.21	0.000%
13	21.96	-44.10	37.21	-21.96	44.10	-37.21	0.000%
14	0.07	-58.79	48.96	-0.07	58.79	-48.96	0.000%
15	0.07	-44.10	48.96	-0.07	44.10	-48.96	0.000%
16	-21.86	-58.79	37.09	21.86	58.79	-37.09	0.000%
17	-21.86	-44.10	37.09	21.86	44.10	-37.09	0.000%
18	-37.99	-58.79	21.34	37.99	58.79	-21.34	0.000%
19	-37.99	-44.10	21.34	37.99	44.10	-21.34	0.000%
20	-45.32	-58.79	-0.04	45.32	58.79	0.04	0.000%
21	-45.32	-44.10	-0.04	45.32	44.10	0.04	0.000%
22	-38.01	-58.79	-21.45	38.01	58.79	21.45	0.000%
23	-38.01	-44.10	-21.45	38.01	44.10	21.45	0.000%
24	-21.98	-58.79	-37.12	21.98	58.79	37.12	0.000%
25	-21.98	-44.10	-37.12	21.98	44.10	37.12	0.000%
26	0.00	-100.55	0.00	0.00	100.55	0.00	0.000%
27	-0.03	-100.55	-10.46	0.03	100.55	10.46	0.000%
28	4.41	-100.55	-7.54	-4.41	100.55	7.54	0.000%
29	7.67	-100.55	-4.34	-7.67	100.55	4.34	0.000%
30	9.47	-100.55	0.02	-9.47	100.55	-0.02	0.000%
31	7.68	-100.55	4.37	-7.68	100.55	-4.37	0.000%
32	4.44	-100.55	7.57	-4.44	100.55	-7.57	0.000%
33	0.02	-100.55	10.47	-0.02	100.55	-10.47	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
34	-4.43	-100.55	7.57	4.43	100.55	-7.57	0.000%
35	-7.70	-100.55	4.35	7.70	100.55	-4.35	0.000%
36	-9.50	-100.55	-0.01	9.50	100.55	0.01	0.000%
37	-7.70	-100.55	-4.38	7.70	100.55	4.38	0.000%
38	-4.46	-100.55	-7.58	4.46	100.55	7.58	0.000%
39	-0.03	-49.00	-10.61	0.03	49.00	10.61	0.000%
40	4.73	-49.00	-8.02	-4.73	49.00	8.02	0.000%
41	8.21	-49.00	-4.61	-8.21	49.00	4.61	0.000%
42	9.80	-49.00	0.02	-9.80	49.00	-0.02	0.000%
43	8.25	-49.00	4.66	-8.25	49.00	-4.66	0.000%
44	4.77	-49.00	8.08	-4.77	49.00	-8.08	0.000%
45	0.02	-49.00	10.62	-0.02	49.00	-10.62	0.000%
46	-4.74	-49.00	8.05	4.74	49.00	-8.05	0.000%
47	-8.24	-49.00	4.63	8.24	49.00	-4.63	0.000%
48	-9.83	-49.00	-0.01	9.83	49.00	0.01	0.000%
49	-8.25	-49.00	-4.66	8.25	49.00	4.66	0.000%
50	-4.77	-49.00	-8.05	4.77	49.00	8.05	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.00000398
2	Yes	5	0.0000001	0.00055171
3	Yes	5	0.0000001	0.00024281
4	Yes	6	0.0000001	0.00026731
5	Yes	6	0.0000001	0.00008567
6	Yes	6	0.0000001	0.00031054
7	Yes	6	0.0000001	0.00010044
8	Yes	5	0.0000001	0.00099086
9	Yes	5	0.0000001	0.00044576
10	Yes	6	0.0000001	0.00027652
11	Yes	6	0.0000001	0.00008830
12	Yes	6	0.0000001	0.00028702
13	Yes	6	0.0000001	0.00009228
14	Yes	5	0.0000001	0.00042334
15	Yes	5	0.0000001	0.00018559
16	Yes	6	0.0000001	0.00030446
17	Yes	6	0.0000001	0.00009859
18	Yes	6	0.0000001	0.00026475
19	Yes	6	0.0000001	0.00008435
20	Yes	6	0.0000001	0.00003954
21	Yes	5	0.0000001	0.00049335
22	Yes	6	0.0000001	0.00030429
23	Yes	6	0.0000001	0.00009771
24	Yes	6	0.0000001	0.00028741
25	Yes	6	0.0000001	0.00009216
26	Yes	5	0.0000001	0.00009720
27	Yes	6	0.0000001	0.00032381
28	Yes	6	0.0000001	0.00033344
29	Yes	6	0.0000001	0.00033870
30	Yes	6	0.0000001	0.00030498
31	Yes	6	0.0000001	0.00032483
32	Yes	6	0.0000001	0.00032274
33	Yes	6	0.0000001	0.00031094
34	Yes	6	0.0000001	0.00032948

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35	Yes	6	0.00000001	0.00033094
36	Yes	6	0.00000001	0.00031281
37	Yes	6	0.00000001	0.00034756
38	Yes	6	0.00000001	0.00034307
39	Yes	5	0.00000001	0.00003269
40	Yes	5	0.00000001	0.00009701
41	Yes	5	0.00000001	0.00014251
42	Yes	5	0.00000001	0.00005715
43	Yes	5	0.00000001	0.00009776
44	Yes	5	0.00000001	0.00010704
45	Yes	4	0.00000001	0.00097762
46	Yes	5	0.00000001	0.00013306
47	Yes	5	0.00000001	0.00009589
48	Yes	5	0.00000001	0.00005997
49	Yes	5	0.00000001	0.00013004
50	Yes	5	0.00000001	0.00010969

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	14.62	39	1.04	0.01
L2	115 - 110	13.54	39	1.03	0.01
L3	110 - 105	12.47	39	1.01	0.01
L4	105 - 100	11.43	39	0.98	0.01
L5	100 - 99.25	10.43	39	0.93	0.00
L6	99.25 - 99	10.28	39	0.92	0.00
L7	99 - 94	10.23	39	0.92	0.00
L8	94 - 90.08	9.29	39	0.88	0.00
L9	90.08 - 89.83	8.59	39	0.84	0.00
L10	89.83 - 89.5	8.54	39	0.83	0.00
L11	89.5 - 89.25	8.49	39	0.83	0.00
L12	89.25 - 84.25	8.44	39	0.83	0.00
L13	84.25 - 78	7.59	39	0.80	0.00
L14	81.75 - 77	7.18	39	0.78	0.00
L15	77 - 76.75	6.41	39	0.76	0.00
L16	76.75 - 76.5	6.37	39	0.76	0.00
L17	76.5 - 75.5	6.33	39	0.76	0.00
L18	75.5 - 75.25	6.18	39	0.75	0.00
L19	75.25 - 74.5	6.14	39	0.75	0.00
L20	74.5 - 74.25	6.02	39	0.74	0.00
L21	74.25 - 72	5.98	39	0.74	0.00
L22	72 - 71.75	5.64	39	0.72	0.00
L23	71.75 - 70.5	5.60	39	0.72	0.00
L24	70.5 - 70.25	5.41	39	0.71	0.00
L25	70.25 - 70	5.37	39	0.71	0.00
L26	70 - 69.75	5.34	39	0.71	0.00
L27	69.75 - 69.5	5.30	39	0.70	0.00
L28	69.5 - 69.25	5.26	39	0.70	0.00
L29	69.25 - 64.25	5.23	39	0.70	0.00
L30	64.25 - 59.25	4.51	39	0.66	0.00
L31	59.25 - 56	3.85	39	0.61	0.00
L32	56 - 55.75	3.44	39	0.58	0.00
L33	55.75 - 55.5	3.41	39	0.58	0.00
L34	55.5 - 55.25	3.38	39	0.58	0.00
L35	55.25 - 54	3.35	39	0.57	0.00
L36	54 - 53.75	3.20	39	0.56	0.00
L37	53.75 - 53.5	3.17	39	0.56	0.00
L38	53.5 - 53.25	3.15	39	0.56	0.00

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L39	53.25 - 53	3.12	39	0.56	0.00
L40	53 - 48	3.09	39	0.55	0.00
L41	48 - 39.75	2.54	39	0.50	0.00
L42	44.5 - 38.75	2.19	39	0.46	0.00
L43	38.75 - 34.75	1.66	39	0.42	0.00
L44	34.75 - 34.5	1.33	39	0.37	0.00
L45	34.5 - 33.75	1.31	39	0.37	0.00
L46	33.75 - 33.5	1.25	39	0.36	0.00
L47	33.5 - 28.5	1.23	39	0.36	0.00
L48	28.5 - 24	0.89	39	0.30	0.00
L49	24 - 23.75	0.63	39	0.25	0.00
L50	23.75 - 18.75	0.61	39	0.25	0.00
L51	18.75 - 14.25	0.38	39	0.19	0.00
L52	14.25 - 14	0.22	39	0.15	0.00
L53	14 - 9	0.21	39	0.14	0.00
L54	9 - 4.75	0.09	39	0.09	0.00
L55	4.75 - 4.5	0.03	39	0.05	0.00
L56	4.5 - 0	0.02	39	0.05	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	VHLP2-11	39	14.62	1.04	0.01	21722
123.000	PX2F-52	39	14.62	1.04	0.01	21722
122.000	APXVTM14-ALU-I20 w/ Mount Pipe	39	14.62	1.04	0.01	21722
120.000	Pipe 6" x 10'	39	14.62	1.04	0.01	21722
113.000	BXA-171063/8CF w/ Mount Pipe	39	13.11	1.02	0.01	15620
105.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	11.43	0.98	0.01	7307
96.000	7770.00 w/ Mount Pipe	39	9.66	0.90	0.00	6234
75.000	ACUTIME 2000	39	6.10	0.75	0.00	8446

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	67.29	2	4.75	0.04
L2	115 - 110	62.34	2	4.72	0.04
L3	110 - 105	57.44	2	4.64	0.03
L4	105 - 100	52.66	2	4.49	0.03
L5	100 - 99.25	48.06	2	4.29	0.02
L6	99.25 - 99	47.39	2	4.25	0.02
L7	99 - 94	47.17	2	4.24	0.02
L8	94 - 90.08	42.83	2	4.04	0.02
L9	90.08 - 89.83	39.59	2	3.85	0.01
L10	89.83 - 89.5	39.39	2	3.84	0.01
L11	89.5 - 89.25	39.12	2	3.83	0.01
L12	89.25 - 84.25	38.92	2	3.82	0.01

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L13	84.25 - 78	35.00	2	3.67	0.01
L14	81.75 - 77	33.10	2	3.59	0.01
L15	77 - 76.75	29.57	2	3.50	0.01
L16	76.75 - 76.5	29.39	2	3.49	0.01
L17	76.5 - 75.5	29.21	2	3.48	0.01
L18	75.5 - 75.25	28.48	2	3.46	0.01
L19	75.25 - 74.5	28.30	2	3.45	0.01
L20	74.5 - 74.25	27.76	2	3.42	0.01
L21	74.25 - 72	27.58	2	3.41	0.01
L22	72 - 71.75	25.99	2	3.33	0.01
L23	71.75 - 70.5	25.82	2	3.33	0.01
L24	70.5 - 70.25	24.95	2	3.28	0.01
L25	70.25 - 70	24.78	2	3.27	0.01
L26	70 - 69.75	24.61	2	3.26	0.01
L27	69.75 - 69.5	24.44	2	3.25	0.01
L28	69.5 - 69.25	24.27	2	3.24	0.01
L29	69.25 - 64.25	24.10	2	3.23	0.01
L30	64.25 - 59.25	20.82	2	3.03	0.01
L31	59.25 - 56	17.76	2	2.82	0.01
L32	56 - 55.75	15.89	2	2.68	0.01
L33	55.75 - 55.5	15.75	2	2.67	0.01
L34	55.5 - 55.25	15.61	2	2.66	0.01
L35	55.25 - 54	15.47	2	2.65	0.01
L36	54 - 53.75	14.78	2	2.61	0.01
L37	53.75 - 53.5	14.64	2	2.59	0.01
L38	53.5 - 53.25	14.51	2	2.58	0.01
L39	53.25 - 53	14.37	2	2.57	0.01
L40	53 - 48	14.24	2	2.56	0.01
L41	48 - 39.75	11.70	2	2.29	0.01
L42	44.5 - 38.75	10.09	2	2.10	0.00
L43	38.75 - 34.75	7.65	2	1.93	0.00
L44	34.75 - 34.5	6.13	2	1.72	0.00
L45	34.5 - 33.75	6.04	2	1.71	0.00
L46	33.75 - 33.5	5.77	2	1.68	0.00
L47	33.5 - 28.5	5.68	2	1.66	0.00
L48	28.5 - 24	4.08	2	1.39	0.00
L49	24 - 23.75	2.89	2	1.16	0.00
L50	23.75 - 18.75	2.83	2	1.14	0.00
L51	18.75 - 14.25	1.76	2	0.90	0.00
L52	14.25 - 14	1.02	2	0.67	0.00
L53	14 - 9	0.99	2	0.65	0.00
L54	9 - 4.75	0.42	2	0.43	0.00
L55	4.75 - 4.5	0.12	2	0.24	0.00
L56	4.5 - 0	0.11	2	0.23	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.000	VHLP2-11	2	67.29	4.75	0.04	4953
123.000	PX2F-52	2	67.29	4.75	0.04	4953
122.000	APXVTM14-ALU-I20 w/ Mount Pipe	2	67.29	4.75	0.04	4953
120.000	Pipe 6" x 10'	2	67.29	4.75	0.04	4953
113.000	BXA-171063/8CF w/ Mount Pipe	2	60.37	4.69	0.03	3555
105.000	ERICSSON AIR 21 B2A B4P w/	2	52.66	4.49	0.03	1621

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft	Mount Pipe					
96.000	7770.00 w/ Mount Pipe	2	44.54	4.13	0.02	1370
75.000	ACUTIME 2000	2	28.12	3.44	0.01	1849

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	120 - 115 (1)	TP23.0103x22x0.25	5.000	0.000	0.0	18.3220	-3.71	989.39	0.004
L2	115 - 110 (2)	TP24.0205x23.0103x0.25	5.000	0.000	0.0	19.1353	-6.75	1033.30	0.007
L3	110 - 105 (3)	TP25.0307x24.0205x0.25	5.000	0.000	0.0	19.9485	-7.26	1077.22	0.007
L4	105 - 100 (4)	TP26.041x25.0307x0.25	5.000	0.000	0.0	20.7617	-11.47	1121.13	0.010
L5	100 - 99.25 (5)	TP26.1925x26.041x0.25	0.750	0.000	0.0	20.8837	-11.57	1127.72	0.010
L6	99.25 - 99 (6)	TP26.243x26.1925x0.3625	0.250	0.000	0.0	30.2090	-11.62	1631.29	0.007
L7	99 - 94 (7)	TP27.2533x26.243x0.3563	5.000	0.000	0.0	30.8542	-17.02	1666.13	0.010
L8	94 - 90.08 (8)	TP28.0453x27.2533x0.35	3.920	0.000	0.0	31.2126	-17.84	1685.48	0.011
L9	90.08 - 89.83 (9)	TP28.0958x28.0453x0.5125	0.250	0.000	0.0	45.5193	-17.91	2458.04	0.007
L10	89.83 - 89.5 (10)	TP28.1625x28.0958x0.5125	0.330	0.000	0.0	45.6293	-17.99	2463.98	0.007
L11	89.5 - 89.25 (11)	TP28.213x28.1625x0.725	0.250	0.000	0.0	64.1707	-18.06	3465.22	0.005
L12	89.25 - 84.25 (12)	TP29.2232x28.213x0.7	5.000	0.000	0.0	64.2913	-19.41	3471.73	0.006
L13	84.25 - 78 (13)	TP30.486x29.2232x0.7	6.250	0.000	0.0	65.4298	-20.14	3533.21	0.006
L14	78 - 77 (14)	TP30.188x29.2283x0.8625	4.750	0.000	0.0	81.4443	-22.83	4397.99	0.005
L15	77 - 76.75 (15)	TP30.2385x30.188x0.8625	0.250	0.000	0.0	81.5846	-22.93	4405.57	0.005
L16	76.75 - 76.5 (16)	TP30.289x30.2385x0.9625	0.250	0.000	0.0	90.8903	-23.03	4908.07	0.005
L17	76.5 - 75.5 (17)	TP30.4911x30.289x0.9625	1.000	0.000	0.0	91.5164	-23.43	4941.89	0.005
L18	75.5 - 75.25 (18)	TP30.5416x30.4911x0.7625	0.250	0.000	0.0	73.1151	-23.53	3948.22	0.006
L19	75.25 - 74.5 (19)	TP30.6931x30.5416x0.7625	0.750	0.000	0.0	73.4871	-23.88	3968.31	0.006
L20	74.5 - 74.25 (20)	TP30.7436x30.6931x0.8375	0.250	0.000	0.0	80.6493	-23.97	4355.06	0.006
L21	74.25 - 72 (21)	TP31.1982x30.7436x0.825	2.250	0.000	0.0	80.6864	-24.75	4357.07	0.006
L22	72 - 71.75 (22)	TP31.2487x31.1982x0.7625	0.250	0.000	0.0	74.8513	-24.85	4041.97	0.006
L23	71.75 - 70.5 (23)	TP31.5013x31.2487x0.7625	1.250	0.000	0.0	75.4714	-25.32	4075.45	0.006
L24	70.5 - 70.25 (24)	TP31.5518x31.5013x0.7875	0.250	0.000	0.0	78.0105	-25.44	4212.57	0.006
L25	70.25 - 70 (25)	TP31.6023x31.5518x0.7875	0.250	0.000	0.0	78.1386	-25.54	4219.49	0.006
L26	70 - 69.75 (26)	TP31.6528x31.6023x0.725	0.250	0.000	0.0	72.2010	-25.64	3898.85	0.007
L27	69.75 - 69.5 (27)	TP31.7033x31.6528x0.875	0.250	0.000	0.0	86.8588	-25.74	4690.37	0.005
L28	69.5 - 69.25 (28)	TP31.7538x31.7033x0.75	0.250	0.000	0.0	74.8742	-25.83	4043.21	0.006
L29	69.25 - 64.25 (29)	TP32.764x31.7538x0.7375	5.000	0.000	0.0	76.0550	-27.62	4106.97	0.007
L30	64.25 - 59.25	TP33.7742x32.764x0.7125	5.000	0.000	0.0	75.8519	-29.46	4096.00	0.007

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
	(30)								
L31	59.25 - 56 (31)	TP34.4309x33.7742x0.7125	3.250	0.000	0.0	77.3583	-30.68	4177.35	0.007
L32	56 - 55.75 (32)	TP34.4814x34.4309x0.8125	0.250	0.000	0.0	88.0862	-30.81	4756.65	0.006
L33	55.75 - 55.5 (33)	TP34.5319x34.4814x0.8125	0.250	0.000	0.0	88.2183	-30.93	4763.79	0.006
L34	55.5 - 55.25 (34)	TP34.5824x34.5319x0.8875	0.250	0.000	0.0	96.2915	-31.05	5199.74	0.006
L35	55.25 - 54 (35)	TP34.8349x34.5824x0.875	1.250	0.000	0.0	95.6821	-31.66	5166.83	0.006
L36	54 - 53.75 (36)	TP34.8854x34.8349x0.75	0.250	0.000	0.0	82.4371	-31.79	4451.60	0.007
L37	53.75 - 53.5 (37)	TP34.936x34.8854x0.7375	0.250	0.000	0.0	81.2128	-31.91	4385.49	0.007
L38	53.5 - 53.25 (38)	TP34.9865x34.936x0.6625	0.250	0.000	0.0	73.2216	-32.02	3953.97	0.008
L39	53.25 - 53 (39)	TP34.9865x30x0.6	0.250	0.000	0.0	56.8008	-32.03	3067.24	0.010
L40	53 - 48 (40)	TP36.0472x35.037x0.5875	5.000	0.000	0.0	67.0808	-34.23	3622.37	0.009
L41	48 - 39.75 (41)	TP37.714x36.0472x0.5875	8.250	0.000	0.0	68.4186	-35.73	3694.60	0.010
L42	39.75 - 38.75 (42)	TP37.291x36.1293x0.6625	5.750	0.000	0.0	78.1378	-39.62	4219.44	0.009
L43	38.75 - 34.75 (43)	TP38.0992x37.291x0.6625	4.000	0.000	0.0	79.8618	-41.43	4312.54	0.010
L44	34.75 - 34.5 (44)	TP38.1497x38.0992x0.825	0.250	0.000	0.0	99.1530	-41.57	5354.26	0.008
L45	34.5 - 33.75 (45)	TP38.3012x38.1497x0.825	0.750	0.000	0.0	99.5556	-41.96	5376.00	0.008
L46	33.75 - 33.5 (46)	TP38.3517x38.3012x0.625	0.250	0.000	0.0	75.9250	-42.08	4099.95	0.010
L47	33.5 - 28.5 (47)	TP39.3619x38.3517x0.6125	5.000	0.000	0.0	76.4235	-44.33	4126.87	0.011
L48	28.5 - 24 (48)	TP40.2711x39.3619x0.6625	4.500	0.000	0.0	84.4950	-46.38	4562.73	0.010
L49	24 - 23.75 (49)	TP40.3216x40.2711x0.7	0.250	0.000	0.0	89.3071	-46.52	4822.58	0.010
L50	23.75 - 18.75 (50)	TP41.3318x40.3216x0.6875	5.000	0.000	0.0	89.9763	-48.92	4858.72	0.010
L51	18.75 - 14.25 (51)	TP42.241x41.3318x0.675	4.500	0.000	0.0	90.3436	-51.12	4878.56	0.010
L52	14.25 - 14 (52)	TP42.2915x42.241x0.5	0.250	0.000	0.0	67.2843	-51.24	3633.35	0.014
L53	14 - 9 (53)	TP43.3017x42.2915x0.7625	5.000	0.000	0.0	104.444	-53.91	5639.99	0.010
L54	9 - 4.75 (54)	TP44.1603x43.3017x0.75	4.250	0.000	0.0	104.836	-56.23	5661.14	0.010
L55	4.75 - 4.5 (55)	TP44.2108x44.1603x0.6625	0.250	0.000	0.0	92.8995	-56.38	5016.57	0.011
L56	4.5 - 0 (56)	TP45.12x44.2108x0.65	4.500	0.000	0.0	93.0757	-58.77	5026.09	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	120 - 115 (1)	TP23.0103x22x0.25	48.19	564.84	0.085	0.00	564.84	0.000
L2	115 - 110 (2)	TP24.0205x23.0103x0.25	114.49	607.66	0.188	0.00	607.66	0.000
L3	110 - 105 (3)	TP25.0307x24.0205x0.25	191.08	651.21	0.293	0.00	651.21	0.000
L4	105 - 100 (4)	TP26.041x25.0307x0.25	299.46	695.40	0.431	0.00	695.40	0.000
L5	100 - 99.25 (5)	TP26.1925x26.041x0.25	315.09	702.08	0.449	0.00	702.08	0.000
L6	99.25 - 99 (6)	TP26.243x26.1925x0.3625	320.31	1077.23	0.297	0.00	1077.23	0.000
L7	99 - 94 (7)	TP27.2533x26.243x0.3563	452.98	1144.31	0.396	0.00	1144.31	0.000
L8	94 - 90.08 (8)	TP28.0453x27.2533x0.35	568.83	1192.67	0.477	0.00	1192.67	0.000
L9	90.08 - 89.83 (9)	TP28.0958x28.0453x0.5125	576.30	1722.21	0.335	0.00	1722.21	0.000

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	Client	Crown Castle	Designed by	tmlester

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
L10	89.83 - 89.5 (10)	TP28.1625x28.0958x0.5125	586.20	1730.63	0.339	0.00	1730.63	0.000
L11	89.5 - 89.25 (11)	TP28.213x28.1625x0.725	593.70	2401.11	0.247	0.00	2401.11	0.000
L12	89.25 - 84.25 (12)	TP29.2232x28.213x0.7	747.00	2500.69	0.299	0.00	2500.69	0.000
L13	84.25 - 78 (13)	TP30.486x29.2232x0.7	826.62	2591.13	0.319	0.00	2591.13	0.000
L14	78 - 77 (14)	TP30.188x29.2283x0.8625	981.92	3241.57	0.303	0.00	3241.57	0.000
L15	77 - 76.75 (15)	TP30.2385x30.188x0.8625	990.24	3252.92	0.304	0.00	3252.92	0.000
L16	76.75 - 76.5 (16)	TP30.289x30.2385x0.9625	998.58	3605.72	0.277	0.00	3605.72	0.000
L17	76.5 - 75.5 (17)	TP30.4911x30.289x0.9625	1032.06	3656.38	0.282	0.00	3656.38	0.000
L18	75.5 - 75.25 (18)	TP30.5416x30.4911x0.7625	1040.47	2966.04	0.351	0.00	2966.04	0.000
L19	75.25 - 74.5 (19)	TP30.6931x30.5416x0.7625	1065.94	2996.68	0.356	0.00	2996.68	0.000
L20	74.5 - 74.25 (20)	TP30.7436x30.6931x0.8375	1074.42	3277.97	0.328	0.00	3277.97	0.000
L21	74.25 - 72 (21)	TP31.1982x30.7436x0.825	1151.29	3333.43	0.345	0.00	3333.43	0.000
L22	72 - 71.75 (22)	TP31.2487x31.1982x0.7625	1159.90	3110.38	0.373	0.00	3110.38	0.000
L23	71.75 - 70.5 (23)	TP31.5013x31.2487x0.7625	1203.16	3162.76	0.380	0.00	3162.76	0.000
L24	70.5 - 70.25 (24)	TP31.5518x31.5013x0.7875	1211.85	3269.36	0.371	0.00	3269.36	0.000
L25	70.25 - 70 (25)	TP31.6023x31.5518x0.7875	1220.56	3280.23	0.372	0.00	3280.23	0.000
L26	70 - 69.75 (26)	TP31.6528x31.6023x0.725	1229.28	3048.38	0.403	0.00	3048.38	0.000
L27	69.75 - 69.5 (27)	TP31.7033x31.6528x0.875	1238.02	3637.88	0.340	0.00	3637.88	0.000
L28	69.5 - 69.25 (28)	TP31.7538x31.7033x0.75	1246.77	3166.69	0.394	0.00	3166.69	0.000
L29	69.25 - 64.25 (29)	TP32.764x31.7538x0.7375	1424.60	3326.52	0.428	0.00	3326.52	0.000
L30	64.25 - 59.25 (30)	TP33.7742x32.764x0.7125	1607.84	3429.82	0.469	0.00	3429.82	0.000
L31	59.25 - 56 (31)	TP34.4309x33.7742x0.7125	1729.82	3568.88	0.485	0.00	3568.88	0.000
L32	56 - 55.75 (32)	TP34.4814x34.4309x0.8125	1739.30	4045.94	0.430	0.00	4045.94	0.000
L33	55.75 - 55.5 (33)	TP34.5319x34.4814x0.8125	1748.79	4058.23	0.431	0.00	4058.23	0.000
L34	55.5 - 55.25 (34)	TP34.5824x34.5319x0.8875	1758.30	4416.73	0.398	0.00	4416.73	0.000
L35	55.25 - 54 (35)	TP34.8349x34.5824x0.875	1806.08	4425.77	0.408	0.00	4425.77	0.000
L36	54 - 53.75 (36)	TP34.8854x34.8349x0.75	1815.68	3847.06	0.472	0.00	3847.06	0.000
L37	53.75 - 53.5 (37)	TP34.936x34.8854x0.7375	1825.29	3798.43	0.481	0.00	3798.43	0.000
L38	53.5 - 53.25 (38)	TP34.9865x34.936x0.6625	1834.92	3444.88	0.533	0.00	3444.88	0.000
L39	53.25 - 53 (39)	TP34.9865x30x0.6	1834.92	2286.47	0.803	0.00	2286.47	0.000
L40	53 - 48 (40)	TP36.0472x35.037x0.5875	2040.31	3269.16	0.624	0.00	3269.16	0.000
L41	48 - 39.75 (41)	TP37.714x36.0472x0.5875	2180.60	3401.93	0.641	0.00	3401.93	0.000
L42	39.75 - 38.75 (42)	TP37.291x36.1293x0.6625	2417.27	3927.67	0.615	0.00	3927.67	0.000
L43	38.75 - 34.75 (43)	TP38.0992x37.291x0.6625	2586.24	4104.48	0.630	0.00	4104.48	0.000
L44	34.75 - 34.5 (44)	TP38.1497x38.0992x0.825	2596.92	5058.79	0.513	0.00	5058.79	0.000
L45	34.5 - 33.75 (45)	TP38.3012x38.1497x0.825	2629.01	5100.39	0.515	0.00	5100.39	0.000
L46	33.75 - 33.5 (46)	TP38.3517x38.3012x0.625	2639.73	3936.75	0.671	0.00	3936.75	0.000
L47	33.5 - 28.5 (47)	TP39.3619x38.3517x0.6125	2856.77	4073.06	0.701	0.00	4073.06	0.000

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Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
L48	28.5 - 24 (48)	TP40.2711x39.3619x0.6625	3056.22	4598.92	0.665	0.00	4598.92	0.000
L49	24 - 23.75 (49)	TP40.3216x40.2711x0.7	3067.42	4857.93	0.631	0.00	4857.93	0.000
L50	23.75 - 18.75 (50)	TP41.3318x40.3216x0.6875	3293.70	5024.38	0.656	0.00	5024.38	0.000
L51	18.75 - 14.25 (51)	TP42.241x41.3318x0.675	3501.17	5162.72	0.678	0.00	5162.72	0.000
L52	14.25 - 14 (52)	TP42.2915x42.241x0.5	3512.79	3882.18	0.905	0.00	3882.18	0.000
L53	14 - 9 (53)	TP43.3017x42.2915x0.7625	3747.64	6098.13	0.615	0.00	6098.13	0.000
L54	9 - 4.75 (54)	TP44.1603x43.3017x0.75	3950.71	6250.33	0.632	0.00	6250.33	0.000
L55	4.75 - 4.5 (55)	TP44.2108x44.1603x0.6625	3962.76	5567.58	0.712	0.00	5567.58	0.000
L56	4.5 - 0 (56)	TP45.12x44.2108x0.65	4181.30	5699.55	0.734	0.00	5699.55	0.000

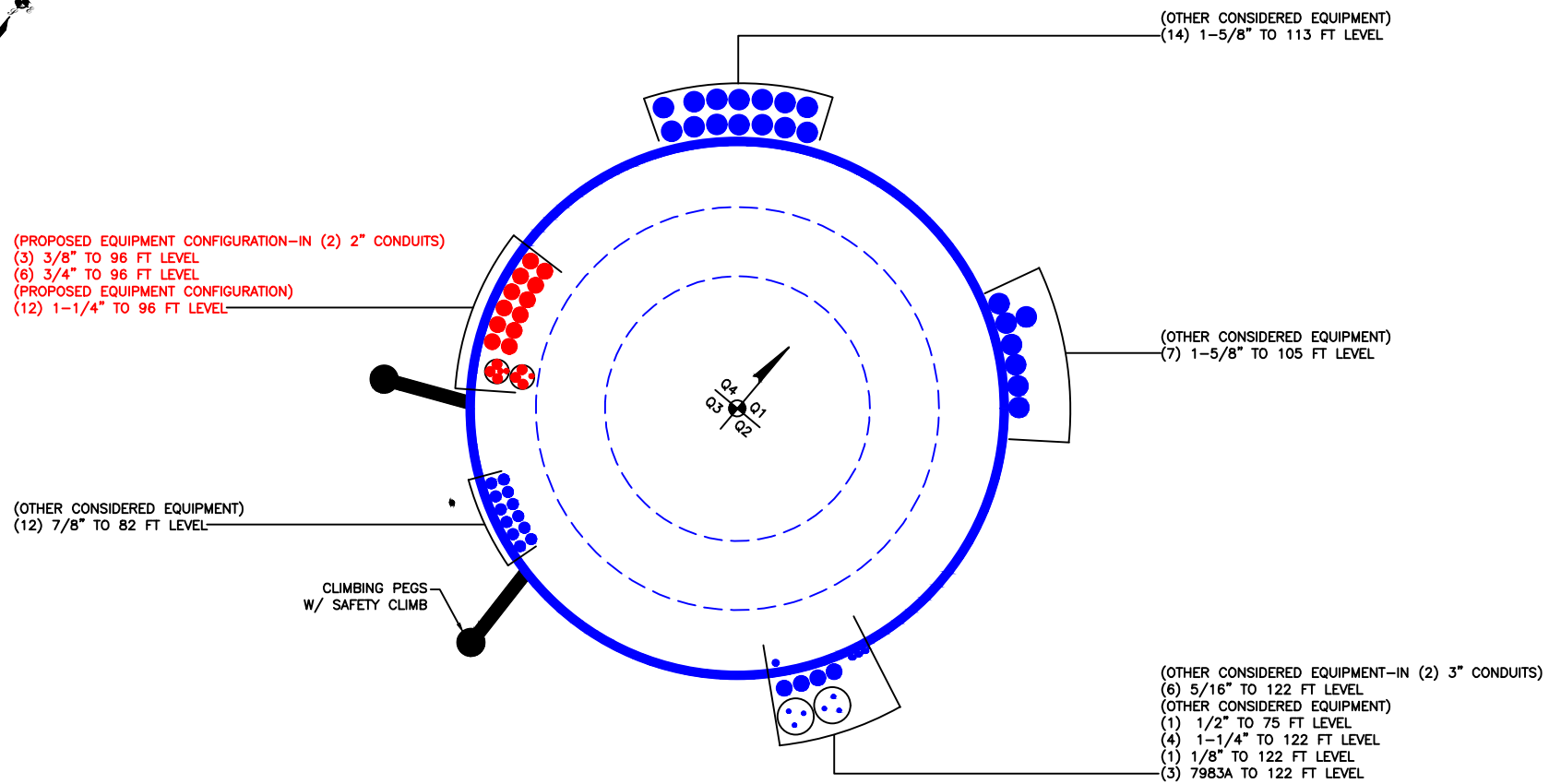
Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	120 - 115 (1)	TP23.0103x22x0.25	7.50	296.82	0.025	2.74	594.25	0.005
L2	115 - 110 (2)	TP24.0205x23.0103x0.25	15.05	309.99	0.049	4.51	648.17	0.007
L3	110 - 105 (3)	TP25.0307x24.0205x0.25	15.58	323.17	0.048	4.51	704.43	0.006
L4	105 - 100 (4)	TP26.041x25.0307x0.25	20.76	336.34	0.062	4.51	763.04	0.006
L5	100 - 99.25 (5)	TP26.1925x26.041x0.25	20.88	338.32	0.062	4.52	772.03	0.006
L6	99.25 - 99 (6)	TP26.243x26.1925x0.3625	20.92	489.39	0.043	4.52	1114.10	0.004
L7	99 - 94 (7)	TP27.2533x26.243x0.3563	29.20	499.84	0.058	4.42	1182.59	0.004
L8	94 - 90.08 (8)	TP28.0453x27.2533x0.35	29.89	505.64	0.059	4.45	1231.83	0.004
L9	90.08 - 89.83 (9)	TP28.0958x28.0453x0.5125	29.93	737.41	0.041	4.45	1789.19	0.002
L10	89.83 - 89.5 (10)	TP28.1625x28.0958x0.5125	29.99	739.20	0.041	4.45	1797.85	0.002
L11	89.5 - 89.25 (11)	TP28.213x28.1625x0.725	30.04	1039.56	0.029	4.45	2513.59	0.002
L12	89.25 - 84.25 (12)	TP29.2232x28.213x0.7	31.57	1041.52	0.030	2.43	2613.16	0.001
L13	84.25 - 78 (13)	TP30.486x29.2232x0.7	32.11	1059.96	0.030	2.42	2706.53	0.001
L14	78 - 77 (14)	TP30.188x29.2283x0.8625	33.24	1319.40	0.025	2.38	3403.47	0.001
L15	77 - 76.75 (15)	TP30.2385x30.188x0.8625	33.29	1321.67	0.025	2.38	3415.20	0.001
L16	76.75 - 76.5 (16)	TP30.289x30.2385x0.9625	33.35	1472.42	0.023	2.38	3798.33	0.001
L17	76.5 - 75.5 (17)	TP30.4911x30.289x0.9625	33.58	1482.57	0.023	2.38	3850.85	0.001
L18	75.5 - 75.25 (18)	TP30.5416x30.4911x0.7625	33.63	1184.46	0.028	2.37	3102.65	0.001
L19	75.25 - 74.5 (19)	TP30.6931x30.5416x0.7625	33.85	1190.49	0.028	2.37	3134.31	0.001
L20	74.5 - 74.25 (20)	TP30.7436x30.6931x0.8375	33.90	1306.52	0.026	2.37	3436.97	0.001
L21	74.25 - 72 (21)	TP31.1982x30.7436x0.825	34.40	1307.12	0.026	2.35	3492.26	0.001
L22	72 - 71.75 (22)	TP31.2487x31.1982x0.7625	34.45	1212.59	0.028	2.34	3251.76	0.001
L23	71.75 - 70.5 (23)	TP31.5013x31.2487x0.7625	34.74	1222.64	0.028	2.34	3305.85	0.001
L24	70.5 - 70.25 (24)	TP31.5518x31.5013x0.7875	34.78	1263.77	0.028	2.32	3419.91	0.001
L25	70.25 - 70 (25)	TP31.6023x31.5518x0.7875	34.84	1265.85	0.028	2.32	3431.15	0.001
L26	70 - 69.75 (26)	TP31.6528x31.6023x0.725	34.89	1169.66	0.030	2.31	3182.05	0.001
L27	69.75 - 69.5 (27)	TP31.7033x31.6528x0.875	34.95	1407.11	0.025	2.31	3815.73	0.001
L28	69.5 - 69.25	TP31.7538x31.7033x0.75	35.01	1212.96	0.029	2.31	3307.97	0.001

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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 $\frac{T_u}{\phi T_n}$
L29	69.25 - 64.25 (28)	TP32.764x31.7538x0.7375	36.10	1232.09	0.029	2.25	3470.98	0.001
L30	64.25 - 59.25 (29)	TP33.7742x32.764x0.7125	37.18	1228.80	0.030	2.18	3573.61	0.001
L31	59.25 - 56 (31)	TP34.4309x33.7742x0.7125	37.87	1253.20	0.030	2.14	3716.97	0.001
L32	56 - 55.75 (32)	TP34.4814x34.4309x0.8125	37.92	1427.00	0.027	2.12	4226.21	0.001
L33	55.75 - 55.5 (33)	TP34.5319x34.4814x0.8125	37.98	1429.14	0.027	2.12	4238.90	0.000
L34	55.5 - 55.25 (34)	TP34.5824x34.5319x0.8875	38.04	1559.92	0.024	2.11	4623.46	0.000
L35	55.25 - 54 (35)	TP34.8349x34.5824x0.875	38.35	1550.05	0.025	2.11	4630.33	0.000
L36	54 - 53.75 (36)	TP34.8854x34.8349x0.75	38.40	1335.48	0.029	2.09	4009.99	0.001
L37	53.75 - 53.5 (37)	TP34.936x34.8854x0.7375	38.45	1315.65	0.029	2.08	3957.72	0.001
L38	53.5 - 53.25 (38)	TP34.9865x34.936x0.6625	38.51	1186.19	0.032	2.08	3581.39	0.001
L39	53.25 - 53 (39)	TP34.9865x30x0.6	38.57	1076.24	0.036	2.08	2379.67	0.001
L40	53 - 48 (40)	TP36.0472x35.037x0.5875	39.69	1086.71	0.037	2.01	3389.60	0.001
L41	48 - 39.75 (41)	TP37.714x36.0472x0.5875	40.44	1108.38	0.036	1.95	3526.13	0.001
L42	39.75 - 38.75 (42)	TP37.291x36.1293x0.6625	41.82	1265.83	0.033	1.85	4078.45	0.000
L43	38.75 - 34.75 (43)	TP38.0992x37.291x0.6625	42.64	1293.76	0.033	1.79	4260.41	0.000
L44	34.75 - 34.5 (44)	TP38.1497x38.0992x0.825	42.68	1606.28	0.027	1.77	5273.72	0.000
L45	34.5 - 33.75 (45)	TP38.3012x38.1497x0.825	42.85	1612.80	0.027	1.77	5316.63	0.000
L46	33.75 - 33.5 (46)	TP38.3517x38.3012x0.625	42.89	1229.99	0.035	1.76	4081.78	0.000
L47	33.5 - 28.5 (47)	TP39.3619x38.3517x0.6125	43.88	1238.06	0.035	1.69	4219.95	0.000
L48	28.5 - 24 (48)	TP40.2711x39.3619x0.6625	44.74	1368.82	0.033	1.62	4769.09	0.000
L49	24 - 23.75 (49)	TP40.3216x40.2711x0.7	44.77	1446.77	0.031	1.60	5042.35	0.000
L50	23.75 - 18.75 (50)	TP41.3318x40.3216x0.6875	45.70	1457.62	0.031	1.53	5211.26	0.000
L51	18.75 - 14.25 (51)	TP42.241x41.3318x0.675	46.48	1463.57	0.032	1.46	5351.18	0.000
L52	14.25 - 14 (52)	TP42.2915x42.241x0.5	46.50	1090.01	0.043	1.44	4006.97	0.000
L53	14 - 9 (53)	TP43.3017x42.2915x0.7625	47.39	1692.00	0.028	1.37	6331.23	0.000
L54	9 - 4.75 (54)	TP44.1603x43.3017x0.75	48.14	1698.34	0.028	1.30	6485.12	0.000
L55	4.75 - 4.5 (55)	TP44.2108x44.1603x0.6625	48.16	1504.97	0.032	1.28	5765.00	0.000
L56	4.5 - 0 (56)	TP45.12x44.2108x0.65	48.93	1507.83	0.032	1.22	5898.18	0.000

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876320 TOWER ID: C_BASELEVEL

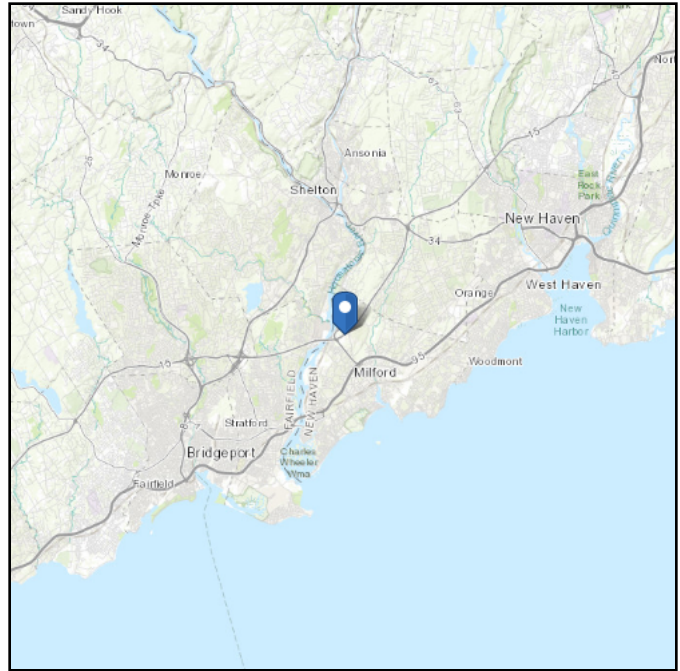
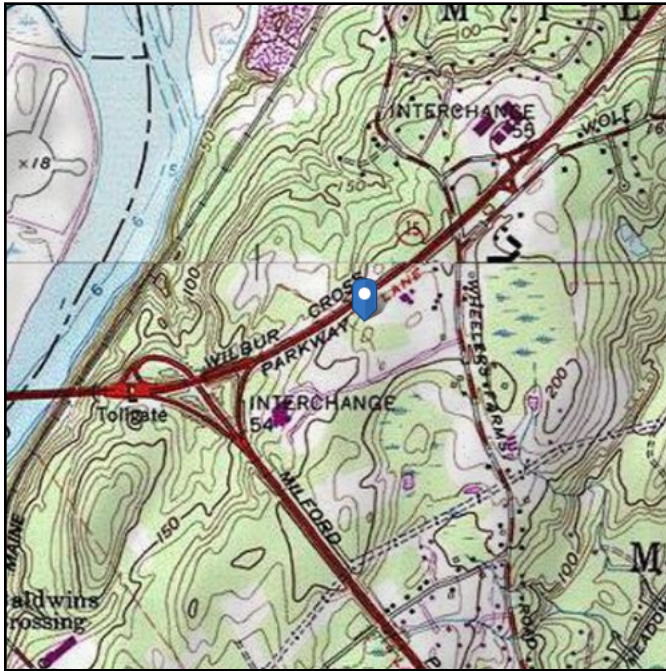
APPENDIX C
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 212.97 ft (NAVD 88)
Latitude: 41.248431
Longitude: -73.079075



Wind

Results:

Wind Speed:	124 Vmph	*Milford, CT Requires 125 mph Vult
10-year MRI	77 Vmph	
25-year MRI	87 Vmph	
50-year MRI	93 Vmph	
100-year MRI	100 Vmph	

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

Date Accessed: Tue Sep 18 2018

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

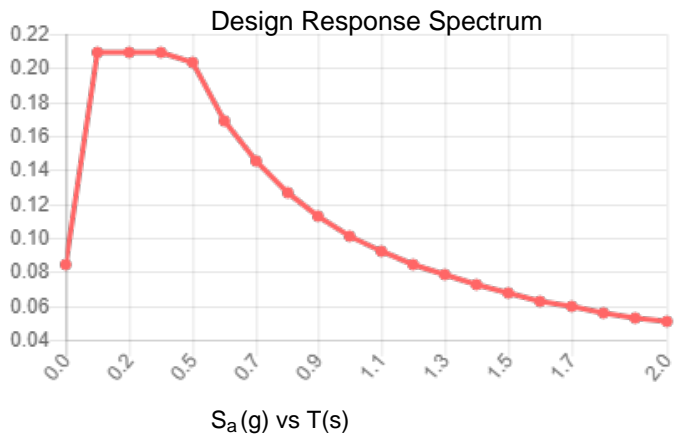
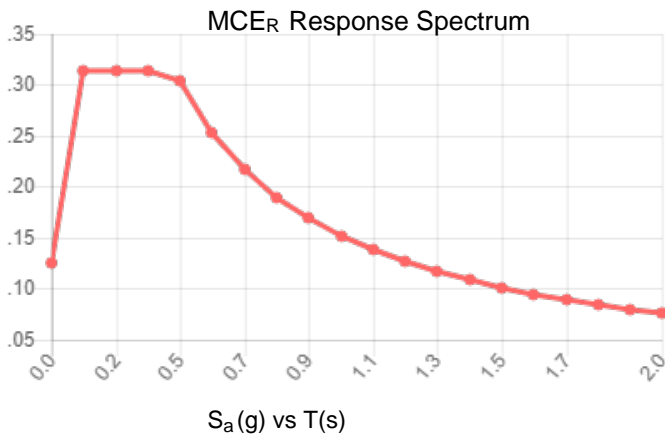
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.196	S_{DS} :	0.209
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.104
S_{MS} :	0.314	PGA _M :	0.166
S_{M1} :	0.152	F _{PGA} :	1.591
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Sep 18 2018

Date Source:

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

Ice

Results:

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

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

Date Accessed: Tue Sep 18 2018

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

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

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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	120	42	3.75	12	22.00003	30.486	0.25	Auto	A607-60
2	81.75	42	4.75	12	29.23	37.714	0.3125	Auto	A607-60
3	44.5	44.5	0	12	36.13	45.12	0.375	Auto	A607-60

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	4.75	plate	(TS) 1.25x4.00 (65 ksi)	3			x		x						x	
2	0	24	channel	MP3-04 (1.25in)	4			x		x				x		x	
3	4.75	34.75	plate	PL 1" X 5"	4		3				-3		-4				-3.3
4	33.75	69.75	plate	PL 1" X 5"	4		-2.5				2.5		2.5				2.5
5	0	14.25	channel	MP3-03 (1.25in)	4		-1.8				1.5		0				1.8
6	24	44.25	channel	MP3-03 (1.25in)	4			x		x				x		x	
7	53.5	70.5	plate	CCI-SFP-045100	1											2.25	
8	53.25	72	plate	CCI-SFP-065125	1			x									
9	54	70	plate	CCI-AFP-045100	2					x				x			
10	69.5	89.5	plate	CCI-AFP-060100	2	x									x		
11	70	90.08	plate	CCI-AFP-045100	2					x				x			
12	44	56	plate	CCI-SFP-045100	3			3			-3		-3				
13	43.75	55.5	plate	CCI-SFP-045100	1												-3
14	74.5	99.25	plate	PL 1.25" X 4"	1			x									
15	75.5	99.25	plate	PL 1.25" X 4"	1						x						
16	75.5	99.25	plate	PL 1.25" X 4"	1												x
17	69.75	78.5	plate	PL 1.25" X 4"	2				x			x					
18	70	78.5	plate	PL 1.25" X 4"	1												-2
19	69.75	76.75	plate	PL 1.25" X 4"	1								-3				
20																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L _v (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	1.25	4	5	8	n/a	n/a	6.000	5.000	0.0000	A572-65
2	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.566	1.2500	A572-65
3	5	1	5	0.5	27.000	27.000	18.000	3.750	1.1875	A572-65
4	5	1	5	0.5	27.000	27.000	18.000	3.750	1.1875	A572-65
5	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.526	1.2500	A572-65
6	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.526	1.2500	A572-65
7	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
8	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
9	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
10	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
11	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
12	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
13	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
14	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
15	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
16	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
17	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
18	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65
19	4	1.25	5	0.625	18.000	18.000	27.000	3.438	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	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	120 - 115	5		12	22.000	23.010	0.25	A607-60	1.000
2	115 - 110	5		12	23.010	24.020	0.25	A607-60	1.000
3	110 - 105	5		12	24.020	25.031	0.25	A607-60	1.000
4	105 - 100	5		12	25.031	26.041	0.25	A607-60	1.000
5	100 - 99.25	0.75		12	26.041	26.193	0.25	A607-60	1.000
6	99.25 - 99	0.25		12	26.193	26.243	0.3625	A607-60	1.190
7	99 - 94	5		12	26.243	27.253	0.35625	A607-60	1.191
8	94 - 90.08	3.92		12	27.253	28.045	0.35	A607-60	1.198
9	90.08 - 89.83	0.25		12	28.045	28.096	0.5125	A607-60	1.020
10	89.83 - 89.5	0.33		12	28.096	28.162	0.5125	A607-60	1.019
11	89.5 - 89.25	0.25		12	28.162	28.213	0.725	A607-60	0.913
12	89.25 - 84.25	5		12	28.213	29.223	0.7	A607-60	0.924
13	84.25 - 81.75	6.25	3.75	12	29.223	30.486	0.7	A607-60	0.914
14	81.75 - 77	4.75		12	29.228	30.188	0.8625	A607-60	0.996
15	77 - 76.75	0.25		12	30.188	30.239	0.8625	A607-60	0.995
16	76.75 - 76.5	0.25		12	30.239	30.289	0.9625	A607-60	0.949
17	76.5 - 75.5	1		12	30.289	30.491	0.9625	A607-60	0.945
18	75.5 - 75.25	0.25		12	30.491	30.542	0.7625	A607-60	1.046
19	75.25 - 74.5	0.75		12	30.542	30.693	0.7625	A607-60	1.043
20	74.5 - 74.25	0.25		12	30.693	30.744	0.8375	A607-60	0.889
21	74.25 - 72	2.25		12	30.744	31.198	0.825	A607-60	0.894
22	72 - 71.75	0.25		12	31.198	31.249	0.7625	A607-60	1.073
23	71.75 - 70.5	1.25		12	31.249	31.501	0.7625	A607-60	1.068
24	70.5 - 70.25	0.25		12	31.501	31.552	0.7875	A607-60	1.091
25	70.25 - 70	0.25		12	31.552	31.602	0.7875	A607-60	1.090
26	70 - 69.75	0.25		12	31.602	31.653	0.725	A607-60	1.111
27	69.75 - 69.5	0.25		12	31.653	31.703	0.875	A607-60	0.982
28	69.5 - 69.25	0.25		12	31.703	31.754	0.75	A607-60	0.979
29	69.25 - 64.25	5		12	31.754	32.764	0.7375	A607-60	0.977
30	64.25 - 59.25	5		12	32.764	33.774	0.7125	A607-60	0.993
31	59.25 - 56	3.25		12	33.774	34.431	0.7125	A607-60	0.983
32	56 - 55.75	0.25		12	34.431	34.481	0.8125	A607-60	1.017
33	55.75 - 55.5	0.25		12	34.481	34.532	0.8125	A607-60	1.016
34	55.5 - 55.25	0.25		12	34.532	34.582	0.8875	A607-60	0.978
35	55.25 - 54	1.25		12	34.582	34.835	0.875	A607-60	0.987
36	54 - 53.75	0.25		12	34.835	34.885	0.75	A607-60	1.037
37	53.75 - 53.5	0.25		12	34.885	34.936	0.7375	A607-60	1.053
38	53.5 - 53.25	0.25		12	34.936	34.986	0.6625	A607-60	1.107
39	53.25 - 53	0.25		12	34.986	35.037	0.6	A607-60	1.097
40	53 - 48	5		12	35.037	36.047	0.5875	A607-60	1.103
41	48 - 44.5	8.25	4.75	12	36.047	37.714	0.5875	A607-60	1.092
42	44.5 - 38.75	5.75		12	36.129	37.291	0.6625	A607-60	0.976
43	38.75 - 34.75	4		12	37.291	38.099	0.6625	A607-60	0.968
44	34.75 - 34.5	0.25		12	38.099	38.150	0.825	A607-60	0.982
45	34.5 - 33.75	0.75		12	38.150	38.301	0.825	A607-60	0.980
46	33.75 - 33.5	0.25		12	38.301	38.352	0.625	A607-60	1.022
47	33.5 - 28.5	5		12	38.352	39.362	0.6125	A607-60	1.031
48	28.5 - 24	4.5		12	39.362	40.271	0.6625	A607-60	0.946
49	24 - 23.75	0.25		12	40.271	40.322	0.7	A607-60	0.950
50	23.75 - 18.75	5		12	40.322	41.332	0.6875	A607-60	0.956
51	18.75 - 14.25	4.5		12	41.332	42.241	0.675	A607-60	0.964
52	14.25 - 14	0.25		12	42.241	42.291	0.775	A607-60	0.954
53	14 - 9	5		12	42.291	43.302	0.7625	A607-60	0.958
54	9 - 4.75	4.25		12	43.302	44.160	0.75	A607-60	0.965
55	4.75 - 4.5	0.25		12	44.160	44.211	0.6625	A607-60	1.035
56	4.5 - 0	4.5		12	44.211	45.120	0.65	A607-60	1.045

TNX Section Forces

Increment (ft):		TNX Output			
5					
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)	
1	120 - 115	3.71	48.19	7.50	
2	115 - 110	6.76	114.49	15.05	
3	110 - 105	7.27	191.08	15.58	
4	105 - 100	11.49	299.46	20.75	
5	100 - 99.25	11.57	315.09	20.88	
6	99.25 - 99	11.62	320.31	20.92	
7	99 - 94	17.05	452.98	29.19	
8	94 - 90.08	17.84	568.83	29.89	
9	90.08 - 89.83	17.91	576.31	29.93	
10	89.83 - 89.5	17.99	586.20	29.99	
11	89.5 - 89.25	18.06	593.70	30.04	
12	89.25 - 84.25	19.41	747.00	31.57	
13	84.25 - 81.75	20.14	826.62	32.11	
14	81.75 - 77	22.83	981.92	33.24	
15	77 - 76.75	22.93	990.24	33.29	
16	76.75 - 76.5	23.03	998.58	33.35	
17	76.5 - 75.5	23.43	1032.06	33.58	
18	75.5 - 75.25	23.53	1040.46	33.63	
19	75.25 - 74.5	23.88	1065.94	33.85	
20	74.5 - 74.25	23.97	1074.42	33.90	
21	74.25 - 72	24.75	1151.29	34.40	
22	72 - 71.75	24.85	1159.90	34.45	
23	71.75 - 70.5	25.32	1203.16	34.74	
24	70.5 - 70.25	25.44	1211.85	34.78	
25	70.25 - 70	25.54	1220.56	34.84	
26	70 - 69.75	25.64	1229.28	34.89	
27	69.75 - 69.5	25.74	1238.02	34.95	
28	69.5 - 69.25	25.83	1246.77	35.01	
29	69.25 - 64.25	27.62	1424.60	36.10	
30	64.25 - 59.25	29.46	1607.84	37.18	
31	59.25 - 56	30.68	1729.82	37.87	
32	56 - 55.75	30.81	1739.30	37.92	
33	55.75 - 55.5	30.93	1748.79	37.98	
34	55.5 - 55.25	31.05	1758.30	38.04	
35	55.25 - 54	31.66	1806.07	38.35	
36	54 - 53.75	31.79	1815.67	38.40	
37	53.75 - 53.5	31.91	1825.29	38.45	
38	53.5 - 53.25	32.02	1834.92	38.51	
39	53.25 - 53	32.12	1844.56	38.57	
40	53 - 48	34.23	2040.31	39.69	
41	48 - 44.5	35.73	2180.60	40.44	
42	44.5 - 38.75	39.62	2417.27	41.82	
43	38.75 - 34.75	41.43	2586.24	42.64	
44	34.75 - 34.5	41.57	2596.91	42.68	
45	34.5 - 33.75	41.96	2629.01	42.85	
46	33.75 - 33.5	42.08	2639.73	42.89	
47	33.5 - 28.5	44.33	2856.77	43.88	
48	28.5 - 24	46.38	3056.22	44.74	
49	24 - 23.75	46.52	3067.42	44.77	
50	23.75 - 18.75	48.92	3293.70	45.70	
51	18.75 - 14.25	51.12	3501.16	46.48	
52	14.25 - 14	51.24	3512.79	46.50	
53	14 - 9	53.91	3747.64	47.39	
54	9 - 4.75	56.23	3950.71	48.14	
55	4.75 - 4.5	56.38	3962.75	48.16	
56	4.5 - 0	58.77	4181.30	48.93	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP23.01x22x0.25	Pole	8.4%	Pass
115 - 110	Pole	TP24.02x23.01x0.25	Pole	18.5%	Pass
110 - 105	Pole	TP25.031x24.02x0.25	Pole	28.5%	Pass
105 - 100	Pole	TP26.041x25.031x0.25	Pole	41.8%	Pass
100 - 99.25	Pole	TP26.193x26.041x0.25	Pole	43.5%	Pass
99.25 - 99	Pole + Reinf.	TP26.243x26.193x0.3625	Reinf. 14 Tension Rupture	40.5%	Pass
99 - 94	Pole + Reinf.	TP27.253x26.243x0.3563	Reinf. 14 Tension Rupture	53.8%	Pass
94 - 90.08	Pole + Reinf.	TP28.045x27.253x0.35	Reinf. 14 Tension Rupture	64.3%	Pass
90.08 - 89.83	Pole + Reinf.	TP28.096x28.045x0.5125	Reinf. 11 Tension Rupture	53.3%	Pass
89.83 - 89.5	Pole + Reinf.	TP28.162x28.096x0.5125	Reinf. 11 Tension Rupture	54.0%	Pass
89.5 - 89.25	Pole + Reinf.	TP28.213x28.162x0.725	Reinf. 15 Tension Rupture	41.8%	Pass
89.25 - 84.25	Pole + Reinf.	TP29.223x28.213x0.7	Reinf. 15 Tension Rupture	50.0%	Pass
84.25 - 81.75	Pole + Reinf.	TP30.486x29.223x0.7	Reinf. 15 Tension Rupture	54.0%	Pass
81.75 - 77	Pole + Reinf.	TP30.188x29.228x0.8625	Reinf. 17 Tension Rupture	48.6%	Pass
77 - 76.75	Pole + Reinf.	TP30.239x30.188x0.8625	Reinf. 17 Tension Rupture	48.9%	Pass
76.75 - 76.5	Pole + Reinf.	TP30.289x30.239x0.9625	Reinf. 14 Tension Rupture	45.9%	Pass
76.5 - 75.5	Pole + Reinf.	TP30.491x30.289x0.9625	Reinf. 14 Tension Rupture	47.0%	Pass
75.5 - 75.25	Pole + Reinf.	TP30.542x30.491x0.7625	Reinf. 17 Tension Rupture	54.1%	Pass
75.25 - 74.5	Pole + Reinf.	TP30.693x30.542x0.7625	Reinf. 17 Tension Rupture	55.0%	Pass
74.5 - 74.25	Pole + Reinf.	TP30.744x30.693x0.8375	Reinf. 17 Tension Rupture	58.0%	Pass
74.25 - 72	Pole + Reinf.	TP31.198x30.744x0.825	Reinf. 17 Tension Rupture	60.8%	Pass
72 - 71.75	Pole + Reinf.	TP31.249x31.198x0.7625	Reinf. 17 Tension Rupture	58.3%	Pass
71.75 - 70.5	Pole + Reinf.	TP31.501x31.249x0.7625	Reinf. 17 Tension Rupture	59.8%	Pass
70.5 - 70.25	Pole + Reinf.	TP31.552x31.501x0.7875	Reinf. 17 Tension Rupture	59.8%	Pass
70.25 - 70	Pole + Reinf.	TP31.602x31.552x0.7875	Reinf. 17 Tension Rupture	60.1%	Pass
70 - 69.75	Pole + Reinf.	TP31.653x31.602x0.725	Reinf. 17 Tension Rupture	62.3%	Pass
69.75 - 69.5	Pole + Reinf.	TP31.703x31.653x0.875	Reinf. 4 Tension Rupture	52.9%	Pass
69.5 - 69.25	Pole + Reinf.	TP31.754x31.703x0.75	Reinf. 4 Tension Rupture	59.1%	Pass
69.25 - 64.25	Pole + Reinf.	TP32.764x31.754x0.7375	Reinf. 4 Tension Rupture	64.5%	Pass
64.25 - 59.25	Pole + Reinf.	TP33.774x32.764x0.7125	Reinf. 4 Tension Rupture	69.5%	Pass
59.25 - 56	Pole + Reinf.	TP34.431x33.774x0.7125	Reinf. 4 Tension Rupture	72.7%	Pass
56 - 55.75	Pole + Reinf.	TP34.481x34.431x0.8125	Reinf. 7 Tension Rupture	70.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP34.532x34.481x0.8125	Reinf. 7 Tension Rupture	70.2%	Pass
55.5 - 55.25	Pole + Reinf.	TP34.582x34.532x0.8875	Reinf. 7 Tension Rupture	63.2%	Pass
55.25 - 54	Pole + Reinf.	TP34.835x34.582x0.875	Reinf. 7 Tension Rupture	64.3%	Pass
54 - 53.75	Pole + Reinf.	TP34.885x34.835x0.75	Reinf. 7 Tension Rupture	73.8%	Pass
53.75 - 53.5	Pole + Reinf.	TP34.936x34.885x0.7375	Reinf. 7 Tension Rupture	74.0%	Pass
53.5 - 53.25	Pole + Reinf.	TP34.986x34.936x0.6625	Reinf. 4 Tension Rupture	79.5%	Pass
53.25 - 53	Pole + Reinf.	TP35.037x34.986x0.6	Reinf. 12 Tension Rupture	82.1%	Pass
53 - 48	Pole + Reinf.	TP36.047x35.037x0.5875	Reinf. 12 Tension Rupture	87.2%	Pass
48 - 44.5	Pole + Reinf.	TP37.714x36.047x0.5875	Reinf. 12 Tension Rupture	90.5%	Pass
44.5 - 38.75	Pole + Reinf.	TP37.291x36.129x0.6625	Reinf. 4 Tension Rupture	88.4%	Pass
38.75 - 34.75	Pole + Reinf.	TP38.099x37.291x0.6625	Reinf. 4 Tension Rupture	91.3%	Pass
34.75 - 34.5	Pole + Reinf.	TP38.15x38.099x0.825	Reinf. 3 Tension Rupture	73.2%	Pass
34.5 - 33.75	Pole + Reinf.	TP38.301x38.15x0.825	Reinf. 3 Tension Rupture	73.7%	Pass
33.75 - 33.5	Pole + Reinf.	TP38.352x38.301x0.625	Reinf. 6 Tension Rupture	90.7%	Pass
33.5 - 28.5	Pole + Reinf.	TP39.362x38.352x0.6125	Reinf. 6 Tension Rupture	93.9%	Pass
28.5 - 24	Pole + Reinf.	TP40.271x39.362x0.6625	Reinf. 3 Tension Rupture	96.9%	Pass
24 - 23.75	Pole + Reinf.	TP40.322x40.271x0.7	Reinf. 3 Tension Rupture	92.6%	Pass
23.75 - 18.75	Pole + Reinf.	TP41.332x40.322x0.6875	Reinf. 3 Tension Rupture	95.6%	Pass
18.75 - 14.25	Pole + Reinf.	TP42.241x41.332x0.675	Reinf. 3 Tension Rupture	98.2%	Pass
14.25 - 14	Pole + Reinf.	TP42.291x42.241x0.775	Reinf. 3 Tension Rupture	85.2%	Pass
14 - 9	Pole + Reinf.	TP43.302x42.291x0.7625	Reinf. 3 Tension Rupture	87.7%	Pass
9 - 4.75	Pole + Reinf.	TP44.16x43.302x0.75	Reinf. 3 Tension Rupture	89.7%	Pass
4.75 - 4.5	Pole + Reinf.	TP44.211x44.16x0.6625	Reinf. 5 Tension Rupture	97.8%	Pass
4.5 - 0	Pole + Reinf.	TP45.12x44.211x0.65	Reinf. 5 Tension Rupture	100.0%	Pass
				Summary	
			Pole	82.0%	Pass
			Reinforcement	100.0%	Pass
			Overall	100.0%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*																			
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19
120 - 115	1213	n/a	1213	18.30	n/a	18.30	8.4%																			
115 - 110	1382	n/a	1382	19.11	n/a	19.11	18.5%																			
110 - 105	1566	n/a	1566	19.92	n/a	19.92	28.5%																			
105 - 100	1765	n/a	1765	20.73	n/a	20.73	41.8%																			
100 - 99.25	1796	n/a	1796	20.85	n/a	20.85	43.5%																			
99.25 - 99	1884	751	2634	20.89	15.00	35.89	33.4%															40.5%	34.3%	34.3%		
99 - 94	2108	809	2917	21.71	15.00	36.71	44.9%															53.8%	45.8%	45.8%		
94 - 90.08	2295	857	3153	22.34	15.00	37.34	54.1%															64.3%	54.9%	54.9%		
90.08 - 89.83	2235	2180	4415	22.38	24.00	46.38	37.1%											53.3%				51.2%	44.5%	51.4%		
89.83 - 89.5	2251	2190	4441	22.44	24.00	46.44	37.6%											54.0%				51.9%	45.2%	52.1%		
89.5 - 89.25	2276	3952	6228	22.48	36.00	58.48	28.1%											34.0%	40.9%			41.7%	41.8%	36.1%		
89.25 - 84.25	2531	4227	6758	23.29	36.00	59.29	34.2%											40.8%	48.9%			49.8%	50.0%	43.2%		
84.25 - 81.75	2665	4368	7033	23.70	36.00	59.70	37.2%											44.0%	52.8%			53.8%	54.0%	46.7%		
81.75 - 77	3434	5537	8970	30.02	51.00	81.02	30.9%											40.0%	46.7%			48.5%	43.2%	40.9%	48.6%	39.1%
77 - 76.75	3451	5554	9005	30.07	51.00	81.07	31.1%											40.3%	47.0%			48.8%	43.4%	41.2%	48.9%	39.3%
76.75 - 76.5	3483	6565	10048	30.12	56.00	86.12	28.6%											38.7%	39.3%			45.9%	41.3%	41.4%	43.3%	39.5%
76.5 - 75.5	3554	6648	10202	30.32	56.00	86.32	29.4%											39.6%	40.3%			47.0%	42.3%	42.4%	44.4%	40.5%
75.5 - 75.25	3556	4807	8362	30.37	46.00	76.37	35.1%											48.5%	49.2%			47.9%		42.4%	54.1%	51.7%
75.25 - 74.5	3609	4852	8461	30.53	46.00	76.53	35.8%											49.4%	50.0%			48.7%		55.0%	52.6%	48.1%
74.5 - 74.25	3738	5532	9270	30.58	41.00	71.58	36.4%											54.1%	53.5%					58.0%	52.6%	51.1%
74.25 - 72	3906	5690	9596	31.03	41.00	72.03	38.4%											56.7%	56.1%					60.8%	55.2%	53.7%
72 - 71.75	3808	5092	8900	31.09	49.13	80.21	37.6%													39.3%		50.5%	51.8%		58.3%	55.9%
71.75 - 70.5	3902	5171	9072	31.34	49.13	80.46	38.7%											40.3%				51.8%	53.1%		59.8%	57.3%
70.5 - 70.25	3925	5537	9462	31.39	53.63	85.01	37.8%											43.7%	40.6%			49.5%	50.9%		59.8%	50.3%
70.25 - 70	3944	5554	9498	31.44	53.63	85.07	38.0%											44.0%	40.8%			49.7%	51.2%		60.1%	50.5%
70 - 69.75	3961	4823	8785	31.49	48.63	80.12	41.7%											53.3%	40.8%	55.0%		55.7%			62.3%	51.5%
69.75 - 69.5	4028	6551	10579	31.54	53.63	85.17	36.0%				52.9%							45.3%	40.2%	51.5%	43.2%					
69.5 - 69.25	4004	5187	9190	31.59	41.63	73.22	40.6%				59.1%							58.6%	45.7%	56.1%						
69.25 - 64.25	4401	5507	9909	32.61	41.63	74.23	44.9%				64.5%							64.0%	50.0%	61.3%						
64.25 - 59.25	4825	5838	10663	33.62	41.63	75.25	49.0%				69.5%							69.2%	54.1%	66.3%						
59.25 - 56	5114	6058	11172	34.28	41.63	75.91	51.7%				72.7%							72.4%	56.7%	69.4%						
56 - 55.75	5209	7530	12738	34.33	55.13	89.46	47.5%				69.1%							70.0%	47.0%	59.4%			60.5%			
55.75 - 55.5	5232	7551	12782	34.38	55.13	89.51	47.7%				69.3%							70.2%	47.2%	59.6%			60.7%			
55.5 - 55.25	5199	8671	13870	34.43	59.63	94.06	43.5%				59.7%							63.2%	47.1%	57.6%			57.2%	59.8%		
55.25 - 54	5314	8793	14107	34.69	59.63	94.31	44.3%				60.7%							64.3%	48.0%	58.6%			58.2%	60.8%		
54 - 53.75	5328	6906	12234	34.74	50.63	85.36	51.5%				65.9%							73.8%	54.1%			65.7%	63.6%			
53.75 - 53.5	5351	6925	12276	34.79	50.63	85.41	51.7%				66.1%							74.0%	54.3%			65.9%	63.8%			
53.5 - 53.25	5418	5610	11027	34.84	46.13	80.97	59.3%				79.5%							56.5%				71.3%	74.3%			
53.25 - 53	5388	4730	10118	34.89	38.00	72.89	62.6%				79.8%											82.1%	73.8%			
53 - 48	5872	4982	10854	35.91	38.00	73.91	67.1%				84.3%											87.2%	78.3%			
48 - 44.5	6228	5162	11390	36.62	38.00	74.62	70.3%				87.3%											90.5%	81.4%			
44.5 - 38.75	7765	5730	13494	44.51	31.68	76.19	61.6%				88.4%		82.4%													
38.75 - 34.75	8286	5977	14263	45.49	31.68	77.17	64.2%				91.3%		85.2%													
34.75 - 34.5	8319	9340	17659	45.55	51.68	97.23	51.6%				73.2%		72.1%													
34.5 - 33.75	8419	9410	17829	45.73	51.68	97.41	52.0%				73.7%		72.5%													
33.75 - 33.5	8462	5245	13707	45.79	31.68	77.47	69.3%				90.5%		90.7%													
33.5 - 28.5	9155	5523	14678	47.01	31.68	78.69	72.6%				93.9%		93.9%													
28.5 - 24	9807	7211	17019	48.11	31.68	79.79	67.7%				96.9%		96.7%													
24 - 23.75	9844	8023	17867	48.17	36.52	84.69	64.8%				88.3%		92.6%													
23.75 - 18.75	10609	8417	19026	49.38	36.52	85.90	67.6%				91.1%		95.6%													
18.75 - 14.25	11331	8779	20110	50.48	36.52	87.00	70.0%				93.4%		98.2%													
14.25 - 14	11367	11520	22886	50.54	48.20	98.74	63.0%				83.9%		85.1%													
14 - 9	12208	12047	24255	51.76	48.20	99.96	65.6%				86.2%		87.6%													
9 - 4.75	12956	12504	25460	52.80	48.20	101.00	67.8%				88.1%		89.6%													
4.75 - 4.5	13085	9560	22645	52.86	43.20	96.06	79.5%				89.2%		87.0%													
4.5 - 0	13914	9922	23836	53.95	43.20	97.15	82.0%				90.9%		89.0%													

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

Monopole Base Plate Connection

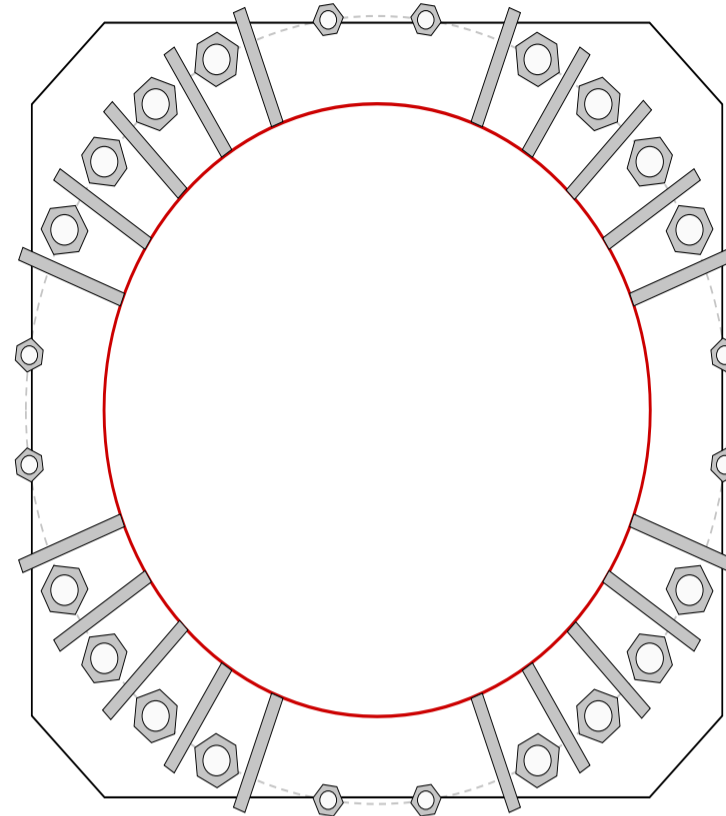


Site Info	
BU #	876320
Site Name	528 Wheelers Farm Rd
Order #	459071 Rev. 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2

Applied Loads	
Moment (kip-ft)	4181.00
Axial Force (kips)	59.00
Shear Force (kips)	49.00

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
GROUP 1: (16) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 58" BC
GROUP 2: (8) 1-3/8" ϕ bolts (R71 150ksi 1-3/8" N; $F_y=120$ ksi, $F_u=125$ ksi) on 58" BC

Base Plate Data
57" OD x 3.25" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi)

Stiffener Data
(20) 18"H x 9"W x 1"T, Notch: 0.75"
plate: $F_y= 50$ ksi ; weld: $F_y= 80$ ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.375" fillet

Pole Data
45.12" x 0.375" 12-sided pole (A607-60; $F_y=60$ ksi, $F_u=75$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
GROUP 1:		
$P_{u_c} = 186.51$	$\phi P_{n_c} = 243.75$	Stress Rating
$V_u = 2.6$	$\phi V_n = 73.13$	73.0%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:		
$P_{u_c} = 66.54$	$\phi P_{n_c} = 139.2$	Stress Rating
$V_u = 0.93$	$\phi V_n = 41.76$	45.6%
$M_u = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	3.58	(Shear)
Allowable Stress (ksi):	29.25	
Stress Rating:	11.7%	Pass
Stiffener Summary		
Horizontal Weld:	37.9%	Pass
Vertical Weld:	49.5%	Pass
Plate Flexure+Shear:	19.4%	Pass
Plate Tension+Shear:	39.3%	Pass
Plate Compression:	55.1%	Pass
Pole Summary		
Punching Shear:	21.5%	Pass

Drilled Pier Foundation



BU #: 876320
 Site Name: 528 Wheelers Farm Rd
 Order Number: 459071 Rev. 1

TIA-222 Revision: H
 Tower Type: Monopole

Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	4181	
Axial Force (kips)	59	
Shear Force (kips)	49	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	19	ft
Ext. Above Grade	0.5	ft

Pier Section 1		
<i>From 0.5' above grade to 19' below grade</i>		
Pier Diameter	7	ft
Rebar Quantity	32	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	Compression	Uplift
D _{v=0} (ft from TOC)	5.74	-
Soil Safety Factor	1.97	-
Max Moment (kip-ft)	4456.39	-
Rating*	64.4%	-
Soil Vertical Capacity	Compression	Uplift
Skin Friction (kips)	525.15	-
End Bearing (kips)	651.55	-
Weight of Concrete (kips)	100.50	-
Total Capacity (kips)	1176.70	-
Axial (kips)	159.50	-
Rating*	12.9%	-
Reinforced Concrete Capacity	Compression	Uplift
Critical Depth (ft from TOC)	5.57	-
Critical Moment (kip-ft)	4455.84	-
Critical Moment Capacity	7541.73	-
Rating*	56.3%	-

Soil Interaction Rating*	64.4%
Structural Foundation Rating*	56.3%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>

Soil Profile		
Groundwater Depth	7	ft
# of Layers	7	

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	2	2	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.5	1.5	135	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.5	6	2.5	135	150	0	42	0.000	0.000	0.00	0.00			Cohesionless
4	6	7	1	135	150	0	42	0.000	0.000	1.28	1.28			Cohesionless
5	7	13.5	6.5	72.6	87.6	0	42	0.000	0.000	1.28	1.28			Cohesionless
6	13.5	14	0.5	77.6	87.6	8	0	3.600	3.600	1.28	1.28			Cohesive
7	14	19	5	77.6	87.6	8	0	3.60	3.60	4.32	4.32	22.5737		Cohesive

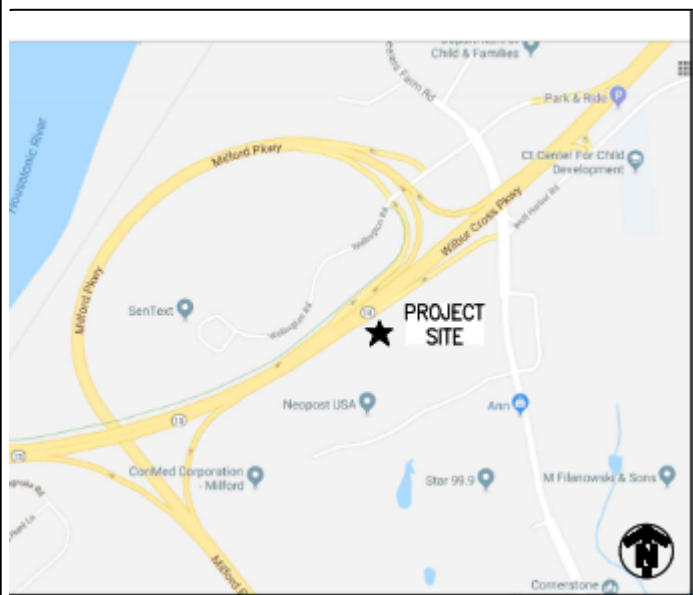
SHEET INDEX

NO.	DESCRIPTION
T1	TITLE PAGE
N1	GENERAL NOTES
C1	COMPOUND PLAN
C2	EQUIPMENT LAYOUT
C3	ELEVATION VIEW AND RF SCHEDULE
C4	ANTENNA ORIENTATION PLAN
C5	EQUIPMENT DETAILS
C6	RF PLUMBING DIAGRAM
C7	GROUNDING DETAILS
S1	GENERAL NOTES
S2	MOUNT MODIFICATION

SCOPE OF WORK

- REMOVE POS. 2 ANTENNA (ALL SECTORS)
- RELOCATE POS. 4 ANTENNA TO POS. 2 (ALL SECTORS)
- INSTALL NEW 800-10965 8 PORT LTE ANTENNA IN POS. 3 & POS. 4 (2 PER SECTOR, TOTAL OF 6)
- SWAP EXISTING 700 RRU W/ NEW RRUS4449 B5/B12 ON POS. 4 (1 PER SECTOR, TOTAL OF 3)
- SWAP EXISTING 1900 RRU W/ NEW RRUS8843 B2/B66 ON POS. 2 (1 PER SECTOR, TOTAL OF 3)
- INSTALL NEW RRUS 4478 B14 ON POS. 3 (1 PER SECTOR, TOTAL OF 3)
- ADD (1) 5216 W/ IDLe CABLE
- ADD (1) 6630
- ADD (2) SQUIDS, (2) DC TRUNKS & (1) FIBER TRUNK
- INSTALL MOUNT MODIFICATIONS

LOCATION MAP



SITE NAME
528 WHEELERS FARM RD

SITE ID
CTL02083

CROWN BU
876320

FA SITE NUMBER
10035336

SITE ADDRESS
528 WHEELERS FARM ROAD
MILFORD, CT 06460

STRUCTURE TYPE
MONOPOLE

PROJECT
6C, 7C, 5G NR UPGRADE & RETROFIT 4TX4RX
PACE ID
MRCTB033759, MRCTB033714, MRCTB033869 & MRCTB033699

PROJECT SITE INFORMATION

SITE NAME:	528 WHEELERS FARM RD
SITE ID:	CT02083
CROWN BU:	876320
FA SITE #:	10035336
SITE ADDRESS:	528 WHEELERS FARM ROAD MILFORD, CT 06460
JURISDICTION:	NEW HAVEN COUNTY
SITE COORDINATES:	
LATITUDE:	N 41° 14' 54.30" (41.248417°) (NAD 83)
LONGITUDE:	W 73° 04' 44.70" (-73.079083°) (NAD 83)
APPLICANT:	AT&T MOBILITY 575 MOROSGO DRIVE ATLANTA, GA 30324

STRUCTURAL ANALYSIS INFORMATION

TOWER ANALYSIS
INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS FROM TOWER OWNER PRIOR TO ANY CONSTRUCTION.

ANTENNA MOUNTS
BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY DATED 01/25/2019. THE EXISTING ANTENNA MOUNT IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION WITH THE FOLLOWING MODIFICATIONS:

- CONTRACTOR TO INSTALL PROPOSED ANGLE L2 1/2X2 1/2X3/16", 4'-4" LONG IN EACH SECTOR.
- CONTRACTOR TO INSTALL PROPOSED CHANNEL BRACKET, SITE PRO 1 PART# X-STU (TYP OF 2 PER CONNECTION).
- CONTRACTOR TO INSTALL PROPOSED 2.375" OD SCH 40 PIPE IN EACH SECTOR.

PROJECT TEAM INFORMATION

CLIENT REPRESENTATIVE:	CROWN CASTLE 3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
CLIENT REP. CONTACT:	ALLISON SQUIRES ALLISON.SQUIRES.CONTRACTOR@CROWNCastle.COM
ENGINEER:	INFINIGY SOLUTIONS 6865 DEERPATH ROAD SUITE 152 ELKRIDGE, MD 21075
ENGINEER CONTACT:	MATT BIRTH MBIRTH@INFINIGY.COM 443-567-8791

TOWER OWNER NOTIFICATION

ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE NOTICE TO PROCEED, CONTRACTOR WILL CONTACT THE CROWN CASTLE CONSTRUCTION MANAGER OF RECORD (NOTED ON THE FIRST PAGE ON THIS CONSTRUCTION DRAWING) A MINIMUM OF 48 HOURS PRIOR TO WORK START. UPON ARRIVAL TO THE JOB SITE, CONTRACTOR CREW IS REQUIRED CALL 1-800-788-7011 TO NOTIFY THE CROWN CASTLE NOC WORK HAS BEGUN.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR www.cbyd.com
CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

GENERAL NOTES

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRR AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON STORMWATER DRAINAGE.
- NO SANITARY SEWER, POTABLE WATER, OR TRASH DISPOSAL SERVICE IS REQUIRED
- NO COMMERCIAL SIGNAGE IS PROPOSED

CODE COMPLIANCE

- ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT ADOPTED EDITIONS OF THE FOLLOWING CODES WITH ANY LOCAL AMENDMENTS BY THE LOCAL GOVERNING AUTHORITIES:
- INTERNATIONAL BUILDING CODE
 - NATIONAL ELECTRICAL CODE
 - NATIONAL FIRE PROTECTION ASSOCIATION 101
 - NATIONAL FIRE PROTECTION ASSOCIATION 1
 - LOCAL BUILDING CODES
 - CITY/COUNTY ORDINANCES
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC)
 - UNDERWRITERS LABORATORIES APPROVED ELECTRICAL PRODUCTS.
 - ANSI EIA/TIA 222 REV. G
 - TIA 607
 - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
 - IEEE C2 (LATEST EDITION)
 - TELCORDIA GR-1275
 - ANSI T1.311

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STATE OF CONNECTICUT
JAMES S. SQUIRE
24705
03/07/2019
PROFESSIONAL ENGINEER

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0	ISSUED FOR CONSTRUCTION	BWB	03/07/19
A	ISSUED FOR CLIENT REVIEW	HAM	12/19/18

No. Submittal / Revision App'd Date

Drawn: BCD
Designed: MEL
Checked: ADJ

Project Number: 499-002

Project Title:
528 WHEELERS FARM RD
CROWN BU: 876320
FA # 10035336
528 WHEELERS FARM ROAD
MILFORD, CT 06460

Prepared For:
CROWN CASTLE

Drawing Title
TITLE PAGE

Drawing Number
T1

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

- 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
 - B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
 - C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
 - D. AND NFPA 101 (LIFE SAFETY CODE).
 - E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
 - F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).
- 1.2 DEFINITIONS:
- A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
 - B. COMPANY: AT&T CORPORATION
 - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
 - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
 - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- 1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.
- 1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
- A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
- 1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.7 NOTICE TO PROCEED:
- A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
 - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE AT&T WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – EXECUTION

- 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HERewith, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

- 2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY AT&T TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.
- 2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR AT&T PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
- A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
 - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
 - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
 - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO AT&T OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
 - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
 - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

- 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
- A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- 4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.
- 4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

- 5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
 - B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
 - C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
 - D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
 - E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

- 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.
- A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.
 - B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.
 - C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
 - D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.
 - E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.
 - F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.
 - G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
---	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES

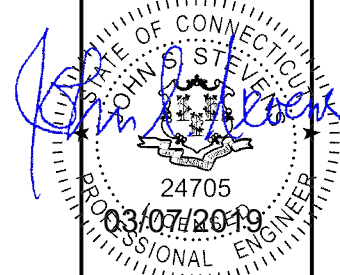
REPRESENTS DETAIL NUMBER
 REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL



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0 ISSUED FOR CONSTRUCTION BMB 03/07/19
 A ISSUED FOR CLIENT REVIEW HAM 12/19/18

Drawn: BCD
 Designed: MEL
 Checked: AJD

Project Number:
499-002

Project Title:
528 WHEELERS FARM RD

CROWN BU: 876320

FA # 10035336

528 WHEELERS FARM ROAD

MILFORD, CT 06460

Prepared For:



Drawing Title

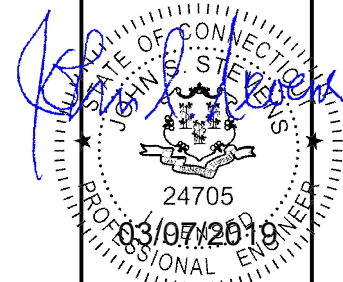
GENERAL NOTES

Drawing Number

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Prepared For:

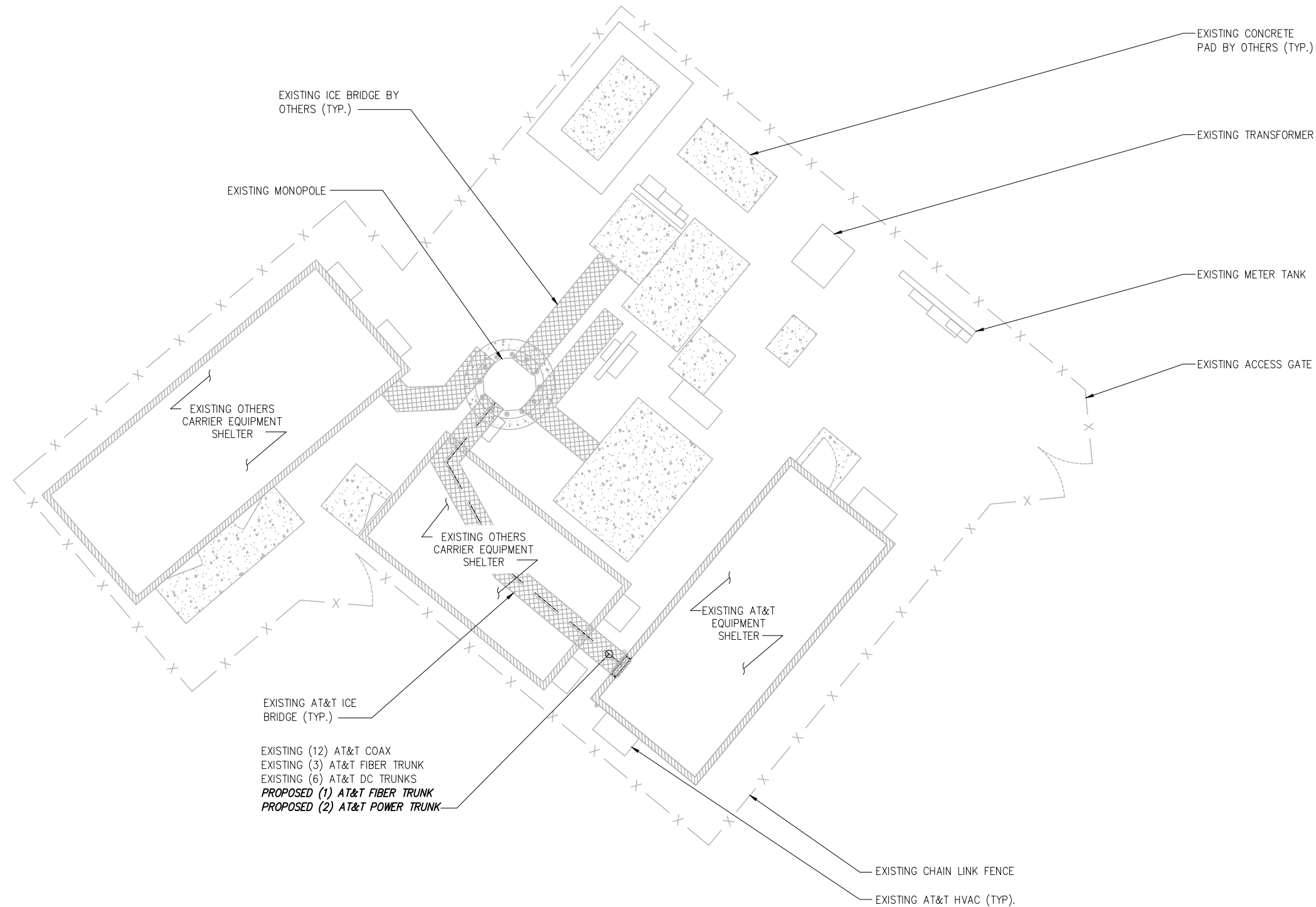


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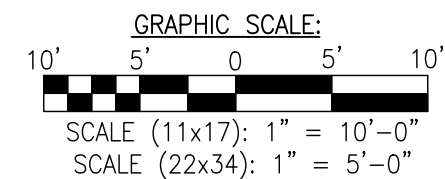
**COMPOUND
PLAN**

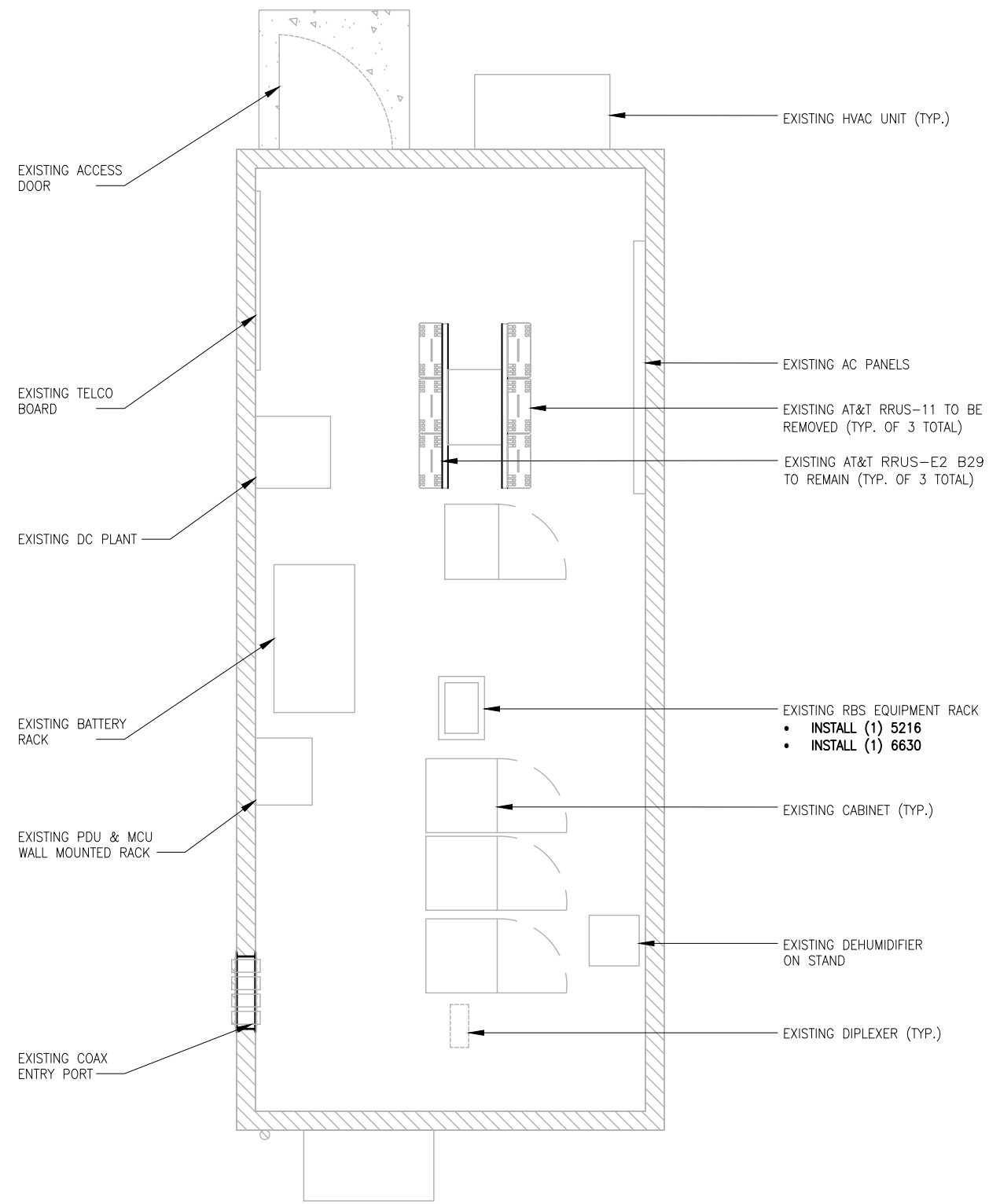
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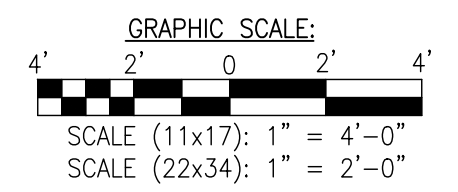
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C1 SCALE: AS NOTED



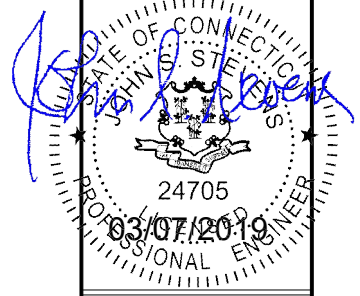


 NORTH

1 EQUIPMENT LAYOUT
C2 SCALE: AS NOTED



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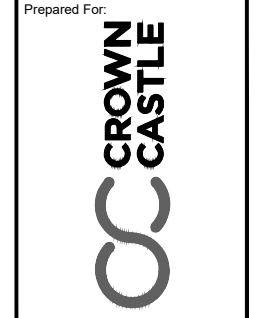
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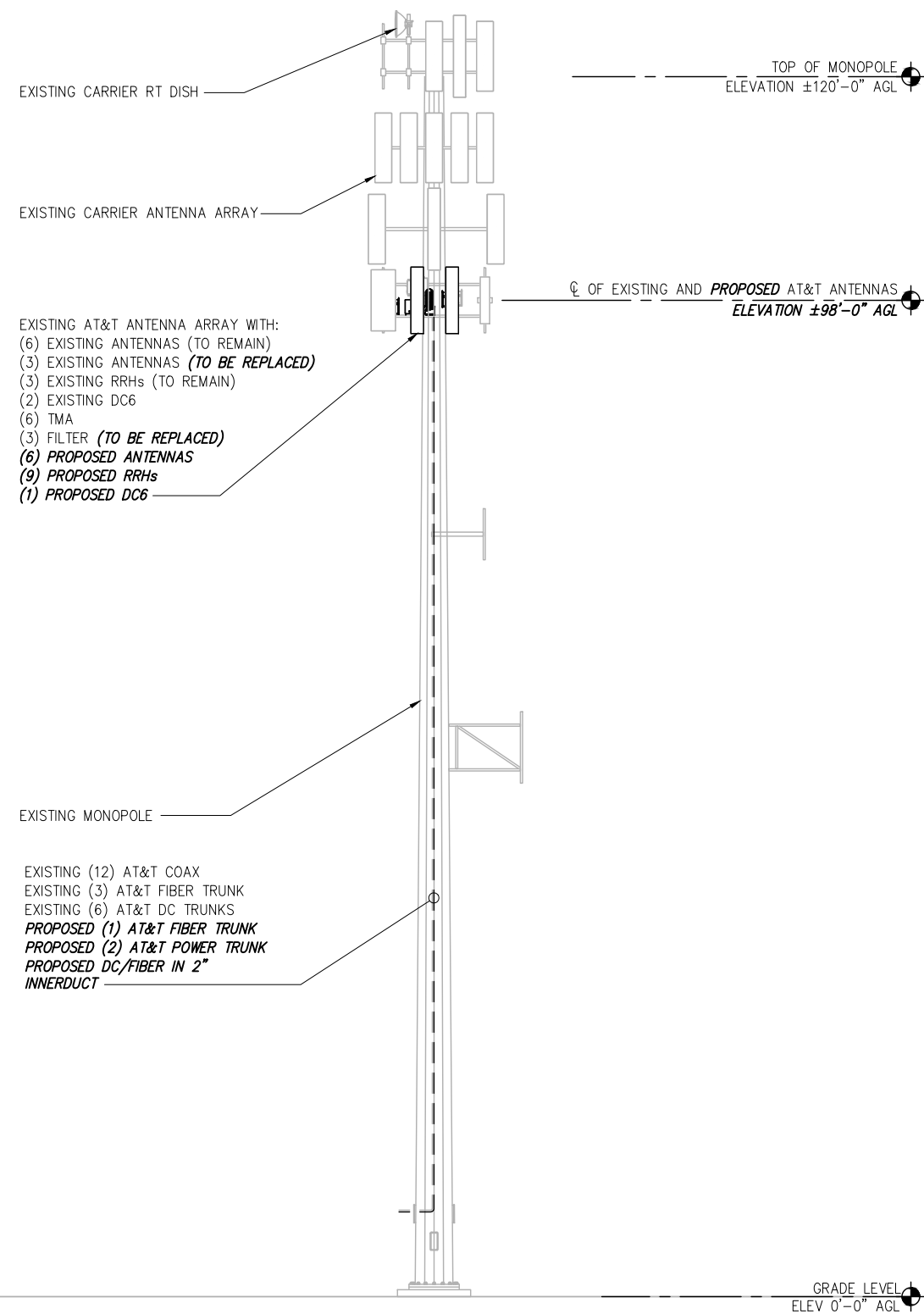
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 528 WHEELERS FARM ROAD
 MILFORD, CT 06460



Drawing Title
EQUIPMENT LAYOUT

Drawing Number
C2



1 ELEVATION VIEW
C3 SCALE: NOT TO SCALE

ANTENNA AND RRH SCHEDULE									
SECTOR	ANTENNA POSITION	ANTENNA MAKE	ANTENNA MODEL	RAD CTR. FT. AGL	AZIMUTH	RRH/TMA QTY/MAKE/MODEL	FILTER/DIPLEXER QTY/MAKE/MODEL	E-TILT	M-TILT
A	#1	POWERWAVE	7770	98'-0"	143°	(2) POWERWAVE LGP 21401	(2) KATHREIN 782-10250	6° (UMTS 850)	0°
	#2	QUINTEL	QS66512-2	98'-0"	30°	(1) RRUS-E2 B29 (AT GROUND) (1) B2/B66A 8843	(2) DBC0061F1V51-2	3° (LTE 700) 6° (LTE 1900) 6° (LTE 1900)	0°
	#3	KATHRIEN	800-10965	98'-0"	30°	(1) B14 4478	-	5° (LTE 700) 3° (LTE AWS)	0°
	#4	KATHRIEN	800-10965	98'-0"	30°	(1) RRUS-32 (1) B5/B12 4449	-	5° (LTE 700) 3° (LTE WCS) 5° (LTE 850) 5° (5G 850)	0°
B	#5	POWERWAVE	7770	98'-0"	263°	(2) POWERWAVE LGP 21401	(2) KATHREIN 782-10250	4° (UMTS 850)	0°
	#6	QUINTEL	QS66512-2	98'-0"	150°	(1) RRUS-E2 B29 (AT GROUND) (1) B2/B66A 8843	(2) DBC0061F1V51-2	3° (LTE 700) 4° (LTE 1900) 4° (LTE 1900)	0°
	#7	KATHRIEN	800-10965	98'-0"	150°	(1) B14 4478	-	4° (LTE 700) 4° (LTE AWS)	0°
	#8	KATHRIEN	800-10965	98'-0"	150°	(1) RRUS-32 (1) B5/B12 4449	-	4° (LTE 700) 3° (LTE WCS) 4° (LTE 850) 4° (5G 850)	0°
C	#9	POWERWAVE	7770	23'-0"	143°	(2) POWERWAVE LGP 21401	(2) KATHREIN 782-10250	4° (UMTS 850)	0°
	#10	QUINTEL	QS66512-2	98'-0"	270°	(1) RRUS-E2 B29 (AT GROUND) (1) B2/B66A 8843	(2) DBC0061F1V51-2 (1) WCS-IMFQ-AMT	3° (LTE 700) 2° (LTE 1900) 2° (LTE 1900)	0°
	#11	KATHRIEN	800-10965	98'-0"	270°	(1) B14 4478	-	2° (LTE 700) 4° (LTE AWS)	0°
	#12	KATHRIEN	800-10965	98'-0"	270°	(1) RRUS-32 (1) B5/B12 4449	-	2° (LTE 700) 3° (LTE WCS) 2° (LTE 850) 2° (5G 850)	0°

KEY:
EXISTING
PROPOSED

CABLE SCHEDULE			
SYSTEM	TYPE	QTY	LENGTH
UMTS	1-1/4"Ø COAX	6	148'±
LTE	1-1/4"Ø COAX	6	148'±
LTE	DC TRUNK	2	148'±
LTE	FIBER TRUNK	2	148'±
LTE	FIBER TRUNK	1	148'±
LTE	6/C DC TRUNK	2	148'±
LTE	POWER TRUNK	2	148'±

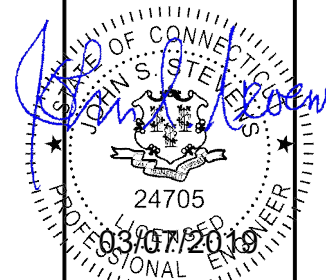
SURGE PROTECTION DEVICE SCHEDULE		
TYPE	LOCATION	QTY
DC6	SECTOR LEVEL	2
DC6	SECTOR LEVEL	1

RF DESIGN NOTE:
THIS ANTENNA AND CABLE SCHEDULE HAS BEEN CREATED USING THE FOLLOWING AT&T RFDS DATED: 07/06/18 REVISION: 2.00 ALL ANTENNA DESIGN, ZONING, STRUCTURAL ANALYSIS PERMITS AND COMPLIANCE SUBMISSIONS ARE COORDINATED WITH THE AFOREMENTIONED DOCUMENT.

2 RF SCHEDULE
C3 NOT TO SCALE



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0 ISSUED FOR CONSTRUCTION BMB 03/07/19
A ISSUED FOR CLIENT REVIEW HAM 12/19/18

Drawn: BCD
Designed: MRL
Checked: AJP

Project Number:

499-002

Project Title:

528 WHEELERS FARM RD

CROWN BU: 876320

FA # 10035336

528 WHEELERS FARM ROAD

MILFORD, CT 06460

Prepared For:



Drawing Title
**ELEVATION
AND
RF SCHEDULE**

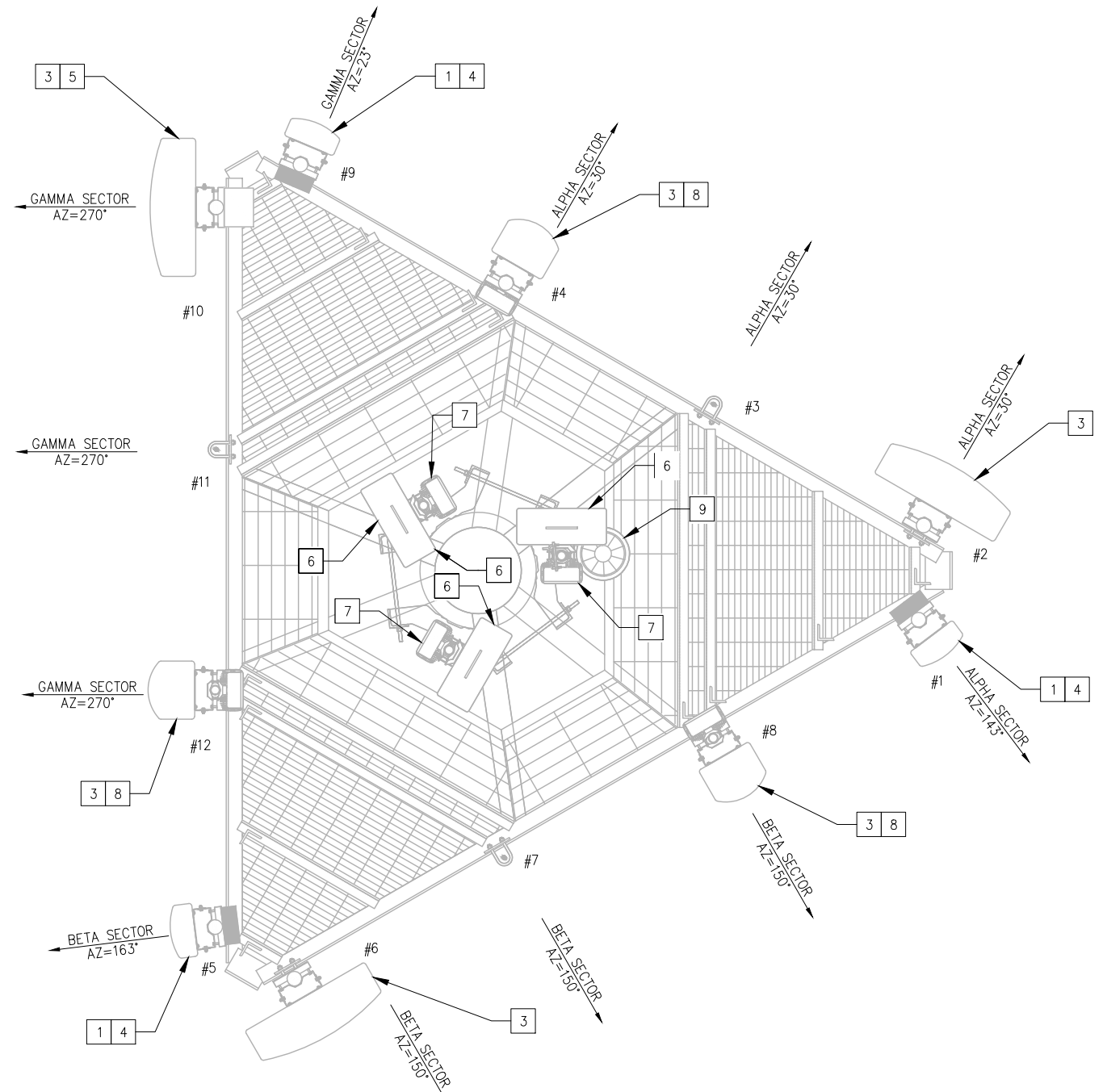
Drawing Number

C3

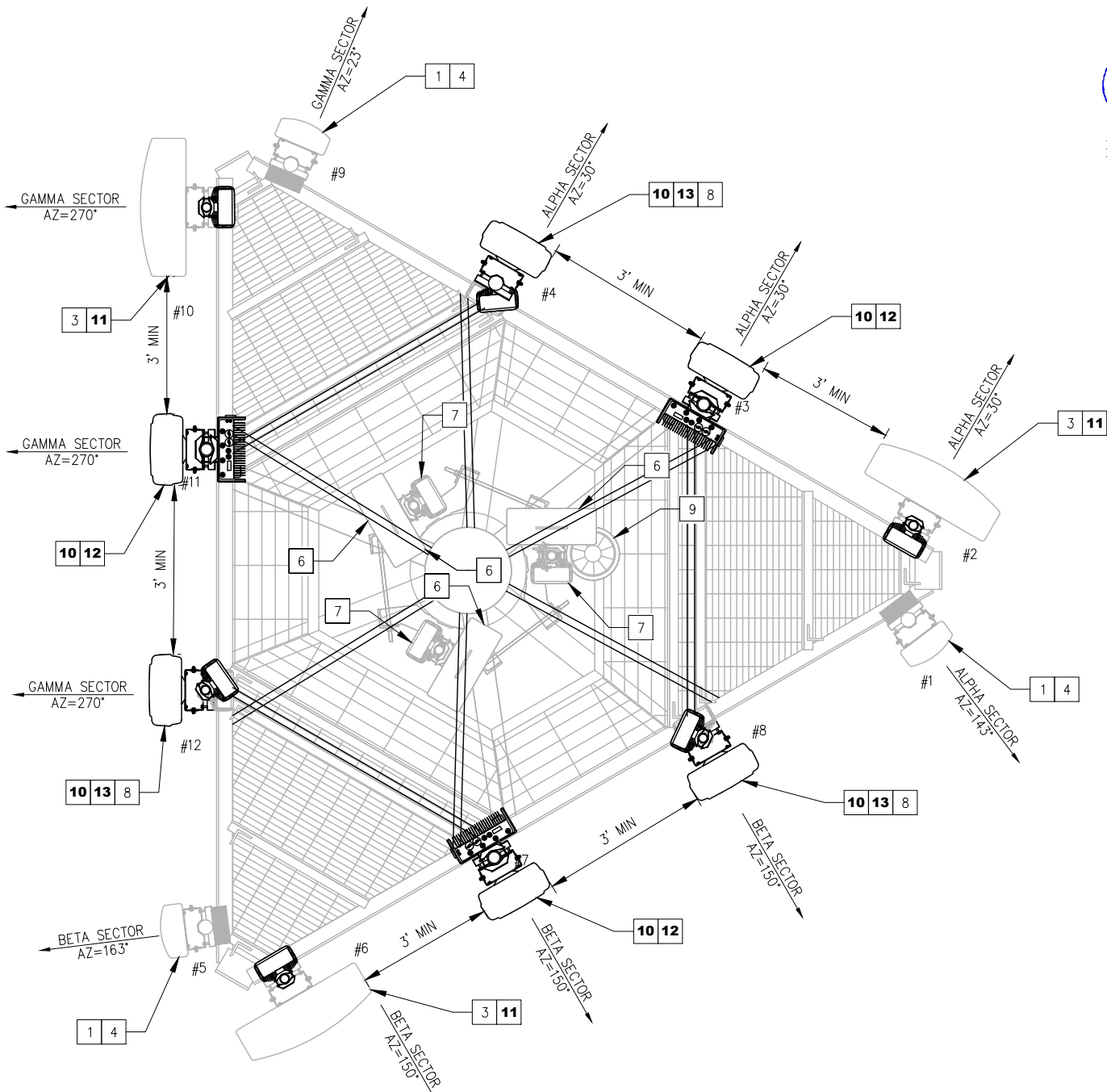
ORIENTATION PLAN KEY				
KEY	DESCRIPTION	TYPE	QTY	STATUS
1	7770	ANTENNA	3	REMAIN
2	QS66512-2	ANTENNA	3	REMAIN
3	QS66512-2	ANTENNA	3	REMOVED
4	POWERWAVE LGP 21401	TMA	6	REMAIN
5	WCS-IMFQ-AMT	FILTER	1	REMOVED
6	RRUS-12	RRH	3	REMOVED
7	RRUS-32	RRH	3	REMAIN
8	RRUS-32 B2	RRH	3	REMOVED
9	DC6	DC/FIBER MGMT	2	REMAIN
10	800-10965	ANTENNA	6	PROPOSED
11	B2/B66A 8843	RRH	3	PROPOSED
12	B14 4478	RRH	3	PROPOSED
13	B5/B12 4449	RRH	3	PROPOSED

NOTE:

- LAYOUT SHOWN BASED ON AVAILABLE INFORMATION FROM AUDIT PHOTOS. GC TO FIELD ADJUST LAYOUT AS NECESSARY FOR MINIMUM REQUIRED CLEARANCES OF EQUIPMENT.
- NO EXISTING OR PROPOSED UNISTRUT TO EXCEED A SPAN OF 4' BETWEEN SUPPORTS. REMOVE AND REPLACE EXISTING UNISTRUT AS NECESSARY FOR MAX. 4' SPAN WHEN UTILIZED FOR MOUNTING RRHs AND SLACK BOXES.
- SEE SHEETS C4 AND C5 FOR PROPOSED EQUIPMENT MOUNTING DETAILS.



1 ANTENNA ORIENTATION PLAN (EXISTING)
C4 NOT TO SCALE



2 ANTENNA ORIENTATION PLAN (PROPOSED)
C4 NOT TO SCALE



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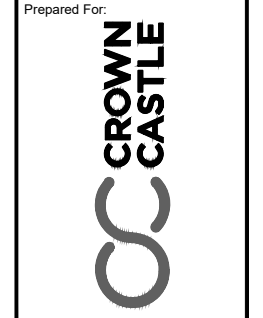
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Designed: MEL
Checked: AJD

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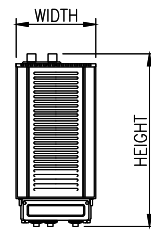
Project Title:
528 WHEELERS FARM RD
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528 WHEELERS FARM ROAD
MILFORD, CT 06460



Drawing Title:
ANTENNA ORIENTATION PLAN

Drawing Number:
C4

REMOTE RADIO HEAD (RRH)
aka
REMOTE RADIO UNIT (RRU)



SIZE AND WEIGHT TABLE

RRH MODEL	HEIGHT x WIDTH x DEPTH	WEIGHT
ERICSSON B14 4478	16.5"x13.4"x7.70"	59.9 LBS
ERICSSON B5/B12 4449	14.96"x13.19"x10.43"	73.0 LBS
ERICSSON B2/B66A 8843	14.96"x13.19"x11.10"	75.00 LBS
-	-	-

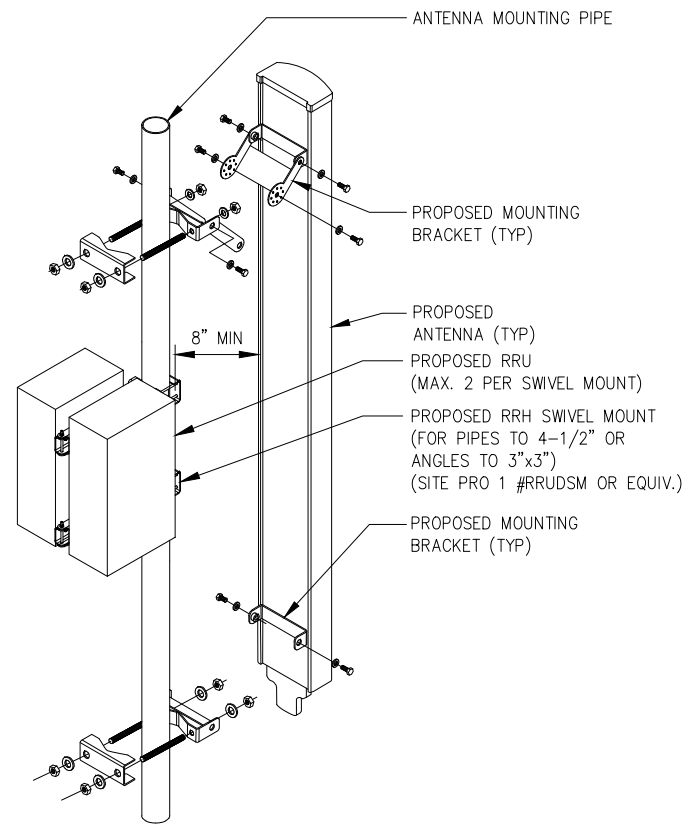
CLEARANCE TABLE

	CLEARANCE REQ'D
FRONT	36" FOR INSTALLATION ACCESS
REAR	2" (0" WITH SUPPLIED MOUNTING BRACKETS)
RIGHT	4" FOR AIR FLOW
LEFT	4" FOR AIR FLOW
TOP	12" FOR AIR FLOW
BOTTOM	12" FOR CONDUIT ROUTING

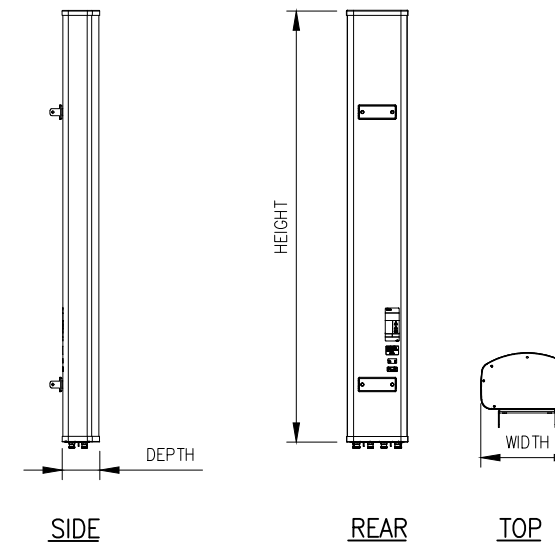
NOTES:

- AT&T SUPPLIES RRH AND RRH MOUNTING BRACKET. SUBCONTRACTOR SHALL SUPPLY UNISTRUT AND INSTALL RRHS AND ALL MOUNTING HARDWARE INCLUDING ERICSSON RRH WALL MOUNTING BRACKET IF NECESSARY. ERICSSON MAKES CABLE TERMINATIONS.
- DIMENSIONS AND WEIGHTS ARE FOR RRH WITHOUT MOUNTING BRACKET
- RRH BANDS (E.G. 4478 B14) DENOTE OPERATING FREQUENCY ONLY AND DO NOT CONSTITUTE A CHANGE IN SIZE OR WEIGHT.

1 RRH DETAIL
C5 SCALE: NTS

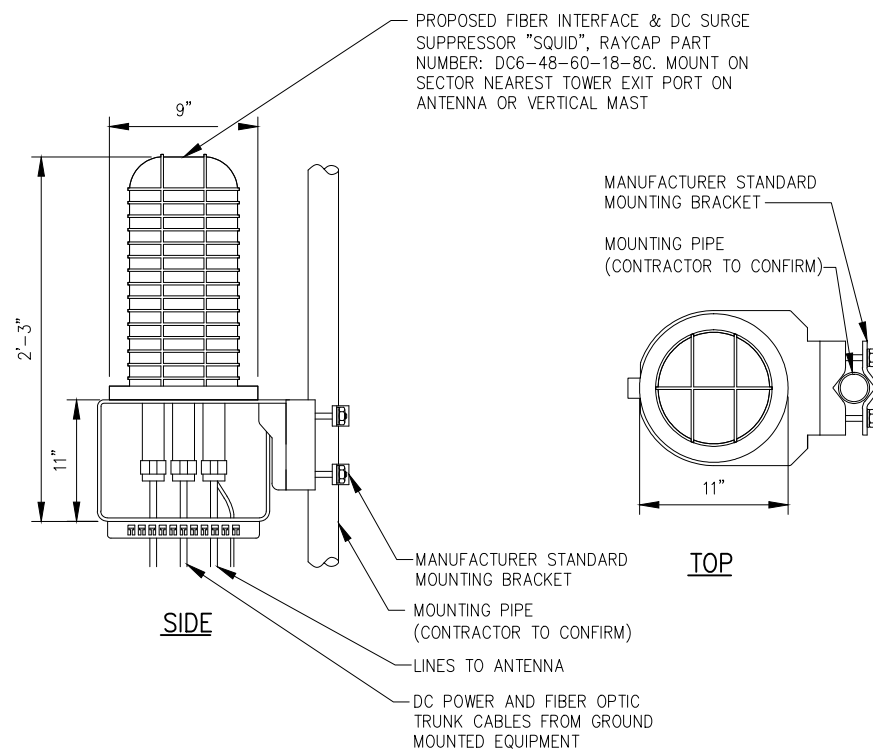


2 ANTENNA/RRU MOUNTING DETAIL
C5 SCALE: NOT TO SCALE

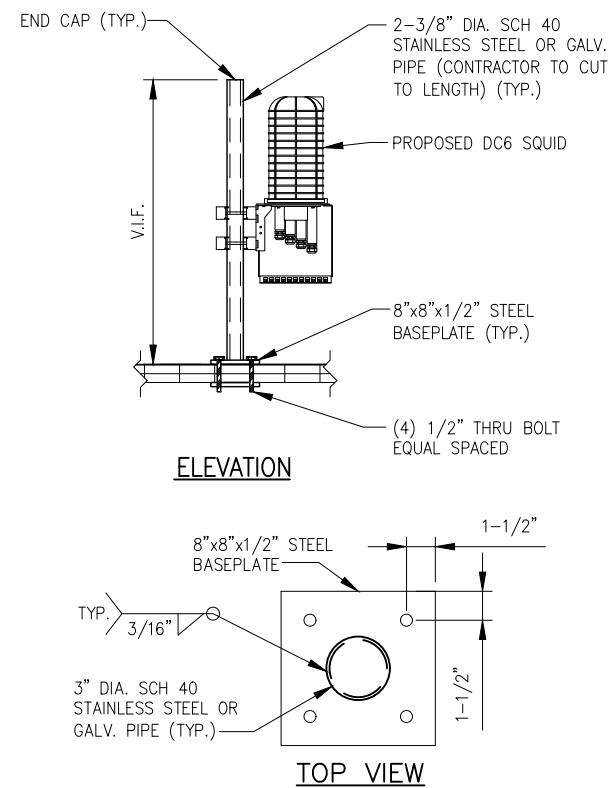


KATHRIEN MODEL NO.:	800-10965
DIMENSIONS, HxWxD:	78.7"x20.0"x6.9"
WEIGHT:	108.6LBS

3 ANTENNA DETAIL
C5 NOT TO SCALE



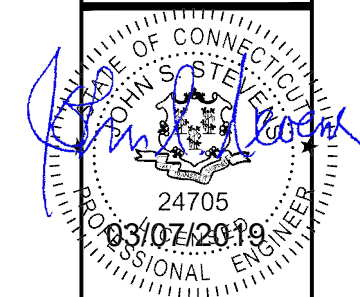
4 DC6 DETAIL
C5 NOT TO SCALE



5 DC6 MOUNTING DETAIL
C5 SCALE: NTS



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No.	Submittal / Revision	App'd	Date

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Checked: AJD

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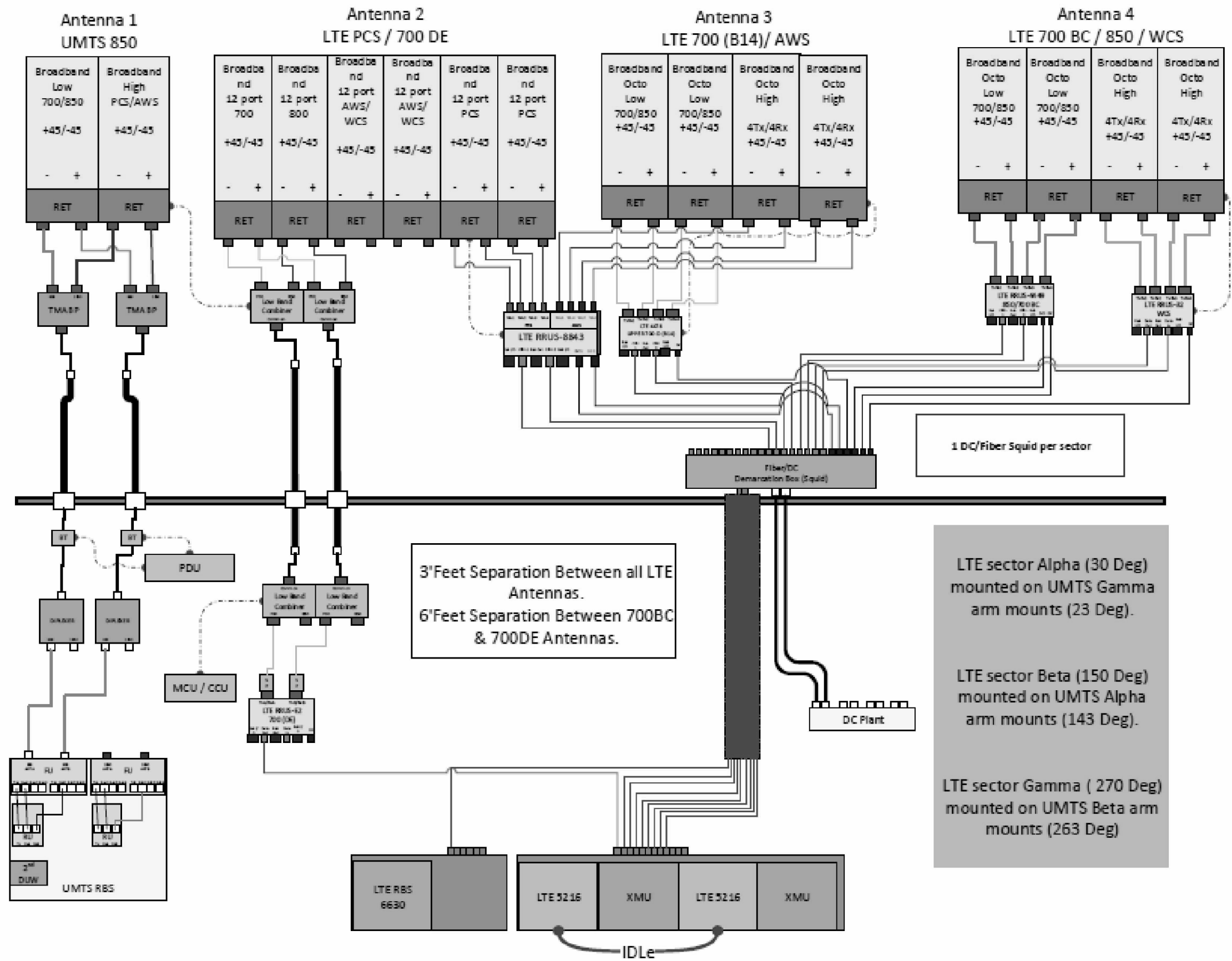
Project Title:
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CROWN BU: 876320
FA # 10035336
528 WHEELERS FARM ROAD
MILFORD, CT 06460

Prepared For:



Drawing Title
EQUIPMENT DETAILS

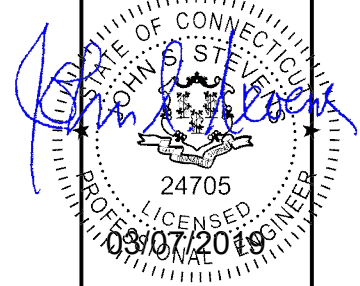
Drawing Number
C5



1 PLUMBING DIAGRAM (FINAL CONFIGURATION)
C6 NOT TO SCALE



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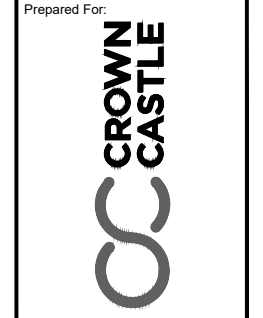
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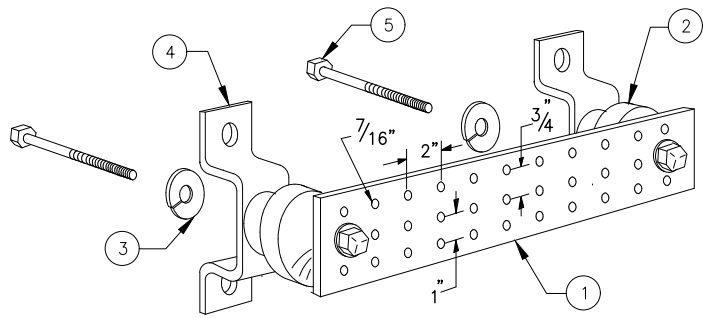
Project Number: 499-002

Project Title:
528 WHEELERS FARM RD
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528 WHEELERS FARM ROAD
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Drawing Title
RF PLUMBING DIAGRAM

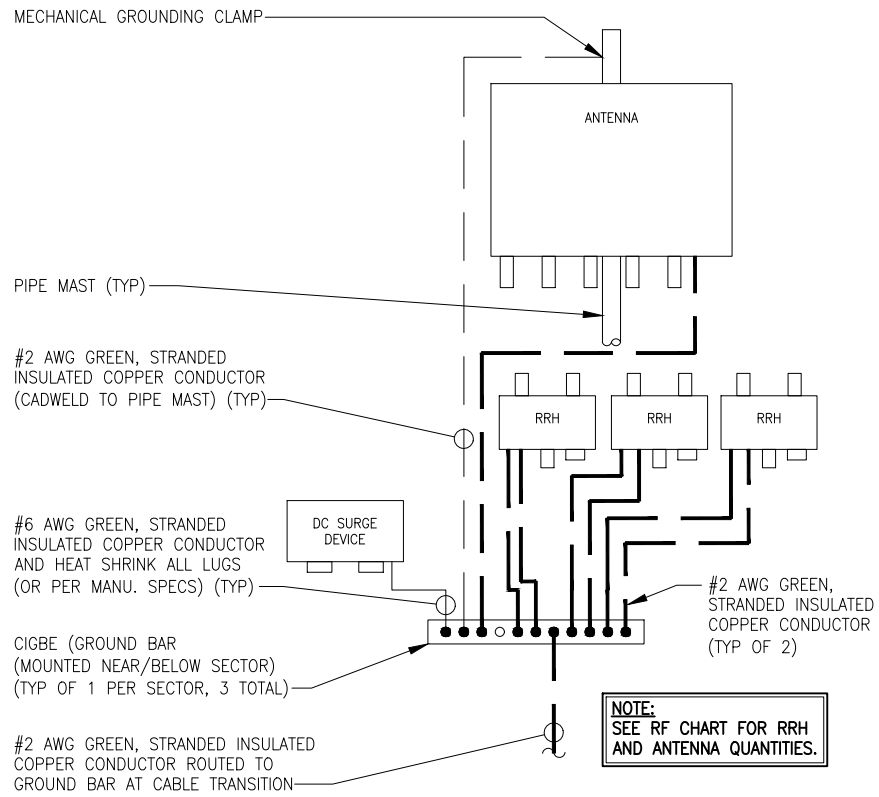
Drawing Number
C6



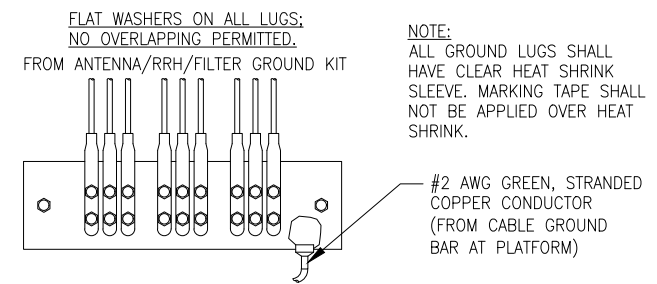
LEGEND

- 1 - SOLID TINNED COPPER GROUND BAR, 1/4"x 4"x 20" MIN., NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
- 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
- 3 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
- 4 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056
- 5 - 5/8-11 X 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1
- 6 - GROUND BAR SHALL BE SIZED TO ACCOMODATE ALL GROUNDING CONNECTIONS REQUIRED PLUS PROVIDE 50% SPARE CAPACITY
- 7 - GROUND BARS SHALL NEITHER BE FIELD FABRICATED NOR NEW HOLES DRILLED
- 8 - GROUND LUGS SHALL MATCH THE HOLE SPACING ON THE BAR
- 9 - HARDWARE DIAMETER SHALL BE MINIMUM 3/8"

1 GROUND BAR
C6 NOT TO SCALE



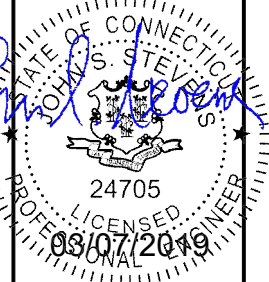
2 CONNECTION OF SECTOR EQUIPMENT TO GROUNDING BAR DETAIL
C7 SCALE: NTS



3 INSTALLATION OF GROUND WIRE TO GROUND BAR DETAIL
C7 SCALE: NTS



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Drawing Title

GROUNDING DETAILS

Drawing Number

C7