



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

August 16, 2022

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

RE: Notice of Exempt Modification for T-Mobile: CT11441A
Crown Site#876360
389 Route 2, Preston, CT 06365
Latitude: 41° 29' 25.35" / Longitude: -71° 59' 29.55"

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 129' level of the 147' monopole located at 389 Route 2, Preston, CT. T-Mobile to remove all equipment at the 129' level and reinstall nine (9) new antennas, modified antenna mount and ancillary equipment at the 147-foot level of the monopole tower. The property is owned by the Town of Preston and the tower is owned by Crown Castle. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

- (3) Ericsson – AIR6419 B41 Antennas
- (3) RFS APXVAALL24_43-U-NA20 Antennas
- (3) Commscope W-65A-R1 Antennas
- (3) Ericsson-Radio 4480_B71+B85 RRU
- (3) Ericsson- 4460 B25+B66 RRH
- (3) Hybrid Cable 6x24
- Mount Modification

Remove:

- (3) Ericsson AIR21 KRC118023-1_B2A_B4P Antennas
- (3) Andrew LNX-6515DS-A1M Antenna
- (3) Ericsson AIR21 KRC118023-1_B2P_B4A Antennas
- (3) Ericsson RRUS-11 B12 TMAs
- (3) Generic Twin Style - 1B-AWS TMAs
- All existing T-Mobile Coaxial Cables

Ground:

Install New:

- (1) 6160 Cabinet
- (1.) B160 Battery Cabinet
- (1) RP 6651
- (2) PSU 4813 vR2A
- (1) CRS IXRc V2
- (2^) RP6651

Remove:

- (1) Equipment Cabinet

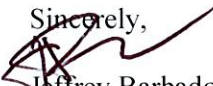
The original approval documents of the facility are not available.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Sandra L. Allyn-Gauthier, First Selectwoman, Town of Preston and Kathy Warzecha – Town Planner, Town of Preston. The Town of Preston is the property owner and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,



Jeffrey Barbadora
Site Acquisition Specialist
1800 W. Park Drive, STE 250
Westborough, MA 01581

Melanie A. Bachman

Page 3

(781) 970-0053
Jeff.Barbadora@crowncastle.com

Attachments

cc:

Sandra L. Allyn-Gauthier, First Selectwoman
Town of Preston
389 Route 2
Preston, CT 06365
(860) 887-5581

Kathy Warzecha – Town Planner
Town of Preston
389 Route 2
Preston, CT 06365
(860) 887-5581 ext. 109

Town of Preston, Property Owner

Crown Castle, Tower Owner

389 ROUTE 2

Location 389 ROUTE 2

Mblu 24-0/ 2/ 389/ /

Acct# 00173000

Owner PRESTON TOWN OF

Assessment \$664,300

Appraisal \$948,950

PID 1758

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$500,600	\$448,350	\$948,950

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$350,500	\$313,800	\$664,300

Owner of Record

Owner PRESTON TOWN OF
Co-Owner 389 ROUTE 2
Address 389 ROUTE 2
 PRESTON, CT 06365

Sale Price \$17,500
Certificate
Book & Page 0056/0174
Sale Date 09/26/1973
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
PRESTON TOWN OF	\$17,500		0056/0174	00	09/26/1973
PRESTON TOWN OF	\$0		0056/0171		09/26/1973

Building Information

Building 1 : Section 1

Year Built: 1974
Living Area: 5,292
Replacement Cost: \$669,068
Building Percent Good: 71

Replacement Cost
Less Depreciation:

\$475,000

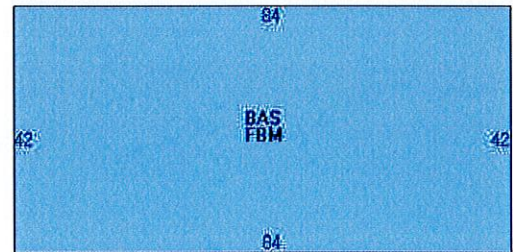
Building Attributes	
Field	Description
Style:	City/Town Hall
Model	Comm/Ind
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Inlaid Sht Gds
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	None
Struct Class	
Bldg Use	MUN TOWN MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	3
1st Floor Use:	903C
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo



(<https://images.vgsi.com/photos/PrestonCTPhotos/\00\00\15127.jpg>)

Building Layout



(https://images.vgsi.com/photos/PrestonCTPhotos//Sketches/1758_1758.jr)

Building Sub-Areas (sq ft)			Legend	
Code	Description	Gross Area	Living Area	
BAS	First Floor	3,528	3,528	
FBM	Basement, Finished	3,528	1,764	
		7,056	5,292	

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
A/C	AIR CONDITION	3528.00 S.F.	\$8,800	1
GEN	GENERATOR	1.00 UNITS	\$3,900	1

Land

Land Use

Use Code 9035
 Description MUN TOWN MDL-96
 Zone RC
 Neighborhood 8000
 Alt Land Appr No
 Category

Land Line Valuation

Size (Acres) 25.86
 Frontage 0
 Depth 0
 Assessed Value \$313,800
 Appraised Value \$448,350

Outbuildings

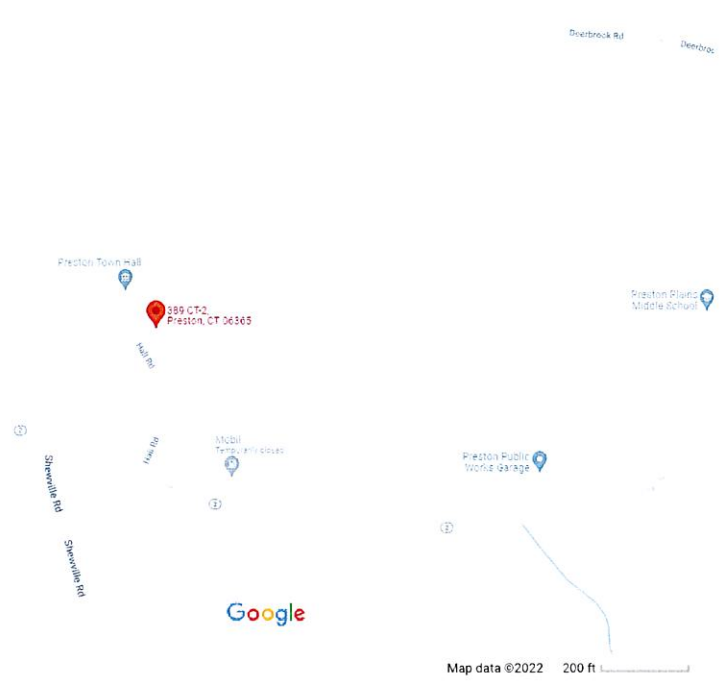
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
LT1	LIGHTS-IN W/PL			6.00 UNITS	\$1,200	1
PAV1	PAVING-ASPHALT			20000.00 S.F.	\$10,800	1
IMP	IMPLEMENT SHED			120.00 S.F.	\$500	1
IMP	IMPLEMENT SHED			100.00 S.F.	\$400	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2011	\$459,600	\$503,400	\$963,000
2006	\$325,800	\$253,400	\$579,200
2001	\$245,200	\$39,700	\$284,900






Assessment			
Valuation Year	Improvements	Land	Total
2011	\$321,800	\$352,400	\$674,200
2006	\$228,100	\$177,400	\$405,500
2001	\$171,600	\$27,800	\$199,400

389 CT-2



389 CT-2

Preston, CT 06365
Building

- 
Directions
- 
Save
- 
Nearby
- 
Send to phone
- 
Share

Photos

At this location

Connecticut Department of Public Safety
Department of Public Safety · 389 CT-2

Preston Public Library
4.4 (5)

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, August 18, 2022 10:22 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777673035717: Your package has been delivered

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



Hi. Your package was
delivered Thu, 08/18/2022 at
10:19am.



Delivered to 389 ROUTE 2, PRESTON, CT 06365
Received by M.WUCZIK

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [777673035717](#)

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Preston Sandra Allyn-Gauthier, First Select 389 Route 2 PRESTON, CT, US, 06365
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Wed 8/17/2022 05:40 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	PRESTON, CT, US, 06365
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, August 18, 2022 10:22 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777673055101: Your package has been delivered

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



Hi. Your package was
delivered Thu, 08/18/2022 at
10:19am.



Delivered to 389 ROUTE 2, PRESTON, CT 06365
Received by M.WUCZIK

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [777673055101](#)

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Preston Kathy Warecha. Town Planner 389 Route 2 PRESTON, CT, US, 06365
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Wed 8/17/2022 05:40 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	PRESTON, CT, US, 06365
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight



MORRISON HERSHFIELD

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Date: **July 18, 2022**

Subject: **Structural Analysis Report**

Carrier Designation: **Site Number:** CT11441A
Site Name: CT23XC411

Crown Castle Designation: **BU Number:** 876360
Site Name: Preston / Town Hall
JDE Job Number: 721117
Work Order Number: 2128131
Order Number: 621166 Rev. 0

Engineering Firm Designation: **Morrison Hershfield Project Number:** CN9-414R2 / 2200039

Site Data: **389 Rt. 2, Preston, New London County, CT 06365**
Latitude 41° 29' 25.25", Longitude -71° 59' 29.55"
147 Foot – EEI Monopole Tower

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 92.2%**

This analysis utilizes an ultimate 3-second gust wind speed of 126 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

G. Lance Cooke, P.E. (CT License No. PEN.0028133)
Senior Engineer



TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Table 5 - Tower Component Stresses vs. Capacity – LC7

4.1) Recommendations

5) APPENDIX A

tnxTower Output

6) APPENDIX B

Base Level Drawing

7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 147 ft monopole tower designed by Engineered Endeavors, Inc.

The tower was modified multiple times in the past to accommodate additional loading. Modifications are incorporated in this analysis per the post modification inspection reports.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	126 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 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)
147.0	149.0	3	commscope	VV-65B-R1_TMO w/ Mount Pipe	3	1-5/8
		3	ericsson	AIR 6419 B41_TMO w/ Mount Pipe		
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
	147.0	1	-	Platform Mount [LP 303-1_HR-1]		
		1	Site Pro 1	Handrail Kit [#HRK12]		
1		Site Pro 1	Reinforcement Kit [#PRK-SFS]			

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)
136.0	138.0	6	antel	LPA-80080/4CF w/ Mount Pipe	13	1-5/8
		2	commscope	NHH-45B-R2B w/ Mount Pipe		
		4	commscope	NHH-65B-R2B w/ Mount Pipe		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
	1	raycap	RVZDC-6627-PF-48			
	136.0	1	-	Platform Mount [LP 712-1]		
129.0	129.0	3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	10	1-5/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	ericsson	KRY 112 144/1		
		1	-	Platform Mount [LP 1201-1]		
116.0	118.0	3	cci antennas	DMP65R-BU8D w/ Mount Pipe	6 4 2 2 1	1-1/4 3/4 2C 3/8 5/16
		3	cci antennas	OPA65R-BU8D w/ Mount Pipe		
		3	powerwave technologies	RA21.7770.00 w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		6	powerwave technologies	LGP21401		
	2	raycap	DC6-48-60-18-8F			
	116.0	1	-	Platform Mount [LP 303-1_HR-1]		
105.0	105.0	3	jma wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		
50.0	51.0	1	lucent	KS24019-L112A	1	1/2
	50.0	1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2192501	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1615411	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1615372	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2331612	CCISITES
4-POST-MODIFICATION INSPECTION	2331610	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3846963	CCISITES
4-POST-MODIFICATION INSPECTION	3846952	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5573224	CCISITES
4-POST-MODIFICATION INSPECTION	5995667	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5959061	CCISITES
4-POST-MODIFICATION INSPECTION	6072770	CCISITES

Document	Reference	Source
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7474716	CCISITES
4-POST-MODIFICATION INSPECTION	8088961	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	SF*P_allow (K)	%Capacity	Pass / Fail
L1	147 - 142	Pole	TP17.326x16.25x0.1875	Pole	15.8	Pass
L2	142 - 137	Pole	TP18.402x17.326x0.1875	Pole	25.5	Pass
L3	137 - 132	Pole	TP19.478x18.402x0.1875	Pole	42.1	Pass
L4	132 - 127	Pole	TP20.553x19.478x0.1875	Pole	57.9	Pass
L5	127 - 123.62	Pole	TP21.98x20.553x0.1875	Pole	68.6	Pass
L6	123.62 - 118.62	Pole	TP21.965x20.906x0.25	Pole	60.9	Pass
L7	118.62 - 113.62	Pole	TP23.025x21.965x0.25	Pole	72.6	Pass
L8	113.62 - 113.08	Pole	TP23.14x23.025x0.25	Pole	73.8	Pass
L9	113.08 - 112.83	Pole	TP23.193x23.14x0.25	Pole	74.4	Pass
L10	112.83 - 112.16	Pole	TP23.335x23.193x0.25	Pole	75.8	Pass
L11	112.16 - 111.91	Pole + Reinf.	TP23.388x23.335x0.525	Reinf. 18 Tension Rupture	65.7	Pass
L12	111.91 - 110.5	Pole + Reinf.	TP23.686x23.388x0.525	Reinf. 18 Tension Rupture	68.7	Pass
L13	110.5 - 110.25	Pole + Reinf.	TP23.739x23.686x0.75	Reinf. 18 Tension Rupture	49.5	Pass
L14	110.25 - 105.25	Pole + Reinf.	TP24.799x23.739x0.725	Reinf. 18 Tension Rupture	56.9	Pass
L15	105.25 - 105	Pole + Reinf.	TP24.852x24.799x0.725	Reinf. 18 Tension Rupture	57.3	Pass
L16	105 - 104.75	Pole + Reinf.	TP24.905x24.852x1	Reinf. 6 Tension Rupture	44.3	Pass
L17	104.75 - 103.5	Pole + Reinf.	TP25.17x24.905x1	Reinf. 6 Tension Rupture	45.9	Pass
L18	103.5 - 103.25	Pole + Reinf.	TP25.223x25.17x0.7625	Reinf. 6 Tension Rupture	58.4	Pass
L19	103.25 - 98.25	Pole + Reinf.	TP26.283x25.223x0.7375	Reinf. 6 Tension Rupture	66.1	Pass
L20	98.25 - 94.17	Pole + Reinf.	TP27.148x26.283x0.7125	Reinf. 6 Tension Rupture	71.9	Pass

Section No.	Elevation (ft)	Component Type	Size	SF*P_allow (K)	%Capacity	Pass / Fail
L21	94.17 - 93.92	Pole + Reinf.	TP27.201x27.148x0.85	Reinf. 12 Tension Rupture	62.4	Pass
L22	93.92 - 91.5	Pole + Reinf.	TP27.713x27.201x0.825	Reinf. 12 Tension Rupture	65.3	Pass
L23	91.5 - 91.25	Pole + Reinf.	TP27.766x27.713x0.8	Reinf. 6 Tension Rupture	67.6	Pass
L24	91.25 - 90.58	Pole + Reinf.	TP27.908x27.766x0.8	Reinf. 6 Tension Rupture	68.3	Pass
L25	90.58 - 90.33	Pole + Reinf.	TP27.961x27.908x0.775	Reinf. 12 Tension Rupture	70.8	Pass
L26	90.33 - 89.08	Pole + Reinf.	TP29.11x27.961x0.7625	Reinf. 12 Tension Rupture	72.3	Pass
L27	89.08 - 83.91	Pole + Reinf.	TP28.822x27.726x0.85	Reinf. 12 Tension Rupture	71.5	Pass
L28	83.91 - 78.91	Pole + Reinf.	TP29.881x28.822x0.825	Reinf. 12 Tension Rupture	76.1	Pass
L29	78.91 - 73.91	Pole + Reinf.	TP30.94x29.881x0.8	Reinf. 12 Tension Rupture	80.2	Pass
L30	73.91 - 68.91	Pole + Reinf.	TP31.999x30.94x0.7875	Reinf. 12 Tension Rupture	84.1	Pass
L31	68.91 - 65.5	Pole + Reinf.	TP32.722x31.999x0.7625	Reinf. 12 Tension Rupture	86.5	Pass
L32	65.5 - 65.25	Pole + Reinf.	TP32.775x32.722x0.9	Reinf. 12 Tension Rupture	81.3	Pass
L33	65.25 - 64.5	Pole + Reinf.	TP32.934x32.775x0.8875	Reinf. 12 Tension Rupture	81.8	Pass
L34	64.5 - 64.25	Pole + Reinf.	TP32.987x32.934x0.8125	Reinf. 12 Tension Rupture	86.1	Pass
L35	64.25 - 59.25	Pole + Reinf.	TP34.046x32.987x0.7875	Reinf. 12 Tension Rupture	89.3	Pass
L36	59.25 - 58.58	Pole + Reinf.	TP34.187x34.046x0.7875	Reinf. 12 Tension Rupture	89.7	Pass
L37	58.58 - 58.33	Pole + Reinf.	TP34.24x34.187x0.8375	Reinf. 10 Tension Rupture	81.1	Pass
L38	58.33 - 57.25	Pole + Reinf.	TP34.47x34.24x0.8375	Reinf. 10 Tension Rupture	81.7	Pass
L39	57.25 - 57	Pole + Reinf.	TP34.523x34.47x0.8375	Reinf. 10 Tension Rupture	80.8	Pass
L40	57 - 52	Pole + Reinf.	TP35.582x34.523x0.825	Reinf. 10 Tension Rupture	83.4	Pass
L41	52 - 49.58	Pole + Reinf.	TP37.19x35.582x0.8125	Reinf. 10 Tension Rupture	84.6	Pass
L42	49.58 - 43.41	Pole + Reinf.	TP36.78x35.47x0.875	Reinf. 10 Tension Rupture	82.9	Pass
L43	43.41 - 38.41	Pole + Reinf.	TP37.842x36.78x0.85	Reinf. 10 Tension Rupture	84.7	Pass
L44	38.41 - 34.5	Pole + Reinf.	TP38.673x37.842x0.85	Reinf. 10 Tension Rupture	86.1	Pass
L45	34.5 - 34.25	Pole + Reinf.	TP38.726x38.673x1	Reinf. 15 Tension Rupture	74.5	Pass
L46	34.25 - 33.5	Pole + Reinf.	TP38.885x38.726x1	Reinf. 15 Tension Rupture	74.7	Pass
L47	33.5 - 33.25	Pole + Reinf.	TP38.938x38.885x0.8	Reinf. 4 Tension Rupture	87.4	Pass
L48	33.25 - 28.48	Pole + Reinf.	TP39.95x38.938x0.8875	Reinf. 4 Tension Rupture	81.6	Pass
L49	28.48 - 28.23	Pole + Reinf.	TP40.004x39.95x0.8875	Reinf. 4 Tension Rupture	81.6	Pass
L50	28.23 - 27.48	Pole + Reinf.	TP40.163x40.004x0.875	Reinf. 3 Tension Rupture	81.9	Pass
L51	27.48 - 27.23	Pole + Reinf.	TP40.216x40.163x0.875	Reinf. 3 Tension Rupture	81.9	Pass
L52	27.23 - 22.23	Pole + Reinf.	TP41.278x40.216x0.875	Reinf. 3 Tension Rupture	83.3	Pass
L53	22.23 - 17.23	Pole + Reinf.	TP42.34x41.278x0.85	Reinf. 3 Tension Rupture	84.6	Pass
L54	17.23 - 12.23	Pole + Reinf.	TP43.402x42.34x0.8375	Reinf. 3 Tension Rupture	85.8	Pass
L55	12.23 - 7.23	Pole + Reinf.	TP44.464x43.402x0.825	Reinf. 3 Tension Rupture	86.9	Pass
L56	7.23 - 6.92	Pole + Reinf.	TP44.531x44.464x0.825	Reinf. 3 Tension Rupture	86.9	Pass
L57	6.92 - 6.67	Pole + Reinf.	TP44.584x44.531x0.775	Reinf. 1 Tension Rupture	89.5	Pass
L58	6.67 - 1.67	Pole + Reinf.	TP45.646x44.584x0.775	Reinf. 1 Tension Rupture	90.5	Pass
L59	1.67 - 0	Pole + Reinf.	TP46x45.646x0.775	Reinf. 1 Tension Rupture	90.8	Pass
					Summary	
				Pole	75.8	Pass
				Reinforcement	90.8	Pass
				Overall	90.8	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	%Capacity	Pass / Fail
1	Anchor Rods	0	86.3	Pass
1	Base Plate		85.5	Pass
1	Base Foundation (Structure)	0	92.2	Pass
1	Base Foundation (Soil Interaction)		61.6	Pass
Structure Rating (max from all components) =				92.2%*

Notes:

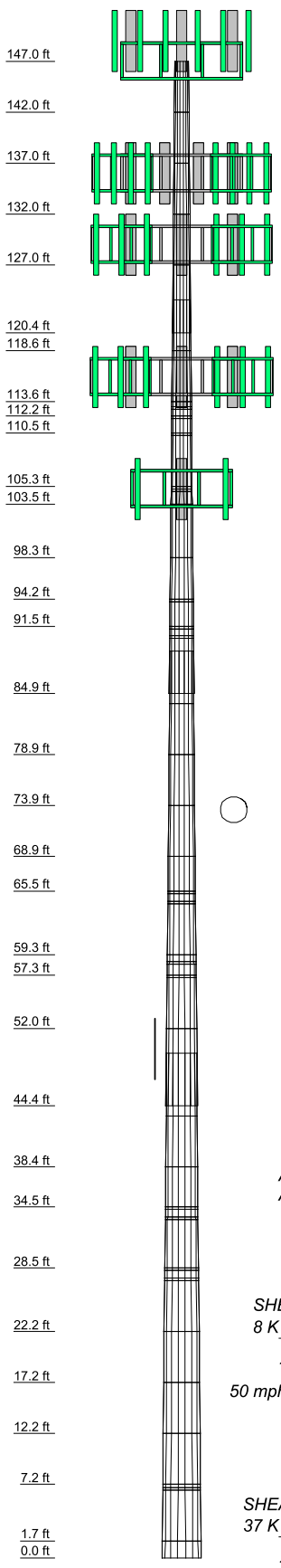
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) *Rating per TIA-222-H, Section 15.5.

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

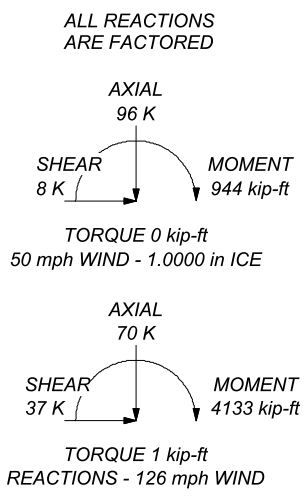
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875	3.25	16.2500	17.3259	A572-65	0.2
2	5.00	18	0.1875	3.25	17.3259	18.4017	A572-65	0.2
3	5.00	18	0.1875	3.25	18.4017	19.4776	A572-65	0.2
4	5.00	18	0.1875	3.25	19.4776	20.5534	A572-65	0.2
5	5.00	18	0.1875	3.25	20.5534	21.6293	A572-65	0.2
6	5.00	18	0.1875	3.25	21.6293	22.7051	A572-65	0.2
7	5.00	18	0.1875	3.25	22.7051	23.7810	A572-65	0.2
8	5.00	18	0.1875	3.25	23.7810	24.8568	A572-65	0.2
9	5.00	18	0.1875	3.25	24.8568	25.9327	A572-65	0.2
10	5.00	18	0.1875	3.25	25.9327	27.0085	A572-65	0.2
11	5.00	18	0.1875	3.25	27.0085	28.0844	A572-65	0.2
12	5.00	18	0.1875	3.25	28.0844	29.1602	A572-65	0.2
13	5.00	18	0.1875	3.25	29.1602	30.2361	A572-65	0.2
14	5.00	18	0.1875	3.25	30.2361	31.3119	A572-65	0.2
15	5.00	18	0.1875	3.25	31.3119	32.3878	A572-65	0.2
16	5.00	18	0.1875	3.25	32.3878	33.4636	A572-65	0.2
17	5.00	18	0.1875	3.25	33.4636	34.5395	A572-65	0.2
18	5.00	18	0.1875	3.25	34.5395	35.6153	A572-65	0.2
19	5.00	18	0.1875	3.25	35.6153	36.6912	A572-65	0.2
20	5.00	18	0.1875	3.25	36.6912	37.7670	A572-65	0.2
21	5.00	18	0.1875	3.25	37.7670	38.8429	A572-65	0.2
22	5.00	18	0.1875	3.25	38.8429	39.9187	A572-65	0.2
23	5.00	18	0.1875	3.25	39.9187	40.9946	A572-65	0.2
24	5.00	18	0.1875	3.25	40.9946	42.0704	A572-65	0.2
25	5.00	18	0.1875	3.25	42.0704	43.1463	A572-65	0.2
26	5.00	18	0.1875	3.25	43.1463	44.2221	A572-65	0.2
27	5.00	18	0.1875	3.25	44.2221	45.2980	A572-65	0.2
28	5.00	18	0.1875	3.25	45.2980	46.3738	A572-65	0.2
29	5.00	18	0.1875	3.25	46.3738	47.4497	A572-65	0.2
30	5.00	18	0.1875	3.25	47.4497	48.5255	A572-65	0.2
31	5.00	18	0.1875	3.25	48.5255	49.6014	A572-65	0.2
32	5.00	18	0.1875	3.25	49.6014	50.6772	A572-65	0.2
33	5.00	18	0.1875	3.25	50.6772	51.7531	A572-65	0.2
34	5.00	18	0.1875	3.25	51.7531	52.8289	A572-65	0.2
35	5.00	18	0.1875	3.25	52.8289	53.9048	A572-65	0.2
36	5.00	18	0.1875	3.25	53.9048	54.9806	A572-65	0.2
37	5.00	18	0.1875	3.25	54.9806	56.0565	A572-65	0.2
38	5.00	18	0.1875	3.25	56.0565	57.1323	A572-65	0.2
39	5.00	18	0.1875	3.25	57.1323	58.2082	A572-65	0.2
40	5.00	18	0.1875	3.25	58.2082	59.2840	A572-65	0.2
41	5.00	18	0.1875	3.25	59.2840	60.3599	A572-65	0.2
42	5.00	18	0.1875	3.25	60.3599	61.4357	A572-65	0.2
43	5.00	18	0.1875	3.25	61.4357	62.5116	A572-65	0.2
44	5.00	18	0.1875	3.25	62.5116	63.5874	A572-65	0.2
45	5.00	18	0.1875	3.25	63.5874	64.6633	A572-65	0.2
46	5.00	18	0.1875	3.25	64.6633	65.7391	A572-65	0.2
47	5.00	18	0.1875	3.25	65.7391	66.8150	A572-65	0.2
48	5.00	18	0.1875	3.25	66.8150	67.8908	A572-65	0.2
49	5.00	18	0.1875	3.25	67.8908	68.9667	A572-65	0.2
50	5.00	18	0.1875	3.25	68.9667	70.0425	A572-65	0.2
51	5.00	18	0.1875	3.25	70.0425	71.1184	A572-65	0.2
52	5.00	18	0.1875	3.25	71.1184	72.1942	A572-65	0.2
53	5.00	18	0.1875	3.25	72.1942	73.2701	A572-65	0.2
54	5.00	18	0.1875	3.25	73.2701	74.3459	A572-65	0.2
55	5.00	18	0.1875	3.25	74.3459	75.4218	A572-65	0.2
56	5.00	18	0.1875	3.25	75.4218	76.4976	A572-65	0.2
57	5.00	18	0.1875	3.25	76.4976	77.5735	A572-65	0.2
58	5.00	18	0.1875	3.25	77.5735	78.6493	A572-65	0.2
59	5.00	18	0.1875	3.25	78.6493	79.7252	A572-65	0.2
60	5.00	18	0.1875	3.25	79.7252	80.8010	A572-65	0.2
61	5.00	18	0.1875	3.25	80.8010	81.8769	A572-65	0.2
62	5.00	18	0.1875	3.25	81.8769	82.9527	A572-65	0.2
63	5.00	18	0.1875	3.25	82.9527	84.0286	A572-65	0.2
64	5.00	18	0.1875	3.25	84.0286	85.1044	A572-65	0.2
65	5.00	18	0.1875	3.25	85.1044	86.1803	A572-65	0.2
66	5.00	18	0.1875	3.25	86.1803	87.2561	A572-65	0.2
67	5.00	18	0.1875	3.25	87.2561	88.3320	A572-65	0.2
68	5.00	18	0.1875	3.25	88.3320	89.4078	A572-65	0.2
69	5.00	18	0.1875	3.25	89.4078	90.4837	A572-65	0.2
70	5.00	18	0.1875	3.25	90.4837	91.5595	A572-65	0.2
71	5.00	18	0.1875	3.25	91.5595	92.6354	A572-65	0.2
72	5.00	18	0.1875	3.25	92.6354	93.7112	A572-65	0.2
73	5.00	18	0.1875	3.25	93.7112	94.7871	A572-65	0.2
74	5.00	18	0.1875	3.25	94.7871	95.8629	A572-65	0.2
75	5.00	18	0.1875	3.25	95.8629	96.9388	A572-65	0.2
76	5.00	18	0.1875	3.25	96.9388	98.0146	A572-65	0.2
77	5.00	18	0.1875	3.25	98.0146	99.0905	A572-65	0.2
78	5.00	18	0.1875	3.25	99.0905	100.1663	A572-65	0.2
79	5.00	18	0.1875	3.25	100.1663	101.2422	A572-65	0.2
80	5.00	18	0.1875	3.25	101.2422	102.3180	A572-65	0.2
81	5.00	18	0.1875	3.25	102.3180	103.3939	A572-65	0.2
82	5.00	18	0.1875	3.25	103.3939	104.4697	A572-65	0.2
83	5.00	18	0.1875	3.25	104.4697	105.5456	A572-65	0.2
84	5.00	18	0.1875	3.25	105.5456	106.6214	A572-65	0.2
85	5.00	18	0.1875	3.25	106.6214	107.6973	A572-65	0.2
86	5.00	18	0.1875	3.25	107.6973	108.7731	A572-65	0.2
87	5.00	18	0.1875	3.25	108.7731	109.8490	A572-65	0.2
88	5.00	18	0.1875	3.25	109.8490	110.9248	A572-65	0.2
89	5.00	18	0.1875	3.25	110.9248	112.0007	A572-65	0.2
90	5.00	18	0.1875	3.25	112.0007	113.0765	A572-65	0.2
91	5.00	18	0.1875	3.25	113.0765	114.1524	A572-65	0.2
92	5.00	18	0.1875	3.25	114.1524	115.2282	A572-65	0.2
93	5.00	18	0.1875	3.25	115.2282	116.3041	A572-65	0.2
94	5.00	18	0.1875	3.25	116.3041	117.3799	A572-65	0.2
95	5.00	18	0.1875	3.25	117.3799	118.4558	A572-65	0.2
96	5.00	18	0.1875	3.25	118.4558	119.5316	A572-65	0.2
97	5.00	18	0.1875	3.25	119.5316	120.6075	A572-65	0.2
98	5.00	18	0.1875	3.25	120.6075	121.6833	A572-65	0.2
99	5.00	18	0.1875	3.25	121.6833	122.7592	A572-65	0.2
100	5.00	18	0.1875	3.25	122.7592	123.8350	A572-65	0.2




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

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 126 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. CCI POLE RATING: 90.8%



 Morrison Hershfield 1455 Lincoln Parkway, Suit 500 Atlanta, GA 30346 Phone: (770) 379-8500 FAX: (770) 379-8501	Job: CN9-414R2 / 2200039		
	Project: 876360 / Preston / Town Hall		
	Client: Crown Castle USA	Drawn by: PKD	App'd:
	Code: TIA-222-H	Date: 07/19/22	Scale: NTS
	Path:		Dwg No. E-1

Tower Input Data

The tower is a monopole.
 This tower is designed using the TIA-222-H standard.
 The following design criteria apply:

- Tower is located in New London County, Connecticut.
- Tower base elevation above sea level: 135.00 ft.
- Basic wind speed of 126 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	147.00-142.00	5.00	0.00	18	16.2500	17.3259	0.1875	0.7500	A572-65 (65 ksi)
L2	142.00-137.00	5.00	0.00	18	17.3259	18.4017	0.1875	0.7500	A572-65 (65 ksi)
L3	137.00-132.00	5.00	0.00	18	18.4017	19.4776	0.1875	0.7500	A572-65 (65 ksi)
L4	132.00-127.00	5.00	0.00	18	19.4776	20.5534	0.1875	0.7500	A572-65 (65 ksi)
L5	127.00-120.37	6.63	3.25	18	20.5534	21.9800	0.1875	0.7500	A572-65 (65 ksi)
L6	120.37-118.62	5.00	0.00	18	20.9057	21.9654	0.2500	1.0000	A572-65 (65 ksi)
L7	118.62-113.62	5.00	0.00	18	21.9654	23.0251	0.2500	1.0000	A572-65 (65 ksi)
L8	113.62-113.08	0.54	0.00	18	23.0251	23.1396	0.2500	1.0000	A572-65 (65 ksi)
L9	113.08-112.83	0.25	0.00	18	23.1396	23.1926	0.2500	1.0000	A572-65 (65 ksi)
L10	112.83-112.16	0.67	0.00	18	23.1926	23.3346	0.2500	1.0000	A572-65 (65 ksi)
L11	112.16-111.91	0.25	0.00	18	23.3346	23.3875	0.5250	2.1000	A572-65 (65 ksi)
L12	111.91-110.50	1.41	0.00	18	23.3875	23.6864	0.5250	2.1000	A572-65 (65 ksi)
L13	110.50-110.25	0.25	0.00	18	23.6864	23.7394	0.7500	3.0000	A572-65 (65 ksi)
L14	110.25-105.25	5.00	0.00	18	23.7394	24.7991	0.7250	2.9000	A572-65 (65 ksi)
L15	105.25-105.00	0.25	0.00	18	24.7991	24.8521	0.7250	2.9000	A572-65 (65 ksi)
L16	105.00-104.75	0.25	0.00	18	24.8521	24.9051	1.0000	4.0000	A572-65 (65 ksi)
L17	104.75-103.50	1.25	0.00	18	24.9051	25.1700	1.0000	4.0000	A572-65 (65 ksi)
L18	103.50-103.25	0.25	0.00	18	25.1700	25.2230	0.7625	3.0500	A572-65 (65 ksi)
L19	103.25-98.25	5.00	0.00	18	25.2230	26.2827	0.7375	2.9500	A572-65 (65 ksi)
L20	98.25-94.17	4.08	0.00	18	26.2827	27.1480	0.7125	2.8500	A572-65 (65 ksi)
L21	94.17-93.92	0.25	0.00	18	27.1480	27.2010	0.8500	3.4000	A572-65 (65 ksi)
L22	93.92-91.50	2.42	0.00	18	27.2010	27.7133	0.8250	3.3000	A572-65 (65 ksi)
L23	91.50-91.25	0.25	0.00	18	27.7133	27.7663	0.8000	3.2000	A572-65 (65 ksi)
L24	91.25-90.58	0.67	0.00	18	27.7663	27.9083	0.8000	3.2000	A572-65 (65 ksi)
L25	90.58-90.33	0.25	0.00	18	27.9083	27.9613	0.7750	3.1000	A572-65 (65 ksi)
L26	90.33-84.91	5.42	4.17	18	27.9613	29.1100	0.7625	3.0500	A572-65 (65 ksi)
L27	84.91-83.91	5.17	0.00	18	27.7262	28.8215	0.8500	3.4000	A572-65 (65 ksi)
L28	83.91-78.91	5.00	0.00	18	28.8215	29.8808	0.8250	3.3000	A572-65 (65 ksi)
L29	78.91-73.91	5.00	0.00	18	29.8808	30.9401	0.8000	3.2000	A572-65 (65 ksi)
L30	73.91-68.91	5.00	0.00	18	30.9401	31.9994	0.7875	3.1500	A572-65 (65 ksi)
L31	68.91-65.50	3.41	0.00	18	31.9994	32.7219	0.7625	3.0500	A572-65 (65 ksi)
L32	65.50-65.25	0.25	0.00	18	32.7219	32.7748	0.9000	3.6000	A572-65 (65 ksi)
L33	65.25-64.50	0.75	0.00	18	32.7748	32.9337	0.8875	3.5500	A572-65 (65 ksi)

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
L34	64.50-64.25	0.25	0.00	18	32.9337	32.9867	0.8125	3.2500	A572-65 (65 ksi)
L35	64.25-59.25	5.00	0.00	18	32.9867	34.0460	0.7875	3.1500	A572-65 (65 ksi)
L36	59.25-58.58	0.67	0.00	18	34.0460	34.1873	0.7875	3.1500	A572-65 (65 ksi)
L37	58.58-58.33	0.25	0.00	18	34.1873	34.2403	0.8375	3.3500	A572-65 (65 ksi)
L38	58.33-57.25	1.08	0.00	18	34.2403	34.4697	0.8375	3.3500	A572-65 (65 ksi)
L39	57.25-57.00	0.25	0.00	18	34.4697	34.5227	0.8375	3.3500	A572-65 (65 ksi)
L40	57.00-52.00	5.00	0.00	18	34.5227	35.5820	0.8250	3.3000	A572-65 (65 ksi)
L41	52.00-44.41	7.59	5.17	18	35.5820	37.1900	0.8125	3.2500	A572-65 (65 ksi)
L42	44.41-43.41	6.17	0.00	18	35.4697	36.7801	0.8750	3.5000	A572-65 (65 ksi)
L43	43.41-38.41	5.00	0.00	18	36.7801	37.8421	0.8500	3.4000	A572-65 (65 ksi)
L44	38.41-34.50	3.91	0.00	18	37.8421	38.6725	0.8500	3.4000	A572-65 (65 ksi)
L45	34.50-34.25	0.25	0.00	18	38.6725	38.7256	1.0000	4.0000	A572-65 (65 ksi)
L46	34.25-33.50	0.75	0.00	18	38.7256	38.8849	1.0000	4.0000	A572-65 (65 ksi)
L47	33.50-33.25	0.25	0.00	18	38.8849	38.9380	0.8000	3.2000	A572-65 (65 ksi)
L48	33.25-28.48	4.77	0.00	18	38.9380	39.9505	0.8875	3.5500	A572-65 (65 ksi)
L49	28.48-28.23	0.25	0.00	18	39.9505	40.0036	0.8875	3.5500	A572-65 (65 ksi)
L50	28.23-27.48	0.75	0.00	18	40.0036	40.1629	0.8750	3.5000	A572-65 (65 ksi)
L51	27.48-27.23	0.25	0.00	18	40.1629	40.2160	0.8750	3.5000	A572-65 (65 ksi)
L52	27.23-22.23	5.00	0.00	18	40.2160	41.2779	0.8750	3.5000	A572-65 (65 ksi)
L53	22.23-17.23	5.00	0.00	18	41.2779	42.3399	0.8500	3.4000	A572-65 (65 ksi)
L54	17.23-12.23	5.00	0.00	18	42.3399	43.4018	0.8375	3.3500	A572-65 (65 ksi)
L55	12.23-7.23	5.00	0.00	18	43.4018	44.4638	0.8250	3.3000	A572-65 (65 ksi)
L56	7.23-6.92	0.32	0.00	18	44.4638	44.5309	0.8250	3.3000	A572-65 (65 ksi)
L57	6.92-6.67	0.25	0.00	18	44.5309	44.5840	0.7750	3.1000	A572-65 (65 ksi)
L58	6.67-1.67	5.00	0.00	18	44.5840	45.6459	0.7750	3.1000	A572-65 (65 ksi)
L59	1.67-0.00	1.67		18	45.6459	46.0000	0.7750	3.1000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	16.4718	9.5592	311.5911	5.7022	8.2550	37.7457	623.5922	4.7805	2.5300	13.493
	17.5642	10.1995	378.4888	6.0841	8.8015	43.0026	757.4756	5.1007	2.7194	14.503
L2	17.5642	10.1995	378.4888	6.0841	8.8015	43.0026	757.4756	5.1007	2.7194	14.503
	18.6567	10.8397	454.3354	6.4660	9.3481	48.6021	909.2686	5.4209	2.9087	15.513
L3	18.6567	10.8397	454.3354	6.4660	9.3481	48.6021	909.2686	5.4209	2.9087	15.513
	19.7491	11.4800	539.6927	6.8480	9.8946	54.5442	1080.0956	5.7411	3.0981	16.523
L4	19.7491	11.4800	539.6927	6.8480	9.8946	54.5442	1080.0956	5.7411	3.0981	16.523
	20.8416	12.1203	635.1226	7.2299	10.4411	60.8289	1271.0809	6.0613	3.2874	17.533
L5	20.8416	12.1203	635.1226	7.2299	10.4411	60.8289	1271.0809	6.0613	3.2874	17.533

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L6	22.2902	12.9693	778.1562	7.7363	11.1658	69.6908	1557.3364	6.4859	3.5385	18.872
	21.8891	16.3903	883.4944	7.3328	10.6201	83.1908	1768.1513	8.1967	3.2394	12.958
	22.2657	17.2312	1026.5696	7.7090	11.1584	91.9995	2054.4900	8.6172	3.4259	13.704
L7	22.2657	17.2312	1026.5696	7.7090	11.1584	91.9995	2054.4900	8.6172	3.4259	13.704
	23.3418	18.0721	1184.3131	8.0852	11.6968	101.2514	2370.1846	9.0377	3.6124	14.45
L8	23.3418	18.0721	1184.3131	8.0852	11.6968	101.2514	2370.1846	9.0377	3.6124	14.45
	23.4580	18.1629	1202.2572	8.1258	11.7549	102.2771	2406.0963	9.0832	3.6326	14.53
L9	23.4580	18.1629	1202.2572	8.1258	11.7549	102.2771	2406.0963	9.0832	3.6326	14.53
	23.5118	18.2049	1210.6256	8.1446	11.7818	102.7537	2422.8442	9.1042	3.6419	14.568
L10	23.5118	18.2049	1210.6256	8.1446	11.7818	102.7537	2422.8442	9.1042	3.6419	14.568
	23.6560	18.3176	1233.2443	8.1950	11.8540	104.0365	2468.1114	9.1605	3.6669	14.668
L11	23.6135	38.0087	2498.3561	8.0974	11.8540	210.7614	4999.9997	19.0080	3.1829	6.063
	23.6673	38.0970	2515.8073	8.1162	11.8809	211.7527	5034.9251	19.0521	3.1922	6.08
L12	23.6673	38.0970	2515.8073	8.1162	11.8809	211.7527	5034.9251	19.0521	3.1922	6.08
	23.9708	38.5950	2615.7558	8.2223	12.0327	217.3876	5234.9535	19.3012	3.2448	6.181
L13	23.9361	54.6001	3628.9459	8.1424	12.0327	301.5907	7262.6668	27.3052	2.8488	3.798
	23.9899	54.7262	3654.1539	8.1612	12.0596	303.0079	7313.1160	27.3683	2.8581	3.811
L14	23.9937	52.9595	3543.8852	8.1701	12.0596	293.8642	7092.4334	26.4848	2.9021	4.003
	25.0698	55.3981	4056.3150	8.5463	12.5979	321.9825	8117.9675	27.7043	3.0886	4.26
L15	25.0698	55.3981	4056.3150	8.5463	12.5979	321.9825	8117.9675	27.7043	3.0886	4.26
	25.1236	55.5200	4083.1572	8.5651	12.6249	323.4222	8171.6871	27.7653	3.0980	4.273
L16	25.0812	75.7065	5441.5493	8.4675	12.6249	431.0189	10890.258	37.8604	2.6140	2.614
	25.1350	75.8746	5477.8939	8.4863	12.6518	432.9746	10962.995	37.9445	2.6233	2.623
L17	25.1350	75.8746	5477.8939	8.4863	12.6518	432.9746	10962.995	37.9445	2.6233	2.623
	25.4040	76.7155	5662.0466	8.5803	12.7864	442.8196	11331.543	38.3651	2.6699	2.67
L18	25.4406	59.0704	4445.8340	8.6647	12.7864	347.7015	8897.5179	29.5408	3.0879	4.05
	25.4944	59.1986	4474.8510	8.6835	12.8133	349.2357	8955.5900	29.6049	3.0972	4.062
L19	25.4983	57.3162	4341.4189	8.6923	12.8133	338.8221	8688.5504	28.6635	3.1412	4.259
	26.5744	59.7968	4929.8473	9.0685	13.3516	369.2326	9866.1813	29.9041	3.3278	4.512
L20	26.5782	57.8263	4776.7307	9.0774	13.3516	357.7646	9559.7468	28.9187	3.3718	4.732
	27.4569	59.7833	5278.3001	9.3846	13.7912	382.7294	10563.545	29.8973	3.5241	4.946
L21	27.4357	70.9495	6199.1725	9.3358	13.7912	449.5018	12406.502	35.4815	3.2821	3.861
	27.4895	71.0924	6236.7186	9.3546	13.8181	451.3434	12481.643	35.5530	3.2914	3.872
L22	27.4934	69.0670	6070.5308	9.3635	13.8181	439.3166	12149.049	34.5400	3.3354	4.043
	28.0135	70.4084	6431.1437	9.5453	14.0784	456.8107	12870.749	35.2109	3.4255	4.152
L23	28.0174	68.3382	6253.6716	9.5542	14.0784	444.2047	12515.572	34.1756	3.4695	4.337
	28.0712	68.4728	6290.6802	9.5730	14.1053	445.9808	12589.637	34.2429	3.4789	4.349
L24	28.0712	68.4728	6290.6802	9.5730	14.1053	445.9808	12589.637	34.2429	3.4789	4.349
	28.2154	68.8334	6390.5827	9.6234	14.1774	450.7582	12789.574	34.4232	3.5039	4.38
L25	28.2193	66.7438	6208.0210	9.6323	14.1774	437.8812	12424.210	33.3782	3.5479	4.578
	28.2731	66.8741	6244.4610	9.6511	14.2043	439.6169	12497.138	33.4434	3.5572	4.59
L26	28.2750	65.8258	6152.2223	9.6556	14.2043	433.1232	12312.539	32.9191	3.5792	4.694
	29.4414	68.6059	6965.1185	10.0634	14.7879	471.0018	13939.402	34.3095	3.7814	4.959
L27	28.9199	72.5093	6617.0867	9.5411	14.0849	469.7997	13242.880	36.2615	3.3838	3.981
	29.1350	75.4644	7459.5278	9.9299	14.6413	509.4843	14928.871	37.7393	3.5766	4.208
L28	29.1389	73.3103	7259.5603	9.9388	14.6413	495.8265	14528.672	36.6621	3.6206	4.389
	30.2145	76.0841	8115.1706	10.3148	15.1795	534.6154	16241.019	38.0493	3.8070	4.615
L29	30.2184	73.8420	7889.5862	10.3237	15.1795	519.7542	15789.553	36.9280	3.8510	4.814

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
	31.2940	76.5318	8783.5340	10.6997	15.7176	558.8350	17578.625	38.2732	4.0375	5.047
L30	31.2959	75.3672	8657.0534	10.7042	15.7176	550.7879	17325.498	37.6908	4.0595	5.155
	32.3716	78.0150	9601.8841	11.0802	16.2557	590.6778	19216.402	39.0149	4.2459	5.392
L31	32.3754	75.5988	9319.4204	11.0891	16.2557	573.3015	18651.103	37.8066	4.2899	5.626
	33.1090	77.3473	9981.1059	11.3456	16.6227	600.4501	19975.345	38.6810	4.4170	5.793
L32	33.0878	90.9023	11629.573	11.2968	16.6227	699.6197	23274.449	45.4598	4.1750	4.639
	33.1416	91.0536	11687.739	11.3156	16.6496	701.9826	23390.858	45.5355	4.1844	4.649
L33	33.1435	89.8242	11538.974	11.3200	16.6496	693.0476	23093.132	44.9206	4.2064	4.74
	33.3049	90.2718	11712.332	11.3764	16.7303	700.0657	23440.076	45.1445	4.2343	4.771
L34	33.3164	82.8366	10798.018	11.4030	16.7303	645.4157	21610.245	41.4262	4.3663	5.374
	33.3702	82.9732	10851.521	11.4218	16.7572	647.5722	21717.322	41.4945	4.3757	5.385
L35	33.3741	80.4827	10542.165	11.4307	16.7572	629.1111	21098.201	40.2490	4.4197	5.612
	34.4497	83.1304	11617.230	11.8068	17.2954	671.6962	23249.747	41.5731	4.6061	5.849
L36	34.4497	83.1304	11617.230	11.8068	17.2954	671.6962	23249.747	41.5731	4.6061	5.849
	34.5932	83.4836	11765.941	11.8569	17.3672	677.4825	23547.363	41.7498	4.6310	5.881
L37	34.5855	88.6513	12456.872	11.8392	17.3672	717.2664	24930.136	44.3341	4.5430	5.424
	34.6393	88.7921	12516.317	11.8580	17.3941	719.5744	25049.104	44.4045	4.5523	5.436
L38	34.6393	88.7921	12516.317	11.8580	17.3941	719.5744	25049.104	44.4045	4.5523	5.436
	34.8723	89.4020	12776.018	11.9394	17.5106	729.6157	25568.848	44.7095	4.5927	5.484
L39	34.8723	89.4020	12776.018	11.9394	17.5106	729.6157	25568.848	44.7095	4.5927	5.484
	34.9260	89.5428	12836.473	11.9582	17.5375	731.9435	25689.838	44.7799	4.6020	5.495
L40	34.9280	88.2391	12658.966	11.9627	17.5375	721.8219	25334.590	44.1279	4.6240	5.605
	36.0036	91.0129	13890.709	12.3387	18.0756	768.4765	27799.696	45.5151	4.8104	5.831
L41	36.0055	89.6661	13695.009	12.3432	18.0756	757.6498	27408.038	44.8416	4.8324	5.948
	37.6384	93.8130	15684.341	12.9140	18.8925	830.1879	31389.320	46.9154	5.1154	6.296
L42	36.9969	96.0781	14527.151	12.2811	18.0186	806.2309	29073.417	48.0482	4.7027	5.374
	37.2125	99.7175	16241.344	12.7463	18.6843	869.2506	32504.059	49.8682	4.9333	5.638
L43	37.2164	96.9359	15810.285	12.7552	18.6843	846.1799	31641.373	48.4772	4.9773	5.856
	38.2947	99.8009	17253.995	13.1322	19.2238	897.5340	34530.693	49.9100	5.1642	6.076
L44	38.2947	99.8009	17253.995	13.1322	19.2238	897.5340	34530.693	49.9100	5.1642	6.076
	39.1380	102.0414	18442.297	13.4270	19.6456	938.7474	36908.861	51.0304	5.3104	6.247
L45	39.1148	119.5726	21439.701	13.3737	19.6456	1091.3208	42907.613	59.7977	5.0464	5.046
	39.1688	119.7411	21530.483	13.3926	19.6726	1094.4391	43089.297	59.8819	5.0557	5.056
L46	39.1688	119.7411	21530.483	13.3926	19.6726	1094.4391	43089.297	59.8819	5.0557	5.056
	39.3305	120.2467	21804.368	13.4491	19.7535	1103.8208	43637.427	60.1348	5.0837	5.084

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L47	39.3614	96.7052	17721.215 7	13.5201	19.7535	897.1160	35465.749 5	48.3618	5.4357	6.795
	39.4153	96.8401	17795.439 3	13.5390	19.7805	899.6450	35614.294 4	48.4292	5.4451	6.806
L48	39.4018	107.1855	19606.246 2	13.5079	19.7805	991.1900	39238.290 8	53.6029	5.2911	5.962
	40.4299	110.0375	21213.335 1	13.8674	20.2948	1045.2573	42454.583 3	55.0292	5.4693	6.163
L49	40.4299	110.0375	21213.335 1	13.8674	20.2948	1045.2573	42454.583 3	55.0292	5.4693	6.163
	40.4838	110.1871	21299.957 5	13.8862	20.3218	1048.1324	42627.941 9	55.1040	5.4786	6.173
L50	40.4857	108.6699	21020.096 8	13.8906	20.3218	1034.3610	42067.852 4	54.3453	5.5006	6.286
	40.6475	109.1122	21277.862 4	13.9472	20.4027	1042.8924	42583.722 8	54.5665	5.5287	6.318
L51	40.6475	109.1122	21277.862 4	13.9472	20.4027	1042.8924	42583.722 8	54.5665	5.5287	6.318
	40.7014	109.2597	21364.250 2	13.9660	20.4297	1045.7440	42756.612 1	54.6402	5.5380	6.329
L52	40.7014	109.2597	21364.250 2	13.9660	20.4297	1045.7440	42756.612 1	54.6402	5.5380	6.329
	41.7797	112.2090	23141.462 1	14.3430	20.9692	1103.5938	46313.374 4	56.1152	5.7249	6.543
L53	41.7836	109.0705	22522.033 5	14.3519	20.9692	1074.0538	45073.702 0	54.5456	5.7689	6.787
	42.8619	111.9355	24343.874 2	14.7289	21.5087	1131.8175	48719.780 7	55.9784	5.9558	7.007
L54	42.8638	110.3227	24007.561 9	14.7333	21.5087	1116.1814	48046.713 5	55.1718	5.9778	7.138
	43.9422	113.1456	25898.017 8	15.1103	22.0481	1174.6130	51830.112 8	56.5835	6.1647	7.361
L55	43.9441	111.4896	25533.962 9	15.1148	22.0481	1158.1011	51101.524 1	55.7554	6.1867	7.499
	45.0224	114.2703	27492.619 5	15.4918	22.5876	1217.1554	55021.414 5	57.1460	6.3736	7.726
L56	45.0224	114.2703	27492.619 5	15.4918	22.5876	1217.1554	55021.414 5	57.1460	6.3736	7.726
	45.0906	114.4461	27619.663 6	15.5156	22.6217	1220.9370	55275.669 9	57.2339	6.3854	7.74
L57	45.0983	107.6329	26034.893 1	15.5333	22.6217	1150.8816	52104.043 7	53.8267	6.4734	8.353
	45.1522	107.7636	26129.787 9	15.5522	22.6487	1153.7008	52293.958 1	53.8920	6.4828	8.365
L58	45.1522	107.7636	26129.787 9	15.5522	22.6487	1153.7008	52293.958 1	53.8920	6.4828	8.365
	46.2306	110.3758	28076.419 8	15.9292	23.1881	1210.8095	56189.783 3	55.1984	6.6697	8.606
L59	46.2306	110.3758	28076.419 8	15.9292	23.1881	1210.8095	56189.783 3	55.1984	6.6697	8.606
	46.5901	111.2467	28746.289 9	16.0549	23.3680	1230.1562	57530.405 0	55.6339	6.7320	8.686

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 147.00- 142.00				1	1	1			
L2 142.00- 137.00				1	1	1			
L3 137.00- 132.00				1	1	1			
L4 132.00- 127.00				1	1	1			
L5 127.00- 120.37				1	1	1			
L6 120.37-				1	1	1			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
118.62									
L7 118.62-113.62				1	1	1			
L8 113.62-113.08				1	1	1			
L9 113.08-112.83				1	1	1			
L10 112.83-112.16				1	1	1			
L11 112.16-111.91				1	1	0.924882			
L12 111.91-110.50				1	1	0.919093			
L13 110.50-110.25				1	1	0.895639			
L14 110.25-105.25				1	1	0.899955			
L15 105.25-105.00				1	1	0.898736			
L16 105.00-104.75				1	1	0.868247			
L17 104.75-103.50				1	1	0.861471			
L18 103.50-103.25				1	1	0.889037			
L19 103.25-98.25				1	1	0.894205			
L20 98.25-94.17				1	1	0.905893			
L21 94.17-93.92				1	1	0.888978			
L22 93.92-91.50				1	1	0.903389			
L23 91.50-91.25				1	1	0.913109			
L24 91.25-90.58				1	1	0.909963			
L25 90.58-90.33				1	1	0.903604			
L26 90.33-84.91				1	1	0.912303			
L27 84.91-83.91				1	1	0.908924			
L28 83.91-78.91				1	1	0.915329			
L29 78.91-73.91				1	1	0.923704			
L30 73.91-68.91				1	1	0.919611			
L31 68.91-65.50				1	1	0.936814			
L32 65.50-65.25				1	1	0.895218			
L33 65.25-64.50				1	1	0.904717			
L34 64.50-64.25				1	1	0.930696			
L35 64.25-59.25				1	1	0.941575			
L36 59.25-58.58				1	1	0.93927			
L37 58.58-58.33				1	1	0.93439			
L38 58.33-57.25				1	1	0.930561			
L39 57.25-57.00				1	1	0.940154			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L40 57.00-52.00				1	1	0.936513			
L41 52.00-44.41				1	1	0.942354			
L42 44.41-43.41				1	1	0.938481			
L43 43.41-38.41				1	1	0.950362			
L44 38.41-34.50				1	1	0.939182			
L45 34.50-34.25				1	1	0.988795			
L46 34.25-33.50				1	1	0.986214			
L47 33.50-33.25				1	1	1.03936			
L48 33.25-28.48				1	1	0.978729			
L49 28.48-28.23				1	1	0.977974			
L50 28.23-27.48				1	1	0.989345			
L51 27.48-27.23				1	1	0.988589			
L52 27.23-22.23				1	1	0.973869			
L53 22.23-17.23				1	1	0.987541			
L54 17.23-12.23				1	1	0.988151			
L55 12.23-7.23				1	1	0.989486			
L56 7.23-6.92				1	1	0.988664			
L57 6.92-6.67				1	1	1.05436			
L58 6.67-1.67				1	1	1.04086			
L59 1.67-0.00				1	1	1.0365			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	B	No	Surface Ar (CaAa)	147.00 - 8.00	1	1	0.250 0.260	0.3750		0.22
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	A	No	Surface Ar (CaAa)	129.00 - 3.00	1	1	0.000 0.000	1.6250		1.07
HCS 6X12 4AWG(1-5/8)	A	No	Surface Ar (CaAa)	129.00 - 3.00	3	3	-0.130 -0.010	1.6600		2.40
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	105.00 - 0.00	1	1	-0.200 -0.200	1.6000		2.35
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	50.00 - 6.00	1	1	0.000 0.000	0.6250		0.15
Flat 5x1.25	A	No	Surface Af (CaAa)	29.75 - 0.00	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af (CaAa)	9.17 - 0.00	1	1	0.400 0.450	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af	9.17 - 0.00	1	1	-0.300	5.0000	12.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)				-0.250			
Flat 5x1.25	B	No	Surface Af	29.75 - 0.00	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af	29.75 - 4.33	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	A	No	Surface Af	59.50 - 29.75	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	B	No	Surface Af	59.50 - 29.75	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af	59.50 - 29.75	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 4.75x1.25	A	No	Surface Af	89.25 - 59.50	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	B	No	Surface Af	89.25 - 59.50	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	C	No	Surface Af	89.25 - 59.50	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	A	No	Surface Af	106.50 - 89.25	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	B	No	Surface Af	106.50 - 89.25	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	C	No	Surface Af	106.50 - 89.25	1	1	0.050 0.100	4.7500	12.0000	0.00
*										
MP3-03	B	No	Surface Af	30.75 - 5.75	1	1	-0.450 -0.400	4.0600	11.2600	0.00
MP3-03	C	No	Surface Af	30.75 - 5.75	1	1	-0.450 -0.400	4.0600	11.2600	0.00
*										
Flat 4.5x1	A	No	Surface Af	30.50 - 0.50	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af	30.50 - 0.50	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af	30.50 - 0.50	1	1	-0.100 -0.050	4.5000	11.0000	0.00
Flat 4.5x1	A	No	Surface Af	60.58 - 30.58	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af	60.58 - 25.58	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af	60.58 - 30.58	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4x0.75	A	No	Surface Af	95.67 - 60.67	1	1	0.250 0.300	4.0000	9.5000	0.00
Flat 4x0.75	B	No	Surface Af	95.67 - 60.67	1	1	0.250 0.300	4.0000	9.5000	0.00
Flat 4x0.75	C	No	Surface Af	95.67 - 60.67	1	1	0.250 0.300	4.0000	9.5000	0.00
**										
Flat 4.5x1	A	No	Surface Af	112.00 - 102.00	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af	112.00 - 102.00	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af	112.00 - 102.00	1	1	0.250 0.300	4.5000	11.0000	0.00
**										
Flat 4.5x1.25	A	No	Surface Af	36.25 - 1.25	1	1	-0.100 -0.050	4.5000	11.5000	0.00
Flat 4.5x1.25	A	No	Surface Af	36.25 - 1.25	1	1	-0.450 -0.400	4.5000	11.5000	0.00
Flat 4.5x1.25	B	No	Surface Af	36.25 - 1.25	1	1	0.400 0.450	4.5000	11.5000	0.00
Flat 4.5x1.25	B	No	Surface Af	36.25 - 1.25	1	1	-0.300 -0.250	4.5000	11.5000	0.00
Flat 4.5x1	A	No	Surface Af	67.00 - 32.00	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af	67.00 - 32.00	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af	67.00 -	1	1	-0.100	4.5000	11.0000	0.00

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
Flat 4.5x1	A	No	(CaAa) Surface Af	32.00 - 67.00	1	1	-0.050 0.400 0.450	4.5000	11.0000	0.00
Flat 4.5x1	A	No	(CaAa) Surface Af	32.00 - 92.08	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	B	No	(CaAa) Surface Af	67.08 - 92.08	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	B	No	(CaAa) Surface Af	67.08 - 93.00	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1.25	A	No	(CaAa) Surface Af	63.00 - 114.16	1	1	-0.300 -0.250	4.5000	11.5000	0.00
Flat 4.5x1.25	C	No	(CaAa) Surface Af	92.16 - 114.16	1	1	-0.300 -0.250	4.5000	11.5000	0.00
Flat 4.5x1.25	B	No	(CaAa) Surface Af	92.16 - 115.08	1	1	-0.300 -0.250	4.5000	11.5000	0.00

**

Feed Line/Linear Appurtenances - Entered As Area

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

**									
HB158-21U6S24-xxM_TMO(1-5/8)	B	No	No	Inside Pole	147.00 - 3.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.50 2.50 2.50

LDF7-50A(1-5/8)	C	No	No	Inside Pole	136.00 - 6.00	11	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
**									
HB158-U12S24-XXX-LI(1-5/8)	C	No	No	Inside Pole	136.00 - 6.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	3.20 3.20 3.20

LDF7-50A(1-5/8)	A	No	No	Inside Pole	129.00 - 3.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82

AVA6-50(1-1/4)	B	No	No	Inside Pole	116.00 - 3.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.46 0.46 0.46
WR-VG86ST-BRD(3/4)	B	No	No	Inside Pole	116.00 - 3.00	4	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.58 0.58 0.58
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	116.00 - 3.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.06 0.06 0.06
ATCB-B01(5/16)	B	No	No	Inside Pole	116.00 - 3.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.07 0.07 0.07
CONDUIT (2)	B	No	No	Inside Pole	116.00 - 3.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.80 2.80 2.80
**									

Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A_R	A_F	C_{AA}	C_{AA}	Weight K
			ft ²	ft ²	In Face ft ²	Out Face ft ²	
L1	147.00-142.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
L2	142.00-137.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
L3	137.00-132.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.06
L4	132.00-127.00	A	0.000	0.000	1.321	0.000	0.03
		B	0.000	0.000	0.188	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.08
L5	127.00-120.37	A	0.000	0.000	4.379	0.000	0.09
		B	0.000	0.000	0.249	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.10
L6	120.37-118.62	A	0.000	0.000	1.156	0.000	0.02
		B	0.000	0.000	0.066	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.03
L7	118.62-113.62	A	0.000	0.000	3.708	0.000	0.07
		B	0.000	0.000	1.283	0.000	0.06
		C	0.000	0.000	0.405	0.000	0.08
L8	113.62-113.08	A	0.000	0.000	0.762	0.000	0.01
		B	0.000	0.000	0.425	0.000	0.01
		C	0.000	0.000	0.405	0.000	0.01
L9	113.08-112.83	A	0.000	0.000	0.353	0.000	0.00
		B	0.000	0.000	0.197	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.00
L10	112.83-112.16	A	0.000	0.000	0.945	0.000	0.01
		B	0.000	0.000	0.528	0.000	0.01
		C	0.000	0.000	0.502	0.000	0.01
L11	112.16-111.91	A	0.000	0.000	0.420	0.000	0.00
		B	0.000	0.000	0.264	0.000	0.00
		C	0.000	0.000	0.255	0.000	0.00
L12	111.91-110.50	A	0.000	0.000	3.046	0.000	0.02
		B	0.000	0.000	2.168	0.000	0.03
		C	0.000	0.000	2.115	0.000	0.02
L13	110.50-110.25	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.384	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.00
L14	110.25-105.25	A	0.000	0.000	11.792	0.000	0.07
		B	0.000	0.000	8.677	0.000	0.09
		C	0.000	0.000	8.490	0.000	0.08
L15	105.25-105.00	A	0.000	0.000	0.738	0.000	0.00
		B	0.000	0.000	0.582	0.000	0.00
		C	0.000	0.000	0.573	0.000	0.00
L16	105.00-104.75	A	0.000	0.000	0.738	0.000	0.00
		B	0.000	0.000	0.622	0.000	0.01
		C	0.000	0.000	0.573	0.000	0.00
L17	104.75-103.50	A	0.000	0.000	3.690	0.000	0.02
		B	0.000	0.000	3.111	0.000	0.03
		C	0.000	0.000	2.865	0.000	0.02
L18	103.50-103.25	A	0.000	0.000	0.738	0.000	0.00
		B	0.000	0.000	0.622	0.000	0.01
		C	0.000	0.000	0.573	0.000	0.00
L19	103.25-98.25	A	0.000	0.000	11.948	0.000	0.07
		B	0.000	0.000	9.633	0.000	0.10
		C	0.000	0.000	8.646	0.000	0.08
L20	98.25-94.17	A	0.000	0.000	9.991	0.000	0.05
		B	0.000	0.000	8.101	0.000	0.09
		C	0.000	0.000	7.295	0.000	0.06
L21	94.17-93.92	A	0.000	0.000	0.717	0.000	0.00
		B	0.000	0.000	0.601	0.000	0.01
		C	0.000	0.000	0.552	0.000	0.00
L22	93.92-91.50	A	0.000	0.000	6.874	0.000	0.03
		B	0.000	0.000	6.190	0.000	0.05
		C	0.000	0.000	4.843	0.000	0.04

Tower Sectio n	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
L23	91.50-91.25	A	0.000	0.000	0.717	0.000	0.00
		B	0.000	0.000	0.789	0.000	0.01
		C	0.000	0.000	0.365	0.000	0.00
L24	91.25-90.58	A	0.000	0.000	1.922	0.000	0.01
		B	0.000	0.000	2.114	0.000	0.01
		C	0.000	0.000	0.977	0.000	0.01
L25	90.58-90.33	A	0.000	0.000	0.717	0.000	0.00
		B	0.000	0.000	0.789	0.000	0.01
		C	0.000	0.000	0.365	0.000	0.00
L26	90.33-84.91	A	0.000	0.000	15.549	0.000	0.07
		B	0.000	0.000	17.105	0.000	0.11
		C	0.000	0.000	7.904	0.000	0.08
L27	84.91-83.91	A	0.000	0.000	2.869	0.000	0.01
		B	0.000	0.000	3.156	0.000	0.02
		C	0.000	0.000	1.458	0.000	0.02
L28	83.91-78.91	A	0.000	0.000	14.344	0.000	0.07
		B	0.000	0.000	15.779	0.000	0.10
		C	0.000	0.000	7.292	0.000	0.08
L29	78.91-73.91	A	0.000	0.000	14.344	0.000	0.07
		B	0.000	0.000	15.779	0.000	0.10
		C	0.000	0.000	7.292	0.000	0.08
L30	73.91-68.91	A	0.000	0.000	14.344	0.000	0.07
		B	0.000	0.000	15.779	0.000	0.10
		C	0.000	0.000	7.292	0.000	0.08
L31	68.91-65.50	A	0.000	0.000	10.848	0.000	0.04
		B	0.000	0.000	10.701	0.000	0.07
		C	0.000	0.000	6.098	0.000	0.05
L32	65.50-65.25	A	0.000	0.000	0.905	0.000	0.00
		B	0.000	0.000	0.789	0.000	0.01
		C	0.000	0.000	0.552	0.000	0.00
L33	65.25-64.50	A	0.000	0.000	2.714	0.000	0.01
		B	0.000	0.000	2.367	0.000	0.02
		C	0.000	0.000	1.656	0.000	0.01
L34	64.50-64.25	A	0.000	0.000	0.905	0.000	0.00
		B	0.000	0.000	0.789	0.000	0.01
		C	0.000	0.000	0.552	0.000	0.00
L35	64.25-59.25	A	0.000	0.000	18.157	0.000	0.07
		B	0.000	0.000	13.030	0.000	0.10
		C	0.000	0.000	11.105	0.000	0.08
L36	59.25-58.58	A	0.000	0.000	2.497	0.000	0.01
		B	0.000	0.000	1.688	0.000	0.01
		C	0.000	0.000	1.556	0.000	0.01
L37	58.58-58.33	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	0.633	0.000	0.01
		C	0.000	0.000	0.583	0.000	0.00
L38	58.33-57.25	A	0.000	0.000	4.055	0.000	0.01
		B	0.000	0.000	2.741	0.000	0.02
		C	0.000	0.000	2.527	0.000	0.02
L39	57.25-57.00	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	0.633	0.000	0.01
		C	0.000	0.000	0.583	0.000	0.00
L40	57.00-52.00	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	12.654	0.000	0.10
		C	0.000	0.000	11.667	0.000	0.08
L41	52.00-44.41	A	0.000	0.000	28.416	0.000	0.10
		B	0.000	0.000	19.209	0.000	0.16
		C	0.000	0.000	18.059	0.000	0.12
L42	44.41-43.41	A	0.000	0.000	3.744	0.000	0.01
		B	0.000	0.000	2.531	0.000	0.02
		C	0.000	0.000	2.396	0.000	0.02
L43	43.41-38.41	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	12.654	0.000	0.10
		C	0.000	0.000	11.979	0.000	0.08
L44	38.41-34.50	A	0.000	0.000	17.263	0.000	0.05
		B	0.000	0.000	12.521	0.000	0.08
		C	0.000	0.000	9.368	0.000	0.06
L45	34.50-34.25	A	0.000	0.000	1.311	0.000	0.00
		B	0.000	0.000	1.008	0.000	0.01
		C	0.000	0.000	0.599	0.000	0.00

Tower Sectio n	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	34.25-33.50	A	0.000	0.000	3.933	0.000	0.01
		B	0.000	0.000	3.023	0.000	0.02
		C	0.000	0.000	1.797	0.000	0.01
L47	33.50-33.25	A	0.000	0.000	1.311	0.000	0.00
		B	0.000	0.000	1.008	0.000	0.01
		C	0.000	0.000	0.599	0.000	0.00
L48	33.25-28.48	A	0.000	0.000	19.660	0.000	0.06
		B	0.000	0.000	19.624	0.000	0.10
		C	0.000	0.000	10.255	0.000	0.07
L49	28.48-28.23	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	1.177	0.000	0.01
		C	0.000	0.000	0.581	0.000	0.00
L50	28.23-27.48	A	0.000	0.000	2.808	0.000	0.01
		B	0.000	0.000	3.531	0.000	0.02
		C	0.000	0.000	1.742	0.000	0.01
L51	27.48-27.23	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	1.177	0.000	0.01
		C	0.000	0.000	0.581	0.000	0.00
L52	27.23-22.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	21.025	0.000	0.10
		C	0.000	0.000	11.613	0.000	0.08
L53	22.23-17.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	19.788	0.000	0.10
		C	0.000	0.000	11.613	0.000	0.08
L54	17.23-12.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	19.788	0.000	0.10
		C	0.000	0.000	11.613	0.000	0.08
L55	12.23-7.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	19.759	0.000	0.10
		C	0.000	0.000	14.639	0.000	0.08
L56	7.23-6.92	A	0.000	0.000	1.183	0.000	0.00
		B	0.000	0.000	1.239	0.000	0.01
		C	0.000	0.000	1.228	0.000	0.00
L57	6.92-6.67	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	0.980	0.000	0.01
		C	0.000	0.000	0.972	0.000	0.00
L58	6.67-1.67	A	0.000	0.000	17.839	0.000	0.05
		B	0.000	0.000	16.837	0.000	0.08
		C	0.000	0.000	14.185	0.000	0.01
L59	1.67-0.00	A	0.000	0.000	2.890	0.000	0.00
		B	0.000	0.000	3.157	0.000	0.00
		C	0.000	0.000	3.484	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Sectio n	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	147.00-142.00	A	0.985	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	1.173	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.00
L2	142.00-137.00	A	0.982	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	1.169	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.00
L3	137.00-132.00	A	0.978	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	1.166	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.06
L4	132.00-127.00	A	0.975	0.000	0.000	2.447	0.000	0.04
		B		0.000	0.000	1.162	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.08
L5	127.00-120.37	A	0.970	0.000	0.000	8.099	0.000	0.15
		B		0.000	0.000	1.535	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.10
L6	120.37-118.62	A	0.967	0.000	0.000	2.138	0.000	0.04
		B		0.000	0.000	0.405	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.03

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A _R	A _F	C _A A _A In Face	C _A A _A Out Face	Weight
n	ft		in	ft ²	ft ²	ft ²	ft ²	K
L7	118.62-113.62	A	0.964	0.000	0.000	6.603	0.000	0.11
		B		0.000	0.000	2.528	0.000	0.08
		C		0.000	0.000	0.509	0.000	0.08
L8	113.62-113.08	A	0.962	0.000	0.000	1.166	0.000	0.02
		B		0.000	0.000	0.633	0.000	0.01
		C		0.000	0.000	0.509	0.000	0.01
L9	113.08-112.83	A	0.961	0.000	0.000	0.540	0.000	0.01
		B		0.000	0.000	0.293	0.000	0.01
		C		0.000	0.000	0.236	0.000	0.01
L10	112.83-112.16	A	0.961	0.000	0.000	1.447	0.000	0.02
		B		0.000	0.000	0.785	0.000	0.02
		C		0.000	0.000	0.631	0.000	0.01
L11	112.16-111.91	A	0.961	0.000	0.000	0.618	0.000	0.01
		B		0.000	0.000	0.371	0.000	0.01
		C		0.000	0.000	0.313	0.000	0.01
L12	111.91-110.50	A	0.960	0.000	0.000	4.263	0.000	0.05
		B		0.000	0.000	2.870	0.000	0.04
		C		0.000	0.000	2.547	0.000	0.04
L13	110.50-110.25	A	0.959	0.000	0.000	0.756	0.000	0.01
		B		0.000	0.000	0.509	0.000	0.01
		C		0.000	0.000	0.452	0.000	0.01
L14	110.25-105.25	A	0.957	0.000	0.000	16.334	0.000	0.17
		B		0.000	0.000	11.400	0.000	0.16
		C		0.000	0.000	10.256	0.000	0.14
L15	105.25-105.00	A	0.954	0.000	0.000	1.000	0.000	0.01
		B		0.000	0.000	0.754	0.000	0.01
		C		0.000	0.000	0.697	0.000	0.01
L16	105.00-104.75	A	0.954	0.000	0.000	1.000	0.000	0.01
		B		0.000	0.000	0.842	0.000	0.01
		C		0.000	0.000	0.697	0.000	0.01
L17	104.75-103.50	A	0.954	0.000	0.000	5.001	0.000	0.05
		B		0.000	0.000	4.207	0.000	0.05
		C		0.000	0.000	3.484	0.000	0.04
L18	103.50-103.25	A	0.953	0.000	0.000	1.000	0.000	0.01
		B		0.000	0.000	0.841	0.000	0.01
		C		0.000	0.000	0.697	0.000	0.01
L19	103.25-98.25	A	0.950	0.000	0.000	16.752	0.000	0.17
		B		0.000	0.000	13.577	0.000	0.19
		C		0.000	0.000	10.688	0.000	0.14
L20	98.25-94.17	A	0.946	0.000	0.000	14.067	0.000	0.14
		B		0.000	0.000	11.475	0.000	0.16
		C		0.000	0.000	9.123	0.000	0.12
L21	94.17-93.92	A	0.944	0.000	0.000	0.996	0.000	0.01
		B		0.000	0.000	0.837	0.000	0.01
		C		0.000	0.000	0.694	0.000	0.01
L22	93.92-91.50	A	0.942	0.000	0.000	9.552	0.000	0.09
		B		0.000	0.000	8.562	0.000	0.10
		C		0.000	0.000	6.085	0.000	0.07
L23	91.50-91.25	A	0.941	0.000	0.000	0.995	0.000	0.01
		B		0.000	0.000	1.071	0.000	0.01
		C		0.000	0.000	0.459	0.000	0.01
L24	91.25-90.58	A	0.941	0.000	0.000	2.667	0.000	0.03
		B		0.000	0.000	2.871	0.000	0.03
		C		0.000	0.000	1.229	0.000	0.02
L25	90.58-90.33	A	0.940	0.000	0.000	0.995	0.000	0.01
		B		0.000	0.000	1.071	0.000	0.01
		C		0.000	0.000	0.459	0.000	0.01
L26	90.33-84.91	A	0.937	0.000	0.000	21.557	0.000	0.20
		B		0.000	0.000	23.200	0.000	0.25
		C		0.000	0.000	9.936	0.000	0.14
L27	84.91-83.91	A	0.934	0.000	0.000	3.977	0.000	0.04
		B		0.000	0.000	4.280	0.000	0.05
		C		0.000	0.000	1.833	0.000	0.03
L28	83.91-78.91	A	0.930	0.000	0.000	19.851	0.000	0.19
		B		0.000	0.000	21.361	0.000	0.23
		C		0.000	0.000	9.152	0.000	0.13
L29	78.91-73.91	A	0.924	0.000	0.000	19.820	0.000	0.19
		B		0.000	0.000	21.326	0.000	0.23
		C		0.000	0.000	9.141	0.000	0.13

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L30	73.91-68.91	A	0.918	0.000	0.000	19.787	0.000	0.19
		B		0.000	0.000	21.288	0.000	0.23
		C		0.000	0.000	9.128	0.000	0.13
L31	68.91-65.50	A	0.913	0.000	0.000	14.799	0.000	0.13
		B		0.000	0.000	14.421	0.000	0.15
		C		0.000	0.000	7.617	0.000	0.09
L32	65.50-65.25	A	0.910	0.000	0.000	1.220	0.000	0.01
		B		0.000	0.000	1.062	0.000	0.01
		C		0.000	0.000	0.689	0.000	0.01
L33	65.25-64.50	A	0.909	0.000	0.000	3.660	0.000	0.03
		B		0.000	0.000	3.185	0.000	0.03
		C		0.000	0.000	2.065	0.000	0.02
L34	64.50-64.25	A	0.909	0.000	0.000	1.220	0.000	0.01
		B		0.000	0.000	1.062	0.000	0.01
		C		0.000	0.000	0.688	0.000	0.01
L35	64.25-59.25	A	0.905	0.000	0.000	24.420	0.000	0.21
		B		0.000	0.000	17.765	0.000	0.21
		C		0.000	0.000	13.804	0.000	0.15
L36	59.25-58.58	A	0.901	0.000	0.000	3.331	0.000	0.03
		B		0.000	0.000	2.289	0.000	0.03
		C		0.000	0.000	1.917	0.000	0.02
L37	58.58-58.33	A	0.900	0.000	0.000	1.248	0.000	0.01
		B		0.000	0.000	0.858	0.000	0.01
		C		0.000	0.000	0.718	0.000	0.01
L38	58.33-57.25	A	0.899	0.000	0.000	5.406	0.000	0.05
		B		0.000	0.000	3.714	0.000	0.04
		C		0.000	0.000	3.111	0.000	0.03
L39	57.25-57.00	A	0.898	0.000	0.000	1.248	0.000	0.01
		B		0.000	0.000	0.857	0.000	0.01
		C		0.000	0.000	0.718	0.000	0.01
L40	57.00-52.00	A	0.894	0.000	0.000	24.927	0.000	0.21
		B		0.000	0.000	17.123	0.000	0.20
		C		0.000	0.000	14.348	0.000	0.15
L41	52.00-44.41	A	0.883	0.000	0.000	37.736	0.000	0.32
		B		0.000	0.000	25.909	0.000	0.31
		C		0.000	0.000	23.066	0.000	0.24
L42	44.41-43.41	A	0.875	0.000	0.000	4.972	0.000	0.04
		B		0.000	0.000	3.414	0.000	0.04
		C		0.000	0.000	3.102	0.000	0.03
L43	43.41-38.41	A	0.868	0.000	0.000	24.769	0.000	0.21
		B		0.000	0.000	16.996	0.000	0.20
		C		0.000	0.000	15.453	0.000	0.16
L44	38.41-34.50	A	0.858	0.000	0.000	22.547	0.000	0.18
		B		0.000	0.000	16.478	0.000	0.17
		C		0.000	0.000	12.053	0.000	0.12
L45	34.50-34.25	A	0.853	0.000	0.000	1.694	0.000	0.01
		B		0.000	0.000	1.306	0.000	0.01
		C		0.000	0.000	0.770	0.000	0.01
L46	34.25-33.50	A	0.852	0.000	0.000	5.081	0.000	0.04
		B		0.000	0.000	3.918	0.000	0.04
		C		0.000	0.000	2.308	0.000	0.02
L47	33.50-33.25	A	0.851	0.000	0.000	1.693	0.000	0.01
		B		0.000	0.000	1.306	0.000	0.01
		C		0.000	0.000	0.769	0.000	0.01
L48	33.25-28.48	A	0.844	0.000	0.000	25.692	0.000	0.20
		B		0.000	0.000	25.388	0.000	0.24
		C		0.000	0.000	13.250	0.000	0.14
L49	28.48-28.23	A	0.837	0.000	0.000	1.229	0.000	0.01
		B		0.000	0.000	1.512	0.000	0.01
		C		0.000	0.000	0.748	0.000	0.01
L50	28.23-27.48	A	0.836	0.000	0.000	3.685	0.000	0.03
		B		0.000	0.000	4.533	0.000	0.04
		C		0.000	0.000	2.243	0.000	0.02
L51	27.48-27.23	A	0.834	0.000	0.000	1.228	0.000	0.01
		B		0.000	0.000	1.511	0.000	0.01
		C		0.000	0.000	0.747	0.000	0.01
L52	27.23-22.23	A	0.826	0.000	0.000	24.503	0.000	0.20
		B		0.000	0.000	27.078	0.000	0.25
		C		0.000	0.000	14.916	0.000	0.16

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A _R	A _F	C _A A _A In Face	C _A A _A Out Face	Weight
n	ft		in	ft ²	ft ²	ft ²	ft ²	K
L53	22.23-17.23	A	0.807	0.000	0.000	24.388	0.000	0.20
		B		0.000	0.000	25.439	0.000	0.24
		C		0.000	0.000	14.842	0.000	0.15
L54	17.23-12.23	A	0.784	0.000	0.000	24.242	0.000	0.19
		B		0.000	0.000	25.276	0.000	0.23
		C		0.000	0.000	14.749	0.000	0.15
L55	12.23-7.23	A	0.752	0.000	0.000	24.043	0.000	0.18
		B		0.000	0.000	24.909	0.000	0.23
		C		0.000	0.000	17.963	0.000	0.16
L56	7.23-6.92	A	0.729	0.000	0.000	1.510	0.000	0.01
		B		0.000	0.000	1.515	0.000	0.01
		C		0.000	0.000	1.463	0.000	0.01
L57	6.92-6.67	A	0.726	0.000	0.000	1.194	0.000	0.01
		B		0.000	0.000	1.198	0.000	0.01
		C		0.000	0.000	1.156	0.000	0.01
L58	6.67-1.67	A	0.691	0.000	0.000	22.199	0.000	0.15
		B		0.000	0.000	20.419	0.000	0.17
		C		0.000	0.000	16.168	0.000	0.08
L59	1.67-0.00	A	0.588	0.000	0.000	3.321	0.000	0.01
		B		0.000	0.000	3.784	0.000	0.02
		C		0.000	0.000	3.835	0.000	0.01

Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L1	147.00-142.00	0.3000	0.0031	0.9434	0.0099
L2	142.00-137.00	0.3002	0.0031	0.9515	0.0100
L3	137.00-132.00	0.3004	0.0031	0.9584	0.0100
L4	132.00-127.00	-1.4795	-0.7547	-0.8102	-0.6918
L5	127.00-120.37	-3.2404	-1.5062	-2.4093	-1.3316
L6	120.37-118.62	-3.2622	-1.5164	-2.4336	-1.3455
L7	118.62-113.62	-2.7890	-2.0525	-2.2262	-1.7131
L8	113.62-113.08	-1.5823	-0.7357	-1.5199	-0.8399
L9	113.08-112.83	-1.5864	-0.7376	-1.5232	-0.8417
L10	112.83-112.16	-1.5911	-0.7398	-1.5270	-0.8438
L11	112.16-111.91	-1.3340	-0.6202	-1.3575	-0.7502
L12	111.91-110.50	-1.0384	-0.4828	-1.1350	-0.6272
L13	110.50-110.25	-1.0447	-0.4857	-1.1411	-0.6306
L14	110.25-105.25	-0.9765	-0.4541	-1.0791	-0.5963
L15	105.25-105.00	-0.7448	-0.3464	-0.9079	-0.5016
L16	105.00-104.75	-0.6099	-0.5060	-0.6776	-0.7681
L17	104.75-103.50	-0.6129	-0.5084	-0.6811	-0.7719
L18	103.50-103.25	-0.6185	-0.5131	-0.6870	-0.7785
L19	103.25-98.25	-0.8334	-0.6914	-0.8175	-0.9260
L20	98.25-94.17	-0.8390	-0.6962	-0.8178	-0.9256
L21	94.17-93.92	-0.7280	-0.6041	-0.7282	-0.8239
L22	93.92-91.50	-1.0228	-1.0782	-0.9829	-1.2373
L23	91.50-91.25	-1.9050	-2.5527	-1.7441	-2.5107
L24	91.25-90.58	-1.9107	-2.5602	-1.7488	-2.5172
L25	90.58-90.33	-1.9163	-2.5676	-1.7534	-2.5237
L26	90.33-84.91	-1.9544	-2.6178	-1.7821	-2.5636
L27	84.91-83.91	-1.9658	-2.6327	-1.7909	-2.5760
L28	83.91-78.91	-2.0023	-2.6808	-1.8211	-2.6169
L29	78.91-73.91	-2.0628	-2.7604	-1.8706	-2.6852
L30	73.91-68.91	-2.1227	-2.8392	-1.9193	-2.7523
L31	68.91-65.50	-0.7273	-2.8085	-0.7272	-2.7290
L32	65.50-65.25	0.8009	-2.7392	0.6006	-2.6750
L33	65.25-64.50	0.8032	-2.7466	0.6022	-2.6814
L34	64.50-64.25	0.8055	-2.7539	0.6037	-2.6876
L35	64.25-59.25	0.8776	-1.8849	0.6563	-1.9390
L36	59.25-58.58	0.8852	-1.5419	0.6667	-1.6514
L37	58.58-58.33	0.8875	-1.5456	0.6683	-1.6548
L38	58.33-57.25	0.8908	-1.5509	0.6705	-1.6596

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L39	57.25-57.00	0.8940	-1.5561	0.6727	-1.6644
L40	57.00-52.00	0.9070	-1.5768	0.6815	-1.6831
L41	52.00-44.41	0.9337	-1.5406	0.6942	-1.4990
L42	44.41-43.41	0.9389	-1.5207	0.6960	-1.4287
L43	43.41-38.41	0.9530	-1.5416	0.7049	-1.4458
L44	38.41-34.50	0.3241	-0.9148	0.1806	-0.9130
L45	34.50-34.25	-0.2993	-0.2873	-0.3560	-0.3610
L46	34.25-33.50	-0.2999	-0.2878	-0.3567	-0.3616
L47	33.50-33.25	-0.3005	-0.2884	-0.3574	-0.3621
L48	33.25-28.48	-0.8386	-0.6291	-0.8240	-0.6740
L49	28.48-28.23	-0.4452	-1.5259	-0.4759	-1.4648
L50	28.23-27.48	-0.4462	-1.5290	-0.4769	-1.4675
L51	27.48-27.23	-0.4472	-1.5321	-0.4780	-1.4703
L52	27.23-22.23	-1.2700	-2.0942	-1.1932	-1.9552
L53	22.23-17.23	-1.7263	-2.4231	-1.5879	-2.2364
L54	17.23-12.23	-1.7605	-2.4698	-1.6195	-2.2755
L55	12.23-7.23	-1.8805	-2.1268	-1.7549	-2.0119
L56	7.23-6.92	-2.0583	-1.6005	-2.0603	-1.6009
L57	6.92-6.67	-2.0605	-1.6021	-2.0620	-1.6019
L58	6.67-1.67	-2.4840	-1.4502	-2.3790	-1.5638
L59	1.67-0.00	-0.6354	-2.8748	-0.4116	-2.7044

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	1	Safety Line 3/8	142.00 - 147.00	1.0000	1.0000
L2	1	Safety Line 3/8	137.00 - 142.00	1.0000	1.0000
L3	1	Safety Line 3/8	132.00 - 137.00	1.0000	1.0000
L4	1	Safety Line 3/8	127.00 - 132.00	1.0000	1.0000
L4	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	127.00 - 129.00	1.0000	1.0000
L4	16	HCS 6X12 4AWG(1-5/8)	127.00 - 129.00	1.0000	1.0000
L5	1	Safety Line 3/8	120.37 - 127.00	1.0000	1.0000
L5	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	120.37 - 127.00	1.0000	1.0000
L5	16	HCS 6X12 4AWG(1-5/8)	120.37 - 127.00	1.0000	1.0000
L6	1	Safety Line 3/8	118.62 - 120.37	1.0000	1.0000
L6	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	118.62 - 120.37	1.0000	1.0000
L6	16	HCS 6X12 4AWG(1-5/8)	118.62 - 120.37	1.0000	1.0000
L7	1	Safety Line 3/8	113.62 - 118.62	1.0000	1.0000
L7	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	113.62 - 118.62	1.0000	1.0000
L7	16	HCS 6X12 4AWG(1-5/8)	113.62 - 118.62	1.0000	1.0000
L7	71	Flat 4.5x1.25	113.62 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L7	72	Flat 4.5x1.25	114.16 113.62 - 114.16	1.0000	1.0000
L7	73	Flat 4.5x1.25	113.62 - 115.08	1.0000	1.0000
L8	1	Safety Line 3/8	113.08 - 113.62	1.0000	1.0000
L8	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	113.08 - 113.62	1.0000	1.0000
L8	16	HCS 6X12 4AWG(1-5/8)	113.08 - 113.62	1.0000	1.0000
L8	71	Flat 4.5x1.25	113.08 - 113.62	1.0000	1.0000
L8	72	Flat 4.5x1.25	113.08 - 113.62	1.0000	1.0000
L8	73	Flat 4.5x1.25	113.08 - 113.62	1.0000	1.0000
L9	1	Safety Line 3/8	112.83 - 113.08	1.0000	1.0000
L9	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	112.83 - 113.08	1.0000	1.0000
L9	16	HCS 6X12 4AWG(1-5/8)	112.83 - 113.08	1.0000	1.0000
L9	71	Flat 4.5x1.25	112.83 - 113.08	1.0000	1.0000
L9	72	Flat 4.5x1.25	112.83 - 113.08	1.0000	1.0000
L9	73	Flat 4.5x1.25	112.83 - 113.08	1.0000	1.0000
L10	1	Safety Line 3/8	112.16 - 112.83	1.0000	1.0000
L10	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	112.16 - 112.83	1.0000	1.0000
L10	16	HCS 6X12 4AWG(1-5/8)	112.16 - 112.83	1.0000	1.0000
L10	71	Flat 4.5x1.25	112.16 - 112.83	1.0000	1.0000
L10	72	Flat 4.5x1.25	112.16 - 112.83	1.0000	1.0000
L10	73	Flat 4.5x1.25	112.16 - 112.83	1.0000	1.0000
L11	1	Safety Line 3/8	111.91 - 112.16	1.0000	1.0000
L11	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	111.91 - 112.16	1.0000	1.0000
L11	16	HCS 6X12 4AWG(1-5/8)	111.91 - 112.16	1.0000	1.0000
L11	56	Flat 4.5x1	111.91 - 112.00	1.0000	1.0000
L11	57	Flat 4.5x1	111.91 - 112.00	1.0000	1.0000
L11	58	Flat 4.5x1	111.91 - 112.00	1.0000	1.0000
L11	71	Flat 4.5x1.25	111.91 - 112.16	1.0000	1.0000
L11	72	Flat 4.5x1.25	111.91 - 112.16	1.0000	1.0000
L11	73	Flat 4.5x1.25	111.91 - 112.16	1.0000	1.0000
L12	1	Safety Line 3/8	110.50 - 111.91	1.0000	1.0000
L12	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	110.50 - 111.91	1.0000	1.0000
L12	16	HCS 6X12 4AWG(1-5/8)	110.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L12	56	Flat 4.5x1	111.91 110.50 -	1.0000	1.0000
L12	57	Flat 4.5x1	111.91 110.50 -	1.0000	1.0000
L12	58	Flat 4.5x1	111.91 110.50 -	1.0000	1.0000
L12	71	Flat 4.5x1.25	111.91 110.50 -	1.0000	1.0000
L12	72	Flat 4.5x1.25	111.91 110.50 -	1.0000	1.0000
L12	73	Flat 4.5x1.25	111.91 110.50 -	1.0000	1.0000
L13	1	Safety Line 3/8	110.25 - 110.50	1.0000	1.0000
L13	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	110.25 - 110.50	1.0000	1.0000
L13	16	HCS 6X12 4AWG(1-5/8)	110.25 - 110.50	1.0000	1.0000
L13	56	Flat 4.5x1	110.25 - 110.50	1.0000	1.0000
L13	57	Flat 4.5x1	110.25 - 110.50	1.0000	1.0000
L13	58	Flat 4.5x1	110.25 - 110.50	1.0000	1.0000
L13	71	Flat 4.5x1.25	110.25 - 110.50	1.0000	1.0000
L13	72	Flat 4.5x1.25	110.25 - 110.50	1.0000	1.0000
L13	73	Flat 4.5x1.25	110.25 - 110.50	1.0000	1.0000
L14	1	Safety Line 3/8	105.25 - 110.25	1.0000	1.0000
L14	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	105.25 - 110.25	1.0000	1.0000
L14	16	HCS 6X12 4AWG(1-5/8)	105.25 - 110.25	1.0000	1.0000
L14	39	Flat 4.75x1.25	105.25 - 106.50	1.0000	1.0000
L14	40	Flat 4.75x1.25	105.25 - 106.50	1.0000	1.0000
L14	41	Flat 4.75x1.25	105.25 - 106.50	1.0000	1.0000
L14	56	Flat 4.5x1	105.25 - 110.25	1.0000	1.0000
L14	57	Flat 4.5x1	105.25 - 110.25	1.0000	1.0000
L14	58	Flat 4.5x1	105.25 - 110.25	1.0000	1.0000
L14	71	Flat 4.5x1.25	105.25 - 110.25	1.0000	1.0000
L14	72	Flat 4.5x1.25	105.25 - 110.25	1.0000	1.0000
L14	73	Flat 4.5x1.25	105.25 - 110.25	1.0000	1.0000
L15	1	Safety Line 3/8	105.00 - 105.25	1.0000	1.0000
L15	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	105.00 - 105.25	1.0000	1.0000
L15	16	HCS 6X12 4AWG(1-5/8)	105.00 - 105.25	1.0000	1.0000
L15	39	Flat 4.75x1.25	105.00 - 105.25	1.0000	1.0000
L15	40	Flat 4.75x1.25	105.00 - 105.25	1.0000	1.0000
L15	41	Flat 4.75x1.25	105.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L15	56	Flat 4.5x1	105.25 105.00 - 105.25	1.0000	1.0000
L15	57	Flat 4.5x1	105.00 - 105.25	1.0000	1.0000
L15	58	Flat 4.5x1	105.00 - 105.25	1.0000	1.0000
L15	71	Flat 4.5x1.25	105.00 - 105.25	1.0000	1.0000
L15	72	Flat 4.5x1.25	105.00 - 105.25	1.0000	1.0000
L15	73	Flat 4.5x1.25	105.00 - 105.25	1.0000	1.0000
L16	1	Safety Line 3/8	104.75 - 105.00	1.0000	1.0000
L16	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	104.75 - 105.00	1.0000	1.0000
L16	16	HCS 6X12 4AWG(1-5/8)	104.75 - 105.00	1.0000	1.0000
L16	24	CU12PSM9P6XXX(1-1/2)	104.75 - 105.00	1.0000	1.0000
L16	39	Flat 4.75x1.25	104.75 - 105.00	1.0000	1.0000
L16	40	Flat 4.75x1.25	104.75 - 105.00	1.0000	1.0000
L16	41	Flat 4.75x1.25	104.75 - 105.00	1.0000	1.0000
L16	56	Flat 4.5x1	104.75 - 105.00	1.0000	1.0000
L16	57	Flat 4.5x1	104.75 - 105.00	1.0000	1.0000
L16	58	Flat 4.5x1	104.75 - 105.00	1.0000	1.0000
L16	71	Flat 4.5x1.25	104.75 - 105.00	1.0000	1.0000
L16	72	Flat 4.5x1.25	104.75 - 105.00	1.0000	1.0000
L16	73	Flat 4.5x1.25	104.75 - 105.00	1.0000	1.0000
L17	1	Safety Line 3/8	103.50 - 104.75	1.0000	1.0000
L17	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	103.50 - 104.75	1.0000	1.0000
L17	16	HCS 6X12 4AWG(1-5/8)	103.50 - 104.75	1.0000	1.0000
L17	24	CU12PSM9P6XXX(1-1/2)	103.50 - 104.75	1.0000	1.0000
L17	39	Flat 4.75x1.25	103.50 - 104.75	1.0000	1.0000
L17	40	Flat 4.75x1.25	103.50 - 104.75	1.0000	1.0000
L17	41	Flat 4.75x1.25	103.50 - 104.75	1.0000	1.0000
L17	56	Flat 4.5x1	103.50 - 104.75	1.0000	1.0000
L17	57	Flat 4.5x1	103.50 - 104.75	1.0000	1.0000
L17	58	Flat 4.5x1	103.50 - 104.75	1.0000	1.0000
L17	71	Flat 4.5x1.25	103.50 - 104.75	1.0000	1.0000
L17	72	Flat 4.5x1.25	103.50 - 104.75	1.0000	1.0000
L17	73	Flat 4.5x1.25	103.50 - 104.75	1.0000	1.0000
L18	1	Safety Line 3/8	103.25 - 103.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L18	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	103.25 - 103.50	1.0000	1.0000
L18	16	HCS 6X12 4AWG(1-5/8)	103.25 - 103.50	1.0000	1.0000
L18	24	CU12PSM9P6XXX(1-1/2)	103.25 - 103.50	1.0000	1.0000
L18	39	Flat 4.75x1.25	103.25 - 103.50	1.0000	1.0000
L18	40	Flat 4.75x1.25	103.25 - 103.50	1.0000	1.0000
L18	41	Flat 4.75x1.25	103.25 - 103.50	1.0000	1.0000
L18	56	Flat 4.5x1	103.25 - 103.50	1.0000	1.0000
L18	57	Flat 4.5x1	103.25 - 103.50	1.0000	1.0000
L18	58	Flat 4.5x1	103.25 - 103.50	1.0000	1.0000
L18	71	Flat 4.5x1.25	103.25 - 103.50	1.0000	1.0000
L18	72	Flat 4.5x1.25	103.25 - 103.50	1.0000	1.0000
L18	73	Flat 4.5x1.25	103.25 - 103.50	1.0000	1.0000
L19	1	Safety Line 3/8	98.25 - 103.25	1.0000	1.0000
L19	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	98.25 - 103.25	1.0000	1.0000
L19	16	HCS 6X12 4AWG(1-5/8)	98.25 - 103.25	1.0000	1.0000
L19	24	CU12PSM9P6XXX(1-1/2)	98.25 - 103.25	1.0000	1.0000
L19	39	Flat 4.75x1.25	98.25 - 103.25	1.0000	1.0000
L19	40	Flat 4.75x1.25	98.25 - 103.25	1.0000	1.0000
L19	41	Flat 4.75x1.25	98.25 - 103.25	1.0000	1.0000
L19	56	Flat 4.5x1	102.00 - 103.25	1.0000	1.0000
L19	57	Flat 4.5x1	102.00 - 103.25	1.0000	1.0000
L19	58	Flat 4.5x1	102.00 - 103.25	1.0000	1.0000
L19	71	Flat 4.5x1.25	98.25 - 103.25	1.0000	1.0000
L19	72	Flat 4.5x1.25	98.25 - 103.25	1.0000	1.0000
L19	73	Flat 4.5x1.25	98.25 - 103.25	1.0000	1.0000
L20	1	Safety Line 3/8	94.17 - 98.25	1.0000	1.0000
L20	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	94.17 - 98.25	1.0000	1.0000
L20	16	HCS 6X12 4AWG(1-5/8)	94.17 - 98.25	1.0000	1.0000
L20	24	CU12PSM9P6XXX(1-1/2)	94.17 - 98.25	1.0000	1.0000
L20	39	Flat 4.75x1.25	94.17 - 98.25	1.0000	1.0000
L20	40	Flat 4.75x1.25	94.17 - 98.25	1.0000	1.0000
L20	41	Flat 4.75x1.25	94.17 - 98.25	1.0000	1.0000
L20	52	Flat 4x0.75	94.17 - 95.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L20	53	Flat 4x0.75	94.17 - 95.67	1.0000	1.0000
L20	54	Flat 4x0.75	94.17 - 95.67	1.0000	1.0000
L20	71	Flat 4.5x1.25	94.17 - 98.25	1.0000	1.0000
L20	72	Flat 4.5x1.25	94.17 - 98.25	1.0000	1.0000
L20	73	Flat 4.5x1.25	94.17 - 98.25	1.0000	1.0000
L21	1	Safety Line 3/8	93.92 - 94.17	1.0000	1.0000
L21	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	93.92 - 94.17	1.0000	1.0000
L21	16	HCS 6X12 4AWG(1-5/8)	93.92 - 94.17	1.0000	1.0000
L21	24	CU12PSM9P6XXX(1-1/2)	93.92 - 94.17	1.0000	1.0000
L21	39	Flat 4.75x1.25	93.92 - 94.17	1.0000	1.0000
L21	40	Flat 4.75x1.25	93.92 - 94.17	1.0000	1.0000
L21	41	Flat 4.75x1.25	93.92 - 94.17	1.0000	1.0000
L21	52	Flat 4x0.75	93.92 - 94.17	1.0000	1.0000
L21	53	Flat 4x0.75	93.92 - 94.17	1.0000	1.0000
L21	54	Flat 4x0.75	93.92 - 94.17	1.0000	1.0000
L21	71	Flat 4.5x1.25	93.92 - 94.17	1.0000	1.0000
L21	72	Flat 4.5x1.25	93.92 - 94.17	1.0000	1.0000
L21	73	Flat 4.5x1.25	93.92 - 94.17	1.0000	1.0000
L22	1	Safety Line 3/8	91.50 - 93.92	1.0000	1.0000
L22	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	91.50 - 93.92	1.0000	1.0000
L22	16	HCS 6X12 4AWG(1-5/8)	91.50 - 93.92	1.0000	1.0000
L22	24	CU12PSM9P6XXX(1-1/2)	91.50 - 93.92	1.0000	1.0000
L22	39	Flat 4.75x1.25	91.50 - 93.92	1.0000	1.0000
L22	40	Flat 4.75x1.25	91.50 - 93.92	1.0000	1.0000
L22	41	Flat 4.75x1.25	91.50 - 93.92	1.0000	1.0000
L22	52	Flat 4x0.75	91.50 - 93.92	1.0000	1.0000
L22	53	Flat 4x0.75	91.50 - 93.92	1.0000	1.0000
L22	54	Flat 4x0.75	91.50 - 93.92	1.0000	1.0000
L22	68	Flat 4.5x1	91.50 - 92.08	1.0000	1.0000
L22	69	Flat 4.5x1	91.50 - 92.08	1.0000	1.0000
L22	70	Flat 4.5x1	91.50 - 93.00	1.0000	1.0000
L22	71	Flat 4.5x1.25	92.16 - 93.92	1.0000	1.0000
L22	72	Flat 4.5x1.25	92.16 - 93.92	1.0000	1.0000
L22	73	Flat 4.5x1.25	93.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L23	1	Safety Line 3/8	93.92 91.25 - 91.50	1.0000	1.0000
L23	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	91.25 - 91.50	1.0000	1.0000
L23	16	HCS 6X12 4AWG(1-5/8)	91.25 - 91.50	1.0000	1.0000
L23	24	CU12PSM9P6XXX(1-1/2)	91.25 - 91.50	1.0000	1.0000
L23	39	Flat 4.75x1.25	91.25 - 91.50	1.0000	1.0000
L23	40	Flat 4.75x1.25	91.25 - 91.50	1.0000	1.0000
L23	41	Flat 4.75x1.25	91.25 - 91.50	1.0000	1.0000
L23	52	Flat 4x0.75	91.25 - 91.50	1.0000	1.0000
L23	53	Flat 4x0.75	91.25 - 91.50	1.0000	1.0000
L23	54	Flat 4x0.75	91.25 - 91.50	1.0000	1.0000
L23	68	Flat 4.5x1	91.25 - 91.50	1.0000	1.0000
L23	69	Flat 4.5x1	91.25 - 91.50	1.0000	1.0000
L23	70	Flat 4.5x1	91.25 - 91.50	1.0000	1.0000
L24	1	Safety Line 3/8	90.58 - 91.25	1.0000	1.0000
L24	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	90.58 - 91.25	1.0000	1.0000
L24	16	HCS 6X12 4AWG(1-5/8)	90.58 - 91.25	1.0000	1.0000
L24	24	CU12PSM9P6XXX(1-1/2)	90.58 - 91.25	1.0000	1.0000
L24	39	Flat 4.75x1.25	90.58 - 91.25	1.0000	1.0000
L24	40	Flat 4.75x1.25	90.58 - 91.25	1.0000	1.0000
L24	41	Flat 4.75x1.25	90.58 - 91.25	1.0000	1.0000
L24	52	Flat 4x0.75	90.58 - 91.25	1.0000	1.0000
L24	53	Flat 4x0.75	90.58 - 91.25	1.0000	1.0000
L24	54	Flat 4x0.75	90.58 - 91.25	1.0000	1.0000
L24	68	Flat 4.5x1	90.58 - 91.25	1.0000	1.0000
L24	69	Flat 4.5x1	90.58 - 91.25	1.0000	1.0000
L24	70	Flat 4.5x1	90.58 - 91.25	1.0000	1.0000
L25	1	Safety Line 3/8	90.33 - 90.58	1.0000	1.0000
L25	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	90.33 - 90.58	1.0000	1.0000
L25	16	HCS 6X12 4AWG(1-5/8)	90.33 - 90.58	1.0000	1.0000
L25	24	CU12PSM9P6XXX(1-1/2)	90.33 - 90.58	1.0000	1.0000
L25	39	Flat 4.75x1.25	90.33 - 90.58	1.0000	1.0000
L25	40	Flat 4.75x1.25	90.33 - 90.58	1.0000	1.0000
L25	41	Flat 4.75x1.25	90.33 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L25	52	Flat 4x0.75	90.58 90.33 - 90.58	1.0000	1.0000
L25	53	Flat 4x0.75	90.33 - 90.58	1.0000	1.0000
L25	54	Flat 4x0.75	90.33 - 90.58	1.0000	1.0000
L25	68	Flat 4.5x1	90.33 - 90.58	1.0000	1.0000
L25	69	Flat 4.5x1	90.33 - 90.58	1.0000	1.0000
L25	70	Flat 4.5x1	90.33 - 90.58	1.0000	1.0000
L26	1	Safety Line 3/8	84.91 - 90.33	1.0000	1.0000
L26	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	84.91 - 90.33	1.0000	1.0000
L26	16	HCS 6X12 4AWG(1-5/8)	84.91 - 90.33	1.0000	1.0000
L26	24	CU12PSM9P6XXX(1-1/2)	84.91 - 90.33	1.0000	1.0000
L26	36	Flat 4.75x1.25	84.91 - 89.25	1.0000	1.0000
L26	37	Flat 4.75x1.25	84.91 - 89.25	1.0000	1.0000
L26	38	Flat 4.75x1.25	84.91 - 89.25	1.0000	1.0000
L26	39	Flat 4.75x1.25	89.25 - 90.33	1.0000	1.0000
L26	40	Flat 4.75x1.25	89.25 - 90.33	1.0000	1.0000
L26	41	Flat 4.75x1.25	89.25 - 90.33	1.0000	1.0000
L26	52	Flat 4x0.75	84.91 - 90.33	1.0000	1.0000
L26	53	Flat 4x0.75	84.91 - 90.33	1.0000	1.0000
L26	54	Flat 4x0.75	84.91 - 90.33	1.0000	1.0000
L26	68	Flat 4.5x1	84.91 - 90.33	1.0000	1.0000
L26	69	Flat 4.5x1	84.91 - 90.33	1.0000	1.0000
L26	70	Flat 4.5x1	84.91 - 90.33	1.0000	1.0000
L27	1	Safety Line 3/8	83.91 - 84.91	1.0000	1.0000
L27	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	83.91 - 84.91	1.0000	1.0000
L27	16	HCS 6X12 4AWG(1-5/8)	83.91 - 84.91	1.0000	1.0000
L27	24	CU12PSM9P6XXX(1-1/2)	83.91 - 84.91	1.0000	1.0000
L27	36	Flat 4.75x1.25	83.91 - 84.91	1.0000	1.0000
L27	37	Flat 4.75x1.25	83.91 - 84.91	1.0000	1.0000
L27	38	Flat 4.75x1.25	83.91 - 84.91	1.0000	1.0000
L27	52	Flat 4x0.75	83.91 - 84.91	1.0000	1.0000
L27	53	Flat 4x0.75	83.91 - 84.91	1.0000	1.0000
L27	54	Flat 4x0.75	83.91 - 84.91	1.0000	1.0000
L27	68	Flat 4.5x1	83.91 - 84.91	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L27	69	Flat 4.5x1	83.91 - 84.91	1.0000	1.0000
L27	70	Flat 4.5x1	83.91 - 84.91	1.0000	1.0000
L28	1	Safety Line 3/8	78.91 - 83.91	1.0000	1.0000
L28	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	78.91 - 83.91	1.0000	1.0000
L28	16	HCS 6X12 4AWG(1-5/8)	78.91 - 83.91	1.0000	1.0000
L28	24	CU12PSM9P6XXX(1-1/2)	78.91 - 83.91	1.0000	1.0000
L28	36	Flat 4.75x1.25	78.91 - 83.91	1.0000	1.0000
L28	37	Flat 4.75x1.25	78.91 - 83.91	1.0000	1.0000
L28	38	Flat 4.75x1.25	78.91 - 83.91	1.0000	1.0000
L28	52	Flat 4x0.75	78.91 - 83.91	1.0000	1.0000
L28	53	Flat 4x0.75	78.91 - 83.91	1.0000	1.0000
L28	54	Flat 4x0.75	78.91 - 83.91	1.0000	1.0000
L28	68	Flat 4.5x1	78.91 - 83.91	1.0000	1.0000
L28	69	Flat 4.5x1	78.91 - 83.91	1.0000	1.0000
L28	70	Flat 4.5x1	78.91 - 83.91	1.0000	1.0000
L29	1	Safety Line 3/8	73.91 - 78.91	1.0000	1.0000
L29	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	73.91 - 78.91	1.0000	1.0000
L29	16	HCS 6X12 4AWG(1-5/8)	73.91 - 78.91	1.0000	1.0000
L29	24	CU12PSM9P6XXX(1-1/2)	73.91 - 78.91	1.0000	1.0000
L29	36	Flat 4.75x1.25	73.91 - 78.91	1.0000	1.0000
L29	37	Flat 4.75x1.25	73.91 - 78.91	1.0000	1.0000
L29	38	Flat 4.75x1.25	73.91 - 78.91	1.0000	1.0000
L29	52	Flat 4x0.75	73.91 - 78.91	1.0000	1.0000
L29	53	Flat 4x0.75	73.91 - 78.91	1.0000	1.0000
L29	54	Flat 4x0.75	73.91 - 78.91	1.0000	1.0000
L29	68	Flat 4.5x1	73.91 - 78.91	1.0000	1.0000
L29	69	Flat 4.5x1	73.91 - 78.91	1.0000	1.0000
L29	70	Flat 4.5x1	73.91 - 78.91	1.0000	1.0000
L30	1	Safety Line 3/8	68.91 - 73.91	1.0000	1.0000
L30	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	68.91 - 73.91	1.0000	1.0000
L30	16	HCS 6X12 4AWG(1-5/8)	68.91 - 73.91	1.0000	1.0000
L30	24	CU12PSM9P6XXX(1-1/2)	68.91 - 73.91	1.0000	1.0000
L30	36	Flat 4.75x1.25	68.91 - 73.91	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L30	37	Flat 4.75x1.25	68.91 - 73.91	1.0000	1.0000
L30	38	Flat 4.75x1.25	68.91 - 73.91	1.0000	1.0000
L30	52	Flat 4x0.75	68.91 - 73.91	1.0000	1.0000
L30	53	Flat 4x0.75	68.91 - 73.91	1.0000	1.0000
L30	54	Flat 4x0.75	68.91 - 73.91	1.0000	1.0000
L30	68	Flat 4.5x1	68.91 - 73.91	1.0000	1.0000
L30	69	Flat 4.5x1	68.91 - 73.91	1.0000	1.0000
L30	70	Flat 4.5x1	68.91 - 73.91	1.0000	1.0000
L31	1	Safety Line 3/8	65.50 - 68.91	1.0000	1.0000
L31	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	65.50 - 68.91	1.0000	1.0000
L31	16	HCS 6X12 4AWG(1-5/8)	65.50 - 68.91	1.0000	1.0000
L31	24	CU12PSM9P6XXX(1-1/2)	65.50 - 68.91	1.0000	1.0000
L31	36	Flat 4.75x1.25	65.50 - 68.91	1.0000	1.0000
L31	37	Flat 4.75x1.25	65.50 - 68.91	1.0000	1.0000
L31	38	Flat 4.75x1.25	65.50 - 68.91	1.0000	1.0000
L31	52	Flat 4x0.75	65.50 - 68.91	1.0000	1.0000
L31	53	Flat 4x0.75	65.50 - 68.91	1.0000	1.0000
L31	54	Flat 4x0.75	65.50 - 68.91	1.0000	1.0000
L31	64	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	65	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	66	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	67	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	68	Flat 4.5x1	67.08 - 68.91	1.0000	1.0000
L31	69	Flat 4.5x1	67.08 - 68.91	1.0000	1.0000
L31	70	Flat 4.5x1	65.50 - 68.91	1.0000	1.0000
L32	1	Safety Line 3/8	65.25 - 65.50	1.0000	1.0000
L32	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	65.25 - 65.50	1.0000	1.0000
L32	16	HCS 6X12 4AWG(1-5/8)	65.25 - 65.50	1.0000	1.0000
L32	24	CU12PSM9P6XXX(1-1/2)	65.25 - 65.50	1.0000	1.0000
L32	36	Flat 4.75x1.25	65.25 - 65.50	1.0000	1.0000
L32	37	Flat 4.75x1.25	65.25 - 65.50	1.0000	1.0000
L32	38	Flat 4.75x1.25	65.25 - 65.50	1.0000	1.0000
L32	52	Flat 4x0.75	65.25 - 65.50	1.0000	1.0000
L32	53	Flat 4x0.75	65.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			65.50		
L32	54	Flat 4x0.75	65.25 - 65.50	1.0000	1.0000
L32	64	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	65	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	66	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	67	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	70	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L33	1	Safety Line 3/8	64.50 - 65.25	1.0000	1.0000
L33	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	64.50 - 65.25	1.0000	1.0000
L33	16	HCS 6X12 4AWG(1-5/8)	64.50 - 65.25	1.0000	1.0000
L33	24	CU12PSM9P6XXX(1-1/2)	64.50 - 65.25	1.0000	1.0000
L33	36	Flat 4.75x1.25	64.50 - 65.25	1.0000	1.0000
L33	37	Flat 4.75x1.25	64.50 - 65.25	1.0000	1.0000
L33	38	Flat 4.75x1.25	64.50 - 65.25	1.0000	1.0000
L33	52	Flat 4x0.75	64.50 - 65.25	1.0000	1.0000
L33	53	Flat 4x0.75	64.50 - 65.25	1.0000	1.0000
L33	54	Flat 4x0.75	64.50 - 65.25	1.0000	1.0000
L33	64	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	65	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	66	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	67	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	70	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L34	1	Safety Line 3/8	64.25 - 64.50	1.0000	1.0000
L34	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	64.25 - 64.50	1.0000	1.0000
L34	16	HCS 6X12 4AWG(1-5/8)	64.25 - 64.50	1.0000	1.0000
L34	24	CU12PSM9P6XXX(1-1/2)	64.25 - 64.50	1.0000	1.0000
L34	36	Flat 4.75x1.25	64.25 - 64.50	1.0000	1.0000
L34	37	Flat 4.75x1.25	64.25 - 64.50	1.0000	1.0000
L34	38	Flat 4.75x1.25	64.25 - 64.50	1.0000	1.0000
L34	52	Flat 4x0.75	64.25 - 64.50	1.0000	1.0000
L34	53	Flat 4x0.75	64.25 - 64.50	1.0000	1.0000
L34	54	Flat 4x0.75	64.25 - 64.50	1.0000	1.0000
L34	64	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L34	65	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L34	66	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L34	67	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L34	70	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L35	1	Safety Line 3/8	59.25 - 64.25	1.0000	1.0000
L35	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	59.25 - 64.25	1.0000	1.0000
L35	16	HCS 6X12 4AWG(1-5/8)	59.25 - 64.25	1.0000	1.0000
L35	24	CU12PSM9P6XXX(1-1/2)	59.25 - 64.25	1.0000	1.0000
L35	33	Flat 5x1.25	59.25 - 59.50	1.0000	1.0000
L35	34	Flat 5x1.25	59.25 - 59.50	1.0000	1.0000
L35	35	Flat 5x1.25	59.25 - 59.50	1.0000	1.0000
L35	36	Flat 4.75x1.25	59.50 - 64.25	1.0000	1.0000
L35	37	Flat 4.75x1.25	59.50 - 64.25	1.0000	1.0000
L35	38	Flat 4.75x1.25	59.50 - 64.25	1.0000	1.0000
L35	49	Flat 4.5x1	59.25 - 60.58	1.0000	1.0000
L35	50	Flat 4.5x1	59.25 - 60.58	1.0000	1.0000
L35	51	Flat 4.5x1	59.25 - 60.58	1.0000	1.0000
L35	52	Flat 4x0.75	60.67 - 64.25	1.0000	1.0000
L35	53	Flat 4x0.75	60.67 - 64.25	1.0000	1.0000
L35	54	Flat 4x0.75	60.67 - 64.25	1.0000	1.0000
L35	64	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	65	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	66	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	67	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	70	Flat 4.5x1	63.00 - 64.25	1.0000	1.0000
L36	1	Safety Line 3/8	58.58 - 59.25	1.0000	1.0000
L36	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	58.58 - 59.25	1.0000	1.0000
L36	16	HCS 6X12 4AWG(1-5/8)	58.58 - 59.25	1.0000	1.0000
L36	24	CU12PSM9P6XXX(1-1/2)	58.58 - 59.25	1.0000	1.0000
L36	33	Flat 5x1.25	58.58 - 59.25	1.0000	1.0000
L36	34	Flat 5x1.25	58.58 - 59.25	1.0000	1.0000
L36	35	Flat 5x1.25	58.58 - 59.25	1.0000	1.0000
L36	49	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	50	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	51	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			59.25		
L36	64	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	65	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	66	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	67	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L37	1	Safety Line 3/8	58.33 - 58.58	1.0000	1.0000
L37	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	58.33 - 58.58	1.0000	1.0000
L37	16	HCS 6X12 4AWG(1-5/8)	58.33 - 58.58	1.0000	1.0000
L37	24	CU12PSM9P6XXX(1-1/2)	58.33 - 58.58	1.0000	1.0000
L37	33	Flat 5x1.25	58.33 - 58.58	1.0000	1.0000
L37	34	Flat 5x1.25	58.33 - 58.58	1.0000	1.0000
L37	35	Flat 5x1.25	58.33 - 58.58	1.0000	1.0000
L37	49	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	50	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	51	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	64	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	65	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	66	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	67	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L38	1	Safety Line 3/8	57.25 - 58.33	1.0000	1.0000
L38	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	57.25 - 58.33	1.0000	1.0000
L38	16	HCS 6X12 4AWG(1-5/8)	57.25 - 58.33	1.0000	1.0000
L38	24	CU12PSM9P6XXX(1-1/2)	57.25 - 58.33	1.0000	1.0000
L38	33	Flat 5x1.25	57.25 - 58.33	1.0000	1.0000
L38	34	Flat 5x1.25	57.25 - 58.33	1.0000	1.0000
L38	35	Flat 5x1.25	57.25 - 58.33	1.0000	1.0000
L38	49	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	50	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	51	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	64	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	65	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	66	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	67	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L39	1	Safety Line 3/8	57.00 - 57.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L39	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	57.00 - 57.25	1.0000	1.0000
L39	16	HCS 6X12 4AWG(1-5/8)	57.00 - 57.25	1.0000	1.0000
L39	24	CU12PSM9P6XXX(1-1/2)	57.00 - 57.25	1.0000	1.0000
L39	33	Flat 5x1.25	57.00 - 57.25	1.0000	1.0000
L39	34	Flat 5x1.25	57.00 - 57.25	1.0000	1.0000
L39	35	Flat 5x1.25	57.00 - 57.25	1.0000	1.0000
L39	49	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	50	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	51	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	64	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	65	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	66	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	67	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L40	1	Safety Line 3/8	52.00 - 57.00	1.0000	1.0000
L40	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	52.00 - 57.00	1.0000	1.0000
L40	16	HCS 6X12 4AWG(1-5/8)	52.00 - 57.00	1.0000	1.0000
L40	24	CU12PSM9P6XXX(1-1/2)	52.00 - 57.00	1.0000	1.0000
L40	33	Flat 5x1.25	52.00 - 57.00	1.0000	1.0000
L40	34	Flat 5x1.25	52.00 - 57.00	1.0000	1.0000
L40	35	Flat 5x1.25	52.00 - 57.00	1.0000	1.0000
L40	49	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	50	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	51	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	64	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	65	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	66	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	67	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L41	1	Safety Line 3/8	44.41 - 52.00	1.0000	1.0000
L41	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	44.41 - 52.00	1.0000	1.0000
L41	16	HCS 6X12 4AWG(1-5/8)	44.41 - 52.00	1.0000	1.0000
L41	24	CU12PSM9P6XXX(1-1/2)	44.41 - 52.00	1.0000	1.0000
L41	26	LDF4-50A(1/2)	44.41 - 50.00	1.0000	1.0000
L41	33	Flat 5x1.25	44.41 - 52.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	34	Flat 5x1.25	44.41 - 52.00	1.0000	1.0000
L41	35	Flat 5x1.25	44.41 - 52.00	1.0000	1.0000
L41	49	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	50	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	51	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	64	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	65	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	66	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	67	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L42	1	Safety Line 3/8	43.41 - 44.41	1.0000	1.0000
L42	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	43.41 - 44.41	1.0000	1.0000
L42	16	HCS 6X12 4AWG(1-5/8)	43.41 - 44.41	1.0000	1.0000
L42	24	CU12PSM9P6XXX(1-1/2)	43.41 - 44.41	1.0000	1.0000
L42	26	LDF4-50A(1/2)	43.41 - 44.41	1.0000	1.0000
L42	33	Flat 5x1.25	43.41 - 44.41	1.0000	1.0000
L42	34	Flat 5x1.25	43.41 - 44.41	1.0000	1.0000
L42	35	Flat 5x1.25	43.41 - 44.41	1.0000	1.0000
L42	49	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	50	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	51	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	64	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	65	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	66	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	67	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L43	1	Safety Line 3/8	38.41 - 43.41	1.0000	1.0000
L43	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	38.41 - 43.41	1.0000	1.0000
L43	16	HCS 6X12 4AWG(1-5/8)	38.41 - 43.41	1.0000	1.0000
L43	24	CU12PSM9P6XXX(1-1/2)	38.41 - 43.41	1.0000	1.0000
L43	26	LDF4-50A(1/2)	38.41 - 43.41	1.0000	1.0000
L43	33	Flat 5x1.25	38.41 - 43.41	1.0000	1.0000
L43	34	Flat 5x1.25	38.41 - 43.41	1.0000	1.0000
L43	35	Flat 5x1.25	38.41 - 43.41	1.0000	1.0000
L43	49	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	50	Flat 4.5x1	38.41 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L43	51	Flat 4.5x1	43.41 38.41 - 43.41	1.0000	1.0000
L43	64	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	65	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	66	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	67	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L44	1	Safety Line 3/8	34.50 - 38.41	1.0000	1.0000
L44	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.50 - 38.41	1.0000	1.0000
L44	16	HCS 6X12 4AWG(1-5/8)	34.50 - 38.41	1.0000	1.0000
L44	24	CU12PSM9P6XXX(1-1/2)	34.50 - 38.41	1.0000	1.0000
L44	26	LDF4-50A(1/2)	34.50 - 38.41	1.0000	1.0000
L44	33	Flat 5x1.25	34.50 - 38.41	1.0000	1.0000
L44	34	Flat 5x1.25	34.50 - 38.41	1.0000	1.0000
L44	35	Flat 5x1.25	34.50 - 38.41	1.0000	1.0000
L44	49	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	50	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	51	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	60	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	61	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	62	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	63	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	64	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	65	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	66	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	67	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L45	1	Safety Line 3/8	34.25 - 34.50	1.0000	1.0000
L45	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.25 - 34.50	1.0000	1.0000
L45	16	HCS 6X12 4AWG(1-5/8)	34.25 - 34.50	1.0000	1.0000
L45	24	CU12PSM9P6XXX(1-1/2)	34.25 - 34.50	1.0000	1.0000
L45	26	LDF4-50A(1/2)	34.25 - 34.50	1.0000	1.0000
L45	33	Flat 5x1.25	34.25 - 34.50	1.0000	1.0000
L45	34	Flat 5x1.25	34.25 - 34.50	1.0000	1.0000
L45	35	Flat 5x1.25	34.25 - 34.50	1.0000	1.0000
L45	49	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	50	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000
L45	51	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000
L45	60	Flat 4.5x1.25	34.25 - 34.50	1.0000	1.0000
L45	61	Flat 4.5x1.25	34.25 - 34.50	1.0000	1.0000
L45	62	Flat 4.5x1.25	34.25 - 34.50	1.0000	1.0000
L45	63	Flat 4.5x1.25	34.25 - 34.50	1.0000	1.0000
L45	64	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000
L45	65	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000
L45	66	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000
L45	67	Flat 4.5x1	34.25 - 34.50	1.0000	1.0000
L46	1	Safety Line 3/8	33.50 - 34.25	1.0000	1.0000
L46	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	33.50 - 34.25	1.0000	1.0000
L46	16	HCS 6X12 4AWG(1-5/8)	33.50 - 34.25	1.0000	1.0000
L46	24	CU12PSM9P6XXX(1-1/2)	33.50 - 34.25	1.0000	1.0000
L46	26	LDF4-50A(1/2)	33.50 - 34.25	1.0000	1.0000
L46	33	Flat 5x1.25	33.50 - 34.25	1.0000	1.0000
L46	34	Flat 5x1.25	33.50 - 34.25	1.0000	1.0000
L46	35	Flat 5x1.25	33.50 - 34.25	1.0000	1.0000
L46	49	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	50	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	51	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	60	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	61	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	62	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	63	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	64	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	65	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	66	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	67	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L47	1	Safety Line 3/8	33.25 - 33.50	1.0000	1.0000
L47	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	33.25 - 33.50	1.0000	1.0000
L47	16	HCS 6X12 4AWG(1-5/8)	33.25 - 33.50	1.0000	1.0000
L47	24	CU12PSM9P6XXX(1-1/2)	33.25 - 33.50	1.0000	1.0000
L47	26	LDF4-50A(1/2)	33.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			33.50		
L47	33	Flat 5x1.25	33.25 - 33.50	1.0000	1.0000
L47	34	Flat 5x1.25	33.25 - 33.50	1.0000	1.0000
L47	35	Flat 5x1.25	33.25 - 33.50	1.0000	1.0000
L47	49	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	50	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	51	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	60	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	61	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	62	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	63	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	64	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	65	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	66	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	67	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L48	1	Safety Line 3/8	28.48 - 33.25	1.0000	1.0000
L48	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	28.48 - 33.25	1.0000	1.0000
L48	16	HCS 6X12 4AWG(1-5/8)	28.48 - 33.25	1.0000	1.0000
L48	24	CU12PSM9P6XXX(1-1/2)	28.48 - 33.25	1.0000	1.0000
L48	26	LDF4-50A(1/2)	28.48 - 33.25	1.0000	1.0000
L48	28	Flat 5x1.25	28.48 - 29.75	1.0000	1.0000
L48	31	Flat 5x1.25	28.48 - 29.75	1.0000	1.0000
L48	32	Flat 5x1.25	28.48 - 29.75	1.0000	1.0000
L48	33	Flat 5x1.25	29.75 - 33.25	1.0000	1.0000
L48	34	Flat 5x1.25	29.75 - 33.25	1.0000	1.0000
L48	35	Flat 5x1.25	29.75 - 33.25	1.0000	1.0000
L48	43	MP3-03	28.48 - 30.75	1.0000	1.0000
L48	44	MP3-03	28.48 - 30.75	1.0000	1.0000
L48	46	Flat 4.5x1	28.48 - 30.50	1.0000	1.0000
L48	47	Flat 4.5x1	28.48 - 30.50	1.0000	1.0000
L48	48	Flat 4.5x1	28.48 - 30.50	1.0000	1.0000
L48	49	Flat 4.5x1	30.58 - 33.25	1.0000	1.0000
L48	50	Flat 4.5x1	28.48 - 33.25	1.0000	1.0000
L48	51	Flat 4.5x1	30.58 - 33.25	1.0000	1.0000
L48	60	Flat 4.5x1.25	28.48 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			33.25		
L48	61	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	62	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	63	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	64	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L48	65	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L48	66	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L48	67	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L49	1	Safety Line 3/8	28.23 - 28.48	1.0000	1.0000
L49	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	28.23 - 28.48	1.0000	1.0000
L49	16	HCS 6X12 4AWG(1-5/8)	28.23 - 28.48	1.0000	1.0000
L49	24	CU12PSM9P6XXX(1-1/2)	28.23 - 28.48	1.0000	1.0000
L49	26	LDF4-50A(1/2)	28.23 - 28.48	1.0000	1.0000
L49	28	Flat 5x1.25	28.23 - 28.48	1.0000	1.0000
L49	31	Flat 5x1.25	28.23 - 28.48	1.0000	1.0000
L49	32	Flat 5x1.25	28.23 - 28.48	1.0000	1.0000
L49	43	MP3-03	28.23 - 28.48	1.0000	1.0000
L49	44	MP3-03	28.23 - 28.48	1.0000	1.0000
L49	46	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	47	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	48	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	50	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	60	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L49	61	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L49	62	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L49	63	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L50	1	Safety Line 3/8	27.48 - 28.23	1.0000	1.0000
L50	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	27.48 - 28.23	1.0000	1.0000
L50	16	HCS 6X12 4AWG(1-5/8)	27.48 - 28.23	1.0000	1.0000
L50	24	CU12PSM9P6XXX(1-1/2)	27.48 - 28.23	1.0000	1.0000
L50	26	LDF4-50A(1/2)	27.48 - 28.23	1.0000	1.0000
L50	28	Flat 5x1.25	27.48 - 28.23	1.0000	1.0000
L50	31	Flat 5x1.25	27.48 - 28.23	1.0000	1.0000
L50	32	Flat 5x1.25	27.48 - 28.23	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L50	43	MP3-03	27.48 - 28.23	1.0000	1.0000
L50	44	MP3-03	27.48 - 28.23	1.0000	1.0000
L50	46	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	47	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	48	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	50	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	60	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L50	61	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L50	62	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L50	63	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L51	1	Safety Line 3/8	27.23 - 27.48	1.0000	1.0000
L51	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	27.23 - 27.48	1.0000	1.0000
L51	16	HCS 6X12 4AWG(1-5/8)	27.23 - 27.48	1.0000	1.0000
L51	24	CU12PSM9P6XXX(1-1/2)	27.23 - 27.48	1.0000	1.0000
L51	26	LDF4-50A(1/2)	27.23 - 27.48	1.0000	1.0000
L51	28	Flat 5x1.25	27.23 - 27.48	1.0000	1.0000
L51	31	Flat 5x1.25	27.23 - 27.48	1.0000	1.0000
L51	32	Flat 5x1.25	27.23 - 27.48	1.0000	1.0000
L51	43	MP3-03	27.23 - 27.48	1.0000	1.0000
L51	44	MP3-03	27.23 - 27.48	1.0000	1.0000
L51	46	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	47	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	48	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	50	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	60	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L51	61	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L51	62	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L51	63	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L52	1	Safety Line 3/8	22.23 - 27.23	1.0000	1.0000
L52	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	22.23 - 27.23	1.0000	1.0000
L52	16	HCS 6X12 4AWG(1-5/8)	22.23 - 27.23	1.0000	1.0000
L52	24	CU12PSM9P6XXX(1-1/2)	22.23 - 27.23	1.0000	1.0000
L52	26	LDF4-50A(1/2)	22.23 - 27.23	1.0000	1.0000
L52	28	Flat 5x1.25	22.23 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L52	31	Flat 5x1.25	27.23 22.23 - 27.23	1.0000	1.0000
L52	32	Flat 5x1.25	27.23 22.23 - 27.23	1.0000	1.0000
L52	43	MP3-03	27.23 22.23 - 27.23	1.0000	1.0000
L52	44	MP3-03	27.23 22.23 - 27.23	1.0000	1.0000
L52	46	Flat 4.5x1	27.23 22.23 - 27.23	1.0000	1.0000
L52	47	Flat 4.5x1	27.23 22.23 - 27.23	1.0000	1.0000
L52	48	Flat 4.5x1	27.23 22.23 - 27.23	1.0000	1.0000
L52	50	Flat 4.5x1	27.23 25.58 - 27.23	1.0000	1.0000
L52	60	Flat 4.5x1.25	27.23 22.23 - 27.23	1.0000	1.0000
L52	61	Flat 4.5x1.25	27.23 22.23 - 27.23	1.0000	1.0000
L52	62	Flat 4.5x1.25	27.23 22.23 - 27.23	1.0000	1.0000
L52	63	Flat 4.5x1.25	27.23 22.23 - 27.23	1.0000	1.0000
L53	1	Safety Line 3/8	22.23 17.23 - 22.23	1.0000	1.0000
L53	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	22.23 17.23 - 22.23	1.0000	1.0000
L53	16	HCS 6X12 4AWG(1-5/8)	22.23 17.23 - 22.23	1.0000	1.0000
L53	24	CU12PSM9P6XXX(1-1/2)	22.23 17.23 - 22.23	1.0000	1.0000
L53	26	LDF4-50A(1/2)	22.23 17.23 - 22.23	1.0000	1.0000
L53	28	Flat 5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L53	31	Flat 5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L53	32	Flat 5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L53	43	MP3-03	22.23 17.23 - 22.23	1.0000	1.0000
L53	44	MP3-03	22.23 17.23 - 22.23	1.0000	1.0000
L53	46	Flat 4.5x1	22.23 17.23 - 22.23	1.0000	1.0000
L53	47	Flat 4.5x1	22.23 17.23 - 22.23	1.0000	1.0000
L53	48	Flat 4.5x1	22.23 17.23 - 22.23	1.0000	1.0000
L53	60	Flat 4.5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L53	61	Flat 4.5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L53	62	Flat 4.5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L53	63	Flat 4.5x1.25	22.23 17.23 - 22.23	1.0000	1.0000
L54	1	Safety Line 3/8	17.23 12.23 - 17.23	1.0000	1.0000
L54	14	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	17.23 12.23 - 17.23	1.0000	1.0000
L54	16	HCS 6X12 4AWG(1-5/8)	17.23 12.23 - 17.23	1.0000	1.0000
L54	24	CU12PSM9P6XXX(1-1/2)	17.23 12.23 - 17.23	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L54	26	LDF4-50A(1/2)	12.23 - 17.23	1.0000	1.0000
L54	28	Flat 5x1.25	12.23 - 17.23	1.0000	1.0000
L54	31	Flat 5x1.25	12.23 - 17.23	1.0000	1.0000
L54	32	Flat 5x1.25	12.23 - 17.23	1.0000	1.0000
L54	43	MP3-03	12.23 - 17.23	1.0000	1.0000
L54	44	MP3-03	12.23 - 17.23	1.0000	1.0000
L54	46	Flat 4.5x1	12.23 - 17.23	1.0000	1.0000
L54	47	Flat 4.5x1	12.23 - 17.23	1.0000	1.0000
L54	48	Flat 4.5x1	12.23 - 17.23	1.0000	1.0000
L54	60	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L54	61	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L54	62	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L54	63	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L55	1	Safety Line 3/8	8.00 - 12.23	1.0000	1.0000
L55	14	MLE HYBRID	7.23 - 12.23	1.0000	1.0000
		9POWER/18FIBER RL			
		2(1-5/8)			
L55	16	HCS 6X12 4AWG(1-5/8)	7.23 - 12.23	1.0000	1.0000
L55	24	CU12PSM9P6XXX(1-1/2)	7.23 - 12.23	1.0000	1.0000
L55	26	LDF4-50A(1/2)	7.23 - 12.23	1.0000	1.0000
L55	28	Flat 5x1.25	7.23 - 12.23	1.0000	1.0000
L55	29	Flat 5x1.25	7.23 - 9.17	1.0000	1.0000
L55	30	Flat 5x1.25	7.23 - 9.17	1.0000	1.0000
L55	31	Flat 5x1.25	7.23 - 12.23	1.0000	1.0000
L55	32	Flat 5x1.25	7.23 - 12.23	1.0000	1.0000
L55	43	MP3-03	7.23 - 12.23	1.0000	1.0000
L55	44	MP3-03	7.23 - 12.23	1.0000	1.0000
L55	46	Flat 4.5x1	7.23 - 12.23	1.0000	1.0000
L55	47	Flat 4.5x1	7.23 - 12.23	1.0000	1.0000
L55	48	Flat 4.5x1	7.23 - 12.23	1.0000	1.0000
L55	60	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L55	61	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L55	62	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L55	63	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L56	14	MLE HYBRID	6.92 - 7.23	1.0000	1.0000
		9POWER/18FIBER RL			
		2(1-5/8)			
L56	16	HCS 6X12 4AWG(1-5/8)	6.92 - 7.23	1.0000	1.0000
L56	24	CU12PSM9P6XXX(1-1/2)	6.92 - 7.23	1.0000	1.0000
L56	26	LDF4-50A(1/2)	6.92 - 7.23	1.0000	1.0000
L56	28	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	29	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	30	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	31	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	32	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	43	MP3-03	6.92 - 7.23	1.0000	1.0000
L56	44	MP3-03	6.92 - 7.23	1.0000	1.0000
L56	46	Flat 4.5x1	6.92 - 7.23	1.0000	1.0000
L56	47	Flat 4.5x1	6.92 - 7.23	1.0000	1.0000
L56	48	Flat 4.5x1	6.92 - 7.23	1.0000	1.0000
L56	60	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L56	61	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L56	62	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L56	63	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L57	14	MLE HYBRID	6.67 - 6.92	1.0000	1.0000
		9POWER/18FIBER RL			

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
		2(1-5/8)			
L57	16	HCS 6X12 4AWG(1-5/8)	6.67 - 6.92	1.0000	1.0000
L57	24	CU12PSM9P6XXX(1-1/2)	6.67 - 6.92	1.0000	1.0000
L57	26	LDF4-50A(1/2)	6.67 - 6.92	1.0000	1.0000
L57	28	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	29	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	30	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	31	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	32	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	43	MP3-03	6.67 - 6.92	1.0000	1.0000
L57	44	MP3-03	6.67 - 6.92	1.0000	1.0000
L57	46	Flat 4.5x1	6.67 - 6.92	1.0000	1.0000
L57	47	Flat 4.5x1	6.67 - 6.92	1.0000	1.0000
L57	48	Flat 4.5x1	6.67 - 6.92	1.0000	1.0000
L57	60	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L57	61	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L57	62	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L57	63	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L58	14	MLE HYBRID	3.00 - 6.67	1.0000	1.0000
		9POWER/18FIBER RL			
		2(1-5/8)			
L58	16	HCS 6X12 4AWG(1-5/8)	3.00 - 6.67	1.0000	1.0000
L58	24	CU12PSM9P6XXX(1-1/2)	1.67 - 6.67	1.0000	1.0000
L58	26	LDF4-50A(1/2)	6.00 - 6.67	1.0000	1.0000
L58	28	Flat 5x1.25	1.67 - 6.67	1.0000	1.0000
L58	29	Flat 5x1.25	1.67 - 6.67	1.0000	1.0000
L58	30	Flat 5x1.25	1.67 - 6.67	1.0000	1.0000
L58	31	Flat 5x1.25	1.67 - 6.67	1.0000	1.0000
L58	32	Flat 5x1.25	4.33 - 6.67	1.0000	1.0000
L58	43	MP3-03	5.75 - 6.67	1.0000	1.0000
L58	44	MP3-03	5.75 - 6.67	1.0000	1.0000
L58	46	Flat 4.5x1	1.67 - 6.67	1.0000	1.0000
L58	47	Flat 4.5x1	1.67 - 6.67	1.0000	1.0000
L58	48	Flat 4.5x1	1.67 - 6.67	1.0000	1.0000
L58	60	Flat 4.5x1.25	1.67 - 6.67	1.0000	1.0000
L58	61	Flat 4.5x1.25	1.67 - 6.67	1.0000	1.0000
L58	62	Flat 4.5x1.25	1.67 - 6.67	1.0000	1.0000
L58	63	Flat 4.5x1.25	1.67 - 6.67	1.0000	1.0000
L59	24	CU12PSM9P6XXX(1-1/2)	0.00 - 1.67	1.0000	1.0000
L59	28	Flat 5x1.25	0.00 - 1.67	1.0000	1.0000
L59	29	Flat 5x1.25	0.00 - 1.67	1.0000	1.0000
L59	30	Flat 5x1.25	0.00 - 1.67	1.0000	1.0000
L59	31	Flat 5x1.25	0.00 - 1.67	1.0000	1.0000
L59	46	Flat 4.5x1	0.50 - 1.67	1.0000	1.0000
L59	47	Flat 4.5x1	0.50 - 1.67	1.0000	1.0000
L59	48	Flat 4.5x1	0.50 - 1.67	1.0000	1.0000
L59	60	Flat 4.5x1.25	1.25 - 1.67	1.0000	1.0000
L59	61	Flat 4.5x1.25	1.25 - 1.67	1.0000	1.0000
L59	62	Flat 4.5x1.25	1.25 - 1.67	1.0000	1.0000
L59	63	Flat 4.5x1.25	1.25 - 1.67	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L7	71	Flat 4.5x1.25	113.62 - 114.16	Auto	0.1995
L7	72	Flat 4.5x1.25	113.62 - 114.16	Auto	0.1995

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L7	73	Flat 4.5x1.25	113.62 - 115.08	Auto	0.2033
L8	71	Flat 4.5x1.25	113.08 - 113.62	Auto	0.1950
L8	72	Flat 4.5x1.25	113.08 - 113.62	Auto	0.1950
L8	73	Flat 4.5x1.25	113.08 - 113.62	Auto	0.1950
L9	71	Flat 4.5x1.25	112.83 - 113.08	Auto	0.1917
L9	72	Flat 4.5x1.25	112.83 - 113.08	Auto	0.1917
L9	73	Flat 4.5x1.25	112.83 - 113.08	Auto	0.1917
L10	71	Flat 4.5x1.25	112.16 - 112.83	Auto	0.1879
L10	72	Flat 4.5x1.25	112.16 - 112.83	Auto	0.1879
L10	73	Flat 4.5x1.25	112.16 - 112.83	Auto	0.1879
L11	56	Flat 4.5x1	111.91 - 112.00	Auto	0.2910
L11	57	Flat 4.5x1	111.91 - 112.00	Auto	0.2910
L11	58	Flat 4.5x1	111.91 - 112.00	Auto	0.2910
L11	71	Flat 4.5x1.25	111.91 - 112.16	Auto	0.2917
L11	72	Flat 4.5x1.25	111.91 - 112.16	Auto	0.2917
L11	73	Flat 4.5x1.25	111.91 - 112.16	Auto	0.2917
L12	56	Flat 4.5x1	110.50 - 111.91	Auto	0.2848
L12	57	Flat 4.5x1	110.50 - 111.91	Auto	0.2848
L12	58	Flat 4.5x1	110.50 - 111.91	Auto	0.2848
L12	71	Flat 4.5x1.25	110.50 - 111.91	Auto	0.2848
L12	72	Flat 4.5x1.25	110.50 - 111.91	Auto	0.2848
L12	73	Flat 4.5x1.25	110.50 - 111.91	Auto	0.2848
L13	56	Flat 4.5x1	110.25 - 110.50	Auto	0.3659
L13	57	Flat 4.5x1	110.25 - 110.50	Auto	0.3659
L13	58	Flat 4.5x1	110.25 - 110.50	Auto	0.3659
L13	71	Flat 4.5x1.25	110.25 - 110.50	Auto	0.3659
L13	72	Flat 4.5x1.25	110.25 - 110.50	Auto	0.3659
L13	73	Flat 4.5x1.25	110.25 - 110.50	Auto	0.3659
L14	39	Flat 4.75x1.25	105.25 - 106.50	Auto	0.3547
L14	40	Flat 4.75x1.25	105.25 - 106.50	Auto	0.3547
L14	41	Flat 4.75x1.25	105.25 - 106.50	Auto	0.3547
L14	56	Flat 4.5x1	105.25 - 110.25	Auto	0.3344
L14	57	Flat 4.5x1	105.25 - 110.25	Auto	0.3344
L14	58	Flat 4.5x1	105.25 - 110.25	Auto	0.3344

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L14	71	Flat 4.5x1.25	105.25 - 110.25	Auto	0.3344
L14	72	Flat 4.5x1.25	105.25 - 110.25	Auto	0.3344
L14	73	Flat 4.5x1.25	105.25 - 110.25	Auto	0.3344
L15	39	Flat 4.75x1.25	105.00 - 105.25	Auto	0.3488
L15	40	Flat 4.75x1.25	105.00 - 105.25	Auto	0.3488
L15	41	Flat 4.75x1.25	105.00 - 105.25	Auto	0.3488
L15	56	Flat 4.5x1	105.00 - 105.25	Auto	0.3126
L15	57	Flat 4.5x1	105.00 - 105.25	Auto	0.3126
L15	58	Flat 4.5x1	105.00 - 105.25	Auto	0.3126
L15	71	Flat 4.5x1.25	105.00 - 105.25	Auto	0.3126
L15	72	Flat 4.5x1.25	105.00 - 105.25	Auto	0.3126
L15	73	Flat 4.5x1.25	105.00 - 105.25	Auto	0.3126
L16	39	Flat 4.75x1.25	104.75 - 105.00	Auto	0.4487
L16	40	Flat 4.75x1.25	104.75 - 105.00	Auto	0.4487
L16	41	Flat 4.75x1.25	104.75 - 105.00	Auto	0.4487
L16	56	Flat 4.5x1	104.75 - 105.00	Auto	0.4181
L16	57	Flat 4.5x1	104.75 - 105.00	Auto	0.4181
L16	58	Flat 4.5x1	104.75 - 105.00	Auto	0.4181
L16	71	Flat 4.5x1.25	104.75 - 105.00	Auto	0.4181
L16	72	Flat 4.5x1.25	104.75 - 105.00	Auto	0.4181
L16	73	Flat 4.5x1.25	104.75 - 105.00	Auto	0.4181
L17	39	Flat 4.75x1.25	103.50 - 104.75	Auto	0.4428
L17	40	Flat 4.75x1.25	103.50 - 104.75	Auto	0.4428
L17	41	Flat 4.75x1.25	103.50 - 104.75	Auto	0.4428
L17	56	Flat 4.5x1	103.50 - 104.75	Auto	0.4119
L17	57	Flat 4.5x1	103.50 - 104.75	Auto	0.4119
L17	58	Flat 4.5x1	103.50 - 104.75	Auto	0.4119
L17	71	Flat 4.5x1.25	103.50 - 104.75	Auto	0.4119
L17	72	Flat 4.5x1.25	103.50 - 104.75	Auto	0.4119
L17	73	Flat 4.5x1.25	103.50 - 104.75	Auto	0.4119
L18	39	Flat 4.75x1.25	103.25 - 103.50	Auto	0.3489
L18	40	Flat 4.75x1.25	103.25 - 103.50	Auto	0.3489
L18	41	Flat 4.75x1.25	103.25 - 103.50	Auto	0.3489
L18	56	Flat 4.5x1	103.25 - 103.50	Auto	0.3128

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L18	57	Flat 4.5x1	103.25 - 103.50	Auto	0.3128
L18	58	Flat 4.5x1	103.25 - 103.50	Auto	0.3128
L18	71	Flat 4.5x1.25	103.25 - 103.50	Auto	0.3128
L18	72	Flat 4.5x1.25	103.25 - 103.50	Auto	0.3128
L18	73	Flat 4.5x1.25	103.25 - 103.50	Auto	0.3128
L19	39	Flat 4.75x1.25	98.25 - 103.25	Auto	0.3191
L19	40	Flat 4.75x1.25	98.25 - 103.25	Auto	0.3191
L19	41	Flat 4.75x1.25	98.25 - 103.25	Auto	0.3191
L19	56	Flat 4.5x1	102.00 - 103.25	Auto	0.2968
L19	57	Flat 4.5x1	102.00 - 103.25	Auto	0.2968
L19	58	Flat 4.5x1	102.00 - 103.25	Auto	0.2968
L19	71	Flat 4.5x1.25	98.25 - 103.25	Auto	0.2812
L19	72	Flat 4.5x1.25	98.25 - 103.25	Auto	0.2812
L19	73	Flat 4.5x1.25	98.25 - 103.25	Auto	0.2812
L20	39	Flat 4.75x1.25	94.17 - 98.25	Auto	0.2741
L20	40	Flat 4.75x1.25	94.17 - 98.25	Auto	0.2741
L20	41	Flat 4.75x1.25	94.17 - 98.25	Auto	0.2741
L20	52	Flat 4x0.75	94.17 - 95.67	Auto	0.1260
L20	53	Flat 4x0.75	94.17 - 95.67	Auto	0.1260
L20	54	Flat 4x0.75	94.17 - 95.67	Auto	0.1260
L20	71	Flat 4.5x1.25	94.17 - 98.25	Auto	0.2338
L20	72	Flat 4.5x1.25	94.17 - 98.25	Auto	0.2338
L20	73	Flat 4.5x1.25	94.17 - 98.25	Auto	0.2338
L21	39	Flat 4.75x1.25	93.92 - 94.17	Auto	0.3081
L21	40	Flat 4.75x1.25	93.92 - 94.17	Auto	0.3081
L21	41	Flat 4.75x1.25	93.92 - 94.17	Auto	0.3081
L21	52	Flat 4x0.75	93.92 - 94.17	Auto	0.1783
L21	53	Flat 4x0.75	93.92 - 94.17	Auto	0.1783
L21	54	Flat 4x0.75	93.92 - 94.17	Auto	0.1783
L21	71	Flat 4.5x1.25	93.92 - 94.17	Auto	0.2696
L21	72	Flat 4.5x1.25	93.92 - 94.17	Auto	0.2696
L21	73	Flat 4.5x1.25	93.92 - 94.17	Auto	0.2696
L22	39	Flat 4.75x1.25	91.50 - 93.92	Auto	0.2883
L22	40	Flat 4.75x1.25	91.50 - 93.92	Auto	0.2883

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L22	41	Flat 4.75x1.25	91.50 - 93.92	Auto	0.2883
L22	52	Flat 4x0.75	91.50 - 93.92	Auto	0.1549
L22	53	Flat 4x0.75	91.50 - 93.92	Auto	0.1549
L22	54	Flat 4x0.75	91.50 - 93.92	Auto	0.1549
L22	68	Flat 4.5x1	91.50 - 92.08	Auto	0.2412
L22	69	Flat 4.5x1	91.50 - 92.08	Auto	0.2412
L22	70	Flat 4.5x1	91.50 - 93.00	Auto	0.2450
L22	71	Flat 4.5x1.25	92.16 - 93.92	Auto	0.2515
L22	72	Flat 4.5x1.25	92.16 - 93.92	Auto	0.2515
L22	73	Flat 4.5x1.25	93.08 - 93.92	Auto	0.2553
L23	39	Flat 4.75x1.25	91.25 - 91.50	Auto	0.2686
L23	40	Flat 4.75x1.25	91.25 - 91.50	Auto	0.2686
L23	41	Flat 4.75x1.25	91.25 - 91.50	Auto	0.2686
L23	52	Flat 4x0.75	91.25 - 91.50	Auto	0.1314
L23	53	Flat 4x0.75	91.25 - 91.50	Auto	0.1314
L23	54	Flat 4x0.75	91.25 - 91.50	Auto	0.1314
L23	68	Flat 4.5x1	91.25 - 91.50	Auto	0.2280
L23	69	Flat 4.5x1	91.25 - 91.50	Auto	0.2280
L23	70	Flat 4.5x1	91.25 - 91.50	Auto	0.2280
L24	39	Flat 4.75x1.25	90.58 - 91.25	Auto	0.2650
L24	40	Flat 4.75x1.25	90.58 - 91.25	Auto	0.2650
L24	41	Flat 4.75x1.25	90.58 - 91.25	Auto	0.2650
L24	52	Flat 4x0.75	90.58 - 91.25	Auto	0.1272
L24	53	Flat 4x0.75	90.58 - 91.25	Auto	0.1272
L24	54	Flat 4x0.75	90.58 - 91.25	Auto	0.1272
L24	68	Flat 4.5x1	90.58 - 91.25	Auto	0.2241
L24	69	Flat 4.5x1	90.58 - 91.25	Auto	0.2241
L24	70	Flat 4.5x1	90.58 - 91.25	Auto	0.2241
L25	39	Flat 4.75x1.25	90.33 - 90.58	Auto	0.2521
L25	40	Flat 4.75x1.25	90.33 - 90.58	Auto	0.2521
L25	41	Flat 4.75x1.25	90.33 - 90.58	Auto	0.2521
L25	52	Flat 4x0.75	90.33 - 90.58	Auto	0.1119
L25	53	Flat 4x0.75	90.33 - 90.58	Auto	0.1119
L25	54	Flat 4x0.75	90.33 - 90.58	Auto	0.1119

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	68	Flat 4.5x1	90.33 - 90.58	Auto	0.2106
L25	69	Flat 4.5x1	90.33 - 90.58	Auto	0.2106
L25	70	Flat 4.5x1	90.33 - 90.58	Auto	0.2106
L26	36	Flat 4.75x1.25	84.91 - 89.25	Auto	0.2210
L26	37	Flat 4.75x1.25	84.91 - 89.25	Auto	0.2210
L26	38	Flat 4.75x1.25	84.91 - 89.25	Auto	0.2210
L26	39	Flat 4.75x1.25	89.25 - 90.33	Auto	0.2422
L26	40	Flat 4.75x1.25	89.25 - 90.33	Auto	0.2422
L26	41	Flat 4.75x1.25	89.25 - 90.33	Auto	0.2422
L26	52	Flat 4x0.75	84.91 - 90.33	Auto	0.0799
L26	53	Flat 4x0.75	84.91 - 90.33	Auto	0.0799
L26	54	Flat 4x0.75	84.91 - 90.33	Auto	0.0799
L26	68	Flat 4.5x1	84.91 - 90.33	Auto	0.1822
L26	69	Flat 4.5x1	84.91 - 90.33	Auto	0.1822
L26	70	Flat 4.5x1	84.91 - 90.33	Auto	0.1822
L27	36	Flat 4.75x1.25	83.91 - 84.91	Auto	0.2510
L27	37	Flat 4.75x1.25	83.91 - 84.91	Auto	0.2510
L27	38	Flat 4.75x1.25	83.91 - 84.91	Auto	0.2510
L27	52	Flat 4x0.75	83.91 - 84.91	Auto	0.1105
L27	53	Flat 4x0.75	83.91 - 84.91	Auto	0.1105
L27	54	Flat 4x0.75	83.91 - 84.91	Auto	0.1105
L27	68	Flat 4.5x1	83.91 - 84.91	Auto	0.2093
L27	69	Flat 4.5x1	83.91 - 84.91	Auto	0.2093
L27	70	Flat 4.5x1	83.91 - 84.91	Auto	0.2093
L28	36	Flat 4.75x1.25	78.91 - 83.91	Auto	0.2181
L28	37	Flat 4.75x1.25	78.91 - 83.91	Auto	0.2181
L28	38	Flat 4.75x1.25	78.91 - 83.91	Auto	0.2181
L28	52	Flat 4x0.75	78.91 - 83.91	Auto	0.0715
L28	53	Flat 4x0.75	78.91 - 83.91	Auto	0.0715
L28	54	Flat 4x0.75	78.91 - 83.91	Auto	0.0715
L28	68	Flat 4.5x1	78.91 - 83.91	Auto	0.1747
L28	69	Flat 4.5x1	78.91 - 83.91	Auto	0.1747
L28	70	Flat 4.5x1	78.91 - 83.91	Auto	0.1747
L29	36	Flat 4.75x1.25	73.91 - 78.91	Auto	0.1696

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	37	Flat 4.75x1.25	73.91 - 78.91	Auto	0.1696
L29	38	Flat 4.75x1.25	73.91 - 78.91	Auto	0.1696
L29	52	Flat 4x0.75	73.91 - 78.91	Auto	0.0149
L29	53	Flat 4x0.75	73.91 - 78.91	Auto	0.0149
L29	54	Flat 4x0.75	73.91 - 78.91	Auto	0.0149
L29	68	Flat 4.5x1	73.91 - 78.91	Auto	0.1235
L29	69	Flat 4.5x1	73.91 - 78.91	Auto	0.1235
L29	70	Flat 4.5x1	73.91 - 78.91	Auto	0.1235
L30	36	Flat 4.75x1.25	68.91 - 73.91	Auto	0.1258
L30	37	Flat 4.75x1.25	68.91 - 73.91	Auto	0.1258
L30	38	Flat 4.75x1.25	68.91 - 73.91	Auto	0.1258
L30	52	Flat 4x0.75	68.91 - 73.91	Auto	0.0000
L30	53	Flat 4x0.75	68.91 - 73.91	Auto	0.0000
L30	54	Flat 4x0.75	68.91 - 73.91	Auto	0.0000
L30	68	Flat 4.5x1	68.91 - 73.91	Auto	0.0772
L30	69	Flat 4.5x1	68.91 - 73.91	Auto	0.0772
L30	70	Flat 4.5x1	68.91 - 73.91	Auto	0.0772
L31	36	Flat 4.75x1.25	65.50 - 68.91	Auto	0.0835
L31	37	Flat 4.75x1.25	65.50 - 68.91	Auto	0.0835
L31	38	Flat 4.75x1.25	65.50 - 68.91	Auto	0.0835
L31	52	Flat 4x0.75	65.50 - 68.91	Auto	0.0000
L31	53	Flat 4x0.75	65.50 - 68.91	Auto	0.0000
L31	54	Flat 4x0.75	65.50 - 68.91	Auto	0.0000
L31	64	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	65	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	66	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	67	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	68	Flat 4.5x1	67.08 - 68.91	Auto	0.0391
L31	69	Flat 4.5x1	67.08 - 68.91	Auto	0.0391
L31	70	Flat 4.5x1	65.50 - 68.91	Auto	0.0326
L32	36	Flat 4.75x1.25	65.25 - 65.50	Auto	0.1201
L32	37	Flat 4.75x1.25	65.25 - 65.50	Auto	0.1201
L32	38	Flat 4.75x1.25	65.25 - 65.50	Auto	0.1201
L32	52	Flat 4x0.75	65.25 - 65.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L32	53	Flat 4x0.75	65.25 - 65.50	Auto	0.0000
L32	54	Flat 4x0.75	65.25 - 65.50	Auto	0.0000
L32	64	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	65	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	66	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	67	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	70	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L33	36	Flat 4.75x1.25	64.50 - 65.25	Auto	0.1115
L33	37	Flat 4.75x1.25	64.50 - 65.25	Auto	0.1115
L33	38	Flat 4.75x1.25	64.50 - 65.25	Auto	0.1115
L33	52	Flat 4x0.75	64.50 - 65.25	Auto	0.0000
L33	53	Flat 4x0.75	64.50 - 65.25	Auto	0.0000
L33	54	Flat 4x0.75	64.50 - 65.25	Auto	0.0000
L33	64	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	65	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	66	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	67	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	70	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L34	36	Flat 4.75x1.25	64.25 - 64.50	Auto	0.0798
L34	37	Flat 4.75x1.25	64.25 - 64.50	Auto	0.0798
L34	38	Flat 4.75x1.25	64.25 - 64.50	Auto	0.0798
L34	52	Flat 4x0.75	64.25 - 64.50	Auto	0.0000
L34	53	Flat 4x0.75	64.25 - 64.50	Auto	0.0000
L34	54	Flat 4x0.75	64.25 - 64.50	Auto	0.0000
L34	64	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	65	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	66	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	67	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	70	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L35	33	Flat 5x1.25	59.25 - 59.50	Auto	0.0797
L35	34	Flat 5x1.25	59.25 - 59.50	Auto	0.0797
L35	35	Flat 5x1.25	59.25 - 59.50	Auto	0.0797
L35	36	Flat 4.75x1.25	59.50 - 64.25	Auto	0.0509
L35	37	Flat 4.75x1.25	59.50 - 64.25	Auto	0.0509

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L35	38	Flat 4.75x1.25	59.50 - 64.25	Auto	0.0509
L35	49	Flat 4.5x1	59.25 - 60.58	Auto	0.0000
L35	50	Flat 4.5x1	59.25 - 60.58	Auto	0.0000
L35	51	Flat 4.5x1	59.25 - 60.58	Auto	0.0000
L35	52	Flat 4x0.75	60.67 - 64.25	Auto	0.0000
L35	53	Flat 4x0.75	60.67 - 64.25	Auto	0.0000
L35	54	Flat 4x0.75	60.67 - 64.25	Auto	0.0000
L35	64	Flat 4.5x1	59.25 - 64.25	Auto	0.0038
L35	65	Flat 4.5x1	59.25 - 64.25	Auto	0.0038
L35	66	Flat 4.5x1	59.25 - 64.25	Auto	0.0038
L35	67	Flat 4.5x1	59.25 - 64.25	Auto	0.0038
L35	70	Flat 4.5x1	63.00 - 64.25	Auto	0.0127
L36	33	Flat 5x1.25	58.58 - 59.25	Auto	0.0763
L36	34	Flat 5x1.25	58.58 - 59.25	Auto	0.0763
L36	35	Flat 5x1.25	58.58 - 59.25	Auto	0.0763
L36	49	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	50	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	51	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	64	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	65	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	66	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	67	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L37	33	Flat 5x1.25	58.33 - 58.58	Auto	0.0905
L37	34	Flat 5x1.25	58.33 - 58.58	Auto	0.0905
L37	35	Flat 5x1.25	58.33 - 58.58	Auto	0.0905
L37	49	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	50	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	51	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	64	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	65	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	66	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	67	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L38	33	Flat 5x1.25	57.25 - 58.33	Auto	0.0855
L38	34	Flat 5x1.25	57.25 - 58.33	Auto	0.0855

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L38	35	Flat 5x1.25	57.25 - 58.33	Auto	0.0855
L38	49	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	50	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	51	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	64	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	65	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	66	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	67	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L39	33	Flat 5x1.25	57.00 - 57.25	Auto	0.0805
L39	34	Flat 5x1.25	57.00 - 57.25	Auto	0.0805
L39	35	Flat 5x1.25	57.00 - 57.25	Auto	0.0805
L39	49	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L39	50	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L39	51	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L39	64	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L39	65	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L39	66	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L39	67	Flat 4.5x1	57.00 - 57.25	Auto	0.0000
L40	33	Flat 5x1.25	52.00 - 57.00	Auto	0.0566
L40	34	Flat 5x1.25	52.00 - 57.00	Auto	0.0566
L40	35	Flat 5x1.25	52.00 - 57.00	Auto	0.0566
L40	49	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	50	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	51	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	64	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	65	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	66	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	67	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L41	33	Flat 5x1.25	44.41 - 52.00	Auto	0.0099
L41	34	Flat 5x1.25	44.41 - 52.00	Auto	0.0099
L41	35	Flat 5x1.25	44.41 - 52.00	Auto	0.0099
L41	49	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	50	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	51	Flat 4.5x1	44.41 - 52.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L41	64	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	65	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	66	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	67	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L42	33	Flat 5x1.25	43.41 - 44.41	Auto	0.0171
L42	34	Flat 5x1.25	43.41 - 44.41	Auto	0.0171
L42	35	Flat 5x1.25	43.41 - 44.41	Auto	0.0171
L42	49	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	50	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	51	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	64	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	65	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	66	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	67	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L43	33	Flat 5x1.25	38.41 - 43.41	Auto	0.0003
L43	34	Flat 5x1.25	38.41 - 43.41	Auto	0.0003
L43	35	Flat 5x1.25	38.41 - 43.41	Auto	0.0003
L43	49	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	50	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	51	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	64	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	65	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	66	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	67	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L44	33	Flat 5x1.25	34.50 - 38.41	Auto	0.0000
L44	34	Flat 5x1.25	34.50 - 38.41	Auto	0.0000
L44	35	Flat 5x1.25	34.50 - 38.41	Auto	0.0000
L44	49	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	50	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	51	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	60	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	61	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	62	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	63	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L44	64	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	65	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	66	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	67	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L45	33	Flat 5x1.25	34.25 - 34.50	Auto	0.0000
L45	34	Flat 5x1.25	34.25 - 34.50	Auto	0.0000
L45	35	Flat 5x1.25	34.25 - 34.50	Auto	0.0000
L45	49	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	50	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	51	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	60	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	61	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	62	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	63	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	64	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	65	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	66	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	67	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L46	33	Flat 5x1.25	33.50 - 34.25	Auto	0.0000
L46	34	Flat 5x1.25	33.50 - 34.25	Auto	0.0000
L46	35	Flat 5x1.25	33.50 - 34.25	Auto	0.0000
L46	49	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	50	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	51	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	60	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	61	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	62	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	63	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	64	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	65	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	66	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	67	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L47	33	Flat 5x1.25	33.25 - 33.50	Auto	0.0000
L47	34	Flat 5x1.25	33.25 - 33.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L47	35	Flat 5x1.25	33.25 - 33.50	Auto	0.0000
L47	49	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	50	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	51	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	60	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	61	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	62	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	63	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	64	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	65	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	66	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	67	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L48	28	Flat 5x1.25	28.48 - 29.75	Auto	0.0000
L48	31	Flat 5x1.25	28.48 - 29.75	Auto	0.0000
L48	32	Flat 5x1.25	28.48 - 29.75	Auto	0.0000
L48	33	Flat 5x1.25	29.75 - 33.25	Auto	0.0000
L48	34	Flat 5x1.25	29.75 - 33.25	Auto	0.0000
L48	35	Flat 5x1.25	29.75 - 33.25	Auto	0.0000
L48	43	MP3-03	28.48 - 30.75	Auto	0.0000
L48	44	MP3-03	28.48 - 30.75	Auto	0.0000
L48	46	Flat 4.5x1	28.48 - 30.50	Auto	0.0000
L48	47	Flat 4.5x1	28.48 - 30.50	Auto	0.0000
L48	48	Flat 4.5x1	28.48 - 30.50	Auto	0.0000
L48	49	Flat 4.5x1	30.58 - 33.25	Auto	0.0000
L48	50	Flat 4.5x1	28.48 - 33.25	Auto	0.0000
L48	51	Flat 4.5x1	30.58 - 33.25	Auto	0.0000
L48	60	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	61	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	62	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	63	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	64	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L48	65	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L48	66	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L48	67	Flat 4.5x1	32.00 - 33.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L49	28	Flat 5x1.25	28.23 - 28.48	Auto	0.0000
L49	31	Flat 5x1.25	28.23 - 28.48	Auto	0.0000
L49	32	Flat 5x1.25	28.23 - 28.48	Auto	0.0000
L49	43	MP3-03	28.23 - 28.48	Auto	0.0000
L49	44	MP3-03	28.23 - 28.48	Auto	0.0000
L49	46	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	47	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	48	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	50	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	60	Flat 4.5x1.25	28.23 - 28.48	Auto	0.0000
L49	61	Flat 4.5x1.25	28.23 - 28.48	Auto	0.0000
L49	62	Flat 4.5x1.25	28.23 - 28.48	Auto	0.0000
L49	63	Flat 4.5x1.25	28.23 - 28.48	Auto	0.0000
L50	28	Flat 5x1.25	27.48 - 28.23	Auto	0.0000
L50	31	Flat 5x1.25	27.48 - 28.23	Auto	0.0000
L50	32	Flat 5x1.25	27.48 - 28.23	Auto	0.0000
L50	43	MP3-03	27.48 - 28.23	Auto	0.0000
L50	44	MP3-03	27.48 - 28.23	Auto	0.0000
L50	46	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	47	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	48	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	50	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	60	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L50	61	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L50	62	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L50	63	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L51	28	Flat 5x1.25	27.23 - 27.48	Auto	0.0000
L51	31	Flat 5x1.25	27.23 - 27.48	Auto	0.0000
L51	32	Flat 5x1.25	27.23 - 27.48	Auto	0.0000
L51	43	MP3-03	27.23 - 27.48	Auto	0.0000
L51	44	MP3-03	27.23 - 27.48	Auto	0.0000
L51	46	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	47	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	48	Flat 4.5x1	27.23 - 27.48	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L51	50	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	60	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L51	61	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L51	62	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L51	63	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L52	28	Flat 5x1.25	22.23 - 27.23	Auto	0.0000
L52	31	Flat 5x1.25	22.23 - 27.23	Auto	0.0000
L52	32	Flat 5x1.25	22.23 - 27.23	Auto	0.0000
L52	43	MP3-03	22.23 - 27.23	Auto	0.0000
L52	44	MP3-03	22.23 - 27.23	Auto	0.0000
L52	46	Flat 4.5x1	22.23 - 27.23	Auto	0.0000
L52	47	Flat 4.5x1	22.23 - 27.23	Auto	0.0000
L52	48	Flat 4.5x1	22.23 - 27.23	Auto	0.0000
L52	50	Flat 4.5x1	25.58 - 27.23	Auto	0.0000
L52	60	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L52	61	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L52	62	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L52	63	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L53	28	Flat 5x1.25	17.23 - 22.23	Auto	0.0000
L53	31	Flat 5x1.25	17.23 - 22.23	Auto	0.0000
L53	32	Flat 5x1.25	17.23 - 22.23	Auto	0.0000
L53	43	MP3-03	17.23 - 22.23	Auto	0.0000
L53	44	MP3-03	17.23 - 22.23	Auto	0.0000
L53	46	Flat 4.5x1	17.23 - 22.23	Auto	0.0000
L53	47	Flat 4.5x1	17.23 - 22.23	Auto	0.0000
L53	48	Flat 4.5x1	17.23 - 22.23	Auto	0.0000
L53	60	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L53	61	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L53	62	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L53	63	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L54	28	Flat 5x1.25	12.23 - 17.23	Auto	0.0000
L54	31	Flat 5x1.25	12.23 - 17.23	Auto	0.0000
L54	32	Flat 5x1.25	12.23 - 17.23	Auto	0.0000
L54	43	MP3-03	12.23 - 17.23	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L54	44	MP3-03	12.23 - 17.23	Auto	0.0000
L54	46	Flat 4.5x1	12.23 - 17.23	Auto	0.0000
L54	47	Flat 4.5x1	12.23 - 17.23	Auto	0.0000
L54	48	Flat 4.5x1	12.23 - 17.23	Auto	0.0000
L54	60	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L54	61	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L54	62	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L54	63	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L55	28	Flat 5x1.25	7.23 - 12.23	Auto	0.0000
L55	29	Flat 5x1.25	7.23 - 9.17	Auto	0.0000
L55	30	Flat 5x1.25	7.23 - 9.17	Auto	0.0000
L55	31	Flat 5x1.25	7.23 - 12.23	Auto	0.0000
L55	32	Flat 5x1.25	7.23 - 12.23	Auto	0.0000
L55	43	MP3-03	7.23 - 12.23	Auto	0.0000
L55	44	MP3-03	7.23 - 12.23	Auto	0.0000
L55	46	Flat 4.5x1	7.23 - 12.23	Auto	0.0000
L55	47	Flat 4.5x1	7.23 - 12.23	Auto	0.0000
L55	48	Flat 4.5x1	7.23 - 12.23	Auto	0.0000
L55	60	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L55	61	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L55	62	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L55	63	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L56	28	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	29	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	30	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	31	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	32	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	43	MP3-03	6.92 - 7.23	Auto	0.0000
L56	44	MP3-03	6.92 - 7.23	Auto	0.0000
L56	46	Flat 4.5x1	6.92 - 7.23	Auto	0.0000
L56	47	Flat 4.5x1	6.92 - 7.23	Auto	0.0000
L56	48	Flat 4.5x1	6.92 - 7.23	Auto	0.0000
L56	60	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L56	61	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L56	62	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L56	63	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L57	28	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	29	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	30	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	31	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	32	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	43	MP3-03	6.67 - 6.92	Auto	0.0000
L57	44	MP3-03	6.67 - 6.92	Auto	0.0000
L57	46	Flat 4.5x1	6.67 - 6.92	Auto	0.0000
L57	47	Flat 4.5x1	6.67 - 6.92	Auto	0.0000
L57	48	Flat 4.5x1	6.67 - 6.92	Auto	0.0000
L57	60	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L57	61	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L57	62	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L57	63	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L58	28	Flat 5x1.25	1.67 - 6.67	Auto	0.0000
L58	29	Flat 5x1.25	1.67 - 6.67	Auto	0.0000
L58	30	Flat 5x1.25	1.67 - 6.67	Auto	0.0000
L58	31	Flat 5x1.25	1.67 - 6.67	Auto	0.0000
L58	32	Flat 5x1.25	4.33 - 6.67	Auto	0.0000
L58	43	MP3-03	5.75 - 6.67	Auto	0.0000
L58	44	MP3-03	5.75 - 6.67	Auto	0.0000
L58	46	Flat 4.5x1	1.67 - 6.67	Auto	0.0000
L58	47	Flat 4.5x1	1.67 - 6.67	Auto	0.0000
L58	48	Flat 4.5x1	1.67 - 6.67	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L58	60	Flat 4.5x1.25	1.67 - 6.67	Auto	0.0000
L58	61	Flat 4.5x1.25	1.67 - 6.67	Auto	0.0000
L58	62	Flat 4.5x1.25	1.67 - 6.67	Auto	0.0000
L58	63	Flat 4.5x1.25	1.67 - 6.67	Auto	0.0000
L59	28	Flat 5x1.25	0.00 - 1.67	Auto	0.0000
L59	29	Flat 5x1.25	0.00 - 1.67	Auto	0.0000
L59	30	Flat 5x1.25	0.00 - 1.67	Auto	0.0000
L59	31	Flat 5x1.25	0.00 - 1.67	Auto	0.0000
L59	46	Flat 4.5x1	0.50 - 1.67	Auto	0.0000
L59	47	Flat 4.5x1	0.50 - 1.67	Auto	0.0000
L59	48	Flat 4.5x1	0.50 - 1.67	Auto	0.0000
L59	60	Flat 4.5x1.25	1.25 - 1.67	Auto	0.0000
L59	61	Flat 4.5x1.25	1.25 - 1.67	Auto	0.0000
L59	62	Flat 4.5x1.25	1.25 - 1.67	Auto	0.0000
L59	63	Flat 4.5x1.25	1.25 - 1.67	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	CA _A Front ft ²	CA _A Side ft ²	Weight K	

6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	147.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	147.00	1" Ice			
			0.00			No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	147.00	Ice	2.29	2.29	0.05
			0.00			1" Ice			
			0.00			No Ice	1.43	1.43	0.02
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	147.00	1/2"	1.92	1.92	0.03
						Ice	2.29	2.29	0.05
						1" Ice			
No Ice						17.09	17.09	1.50	
						21.47	21.47	1.88	
						25.72	25.72	2.35	

VV-65B-R1_TMO w/ Mount Pipe	A	From Leg	4.00	0.0000	147.00	No Ice	5.82	3.48	0.07
			0.00			1/2"	6.37	4.00	0.12
			2.00			Ice	6.94	4.54	0.19
VV-65B-R1_TMO w/ Mount Pipe	B	From Leg	4.00	0.0000	147.00	1" Ice			
			0.00			No Ice	5.82	3.48	0.07
			2.00			1/2"	6.37	4.00	0.12
VV-65B-R1_TMO w/ Mount Pipe	C	From Leg	4.00	0.0000	147.00	Ice	6.94	4.54	0.19
			0.00			1" Ice			
			2.00			No Ice	5.82	3.48	0.07
AIR 6419 B41_TMO w/ Mount Pipe	A	From Leg	4.00	0.0000	147.00	1/2"	6.37	4.00	0.12
			0.00			Ice	6.94	4.54	0.19
			2.00			1" Ice			
AIR 6419 B41_TMO w/ Mount Pipe	B	From Leg	4.00	0.0000	147.00	No Ice	6.58	3.50	0.11
			0.00			1/2"	7.06	3.90	0.16
			2.00			Ice	7.57	4.32	0.22
AIR 6419 B41_TMO w/ Mount Pipe	B	From Leg	4.00	0.0000	147.00	1" Ice			
			0.00			No Ice	6.58	3.50	0.11
						7.06	3.90	0.16	

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			2.00			Ice 1" Ice 7.57	4.32	0.22
AIR 6419 B41_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 7.57	6.58 3.50 3.90 4.32	0.11 0.16 0.22
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 16.23	14.69 6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 16.23	14.69 6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 16.23	14.69 6.87 7.55 8.25	0.18 0.31 0.45
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 2.51	2.14 1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 2.51	2.14 1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 2.51	2.14 1.69 1.85 2.02	0.11 0.13 0.16
Radio 4480_TMOV2	A	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 3.31	2.88 1.40 1.56 1.73	0.08 0.10 0.13
Radio 4480_TMOV2	B	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 3.31	2.88 1.40 1.56 1.73	0.08 0.10 0.13
Radio 4480_TMOV2	C	From Leg	4.00 0.00 2.00	0.0000	147.00	1" Ice No Ice 1/2" Ice 3.31	2.88 1.40 1.56 1.73	0.08 0.10 0.13
Handrail Kit [#HRK12]	C	None		0.0000	147.00	1" Ice No Ice 1/2" Ice 8.18	4.56 4.56 6.39 8.18	0.25 0.31 0.40
Reinforcement Kit [#PRK- SFS]	C	None		0.0000	147.00	1" Ice No Ice 1/2" Ice 22.08	11.84 11.84 16.96 22.08	0.28 0.30 0.32

(2) LPA-80080/4CF w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	1" Ice No Ice 1/2" Ice 2.82	2.04 5.22 5.67 6.13	0.04 0.08 0.13
(2) LPA-80080/4CF w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	1" Ice No Ice 1/2" Ice 2.82	2.04 5.22 5.67 6.13	0.04 0.08 0.13
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	1" Ice No Ice 1/2" Ice 2.82	2.04 5.22 5.67 6.13	0.04 0.08 0.13
Platform Mount [LP 712-1]	C	None		0.0000	136.00	1" Ice No Ice 1/2"	24.56 24.56 27.92	1.34 1.91

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
						Ice 1" Ice	31.27	31.27	2.55
*** (2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	3.29 3.67 4.06	0.07 0.13 0.21
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	3.29 3.67 4.06	0.07 0.13 0.21
(2) NHH-45B-R2B w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	8.26 8.83 9.41	4.39 4.91 5.43	0.10 0.18 0.27
MT6407-77A w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
MT6407-77A w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
MT6407-77A w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
RF4439D-25A	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.87 2.03 2.21	1.25 1.39 1.54	0.07 0.09 0.11
RF4439D-25A	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.87 2.03 2.21	1.25 1.39 1.54	0.07 0.09 0.11
RF4439D-25A	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.87 2.03 2.21	1.25 1.39 1.54	0.07 0.09 0.11
RF4440D-13A	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.87 2.03 2.21	1.13 1.27 1.41	0.07 0.09 0.11
RF4440D-13A	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.87 2.03 2.21	1.13 1.27 1.41	0.07 0.09 0.11
RF4440D-13A	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.87 2.03 2.21	1.13 1.27 1.41	0.07 0.09 0.11
RVZDC-6627-PF-48	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	3.79 4.04 4.30	2.51 2.73 2.95	0.03 0.06 0.10
***** ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	3.14 3.45 3.77	2.59 2.88 3.19	0.11 0.16 0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	3.14 3.45 3.77	2.59 2.88 3.19	0.11 0.16 0.23
ERICSSON AIR 21 B2A	C	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
B4P w/ Mount Pipe			0.00 0.00			1/2" Ice 3.77	2.88 3.19	0.16 0.23
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 3.77	3.14 2.88 3.19	0.11 0.16 0.22
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 3.77	3.14 2.88 3.19	0.11 0.16 0.22
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 3.77	3.14 2.88 3.19	0.11 0.16 0.22
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 0.51	0.35 0.23 0.30	0.01 0.01 0.02
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 0.51	0.35 0.23 0.30	0.01 0.01 0.02
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 0.51	0.35 0.23 0.30	0.01 0.01 0.02
Platform Mount [LP 1201-1]	C	None		0.0000	129.00	No Ice 1/2" Ice 25.87	18.38 22.11 25.87	2.10 2.65 3.26
***						1" Ice		
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 16.23	6.87 7.55 8.25	0.18 0.31 0.45
RADIO 4449 B71 B85A_T- MOBILE	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T- MOBILE	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T- MOBILE	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 2.33	1.59 1.75 1.92	0.07 0.09 0.12
*****						1" Ice		
RA21.7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 5.01	2.46 2.87 3.29	0.06 0.11 0.17
RA21.7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 5.01	2.46 2.87 3.29	0.06 0.11 0.17
						1" Ice		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
RA21.7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice	4.14	2.46	0.06
			0.00			1/2"	4.57	2.87	0.11
			2.00			Ice	5.01	3.29	0.17
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.00	0.0000	116.00	No Ice	15.89	7.89	0.14
			0.00			1/2"	16.81	8.74	0.25
			2.00			Ice	17.76	9.60	0.38
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.00	0.0000	116.00	No Ice	15.89	7.89	0.14
			0.00			1/2"	16.81	8.74	0.25
			2.00			Ice	17.76	9.60	0.38
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice	15.89	7.89	0.14
			0.00			1/2"	16.81	8.74	0.25
			2.00			Ice	17.76	9.60	0.38
OPA65R-BU8D w/ Mount Pipe	A	From Leg	4.00	0.0000	116.00	No Ice	17.46	8.58	0.11
			0.00			1/2"	18.46	9.49	0.22
			2.00			Ice	19.48	10.42	0.35
OPA65R-BU8D w/ Mount Pipe	B	From Leg	4.00	0.0000	116.00	No Ice	17.46	8.58	0.11
			0.00			1/2"	18.46	9.49	0.22
			2.00			Ice	19.48	10.42	0.35
OPA65R-BU8D w/ Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice	17.46	8.58	0.11
			0.00			1/2"	18.46	9.49	0.22
			2.00			Ice	19.48	10.42	0.35
RRUS 4449 B5/B12	A	From Leg	4.00	0.0000	116.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	B	From Leg	4.00	0.0000	116.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	C	From Leg	4.00	0.0000	116.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
RRUS 4478 B14	A	From Leg	4.00	0.0000	116.00	No Ice	1.84	1.06	0.06
			0.00			1/2"	2.01	1.20	0.08
			2.00			Ice	2.19	1.34	0.09
RRUS 4478 B14	B	From Leg	4.00	0.0000	116.00	No Ice	1.84	1.06	0.06
			0.00			1/2"	2.01	1.20	0.08
			2.00			Ice	2.19	1.34	0.09
RRUS 4478 B14	C	From Leg	4.00	0.0000	116.00	No Ice	1.84	1.06	0.06
			0.00			1/2"	2.01	1.20	0.08
			2.00			Ice	2.19	1.34	0.09
RRUS 8843 B2/B66A	A	From Leg	4.00	0.0000	116.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			2.00			Ice	1.97	1.65	0.11
RRUS 8843 B2/B66A	B	From Leg	4.00	0.0000	116.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			2.00			Ice	1.97	1.65	0.11
RRUS 8843 B2/B66A	C	From Leg	4.00	0.0000	116.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			2.00			Ice	1.97	1.65	0.11
(2) LGP21401	A	From Leg	4.00	0.0000	116.00	No Ice	1.10	0.21	0.01

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
			0.00			1/2"	1.24	0.27	0.02
			2.00			Ice	1.38	0.35	0.03
(2) LGP21401	B	From Leg	4.00		0.0000	116.00	1.10	0.21	0.01
			0.00			No Ice	1.24	0.27	0.02
			2.00			Ice	1.38	0.35	0.03
(2) LGP21401	C	From Leg	4.00		0.0000	116.00	1.10	0.21	0.01
			0.00			No Ice	1.24	0.27	0.02
			2.00			Ice	1.38	0.35	0.03
DC6-48-60-18-8F	A	From Leg	4.00		0.0000	116.00	0.92	0.92	0.02
			0.00			No Ice	1.46	1.46	0.04
			2.00			Ice	1.64	1.64	0.06
DC6-48-60-18-8F	B	From Leg	4.00		0.0000	116.00	0.92	0.92	0.02
			0.00			No Ice	1.46	1.46	0.04
			2.00			Ice	1.64	1.64	0.06
6' x 2" Mount Pipe	A	From Leg	4.00		0.0000	116.00	1.43	1.43	0.02
			0.00			No Ice	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
6' x 2" Mount Pipe	B	From Leg	4.00		0.0000	116.00	1.43	1.43	0.02
			0.00			No Ice	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
6' x 2" Mount Pipe	C	From Leg	4.00		0.0000	116.00	1.43	1.43	0.02
			0.00			No Ice	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
Platform Mount [LP 303-1_HR-1]	C	None			0.0000	116.00	17.09	17.09	1.50
						No Ice	21.47	21.47	1.88
						Ice	25.72	25.72	2.35
						1" Ice			

MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00		0.0000	105.00	8.01	4.23	0.11
			0.00			No Ice	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00		0.0000	105.00	8.01	4.23	0.11
			0.00			No Ice	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00		0.0000	105.00	8.01	4.23	0.11
			0.00			No Ice	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
TA08025-B604	A	From Leg	4.00		0.0000	105.00	1.96	0.98	0.06
			0.00			No Ice	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
TA08025-B604	B	From Leg	4.00		0.0000	105.00	1.96	0.98	0.06
			0.00			No Ice	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
TA08025-B604	C	From Leg	4.00		0.0000	105.00	1.96	0.98	0.06
			0.00			No Ice	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
TA08025-B605	A	From Leg	4.00		0.0000	105.00	1.96	1.13	0.08
			0.00			No Ice	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
TA08025-B605	B	From Leg	4.00		0.0000	105.00	1.96	1.13	0.08
						No Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			0.00			1/2"	2.14	0.09
			0.00			Ice	2.32	0.11
TA08025-B605	C	From Leg	4.00	0.0000	105.00	1" Ice	1.96	0.08
			0.00			No Ice	2.14	0.09
			0.00			Ice	2.32	0.11
			0.00			1" Ice		
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	105.00	No Ice	2.01	0.02
			0.00			1/2"	2.19	0.04
			0.00			Ice	2.37	0.06
			0.00			1" Ice		
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.0000	105.00	No Ice	1.90	0.03
			0.00			1/2"	2.73	0.04
			0.00			Ice	3.40	0.06
			0.00			1" Ice		
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.0000	105.00	No Ice	1.90	0.03
			0.00			1/2"	2.73	0.04
			0.00			Ice	3.40	0.06
			0.00			1" Ice		
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.0000	105.00	No Ice	1.90	0.03
			0.00			1/2"	2.73	0.04
			0.00			Ice	3.40	0.06
			0.00			1" Ice		
Commscope MC-PK8-DSH	C	None		0.0000	105.00	No Ice	34.24	1.75
						1/2"	62.95	2.10
						Ice	91.66	2.45
						1" Ice		

KS24019-L112A	C	From Leg	3.00	0.0000	50.00	No Ice	0.14	0.01
			0.00			1/2"	0.20	0.01
			1.00			Ice	0.26	0.01
			0.00			1" Ice		
Side Arm Mount [SO 701-1]	C	From Leg	1.50	0.0000	50.00	No Ice	0.85	0.07
			0.00			1/2"	1.14	0.08
			0.00			Ice	1.43	0.09
			0.00			1" Ice		

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice

Comb. No.	Description
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	147 - 142	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-7.71	-0.00	0.01
			Max. Mx	20	-3.88	42.10	-0.01
			Max. My	2	-3.88	-0.01	42.10
			Max. Vy	20	-6.95	42.10	-0.01
			Max. Vx	2	-6.95	-0.01	42.10
			Max. Torque	14			0.01
L2	142 - 137	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.09	-0.00	0.02
			Max. Mx	20	-4.13	77.62	-0.02
			Max. My	2	-4.13	-0.02	77.63
			Max. Vy	20	-7.27	77.62	-0.02
			Max. Vx	2	-7.27	-0.02	77.63
			Max. Torque	14			0.01
L3	137 - 132	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.08	0.56	0.20
			Max. Mx	20	-7.29	141.13	-0.76
			Max. My	2	-7.30	-0.48	140.38
			Max. Vy	20	-12.50	141.13	-0.76
			Max. Vx	2	-12.43	-0.48	140.38
			Max. Torque	16			-0.53
L4	132 - 127	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.65	0.59	0.24
			Max. Mx	20	-11.63	212.10	-1.35
			Max. My	2	-11.64	-1.07	210.96
			Max. Vy	20	-16.65	212.10	-1.35
			Max. Vx	2	-16.57	-1.07	210.96
			Max. Torque	16			-0.53

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	127 - 120.37	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.09	0.65	0.28
			Max. Mx	20	-12.02	268.69	-1.75
			Max. My	2	-12.02	-1.45	267.28
			Max. Vy	20	-16.84	268.69	-1.75
			Max. Vx	2	-16.77	-1.45	267.28
			Max. Torque	16			-0.53
L6	120.37 - 118.62	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.10	0.73	0.34
			Max. Mx	20	-12.80	353.82	-2.33
			Max. My	2	-12.80	-2.02	352.01
			Max. Vy	20	-17.20	353.82	-2.33
			Max. Vx	2	-17.13	-2.02	352.01
			Max. Torque	16			-0.53
L7	118.62 - 113.62	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.87	0.56	0.56
			Max. Mx	20	-16.86	462.94	-2.86
			Max. My	2	-16.86	-2.67	460.90
			Max. Vy	20	-23.28	462.94	-2.86
			Max. Vx	2	-23.21	-2.67	460.90
			Max. Torque	16			-0.53
L8	113.62 - 113.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.97	0.57	0.57
			Max. Mx	20	-16.96	475.51	-2.93
			Max. My	2	-16.96	-2.73	473.44
			Max. Vy	20	-23.30	475.51	-2.93
			Max. Vx	2	-23.23	-2.73	473.44
			Max. Torque	6			0.47
L9	113.08 - 112.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.02	0.57	0.57
			Max. Mx	20	-17.01	481.34	-2.96
			Max. My	2	-17.01	-2.76	479.25
			Max. Vy	20	-23.31	481.34	-2.96
			Max. Vx	2	-23.24	-2.76	479.25
			Max. Torque	6			0.47
L10	112.83 - 112.16	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.14	0.58	0.58
			Max. Mx	20	-17.12	496.97	-3.04
			Max. My	2	-17.12	-2.84	494.83
			Max. Vy	20	-23.35	496.97	-3.04
			Max. Vx	2	-23.28	-2.84	494.83
			Max. Torque	6			0.47
L11	112.16 - 111.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.21	0.59	0.58
			Max. Mx	20	-17.18	502.81	-3.06
			Max. My	2	-17.18	-2.87	500.65
			Max. Vy	20	-23.36	502.81	-3.06
			Max. Vx	2	-23.30	-2.87	500.65
			Max. Torque	6			0.47
L12	111.91 - 110.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.59	0.61	0.60
			Max. Mx	20	-17.47	535.83	-3.23
			Max. My	2	-17.47	-3.03	533.59
			Max. Vy	20	-23.48	535.83	-3.23
			Max. Vx	2	-23.43	-3.03	533.59
			Max. Torque	6			0.47
L13	110.5 - 110.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.68	0.62	0.61
			Max. Mx	20	-17.56	541.70	-3.26
			Max. My	2	-17.55	-3.06	539.45
			Max. Vy	20	-23.49	541.70	-3.26

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	110.25 - 105.25	Pole	Max. Vx	2	-23.44	-3.06	539.45
			Max. Torque	6			0.47
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.35	0.71	0.68
			Max. Mx	20	-18.88	660.22	-3.84
			Max. My	2	-18.88	-3.62	657.88
			Max. Vy	20	-23.91	660.22	-3.84
L15	105.25 - 105	Pole	Max. Vx	2	-23.93	-3.62	657.88
			Max. Torque	6			0.47
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.43	0.71	0.68
			Max. Mx	20	-18.96	666.20	-3.87
			Max. My	2	-18.95	-3.65	663.87
			Max. Vy	20	-23.94	666.20	-3.87
L16	105 - 104.75	Pole	Max. Vx	2	-23.96	-3.65	663.87
			Max. Torque	6			0.47
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.40	0.71	1.00
			Max. Mx	20	-21.99	673.10	-3.80
			Max. My	2	-21.98	-3.68	670.90
			Max. Vy	20	-27.62	673.10	-3.80
L17	104.75 - 103.5	Pole	Max. Vx	2	-27.68	-3.68	670.90
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.93	0.73	1.02
			Max. Mx	20	-22.40	707.75	-3.94
			Max. My	2	-22.39	-3.82	705.62
			Max. Vy	20	-27.81	707.75	-3.94
L18	103.5 - 103.25	Pole	Max. Vx	2	-27.86	-3.82	705.62
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.02	0.73	1.02
			Max. Mx	20	-22.48	714.70	-3.97
			Max. My	2	-22.47	-3.85	712.59
			Max. Vy	20	-27.84	714.70	-3.97
L19	103.25 - 98.25	Pole	Max. Vx	2	-27.89	-3.85	712.59
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.80	0.79	1.09
			Max. Mx	20	-23.92	854.92	-4.55
			Max. My	2	-23.91	-4.44	853.20
			Max. Vy	20	-28.25	854.92	-4.55
L20	98.25 - 94.167	Pole	Max. Vx	2	-28.35	-4.44	853.20
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.28	0.83	1.16
			Max. Mx	20	-25.13	970.92	-5.02
			Max. My	2	-25.11	-4.91	969.68
			Max. Vy	20	-28.58	970.92	-5.02
L21	94.167 - 93.917	Pole	Max. Vx	2	-28.71	-4.91	969.68
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.38	0.84	1.16
			Max. Mx	20	-25.22	978.07	-5.05
			Max. My	2	-25.20	-4.94	976.87
			Max. Vy	20	-28.60	978.07	-5.05
L22	93.917 - 91.5	Pole	Max. Vx	2	-28.73	-4.94	976.87
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.37	0.87	1.21
			Max. Mx	20	-26.02	1047.44	-5.33
Max. My	2	-26.00	-5.22	1046.60			

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	91.5 - 91.25	Pole	Max. Vy	20	-28.81	1047.44	-5.33
			Max. Vx	2	-28.97	-5.22	1046.60
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.48	0.87	1.21
			Max. Mx	20	-26.11	1054.65	-5.36
			Max. My	2	-26.09	-5.25	1053.84
			Max. Vy	20	-28.82	1054.65	-5.36
L24	91.25 - 90.58	Pole	Max. Vx	2	-28.99	-5.25	1053.84
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.75	0.88	1.23
			Max. Mx	20	-26.33	1073.98	-5.44
			Max. My	2	-26.31	-5.33	1073.28
			Max. Vy	20	-28.88	1073.98	-5.44
			Max. Vx	2	-29.05	-5.33	1073.28
L25	90.58 - 90.33	Pole	Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.85	0.88	1.24
			Max. Mx	20	-26.41	1081.20	-5.47
			Max. My	2	-26.39	-5.36	1080.55
			Max. Vy	20	-28.90	1081.20	-5.47
			Max. Vx	2	-29.07	-5.36	1080.55
			Max. Torque	6			0.68
L26	90.33 - 84.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.35	0.89	1.28
			Max. Mx	20	-26.81	1117.40	-5.61
			Max. My	2	-26.79	-5.50	1116.96
			Max. Vy	20	-29.01	1117.40	-5.61
			Max. Vx	2	-29.19	-5.50	1116.96
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
L27	84.91 - 83.91	Pole	Max. Compression	26	-48.76	0.96	1.43
			Max. Mx	20	-29.63	1268.86	-6.20
			Max. My	2	-29.61	-6.10	1269.46
			Max. Vy	20	-29.57	1268.86	-6.20
			Max. Vx	2	-29.78	-6.10	1269.46
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.92	1.02	1.58
L28	83.91 - 78.91	Pole	Max. Mx	20	-31.42	1417.69	-6.78
			Max. My	2	-31.40	-6.68	1419.46
			Max. Vy	20	-29.98	1417.69	-6.78
			Max. Vx	2	-30.23	-6.68	1419.46
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.12	1.08	1.73
			Max. Mx	20	-33.24	1568.56	-7.35
L29	78.91 - 73.91	Pole	Max. My	2	-33.22	-7.26	1571.63
			Max. Vy	20	-30.38	1568.56	-7.35
			Max. Vx	2	-30.66	-7.26	1571.63
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.33	1.14	1.89
			Max. Mx	20	-35.09	1721.42	-7.93
			Max. My	2	-35.07	-7.83	1725.92
L30	73.91 - 68.91	Pole	Max. Vy	20	-30.78	1721.42	-7.93
			Max. Vx	2	-31.07	-7.83	1725.92
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.33	1.14	1.89
			Max. Mx	20	-35.09	1721.42	-7.93
			Max. My	2	-35.07	-7.83	1725.92
			Max. Vy	20	-30.78	1721.42	-7.93
L31	68.91 - 65.5	Pole	Max. Vx	2	-31.07	-7.83	1725.92
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.87	1.19	2.00
Max. Mx	20	-36.37	1826.80	-8.31			

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L32	65.5 - 65.25	Pole	Max. My	2	-36.34	-8.22	1832.32
			Max. Vy	8	31.05	-1825.37	9.63
			Max. Vx	2	-31.35	-8.22	1832.32
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.00	1.19	2.00
			Max. Mx	20	-36.48	1834.56	-8.34
			Max. My	2	-36.46	-8.25	1840.16
			Max. Vy	20	-31.05	1834.56	-8.34
			Max. Vx	2	-31.36	-8.25	1840.16
L33	65.25 - 64.5	Pole	Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.37	1.20	2.03
			Max. Mx	20	-36.78	1857.88	-8.43
			Max. My	2	-36.76	-8.33	1863.70
			Max. Vy	8	31.12	-1856.43	9.76
			Max. Vx	2	-31.43	-8.33	1863.70
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.49	1.20	2.04
L34	64.5 - 64.25	Pole	Max. Mx	20	-36.89	1865.66	-8.45
			Max. My	2	-36.87	-8.36	1871.56
			Max. Vy	8	31.14	-1864.21	9.80
			Max. Vx	2	-31.45	-8.36	1871.56
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.87	1.28	2.17
			Max. Mx	20	-38.86	2022.33	-9.02
			Max. My	2	-38.84	-8.93	2029.81
			Max. Vy	8	31.54	-2020.79	10.46
L35	64.25 - 59.25	Pole	Max. Vx	2	-31.86	-8.93	2029.81
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.20	1.29	2.19
			Max. Mx	20	-39.14	2043.38	-9.10
			Max. My	2	-39.11	-9.01	2051.07
			Max. Vy	8	31.58	-2041.83	10.55
			Max. Vx	2	-31.91	-9.01	2051.07
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
L36	59.25 - 58.583	Pole	Max. Compression	26	-60.32	1.29	2.19
			Max. Mx	20	-39.25	2051.28	-9.12
			Max. My	2	-39.23	-9.04	2059.05
			Max. Vy	8	31.60	-2049.72	10.58
			Max. Vx	2	-31.92	-9.04	2059.05
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.86	1.31	2.22
			Max. Mx	20	-39.69	2085.55	-9.25
			Max. My	2	-39.67	-9.16	2093.67
L37	58.583 - 58.333	Pole	Max. Vy	8	31.70	-2083.98	10.73
			Max. Vx	2	-32.02	-9.16	2093.67
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.99	1.31	2.23
			Max. Mx	20	-39.81	2093.47	-9.27
			Max. My	2	-39.79	-9.19	2101.68
			Max. Vy	8	31.71	-2091.90	10.76
			Max. Vx	2	-32.03	-9.19	2101.68
			Max. Torque	6			0.68
L38	58.333 - 57.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.52	1.40	2.36
			Max. Mx	20	-41.92	2253.00	-9.83
			Max. My	2	-41.90	-9.75	2262.86
			Max. Vy	8	32.11	-2251.33	11.43
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.52	1.40	2.36
			Max. Mx	20	-41.92	2253.00	-9.83
			Max. My	2	-41.90	-9.75	2262.86
L39	57.25 - 57	Pole	Max. Vy	8	32.11	-2251.33	11.43
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.52	1.40	2.36
			Max. Mx	20	-41.92	2253.00	-9.83
			Max. My	2	-41.90	-9.75	2262.86
			Max. Vy	8	32.11	-2251.33	11.43
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.52	1.40	2.36
L40	57 - 52	Pole	Max. Mx	20	-41.92	2253.00	-9.83
			Max. My	2	-41.90	-9.75	2262.86
			Max. Vy	8	32.11	-2251.33	11.43
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.52	1.40	2.36
			Max. Mx	20	-41.92	2253.00	-9.83
			Max. My	2	-41.90	-9.75	2262.86
			Max. Vy	8	32.11	-2251.33	11.43
			Max. Torque	6			0.68

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L41	52 - 44.41	Pole	Max. Vx	2	-32.44	-9.75	2262.86
			Max. Torque	6			0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.87	1.74	2.24
			Max. Mx	20	-43.04	2331.16	-10.22
			Max. My	2	-43.02	-9.80	2341.48
			Max. Vy	8	32.35	-2328.99	11.62
L42	44.41 - 43.41	Pole	Max. Vx	2	-32.71	-9.80	2341.48
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.25	1.85	2.39
			Max. Mx	20	-47.63	2532.71	-10.82
			Max. My	2	-47.61	-10.39	2545.23
			Max. Vy	8	32.97	-2530.43	12.34
L43	43.41 - 38.41	Pole	Max. Vx	2	-33.33	-10.39	2545.23
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.98	1.93	2.51
			Max. Mx	20	-49.95	2698.42	-11.29
			Max. My	2	-49.94	-10.87	2712.73
			Max. Vy	8	33.33	-2696.04	12.93
L44	38.41 - 34.5	Pole	Max. Vx	2	-33.69	-10.87	2712.73
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.17	2.01	2.62
			Max. Mx	20	-51.79	2829.23	-11.66
			Max. My	2	-51.77	-11.24	2844.94
			Max. Vy	8	33.61	-2826.78	13.38
L45	34.5 - 34.25	Pole	Max. Vx	2	-33.97	-11.24	2844.94
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.33	2.01	2.63
			Max. Mx	20	-51.94	2837.63	-11.69
			Max. My	2	-51.93	-11.27	2853.43
			Max. Vy	8	33.61	-2835.17	13.41
L46	34.25 - 33.5	Pole	Max. Vx	2	-33.97	-11.27	2853.43
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.83	2.03	2.66
			Max. Mx	20	-52.36	2862.85	-11.76
			Max. My	2	-52.34	-11.34	2878.93
			Max. Vy	8	33.67	-2860.38	13.50
L47	33.5 - 33.25	Pole	Max. Vx	2	-34.03	-11.34	2878.93
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.98	2.03	2.66
			Max. Mx	20	-52.48	2871.27	-11.78
			Max. My	2	-52.47	-11.36	2887.44
			Max. Vy	8	33.68	-2868.80	13.53
L48	33.25 - 28.483	Pole	Max. Vx	2	-34.04	-11.36	2887.44
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.88	2.09	2.81
			Max. Mx	20	-54.93	3032.62	-12.23
			Max. My	2	-54.92	-11.81	3050.50
			Max. Vy	8	34.02	-3030.05	14.08
L49	28.483 - 28.233	Pole	Max. Vx	2	-34.38	-11.81	3050.50
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.04	2.09	2.82
			Max. Mx	20	-55.07	3041.12	-12.25
			Max. My	2	-55.06	-11.83	3059.10
			Max. Vy	8	34.02	-3038.55	14.11
			Max. Vx	2	-34.38	-11.83	3059.10
			Max. Torque	16			-0.68

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L50	28.233 - 27.483	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.50	2.09	2.84
			Max. Mx	20	-55.46	3066.66	-12.32
			Max. My	2	-55.45	-11.90	3084.91
			Max. Vy	8	34.08	-3064.07	14.20
			Max. Vx	2	-34.44	-11.90	3084.91
L51	27.483 - 27.233	Pole	Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.65	2.09	2.85
			Max. Mx	20	-55.60	3075.18	-12.35
			Max. My	2	-55.59	-11.93	3093.52
			Max. Vy	8	34.09	-3072.58	14.23
L52	27.233 - 22.233	Pole	Max. Vx	2	-34.45	-11.93	3093.52
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.72	2.14	3.01
			Max. Mx	20	-58.20	3246.43	-12.81
			Max. My	2	-58.19	-12.39	3266.57
L53	22.233 - 17.233	Pole	Max. Vy	8	34.42	-3243.74	14.81
			Max. Vx	2	-34.78	-12.39	3266.57
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.79	2.20	3.17
			Max. Mx	20	-60.84	3419.20	-13.27
L54	17.233 - 12.233	Pole	Max. My	2	-60.83	-12.86	3441.14
			Max. Vy	8	34.71	-3416.40	15.38
			Max. Vx	2	-35.07	-12.86	3441.14
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.88	2.26	3.34
L55	12.233 - 7.233	Pole	Max. Mx	20	-63.51	3593.35	-13.72
			Max. My	2	-63.51	-13.31	3617.08
			Max. Vy	8	34.97	-3590.44	15.95
			Max. Vx	2	-35.33	-13.31	3617.08
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
L56	7.233 - 6.917	Pole	Max. Compression	26	-92.00	2.33	3.47
			Max. Mx	20	-66.21	3768.79	-14.17
			Max. My	2	-66.20	-13.77	3794.31
			Max. Vy	8	35.23	-3765.77	16.52
			Max. Vx	2	-35.58	-13.77	3794.31
			Max. Torque	16			-0.68
L57	6.917 - 6.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.20	2.33	3.47
			Max. Mx	20	-66.39	3779.92	-14.20
			Max. My	2	-66.38	-13.80	3805.55
			Max. Vy	8	35.23	-3776.90	16.56
			Max. Vx	2	-35.58	-13.80	3805.55
L58	6.667 - 1.667	Pole	Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.35	2.34	3.47
			Max. Mx	20	-66.53	3788.73	-14.22
			Max. My	2	-66.52	-13.82	3814.45
			Max. Vy	8	35.24	-3785.70	16.59
L59	6.667 - 1.667	Pole	Max. Vx	2	-35.59	-13.82	3814.45
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.29	2.42	3.55
			Max. Mx	20	-69.12	3965.52	-14.68
			Max. My	2	-69.12	-14.29	3993.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L59	1.667 - 0	Pole	Max. Vy	8	35.50	-3962.43	17.14
			Max. Vx	2	-35.85	-14.29	3993.03
			Max. Torque	16			-0.68
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.18	2.41	3.55
			Max. Mx	20	-69.94	4024.72	-14.84
			Max. My	2	-69.94	-14.46	4052.83
			Max. Vy	8	35.60	-4021.64	17.31
			Max. Vx	2	-35.95	-14.46	4052.83
			Max. Torque	16			-0.68

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	96.18	8.39	-0.01
	Max. H _x	20	69.96	35.55	-0.10
	Max. H _z	2	69.96	-0.10	35.91
	Max. M _x	2	4052.83	-0.10	35.91
	Max. M _z	8	4021.64	-35.55	0.10
	Max. Torsion	6	0.68	-30.84	17.85
	Min. Vert	13	52.47	-17.69	-30.72
	Min. H _x	8	69.96	-35.55	0.10
	Min. H _z	14	69.96	0.10	-35.91
	Min. M _x	14	-4050.21	0.10	-35.91
	Min. M _z	20	-4024.72	35.55	-0.10
	Min. Torsion	16	-0.68	18.73	-32.31

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	58.30	0.00	0.00	-0.98	1.28	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	69.96	0.10	-35.91	-4052.83	-14.46	-0.45
0.9 Dead+1.0 Wind 0 deg - No Ice	52.47	0.10	-35.91	-4000.44	-14.64	-0.45
1.2 Dead+1.0 Wind 30 deg - No Ice	69.96	18.73	-32.31	-3574.61	-2074.08	-0.65
0.9 Dead+1.0 Wind 30 deg - No Ice	52.47	18.73	-32.31	-3528.62	-2047.94	-0.64
1.2 Dead+1.0 Wind 60 deg - No Ice	69.96	30.84	-17.85	-2023.36	-3490.49	-0.68
0.9 Dead+1.0 Wind 60 deg - No Ice	52.47	30.84	-17.85	-1996.97	-3445.90	-0.67
1.2 Dead+1.0 Wind 90 deg - No Ice	69.96	35.55	-0.10	-17.31	-4021.64	-0.53
0.9 Dead+1.0 Wind 90 deg - No Ice	52.47	35.55	-0.10	-16.75	-3970.23	-0.53
1.2 Dead+1.0 Wind 120 deg - No Ice	69.96	31.18	17.93	2014.05	-3510.81	-0.22
0.9 Dead+1.0 Wind 120 deg - No Ice	52.47	31.18	17.93	1988.53	-3466.13	-0.22
1.2 Dead+1.0 Wind 150 deg - No Ice	69.96	17.69	30.72	3469.13	-1996.05	0.16
0.9 Dead+1.0 Wind 150 deg - No Ice	52.47	17.69	30.72	3424.78	-1970.76	0.15
1.2 Dead+1.0 Wind 180 deg - No Ice	69.96	-0.10	35.91	4050.21	17.70	0.49

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
0.9 Dead+1.0 Wind 180 deg - No Ice	52.47	-0.10	35.91	3998.47	17.03	0.49
1.2 Dead+1.0 Wind 210 deg - No Ice	69.96	-18.73	32.31	3572.27	2077.39	0.68
0.9 Dead+1.0 Wind 210 deg - No Ice	52.47	-18.73	32.31	3526.92	2050.41	0.67
1.2 Dead+1.0 Wind 240 deg - No Ice	69.96	-30.84	17.85	2020.95	3493.83	0.67
0.9 Dead+1.0 Wind 240 deg - No Ice	52.47	-30.84	17.85	1995.20	3448.40	0.67
1.2 Dead+1.0 Wind 270 deg - No Ice	69.96	-35.55	0.10	14.84	4024.72	0.49
0.9 Dead+1.0 Wind 270 deg - No Ice	52.47	-35.55	0.10	14.92	3972.46	0.49
1.2 Dead+1.0 Wind 300 deg - No Ice	69.96	-31.17	-17.93	-2016.46	3513.93	0.19
0.9 Dead+1.0 Wind 300 deg - No Ice	52.47	-31.17	-17.93	-1990.30	3468.41	0.19
1.2 Dead+1.0 Wind 330 deg - No Ice	69.96	-17.69	-30.72	-3471.75	1999.36	-0.15
0.9 Dead+1.0 Wind 330 deg - No Ice	52.47	-17.69	-30.72	-3426.75	1973.23	-0.15
1.2 Dead+1.0 Ice+1.0 Temp	96.18	-0.00	-0.00	-3.55	2.41	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	96.18	0.01	-8.39	-943.47	-0.02	-0.10
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	96.18	4.21	-7.28	-818.92	-470.01	-0.14
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	96.18	7.27	-4.21	-475.87	-813.31	-0.14
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	96.18	8.39	-0.01	-6.38	-938.05	-0.10
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	96.18	7.26	4.18	463.81	-810.73	-0.04
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	96.18	4.18	7.26	808.69	-465.48	0.04
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	96.18	-0.01	8.39	935.87	5.17	0.11
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	96.18	-4.21	7.28	811.37	475.17	0.14
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	96.18	-7.27	4.21	468.30	818.47	0.14
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	96.18	-8.39	0.01	-1.19	943.17	0.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	96.18	-7.26	-4.18	-471.37	815.86	0.03
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	96.18	-4.18	-7.26	-816.28	470.64	-0.04
Dead+Wind 0 deg - Service	58.30	0.02	-7.67	-860.41	-2.07	-0.10
Dead+Wind 30 deg - Service	58.30	4.00	-6.90	-759.03	-438.96	-0.14
Dead+Wind 60 deg - Service	58.30	6.59	-3.81	-429.93	-739.36	-0.15
Dead+Wind 90 deg - Service	58.30	7.60	-0.02	-4.43	-852.02	-0.11
Dead+Wind 120 deg - Service	58.30	6.66	3.83	426.44	-743.68	-0.05
Dead+Wind 150 deg - Service	58.30	3.78	6.56	735.05	-422.37	0.03
Dead+Wind 180 deg - Service	58.30	-0.02	7.67	858.33	4.75	0.10
Dead+Wind 210 deg - Service	58.30	-4.00	6.90	757.00	441.66	0.14
Dead+Wind 240 deg - Service	58.30	-6.59	3.81	427.89	742.06	0.15
Dead+Wind 270 deg - Service	58.30	-7.59	0.02	2.38	854.66	0.11
Dead+Wind 300 deg - Service	58.30	-6.66	-3.83	-428.48	746.34	0.05
Dead+Wind 330 deg - Service	58.30	-3.78	-6.56	-737.13	425.07	-0.03

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	-58.30	0.00	0.00	58.30	0.00	0.000%
2	0.10	-69.96	-35.91	-0.10	69.96	35.91	0.000%
3	0.10	-52.47	-35.91	-0.10	52.47	35.91	0.000%
4	18.73	-69.96	-32.31	-18.73	69.96	32.31	0.000%
5	18.73	-52.47	-32.31	-18.73	52.47	32.31	0.000%
6	30.84	-69.96	-17.85	-30.84	69.96	17.85	0.000%
7	30.84	-52.47	-17.85	-30.84	52.47	17.85	0.000%
8	35.55	-69.96	-0.10	-35.55	69.96	0.10	0.000%
9	35.55	-52.47	-0.10	-35.55	52.47	0.10	0.000%
10	31.18	-69.96	17.93	-31.18	69.96	-17.93	0.000%
11	31.18	-52.47	17.93	-31.18	52.47	-17.93	0.000%
12	17.69	-69.96	30.72	-17.69	69.96	-30.72	0.000%
13	17.69	-52.47	30.72	-17.69	52.47	-30.72	0.000%
14	-0.10	-69.96	35.91	0.10	69.96	-35.91	0.000%
15	-0.10	-52.47	35.91	0.10	52.47	-35.91	0.000%
16	-18.73	-69.96	32.31	18.73	69.96	-32.31	0.000%
17	-18.73	-52.47	32.31	18.73	52.47	-32.31	0.000%
18	-30.84	-69.96	17.85	30.84	69.96	-17.85	0.000%
19	-30.84	-52.47	17.85	30.84	52.47	-17.85	0.000%
20	-35.55	-69.96	0.10	35.55	69.96	-0.10	0.000%
21	-35.55	-52.47	0.10	35.55	52.47	-0.10	0.000%
22	-31.17	-69.96	-17.93	31.17	69.96	17.93	0.000%
23	-31.17	-52.47	-17.93	31.17	52.47	17.93	0.000%
24	-17.69	-69.96	-30.72	17.69	69.96	30.72	0.000%
25	-17.69	-52.47	-30.72	17.69	52.47	30.72	0.000%
26	0.00	-96.18	0.00	0.00	96.18	0.00	0.000%
27	0.01	-96.18	-8.39	-0.01	96.18	8.39	0.000%
28	4.21	-96.18	-7.28	-4.21	96.18	7.28	0.000%
29	7.27	-96.18	-4.21	-7.27	96.18	4.21	0.000%
30	8.39	-96.18	-0.01	-8.39	96.18	0.01	0.000%
31	7.26	-96.18	4.18	-7.26	96.18	-4.18	0.000%
32	4.18	-96.18	7.26	-4.18	96.18	-7.26	0.000%
33	-0.01	-96.18	8.39	0.01	96.18	-8.39	0.000%
34	-4.21	-96.18	7.28	4.21	96.18	-7.28	0.000%
35	-7.27	-96.18	4.21	7.27	96.18	-4.21	0.000%
36	-8.39	-96.18	0.01	8.39	96.18	-0.01	0.000%
37	-7.26	-96.18	-4.18	7.26	96.18	4.18	0.000%
38	-4.18	-96.18	-7.26	4.18	96.18	7.26	0.000%
39	0.02	-58.30	-7.67	-0.02	58.30	7.67	0.000%
40	4.00	-58.30	-6.90	-4.00	58.30	6.90	0.000%
41	6.59	-58.30	-3.81	-6.59	58.30	3.81	0.000%
42	7.60	-58.30	-0.02	-7.60	58.30	0.02	0.000%
43	6.66	-58.30	3.83	-6.66	58.30	-3.83	0.000%
44	3.78	-58.30	6.56	-3.78	58.30	-6.56	0.000%
45	-0.02	-58.30	7.67	0.02	58.30	-7.67	0.000%
46	-4.00	-58.30	6.90	4.00	58.30	-6.90	0.000%
47	-6.59	-58.30	3.81	6.59	58.30	-3.81	0.000%
48	-7.59	-58.30	0.02	7.59	58.30	-0.02	0.000%
49	-6.66	-58.30	-3.83	6.66	58.30	3.83	0.000%
50	-3.78	-58.30	-6.56	3.78	58.30	6.56	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00032148
3	Yes	5	0.00000001	0.00012077
4	Yes	7	0.00000001	0.00010826
5	Yes	6	0.00000001	0.00062050

6	Yes	7	0.00000001	0.00010772
7	Yes	6	0.00000001	0.00062009
8	Yes	5	0.00000001	0.00090777
9	Yes	5	0.00000001	0.00041669
10	Yes	7	0.00000001	0.00010541
11	Yes	6	0.00000001	0.00060619
12	Yes	7	0.00000001	0.00010475
13	Yes	6	0.00000001	0.00060368
14	Yes	5	0.00000001	0.00073711
15	Yes	5	0.00000001	0.00032761
16	Yes	7	0.00000001	0.00011014
17	Yes	6	0.00000001	0.00063147
18	Yes	7	0.00000001	0.00010565
19	Yes	6	0.00000001	0.00060769
20	Yes	5	0.00000001	0.00031962
21	Yes	5	0.00000001	0.00011978
22	Yes	7	0.00000001	0.00010674
23	Yes	6	0.00000001	0.00061381
24	Yes	7	0.00000001	0.00010501
25	Yes	6	0.00000001	0.00060462
26	Yes	4	0.00000001	0.00022963
27	Yes	14	0.00000001	0.00000000
28	Yes	6	0.00000001	0.00076406
29	Yes	6	0.00000001	0.00076631
30	Yes	6	0.00000001	0.00063181
31	Yes	6	0.00000001	0.00075081
32	Yes	6	0.00000001	0.00075091
33	Yes	6	0.00000001	0.00063004
34	Yes	6	0.00000001	0.00076401
35	Yes	6	0.00000001	0.00076270
36	Yes	6	0.00000001	0.00063634
37	Yes	6	0.00000001	0.00076418
38	Yes	6	0.00000001	0.00076309
39	Yes	5	0.00000001	0.00005628
40	Yes	5	0.00000001	0.00038668
41	Yes	5	0.00000001	0.00039152
42	Yes	5	0.00000001	0.00006093
43	Yes	5	0.00000001	0.00036846
44	Yes	5	0.00000001	0.00036774
45	Yes	5	0.00000001	0.00005774
46	Yes	5	0.00000001	0.00040608
47	Yes	5	0.00000001	0.00037055
48	Yes	5	0.00000001	0.00005844
49	Yes	5	0.00000001	0.00038497
50	Yes	5	0.00000001	0.00037168

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147 - 142	21.938	40	1.5629	0.0017
L2	142 - 137	20.312	40	1.5413	0.0017
L3	137 - 132	18.721	40	1.4982	0.0017
L4	132 - 127	17.186	40	1.4319	0.0014
L5	127 - 120.37	15.732	40	1.3422	0.0011
L6	123.62 - 118.62	14.808	40	1.2689	0.0009
L7	118.62 - 113.62	13.510	40	1.1985	0.0008
L8	113.62 - 113.08	12.311	40	1.0880	0.0006
L9	113.08 - 112.83	12.189	40	1.0752	0.0006
L10	112.83 - 112.16	12.133	40	1.0693	0.0006
L11	112.16 - 111.91	11.984	40	1.0532	0.0006
L12	111.91 - 110.5	11.929	40	1.0502	0.0006
L13	110.5 - 110.25	11.621	40	1.0332	0.0005
L14	110.25 - 105.25	11.567	40	1.0310	0.0005
L15	105.25 - 105	10.512	40	0.9831	0.0005
L16	105 - 104.75	10.461	40	0.9806	0.0005
L17	104.75 - 103.5	10.410	40	0.9788	0.0005

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L18	103.5 - 103.25	10.155	40	0.9695	0.0005
L19	103.25 - 98.25	10.104	40	0.9671	0.0005
L20	98.25 - 94.167	9.118	40	0.9157	0.0004
L21	94.167 - 93.917	8.354	40	0.8707	0.0004
L22	93.917 - 91.5	8.308	40	0.8683	0.0004
L23	91.5 - 91.25	7.875	40	0.8445	0.0003
L24	91.25 - 90.58	7.831	40	0.8420	0.0003
L25	90.58 - 90.33	7.713	40	0.8352	0.0003
L26	90.33 - 84.91	7.669	40	0.8326	0.0003
L27	89.08 - 83.91	7.453	40	0.8192	0.0003
L28	83.91 - 78.91	6.581	40	0.7868	0.0003
L29	78.91 - 73.91	5.785	40	0.7335	0.0003
L30	73.91 - 68.91	5.046	40	0.6789	0.0002
L31	68.91 - 65.5	4.364	40	0.6238	0.0002
L32	65.5 - 65.25	3.932	40	0.5855	0.0002
L33	65.25 - 64.5	3.902	40	0.5831	0.0002
L34	64.5 - 64.25	3.810	40	0.5759	0.0002
L35	64.25 - 59.25	3.780	40	0.5732	0.0002
L36	59.25 - 58.583	3.208	40	0.5195	0.0002
L37	58.583 - 58.333	3.136	40	0.5125	0.0002
L38	58.333 - 57.25	3.109	40	0.5100	0.0002
L39	57.25 - 57	2.995	40	0.4992	0.0001
L40	57 - 52	2.969	40	0.4967	0.0001
L41	52 - 44.41	2.475	40	0.4465	0.0001
L42	49.58 - 43.41	2.255	40	0.4222	0.0001
L43	43.41 - 38.41	1.729	40	0.3873	0.0001
L44	38.41 - 34.5	1.349	40	0.3387	0.0001
L45	34.5 - 34.25	1.087	40	0.3015	0.0001
L46	34.25 - 33.5	1.071	40	0.2995	0.0001
L47	33.5 - 33.25	1.025	40	0.2934	0.0001
L48	33.25 - 28.483	1.009	40	0.2910	0.0001
L49	28.483 - 28.233	0.740	40	0.2485	0.0001
L50	28.233 - 27.483	0.727	40	0.2464	0.0001
L51	27.483 - 27.233	0.689	40	0.2397	0.0001
L52	27.233 - 22.233	0.677	40	0.2375	0.0001
L53	22.233 - 17.233	0.451	40	0.1938	0.0000
L54	17.233 - 12.233	0.271	40	0.1499	0.0000
L55	12.233 - 7.233	0.137	40	0.1065	0.0000
L56	7.233 - 6.917	0.048	40	0.0636	0.0000
L57	6.917 - 6.667	0.044	40	0.0609	0.0000
L58	6.667 - 1.667	0.041	40	0.0587	0.0000
L59	1.667 - 0	0.003	40	0.0144	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	6' x 2" Mount Pipe	40	21.938	1.5629	0.0017	8704
136.00	(2) LPA-80080/4CF w/ Mount Pipe	40	18.409	1.4866	0.0017	4930
129.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	40	16.302	1.3822	0.0012	3041
116.00	RA21.7770.00 w/ Mount Pipe	40	12.867	1.1450	0.0007	2683
105.00	MX08FRO665-21 w/ Mount Pipe	40	10.461	0.9806	0.0005	6234
50.00	KS24019-L112A	40	2.293	0.4260	0.0001	7619

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147 - 142	103.334	4	7.3753	0.0078
L2	142 - 137	95.692	4	7.2739	0.0078
L3	137 - 132	88.210	4	7.0705	0.0078
L4	132 - 127	80.989	4	6.7588	0.0065
L5	127 - 120.37	74.150	4	6.3369	0.0050
L6	123.62 - 118.62	69.799	4	5.9915	0.0042
L7	118.62 - 113.62	63.688	4	5.6583	0.0036
L8	113.62 - 113.08	58.044	4	5.1362	0.0028
L9	113.08 - 112.83	57.468	4	5.0760	0.0027
L10	112.83 - 112.16	57.204	4	5.0478	0.0027
L11	112.16 - 111.91	56.502	4	4.9718	0.0026
L12	111.91 - 110.5	56.243	4	4.9576	0.0026
L13	110.5 - 110.25	54.794	4	4.8776	0.0025
L14	110.25 - 105.25	54.539	4	4.8670	0.0025
L15	105.25 - 105	49.570	4	4.6408	0.0023
L16	105 - 104.75	49.327	4	4.6292	0.0023
L17	104.75 - 103.5	49.086	4	4.6205	0.0022
L18	103.5 - 103.25	47.884	4	4.5768	0.0022
L19	103.25 - 98.25	47.645	4	4.5654	0.0022
L20	98.25 - 94.167	42.998	4	4.3229	0.0019
L21	94.167 - 93.917	39.398	4	4.1102	0.0017
L22	93.917 - 91.5	39.183	4	4.0990	0.0017
L23	91.5 - 91.25	37.140	4	3.9866	0.0016
L24	91.25 - 90.58	36.931	4	3.9746	0.0016
L25	90.58 - 90.33	36.377	4	3.9425	0.0016
L26	90.33 - 84.91	36.171	4	3.9301	0.0016
L27	89.08 - 83.91	35.152	4	3.8669	0.0015
L28	83.91 - 78.91	31.041	4	3.7142	0.0014
L29	78.91 - 73.91	27.288	4	3.4626	0.0012
L30	73.91 - 68.91	23.800	4	3.2044	0.0011
L31	68.91 - 65.5	20.584	4	2.9444	0.0010
L32	65.5 - 65.25	18.547	4	2.7634	0.0009
L33	65.25 - 64.5	18.403	4	2.7521	0.0009
L34	64.5 - 64.25	17.973	4	2.7179	0.0008
L35	64.25 - 59.25	17.832	4	2.7055	0.0008
L36	59.25 - 58.583	15.133	4	2.4519	0.0007
L37	58.583 - 58.333	14.793	4	2.4185	0.0007
L38	58.333 - 57.25	14.667	4	2.4067	0.0007
L39	57.25 - 57	14.127	4	2.3560	0.0007
L40	57 - 52	14.004	4	2.3442	0.0007
L41	52 - 44.41	11.674	4	2.1072	0.0006
L42	49.58 - 43.41	10.636	4	1.9925	0.0005
L43	43.41 - 38.41	8.156	4	1.8276	0.0005
L44	38.41 - 34.5	6.363	4	1.5981	0.0004
L45	34.5 - 34.25	5.127	4	1.4224	0.0004
L46	34.25 - 33.5	5.052	4	1.4128	0.0004
L47	33.5 - 33.25	4.833	4	1.3844	0.0003
L48	33.25 - 28.483	4.761	4	1.3727	0.0003
L49	28.483 - 28.233	3.491	4	1.1724	0.0003
L50	28.233 - 27.483	3.430	4	1.1620	0.0003
L51	27.483 - 27.233	3.249	4	1.1308	0.0003
L52	27.233 - 22.233	3.191	4	1.1203	0.0003
L53	22.233 - 17.233	2.126	4	0.9138	0.0002
L54	17.233 - 12.233	1.278	4	0.7068	0.0002
L55	12.233 - 7.233	0.645	4	0.5021	0.0001
L56	7.233 - 6.917	0.226	4	0.2997	0.0001
L57	6.917 - 6.667	0.206	4	0.2871	0.0001
L58	6.667 - 1.667	0.192	4	0.2765	0.0001
L59	1.667 - 0	0.012	4	0.0677	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	6' x 2" Mount Pipe	4	103.334	7.3753	0.0080	1904
136.00	(2) LPA-80080/4CF w/ Mount Pipe	4	86.741	7.0161	0.0078	1080
129.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	4	76.830	6.5252	0.0057	666
116.00	RA21.7770.00 w/ Mount Pipe	4	60.664	5.4054	0.0032	580
105.00	MX08FRO665-21 w/ Mount Pipe	4	49.327	4.6292	0.0023	1340
50.00	KS24019-L112A	4	10.813	2.0100	0.0006	1618

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u	φP _n	Ratio
							K	K	$\frac{P_u}{\phi P_n}$
L1	147 - 142 (1)	TP17.3259x16.25x0.1875	5.00	0.00	0.0	10.199 5	-3.87	596.67	0.006
L2	142 - 137 (2)	TP18.4017x17.3259x0.18 75	5.00	0.00	0.0	10.839 7	-4.12	634.12	0.006
L3	137 - 132 (3)	TP19.4776x18.4017x0.18 75	5.00	0.00	0.0	11.480 0	-7.28	671.58	0.011
L4	132 - 127 (4)	TP20.5534x19.4776x0.18 75	5.00	0.00	0.0	12.120 3	-11.61	709.04	0.016
L5	127 - 120.37 (5)	TP21.98x20.5534x0.1875	6.63	0.00	0.0	12.553 1	-12.00	734.36	0.016
L6	120.37 - 118.62 (6)	TP21.9654x20.9057x0.25	5.00	0.00	0.0	17.231 2	-12.79	1008.02	0.013
L7	118.62 - 113.62 (7)	TP23.0251x21.9654x0.25	5.00	0.00	0.0	18.072 1	-16.81	1057.22	0.016
L8	113.62 - 113.08 (8)	TP23.1396x23.0251x0.25	0.54	0.00	0.0	18.162 9	-16.91	1062.53	0.016
L9	113.08 - 112.83 (9)	TP23.1926x23.1396x0.25	0.25	0.00	0.0	18.204 9	-16.96	1064.99	0.016
L10	112.83 - 112.16 (10)	TP23.3346x23.1926x0.25	0.67	0.00	0.0	18.317 6	-17.07	1071.58	0.016
L11	112.16 - 111.91 (11)	TP23.3875x23.3346x0.52 5	0.25	0.00	0.0	38.097 0	-17.13	2228.67	0.008
L12	111.91 - 110.5 (12)	TP23.6864x23.3875x0.52 5	1.41	0.00	0.0	38.595 0	-17.43	2257.81	0.008
L13	110.5 - 110.25 (13)	TP23.7394x23.6864x0.75	0.25	0.00	0.0	54.726 2	-17.51	3201.48	0.005
L14	110.25 - 105.25 (14)	TP24.7991x23.7394x0.72 5	5.00	0.00	0.0	55.398 1	-18.83	3240.79	0.006
L15	105.25 - 105 (15)	TP24.8521x24.7991x0.72 5	0.25	0.00	0.0	55.520 0	-18.91	3247.92	0.006
L16	105 - 104.75 (16)	TP24.9051x24.8521x1	0.25	0.00	0.0	75.874 6	-21.93	4438.67	0.005
L17	104.75 - 103.5 (17)	TP25.17x24.9051x1	1.25	0.00	0.0	76.715 5	-22.34	4487.86	0.005
L18	103.5 - 103.25 (18)	TP25.223x25.17x0.7625	0.25	0.00	0.0	59.198 6	-22.42	3463.12	0.006
L19	103.25 - 98.25 (19)	TP26.2827x25.223x0.737 5	5.00	0.00	0.0	59.796 8	-23.86	3498.11	0.007
L20	98.25 - 94.167 (20)	TP27.148x26.2827x0.712 5	4.08	0.00	0.0	59.783 3	-25.06	3497.32	0.007
L21	94.167 - 93.917 (21)	TP27.201x27.148x0.85	0.25	0.00	0.0	71.092 4	-25.15	4158.91	0.006
L22	93.917 - 91.5 (22)	TP27.7133x27.201x0.825	2.42	0.00	0.0	70.408 3	-25.95	4118.89	0.006
L23	91.5 - 91.25 (23)	TP27.7663x27.7133x0.8	0.25	0.00	0.0	68.472 8	-26.04	4005.66	0.007

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
L24	91.25 - 90.58 (24)	TP27.9083x27.7663x0.8	0.67	0.00	0.0	68.833 4	-26.26	4026.75	0.007
L25	90.58 - 90.33 (25)	TP27.9613x27.9083x0.77 5	0.25	0.00	0.0	66.874 1	-26.34	3912.14	0.007
L26	90.33 - 84.91 (26)	TP29.11x27.9613x0.7625	5.42	0.00	0.0	66.467 0	-26.74	3888.32	0.007
L27	84.91 - 83.91 (27)	TP28.8215x27.7262x0.85	5.17	0.00	0.0	75.464 4	-29.55	4414.66	0.007
L28	83.91 - 78.91 (28)	TP29.8808x28.8215x0.82 5	5.00	0.00	0.0	76.084 1	-31.35	4450.92	0.007
L29	78.91 - 73.91 (29)	TP30.9401x29.8808x0.8	5.00	0.00	0.0	76.531 8	-33.17	4477.11	0.007
L30	73.91 - 68.91 (30)	TP31.9994x30.9401x0.78 75	5.00	0.00	0.0	78.015 0	-35.02	4563.88	0.008
L31	68.91 - 65.5 (31)	TP32.7219x31.9994x0.76 25	3.41	0.00	0.0	77.347 3	-36.30	4524.81	0.008
L32	65.5 - 65.25 (32)	TP32.7748x32.7219x0.9	0.25	0.00	0.0	91.053 6	-36.41	5326.64	0.007
L33	65.25 - 64.5 (33)	TP32.9337x32.7748x0.88 75	0.75	0.00	0.0	90.271 8	-36.72	5280.90	0.007
L34	64.5 - 64.25 (34)	TP32.9867x32.9337x0.81 25	0.25	0.00	0.0	82.973 2	-36.82	4853.93	0.008
L35	64.25 - 59.25 (35)	TP34.046x32.9867x0.787 5	5.00	0.00	0.0	83.130 4	-38.80	4863.13	0.008
L36	59.25 - 58.583 (36)	TP34.1873x34.046x0.787 5	0.67	0.00	0.0	83.483 6	-39.07	4883.79	0.008
L37	58.583 - 58.333 (37)	TP34.2403x34.1873x0.83 75	0.25	0.00	0.0	88.792 1	-39.18	5194.34	0.008
L38	58.333 - 57.25 (38)	TP34.4697x34.2403x0.83 75	1.08	0.00	0.0	89.402 0	-39.63	5230.02	0.008
L39	57.25 - 57 (39)	TP34.5227x34.4697x0.83 75	0.25	0.00	0.0	89.542 8	-39.74	5238.25	0.008
L40	57 - 52 (40)	TP35.582x34.5227x0.825	5.00	0.00	0.0	91.012 9	-41.86	5324.25	0.008
L41	52 - 44.41 (41)	TP37.19x35.582x0.8125	7.59	0.00	0.0	90.988 3	-42.98	5322.82	0.008
L42	44.41 - 43.41 (42)	TP36.7801x35.4697x0.87 5	6.17	0.00	0.0	99.717 5	-47.58	5833.48	0.008
L43	43.41 - 38.41 (43)	TP37.8421x36.7801x0.85	5.00	0.00	0.0	99.800 9	-49.90	5838.36	0.009
L44	38.41 - 34.5 (44)	TP38.6725x37.8421x0.85	3.91	0.00	0.0	102.04 10	-51.74	5969.42	0.009
L45	34.5 - 34.25 (45)	TP38.7256x38.6725x1	0.25	0.00	0.0	119.74 10	-51.90	7004.86	0.007
L46	34.25 - 33.5 (46)	TP38.8849x38.7256x1	0.75	0.00	0.0	120.24 70	-52.31	7034.43	0.007
L47	33.5 - 33.25 (47)	TP38.938x38.8849x0.8	0.25	0.00	0.0	96.840 1	-52.44	5665.14	0.009
L48	33.25 - 28.483 (48)	TP39.9505x38.938x0.887 5	4.77	0.00	0.0	110.03 70	-54.89	6437.19	0.009
L49	28.483 - 28.233 (49)	TP40.0036x39.9505x0.88 75	0.25	0.00	0.0	110.18 70	-55.03	6445.94	0.009
L50	28.233 - 27.483 (50)	TP40.1629x40.0036x0.87 5	0.75	0.00	0.0	109.11 20	-55.42	6383.07	0.009
L51	27.483 - 27.233 (51)	TP40.216x40.1629x0.875	0.25	0.00	0.0	109.26 00	-55.56	6391.69	0.009
L52	27.233 - 22.233 (52)	TP41.2779x40.216x0.875	5.00	0.00	0.0	112.20 90	-58.16	6564.23	0.009
L53	22.233 - 17.233 (53)	TP42.3399x41.2779x0.85	5.00	0.00	0.0	111.93 60	-60.81	6548.23	0.009
L54	17.233 - 12.233 (54)	TP43.4018x42.3399x0.83 75	5.00	0.00	0.0	112.01 60	-62.44	6552.96	0.010
L55	12.233 - 7.233 (55)	TP44.4638x43.4018x0.82 5	5.00	0.00	0.0	111.49 00	-63.51	6522.14	0.010
L56	7.233 - 6.917 (56)	TP44.5309x44.4638x0.82 5	0.32	0.00	0.0	114.27 00	-66.21	6684.81	0.010
L57	6.917 - 6.667 (57)	TP44.584x44.5309x0.775	0.25	0.00	0.0	107.63 30	-66.38	6296.53	0.011
L58	6.667 - 1.667	TP45.6459x44.584x0.775	5.00	0.00	0.0	107.76	-66.53	6304.17	0.011

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
L59	1.667 - 0 (59)	TP46x45.6459x0.775	1.67	0.00	0.0	110.37 60	-69.15	6456.98	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} / φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} / φM _{ny}
L1	147 - 142 (1)	TP17.3259x16.25x0.1875	42.13	266.24	0.158	0.00	266.24	0.000
L2	142 - 137 (2)	TP18.4017x17.3259x0.1875	77.68	299.34	0.260	0.00	299.34	0.000
L3	137 - 132 (3)	TP19.4776x18.4017x0.1875	141.61	331.08	0.428	0.00	331.08	0.000
L4	132 - 127 (4)	TP20.5534x19.4776x0.1875	212.98	363.81	0.585	0.00	363.81	0.000
L5	127 - 120.37 (5)	TP21.98x20.5534x0.1875	269.85	386.44	0.698	0.00	386.44	0.000
L6	120.37 - 118.62 (6)	TP21.9654x20.9057x0.25	355.38	569.59	0.624	0.00	569.59	0.000
L7	118.62 - 113.62 (7)	TP23.0251x21.9654x0.25	465.04	626.87	0.742	0.00	626.87	0.000
L8	113.62 - 113.08 (8)	TP23.1396x23.0251x0.25	477.72	633.22	0.754	0.00	633.22	0.000
L9	113.08 - 112.83 (9)	TP23.1926x23.1396x0.25	483.59	636.17	0.760	0.00	636.17	0.000
L10	112.83 - 112.16 (10)	TP23.3346x23.1926x0.25	499.36	644.12	0.775	0.00	644.12	0.000
L11	112.16 - 111.91 (11)	TP23.3875x23.3346x0.525	505.26	1311.02	0.385	0.00	1311.02	0.000
L12	111.91 - 110.5 (12)	TP23.6864x23.3875x0.525	538.58	1345.90	0.400	0.00	1345.90	0.000
L13	110.5 - 110.25 (13)	TP23.7394x23.6864x0.75	544.51	1876.00	0.290	0.00	1876.00	0.000
L14	110.25 - 105.25 (14)	TP24.7991x23.7394x0.725	664.29	1993.47	0.333	0.00	1993.47	0.000
L15	105.25 - 105 (15)	TP24.8521x24.7991x0.725	670.34	2002.39	0.335	0.00	2002.39	0.000
L16	105 - 104.75 (16)	TP24.9051x24.8521x1	677.35	2680.65	0.253	0.00	2680.65	0.000
L17	104.75 - 103.5 (17)	TP25.17x24.9051x1	712.39	2741.61	0.260	0.00	2741.61	0.000
L18	103.5 - 103.25 (18)	TP25.223x25.17x0.7625	719.42	2162.21	0.333	0.00	2162.21	0.000
L19	103.25 - 98.25 (19)	TP26.2827x25.223x0.7375	861.44	2286.01	0.377	0.00	2286.01	0.000
L20	98.25 - 94.167 (20)	TP27.148x26.2827x0.7125	979.25	2369.57	0.413	0.00	2369.57	0.000
L21	94.167 - 93.917 (21)	TP27.201x27.148x0.85	986.52	2794.38	0.353	0.00	2794.38	0.000
L22	93.917 - 91.5 (22)	TP27.7133x27.201x0.825	1057.09	2828.23	0.374	0.00	2828.23	0.000
L23	91.5 - 91.25 (23)	TP27.7663x27.7133x0.8	1064.43	2761.18	0.385	0.00	2761.18	0.000
L24	91.25 - 90.58 (24)	TP27.9083x27.7663x0.8	1084.11	2790.76	0.388	0.00	2790.76	0.000
L25	90.58 - 90.33 (25)	TP27.9613x27.9083x0.775	1091.47	2721.78	0.401	0.00	2721.78	0.000
L26	90.33 - 84.91 (26)	TP29.11x27.9613x0.7625	1128.33	2734.78	0.413	0.00	2734.78	0.000
L27	84.91 - 83.91 (27)	TP28.8215x27.7262x0.85	1282.85	3154.34	0.407	0.00	3154.34	0.000
L28	83.91 - 78.91 (28)	TP29.8808x28.8215x0.825	1434.98	3309.94	0.434	0.00	3309.94	0.000
L29	78.91 - 73.91	TP30.9401x29.8808x0.8	1589.46	3459.88	0.459	0.00	3459.88	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L30	(29) 73.91 - 68.91	TP31.9994x30.9401x0.78	1746.22	3657.03	0.477	0.00	3657.03	0.000
L31	(30) 68.91 - 65.5	TP32.7219x31.9994x0.76	1854.41	3717.53	0.499	0.00	3717.53	0.000
L32	(31) 65.5 - 65.25	TP32.7748x32.7219x0.9	1862.38	4346.15	0.429	0.00	4346.15	0.000
L33	(32) 65.25 - 64.5	TP32.9337x32.7748x0.88	1886.33	4334.28	0.435	0.00	4334.28	0.000
L34	(33) 64.5 - 64.25	TP32.9867x32.9337x0.81	1894.33	4009.28	0.472	0.00	4009.28	0.000
L35	(34) 64.25 - 59.25	TP34.046x32.9867x0.787	2055.36	4158.64	0.494	0.00	4158.64	0.000
L36	(35) 59.25 -	TP34.1873x34.046x0.787	2077.01	4194.47	0.495	0.00	4194.47	0.000
L37	(36) 58.583 -	TP34.2403x34.1873x0.83	2085.13	4455.07	0.468	0.00	4455.07	0.000
L38	(37) 58.333 -	TP34.4697x34.2403x0.83	2120.38	4517.23	0.469	0.00	4517.23	0.000
L39	(38) 57.25 -	TP34.5227x34.4697x0.83	2128.53	4531.64	0.470	0.00	4531.64	0.000
L40	(39) 57 - 52 (40)	TP35.582x34.5227x0.825	2292.71	4757.83	0.482	0.00	4757.83	0.000
L41	(40) 52 - 44.41	TP37.19x35.582x0.8125	2372.72	4831.76	0.491	0.00	4831.76	0.000
L42	(41) 44.41 - 43.41	TP36.7801x35.4697x0.87	2580.32	5381.75	0.479	0.00	5381.75	0.000
L43	(42) 43.41 - 38.41	TP37.8421x36.7801x0.85	2751.07	5556.86	0.495	0.00	5556.86	0.000
L44	(43) 38.41 - 34.5	TP38.6725x37.8421x0.85	2885.95	5812.02	0.497	0.00	5812.02	0.000
L45	(44) 34.5 - 34.25	TP38.7256x38.6725x1	2894.62	6775.95	0.427	0.00	6775.95	0.000
L46	(45) 34.25 - 33.5	TP38.8849x38.7256x1	2920.65	6834.03	0.427	0.00	6834.03	0.000
L47	(46) 33.5 - 33.25	TP38.938x38.8849x0.8	2929.34	5569.93	0.526	0.00	5569.93	0.000
L48	(47) 33.25 -	TP39.9505x38.938x0.887	3096.14	6471.45	0.478	0.00	6471.45	0.000
L49	(48) 28.483 -	TP40.0036x39.9505x0.88	3104.95	6489.25	0.478	0.00	6489.25	0.000
L50	(49) 28.233 -	TP40.1629x40.0036x0.87	3131.42	6456.81	0.485	0.00	6456.81	0.000
L51	(50) 27.483 -	TP40.216x40.1629x0.875	3140.25	6474.47	0.485	0.00	6474.47	0.000
L52	(51) 27.233 -	TP41.2779x40.216x0.875	3318.12	6832.62	0.486	0.00	6832.62	0.000
L53	(52) 22.233 -	TP42.3399x41.2779x0.85	3498.14	7007.37	0.499	0.00	7007.37	0.000
L54	(53) 17.233 -	TP43.4018x42.3399x0.83	3607.12	7126.51	0.506	0.00	7126.51	0.000
L55	(54) 12.233 -	TP44.4638x43.4018x0.82	3680.14	7170.09	0.513	0.00	7170.09	0.000
L56	(55) 7.233 -	TP44.5309x44.4638x0.82	3863.97	7535.72	0.513	0.00	7535.72	0.000
L57	(56) 6.917 - 6.667	TP44.584x44.5309x0.775	3875.66	7125.40	0.544	0.00	7125.40	0.000
L58	(57) 6.667 - 1.667	TP45.6459x44.584x0.775	3884.90	7142.85	0.544	0.00	7142.85	0.000
L59	(58) 1.667 - 0 (59)	TP46x45.6459x0.775	4070.56	7496.42	0.543	0.00	7496.42	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 $\frac{T_u}{\phi T_n}$
-------------	-----------------	------	----------------------	-----------------	---------------------------------	---------------------------	----------------------	---------------------------------

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio V_u ϕV_n	Actual T_u kip-ft	ϕT_n kip-ft	Ratio T_u ϕT_n
L1	147 - 142 (1)	TP17.3259x16.25x0.1875	6.95	179.00	0.039	0.00	268.66	0.000
L2	142 - 137 (2)	TP18.4017x17.3259x0.1875	7.27	190.24	0.038	0.00	303.45	0.000
L3	137 - 132 (3)	TP19.4776x18.4017x0.1875	12.59	201.47	0.062	0.46	340.36	0.001
L4	132 - 127 (4)	TP20.5534x19.4776x0.1875	16.73	212.71	0.079	0.46	379.38	0.001
L5	127 - 120.37 (5)	TP21.98x20.5534x0.1875	16.93	220.31	0.077	0.46	406.96	0.001
L6	120.37 - 118.62 (6)	TP21.9654x20.9057x0.25	17.29	302.41	0.057	0.46	575.10	0.001
L7	118.62 - 113.62 (7)	TP23.0251x21.9654x0.25	23.48	317.17	0.074	0.44	632.60	0.001
L8	113.62 - 113.08 (8)	TP23.1396x23.0251x0.25	23.51	318.76	0.074	0.44	638.97	0.001
L9	113.08 - 112.83 (9)	TP23.1926x23.1396x0.25	23.52	319.50	0.074	0.44	641.93	0.001
L10	112.83 - 112.16 (10)	TP23.3346x23.1926x0.25	23.57	321.47	0.073	0.44	649.90	0.001
L11	112.16 - 111.91 (11)	TP23.3875x23.3346x0.525	23.58	668.60	0.035	0.44	1338.67	0.000
L12	111.91 - 110.5 (12)	TP23.6864x23.3875x0.525	23.71	677.34	0.035	0.44	1373.89	0.000
L13	110.5 - 110.25 (13)	TP23.7394x23.6864x0.75	23.72	960.45	0.025	0.44	1933.66	0.000
L14	110.25 - 105.25 (14)	TP24.7991x23.7394x0.725	24.20	972.24	0.025	0.44	2049.75	0.000
L15	105.25 - 105 (15)	TP24.8521x24.7991x0.725	24.23	974.38	0.025	0.44	2058.78	0.000
L16	105 - 104.75 (16)	TP24.9051x24.8521x1	27.94	1331.60	0.021	0.53	2787.68	0.000
L17	104.75 - 103.5 (17)	TP25.17x24.9051x1	28.13	1346.36	0.021	0.53	2849.82	0.000
L18	103.5 - 103.25 (18)	TP25.223x25.17x0.7625	28.16	1038.94	0.027	0.53	2225.53	0.000
L19	103.25 - 98.25 (19)	TP26.2827x25.223x0.7375	28.66	1049.43	0.027	0.53	2347.71	0.000
L20	98.25 - 94.167 (20)	TP27.148x26.2827x0.7125	29.06	1049.20	0.028	0.53	2428.99	0.000
L21	94.167 - 93.917 (21)	TP27.201x27.148x0.85	29.08	1247.67	0.023	0.53	2879.24	0.000
L22	93.917 - 91.5 (22)	TP27.7133x27.201x0.825	29.33	1235.67	0.024	0.53	2909.68	0.000
L23	91.5 - 91.25 (23)	TP27.7663x27.7133x0.8	29.35	1201.70	0.024	0.53	2837.89	0.000
L24	91.25 - 90.58 (24)	TP27.9083x27.7663x0.8	29.42	1208.03	0.024	0.53	2867.86	0.000
L25	90.58 - 90.33 (25)	TP27.9613x27.9083x0.775	29.44	1173.64	0.025	0.53	2794.25	0.000
L26	90.33 - 84.91 (26)	TP29.11x27.9613x0.7625	29.57	1166.50	0.025	0.53	2805.57	0.000
L27	84.91 - 83.91 (27)	TP28.8215x27.7262x0.85	30.20	1324.40	0.023	0.53	3244.26	0.000
L28	83.91 - 78.91 (28)	TP29.8808x28.8215x0.825	30.68	1335.28	0.023	0.53	3397.69	0.000
L29	78.91 - 73.91 (29)	TP30.9401x29.8808x0.8	31.14	1343.13	0.023	0.53	3545.22	0.000
L30	73.91 - 68.91 (30)	TP31.9994x30.9401x0.7875	31.59	1369.16	0.023	0.53	3742.45	0.000
L31	68.91 - 65.5 (31)	TP32.7219x31.9994x0.7625	31.89	1357.44	0.023	0.53	3799.27	0.000
L32	65.5 - 65.25 (32)	TP32.7748x32.7219x0.9	31.90	1597.99	0.020	0.53	4460.69	0.000
L33	65.25 - 64.5 (33)	TP32.9337x32.7748x0.8875	31.98	1584.27	0.020	0.53	4446.18	0.000
L34	64.5 - 64.25 (34)	TP32.9867x32.9337x0.8125	31.99	1456.18	0.022	0.53	4103.01	0.000
L35	64.25 - 59.25 (35)	TP34.046x32.9867x0.7875	32.44	1458.94	0.022	0.53	4249.32	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio V_u ϕV_n	Actual T_u kip-ft	ϕT_n kip-ft	Ratio T_u ϕT_n
L36	59.25 - 58.583 (36)	TP34.1873x34.046x0.7875	32.49	1465.14	0.022	0.53	4285.51	0.000
L37	58.583 - 58.333 (37)	TP34.2403x34.1873x0.8375	32.50	1558.30	0.021	0.53	4558.42	0.000
L38	58.333 - 57.25 (38)	TP34.4697x34.2403x0.8375	32.61	1569.00	0.021	0.53	4621.25	0.000
L39	57.25 - 57 (39)	TP34.5227x34.4697x0.8375	32.62	1571.48	0.021	0.53	4635.82	0.000
L40	57 - 52 (40)	TP35.582x34.5227x0.825	33.06	1597.28	0.021	0.53	4861.86	0.000
L41	52 - 44.41 (41)	TP37.19x35.582x0.8125	33.32	1596.85	0.021	0.68	4933.99	0.000
L42	44.41 - 43.41 (42)	TP36.7801x35.4697x0.875	33.98	1750.04	0.019	0.65	5502.82	0.000
L43	43.41 - 38.41 (43)	TP37.8421x36.7801x0.85	34.36	1751.51	0.020	0.65	5674.15	0.000
L44	38.41 - 34.5 (44)	TP38.6725x37.8421x0.85	34.68	1790.83	0.019	0.65	5931.77	0.000
L45	34.5 - 34.25 (45)	TP38.7256x38.6725x1	34.68	2101.46	0.017	0.65	6942.83	0.000
L46	34.25 - 33.5 (46)	TP38.8849x38.7256x1	34.76	2110.33	0.016	0.65	7001.59	0.000
L47	33.5 - 33.25 (47)	TP38.938x38.8849x0.8	34.77	1699.54	0.020	0.65	5676.37	0.000
L48	33.25 - 28.483 (48)	TP39.9505x38.938x0.8875	35.23	1931.16	0.018	0.65	6606.37	0.000
L49	28.483 - 28.233 (49)	TP40.0036x39.9505x0.8875	35.25	1933.78	0.018	0.65	6624.35	0.000
L50	28.233 - 27.483 (50)	TP40.1629x40.0036x0.875	35.33	1914.92	0.018	0.65	6588.54	0.000
L51	27.483 - 27.233 (51)	TP40.216x40.1629x0.875	35.35	1917.51	0.018	0.65	6606.36	0.000
L52	27.233 - 22.233 (52)	TP41.2779x40.216x0.875	35.82	1969.27	0.018	0.65	6967.83	0.000
L53	22.233 - 17.233 (53)	TP42.3399x41.2779x0.85	36.23	1964.47	0.018	0.65	7137.85	0.000
L54	17.233 - 12.233 (54)	TP43.4018x42.3399x0.8375	36.53	1975.80	0.018	0.65	7254.85	0.000
L55	12.233 - 7.233 (55)	TP44.4638x43.4018x0.825	36.68	1966.40	0.019	0.65	7295.66	0.000
L56	7.233 - 6.917 (56)	TP44.5309x44.4638x0.825	36.98	2008.53	0.018	0.65	7664.13	0.000
L57	6.917 - 6.667 (57)	TP44.584x44.5309x0.775	36.99	1891.25	0.020	0.65	7238.34	0.000
L58	6.667 - 1.667 (58)	TP45.6459x44.584x0.775	37.07	1900.42	0.020	0.65	7255.92	0.000
L59	1.667 - 0 (59)	TP46x45.6459x0.775	37.39	1952.38	0.019	0.65	7611.96	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	147 - 142 (1)	0.006	0.158	0.000	0.039	0.000	0.166	1.050	4.8.2
L2	142 - 137 (2)	0.006	0.260	0.000	0.038	0.000	0.267	1.050	4.8.2
L3	137 - 132 (3)	0.011	0.428	0.000	0.062	0.001	0.443	1.050	4.8.2
L4	132 - 127 (4)	0.016	0.585	0.000	0.079	0.001	0.608	1.050	4.8.2
L5	127 - 120.37 (5)	0.016	0.698	0.000	0.077	0.001	0.721	1.050	4.8.2
L6	120.37 - 118.62 (6)	0.013	0.624	0.000	0.057	0.001	0.640	1.050	4.8.2
L7	118.62 - 113.62 (7)	0.016	0.742	0.000	0.074	0.001	0.763	1.050	4.8.2
L8	113.62 - 113.08 (8)	0.016	0.754	0.000	0.074	0.001	0.776	1.050	4.8.2
L9	113.08 -	0.016	0.760	0.000	0.074	0.001	0.782	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u ϕP_n	M_{ux} ϕM_{nx}	M_{uy} ϕM_{ny}	V_u ϕV_n	T_u ϕT_n			
L10	112.83 (9)								
	112.83 - 112.16 (10)	0.016	0.775	0.000	0.073	0.001	0.797	1.050	4.8.2
L11	112.16 - 111.91 (11)	0.008	0.385	0.000	0.035	0.000	0.394	1.050	4.8.2
L12	111.91 - 110.5 (12)	0.008	0.400	0.000	0.035	0.000	0.409	1.050	4.8.2
L13	110.5 - 110.25 (13)	0.005	0.290	0.000	0.025	0.000	0.296	1.050	4.8.2
L14	110.25 - 105.25 (14)	0.006	0.333	0.000	0.025	0.000	0.340	1.050	4.8.2
L15	105.25 - 105 (15)	0.006	0.335	0.000	0.025	0.000	0.341	1.050	4.8.2
L16	105 - 104.75 (16)	0.005	0.253	0.000	0.021	0.000	0.258	1.050	4.8.2
L17	104.75 - 103.5 (17)	0.005	0.260	0.000	0.021	0.000	0.265	1.050	4.8.2
L18	103.5 - 103.25 (18)	0.006	0.333	0.000	0.027	0.000	0.340	1.050	4.8.2
L19	103.25 - 98.25 (19)	0.007	0.377	0.000	0.027	0.000	0.384	1.050	4.8.2
L20	98.25 - 94.167 (20)	0.007	0.413	0.000	0.028	0.000	0.421	1.050	4.8.2
L21	94.167 - 93.917 (21)	0.006	0.353	0.000	0.023	0.000	0.360	1.050	4.8.2
L22	93.917 - 91.5 (22)	0.006	0.374	0.000	0.024	0.000	0.381	1.050	4.8.2
L23	91.5 - 91.25 (23)	0.007	0.385	0.000	0.024	0.000	0.393	1.050	4.8.2
L24	91.25 - 90.58 (24)	0.007	0.388	0.000	0.024	0.000	0.396	1.050	4.8.2
L25	90.58 - 90.33 (25)	0.007	0.401	0.000	0.025	0.000	0.408	1.050	4.8.2
L26	90.33 - 84.91 (26)	0.007	0.413	0.000	0.025	0.000	0.420	1.050	4.8.2
L27	84.91 - 83.91 (27)	0.007	0.407	0.000	0.023	0.000	0.414	1.050	4.8.2
L28	83.91 - 78.91 (28)	0.007	0.434	0.000	0.023	0.000	0.441	1.050	4.8.2
L29	78.91 - 73.91 (29)	0.007	0.459	0.000	0.023	0.000	0.467	1.050	4.8.2
L30	73.91 - 68.91 (30)	0.008	0.477	0.000	0.023	0.000	0.486	1.050	4.8.2
L31	68.91 - 65.5 (31)	0.008	0.499	0.000	0.023	0.000	0.507	1.050	4.8.2
L32	65.5 - 65.25 (32)	0.007	0.429	0.000	0.020	0.000	0.436	1.050	4.8.2
L33	65.25 - 64.5 (33)	0.007	0.435	0.000	0.020	0.000	0.443	1.050	4.8.2
L34	64.5 - 64.25 (34)	0.008	0.472	0.000	0.022	0.000	0.481	1.050	4.8.2
L35	64.25 - 59.25 (35)	0.008	0.494	0.000	0.022	0.000	0.503	1.050	4.8.2
L36	59.25 - 58.583 (36)	0.008	0.495	0.000	0.022	0.000	0.504	1.050	4.8.2
L37	58.583 - 58.333 (37)	0.008	0.468	0.000	0.021	0.000	0.476	1.050	4.8.2
L38	58.333 - 57.25 (38)	0.008	0.469	0.000	0.021	0.000	0.477	1.050	4.8.2
L39	57.25 - 57 (39)	0.008	0.470	0.000	0.021	0.000	0.478	1.050	4.8.2
L40	57 - 52 (40)	0.008	0.482	0.000	0.021	0.000	0.490	1.050	4.8.2
L41	52 - 44.41 (41)	0.008	0.491	0.000	0.021	0.000	0.500	1.050	4.8.2
L42	44.41 - 43.41 (42)	0.008	0.479	0.000	0.019	0.000	0.488	1.050	4.8.2
L43	43.41 - 38.41 (43)	0.009	0.495	0.000	0.020	0.000	0.504	1.050	4.8.2
L44	38.41 - 34.5	0.009	0.497	0.000	0.019	0.000	0.506	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
	(44)								
L45	34.5 - 34.25	0.007	0.427	0.000	0.017	0.000	0.435	1.050	4.8.2
	(45)								
L46	34.25 - 33.5	0.007	0.427	0.000	0.016	0.000	0.435	1.050	4.8.2
	(46)								
L47	33.5 - 33.25	0.009	0.526	0.000	0.020	0.000	0.536	1.050	4.8.2
	(47)								
L48	33.25 - 28.483 (48)	0.009	0.478	0.000	0.018	0.000	0.487	1.050	4.8.2
	(48)								
L49	28.483 - 28.233 (49)	0.009	0.478	0.000	0.018	0.000	0.487	1.050	4.8.2
	(49)								
L50	28.233 - 27.483 (50)	0.009	0.485	0.000	0.018	0.000	0.494	1.050	4.8.2
	(50)								
L51	27.483 - 27.233 (51)	0.009	0.485	0.000	0.018	0.000	0.494	1.050	4.8.2
	(51)								
L52	27.233 - 22.233 (52)	0.009	0.486	0.000	0.018	0.000	0.495	1.050	4.8.2
	(52)								
L53	22.233 - 17.233 (53)	0.009	0.499	0.000	0.018	0.000	0.509	1.050	4.8.2
	(53)								
L54	17.233 - 12.233 (54)	0.010	0.506	0.000	0.018	0.000	0.516	1.050	4.8.2
	(54)								
L55	12.233 - 7.233 (55)	0.010	0.513	0.000	0.019	0.000	0.523	1.050	4.8.2
	(55)								
L56	7.233 - 6.917 (56)	0.010	0.513	0.000	0.018	0.000	0.523	1.050	4.8.2
	(56)								
L57	6.917 - 6.667 (57)	0.011	0.544	0.000	0.020	0.000	0.555	1.050	4.8.2
	(57)								
L58	6.667 - 1.667 (58)	0.011	0.544	0.000	0.020	0.000	0.555	1.050	4.8.2
	(58)								
L59	1.667 - 0 (59)	0.011	0.543	0.000	0.019	0.000	0.554	1.050	4.8.2

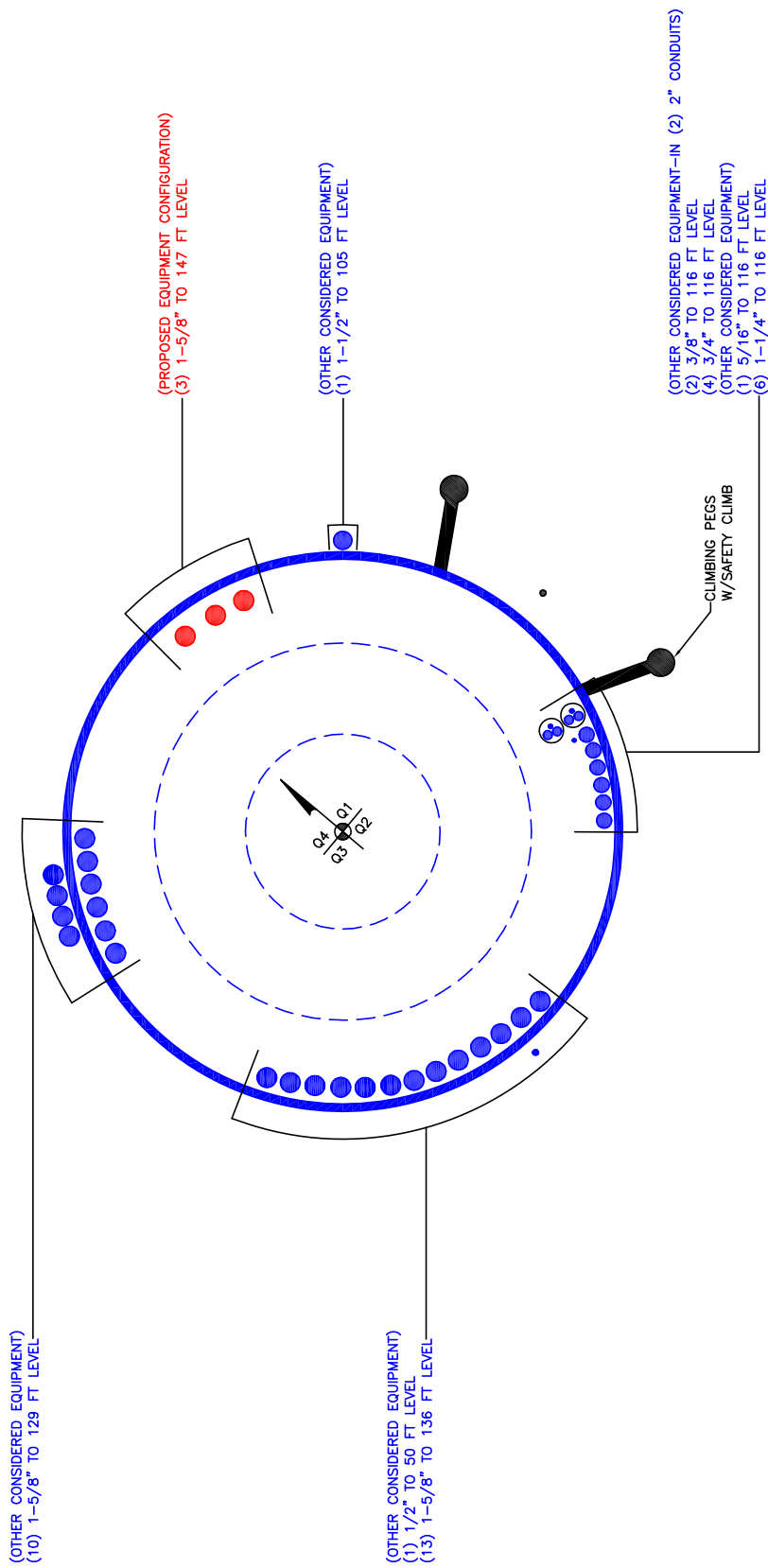
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	147 - 142	Pole	TP17.3259x16.25x0.1875	1	-3.87	626.50	15.8	Pass
L2	142 - 137	Pole	TP18.4017x17.3259x0.1875	2	-4.12	665.83	25.5	Pass
L3	137 - 132	Pole	TP19.4776x18.4017x0.1875	3	-7.28	705.16	42.2	Pass
L4	132 - 127	Pole	TP20.5534x19.4776x0.1875	4	-11.61	744.49	57.9	Pass
L5	127 - 120.37	Pole	TP21.98x20.5534x0.1875	5	-12.00	771.07	68.6	Pass
L6	120.37 - 118.62	Pole	TP21.9654x20.9057x0.25	6	-12.79	1058.42	60.9	Pass
L7	118.62 - 113.62	Pole	TP23.0251x21.9654x0.25	7	-16.81	1110.08	72.7	Pass
L8	113.62 - 113.08	Pole	TP23.1396x23.0251x0.25	8	-16.91	1115.66	73.9	Pass
L9	113.08 - 112.83	Pole	TP23.1926x23.1396x0.25	9	-16.96	1118.24	74.4	Pass
L10	112.83 - 112.16	Pole	TP23.3346x23.1926x0.25	10	-17.07	1125.16	75.9	Pass
L11	112.16 - 111.91	Pole	TP23.3875x23.3346x0.525	11	-17.13	2340.10	37.6	Pass
L12	111.91 - 110.5	Pole	TP23.6864x23.3875x0.525	12	-17.43	2370.70	39.0	Pass
L13	110.5 - 110.25	Pole	TP23.7394x23.6864x0.75	13	-17.51	3361.55	28.2	Pass
L14	110.25 - 105.25	Pole	TP24.7991x23.7394x0.725	14	-18.83	3402.83	32.3	Pass
L15	105.25 - 105	Pole	TP24.8521x24.7991x0.725	15	-18.91	3410.32	32.5	Pass
L16	105 - 104.75	Pole	TP24.9051x24.8521x1	16	-21.93	4660.60	24.6	Pass
L17	104.75 - 103.5	Pole	TP25.17x24.9051x1	17	-22.34	4712.25	25.3	Pass
L18	103.5 - 103.25	Pole	TP25.223x25.17x0.7625	18	-22.42	3636.28	32.4	Pass
L19	103.25 - 98.25	Pole	TP26.2827x25.223x0.7375	19	-23.86	3673.02	36.6	Pass
L20	98.25 - 94.167	Pole	TP27.148x26.2827x0.7125	20	-25.06	3672.19	40.1	Pass
L21	94.167 - 93.917	Pole	TP27.201x27.148x0.85	21	-25.15	4366.86	34.3	Pass
L22	93.917 - 91.5	Pole	TP27.7133x27.201x0.825	22	-25.95	4324.83	36.3	Pass
L23	91.5 - 91.25	Pole	TP27.7663x27.7133x0.8	23	-26.04	4205.94	37.4	Pass
L24	91.25 - 90.58	Pole	TP27.9083x27.7663x0.8	24	-26.26	4228.09	37.7	Pass
L25	90.58 - 90.33	Pole	TP27.9613x27.9083x0.775	25	-26.34	4107.75	38.9	Pass
L26	90.33 - 84.91	Pole	TP29.11x27.9613x0.7625	26	-26.74	4082.74	40.0	Pass
L27	84.91 - 83.91	Pole	TP28.8215x27.7262x0.85	27	-29.55	4635.39	39.4	Pass
L28	83.91 - 78.91	Pole	TP29.8808x28.8215x0.825	28	-31.35	4673.47	42.0	Pass
L29	78.91 - 73.91	Pole	TP30.9401x29.8808x0.8	29	-33.17	4700.97	44.5	Pass
L30	73.91 - 68.91	Pole	TP31.9994x30.9401x0.7875	30	-35.02	4792.07	46.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L31	68.91 - 65.5	Pole	TP32.7219x31.9994x0.7625	31	-36.30	4751.05	48.3	Pass	
L32	65.5 - 65.25	Pole	TP32.7748x32.7219x0.9	32	-36.41	5592.97	41.5	Pass	
L33	65.25 - 64.5	Pole	TP32.9337x32.7748x0.8875	33	-36.72	5544.94	42.2	Pass	
L34	64.5 - 64.25	Pole	TP32.9867x32.9337x0.8125	34	-36.82	5096.63	45.8	Pass	
L35	64.25 - 59.25	Pole	TP34.046x32.9867x0.7875	35	-38.80	5106.29	47.9	Pass	
L36	59.25 - 58.583	Pole	TP34.1873x34.046x0.7875	36	-39.07	5127.98	48.0	Pass	
L37	58.583 - 58.333	Pole	TP34.2403x34.1873x0.8375	37	-39.18	5454.06	45.3	Pass	
L38	58.333 - 57.25	Pole	TP34.4697x34.2403x0.8375	38	-39.63	5491.52	45.5	Pass	
L39	57.25 - 57	Pole	TP34.5227x34.4697x0.8375	39	-39.74	5500.16	45.5	Pass	
L40	57 - 52	Pole	TP35.582x34.5227x0.825	40	-41.86	5590.46	46.7	Pass	
L41	52 - 44.41	Pole	TP37.19x35.582x0.8125	41	-42.98	5588.96	47.6	Pass	
L42	44.41 - 43.41	Pole	TP36.7801x35.4697x0.875	42	-47.58	6125.15	46.5	Pass	
L43	43.41 - 38.41	Pole	TP37.8421x36.7801x0.85	43	-49.90	6130.28	48.0	Pass	
L44	38.41 - 34.5	Pole	TP38.6725x37.8421x0.85	44	-51.74	6267.89	48.2	Pass	
L45	34.5 - 34.25	Pole	TP38.7256x38.6725x1	45	-51.90	7355.10	41.4	Pass	
L46	34.25 - 33.5	Pole	TP38.8849x38.7256x1	46	-52.31	7386.15	41.4	Pass	
L47	33.5 - 33.25	Pole	TP38.938x38.8849x0.8	47	-52.44	5948.40	51.0	Pass	
L48	33.25 - 28.483	Pole	TP39.9505x38.938x0.8875	48	-54.89	6759.05	46.4	Pass	
L49	28.483 - 28.233	Pole	TP40.0036x39.9505x0.8875	49	-55.03	6768.24	46.4	Pass	
L50	28.233 - 27.483	Pole	TP40.1629x40.0036x0.875	50	-55.42	6702.22	47.0	Pass	
L51	27.483 - 27.233	Pole	TP40.216x40.1629x0.875	51	-55.56	6711.27	47.1	Pass	
L52	27.233 - 22.233	Pole	TP41.2779x40.216x0.875	52	-58.16	6892.44	47.1	Pass	
L53	22.233 - 17.233	Pole	TP42.3399x41.2779x0.85	53	-60.81	6875.64	48.5	Pass	
L54	17.233 - 12.233	Pole	TP43.4018x42.3399x0.8375	54	-62.44	6880.61	49.1	Pass	
L55	12.233 - 7.233	Pole	TP44.4638x43.4018x0.825	55	-63.51	6848.25	49.8	Pass	
L56	7.233 - 6.917	Pole	TP44.5309x44.4638x0.825	56	-66.21	7019.05	49.8	Pass	
L57	6.917 - 6.667	Pole	TP44.584x44.5309x0.775	57	-66.38	6611.36	52.8	Pass	
L58	6.667 - 1.667	Pole	TP45.6459x44.584x0.775	58	-66.53	6619.38	52.8	Pass	
L59	1.667 - 0	Pole	TP46x45.6459x0.775	59	-69.15	6779.83	52.8	Pass	
							Summary		
							Pole (L10)	75.9	Pass
							RATING =	75.9	Pass

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

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

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	147	26.63	3.25	18	16.25	21.98	0.1875	Auto	A572-65
2	123.62	38.71	4.17	18	20.91	29.11	0.25	Auto	A572-65
3	89.08	44.67	5.17	18	27.73	37.19	0.3125	Auto	A572-65
4	49.58	49.58	0	18	35.47	46	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	6.917	plate	PL5x1.25	2						E1				E1								
2	0	27.5	plate	PL5x1.25	2		E1												E1				
3	6.917	27.5	plate	PL5x1.25_2	1								E1										
4	27.5	57.25	plate	PL5x1.25_1	3		E1						E1						E1				
5	57.25	87.25	plate	PL4.75x1.25	3		E1						E1						E1				
6	87.25	105	plate	PL4.25x1.25	3		E1						E1						E1				
7	6.917	28.583	channel	MP3-03 (1.1875in)	2											E2						E2	
8	0	28.5	plate	CCI-AFP-045100	2		E3						E3										
9	0	28.5	plate	PL4.5x1	1															E3			
10	28.5	58.583	plate	CCI-AFP-045100	2		E3						E3										
11	27.583	58.583	plate	CCI-AFP-045100	1														E3				
12	58.583	94.167	plate	CCI-AFP-040075	3		E3						E3						E3				
13	103.5	110.5	plate	CCI-SFP-045100	3		E4						E4						E4				
14	0	34.5	plate	PL4.5x1.25	4			E5		E5								E5			E5		
15	33.5	65.5	plate	CCI-SFP-045100	4					E5					E5					E5			E5
16	65.5	90.58	plate	CCI-SFP-045100	2					E5					E5								
17	64.5	91.5	plate	CCI-SFP-045100	1																	E5	
18	90.58	112.16	plate	PL4.5x1.25 (8 T.B.)	2					E5					E5								
19	91.5	113.08	plate	PL4.5x1.25 (8 T.B.)	1																	E5	
20																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	5	1.25	6.25	0.625	Welded	n/a	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
2	5	1.25	6.25	0.625	Welded	n/a	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
3	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
4	5	1.25	6.25	0.625	None	n/a	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
5	4.75	1.25	5.9375	0.625	None	n/a	PC 8.8 - M20 (100)	24.000	18.000	4.375	1.1875	A572-65
6	4.25	1.25	5.3125	0.625	None	n/a	PC 8.8 - M20 (100)	18.000	21.000	3.750	1.1875	A572-65
7	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
8	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
9	4.5	1	4.5	0.5	Welded	n/a	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
10	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
11	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
12	4	0.75	3	0.375	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	16.000	2.063	1.1875	A572-65
13	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
14	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	24.000	4.063	1.1875	A572-65
15	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
16	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
17	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
18	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	24.000	4.063	1.1875	A572-65
19	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	24.000	4.063	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
PL5x1.25	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL5x1.25_2	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	9	N	3	3	-	-	-	-	-	-	-	-	-
PL4.75x1.25	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-
PL4.25x1.25	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-
PL4.5x1	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL4.5x1.25	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	-	-	-	-	-	-	-	-	-
PL4.5x1.25 (8 T.B.)	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
PL5x1.25_1	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-

TNX Geometry Input

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

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	147 - 142	5		18	16.250	17.326	0.1875	A572-65	1.000
2	142 - 137	5		18	17.326	18.402	0.1875	A572-65	1.000
3	137 - 132	5		18	18.402	19.478	0.1875	A572-65	1.000
4	132 - 127	5		18	19.478	20.553	0.1875	A572-65	1.000
5	127 - 123.62	6.63	3.25	18	20.553	21.980	0.1875	A572-65	1.000
6	123.62 - 118.62	5		18	20.906	21.965	0.25	A572-65	1.000
7	118.62 - 113.62	5		18	21.965	23.025	0.25	A572-65	1.000
8	113.62 - 113.08	0.54		18	23.025	23.140	0.25	A572-65	1.000
9	113.08 - 112.83	0.25		18	23.140	23.193	0.25	A572-65	1.000
10	112.83 - 112.16	0.67		18	23.193	23.335	0.25	A572-65	1.000
11	112.16 - 111.91	0.25		18	23.335	23.388	0.525	A572-65	0.925
12	111.91 - 110.5	1.41		18	23.388	23.686	0.525	A572-65	0.919
13	110.5 - 110.25	0.25		18	23.686	23.739	0.75	A572-65	0.896
14	110.25 - 105.25	5		18	23.739	24.799	0.725	A572-65	0.900
15	105.25 - 105	0.25		18	24.799	24.852	0.725	A572-65	0.899
16	105 - 104.75	0.25		18	24.852	24.905	1	A572-65	0.868
17	104.75 - 103.5	1.25		18	24.905	25.170	1	A572-65	0.861
18	103.5 - 103.25	0.25		18	25.170	25.223	0.7625	A572-65	0.889
19	103.25 - 98.25	5		18	25.223	26.283	0.7375	A572-65	0.894
20	98.25 - 94.167	4.083		18	26.283	27.148	0.7125	A572-65	0.906
21	94.167 - 93.917	0.25		18	27.148	27.201	0.85	A572-65	0.889
22	93.917 - 91.5	2.417		18	27.201	27.713	0.825	A572-65	0.903
23	91.5 - 91.25	0.25		18	27.713	27.766	0.8	A572-65	0.913
24	91.25 - 90.58	0.67		18	27.766	27.908	0.8	A572-65	0.910
25	90.58 - 90.33	0.25		18	27.908	27.961	0.775	A572-65	0.904
26	90.33 - 89.08	5.42	4.17	18	27.961	29.110	0.7625	A572-65	0.912
27	89.08 - 83.91	5.17		18	27.726	28.822	0.85	A572-65	0.909
28	83.91 - 78.91	5		18	28.822	29.881	0.825	A572-65	0.915
29	78.91 - 73.91	5		18	29.881	30.940	0.8	A572-65	0.924
30	73.91 - 68.91	5		18	30.940	31.999	0.7875	A572-65	0.920
31	68.91 - 65.5	3.41		18	31.999	32.722	0.7625	A572-65	0.937
32	65.5 - 65.25	0.25		18	32.722	32.775	0.9	A572-65	0.895
33	65.25 - 64.5	0.75		18	32.775	32.934	0.8875	A572-65	0.905
34	64.5 - 64.25	0.25		18	32.934	32.987	0.8125	A572-65	0.931
35	64.25 - 59.25	5		18	32.987	34.046	0.7875	A572-65	0.942
36	59.25 - 58.583	0.667		18	34.046	34.187	0.7875	A572-65	0.939
37	58.583 - 58.333	0.25		18	34.187	34.240	0.8375	A572-65	0.934
38	58.333 - 57.25	1.083		18	34.240	34.470	0.8375	A572-65	0.931
39	57.25 - 57	0.25		18	34.470	34.523	0.8375	A572-65	0.940
40	57 - 52	5		18	34.523	35.582	0.825	A572-65	0.937
41	52 - 49.58	7.59	5.17	18	35.582	37.190	0.8125	A572-65	0.942
42	49.58 - 43.41	6.17		18	35.470	36.780	0.875	A572-65	0.938
43	43.41 - 38.41	5		18	36.780	37.842	0.85	A572-65	0.950
44	38.41 - 34.5	3.91		18	37.842	38.673	0.85	A572-65	0.939
45	34.5 - 34.25	0.25		18	38.673	38.726	1	A572-65	0.989
46	34.25 - 33.5	0.75		18	38.726	38.885	1	A572-65	0.986
47	33.5 - 33.25	0.25		18	38.885	38.938	0.8	A572-65	1.039
48	33.25 - 28.483	4.767		18	38.938	39.950	0.8875	A572-65	0.979
49	28.483 - 28.233	0.25		18	39.950	40.004	0.8875	A572-65	0.978
50	28.233 - 27.483	0.75		18	40.004	40.163	0.875	A572-65	0.989
51	27.483 - 27.233	0.25		18	40.163	40.216	0.875	A572-65	0.989
52	27.233 - 22.233	5		18	40.216	41.278	0.875	A572-65	0.974
53	22.233 - 17.233	5		18	41.278	42.340	0.85	A572-65	0.988
54	17.233 - 12.233	5		18	42.340	43.402	0.8375	A572-65	0.988
55	12.233 - 7.233	5		18	43.402	44.464	0.825	A572-65	0.989
56	7.233 - 6.917	0.316		18	44.464	44.531	0.825	A572-65	0.989
57	6.917 - 6.667	0.25		18	44.531	44.584	0.775	A572-65	1.054
58	6.667 - 1.667	5		18	44.584	45.646	0.775	A572-65	1.041
59	1.667 - 0	1.667		18	45.646	46.000	0.775	A572-65	1.037

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	147 - 142		3.87	42.13	6.95
2	142 - 137		4.12	77.68	7.27
3	137 - 132		7.28	141.61	12.59
4	132 - 127		11.61	212.98	16.73
5	127 - 123.62		12.00	269.85	16.93
6	123.62 - 118.62		12.79	355.38	17.29
7	118.62 - 113.62		16.81	465.04	23.48
8	113.62 - 113.08		16.91	477.72	23.51
9	113.08 - 112.83		16.96	483.59	23.52
10	112.83 - 112.16		17.07	499.36	23.57
11	112.16 - 111.91		17.13	505.26	23.58
12	111.91 - 110.5		17.43	538.58	23.71
13	110.5 - 110.25		17.51	544.51	23.72
14	110.25 - 105.25		18.83	664.29	24.20
15	105.25 - 105		18.91	670.34	24.23
16	105 - 104.75		21.93	677.35	27.94
17	104.75 - 103.5		22.34	712.39	28.13
18	103.5 - 103.25		22.42	719.42	28.16
19	103.25 - 98.25		23.86	861.44	28.66
20	98.25 - 94.167		25.06	979.25	29.06
21	94.167 - 93.917		25.15	986.51	29.08
22	93.917 - 91.5		25.95	1057.09	29.33
23	91.5 - 91.25		26.04	1064.42	29.35
24	91.25 - 90.58		26.26	1084.11	29.42
25	90.58 - 90.33		26.34	1091.46	29.44
26	90.33 - 89.08		26.74	1128.34	29.57
27	89.08 - 83.91		29.55	1282.85	30.20
28	83.91 - 78.91		31.35	1434.98	30.68
29	78.91 - 73.91		33.17	1589.46	31.14
30	73.91 - 68.91		35.02	1746.22	31.59
31	68.91 - 65.5		36.30	1854.41	31.89
32	65.5 - 65.25		36.41	1862.38	31.90
33	65.25 - 64.5		36.72	1886.33	31.98
34	64.5 - 64.25		36.82	1894.32	31.99
35	64.25 - 59.25		38.80	2055.36	32.44
36	59.25 - 58.583		39.07	2077.01	32.49
37	58.583 - 58.333		39.18	2085.13	32.50
38	58.333 - 57.25		39.63	2120.38	32.61
39	57.25 - 57		39.74	2128.54	32.62
40	57 - 52		41.86	2292.71	33.06
41	52 - 49.58		42.98	2372.73	33.32
42	49.58 - 43.41		47.58	2580.32	33.98
43	43.41 - 38.41		49.90	2751.07	34.36
44	38.41 - 34.5		51.74	2885.95	34.68
45	34.5 - 34.25		51.90	2894.61	34.68
46	34.25 - 33.5		52.31	2920.65	34.76
47	33.5 - 33.25		52.44	2929.34	34.77
48	33.25 - 28.483		54.89	3096.14	35.23
49	28.483 - 28.233		55.03	3104.95	35.25
50	28.233 - 27.483		55.42	3131.42	35.33
51	27.483 - 27.233		55.56	3140.25	35.35
52	27.233 - 22.233		58.16	3318.11	35.82
53	22.233 - 17.233		60.81	3498.14	36.23
54	17.233 - 12.233		63.49	3680.14	36.60
55	12.233 - 7.233		66.19	3863.98	36.97
56	7.233 - 6.917		66.37	3875.66	36.98
57	6.917 - 6.667		66.51	3884.90	36.99
58	6.667 - 1.667		69.12	4070.56	37.29
59	1.667 - 0		69.94	4132.75	37.39

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147 - 142	Pole	TP17.326x16.25x0.1875	Pole	15.8%	Pass
142 - 137	Pole	TP18.402x17.326x0.1875	Pole	25.5%	Pass
137 - 132	Pole	TP19.478x18.402x0.1875	Pole	42.1%	Pass
132 - 127	Pole	TP20.553x19.478x0.1875	Pole	57.9%	Pass
127 - 123.62	Pole	TP21.98x20.553x0.1875	Pole	68.6%	Pass
123.62 - 118.62	Pole	TP21.965x20.906x0.25	Pole	60.9%	Pass
118.62 - 113.62	Pole	TP23.025x21.965x0.25	Pole	72.6%	Pass
113.62 - 113.08	Pole	TP23.14x23.025x0.25	Pole	73.8%	Pass
113.08 - 112.83	Pole	TP23.193x23.14x0.25	Pole	74.4%	Pass
112.83 - 112.16	Pole	TP23.335x23.193x0.25	Pole	75.8%	Pass
112.16 - 111.91	Pole + Reinf.	TP23.388x23.335x0.525	Reinf. 18 Tension Rupture	65.7%	Pass
111.91 - 110.5	Pole + Reinf.	TP23.686x23.388x0.525	Reinf. 18 Tension Rupture	68.7%	Pass
110.5 - 110.25	Pole + Reinf.	TP23.739x23.686x0.75	Reinf. 18 Tension Rupture	49.5%	Pass
110.25 - 105.25	Pole + Reinf.	TP24.799x23.739x0.725	Reinf. 18 Tension Rupture	56.9%	Pass
105.25 - 105	Pole + Reinf.	TP24.852x24.799x0.725	Reinf. 18 Tension Rupture	57.3%	Pass
105 - 104.75	Pole + Reinf.	TP24.905x24.852x1	Reinf. 6 Tension Rupture	44.3%	Pass
104.75 - 103.5	Pole + Reinf.	TP25.17x24.905x1	Reinf. 6 Tension Rupture	45.9%	Pass
103.5 - 103.25	Pole + Reinf.	TP25.223x25.17x0.7625	Reinf. 6 Tension Rupture	58.4%	Pass
103.25 - 98.25	Pole + Reinf.	TP26.283x25.223x0.7375	Reinf. 6 Tension Rupture	66.1%	Pass
98.25 - 94.17	Pole + Reinf.	TP27.148x26.283x0.7125	Reinf. 6 Tension Rupture	71.9%	Pass
94.17 - 93.92	Pole + Reinf.	TP27.201x27.148x0.85	Reinf. 12 Tension Rupture	62.4%	Pass
93.92 - 91.5	Pole + Reinf.	TP27.713x27.201x0.825	Reinf. 12 Tension Rupture	65.3%	Pass
91.5 - 91.25	Pole + Reinf.	TP27.766x27.713x0.8	Reinf. 6 Tension Rupture	67.6%	Pass
91.25 - 90.58	Pole + Reinf.	TP27.908x27.766x0.8	Reinf. 6 Tension Rupture	68.3%	Pass
90.58 - 90.33	Pole + Reinf.	TP27.961x27.908x0.775	Reinf. 12 Tension Rupture	70.8%	Pass
90.33 - 89.08	Pole + Reinf.	TP29.11x27.961x0.7625	Reinf. 12 Tension Rupture	72.3%	Pass
89.08 - 83.91	Pole + Reinf.	TP28.822x27.726x0.85	Reinf. 12 Tension Rupture	71.5%	Pass
83.91 - 78.91	Pole + Reinf.	TP29.881x28.822x0.825	Reinf. 12 Tension Rupture	76.1%	Pass
78.91 - 73.91	Pole + Reinf.	TP30.94x29.881x0.8	Reinf. 12 Tension Rupture	80.2%	Pass
73.91 - 68.91	Pole + Reinf.	TP31.999x30.94x0.7875	Reinf. 12 Tension Rupture	84.1%	Pass
68.91 - 65.5	Pole + Reinf.	TP32.722x31.999x0.7625	Reinf. 12 Tension Rupture	86.5%	Pass
65.5 - 65.25	Pole + Reinf.	TP32.775x32.722x0.9	Reinf. 12 Tension Rupture	81.3%	Pass
65.25 - 64.5	Pole + Reinf.	TP32.934x32.775x0.8875	Reinf. 12 Tension Rupture	81.8%	Pass
64.5 - 64.25	Pole + Reinf.	TP32.987x32.934x0.8125	Reinf. 12 Tension Rupture	86.1%	Pass
64.25 - 59.25	Pole + Reinf.	TP34.046x32.987x0.7875	Reinf. 12 Tension Rupture	89.3%	Pass
59.25 - 58.58	Pole + Reinf.	TP34.187x34.046x0.7875	Reinf. 12 Tension Rupture	89.7%	Pass
58.58 - 58.33	Pole + Reinf.	TP34.24x34.187x0.8375	Reinf. 10 Tension Rupture	81.1%	Pass
58.33 - 57.25	Pole + Reinf.	TP34.47x34.24x0.8375	Reinf. 10 Tension Rupture	81.7%	Pass
57.25 - 57	Pole + Reinf.	TP34.523x34.47x0.8375	Reinf. 10 Tension Rupture	80.8%	Pass
57 - 52	Pole + Reinf.	TP35.582x34.523x0.825	Reinf. 10 Tension Rupture	83.4%	Pass
52 - 49.58	Pole + Reinf.	TP37.19x35.582x0.8125	Reinf. 10 Tension Rupture	84.6%	Pass
49.58 - 43.41	Pole + Reinf.	TP36.78x35.47x0.875	Reinf. 10 Tension Rupture	82.9%	Pass
43.41 - 38.41	Pole + Reinf.	TP37.842x36.78x0.85	Reinf. 10 Tension Rupture	84.7%	Pass
38.41 - 34.5	Pole + Reinf.	TP38.673x37.842x0.85	Reinf. 10 Tension Rupture	86.1%	Pass
34.5 - 34.25	Pole + Reinf.	TP38.726x38.673x1	Reinf. 15 Tension Rupture	74.5%	Pass
34.25 - 33.5	Pole + Reinf.	TP38.885x38.726x1	Reinf. 15 Tension Rupture	74.7%	Pass
33.5 - 33.25	Pole + Reinf.	TP38.938x38.885x0.8	Reinf. 4 Tension Rupture	87.4%	Pass
33.25 - 28.48	Pole + Reinf.	TP39.95x38.938x0.8875	Reinf. 4 Tension Rupture	81.6%	Pass
28.48 - 28.23	Pole + Reinf.	TP40.004x39.95x0.8875	Reinf. 4 Tension Rupture	81.6%	Pass
28.23 - 27.48	Pole + Reinf.	TP40.163x40.004x0.875	Reinf. 3 Tension Rupture	81.9%	Pass
27.48 - 27.23	Pole + Reinf.	TP40.216x40.163x0.875	Reinf. 3 Tension Rupture	81.9%	Pass
27.23 - 22.23	Pole + Reinf.	TP41.278x40.216x0.875	Reinf. 3 Tension Rupture	83.3%	Pass
22.23 - 17.23	Pole + Reinf.	TP42.34x41.278x0.85	Reinf. 3 Tension Rupture	84.6%	Pass
17.23 - 12.23	Pole + Reinf.	TP43.402x42.34x0.8375	Reinf. 3 Tension Rupture	85.8%	Pass
12.23 - 7.23	Pole + Reinf.	TP44.464x43.402x0.825	Reinf. 3 Tension Rupture	86.9%	Pass
7.23 - 6.92	Pole + Reinf.	TP44.531x44.464x0.825	Reinf. 3 Tension Rupture	86.9%	Pass
6.92 - 6.67	Pole + Reinf.	TP44.584x44.531x0.775	Reinf. 1 Tension Rupture	89.5%	Pass
6.67 - 1.67	Pole + Reinf.	TP45.646x44.584x0.775	Reinf. 1 Tension Rupture	90.5%	Pass
1.67 - 0	Pole + Reinf.	TP46x45.646x0.775	Reinf. 1 Tension Rupture	90.8%	Pass
				Summary	
			Pole	75.8%	Pass
			Reinforcement	90.8%	Pass
			Overall	90.8%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity* (100% Max. Allowable)																				
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	
147 - 142	378	n/a	378	10.20	n/a	10.20	15.8%																				
142 - 137	454	n/a	454	10.84	n/a	10.84	25.5%																				
137 - 132	540	n/a	540	11.48	n/a	11.48	42.1%																				
132 - 127	635	n/a	635	12.12	n/a	12.12	57.9%																				
127 - 123.62	705	n/a	705	12.55	n/a	12.55	68.6%																				
123.62 - 118.62	1026	n/a	1026	17.23	n/a	17.23	60.9%																				
118.62 - 113.62	1184	n/a	1184	18.07	n/a	18.07	72.6%																				
113.62 - 113.08	1202	n/a	1202	18.16	n/a	18.16	73.8%																				
113.08 - 112.83	1210	n/a	1210	18.20	n/a	18.20	74.4%																				
112.83 - 112.16	1233	n/a	1233	18.32	n/a	18.32	75.8%																				
112.16 - 111.91	1241	1296	2537	18.36	16.88	35.23	36.8%																		65.7%	65.7%	
111.91 - 110.5	1290	1327	2617	18.60	16.88	35.47	37.5%																				
110.5 - 110.25	1299	2377	3676	18.64	30.38	49.01	27.8%													49.0%						49.5%	49.5%
110.25 - 105.25	1483	2582	4064	19.48	30.38	49.85	32.2%													56.4%						56.9%	56.9%
105.25 - 105	1492	2592	4085	19.52	30.38	49.90	32.4%													56.7%						57.3%	57.3%
105 - 104.75	1502	3979	5481	19.56	46.31	65.88	24.6%						44.3%							42.9%						43.3%	43.3%
104.75 - 103.5	1551	4059	5610	19.77	46.31	66.09	25.6%						45.9%							44.5%						44.9%	44.9%
103.5 - 103.25	1561	2903	4464	19.82	32.81	52.63	32.5%						58.4%													57.1%	57.1%
103.25 - 98.25	1768	3138	4906	20.66	32.81	53.47	37.2%						66.1%													64.6%	64.6%
98.25 - 94.17	1950	3336	5286	21.34	32.81	54.16	40.9%						71.9%													70.3%	70.3%
94.17 - 93.92	1962	4234	6195	21.38	41.81	63.20	35.2%						81.9%						82.4%							60.5%	60.5%
93.92 - 91.5	2076	4387	6463	21.79	41.81	63.60	37.0%						84.7%						85.3%							63.3%	63.3%
91.5 - 91.25	2089	4228	6317	21.83	40.69	62.52	39.3%						87.6%						87.0%							66.8%	63.6%
91.25 - 90.58	2121	4269	6391	21.95	40.69	62.63	39.8%						88.3%						87.8%							67.6%	64.4%
90.58 - 90.33	2133	4074	6206	21.99	38.44	60.43	40.3%						70.2%						70.8%							68.0%	68.0%
90.33 - 89.08	2194	4148	6342	22.20	38.44	60.64	41.2%						71.6%						72.3%							69.4%	69.4%
89.08 - 83.91	2903	4534	7437	28.28	40.31	68.59	39.1%						67.9%						71.5%							68.7%	68.7%
83.91 - 78.91	3238	4859	8097	29.33	40.31	69.64	41.6%						72.2%						76.1%							73.0%	73.0%
78.91 - 73.91	3599	5195	8794	30.38	40.31	70.69	44.3%						76.1%						80.2%							77.0%	77.0%
73.91 - 68.91	3986	5542	9527	31.43	40.31	71.74	46.8%						79.7%						84.1%							80.7%	80.7%
68.91 - 65.5	4264	5785	10049	32.14	40.31	72.46	48.4%						82.0%						86.5%							83.0%	83.0%
65.5 - 65.25	4367	7406	11773	32.20	49.31	81.51	45.6%						76.9%						81.3%							79.7%	64.8%
65.25 - 64.5	4431	7476	11907	32.36	49.31	81.67	46.0%						77.4%						81.8%							80.2%	65.2%
64.5 - 64.25	4386	6437	10822	32.41	44.81	77.22	48.4%						80.7%						86.1%							80.7%	
64.25 - 59.25	4826	6842	11667	33.46	44.81	78.27	50.6%						83.7%						89.3%							83.7%	
59.25 - 58.58	4886	6897	11783	33.60	44.81	78.41	50.9%						84.1%						89.7%							84.1%	
58.58 - 58.33	4908	7645	12553	33.65	49.31	82.96	48.0%						79.3%						81.1%	78.4%						79.3%	
58.33 - 57.25	5008	7744	12752	33.88	49.31	83.19	48.4%						79.9%						81.7%	79.0%						79.9%	
57.25 - 57	5031	7921	12952	33.93	50.25	84.18	48.0%						77.7%						80.8%	78.2%						79.1%	
57 - 52	5512	8396	13909	34.98	50.25	85.23	50.0%						80.2%						83.4%	80.7%						81.6%	
52 - 49.58	5756	8632	14387	35.49	50.25	85.74	50.9%						81.3%						84.6%	81.9%						82.8%	
49.58 - 43.41	7271	8954	16225	43.33	50.25	93.58	47.8%						79.7%						82.9%	80.5%						81.3%	
43.41 - 38.41	7925	9461	17386	44.59	50.25	94.84	49.2%						81.5%						84.7%	82.3%						83.1%	
38.41 - 34.5	8463	9867	18331	45.58	50.25	95.83	50.3%						82.8%						86.1%	83.7%						84.5%	
34.5 - 34.25	8536	13135	21671	45.65	72.75	118.40	44.2%						73.7%						73.2%	63.3%						67.6%	74.5%
34.25 - 33.5	8643	13240	21882	45.83	72.75	118.58	44.4%						73.9%						73.4%	63.5%						67.8%	74.7%
33.5 - 33.25	8634	9070	17704	45.90	54.75	100.65	53.5%						87.4%						85.7%	74.0%						83.0%	
33.25 - 28.48	9396	11878	21274	47.10	60.59	107.69	50.4%						81.6%						72.9%	80.6%	70.9%					79.6%	
28.48 - 28.23	9433	11909	21342	47.17	60.59	107.76	50.5%						81.6%						73.0%	80.7%	70.9%					79.7%	
28.23 - 27.48	9547	12001	21548	47.36	60.59	107.95	50.6%						73.3%	81.9%					73.2%	80.9%	71.1%					79.9%	
27.48 - 27.23	9585	12032	21617	47.42	60.59	108.01	50.7%						73.3%	81.9%					73.2%	81.0%	71.2%					79.9%	
27.23 - 22.23	10370	12656	23027	48.68	60.59	109.27	52.0%						74.7%	83.3%					74.5%	82.4%	72.6%					81.4%	
22.23 - 17.23	11197	13297	24494	49.95	60.59	110.54	53.2%						75.9%	84.6%					75.6%	83.7%	73.9%					82.7%	
17.23 - 12.23	12066	13953	26020	51.21	60.59	111.80	54.4%						77.1%	85.8%					76.7%	84.9%	75.1%					83.9%	
12.23 - 7.23	12980	14625	27605	52.47	60.59	113.06	55.5%						78.2%	86.9%					77.7%	86.1%	76.2%					85.0%	
7.23 - 6.92	13039	14668	27707	52.55	60.59	113.14	55.6%						78.2%	86.9%					77.8%	86.1%	76.2%					85.1%	
6.92 - 6.67	13023	13350	26373	52.62	61.00	113.62	57.3%	89.5%	79.1%										86.1%	79.1%						83.9%	
6.67 - 1.67	13984	13974	27958	53.88	61.00	114.88	58.4%	90.5%	80.1%										87.2%	80.1%						84.9%	
1.67 - 0	14314	14186	28500	54.30	61.00	115.30	58.7%	90.8%	80.4%										87.5%	80.5%						85.2%	

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

Monopole Base Plate Connection

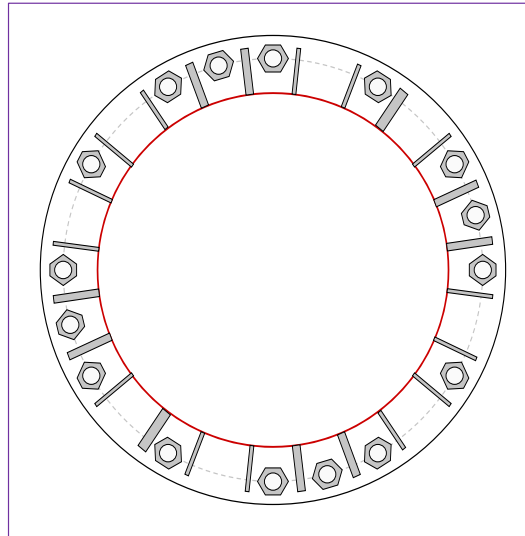


Site Info	
BU #	876360
Site Name	Preston / Town Hall
Order #	621166 Rev. 0

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

Applied Loads	
Moment (kip-ft)	4132.75
Axial Force (kips)	69.94
Shear Force (kips)	37.39

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results																																													
<p>Anchor Rod Data</p> <p>GROUP 1: (12) 2-1/4" ϕ bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 55" BC GROUP 2: (4) 2-1/4" ϕ bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 55" BC</p> <p>Base Plate Data</p> <p>61" OD x 1.75" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)</p> <p>Stiffener Data</p> <p>Group 1: (14) 14"H x 6"W x 0.5"T, Notch: 0.75" plate: Fy= 50 ksi ; weld: Fy= 80 ksi horiz. weld: 0.25" groove, 45° dbl bevel FALSE vert. weld: 0.4375" fillet</p> <p>Group 2: (3) 60"H x 6"W x 1"T, Notch: 0.75" plate: Fy= 65 ksi ; weld: Fy= 80 ksi horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet vert. weld: 0.375" fillet</p> <p>Group 3: (2) 66"H x 6"W x 1.25"T, Notch: 0.75" plate: Fy= 65 ksi ; weld: Fy= 80 ksi horiz. weld: 0.625" groove, 45° dbl bevel, 0.3125" fillet vert. weld: 0.3125" fillet</p> <p>Group 4: (5) 14"H x 6"W x 1"T, Notch: 0.75" plate: Fy= 65 ksi ; weld: Fy= 80 ksi horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet vert. weld: 0.375" fillet</p> <p>Pole Data</p> <p>46" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)</p>	<p>Anchor Rod Summary (units of kips, kip-in)</p> <p>GROUP 1:</p> <table border="0"> <tr> <td>$Pu_t = 220.9$</td> <td>$\phi Pn_t = 243.75$</td> <td>Stress Rating</td> </tr> <tr> <td>$Vu = 2.34$</td> <td>$\phi Vn = 149.1$</td> <td>86.3%</td> </tr> <tr> <td>$Mu = 3.61$</td> <td>$\phi Mn = 128.14$</td> <td>Pass</td> </tr> </table> <p>GROUP 2:</p> <table border="0"> <tr> <td>$Pu_t = 220.9$</td> <td>$\phi Pn_t = 243.75$</td> <td>Stress Rating</td> </tr> <tr> <td>$Vu = 2.34$</td> <td>$\phi Vn = 149.1$</td> <td>86.3%</td> </tr> <tr> <td>$Mu = 3.61$</td> <td>$\phi Mn = 128.14$</td> <td>Pass</td> </tr> </table> <p>Base Plate Summary</p> <table border="0"> <tr> <td>Max Stress (ksi):</td> <td>48.48</td> <td>(Roark's Flexural)</td> </tr> <tr> <td>Allowable Stress (ksi):</td> <td>54</td> <td></td> </tr> <tr> <td>Stress Rating:</td> <td>85.5%</td> <td>Pass</td> </tr> </table> <p>Stiffener Summary</p> <table border="0"> <tr> <td>Horizontal Weld:</td> <td>73.3%</td> <td>Pass</td> </tr> <tr> <td>Vertical Weld:</td> <td>59.5%</td> <td>Pass</td> </tr> <tr> <td>Plate Flexure+Shear:</td> <td>32.9%</td> <td>Pass</td> </tr> <tr> <td>Plate Tension+Shear:</td> <td>77.2%</td> <td>Pass</td> </tr> <tr> <td>Plate Compression:</td> <td>85.4%</td> <td>Pass</td> </tr> </table> <p>Pole Summary</p> <table border="0"> <tr> <td>Punching Shear:</td> <td>21.9%</td> <td>Pass</td> </tr> </table>	$Pu_t = 220.9$	$\phi Pn_t = 243.75$	Stress Rating	$Vu = 2.34$	$\phi Vn = 149.1$	86.3%	$Mu = 3.61$	$\phi Mn = 128.14$	Pass	$Pu_t = 220.9$	$\phi Pn_t = 243.75$	Stress Rating	$Vu = 2.34$	$\phi Vn = 149.1$	86.3%	$Mu = 3.61$	$\phi Mn = 128.14$	Pass	Max Stress (ksi):	48.48	(Roark's Flexural)	Allowable Stress (ksi):	54		Stress Rating:	85.5%	Pass	Horizontal Weld:	73.3%	Pass	Vertical Weld:	59.5%	Pass	Plate Flexure+Shear:	32.9%	Pass	Plate Tension+Shear:	77.2%	Pass	Plate Compression:	85.4%	Pass	Punching Shear:	21.9%	Pass
$Pu_t = 220.9$	$\phi Pn_t = 243.75$	Stress Rating																																												
$Vu = 2.34$	$\phi Vn = 149.1$	86.3%																																												
$Mu = 3.61$	$\phi Mn = 128.14$	Pass																																												
$Pu_t = 220.9$	$\phi Pn_t = 243.75$	Stress Rating																																												
$Vu = 2.34$	$\phi Vn = 149.1$	86.3%																																												
$Mu = 3.61$	$\phi Mn = 128.14$	Pass																																												
Max Stress (ksi):	48.48	(Roark's Flexural)																																												
Allowable Stress (ksi):	54																																													
Stress Rating:	85.5%	Pass																																												
Horizontal Weld:	73.3%	Pass																																												
Vertical Weld:	59.5%	Pass																																												
Plate Flexure+Shear:	32.9%	Pass																																												
Plate Tension+Shear:	77.2%	Pass																																												
Plate Compression:	85.4%	Pass																																												
Punching Shear:	21.9%	Pass																																												

Elevation (ft) /Base)

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

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

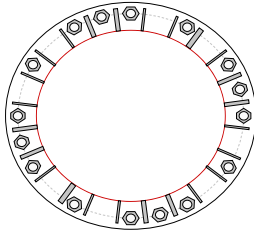
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l _w (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	2.25	A615-75	55	0.5	2.375	N-Included		No
2	1	30	2.25	A615-75	55	0.5	2.375	N-Included		No
3	1	60	2.25	A615-75	55	0.5	2.375	N-Included		No
4	1	90	2.25	A615-75	55	0.5	2.375	N-Included		No
5	1	120	2.25	A615-75	55	0.5	2.375	N-Included		No
6	1	150	2.25	A615-75	55	0.5	2.375	N-Included		No
7	1	180	2.25	A615-75	55	0.5	2.375	N-Included		No
8	1	210	2.25	A615-75	55	0.5	2.375	N-Included		No
9	1	240	2.25	A615-75	55	0.5	2.375	N-Included		No
10	1	270	2.25	A615-75	55	0.5	2.375	N-Included		No
11	1	300	2.25	A615-75	55	0.5	2.375	N-Included		No
12	1	330	2.25	A615-75	55	0.5	2.375	N-Included		No
13	2	15	2.25	A615-75	55	0.5	2.375	N-Included		No
14	2	105	2.25	A615-75	55	0.5	2.375	N-Included		No
15	2	195	2.25	A615-75	55	0.5	2.375	N-Included		No
16	2	285	2.25	A615-75	55	0.5	2.375	N-Included		No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	36.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
2	1	66.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
3	1	83.216209	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
4	1	126.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
5	1	143.216209	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
6	1	156.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
7	1	173.216209	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
8	1	216.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
9	1	246.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
10	1	263.216209	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
11	1	306.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
12	1	323.216209	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
13	1	336.783791	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
14	1	353.216209	6	14	0.5	0.75	0.75	50	Groove	0.25	45		0.4375	80
15	2	7.5	6	60	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
16	4	22.5	6	14	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
17	4	97.5	6	14	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
18	2	112.5	6	60	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
19	4	187.5	6	14	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
20	4	202.5	6	14	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
21	2	277.5	6	60	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
22	4	292.5	6	14	1	0.75	0.75	65	Both	0.5	45	0.5	0.375	80
23	3	53.216209	6	66	1.25	0.75	0.75	65	Both	0.625	45	0.3125	0.3125	80
24	3	233.216209	6	66	1.25	0.75	0.75	65	Both	0.625	45	0.3125	0.3125	80

Plot Graphic



Pier and Pad Foundation



BU #: 621166
Site Name: Preston / Town Ha
App. Number: 621166 Rev. 0

TIA-222 Revision: H
Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	69.96	kips
Base Shear, V_{u_comp} :	37.35	kips
Moment, M_u :	4132.75	ft-kips
Tower Height, H :	147	ft
BP Dist. Above Fdn, bp_{dist} :	4.625	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	277.59	37.35	12.8%	Pass
<i>Bearing Pressure (ksf)</i>	11.25	2.33	20.7%	Pass
<i>Overtuning (kip*ft)</i>	7154.81	4408.60	61.6%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	4424.47	4282.15	92.2%	Pass
<i>Pier Compression (kip)</i>	31187.52	105.24	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	2857.85	1756.69	58.5%	Pass
<i>Pad Shear - 1-way (kips)</i>	932.37	258.69	26.4%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.042	21.2%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3460.76	2569.29	70.7%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	7	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	33	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Structural Rating*:	92.2%
Soil Rating*:	61.6%

Pad Properties		
Depth, D :	6	ft
Pad Width, W_1 :	26	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	26	
Pad Clear Cover, cc_{pad} :	3	in

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

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Gross Bearing, Q_{ult} :	15.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	40	degrees
SPT Blow Count, N_{blows} :	64	
Base Friction, μ :	0.3	
Neglected Depth, N :	2.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

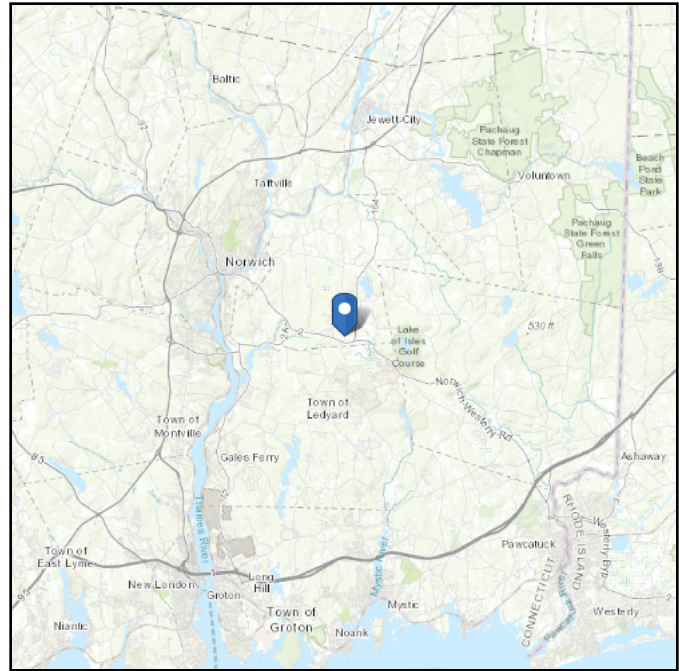
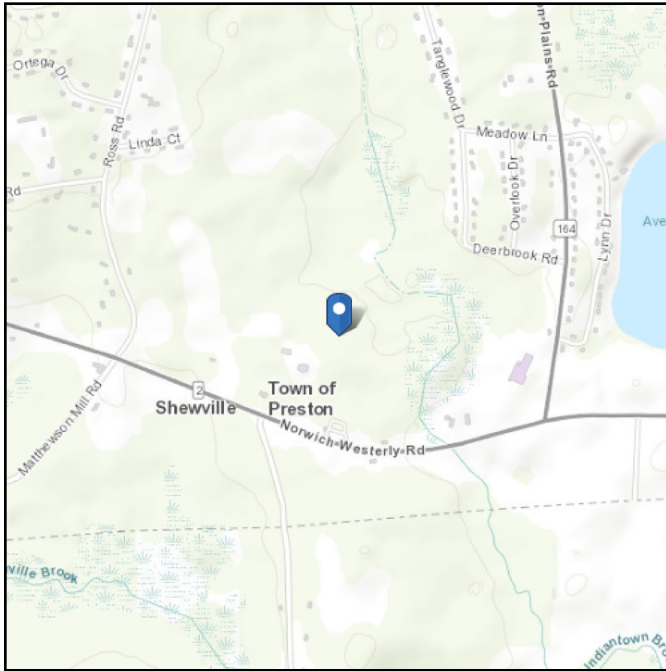
<--Toggle between Gross and Net

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 134.57 ft (NAVD 88)
Latitude: 41.490347
Longitude: -71.991542



Wind

Results:

Wind Speed	126 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	98 Vmph
100-year MRI	103 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Jul 18 2022

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

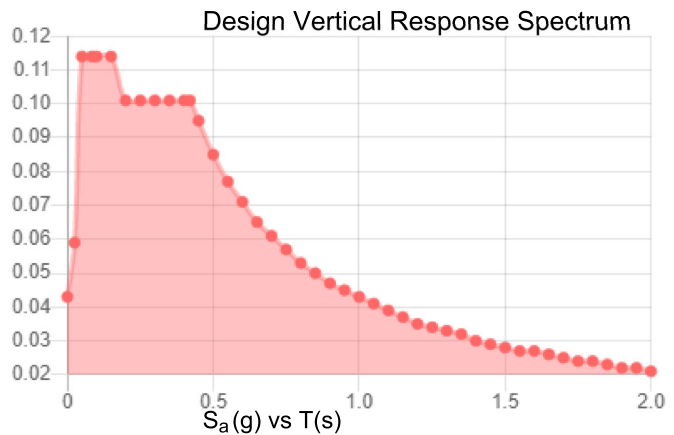
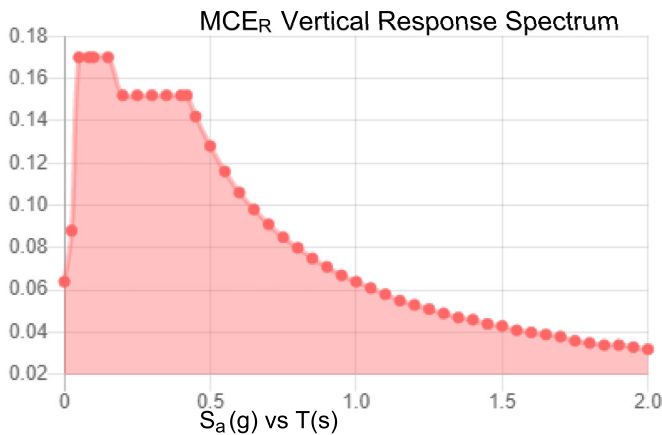
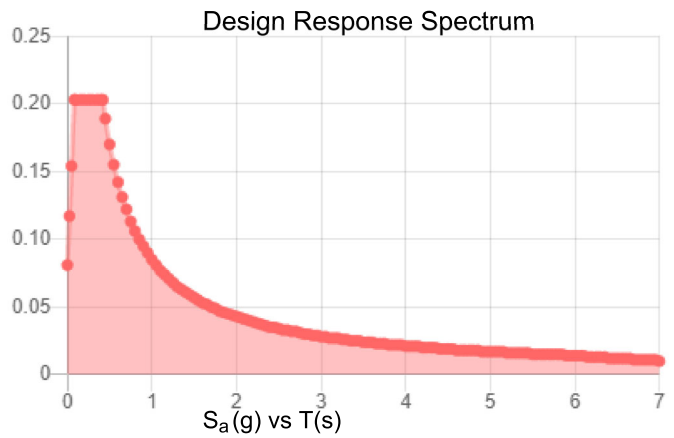
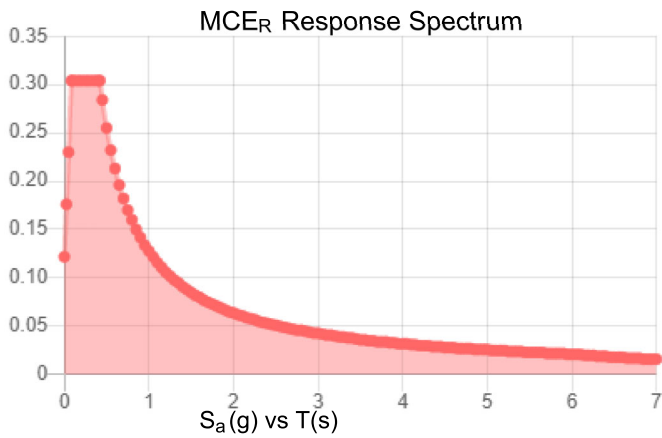
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.19	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.104
F_v :	2.4	PGA _M :	0.166
S_{MS} :	0.304	F_{PGA} :	1.591
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.203	C_v :	0.7

Seismic Design Category B



Data Accessed: Mon Jul 18 2022

Date Source:

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

Ice

Results:

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

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

Date Accessed: Mon Jul 18 2022

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

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

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

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Date: July 4, 2022



Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject: Mount Modification Report

Carrier Designation: T-Mobile Equipment Change-Out
Carrier Site Number: CT11441A
Carrier Site Name: Town Hall Sprint Tower

Crown Castle Designation: BU Number: 876360
Site Name: Preston / Town Hall
JDE Job Number: 721117
Order Number: 621166 Rev. 0

Engineering Firm Designation: Trylon Report Designation: 212290

Site Data: 389 Rt. 2, Preston, New London County, CT, 06365
Latitude 41°29'25.25" Longitude -71°59'29.55"

Structure Information: Tower Height & Type: 147.0 ft Monopole
Mount Elevation: 147.0 ft
Mount Width & Type: 12.5 ft Platform

Trylon is pleased to submit this “**Mount Modification Report**” to determine the structural integrity of T-Mobile’s antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient***
***Sufficient upon completion of the changes listed in the ‘Recommendations’ section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 126 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Adrian Marin

Respectfully Submitted by:
Cliff Abernathy, P.E.

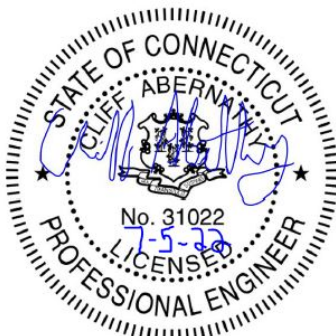


TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

4.1) Recommendations

5) APPENDIX A

Wire Frame and Rendered Models

6) APPENDIX B

Software Input Calculations

7) APPENDIX C

Software Analysis Output

8) APPENDIX D

Additional Calculations

9) APPENDIX E

Mount Modification Design Drawings (MDD)

1) INTRODUCTION

This is an existing 3 sector 12.5 ft Platform, designed by Site Pro 1.

2) ANALYSIS CRITERIA

Building Code:	2018 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	126 mph
Exposure Category:	C
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	1.00 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.19
Seismic S₁:	0.053
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
147.0	149.0	3	Commscope	VV-65B-R1_TMO	12.5 ft Platform
		3	Ericsson	AIR 6419 B41_TMO	
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	
		3	Ericsson	Radio 4480_TMOV2	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	621166, Rev. 0	CCI Sites
Mount Analysis Report	Trylon	9899474	Trylon
Mount Manufacturer Drawings	Site Pro 1	RMQP-4xxx	Trylon
Mount Modifications Drawings	Trylon	Appendix E	Trylon

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed, using Microsoft Excel, by Trylon was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 Tower Mount Analysis (Revision E).

3.2) Assumptions

- 1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
- 5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
- 6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Tylon should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2,3,4	Mount Pipe(s)	MP7	147.0	70.8	Pass
	Horizontal(s)	H2		20.5	Pass
	Standoff(s)	M29		29.6	Pass
	Bracing(s)	M31		13.4	Pass
	Handrail(s)	M81		23.3	Pass
	Plate(s)	M40		49.3	Pass
	Mid-Horizontal(s)	M114		51.2	Pass
	Stabilizer(s)	M114A		15.8	Pass
	Mount Connection(s)	-		25.1	Pass

Structure Rating (max from all components) =	70.8%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) See additional documentation in "Appendix D – Additional Calculations" for detailed mount connection calculations.
- 3) All sectors are typical
- 4) Rating per TIA-222-H, Section 15.5

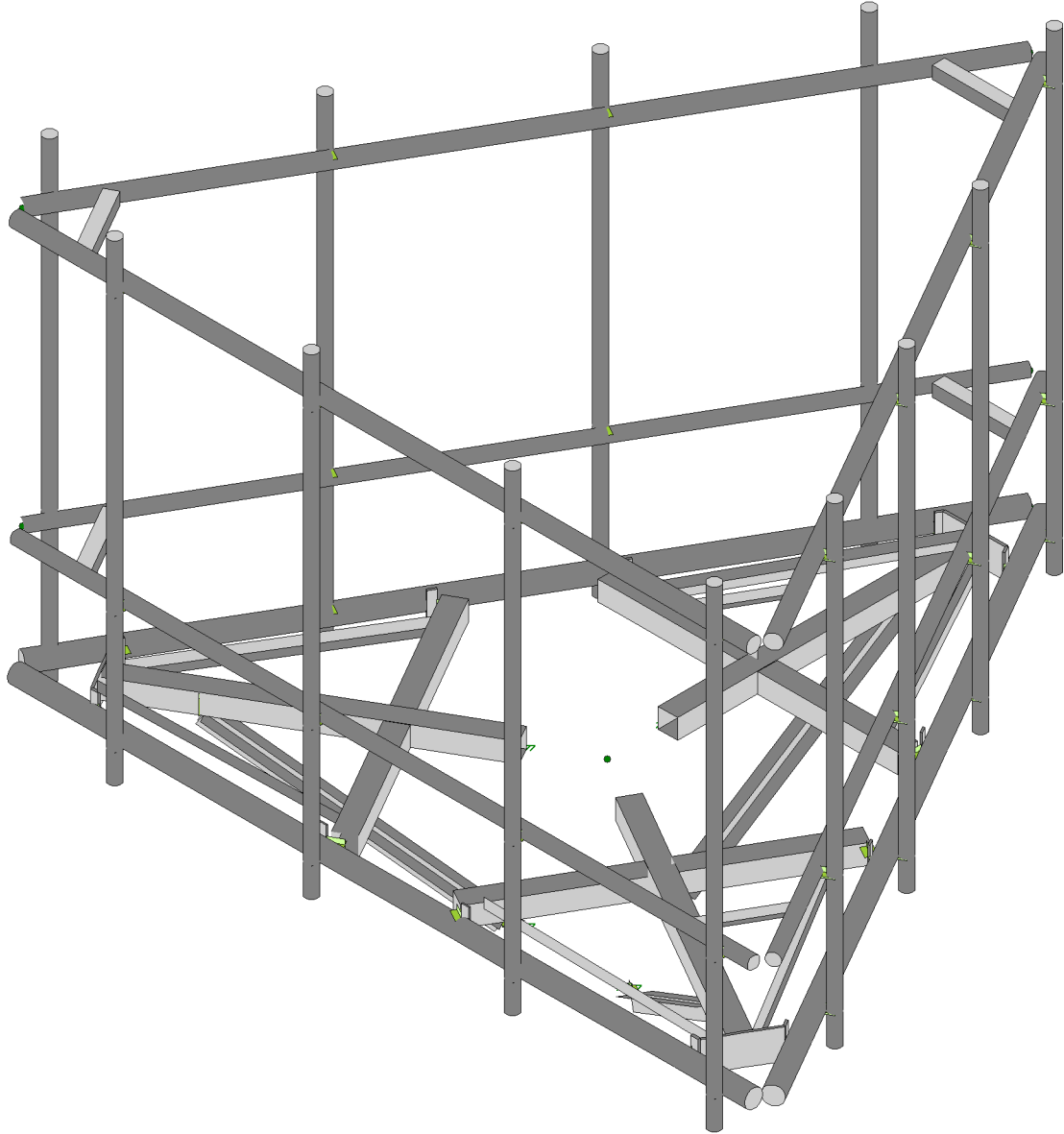
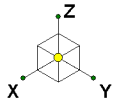
4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the structural modifications listed below must be completed.

1. Install a new PRK-1245.
2. Install a new HRK12.

Engineering detail drawings have been provided in Appendix E – Mount Modification Design Drawings. Connection from the mount to the tower and local stresses on the tower are sufficient.

APPENDIX A
WIRE FRAME AND RENDERED MODELS

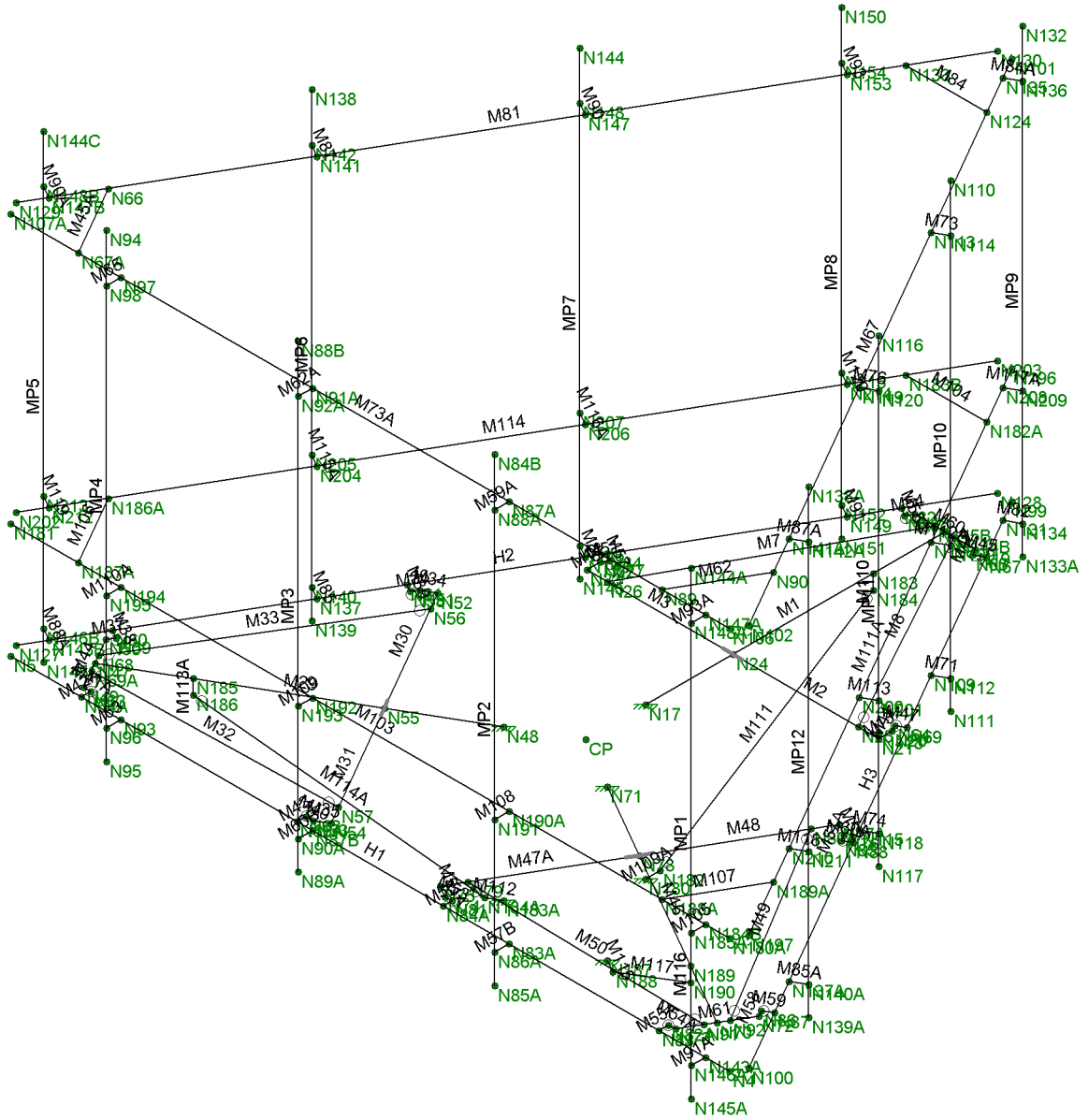
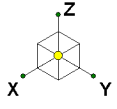


Envelope Only Solution

Trylon
AM
212290

876360

SK - 1
July 4, 2022 at 10:40 AM
876360_loaded.r3d



Envelope Only Solution

Trylon
AM
212290

876360

SK - 2
July 4, 2022 at 10:40 AM
876360_loaded.r3d

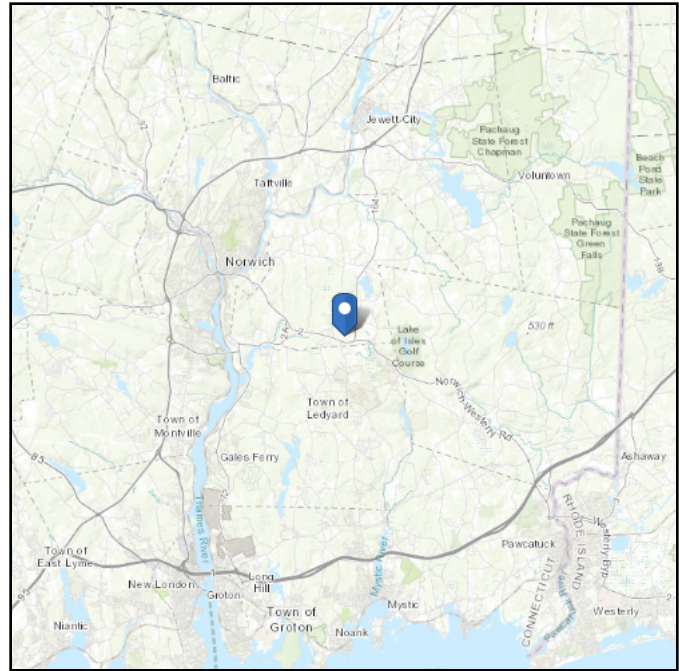
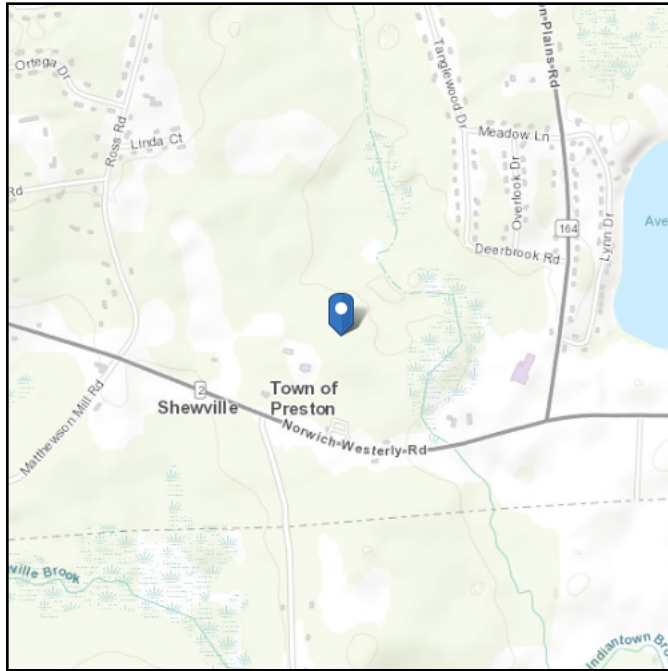
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 134.57 ft (NAVD 88)
Latitude: 41.490347
Longitude: -71.991542



Wind

Results:

Wind Speed	126 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	98 Vmph
100-year MRI	103 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed Jun 29 2022

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

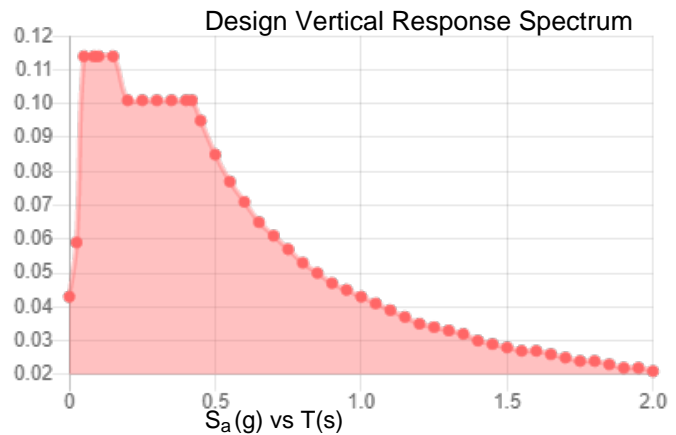
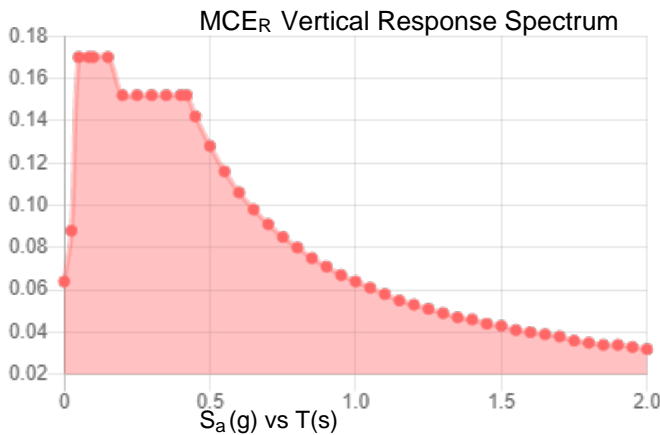
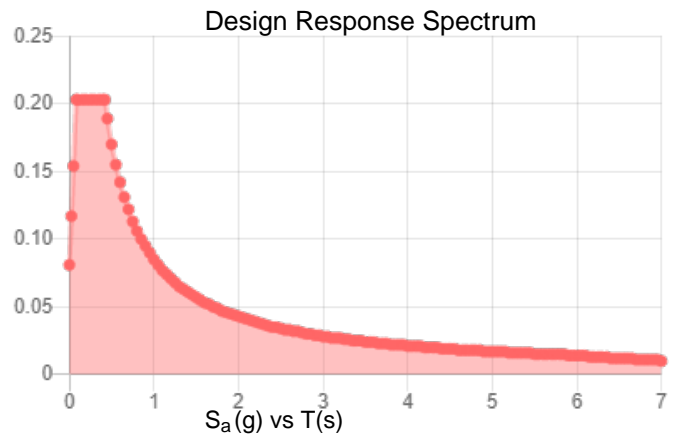
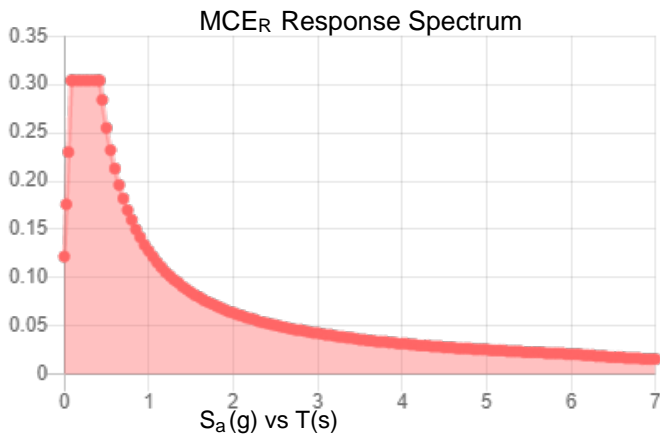
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.19	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.104
F_v :	2.4	PGA _M :	0.166
S_{MS} :	0.304	F_{PGA} :	1.591
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.203	C_v :	0.7

Seismic Design Category B



Data Accessed: Wed Jun 29 2022

Date Source:

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

Ice

Results:

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

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

Date Accessed: Wed Jun 29 2022

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

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

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

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



Trylon

1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.2

PROJECT DATA	
Job Code:	212290
Carrier Site ID:	CT11441A
Carrier Site Name:	Town Hall Sprint Tower

CODES AND STANDARDS	
Building Code:	2018 IBC
Local Building Code:	2018 CSBC
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	147.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	147.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Default	--
Ground Elevation:	134.57	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	126	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.37	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (G _h):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	52.74	psf
Ground Elevation Factor (K_e):	1.00	--

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	7.03	psf
Mount Ice Thickness (t_{iz}):	1.16	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	94.93	psf
Round Member Pressure:	56.96	psf
Ice Wind Pressure:	7.59	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel. (S_s):	0.190	g
1 Second Accel. (S_1):	0.053	g
Short Period Des. (S_{DS}):	0.20	g
1 Second Des. (S_{D1}):	0.08	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (C_s):	0.10	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

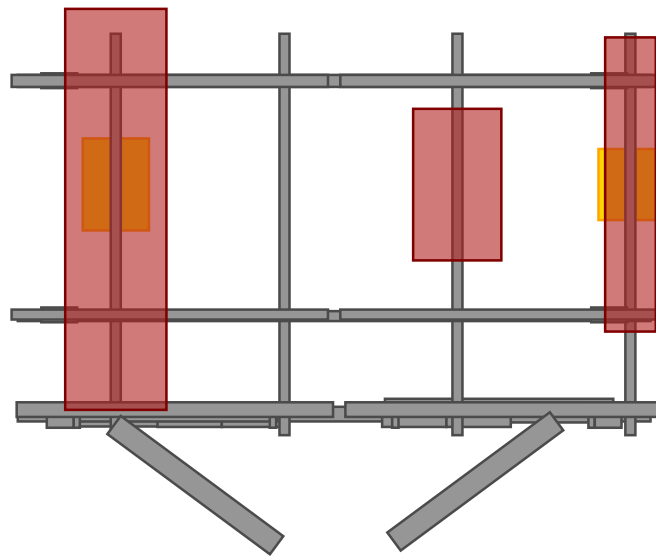
#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

ELEVATION VIEW



MP4

MP3

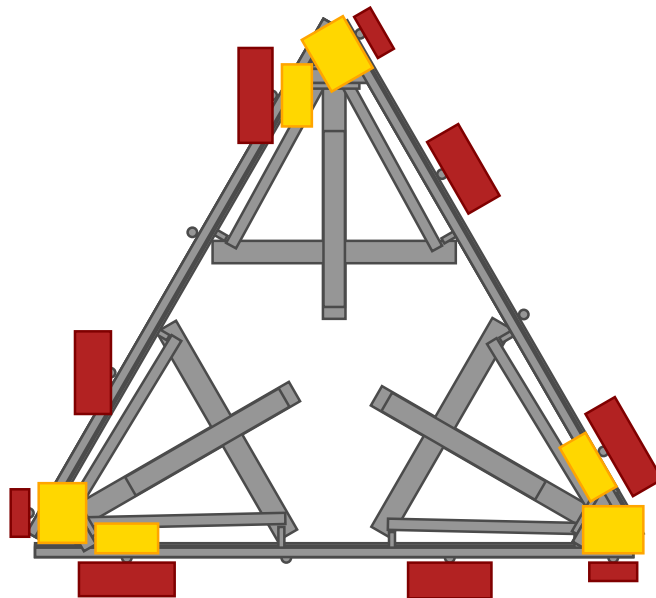
MP2

MP1

*these drawings are intended to show approximate locations of equipment on the mount and should not be used to determine exact placement of equipment or additional hardware

**Elevation View Shows Only One Sector

PLAN VIEW



APPENDIX C
SOFTWARE ANALYSIS OUTPUT

fl `cVUL'A cXY`GYHj| g

Öä æ Ä ^ & ä } • Ä Ä ^ { à ^ ! Ä æ & •	I Á
T æ Ä Ö c } æ Ä ^ & ä } • Ä Ä ^ { à ^ ! Ä æ & •	J I Á
Q & ~ ä ^ Ä @ æ Ä ^ ~ { } æ ä } N	Y ^ •
Q & ^ æ ^ Ä æ ä } * Ä æ æ ä c Ä Ä Y ä ä N	Y ^ •
Q & ~ ä ^ Ä æ ä } ä * N	Y ^ •
V æ • Ä æ ä Ö c } Ä Ö c ^ • ^ & ä } * Ä [[ä Ä æ æ N	Y ^ •
Ö E ^ æ S æ ä Ä ^ • @ Ä ä Ö	F I I
T ^ ! * ^ Ä ^ ä } & ^ Ä ä D	E G
Ü E ^ c æ Ö æ } • ä Ä ^ ä } &	E E € A
Q & ~ ä ^ Ä Ü E ^ c æ Ä Ä Y æ • N	Y ^ •
Ö E { { æ ä æ ^ Ä c æ Ä Ü c ä } ^ • • Ä Ä Y æ • N	Y ^ •
T æ Ä Ö c } • Ä Ä Y æ Ä Ü c ä } ^ • •	H
Ö æ ä c Ä Ö & ^ ^ ä } Ä ä D ^ & ä Ö	H I I E
Y æ Ä ^ • @ Ü ä ^ Ä ä D	G
Ö ä ^ } • ^ ä } Ä } c ^ ! ^ } & Ä E F E Ö E D	I
X ^ c æ ä Ö æ ä	Z
Ö ä æ Ä ^ { à ^ ! Ä ä } æ ä } Ä æ ^	Y Y
Ü c æ Ä c ^ !	U æ ^ • Ä Ö & ^ ^ ä } ä
Ö ^ } æ ä Ä c ^ !	Ö & ^ ^ ä } ä c ^ !

P c Ä ä Ä Ü c ^ Ä ä ^	Ö Ü Ö Ä F c Ö H E F I D S U Ö Ö
Ö ä b • c Ä c ä } ^ • • N	Y ^ • Ö c æ ä ^ D
Ü Ü Ö Ö } } ^ & ä } Ä ä ^	Ö Ü Ö Ä F c Ö H E F I D S U Ö Ö
Ö ä Ä { ^ ä Ä Ü c ^ Ä ä ^	Ö Ü Ö Ä F E E E F I K S U Ö Ö
Y [ä Ä ä ^	P } ^
Y [ä Ä ^ { } ^ ! æ ^ ! ^	L A F E E Ö
Ö } & ^ c Ä Ö ä ^	P } ^
T æ } ^ Ä ä ^	P } ^
Ö E { { ä ~ { Ä ä ^	P } ^ Ä Ö ä ä ä *
Ü c æ ^ • • Ä Ü c ^ Ä ä ^	Ö Ü Ö Ä F c Ö H E F E D S U Ö Ö
Ö ä b • c Ä c ä } ^ • • N	Y ^ • Ö c æ ä ^ D

P ~ { à ^ ! Ä - Ä @ æ Ä ^ * ä } •	I
Ü ^ * ä } Ä æ ä } * Ä & ^ { ^ } c ä D	I
Ö ä c ä Ä Ö { } Ä ^ c @ ä	Ö c ä c Ö c ^ æ ä }
Ü æ { ^ Ä ^ c ä c ä c Ä Ö Ö E D	E I
Ö } & ^ c Ä Ü c ^ • Ä &	Ü ^ & c ä } * æ
W ^ Ä Ö æ ä ^ ä Ä ^ & ä } • N	Y ^ •
W ^ Ä Ö æ ä ^ ä Ä ^ & ä } • Ä æ ä N	P
Ö ä Ä Ö æ ä ä * Ä æ } ä * N	P
W ^ • ^ ä Ä & ^ Ä æ } ä * N	Y ^ •
T ä F Ä Ö c Ä Ö ä } E Ä æ ä } * N	P
Ö } & ^ c Ä ^ ä ä Ä ^ c	Ü Ö Ö Ö Ü ' Ü Ö Ü ' Ö E V T Ö E F I
T ä Ä Ä Ü c ^ Ä Ä { }	F
T æ Ä Ä Ü c ^ Ä Ä { }	I

APPENDIX D
ADDITIONAL CALCULATIONS

BOLT TOOL 1.5.2

Project Data	
Job Code:	212290
Carrier Site ID:	CT11441A
Carrier Site Name:	Town Hall Sprint Tower

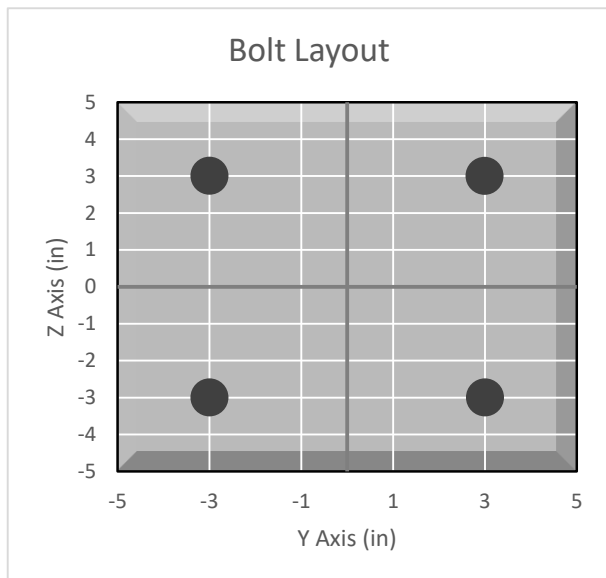
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	AISC

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in

Connection Description
Standoff to Monopole Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	3168.9	lbs
Shear Force (V_u):	150.3	lbs
Tension Usage:	14.8%	--
Shear Usage:	1.0%	--
Interaction:	14.8%	Pass
Controlling Member:	M29	--
Controlling LC:	7	--

*Rating per TIA-222-H Section 15.5



BOLT TOOL 1.5.2

Project Data	
Job Code:	212290
Carrier Site ID:	CT11441A
Carrier Site Name:	Town Hall Sprint Tower

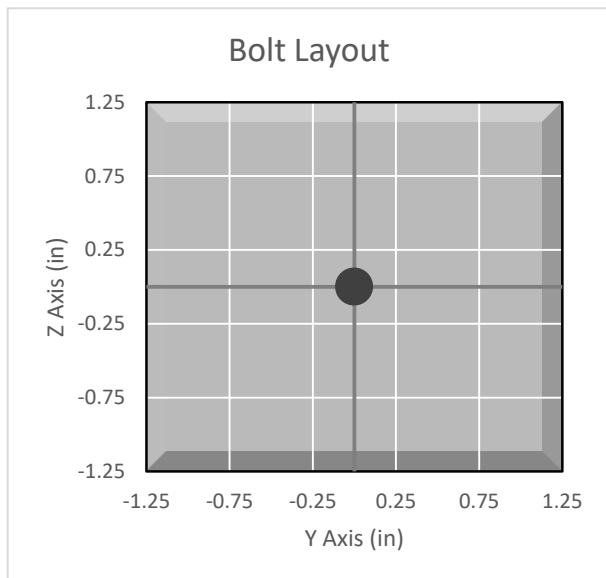
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	AISC

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	1	--
Threads Included:	Yes	--
Double Shear:	Yes	--
Connection Pipe Size:	-	in

Connection Description
Stabilizer to Tower

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	0.0	lbs
Shear Force (V_u):	3643.2	lbs
Tension Usage:	0.0%	--
Shear Usage:	25.1%	--
Interaction:	25.1%	Pass
Controlling Member:	M112	--
Controlling LC:	7	--

*Rating per TIA-222-H Section 15.5



APPENDIX E
MOUNT MODIFICATION DESIGN DRAWINGS (MDD)

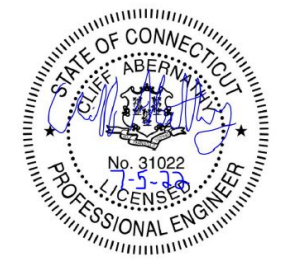
T-Mobile



1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057



1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421



DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE
PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES
ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	06/30/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
PRESTON / TOWN HALL

SITE NUMBER:
CT11441A

SITE ADDRESS:
389 RT. 2,
PRESTON, CT 06365

SHEET DESCRIPTION

TITLE SHEET

SHEET No.

T-1

UPGRADE:
MOUNT REINFORCEMENT

SITE NAME:
PRESTON / TOWN HALL

SITE NUMBER:
CT11441A

CROWN CASTLE BU#:
876360

SITE ADDRESS:
389 RT. 2,
PRESTON, CT 06365

PROJECT INFORMATION

SCOPE OF WORK:	REINFORCE AS FOLLOWS: <ul style="list-style-type: none"> INSTALL NEW SITE PRO 1, PRK-1245 KICKER KIT AT APPROXIMATELY 31.5" BELOW THE EXISTING STANDOFF ELEVATION. INSTALL NEW SITE PRO 1, HRK12 HANDRAIL KIT AT APPROXIMATELY 24" ABOVE THE EXISTING STANDOFF ELEVATION.
JURISDICTION:	NEW LONDON COUNTY
SITE NAME:	PRESTON / TOWN HALL
SITE ADDRESS:	389 RT. 2, PRESTON, CT 06365
LATITUDE:	41° 29' 25.25"
LONGITUDE:	-71° 59' 29.55"
TOWER TYPE:	MONOPOLE
OVERALL TOWER HEIGHT:	147'
ELEVATION OF WORK ON TOWER:	147'

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1	TITLE SHEET	0
S-1	MOUNT REINFORCEMENT	0
S-2	MOUNT REINFORCEMENT DETAILS	0

APPROVALS

_____ T-MOBILE CONSTRUCTION MANAGER	_____ T-MOBILE RF ENGINEER
_____ LAND USE PLANNER	_____ NETWORK OPERATION
_____ PROPERTY OWNER	_____ CONTRACTOR

DRIVING DIRECTION

FROM TWEED NEW HAVEN REGIONAL AIRPORT:
HEAD SOUTHWEST (417 FT). TURN LEFT (0.2 MI). TURN RIGHT ONTO BURR ST (0.2 MI). TURN LEFT TO STAY ON BURR ST (0.1 MI). SLIGHT LEFT ONTO CHARTER OAK AVE (0.6 MI). TURN LEFT ONTO MAIN ST (0.4 MI). TURN RIGHT ONTO OAKLEY ST (358 FT). TURN RIGHT ONTO US-1 N (0.5 MI). USE THE LEFT LANE TO TAKE THE RAMP ONTO I-95 N (0.2 MI). MERGE WITH I-95 N (38.2 MI). KEEP LEFT AT THE Y JUNCTION TO CONTINUE ON I-395 N, FOLLOW SIGNS FOR INTERSTATE 395 N/NORWICH/PLAINFIELD (9.3 MI). TAKE EXIT 9 FOR CONNECTICUT 2 ALTERNATE E TOWARD PRESTON/LEDYARD (0.4 MI). CONTINUE ONTO CT-2A E (2.4 MI). USE THE MIDDLE LANE TO TURN LEFT ONTO CT-12 N/CT-2A E (0.2 MI). TURN RIGHT ONTO CT-2A E (1.8 MI). TURN LEFT ONTO CT-117 N/CT-2A E (0.8 MI). TURN RIGHT ONTO CT-2 E (2.3 MI). TURN LEFT ONTO HALL RD (0.1 MI). TURN RIGHT (92 FT).

VICINITY MAP



GENERAL NOTES

PRIOR TO ACCESSING/ ENTERING THE SITE, YOU MUST CONTACT THE CROWN NOC AT
800-788-7011 AND CROWN CM
CHAD STEINHOFF- 214-287-3756, CHAD.STEINHOFF@CROWNCastle.COM

THE HEIGHT OF THE TOWER WILL NOT BE INCREASED, NOR AN EXPANSION OF THE GROUND/
LEASE AREA WHEN AND WHERE APPLICABLE

BUILDING CODES

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE
CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL AUTHORITIES HAVING
JURISDICTION

- 2018 INTERNATIONAL BUILDING CODE
- UNIFORM BUILDING CODE
- CITY/COUNTY ORDINANCES
- TIA-222-H

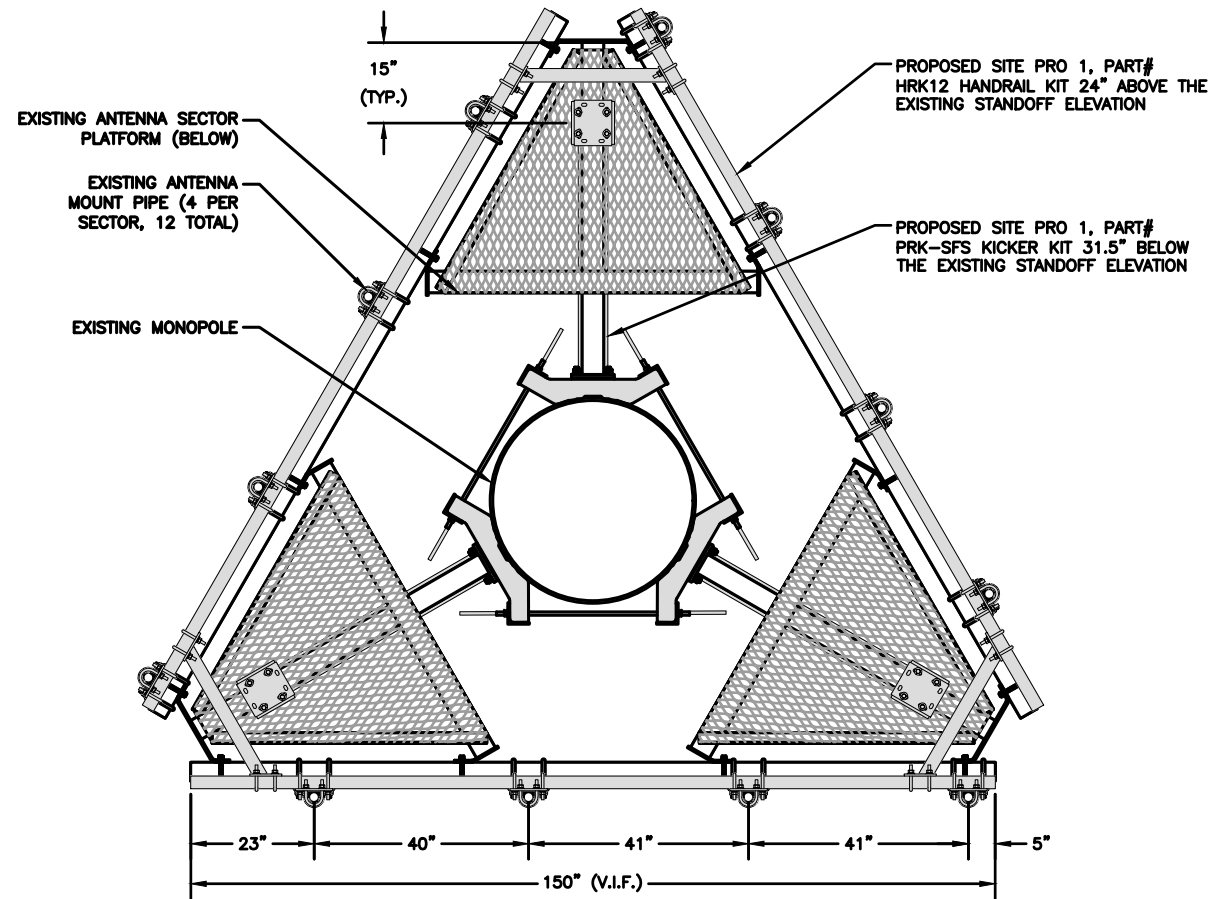


IF YOU DIG IN ANY STATE DIAL 811
FOR THE LOCAL "ONE CALL CENTER"
IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE
OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO
RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY
TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO THE
EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

INSTALLATION NOTES:

- INSTALL NEW SITE PRO 1, PRK-1245 KICKER KIT AT APPROXIMATELY 31.5" BELOW THE EXISTING STANDOFF ELEVATION.
- INSTALL NEW SITE PRO 1, HRK12 HANDRAIL KIT AT APPROXIMATELY 24" ABOVE THE EXISTING STANDOFF ELEVATION.



2
S-1

EQUIPMENT NOT SHOWN FOR CLARITY.

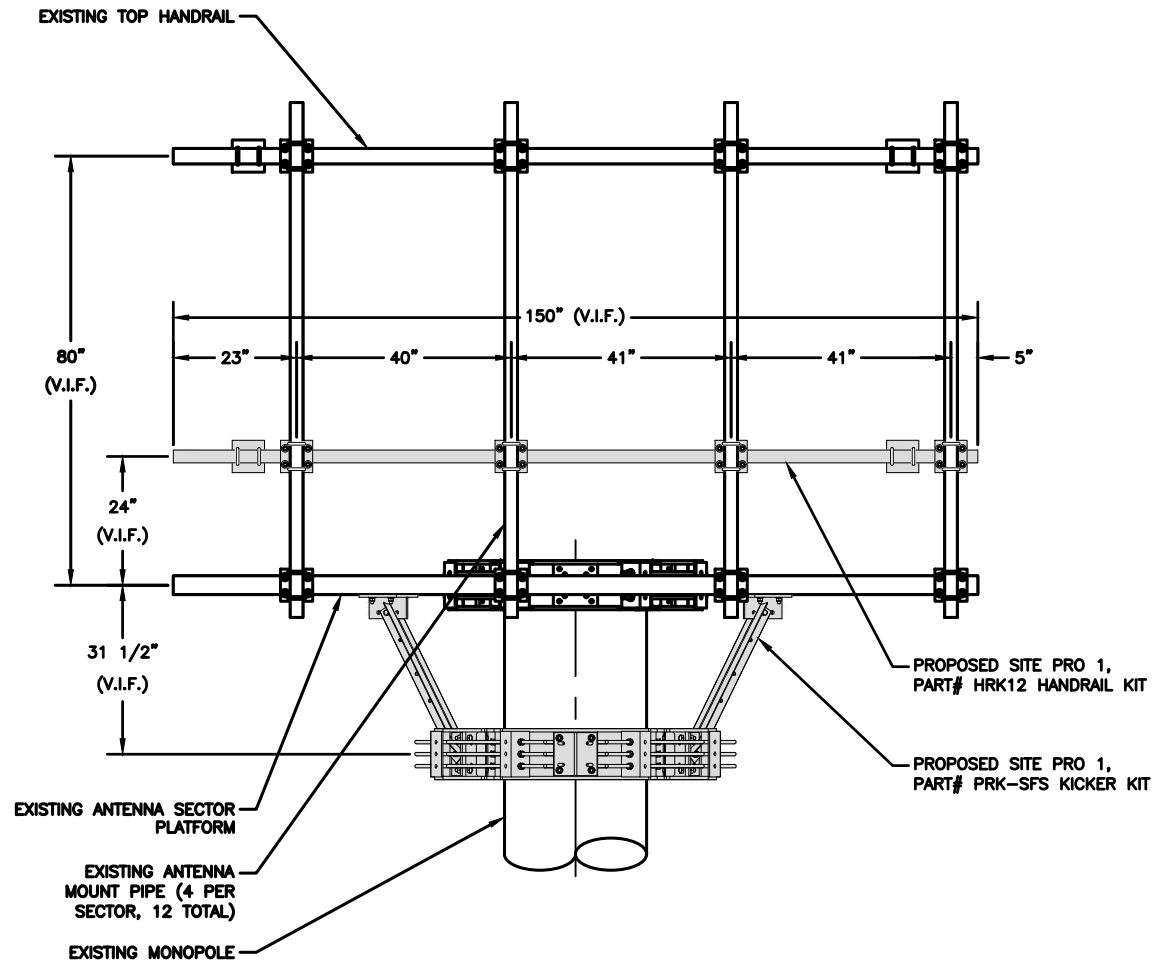
1 PROPOSED PLAN VIEW (ALL SECTORS)
S-1 SCALE: 3/4" = 1'-0"



BILL OF MATERIALS		
QTY.	KIT NO./PART NO.	DESCRIPTION
1 TOTAL	PRK-SFS	KICKER KIT
1 TOTAL	HRK12	HANDRAIL KIT

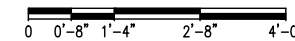
GENERAL NOTES:

1. ALL STEEL ANGLE TO BE ASTM A36 (GR 36) OR BETTER.
2. ALL STEEL PLATE TO BE ASTM A36 (GR 36) OR BETTER.
3. ALL PIPES TO BE ASTM A53 (GR 35) OR BETTER.
4. HOT DIP GALVANIZE LEVEL 3 PARTS.
5. APPLY TWO COATS OF GALVICON TO ALL FIELD CUT OR DRILL EDGES.
6. ALL BOLTS TO MAINTAIN 1" EDGE DISTANCE.



EQUIPMENT NOT SHOWN FOR CLARITY.

2 PROPOSED ELEVATION VIEW (ALL SECTORS)
S-1 SCALE: 3/4" = 1'-0"



1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057



1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421



DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	06/30/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
PRESTON / TOWN HALL

SITE NUMBER:
CT11441A

SITE ADDRESS:
389 RT. 2,
PRESTON, CT 06365

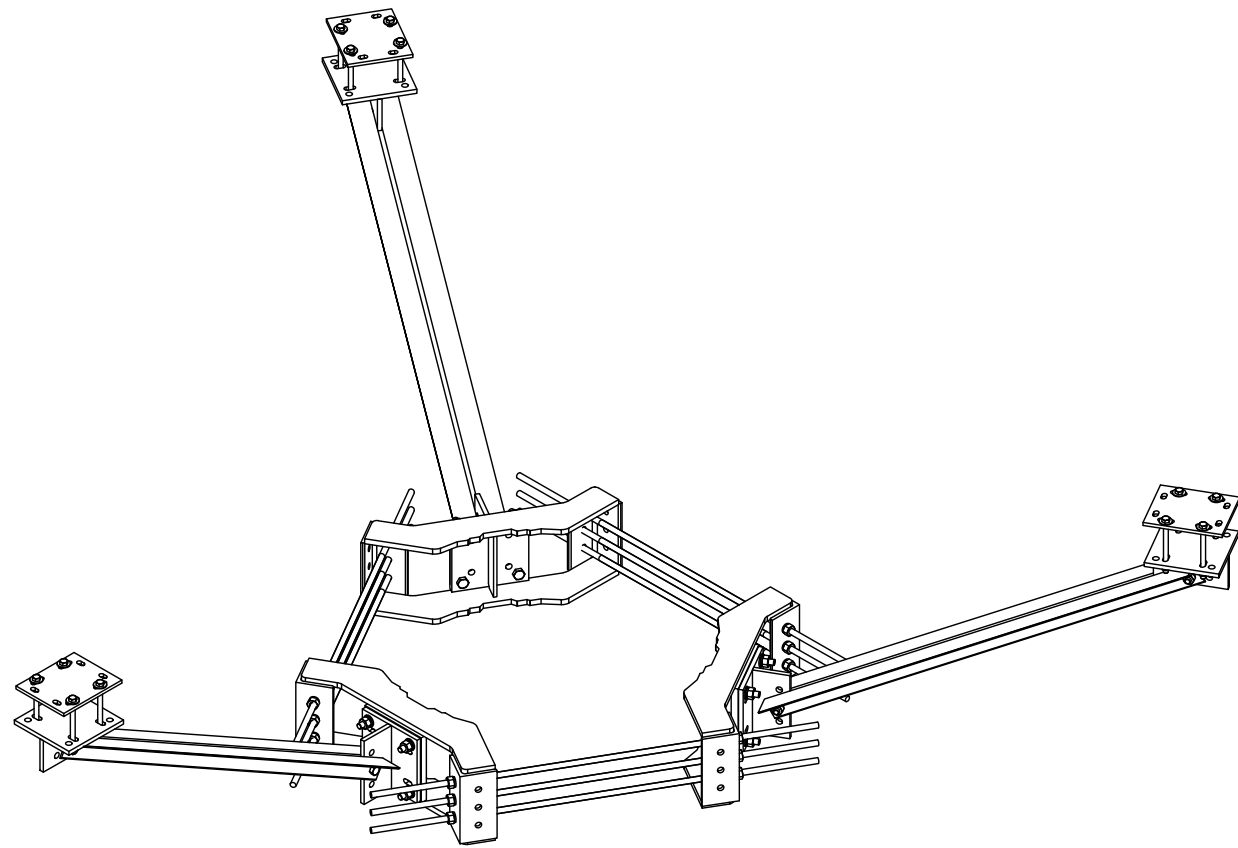
SHEET DESCRIPTION

MOUNT REINFORCEMENT

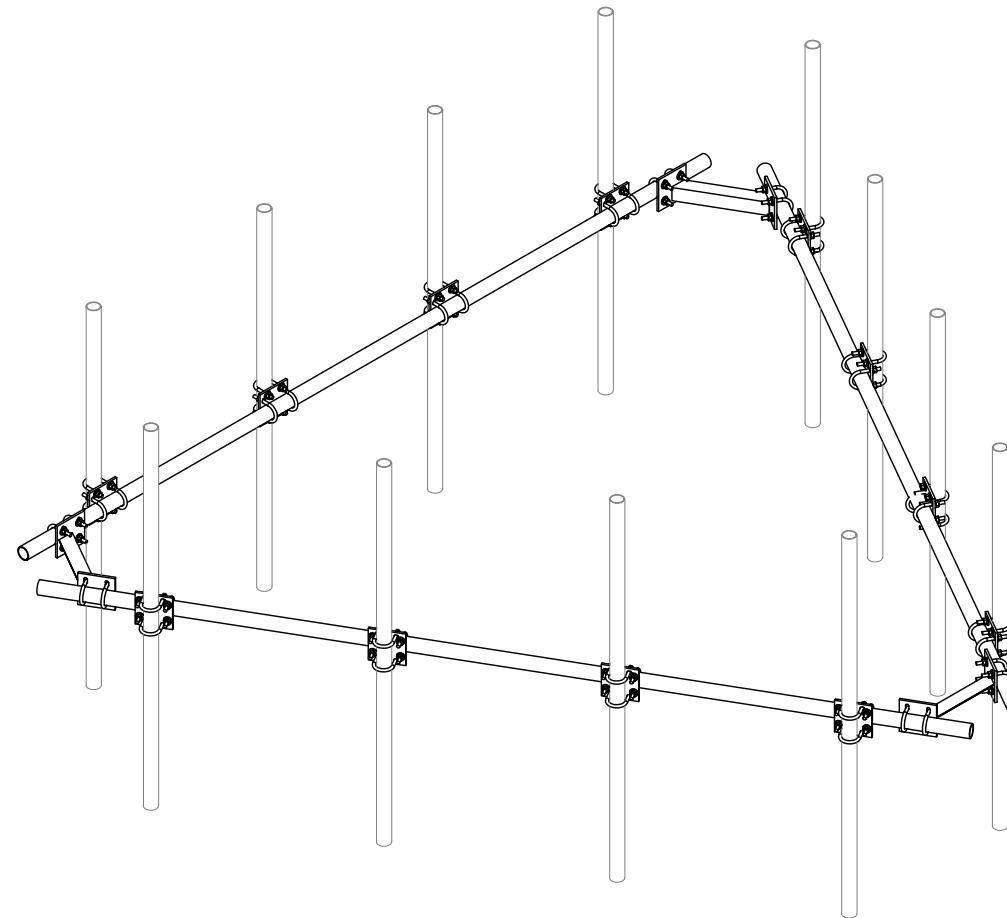
SHEET No.

S-1

MOUNT KIT	
PART NUMBER	DESCRIPTION
PRK-1245	REINFORCEMENT ASSEMBLY KIT



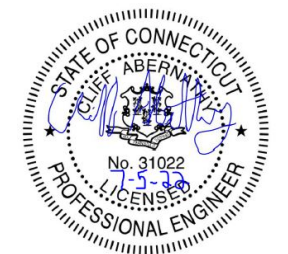
MOUNT KIT	
PART NUMBER	DESCRIPTION
HRK12	HANDRAIL KIT



1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057



1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421



DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE
PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES
ARE DEEMED "NOT TO SCALE".

SUBMITTALS			
REV	DATE	DESCRIPTION	BY
0	06/30/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
PRESTON / TOWN HALL

SITE NUMBER:
CT11441A

SITE ADDRESS:
389 RT. 2,
PRESTON, CT 06365

SHEET DESCRIPTION

MOUNT REINFORCEMENT
DETAILS

SHEET No.

S-2



Radio Frequency Emissions Analysis Report



Site ID: CT11441A

Town Hall Sprint Tower
389 Route 2
Portland, CT 06365

August 10, 2022

Fox Hill Telecom Project Number: 221562

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	31.92 %

August 10, 2022

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CT11441A – Town Hall Sprint Tower**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **389 Route 2, Portland, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **389 Route 2, Portland, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
LTE / 5G NR	2500 MHz (BRS)	8	20

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	149
A	2	Commscope VV-65B-R1	149
A	3	Ericsson AIR6419 B41	149
B	1	RFS APXVAALL24_43-U-NA20	149
B	2	Commscope VV-65B-R1	149
B	3	Ericsson AIR6419 B41	149
C	1	RFS APXVAALL24_43-U-NA20	149
C	2	Commscope VV-65B-R1	149
C	3	Ericsson AIR6419 B41	149

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.



RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.18
Antenna A2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	2.75
Antenna A3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.97
Sector A Composite MPE%							7.90
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.18
Antenna B2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	2.75
Antenna B3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.97
Sector B Composite MPE%							7.90
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.18
Antenna C2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	2.75
Antenna C3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.97
Sector C Composite MPE%							7.90

Table 3: T-MOBILE Emissions Levels



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
T-MOBILE – Max Per Sector Value	7.90 %
DISH	5.97 %
Verizon Wireless	12.01 %
AT&T	6.04 %
Site Total MPE %:	31.92 %

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	7.90 %
T-MOBILE Sector B Total:	7.90 %
T-MOBILE Sector C Total:	7.90 %
<hr/>	
Site Total:	31.92 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	149	3.26	600 MHz	400	0.81%
T-Mobile 700 MHz LTE	2	485.32	149	1.71	700 MHz	467	0.37%
T-Mobile 1900 MHz (PCS) LTE	4	1,807.42	149	12.71	1900 MHz (PCS)	1000	1.27%
T-Mobile 1900 MHz (PCS) GSM	1	677.78	149	1.19	1900 MHz (PCS)	1000	0.12%
T-Mobile 2100 MHz (AWS) LTE	4	1,936.69	149	13.62	2100 MHz (AWS)	1000	1.36%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	149	39.73	2500 MHz (BRS)	1000	3.97%
						Total:	7.90%

Table 6: T-MOBILE Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-MOBILE facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-MOBILE Sector	Power Density Value (%)
Sector A:	7.90 %
Sector B:	7.90 %
Sector C:	7.90 %
T-MOBILE Maximum Total (per sector):	7.90 %
Site Total:	31.92 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **31.92 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998



T-MOBILE SITE NUMBER: CT11441A

T-MOBILE SITE NAME: TOWN HALL SPRINT TOWER

SITE TYPE: MONOPOLE

TOWER HEIGHT: 147'-0"

BUSINESS UNIT #: 876360

**SITE ADDRESS: 389 RT. 2
PRESTON, CT 06365**

COUNTY: NEW LONDON

JURISDICTION: NEW LONDON COUNTY

CT11441A _ANCHOR: 67E5998E_1XAIR+1OP+1QP

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

**T-MOBILE SITE NUMBER:
CT11441A**

BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS

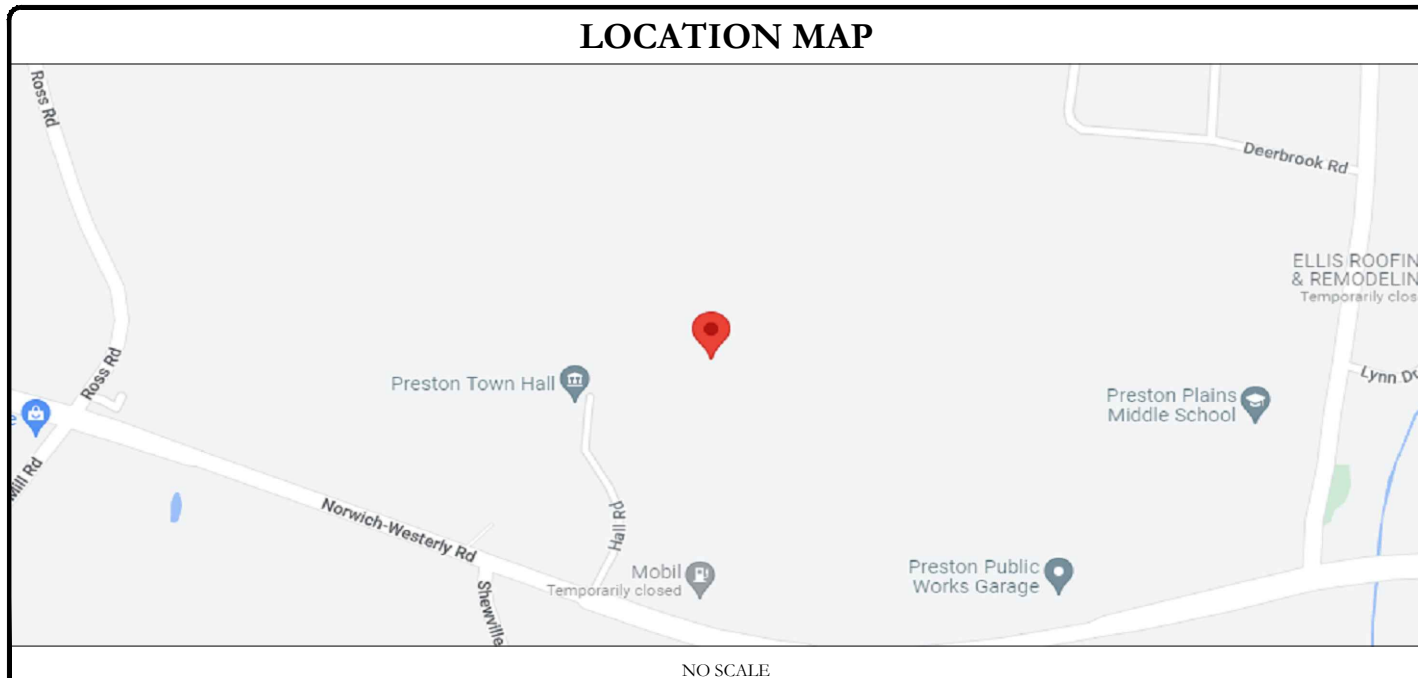
SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	PRESTON / TOWN HALL
SITE ADDRESS:	389 RT. 2 PRESTON, CT 06365
COUNTY:	NEW LONDON
MAP/PARCEL #:	VERIFY
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.49034000° (41° 29' 25.25")
LONGITUDE:	-71.99154300° (-71° 59' 29.55")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	±167 FT
CURRENT ZONING:	TBD
JURISDICTION:	NEW LONDON COUNTY
OCCUPANCY CLASSIFICATION:	TBD
TYPE OF CONSTRUCTION:	TBD
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	TBD
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	TBD
TELCO PROVIDER:	TBD

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



PROJECT TEAM

A&E FIRM:	INFINIGY 500 WEST OFFICE CENTER DR. SUITE 150, FORT WASHINGTON, PA 19034
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1500 CORPORATE DRIVE CANONSBURG, PA 15317
	TBD - PROJECT MANAGER
	TBD - CONSTRUCTION MANAGER

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:

- REMOVE (9) ANTENNAS
- REMOVE (3) TMAS
- REMOVE (3) RRHS
- INSTALL (9) ANTENNAS
- INSTALL (6) RRHS
- INSTALL (3) HYBRID CABLES

GROUND SCOPE OF WORK:

- REMOVE (1) EQUIPMENT CABINET
- INSTALL (1) 6160 & (1) B160 BATTERY CABINET
- INSTALL (1) PSU4813 VOLTAGE BOOSTER IN (P) CABINET
- INSTALL (1) CSR IXRE ROUTER IN (P) CABINET
- INSTALL (1) RP6651 IN (P) CABINET
- INSTALL (1) RP 6651 IN (E) RBS 6131 CABINET
- INSTALL (1) PSU4813 VOLTAGE BOOSTER IN (E) RBS 6131 CABINET

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2018 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	MORRISON HERSHFIELD
DATED:	07/18/2022
MOUNT ANALYSIS:	TRYLON
DATED:	07/04/2022
RFDS REVISION:	3
DATED:	6/3/2021
ORDER ID:	621166
REVISION:	0

CALL CONNECTICUT ONE CALL (800) 922-4455 CBYD.COM CALL 2 WORKING DAYS BEFORE YOU DIG!

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.	_____	_____
LAND USE PLANNER	_____	_____
T-MOBILE	_____	_____
OPERATIONS	_____	_____
RF	_____	_____
NETWORK	_____	_____
BACKHAUL	_____	_____
CONSTRUCTION MANAGER	_____	_____

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

SHUHEI SAKANoue
STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER
34916
08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-1	REVISION: 0
------------------------------------	------------------------------

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- NOTICE TO PROCEED- NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
- "LOOK UP" - CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT: THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED-STD-10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
- ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED-STD-10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS." IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GREENFIELD GROUNDING NOTES:

- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OFF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- APPROVED ANTI-OXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (I.E., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
- BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM. THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NON-FERROUS METAL PIPING ONLY).

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: T-MOBILE
TOWER OWNER: CROWN CASTLE USA INC.
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90° AT TIME OF PLACEMENT.
- CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WFF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER.....40 ksi
#5 BARS AND LARGER.....60 ksi
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 BARS AND LARGER.....2"
#5 BARS AND SMALLER.....1-1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLAB AND WALLS.....3/4"
BEAMS AND COLUMNS.....1-1/2"
- A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
- EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREFOLD SPECMATE WIREWAY).
- SLOTTED WIRING CUP SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (I.E. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
- METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T-MOBILE".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
120/208V, 3Ø	GROUND	GREEN
	A PHASE	BLACK
	B PHASE	RED
277/480V, 3Ø	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
DC VOLTAGE	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
	POS (+)	RED**
	NEG (-)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDSD	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES



35 GRIFFIN ROAD
BLOOMFIELD, CT 06002



1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

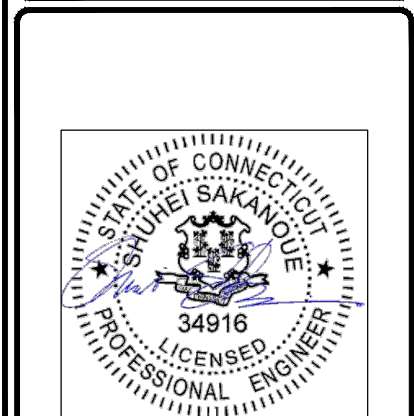
BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS

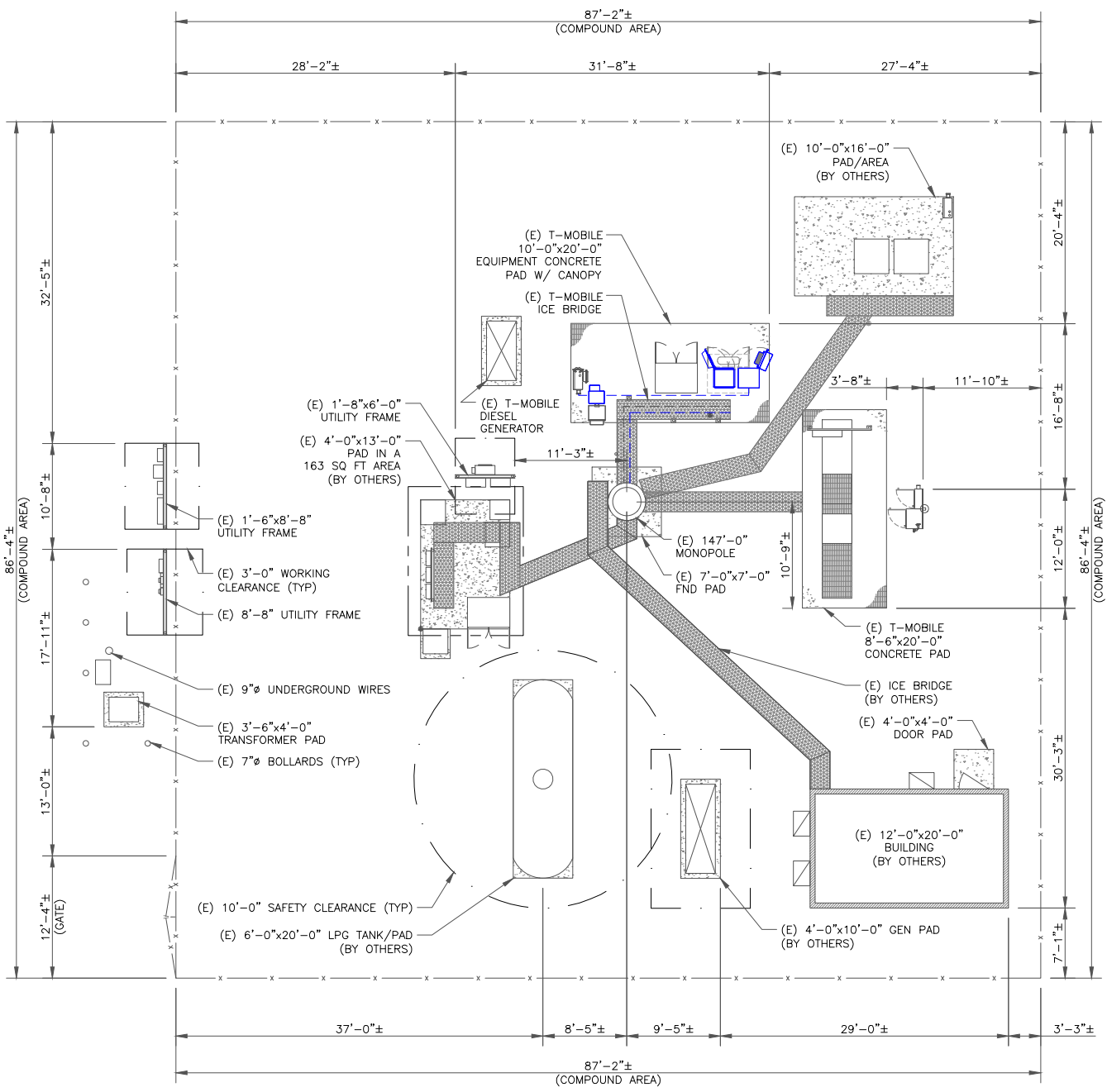


8/8/2022

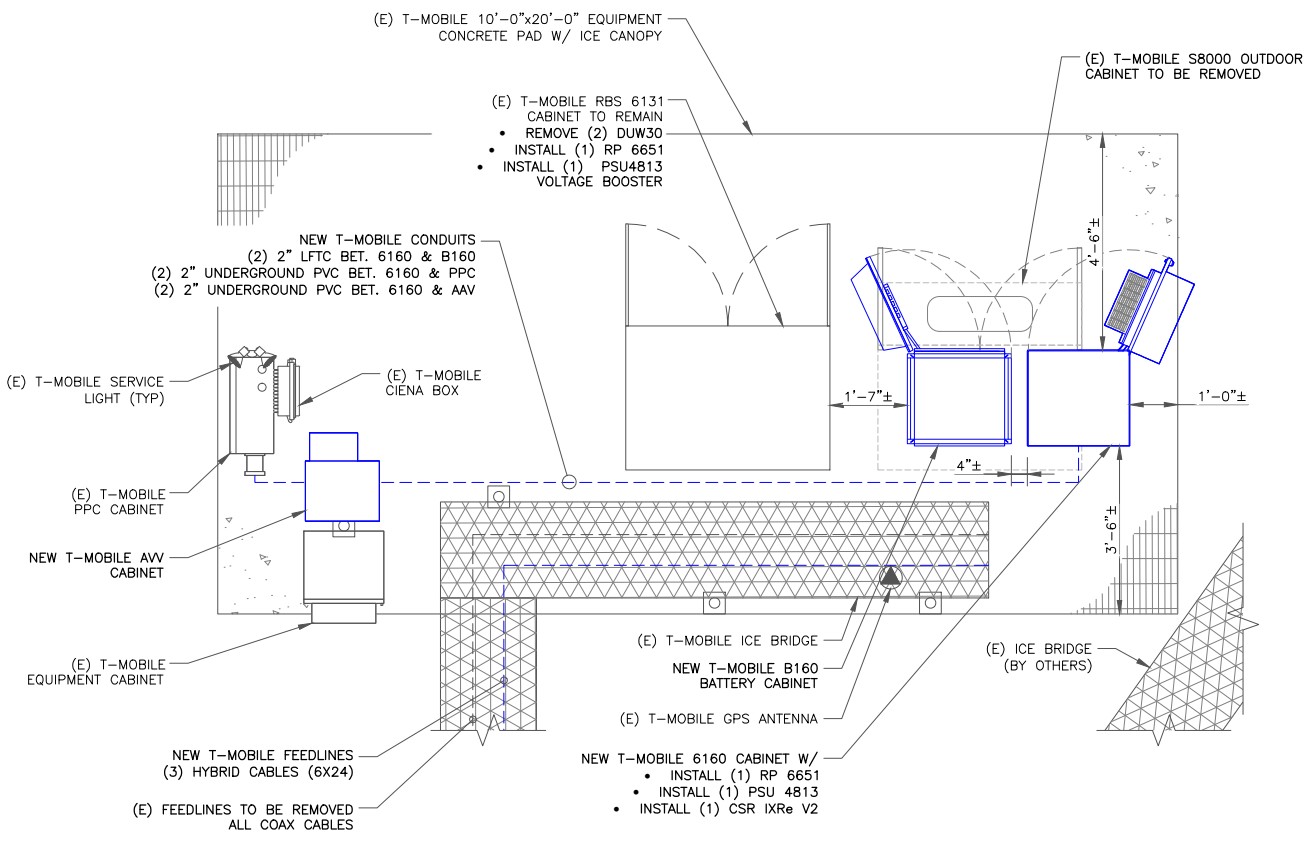
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **T-2** REVISION: **0**

NOTE:
 1. PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T-MOBILE EQUIPMENT.



1 SITE PLAN
 SCALE: 1/8"=1'-0" (FULL SIZE)
 1/16"=1'-0" (11x17)



2 ENLARGED SITE PLAN
 SCALE: 1/2"=1'-0" (FULL SIZE)
 1/4"=1'-0" (11x17)



T-Mobile

35 GRIFFIN ROAD
 BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
 CANONSBURG, PA 15317

INFINIGY

FROM ZERO TO INFINIGY
 the solutions are endless

500 West Office Center Dr.
 Suite 150 | Fort Washington, PA 19034
 www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

BU #: **876360**
PRESTON / TOWN HALL

389 RT. 2
 PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS

STATE OF CONNECTICUT
 SHUHEI SAKANOU
 34916
 LICENSED PROFESSIONAL ENGINEER

08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

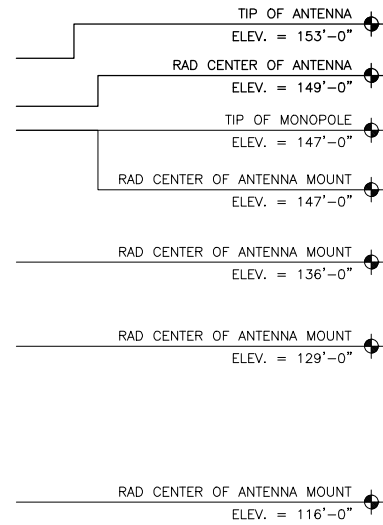
SHEET NUMBER: **C-1** REVISION: **0**

T-MOBILE EQUIPMENT

ANTENNA CL: 149'-0"
MOUNT CL: 147'-0"

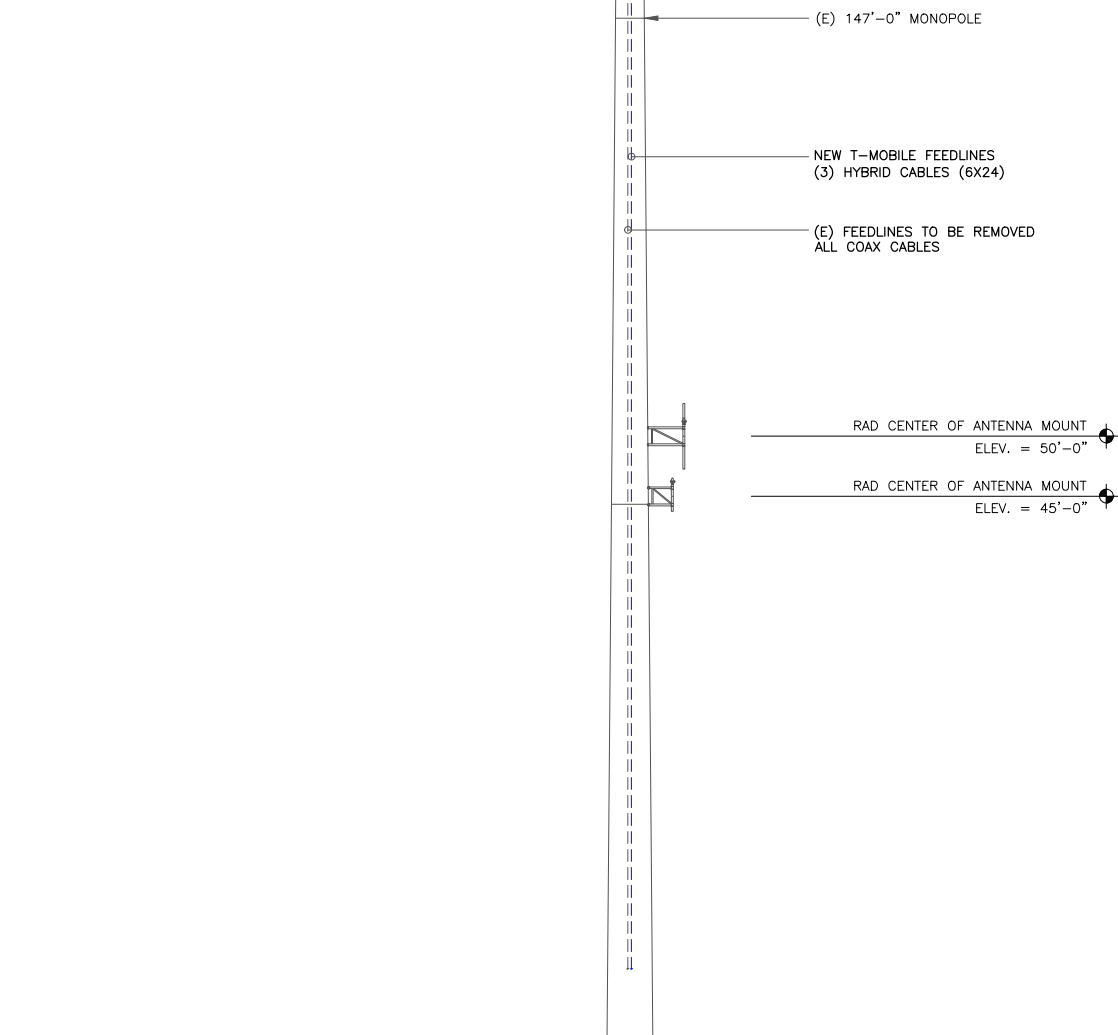
ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

(E) T-MOBILE ANTENNA, TMA, RRH & MOUNT TO BE REMOVED

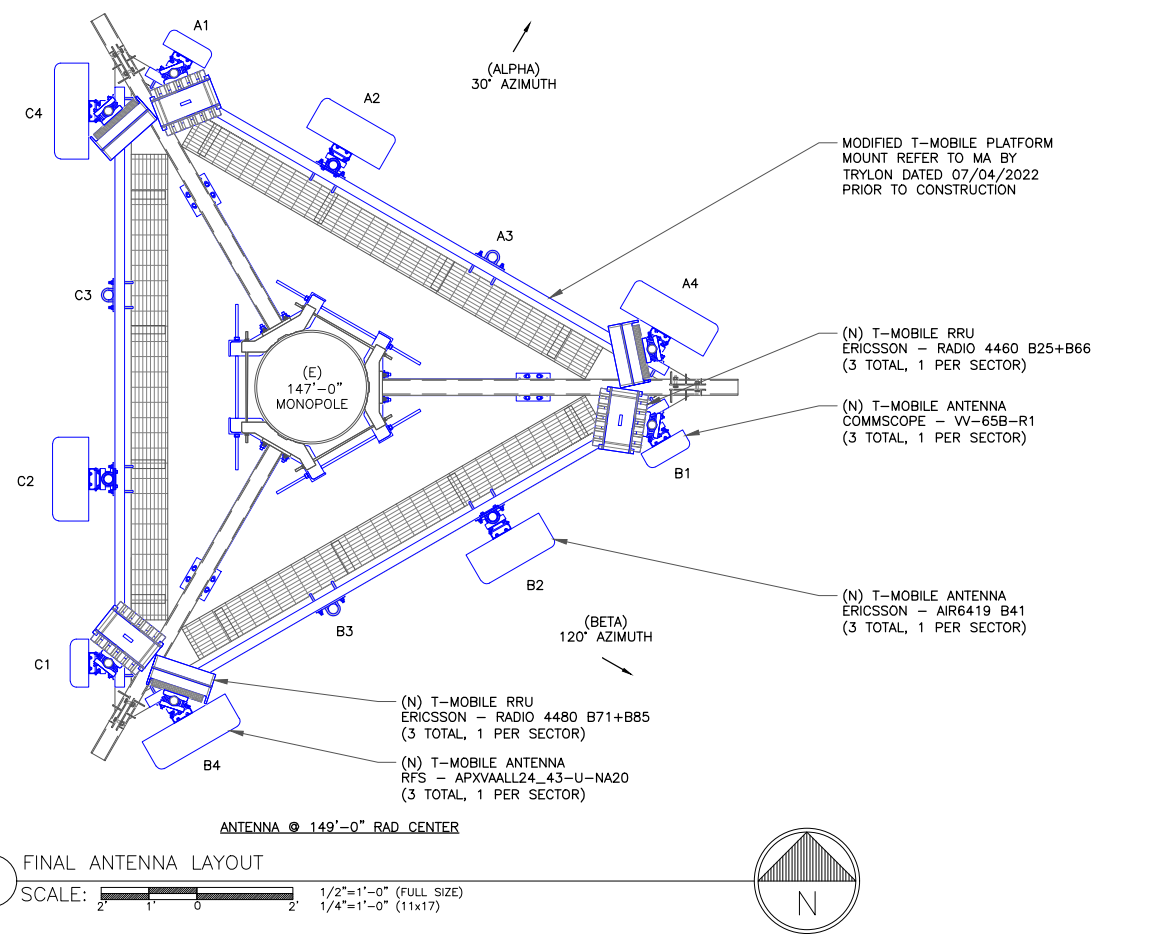
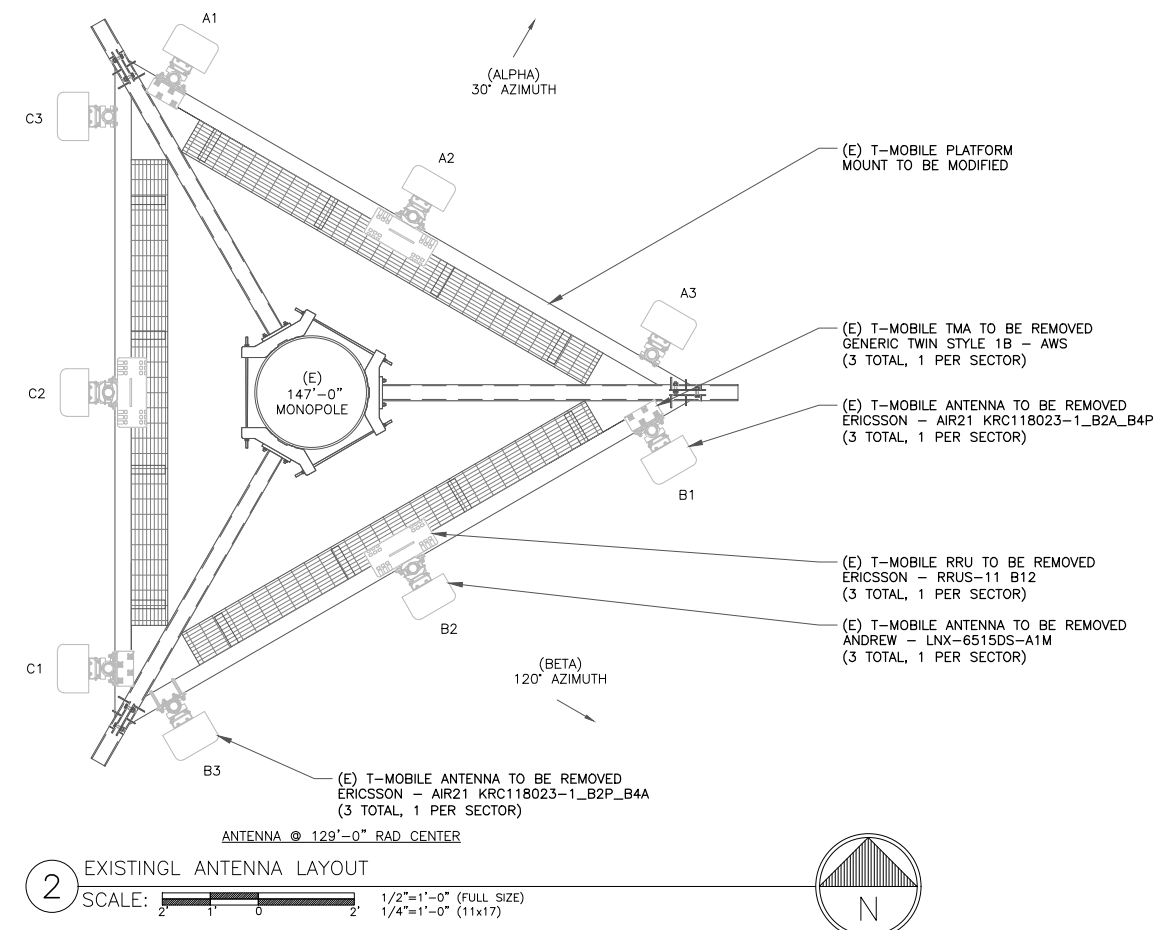


NOTES:

- ELEVATION BASED ON DRAWING PROVIDED BY TOWER OWNER. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.
- INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.



1 FINAL ELEVATION
SCALE: 1/8"=1'-0" (FULL SIZE)
1/16"=1'-0" (11x17)



T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

BU #: **876360**

PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS

STATE OF CONNECTICUT
SHUHEI SAKANQUE
34916
LICENSED PROFESSIONAL ENGINEER

08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

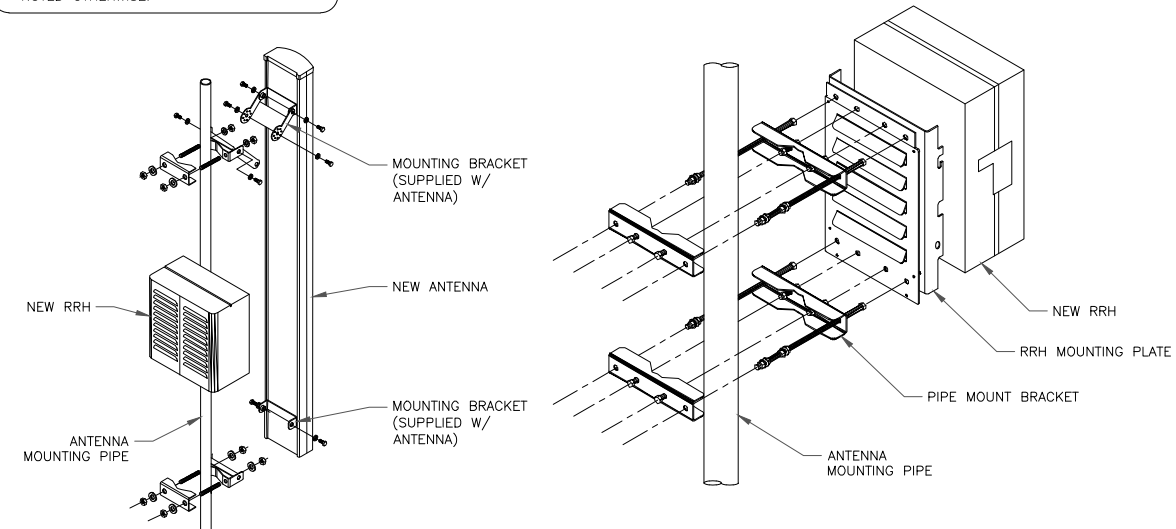
SHEET NUMBER: **C-2** REVISION: **0**

ANTENNA SCHEDULE										
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2100/1900, G1900	149'-0"	30°	COMMSCOPE	VV-65B-R1	0	2/2	(1) ERICSSON - RRUS 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH
ALPHA	A2	L2500, N2500	149'-0"	30°	ERICSSON	AIR 6419 B41	0	2/2	-	-
ALPHA	A3	-	-	-	-	-	-	-	-	-
ALPHA	A4	L600/700, N600	149'-0"	30°	RFS	APXVAALL24_43-U-NA20	0	2/2	(1) ERICSSON - RRUS 4480 B71+B85	-
BETA	B1	L2100/1900, G1900	149'-0"	120°	COMMSCOPE	VV-65B-R1	0	2/2	(1) ERICSSON - RRUS 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH
BETA	B2	L2500, N2500	149'-0"	120°	ERICSSON	AIR 6419 B41	0	2/2	-	-
BETA	B3	-	-	-	-	-	-	-	-	-
BETA	B4	L600/700, N600	149'-0"	120°	RFS	APXVAALL24_43-U-NA20	0	2/2	(1) ERICSSON - RRUS 4480 B71+B85	-
GAMMA	C1	L2100/1900, G1900	149'-0"	270°	COMMSCOPE	VV-65B-R1	0	2/2	(1) ERICSSON - RRUS 4460 B25+B66	(1) 6X24 HYBRID 60M IN LENGTH
GAMMA	C2	L2500, N2500	149'-0"	270°	ERICSSON	AIR 6419 B41	0	2/2	-	-
GAMMA	C3	-	-	-	-	-	-	-	-	-
GAMMA	C4	L600/700, N600	149'-0"	270°	RFS	APXVAALL24_43-U-NA20	0	2/2	(1) ERICSSON - RRUS 4480 B71+B85	-

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



NOTE:

1. CONTRACTOR SHALL INSTALL 3RD DUAL RRH MOUNT TO ACCOMMODATE ALL RRH BRACKETS HOLES IF NECESSARY.

2 ANTENNA WITH RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

BU #: **876360**
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

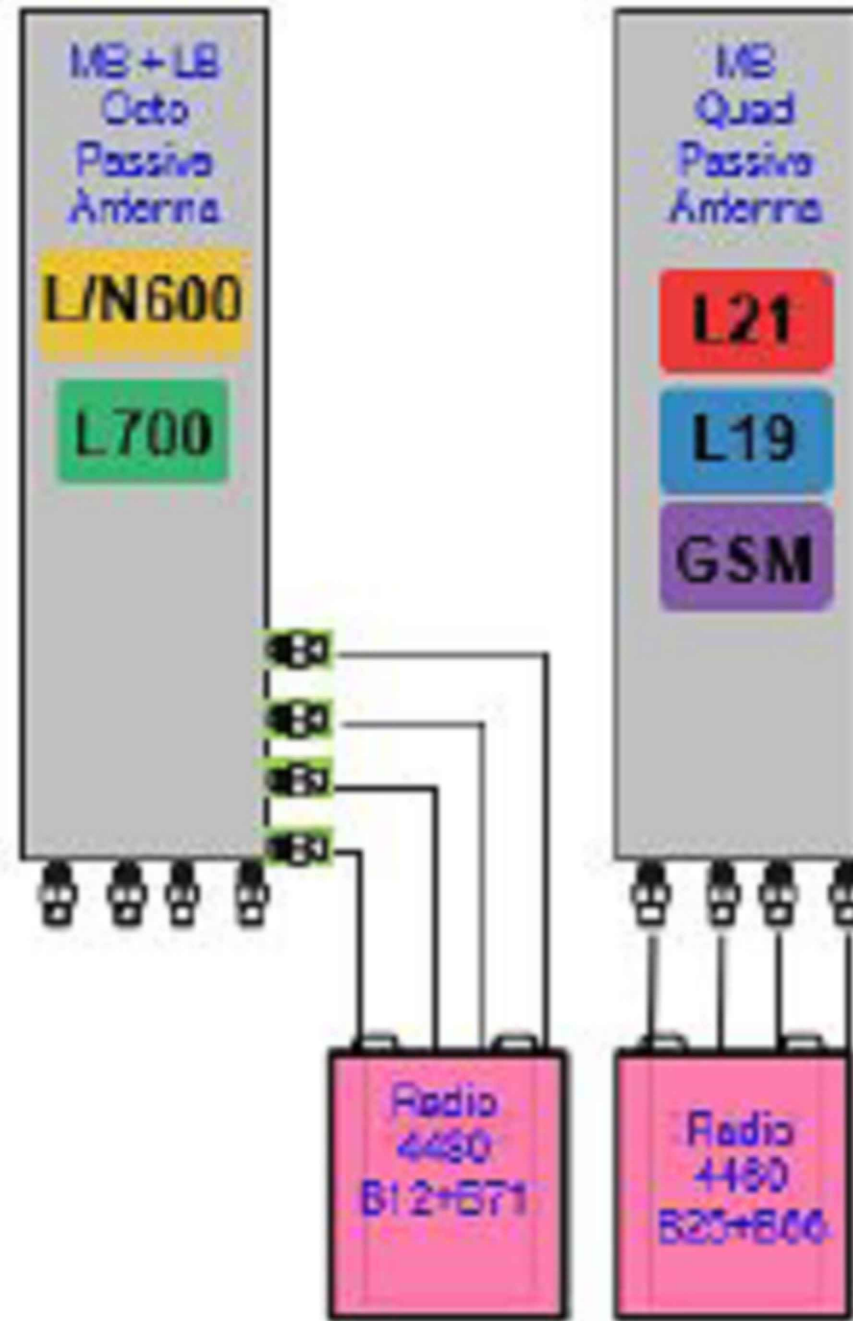
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS

STATE OF CONNECTICUT
SHUHEI SAKANoue
34916
LICENSED PROFESSIONAL ENGINEER

08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **C-3** REVISION: **0**



T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

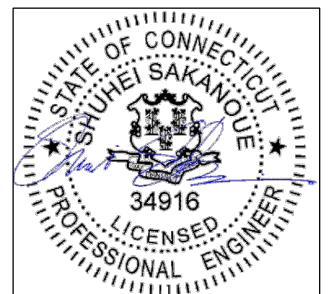
BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS



08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

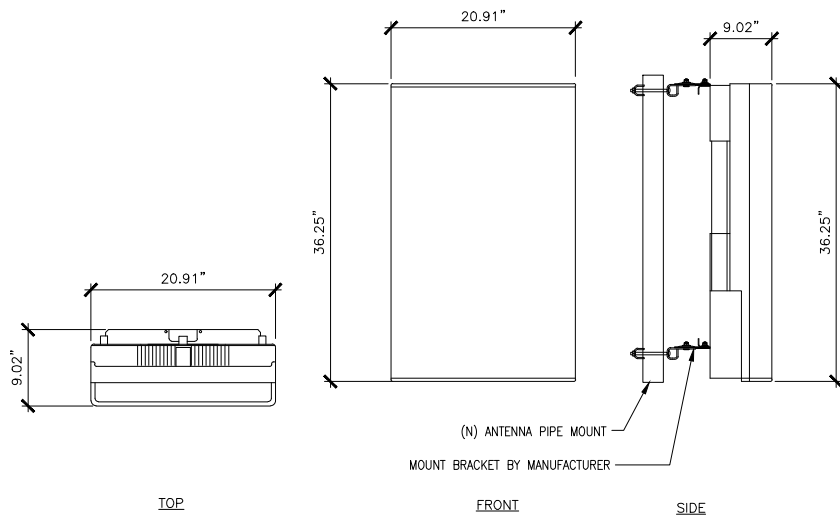
SHEET NUMBER:

C-4

REVISION:

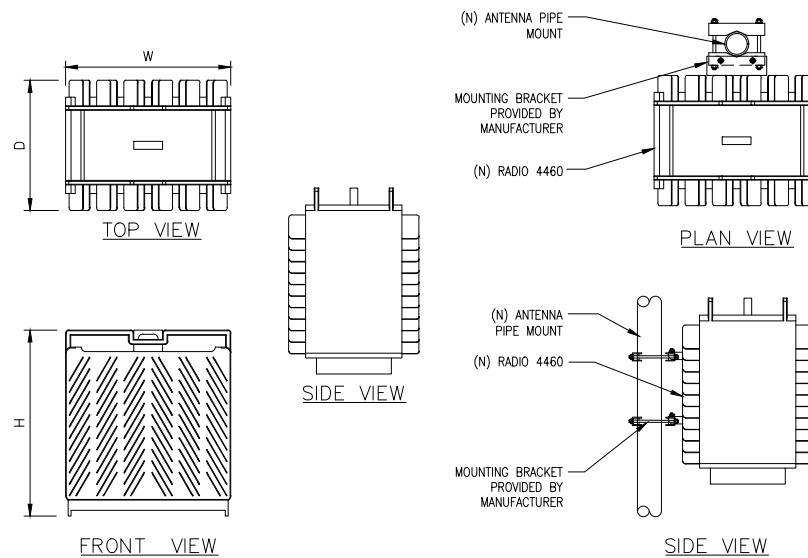
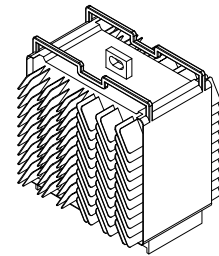
0

MANUFACTURER: ERICSSON
 MODEL: AIR6419 B41
 WEIGHT: 96.5 LBS (W/ MOUNT BRACKET 113)
 DIMENSIONS: 36.25"H. X 20.91"W. X 9.02"D.
 FREQUENCY: REFER TO RF DATA SHEET

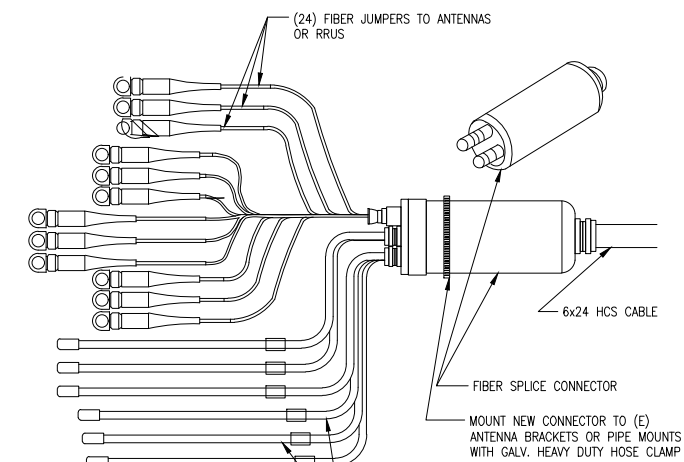


1 (N) AIR6419 B41 ANTENNA SPEC
 SCALE: NOT TO SCALE

ERICSSON RADIO-4460 B25 B66
 DIMENSIONS, WxDxH: 17.0"x15.1"x11.9"
 MAX OUTPUT POWER: 4x80W (2x(2x80W))
 TOTAL WEIGHT: 109 lbs
 TEMPERATURE: -40° TO 55° C



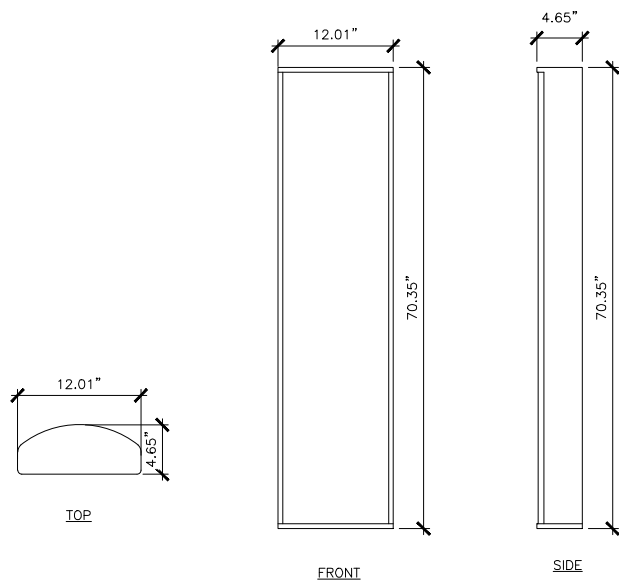
2 (N) RADIO 4460 SPEC
 SCALE: NOT TO SCALE



NOTE:
 NUMBER OF LINES SHOWN FOR REFERENCE ONLY.
 ACTUAL # OF DC AND FIBER LINES SPECIFIC TO
 MODEL OF HCS CABLES

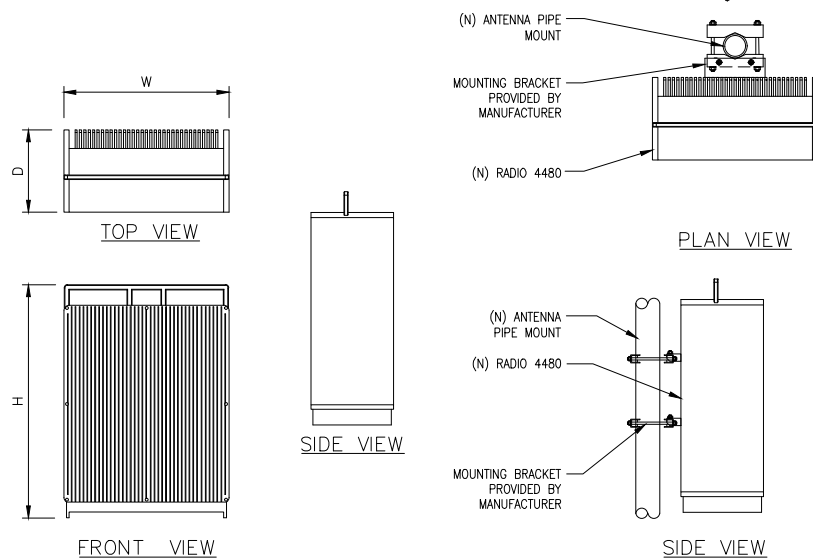
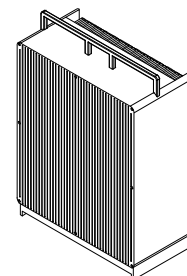
3 (N) 6X24 HCS CABLE DETAIL
 SCALE: NOT TO SCALE

MANUFACTURER: COMMSCOPE
 MODEL: W-65B-R1
 WEIGHT: 96.50 LBS
 DIMENSIONS: 70.35"H. X 12.01"W. X 4.65"D.
 FREQUENCY: REFER TO RF DATA SHEET

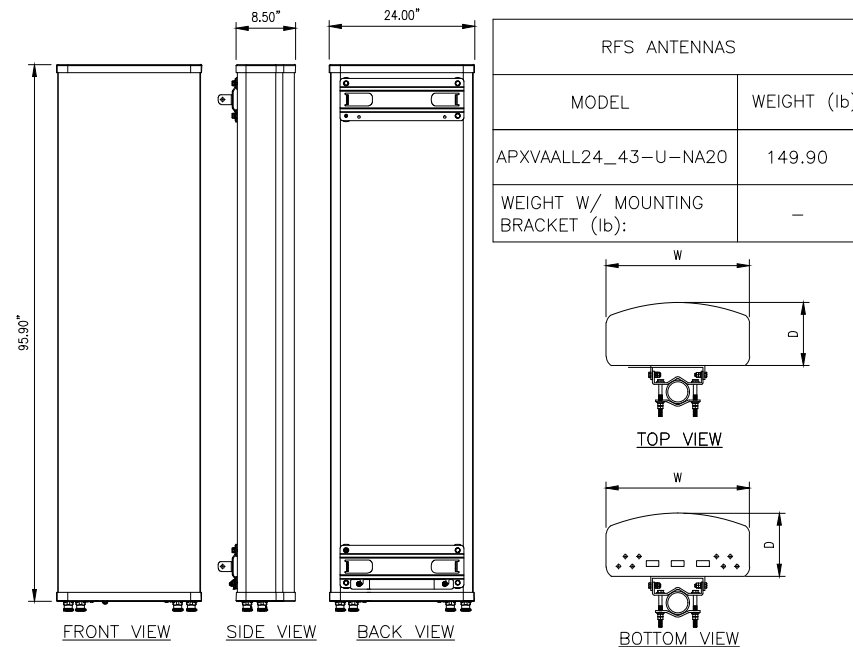


4 (N) W-65B-R1 ANTENNA SPEC
 SCALE: NOT TO SCALE

ERICSSON RADIO-4480 B71 B85
 DIMENSIONS, WxDxH: 21.8"x15.7"x7.5"
 MAX OUTPUT POWER: 4x80W (2x(2x80W))
 TOTAL WEIGHT: 93 lbs
 TEMPERATURE: -40° TO 55° C



5 (N) RADIO 4480 SPEC
 SCALE: NOT TO SCALE



6 (N) APXVAALL24_43-U-NA20 ANTENNA SPEC
 SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
 BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
 CANONSBURG, PA 15317

INFINIGY
 FROM ZERO TO INFINIGY
 the solutions are endless

500 West Office Center Dr.
 Suite 150 | Fort Washington, PA 19034
 www.infinigy.com

T-MOBILE SITE NUMBER:
 CT11441A

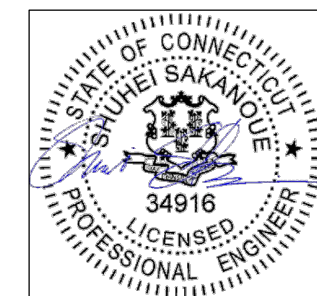
BU #: 876360
 PRESTON / TOWN HALL

389 RT. 2
 PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS



08/12/2022

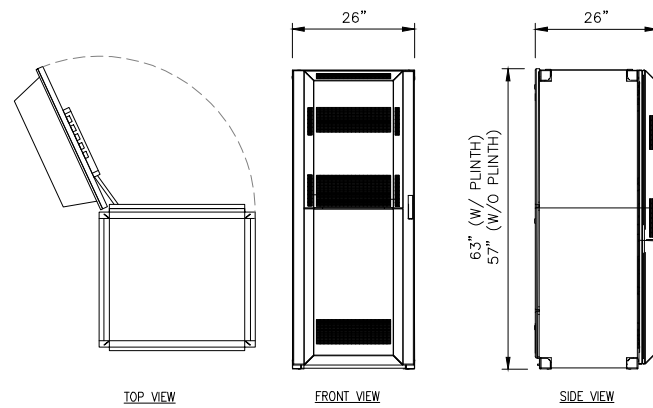
IT IS A VIOLATION OF LAW FOR ANY PERSON,
 UNLESS THEY ARE ACTING UNDER THE DIRECTION
 OF A LICENSED PROFESSIONAL ENGINEER,
 TO ALTER THIS DOCUMENT.

SHEET NUMBER:

C-5

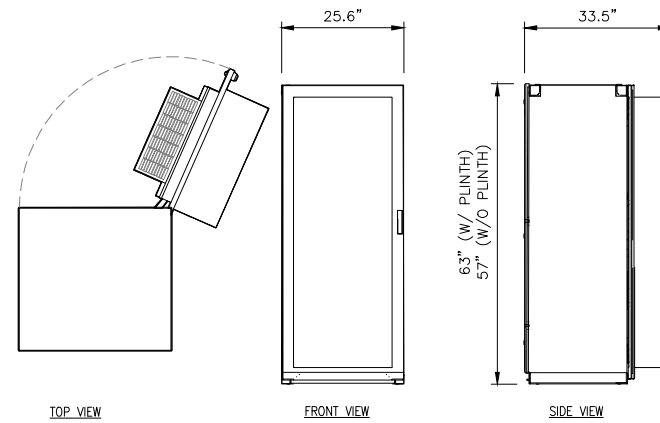
REVISION:

0



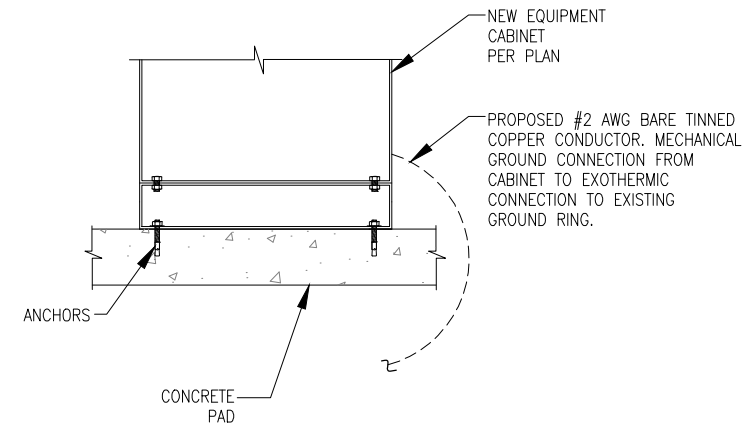
ERICSSON MODEL NO.:	B160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x26"x26" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	485 LBS
MAXIMUM WEIGHT:	2100± LBS

1 (N) B160 CABINET DETAIL
SCALE: NOT TO SCALE

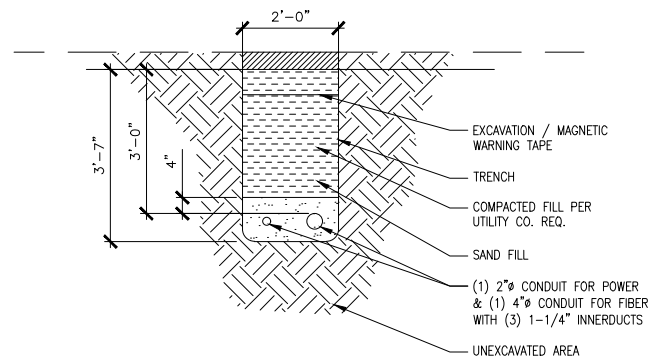


ERICSSON MODEL NO.:	6160
RACK SPACE:	19U
DIMENSIONS, HxWxD:	63"x25.6"x25.6" (W/ 6" PLINTH)
CABINET WEIGHT, EMPTY:	410 LBS
MAXIMUM WEIGHT:	770± LBS

2 (N) 6160 CABINET DETAIL
SCALE: NOT TO SCALE



3 (N) EQUIPMENT CABINET MOUNTING DETAIL
SCALE: NOT TO SCALE



4 (N) CONDUIT TRENCH DETAIL
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

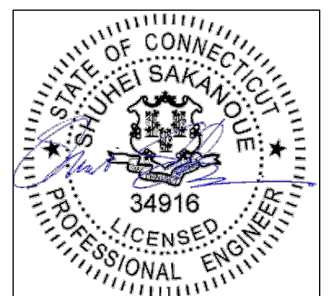
BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS



08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

C-6

REVISION:

0

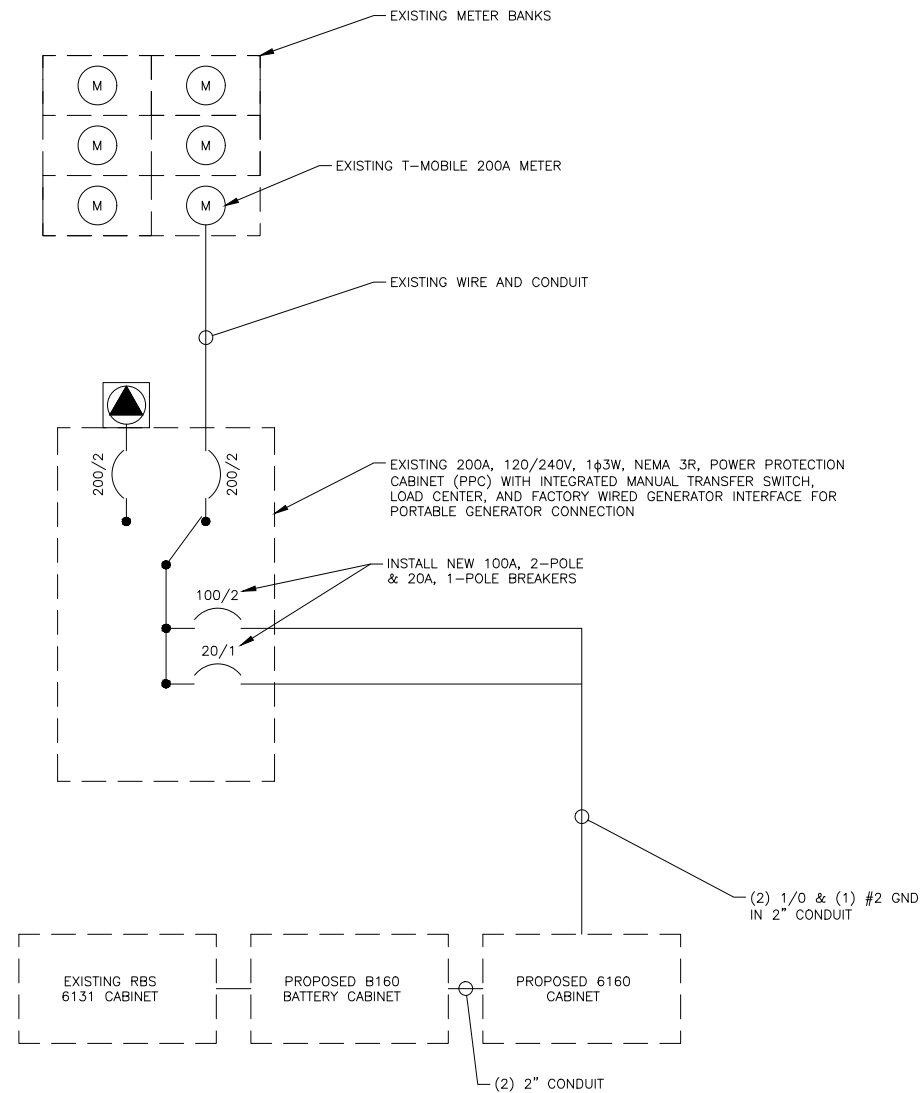
NOTES:

- EXISTING DISTRIBUTION PANEL WAS NOT ACCESSIBLE DURING SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL INFORM ENGINEER IF THERE ARE ANY DISCREPANCIES IN PANEL SCHEDULE.

NOTES:

- ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
- CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL GROUNDING AND BONDING PER THE NEC.

T-MOBILE PANEL SCHEDULE											
MAIN: 200A MAIN BREAKER			VOTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE				SHORT CIRCUIT CURRENT RATING: --				
MOUNTING: INSIDE PPC ENCLOSURE			ENCLOSURE: NEMA 3R				SURGE PROTECTION DEVICE: YES				
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	PHASE LOADS (VA)		CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
					A	B					
6160	8750	C	100	1	8751		7	60	NC	1	SURGE ARRESTOR
	8750	C		2		8751	8		NC	1	
6160 GFI	180	NC	20	3	180		9	20	NC	0	OFF
TELCO FAN	200	NC	10	4		200	10	20	NC	0	OFF
MMBS (TO BE OFF)	0	C	100	5	180		11	20	NC	180	EXTERNAL RECEPTACLE
	0	C		6		180	12	20	NC	180	INTERNAL RECEPTACLE
BASE LOAD (VA) =					9111	9131	C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD				
25% OF CONTINUOUS LOAD (VA) =					2188	2188	NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED VALUES.				
TOTAL LOAD (VA) =					11299	11319					
TOTAL LOAD (A) =					94	94					



T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

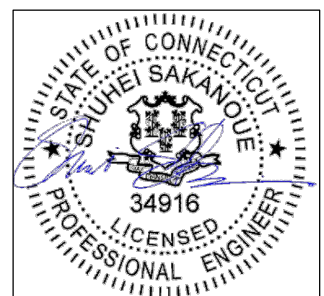
BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS



08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:

E-1

REVISION:

0

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

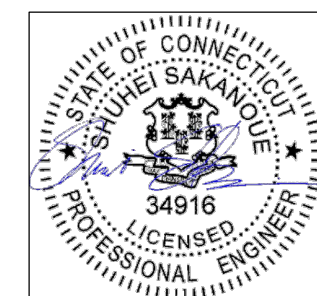
BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS

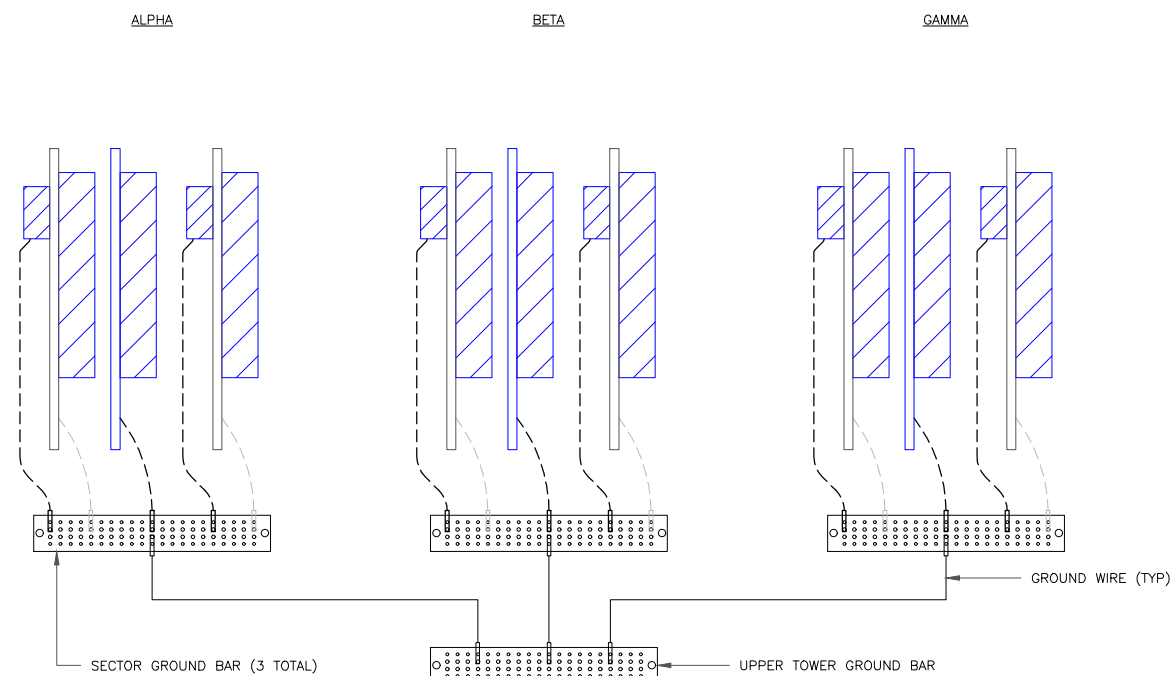


08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

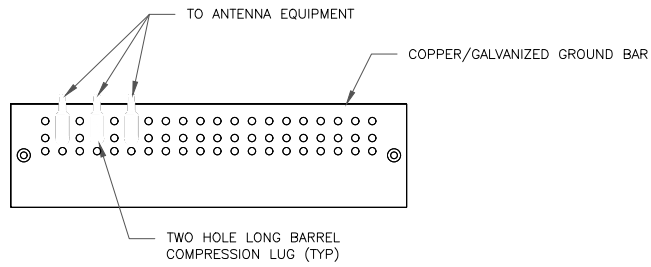
SHEET NUMBER: REVISION:

G-1 0



NOTE:
ALL NEW GROUNDS TO BE #6 STRANDED
COPPER WITH GREEN INSULATION UNLESS
NOTED OTHERWISE.

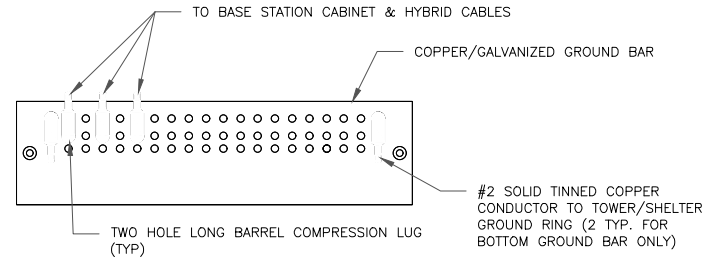
1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



NOTES:

- DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
- EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
- GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

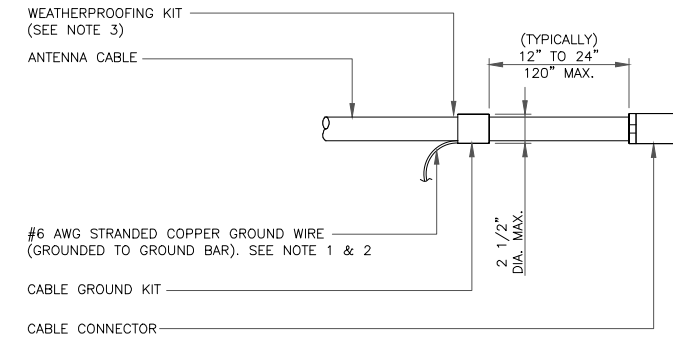
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

- EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
- GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
- GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

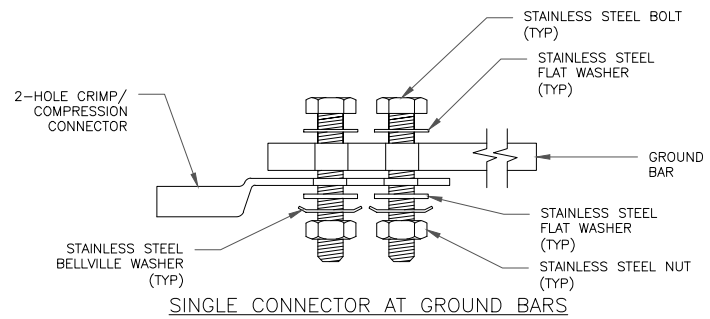
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



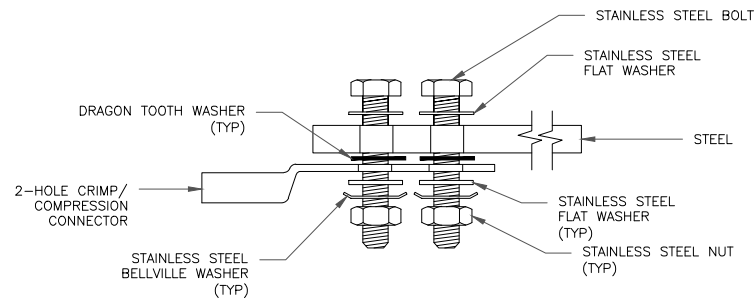
NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

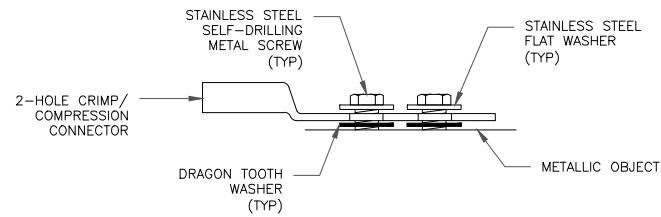
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1500 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY

FROM ZERO TO INFINIGY
the solutions are endless

500 West Office Center Dr.
Suite 150 | Fort Washington, PA 19034
www.infinigy.com

T-MOBILE SITE NUMBER:
CT11441A

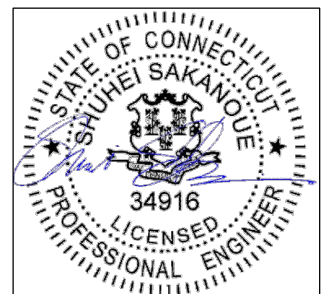
BU #: 876360
PRESTON / TOWN HALL

389 RT. 2
PRESTON, CT 06365

EXISTING 147'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES/QA
A	07/12/22	RCD	PRELIMINARY	SS
0	08/12/2022	RCD	100% FINALS	SS



08/12/2022

IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

G-2

REVISION:

0