



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

December 15, 2021

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

RE: **Notice of Exempt Modification for T-Mobile: CT11124H**
Crown Site ID#876314
214 Russian Village Road, Southbury, CT 06488
Latitude: 41° 27' 7.97" / Longitude: -73° 15' 1.25"

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 100-foot mount level on the existing 134-foot monopole tower, located at 214 Russian Road, Southbury, CT. The property is owned by Thomas and Mieke Crider. The tower is owned by Crown Castle. T-Mobile now intends to replace six (6) antennas and ancillary equipment at the 134-ft level. 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) CommScope – W-65A-R1 Antenna
- (3) Ericsson – AIR6449 B41 Antenna
- (3) Ericsson Radio 4460 B25+B66
- (2) HYBRID 6x24 Hybrid Cable (1-5/8")
- (2) HYBRID 6x12 Hybrid Cable (1-5/8")

Remove:

- (6) EMS-RR90-17-XXDP - Antennas
- (3) Ericsson Twin Style 1A-PCS- TMA
- (3) Ericsson Twin Style 1BX-KRY 112 144/2 TMA
- (12) Coaxial Cables
- (1) Hybrid Cables

Ground:

Install New:

- (1) 6160 Equipment Cabinet
- (1) B160 Battery Cabinet
- (1.) BB 6648 FOR L2500, N2500
- (1.) PSU 4813 Voltage Booster
- (1.) DC DU & (4) Rectifiers

The Foundation for a Wireless World.

CrownCastle.com

Melanie A. Bachman

Page 2

(1.) IXRe Router IN 6160

Remove:

(1) RBS6201 ODE

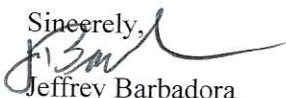
The facility was approved by the Town of Southbury Zoning Board of Appeals on March 4, 1997. This approval was given without conditions.

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 Mr. Jeff Manville, First Selectman, Town of Southbury, CT, Ms. Jessica Townsend, Land Use Administrator, Town of Southbury, CT and Thomas and Mieke Crider, Property Owner. 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
Westborough, MA 01581
(781) 970-0053
Jeff.Barbadora@crowncastle.com

Melanie A. Bachman

Page 3

Attachments

cc:

Mr. Jeff Manville, First Selectman
Town of Southbury
501 Main Street
Southbury, CT 06488
203-262-0600

Ms. Jessica Townsend, Land Use Administrator
Town of Southbury
501 Main Street
Southbury, CT 06488
203-262-0634

Thomas and Mieke Crider
100 Russian Village Road
Southbury, CT 06488

Crown Castle, Tower Owner.



TOWN OF SOUTHBURY

ZONING BOARD OF APPEALS

501 Main Street South

Southbury, Connecticut 06488

(203) 264-0606 - ext. 257

FAX: (203) 264-9762

February 14, 1997

Thomas and Meike Crider
100 Russian Village Road
Southbury, CT 06488

Dear Crider Family:

On **TUESDAY, March 4, 1997**, at 7:30 p.m. in Room 205A of the Southbury Town Hall, the Southbury Zoning Board of Appeals will conduct the continuation of your public hearing to consider your appeal. **It is important that you, or someone representing you, be present to state your case.**

An On-Site Inspection of the property under appeal will be conducted by the Board members during the week before the public hearing. There may be more than one group of members inspecting the property. If at all possible, please stake out where the proposed construction will be located on the property.

The Public Notice will appear in Voices on Wednesday, February 19, and Wednesday, February 26, 1997.

The Zoning Board of Appeals has 65 days after the close of the hearing in which to make a decision. You will be notified within 15 days after such decision has been rendered.

Sincerely,

Barbara Browne
Clerk

cc: Christopher Cody
Sprint PCS

HURWITZ & SAGARIN PC

LEWIS A. HURWITZ
JACOB DANIEL SAGARIN
CHRISTINE M. GONILLO
ELIAS A. ALEXIADES
DAVID A. SLOSSBERG
ANDREW C. KRUGER
JULIE M. CASHIN
JOHN W. KNUFF

MEMORANDUM

TO: Julie Reach, Sprint PCS
FROM: Lisa Dalfonso
DATE: February 6, 1997
RE: Site 017 - Southbury

**

Attached please find a copy of the referral from the Southbury Planning Commission to the Zoning Board of Appeals on site 017. According to the letter, the Planning Commission voted to recommend approval of the Special Exception application for the PCS facility. As you know, Chris Cody of our office was present at the ZBA hearing on February 4, 1997 and a memo to Larry from Chris will follow, advising of the outcome and additional considerations for the continuation hearing. Overall, the hearing went well most of the unaddressed issues involved structural considerations. Therefore, can we please have a structural engineer available for the next hearing. I will let you know the date as soon as possible.

LAW OFFICES

147 North Broad Street, P.O. Box 112, Milford, Connecticut 06460-0112

Tel. 203-877-8000 • Fax 203-878-9800



TOWN OF SOUTHBURY

PLANNING COMMISSION

501 Main Street South

Southbury, Connecticut 06488-2295

(203) 262-0634

FAX: (203) 264-3719

January 30, 1997

TO: Zoning Board of Appeals
FROM: Planning Commission

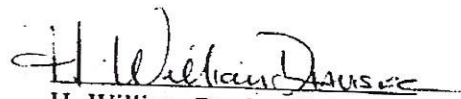
RE: Referral - Proposed Sprint Tower on Land of Crider

The Planning Commission was presented with the proposal to erect a PCS Sprint Tower off Russian Village Road by the applicants and the land owner at their meeting on January 21, 1997. The Special Exception Application was reviewed for consistency with the Comprehensive Plan of Development and compliance with Section 7 of the Zoning Regulations. The Commission recognizes that an application also exists for the height of the tower at 128 feet but is not responding to that variance application.

During the discussion the applicant satisfied questions with regard to strength of the tower in high winds, adequate fall area, setbacks to nearest existing and potential home sites (600 feet), lighting on the tower (none is proposed), other areas of town investigated for the placement of the tower, the maximum number of additional units that could be placed on the tower (3), the maintenance of the structure and need for inspections and the utility lines needed to address this site.

The Commission recognizes the changes in the state and federal laws regarding telecommunications and the necessity of the towers. They felt that this site, in particular, is technically a good site due to the density of population and that the horizon line as outlined in the Plan was not affected. Further, the possibility of the need for additional antennae, by others, could be addressed by acknowledging that three units are possible on this type of tower.

Therefore, the Commission voted to recommend approval of the Special Exception Application of Sprint PCS for the installation of a utility tower on Russian Village Road.


H. William Davis, Chairman

214 RUSSIAN VILLAGE ROAD

Location 214 RUSSIAN VILLAGE ROAD

Mblu 19C/ 92/ 45/ 1

Acct# 00070700

Owner CRIDER MIEKE

Assessment \$56,000

Appraisal \$80,000

PID 859

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$0	\$80,000	\$80,000
Assessment			
Valuation Year	Improvements	Land	Total
2017	\$0	\$56,000	\$56,000

Owner of Record

Owner CRIDER MIEKE

Sale Price \$0

Co-Owner AKA CRIDER MIEKE MAAS

Certificate

Address 100 RUSSIAN VILLAGE ROAD
SOUTHBURY, CT 06488

Book & Page 0683/0875

Sale Date 10/23/2018

Instrument 25

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
CRIDER MIEKE	\$0		0683/0875	25	10/23/2018
CRIDER MIEKE & THOMAS S	\$0		0311/1220	25	09/11/1996
AKA MAAS MIEKE	\$0		0000/0000	25	

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Replacement Cost: \$0

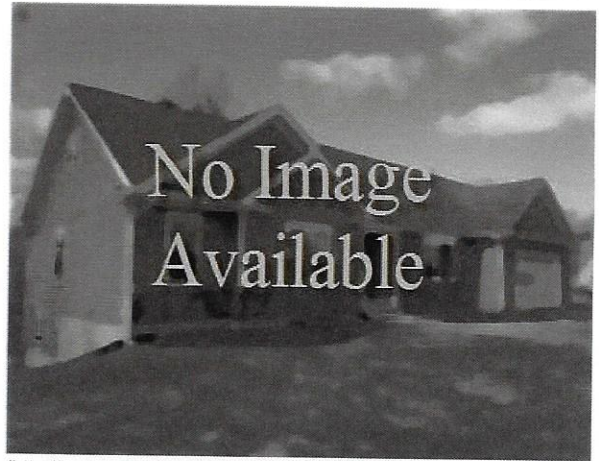
Building Percent Good:

Replacement Cost

Less Depreciation: \$0

Building Attributes	
Field	Description
Style	Vacant Land
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Percent	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Pln FPL:	
Det FPL:	
Gas Fireplace(s)	
% Attic Fin	
LF Dormer	
Foundation	
Bsmt Gar(s)	
Bsmt %	
SF FBM	
SF Rec Rm	
Fin Bsmt Qual	
Bsmt Access	
Fndtn Cndtn	

Building Photo



(<http://images.vgsi.com/photos/SouthburyCTPhotos//default.jpg>)

Building Layout

(http://images.vgsi.com/photos/SouthburyCTPhotos//Sketches/859_859.jpg)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Basement

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 109
Description Vacant W/ OB
Zone R-60
Neighborhood 14W
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 1.04
Frontage 0
Depth 0
Assessed Value \$56,000
Appraised Value \$80,000

Outbuildings

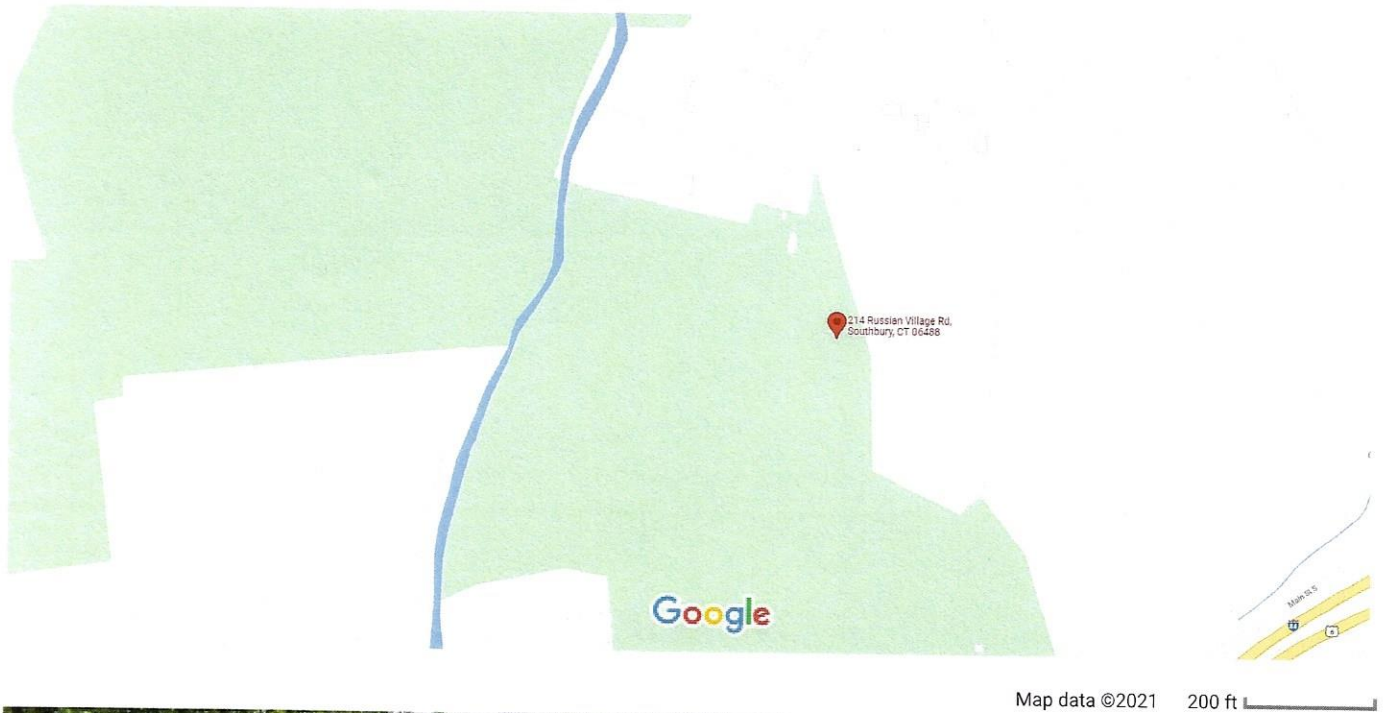
Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$0	\$576,975	\$576,975
2016	\$0	\$567,373	\$567,373
2012	\$0	\$558,643	\$558,643



Assessment			
Valuation Year	Improvements	Land	Total
2017	\$0	\$146,540	\$146,540
2016	\$0	\$133,170	\$133,170
2012	\$0	\$141,440	\$141,440

Google Maps 214 Russian Village Rd



214 Russian Village Rd

Southbury, CT 06488

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

FP4W+7X Southbury, Connecticut

Photos

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, December 16, 2021 11:49 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 775505491649: 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, 12/16/2021 at
11:46am.



Delivered to 501 MAIN ST S, SOUTHURY, CT 06488
Received by T.CLERK

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [775505491649](#)

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO Town of Southbury
Jeff Manville, First Selectman
Town of Southbury
SOUTHBURY, CT, US, 06488

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Wed 12/15/2021 06:23 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

DESTINATION SOUTHBURY, CT, US, 06488

SPECIAL HANDLING Deliver Weekday

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



Download the FedEx® Mobile app

Get the flexibility you need to create shipments and request to customize your deliveries through the app.

[LEARN MORE](#)

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, December 16, 2021 11:49 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 775505518708: 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, 12/16/2021 at
11:46am.



Delivered to 501 MAIN ST S, SOUTHBURY, CT 06488
Received by T.CLERK

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [775505518708](#)

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO Town of Southbury
Jessica Townsend, Land Use Admin
Town of Southbury
SOUTHBURY, CT, US, 06488

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Wed 12/15/2021 06:23 PM

DELIVERED TO Receptionist/Front Desk

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

DESTINATION SOUTHBURY, CT, US, 06488

SPECIAL HANDLING Deliver Weekday

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



Download the FedEx® Mobile app

Get the flexibility you need to create shipments and request to customize your deliveries through the app.

[LEARN MORE](#)

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, December 16, 2021 11:38 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 775505590093: 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, 12/16/2021 at
11:36am.



Delivered to 100 RUSSIAN VILLAGE RD, SOUTHBURY, CT 06488

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [775505590093](#)

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO Thomas and Mieke Crider
Property Owner
100 Russian Village Road
SOUTHBURY, CT, US, 06488

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Wed 12/15/2021 06:23 PM

DELIVERED TO Residence

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

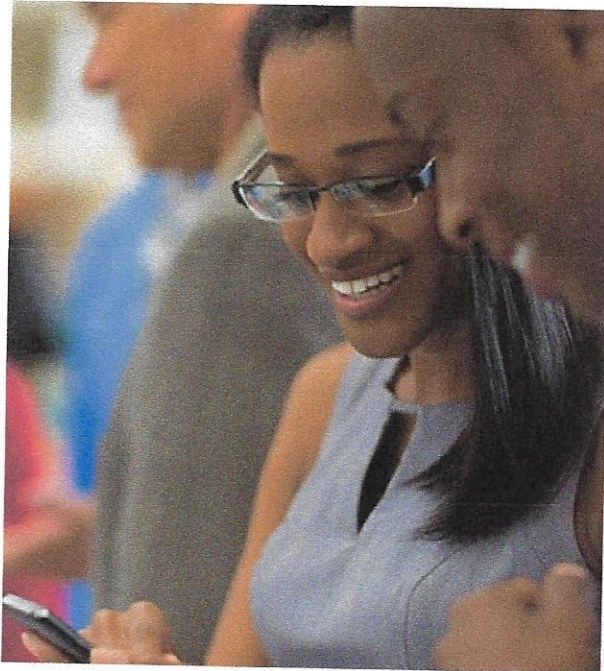
DESTINATION SOUTHBURY, CT, US, 06488

SPECIAL HANDLING Deliver Weekday
Residential Delivery

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



Download the FedEx[®] Mobile app

Get the flexibility you need to create shipments and request to customize your deliveries through the app.

[LEARN MORE](#)



MORRISON HERSHFIELD

Date: **November 02, 2021**

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

Subject: **Structural Analysis Report**

Carrier Designation: **T-Mobile Co-Locate**
Site Number: CT11124H
Site Name: Southbury-W/ I-84

Crown Castle Designation: **BU Number:** 876314
Site Name: Horse Hill
JDE Job Number: 687451
Work Order Number: 2034367
Order Number: 587435 Rev. 0

Engineering Firm Designation: **Morrison Hershfield Project Number:** CN9-948 / 2200039

Site Data: **214 Russian Village Rd, Southbury, New Haven County, CT 06488**
Latitude 41° 27' 7.97", Longitude -73° 15' 1.25"
130 Foot - Summit Monopole Tower

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

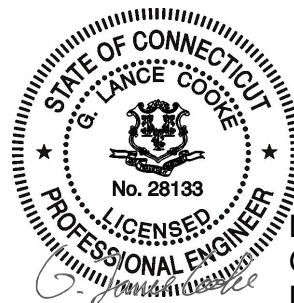
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 65.3%**

This analysis utilizes an ultimate 3-second gust wind speed of 116 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



Digitally signed by
G. Lance Cooke
Date: 2021.11.02
08:58:47-07'00'

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 130 ft Monopole tower designed by Summit Manufacturing, Inc.

The tower was modified per reinforcement drawings prepared by Tower Engineering Professionals in April of 2013. Reinforcement consists of installing flat plate reinforcement from 0 ft to 115 ft. Per the post modification inspection completed by Tower Engineering Professionals, Inc., in April of 2013, these modifications have been properly installed and were considered in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	116 mph
Exposure Category:	B
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)
100.0	103.0	3	ericsson	RADIO 4449 B71/B85A	4	1-5/8
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
	101.0	3	commscope	VV-65A-R1_TMO w/ Mount Pipe		
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	100.0	1	-	Platform Mount [LP 1201-1_KCKR-HR-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	130.0	3	kathrein	800 10121 w/ Mount Pipe	6 2 1	1-5/8 3/4 3/8
		1	andrew	SBNH-1D6565C w/ Mount Pipe		
		1	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe		
		1	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe		
		6	kathrein	860 10025		
		3	ericsson	RRUS 12		
		3	ericsson	RRUS-11		
		6	powerwave technologies	LGP21401		
		1	raycap	DC6-48-60-18-8F		
		1	-	Platform Mount [LP 303-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0	120.0	3	alcatel lucent	TD-RRH8X20-25	4	1-1/4
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		1	-	Platform Mount [LP 1201-1]		
118.0	119.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	-	-
		3	alcatel lucent	800MHZ RRH		
	118.0	1	-	Side Arm Mount [SO 102-3]		
	117.0	3	alcatel lucent	1900MHZ RRH (65MHZ)		
110.0	110.0	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	-	Commscope MC-PK8-DSH		
90.0	90.0	-	-	-	6	1-5/8
80.0	80.0	1	gps	GPS_A	1	1/2
		1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1529735	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1611741	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1529812	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3797841	CCISITES
4-POST-MODIFICATION INSPECTION	3797830	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 included 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	Critical Element	% Capacity	Pass / Fail
L1	130 - 125	Pole	TP16x16x0.375	Pole	4.1%	Pass
L2	125 - 120	Pole	TP16x16x0.375	Pole	8.1%	Pass
L3	120 - 114.9	Pole + Reinf.	TP17.249x16x0.5125	Reinf. 7 Tension Rupture	11.8%	Pass
L4	114.9 - 114.67	Pole + Reinf.	TP17.305x17.249x0.5125	Reinf. 7 Tension Rupture	12.1%	Pass
L5	114.67 - 109.67	Pole + Reinf.	TP18.53x17.305x0.4813	Reinf. 7 Tension Rupture	17.2%	Pass
L6	109.67 - 109.42	Pole + Reinf.	TP18.591x18.53x0.4813	Reinf. 7 Tension Rupture	17.6%	Pass
L7	109.42 - 109.17	Pole + Reinf.	TP18.652x18.591x0.425	Reinf. 7 Tension Rupture	18.6%	Pass
L8	109.17 - 104.17	Pole + Reinf.	TP19.877x18.652x0.4125	Reinf. 7 Tension Rupture	25.4%	Pass
L9	104.17 - 103.92	Pole + Reinf.	TP19.938x19.877x0.4063	Reinf. 7 Tension Rupture	25.7%	Pass
L10	103.92 - 103.67	Pole + Reinf.	TP19.999x19.938x0.45	Reinf. 7 Tension Rupture	25.1%	Pass
L11	103.67 - 98.67	Pole + Reinf.	TP21.224x19.999x0.4375	Reinf. 7 Tension Rupture	34.1%	Pass
L12	98.67 - 96.42	Pole + Reinf.	TP21.775x21.224x0.425	Reinf. 7 Tension Rupture	37.5%	Pass
L13	96.42 - 96.17	Pole + Reinf.	TP21.836x21.775x0.3875	Reinf. 7 Tension Rupture	39.1%	Pass
L14	96.17 - 94.5	Pole + Reinf.	TP22.98x21.836x0.3813	Reinf. 7 Tension Rupture	41.5%	Pass
L15	94.5 - 89.5	Pole + Reinf.	TP23.095x21.87x0.4375	Reinf. 7 Tension Rupture	42.1%	Pass
L16	89.5 - 88.92	Pole + Reinf.	TP23.237x23.095x0.4375	Reinf. 7 Tension Rupture	42.7%	Pass
L17	88.92 - 88.67	Pole + Reinf.	TP23.299x23.237x0.325	Reinf. 7 Tension Rupture	49.5%	Pass
L18	88.67 - 88.25	Pole + Reinf.	TP23.401x23.299x0.325	Reinf. 7 Tension Rupture	50.0%	Pass
L19	88.25 - 88	Pole + Reinf.	TP23.463x23.401x0.4	Reinf. 7 Tension Rupture	45.7%	Pass
L20	88 - 87.42	Pole + Reinf.	TP23.605x23.463x0.4	Reinf. 7 Tension Rupture	46.2%	Pass
L21	87.42 - 87.17	Pole	TP23.666x23.605x0.25	Pole	52.0%	Pass
L22	87.17 - 86.92	Pole	TP23.727x23.666x0.25	Pole	52.3%	Pass
L23	86.92 - 86.67	Pole + Reinf.	TP23.789x23.727x0.4313	Reinf. 4 Tension Rupture	44.9%	Pass
L24	86.67 - 81.67	Pole + Reinf.	TP25.014x23.789x0.4188	Reinf. 4 Tension Rupture	49.7%	Pass
L25	81.67 - 80.75	Pole + Reinf.	TP25.239x25.014x0.4188	Reinf. 4 Tension Rupture	50.5%	Pass
L26	80.75 - 80.5	Pole + Reinf.	TP25.3x25.239x0.3188	Reinf. 4 Tension Rupture	57.9%	Pass
L27	80.5 - 75.5	Pole + Reinf.	TP26.525x25.3x0.3188	Reinf. 4 Tension Rupture	62.4%	Pass
L28	75.5 - 71.83	Pole + Reinf.	TP27.424x26.525x0.3125	Reinf. 4 Tension Rupture	65.3%	Pass
L29	71.83 - 71.58	Pole + Reinf.	TP27.485x27.424x0.4	Reinf. 4 Tension Rupture	57.9%	Pass
L30	71.58 - 68.83	Pole + Reinf.	TP28.159x27.485x0.4	Reinf. 4 Tension Rupture	59.8%	Pass
L31	68.83 - 68.58	Pole + Reinf.	TP28.22x28.159x0.4625	Reinf. 3 Tension Rupture	51.8%	Pass
L32	68.58 - 68.25	Pole + Reinf.	TP29.22x28.22x0.4625	Reinf. 3 Tension Rupture	52.0%	Pass
L33	68.25 - 63.25	Pole + Reinf.	TP29.026x27.801x0.5188	Reinf. 3 Tension Rupture	49.6%	Pass
L34	63.25 - 58.25	Pole + Reinf.	TP30.251x29.026x0.5125	Reinf. 3 Tension Rupture	51.9%	Pass
L35	58.25 - 53.25	Pole + Reinf.	TP31.476x30.251x0.5	Reinf. 3 Tension Rupture	53.9%	Pass
L36	53.25 - 48.25	Pole + Reinf.	TP32.701x31.476x0.4875	Reinf. 3 Tension Rupture	55.7%	Pass
L37	48.25 - 46.75	Pole + Reinf.	TP34.11x32.701x0.4875	Reinf. 3 Tension Rupture	56.2%	Pass
L38	46.75 - 41.83	Pole + Reinf.	TP33.648x32.444x0.5188	Reinf. 3 Tension Rupture	56.1%	Pass
L39	41.83 - 41.58	Pole	TP33.709x33.648x0.3438	Pole	59.5%	Pass
L40	41.58 - 41.17	Pole	TP33.81x33.709x0.3438	Pole	59.6%	Pass
L41	41.17 - 40.92	Pole + Reinf.	TP33.871x33.81x0.5188	Reinf. 2 Tension Rupture	56.3%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L42	40.92 - 35.92	Pole + Reinf.	TP35.095x33.871x0.5063	Reinf. 2 Tension Rupture	57.6%	Pass
L43	35.92 - 30.92	Pole + Reinf.	TP36.318x35.095x0.5063	Reinf. 2 Tension Rupture	58.7%	Pass
L44	30.92 - 25.92	Pole + Reinf.	TP37.542x36.318x0.4938	Reinf. 2 Tension Rupture	59.7%	Pass
L45	25.92 - 25.25	Pole + Reinf.	TP38.93x37.542x0.4938	Reinf. 2 Tension Rupture	59.8%	Pass
L46	25.25 - 19.25	Pole + Reinf.	TP38.49x37.019x0.525	Reinf. 2 Tension Rupture	59.1%	Pass
L47	19.25 - 14.15	Pole + Reinf.	TP39.74x38.49x0.5188	Reinf. 1 Tension Rupture	59.8%	Pass
L48	14.15 - 13.92	Pole + Reinf.	TP39.797x39.74x0.5188	Reinf. 1 Tension Rupture	59.8%	Pass
L49	13.92 - 8.92	Pole + Reinf.	TP41.023x39.797x0.5125	Reinf. 1 Tension Rupture	60.3%	Pass
L50	8.92 - 3.92	Pole + Reinf.	TP42.249x41.023x0.5125	Reinf. 1 Tension Rupture	60.8%	Pass
L51	3.92 - 0	Pole + Reinf.	TP43.21x42.249x0.5063	Reinf. 1 Tension Rupture	61.1%	Pass
					Summary	
				Pole	59.6%	Pass
				Reinforcement	65.3%	Pass
				Overall	65.3%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	0	23.0	Pass
1	Anchor Rods	0	41.0	Pass
1	Base Plate		51.5	Pass
1	Base Foundation (Structure)	0	37.3	Pass
1	Base Foundation (Soil Interaction)		53.9	Pass

Structure Rating (max from all components) =	65.3%*
---	---------------

Notes:

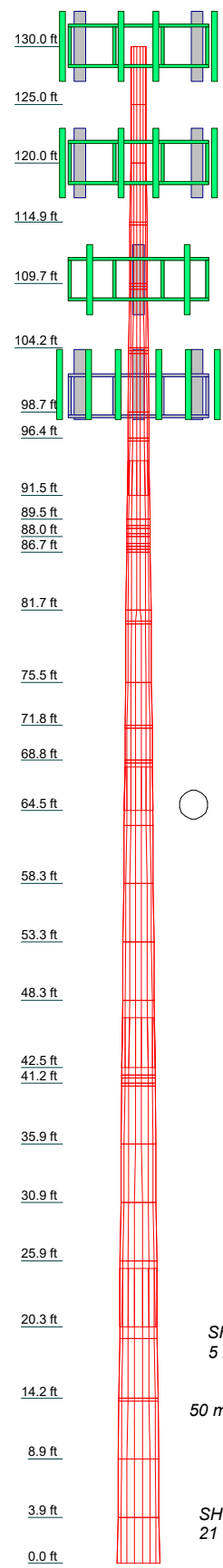
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) *Rating as per TIA-222-H, Section 15.5.

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	0	0.3750				A500-42	0.3
2	5.00	0	0.3750				A500-42	0.3
3	5.00	0	0.3750				A500-42	0.3
4	5.00	0	0.3750				A500-42	0.3
5	5.00	0	0.3750				A500-42	0.3
6	5.00	0	0.3750				A500-42	0.3
7	5.00	0	0.3750				A500-42	0.3
8	5.00	0	0.3750				A500-42	0.3
9	5.00	0	0.3750				A500-42	0.3
10	5.00	0	0.3750				A500-42	0.3
11	5.00	0	0.3750				A500-42	0.3
12	5.00	0	0.3750				A500-42	0.3
13	5.00	0	0.3750				A500-42	0.3
14	5.00	0	0.3750				A500-42	0.3
15	5.00	0	0.3750				A500-42	0.3
16	5.00	0	0.3750				A500-42	0.3
17	5.00	0	0.3750				A500-42	0.3
18	5.00	0	0.3750				A500-42	0.3
19	5.00	0	0.3750				A500-42	0.3
20	5.00	0	0.3750				A500-42	0.3
21	5.00	0	0.3750				A500-42	0.3
22	5.00	0	0.3750				A500-42	0.3
23	5.00	0	0.3750				A500-42	0.3
24	5.00	0	0.3750				A500-42	0.3
25	5.00	0	0.3750				A500-42	0.3
26	5.00	0	0.3750				A500-42	0.3
27	5.00	0	0.3750				A500-42	0.3
28	5.00	0	0.3750				A500-42	0.3
29	5.00	0	0.3750				A500-42	0.3
30	5.00	0	0.3750				A500-42	0.3
31	5.00	0	0.3750				A500-42	0.3
32	5.00	0	0.3750				A500-42	0.3
33	5.00	0	0.3750				A500-42	0.3
34	5.00	0	0.3750				A500-42	0.3
35	5.00	0	0.3750				A500-42	0.3
36	5.00	0	0.3750				A500-42	0.3
37	5.00	0	0.3750				A500-42	0.3
38	5.00	0	0.3750				A500-42	0.3
39	5.00	0	0.3750				A500-42	0.3
40	5.00	0	0.3750				A500-42	0.3
41	5.00	0	0.3750				A500-42	0.3
42	5.00	0	0.3750				A500-42	0.3
43	5.00	0	0.3750				A500-42	0.3
44	5.00	0	0.3750				A500-42	0.3
45	5.00	0	0.3750				A500-42	0.3
46	5.00	0	0.3750				A500-42	0.3
47	5.00	0	0.3750				A500-42	0.3
48	5.00	0	0.3750				A500-42	0.3
49	5.00	0	0.3750				A500-42	0.3
50	5.00	0	0.3750				A500-42	0.3
51	5.00	0	0.3750				A500-42	0.3

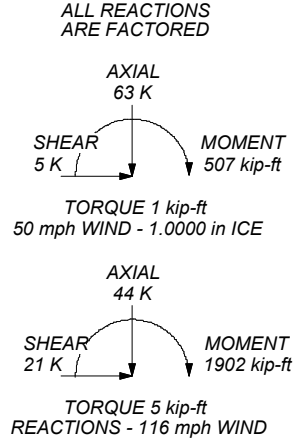



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi	A607-60	60 ksi	75 ksi
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 116 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. CCIPOLE RATING: 65.3%



 <p>Morrison Hershfield Consulting Engineers</p>	<p>1455 Lincoln Parkway, Suite 500 Atlanta, GA 30346 Phone: (770) 379-8500 FAX: (770) 379-8501</p>		
	<p>Job: CN9-948 / 2200039 Project: 876314 / Horse Hill</p>	<p>Client: Crown Castle USA Code: TIA-222-H Path:</p>	<p>Drawn by: NT Date: 11/02/21</p>

Tower Input Data

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

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 445.00 ft.
- Basic wind speed of 116 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- CCIPOLE RATING: 65.3%.
- 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 Retention 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	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	130.00-125.00	5.00	0.00	Round	16.0000	16.0000	0.3750		A500-42

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
L2	125.00-120.00	5.00	0.00	Round	16.0000	16.0000	0.3750		(42 ksi) A500-42
L3	120.00-114.90	5.10	0.00	12	16.0000	17.2491	0.5125	2.0500	(42 ksi) A607-65
L4	114.90-114.67	0.23	0.00	12	17.2491	17.3054	0.5125	2.0500	(65 ksi) A607-65
L5	114.67-109.67	5.00	0.00	12	17.3054	18.5299	0.4813	1.9250	(65 ksi) A607-65
L6	109.67-109.42	0.25	0.00	12	18.5299	18.5912	0.4813	1.9250	(65 ksi) A607-65
L7	109.42-109.17	0.25	0.00	12	18.5912	18.6524	0.4250	1.7000	(65 ksi) A607-65
L8	109.17-104.17	5.00	0.00	12	18.6524	19.8770	0.4125	1.6500	(65 ksi) A607-65
L9	104.17-103.92	0.25	0.00	12	19.8770	19.9382	0.4063	1.6250	(65 ksi) A607-65
L10	103.92-103.67	0.25	0.00	12	19.9382	19.9994	0.4500	1.8000	(65 ksi) A607-65
L11	103.67-98.67	5.00	0.00	12	19.9994	21.2240	0.4375	1.7500	(65 ksi) A607-65
L12	98.67-96.42	2.25	0.00	12	21.2240	21.7750	0.4250	1.7000	(65 ksi) A607-65
L13	96.42-96.17	0.25	0.00	12	21.7750	21.8363	0.3875	1.5500	(65 ksi) A607-65
L14	96.17-91.50	4.67	3.00	12	21.8363	22.9800	0.3812	1.5250	(65 ksi) A607-65
L15	91.50-89.50	5.00	0.00	12	21.8703	23.0952	0.4375	1.7500	(65 ksi) A607-65
L16	89.50-88.92	0.58	0.00	12	23.0952	23.2373	0.4375	1.7500	(65 ksi) A607-65
L17	88.92-88.67	0.25	0.00	12	23.2373	23.2986	0.3250	1.3000	(65 ksi) A607-65
L18	88.67-88.25	0.42	0.00	12	23.2986	23.4015	0.3250	1.3000	(65 ksi) A607-65
L19	88.25-88.00	0.25	0.00	12	23.4015	23.4627	0.4000	1.6000	(65 ksi) A607-65
L20	88.00-87.42	0.58	0.00	12	23.4627	23.6048	0.4000	1.6000	(65 ksi) A607-65
L21	87.42-87.17	0.25	0.00	12	23.6048	23.6660	0.2500	1.0000	(65 ksi) A607-65
L22	87.17-86.92	0.25	0.00	12	23.6660	23.7273	0.2500	1.0000	(65 ksi) A607-65
L23	86.92-86.67	0.25	0.00	12	23.7273	23.7885	0.4313	1.7250	(65 ksi) A607-65
L24	86.67-81.67	5.00	0.00	12	23.7885	25.0135	0.4188	1.6750	(65 ksi) A607-65
L25	81.67-80.75	0.92	0.00	12	25.0135	25.2389	0.4188	1.6750	(65 ksi) A607-65
L26	80.75-80.50	0.25	0.00	12	25.2389	25.3001	0.3187	1.2750	(65 ksi) A607-65
L27	80.50-75.50	5.00	0.00	12	25.3001	26.5251	0.3187	1.2750	(65 ksi) A607-65
L28	75.50-71.83	3.67	0.00	12	26.5251	27.4242	0.3125	1.2500	(65 ksi) A607-65
L29	71.83-71.58	0.25	0.00	12	27.4242	27.4855	0.4000	1.6000	(65 ksi) A607-65
L30	71.58-68.83	2.75	0.00	12	27.4855	28.1592	0.4000	1.6000	(65 ksi) A607-65
L31	68.83-68.58	0.25	0.00	12	28.1592	28.2204	0.4625	1.8500	(65 ksi) A607-65
L32	68.58-64.50	4.08	3.75	12	28.2204	29.2200	0.4625	1.8500	(65 ksi) A607-65
L33	64.50-63.25	5.00	0.00	12	27.8013	29.0263	0.5188	2.0750	(65 ksi) A607-65
L34	63.25-58.25	5.00	0.00	12	29.0263	30.2513	0.5125	2.0500	(65 ksi) A607-65
L35	58.25-53.25	5.00	0.00	12	30.2513	31.4763	0.5000	2.0000	(65 ksi) A607-65

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
L36	53.25-48.25	5.00	0.00	12	31.4763	32.7013	0.4875	1.9500	A607-65 (65 ksi)
L37	48.25-42.50	5.75	4.25	12	32.7013	34.1100	0.4875	1.9500	A607-65 (65 ksi)
L38	42.50-41.83	4.92	0.00	12	32.4438	33.6480	0.5188	2.0752	A607-65 (65 ksi)
L39	41.83-41.58	0.25	0.00	12	33.6480	33.7092	0.3438	1.3752	A607-65 (65 ksi)
L40	41.58-41.17	0.41	0.00	12	33.7092	33.8095	0.3438	1.3752	A607-65 (65 ksi)
L41	41.17-40.92	0.25	0.00	12	33.8095	33.8707	0.5188	2.0752	A607-65 (65 ksi)
L42	40.92-35.92	5.00	0.00	12	33.8707	35.0945	0.5063	2.0252	A607-65 (65 ksi)
L43	35.92-30.92	5.00	0.00	12	35.0945	36.3184	0.5063	2.0252	A607-65 (65 ksi)
L44	30.92-25.92	5.00	0.00	12	36.3184	37.5422	0.4938	1.9752	A607-65 (65 ksi)
L45	25.92-20.25	5.67	5.00	12	37.5422	38.9300	0.4938	1.9752	A607-65 (65 ksi)
L46	20.25-19.25	6.00	0.00	12	37.0186	38.4898	0.5250	2.1000	A607-60 (60 ksi)
L47	19.25-14.15	5.10	0.00	12	38.4898	39.7404	0.5188	2.0750	A607-60 (60 ksi)
L48	14.15-13.92	0.23	0.00	12	39.7404	39.7968	0.5188	2.0750	A607-60 (60 ksi)
L49	13.92-8.92	5.00	0.00	12	39.7968	41.0228	0.5125	2.0500	A607-60 (60 ksi)
L50	8.92-3.92	5.00	0.00	12	41.0228	42.2488	0.5125	2.0500	A607-60 (60 ksi)
L51	3.92-0.00	3.92		12	42.2488	43.2100	0.5062	2.0250	A607-60 (60 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	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
L2	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
L3	16.3836	25.5582	782.4915	5.5445	8.2880	94.4126	1585.5400	12.5790	2.9145	5.687
L4	17.6767	27.6195	987.4924	5.9917	8.9350	110.5195	2000.9272	13.5935	3.2492	6.34
L5	17.7461	26.0711	941.9127	6.0230	8.9642	105.0751	1908.5705	12.8314	3.3481	6.957
L6	19.0138	27.9687	1162.9202	6.4614	9.5985	121.1563	2356.3916	13.7653	3.6763	7.639
L7	19.0772	28.0636	1174.7956	6.4834	9.6302	121.9904	2380.4543	13.8120	3.6927	7.673
L8	19.1649	24.2271	1028.8052	6.5299	9.6619	106.4801	2084.6382	11.9239	3.8933	9.438
L9	20.4326	25.8537	1250.2387	6.9683	10.2963	121.4264	2533.3225	12.7244	4.2215	10.234
L10	20.4348	25.4701	1232.4821	6.9705	10.2963	119.7019	2497.3429	12.5356	4.2383	10.433
L11	20.4982	25.5502	1244.1460	6.9924	10.3280	120.4636	2520.9771	12.5750	4.2547	10.473
L12	20.4828	28.2384	1368.8909	6.9768	10.3280	132.5420	2773.7442	13.8981	4.1374	9.194
L13	20.5462	28.3271	1381.8339	6.9987	10.3597	133.3855	2799.9701	13.9417	4.1538	9.231
L14	20.5506	27.5579	1346.0283	7.0032	10.3597	129.9293	2727.4182	13.5631	4.1873	9.571
L15	21.8183	29.2830	1614.9634	7.4416	10.9940	146.8947	3272.3536	14.4122	4.5155	10.321
L16	21.8228	28.4634	1571.6535	7.4460	10.9940	142.9553	3184.5961	14.0088	4.5490	10.704
L17	22.3932	29.2175	1699.9116	7.6433	11.2795	150.7085	3444.4818	14.3800	4.6967	11.051
L18	22.4065	26.6863	1558.1008	7.6567	11.2795	138.1360	3157.1346	13.1342	4.7972	12.38
L19	22.4699	26.7627	1571.5207	7.6787	11.3112	138.9351	3184.3269	13.1718	4.8136	12.422
L20	22.4721	26.3387	1547.5256	7.6809	11.3112	136.8138	3135.7064	12.9631	4.8304	12.67
L21	23.6562	27.7428	1808.4434	8.0904	11.9036	151.9236	3664.3967	13.6542	5.1369	13.474
L22	23.2483	30.1934	1770.3306	7.6729	11.3288	156.2682	3587.1697	14.8603	4.6887	10.717

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
L16	23.7556	31.9191	2091.5509	8.1115	11.9633	174.8303	4238.0492	15.7096	5.0170	11.467
	23.7556	31.9191	2091.5509	8.1115	11.9633	174.8303	4238.0492	15.7096	5.0170	11.467
	23.9027	32.1192	2131.1489	8.1623	12.0369	177.0509	4318.2854	15.8081	5.0551	11.555
L17	23.9424	23.9777	1606.6898	8.2026	12.0369	133.4800	3255.5892	11.8011	5.3566	16.482
	24.0058	24.0418	1619.6090	8.2245	12.0687	134.1996	3281.7670	11.8327	5.3730	16.532
L18	24.0058	24.0418	1619.6090	8.2245	12.0687	134.1996	3281.7670	11.8327	5.3730	16.532
	24.1123	24.1495	1641.4688	8.2614	12.1220	135.4129	3326.0608	11.8857	5.4006	16.617
L19	24.0859	29.6259	2000.6352	8.2345	12.1220	165.0423	4053.8294	14.5810	5.1996	12.999
	24.1493	29.7048	2016.6596	8.2564	12.1537	165.9299	4086.2991	14.6198	5.2160	13.04
L20	24.1493	29.7048	2016.6596	8.2564	12.1537	165.9299	4086.2991	14.6198	5.2160	13.04
	24.2964	29.8878	2054.1652	8.3073	12.2273	167.9984	4162.2955	14.7099	5.2541	13.135
L21	24.3493	18.8006	1308.9117	8.3610	12.2273	107.0484	2652.2099	9.2531	5.6561	22.624
	24.4127	18.8499	1319.2366	8.3829	12.2590	107.6136	2673.1310	9.2774	5.6725	22.69
L22	24.4127	18.8499	1319.2366	8.3829	12.2590	107.6136	2673.1310	9.2774	5.6725	22.69
	24.4761	18.8992	1329.6156	8.4049	12.2907	108.1803	2694.1617	9.3016	5.6889	22.756
L23	24.4122	32.3495	2240.8750	8.3400	12.2907	182.3222	4540.6203	15.9214	5.2032	12.065
	24.4756	32.4345	2258.5961	8.3619	12.3225	183.2909	4576.5280	15.9633	5.2196	12.103
L24	24.4800	31.5112	2196.6525	8.3664	12.3225	178.2640	4451.0134	15.5089	5.2531	12.545
	25.7482	33.1629	2560.4950	8.8049	12.9570	197.6149	5188.2571	16.3218	5.5814	13.329
L25	25.7482	33.1629	2560.4950	8.8049	12.9570	197.6149	5188.2571	16.3218	5.5814	13.329
	25.9815	33.4669	2631.5367	8.8856	13.0737	201.2841	5332.2068	16.4714	5.6418	13.473
L26	26.0168	25.5774	2027.4192	8.9214	13.0737	155.0756	4108.1009	12.5884	5.9098	18.54
	26.0802	25.6403	2042.4048	8.9433	13.1055	155.8437	4138.4658	12.6194	5.9262	18.592
L27	26.0802	25.6403	2042.4048	8.9433	13.1055	155.8437	4138.4658	12.6194	5.9262	18.592
	27.3484	26.8975	2357.8245	9.3819	13.7400	171.6029	4777.5917	13.2382	6.2545	19.622
L28	27.3506	26.3764	2313.2469	9.3841	13.7400	168.3586	4687.2654	12.9817	6.2712	20.068
	28.2814	27.2812	2559.5450	9.7060	14.2057	180.1768	5186.3321	13.4270	6.5122	20.839
L29	28.2505	34.8072	3244.5990	9.6747	14.2057	228.4005	6574.4372	17.1310	6.2777	15.694
	28.3139	34.8861	3266.7098	9.6966	14.2375	229.4446	6619.2397	17.1699	6.2941	15.735
L30	28.3139	34.8861	3266.7098	9.6966	14.2375	229.4446	6619.2397	17.1699	6.2941	15.735
	29.0114	35.7538	3516.5928	9.9378	14.5865	241.0861	7125.5705	17.5969	6.4747	16.187
L31	28.9894	41.2473	4038.6580	9.9154	14.5865	276.8772	8183.4160	20.3007	6.3072	13.637
	29.0528	41.3385	4065.5103	9.9373	14.6182	278.1132	8237.8262	20.3456	6.3236	13.673
L32	29.0528	41.3385	4065.5103	9.9373	14.6182	278.1132	8237.8262	20.3456	6.3236	13.673
	30.0876	42.8271	4520.7131	10.2952	15.1360	298.6737	9160.1903	21.0782	6.5915	14.252
L33	29.5502	45.5721	4329.6621	9.7671	14.4011	300.6487	8773.0691	22.4292	6.0605	11.683
	29.8672	47.6183	4939.4497	10.2057	15.0356	328.5167	10008.664	23.4363	6.3888	12.316
L34	29.8694	47.0549	4883.1486	10.2079	15.0356	324.7722	9894.5829	23.1590	6.4055	12.499
	31.1376	49.0764	5539.9354	10.6465	15.6702	353.5341	11225.411	24.1539	6.7338	13.139
L35	31.1420	47.8995	5411.6332	10.6510	15.6702	345.3464	10965.436	23.5747	6.7673	13.535
	32.4102	49.8718	6107.9987	11.0895	16.3047	374.6157	12376.461	24.5454	7.0956	14.191
L36	32.4147	48.6446	5962.5112	11.0940	16.3047	365.6927	12081.664	23.9414	7.1291	14.624
	33.6829	50.5675	6697.9296	11.5325	16.9393	395.4088	13571.821	24.8878	7.4574	15.297
L37	33.6829	50.5675	6697.9296	11.5325	16.9393	395.4088	13571.821	24.8878	7.4574	15.297
	35.1413	52.7789	7615.6407	12.0369	17.6690	431.0176	15431.352	25.9762	7.8350	16.072
L38	34.4822	53.3318	6937.9740	11.4291	16.8059	412.8305	14058.216	26.2483	7.3045	14.08
	34.6520	55.3435	7753.0824	11.8603	17.4297	444.8212	15709.846	27.2384	7.6273	14.702
L39	34.7137	36.8689	5219.6872	11.9229	17.4297	299.4715	10576.501	18.1458	8.0963	23.549
	34.7770	36.9367	5248.5110	11.9448	17.4614	300.5786	10634.906	18.1791	8.1127	23.597
L40	34.7770	36.9367	5248.5110	11.9448	17.4614	300.5786	10634.906	18.1791	8.1127	23.597
	34.8809	37.0478	5296.0114	11.9807	17.5133	302.3987	10731.155	18.2338	8.1396	23.675
L41	34.8192	55.6134	7867.0527	11.9181	17.5133	449.2034	15940.781	27.3712	7.6706	14.785
	34.8825	55.7156	7910.5132	11.9400	17.5450	450.8690	16028.844	27.4215	7.6870	14.817
L42	34.8870	54.3936	7728.6002	11.9445	17.5450	440.5006	15660.239	26.7709	7.7205	15.249

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
	36.1539	56.3887	8610.6409	12.3826	18.1790	473.6593	17447.493	27.7528	8.0485	15.897
L43	36.1539	56.3887	8610.6409	12.3826	18.1790	473.6593	17447.493	27.7528	8.0485	15.897
	37.4209	58.3839	9557.3609	12.8207	18.8129	508.0213	19365.804	28.7348	8.3764	16.544
L44	37.4253	56.9624	9331.1642	12.8252	18.8129	495.9978	18907.468	28.0351	8.4099	17.031
	38.6923	58.9083	10320.502	13.2633	19.4469	530.7030	20912.136	28.9929	8.7379	17.695
L45	38.6923	58.9083	10320.502	13.2633	19.4469	530.7030	20912.136	28.9929	8.7379	17.695
	40.1291	61.1149	11524.291	13.7602	20.1657	571.4787	23351.339	30.0789	9.1099	18.448
L46	39.4085	61.6924	10486.982	13.0647	19.1756	546.8913	21249.469	30.3631	8.5140	16.217
	39.6624	64.1795	11807.141	13.5914	19.9377	592.2012	23924.470	31.5872	8.9083	16.968
L47	39.6646	63.4259	11672.343	13.5936	19.9377	585.4402	23651.332	31.2163	8.9250	17.205
	40.9592	65.5148	12863.997	14.0413	20.5855	624.9057	26065.946	32.2444	9.2602	17.851
L48	40.9592	65.5148	12863.997	14.0413	20.5855	624.9057	26065.946	32.2444	9.2602	17.851
	41.0176	65.6090	12919.569	14.0615	20.6147	626.7158	26178.549	32.2907	9.2753	17.88
L49	41.0198	64.8288	12770.005	14.0638	20.6147	619.4606	25875.493	31.9068	9.2920	18.131
	42.2891	66.8521	14003.327	14.5027	21.2498	658.9864	28374.537	32.9026	9.6206	18.772
L50	42.2891	66.8521	14003.327	14.5027	21.2498	658.9864	28374.537	32.9026	9.6206	18.772
	43.5584	68.8753	15313.604	14.9416	21.8849	699.7346	31029.515	33.8983	9.9492	19.413
L51	43.5606	68.0456	15133.650	14.9438	21.8849	691.5118	30664.878	33.4900	9.9659	19.686
	44.5557	69.6125	16203.353	15.2879	22.3828	723.9205	32832.386	34.2611	10.2235	20.195

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							
L1 130.00-125.00				1	1	1			
L2 125.00-120.00				1	1	1			
L3 120.00-114.90				1	1	0.902328			
L4 114.90-114.67				1	1	0.900528			
L5 114.67-109.67				1	1	0.918712			
L6 109.67-109.42				1	1	0.916923			
L7 109.42-109.17				1	1	0.915841			
L8 109.17-104.17				1	1	0.912221			
L9 104.17-103.92				1	1	0.924502			
L10 103.92-103.67				1	1	0.938408			
L11 103.67-98.67				1	1	0.933024			
L12 98.67-96.42				1	1	0.946501			

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							
L13 96.42-96.17				1	1	0.925437			
L14 96.17-91.50				1	1	0.931944			
L15 91.50-89.50				1	1	0.942607			
L16 89.50-88.92				1	1	0.940294			
L17 88.92-88.67				1	1	1.13663			
L18 88.67-88.25				1	1	1.13499			
L19 88.25-88.00				1	1	1.02283			
L20 88.00-87.42				1	1	1.02039			
L21 87.42-87.17				1	1	1			
L22 87.17-86.92				1	1	1			
L23 86.92-86.67				1	1	0.944835			
L24 86.67-81.67				1	1	0.953816			
L25 81.67-80.75				1	1	0.950576			
L26 80.75-80.50				1	1	1.12861			
L27 80.50-75.50				1	1	1.11252			
L28 75.50-71.83				1	1	1.12341			
L29 71.83-71.58				1	1	0.963745			
L30 71.58-68.83				1	1	0.955524			
L31 68.83-68.58				1	1	0.944879			
L32 68.58-64.50				1	1	0.943705			
L33 64.50-63.25				1	1	0.954191			
L34 63.25-58.25				1	1	0.950957			
L35 58.25-53.25				1	1	0.960507			
L36 53.25-48.25				1	1	0.971668			
L37 48.25-42.50				1	1	0.967939			
L38 42.50-41.83				1	1	0.965111			
L39 41.83-41.58				1	1	1			
L40 41.58-41.17				1	1	1			
L41 41.17-40.92				1	1	0.963091			
L42 40.92-35.92				1	1	0.975621			
L43 35.92-30.92				1	1	0.965486			
L44 30.92-25.92				1	1	0.97989			
L45 25.92-20.25				1	1	0.97864			
L46 20.25-				1	1	0.97488			

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
19.25									
L47 19.25-14.15				1	1	0.978059			
L48 14.15-13.92				1	1	0.977693			
L49 13.92-8.92				1	1	0.981658			
L50 8.92-3.92				1	1	0.974315			
L51 3.92-0.00				1	1	0.980671			

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	C	No	Surface Ar (CaAa)	130.00 - 8.00	1	1	0.100 0.100	0.3750		0.22
Climbing Pegs	C	No	Surface Ar (CaAa)	130.00 - 8.00	1	1	0.050 0.150	0.7050		1.80

HB114-1-0813U4-M5J(1-1/4)	C	No	Surface Ar (CaAa)	120.00 - 8.00	4	4	0.100 0.230	1.5400		1.20

LCF158-50JL(1-5/8)	C	No	Surface Ar (CaAa)	90.00 - 8.00	6	6	-0.400 -0.050	1.9800		0.52

(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	15.50 - 0.50	1	1	-0.250 -0.250	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	15.50 - 0.50	1	1	0.500 0.500	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	B	No	Surface Af (CaAa)	15.50 - 0.50	1	1	0.250 0.250	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	C	No	Surface Af (CaAa)	15.50 - 0.50	1	1	0.000 0.000	4.7800	12.7800	0.00

(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	15.50 - 12.67	1	1	-0.250 -0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	15.50 - 12.67	1	1	0.500 0.500	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	B	No	Surface Af (CaAa)	15.50 - 12.67	1	1	0.250 0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	C	No	Surface Af (CaAa)	15.50 - 12.67	1	1	0.000 0.000	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	42.67 - 15.50	1	1	-0.250 -0.250	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	42.67 - 15.50	1	1	0.500 0.500	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	B	No	Surface Af (CaAa)	42.67 - 15.50	1	1	0.250 0.250	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	C	No	Surface Af (CaAa)	42.67 - 15.50	1	1	0.000 0.000	4.7800	12.7800	0.00

(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	42.67 - 40.33	1	1	-0.250 -0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	42.67 - 40.33	1	1	0.500 0.500	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	B	No	Surface Af (CaAa)	42.67 - 40.33	1	1	0.250 0.250	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	C	No	Surface Af (CaAa)	42.67 - 40.33	1	1	0.000 0.000	4.7800	9.5600	0.00
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	70.33 - 42.67	1	1	-0.250 -0.250	4.7800	12.7800	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
(Area) Aero MP3-04 (H)	A	No	Surface Af (CaAa)	70.33 - 42.67	1	1	0.500 0.500	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	B	No	Surface Af (CaAa)	70.33 - 42.67	1	1	0.250 0.250	4.7800	12.7800	0.00
(Area) Aero MP3-04 (H)	C	No	Surface Af (CaAa)	70.33 - 42.67	1	1	0.000 0.000	4.7800	12.7800	0.00

(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	70.33 - 68.17	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	70.33 - 68.17	1	1	0.500 0.500	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	70.33 - 68.17	1	1	0.250 0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	70.33 - 68.17	1	1	0.000 0.000	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	88.17 - 70.33	1	1	-0.250 -0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	88.17 - 70.33	1	1	0.500 0.500	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	88.17 - 70.33	1	1	0.250 0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	73.08 - 70.33	1	1	0.000 0.000	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	89.50 - 79.50	1	1	0.000 0.000	4.0600	11.2600	0.00

(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	89.50 - 86.17	1	1	0.000 0.000	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	116.17 - 89.50	1	1	0.000 0.000	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	88.17 - 86.17	1	1	0.500 0.500	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	88.17 - 86.17	1	1	0.250 0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	116.17 - 88.17	1	1	0.500 0.500	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	116.17 - 88.17	1	1	0.250 0.250	4.0600	11.2600	0.00

(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	88.17 - 87.67	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	97.67 - 88.17	1	1	-0.250 -0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	103.92 - 95.17	1	1	0.000 0.000	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	97.67 - 95.17	1	1	-0.250 -0.250	4.0600	8.1200	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	103.92 - 97.67	1	1	-0.250 -0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	109.42 - 103.92	1	1	-0.250 -0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	116.17 - 109.42	1	1	-0.250 -0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	116.17 - 109.42	1	1	0.000 0.000	4.0600	8.1200	0.00

Feed Line/Linear Appurtenances - Entered As Area

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

CR 50 1873(1-5/8)	A	No	No	Inside Pole	130.00 - 8.00	6	No Ice	0.00	0.83

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf
							1/2" Ice	0.00	0.83
							1" Ice	0.00	0.83
FB-L98B-002-75000(3/8)	A	No	No	Inside Pole	130.00 - 8.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	130.00 - 8.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
2" Rigid Conduit	A	No	No	Inside Pole	130.00 - 8.00	1	No Ice	0.00	2.80
							1/2" Ice	0.00	2.80
							1" Ice	0.00	2.80

CU12PSM9P6XXX (1-1/2)	B	No	No	Inside Pole	110.00 - 8.00	1	No Ice	0.00	2.35
							1/2" Ice	0.00	2.35
							1" Ice	0.00	2.35

HCS 6X12 4AWG(1-5/8)	B	No	No	Inside Pole	100.00 - 8.00	2	No Ice	0.00	2.40
							1/2" Ice	0.00	2.40
							1" Ice	0.00	2.40
HB158-21U6S24-xxM_TMO(1-5/8)	B	No	No	Inside Pole	100.00 - 8.00	2	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50

LDF4-50A(1/2)	C	No	No	Inside Pole	80.00 - 8.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	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
L1	130.00-125.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.540	0.000	0.01
L2	125.00-120.00	A	0.000	0.000	0.000	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.540	0.000	0.01
L3	120.00-114.90	A	0.000	0.000	1.627	0.000	0.05
		B	0.000	0.000	0.859	0.000	0.00
		C	0.000	0.000	5.339	0.000	0.03
L4	114.90-114.67	A	0.000	0.000	0.295	0.000	0.00
		B	0.000	0.000	0.156	0.000	0.00
		C	0.000	0.000	0.465	0.000	0.00
L5	114.67-109.67	A	0.000	0.000	6.406	0.000	0.05
		B	0.000	0.000	3.383	0.000	0.00
		C	0.000	0.000	10.102	0.000	0.03
L6	109.67-109.42	A	0.000	0.000	0.320	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.505	0.000	0.00
L7	109.42-109.17	A	0.000	0.000	0.311	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.350	0.000	0.00
L8	109.17-104.17	A	0.000	0.000	6.212	0.000	0.05
		B	0.000	0.000	3.383	0.000	0.01
		C	0.000	0.000	7.003	0.000	0.03
L9	104.17-103.92	A	0.000	0.000	0.311	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.350	0.000	0.00
L10	103.92-103.67	A	0.000	0.000	0.316	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.519	0.000	0.00
L11	103.67-98.67	A	0.000	0.000	6.328	0.000	0.05

Tower Sectio n	Tower Elevation ft	Face	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
		B	0.000	0.000	3.383	0.000	0.02
		C	0.000	0.000	10.387	0.000	0.03
L12	98.67-96.42	A	0.000	0.000	3.555	0.000	0.02
		B	0.000	0.000	1.523	0.000	0.03
		C	0.000	0.000	4.674	0.000	0.02
L13	96.42-96.17	A	0.000	0.000	0.458	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.519	0.000	0.00
L14	96.17-91.50	A	0.000	0.000	6.798	0.000	0.04
		B	0.000	0.000	3.160	0.000	0.06
		C	0.000	0.000	7.218	0.000	0.03
L15	91.50-89.50	A	0.000	0.000	2.707	0.000	0.02
		B	0.000	0.000	1.353	0.000	0.02
		C	0.000	0.000	3.395	0.000	0.02
L16	89.50-88.92	A	0.000	0.000	0.785	0.000	0.01
		B	0.000	0.000	0.392	0.000	0.01
		C	0.000	0.000	1.795	0.000	0.01
L17	88.92-88.67	A	0.000	0.000	0.338	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.774	0.000	0.00
L18	88.67-88.25	A	0.000	0.000	0.568	0.000	0.00
		B	0.000	0.000	0.284	0.000	0.01
		C	0.000	0.000	1.300	0.000	0.00
L19	88.25-88.00	A	0.000	0.000	0.485	0.000	0.00
		B	0.000	0.000	0.247	0.000	0.00
		C	0.000	0.000	0.774	0.000	0.00
L20	88.00-87.42	A	0.000	0.000	1.184	0.000	0.01
		B	0.000	0.000	0.658	0.000	0.01
		C	0.000	0.000	1.795	0.000	0.01
L21	87.42-87.17	A	0.000	0.000	0.453	0.000	0.00
		B	0.000	0.000	0.283	0.000	0.00
		C	0.000	0.000	0.774	0.000	0.00
L22	87.17-86.92	A	0.000	0.000	0.453	0.000	0.00
		B	0.000	0.000	0.283	0.000	0.00
		C	0.000	0.000	0.774	0.000	0.00
L23	86.92-86.67	A	0.000	0.000	0.453	0.000	0.00
		B	0.000	0.000	0.283	0.000	0.00
		C	0.000	0.000	0.774	0.000	0.00
L24	86.67-81.67	A	0.000	0.000	6.995	0.000	0.05
		B	0.000	0.000	3.612	0.000	0.06
		C	0.000	0.000	13.196	0.000	0.05
L25	81.67-80.75	A	0.000	0.000	1.245	0.000	0.01
		B	0.000	0.000	0.623	0.000	0.01
		C	0.000	0.000	2.382	0.000	0.01
L26	80.75-80.50	A	0.000	0.000	0.338	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.647	0.000	0.00
L27	80.50-75.50	A	0.000	0.000	6.767	0.000	0.05
		B	0.000	0.000	3.383	0.000	0.06
		C	0.000	0.000	10.237	0.000	0.05
L28	75.50-71.83	A	0.000	0.000	4.967	0.000	0.03
		B	0.000	0.000	2.483	0.000	0.04
		C	0.000	0.000	7.617	0.000	0.04
L29	71.83-71.58	A	0.000	0.000	0.338	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.598	0.000	0.00
L30	71.58-68.83	A	0.000	0.000	5.475	0.000	0.02
		B	0.000	0.000	2.737	0.000	0.03
		C	0.000	0.000	7.750	0.000	0.03
L31	68.83-68.58	A	0.000	0.000	0.631	0.000	0.00
		B	0.000	0.000	0.315	0.000	0.00
		C	0.000	0.000	0.793	0.000	0.00
L32	68.58-64.50	A	0.000	0.000	6.882	0.000	0.04
		B	0.000	0.000	3.441	0.000	0.05
		C	0.000	0.000	11.242	0.000	0.04
L33	64.50-63.25	A	0.000	0.000	1.992	0.000	0.01
		B	0.000	0.000	0.996	0.000	0.02
		C	0.000	0.000	3.386	0.000	0.01
L34	63.25-58.25	A	0.000	0.000	7.967	0.000	0.05

Tower Section	Tower Elevation	Face	A _R	A _F	C _A A _A In Face	C _A A _A Out Face	Weight
n	ft		ft ²	ft ²	ft ²	ft ²	K
		B	0.000	0.000	3.983	0.000	0.06
		C	0.000	0.000	13.543	0.000	0.05
L35	58.25-53.25	A	0.000	0.000	7.967	0.000	0.05
		B	0.000	0.000	3.983	0.000	0.06
		C	0.000	0.000	13.543	0.000	0.05
L36	53.25-48.25	A	0.000	0.000	7.967	0.000	0.05
		B	0.000	0.000	3.983	0.000	0.06
		C	0.000	0.000	13.543	0.000	0.05
L37	48.25-42.50	A	0.000	0.000	9.344	0.000	0.05
		B	0.000	0.000	4.672	0.000	0.07
		C	0.000	0.000	15.666	0.000	0.06
L38	42.50-41.83	A	0.000	0.000	1.788	0.000	0.01
		B	0.000	0.000	0.894	0.000	0.01
		C	0.000	0.000	2.175	0.000	0.01
L39	41.83-41.58	A	0.000	0.000	0.667	0.000	0.00
		B	0.000	0.000	0.334	0.000	0.00
		C	0.000	0.000	0.812	0.000	0.00
L40	41.58-41.17	A	0.000	0.000	1.094	0.000	0.00
		B	0.000	0.000	0.547	0.000	0.00
		C	0.000	0.000	1.331	0.000	0.00
L41	41.17-40.92	A	0.000	0.000	0.667	0.000	0.00
		B	0.000	0.000	0.334	0.000	0.00
		C	0.000	0.000	0.812	0.000	0.00
L42	40.92-35.92	A	0.000	0.000	8.601	0.000	0.05
		B	0.000	0.000	4.301	0.000	0.06
		C	0.000	0.000	13.861	0.000	0.05
L43	35.92-30.92	A	0.000	0.000	7.967	0.000	0.05
		B	0.000	0.000	3.983	0.000	0.06
		C	0.000	0.000	13.543	0.000	0.05
L44	30.92-25.92	A	0.000	0.000	7.967	0.000	0.05
		B	0.000	0.000	3.983	0.000	0.06
		C	0.000	0.000	13.543	0.000	0.05
L45	25.92-20.25	A	0.000	0.000	9.034	0.000	0.05
		B	0.000	0.000	4.517	0.000	0.07
		C	0.000	0.000	15.358	0.000	0.06
L46	20.25-19.25	A	0.000	0.000	1.593	0.000	0.01
		B	0.000	0.000	0.797	0.000	0.01
		C	0.000	0.000	2.709	0.000	0.01
L47	19.25-14.15	A	0.000	0.000	9.635	0.000	0.05
		B	0.000	0.000	4.818	0.000	0.06
		C	0.000	0.000	14.569	0.000	0.05
L48	14.15-13.92	A	0.000	0.000	0.624	0.000	0.00
		B	0.000	0.000	0.312	0.000	0.00
		C	0.000	0.000	0.752	0.000	0.00
L49	13.92-8.92	A	0.000	0.000	9.364	0.000	0.05
		B	0.000	0.000	4.682	0.000	0.06
		C	0.000	0.000	14.242	0.000	0.05
L50	8.92-3.92	A	0.000	0.000	7.967	0.000	0.01
		B	0.000	0.000	3.983	0.000	0.01
		C	0.000	0.000	5.742	0.000	0.01
L51	3.92-0.00	A	0.000	0.000	5.449	0.000	0.00
		B	0.000	0.000	2.725	0.000	0.00
		C	0.000	0.000	2.725	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

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
L1	130.00-125.00	A	0.973	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.486	0.000	0.03
L2	125.00-120.00	A	0.969	0.000	0.000	0.000	0.000	0.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.478	0.000	0.03
L3	120.00-114.90	A	0.965	0.000	0.000	2.006	0.000	0.06

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
		B		0.000	0.000	1.104	0.000	0.01
		C		0.000	0.000	9.698	0.000	0.10
L4	114.90-114.67	A	0.963	0.000	0.000	0.363	0.000	0.00
		B		0.000	0.000	0.200	0.000	0.00
		C		0.000	0.000	0.712	0.000	0.01
L5	114.67-109.67	A	0.961	0.000	0.000	7.892	0.000	0.10
		B		0.000	0.000	4.344	0.000	0.03
		C		0.000	0.000	15.461	0.000	0.14
L6	109.67-109.42	A	0.958	0.000	0.000	0.394	0.000	0.01
		B		0.000	0.000	0.217	0.000	0.00
		C		0.000	0.000	0.773	0.000	0.01
L7	109.42-109.17	A	0.958	0.000	0.000	0.385	0.000	0.01
		B		0.000	0.000	0.217	0.000	0.00
		C		0.000	0.000	0.592	0.000	0.01
L8	109.17-104.17	A	0.956	0.000	0.000	7.692	0.000	0.10
		B		0.000	0.000	4.339	0.000	0.04
		C		0.000	0.000	11.835	0.000	0.11
L9	104.17-103.92	A	0.953	0.000	0.000	0.384	0.000	0.01
		B		0.000	0.000	0.217	0.000	0.00
		C		0.000	0.000	0.591	0.000	0.01
L10	103.92-103.67	A	0.953	0.000	0.000	0.390	0.000	0.01
		B		0.000	0.000	0.217	0.000	0.00
		C		0.000	0.000	0.788	0.000	0.01
L11	103.67-98.67	A	0.951	0.000	0.000	7.800	0.000	0.10
		B		0.000	0.000	4.334	0.000	0.05
		C		0.000	0.000	15.739	0.000	0.14
L12	98.67-96.42	A	0.947	0.000	0.000	4.354	0.000	0.05
		B		0.000	0.000	1.949	0.000	0.04
		C		0.000	0.000	7.075	0.000	0.06
L13	96.42-96.17	A	0.946	0.000	0.000	0.559	0.000	0.01
		B		0.000	0.000	0.216	0.000	0.00
		C		0.000	0.000	0.786	0.000	0.01
L14	96.17-91.50	A	0.944	0.000	0.000	8.320	0.000	0.10
		B		0.000	0.000	4.041	0.000	0.08
		C		0.000	0.000	11.790	0.000	0.11
L15	91.50-89.50	A	0.940	0.000	0.000	3.317	0.000	0.04
		B		0.000	0.000	1.731	0.000	0.04
		C		0.000	0.000	5.574	0.000	0.05
L16	89.50-88.92	A	0.939	0.000	0.000	0.961	0.000	0.01
		B		0.000	0.000	0.501	0.000	0.01
		C		0.000	0.000	2.681	0.000	0.02
L17	88.92-88.67	A	0.938	0.000	0.000	0.414	0.000	0.00
		B		0.000	0.000	0.216	0.000	0.00
		C		0.000	0.000	1.156	0.000	0.01
L18	88.67-88.25	A	0.938	0.000	0.000	0.696	0.000	0.01
		B		0.000	0.000	0.363	0.000	0.01
		C		0.000	0.000	1.941	0.000	0.02
L19	88.25-88.00	A	0.938	0.000	0.000	0.608	0.000	0.01
		B		0.000	0.000	0.311	0.000	0.01
		C		0.000	0.000	1.155	0.000	0.01
L20	88.00-87.42	A	0.937	0.000	0.000	1.495	0.000	0.02
		B		0.000	0.000	0.824	0.000	0.01
		C		0.000	0.000	2.680	0.000	0.02
L21	87.42-87.17	A	0.937	0.000	0.000	0.571	0.000	0.01
		B		0.000	0.000	0.355	0.000	0.01
		C		0.000	0.000	1.155	0.000	0.01
L22	87.17-86.92	A	0.937	0.000	0.000	0.571	0.000	0.01
		B		0.000	0.000	0.355	0.000	0.01
		C		0.000	0.000	1.155	0.000	0.01
L23	86.92-86.67	A	0.936	0.000	0.000	0.571	0.000	0.01
		B		0.000	0.000	0.355	0.000	0.01
		C		0.000	0.000	1.155	0.000	0.01
L24	86.67-81.67	A	0.933	0.000	0.000	8.911	0.000	0.10
		B		0.000	0.000	4.594	0.000	0.09
		C		0.000	0.000	20.354	0.000	0.19
L25	81.67-80.75	A	0.930	0.000	0.000	1.587	0.000	0.02
		B		0.000	0.000	0.794	0.000	0.02
		C		0.000	0.000	3.686	0.000	0.03
L26	80.75-80.50	A	0.929	0.000	0.000	0.431	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
		B		0.000	0.000	0.216	0.000	0.00
		C		0.000	0.000	1.002	0.000	0.01
L27	80.50-75.50	A	0.926	0.000	0.000	8.619	0.000	0.10
		B		0.000	0.000	4.310	0.000	0.09
		C		0.000	0.000	16.790	0.000	0.17
L28	75.50-71.83	A	0.921	0.000	0.000	6.319	0.000	0.07
		B		0.000	0.000	3.159	0.000	0.06
		C		0.000	0.000	12.438	0.000	0.12
L29	71.83-71.58	A	0.919	0.000	0.000	0.430	0.000	0.00
		B		0.000	0.000	0.215	0.000	0.00
		C		0.000	0.000	0.942	0.000	0.01
L30	71.58-68.83	A	0.917	0.000	0.000	6.770	0.000	0.07
		B		0.000	0.000	3.385	0.000	0.05
		C		0.000	0.000	11.800	0.000	0.11
L31	68.83-68.58	A	0.915	0.000	0.000	0.770	0.000	0.01
		B		0.000	0.000	0.385	0.000	0.01
		C		0.000	0.000	1.181	0.000	0.01
L32	68.58-64.50	A	0.912	0.000	0.000	8.448	0.000	0.09
		B		0.000	0.000	4.224	0.000	0.07
		C		0.000	0.000	17.213	0.000	0.15
L33	64.50-63.25	A	0.908	0.000	0.000	2.448	0.000	0.03
		B		0.000	0.000	1.224	0.000	0.02
		C		0.000	0.000	5.203	0.000	0.05
L34	63.25-58.25	A	0.903	0.000	0.000	9.774	0.000	0.10
		B		0.000	0.000	4.887	0.000	0.09
		C		0.000	0.000	20.767	0.000	0.19
L35	58.25-53.25	A	0.896	0.000	0.000	9.758	0.000	0.10
		B		0.000	0.000	4.879	0.000	0.09
		C		0.000	0.000	20.725	0.000	0.19
L36	53.25-48.25	A	0.887	0.000	0.000	9.741	0.000	0.10
		B		0.000	0.000	4.871	0.000	0.09
		C		0.000	0.000	20.679	0.000	0.18
L37	48.25-42.50	A	0.877	0.000	0.000	11.394	0.000	0.12
		B		0.000	0.000	5.697	0.000	0.10
		C		0.000	0.000	23.825	0.000	0.21
L38	42.50-41.83	A	0.871	0.000	0.000	2.147	0.000	0.02
		B		0.000	0.000	1.073	0.000	0.01
		C		0.000	0.000	3.186	0.000	0.03
L39	41.83-41.58	A	0.870	0.000	0.000	0.800	0.000	0.01
		B		0.000	0.000	0.400	0.000	0.01
		C		0.000	0.000	1.186	0.000	0.01
L40	41.58-41.17	A	0.869	0.000	0.000	1.312	0.000	0.01
		B		0.000	0.000	0.656	0.000	0.01
		C		0.000	0.000	1.945	0.000	0.02
L41	41.17-40.92	A	0.869	0.000	0.000	0.800	0.000	0.01
		B		0.000	0.000	0.400	0.000	0.01
		C		0.000	0.000	1.186	0.000	0.01
L42	40.92-35.92	A	0.863	0.000	0.000	10.434	0.000	0.10
		B		0.000	0.000	5.217	0.000	0.09
		C		0.000	0.000	20.916	0.000	0.18
L43	35.92-30.92	A	0.851	0.000	0.000	9.669	0.000	0.10
		B		0.000	0.000	4.834	0.000	0.09
		C		0.000	0.000	20.479	0.000	0.18
L44	30.92-25.92	A	0.837	0.000	0.000	9.641	0.000	0.10
		B		0.000	0.000	4.821	0.000	0.09
		C		0.000	0.000	20.404	0.000	0.18
L45	25.92-20.25	A	0.820	0.000	0.000	10.894	0.000	0.11
		B		0.000	0.000	5.447	0.000	0.10
		C		0.000	0.000	23.030	0.000	0.20
L46	20.25-19.25	A	0.807	0.000	0.000	1.921	0.000	0.02
		B		0.000	0.000	0.961	0.000	0.02
		C		0.000	0.000	4.062	0.000	0.03
L47	19.25-14.15	A	0.794	0.000	0.000	11.478	0.000	0.11
		B		0.000	0.000	5.739	0.000	0.09
		C		0.000	0.000	21.435	0.000	0.18
L48	14.15-13.92	A	0.780	0.000	0.000	0.733	0.000	0.01
		B		0.000	0.000	0.366	0.000	0.00
		C		0.000	0.000	1.071	0.000	0.01
L49	13.92-8.92	A	0.764	0.000	0.000	11.092	0.000	0.10

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
L50	8.92-3.92	B	0.722	0.000	0.000	5.546	0.000	0.09
		C		0.000	0.000	20.800	0.000	0.17
		A		0.000	0.000	9.410	0.000	0.05
L51	3.92-0.00	B	0.641	0.000	0.000	4.705	0.000	0.03
		C		0.000	0.000	7.476	0.000	0.05
		A		0.000	0.000	6.326	0.000	0.03
		B		0.000	0.000	3.163	0.000	0.01
		C		0.000	0.000	3.163	0.000	0.01

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	130.00-125.00	-0.2051	0.9651	-0.3733	1.7561
L2	125.00-120.00	-0.2051	0.9651	-0.3725	1.7524
L3	120.00-114.90	-0.1668	3.0721	-0.3659	3.3066
L4	114.90-114.67	0.7644	3.0296	0.6141	3.3125
L5	114.67-109.67	0.7883	3.1184	0.6323	3.4019
L6	109.67-109.42	0.8120	3.2067	0.6504	3.4905
L7	109.42-109.17	0.9953	2.4664	0.7728	2.9191
L8	109.17-104.17	1.0228	2.5300	0.7930	2.9876
L9	104.17-103.92	1.0499	2.5927	0.8128	3.0549
L10	103.92-103.67	0.8853	3.4552	0.7048	3.7261
L11	103.67-98.67	0.9086	3.5416	0.7223	3.8111
L12	98.67-96.42	0.3485	3.7462	0.2453	3.9897
L13	96.42-96.17	-0.0794	3.8496	-0.1218	4.0754
L14	96.17-91.50	0.6490	3.1374	0.4908	3.5322
L15	91.50-89.50	1.1443	3.3496	0.9382	3.7348
L16	89.50-88.92	1.6375	4.9257	1.4426	4.9397
L17	88.92-88.67	1.6426	4.9409	1.4468	4.9536
L18	88.67-88.25	1.6472	4.9543	1.4506	4.9663
L19	88.25-88.00	1.9691	4.3930	1.6628	4.5036
L20	88.00-87.42	2.3933	4.1425	2.0008	4.2956
L21	87.42-87.17	2.8042	4.1057	2.3482	4.2682
L22	87.17-86.92	2.8101	4.1141	2.3530	4.2765
L23	86.92-86.67	2.8173	4.1243	2.3590	4.2870
L24	86.67-81.67	1.9532	4.5499	1.5892	4.6748
L25	81.67-80.75	1.8741	4.6976	1.5183	4.8125
L26	80.75-80.50	1.8817	4.7161	1.5241	4.8299
L27	80.50-75.50	2.0825	4.0316	1.6553	4.3241
L28	75.50-71.83	2.1353	4.2034	1.6965	4.4851
L29	71.83-71.58	2.0618	4.7363	1.6543	4.9073
L30	71.58-68.83	2.2735	4.7062	1.8757	4.8970
L31	68.83-68.58	2.4102	4.7032	2.0253	4.9045
L32	68.58-64.50	2.1971	5.0288	1.7815	5.2162
L33	64.50-63.25	2.1728	5.0867	1.7531	5.2708
L34	63.25-58.25	2.2162	5.1858	1.7872	5.3640
L35	58.25-53.25	2.2844	5.3419	1.8398	5.5120
L36	53.25-48.25	2.3453	5.4808	1.8915	5.6561
L37	48.25-42.50	2.4209	5.6081	1.9610	5.7971
L38	42.50-41.83	2.7974	5.3259	2.3545	5.5346
L39	41.83-41.58	2.8027	5.3358	2.3603	5.5429
L40	41.58-41.17	2.8074	5.3447	2.3646	5.5523
L41	41.17-40.92	2.8136	5.3561	2.3699	5.5641
L42	40.92-35.92	2.5100	5.6834	2.0473	5.8833
L43	35.92-30.92	2.5081	5.8519	2.0405	6.0575
L44	30.92-25.92	2.5603	5.9710	2.0890	6.1852
L45	25.92-20.25	2.6148	6.0950	2.1403	6.3167
L46	20.25-19.25	2.6204	6.1079	2.1457	6.3324
L47	19.25-14.15	2.8039	6.0952	2.3265	6.3184
L48	14.15-13.92	3.1620	5.9695	2.6913	6.1948
L49	13.92-8.92	2.8455	6.2137	2.3686	6.4366
L50	8.92-3.92	2.5688	3.3827	2.3599	3.4232
L51	3.92-0.00	2.3657	2.3657	2.2178	2.2178

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	2	Safety Line 3/8	125.00 - 130.00	1.0000	1.0000
L1	3	Climbing Pegs	125.00 - 130.00	1.0000	1.0000
L2	2	Safety Line 3/8	120.00 - 125.00	1.0000	1.0000
L2	3	Climbing Pegs	120.00 - 125.00	1.0000	1.0000
L3	2	Safety Line 3/8	114.90 - 120.00	1.0000	1.0000
L3	3	Climbing Pegs	114.90 - 120.00	1.0000	1.0000
L3	10	HB114-1-0813U4-M5J(1-1/4)	114.90 - 120.00	1.0000	1.0000
L3	58	(Area) Aero MP3-03 (H)	114.90 - 116.17	1.0000	1.0000
L3	61	(Area) Aero MP3-03 (H)	114.90 - 116.17	1.0000	1.0000
L3	62	(Area) Aero MP3-03 (H)	114.90 - 116.17	1.0000	1.0000
L3	70	(Area) Aero MP3-03 (H)	114.90 - 116.17	1.0000	1.0000
L3	71	(Area) Aero MP3-03 (H)	114.90 - 116.17	1.0000	1.0000
L4	2	Safety Line 3/8	114.67 - 114.90	1.0000	1.0000
L4	3	Climbing Pegs	114.67 - 114.90	1.0000	1.0000
L4	10	HB114-1-0813U4-M5J(1-1/4)	114.67 - 114.90	1.0000	1.0000
L4	58	(Area) Aero MP3-03 (H)	114.67 - 114.90	1.0000	1.0000
L4	61	(Area) Aero MP3-03 (H)	114.67 - 114.90	1.0000	1.0000
L4	62	(Area) Aero MP3-03 (H)	114.67 - 114.90	1.0000	1.0000
L4	70	(Area) Aero MP3-03 (H)	114.67 - 114.90	1.0000	1.0000
L4	71	(Area) Aero MP3-03 (H)	114.67 - 114.90	1.0000	1.0000
L5	2	Safety Line 3/8	109.67 - 114.67	1.0000	1.0000
L5	3	Climbing Pegs	109.67 - 114.67	1.0000	1.0000
L5	10	HB114-1-0813U4-M5J(1-1/4)	109.67 - 114.67	1.0000	1.0000
L5	58	(Area) Aero MP3-03 (H)	109.67 - 114.67	1.0000	1.0000
L5	61	(Area) Aero MP3-03 (H)	109.67 - 114.67	1.0000	1.0000
L5	62	(Area) Aero MP3-03 (H)	109.67 - 114.67	1.0000	1.0000
L5	70	(Area) Aero MP3-03 (H)	109.67 - 114.67	1.0000	1.0000
L5	71	(Area) Aero MP3-03 (H)	109.67 - 114.67	1.0000	1.0000
L6	2	Safety Line 3/8	109.42 - 109.67	1.0000	1.0000
L6	3	Climbing Pegs	109.42 - 109.67	1.0000	1.0000
L6	10	HB114-1-0813U4-M5J(1-1/4)	109.42 - 109.67	1.0000	1.0000
L6	58	(Area) Aero MP3-03 (H)	109.42 - 109.67	1.0000	1.0000
L6	61	(Area) Aero MP3-03 (H)	109.42 - 109.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L6	62	(Area) Aero MP3-03 (H)	109.42 - 109.67	1.0000	1.0000
L6	70	(Area) Aero MP3-03 (H)	109.42 - 109.67	1.0000	1.0000
L6	71	(Area) Aero MP3-03 (H)	109.42 - 109.67	1.0000	1.0000
L7	2	Safety Line 3/8	109.17 - 109.42	1.0000	1.0000
L7	3	Climbing Pegs	109.17 - 109.42	1.0000	1.0000
L7	10	HB114-1-0813U4-M5J(1-1/4)	109.17 - 109.42	1.0000	1.0000
L7	58	(Area) Aero MP3-03 (H)	109.17 - 109.42	1.0000	1.0000
L7	61	(Area) Aero MP3-03 (H)	109.17 - 109.42	1.0000	1.0000
L7	62	(Area) Aero MP3-03 (H)	109.17 - 109.42	1.0000	1.0000
L7	69	(Area) Aero MP3-03 (H)	109.17 - 109.42	1.0000	1.0000
L8	2	Safety Line 3/8	104.17 - 109.17	1.0000	1.0000
L8	3	Climbing Pegs	104.17 - 109.17	1.0000	1.0000
L8	10	HB114-1-0813U4-M5J(1-1/4)	104.17 - 109.17	1.0000	1.0000
L8	58	(Area) Aero MP3-03 (H)	104.17 - 109.17	1.0000	1.0000
L8	61	(Area) Aero MP3-03 (H)	104.17 - 109.17	1.0000	1.0000
L8	62	(Area) Aero MP3-03 (H)	104.17 - 109.17	1.0000	1.0000
L8	69	(Area) Aero MP3-03 (H)	104.17 - 109.17	1.0000	1.0000
L9	2	Safety Line 3/8	103.92 - 104.17	1.0000	1.0000
L9	3	Climbing Pegs	103.92 - 104.17	1.0000	1.0000
L9	10	HB114-1-0813U4-M5J(1-1/4)	103.92 - 104.17	1.0000	1.0000
L9	58	(Area) Aero MP3-03 (H)	103.92 - 104.17	1.0000	1.0000
L9	61	(Area) Aero MP3-03 (H)	103.92 - 104.17	1.0000	1.0000
L9	62	(Area) Aero MP3-03 (H)	103.92 - 104.17	1.0000	1.0000
L9	69	(Area) Aero MP3-03 (H)	103.92 - 104.17	1.0000	1.0000
L10	2	Safety Line 3/8	103.67 - 103.92	1.0000	1.0000
L10	3	Climbing Pegs	103.67 - 103.92	1.0000	1.0000
L10	10	HB114-1-0813U4-M5J(1-1/4)	103.67 - 103.92	1.0000	1.0000
L10	58	(Area) Aero MP3-03 (H)	103.67 - 103.92	1.0000	1.0000
L10	61	(Area) Aero MP3-03 (H)	103.67 - 103.92	1.0000	1.0000
L10	62	(Area) Aero MP3-03 (H)	103.67 - 103.92	1.0000	1.0000
L10	66	(Area) Aero MP3-03 (H)	103.67 - 103.92	1.0000	1.0000
L10	68	(Area) Aero MP3-03 (H)	103.67 - 103.92	1.0000	1.0000
L11	2	Safety Line 3/8	98.67 - 103.67	1.0000	1.0000
L11	3	Climbing Pegs	98.67 - 103.67	1.0000	1.0000
L11	10	HB114-1-0813U4-M5J(1-	98.67 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L11	58	(Area) Aero MP3-03 (H)	103.67 98.67 - 103.67	1.0000	1.0000
L11	61	(Area) Aero MP3-03 (H)	98.67 - 103.67	1.0000	1.0000
L11	62	(Area) Aero MP3-03 (H)	98.67 - 103.67	1.0000	1.0000
L11	66	(Area) Aero MP3-03 (H)	98.67 - 103.67	1.0000	1.0000
L11	68	(Area) Aero MP3-03 (H)	98.67 - 103.67	1.0000	1.0000
L12	2	Safety Line 3/8	96.42 - 98.67	1.0000	1.0000
L12	3	Climbing Pegs	96.42 - 98.67	1.0000	1.0000
L12	10	HB114-1-0813U4-M5J(1-1/4)	96.42 - 98.67	1.0000	1.0000
L12	58	(Area) Aero MP3-03 (H)	96.42 - 98.67	1.0000	1.0000
L12	61	(Area) Aero MP3-03 (H)	96.42 - 98.67	1.0000	1.0000
L12	62	(Area) Aero MP3-03 (H)	96.42 - 98.67	1.0000	1.0000
L12	65	(Area) Aero MP3-03 (H)	96.42 - 97.67	1.0000	1.0000
L12	66	(Area) Aero MP3-03 (H)	96.42 - 98.67	1.0000	1.0000
L12	67	(Area) Aero MP3-03 (H)	96.42 - 97.67	1.0000	1.0000
L12	68	(Area) Aero MP3-03 (H)	97.67 - 98.67	1.0000	1.0000
L13	2	Safety Line 3/8	96.17 - 96.42	1.0000	1.0000
L13	3	Climbing Pegs	96.17 - 96.42	1.0000	1.0000
L13	10	HB114-1-0813U4-M5J(1-1/4)	96.17 - 96.42	1.0000	1.0000
L13	58	(Area) Aero MP3-03 (H)	96.17 - 96.42	1.0000	1.0000
L13	61	(Area) Aero MP3-03 (H)	96.17 - 96.42	1.0000	1.0000
L13	62	(Area) Aero MP3-03 (H)	96.17 - 96.42	1.0000	1.0000
L13	65	(Area) Aero MP3-03 (H)	96.17 - 96.42	1.0000	1.0000
L13	66	(Area) Aero MP3-03 (H)	96.17 - 96.42	1.0000	1.0000
L13	67	(Area) Aero MP3-03 (H)	96.17 - 96.42	1.0000	1.0000
L14	2	Safety Line 3/8	91.50 - 96.17	1.0000	1.0000
L14	3	Climbing Pegs	91.50 - 96.17	1.0000	1.0000
L14	10	HB114-1-0813U4-M5J(1-1/4)	91.50 - 96.17	1.0000	1.0000
L14	58	(Area) Aero MP3-03 (H)	91.50 - 96.17	1.0000	1.0000
L14	61	(Area) Aero MP3-03 (H)	91.50 - 96.17	1.0000	1.0000
L14	62	(Area) Aero MP3-03 (H)	91.50 - 96.17	1.0000	1.0000
L14	65	(Area) Aero MP3-03 (H)	91.50 - 96.17	1.0000	1.0000
L14	66	(Area) Aero MP3-03 (H)	95.17 - 96.17	1.0000	1.0000
L14	67	(Area) Aero MP3-03 (H)	95.17 - 96.17	1.0000	1.0000
L15	2	Safety Line 3/8	89.50 - 91.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L15	3	Climbing Pegs	89.50 - 91.50	1.0000	1.0000
L15	10	HB114-1-0813U4-M5J(1- 1/4)	89.50 - 91.50	1.0000	1.0000
L15	20	LCF158-50JL(1-5/8)	89.50 - 90.00	1.0000	1.0000
L15	58	(Area) Aero MP3-03 (H)	89.50 - 91.50	1.0000	1.0000
L15	61	(Area) Aero MP3-03 (H)	89.50 - 91.50	1.0000	1.0000
L15	62	(Area) Aero MP3-03 (H)	89.50 - 91.50	1.0000	1.0000
L15	65	(Area) Aero MP3-03 (H)	89.50 - 91.50	1.0000	1.0000
L16	2	Safety Line 3/8	88.92 - 89.50	1.0000	1.0000
L16	3	Climbing Pegs	88.92 - 89.50	1.0000	1.0000
L16	10	HB114-1-0813U4-M5J(1- 1/4)	88.92 - 89.50	1.0000	1.0000
L16	20	LCF158-50JL(1-5/8)	88.92 - 89.50	1.0000	1.0000
L16	55	(Area) Aero MP3-03 (H)	88.92 - 89.50	1.0000	1.0000
L16	57	(Area) Aero MP3-03 (H)	88.92 - 89.50	1.0000	1.0000
L16	61	(Area) Aero MP3-03 (H)	88.92 - 89.50	1.0000	1.0000
L16	62	(Area) Aero MP3-03 (H)	88.92 - 89.50	1.0000	1.0000
L16	65	(Area) Aero MP3-03 (H)	88.92 - 89.50	1.0000	1.0000
L17	2	Safety Line 3/8	88.67 - 88.92	1.0000	1.0000
L17	3	Climbing Pegs	88.67 - 88.92	1.0000	1.0000
L17	10	HB114-1-0813U4-M5J(1- 1/4)	88.67 - 88.92	1.0000	1.0000
L17	20	LCF158-50JL(1-5/8)	88.67 - 88.92	1.0000	1.0000
L17	55	(Area) Aero MP3-03 (H)	88.67 - 88.92	1.0000	1.0000
L17	57	(Area) Aero MP3-03 (H)	88.67 - 88.92	1.0000	1.0000
L17	61	(Area) Aero MP3-03 (H)	88.67 - 88.92	1.0000	1.0000
L17	62	(Area) Aero MP3-03 (H)	88.67 - 88.92	1.0000	1.0000
L17	65	(Area) Aero MP3-03 (H)	88.67 - 88.92	1.0000	1.0000
L18	2	Safety Line 3/8	88.25 - 88.67	1.0000	1.0000
L18	3	Climbing Pegs	88.25 - 88.67	1.0000	1.0000
L18	10	HB114-1-0813U4-M5J(1- 1/4)	88.25 - 88.67	1.0000	1.0000
L18	20	LCF158-50JL(1-5/8)	88.25 - 88.67	1.0000	1.0000
L18	55	(Area) Aero MP3-03 (H)	88.25 - 88.67	1.0000	1.0000
L18	57	(Area) Aero MP3-03 (H)	88.25 - 88.67	1.0000	1.0000
L18	61	(Area) Aero MP3-03 (H)	88.25 - 88.67	1.0000	1.0000
L18	62	(Area) Aero MP3-03 (H)	88.25 - 88.67	1.0000	1.0000
L18	65	(Area) Aero MP3-03 (H)	88.25 - 88.67	1.0000	1.0000
L19	2	Safety Line 3/8	88.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L19	3	Climbing Pegs	88.25 88.00 - 88.25	1.0000	1.0000
L19	10	HB114-1-0813U4-M5J(1-1/4)	88.00 - 88.25	1.0000	1.0000
L19	20	LCF158-50JL(1-5/8)	88.00 - 88.25	1.0000	1.0000
L19	51	(Area) Aero MP3-03 (H)	88.00 - 88.17	1.0000	1.0000
L19	52	(Area) Aero MP3-03 (H)	88.00 - 88.17	1.0000	1.0000
L19	53	(Area) Aero MP3-03 (H)	88.00 - 88.17	1.0000	1.0000
L19	55	(Area) Aero MP3-03 (H)	88.00 - 88.25	1.0000	1.0000
L19	57	(Area) Aero MP3-03 (H)	88.00 - 88.25	1.0000	1.0000
L19	59	(Area) Aero MP3-03 (H)	88.00 - 88.17	1.0000	1.0000
L19	60	(Area) Aero MP3-03 (H)	88.00 - 88.17	1.0000	1.0000
L19	61	(Area) Aero MP3-03 (H)	88.17 - 88.25	1.0000	1.0000
L19	62	(Area) Aero MP3-03 (H)	88.17 - 88.25	1.0000	1.0000
L19	64	(Area) Aero MP3-03 (H)	88.00 - 88.17	1.0000	1.0000
L19	65	(Area) Aero MP3-03 (H)	88.17 - 88.25	1.0000	1.0000
L20	2	Safety Line 3/8	87.42 - 88.00	1.0000	1.0000
L20	3	Climbing Pegs	87.42 - 88.00	1.0000	1.0000
L20	10	HB114-1-0813U4-M5J(1-1/4)	87.42 - 88.00	1.0000	1.0000
L20	20	LCF158-50JL(1-5/8)	87.42 - 88.00	1.0000	1.0000
L20	51	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	52	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	53	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	55	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	57	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	59	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	60	(Area) Aero MP3-03 (H)	87.42 - 88.00	1.0000	1.0000
L20	64	(Area) Aero MP3-03 (H)	87.67 - 88.00	1.0000	1.0000
L21	2	Safety Line 3/8	87.17 - 87.42	1.0000	1.0000
L21	3	Climbing Pegs	87.17 - 87.42	1.0000	1.0000
L21	10	HB114-1-0813U4-M5J(1-1/4)	87.17 - 87.42	1.0000	1.0000
L21	20	LCF158-50JL(1-5/8)	87.17 - 87.42	1.0000	1.0000
L21	51	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000
L21	52	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000
L21	53	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000
L21	55	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L21	57	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000
L21	59	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000
L21	60	(Area) Aero MP3-03 (H)	87.17 - 87.42	1.0000	1.0000
L22	2	Safety Line 3/8	86.92 - 87.17	1.0000	1.0000
L22	3	Climbing Pegs	86.92 - 87.17	1.0000	1.0000
L22	10	HB114-1-0813U4-M5J(1- 1/4)	86.92 - 87.17	1.0000	1.0000
L22	20	LCF158-50JL(1-5/8)	86.92 - 87.17	1.0000	1.0000
L22	51	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L22	52	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L22	53	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L22	55	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L22	57	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L22	59	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L22	60	(Area) Aero MP3-03 (H)	86.92 - 87.17	1.0000	1.0000
L23	2	Safety Line 3/8	86.67 - 86.92	1.0000	1.0000
L23	3	Climbing Pegs	86.67 - 86.92	1.0000	1.0000
L23	10	HB114-1-0813U4-M5J(1- 1/4)	86.67 - 86.92	1.0000	1.0000
L23	20	LCF158-50JL(1-5/8)	86.67 - 86.92	1.0000	1.0000
L23	51	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L23	52	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L23	53	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L23	55	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L23	57	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L23	59	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L23	60	(Area) Aero MP3-03 (H)	86.67 - 86.92	1.0000	1.0000
L24	2	Safety Line 3/8	81.67 - 86.67	1.0000	1.0000
L24	3	Climbing Pegs	81.67 - 86.67	1.0000	1.0000
L24	10	HB114-1-0813U4-M5J(1- 1/4)	81.67 - 86.67	1.0000	1.0000
L24	20	LCF158-50JL(1-5/8)	81.67 - 86.67	1.0000	1.0000
L24	51	(Area) Aero MP3-03 (H)	81.67 - 86.67	1.0000	1.0000
L24	52	(Area) Aero MP3-03 (H)	81.67 - 86.67	1.0000	1.0000
L24	53	(Area) Aero MP3-03 (H)	81.67 - 86.67	1.0000	1.0000
L24	55	(Area) Aero MP3-03 (H)	81.67 - 86.67	1.0000	1.0000
L24	57	(Area) Aero MP3-03 (H)	86.17 - 86.67	1.0000	1.0000
L24	59	(Area) Aero MP3-03 (H)	86.17 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L24	60	(Area) Aero MP3-03 (H)	86.67 86.17 - 86.67	1.0000	1.0000
L25	2	Safety Line 3/8	80.75 - 81.67	1.0000	1.0000
L25	3	Climbing Pegs	80.75 - 81.67	1.0000	1.0000
L25	10	HB114-1-0813U4-M5J(1-1/4)	80.75 - 81.67	1.0000	1.0000
L25	20	LCF158-50JL(1-5/8)	80.75 - 81.67	1.0000	1.0000
L25	51	(Area) Aero MP3-03 (H)	80.75 - 81.67	1.0000	1.0000
L25	52	(Area) Aero MP3-03 (H)	80.75 - 81.67	1.0000	1.0000
L25	53	(Area) Aero MP3-03 (H)	80.75 - 81.67	1.0000	1.0000
L25	55	(Area) Aero MP3-03 (H)	80.75 - 81.67	1.0000	1.0000
L26	2	Safety Line 3/8	80.50 - 80.75	1.0000	1.0000
L26	3	Climbing Pegs	80.50 - 80.75	1.0000	1.0000
L26	10	HB114-1-0813U4-M5J(1-1/4)	80.50 - 80.75	1.0000	1.0000
L26	20	LCF158-50JL(1-5/8)	80.50 - 80.75	1.0000	1.0000
L26	51	(Area) Aero MP3-03 (H)	80.50 - 80.75	1.0000	1.0000
L26	52	(Area) Aero MP3-03 (H)	80.50 - 80.75	1.0000	1.0000
L26	53	(Area) Aero MP3-03 (H)	80.50 - 80.75	1.0000	1.0000
L26	55	(Area) Aero MP3-03 (H)	80.50 - 80.75	1.0000	1.0000
L27	2	Safety Line 3/8	75.50 - 80.50	1.0000	1.0000
L27	3	Climbing Pegs	75.50 - 80.50	1.0000	1.0000
L27	10	HB114-1-0813U4-M5J(1-1/4)	75.50 - 80.50	1.0000	1.0000
L27	20	LCF158-50JL(1-5/8)	75.50 - 80.50	1.0000	1.0000
L27	51	(Area) Aero MP3-03 (H)	75.50 - 80.50	1.0000	1.0000
L27	52	(Area) Aero MP3-03 (H)	75.50 - 80.50	1.0000	1.0000
L27	53	(Area) Aero MP3-03 (H)	75.50 - 80.50	1.0000	1.0000
L27	55	(Area) Aero MP3-03 (H)	79.50 - 80.50	1.0000	1.0000
L28	2	Safety Line 3/8	71.83 - 75.50	1.0000	1.0000
L28	3	Climbing Pegs	71.83 - 75.50	1.0000	1.0000
L28	10	HB114-1-0813U4-M5J(1-1/4)	71.83 - 75.50	1.0000	1.0000
L28	20	LCF158-50JL(1-5/8)	71.83 - 75.50	1.0000	1.0000
L28	51	(Area) Aero MP3-03 (H)	71.83 - 75.50	1.0000	1.0000
L28	52	(Area) Aero MP3-03 (H)	71.83 - 75.50	1.0000	1.0000
L28	53	(Area) Aero MP3-03 (H)	71.83 - 75.50	1.0000	1.0000
L28	54	(Area) Aero MP3-03 (H)	71.83 - 73.08	1.0000	1.0000
L29	2	Safety Line 3/8	71.58 - 71.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L29	3	Climbing Pegs	71.58 - 71.83	1.0000	1.0000
L29	10	HB114-1-0813U4-M5J(1- 1/4)	71.58 - 71.83	1.0000	1.0000
L29	20	LCF158-50JL(1-5/8)	71.58 - 71.83	1.0000	1.0000
L29	51	(Area) Aero MP3-03 (H)	71.58 - 71.83	1.0000	1.0000
L29	52	(Area) Aero MP3-03 (H)	71.58 - 71.83	1.0000	1.0000
L29	53	(Area) Aero MP3-03 (H)	71.58 - 71.83	1.0000	1.0000
L29	54	(Area) Aero MP3-03 (H)	71.58 - 71.83	1.0000	1.0000
L30	2	Safety Line 3/8	68.83 - 71.58	1.0000	1.0000
L30	3	Climbing Pegs	68.83 - 71.58	1.0000	1.0000
L30	10	HB114-1-0813U4-M5J(1- 1/4)	68.83 - 71.58	1.0000	1.0000
L30	20	LCF158-50JL(1-5/8)	68.83 - 71.58	1.0000	1.0000
L30	42	(Area) Aero MP3-04 (H)	68.83 - 70.33	1.0000	1.0000
L30	43	(Area) Aero MP3-04 (H)	68.83 - 70.33	1.0000	1.0000
L30	44	(Area) Aero MP3-04 (H)	68.83 - 70.33	1.0000	1.0000
L30	45	(Area) Aero MP3-04 (H)	68.83 - 70.33	1.0000	1.0000
L30	47	(Area) Aero MP3-03 (H)	68.83 - 70.33	1.0000	1.0000
L30	48	(Area) Aero MP3-03 (H)	68.83 - 70.33	1.0000	1.0000
L30	49	(Area) Aero MP3-03 (H)	68.83 - 70.33	1.0000	1.0000
L30	50	(Area) Aero MP3-03 (H)	68.83 - 70.33	1.0000	1.0000
L30	51	(Area) Aero MP3-03 (H)	70.33 - 71.58	1.0000	1.0000
L30	52	(Area) Aero MP3-03 (H)	70.33 - 71.58	1.0000	1.0000
L30	53	(Area) Aero MP3-03 (H)	70.33 - 71.58	1.0000	1.0000
L30	54	(Area) Aero MP3-03 (H)	70.33 - 71.58	1.0000	1.0000
L31	2	Safety Line 3/8	68.58 - 68.83	1.0000	1.0000
L31	3	Climbing Pegs	68.58 - 68.83	1.0000	1.0000
L31	10	HB114-1-0813U4-M5J(1- 1/4)	68.58 - 68.83	1.0000	1.0000
L31	20	LCF158-50JL(1-5/8)	68.58 - 68.83	1.0000	1.0000
L31	42	(Area) Aero MP3-04 (H)	68.58 - 68.83	1.0000	1.0000
L31	43	(Area) Aero MP3-04 (H)	68.58 - 68.83	1.0000	1.0000
L31	44	(Area) Aero MP3-04 (H)	68.58 - 68.83	1.0000	1.0000
L31	45	(Area) Aero MP3-04 (H)	68.58 - 68.83	1.0000	1.0000
L31	47	(Area) Aero MP3-03 (H)	68.58 - 68.83	1.0000	1.0000
L31	48	(Area) Aero MP3-03 (H)	68.58 - 68.83	1.0000	1.0000
L31	49	(Area) Aero MP3-03 (H)	68.58 - 68.83	1.0000	1.0000
L31	50	(Area) Aero MP3-03 (H)	68.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			68.83		
L32	2	Safety Line 3/8	64.50 - 68.58	1.0000	1.0000
L32	3	Climbing Pegs	64.50 - 68.58	1.0000	1.0000
L32	10	HB114-1-0813U4-M5J(1-1/4)	64.50 - 68.58	1.0000	1.0000
L32	20	LCF158-50JL(1-5/8)	64.50 - 68.58	1.0000	1.0000
L32	42	(Area) Aero MP3-04 (H)	64.50 - 68.58	1.0000	1.0000
L32	43	(Area) Aero MP3-04 (H)	64.50 - 68.58	1.0000	1.0000
L32	44	(Area) Aero MP3-04 (H)	64.50 - 68.58	1.0000	1.0000
L32	45	(Area) Aero MP3-04 (H)	64.50 - 68.58	1.0000	1.0000
L32	47	(Area) Aero MP3-03 (H)	68.17 - 68.58	1.0000	1.0000
L32	48	(Area) Aero MP3-03 (H)	68.17 - 68.58	1.0000	1.0000
L32	49	(Area) Aero MP3-03 (H)	68.17 - 68.58	1.0000	1.0000
L32	50	(Area) Aero MP3-03 (H)	68.17 - 68.58	1.0000	1.0000
L33	2	Safety Line 3/8	63.25 - 64.50	1.0000	1.0000
L33	3	Climbing Pegs	63.25 - 64.50	1.0000	1.0000
L33	10	HB114-1-0813U4-M5J(1-1/4)	63.25 - 64.50	1.0000	1.0000
L33	20	LCF158-50JL(1-5/8)	63.25 - 64.50	1.0000	1.0000
L33	42	(Area) Aero MP3-04 (H)	63.25 - 64.50	1.0000	1.0000
L33	43	(Area) Aero MP3-04 (H)	63.25 - 64.50	1.0000	1.0000
L33	44	(Area) Aero MP3-04 (H)	63.25 - 64.50	1.0000	1.0000
L33	45	(Area) Aero MP3-04 (H)	63.25 - 64.50	1.0000	1.0000
L34	2	Safety Line 3/8	58.25 - 63.25	1.0000	1.0000
L34	3	Climbing Pegs	58.25 - 63.25	1.0000	1.0000
L34	10	HB114-1-0813U4-M5J(1-1/4)	58.25 - 63.25	1.0000	1.0000
L34	20	LCF158-50JL(1-5/8)	58.25 - 63.25	1.0000	1.0000
L34	42	(Area) Aero MP3-04 (H)	58.25 - 63.25	1.0000	1.0000
L34	43	(Area) Aero MP3-04 (H)	58.25 - 63.25	1.0000	1.0000
L34	44	(Area) Aero MP3-04 (H)	58.25 - 63.25	1.0000	1.0000
L34	45	(Area) Aero MP3-04 (H)	58.25 - 63.25	1.0000	1.0000
L35	2	Safety Line 3/8	53.25 - 58.25	1.0000	1.0000
L35	3	Climbing Pegs	53.25 - 58.25	1.0000	1.0000
L35	10	HB114-1-0813U4-M5J(1-1/4)	53.25 - 58.25	1.0000	1.0000
L35	20	LCF158-50JL(1-5/8)	53.25 - 58.25	1.0000	1.0000
L35	42	(Area) Aero MP3-04 (H)	53.25 - 58.25	1.0000	1.0000
L35	43	(Area) Aero MP3-04 (H)	53.25 - 58.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L35	44	(Area) Aero MP3-04 (H)	53.25 - 58.25	1.0000	1.0000
L35	45	(Area) Aero MP3-04 (H)	53.25 - 58.25	1.0000	1.0000
L36	2	Safety Line 3/8	48.25 - 53.25	1.0000	1.0000
L36	3	Climbing Pegs	48.25 - 53.25	1.0000	1.0000
L36	10	HB114-1-0813U4-M5J(1-1/4)	48.25 - 53.25	1.0000	1.0000
L36	20	LCF158-50JL(1-5/8)	48.25 - 53.25	1.0000	1.0000
L36	42	(Area) Aero MP3-04 (H)	48.25 - 53.25	1.0000	1.0000
L36	43	(Area) Aero MP3-04 (H)	48.25 - 53.25	1.0000	1.0000
L36	44	(Area) Aero MP3-04 (H)	48.25 - 53.25	1.0000	1.0000
L36	45	(Area) Aero MP3-04 (H)	48.25 - 53.25	1.0000	1.0000
L37	2	Safety Line 3/8	42.50 - 48.25	1.0000	1.0000
L37	3	Climbing Pegs	42.50 - 48.25	1.0000	1.0000
L37	10	HB114-1-0813U4-M5J(1-1/4)	42.50 - 48.25	1.0000	1.0000
L37	20	LCF158-50JL(1-5/8)	42.50 - 48.25	1.0000	1.0000
L37	33	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	34	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	35	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	36	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	38	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	39	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	40	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	41	(Area) Aero MP3-04 (H)	42.50 - 42.67	1.0000	1.0000
L37	42	(Area) Aero MP3-04 (H)	42.67 - 48.25	1.0000	1.0000
L37	43	(Area) Aero MP3-04 (H)	42.67 - 48.25	1.0000	1.0000
L37	44	(Area) Aero MP3-04 (H)	42.67 - 48.25	1.0000	1.0000
L37	45	(Area) Aero MP3-04 (H)	42.67 - 48.25	1.0000	1.0000
L38	2	Safety Line 3/8	41.83 - 42.50	1.0000	1.0000
L38	3	Climbing Pegs	41.83 - 42.50	1.0000	1.0000
L38	10	HB114-1-0813U4-M5J(1-1/4)	41.83 - 42.50	1.0000	1.0000
L38	20	LCF158-50JL(1-5/8)	41.83 - 42.50	1.0000	1.0000
L38	33	(Area) Aero MP3-04 (H)	41.83 - 42.50	1.0000	1.0000
L38	34	(Area) Aero MP3-04 (H)	41.83 - 42.50	1.0000	1.0000
L38	35	(Area) Aero MP3-04 (H)	41.83 - 42.50	1.0000	1.0000
L38	36	(Area) Aero MP3-04 (H)	41.83 - 42.50	1.0000	1.0000
L38	38	(Area) Aero MP3-04 (H)	41.83 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L38	39	(Area) Aero MP3-04 (H)	42.50 41.83 -	1.0000	1.0000
L38	40	(Area) Aero MP3-04 (H)	42.50 41.83 -	1.0000	1.0000
L38	41	(Area) Aero MP3-04 (H)	42.50 41.83 -	1.0000	1.0000
L39	2	Safety Line 3/8	42.50 41.58 -	1.0000	1.0000
L39	3	Climbing Pegs	41.83 41.58 -	1.0000	1.0000
L39	10	HB114-1-0813U4-M5J(1-1/4)	41.83 41.58 -	1.0000	1.0000
L39	20	LCF158-50JL(1-5/8)	41.83 41.58 -	1.0000	1.0000
L39	33	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	34	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	35	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	36	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	38	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	39	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	40	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L39	41	(Area) Aero MP3-04 (H)	41.83 41.58 -	1.0000	1.0000
L40	2	Safety Line 3/8	41.83 41.17 -	1.0000	1.0000
L40	3	Climbing Pegs	41.58 41.17 -	1.0000	1.0000
L40	10	HB114-1-0813U4-M5J(1-1/4)	41.58 41.17 -	1.0000	1.0000
L40	20	LCF158-50JL(1-5/8)	41.58 41.17 -	1.0000	1.0000
L40	33	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	34	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	35	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	36	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	38	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	39	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	40	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L40	41	(Area) Aero MP3-04 (H)	41.58 41.17 -	1.0000	1.0000
L41	2	Safety Line 3/8	41.58 40.92 -	1.0000	1.0000
L41	3	Climbing Pegs	41.17 40.92 -	1.0000	1.0000
L41	10	HB114-1-0813U4-M5J(1-1/4)	41.17 40.92 -	1.0000	1.0000
L41	20	LCF158-50JL(1-5/8)	41.17 40.92 -	1.0000	1.0000
L41	33	(Area) Aero MP3-04 (H)	41.17 40.92 -	1.0000	1.0000
L41	34	(Area) Aero MP3-04 (H)	41.17 40.92 -	1.0000	1.0000
L41	35	(Area) Aero MP3-04 (H)	41.17 40.92 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	36	(Area) Aero MP3-04 (H)	40.92 - 41.17	1.0000	1.0000
L41	38	(Area) Aero MP3-04 (H)	40.92 - 41.17	1.0000	1.0000
L41	39	(Area) Aero MP3-04 (H)	40.92 - 41.17	1.0000	1.0000
L41	40	(Area) Aero MP3-04 (H)	40.92 - 41.17	1.0000	1.0000
L41	41	(Area) Aero MP3-04 (H)	40.92 - 41.17	1.0000	1.0000
L42	2	Safety Line 3/8	35.92 - 40.92	1.0000	1.0000
L42	3	Climbing Pegs	35.92 - 40.92	1.0000	1.0000
L42	10	HB114-1-0813U4-M5J(1-1/4)	35.92 - 40.92	1.0000	1.0000
L42	20	LCF158-50JL(1-5/8)	35.92 - 40.92	1.0000	1.0000
L42	33	(Area) Aero MP3-04 (H)	35.92 - 40.92	1.0000	1.0000
L42	34	(Area) Aero MP3-04 (H)	35.92 - 40.92	1.0000	1.0000
L42	35	(Area) Aero MP3-04 (H)	35.92 - 40.92	1.0000	1.0000
L42	36	(Area) Aero MP3-04 (H)	35.92 - 40.92	1.0000	1.0000
L42	38	(Area) Aero MP3-04 (H)	40.33 - 40.92	1.0000	1.0000
L42	39	(Area) Aero MP3-04 (H)	40.33 - 40.92	1.0000	1.0000
L42	40	(Area) Aero MP3-04 (H)	40.33 - 40.92	1.0000	1.0000
L42	41	(Area) Aero MP3-04 (H)	40.33 - 40.92	1.0000	1.0000
L43	2	Safety Line 3/8	30.92 - 35.92	1.0000	1.0000
L43	3	Climbing Pegs	30.92 - 35.92	1.0000	1.0000
L43	10	HB114-1-0813U4-M5J(1-1/4)	30.92 - 35.92	1.0000	1.0000
L43	20	LCF158-50JL(1-5/8)	30.92 - 35.92	1.0000	1.0000
L43	33	(Area) Aero MP3-04 (H)	30.92 - 35.92	1.0000	1.0000
L43	34	(Area) Aero MP3-04 (H)	30.92 - 35.92	1.0000	1.0000
L43	35	(Area) Aero MP3-04 (H)	30.92 - 35.92	1.0000	1.0000
L43	36	(Area) Aero MP3-04 (H)	30.92 - 35.92	1.0000	1.0000
L44	2	Safety Line 3/8	25.92 - 30.92	1.0000	1.0000
L44	3	Climbing Pegs	25.92 - 30.92	1.0000	1.0000
L44	10	HB114-1-0813U4-M5J(1-1/4)	25.92 - 30.92	1.0000	1.0000
L44	20	LCF158-50JL(1-5/8)	25.92 - 30.92	1.0000	1.0000
L44	33	(Area) Aero MP3-04 (H)	25.92 - 30.92	1.0000	1.0000
L44	34	(Area) Aero MP3-04 (H)	25.92 - 30.92	1.0000	1.0000
L44	35	(Area) Aero MP3-04 (H)	25.92 - 30.92	1.0000	1.0000
L44	36	(Area) Aero MP3-04 (H)	25.92 - 30.92	1.0000	1.0000
L45	2	Safety Line 3/8	20.25 - 25.92	1.0000	1.0000
L45	3	Climbing Pegs	20.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	10	HB114-1-0813U4-M5J(1-1/4)	25.92 - 20.25	1.0000	1.0000
L45	20	LCF158-50JL(1-5/8)	25.92 - 20.25	1.0000	1.0000
L45	33	(Area) Aero MP3-04 (H)	25.92 - 20.25	1.0000	1.0000
L45	34	(Area) Aero MP3-04 (H)	25.92 - 20.25	1.0000	1.0000
L45	35	(Area) Aero MP3-04 (H)	25.92 - 20.25	1.0000	1.0000
L45	36	(Area) Aero MP3-04 (H)	25.92 - 20.25	1.0000	1.0000
L46	2	Safety Line 3/8	19.25 - 20.25	1.0000	1.0000
L46	3	Climbing Pegs	19.25 - 20.25	1.0000	1.0000
L46	10	HB114-1-0813U4-M5J(1-1/4)	19.25 - 20.25	1.0000	1.0000
L46	20	LCF158-50JL(1-5/8)	19.25 - 20.25	1.0000	1.0000
L46	33	(Area) Aero MP3-04 (H)	19.25 - 20.25	1.0000	1.0000
L46	34	(Area) Aero MP3-04 (H)	19.25 - 20.25	1.0000	1.0000
L46	35	(Area) Aero MP3-04 (H)	19.25 - 20.25	1.0000	1.0000
L46	36	(Area) Aero MP3-04 (H)	19.25 - 20.25	1.0000	1.0000
L47	2	Safety Line 3/8	14.15 - 19.25	1.0000	1.0000
L47	3	Climbing Pegs	14.15 - 19.25	1.0000	1.0000
L47	10	HB114-1-0813U4-M5J(1-1/4)	14.15 - 19.25	1.0000	1.0000
L47	20	LCF158-50JL(1-5/8)	14.15 - 19.25	1.0000	1.0000
L47	24	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	25	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	26	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	27	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	29	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	30	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	31	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	32	(Area) Aero MP3-04 (H)	14.15 - 15.50	1.0000	1.0000
L47	33	(Area) Aero MP3-04 (H)	15.50 - 19.25	1.0000	1.0000
L47	34	(Area) Aero MP3-04 (H)	15.50 - 19.25	1.0000	1.0000
L47	35	(Area) Aero MP3-04 (H)	15.50 - 19.25	1.0000	1.0000
L47	36	(Area) Aero MP3-04 (H)	15.50 - 19.25	1.0000	1.0000
L48	2	Safety Line 3/8	13.92 - 14.15	1.0000	1.0000
L48	3	Climbing Pegs	13.92 - 14.15	1.0000	1.0000
L48	10	HB114-1-0813U4-M5J(1-1/4)	13.92 - 14.15	1.0000	1.0000
L48	20	LCF158-50JL(1-5/8)	13.92 - 14.15	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L48	24	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	25	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	26	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	27	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	29	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	30	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	31	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L48	32	(Area) Aero MP3-04 (H)	13.92 - 14.15	1.0000	1.0000
L49	2	Safety Line 3/8	8.92 - 13.92	1.0000	1.0000
L49	3	Climbing Pegs	8.92 - 13.92	1.0000	1.0000
L49	10	HB114-1-0813U4-M5J(1-1/4)	8.92 - 13.92	1.0000	1.0000
L49	20	LCF158-50JL(1-5/8)	8.92 - 13.92	1.0000	1.0000
L49	24	(Area) Aero MP3-04 (H)	8.92 - 13.92	1.0000	1.0000
L49	25	(Area) Aero MP3-04 (H)	8.92 - 13.92	1.0000	1.0000
L49	26	(Area) Aero MP3-04 (H)	8.92 - 13.92	1.0000	1.0000
L49	27	(Area) Aero MP3-04 (H)	8.92 - 13.92	1.0000	1.0000
L49	29	(Area) Aero MP3-04 (H)	12.67 - 13.92	1.0000	1.0000
L49	30	(Area) Aero MP3-04 (H)	12.67 - 13.92	1.0000	1.0000
L49	31	(Area) Aero MP3-04 (H)	12.67 - 13.92	1.0000	1.0000
L49	32	(Area) Aero MP3-04 (H)	12.67 - 13.92	1.0000	1.0000
L50	2	Safety Line 3/8	8.00 - 8.92	1.0000	1.0000
L50	3	Climbing Pegs	8.00 - 8.92	1.0000	1.0000
L50	10	HB114-1-0813U4-M5J(1-1/4)	8.00 - 8.92	1.0000	1.0000
L50	20	LCF158-50JL(1-5/8)	8.00 - 8.92	1.0000	1.0000
L50	24	(Area) Aero MP3-04 (H)	3.92 - 8.92	1.0000	1.0000
L50	25	(Area) Aero MP3-04 (H)	3.92 - 8.92	1.0000	1.0000
L50	26	(Area) Aero MP3-04 (H)	3.92 - 8.92	1.0000	1.0000
L50	27	(Area) Aero MP3-04 (H)	3.92 - 8.92	1.0000	1.0000
L51	24	(Area) Aero MP3-04 (H)	0.50 - 3.92	1.0000	1.0000
L51	25	(Area) Aero MP3-04 (H)	0.50 - 3.92	1.0000	1.0000
L51	26	(Area) Aero MP3-04 (H)	0.50 - 3.92	1.0000	1.0000
L51	27	(Area) Aero MP3-04 (H)	0.50 - 3.92	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
L3	58	(Area) Aero MP3-03 (H)	114.90 - 116.17	Auto	0.2100
L3	61	(Area) Aero MP3-03 (H)	114.90 - 116.17	Auto	0.2100
L3	62	(Area) Aero MP3-03 (H)	114.90 - 116.17	Auto	0.2100
L3	70	(Area) Aero MP3-03 (H)	114.90 - 116.17	Auto	0.2100
L3	71	(Area) Aero MP3-03 (H)	114.90 - 116.17	Auto	0.2100
L4	58	(Area) Aero MP3-03 (H)	114.67 - 114.90	Auto	0.1978
L4	61	(Area) Aero MP3-03 (H)	114.67 -	Auto	0.1978

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L4	62	(Area) Aero MP3-03 (H)	114.90 114.67 - 114.90	Auto	0.1978
L4	70	(Area) Aero MP3-03 (H)	114.67 - 114.90	Auto	0.1978
L4	71	(Area) Aero MP3-03 (H)	114.67 - 114.90	Auto	0.1978
L5	58	(Area) Aero MP3-03 (H)	109.67 - 114.67	Auto	0.1349
L5	61	(Area) Aero MP3-03 (H)	109.67 - 114.67	Auto	0.1349
L5	62	(Area) Aero MP3-03 (H)	109.67 - 114.67	Auto	0.1349
L5	70	(Area) Aero MP3-03 (H)	109.67 - 114.67	Auto	0.1349
L5	71	(Area) Aero MP3-03 (H)	109.67 - 114.67	Auto	0.1349
L6	58	(Area) Aero MP3-03 (H)	109.42 - 109.67	Auto	0.0925
L6	61	(Area) Aero MP3-03 (H)	109.42 - 109.67	Auto	0.0925
L6	62	(Area) Aero MP3-03 (H)	109.42 - 109.67	Auto	0.0925
L6	70	(Area) Aero MP3-03 (H)	109.42 - 109.67	Auto	0.0925
L6	71	(Area) Aero MP3-03 (H)	109.42 - 109.67	Auto	0.0925
L7	58	(Area) Aero MP3-03 (H)	109.17 - 109.42	Auto	0.0513
L7	61	(Area) Aero MP3-03 (H)	109.17 - 109.42	Auto	0.0513
L7	62	(Area) Aero MP3-03 (H)	109.17 - 109.42	Auto	0.0513
L7	69	(Area) Aero MP3-03 (H)	109.17 - 109.42	Auto	0.0513
L8	58	(Area) Aero MP3-03 (H)	104.17 - 109.17	Auto	0.0104
L8	61	(Area) Aero MP3-03 (H)	104.17 - 109.17	Auto	0.0104
L8	62	(Area) Aero MP3-03 (H)	104.17 - 109.17	Auto	0.0104
L8	69	(Area) Aero MP3-03 (H)	104.17 - 109.17	Auto	0.0104
L9	58	(Area) Aero MP3-03 (H)	103.92 - 104.17	Auto	0.0000
L9	61	(Area) Aero MP3-03 (H)	103.92 - 104.17	Auto	0.0000
L9	62	(Area) Aero MP3-03 (H)	103.92 - 104.17	Auto	0.0000
L9	69	(Area) Aero MP3-03 (H)	103.92 - 104.17	Auto	0.0000
L10	58	(Area) Aero MP3-03 (H)	103.67 - 103.92	Auto	0.0000
L10	61	(Area) Aero MP3-03 (H)	103.67 - 103.92	Auto	0.0000
L10	62	(Area) Aero MP3-03 (H)	103.67 - 103.92	Auto	0.0000
L10	66	(Area) Aero MP3-03 (H)	103.67 - 103.92	Auto	0.0000
L10	68	(Area) Aero MP3-03 (H)	103.67 - 103.92	Auto	0.0000
L11	58	(Area) Aero MP3-03 (H)	98.67 - 103.67	Auto	0.0000
L11	61	(Area) Aero MP3-03 (H)	98.67 - 103.67	Auto	0.0000
L11	62	(Area) Aero MP3-03 (H)	98.67 - 103.67	Auto	0.0000
L11	66	(Area) Aero MP3-03 (H)	98.67 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L11	68	(Area) Aero MP3-03 (H)	103.67 98.67 - 103.67	Auto	0.0000
L12	58	(Area) Aero MP3-03 (H)	96.42 - 98.67	Auto	0.0000
L12	61	(Area) Aero MP3-03 (H)	96.42 - 98.67	Auto	0.0000
L12	62	(Area) Aero MP3-03 (H)	96.42 - 98.67	Auto	0.0000
L12	65	(Area) Aero MP3-03 (H)	96.42 - 97.67	Auto	0.0000
L12	66	(Area) Aero MP3-03 (H)	96.42 - 98.67	Auto	0.0000
L12	67	(Area) Aero MP3-03 (H)	96.42 - 97.67	Auto	0.0000
L12	68	(Area) Aero MP3-03 (H)	97.67 - 98.67	Auto	0.0000
L13	58	(Area) Aero MP3-03 (H)	96.17 - 96.42	Auto	0.0000
L13	61	(Area) Aero MP3-03 (H)	96.17 - 96.42	Auto	0.0000
L13	62	(Area) Aero MP3-03 (H)	96.17 - 96.42	Auto	0.0000
L13	65	(Area) Aero MP3-03 (H)	96.17 - 96.42	Auto	0.0000
L13	66	(Area) Aero MP3-03 (H)	96.17 - 96.42	Auto	0.0000
L13	67	(Area) Aero MP3-03 (H)	96.17 - 96.42	Auto	0.0000
L14	58	(Area) Aero MP3-03 (H)	91.50 - 96.17	Auto	0.0000
L14	61	(Area) Aero MP3-03 (H)	91.50 - 96.17	Auto	0.0000
L14	62	(Area) Aero MP3-03 (H)	91.50 - 96.17	Auto	0.0000
L14	65	(Area) Aero MP3-03 (H)	91.50 - 96.17	Auto	0.0000
L14	66	(Area) Aero MP3-03 (H)	95.17 - 96.17	Auto	0.0000
L14	67	(Area) Aero MP3-03 (H)	95.17 - 96.17	Auto	0.0000
L15	58	(Area) Aero MP3-03 (H)	89.50 - 91.50	Auto	0.0000
L15	61	(Area) Aero MP3-03 (H)	89.50 - 91.50	Auto	0.0000
L15	62	(Area) Aero MP3-03 (H)	89.50 - 91.50	Auto	0.0000
L15	65	(Area) Aero MP3-03 (H)	89.50 - 91.50	Auto	0.0000
L16	55	(Area) Aero MP3-03 (H)	88.92 - 89.50	Auto	0.0000
L16	57	(Area) Aero MP3-03 (H)	88.92 - 89.50	Auto	0.0000
L16	61	(Area) Aero MP3-03 (H)	88.92 - 89.50	Auto	0.0000
L16	62	(Area) Aero MP3-03 (H)	88.92 - 89.50	Auto	0.0000
L16	65	(Area) Aero MP3-03 (H)	88.92 - 89.50	Auto	0.0000
L17	55	(Area) Aero MP3-03 (H)	88.67 - 88.92	Auto	0.0000
L17	57	(Area) Aero MP3-03 (H)	88.67 - 88.92	Auto	0.0000
L17	61	(Area) Aero MP3-03 (H)	88.67 - 88.92	Auto	0.0000
L17	62	(Area) Aero MP3-03 (H)	88.67 - 88.92	Auto	0.0000
L17	65	(Area) Aero MP3-03 (H)	88.67 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L18	55	(Area) Aero MP3-03 (H)	88.92 88.25 - 88.67	Auto	0.0000
L18	57	(Area) Aero MP3-03 (H)	88.25 - 88.67	Auto	0.0000
L18	61	(Area) Aero MP3-03 (H)	88.25 - 88.67	Auto	0.0000
L18	62	(Area) Aero MP3-03 (H)	88.25 - 88.67	Auto	0.0000
L18	65	(Area) Aero MP3-03 (H)	88.25 - 88.67	Auto	0.0000
L19	51	(Area) Aero MP3-03 (H)	88.00 - 88.17	Auto	0.0000
L19	52	(Area) Aero MP3-03 (H)	88.00 - 88.17	Auto	0.0000
L19	53	(Area) Aero MP3-03 (H)	88.00 - 88.17	Auto	0.0000
L19	55	(Area) Aero MP3-03 (H)	88.00 - 88.25	Auto	0.0000
L19	57	(Area) Aero MP3-03 (H)	88.00 - 88.25	Auto	0.0000
L19	59	(Area) Aero MP3-03 (H)	88.00 - 88.17	Auto	0.0000
L19	60	(Area) Aero MP3-03 (H)	88.00 - 88.17	Auto	0.0000
L19	61	(Area) Aero MP3-03 (H)	88.17 - 88.25	Auto	0.0000
L19	62	(Area) Aero MP3-03 (H)	88.17 - 88.25	Auto	0.0000
L19	64	(Area) Aero MP3-03 (H)	88.00 - 88.17	Auto	0.0000
L19	65	(Area) Aero MP3-03 (H)	88.17 - 88.25	Auto	0.0000
L20	51	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	52	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	53	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	55	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	57	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	59	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	60	(Area) Aero MP3-03 (H)	87.42 - 88.00	Auto	0.0000
L20	64	(Area) Aero MP3-03 (H)	87.67 - 88.00	Auto	0.0000
L21	51	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L21	52	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L21	53	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L21	55	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L21	57	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L21	59	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L21	60	(Area) Aero MP3-03 (H)	87.17 - 87.42	Auto	0.0000
L22	51	(Area) Aero MP3-03 (H)	86.92 - 87.17	Auto	0.0000
L22	52	(Area) Aero MP3-03 (H)	86.92 - 87.17	Auto	0.0000
L22	53	(Area) Aero MP3-03 (H)	86.92 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L22	55	(Area) Aero MP3-03 (H)	87.17 86.92 - 87.17	Auto	0.0000
L22	57	(Area) Aero MP3-03 (H)	86.92 - 87.17	Auto	0.0000
L22	59	(Area) Aero MP3-03 (H)	86.92 - 87.17	Auto	0.0000
L22	60	(Area) Aero MP3-03 (H)	86.92 - 87.17	Auto	0.0000
L23	51	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L23	52	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L23	53	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L23	55	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L23	57	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L23	59	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L23	60	(Area) Aero MP3-03 (H)	86.67 - 86.92	Auto	0.0000
L24	51	(Area) Aero MP3-03 (H)	81.67 - 86.67	Auto	0.0000
L24	52	(Area) Aero MP3-03 (H)	81.67 - 86.67	Auto	0.0000
L24	53	(Area) Aero MP3-03 (H)	81.67 - 86.67	Auto	0.0000
L24	55	(Area) Aero MP3-03 (H)	81.67 - 86.67	Auto	0.0000
L24	57	(Area) Aero MP3-03 (H)	86.17 - 86.67	Auto	0.0000
L24	59	(Area) Aero MP3-03 (H)	86.17 - 86.67	Auto	0.0000
L24	60	(Area) Aero MP3-03 (H)	86.17 - 86.67	Auto	0.0000
L25	51	(Area) Aero MP3-03 (H)	80.75 - 81.67	Auto	0.0000
L25	52	(Area) Aero MP3-03 (H)	80.75 - 81.67	Auto	0.0000
L25	53	(Area) Aero MP3-03 (H)	80.75 - 81.67	Auto	0.0000
L25	55	(Area) Aero MP3-03 (H)	80.75 - 81.67	Auto	0.0000
L26	51	(Area) Aero MP3-03 (H)	80.50 - 80.75	Auto	0.0000
L26	52	(Area) Aero MP3-03 (H)	80.50 - 80.75	Auto	0.0000
L26	53	(Area) Aero MP3-03 (H)	80.50 - 80.75	Auto	0.0000
L26	55	(Area) Aero MP3-03 (H)	80.50 - 80.75	Auto	0.0000
L27	51	(Area) Aero MP3-03 (H)	75.50 - 80.50	Auto	0.0000
L27	52	(Area) Aero MP3-03 (H)	75.50 - 80.50	Auto	0.0000
L27	53	(Area) Aero MP3-03 (H)	75.50 - 80.50	Auto	0.0000
L27	55	(Area) Aero MP3-03 (H)	79.50 - 80.50	Auto	0.0000
L28	51	(Area) Aero MP3-03 (H)	71.83 - 75.50	Auto	0.0000
L28	52	(Area) Aero MP3-03 (H)	71.83 - 75.50	Auto	0.0000
L28	53	(Area) Aero MP3-03 (H)	71.83 - 75.50	Auto	0.0000
L28	54	(Area) Aero MP3-03 (H)	71.83 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	51	(Area) Aero MP3-03 (H)	73.08 71.58 - 71.83	Auto	0.0000
L29	52	(Area) Aero MP3-03 (H)	71.58 - 71.83	Auto	0.0000
L29	53	(Area) Aero MP3-03 (H)	71.58 - 71.83	Auto	0.0000
L29	54	(Area) Aero MP3-03 (H)	71.58 - 71.83	Auto	0.0000
L30	42	(Area) Aero MP3-04 (H)	68.83 - 70.33	Auto	0.0000
L30	43	(Area) Aero MP3-04 (H)	68.83 - 70.33	Auto	0.0000
L30	44	(Area) Aero MP3-04 (H)	68.83 - 70.33	Auto	0.0000
L30	45	(Area) Aero MP3-04 (H)	68.83 - 70.33	Auto	0.0000
L30	47	(Area) Aero MP3-03 (H)	68.83 - 70.33	Auto	0.0000
L30	48	(Area) Aero MP3-03 (H)	68.83 - 70.33	Auto	0.0000
L30	49	(Area) Aero MP3-03 (H)	68.83 - 70.33	Auto	0.0000
L30	50	(Area) Aero MP3-03 (H)	68.83 - 70.33	Auto	0.0000
L30	51	(Area) Aero MP3-03 (H)	70.33 - 71.58	Auto	0.0000
L30	52	(Area) Aero MP3-03 (H)	70.33 - 71.58	Auto	0.0000
L30	53	(Area) Aero MP3-03 (H)	70.33 - 71.58	Auto	0.0000
L30	54	(Area) Aero MP3-03 (H)	70.33 - 71.58	Auto	0.0000
L31	42	(Area) Aero MP3-04 (H)	68.58 - 68.83	Auto	0.0000
L31	43	(Area) Aero MP3-04 (H)	68.58 - 68.83	Auto	0.0000
L31	44	(Area) Aero MP3-04 (H)	68.58 - 68.83	Auto	0.0000
L31	45	(Area) Aero MP3-04 (H)	68.58 - 68.83	Auto	0.0000
L31	47	(Area) Aero MP3-03 (H)	68.58 - 68.83	Auto	0.0000
L31	48	(Area) Aero MP3-03 (H)	68.58 - 68.83	Auto	0.0000
L31	49	(Area) Aero MP3-03 (H)	68.58 - 68.83	Auto	0.0000
L31	50	(Area) Aero MP3-03 (H)	68.58 - 68.83	Auto	0.0000
L32	42	(Area) Aero MP3-04 (H)	64.50 - 68.58	Auto	0.0000
L32	43	(Area) Aero MP3-04 (H)	64.50 - 68.58	Auto	0.0000
L32	44	(Area) Aero MP3-04 (H)	64.50 - 68.58	Auto	0.0000
L32	45	(Area) Aero MP3-04 (H)	64.50 - 68.58	Auto	0.0000
L32	47	(Area) Aero MP3-03 (H)	68.17 - 68.58	Auto	0.0000
L32	48	(Area) Aero MP3-03 (H)	68.17 - 68.58	Auto	0.0000
L32	49	(Area) Aero MP3-03 (H)	68.17 - 68.58	Auto	0.0000
L32	50	(Area) Aero MP3-03 (H)	68.17 - 68.58	Auto	0.0000
L33	42	(Area) Aero MP3-04 (H)	63.25 - 64.50	Auto	0.0000
L33	43	(Area) Aero MP3-04 (H)	63.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L33	44	(Area) Aero MP3-04 (H)	64.50 63.25 - 64.50	Auto	0.0000
L33	45	(Area) Aero MP3-04 (H)	63.25 - 64.50	Auto	0.0000
L34	42	(Area) Aero MP3-04 (H)	58.25 - 63.25	Auto	0.0000
L34	43	(Area) Aero MP3-04 (H)	58.25 - 63.25	Auto	0.0000
L34	44	(Area) Aero MP3-04 (H)	58.25 - 63.25	Auto	0.0000
L34	45	(Area) Aero MP3-04 (H)	58.25 - 63.25	Auto	0.0000
L35	42	(Area) Aero MP3-04 (H)	53.25 - 58.25	Auto	0.0000
L35	43	(Area) Aero MP3-04 (H)	53.25 - 58.25	Auto	0.0000
L35	44	(Area) Aero MP3-04 (H)	53.25 - 58.25	Auto	0.0000
L35	45	(Area) Aero MP3-04 (H)	53.25 - 58.25	Auto	0.0000
L36	42	(Area) Aero MP3-04 (H)	48.25 - 53.25	Auto	0.0000
L36	43	(Area) Aero MP3-04 (H)	48.25 - 53.25	Auto	0.0000
L36	44	(Area) Aero MP3-04 (H)	48.25 - 53.25	Auto	0.0000
L36	45	(Area) Aero MP3-04 (H)	48.25 - 53.25	Auto	0.0000
L37	33	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	34	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	35	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	36	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	38	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	39	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	40	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	41	(Area) Aero MP3-04 (H)	42.50 - 42.67	Auto	0.0000
L37	42	(Area) Aero MP3-04 (H)	42.67 - 48.25	Auto	0.0000
L37	43	(Area) Aero MP3-04 (H)	42.67 - 48.25	Auto	0.0000
L37	44	(Area) Aero MP3-04 (H)	42.67 - 48.25	Auto	0.0000
L37	45	(Area) Aero MP3-04 (H)	42.67 - 48.25	Auto	0.0000
L38	33	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	34	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	35	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	36	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	38	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	39	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	40	(Area) Aero MP3-04 (H)	41.83 - 42.50	Auto	0.0000
L38	41	(Area) Aero MP3-04 (H)	41.83 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L39	33	(Area) Aero MP3-04 (H)	42.50 41.58 - 41.83	Auto	0.0000
L39	34	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L39	35	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L39	36	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L39	38	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L39	39	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L39	40	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L39	41	(Area) Aero MP3-04 (H)	41.58 - 41.83	Auto	0.0000
L40	33	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	34	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	35	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	36	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	38	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	39	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	40	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L40	41	(Area) Aero MP3-04 (H)	41.17 - 41.58	Auto	0.0000
L41	33	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	34	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	35	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	36	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	38	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	39	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	40	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L41	41	(Area) Aero MP3-04 (H)	40.92 - 41.17	Auto	0.0000
L42	33	(Area) Aero MP3-04 (H)	35.92 - 40.92	Auto	0.0000
L42	34	(Area) Aero MP3-04 (H)	35.92 - 40.92	Auto	0.0000
L42	35	(Area) Aero MP3-04 (H)	35.92 - 40.92	Auto	0.0000
L42	36	(Area) Aero MP3-04 (H)	35.92 - 40.92	Auto	0.0000
L42	38	(Area) Aero MP3-04 (H)	40.33 - 40.92	Auto	0.0000
L42	39	(Area) Aero MP3-04 (H)	40.33 - 40.92	Auto	0.0000
L42	40	(Area) Aero MP3-04 (H)	40.33 - 40.92	Auto	0.0000
L42	41	(Area) Aero MP3-04 (H)	40.33 - 40.92	Auto	0.0000
L43	33	(Area) Aero MP3-04 (H)	30.92 - 35.92	Auto	0.0000
L43	34	(Area) Aero MP3-04 (H)	30.92 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L43	35	(Area) Aero MP3-04 (H)	35.92 30.92 - 35.92	Auto	0.0000
L43	36	(Area) Aero MP3-04 (H)	30.92 - 35.92	Auto	0.0000
L44	33	(Area) Aero MP3-04 (H)	25.92 - 30.92	Auto	0.0000
L44	34	(Area) Aero MP3-04 (H)	25.92 - 30.92	Auto	0.0000
L44	35	(Area) Aero MP3-04 (H)	25.92 - 30.92	Auto	0.0000
L44	36	(Area) Aero MP3-04 (H)	25.92 - 30.92	Auto	0.0000
L45	33	(Area) Aero MP3-04 (H)	20.25 - 25.92	Auto	0.0000
L45	34	(Area) Aero MP3-04 (H)	20.25 - 25.92	Auto	0.0000
L45	35	(Area) Aero MP3-04 (H)	20.25 - 25.92	Auto	0.0000
L45	36	(Area) Aero MP3-04 (H)	20.25 - 25.92	Auto	0.0000
L46	33	(Area) Aero MP3-04 (H)	19.25 - 20.25	Auto	0.0000
L46	34	(Area) Aero MP3-04 (H)	19.25 - 20.25	Auto	0.0000
L46	35	(Area) Aero MP3-04 (H)	19.25 - 20.25	Auto	0.0000
L46	36	(Area) Aero MP3-04 (H)	19.25 - 20.25	Auto	0.0000
L47	24	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	25	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	26	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	27	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	29	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	30	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	31	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	32	(Area) Aero MP3-04 (H)	14.15 - 15.50	Auto	0.0000
L47	33	(Area) Aero MP3-04 (H)	15.50 - 19.25	Auto	0.0000
L47	34	(Area) Aero MP3-04 (H)	15.50 - 19.25	Auto	0.0000
L47	35	(Area) Aero MP3-04 (H)	15.50 - 19.25	Auto	0.0000
L47	36	(Area) Aero MP3-04 (H)	15.50 - 19.25	Auto	0.0000
L48	24	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	25	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	26	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	27	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	29	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	30	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	31	(Area) Aero MP3-04 (H)	13.92 - 14.15	Auto	0.0000
L48	32	(Area) Aero MP3-04 (H)	13.92 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			14.15		
L49	24	(Area) Aero MP3-04 (H)	8.92 - 13.92	Auto	0.0000
L49	25	(Area) Aero MP3-04 (H)	8.92 - 13.92	Auto	0.0000
L49	26	(Area) Aero MP3-04 (H)	8.92 - 13.92	Auto	0.0000
L49	27	(Area) Aero MP3-04 (H)	8.92 - 13.92	Auto	0.0000
L49	29	(Area) Aero MP3-04 (H)	12.67 - 13.92	Auto	0.0000
L49	30	(Area) Aero MP3-04 (H)	12.67 - 13.92	Auto	0.0000
L49	31	(Area) Aero MP3-04 (H)	12.67 - 13.92	Auto	0.0000
L49	32	(Area) Aero MP3-04 (H)	12.67 - 13.92	Auto	0.0000
L50	24	(Area) Aero MP3-04 (H)	3.92 - 8.92	Auto	0.0000
L50	25	(Area) Aero MP3-04 (H)	3.92 - 8.92	Auto	0.0000
L50	26	(Area) Aero MP3-04 (H)	3.92 - 8.92	Auto	0.0000
L50	27	(Area) Aero MP3-04 (H)	3.92 - 8.92	Auto	0.0000
L51	24	(Area) Aero MP3-04 (H)	0.50 - 3.92	Auto	0.0000
L51	25	(Area) Aero MP3-04 (H)	0.50 - 3.92	Auto	0.0000
L51	26	(Area) Aero MP3-04 (H)	0.50 - 3.92	Auto	0.0000
L51	27	(Area) Aero MP3-04 (H)	0.50 - 3.92	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	

800 10121 w/ Mount Pipe	A	From Leg	4.00	0.0000	130.00	No Ice	3.60	2.95	0.07
			0.00			1/2"	4.00	3.34	0.11
			0.00			Ice	4.42	3.74	0.17
						1" Ice			
800 10121 w/ Mount Pipe	B	From Leg	4.00	0.0000	130.00	No Ice	3.60	2.95	0.07
			0.00			1/2"	4.00	3.34	0.11
			0.00			Ice	4.42	3.74	0.17
						1" Ice			
800 10121 w/ Mount Pipe	C	From Leg	4.00	0.0000	130.00	No Ice	3.60	2.95	0.07
			0.00			1/2"	4.00	3.34	0.11
			0.00			Ice	4.42	3.74	0.17
						1" Ice			
SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.00	0.0000	130.00	No Ice	5.56	4.47	0.08
			0.00			1/2"	6.07	4.97	0.17
			0.00			Ice	6.59	5.47	0.26
						1" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00	0.0000	130.00	No Ice	4.63	3.27	0.07
			0.00			1/2"	5.06	3.69	0.13
			0.00			Ice	5.51	4.12	0.20
						1" Ice			
P65-17-XLH-RR w/ Mount Pipe	C	From Leg	4.00	0.0000	130.00	No Ice	7.48	5.29	0.09
			0.00			1/2"	8.17	5.96	0.17
			0.00			Ice	8.88	6.64	0.26
						1" Ice			
(2) 860 10025	A	From Leg	4.00	0.0000	130.00	No Ice	0.14	0.12	0.00
			0.00			1/2"	0.20	0.17	0.00
			0.00			Ice	0.26	0.23	0.01
						1" Ice			
(2) 860 10025	B	From Leg	4.00	0.0000	130.00	No Ice	0.14	0.12	0.00
			0.00			1/2"	0.20	0.17	0.00
			0.00			Ice	0.26	0.23	0.01
						1" Ice			
(2) 860 10025	C	From Leg	4.00	0.0000	130.00	No Ice	0.14	0.12	0.00

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
			0.00			1/2"	0.20	0.00
			0.00			Ice	0.26	0.01
						1" Ice		
(2) LGP21401	A	From Leg	4.00	0.0000	130.00	No Ice	1.10	0.01
			0.00			1/2"	1.24	0.02
			0.00			Ice	1.38	0.03
						1" Ice		
(2) LGP21401	B	From Leg	4.00	0.0000	130.00	No Ice	1.10	0.01
			0.00			1/2"	1.24	0.02
			0.00			Ice	1.38	0.03
						1" Ice		
(2) LGP21401	C	From Leg	4.00	0.0000	130.00	No Ice	1.10	0.01
			0.00			1/2"	1.24	0.02
			0.00			Ice	1.38	0.03
						1" Ice		
RRUS 12	A	From Leg	4.00	0.0000	130.00	No Ice	3.15	0.06
			0.00			1/2"	3.36	0.08
			0.00			Ice	3.59	0.11
						1" Ice		
RRUS 12	B	From Leg	4.00	0.0000	130.00	No Ice	3.15	0.06
			0.00			1/2"	3.36	0.08
			0.00			Ice	3.59	0.11
						1" Ice		
RRUS 12	C	From Leg	4.00	0.0000	130.00	No Ice	3.15	0.06
			0.00			1/2"	3.36	0.08
			0.00			Ice	3.59	0.11
						1" Ice		
RRUS-11	A	From Leg	4.00	0.0000	130.00	No Ice	2.78	0.05
			0.00			1/2"	2.99	0.07
			0.00			Ice	3.21	0.09
						1" Ice		
RRUS-11	B	From Leg	4.00	0.0000	130.00	No Ice	2.78	0.05
			0.00			1/2"	2.99	0.07
			0.00			Ice	3.21	0.09
						1" Ice		
RRUS-11	C	From Leg	4.00	0.0000	130.00	No Ice	2.78	0.05
			0.00			1/2"	2.99	0.07
			0.00			Ice	3.21	0.09
						1" Ice		
DC6-48-60-18-8F	A	From Leg	4.00	0.0000	130.00	No Ice	0.92	0.02
			0.00			1/2"	1.46	0.04
			0.00			Ice	1.64	0.06
						1" Ice		
Platform Mount [LP 303-1]	C	None		0.0000	130.00	No Ice	14.69	1.25
						1/2"	18.01	1.57
						Ice	21.34	1.94
						1" Ice		

APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.00	0.0000	120.00	No Ice	4.09	0.08
			0.00			1/2"	4.48	0.13
			0.00			Ice	4.88	0.19
						1" Ice		
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.00	0.0000	120.00	No Ice	4.09	0.08
			0.00			1/2"	4.48	0.13
			0.00			Ice	4.88	0.19
						1" Ice		
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.00	0.0000	120.00	No Ice	4.09	0.08
			0.00			1/2"	4.48	0.13
			0.00			Ice	4.88	0.19
						1" Ice		
APXVSP18-C-A20 w/ Mount Pipe	A	From Leg	4.00	0.0000	120.00	No Ice	4.60	0.10
			0.00			1/2"	5.05	0.16
			0.00			Ice	5.50	0.23
						1" Ice		
APXVSP18-C-A20 w/ Mount Pipe	B	From Leg	4.00	0.0000	120.00	No Ice	4.60	0.10

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
Mount Pipe			0.00 0.00			1/2" Ice 5.05 5.50	4.45 4.89	0.16 0.23
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 5.05 5.50	4.01 4.45 4.89	0.10 0.16 0.23
TD-RRH8X20-25	A	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8X20-25	B	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
TD-RRH8X20-25	C	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
(3) ACU-A20-N	A	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 0.07 0.10 0.15	0.12 0.16 0.21	0.00 0.00 0.00
(3) ACU-A20-N	B	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 0.07 0.10 0.15	0.12 0.16 0.21	0.00 0.00 0.00
(3) ACU-A20-N	C	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 0.07 0.10 0.15	0.12 0.16 0.21	0.00 0.00 0.00
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	120.00	1" Ice No Ice 1/2" Ice 1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
Platform Mount [LP 1201-1]	C	None		0.0000	120.00	1" Ice No Ice 1/2" Ice 18.38 22.11 25.87	18.38 22.11 25.87	2.10 2.65 3.26

800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 1.00	0.0000	118.00	1" Ice No Ice 1/2" Ice 0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
(2) 800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00 1.00	0.0000	118.00	1" Ice No Ice 1/2" Ice 0.66 0.76 0.87	0.32 0.40 0.48	0.01 0.02 0.02
800MHZ RRH	A	From Leg	4.00 0.00 1.00	0.0000	118.00	1" Ice No Ice 1/2" Ice 2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
(2) 800MHZ RRH	B	From Leg	4.00 0.00 1.00	0.0000	118.00	1" Ice No Ice 1/2" Ice 2.13 2.32 2.51	1.77 1.95 2.13	0.05 0.07 0.10
1900MHZ RRH (65MHZ)	A	From Leg	4.00	0.0000	118.00	1" Ice No Ice 2.32	2.24	0.06

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _{Front}	C _A A _{Side}	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
			0.00			1/2"	2.53	2.44	0.08
			-1.00			Ice	2.74	2.65	0.11
						1" Ice			
1900MHZ RRH (65MHZ)	B	From Leg	4.00	0.0000	118.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			-1.00			Ice	2.74	2.65	0.11
						1" Ice			
1900MHZ RRH (65MHZ)	C	From Leg	4.00	0.0000	118.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			-1.00			Ice	2.74	2.65	0.11
						1" Ice			
Side Arm Mount [SO 102-3]	C	None		0.0000	118.00	No Ice	3.60	3.60	0.07
						1/2"	4.18	4.18	0.11
						Ice	4.75	4.75	0.14
						1" Ice			

MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	110.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	110.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	110.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice			
TA08025-B604	A	From Leg	4.00	0.0000	110.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice			
TA08025-B604	B	From Leg	4.00	0.0000	110.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice			
TA08025-B604	C	From Leg	4.00	0.0000	110.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice			
TA08025-B605	A	From Leg	4.00	0.0000	110.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice			
TA08025-B605	B	From Leg	4.00	0.0000	110.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice			
TA08025-B605	C	From Leg	4.00	0.0000	110.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice			
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	110.00	No Ice	2.01	1.17	0.02
			0.00			1/2"	2.19	1.31	0.04
			0.00			Ice	2.37	1.46	0.06
						1" Ice			
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.0000	110.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.0000	110.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.0000	110.00	No Ice	1.90	1.90	0.03

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	
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
Commscope MC-PK8-DSH	C	None		0.0000	110.00	No Ice	34.24	34.24	1.75
						1/2"	62.95	62.95	2.10
						Ice	91.66	91.66	2.45
						1" Ice			

APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	14.69	6.87	0.19
						1/2"	15.46	7.55	0.31
						Ice	16.23	8.25	0.46
						1" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	14.69	6.87	0.19
						1/2"	15.46	7.55	0.31
						Ice	16.23	8.25	0.46
						1" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	14.69	6.87	0.19
						1/2"	15.46	7.55	0.31
						Ice	16.23	8.25	0.46
						1" Ice			
RADIO 4449 B71/B85A	A	From Leg	4.00 0.00 3.00	0.0000	100.00	No Ice	1.64	1.31	0.07
						1/2"	1.80	1.46	0.09
						Ice	1.97	1.61	0.11
						1" Ice			
RADIO 4449 B71/B85A	B	From Leg	4.00 0.00 3.00	0.0000	100.00	No Ice	1.64	1.31	0.07
						1/2"	1.80	1.46	0.09
						Ice	1.97	1.61	0.11
						1" Ice			
RADIO 4449 B71/B85A	C	From Leg	4.00 0.00 3.00	0.0000	100.00	No Ice	1.64	1.31	0.07
						1/2"	1.80	1.46	0.09
						Ice	1.97	1.61	0.11
						1" Ice			
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	100.00	No Ice	1.43	1.43	0.02
						1/2"	1.92	1.92	0.03
						Ice	2.29	2.29	0.05
						1" Ice			
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	100.00	No Ice	1.43	1.43	0.02
						1/2"	1.92	1.92	0.03
						Ice	2.29	2.29	0.05
						1" Ice			
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	100.00	No Ice	1.43	1.43	0.02
						1/2"	1.92	1.92	0.03
						Ice	2.29	2.29	0.05
						1" Ice			
Platform Mount [LP 1201- 1_KCKR-HR-1]	A	From Leg	4.00 0.00 0.00	0.0000	100.00	No Ice	37.61	37.61	2.63
						1/2"	45.62	45.62	3.48
						Ice	53.59	53.59	4.46
						1" Ice			

AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	5.19	2.71	0.13
						1/2"	5.59	3.04	0.17
						Ice	6.02	3.38	0.23
						1" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	5.19	2.71	0.13
						1/2"	5.59	3.04	0.17
						Ice	6.02	3.38	0.23
						1" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	5.19	2.71	0.13
						1/2"	5.59	3.04	0.17
						Ice	6.02	3.38	0.23
						1" Ice			
VV-65A-R1_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice	4.46	2.69	0.05
						1/2"	4.91	3.10	0.10
						Ice	5.36	3.52	0.15
						1" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front	C _{AA} Side	Weight K
						ft ²	ft ²	
VV-65A-R1_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	4.46 4.91 5.36 2.69	0.05 0.10 0.15
VV-65A-R1_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	4.46 4.91 5.36 2.69	0.05 0.10 0.15
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 3.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51 1.69	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 3.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51 1.69	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 3.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51 1.69	0.11 0.13 0.16
***** GPS_A	A	From Leg	4.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	0.26 0.32 0.39 0.26	0.00 0.00 0.01
Side Arm Mount [SO 701- 1]	C	None		0.0000	80.00	No Ice 1/2" Ice 1" Ice	0.85 1.14 1.43 1.67	0.07 0.08 0.09

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
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	130 - 125	Pole	Max Tension	45	0.00	0	0
			Max. Compression	26	-4.98	0	0
			Max. Mx	20	-2.84	11	0
			Max. My	2	-2.85	0	11
			Max. Vy	8	2.30	-11	0
			Max. Vx	2	-2.27	0	11
			Max. Torque	4			0
L2	125 - 120	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-5.54	0	1
			Max. Mx	20	-3.27	23	0
			Max. My	2	-3.28	0	23
			Max. Vy	8	2.47	-23	0
			Max. Vx	2	-2.44	0	23
			Max. Torque	4			0
L3	120 - 114.9	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-12.82	0	1
			Max. Mx	8	-7.68	-48	0
			Max. My	2	-7.70	0	47
			Max. Vy	8	5.27	-48	0
			Max. Vx	2	-5.18	0	47
			Max. Torque	4			0
L4	114.9 - 114.67	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-12.87	0	1
			Max. Mx	8	-7.70	-49	0
			Max. My	2	-7.73	0	49
			Max. Vy	8	5.29	-49	0
			Max. Vx	2	-5.20	0	49
			Max. Torque	22			0
L5	114.67 - 109.67	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-18.64	0	1
			Max. Mx	8	-11.35	-78	1
			Max. My	2	-11.39	-1	76
			Max. Vy	8	8.23	-78	1
			Max. Vx	2	-8.03	-1	76
			Max. Torque	22			0
L6	109.67 -	Pole	Max Tension	1	0.00	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	109.42		Max. Compression	26	-18.69	0	1
			Max. Mx	8	-11.38	-80	1
			Max. My	2	-11.42	-1	78
			Max. Vy	8	8.25	-80	1
			Max. Vx	2	-8.04	-1	78
			Max. Torque	22			0
L7	109.42 - 109.17	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-18.73	0	1
			Max. Mx	8	-11.41	-82	1
			Max. My	2	-11.45	-1	80
			Max. Vy	8	8.28	-82	1
			Max. Vx	2	-8.06	-1	80
			Max. Torque	22			0
L8	109.17 - 104.17	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-19.59	0	1
			Max. Mx	8	-11.97	-124	1
			Max. My	2	-12.02	-1	121
			Max. Vy	8	8.73	-124	1
			Max. Vx	2	-8.38	-1	121
			Max. Torque	22			0
L9	104.17 - 103.92	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-19.63	0	1
			Max. Mx	8	-12.00	-127	1
			Max. My	2	-12.05	-1	123
			Max. Vy	8	8.75	-127	1
			Max. Vx	2	-8.40	-1	123
			Max. Torque	22			0
L10	103.92 - 103.67	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-19.68	0	1
			Max. Mx	8	-12.03	-129	1
			Max. My	2	-12.08	-1	125
			Max. Vy	8	8.78	-129	1
			Max. Vx	2	-8.42	-1	125
			Max. Torque	22			0
L11	103.67 - 98.67	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-29.25	0	25
			Max. Mx	8	-17.67	-181	16
			Max. My	2	-17.74	-1	191
			Max. Vy	8	12.69	-181	16
			Max. Vx	2	-12.17	-1	191
			Max. Torque	21			-6
L12	98.67 - 96.42	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-29.72	0	25
			Max. Mx	8	-18.00	-209	16
			Max. My	2	-18.07	-1	218
			Max. Vy	8	12.90	-209	16
			Max. Vx	2	-12.31	-1	218
			Max. Torque	21			-6
L13	96.42 - 96.17	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-29.77	0	25
			Max. Mx	8	-18.03	-213	16
			Max. My	2	-18.11	-1	221
			Max. Vy	8	12.92	-213	16
			Max. Vx	2	-12.33	-1	221
			Max. Torque	21			-6
L14	96.17 - 91.5	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-30.10	0	26
			Max. Mx	8	-18.26	-234	16
			Max. My	2	-18.34	-1	242
			Max. Vy	8	13.08	-234	16
			Max. Vx	2	-12.43	-1	242

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L15	91.5 - 89.5	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-31.57	0	26
			Max. Mx	8	-19.34	-301	16
			Max. My	2	-19.43	-1	305
			Max. Vy	8	13.58	-301	16
			Max. Vx	2	-12.78	-1	305
L16	89.5 - 88.92	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-31.71	0	26
			Max. Mx	8	-19.44	-309	16
			Max. My	2	-19.53	-1	312
			Max. Vy	8	13.63	-309	16
			Max. Vx	2	-12.81	-1	312
L17	88.92 - 88.67	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-31.76	0	26
			Max. Mx	8	-19.48	-312	16
			Max. My	2	-19.57	-1	315
			Max. Vy	8	13.65	-312	16
			Max. Vx	2	-12.82	-1	315
L18	88.67 - 88.25	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-31.86	0	26
			Max. Mx	8	-19.54	-318	16
			Max. My	2	-19.63	-1	321
			Max. Vy	8	13.70	-318	16
			Max. Vx	2	-12.85	-1	321
L19	88.25 - 88	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-31.92	0	26
			Max. Mx	8	-19.58	-321	16
			Max. My	2	-19.68	-1	324
			Max. Vy	8	13.72	-321	16
			Max. Vx	2	-12.86	-1	324
L20	88 - 87.42	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-32.07	0	26
			Max. Mx	8	-19.68	-329	16
			Max. My	2	-19.77	-1	331
			Max. Vy	8	13.78	-329	16
			Max. Vx	2	-12.90	-1	331
L21	87.42 - 87.17	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-32.12	0	26
			Max. Mx	8	-19.71	-333	16
			Max. My	2	-19.81	-1	335
			Max. Vy	8	13.80	-333	16
			Max. Vx	2	-12.91	-1	335
L22	87.17 - 86.92	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-32.17	0	26
			Max. Mx	8	-19.74	-336	16
			Max. My	2	-19.84	-1	338
			Max. Vy	8	13.82	-336	16
			Max. Vx	2	-12.92	-1	338
L23	86.92 - 86.67	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-32.23	0	26
			Max. Mx	8	-19.78	-340	16
			Max. My	2	-19.88	-1	341
			Max. Vy	8	13.84	-340	16
			Max. Vx	2	-12.94	-1	341
			Max. Torque	21			-6

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L24	86.67 - 81.67	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-33.42	0	26
			Max. Mx	8	-20.62	-410	17
			Max. My	2	-20.72	-1	406
			Max. Vy	8	14.35	-410	17
			Max. Vx	2	-13.24	-1	406
L25	81.67 - 80.75	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-33.64	0	26
			Max. Mx	8	-20.78	-424	17
			Max. My	2	-20.88	-1	419
			Max. Vy	8	14.44	-424	17
L26	80.75 - 80.5	Pole	Max. Vx	2	-13.30	-1	419
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-33.70	0	26
			Max. Mx	8	-20.82	-427	17
			Max. My	2	-20.93	-1	422
L27	80.5 - 75.5	Pole	Max. Vy	8	14.46	-427	17
			Max. Vx	2	-13.31	-1	422
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-34.94	0	26
			Max. Mx	8	-21.73	-501	17
L28	75.5 - 71.83	Pole	Max. My	2	-21.84	-1	489
			Max. Vy	8	14.98	-501	17
			Max. Vx	2	-13.65	-1	489
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-35.80	0	26
L29	71.83 - 71.58	Pole	Max. Mx	8	-22.36	-556	17
			Max. My	2	-22.47	-1	540
			Max. Vy	8	15.32	-556	17
			Max. Vx	2	-13.85	-1	540
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
L30	71.58 - 68.83	Pole	Max. Compression	26	-35.86	0	26
			Max. Mx	8	-22.41	-560	17
			Max. My	2	-22.52	-1	543
			Max. Vy	8	15.33	-560	17
			Max. Vx	2	-13.85	-1	543
			Max. Torque	21			-6
L31	68.83 - 68.58	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-36.58	0	26
			Max. Mx	8	-22.91	-603	17
			Max. My	2	-23.02	-1	581
			Max. Vy	8	15.62	-603	17
			Max. Vx	2	-14.02	-1	581
L32	68.58 - 64.5	Pole	Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-36.74	0	26
			Max. Mx	8	-23.03	-612	17
			Max. My	2	-23.14	-1	590
			Max. Vy	8	15.67	-612	17
L33	64.5 - 63.25	Pole	Max. Vx	2	-14.05	-1	590
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	63.25 - 58.25	Pole	Max. Compression	26	-38.97	0	26
			Max. Mx	8	-24.74	-692	17
			Max. My	2	-24.86	-1	661
			Max. Vy	8	16.26	-692	17
			Max. Vx	2	-14.42	-1	661
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-40.49	0	26
L35	58.25 - 53.25	Pole	Max. Mx	8	-25.90	-774	17
			Max. My	2	-26.02	-1	733
			Max. Vy	8	16.77	-774	17
			Max. Vx	2	-14.73	-1	733
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-42.03	0	26
			Max. Mx	8	-27.09	-859	17
L36	53.25 - 48.25	Pole	Max. My	2	-27.20	-1	808
			Max. Vy	8	17.29	-859	17
			Max. Vx	2	-15.03	-1	808
			Max. Torque	21			-6
			Max Tension	1	0.00	0	0
			Max. Compression	26	-43.60	0	26
			Max. Mx	8	-28.30	-947	17
			Max. My	2	-28.41	-1	883
L37	48.25 - 42.5	Pole	Max. Vy	8	17.80	-947	17
			Max. Vx	2	-15.33	-1	883
			Max. Torque	21			-5
			Max Tension	1	0.00	0	0
			Max. Compression	26	-44.08	0	26
			Max. Mx	8	-28.67	-974	17
			Max. My	2	-28.78	-1	906
			Max. Vy	8	17.95	-974	17
L38	42.5 - 41.83	Pole	Max. Vx	2	-15.42	-1	906
			Max. Torque	11			5
			Max Tension	1	0.00	0	0
			Max. Compression	26	-46.76	0	26
			Max. Mx	8	-30.81	-1063	17
			Max. My	2	-30.91	-1	983
			Max. Vy	8	18.51	-1063	17
			Max. Vx	2	-15.77	-1	983
L39	41.83 - 41.58	Pole	Max. Torque	11			5
			Max Tension	1	0.00	0	0
			Max. Compression	26	-46.83	0	26
			Max. Mx	8	-30.86	-1068	17
			Max. My	2	-30.96	-1	987
			Max. Vy	8	18.53	-1068	17
			Max. Vx	2	-15.78	-1	987
			Max. Torque	11			5
L40	41.58 - 41.17	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-46.95	0	26
			Max. Mx	8	-30.94	-1076	17
			Max. My	2	-31.05	-1	993
			Max. Vy	8	18.56	-1076	17
			Max. Vx	2	-15.80	-1	993
			Max. Torque	11			5
			Max Tension	1	0.00	0	0
L41	41.17 - 40.92	Pole	Max. Compression	26	-47.04	0	26
			Max. Mx	8	-31.01	-1080	17
			Max. My	2	-31.11	-1	997
			Max. Vy	8	18.58	-1080	17
			Max. Vx	2	-15.81	-1	997
			Max. Torque	11			5
			Max Tension	1	0.00	0	0
			Max. Compression	26	-47.04	0	26
L42	40.92 -	Pole	Max. Mx	8	-31.01	-1080	17
			Max. My	2	-31.11	-1	997
			Max. Vy	8	18.58	-1080	17
			Max. Vx	2	-15.81	-1	997
			Max. Torque	11			5
			Max Tension	1	0.00	0	0
			Max. Compression	26	-47.04	0	26
			Max. Mx	8	-31.01	-1080	17

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	35.92		Max. Compression	26	-48.74	0	26
			Max. Mx	8	-32.35	-1174	17
			Max. My	2	-32.44	-1	1077
			Max. Vy	8	18.96	-1174	17
			Max. Vx	2	-16.10	-1	1077
			Max. Torque	11			5
L43	35.92 - 30.92	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-50.46	0	26
			Max. Mx	8	-33.72	-1270	17
			Max. My	2	-33.81	-2	1158
			Max. Vy	8	19.33	-1270	17
			Max. Vx	2	-16.37	-2	1158
			Max. Torque	11			5
L44	30.92 - 25.92	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-52.21	0	25
			Max. Mx	8	-35.13	-1367	17
			Max. My	2	-35.20	-2	1240
			Max. Vy	8	19.68	-1367	17
			Max. Vx	2	-16.64	-2	1240
			Max. Torque	11			5
L45	25.92 - 20.25	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-52.45	0	25
			Max. Mx	8	-35.32	-1380	17
			Max. My	2	-35.39	-2	1252
			Max. Vy	8	19.72	-1380	17
			Max. Vx	2	-16.68	-2	1252
			Max. Torque	11			5
L46	20.25 - 19.25	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-56.05	0	25
			Max. Mx	8	-38.29	-1500	17
			Max. My	2	-38.35	-2	1353
			Max. Vy	8	20.22	-1500	17
			Max. Vx	2	-17.08	-2	1353
			Max. Torque	11			5
L47	19.25 - 14.15	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-57.98	0	25
			Max. Mx	8	-39.85	-1604	17
			Max. My	2	-39.90	-2	1440
			Max. Vy	8	20.58	-1604	17
			Max. Vx	2	-17.37	-2	1440
			Max. Torque	11			5
L48	14.15 - 13.92	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-58.07	0	25
			Max. Mx	8	-39.93	-1609	17
			Max. My	2	-39.97	-2	1444
			Max. Vy	8	20.59	-1609	17
			Max. Vx	2	-17.37	-2	1444
			Max. Torque	11			5
L49	13.92 - 8.92	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-59.97	0	25
			Max. Mx	8	-41.49	-1713	17
			Max. My	2	-41.52	-2	1532
			Max. Vy	8	20.95	-1713	17
			Max. Vx	2	-17.66	-2	1532
			Max. Torque	11			5
L50	8.92 - 3.92	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-61.65	0	25
			Max. Mx	8	-42.94	-1818	17
			Max. My	2	-42.95	-2	1621
			Max. Vy	8	21.23	-1818	17
			Max. Vx	2	-17.96	-2	1621
			Max. Torque	11			5

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L51	3.92 - 0	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-62.92	0	25
			Max. Mx	8	-44.06	-1902	17
			Max. My	2	-44.07	-2	1692
			Max. Vy	8	21.45	-1902	17
			Max. Vx	2	-18.19	-2	1692
			Max. Torque	11			5

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	62.92	-5.31	0.00
	Max. H _x	20	44.07	21.44	-0.01
	Max. H _z	2	44.07	-0.01	18.18
	Max. M _x	2	1692	-0.01	18.18
	Max. M _z	8	1902	-21.44	0.01
	Max. Torsion	11	5	-15.48	-8.93
	Min. Vert	13	33.05	-8.92	-15.47
	Min. H _x	8	44.07	-21.44	0.01
	Min. H _z	14	44.07	0.01	-18.18
	Min. M _x	14	-1660	0.01	-18.18
	Min. M _z	20	-1901	21.44	-0.01
	Min. Torsion	23	-5	15.48	8.93

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	36.73	0.00	-0.00	-13	0	0
1.2 Dead+1.0 Wind 0 deg - No Ice	44.07	0.01	-18.18	-1692	-2	0
0.9 Dead+1.0 Wind 0 deg - No Ice	33.05	0.01	-18.18	-1665	-2	0
1.2 Dead+1.0 Wind 30 deg - No Ice	44.07	8.94	-15.48	-1441	-824	-3
0.9 Dead+1.0 Wind 30 deg - No Ice	33.05	8.94	-15.48	-1418	-813	-3
1.2 Dead+1.0 Wind 60 deg - No Ice	44.07	15.48	-8.94	-839	-1426	-5
0.9 Dead+1.0 Wind 60 deg - No Ice	33.05	15.48	-8.94	-824	-1407	-5
1.2 Dead+1.0 Wind 90 deg - No Ice	44.07	21.44	-0.01	-17	-1902	-5
0.9 Dead+1.0 Wind 90 deg - No Ice	33.05	21.44	-0.01	-13	-1877	-5
1.2 Dead+1.0 Wind 120 deg - No Ice	44.07	15.48	8.93	806	-1426	-5
0.9 Dead+1.0 Wind 120 deg - No Ice	33.05	15.48	8.93	800	-1407	-5
1.2 Dead+1.0 Wind 150 deg - No Ice	44.07	8.92	15.47	1408	-822	-3
0.9 Dead+1.0 Wind 150 deg - No Ice	33.05	8.92	15.47	1393	-811	-3
1.2 Dead+1.0 Wind 180 deg - No Ice	44.07	-0.01	18.18	1660	1	0
0.9 Dead+1.0 Wind 180 deg - No Ice	33.05	-0.01	18.18	1642	1	0
1.2 Dead+1.0 Wind 210 deg	44.07	-8.94	15.48	1410	824	3

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
- No Ice						
0.9 Dead+1.0 Wind 210 deg	33.05	-8.94	15.48	1395	813	3
- No Ice						
1.2 Dead+1.0 Wind 240 deg	44.07	-15.48	8.94	808	1426	5
- No Ice						
0.9 Dead+1.0 Wind 240 deg	33.05	-15.48	8.94	801	1406	5
- No Ice						
1.2 Dead+1.0 Wind 270 deg	44.07	-21.44	0.01	-14	1901	5
- No Ice						
0.9 Dead+1.0 Wind 270 deg	33.05	-21.44	0.01	-10	1876	5
- No Ice						
1.2 Dead+1.0 Wind 300 deg	44.07	-15.48	-8.93	-838	1425	5
- No Ice						
0.9 Dead+1.0 Wind 300 deg	33.05	-15.48	-8.93	-822	1406	5
- No Ice						
1.2 Dead+1.0 Wind 330 deg	44.07	-8.92	-15.47	-1440	821	3
- No Ice						
0.9 Dead+1.0 Wind 330 deg	33.05	-8.92	-15.47	-1416	810	3
- No Ice						
1.2 Dead+1.0 Ice+1.0 Temp	62.92	0.00	-0.00	-25	0	0
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	62.92	0.00	-4.70	-480	0	0
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	62.92	2.35	-4.07	-419	-228	-1
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	62.92	4.07	-2.35	-252	-394	-1
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	62.92	5.31	-0.00	-25	-506	-1
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	62.92	4.07	2.35	202	-394	-1
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	62.92	2.35	4.07	369	-227	-1
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	62.92	-0.00	4.70	430	0	0
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	62.92	-2.35	4.07	369	228	1
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	62.92	-4.07	2.35	203	394	1
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	62.92	-5.31	0.00	-24	506	1
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	62.92	-4.07	-2.35	-252	394	1
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	62.92	-2.35	-4.07	-419	227	1
Dead+Wind 0 deg - Service	36.73	0.00	-4.58	-432	-1	0
Dead+Wind 30 deg - Service	36.73	2.25	-3.90	-369	-206	-1
Dead+Wind 60 deg - Service	36.73	3.90	-2.25	-219	-357	-1
Dead+Wind 90 deg - Service	36.73	5.40	-0.00	-13	-476	-1
Dead+Wind 120 deg - Service	36.73	3.90	2.25	193	-357	-1
Dead+Wind 150 deg - Service	36.73	2.25	3.90	343	-206	-1
Dead+Wind 180 deg - Service	36.73	-0.00	4.58	406	0	0
Dead+Wind 210 deg - Service	36.73	-2.25	3.90	344	206	1
Dead+Wind 240 deg - Service	36.73	-3.90	2.25	193	356	1
Dead+Wind 270 deg - Service	36.73	-5.40	0.00	-12	475	1
Dead+Wind 300 deg - Service	36.73	-3.90	-2.25	-218	356	1
Dead+Wind 330 deg - Service	36.73	-2.25	-3.90	-369	205	1

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	-36.73	0.00	0.00	36.73	0.00	0.000%
2	0.01	-44.07	-18.18	-0.01	44.07	18.18	0.000%
3	0.01	-33.05	-18.18	-0.01	33.05	18.18	0.000%
4	8.94	-44.07	-15.48	-8.94	44.07	15.48	0.000%
5	8.94	-33.05	-15.48	-8.94	33.05	15.48	0.000%
6	15.48	-44.07	-8.94	-15.48	44.07	8.94	0.000%
7	15.48	-33.05	-8.94	-15.48	33.05	8.94	0.000%
8	21.44	-44.07	-0.01	-21.44	44.07	0.01	0.000%
9	21.44	-33.05	-0.01	-21.44	33.05	0.01	0.000%
10	15.48	-44.07	8.93	-15.48	44.07	-8.93	0.000%
11	15.48	-33.05	8.93	-15.48	33.05	-8.93	0.000%
12	8.92	-44.07	15.47	-8.92	44.07	-15.47	0.000%
13	8.92	-33.05	15.47	-8.92	33.05	-15.47	0.000%
14	-0.01	-44.07	18.18	0.01	44.07	-18.18	0.000%
15	-0.01	-33.05	18.18	0.01	33.05	-18.18	0.000%
16	-8.94	-44.07	15.48	8.94	44.07	-15.48	0.000%
17	-8.94	-33.05	15.48	8.94	33.05	-15.48	0.000%
18	-15.48	-44.07	8.94	15.48	44.07	-8.94	0.000%
19	-15.48	-33.05	8.94	15.48	33.05	-8.94	0.000%
20	-21.44	-44.07	0.01	21.44	44.07	-0.01	0.000%
21	-21.44	-33.05	0.01	21.44	33.05	-0.01	0.000%
22	-15.48	-44.07	-8.93	15.48	44.07	8.93	0.000%
23	-15.48	-33.05	-8.93	15.48	33.05	8.93	0.000%
24	-8.92	-44.07	-15.47	8.92	44.07	15.47	0.000%
25	-8.92	-33.05	-15.47	8.92	33.05	15.47	0.000%
26	0.00	-62.92	0.00	-0.00	62.92	0.00	0.000%
27	0.00	-62.92	-4.70	-0.00	62.92	4.70	0.000%
28	2.35	-62.92	-4.07	-2.35	62.92	4.07	0.000%
29	4.07	-62.92	-2.35	-4.07	62.92	2.35	0.000%
30	5.31	-62.92	-0.00	-5.31	62.92	0.00	0.000%
31	4.07	-62.92	2.35	-4.07	62.92	-2.35	0.000%
32	2.35	-62.92	4.07	-2.35	62.92	-4.07	0.000%
33	-0.00	-62.92	4.70	0.00	62.92	-4.70	0.000%
34	-2.35	-62.92	4.07	2.35	62.92	-4.07	0.000%
35	-4.07	-62.92	2.35	4.07	62.92	-2.35	0.000%
36	-5.31	-62.92	0.00	5.31	62.92	-0.00	0.000%
37	-4.07	-62.92	-2.35	4.07	62.92	2.35	0.000%
38	-2.35	-62.92	-4.07	2.35	62.92	4.07	0.000%
39	0.00	-36.73	-4.58	-0.00	36.73	4.58	0.000%
40	2.25	-36.73	-3.90	-2.25	36.73	3.90	0.000%
41	3.90	-36.73	-2.25	-3.90	36.73	2.25	0.000%
42	5.40	-36.73	-0.00	-5.40	36.73	0.00	0.000%
43	3.90	-36.73	2.25	-3.90	36.73	-2.25	0.000%
44	2.25	-36.73	3.90	-2.25	36.73	-3.90	0.000%
45	-0.00	-36.73	4.58	0.00	36.73	-4.58	0.000%
46	-2.25	-36.73	3.90	2.25	36.73	-3.90	0.000%
47	-3.90	-36.73	2.25	3.90	36.73	-2.25	0.000%
48	-5.40	-36.73	0.00	5.40	36.73	-0.00	0.000%
49	-3.90	-36.73	-2.25	3.90	36.73	2.25	0.000%
50	-2.25	-36.73	-3.90	2.25	36.73	3.90	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00007957
2	Yes	5	0.00000001	0.00042120
3	Yes	5	0.00000001	0.00017431
4	Yes	7	0.00000001	0.00008409
5	Yes	6	0.00000001	0.00043199
6	Yes	7	0.00000001	0.00011927
7	Yes	6	0.00000001	0.00062852
8	Yes	6	0.00000001	0.00067906

9	Yes	6	0.0000001	0.00025605
10	Yes	7	0.0000001	0.00007262
11	Yes	6	0.0000001	0.00038497
12	Yes	7	0.0000001	0.00009965
13	Yes	6	0.0000001	0.00053056
14	Yes	5	0.0000001	0.00036954
15	Yes	5	0.0000001	0.00014792
16	Yes	7	0.0000001	0.00009926
17	Yes	6	0.0000001	0.00052848
18	Yes	7	0.0000001	0.00007296
19	Yes	6	0.0000001	0.00038678
20	Yes	6	0.0000001	0.00067084
21	Yes	6	0.0000001	0.00025310
22	Yes	7	0.0000001	0.00011927
23	Yes	6	0.0000001	0.00062894
24	Yes	7	0.0000001	0.00008289
25	Yes	6	0.0000001	0.00042627
26	Yes	5	0.0000001	0.00057419
27	Yes	6	0.0000001	0.00057959
28	Yes	6	0.0000001	0.00069316
29	Yes	6	0.0000001	0.00073986
30	Yes	6	0.0000001	0.00061493
31	Yes	6	0.0000001	0.00055219
32	Yes	6	0.0000001	0.00055442
33	Yes	6	0.0000001	0.00044997
34	Yes	6	0.0000001	0.00055343
35	Yes	6	0.0000001	0.00055140
36	Yes	6	0.0000001	0.00061253
37	Yes	6	0.0000001	0.00073621
38	Yes	6	0.0000001	0.00068929
39	Yes	5	0.0000001	0.0006908
40	Yes	5	0.0000001	0.00029885
41	Yes	5	0.0000001	0.00061400
42	Yes	5	0.0000001	0.00052198
43	Yes	5	0.0000001	0.00034167
44	Yes	5	0.0000001	0.00038381
45	Yes	4	0.0000001	0.00097466
46	Yes	5	0.0000001	0.00037595
47	Yes	5	0.0000001	0.00033740
48	Yes	5	0.0000001	0.00051901
49	Yes	5	0.0000001	0.00061576
50	Yes	5	0.0000001	0.00029780

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 125	15.904	42	1.0709	0.0117
L2	125 - 120	14.786	42	1.0672	0.0116
L3	120 - 114.9	13.676	42	1.0564	0.0114
L4	114.9 - 114.67	12.557	42	1.0423	0.0113
L5	114.67 - 109.67	12.507	42	1.0415	0.0113
L6	109.67 - 109.42	11.429	42	1.0206	0.0112
L7	109.42 - 109.17	11.376	42	1.0195	0.0112
L8	109.17 - 104.17	11.323	42	1.0181	0.0112
L9	104.17 - 103.92	10.276	42	0.9867	0.0110
L10	103.92 - 103.67	10.225	42	0.9850	0.0110
L11	103.67 - 98.67	10.173	42	0.9834	0.0110
L12	98.67 - 96.42	9.166	42	0.9448	0.0105
L13	96.42 - 96.17	8.726	42	0.9241	0.0098
L14	96.17 - 91.5	8.678	42	0.9217	0.0097
L15	94.5 - 89.5	8.358	42	0.9048	0.0092
L16	89.5 - 88.92	7.427	42	0.8692	0.0082
L17	88.92 - 88.67	7.321	42	0.8633	0.0081
L18	88.67 - 88.25	7.276	42	0.8598	0.0080
L19	88.25 - 88	7.201	42	0.8541	0.0079
L20	88 - 87.42	7.156	42	0.8512	0.0078
L21	87.42 - 87.17	7.053	42	0.8447	0.0077

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L22	87.17 - 86.92	7.009	42	0.8402	0.0076
L23	86.92 - 86.67	6.965	42	0.8357	0.0075
L24	86.67 - 81.67	6.922	42	0.8330	0.0074
L25	81.67 - 80.75	6.079	42	0.7768	0.0063
L26	80.75 - 80.5	5.930	42	0.7664	0.0062
L27	80.5 - 75.5	5.890	42	0.7627	0.0061
L28	75.5 - 71.83	5.131	42	0.6876	0.0049
L29	71.83 - 71.58	4.624	42	0.6310	0.0042
L30	71.58 - 68.83	4.591	42	0.6280	0.0042
L31	68.83 - 68.58	4.239	42	0.5944	0.0038
L32	68.58 - 64.5	4.208	42	0.5918	0.0037
L33	68.25 - 63.25	4.167	42	0.5883	0.0037
L34	63.25 - 58.25	3.565	42	0.5566	0.0034
L35	58.25 - 53.25	3.009	42	0.5066	0.0029
L36	53.25 - 48.25	2.505	42	0.4562	0.0025
L37	48.25 - 42.5	2.053	42	0.4055	0.0021
L38	46.75 - 41.83	1.928	42	0.3905	0.0020
L39	41.83 - 41.58	1.539	42	0.3630	0.0018
L40	41.58 - 41.17	1.520	42	0.3594	0.0018
L41	41.17 - 40.92	1.489	42	0.3535	0.0017
L42	40.92 - 35.92	1.471	42	0.3511	0.0017
L43	35.92 - 30.92	1.129	42	0.3021	0.0014
L44	30.92 - 25.92	0.838	42	0.2542	0.0011
L45	25.92 - 20.25	0.596	42	0.2065	0.0009
L46	25.25 - 19.25	0.568	42	0.2002	0.0009
L47	19.25 - 14.15	0.334	42	0.1681	0.0007
L48	14.15 - 13.92	0.179	42	0.1222	0.0005
L49	13.92 - 8.92	0.173	42	0.1202	0.0005
L50	8.92 - 3.92	0.071	42	0.0760	0.0003
L51	3.92 - 0	0.014	42	0.0331	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.00	800 10121 w/ Mount Pipe	42	15.904	1.0709	0.0117	39598
120.00	APXVMTM14-ALU-I20 w/ Mount Pipe	42	13.676	1.0564	0.0114	23123
118.00	800 EXTERNAL NOTCH FILTER	42	13.235	1.0514	0.0113	20164
110.00	MX08FRO665-21 w/ Mount Pipe	42	11.500	1.0221	0.0112	11322
100.00	APXVAARR24_43-U-NA20 w/ Mount Pipe	42	9.430	0.9567	0.0107	6587
80.00	GPS_A	42	5.811	0.7552	0.0060	3936

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 125	63.606	8	4.2732	0.0463
L2	125 - 120	59.140	8	4.2596	0.0458
L3	120 - 114.9	54.703	8	4.2170	0.0451
L4	114.9 - 114.67	50.231	8	4.1598	0.0447
L5	114.67 - 109.67	50.031	8	4.1566	0.0447
L6	109.67 - 109.42	45.725	8	4.0715	0.0443
L7	109.42 - 109.17	45.512	8	4.0667	0.0443
L8	109.17 - 104.17	45.299	8	4.0613	0.0443
L9	104.17 - 103.92	41.114	8	3.9329	0.0437
L10	103.92 - 103.67	40.909	8	3.9257	0.0437
L11	103.67 - 98.67	40.704	8	3.9192	0.0436
L12	98.67 - 96.42	36.677	8	3.7727	0.0416

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L13	96.42 - 96.17	34.919	8	3.6963	0.0388
L14	96.17 - 91.5	34.726	8	3.6867	0.0385
L15	94.5 - 89.5	33.448	8	3.6199	0.0364
L16	89.5 - 88.92	29.721	8	3.4785	0.0327
L17	88.92 - 88.67	29.300	8	3.4549	0.0321
L18	88.67 - 88.25	29.120	8	3.4412	0.0318
L19	88.25 - 88	28.818	8	3.4182	0.0313
L20	88 - 87.42	28.640	8	3.4069	0.0310
L21	87.42 - 87.17	28.228	8	3.3808	0.0304
L22	87.17 - 86.92	28.051	8	3.3629	0.0300
L23	86.92 - 86.67	27.876	8	3.3450	0.0297
L24	86.67 - 81.67	27.701	8	3.3343	0.0294
L25	81.67 - 80.75	24.328	8	3.1098	0.0252
L26	80.75 - 80.5	23.733	8	3.0683	0.0245
L27	80.5 - 75.5	23.573	8	3.0535	0.0242
L28	75.5 - 71.83	20.533	8	2.7532	0.0196
L29	71.83 - 71.58	18.505	8	2.5265	0.0166
L30	71.58 - 68.83	18.373	8	2.5144	0.0165
L31	68.83 - 68.58	16.964	8	2.3802	0.0149
L32	68.58 - 64.5	16.839	8	2.3696	0.0148
L33	68.25 - 63.25	16.676	8	2.3556	0.0146
L34	63.25 - 58.25	14.267	8	2.2285	0.0133
L35	58.25 - 53.25	12.038	8	2.0282	0.0115
L36	53.25 - 48.25	10.021	8	1.8264	0.0098
L37	48.25 - 42.5	8.215	8	1.6232	0.0082
L38	46.75 - 41.83	7.715	8	1.5631	0.0078
L39	41.83 - 41.58	6.155	8	1.4528	0.0071
L40	41.58 - 41.17	6.079	8	1.4384	0.0070
L41	41.17 - 40.92	5.957	8	1.4148	0.0068
L42	40.92 - 35.92	5.883	8	1.4051	0.0068
L43	35.92 - 30.92	4.515	8	1.2087	0.0056
L44	30.92 - 25.92	3.350	8	1.0172	0.0045
L45	25.92 - 20.25	2.385	8	0.8261	0.0035
L46	25.25 - 19.25	2.271	8	0.8009	0.0034
L47	19.25 - 14.15	1.335	8	0.6723	0.0028
L48	14.15 - 13.92	0.716	8	0.4886	0.0019
L49	13.92 - 8.92	0.693	8	0.4805	0.0019
L50	8.92 - 3.92	0.282	8	0.3039	0.0012
L51	3.92 - 0	0.054	8	0.1324	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.00	800 10121 w/ Mount Pipe	8	63.606	4.2732	0.0463	10191
120.00	APXVTM14-ALU-I20 w/ Mount Pipe	8	54.703	4.2170	0.0451	5841
118.00	800 EXTERNAL NOTCH FILTER	8	52.942	4.1967	0.0450	5091
110.00	MX08FRO665-21 w/ Mount Pipe	8	46.006	4.0776	0.0443	2864
100.00	APXVAARR24_43-U-NA20 w/ Mount Pipe	8	37.733	3.8144	0.0427	1834
80.00	GPS_A	8	23.255	3.0234	0.0237	1054

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L1	130 - 125 (1)	TP16x16x0.375	5.00	0.00	0.0	18.4078	-2.84	695.81	0.004
L2	125 - 120 (2)	TP16x16x0.375	5.00	0.00	0.0	18.4078	-3.27	695.81	0.005
L3	120 - 114.9 (3)	TP17.2491x16x0.5125	5.10	0.00	0.0	27.6195	-7.68	1615.74	0.005
L4	114.9 - 114.67 (4)	TP17.3054x17.2491x0.5125	0.23	0.00	0.0	27.7125	-7.70	1621.18	0.005
L5	114.67 - 109.67 (5)	TP18.5299x17.3054x0.4813	5.00	0.00	0.0	27.9687	-11.35	1636.17	0.007
L6	109.67 - 109.42 (6)	TP18.5912x18.5299x0.4813	0.25	0.00	0.0	28.0636	-11.38	1641.72	0.007
L7	109.42 - 109.17 (7)	TP18.6524x18.5912x0.425	0.25	0.00	0.0	24.9442	-11.41	1459.24	0.008
L8	109.17 - 104.17 (8)	TP19.877x18.6524x0.4125	5.00	0.00	0.0	25.8537	-11.97	1512.44	0.008
L9	104.17 - 103.92 (9)	TP19.9382x19.877x0.4063	0.25	0.00	0.0	25.5502	-12.00	1494.69	0.008
L10	103.92 - 103.67 (10)	TP19.9994x19.9382x0.451	0.25	0.00	0.0	28.3271	-12.03	1657.14	0.007
L11	103.67 - 98.67 (11)	TP21.224x19.9994x0.4375	5.00	0.00	0.0	29.2830	-17.74	1713.05	0.010
L12	98.67 - 96.42 (12)	TP21.775x21.224x0.4255	2.25	0.00	0.0	29.2175	-18.07	1709.22	0.011
L13	96.42 - 96.17 (13)	TP21.8363x21.775x0.3875	0.25	0.00	0.0	26.7627	-18.11	1565.62	0.012
L14	96.17 - 91.5 (14)	TP22.98x21.8363x0.38138	4.67	0.00	0.0	26.8408	-18.34	1570.19	0.012
L15	91.5 - 89.5 (15)	TP23.0952x21.8703x0.4375	5.00	0.00	0.0	31.9191	-19.43	1867.27	0.010
L16	89.5 - 88.92 (16)	TP23.2373x23.0952x0.4375	0.58	0.00	0.0	32.1192	-19.53	1878.98	0.010
L17	88.92 - 88.67 (17)	TP23.2986x23.2373x0.325	0.25	0.00	0.0	24.0418	-19.57	1406.45	0.014
L18	88.67 - 88.25 (18)	TP23.4015x23.2986x0.325	0.42	0.00	0.0	24.1495	-19.63	1412.75	0.014
L19	88.25 - 88 (19)	TP23.4627x23.4015x0.48	0.25	0.00	0.0	29.7048	-19.68	1737.73	0.011
L20	88 - 87.42 (20)	TP23.6048x23.4627x0.48	0.58	0.00	0.0	29.8878	-19.77	1748.44	0.011
L21	87.42 - 87.17 (21)	TP23.666x23.6048x0.259	0.25	0.00	0.0	18.8499	-19.81	1102.72	0.018
L22	87.17 - 86.92 (22)	TP23.7273x23.666x0.252	0.25	0.00	0.0	18.8992	-19.84	1105.60	0.018
L23	86.92 - 86.67 (23)	TP23.7885x23.7273x0.4313	0.25	0.00	0.0	32.4345	-19.88	1897.42	0.010
L24	86.67 - 81.67 (24)	TP25.0135x23.7885x0.4188	5.00	0.00	0.0	33.1629	-20.62	1940.03	0.011
L25	81.67 - 80.75 (25)	TP25.2389x25.0135x0.4188	0.92	0.00	0.0	33.4669	-20.78	1957.81	0.011
L26	80.75 - 80.5 (26)	TP25.3001x25.2389x0.3188	0.25	0.00	0.0	25.6403	-20.82	1499.96	0.014
L27	80.5 - 75.5 (27)	TP26.5251x25.3001x0.3188	5.00	0.00	0.0	26.8975	-21.73	1573.51	0.014
L28	75.5 - 71.83 (28)	TP27.4242x26.5251x0.3125	3.67	0.00	0.0	27.2812	-22.36	1595.95	0.014
L29	71.83 - 71.58 (29)	TP27.4855x27.4242x0.41	0.25	0.00	0.0	34.8861	-22.41	2040.84	0.011
L30	71.58 - 68.83 (30)	TP28.1592x27.4855x0.48	2.75	0.00	0.0	35.7538	-22.91	2091.60	0.011
L31	68.83 - 68.58 (31)	TP28.2204x28.1592x0.4625	0.25	0.00	0.0	41.3385	-22.97	2418.30	0.009

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
L32	68.58 - 64.5 (32)	TP29.22x28.2204x0.4625	4.08	0.00	0.0	41.458 9	-23.03	2425.35	0.009
L33	64.5 - 63.25 (33)	TP29.0263x27.8013x0.51 88	5.00	0.00	0.0	47.618 3	-24.74	2785.67	0.009
L34	63.25 - 58.25 (34)	TP30.2513x29.0263x0.51 25	5.00	0.00	0.0	49.076 4	-25.90	2870.97	0.009
L35	58.25 - 53.25 (35)	TP31.4763x30.2513x0.5	5.00	0.00	0.0	49.871 8	-27.09	2917.50	0.009
L36	53.25 - 48.25 (36)	TP32.7013x31.4763x0.48 75	5.00	0.00	0.0	50.567 5	-28.30	2958.20	0.010
L37	48.25 - 42.5 (37)	TP34.11x32.7013x0.4875	5.75	0.00	0.0	51.144 4	-28.67	2991.95	0.010
L38	42.5 - 41.83 (38)	TP33.648x32.4438x0.518 8	4.92	0.00	0.0	55.343 5	-30.81	3237.60	0.010
L39	41.83 - 41.58 (39)	TP33.7092x33.648x0.343 8	0.25	0.00	0.0	36.936 7	-30.86	2160.80	0.014
L40	41.58 - 41.17 (40)	TP33.8095x33.7092x0.34 38	0.41	0.00	0.0	37.047 8	-30.94	2167.30	0.014
L41	41.17 - 40.92 (41)	TP33.8707x33.8095x0.51 88	0.25	0.00	0.0	55.715 6	-31.01	3259.36	0.010
L42	40.92 - 35.92 (42)	TP35.0945x33.8707x0.50 63	5.00	0.00	0.0	56.388 7	-32.35	3298.74	0.010
L43	35.92 - 30.92 (43)	TP36.3184x35.0945x0.50 63	5.00	0.00	0.0	58.383 9	-33.72	3415.46	0.010
L44	30.92 - 25.92 (44)	TP37.5422x36.3184x0.49 38	5.00	0.00	0.0	58.908 3	-35.13	3446.13	0.010
L45	25.92 - 20.25 (45)	TP38.93x37.5422x0.4938 0	5.67	0.00	0.0	59.169 0	-35.32	3461.39	0.010
L46	20.25 - 19.25 (46)	TP38.4898x37.0186x0.52 5	6.00	0.00	0.0	64.179 5	-38.29	3465.69	0.011
L47	19.25 - 14.15 (47)	TP39.7404x38.4898x0.51 88	5.10	0.00	0.0	65.514 8	-39.85	3537.80	0.011
L48	14.15 - 13.92 (48)	TP39.7968x39.7404x0.51 88	0.23	0.00	0.0	65.609 0	-39.93	3542.89	0.011
L49	13.92 - 8.92 (49)	TP41.0228x39.7968x0.51 25	5.00	0.00	0.0	66.447 4	-41.34	3588.16	0.012
L50	8.92 - 3.92 (50)	TP42.2488x41.0228x0.51 25	5.00	0.00	0.0	67.256 7	-41.79	3631.86	0.012
L51	3.92 - 0 (51)	TP43.21x42.2488x0.5063 6	3.92	0.00	0.0	68.045 6	-42.95	3674.46	0.012

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	130 - 125 (1)	TP16x16x0.375	11	288	0.039	0	288	0.000
L2	125 - 120 (2)	TP16x16x0.375	23	288	0.080	0	288	0.000
L3	120 - 114.9 (3)	TP17.2491x16x0.5125	48	679	0.071	0	679	0.000
L4	114.9 - 114.67 (4)	TP17.3054x17.2491x0.51 25	49	684	0.072	0	684	0.000
L5	114.67 - 109.67 (5)	TP18.5299x17.3054x0.48 13	78	744	0.105	0	744	0.000
L6	109.67 - 109.42 (6)	TP18.5912x18.5299x0.48 13	80	749	0.107	0	749	0.000
L7	109.42 - 109.17 (7)	TP18.6524x18.5912x0.42 5	82	672	0.122	0	672	0.000
L8	109.17 - 104.17 (8)	TP19.877x18.6524x0.412 5	124	746	0.167	0	746	0.000
L9	104.17 - 103.92 (9)	TP19.9382x19.877x0.406 3	127	740	0.171	0	740	0.000
L10	103.92 - 103.67 (10)	TP19.9994x19.9382x0.45	129	819	0.157	0	819	0.000
L11	103.67 -	TP21.224x19.9994x0.437	191	902	0.211	0	902	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 $\frac{M_{uy}}{\phi M_{ny}}$
L12	98.67 (11) 98.67 - 96.42 (12)	5 TP21.775x21.224x0.425	218	926	0.236	0	926	0.000
L13	96.42 - 96.17 (13)	5 TP21.8363x21.775x0.387	221	853	0.259	0	853	0.000
L14	96.17 - 91.5 (14)	5 TP22.98x21.8363x0.3813	242	873	0.277	0	873	0.000
L15	91.5 - 89.5 (15)	75 TP23.0952x21.8703x0.43	305	1074	0.284	0	1074	0.000
L16	89.5 - 88.92 (16)	75 TP23.2373x23.0952x0.43	312	1088	0.287	0	1088	0.000
L17	88.92 - 88.67 (17)	5 TP23.2986x23.2373x0.32	315	824	0.383	0	824	0.000
L18	88.67 - 88.25 (18)	5 TP23.4015x23.2986x0.32	321	832	0.386	0	832	0.000
L19	88.25 - 88 (19)	5 TP23.4627x23.4015x0.4	324	1019	0.318	0	1019	0.000
L20	88 - 87.42 (20)	5 TP23.6048x23.4627x0.4	331	1032	0.321	0	1032	0.000
L21	87.42 - 87.17 (21)	5 TP23.666x23.6048x0.25	335	634	0.528	0	634	0.000
L22	87.17 - 86.92 (22)	5 TP23.7273x23.666x0.25	338	636	0.531	0	636	0.000
L23	86.92 - 86.67 (23)	13 TP23.7885x23.7273x0.43	341	1126	0.303	0	1126	0.000
L24	86.67 - 81.67 (24)	88 TP25.0135x23.7885x0.41	411	1214	0.338	0	1214	0.000
L25	81.67 - 80.75 (25)	88 TP25.2389x25.0135x0.41	424	1236	0.343	0	1236	0.000
L26	80.75 - 80.5 (26)	88 TP25.3001x25.2389x0.31	427	957	0.447	0	957	0.000
L27	80.5 - 75.5 (27)	88 TP26.5251x25.3001x0.31	501	1053	0.476	0	1053	0.000
L28	75.5 - 71.83 (28)	25 TP27.4242x26.5251x0.31	557	1088	0.512	0	1088	0.000
L29	71.83 - 71.58 (29)	5 TP27.4855x27.4242x0.4	560	1409	0.398	0	1409	0.000
L30	71.58 - 68.83 (30)	5 TP28.1592x27.4855x0.4	603	1481	0.407	0	1481	0.000
L31	68.83 - 68.58 (31)	25 TP28.2204x28.1592x0.46	607	1708	0.355	0	1708	0.000
L32	68.58 - 64.5 (32)	25 TP29.22x28.2204x0.4625	612	1718	0.356	0	1718	0.000
L33	64.5 - 63.25 (33)	88 TP29.0263x27.8013x0.51	692	2018	0.343	0	2018	0.000
L34	63.25 - 58.25 (34)	25 TP30.2513x29.0263x0.51	774	2172	0.357	0	2172	0.000
L35	58.25 - 53.25 (35)	5 TP31.4763x30.2513x0.5	859	2301	0.374	0	2301	0.000
L36	53.25 - 48.25 (36)	75 TP32.7013x31.4763x0.48	947	2429	0.390	0	2429	0.000
L37	48.25 - 42.5 (37)	75 TP34.11x32.7013x0.4875	974	2485	0.392	0	2485	0.000
L38	42.5 - 41.83 (38)	8 TP33.648x32.4438x0.518	1064	2732	0.389	0	2732	0.000
L39	41.83 - 41.58 (39)	8 TP33.7092x33.648x0.343	1068	1748	0.611	0	1748	0.000
L40	41.58 - 41.17 (40)	38 TP33.8095x33.7092x0.34	1076	1756	0.613	0	1756	0.000
L41	41.17 - 40.92 (41)	88 TP33.8707x33.8095x0.51	1080	2769	0.390	0	2769	0.000
L42	40.92 - 35.92 (42)	63 TP35.0945x33.8707x0.50	1174	2909	0.404	0	2909	0.000
L43	35.92 - 30.92 (43)	63 TP36.3184x35.0945x0.50	1270	3121	0.407	0	3121	0.000
L44	30.92 - 25.92 (44)	38 TP37.5422x36.3184x0.49	1367	3260	0.419	0	3260	0.000
L45	25.92 - 20.25 (45)	38 TP38.93x37.5422x0.4938	1381	3289	0.420	0	3289	0.000

Section No.	Elevation ft	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy}	ϕM_{ny}	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{nx}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{ny}}$
L46	20.25 - 19.25 (46)	TP38.4898x37.0186x0.52 5	1500	3358	0.447	0	3358	0.000
L47	19.25 - 14.15 (47)	TP39.7404x38.4898x0.51 88	1604	3543	0.453	0	3543	0.000
L48	14.15 - 13.92 (48)	TP39.7968x39.7404x0.51 88	1609	3553	0.453	0	3553	0.000
L49	13.92 - 8.92 (49)	TP41.0228x39.7968x0.51 25	1692	3691	0.458	0	3691	0.000
L50	8.92 - 3.92 (50)	TP42.2488x41.0228x0.51 25	1734	3782	0.458	0	3782	0.000
L51	3.92 - 0 (51)	TP43.21x42.2488x0.5063	1818	3921	0.464	0	3921	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual	ϕV_n	Ratio	Actual	ϕT_n	Ratio
			V_u K	K	$\frac{V_u}{\phi V_n}$	T_u kip-ft	kip-ft	$\frac{T_u}{\phi T_n}$
L1	130 - 125 (1)	TP16x16x0.375	2.30	208.74	0.011	0	287	0.001
L2	125 - 120 (2)	TP16x16x0.375	2.47	208.74	0.012	0	287	0.001
L3	120 - 114.9 (3)	TP17.2491x16x0.5125	5.27	484.72	0.011	0	714	0.000
L4	114.9 - 114.67 (4)	TP17.3054x17.2491x0.51 25	5.29	486.35	0.011	0	718	0.000
L5	114.67 - 109.67 (5)	TP18.5299x17.3054x0.48 13	8.23	490.85	0.017	0	779	0.000
L6	109.67 - 109.42 (6)	TP18.5912x18.5299x0.48 13	8.25	492.52	0.017	0	785	0.000
L7	109.42 - 109.17 (7)	TP18.6524x18.5912x0.42 5	8.28	437.77	0.019	0	702	0.000
L8	109.17 - 104.17 (8)	TP19.877x18.6524x0.412 5	8.73	453.73	0.019	0	777	0.000
L9	104.17 - 103.92 (9)	TP19.9382x19.877x0.406 3	8.75	448.41	0.020	0	770	0.000
L10	103.92 - 103.67 (10)	TP19.9994x19.9382x0.45	8.78	497.14	0.018	0	855	0.000
L11	103.67 - 98.67 (11)	TP21.224x19.9994x0.437 5	12.17	513.92	0.024	0	940	0.000
L12	98.67 - 96.42 (12)	TP21.775x21.224x0.425	12.31	512.77	0.024	0	963	0.000
L13	96.42 - 96.17 (13)	TP21.8363x21.775x0.387 5	12.33	469.69	0.026	0	886	0.000
L14	96.17 - 91.5 (14)	TP22.98x21.8363x0.3813	12.43	471.06	0.026	0	906	0.000
L15	91.5 - 89.5 (15)	TP23.0952x21.8703x0.43 75	12.78	560.18	0.023	0	1116	0.000
L16	89.5 - 88.92 (16)	TP23.2373x23.0952x0.43 75	12.81	563.69	0.023	0	1131	0.000
L17	88.92 - 88.67 (17)	TP23.2986x23.2373x0.32 5	12.82	421.93	0.030	0	853	0.000
L18	88.67 - 88.25 (18)	TP23.4015x23.2986x0.32 5	12.85	423.82	0.030	0	860	0.000
L19	88.25 - 88 (19)	TP23.4627x23.4015x0.4	12.86	521.32	0.025	0	1058	0.000
L20	88 - 87.42 (20)	TP23.6048x23.4627x0.4	12.90	524.53	0.025	0	1071	0.000
L21	87.42 - 87.17 (21)	TP23.666x23.6048x0.25	12.91	330.82	0.039	0	681	0.000
L22	87.17 - 86.92 (22)	TP23.7273x23.666x0.25	12.92	331.68	0.039	0	685	0.000
L23	86.92 - 86.67 (23)	TP23.7885x23.7273x0.43 13	12.94	569.23	0.023	0	1170	0.000
L24	86.67 - 81.67 (24)	TP25.0135x23.7885x0.41 88	14.35	582.01	0.025	6	1259	0.005
L25	81.67 - 80.75 (25)	TP25.2389x25.0135x0.41 88	14.44	587.34	0.025	6	1282	0.004

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 $\frac{T_u}{\phi T_n}$
L26	80.75 - 80.5 (26)	TP25.3001x25.2389x0.31 88	14.46	449.99	0.032	6	989	0.006
L27	80.5 - 75.5 (27)	TP26.5251x25.3001x0.31 88	14.98	472.05	0.032	6	1088	0.005
L28	75.5 - 71.83 (28)	TP27.4242x26.5251x0.31 25	15.32	478.78	0.032	6	1142	0.005
L29	71.83 - 71.58 (29)	TP27.4855x27.4242x0.4	15.33	612.25	0.025	6	1459	0.004
L30	71.58 - 68.83 (30)	TP28.1592x27.4855x0.4	15.62	627.48	0.025	6	1532	0.004
L31	68.83 - 68.58 (31)	TP28.2204x28.1592x0.46 25	15.64	725.49	0.022	6	1771	0.003
L32	68.58 - 64.5 (32)	TP29.22x28.2204x0.4625	15.67	727.60	0.022	6	1782	0.003
L33	64.5 - 63.25 (33)	TP29.0263x27.8013x0.51 88	16.26	835.70	0.019	6	2096	0.003
L34	63.25 - 58.25 (34)	TP30.2513x29.0263x0.51 25	16.77	861.29	0.019	5	2253	0.002
L35	58.25 - 53.25 (35)	TP31.4763x30.2513x0.5	17.29	875.25	0.020	5	2385	0.002
L36	53.25 - 48.25 (36)	TP32.7013x31.4763x0.48 75	17.80	887.46	0.020	5	2515	0.002
L37	48.25 - 42.5 (37)	TP34.11x32.7013x0.4875	17.95	897.59	0.020	5	2572	0.002
L38	42.5 - 41.83 (38)	TP33.648x32.4438x0.518 8	18.51	971.28	0.019	5	2830	0.002
L39	41.83 - 41.58 (39)	TP33.7092x33.648x0.343 8	18.53	648.24	0.029	5	1903	0.003
L40	41.58 - 41.17 (40)	TP33.8095x33.7092x0.34 38	18.56	650.19	0.029	5	1914	0.003
L41	41.17 - 40.92 (41)	TP33.8707x33.8095x0.51 88	18.58	977.81	0.019	5	2869	0.002
L42	40.92 - 35.92 (42)	TP35.0945x33.8707x0.50 63	18.96	989.62	0.019	5	3011	0.002
L43	35.92 - 30.92 (43)	TP36.3184x35.0945x0.50 63	19.33	1024.64	0.019	5	3228	0.002
L44	30.92 - 25.92 (44)	TP37.5422x36.3184x0.49 38	19.68	1033.84	0.019	5	3369	0.002
L45	25.92 - 20.25 (45)	TP38.93x37.5422x0.4938	19.72	1038.42	0.019	5	3399	0.002
L46	20.25 - 19.25 (46)	TP38.4898x37.0186x0.52 5	20.22	1039.71	0.019	5	3472	0.001
L47	19.25 - 14.15 (47)	TP39.7404x38.4898x0.51 88	20.58	1061.34	0.019	5	3662	0.001
L48	14.15 - 13.92 (48)	TP39.7968x39.7404x0.51 88	20.59	1062.87	0.019	5	3672	0.001
L49	13.92 - 8.92 (49)	TP41.0228x39.7968x0.51 25	20.95	1083.00	0.019	5	3813	0.001
L50	8.92 - 3.92 (50)	TP42.2488x41.0228x0.51 25	21.06	1096.11	0.019	5	3906	0.001
L51	3.92 - 0 (51)	TP43.21x42.2488x0.5063	21.31	1110.80	0.019	5	4048	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	130 - 125 (1)	0.004	0.039	0.000	0.011	0.001	0.043	1.050	4.8.2
L2	125 - 120 (2)	0.005	0.080	0.000	0.012	0.001	0.085	1.050	4.8.2
L3	120 - 114.9 (3)	0.005	0.071	0.000	0.011	0.000	0.076	1.050	4.8.2
L4	114.9 - 114.67 (4)	0.005	0.072	0.000	0.011	0.000	0.077	1.050	4.8.2
L5	114.67 -	0.007	0.105	0.000	0.017	0.000	0.112	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			
L6	109.67 (5) 109.67 - 109.42 (6)	0.007	0.107	0.000	0.017	0.000	0.114	1.050	4.8.2
L7	109.42 - 109.17 (7)	0.008	0.122	0.000	0.019	0.000	0.130	1.050	4.8.2
L8	109.17 - 104.17 (8)	0.008	0.167	0.000	0.019	0.000	0.175	1.050	4.8.2
L9	104.17 - 103.92 (9)	0.008	0.171	0.000	0.020	0.000	0.180	1.050	4.8.2
L10	103.92 - 103.67 (10)	0.007	0.157	0.000	0.018	0.000	0.165	1.050	4.8.2
L11	103.67 - 98.67 (11)	0.010	0.211	0.000	0.024	0.000	0.222	1.050	4.8.2
L12	98.67 - 96.42 (12)	0.011	0.236	0.000	0.024	0.000	0.247	1.050	4.8.2
L13	96.42 - 96.17 (13)	0.012	0.259	0.000	0.026	0.000	0.271	1.050	4.8.2
L14	96.17 - 91.5 (14)	0.012	0.277	0.000	0.026	0.000	0.289	1.050	4.8.2
L15	91.5 - 89.5 (15)	0.010	0.284	0.000	0.023	0.000	0.295	1.050	4.8.2
L16	89.5 - 88.92 (16)	0.010	0.287	0.000	0.023	0.000	0.298	1.050	4.8.2
L17	88.92 - 88.67 (17)	0.014	0.383	0.000	0.030	0.000	0.397	1.050	4.8.2
L18	88.67 - 88.25 (18)	0.014	0.386	0.000	0.030	0.000	0.400	1.050	4.8.2
L19	88.25 - 88 (19)	0.011	0.318	0.000	0.025	0.000	0.330	1.050	4.8.2
L20	88 - 87.42 (20)	0.011	0.321	0.000	0.025	0.000	0.333	1.050	4.8.2
L21	87.42 - 87.17 (21)	0.018	0.528	0.000	0.039	0.000	0.548	1.050	4.8.2
L22	87.17 - 86.92 (22)	0.018	0.531	0.000	0.039	0.000	0.550	1.050	4.8.2
L23	86.92 - 86.67 (23)	0.010	0.303	0.000	0.023	0.000	0.314	1.050	4.8.2
L24	86.67 - 81.67 (24)	0.011	0.338	0.000	0.025	0.005	0.350	1.050	4.8.2
L25	81.67 - 80.75 (25)	0.011	0.343	0.000	0.025	0.004	0.354	1.050	4.8.2
L26	80.75 - 80.5 (26)	0.014	0.447	0.000	0.032	0.006	0.462	1.050	4.8.2
L27	80.5 - 75.5 (27)	0.014	0.476	0.000	0.032	0.005	0.491	1.050	4.8.2
L28	75.5 - 71.83 (28)	0.014	0.512	0.000	0.032	0.005	0.527	1.050	4.8.2
L29	71.83 - 71.58 (29)	0.011	0.398	0.000	0.025	0.004	0.409	1.050	4.8.2
L30	71.58 - 68.83 (30)	0.011	0.407	0.000	0.025	0.004	0.419	1.050	4.8.2
L31	68.83 - 68.58 (31)	0.009	0.355	0.000	0.022	0.003	0.365	1.050	4.8.2
L32	68.58 - 64.5 (32)	0.009	0.356	0.000	0.022	0.003	0.366	1.050	4.8.2
L33	64.5 - 63.25 (33)	0.009	0.343	0.000	0.019	0.003	0.352	1.050	4.8.2
L34	63.25 - 58.25 (34)	0.009	0.357	0.000	0.019	0.002	0.366	1.050	4.8.2
L35	58.25 - 53.25 (35)	0.009	0.374	0.000	0.020	0.002	0.383	1.050	4.8.2
L36	53.25 - 48.25 (36)	0.010	0.390	0.000	0.020	0.002	0.400	1.050	4.8.2
L37	48.25 - 42.5 (37)	0.010	0.392	0.000	0.020	0.002	0.402	1.050	4.8.2
L38	42.5 - 41.83 (38)	0.010	0.389	0.000	0.019	0.002	0.399	1.050	4.8.2
L39	41.83 - 41.58 (39)	0.014	0.611	0.000	0.029	0.003	0.627	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			
L40	41.58 - 41.17 (40)	0.014	0.613	0.000	0.029	0.003	0.628	1.050	4.8.2
L41	41.17 - 40.92 (41)	0.010	0.390	0.000	0.019	0.002	0.400	1.050	4.8.2
L42	40.92 - 35.92 (42)	0.010	0.404	0.000	0.019	0.002	0.414	1.050	4.8.2
L43	35.92 - 30.92 (43)	0.010	0.407	0.000	0.019	0.002	0.417	1.050	4.8.2
L44	30.92 - 25.92 (44)	0.010	0.419	0.000	0.019	0.002	0.430	1.050	4.8.2
L45	25.92 - 20.25 (45)	0.010	0.420	0.000	0.019	0.002	0.430	1.050	4.8.2
L46	20.25 - 19.25 (46)	0.011	0.447	0.000	0.019	0.001	0.458	1.050	4.8.2
L47	19.25 - 14.15 (47)	0.011	0.453	0.000	0.019	0.001	0.464	1.050	4.8.2
L48	14.15 - 13.92 (48)	0.011	0.453	0.000	0.019	0.001	0.465	1.050	4.8.2
L49	13.92 - 8.92 (49)	0.012	0.458	0.000	0.019	0.001	0.470	1.050	4.8.2
L50	8.92 - 3.92 (50)	0.012	0.458	0.000	0.019	0.001	0.470	1.050	4.8.2
L51	3.92 - 0 (51)	0.012	0.464	0.000	0.019	0.001	0.476	1.050	4.8.2

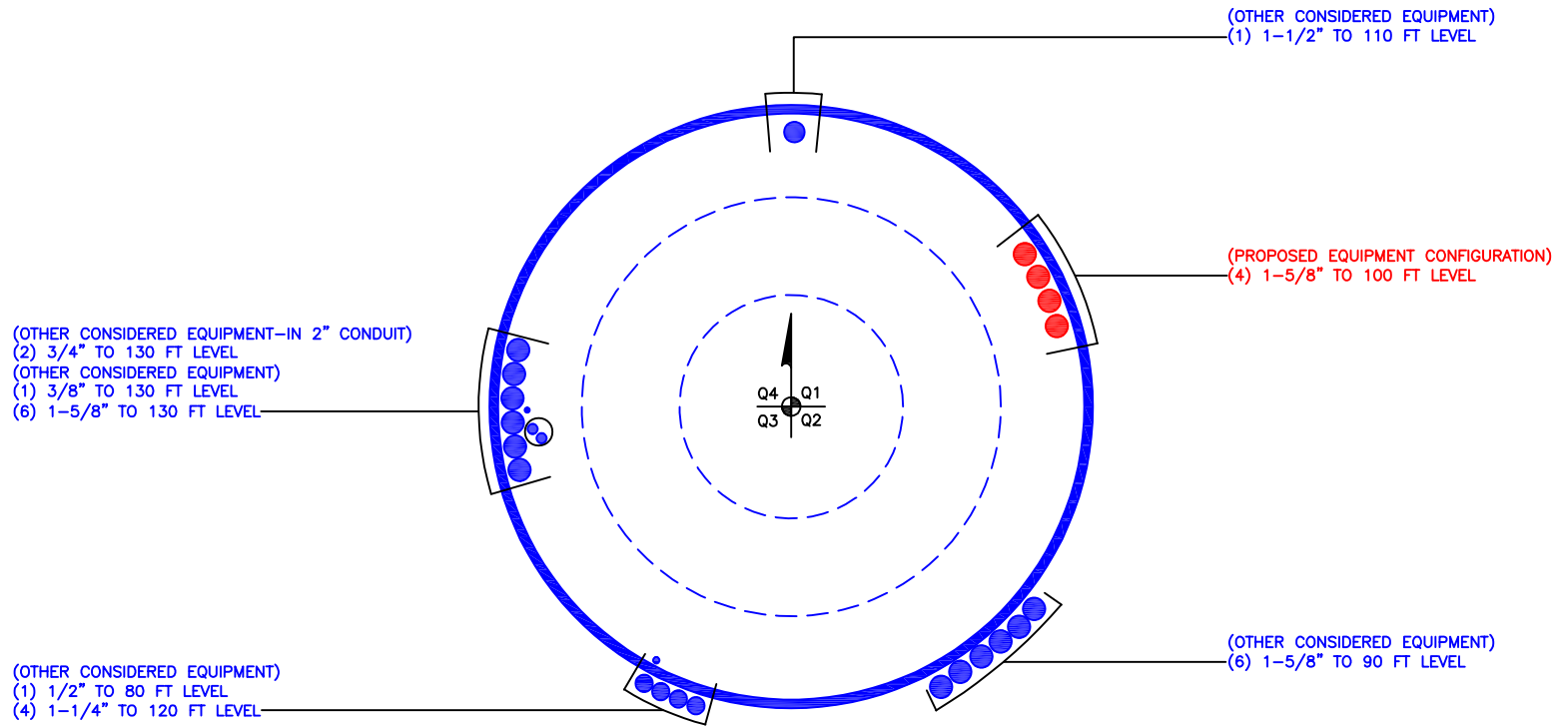
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	130 - 125	Pole	TP16x16x0.375	1	-2.84	730.60	4.1	Pass
L2	125 - 120	Pole	TP16x16x0.375	2	-3.27	730.60	8.1	Pass
L3	120 - 114.9	Pole	TP17.2491x16x0.5125	3	-7.68	1696.53	7.2	Pass
L4	114.9 - 114.67	Pole	TP17.3054x17.2491x0.5125	4	-7.70	1702.24	7.4	Pass
L5	114.67 - 109.67	Pole	TP18.5299x17.3054x0.4813	5	-11.35	1717.98	10.6	Pass
L6	109.67 - 109.42	Pole	TP18.5912x18.5299x0.4813	6	-11.38	1723.81	10.8	Pass
L7	109.42 - 109.17	Pole	TP18.6524x18.5912x0.425	7	-11.41	1532.20	12.4	Pass
L8	109.17 - 104.17	Pole	TP19.877x18.6524x0.4125	8	-11.97	1588.06	16.7	Pass
L9	104.17 - 103.92	Pole	TP19.9382x19.877x0.4063	9	-12.00	1569.42	17.1	Pass
L10	103.92 - 103.67	Pole	TP19.9994x19.9382x0.45	10	-12.03	1740.00	15.7	Pass
L11	103.67 - 98.67	Pole	TP21.224x19.9994x0.4375	11	-17.74	1798.70	21.1	Pass
L12	98.67 - 96.42	Pole	TP21.775x21.224x0.425	12	-18.07	1794.68	23.5	Pass
L13	96.42 - 96.17	Pole	TP21.8363x21.775x0.3875	13	-18.11	1643.90	25.8	Pass
L14	96.17 - 91.5	Pole	TP22.98x21.8363x0.3813	14	-18.34	1648.70	27.6	Pass
L15	91.5 - 89.5	Pole	TP23.0952x21.8703x0.4375	15	-19.43	1960.63	28.1	Pass
L16	89.5 - 88.92	Pole	TP23.2373x23.0952x0.4375	16	-19.53	1972.93	28.4	Pass
L17	88.92 - 88.67	Pole	TP23.2986x23.2373x0.325	17	-19.57	1476.77	37.8	Pass
L18	88.67 - 88.25	Pole	TP23.4015x23.2986x0.325	18	-19.63	1483.39	38.1	Pass
L19	88.25 - 88	Pole	TP23.4627x23.4015x0.4	19	-19.68	1824.62	31.4	Pass
L20	88 - 87.42	Pole	TP23.6048x23.4627x0.4	20	-19.77	1835.86	31.7	Pass
L21	87.42 - 87.17	Pole	TP23.666x23.6048x0.25	21	-19.81	1157.86	52.2	Pass
L22	87.17 - 86.92	Pole	TP23.7273x23.666x0.25	22	-19.84	1160.88	52.4	Pass
L23	86.92 - 86.67	Pole	TP23.7885x23.7273x0.4313	23	-19.88	1992.29	29.9	Pass
L24	86.67 - 81.67	Pole	TP25.0135x23.7885x0.4188	24	-20.62	2037.03	33.3	Pass
L25	81.67 - 80.75	Pole	TP25.2389x25.0135x0.4188	25	-20.78	2055.70	33.7	Pass
L26	80.75 - 80.5	Pole	TP25.3001x25.2389x0.3188	26	-20.82	1574.96	44.0	Pass
L27	80.5 - 75.5	Pole	TP26.5251x25.3001x0.3188	27	-21.73	1652.19	46.7	Pass
L28	75.5 - 71.83	Pole	TP27.4242x26.5251x0.3125	28	-22.36	1675.75	50.2	Pass
L29	71.83 - 71.58	Pole	TP27.4855x27.4242x0.4	29	-22.41	2142.88	39.0	Pass
L30	71.58 - 68.83	Pole	TP28.1592x27.4855x0.4	30	-22.91	2196.18	39.9	Pass
L31	68.83 - 68.58	Pole	TP28.2204x28.1592x0.4625	31	-22.97	2539.21	34.8	Pass
L32	68.58 - 64.5	Pole	TP29.22x28.2204x0.4625	32	-23.03	2546.62	34.9	Pass
L33	64.5 - 63.25	Pole	TP29.0263x27.8013x0.5188	33	-24.74	2924.95	33.5	Pass
L34	63.25 - 58.25	Pole	TP30.2513x29.0263x0.5125	34	-25.90	3014.52	34.9	Pass
L35	58.25 - 53.25	Pole	TP31.4763x30.2513x0.5	35	-27.09	3063.37	36.5	Pass
L36	53.25 - 48.25	Pole	TP32.7013x31.4763x0.4875	36	-28.30	3106.11	38.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail	
L37	48.25 - 42.5	Pole	TP34.11x32.7013x0.4875	37	-28.67	3141.55	38.3	Pass	
L38	42.5 - 41.83	Pole	TP33.648x32.4438x0.5188	38	-30.81	3399.48	38.0	Pass	
L39	41.83 - 41.58	Pole	TP33.7092x33.648x0.3438	39	-30.86	2268.84	59.7	Pass	
L40	41.58 - 41.17	Pole	TP33.8095x33.7092x0.3438	40	-30.94	2275.66	59.8	Pass	
L41	41.17 - 40.92	Pole	TP33.8707x33.8095x0.5188	41	-31.01	3422.33	38.1	Pass	
L42	40.92 - 35.92	Pole	TP35.0945x33.8707x0.5063	42	-32.35	3463.68	39.4	Pass	
L43	35.92 - 30.92	Pole	TP36.3184x35.0945x0.5063	43	-33.72	3586.23	39.7	Pass	
L44	30.92 - 25.92	Pole	TP37.5422x36.3184x0.4938	44	-35.13	3618.44	41.0	Pass	
L45	25.92 - 20.25	Pole	TP38.93x37.5422x0.4938	45	-35.32	3634.46	41.0	Pass	
L46	20.25 - 19.25	Pole	TP38.4898x37.0186x0.525	46	-38.29	3638.97	43.6	Pass	
L47	19.25 - 14.15	Pole	TP39.7404x38.4898x0.5188	47	-39.85	3714.69	44.2	Pass	
L48	14.15 - 13.92	Pole	TP39.7968x39.7404x0.5188	48	-39.93	3720.03	44.2	Pass	
L49	13.92 - 8.92	Pole	TP41.0228x39.7968x0.5125	49	-41.34	3767.57	44.8	Pass	
L50	8.92 - 3.92	Pole	TP42.2488x41.0228x0.5125	50	-41.79	3813.45	44.8	Pass	
L51	3.92 - 0	Pole	TP43.21x42.2488x0.5063	51	-42.95	3858.18	45.3	Pass	
							Summary		
							Pole (L40)	59.8	Pass
							RATING =	59.8	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

Site BU: 876314
Work Order: 2034367



Copyright © 2019 Crown Castle

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	130	10	0	0	16	16	0.375		A500-42
2	120	28.5	3	12	16.00	22.98	0.1875	Auto	A607-65
3	94.5	30	3.75	12	21.87	29.22	0.25	Auto	A607-65
4	68.25	25.75	4.25	12	27.80	34.11	0.3125	Auto	A607-65
5	46.75	26.5	5	12	32.44	38.93	0.3438	Auto	A607-65
6	25.25	25.25	0	12	37.02	43.21	0.375	Auto	A607-60

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	14.17	channel	MP3-04 (1.25in)	4			E			E			E			E
2	14.17	41.17	channel	MP3-04 (1.25in)	4	E			E			E			E		
3	41.83	68.83	channel	MP3-04 (1.25in)	4			E			E			E			E
4	68.83	86.92	channel	MP3-03 (1.25in)	3	E			E						E		
5	68.83	71.83	channel	MP3-03 (1.25in)	1							E					
6	80.75	88.25	channel	MP3-03 (1.25in)	1							E					
7	87.42	114.92	channel	MP3-03 (1.25in)	3			E						E			E
8	88.92	96.42	channel	MP3-03 (1.25in)	1						E						
9	96.42	103.92	channel	MP3-03 (1.25in)	2					E		E					
10	103.92	109.42	channel	MP3-03 (1.25in)	1						E						
11	109.42	114.92	channel	MP3-03 (1.25in)	2					E		E					
12																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.566	1.2500	A572-65
2	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.566	1.2500	A572-65
3	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.566	1.2500	A572-65
4	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	A572-65
5	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	A572-65
6	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	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	2.526	1.2500	A572-65
8	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	A572-65
9	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	A572-65
10	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	A572-65
11	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.526	1.2500	A572-65

TNX Geometry Input

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

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	130 - 125	5		0	16.000	16.000	0.375	A500-42	1.000
2	125 - 120	5	0	0	16.000	16.000	0.375	A500-42	1.000
3	120 - 114.9	5.1		12	16.000	17.249	0.5125	A607-65	0.902
4	114.9 - 114.67	0.23		12	17.249	17.305	0.5125	A607-65	0.901
5	114.67 - 109.67	5		12	17.305	18.530	0.48125	A607-65	0.919
6	109.67 - 109.42	0.25		12	18.530	18.591	0.48125	A607-65	0.917
7	109.42 - 109.17	0.25		12	18.591	18.652	0.425	A607-65	0.916
8	109.17 - 104.17	5		12	18.652	19.877	0.4125	A607-65	0.912
9	104.17 - 103.92	0.25		12	19.877	19.938	0.40625	A607-65	0.925
10	103.92 - 103.67	0.25		12	19.938	19.999	0.45	A607-65	0.938
11	103.67 - 98.67	5		12	19.999	21.224	0.4375	A607-65	0.933
12	98.67 - 96.42	2.25		12	21.224	21.775	0.425	A607-65	0.947
13	96.42 - 96.17	0.25		12	21.775	21.836	0.3875	A607-65	0.925
14	96.17 - 94.5	4.67	3	12	21.836	22.980	0.38125	A607-65	0.932
15	94.5 - 89.5	5		12	21.870	23.095	0.4375	A607-65	0.943
16	89.5 - 88.92	0.58		12	23.095	23.237	0.4375	A607-65	0.940
17	88.92 - 88.67	0.25		12	23.237	23.299	0.325	A607-65	1.137
18	88.67 - 88.25	0.42		12	23.299	23.401	0.325	A607-65	1.135
19	88.25 - 88	0.25		12	23.401	23.463	0.4	A607-65	1.023
20	88 - 87.42	0.58		12	23.463	23.605	0.4	A607-65	1.020
21	87.42 - 87.17	0.25		12	23.605	23.666	0.25	A607-65	1.000
22	87.17 - 86.92	0.25		12	23.666	23.727	0.25	A607-65	1.000
23	86.92 - 86.67	0.25		12	23.727	23.789	0.43125	A607-65	0.945
24	86.67 - 81.67	5		12	23.789	25.014	0.41875	A607-65	0.954
25	81.67 - 80.75	0.92		12	25.014	25.239	0.41875	A607-65	0.951
26	80.75 - 80.5	0.25		12	25.239	25.300	0.31875	A607-65	1.129
27	80.5 - 75.5	5		12	25.300	26.525	0.31875	A607-65	1.113
28	75.5 - 71.83	3.67		12	26.525	27.424	0.3125	A607-65	1.123
29	71.83 - 71.58	0.25		12	27.424	27.485	0.4	A607-65	0.964
30	71.58 - 68.83	2.75		12	27.485	28.159	0.4	A607-65	0.956
31	68.83 - 68.58	0.25		12	28.159	28.220	0.4625	A607-65	0.945
32	68.58 - 68.25	4.08	3.75	12	28.220	29.220	0.4625	A607-65	0.944
33	68.25 - 63.25	5		12	27.801	29.026	0.51875	A607-65	0.954
34	63.25 - 58.25	5		12	29.026	30.251	0.5125	A607-65	0.951
35	58.25 - 53.25	5		12	30.251	31.476	0.5	A607-65	0.961
36	53.25 - 48.25	5		12	31.476	32.701	0.4875	A607-65	0.972
37	48.25 - 46.75	5.75	4.25	12	32.701	34.110	0.4875	A607-65	0.968
38	46.75 - 41.83	4.92		12	32.444	33.648	0.5188	A607-65	0.965
39	41.83 - 41.58	0.25		12	33.648	33.709	0.3438	A607-65	1.000
40	41.58 - 41.17	0.41		12	33.709	33.810	0.3438	A607-65	1.000
41	41.17 - 40.92	0.25		12	33.810	33.871	0.5188	A607-65	0.963
42	40.92 - 35.92	5		12	33.871	35.095	0.5063	A607-65	0.976
43	35.92 - 30.92	5		12	35.095	36.318	0.5063	A607-65	0.965
44	30.92 - 25.92	5		12	36.318	37.542	0.4938	A607-65	0.980
45	25.92 - 25.25	5.67	5	12	37.542	38.930	0.4938	A607-65	0.979
46	25.25 - 19.25	6		12	37.019	38.490	0.525	A607-60	0.975
47	19.25 - 14.15	5.1		12	38.490	39.740	0.51875	A607-60	0.978
48	14.15 - 13.92	0.23		12	39.740	39.797	0.51875	A607-60	0.978
49	13.92 - 8.92	5		12	39.797	41.023	0.5125	A607-60	0.982
50	8.92 - 3.92	5		12	41.023	42.249	0.5125	A607-60	0.974
51	3.92 - 0	3.92		12	42.249	43.210	0.50625	A607-60	0.981

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	130 - 125		2.85	11.16	2.30
2	125 - 120		3.29	23.08	2.47
3	120 - 114.9		7.71	48.26	5.27
4	114.9 - 114.67		7.74	49.48	5.29
5	114.67 - 109.67		11.37	77.88	8.23
6	109.67 - 109.42		11.40	79.94	8.26
7	109.42 - 109.17		11.43	82.01	8.28
8	109.17 - 104.17		11.99	124.52	8.73
9	104.17 - 103.92		12.02	126.70	8.76
10	103.92 - 103.67		12.05	128.89	8.78
11	103.67 - 98.67		17.79	190.57	12.17
12	98.67 - 96.42		18.12	218.09	12.32
13	96.42 - 96.17		18.16	221.17	12.33
14	96.17 - 94.5		18.39	241.82	12.44
15	94.5 - 89.5		19.48	304.81	12.78
16	89.5 - 88.92		19.58	312.23	12.81
17	88.92 - 88.67		19.62	315.43	12.83
18	88.67 - 88.25		19.68	320.81	12.85
19	88.25 - 88		19.72	324.02	12.86
20	88 - 87.42		19.82	331.48	12.90
21	87.42 - 87.17		19.85	334.71	12.91
22	87.17 - 86.92		19.88	337.93	12.93
23	86.92 - 86.67		19.93	341.16	12.94
24	86.67 - 81.67		20.67	410.74	14.35
25	81.67 - 80.75		20.83	423.97	14.45
26	80.75 - 80.5		20.87	427.58	14.46
27	80.5 - 75.5		21.77	501.26	14.99
28	75.5 - 71.83		22.40	556.80	15.32
29	71.83 - 71.58		22.46	560.63	15.34
30	71.58 - 68.83		22.95	603.15	15.62
31	68.83 - 68.58		23.01	607.06	15.64
32	68.58 - 68.25		23.08	612.22	15.67
33	68.25 - 63.25		24.79	692.03	16.26
34	63.25 - 58.25		25.95	774.54	16.78
35	58.25 - 53.25		27.13	859.64	17.29
36	53.25 - 48.25		28.35	947.30	17.80
37	48.25 - 46.75		28.72	974.10	17.95
38	46.75 - 41.83		30.85	1063.76	18.51
39	41.83 - 41.58		30.91	1068.38	18.53
40	41.58 - 41.17		30.99	1075.98	18.57
41	41.17 - 40.92		31.06	1080.63	18.59
42	40.92 - 35.92		32.40	1174.45	18.96
43	35.92 - 30.92		33.77	1270.11	19.33
44	30.92 - 25.92		35.17	1367.55	19.68
45	25.92 - 25.25		35.37	1380.74	19.72
46	25.25 - 19.25		38.33	1500.54	20.22
47	19.25 - 14.15		39.90	1604.52	20.58
48	14.15 - 13.92		39.97	1609.25	20.59
49	13.92 - 8.92		41.54	1713.04	20.95
50	8.92 - 3.92		42.98	1818.41	21.23
51	3.92 - 0		44.11	1902.00	21.45

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
130 - 125	Pole	TP16x16x0.375	Pole	4.1%	Pass
125 - 120	Pole	TP16x16x0.375	Pole	8.1%	Pass
120 - 114.9	Pole + Reinf.	TP17.249x16x0.5125	Reinf. 7 Tension Rupture	11.8%	Pass
114.9 - 114.67	Pole + Reinf.	TP17.305x17.249x0.5125	Reinf. 7 Tension Rupture	12.1%	Pass
114.67 - 109.67	Pole + Reinf.	TP18.53x17.305x0.4813	Reinf. 7 Tension Rupture	17.2%	Pass
109.67 - 109.42	Pole + Reinf.	TP18.591x18.53x0.4813	Reinf. 7 Tension Rupture	17.6%	Pass
109.42 - 109.17	Pole + Reinf.	TP18.652x18.591x0.425	Reinf. 7 Tension Rupture	18.6%	Pass
109.17 - 104.17	Pole + Reinf.	TP19.877x18.652x0.4125	Reinf. 7 Tension Rupture	25.4%	Pass
104.17 - 103.92	Pole + Reinf.	TP19.938x19.877x0.4063	Reinf. 7 Tension Rupture	25.7%	Pass
103.92 - 103.67	Pole + Reinf.	TP19.999x19.938x0.45	Reinf. 7 Tension Rupture	25.1%	Pass
103.67 - 98.67	Pole + Reinf.	TP21.224x19.999x0.4375	Reinf. 7 Tension Rupture	34.1%	Pass
98.67 - 96.42	Pole + Reinf.	TP21.775x21.224x0.425	Reinf. 7 Tension Rupture	37.5%	Pass
96.42 - 96.17	Pole + Reinf.	TP21.836x21.775x0.3875	Reinf. 7 Tension Rupture	39.1%	Pass
96.17 - 94.5	Pole + Reinf.	TP22.98x21.836x0.3813	Reinf. 7 Tension Rupture	41.5%	Pass
94.5 - 89.5	Pole + Reinf.	TP23.095x21.87x0.4375	Reinf. 7 Tension Rupture	42.1%	Pass
89.5 - 88.92	Pole + Reinf.	TP23.237x23.095x0.4375	Reinf. 7 Tension Rupture	42.7%	Pass
88.92 - 88.67	Pole + Reinf.	TP23.299x23.237x0.325	Reinf. 7 Tension Rupture	49.5%	Pass
88.67 - 88.25	Pole + Reinf.	TP23.401x23.299x0.325	Reinf. 7 Tension Rupture	50.0%	Pass
88.25 - 88	Pole + Reinf.	TP23.463x23.401x0.4	Reinf. 7 Tension Rupture	45.7%	Pass
88 - 87.42	Pole + Reinf.	TP23.605x23.463x0.4	Reinf. 7 Tension Rupture	46.2%	Pass
87.42 - 87.17	Pole	TP23.666x23.605x0.25	Pole	52.0%	Pass
87.17 - 86.92	Pole	TP23.727x23.666x0.25	Pole	52.3%	Pass
86.92 - 86.67	Pole + Reinf.	TP23.789x23.727x0.4313	Reinf. 4 Tension Rupture	44.9%	Pass
86.67 - 81.67	Pole + Reinf.	TP25.014x23.789x0.4188	Reinf. 4 Tension Rupture	49.7%	Pass
81.67 - 80.75	Pole + Reinf.	TP25.239x25.014x0.4188	Reinf. 4 Tension Rupture	50.5%	Pass
80.75 - 80.5	Pole + Reinf.	TP25.3x25.239x0.3188	Reinf. 4 Tension Rupture	57.9%	Pass
80.5 - 75.5	Pole + Reinf.	TP26.525x25.3x0.3188	Reinf. 4 Tension Rupture	62.4%	Pass
75.5 - 71.83	Pole + Reinf.	TP27.424x26.525x0.3125	Reinf. 4 Tension Rupture	65.3%	Pass
71.83 - 71.58	Pole + Reinf.	TP27.485x27.424x0.4	Reinf. 4 Tension Rupture	57.9%	Pass
71.58 - 68.83	Pole + Reinf.	TP28.159x27.485x0.4	Reinf. 4 Tension Rupture	59.8%	Pass
68.83 - 68.58	Pole + Reinf.	TP28.22x28.159x0.4625	Reinf. 3 Tension Rupture	51.8%	Pass
68.58 - 68.25	Pole + Reinf.	TP29.22x28.22x0.4625	Reinf. 3 Tension Rupture	52.0%	Pass
68.25 - 63.25	Pole + Reinf.	TP29.026x27.801x0.5188	Reinf. 3 Tension Rupture	49.6%	Pass
63.25 - 58.25	Pole + Reinf.	TP30.251x29.026x0.5125	Reinf. 3 Tension Rupture	51.9%	Pass
58.25 - 53.25	Pole + Reinf.	TP31.476x30.251x0.5	Reinf. 3 Tension Rupture	53.9%	Pass
53.25 - 48.25	Pole + Reinf.	TP32.701x31.476x0.4875	Reinf. 3 Tension Rupture	55.7%	Pass
48.25 - 46.75	Pole + Reinf.	TP34.11x32.701x0.4875	Reinf. 3 Tension Rupture	56.2%	Pass
46.75 - 41.83	Pole + Reinf.	TP33.648x32.444x0.5188	Reinf. 3 Tension Rupture	56.1%	Pass
41.83 - 41.58	Pole	TP33.709x33.648x0.3438	Pole	59.5%	Pass
41.58 - 41.17	Pole	TP33.81x33.709x0.3438	Pole	59.6%	Pass
41.17 - 40.92	Pole + Reinf.	TP33.871x33.81x0.5188	Reinf. 2 Tension Rupture	56.3%	Pass
40.92 - 35.92	Pole + Reinf.	TP35.095x33.871x0.5063	Reinf. 2 Tension Rupture	57.6%	Pass
35.92 - 30.92	Pole + Reinf.	TP36.318x35.095x0.5063	Reinf. 2 Tension Rupture	58.7%	Pass
30.92 - 25.92	Pole + Reinf.	TP37.542x36.318x0.4938	Reinf. 2 Tension Rupture	59.7%	Pass
25.92 - 25.25	Pole + Reinf.	TP38.93x37.542x0.4938	Reinf. 2 Tension Rupture	59.8%	Pass
25.25 - 19.25	Pole + Reinf.	TP38.49x37.019x0.525	Reinf. 2 Tension Rupture	59.1%	Pass
19.25 - 14.15	Pole + Reinf.	TP39.74x38.49x0.5188	Reinf. 1 Tension Rupture	59.8%	Pass
14.15 - 13.92	Pole + Reinf.	TP39.797x39.74x0.5188	Reinf. 1 Tension Rupture	59.8%	Pass
13.92 - 8.92	Pole + Reinf.	TP41.023x39.797x0.5125	Reinf. 1 Tension Rupture	60.3%	Pass
8.92 - 3.92	Pole + Reinf.	TP42.249x41.023x0.5125	Reinf. 1 Tension Rupture	60.8%	Pass
3.92 - 0	Pole + Reinf.	TP43.21x42.249x0.5063	Reinf. 1 Tension Rupture	61.1%	Pass
				Summary	
			Pole	59.6%	Pass
			Reinforcement	65.3%	Pass
			Overall	65.3%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*											
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
130 - 125	562	n/a	562	18.41	n/a	18.41	4.1%											
125 - 120	562	n/a	562	18.41	n/a	18.41	8.1%											
120 - 114.9	390	602	992	10.29	14.60	24.89	7.9%							11.8%				10.1%
114.9 - 114.67	394	606	1000	10.32	14.60	24.92	8.1%							12.1%				10.3%
114.67 - 109.67	484	689	1172	11.06	14.60	25.66	11.8%							17.2%				14.8%
109.67 - 109.42	489	693	1182	11.10	14.60	25.70	12.1%							17.6%				15.1%
109.42 - 109.17	486	578	1064	11.13	11.68	22.81	12.7%							18.6%			18.6%	
109.17 - 104.17	589	651	1240	11.87	11.68	23.55	17.8%							25.4%			25.4%	
104.17 - 103.92	595	655	1249	11.91	11.68	23.59	18.0%							25.7%			25.7%	
103.92 - 103.67	609	795	1404	11.94	14.60	26.54	17.7%							25.1%		21.7%		
103.67 - 98.67	728	890	1618	12.68	14.60	27.28	24.7%							34.1%		29.6%		
98.67 - 96.42	787	934	1721	13.01	14.60	27.61	27.4%							37.5%		32.5%		
96.42 - 96.17	783	777	1560	13.05	11.68	24.73	28.6%							39.1%	39.1%			
96.17 - 94.5	828	805	1633	13.30	11.68	24.98	30.6%							41.5%	41.5%			
94.5 - 89.5	1227	864	2091	18.36	11.68	30.04	28.2%							42.1%	42.1%			
89.5 - 88.92	1250	874	2124	18.48	11.68	30.16	28.6%							42.7%	42.7%			
88.92 - 88.67	1292	362	1654	18.53	8.76	27.29	41.0%							49.5%				
88.67 - 88.25	1309	365	1674	18.61	8.76	27.37	41.4%							50.0%				
88.25 - 88	1288	746	2034	18.66	11.68	30.34	32.4%						42.2%	45.7%				
88 - 87.42	1312	755	2066	18.77	11.68	30.45	32.9%						42.7%	46.2%				
87.42 - 87.17	1321	n/a	1321	18.82	n/a	18.82	52.0%											
87.17 - 86.92	1331	n/a	1331	18.87	n/a	18.87	52.3%											
86.92 - 86.67	1342	914	2256	18.92	11.68	30.60	30.3%				44.9%		44.9%					
86.67 - 81.67	1562	1005	2568	19.91	11.68	31.59	34.2%				49.7%		49.7%					
81.67 - 80.75	1605	1023	2628	20.09	11.68	31.77	34.9%				50.5%		50.5%					
80.75 - 80.5	1653	427	2081	20.14	8.76	28.90	48.9%				57.9%							
80.5 - 75.5	1905	470	2375	21.12	8.76	29.88	53.4%				62.4%							
75.5 - 71.83	2105	503	2608	21.84	8.76	30.60	56.4%				65.3%							
71.83 - 71.58	2079	1203	3282	21.89	11.68	33.57	41.4%				57.9%		57.9%					
71.58 - 68.83	2237	1260	3497	22.43	11.68	34.11	43.3%				59.8%		59.8%					
68.83 - 68.58	2251	1799	4050	22.48	16.52	39.00	37.7%				51.8%							
68.58 - 68.25	2271	1809	4080	22.55	16.52	39.07	37.9%				52.0%							
68.25 - 63.25	3045	1898	4943	28.85	16.52	45.37	33.6%				49.6%							
63.25 - 58.25	3451	2054	5505	30.08	16.52	46.60	35.7%				51.9%							
58.25 - 53.25	3893	2216	6109	31.31	16.52	47.83	37.6%				53.9%							
53.25 - 48.25	4370	2385	6755	32.54	16.52	49.06	39.5%				55.7%							
48.25 - 46.75	4520	2437	6957	32.91	16.52	49.43	40.1%				56.2%							
46.75 - 41.83	5227	2519	7746	36.82	16.52	53.34	38.8%				56.1%							
41.83 - 41.58	5256	n/a	5256	36.88	n/a	36.88	59.5%											
41.58 - 41.17	5303	n/a	5303	36.99	n/a	36.99	59.6%											
41.17 - 40.92	5332	2552	7884	37.06	16.52	53.58	39.1%			56.3%								
40.92 - 35.92	5938	2732	8670	38.42	16.52	54.94	40.6%			57.6%								
35.92 - 30.92	6587	2919	9506	39.77	16.52	56.29	41.9%			58.7%								
30.92 - 25.92	7283	3112	10395	41.12	16.52	57.64	43.3%			59.7%								
25.92 - 25.25	7380	3138	10518	41.30	16.52	57.82	43.5%			59.8%								
25.25 - 19.25	8546	3265	11811	45.96	16.52	62.48	44.6%			59.1%								
19.25 - 14.15	9415	3473	12888	47.47	16.52	63.99	45.7%	59.8%										
14.15 - 13.92	9455	3483	12938	47.53	16.52	64.05	45.7%	59.8%										
13.92 - 8.92	10365	3694	14059	49.01	16.52	65.53	46.7%	60.3%										
8.92 - 3.92	11331	3911	15242	50.49	16.52	67.01	47.7%	60.8%										
3.92 - 0	12130	4085	16215	51.65	16.52	68.17	48.4%	61.1%										

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

Monopole Flange Plate Connection

Elevation = 120 ft.

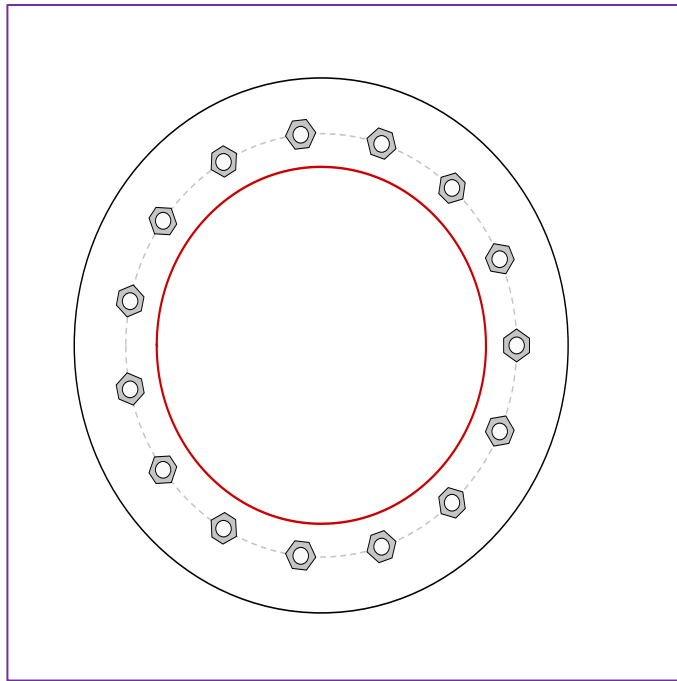


BU #	876314
Site Name	Horse Hill
Order #	587435 Rev.0
TIA-222 Revision	H

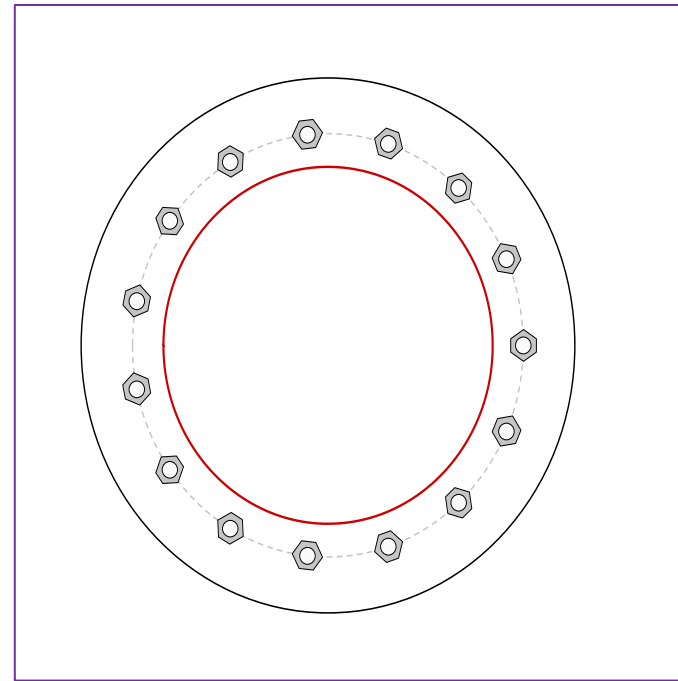
Applied Loads	
Moment (kip-ft)	23.07
Axial Force (kips)	3.27
Shear Force (kips)	2.47

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(15) 3/4" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19" BC

Top Plate Data

24" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

16" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Plate Data

24" OD x 0.75" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

16" x 0.1875" 12-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	3.67
Allowable (kips)	30.06
Stress Rating:	11.6% Pass

Top Plate Capacity

Max Stress (ksi):	1.95	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	5.7%	Pass
Tension Side Stress Rating:	2.3%	Pass

Bottom Plate Capacity

Max Stress (ksi):	7.82	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	23.0%	Pass
Tension Side Stress Rating:	9.1%	Pass

Monopole Base Plate Connection

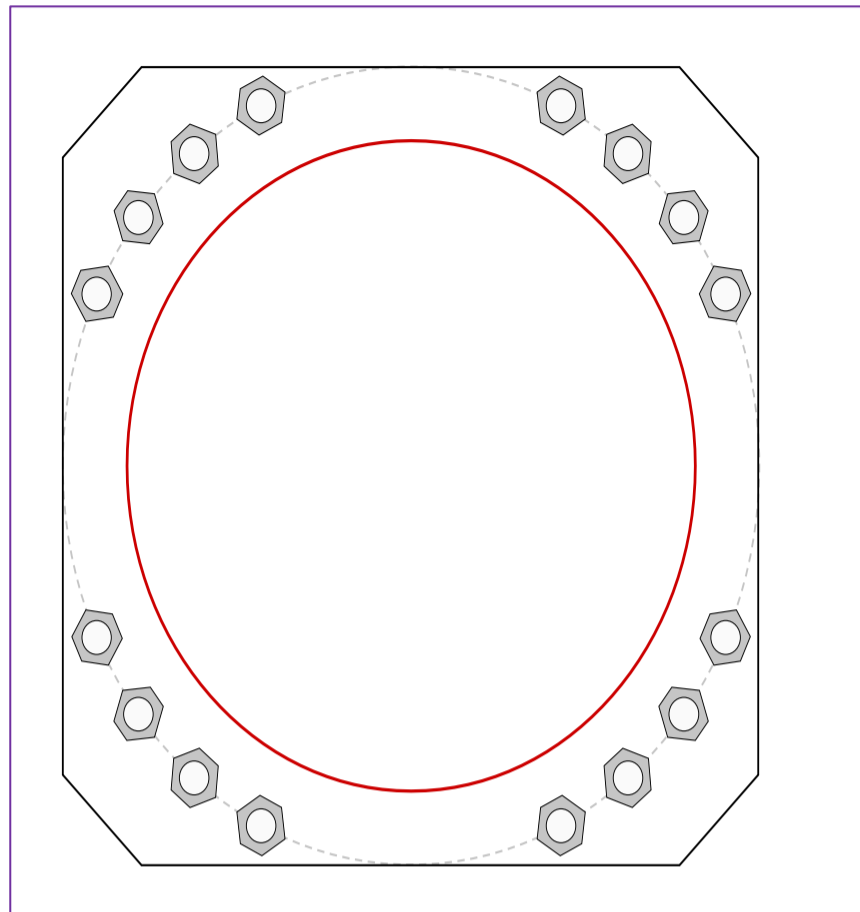


Site Info	
BU #	876314
Site Name	Horse Hill
Order #	587435 Rev.0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.625

Applied Loads	
Moment (kip-ft)	1901.77
Axial Force (kips)	44.06
Shear Force (kips)	21.45

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
(16) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 53" BC <i>Anchor Spacing: 6 in</i>
Base Plate Data
53" W x 3" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi); Clip: 6 in
Stiffener Data
N/A
Pole Data
43.21" x 0.375" 12-sided pole (A607-60; $F_y=60$ ksi, $F_u=75$ ksi)

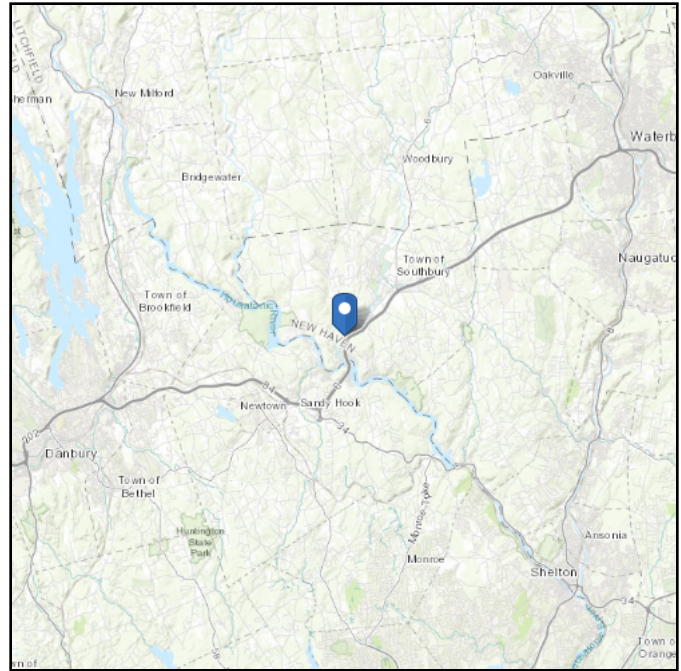
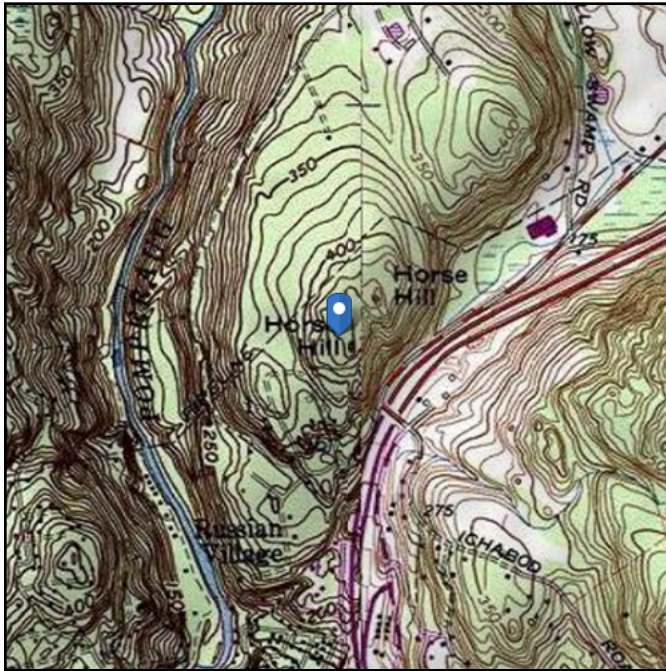
Anchor Rod Summary			<i>(units of kips, kip-in)</i>
$P_{u,t} = 104.81$	$\phi P_{n,t} = 243.75$	Stress Rating	
$V_u = 1.34$	$\phi V_n = 149.1$	41.0%	
$M_u = n/a$	$\phi M_n = n/a$	Pass	
Base Plate Summary			
Max Stress (ksi):	24.35	(Flexural)	
Allowable Stress (ksi):	45		
Stress Rating:	51.5%	Pass	

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 445.14 ft (NAVD 88)
Latitude: 41.452214
Longitude: -73.250347



Wind

Results:

Wind Speed:	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 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 Nov 01 2021

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).

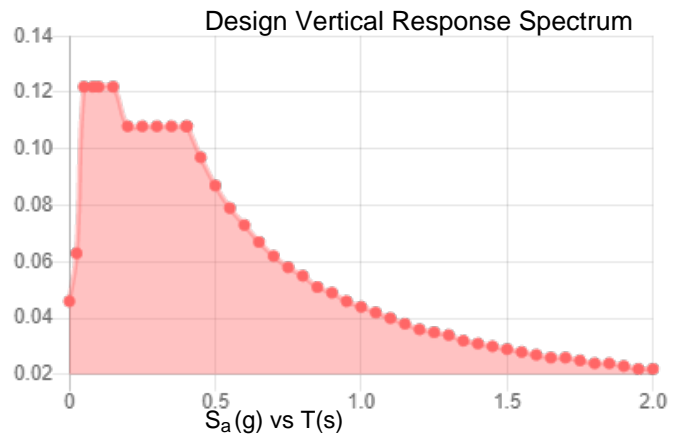
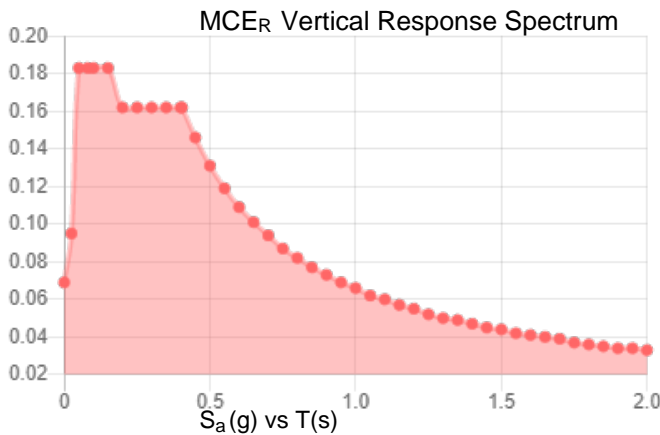
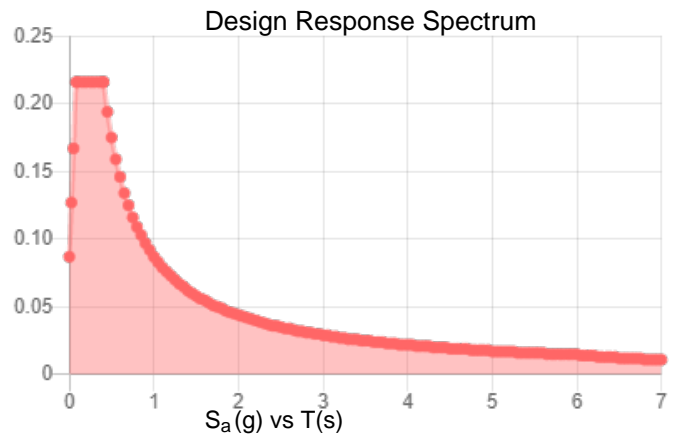
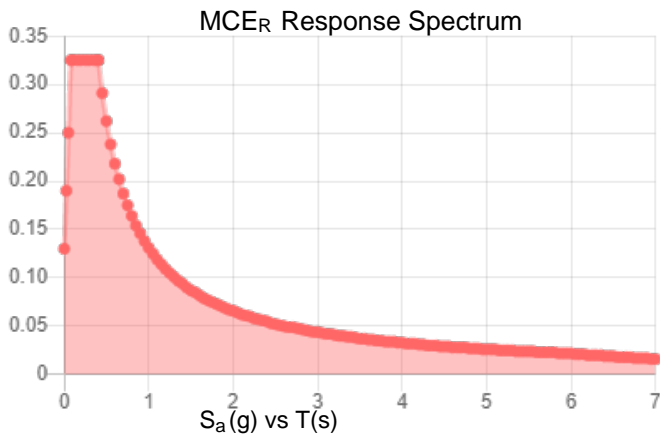
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.203	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.114
F_v :	2.4	PGA _M :	0.179
S_{MS} :	0.325	F_{PGA} :	1.572
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.216	C_v :	0.706

Seismic Design Category B



Data Accessed: Mon Nov 01 2021
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 Nov 01 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 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: **October 26, 2021**

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6589

Subject: **Mount Analysis Report**

Carrier Designation: **T-Mobile Anchor**
Carrier Site Number: CT11124H
Carrier Site Name: Southbury-W/ I-84

Crown Castle Designation: **Crown Castle BU Number:** 876314
Crown Castle Site Name: HORSE HILL
Crown Castle JDE Job Number: 687451
Crown Castle Order Number: 587435 Rev. 0

Engineering Firm Designation: **Infinigy Engineering, PLLC Report Designation: 1039-Z0001-B**

Site Data: **214 Russian Village Road, Southbury, New Haven County, CT, 06488**
Latitude 41°27'7.97", Longitude -73°15'1.25"

Structure Information: **Tower Height & Type:** **130.0 ft Monopole**
Mount Elevation: **100.0 ft**
Mount Type: **14.0 ft Platform**

Dear Darcy Tarr,

Infinigy Engineering, PLLC is pleased to submit this "**Mount Analysis 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:

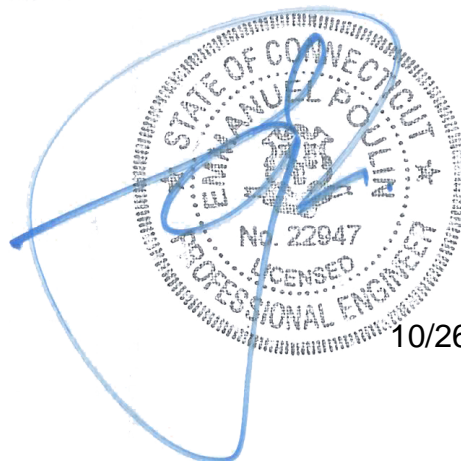
Platform

Sufficient - 55.7%

This analysis utilizes an ultimate 3-second gust wind speed of 116 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: Andrew Gloriani, E.I.T.

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



10/26/21

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

1) INTRODUCTION

This is an existing 3 sector 14.0 ft Platform, designed by Summit Manufacturing and mapped by Pier Structural Engineering Corp.

The mount has been modified per reinforcement drawings prepared by Mastec Network Solutions in May of 2019. Reinforcement consists of installation of a platform reinforcement kit (Sabre Industries Drawing No. C10851202) for all sectors.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	116 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.201
Seismic S₁:	0.065
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
100.0	103.0	3	Ericsson	RADIO 4449 B71/B85A	14.0 ft Platform
		3	Ericsson	RADIO 4460 B2/B25 B66 TMO	
	101.0	3	Commscope	VV-65A-R1 TMO	
		3	Ericsson	AIR6449 B41 T-MOBILE	
		3	RFS/Celwave	APXVAARR24 43-U-NA20	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	587435 Rev. 0	CCI Sites
Loading Document	T-Mobile	RFDS Version: 3	TSA
Tower Manufacturer Drawings	Summit Manufacturing	1529812	CCI Sites
Mount Mapping Documents	Pier Structural Engineering Corp	8341832	CCI Sites
Mount Modification Drawings	Mastec Network Solutions	8446207	CCI Sites

3.1) Analysis Method

RISA-3D (Version 19.0.4), 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.

Infinigy Mount Analysis Tool V2.1.7, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

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

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. Infinigy Engineering, PLLC 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	Mount Pipe(s)	MP5	100.0	27.5	Pass
	Horizontal(s)	MH1		55.7	Pass
	Standoff(s)	MS3		26.2	Pass
	Handrail(s)	MR2		16.3	Pass
	Kicker(s)	MK4		21.1	Pass
	Mount Connection(s)	-		28.8	Pass

Structure Rating (max from all components) =	55.7%
---	--------------

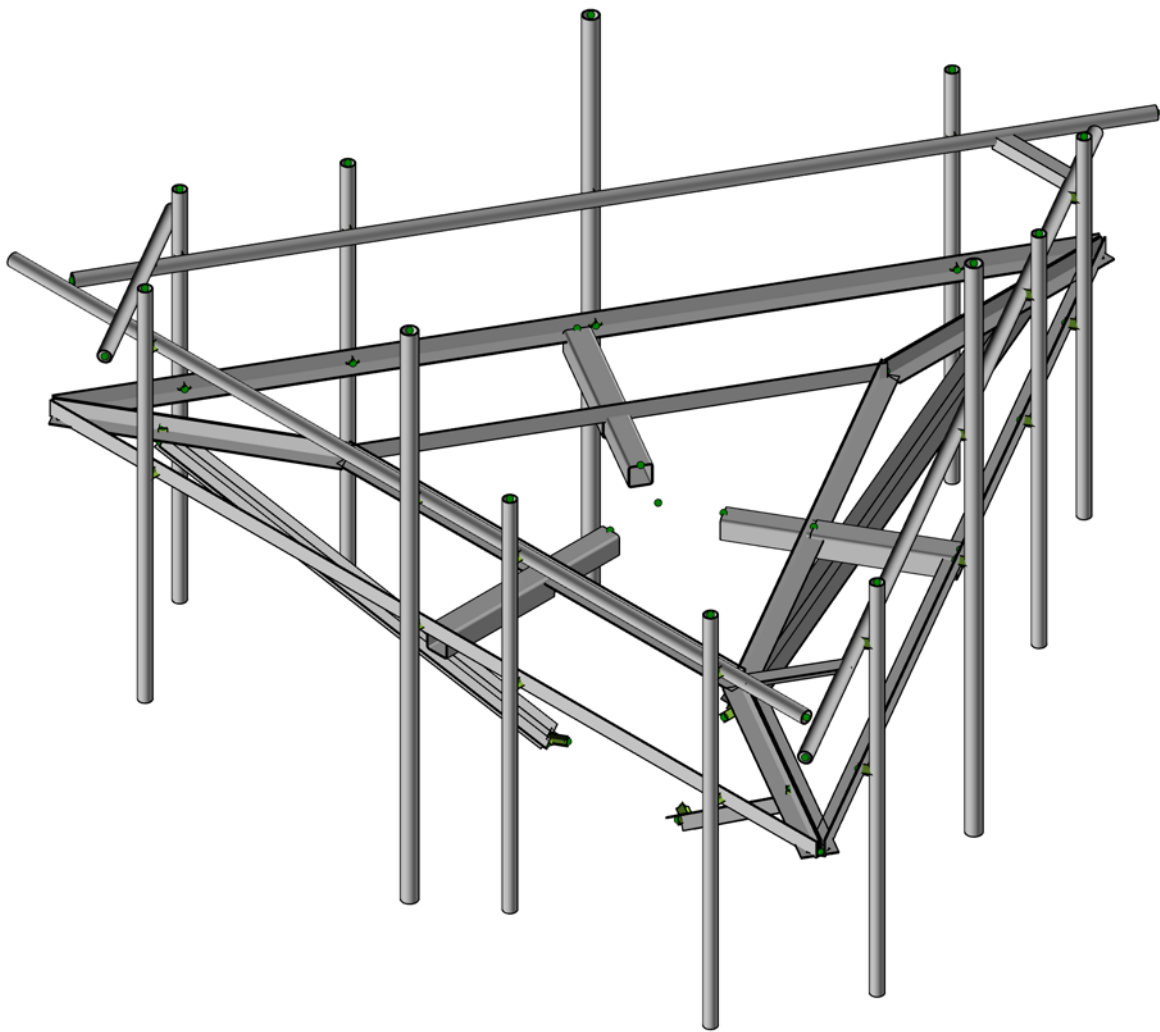
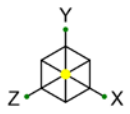
Notes:

- 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.

4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Infinigy Engineering, PLLC

AG

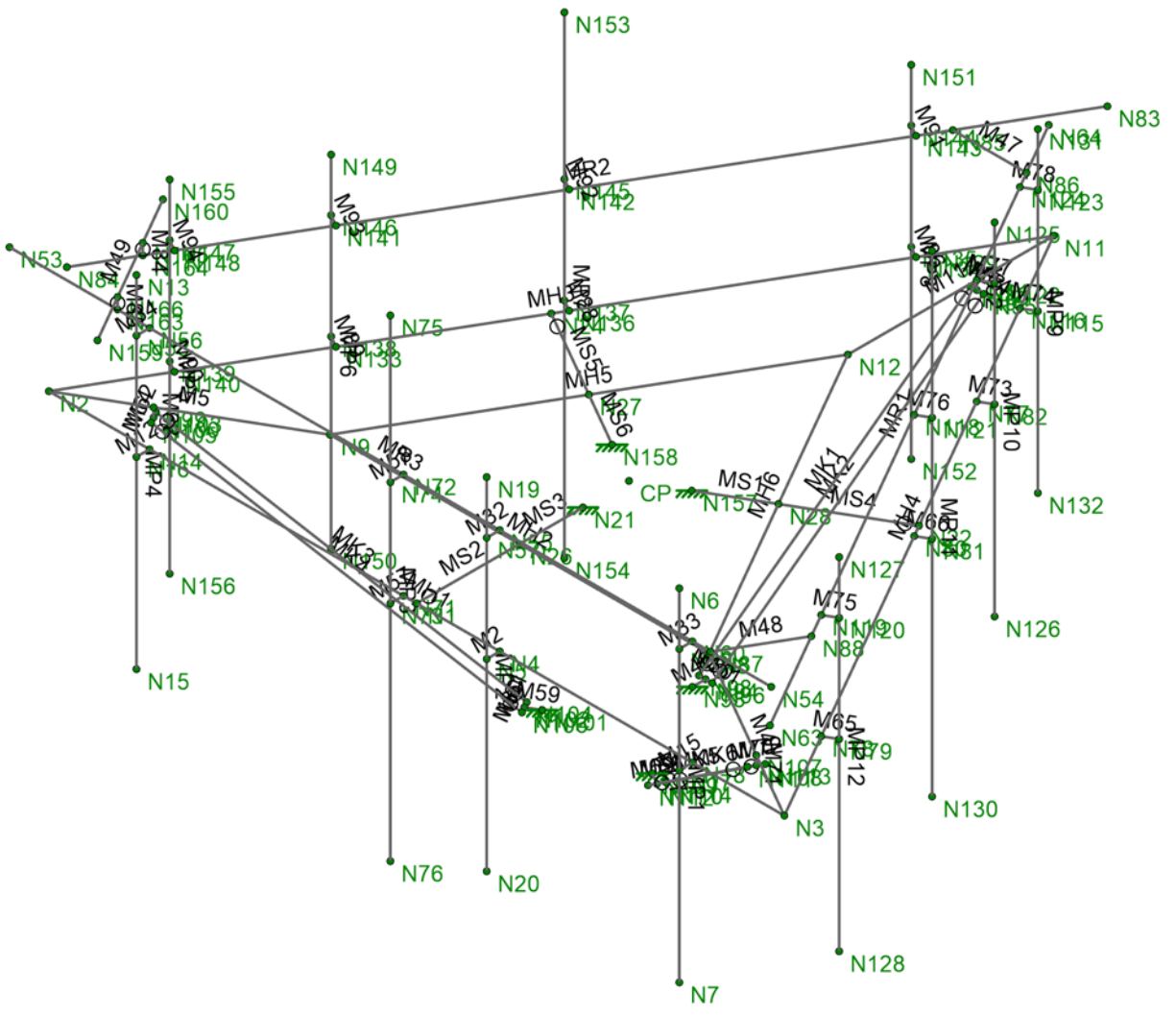
1039-Z0001-B

876314

Render

Oct 26, 2021

876314_loaded.r3d



Infinigy Engineering, PLLC

876314

Wireframe

AG

Oct 26, 2021

1039-Z0001-B

876314_loaded.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION		
Client:	Crown Castle	
Carrier:	T-Mobile	
Engineer:	Andrew Gloriani	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	445.14	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	100.00	ft
Tower Height AGL:	130.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.984	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	116	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.5	in
Flat Pressure:	63.646	psf
Round Pressure:	38.187	psf
Ice Wind Pressure:	7.095	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.201	g
1-Second Accel. (S_1):	0.065	g
Short-Period Design (S_{DS}):	0.214	
1-Second Design (S_{D1}):	0.104	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	



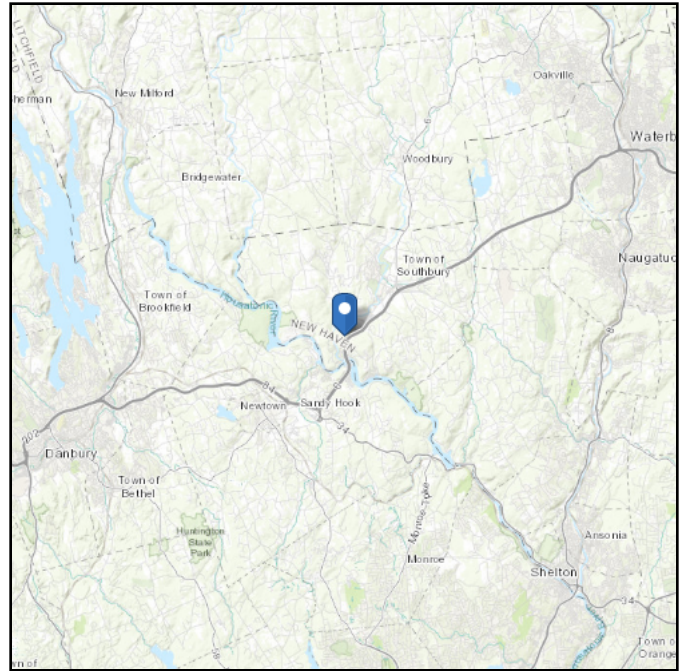
Infinigy Load Calculator V2.1.7

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 445.14 ft (NAVD 88)
Latitude: 41.452214
Longitude: -73.250347



Wind

Results:

Wind Speed:
10-year MRI
25-year MRI
50-year MRI
100-year MRI

116 Vmph per the State of Connecticut allowing ASCE 7-16 wind speed values

76 Vmph
85 Vmph
91 Vmph
97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

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

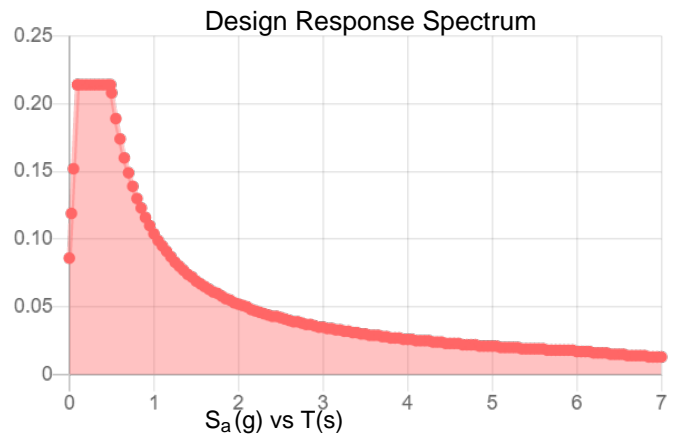
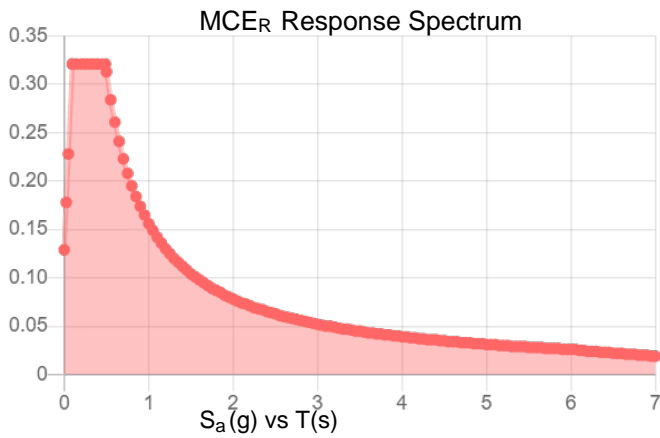
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.201	S_{DS} :	0.214
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.107
S_{MS} :	0.321	PGA _M :	0.169
S_{M1} :	0.156	F _{PGA} :	1.587
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Oct 26 2021

Date Source:

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

Ice

Results:

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

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

Date Accessed: Tue Oct 26 2021

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

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

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.

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	Node J	Node K	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	MH1	N2	N3	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N4	N5		RIGID	None	None	RIGID	Typical
3	MP1	N6	N7		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
4	M4	N8	N3	180	Corner Horizontals	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
5	M5	N9	N2	180	Corner Horizontals	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
6	MH2	N8	N9	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
7	MH4	N3	N11	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
8	MH3	N11	N2	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
9	MH5	N9	N12	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
10	MH6	N12	N8	270	Horizontals	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N12	N11	180	Corner Horizontals	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
12	M12	N14	N16		RIGID	None	None	RIGID	Typical
13	MP4	N13	N15		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
14	MS2	N26	N1	90	Standoff 1	Beam	Tube	A500 Gr.B Rect	Typical
15	M15	N18	N17		RIGID	None	None	RIGID	Typical
16	MP2	N19	N20		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
17	MR3	N53	N54	270	Handrail	Beam	Pipe	A53 Gr.B	Typical
18	M32	N55	N57		RIGID	None	None	RIGID	Typical
19	M33	N60	N59		RIGID	None	None	RIGID	Typical
20	M34	N56	N58		RIGID	None	None	RIGID	Typical
21	MR1	N63	N64	270	Handrail	Beam	Pipe	A53 Gr.B	Typical
22	MR2	N83	N84	270	Handrail	Beam	Pipe	A53 Gr.B	Typical
23	M47	N86	N85	90	Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
24	M48	N87	N88	90	Handrail Angle	Beam	Single Angle	A36 Gr.36	Typical
25	M49	N160	N159	90	Handrail Pipe	Beam	Pipe	A53 Gr.B	Typical
26	M46	N93	N94		RIGID	None	None	RIGID	Typical
27	M50	N94	N98		RIGID	None	None	RIGID	Typical
28	M51	N96	N94		RIGID	None	None	RIGID	Typical
29	M52	N91	N92		RIGID	None	None	RIGID	Typical
30	M53	N92	N97		RIGID	None	None	RIGID	Typical
31	M54	N95	N92		RIGID	None	None	RIGID	Typical
32	MK2	N95	N96	180	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
33	MK1	N97	N98	90	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
34	M59	N101	N102		RIGID	None	None	RIGID	Typical
35	M60	N102	N106		RIGID	None	None	RIGID	Typical
36	M61	N104	N102		RIGID	None	None	RIGID	Typical
37	M67	N109	N110		RIGID	None	None	RIGID	Typical
38	M68	N110	N114		RIGID	None	None	RIGID	Typical
39	M69	N112	N110		RIGID	None	None	RIGID	Typical
40	M62	N103	N100		RIGID	None	None	RIGID	Typical
41	M63	N99	N100		RIGID	None	None	RIGID	Typical
42	M64	N100	N105		RIGID	None	None	RIGID	Typical
43	MK3	N103	N104	180	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
44	MK4	N105	N106	90	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
45	M70	N111	N108		RIGID	None	None	RIGID	Typical
46	M71	N107	N108		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
47	M72	N108	N113		RIGID	None	None	RIGID	Typical
48	MK5	N111	N112	180	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
49	MK6	N113	N114	90	Angle Kickers	VBrace	Single Angle	A36 Gr.36	Typical
50	M57	N71	N73		RIGID	None	None	RIGID	Typical
51	M58	N72	N74		RIGID	None	None	RIGID	Typical
52	MP3	N75	N76		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
53	MS3	N21	N26		Standoff 2	Beam	Tube	A500 Gr.B Rect	Typical
54	MS4	N28	N22	90	Standoff 1	Beam	Tube	A500 Gr.B Rect	Typical
55	MS1	N157	N28		Standoff 2	Beam	Tube	A500 Gr.B Rect	Typical
56	MS5	N27	N24	90	Standoff 1	Beam	Tube	A500 Gr.B Rect	Typical
57	MS6	N158	N27		Standoff 2	Beam	Tube	A500 Gr.B Rect	Typical
58	M65	N78	N79		RIGID	None	None	RIGID	Typical
59	M66	N80	N81		RIGID	None	None	RIGID	Typical
60	M73	N77	N82		RIGID	None	None	RIGID	Typical
61	M74	N116	N115		RIGID	None	None	RIGID	Typical
62	M75	N119	N120		RIGID	None	None	RIGID	Typical
63	M76	N118	N121		RIGID	None	None	RIGID	Typical
64	M77	N117	N122		RIGID	None	None	RIGID	Typical
65	M78	N124	N123		RIGID	None	None	RIGID	Typical
66	MP10	N125	N126		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
67	MP12	N127	N128		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
68	MP11	N129	N130		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
69	MP9	N131	N132		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
70	M86	N134	N135		RIGID	None	None	RIGID	Typical
71	M88	N136	N137		RIGID	None	None	RIGID	Typical
72	M89	N133	N138		RIGID	None	None	RIGID	Typical
73	M90	N140	N139		RIGID	None	None	RIGID	Typical
74	M91	N143	N144		RIGID	None	None	RIGID	Typical
75	M92	N142	N145		RIGID	None	None	RIGID	Typical
76	M93	N141	N146		RIGID	None	None	RIGID	Typical
77	M94	N148	N147		RIGID	None	None	RIGID	Typical
78	MP6	N149	N150		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
79	MP8	N151	N152		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
80	MP7	N153	N154		Mount Pipe 2.5	Column	Pipe	A53 Gr.B	Typical
81	MP5	N155	N156		Mount Pipe 2.0	Column	Pipe	A53 Gr.B	Typical
82	M84	N165	N164		RIGID	None	None	RIGID	Typical
83	M85	N166	N163		RIGID	None	None	RIGID	Typical

Material Take-Off

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General Members				
2	RIGID		44	110	0
3	Total General		44	110	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2.5x2.5x3	8	496.9	126.956

Material Take-Off (Continued)

	Material	Size	Pieces	Length[in]	Weight[LB]
7	A36 Gr.36	L3X3X4	6	763.8	311.877
8	A36 Gr.36	LL3x3x4x0	3	141	115.15
9	A500 Gr.B Rect	HSS4X4X4	3	43.5	44.708
10	A500 Gr.B Rect	HSS4.5X4.5X4	3	70.5	82.563
11	A53 Gr.B	PIPE_2.0	13	1258.9	364.107
12	A53 Gr.B	PIPE_2.5	3	324	147.919
13	Total HR Steel		39	3098.5	1193.28

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			30		3
2	Wind Load AZI 0	WLZ					60		
3	Wind Load AZI 30	None					60		
4	Wind Load AZI 60	None					60		
5	Wind Load AZI 90	WLX					60		
6	Wind Load AZI 120	None					60		
7	Wind Load AZI 150	None					60		
8	Wind Load AZI 180	None					60		
9	Wind Load AZI 210	None					60		
10	Wind Load AZI 240	None					60		
11	Wind Load AZI 270	None					60		
12	Wind Load AZI 300	None					60		
13	Wind Load AZI 330	None					60		
14	Distr. Wind Load Z	WLZ						83	
15	Distr. Wind Load X	WLX						83	
16	Ice Weight	OL1					30	83	3
17	Ice Wind Load AZI 0	OL2					60		
18	Ice Wind Load AZI 30	None					60		
19	Ice Wind Load AZI 60	None					60		
20	Ice Wind Load AZI 90	OL3					60		
21	Ice Wind Load AZI 120	None					60		
22	Ice Wind Load AZI 150	None					60		
23	Ice Wind Load AZI 180	None					60		
24	Ice Wind Load AZI 210	None					60		
25	Ice Wind Load AZI 240	None					60		
26	Ice Wind Load AZI 270	None					60		
27	Ice Wind Load AZI 300	None					60		
28	Ice Wind Load AZI 330	None					60		
29	Distr. Ice Wind Load Z	OL2						83	
30	Distr. Ice Wind Load X	OL3						83	
31	Seismic Load Z	ELZ			-0.322		30		
32	Seismic Load X	ELX	-0.322				30		
33	Service Live Loads	LL				1			
34	Maintenance Load 1	LL				1			
35	Maintenance Load 2	LL				1			
36	Maintenance Load 3	LL				1			



Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed Area(Member)		
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	Maintenance Load 10	LL				1				
44	Maintenance Load 11	LL				1				
45	Maintenance Load 12	LL				1				
46	BLC 1 Transient Area Loads	None							30	
47	BLC 16 Transient Area Loads	None							30	

Load Combinations

	Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
1	1.4DL	Yes	Y	1	1.4								
2	1.2DL + 1WL AZI 0	Yes	Y	1	1.2	2	1	14	1	15			
3	1.2DL + 1WL AZI 30	Yes	Y	1	1.2	3	1	14	0.866	15	0.5		
4	1.2DL + 1WL AZI 60	Yes	Y	1	1.2	4	1	14	0.5	15	0.866		
5	1.2DL + 1WL AZI 90	Yes	Y	1	1.2	5	1	14		15	1		
6	1.2DL + 1WL AZI 120	Yes	Y	1	1.2	6	1	14	-0.5	15	0.866		
7	1.2DL + 1WL AZI 150	Yes	Y	1	1.2	7	1	14	-0.866	15	0.5		
8	1.2DL + 1WL AZI 180	Yes	Y	1	1.2	8	1	14	-1	15			
9	1.2DL + 1WL AZI 210	Yes	Y	1	1.2	9	1	14	-0.866	15	-0.5		
10	1.2DL + 1WL AZI 240	Yes	Y	1	1.2	10	1	14	-0.5	15	-0.866		
11	1.2DL + 1WL AZI 270	Yes	Y	1	1.2	11	1	14		15	-1		
12	1.2DL + 1WL AZI 300	Yes	Y	1	1.2	12	1	14	0.5	15	-0.866		
13	1.2DL + 1WL AZI 330	Yes	Y	1	1.2	13	1	14	0.866	15	-0.5		
14	0.9DL + 1WL AZI 0	Yes	Y	1	0.9	2	1	14	1	15			
15	0.9DL + 1WL AZI 30	Yes	Y	1	0.9	3	1	14	0.866	15	0.5		
16	0.9DL + 1WL AZI 60	Yes	Y	1	0.9	4	1	14	0.5	15	0.866		
17	0.9DL + 1WL AZI 90	Yes	Y	1	0.9	5	1	14		15	1		
18	0.9DL + 1WL AZI 120	Yes	Y	1	0.9	6	1	14	-0.5	15	0.866		
19	0.9DL + 1WL AZI 150	Yes	Y	1	0.9	7	1	14	-0.866	15	0.5		
20	0.9DL + 1WL AZI 180	Yes	Y	1	0.9	8	1	14	-1	15			
21	0.9DL + 1WL AZI 210	Yes	Y	1	0.9	9	1	14	-0.866	15	-0.5		
22	0.9DL + 1WL AZI 240	Yes	Y	1	0.9	10	1	14	-0.5	15	-0.866		
23	0.9DL + 1WL AZI 270	Yes	Y	1	0.9	11	1	14		15	-1		
24	0.9DL + 1WL AZI 300	Yes	Y	1	0.9	12	1	14	0.5	15	-0.866		
25	0.9DL + 1WL AZI 330	Yes	Y	1	0.9	13	1	14	0.866	15	-0.5		
26	1.2D + 1.0Di	Yes	Y	1	1.2	16	1						
27	1.2D + 1.0Di + 1.0Wi AZI 0	Yes	Y	1	1.2	16	1	17	1	29	1	30	
28	1.2D + 1.0Di + 1.0Wi AZI 30	Yes	Y	1	1.2	16	1	18	1	29	0.866	30	0.5
29	1.2D + 1.0Di + 1.0Wi AZI 60	Yes	Y	1	1.2	16	1	19	1	29	0.5	30	0.866
30	1.2D + 1.0Di + 1.0Wi AZI 90	Yes	Y	1	1.2	16	1	20	1	29		30	1
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y	1	1.2	16	1	21	1	29	-0.5	30	0.866
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y	1	1.2	16	1	22	1	29	-0.866	30	0.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y	1	1.2	16	1	23	1	29	-1	30	
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y	1	1.2	16	1	24	1	29	-0.866	30	-0.5
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y	1	1.2	16	1	25	1	29	-0.5	30	-0.866
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y	1	1.2	16	1	26	1	29		30	-1
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y	1	1.2	16	1	27	1	29	0.5	30	-0.866
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y	1	1.2	16	1	28	1	29	0.866	30	-0.5
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.243	31	1	32					
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.243	31	0.866	32	0.5				
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.243	31	0.5	32	0.866				
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.243	31		32	1				
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.243	31	-0.5	32	0.866				
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.243	31	-0.866	32	0.5				
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.243	31	-1	32					
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.243	31	-0.866	32	-0.5				
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.243	31	-0.5	32	-0.866				
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.243	31		32	-1				
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.243	31	0.5	32	-0.866				
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.243	31	0.866	32	-0.5				
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.857	31	1	32					
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.857	31	0.866	32	0.5				
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.857	31	0.5	32	0.866				
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.857	31		32	1				
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.857	31	-0.5	32	0.866				
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.857	31	-0.866	32	0.5				
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.857	31	-1	32					
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.857	31	-0.866	32	-0.5				
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.857	31	-0.5	32	-0.866				
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.857	31		32	-1				
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.857	31	0.5	32	-0.866				
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.857	31	0.866	32	-0.5				
63	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 0	Yes	Y	1	1	2	0.268	14	0.268	15		33	1.5
64	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 30	Yes	Y	1	1	3	0.268	14	0.232	15	0.134	33	1.5
65	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 60	Yes	Y	1	1	4	0.268	14	0.134	15	0.232	33	1.5
66	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 90	Yes	Y	1	1	5	0.268	14		15	0.268	33	1.5
67	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 120	Yes	Y	1	1	6	0.268	14	-0.134	15	0.232	33	1.5
68	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 150	Yes	Y	1	1	7	0.268	14	-0.232	15	0.134	33	1.5
69	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 180	Yes	Y	1	1	8	0.268	14	-0.268	15		33	1.5
70	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 210	Yes	Y	1	1	9	0.268	14	-0.232	15	-0.134	33	1.5
71	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 240	Yes	Y	1	1	10	0.268	14	-0.134	15	-0.232	33	1.5
72	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 270	Yes	Y	1	1	11	0.268	14		15	-0.268	33	1.5
73	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 300	Yes	Y	1	1	12	0.268	14	0.134	15	-0.232	33	1.5
74	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 330	Yes	Y	1	1	13	0.268	14	0.232	15	-0.134	33	1.5
75	1.2DL + 1.5LL	Yes	Y	1	1.2	33	1.5						
76	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	34	1.5	2	0.067	14	0.067	15	
77	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.067	14	0.058	15	0.033
78	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.067	14	0.033	15	0.058



Load Combinations (Continued)

	Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
79	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.067	14		15	0.067	
80	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.067	14	-0.033	15	0.058	
81	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.067	14	-0.058	15	0.033	
82	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.067	14	-0.067	15		
83	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.067	14	-0.058	15	-0.033	
84	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.067	14	-0.033	15	-0.058	
85	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.067	14		15	-0.067	
86	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.067	14	0.033	15	-0.058	
87	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.067	14	0.058	15	-0.033	
88	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.067	14	0.067	15		
89	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.067	14	0.058	15	0.033	
90	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.067	14	0.033	15	0.058	
91	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.067	14		15	0.067	
92	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.067	14	-0.033	15	0.058	
93	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.067	14	-0.058	15	0.033	
94	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.067	14	-0.067	15		
95	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.067	14	-0.058	15	-0.033	
96	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.067	14	-0.033	15	-0.058	
97	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.067	14		15	-0.067	
98	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.067	14	0.033	15	-0.058	
99	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.067	14	0.058	15	-0.033	
100	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.067	14	0.067	15		
101	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.067	14	0.058	15	0.033	
102	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.067	14	0.033	15	0.058	
103	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.067	14		15	0.067	
104	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.067	14	-0.033	15	0.058	
105	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.067	14	-0.058	15	0.033	
106	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.067	14	-0.067	15		
107	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.067	14	-0.058	15	-0.033	
108	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.067	14	-0.033	15	-0.058	
109	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.067	14		15	-0.067	
110	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.067	14	0.033	15	-0.058	
111	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.067	14	0.058	15	-0.033	
112	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.067	14	0.067	15		
113	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.067	14	0.058	15	0.033	
114	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.067	14	0.033	15	0.058	
115	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.067	14		15	0.067	
116	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.067	14	-0.033	15	0.058	
117	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.067	14	-0.058	15	0.033	
118	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.067	14	-0.067	15		
119	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.067	14	-0.058	15	-0.033	
120	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.067	14	-0.033	15	-0.058	
121	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.067	14		15	-0.067	
122	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.067	14	0.033	15	-0.058	
123	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.067	14	0.058	15	-0.033	
124	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.067	14	0.067	15		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
125	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.067	14	0.058	15	0.033	
126	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.067	14	0.033	15	0.058	
127	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.067	14		15	0.067	
128	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.067	14	-0.033	15	0.058	
129	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.067	14	-0.058	15	0.033	
130	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.067	14	-0.067	15		
131	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.067	14	-0.058	15	-0.033	
132	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.067	14	-0.033	15	-0.058	
133	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.067	14		15	-0.067	
134	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.067	14	0.033	15	-0.058	
135	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.067	14	0.058	15	-0.033	
136	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.067	14	0.067	15		
137	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.067	14	0.058	15	0.033	
138	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.067	14	0.033	15	0.058	
139	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.067	14		15	0.067	
140	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.067	14	-0.033	15	0.058	
141	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.067	14	-0.058	15	0.033	
142	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.067	14	-0.067	15		
143	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.067	14	-0.058	15	-0.033	
144	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.067	14	-0.033	15	-0.058	
145	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.067	14		15	-0.067	
146	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.067	14	0.033	15	-0.058	
147	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.067	14	0.058	15	-0.033	
148	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.067	14	0.067	15		
149	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.067	14	0.058	15	0.033	
150	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.067	14	0.033	15	0.058	
151	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.067	14		15	0.067	
152	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.067	14	-0.033	15	0.058	
153	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.067	14	-0.058	15	0.033	
154	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.067	14	-0.067	15		
155	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.067	14	-0.058	15	-0.033	
156	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.067	14	-0.033	15	-0.058	
157	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.067	14		15	-0.067	
158	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.067	14	0.033	15	-0.058	
159	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.067	14	0.058	15	-0.033	
160	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.067	14	0.067	15		
161	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.067	14	0.058	15	0.033	
162	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.067	14	0.033	15	0.058	
163	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.067	14		15	0.067	
164	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.067	14	-0.033	15	0.058	
165	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.067	14	-0.058	15	0.033	
166	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.067	14	-0.067	15		
167	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.067	14	-0.058	15	-0.033	
168	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.067	14	-0.033	15	-0.058	
169	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.067	14		15	-0.067	
170	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.067	14	0.033	15	-0.058	



Company : Infinigy Engineering, PLLC
 Designer : AG
 Job Number : 1039-Z0001-B
 Model Name : 876314

10/26/2021
 12:41:13 PM
 Checked By : _____

Load Combinations (Continued)

	Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
171	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.067	14	0.058	15	-0.033
172	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.067	14	0.067	15	
173	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.067	14	0.058	15	0.033
174	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.067	14	0.033	15	0.058
175	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.067	14		15	0.067
176	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.067	14	-0.033	15	0.058
177	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.067	14	-0.058	15	0.033
178	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.067	14	-0.067	15	
179	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.067	14	-0.058	15	-0.033
180	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.067	14	-0.033	15	-0.058
181	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.067	14		15	-0.067
182	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.067	14	0.033	15	-0.058
183	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.067	14	0.058	15	-0.033
184	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	43	1.5	2	0.067	14	0.067	15	
185	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	43	1.5	3	0.067	14	0.058	15	0.033
186	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	43	1.5	4	0.067	14	0.033	15	0.058
187	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	43	1.5	5	0.067	14		15	0.067
188	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	43	1.5	6	0.067	14	-0.033	15	0.058
189	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	43	1.5	7	0.067	14	-0.058	15	0.033
190	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	43	1.5	8	0.067	14	-0.067	15	
191	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	43	1.5	9	0.067	14	-0.058	15	-0.033
192	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	43	1.5	10	0.067	14	-0.033	15	-0.058
193	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	43	1.5	11	0.067	14		15	-0.067
194	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	43	1.5	12	0.067	14	0.033	15	-0.058
195	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	43	1.5	13	0.067	14	0.058	15	-0.033
196	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	44	1.5	2	0.067	14	0.067	15	
197	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	44	1.5	3	0.067	14	0.058	15	0.033
198	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	44	1.5	4	0.067	14	0.033	15	0.058
199	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	44	1.5	5	0.067	14		15	0.067
200	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	44	1.5	6	0.067	14	-0.033	15	0.058
201	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	44	1.5	7	0.067	14	-0.058	15	0.033
202	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	44	1.5	8	0.067	14	-0.067	15	
203	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	44	1.5	9	0.067	14	-0.058	15	-0.033
204	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	44	1.5	10	0.067	14	-0.033	15	-0.058
205	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	44	1.5	11	0.067	14		15	-0.067
206	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	44	1.5	12	0.067	14	0.033	15	-0.058
207	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	44	1.5	13	0.067	14	0.058	15	-0.033
208	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	45	1.5	2	0.067	14	0.067	15	
209	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	45	1.5	3	0.067	14	0.058	15	0.033
210	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	45	1.5	4	0.067	14	0.033	15	0.058
211	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	45	1.5	5	0.067	14		15	0.067
212	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	45	1.5	6	0.067	14	-0.033	15	0.058
213	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	45	1.5	7	0.067	14	-0.058	15	0.033
214	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	45	1.5	8	0.067	14	-0.067	15	
215	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	45	1.5	9	0.067	14	-0.058	15	-0.033
216	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	45	1.5	10	0.067	14	-0.033	15	-0.058

Load Combinations (Continued)

Description		Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor				
217	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	45	1.5	11	0.067	14	15	-0.067	
218	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	45	1.5	12	0.067	14	0.033	15	-0.058

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC		
1	N21	max	1422.727	5	1380.685	29	894.543	2	-824.834	21	1072.722	6	106.229	104
2		min	-1405.07	23	293.577	21	-850.19	20	-3950.778	29	-1050.517	24	-97.945	98
3	N101	max	-320.242	24	1660.931	31	1087.687	31	-36.601	24	20.358	217	-63.217	24
4		min	-1883.846	31	292.194	24	184.83	24	-210.127	31	-25.162	91	-358.029	31
5	N93	max	6.309	54	1646.73	27	-343.151	20	411.575	27	13.323	169	9.966	169
6		min	-6.303	60	272.454	20	-2156.15	27	68.113	20	-14.046	187	-10.511	187
7	N109	max	1805.726	35	1594.08	35	1042.667	35	-32.781	16	12.943	81	345.165	35
8		min	297.285	16	272.529	16	171.598	16	-198.983	35	-13.983	147	59.746	16
9	N157	max	1247.997	5	1320.24	35	1509.224	14	1805.426	34	1531.853	22	3289.361	35
10		min	-1196.03	23	288.86	16	-1513.667	8	330.013	16	-1543.682	4	753.544	16
11	N158	max	1185.362	17	1304.194	36	1577.439	14	1932.635	34	1531.003	12	-660.936	17
12		min	-1214.204	11	298.909	17	-1603.403	8	470.45	61	-1530.214	6	-3169.647	36
13	N166	max	NC		NC		NC		NC		NC		LOCKED	
14		min	NC		NC		NC		NC		NC		LOCKED	
15	Totals:	max	3467.73	5	8762.474	38	3558.728	2						
16		min	-3467.728	23	2298.777	56	-3558.722	20						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn	
1	MH1	L3X3X4	0.557	0	32	0.081	0	z	89	15778.129	46656	1688.138	2160.605	1	H2-1
2	MH3	L3X3X4	0.546	168	31	0.077	84	z	30	15778.129	46656	1688.138	2160.605	1	H2-1
3	MH4	L3X3X4	0.537	168	27	0.078	84	z	37	15778.129	46656	1688.138	2160.605	1	H2-1
4	M5	LL3x3x4x0	0.31	47	33	0.079	29.865	y	91	76373.943	93312	6480	4360.702	1.934	H1-1b
5	M11	LL3x3x4x0	0.305	47	37	0.061	29.865	y	187	76373.943	93312	6480	4360.702	2.076	H1-1b
6	M4	LL3x3x4x0	0.294	47	33	0.061	29.865	y	147	76373.943	93312	6480	4360.702	1.915	H1-1b
7	MP5	PIPE 2.0	0.275	35.75	176	0.101	35.75		9	19360.206	32130	1871.625	1871.625	3	H1-1b
8	MP8	PIPE 2.0	0.266	35.75	27	0.101	12.188		4	19360.206	32130	1871.625	1871.625	3	H1-1b
9	MS3	HSS4X4X4	0.262	0	30	0.055	0	z	5	138668.086	139518	16180.5	16180.5	1.202	H1-1b
10	MP4	PIPE 2.0	0.261	35.75	30	0.099	35.75		8	19360.206	32130	1871.625	1871.625	3	H1-1b
11	MP9	PIPE 2.0	0.261	36	124	0.094	36		6	20866.733	32130	1871.625	1871.625	1.704	H1-1b
12	MP12	PIPE 2.0	0.26	35.75	35	0.095	12.188		12	19360.206	32130	1871.625	1871.625	2.673	H1-1b
13	MS1	HSS4X4X4	0.253	0	35	0.063	0	z	10	138668.086	139518	16180.5	16180.5	1.203	H1-1b
14	MS6	HSS4X4X4	0.252	0	38	0.065	0	z	13	138668.086	139518	16180.5	16180.5	1.204	H1-1b
15	M48	L2.5x2.5x3	0.229	16.856	140	0.053	16.856	y	13	27191.718	29192.4	872.574	1971.83	1.207	H2-1
16	M47	L2.5x2.5x3	0.229	16.856	192	0.052	16.856	y	5	27191.718	29192.4	872.574	1971.83	1.211	H2-1
17	MP1	PIPE 2.0	0.223	35.75	35	0.105	12.188		8	19360.206	32130	1871.625	1871.625	3	H1-1b
18	MK4	L2.5x2.5x3	0.211	39.404	31	0.002	77.199	z	36	7934.818	29192.4	872.574	1495.62	1.136	H2-1
19	MK1	L2.5x2.5x3	0.207	39.404	28	0.002	77.199	z	36	7934.818	29192.4	872.574	1495.62	1.136	H2-1
20	MK2	L2.5x2.5x3	0.207	39.404	27	0.002	77.199	y	36	7934.818	29192.4	872.574	1495.62	1.136	H2-1



Company : Infinigy Engineering, PLLC
 Designer : AG
 Job Number : 1039-Z0001-B
 Model Name : 876314

10/26/2021
 12:41:13 PM
 Checked By : _____

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn	
21	MK3	L2.5x2.5x3	0.206	39.404	31	0.002	77.199	y	36	7934.818	29192.4	872.574	1495.62	1.136	H2-1
22	MP7	PIPE 2.5	0.204	56.25	10	0.033	56.25		2	26137.193	50715	3596.25	3596.25	1.434	H1-1b
23	MP11	PIPE 2.5	0.203	56.25	6	0.031	56.25		5	26137.193	50715	3596.25	3596.25	1.431	H1-1b
24	MK6	L2.5x2.5x3	0.202	39.404	35	0.002	77.199	z	36	7934.818	29192.4	872.574	1495.62	1.136	H2-1
25	MK5	L2.5x2.5x3	0.201	39.404	35	0.002	77.199	y	36	7934.818	29192.4	872.574	1495.62	1.136	H2-1
26	MP3	PIPE 2.5	0.2	56.25	2	0.03	56.25		13	26137.193	50715	3596.25	3596.25	1.921	H1-1b
27	MR2	PIPE 2.0	0.163	155.875	176	0.121	32.625		4	17855.085	32130	1871.625	1871.625	1.311	H1-1b
28	MR1	PIPE 2.0	0.158	128.687	132	0.12	155.875		12	17855.085	32130	1871.625	1871.625	1	H1-1b
29	MR3	PIPE 2.0	0.137	112.375	107	0.13	155.875		8	17855.085	32130	1871.625	1871.625	1	H1-1b
30	MH5	L3X3X4	0.133	43.297	23	0.013	43.297	z	29	14847.125	46656	1688.138	3255.841	1.5	H2-1
31	MH6	L3X3X4	0.128	43.297	17	0.013	43.297	z	34	14847.125	46656	1688.138	3255.841	1.5	H2-1
32	M49	PIPE 2.0	0.127	12.768	8	0.025	28.089		9	27960.819	32130	1871.625	1871.625	2.901	H1-1b
33	MS2	HSS4.5X4.5X4	0.118	0	30	0.035	0	z	38	156999.089	158976	20907	20907	1.646	H1-1b
34	MH2	L3X3X4	0.117	43.297	15	0.013	43.297	z	30	14847.125	46656	1688.138	3255.841	1.5	H2-1
35	MS4	HSS4.5X4.5X4	0.11	0	34	0.035	0	z	27	156999.089	158976	20907	20907	1.644	H1-1b
36	MS5	HSS4.5X4.5X4	0.108	0	38	0.035	0	z	31	156999.089	158976	20907	20907	1.641	H1-1b
37	MP10	PIPE 2.0	0.107	12.188	3	0.101	35.75		12	19360.206	32130	1871.625	1871.625	2.721	H1-1b
38	MP6	PIPE 2.0	0.105	12.188	7	0.099	35.75		4	19360.206	32130	1871.625	1871.625	2.799	H1-1b
39	MP2	PIPE 2.0	0.097	12.188	11	0.093	35.75		9	19360.206	32130	1871.625	1871.625	2.579	H1-1b

APPENDIX D
ADDITIONAL CALCUATIONS

Welded Calculation Tool, V1.0

PROJECT DATA	
Site Name:	HORSE HILL
Site Number:	876314
Job Code:	1039-Z0001-B
Date:	10/26/2021

WELD INFORMATION		
Design:	LRFD	-
Weld Strength (F_EXX):	70	ksi
Weld Thickness:	0.1875	in

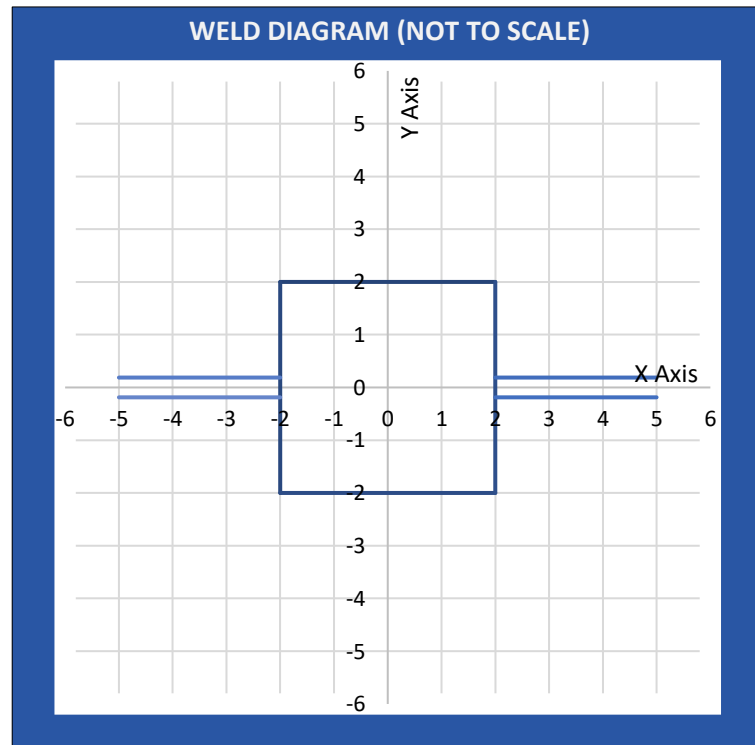
MAIN SHAPE INFORMATION		
Main Shape:	Rectangle	-
Main Shape Material:	A 500 Gr. B Rect.	-
Main Shape Thickness:	0.233	in
Main Shape Size:	4X4	in

TOTAL SUM OF LINES PROPERTIES		
Polar Moment of Inertia:	241.755	in ³
Section Modulus X-X dir.:	21.544	in ²
Section Modulus Y-Y dir.:	39.733	in ²
Critical Usage Mode*:	Weld Critical	-
Critical Thickness Used:	0.188	in

SECONDARY SHAPE INFORMATION		
Secondary Shape:	Custom	-
Secondary Shape Material:	A36	-
Secondary Shape Thickness:	0.375	in
Secondary Shape Size:	N/A	in

WELD DESCRIPTION
Standoff to Collar

RESULTS		
Critical Risa Combination:	LC 29	-
Critical Member Label:	MS3	-
Member End:	i	-
Weld Strength (Phi*Rn):	4176.349	lb/in
Weld Demand (Ru):	1203.187	lb/in
Usage ratio:	28.8%	OK



NOTES
*The strength of the weld governs the design compared to the effective strength of the welded object.

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	HORSE HILL
Site Number:	876314
Connection Description:	Kicker to Collar

MAXIMUM BOLT LOADS		
Bolt Tension:	-	lbs
Bolt Shear:	416.72	lbs

WORST CASE BOLT LOADS ¹		
Bolt Tension:	0.00	lbs
Bolt Shear:	416.72	lbs

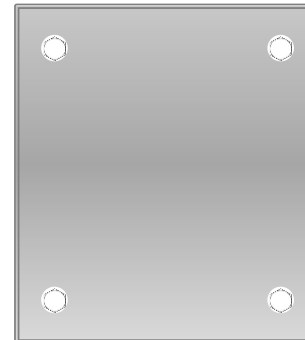
BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

¹ Worst case bolt loads correspond to Load combination #31 on member M59 in RISA-3D, which causes the maximum demand on the bolts.

Member Information
I nodes of M46, M59, M67

BOLT CHECK	
Tensile Strength	20340.15
Shear Strength	13805.83
Max Tensile Usage	-
Max Shear Usage	3.0%
Interaction Check (Worst Case)	0.00
Result	Pass

≤1.05



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL
TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CT11124H

876314

214 Russian Village Road
Southbury, Connecticut 06488

December 9, 2021

EBI Project Number: 6221007494

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	32.24%

December 9, 2021

T-Mobile

Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11124H - 876314

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **214 Russian Village Road in Southbury, Connecticut** 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.

Public 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 and 700 MHz frequency 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 11 GHz frequency 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 done for the proposed T-Mobile Wireless antenna facility located at 214 Russian Village Road in Southbury, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 1 LTE Traffic channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 8) 1 LTE Broadcast channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.
- 12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-RI for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-RI for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-RI for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels

are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

- 14) The antenna mounting height centerline of the proposed antennas is 101 feet above ground level (AGL).
- 15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 16) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	101 feet	Height (AGL):	101 feet	Height (AGL):	101 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	14.48%	Antenna B1 MPE %:	14.48%	Antenna C1 MPE %:	14.48%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd
Height (AGL):	101 feet	Height (AGL):	101 feet	Height (AGL):	101 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,059.02	ERP (W):	4,059.02	ERP (W):	4,059.02
Antenna A2 MPE %:	3.86%	Antenna B2 MPE %:	3.86%	Antenna C2 MPE %:	3.86%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope VV-65A-RI	Make / Model:	Commscope VV-65A-RI	Make / Model:	Commscope VV-65A-RI
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.15 dBd / 15.8 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.8 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.8 dBd / 15.8 dBd
Height (AGL):	101 feet	Height (AGL):	101 feet	Height (AGL):	101 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	13,052.63	ERP (W):	13,052.63	ERP (W):	13,052.63
Antenna A3 MPE %:	5.20%	Antenna B3 MPE %:	5.20%	Antenna C3 MPE %:	5.20%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	23.54%
Metro PCS	0.96%
Sprint	4.09%
AT&T	3.65%
Site Total MPE % :	32.24%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	23.54%
T-Mobile Sector B Total:	23.54%
T-Mobile Sector C Total:	23.54%
Site Total MPE % :	32.24%

T-Mobile Maximum MPE Power Values (Sector A)							
T-Mobile Frequency Band / Technology (Sector A)	# 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 2500 MHz LTE IC & 2C Traffic	1	11044.63	101.0	44.00	2500 MHz LTE IC & 2C Traffic	1000	4.40%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	1074.06	101.0	4.28	2500 MHz LTE IC & 2C Broadcast	1000	0.43%
T-Mobile 2500 MHz NR Traffic	1	22089.26	101.0	87.99	2500 MHz NR Traffic	1000	8.80%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	101.0	8.56	2500 MHz NR Broadcast	1000	0.86%
T-Mobile 600 MHz LTE	2	591.73	101.0	4.71	600 MHz LTE	400	1.18%
T-Mobile 600 MHz NR	1	1577.94	101.0	6.29	600 MHz NR	400	1.57%
T-Mobile 700 MHz LTE	2	648.82	101.0	5.17	700 MHz LTE	467	1.11%
T-Mobile 1900 MHz GSM	4	982.02	101.0	15.65	1900 MHz GSM	1000	1.56%
T-Mobile 1900 MHz LTE	2	2281.14	101.0	18.17	1900 MHz LTE	1000	1.82%
T-Mobile 2100 MHz LTE	2	2281.14	101.0	18.17	2100 MHz LTE	1000	1.82%
						Total:	23.54%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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:	23.54%
Sector B:	23.54%
Sector C:	23.54%
T-Mobile Maximum MPE % (Sector A):	23.54%
Site Total:	32.24%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **32.24%** 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.

T-Mobile

T-MOBILE SITE NUMBER: CT11124H

T-MOBILE SITE NAME: SOUTHBURY-W/I-84

SITE TYPE: MONOPOLE

TOWER HEIGHT: 132'-0"

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5A998E 6160

BUSINESS UNIT #: 876314

**SITE ADDRESS: 214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488**

COUNTY: NEW HAVEN COUNTY

JURISDICTION: TOWN OF

SOUTHBURY

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARRELO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.

SITE INFORMATION

CROWN CASTLE USA INC. HORSE HILL
SITE NAME:
SITE ADDRESS: 214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488
COUNTY: NEW HAVEN COUNTY
MAP/PARCEL #: ---
AREA OF CONSTRUCTION: EXISTING
LATITUDE: 41.45226433
LONGITUDE: -73.24983750
LAT/LONG TYPE: NAD83
GROUND ELEVATION: 412.0 FT
CURRENT ZONING: ---
JURISDICTION: TOWN OF SOUTHBURY
OCCUPANCY CLASSIFICATION: U
TYPE OF CONSTRUCTION: IIB
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR
HUMAN HABITATION
PROPERTY OWNER: CRIDER MIEKE
100 RUSSIAN VILLAGE RD
CITY, STATE ZIP
TOWER OWNER: SOUTHBURY CT 06488
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
CARRIER/APPLICANT: T-MOBILE
4 SYLVAN WAY
PARSIPPANY, NJ 07054
ELECTRIC PROVIDER: ---
TELCO PROVIDER: ---
JOB NO.: 2438.6883

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	SITE PLAN
C-1.2	ENLARGED SITE PLANS
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	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.

LOCATION MAP



NO SCALE

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 (6) ANTENNAS
- REMOVE (6) TMAs
- REMOVE (12) COAX CABLES
- REMOVE (1) HYBRID CABLE
- INSTALL (6) ANTENNAS
- INSTALL (3) RRUs
- INSTALL (4) 1-5/8" HYBRID CABLE

GROUND SCOPE OF WORK:

- REMOVE (1) RBS 6201 ODE
- INSTALL (1) 6160 EQUIPMENT CABINET
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (1) DC DU AND (4) RECTIFIERS
- INSTALL (1) IXRc ROUTER
- INSTALL (1) BB6648 FOR L2500, N2500 IN 6160
- INSTALL (1) PSU4813 VOLTAGE BOOSTER IN 6160

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

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	2018 IMC
ELECTRICAL	2017 NEC

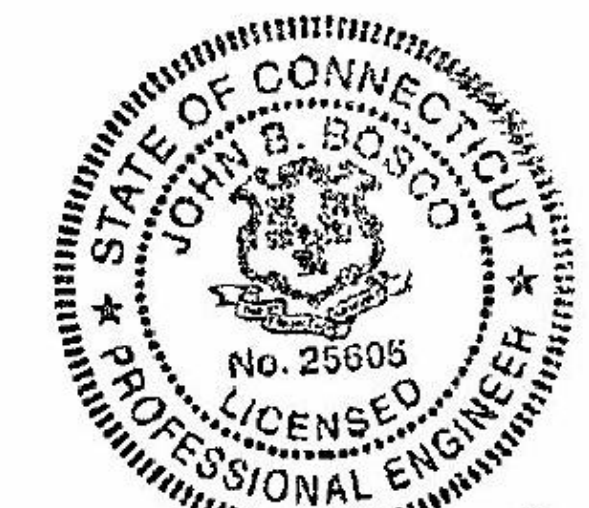
REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS: MORRISON HERSHFIELD
DATED: 11/02/21
MOUNT ANALYSIS: INFINIGY ENGINEERING, PLLC
DATED: 10/26/21
AC ELECTRICAL POWER DESIGN: BY OTHERS
DATED:
RFDS REVISION: 3
DATED: 10/04/21
ORDER ID: 587435
REVISION: 0



APPROVALS

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



John B. Bosco

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.

PROJECT TEAM

A&E FIRM: CROWN CASTLE USA INC.
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
CROWN.AE.APPROVAL@CROWNCastle.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430
TRICIA PELON - PROJECT MANAGER

JASON D'AMICO - CONSTRUCTION MANAGER

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

SHEET NUMBER:

T-1

REVISION:

B

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 NONFERROUS 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°F 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 (WWF) 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.
4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
4.2. 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/IEEE 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 SIZES WHEN FITTING ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE 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 DUCT 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
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
277/480V, 3Ø	GROUND	GREEN
	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
DC VOLTAGE	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
- RETS REMOTE ELECTRIC TILT
- RFDs 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

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H
BU #: 876314
HORSE HILL


214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.

STATE OF CONNECTICUT
JOHN B. BOSCO
No. 25608
PROFESSIONAL ENGINEER

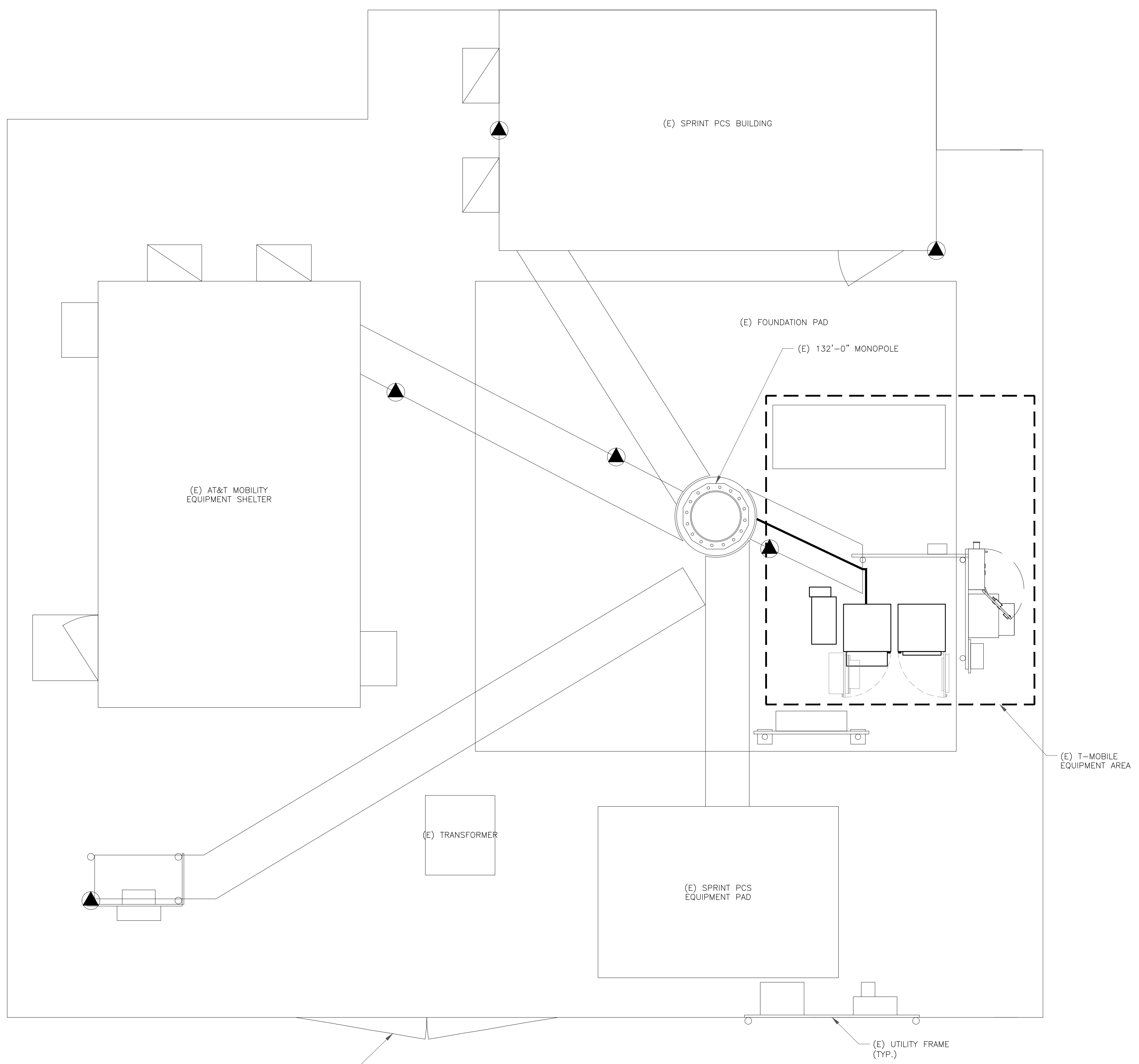


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:
T-2

REVISION:
B

SITE PLAN DISCLAIMER:
 PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.



T-Mobile

35 GRIFFIN ROAD
 BLOOMFIELD, CT 06002

CROWN CASTLE

1200 MACARTHUR BLVD, SUITE 200
 MAHWAH, NJ 07430

FPA
 FRENCH & PARRELLO ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
 o: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
 SOUTHURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

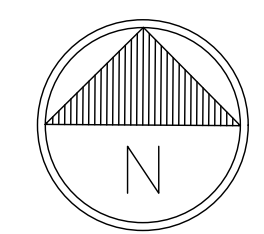
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.

STATE OF CONNECTICUT
 JOHN B. BOSCO
 No. 25606
 LICENSED PROFESSIONAL ENGINEER

John B. Bosco

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.

1 SITE PLAN
 SCALE: 3/4"=1'-0" (FULL SIZE)
 3/8"=1'-0" (11x17)



SHEET NUMBER: **C-1.1** REVISION: **B**

NOTES:
 THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

T-Mobile
 35 GRIFFIN ROAD
 BLOOMFIELD, CT 06002

CROWN CASTLE
 1200 MACARTHUR BLVD, SUITE 200
 MAHWAH, NJ 07430

FPA
FRENCH & PARRELLO
 ASSOCIATES
 1800 Route 34, Suite 101 • Wall, New Jersey 07719
 a: 732.312.9800 f: 732.312.9801

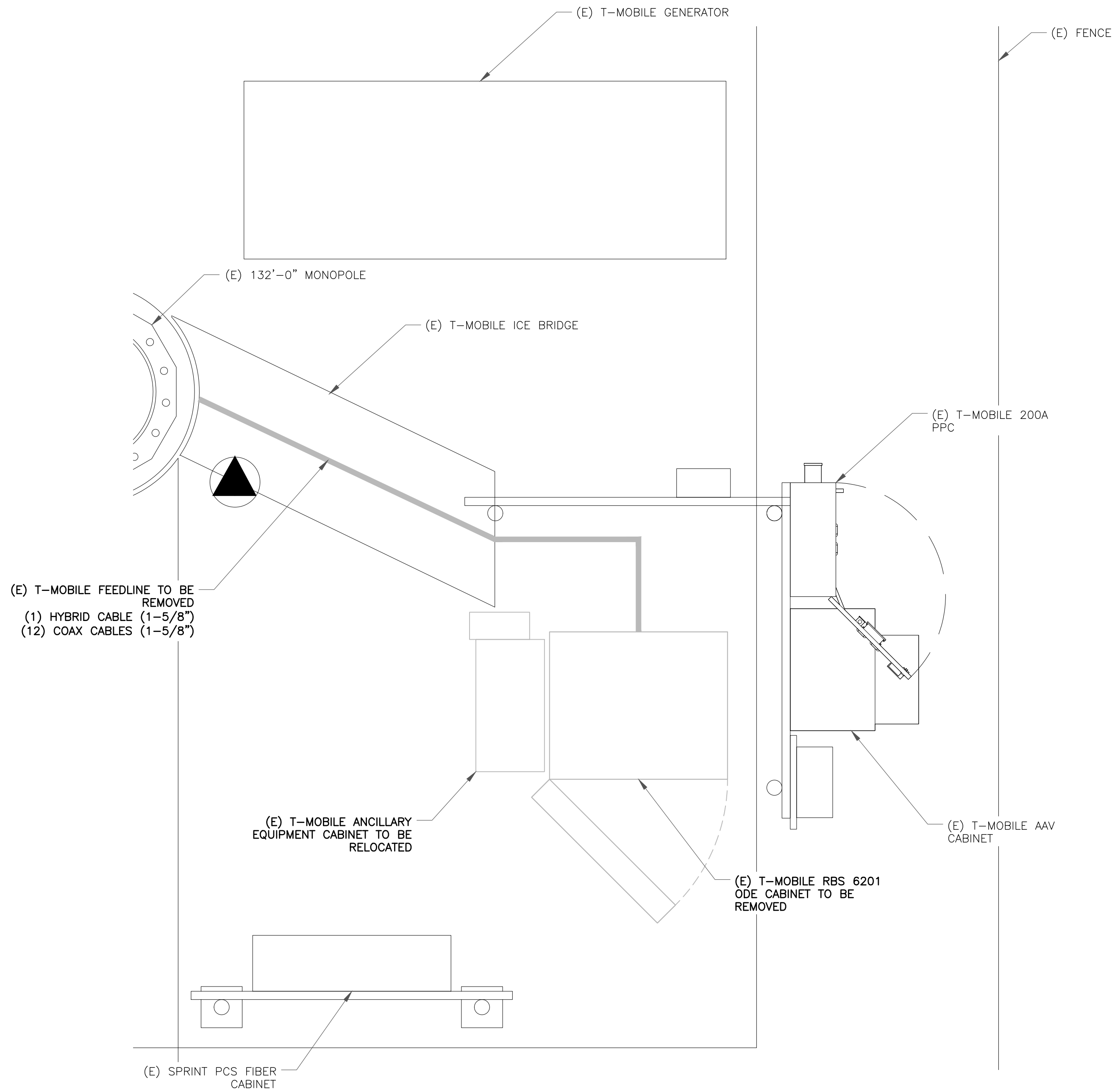
T-MOBILE SITE NUMBER:
CT1124H
 BU #: 876314
HORSE HILL
 214 RUSSIAN VILLAGE RD
 SOUTHURY, CT 06488
 EXISTING 132'-0" MONOPOLE

ISSUED FOR:

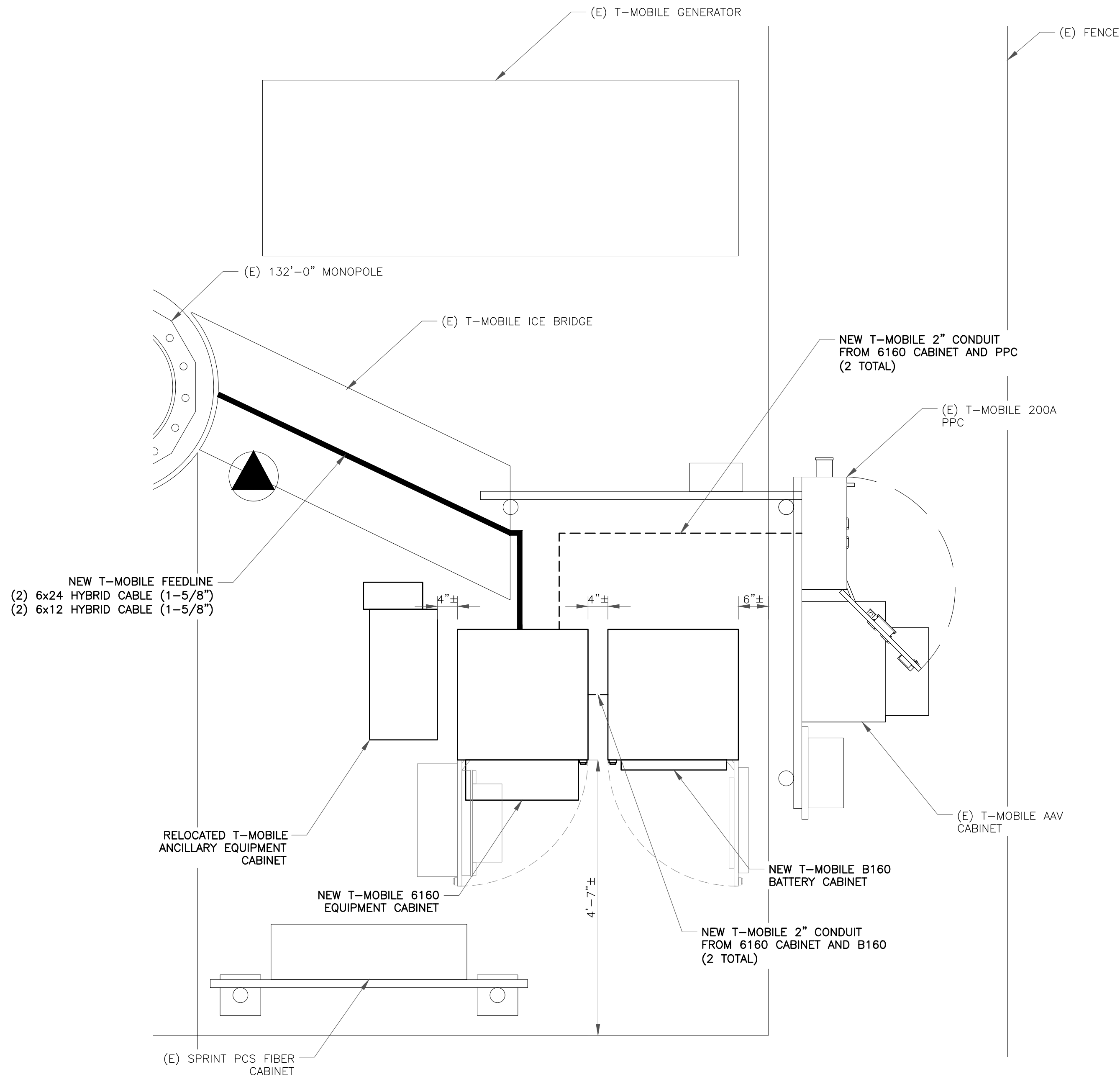
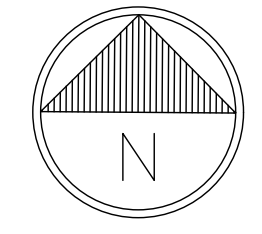
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.

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.

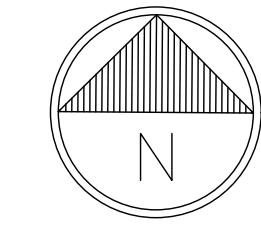
SHEET NUMBER: **C-1.2** REVISION: **B**



1 EXISTING ENLARGED SITE PLAN
 SCALE: 1-1/2"=1'-0" (FULL SIZE)
 3/4"=1'-0" (11x17)



2 NEW ENLARGED SITE PLAN
 SCALE: 1-1/2"=1'-0" (FULL SIZE)
 3/4"=1'-0" (11x17)



T-MOBILE SITE NUMBER:
CT11124H

BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DWG./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



John B. Bosco

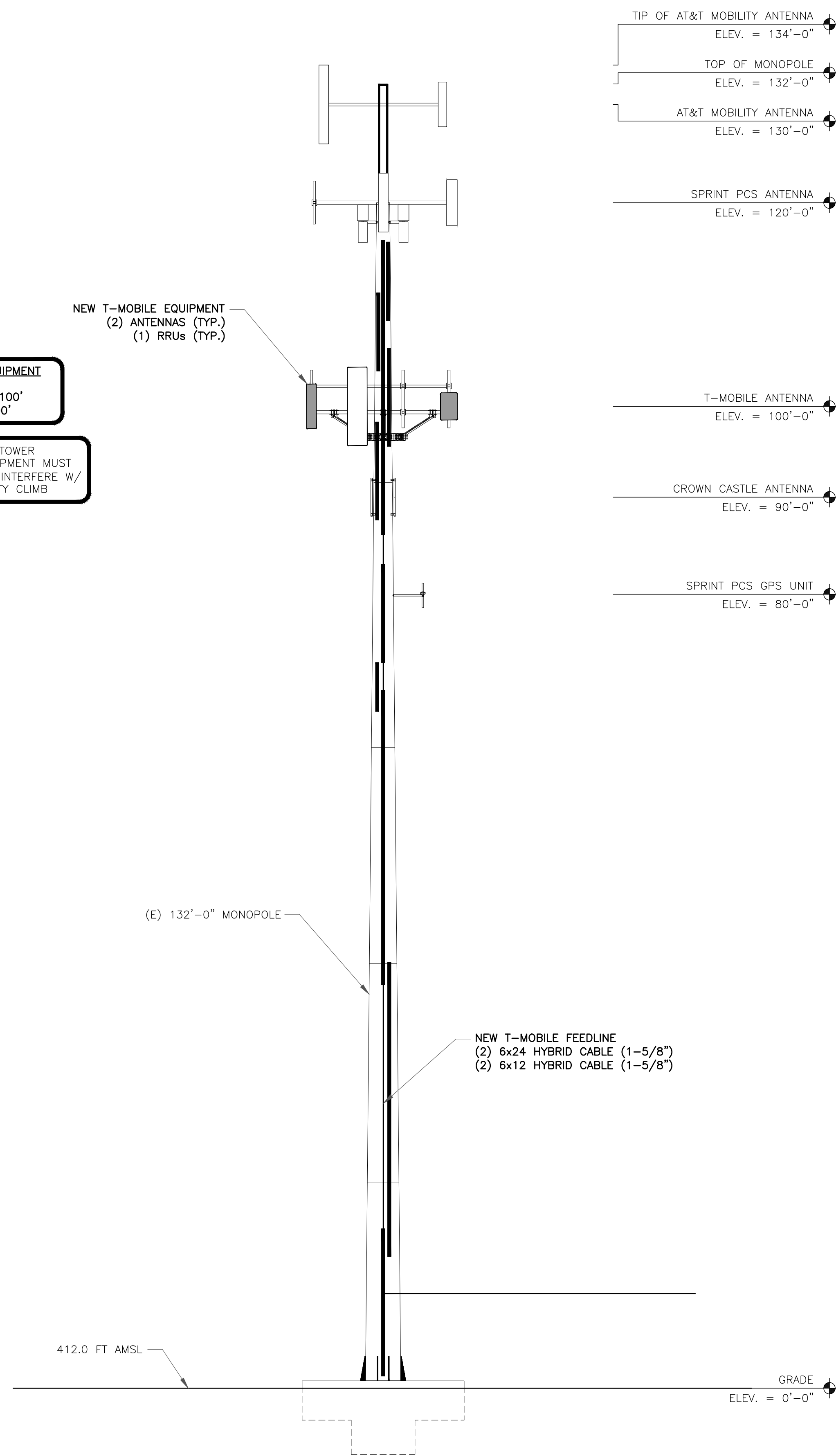
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

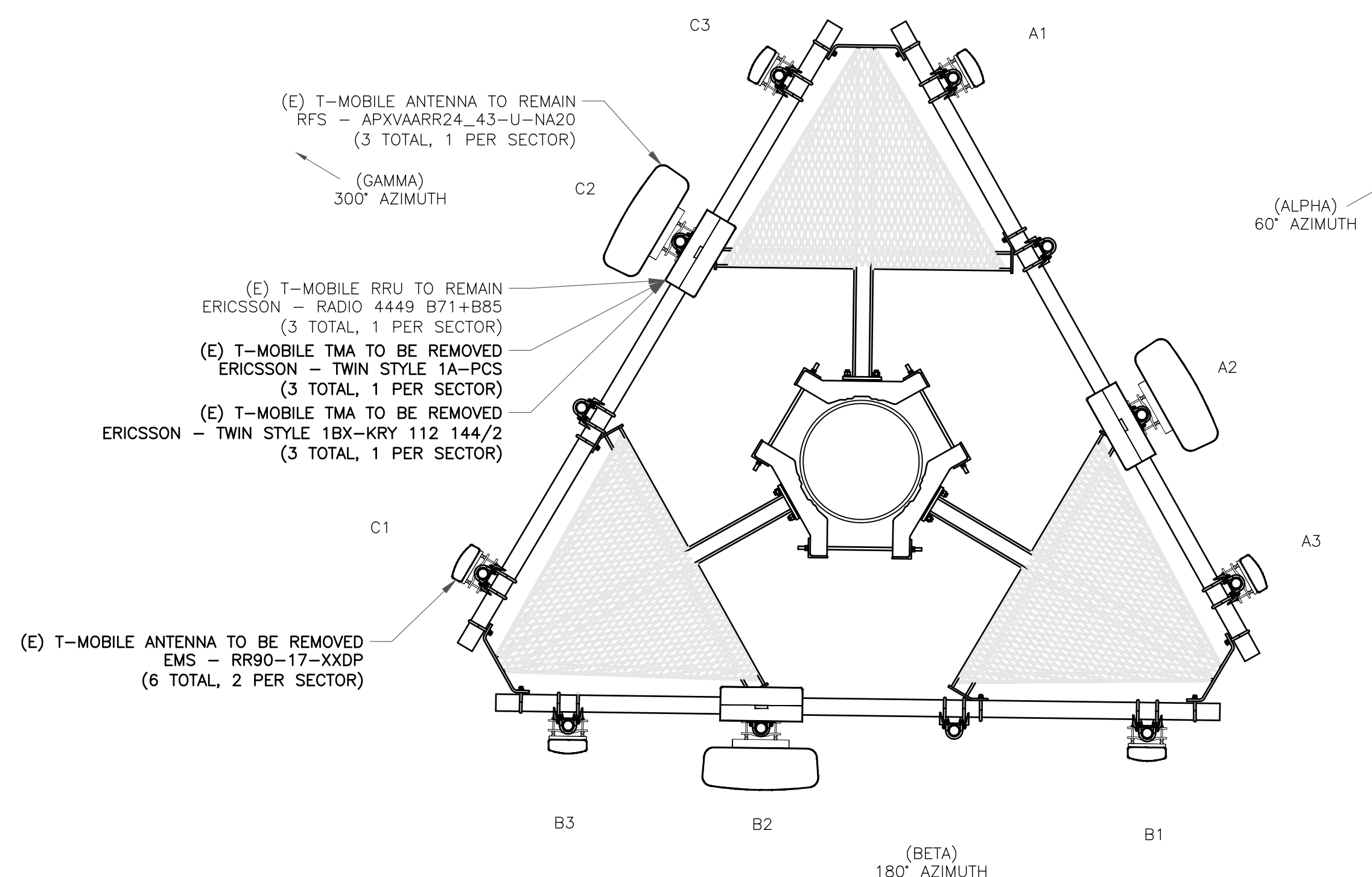
C-2

REVISION:

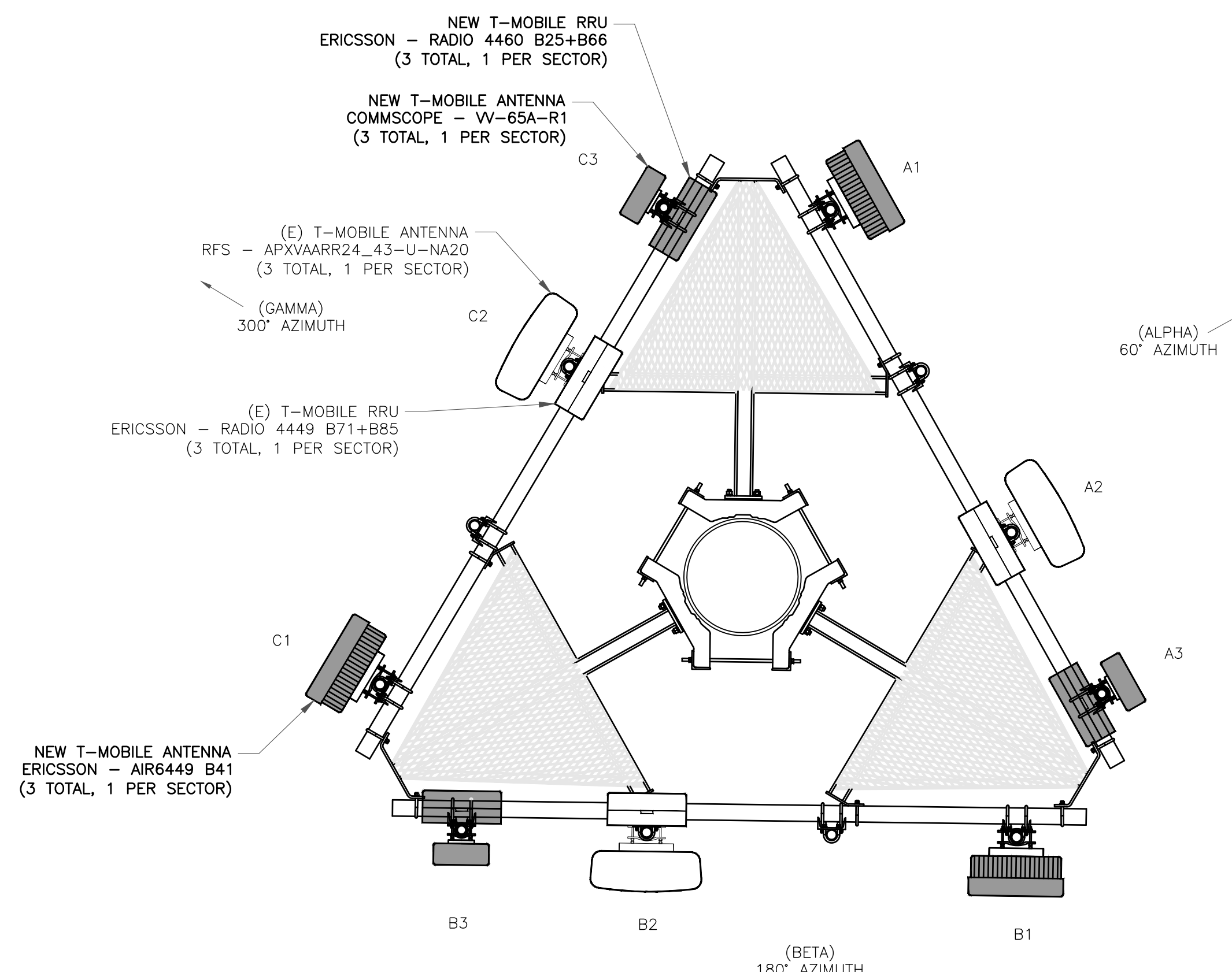
B



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

T-MOBILE EQUIPMENT

ANTENNA CL: 100'

MOUNT CL: 100'

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

T-MOBILE SITE NUMBER:
CT1124H

BU #: **876314**
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

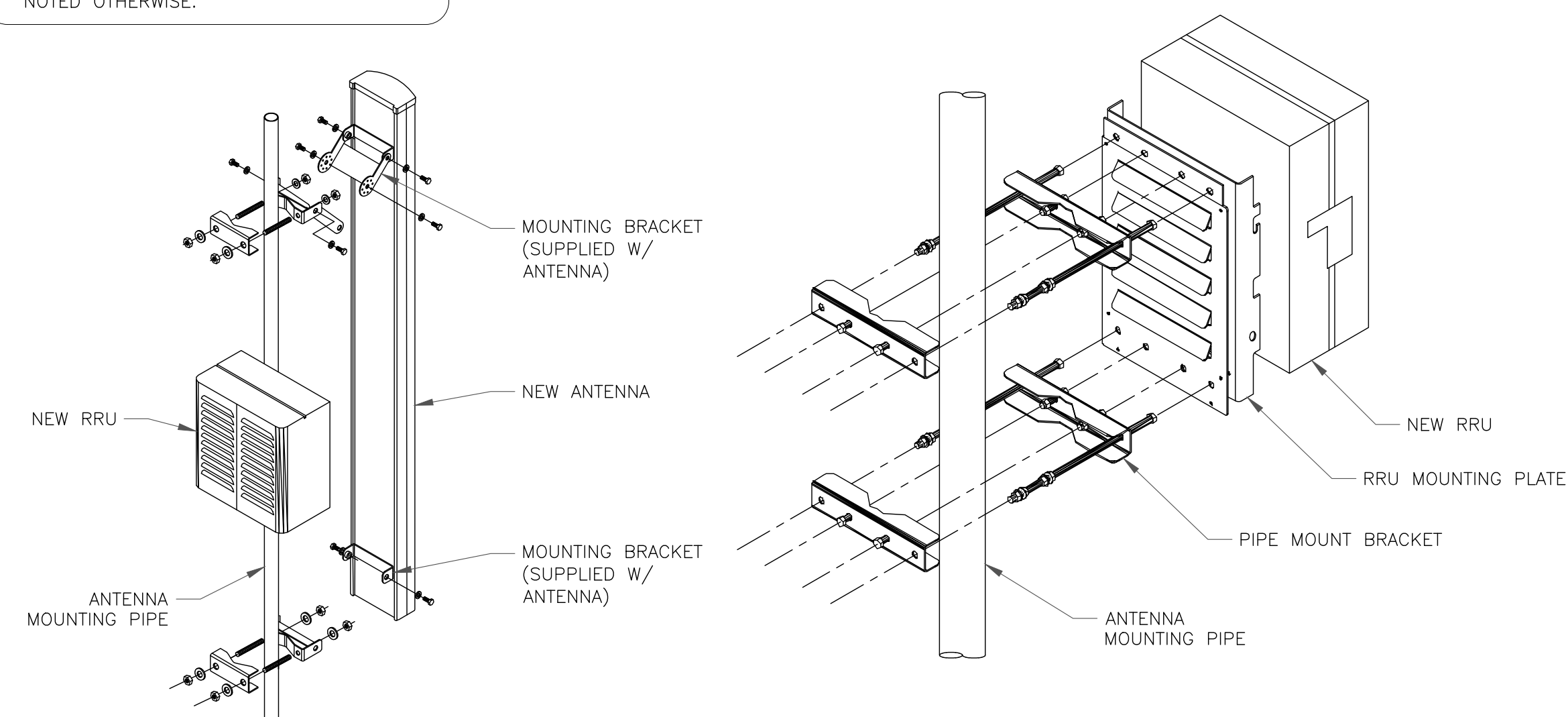
EXISTING 132'-0" MONOPOLE

ANTENNA SCHEDULE											
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE	FEEDLINE LENGTH
ALPHA	A1	L2500/N2500	100'	60°	ERICSSON	AIR6449 B41	0°	0°/0°	-	(1) 1-5/8" 6x24 HYBRID (SHARED)	170'-0"
ALPHA	A2	L600/L700/N600	100'	60°	RFS	APXVAARR24_43-U-NA20	0°	0°/0°/0°/0°	(1) ERICSSON - RADIO 4449 B71+B85	(SHARED FIBER)	-
ALPHA	A3	L2100/L1900/G1900	100'	60°	COMMSCOPE	W-65A-R1	0°	0°/0°	(1) ERICSSON - RADIO 4460 B25+B66	(SHARED FIBER)	-
BETA	B1	L2500/N2500	100'	180°	ERICSSON	AIR6449 B41	0°	0°/0°	-	(2) 1-5/8" 6x12 HYBRID (SHARED)	170'-0"
BETA	B2	L600/L700/N600	100'	180°	RFS	APXVAARR24_43-U-NA20	0°	0°/0°/0°/0°	(1) ERICSSON - RADIO 4449 B71+B85	(SHARED FIBER)	-
BETA	B3	L2100/L1900/G1900	100'	180°	COMMSCOPE	W-65A-R1	0°	0°/0°	(1) ERICSSON - RADIO 4460 B25+B66	(SHARED FIBER)	-
GAMMA	C1	L2500/N2500	100'	300°	ERICSSON	AIR6449 B41	0°	0°/0°	-	(1) 1-5/8" 6x24 HYBRID (SHARED)	170'-0"
GAMMA	C2	L600/L700/N600	100'	300°	RFS	APXVAARR24_43-U-NA20	0°	0°/0°/0°/0°	(1) ERICSSON - RADIO 4449 B71+B85	(SHARED FIBER)	-
GAMMA	C3	L2100/L1900/G1900	100'	300°	COMMSCOPE	W-65A-R1	0°	0°/0°	(1) ERICSSON - RADIO 4460 B25+B66	(SHARED FIBER)	-

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



2 ANTENNA WITH RRU MOUNTING DETAIL
SCALE: NOT TO SCALE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



John B. Bosco

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:

B



T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN
CASTLE

1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARRELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

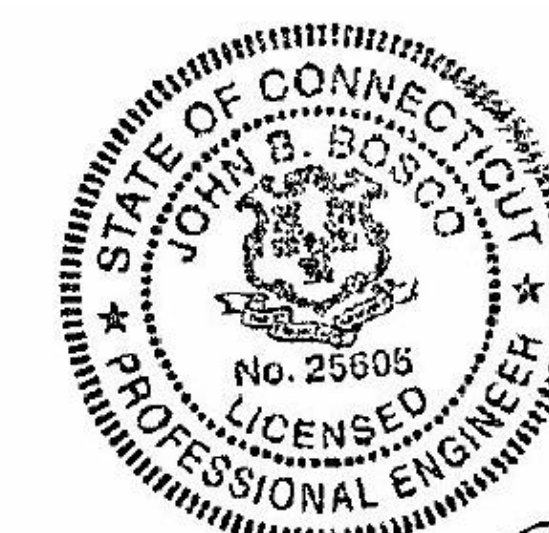
BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



John B. Bosco

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:

B

1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN
CASTLE

1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARRELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
a: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



John B. Bosco

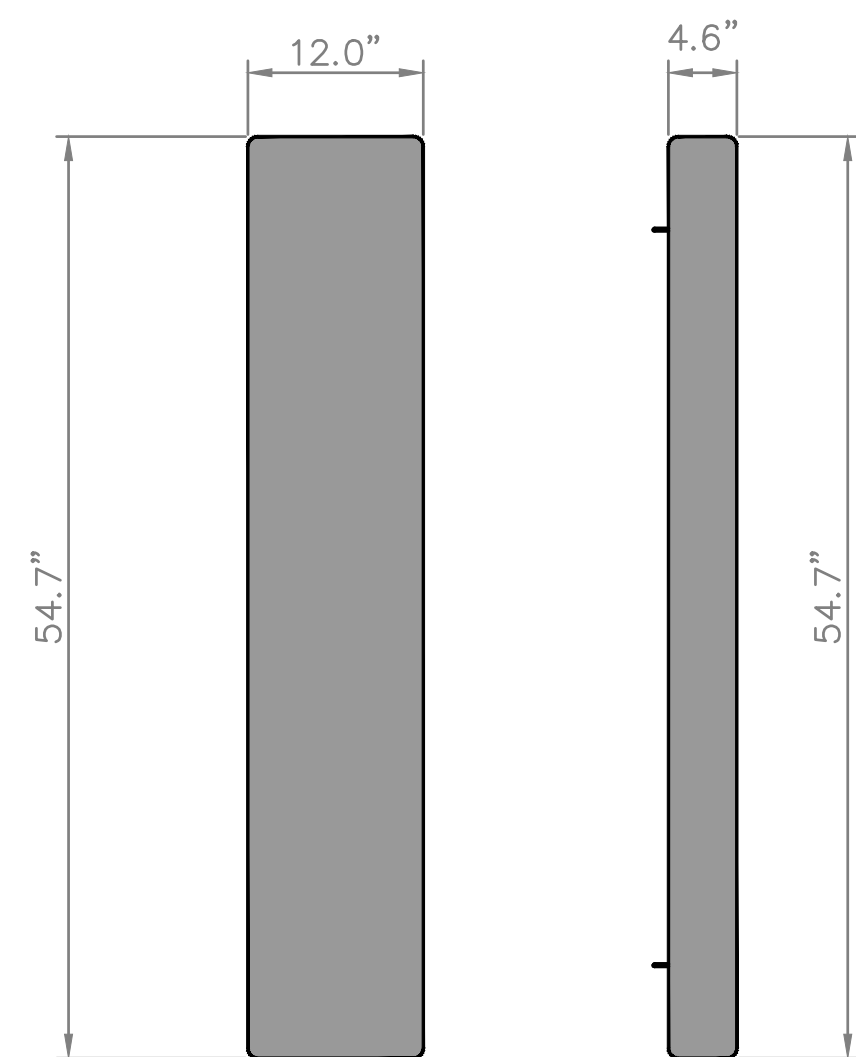
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

C-5

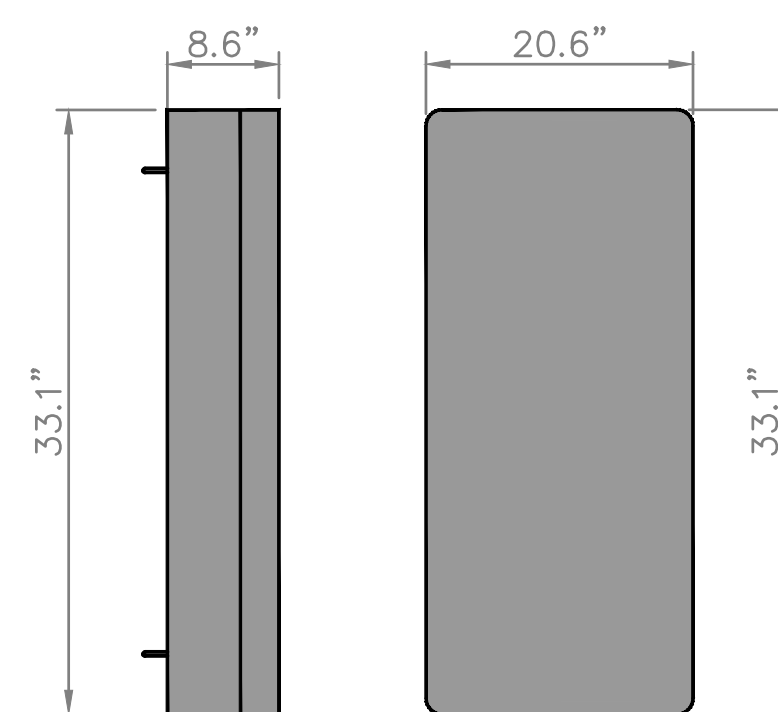
REVISION:

B



MECHANICAL
SPECIFICATIONS:
OVERALL
HEIGHT: 54.7 IN.
WIDTH: 12.0 IN.
DEPTH: 4.6 IN.
WEIGHT: 33.3 LBS.

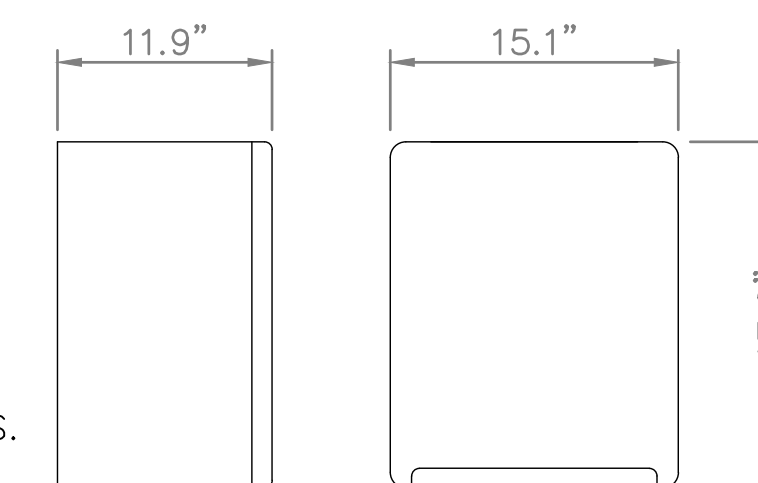
1 W-65A-R1 (QUAD) DETAIL
SCALE: NOT TO SCALE



MECHANICAL
SPECIFICATIONS:
OVERALL
HEIGHT: 33.1 IN.
WIDTH: 20.6 IN.
DEPTH: 8.6 IN.
WEIGHT: 104 LBS.

2 AIR6449 B41 ANTENNA DETAIL
SCALE: NOT TO SCALE

MECHANICAL
SPECIFICATIONS:
OVERALL
HEIGHT: 17.0 IN.
WIDTH: 15.1 IN.
DEPTH: 11.9 IN.
WEIGHT: 104 LBS.



3 RADIO 4460 B25 B66 DETAIL
SCALE: NOT TO SCALE



Technical Specifications

Dimensions		
Height		63 in.
Width		25.6 in.
Depth		33.5 in.
Max. Weight		605 lbs

4 6160 CABINET DETAIL
SCALE: NOT TO SCALE



Technical Specifications

Dimensions		
Height		63 in.
Width		25.6 in.
Depth		25.6 in.
Max. Weight		1,883 lbs

5 B160 BATTERY CABINET DETAIL
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

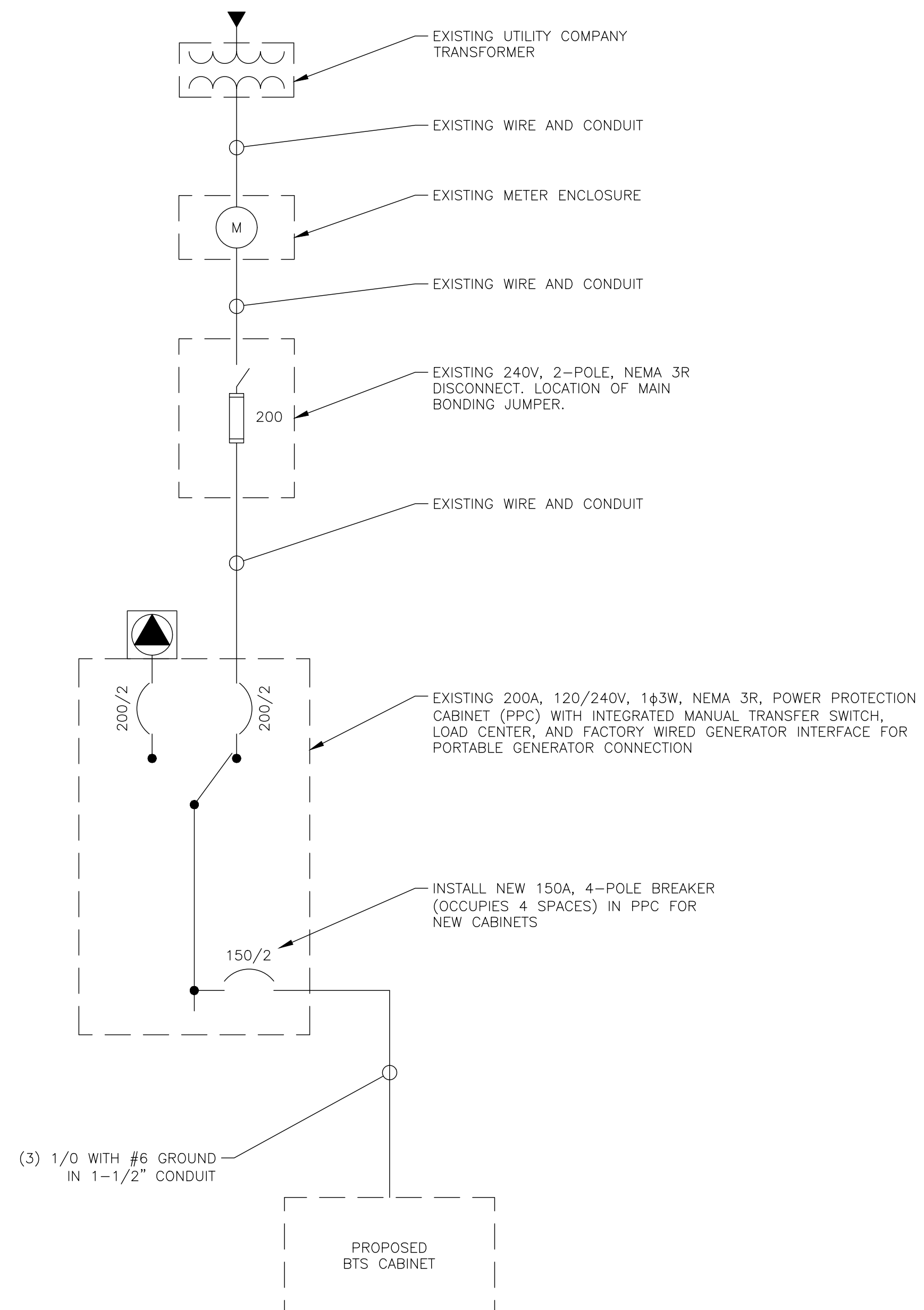
JOB NAME: CT11124H		TM (T-MOBILE PANEL) (EXISTING)						T-MOBILE LOCATION: PPC	
RATING: 240/120V, 1 PH, 3W, 200A		POLE	BKR.	A	B	BKR.	POLE	CIRCUIT DESCRIPTION	CKT. NO.
1	SURGE	2	30	■	■	150	2	6160/B160	2
3				■	■				4
5				■	■	150	2		6
7				■	■				8
9				■	■	20	1	LED LIGHT	10
11				■	■	20	1	GFCI	12
13				■	■				14
15				■	■				16
17				■	■				18
19				■	■				20
21				■	■				22
23				■	■				24

NOTES
1. ALL BUSING TO BE COPPER
2. BOLT ON BREAKERS ONLY
3. CONTRACTOR IS RESPONSIBLE TO COORDINATE THE SHORT CIRCUIT RATING PRIOR TO PURCHASING ANY EQUIPMENT.
4. ALL WIRE SIZES ARE BASED ON 75 DEGREE WIRE.
5. SHORT CIRCUIT RATING: PANEL SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE

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.



2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
a: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.

STATE OF CONNECTICUT
JOHN B. BOSCO
No. 25808
LICENSED PROFESSIONAL ENGINEER

John B. Bosco

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: **B**

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN
CASTLE

1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARRELO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

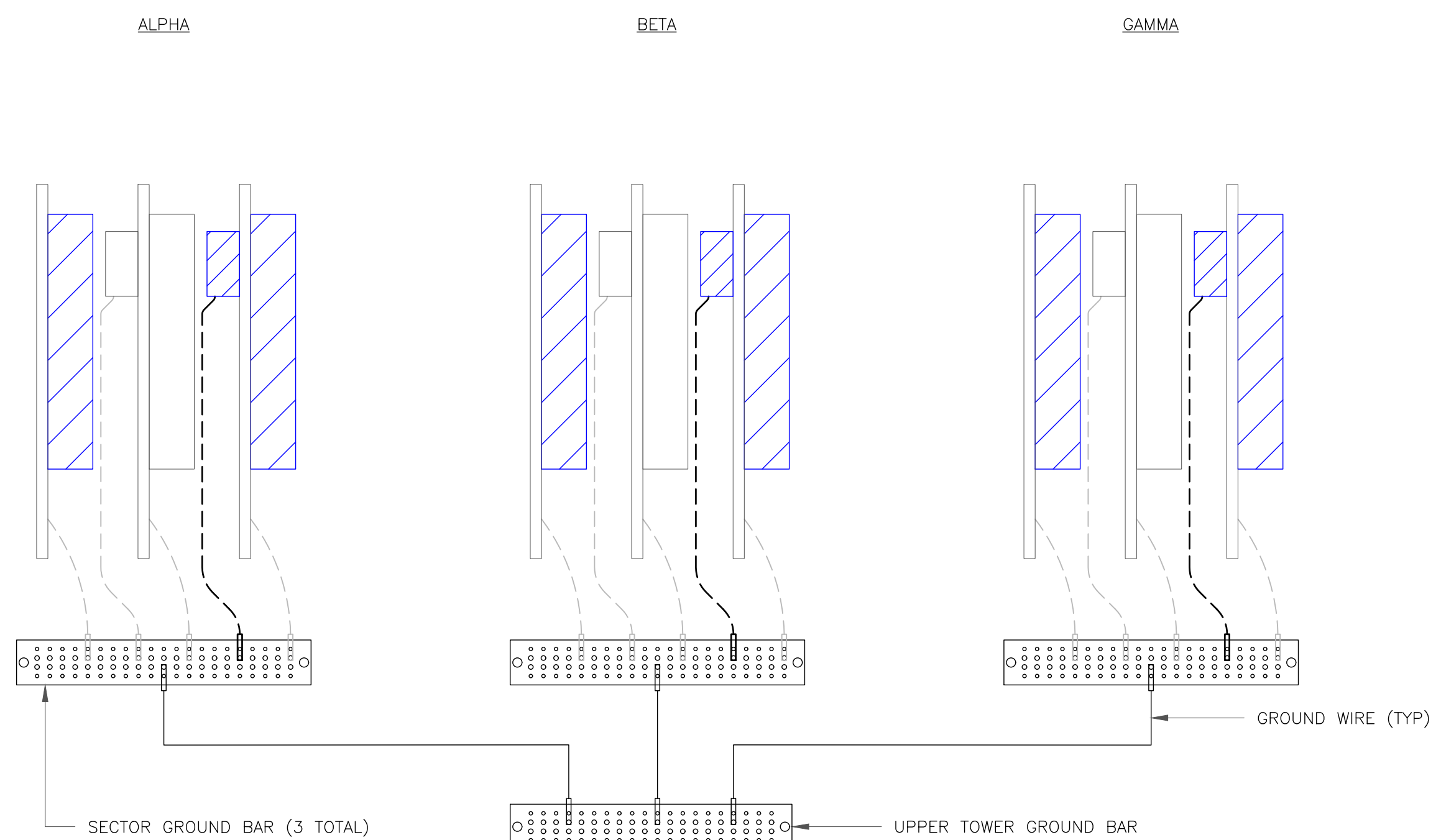
BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



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

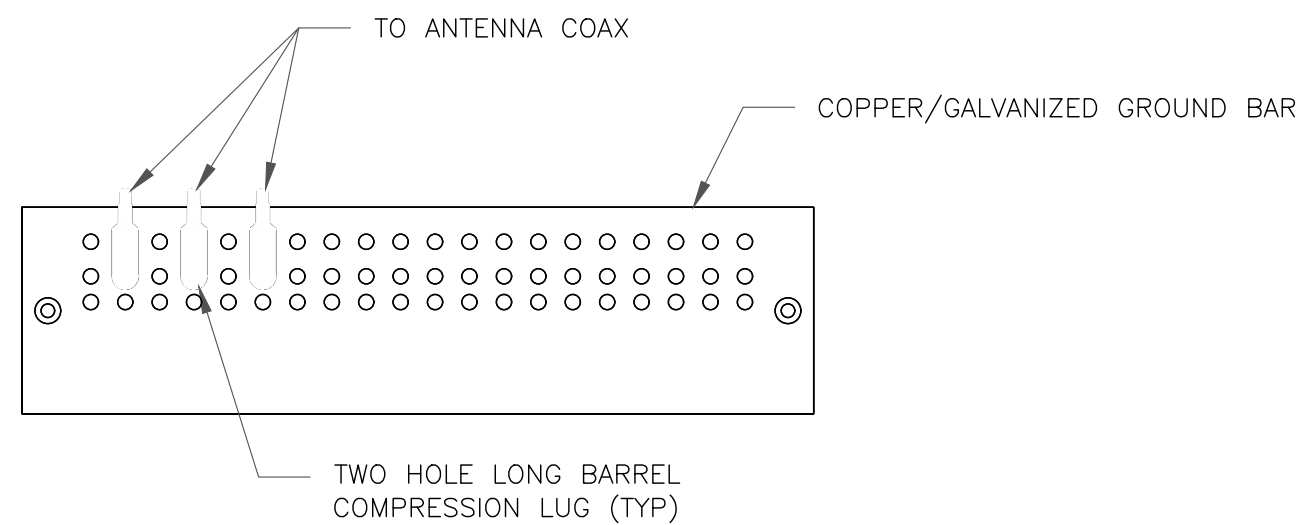
1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE



John B. Bosco

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.

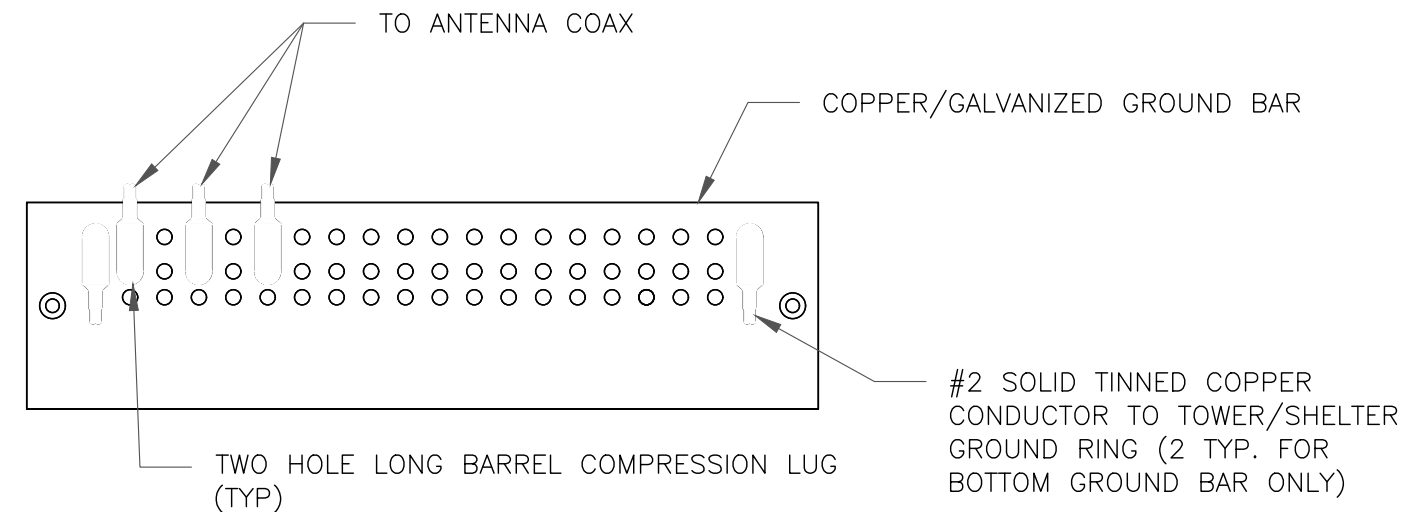
SHEET NUMBER: **G-1** REVISION: **B**



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.

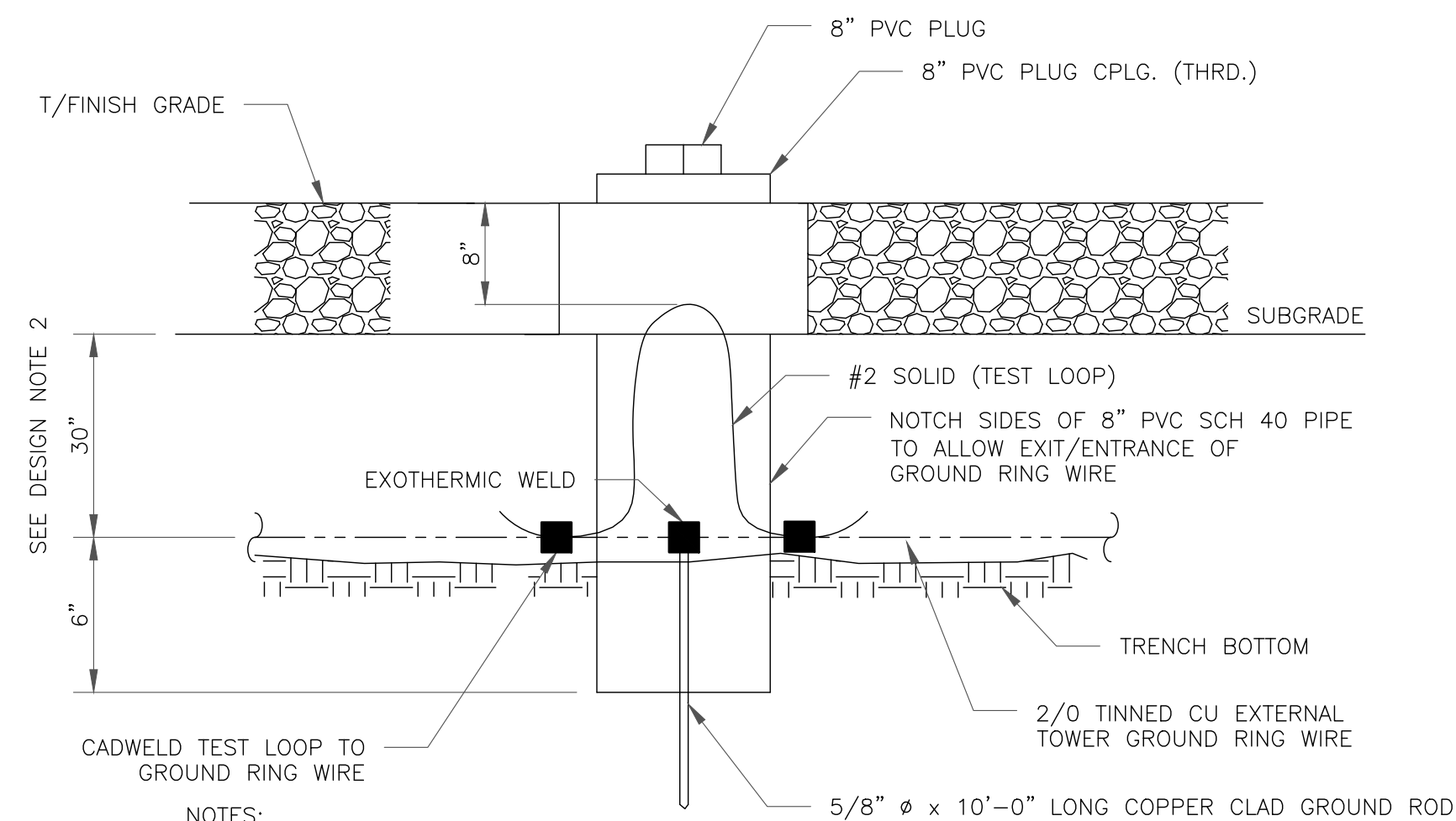
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

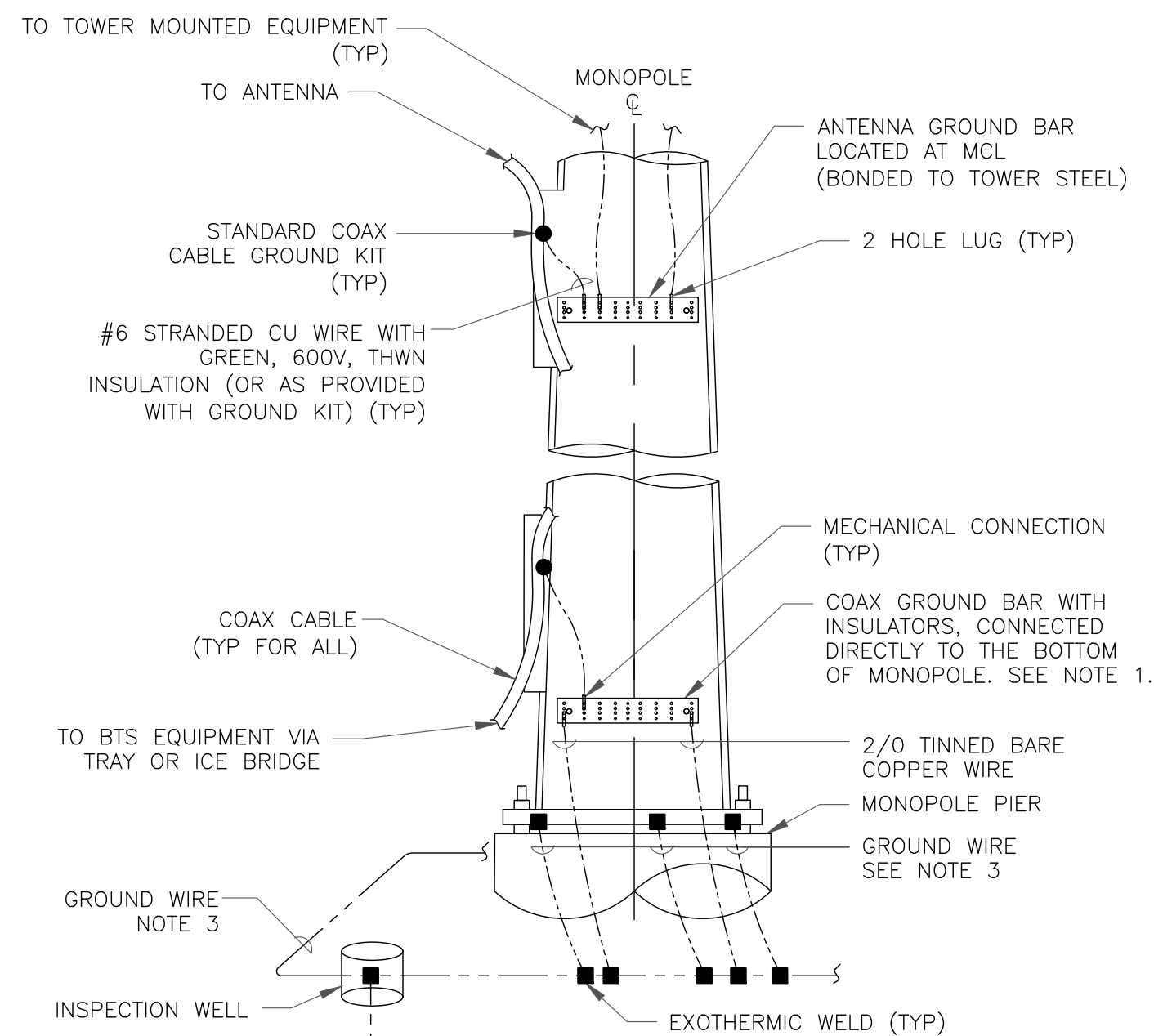
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
- GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

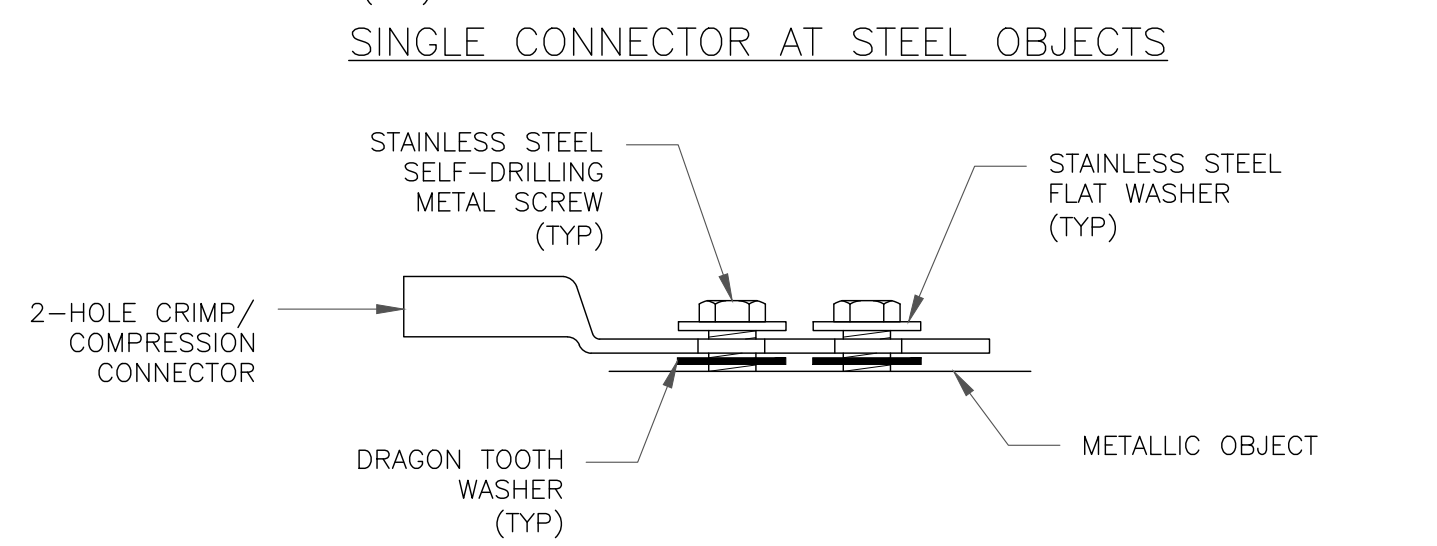
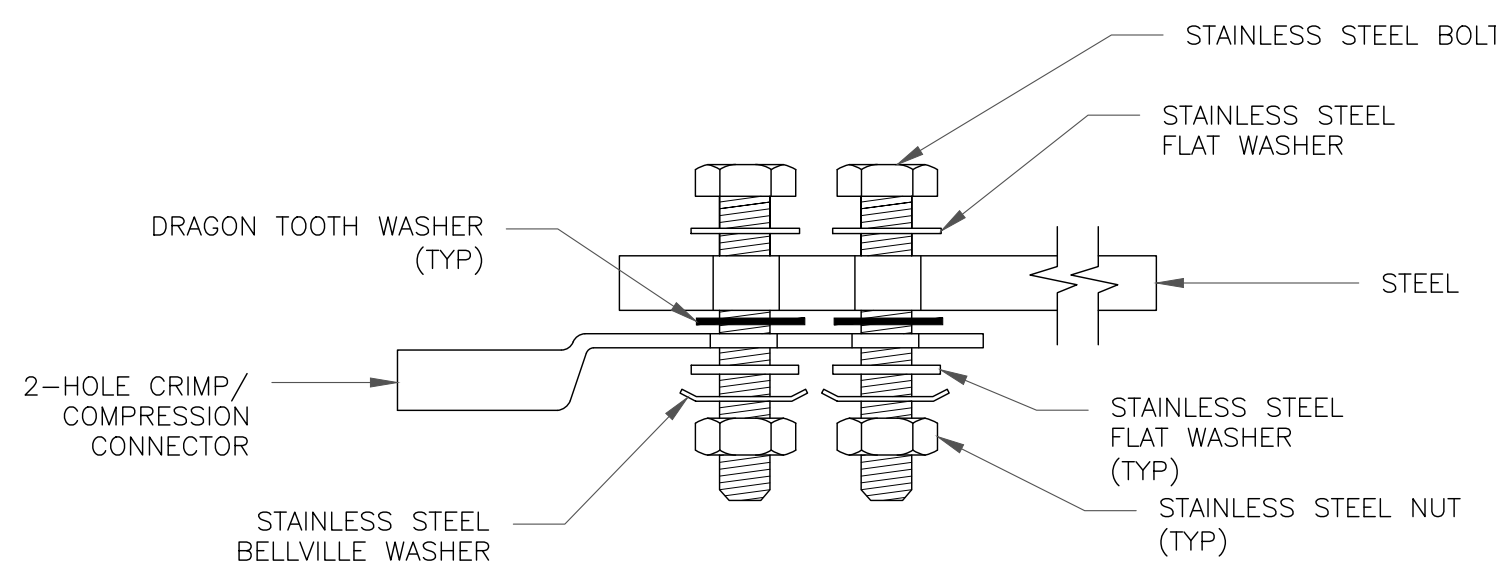
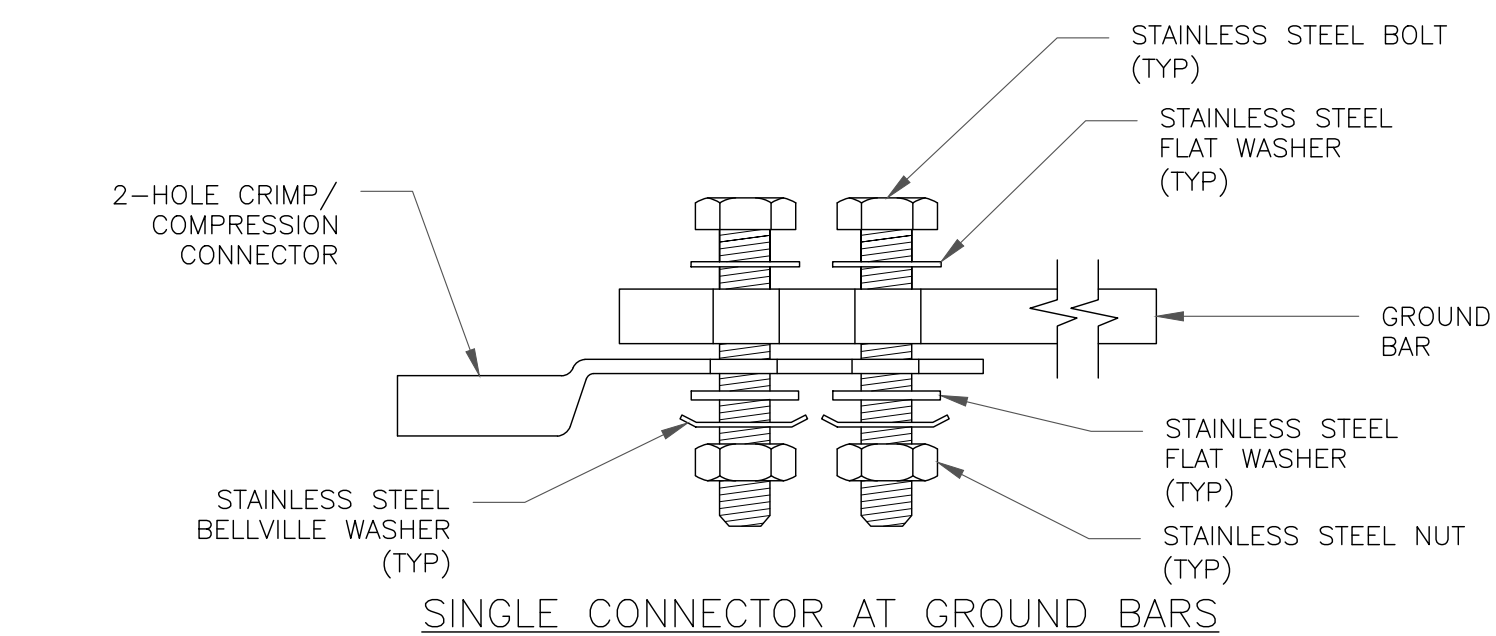
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



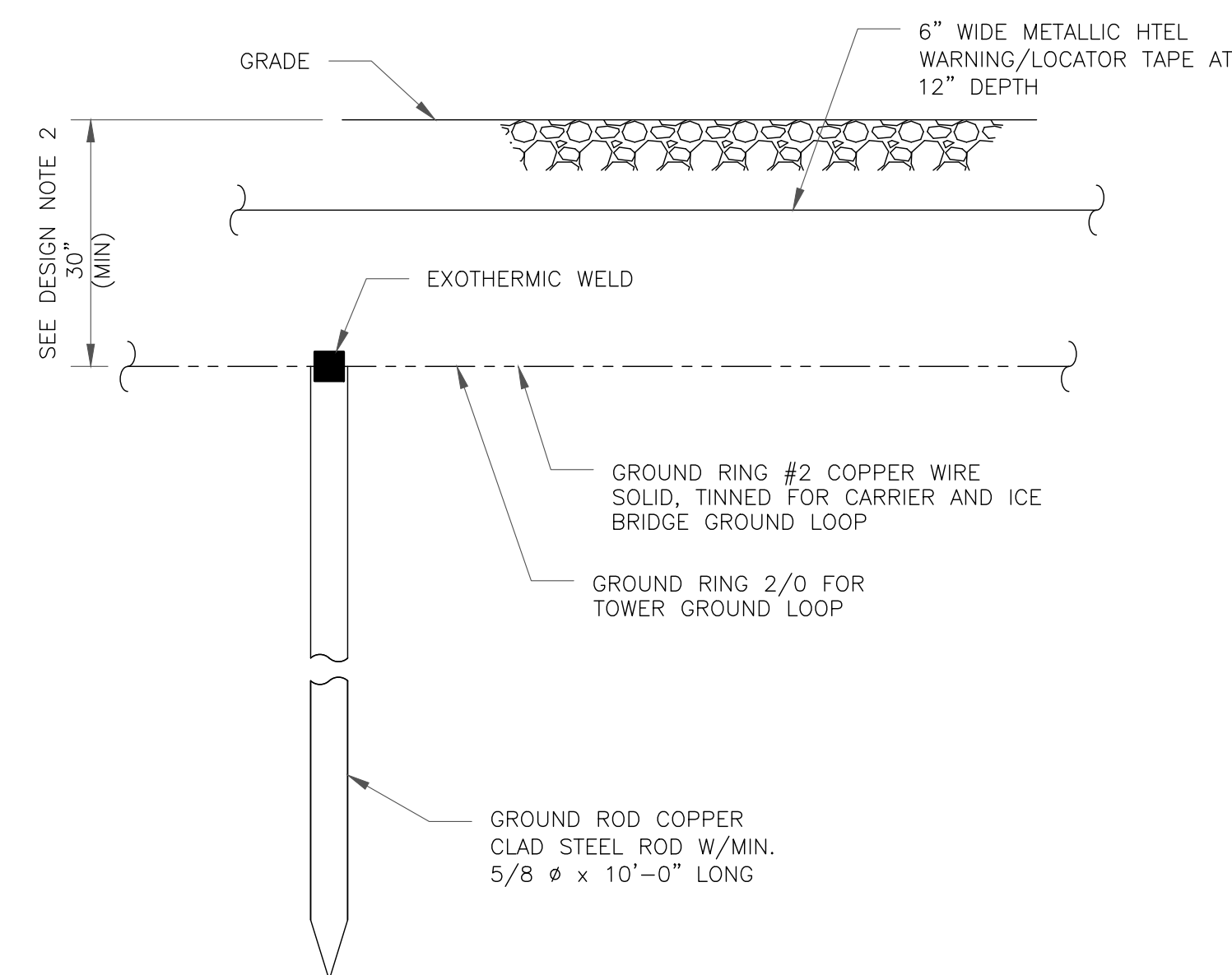
NOTES:

- NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
- ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
- ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
- GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
a: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

BU #: 876314
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



John B. Bosco

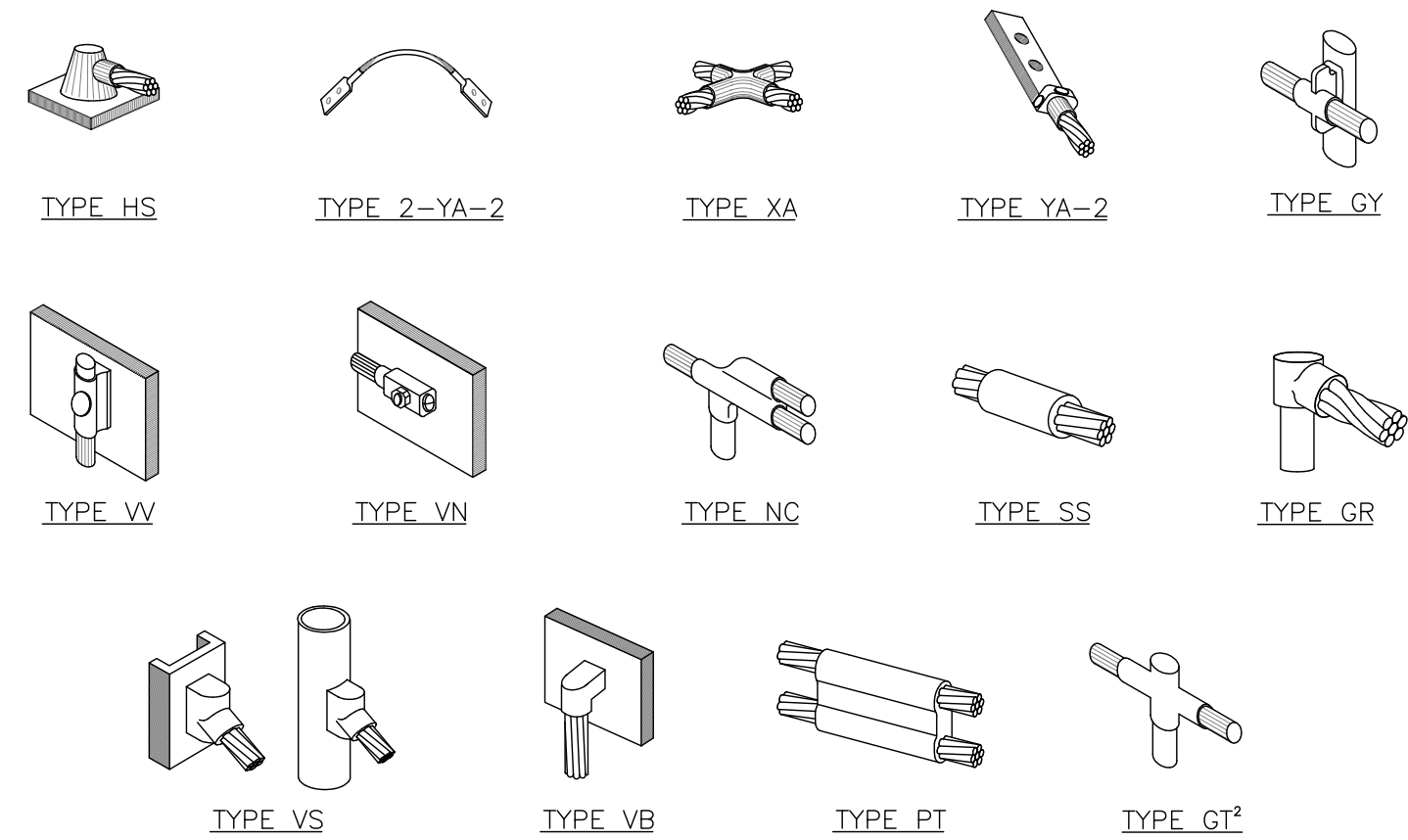
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER:

G-2

REVISION:

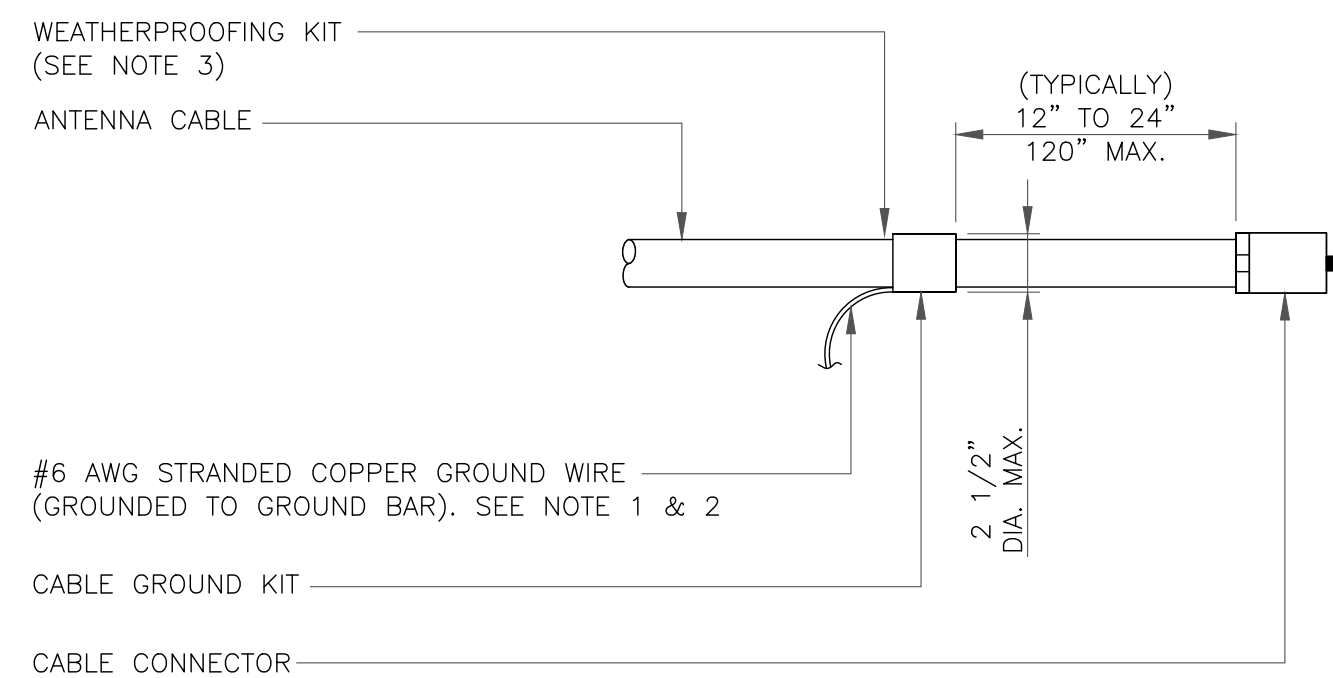
B



NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

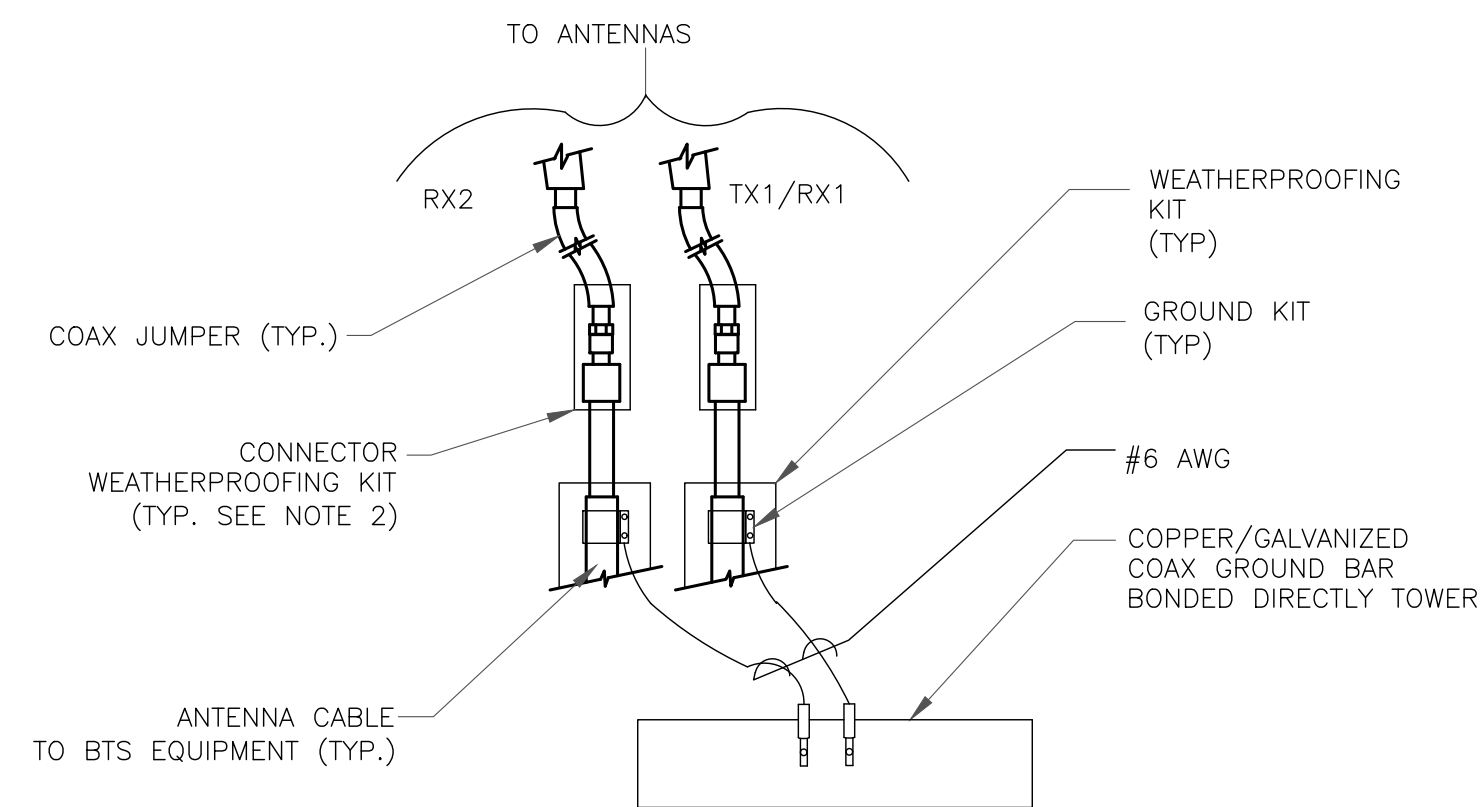
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

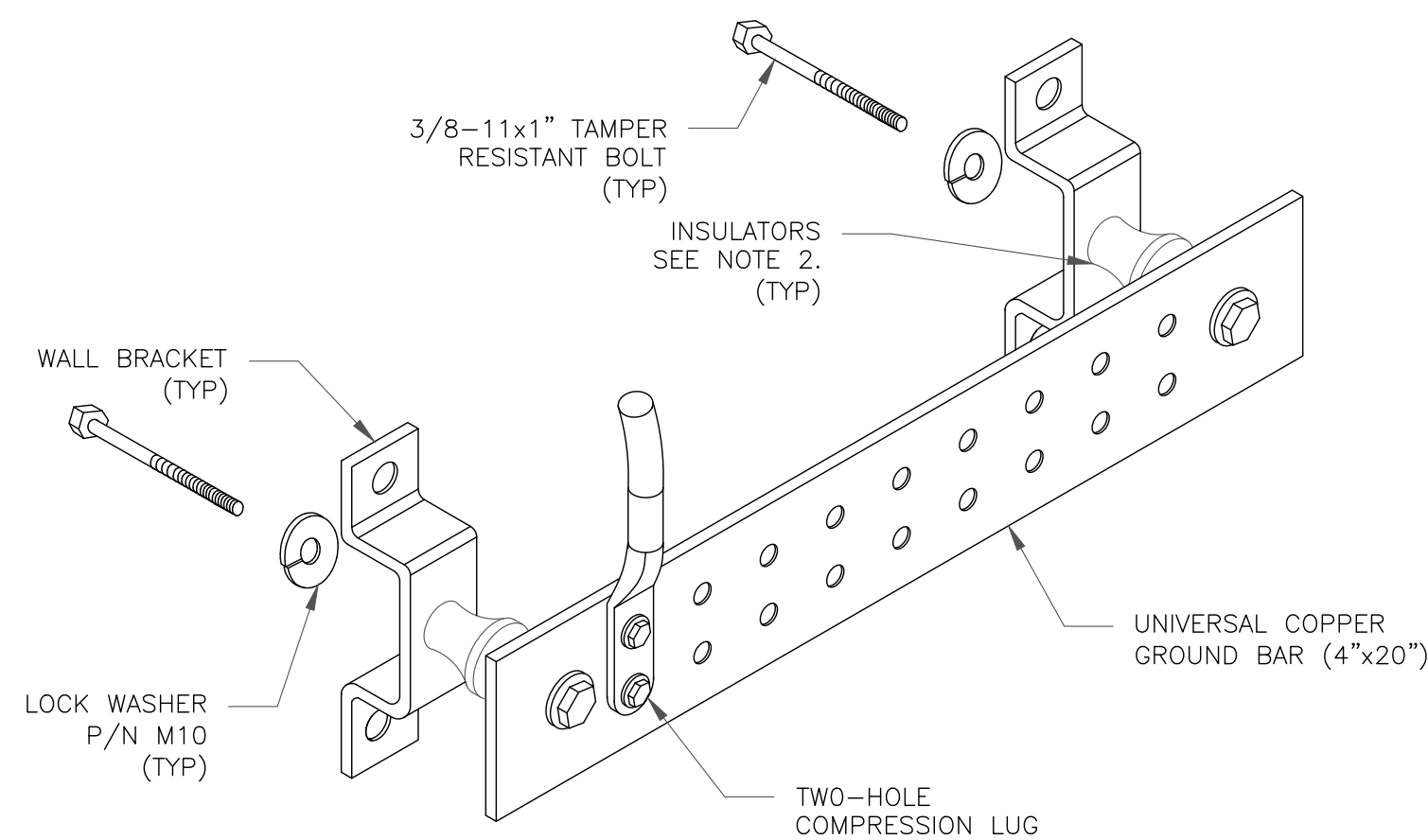
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

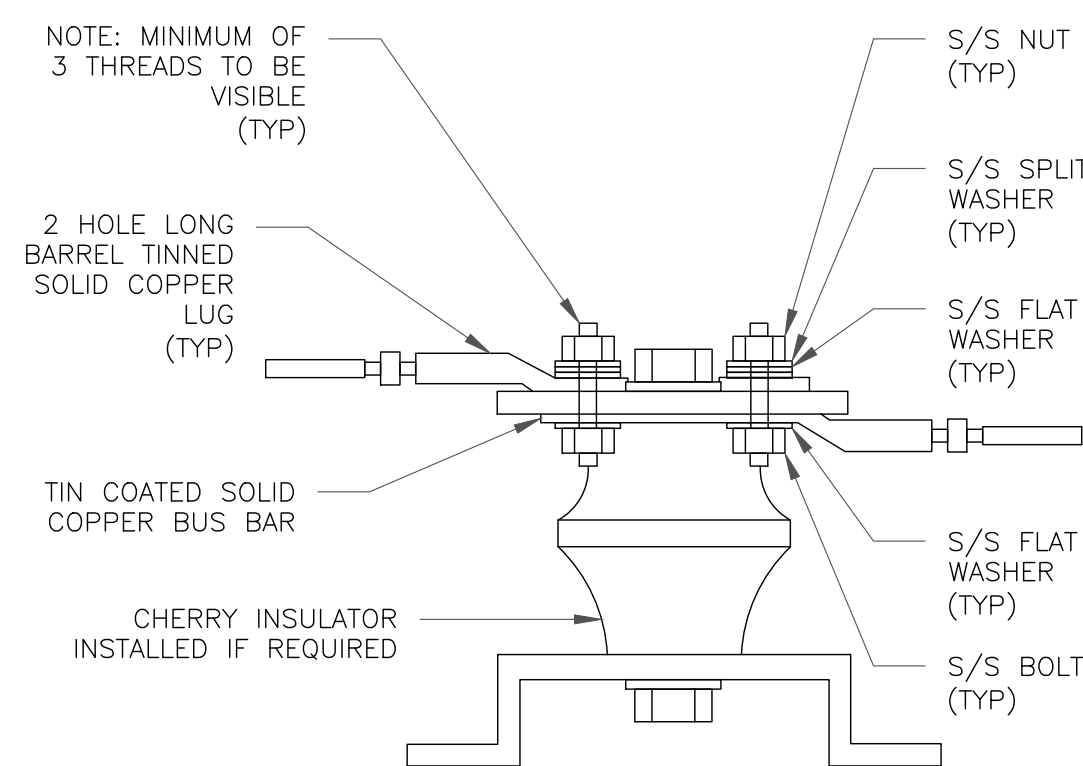
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

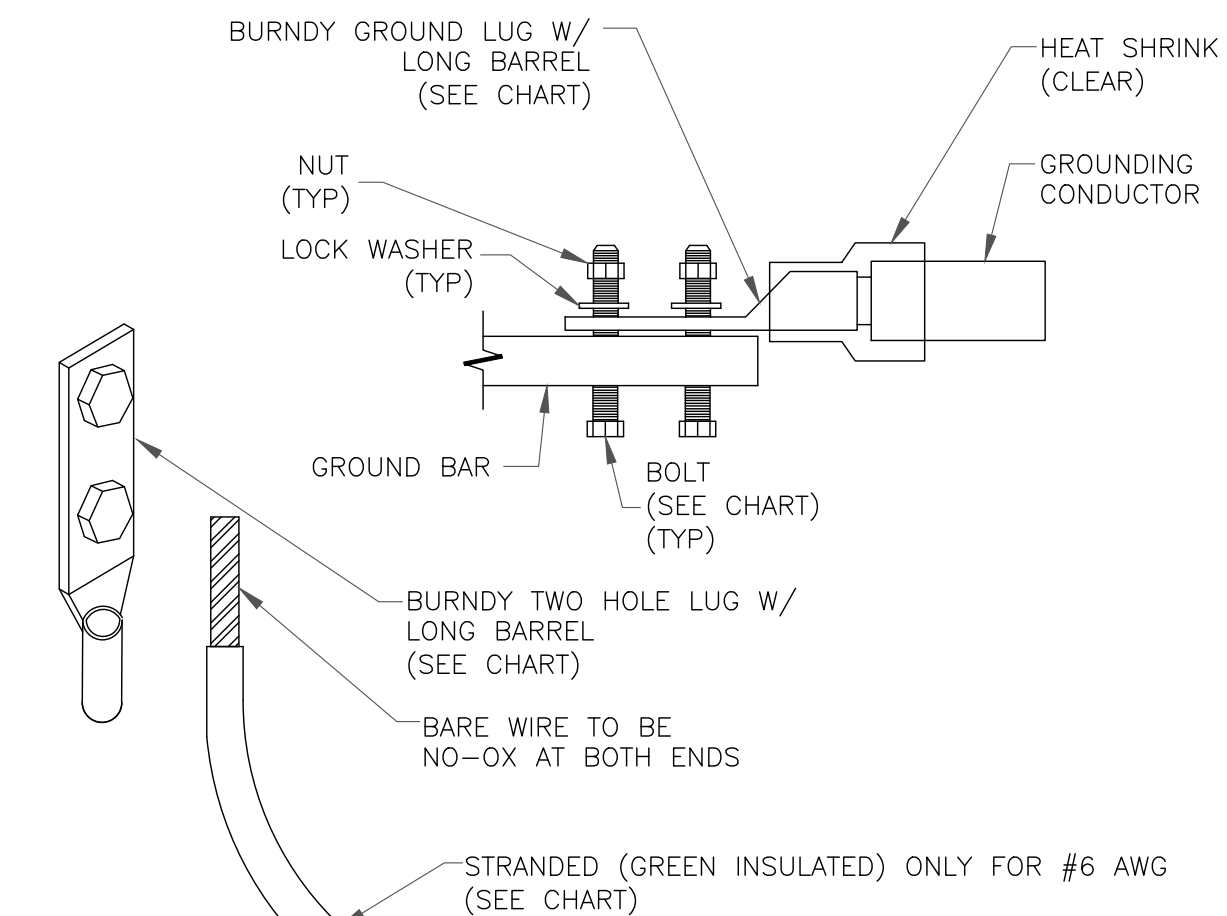
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

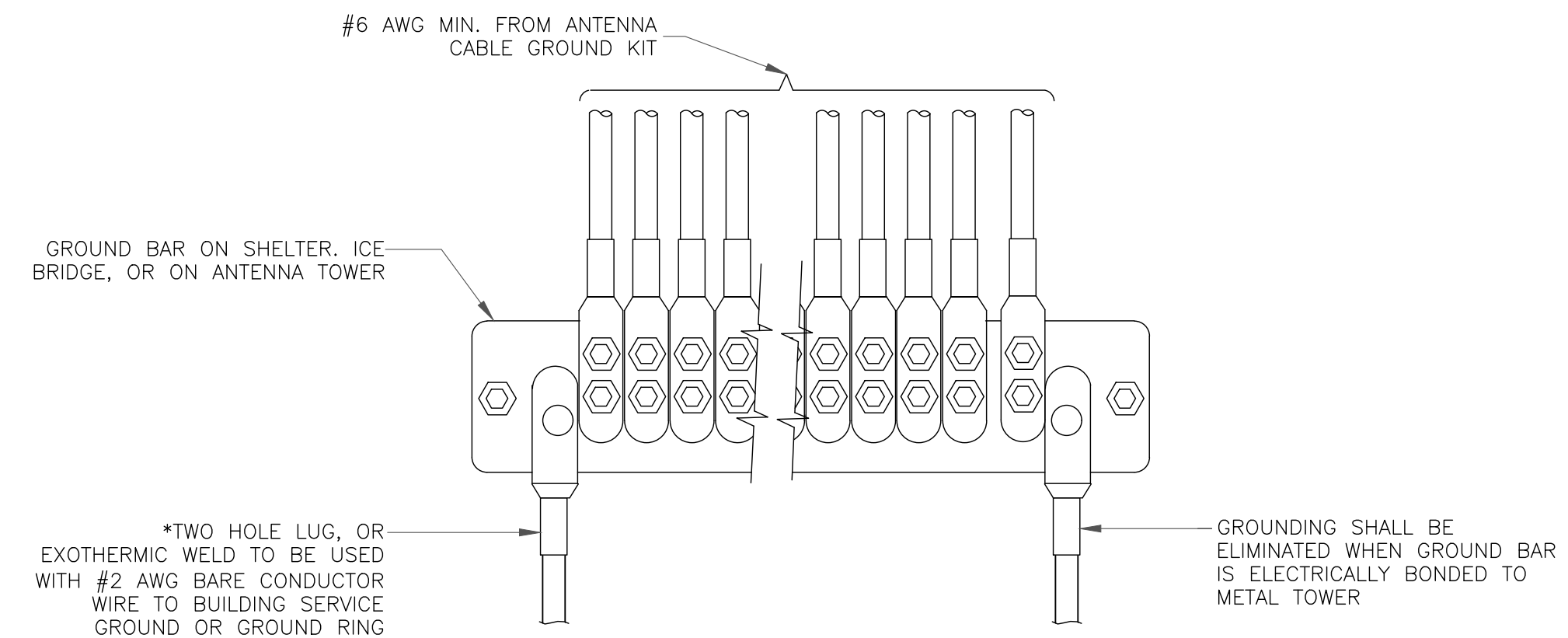
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



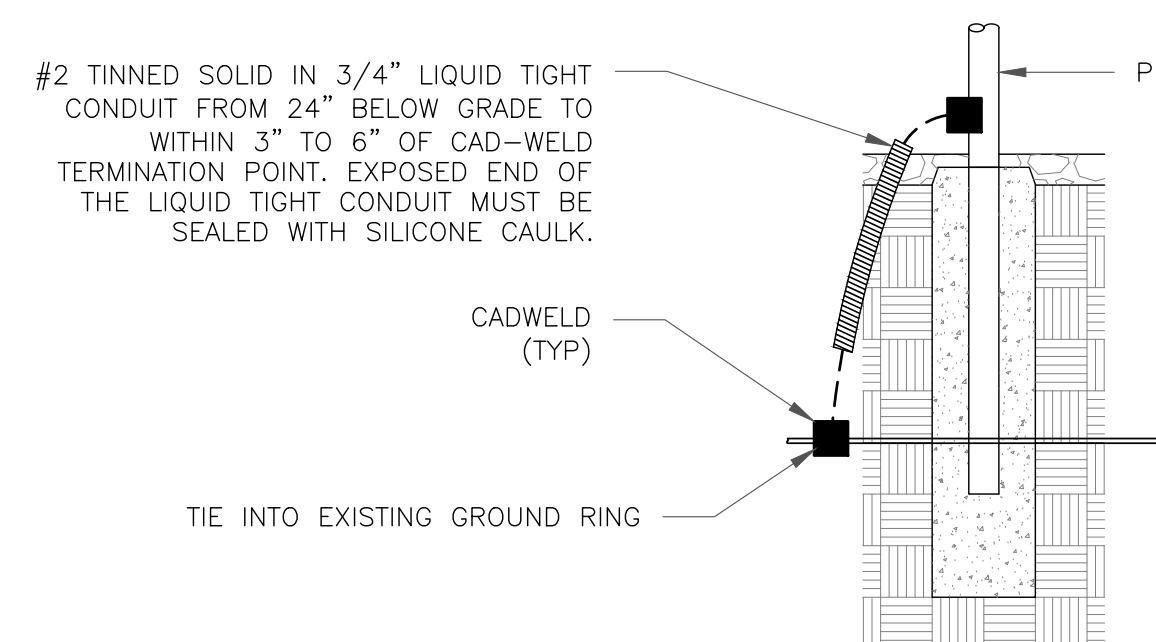
NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

FPA
FRENCH & PARELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801

T-MOBILE SITE NUMBER:
CT11124H

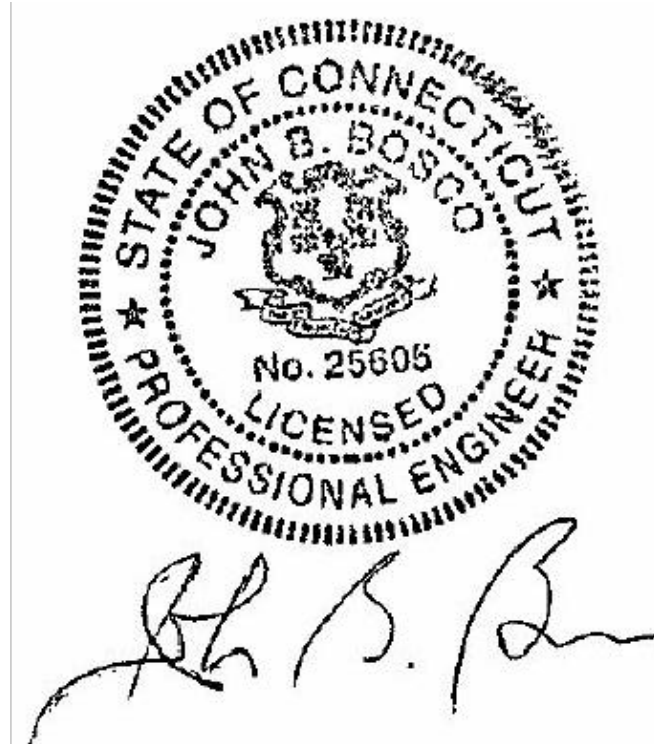
BU #: **876314**
HORSE HILL

214 RUSSIAN VILLAGE RD
SOUTHBURY, CT 06488

EXISTING 132'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	11/24/21	K.S.S.	PRELIMINARY	J.B.
B	11/30/21	K.S.S.	FINAL	J.B.
C	12/07/21	K.S.S.	FINAL	J.B.



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-3

REVISION:

B