



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

December 30, 2022

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

RE: Notice of Exempt Modification for T-Mobile: 876348/CTHA067A
3 Bright Meadow Blvd, Enfield, CT 06082
Latitude: 42° 1' 14.91" / Longitude: -72° 35' 6.59"

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 107' level of the 147'-6" monopole tower. T-Mobile is to remove all equipment at the 107' level including the antenna mount. T-Mobile proposes to replace six (6) existing Sprint antennas with nine (9) new T-Mobile antennas and ancillary equipment at the 147-foot mount level on the existing 147'-6" monopole tower. The property is located at 3 Bright Meadow Blvd and is owned by Connecticut Light & Power. The tower is owned by Crown Castle. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New @147'

- (3) Ericsson – AIR6419 B41 Antennas
- (3) CommScope – W-65B-R1 Antennas
- (3) RFS-APXVAALL24_43-U-NA20 Antennas
- (3) Ericsson- Radio 4460 B25+B66
- (3) Ericsson- Radio 4480 B71+B85
- (3) Hybrid Cables (6x24)
- Mount Modification

Remove @ 147'

- (3) RFS – APXVSPP18-C-A20 Antennas
- (3) RFS – APXVTM14-ALU-120 Antennas
- (3) Alcatel Lucent – TDRRH8X20-25
- (3) Alcatel Lucent - TME-PCS-1900MHz 4x45-65MHz
- (3) Alcatel Lucent - TME-PCS-800MHz 2x50 RRH

Remove @ 107'

- (3) RFS-APXVAARR24-43-U-NA20 Antennas
- (3) Ericsson – Air21 KRC118023-1_B2A-B4PAntennas
- (3) Ericsson – Air21 KRD901146-1_B66A_B2A Antennas

The Foundation for a Wireless World.

CrownCastle.com

- (3) Ericsson- Radio 4480 B71+B85
- (3) Generic Twin Style 1B – AWS TMA's
- (10) Coaxial Cables
- (1) ¾" DC Cable

Ground:

Install New:

- (1) 6160 & (1) B160 Battery Cabinet
- (2) PSU4813 Voltage Booster in (P) Cabinet
- (1) CSR IXRE Router V2
- (1) RP 6651 in (P) Cabinet
- (1) AVV Cabinet
- (1) 200 AMP PPC
- (1) 15' Ice Bridge

Remove:

- (1) PTS 8003 Cabinet
- (2) DUW 30
- (6) RU22
- (1) PPC
- (1) 6131 Cabinet
- (1) AAV Cabinet
- (1) existing Ice Bridge

The facility was approved by the Town of Enfield Special Use Permit No. PH2053 on July 2, 1998.

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 Ellen Zoppo-Sassu, Town Manager, Town of Enfield, Ms. Lauren Whitten, Director of Planning, Town of Enfield and the land owner Connecticut Light & Power. Crown Castle is the property owner.

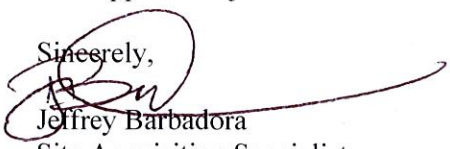
1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed 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.

Melanie A. Bachman

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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, Suite 250
Westborough, MA 01581
(781) 970-0053
Jeff.Barbadora@crowncastle.com

Attachments

cc:

Ellen Zoppo-Sassu, Town Manager
Town of Enfield
820 Enfield Street
Enfield, CT 06082
860-253-6350

Lauren Whitten, Director of Planning
Town of Enfield
820 Enfield Street
Enfield, CT 06082
860-253-6507

Connecticut Light & Power
PO Box 270
Hartford, CT 06140
(860) 665-6715

Crown Castle – Tower Owner



May 20, 1998

TOWN OF ENFIELD

CERTIFIED MAIL Z392 898 403

Karen Johnson
Sprint PCS
9 Barnes Industrial Rd South
Wallingford, CT 06492

Dear Ms. Johnson:

At the May 19, 1998 Regular Meeting of the Enfield Conservation Commission (Inland Wetland and Watercourses Agency), the following action was taken:

IW 273 - Application of Sprint PCS (Telecommunications) requesting a permit or regulated activities associated with the erection of a telecommunications tower accesses from Brightmeadow Boulevard.

The Commission approved the application with the following conditions:

1. The permittee shall notify the Planning Department at 253-6358 immediately upon the commencement of work and upon its completion.
2. If the authorized activity has not been initiated before May 19, 2000, this permit shall be null and void if not previously revoked or specifically extended. The duration of the permit once initiated shall be 5 years from the date of approval.
3. All work and all regulated activities conducted pursuant to this authorization shall be consistent with these terms and conditions of this permit. Any structures, excavation, fill, obstruction, encroachments or regulated activities not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension, or revocation. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this permit.
4. The authorization is not transferable without the written consent of the Enfield Conservation Commission.
5. In evaluating this application, the Commission has relied on information provided by the applicant and, if such information subsequently proves to be false, deceptive, incomplete and/or inaccurate this permit shall be modified, suspended or revoked.

820 Enfield Street/Enfield, Connecticut 06082/(860) 253-6300

6. This permittee shall employ best management practices, consistent with the terms and conditions of the permit, to control stormwater discharges and to prevent erosion and sedimentation and to otherwise prevent pollution of wetlands or watercourses. For information and technical assistance, contact the Town Planner. The permittee shall immediately inform the Planning Department of any problems involving wetlands or watercourses which have developed in the course of, or which are caused by, the authorized work.
7. No equipment or material including without limitation, fill, construction materials, or debris, shall be deposited, placed, or stored in any wetland or watercourse on or off site unless specifically authorized by this permit.
8. This permit is subject to and does not derogate any present or future property rights or other rights or powers of the Town of Enfield, and conveys no property rights or in real estate of material nor any exclusive privileges, and is further subject to any and all public and private rights and to any activity affected hereby.
9. Timely implementation and maintenance of sediment and erosion control measures are a condition of this permit. (All sediment and erosion control measures must be maintained until all disturbed areas are stabilized.)
10. A pre-construction meeting shall be held prior to the commencement of any construction activities on the site with the applicant, contractor, and Town staff.
11. A landscape/performance bond shall be posted prior to any clearing of the site.

If you have any questions regarding this action, please contact me at (860)253-6358.

Very truly yours,



Laurie P. Whitten
Assistant Town Planner

LPW/vch



TOWN OF ENFIELD

CERTIFIED MAIL Z205 375 469



July 7, 1998

Karen Johnson
Vanasse Hangen Brustlin Inc.
54 Tuttle Place
Middletown, CT 06457

Dear Ms. Johnson:

At the July 2, 1998 Regular Meeting of the Enfield Planning & Zoning Commission the following action was taken:

PH 2053 – Special Use Permit for a Commercial Wireless Telecommunication Service including site plan review of a wireless telecommunication facility consisting of a 150-foot Monopole and associated equipment surrounded by a chain link fence located east of Bright Meadow Blvd. adjacent to the Harley Hotel (Assessor's Map 35, Lot 219 - Old Enfield St) BR zone – The Connecticut Light and Power Company, owner / Sprint Spectrum L.P. (Sprint PCS) aplct.

The Commission approved the application with the following conditions:

1. An engineering bond for removal of the wireless telecommunications facility including the tower and base components in an amount to be determined by the town engineer shall be submitted to the town prior to the start of construction and prior to the issuance of any building permits. Any need to use the bond by the town shall be binding on the site regardless of name of the bond obligee.

820 Enfield Street/Enfield, Connecticut 06082 / (860) 253-6300

2. An erosion and sedimentation control passbook, pledged to the town, in an amount to be determined by the town engineer, shall be submitted to the town prior to the start of construction.
3. A preconstruction meeting between the applicant, site contractors, project engineer and town staff shall be held prior to the beginning of any site work.
4. The tower shall accommodate both the applicant's Antennas and comparable Antennas for at least two additional users.
5. The tower shall allow for future rearrangement of Antennas upon the tower and shall accommodate Antennas mounted at varying heights.
6. The wireless communication facility shall not interfere with existing or proposed public safety communications, commercial television and radio signals or other forms of communication transmissions. Penalty for subsequent interference shall void the approval of the facility.
7. The wireless communication facility shall comply with the standards promulgated by the Federal Communication Commission (FCC).
8. All generators installed in conjunction with the wireless communications facility shall comply with all State and local noise regulators.
9. On or before August 31 every year, the applicant or wireless telecommunications service provider shall submit information to the Planning Zoning Commission file in support of the provision of Section 14-8.6 of the Zoning Ordinance.
10. If the wireless communications facility is not in use for 12 consecutive months, it shall be removed within 90 days from the end of such 12 month period, including any towers and base components by the last service provider using the site or owner, whichever has a contractual obligation to perform the removal. The site shall be restored to an appearance that is compatible with the surrounding neighborhood and where appropriate, re-vegetated to blend with surrounding area.
11. The special use permit for a commercial wireless telecommunication service shall be valid for a maximum period of 10 years with a right of reapplication under regulations in effect at that time.

Karen Johnson

-3-

July 7, 1998

12. The approval of an application for special use permit shall be void and of no effect unless construction of the project commences within one year from the date of the approval granted by the commission in accordance with Section 14-10.2 of the Zoning Ordinance.
13. Arrangements shall be made with the fire department regarding emergency access to the compound.
14. The plans shall be modified to show a paved apron at the driveway entrance that conforms to town paving specifications.
15. The plans shall be modified to include standard notes as recommended by the town engineer.
16. Monopole shall be maintained if becomes rusty or eye sore.

If you have any questions regarding this action, please contact me at (860)253-6358.

Very truly yours,



Laurie P. Whitten
Acting Town Planner

LPW/vch

Exhibit B

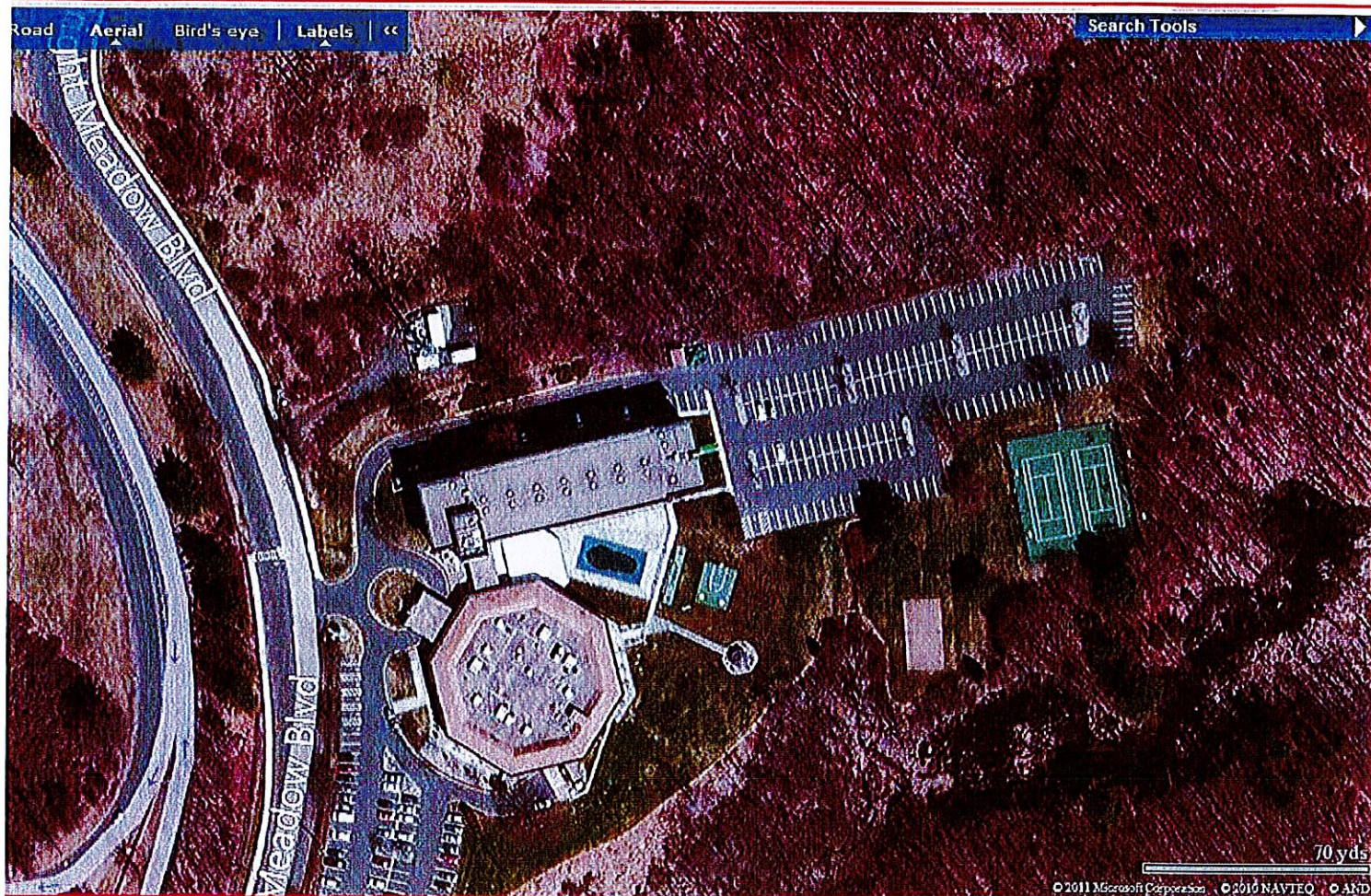
Property Card

BU #: 876348

Tax Parcel ID # (Real Property):

ENFI-000487-000001-000005

Aerial Photo of Parcel from County GIS Database:



3 BRIGHT MEADOW BLVD

Location 3 BRIGHT MEADOW BLVD

Mblu 035/ / 0219/ /

Acct# 048700010005

Owner CONN LIGHT + POWER
COMPANY

Assessment \$485,710

Appraisal \$693,860

PID 11009

Building Count 1

Fire District 4

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$419,280	\$274,580	\$693,860

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$293,500	\$192,210	\$485,710

Owner of Record

Owner CONN LIGHT + POWER COMPANY
Co-Owner
Address PO BOX 270
HARTFORD, CT 06140-0270

Sale Price \$0
Certificate 1
Book & Page 0237/0455
Sale Date
Instrument

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
CONN LIGHT + POWER COMPANY	\$0	1	0237/0455		

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: \$0

Building Percent Good:

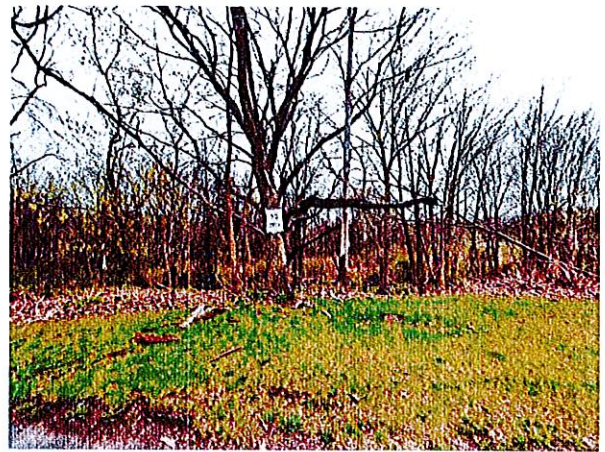
Replacement Cost

Less Depreciation: \$0

Building Attributes

Field	Description
Style	Outbuildings
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Fir 1	
Interior Fir 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Extra Kitchens	
Fireplace(s)	
Extra Opening(s)	
Gas Fireplace(s)	
Blocked FPL(s)	
Bsmt Garage(s)	
Fin Bsmt	
FBM Quality	
Whirlpool(s)	
Sauna	
Walk Out	
Solar	
Fndtn Cndtn	
Basement	

Building Photo



(<http://images.vgsi.com/photos2/EnfieldCTPhotos/A00\02\72\14.JPG>)

Building Layout

 Building Layout (ParcelSketch.ashx?pid=11009&bld=11009)

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

Extra Features

Extra Features

Legend

No Data for Extra Features

Land

Land Use

Use Code 300
Description Ind Land
Zone BR
Neighborhood
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 12.61
Frontage
Depth
Assessed Value \$192,210
Appraised Value \$274,580

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN2	FENCE-6' CHAIN			400.00 L.F.	\$3,400	1
MSC1	CMEQ			360.00 UNIT	\$13,500	1
MSC1	CMEQ			240.00 UNIT	\$9,000	1
MSC1	CMEQ			240.00 UNIT	\$9,000	1
TWR3	Cell Twr3 Carriers			1.00 UNITS	\$384,380	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$419,280	\$274,580	\$693,860
2018	\$419,280	\$274,580	\$693,860
2017	\$419,280	\$274,580	\$693,860

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$293,500	\$192,210	\$485,710
2018	\$293,500	\$192,210	\$485,710
2017	\$293,500	\$192,210	\$485,710

Exhibit C

Construction Drawings

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, December 30, 2022 9:54 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 770906219470: 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 Fri, 12/30/2022 at
9:46am.



Delivered to 820 ENFIELD ST, ENFIELD, CT 06082
Received by E.CASS

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [770906219470](#)

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Enfield Ellen Zoppo-Sassu, Town Manager 820 Enfield Street ENFIELD, CT, US, 06082
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 12/29/2022 07:07 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	ENFIELD, CT, US, 06082
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, December 30, 2022 9:54 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 770906239770: Your package has been delivered

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Delivered to 820 ENFIELD ST, ENFIELD, CT 06082
Received by E.CASS

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [770906239770](#)

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Enfield Lauren Whitten, Dir of Planning 820 Enfield Street ENFIELD, CT, US, 06082
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 12/29/2022 07:07 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	ENFIELD, CT, US, 06082
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

Tracking Number:

Remove X

EI542048538US

Copy Add to Informed Delivery (<https://informedelivery.usps.com/>)

Latest Update

Your item has been delivered and is available at a PO Box at 5:55 am on December 30, 2022 in HARTFORD, CT 06102. Waiver of signature was exercised at time of delivery.

Get More Out of USPS Tracking:

USPS Tracking Plus®

Delivered

Delivered, PO Box

HARTFORD, CT 06102

December 30, 2022, 5:55 am

See All Tracking History

Feedback

Text & Email Updates



Proof of Delivery



USPS Tracking Plus®



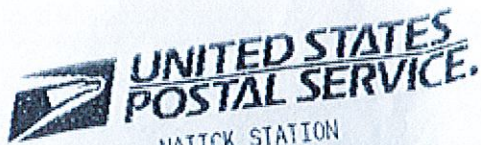
Product Information



See Less ^

Track Another Package





NATICK STATION
15 COMMON ST
NATICK, MA 01760-4762
(800) 275-8777

03:58 PM

12/29/2022

Product	Qty	Unit Price	Price
---------	-----	------------	-------

PM Express 1-Day	1		\$27.90
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Flat Rate Env

Hartford, CT 06141

Flat Rate

Signature Waiver

Scheduled Delivery Date

Fri 12/30/2022 06:00 PM

Money Back Guarantee

Tracking #:

EI542048538US

Insurance

Up to \$100.00 included

\$0.00

\$27.90

Total

\$27.90

Grand Total:

\$27.90

Credit Card Remit

Card Name: VISA

Account #: XXXXXXXXXXXX5201

Approval #: 521334

Transaction #: 675

AID: A0000000980840

AL: US DEBIT

PIN: Not Required

Chip

Save this receipt as evidence of insurance. For information on filing an insurance claim go to
<https://www.usps.com/help/claims.htm>
or call 1-800-222-1811

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

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All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Date: December 12, 2022



MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject: Mount Analysis - Conditional Passing Report

Carrier Designation: T-Mobile Equipment Change-Out
Carrier Site Number: CTHA067A
Carrier Site Name: CTHA067A

Crown Castle Designation: BU Number: 876348
Site Name: Enfield
JDE Job Number: 728058
Order Number: 629447, Rev.0

Engineering Firm Designation: Report Designation: 149864.007.01.0001

Site Data: Bright Meadow Blvd., Enfield, CT, Hartford County, 06082
Latitude 42° 1' 14.91" Longitude -72° 35' 6.59"

Structure Information: Tower Height & Type: 147.5 ft. Monopole
Mount Elevation: 147 ft.
Mount Type: 14 ft. Platform Mount

We are pleased to submit this “**Mount Analysis - Conditional Passing 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’s stress level. Based on our analysis we have determined the stress level to be:

Platform Mount

Sufficient

*See Section 4.1 of this report for the structural modifications required in order for the mount to support the loading listed in Table 1.

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Joseph Variamparampil

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: BER: 2386985 Expires: 03/31/2023

Chad E. Tuttle, P.E.

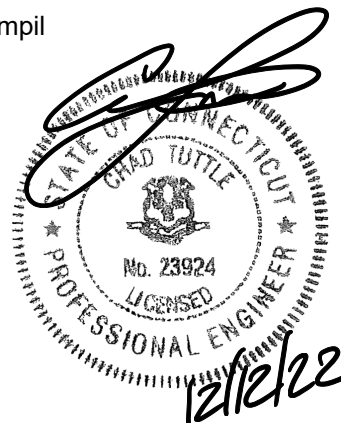


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1) INTRODUCTION

This is an existing 3 – sector 14' Platform Mount, mapped and analysed by MTS Engineering, P.L.L.C.

The proposed modifications prepared by MTS Engineering, P.L.L.C, in June of 2021 have been considered in this analysis. Reinforcement consists of SitePro1 Part#PRK-1245L and Sitepro1 Part# HRK-12.

2) ANALYSIS CRITERIA

Building Code:	2021 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	116 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s :	0.171
Seismic S_1 :	0.055
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	Manufacturer	Model/Type	Mount / Modification Details
147	147	3	Commscope	VV-65B-R1_TMO	14' Platform Mount
		3	Ericsson	AIR 6419 B41_TMO_CCIV2	
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	
		3	Ericsson	Radio 4480_TMOV2	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 08/16/2022	Crown Castle
RFDS		Date: 11/15/2022	
Mount Mapping	MTS Engineering, P.L.L.C.	Date: 05/05/2021	On File
Mount Analysis		Date: 08/23/2022	
CD	B+T group	Date: 11/16/2022	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 20.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

A tool internally developed by MTS Engineering, P.L.L.C., 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.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Mount Analysis* (Revision E). In addition, this analysis is in accordance with OTHER SOW.

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

The following assumptions have been included in the analysis of the mount:

Component	Section	Length	Note
Support Rail	2" Std. Pipe	13'-0"	--
Connection Angle	L2.5X2.5X4	1'-3"	--

5. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
7. 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.
8. The following material grades were assumed (Unless Noted Otherwise):
 - (a) Connection Bolts : ASTM A325
 - (b) Steel Pipe : ASTM A53 (GR. 35)
 - (c) HSS (Round) : ASTM 500 (GR. B-42)
 - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - (e) Channel : ASTM A36 (GR. 36)
 - (f) Steel Solid Rod : ASTM A36 (GR. 36)
 - (g) Steel Plate : ASTM A36 (GR. 36)
 - (h) Steel Angle : ASTM A36 (GR. 36)
 - (i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. MTS Engineering, P.L.L.C. 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 Mount)

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1,2	Main Horizontals	147	2	67.3	Pass
	Support Rails		44	32.4	Pass
	Mount Pipes		52	39.6	Pass
	Support Channels		10	34.1	Pass
	Support Angles		16	48.9	Pass
	Connection Angles		51	38.4	Pass
	Kicker		76	11.5	Pass
	Connection Plates		77	7.3	Pass
3	Mount to Tower Connection		--	50.4	Pass

Structure Rating with Recommendations (max from all components) =	67.3%
--	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) All sectors are typical
- 3) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

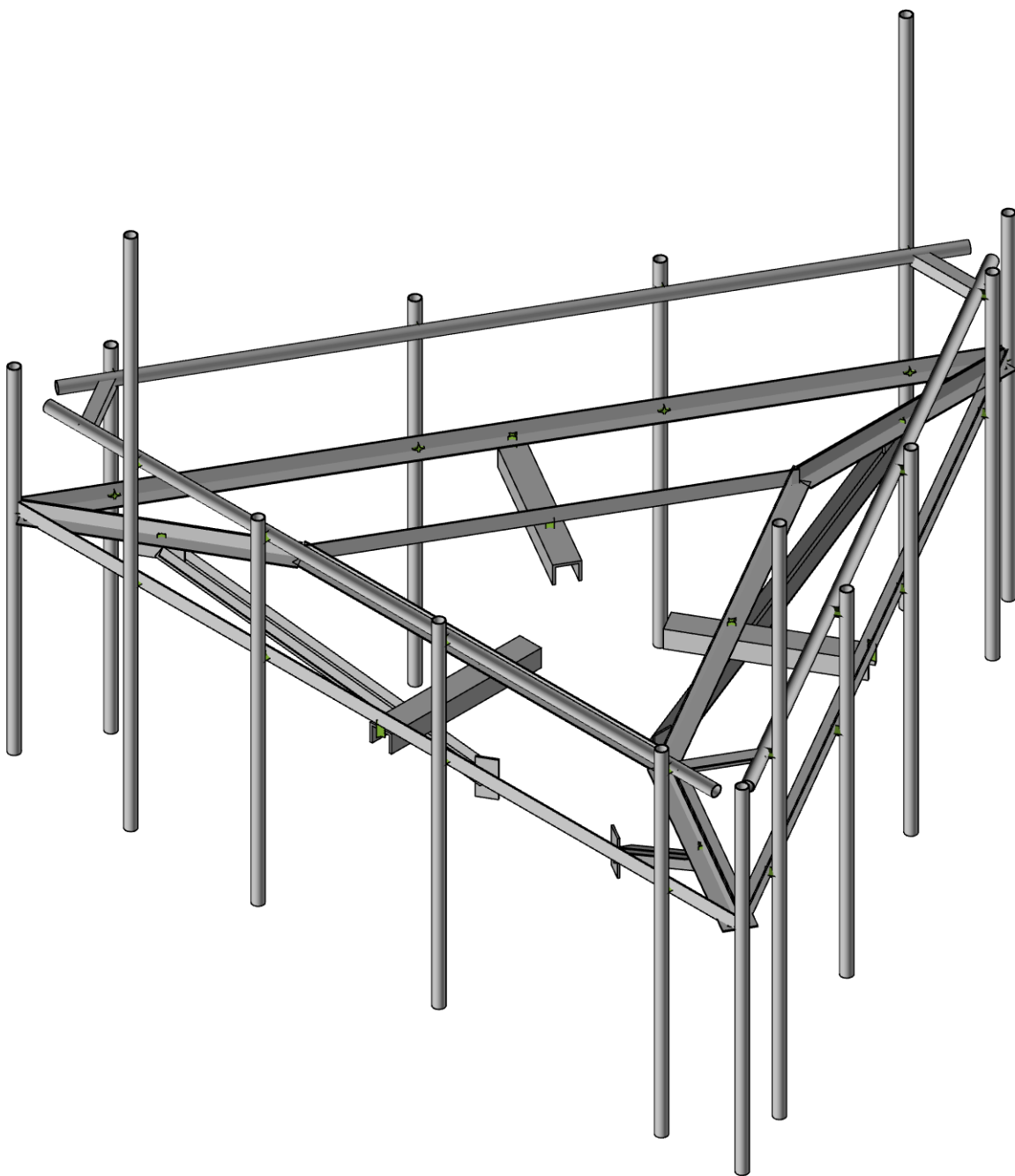
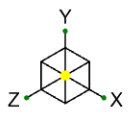
4.1) Recommendations

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

1. Install 2" Std. Pipe x10'-0" Long at Pos. 4 in order to install new antenna with similar connection as existing.

No modifications are required at this time provided that the above-listed changes are completed.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

MTS Engineering, P.L.L.C.

APK

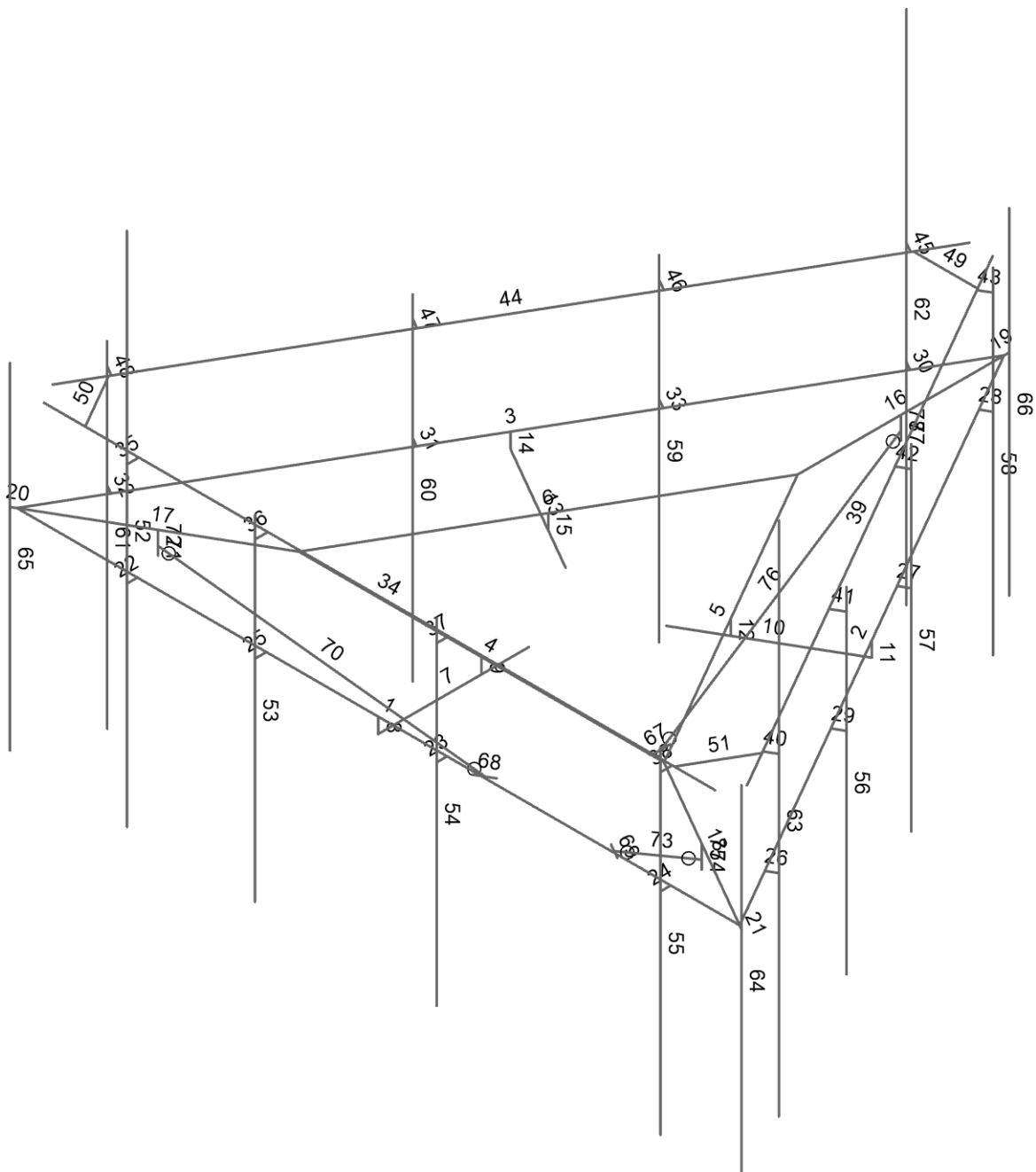
149864.007.01.0001

876348 - Enfield

SK-1

Dec 10, 2022

149864_007_01_0001_Enfield_C...



Envelope Only Solution

MTS Engineering, P.L.L.C.

APK

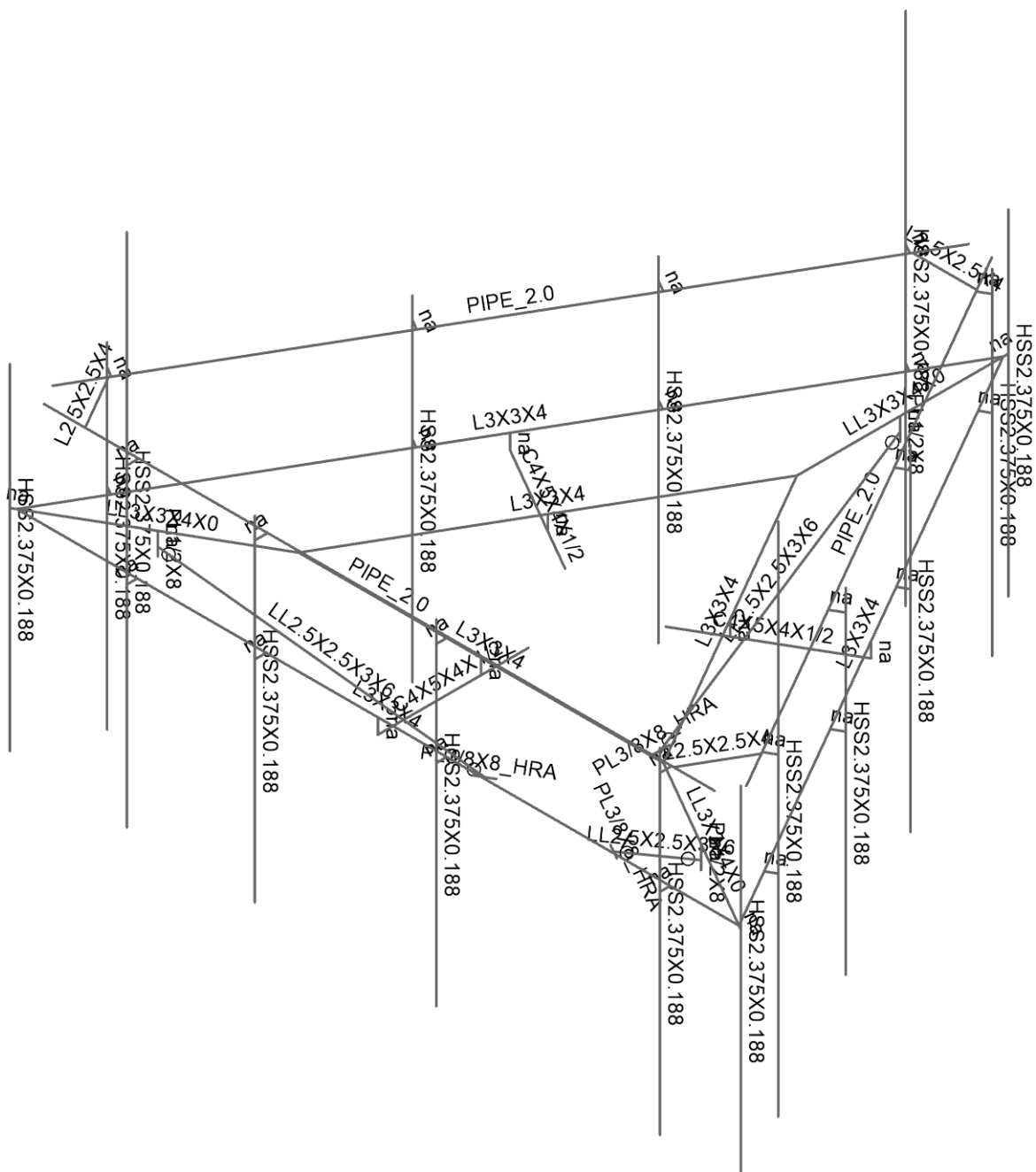
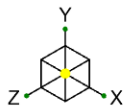
149864.007.01.0001

876348 - Enfield

SK-2

Dec 10, 2022

149864_007_01_0001_Enfield_C...



Envelope Only Solution

MTS Engineering, P.L.L.C.

APK

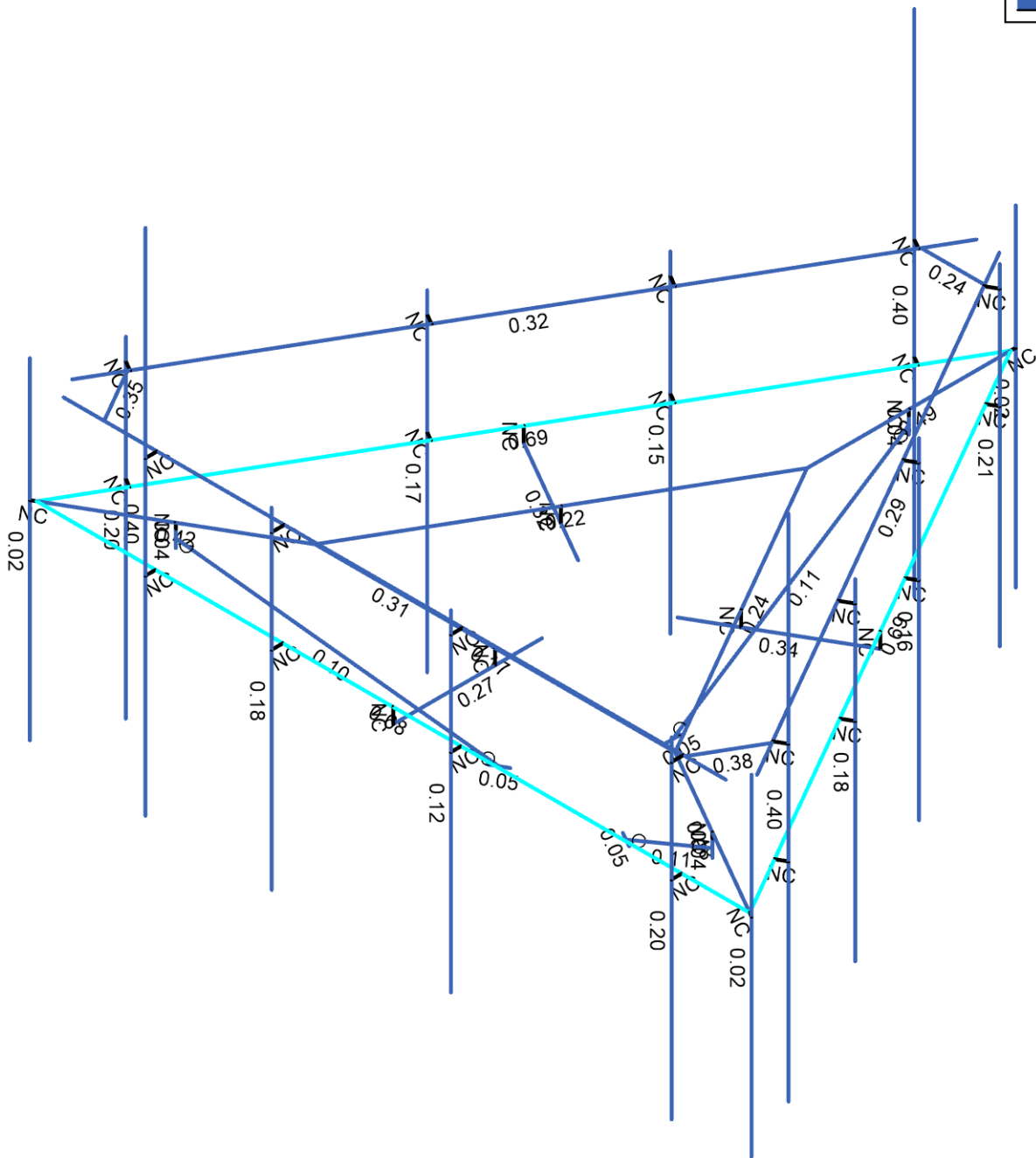
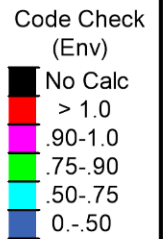
149864.007.01.0001

876348 - Enfield

SK-3

Dec 10, 2022

149864_007_01_0001_Enfield_C...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

MTS Engineering, P.L.L.C.

APK

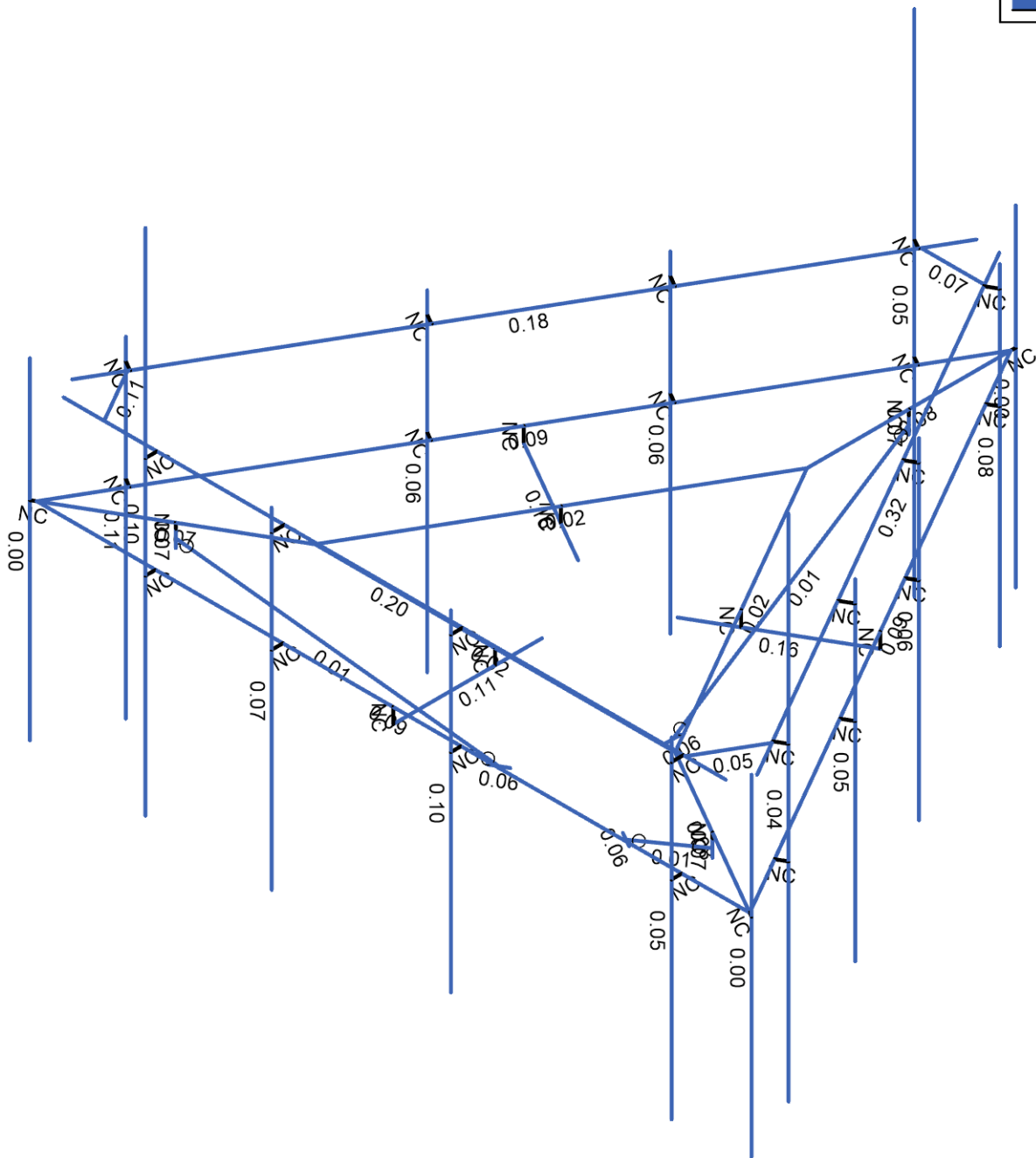
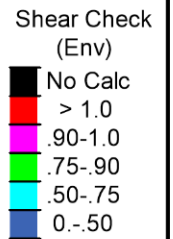
149864.007.01.0001

876348 - Enfield

SK-4

Dec 10, 2022

149864_007_01_0001_Enfield_C...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

MTS Engineering, P.L.L.C.

APK

149864.007.01.0001

876348 - Enfield

SK-5

Dec 10, 2022

149864_007_01_0001_Enfield_C...

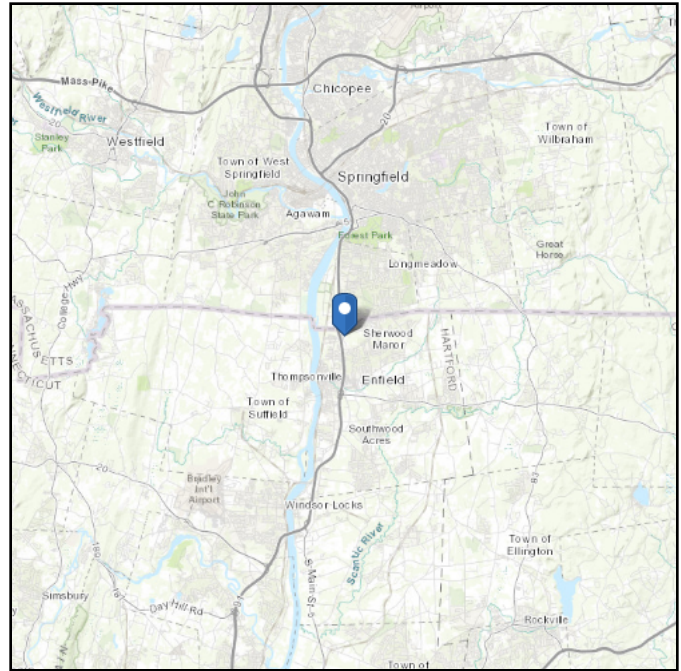
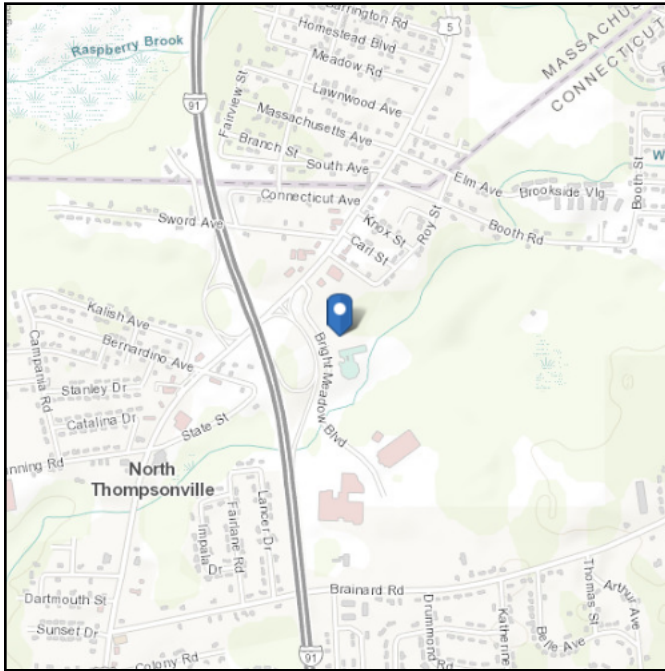
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Latitude: 42.020808
Longitude: -72.585164
Elevation: 110.38 ft (NAVD 88)



Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	83 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: Sat Dec 10 2022

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

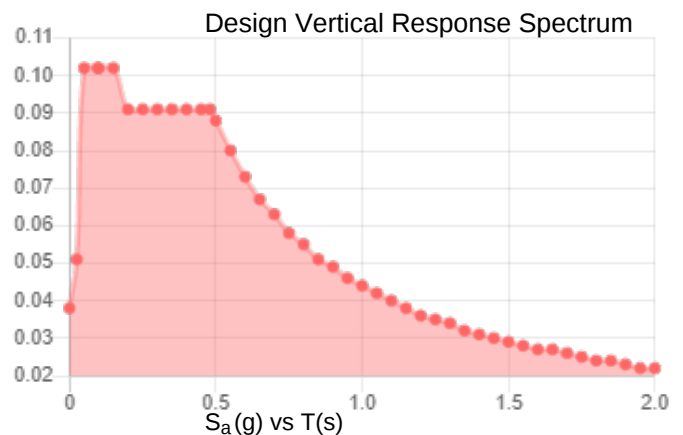
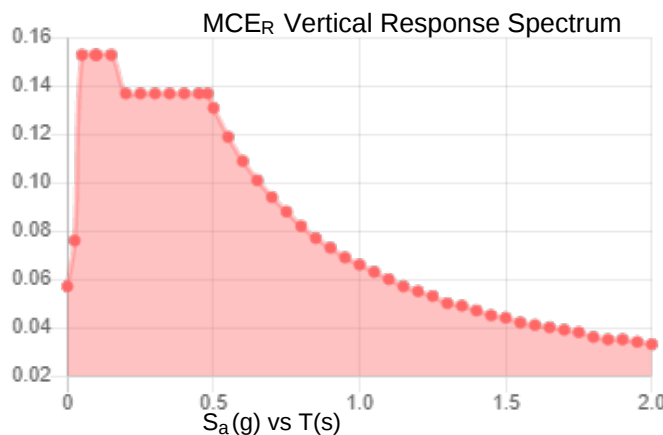
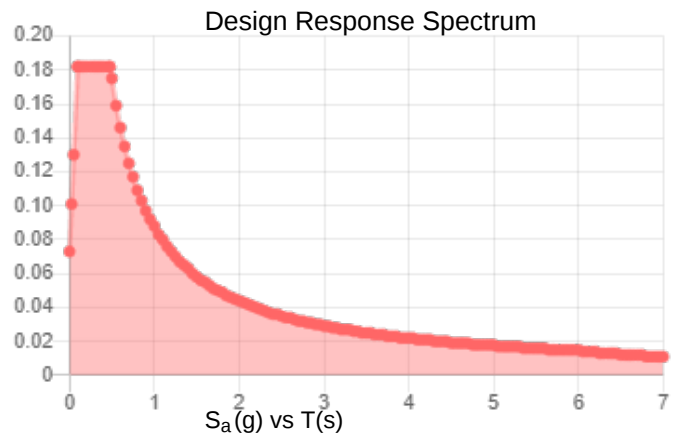
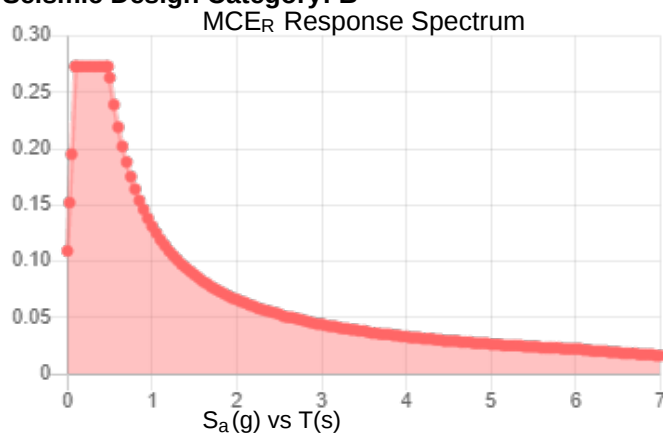
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class:

Results:

S_S :	0.171	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.089
F_v :	2.4	PGA _M :	0.143
S_{MS} :	0.273	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.182	C_v :	0.7

Seismic Design Category: B



Data Accessed:

Sat Dec 10 2022

Date Source:

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

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 5 F
Gust Speed 50 mph

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

Date Accessed: Sat Dec 10 2022

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

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

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

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

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

PROJECT	149864.007.01.0001 - ENFIELD, CT	KSC
SUBJECT	Platform Mount Analysis	
DATE	12-10-22	



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	z_s :	110 ft	[ASCE7 Hazard Tool]
Tower Height	:	147.50 ft	
Mount Elevation	:	147.00 ft	
Antenna Elevation	:	147.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	B	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	116 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i :	50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s :	30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i :	1.50 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S :	0.17	
	S_1 :	0.06	
	S_{DS} :	0.18	
	S_{D1} :	0.09	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.10	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	2.34	[Sec. 2.6.6]
Elevation Factor	K_e :	1.00	[Sec. 2.6.8]
Directionality Factor	K_d :	0.95	[Sec. 16.6]
Shielding Factor	K_a :	0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz} :	1.74 in	[Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.091	[Sec. 2.7.7.1]
Amplification	A_s :	2.986441	[Sec. 16.7]
	q_z :	35.96 psf	

PROJECT	149864.007.01.0001 - ENFIELD, CT	KSC
SUBJECT	Platform Mount Analysis	
DATE	12-10-22	



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630



Manufacturer	Model	Qty	Height (in ²)	Width (in ²)	Depth (in ²)	Weight (lbs)	C _a A _a (N) (ft ²)	C _a A _a (T) (ft ²)	C _a A _a (N) Ice (ft ²)	C _a A _a (T) Ice (ft ²)	F _A (N) (k)	F _A (T) (k)	F _A (N) Ice (k)	F _A (T) Ice (k)
COMMSCOPE	VV-65B-R1_TMO	0.5	70.4	12.0	4.6	41.7	3.96	1.90	5.36	3.48	0.13	0.05	0.02	0.01
COMMSCOPE	VV-65B-R1_TMO	0.5					3.96	1.90	5.36	3.48	0.13	0.05	0.02	0.01
ERICSSON	ADIO 4460 B2/B25 B66_TM	1	17.0	15.1	11.9	109.0	2.14	1.69	3.17	2.63	0.07	0.05	0.01	0.01
ERICSSON	AIR 6419 B41_TMO_CCIV2	0.5	34.5	19.9	8.0	81.8	2.86	1.23	3.70	1.94	0.09	0.04	0.02	0.01
ERICSSON	AIR 6419 B41_TMO_CCIV2	0.5					2.86	1.23	3.70	1.94	0.09	0.04	0.02	0.01
RFS/CELWAVE	XVAALL24_43-U-NA20_TM	0.5	95.9	24.0	8.5	149.9	7.34	2.66	8.51	3.69	0.26	0.10	0.06	0.02
RFS/CELWAVE	XVAALL24_43-U-NA20_TM	0.5					7.34	2.66	8.51	3.69	0.26	0.10	0.06	0.02
ERICSSON	Radio 4480_TMOV2	1	22.0	15.7	7.5	81.0	2.88	1.40	4.07	2.37	0.09	0.04	0.02	0.01
COMMSCOPE	VV-65B-R1_TMO	0.5	70.4	12.0	4.6	41.7	3.96	1.90	5.36	3.48	0.13	0.05	0.02	0.01
COMMSCOPE	VV-65B-R1_TMO	0.5					3.96	1.90	5.36	3.48	0.13	0.05	0.02	0.01
ERICSSON	ADIO 4460 B2/B25 B66_TM	1	17.0	15.1	11.9	109.0	2.14	1.69	3.17	2.63	0.07	0.05	0.01	0.01
ERICSSON	AIR 6419 B41_TMO_CCIV2	0.5	34.5	19.9	8.0	81.8	2.86	1.23	3.70	1.94	0.09	0.04	0.02	0.01
ERICSSON	AIR 6419 B41_TMO_CCIV2	0.5					2.86	1.23	3.70	1.94	0.09	0.04	0.02	0.01
RFS/CELWAVE	XVAALL24_43-U-NA20_TM	0.5	95.9	24.0	8.5	149.9	7.34	2.66	8.51	3.69	0.26	0.10	0.06	0.02
RFS/CELWAVE	XVAALL24_43-U-NA20_TM	0.5					7.34	2.66	8.51	3.69	0.26	0.10	0.06	0.02
ERICSSON	Radio 4480_TMOV2	1	22.0	15.7	7.5	81.0	2.88	1.40	4.07	2.37	0.09	0.04	0.02	0.01
COMMSCOPE	VV-65B-R1_TMO	0.5	70.4	12.0	4.6	41.7	3.96	1.90	5.36	3.48	0.13	0.05	0.02	0.01
COMMSCOPE	VV-65B-R1_TMO	0.5					3.96	1.90	5.36	3.48	0.13	0.05	0.02	0.01
ERICSSON	ADIO 4460 B2/B25 B66_TM	1	17.0	15.1	11.9	109.0	2.14	1.69	3.17	2.63	0.07	0.05	0.01	0.01
ERICSSON	AIR 6419 B41_TMO_CCIV2	0.5	34.5	19.9	8.0	81.8	2.86	1.23	3.70	1.94	0.09	0.04	0.02	0.01
ERICSSON	AIR 6419 B41_TMO_CCIV2	0.5					2.86	1.23	3.70	1.94	0.09	0.04	0.02	0.01

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	0	
2	2	0	-0.291667	1.124785	
3	3	0	0	4.041452	
4	4	0	-0.291667	4.041452	
5	5	0	0	2.041452	
6	6	0	-0.291667	2.041452	
7	7	0.974093	-0.291667	-0.562393	
8	8	3.5	0	-2.020726	
9	9	3.5	-0.291667	-2.020726	
10	10	1.767949	0	-1.020726	
11	11	1.767949	-0.291667	-1.020726	
12	12	-0.974093	-0.291667	-0.562393	
13	13	-3.5	0	-2.020726	
14	14	-3.5	-0.291667	-2.020726	
15	15	-1.767949	0	-1.020726	
16	16	-1.767949	-0.291667	-1.020726	
17	17	0	0	-4.082904	
18	18	-3.535898	0	2.041452	
19	19	3.535898	0	2.041452	
20	20	0	0	-8.082904	
21	21	0	0	-8.18207	
22	22	-7	0	4.041452	
23	23	-7.085889	0	4.09104	
24	24	7	0	4.041452	
25	25	7.085889	0	4.09104	
26	26	0	0	-1	
27	27	0	0	-6.082904	
28	28	-5.267949	0	3.041452	
29	29	5.267949	0	3.041452	
30	30	-4.666667	0	4.041452	
31	31	-4.666667	0	4.241858	
32	32	1.333333	0	4.041452	
33	33	1.333333	0	4.241858	
34	34	5.666663	0	4.041452	
35	35	5.666663	0	4.241858	
36	36	-2.166667	0	4.041452	
37	37	-2.166667	0	4.26269	
38	38	6.333334	0	2.886752	
39	39	6.50689	0	2.786549	
40	40	2.833334	0	-3.175426	
41	41	3.00689	0	-3.275629	
42	42	0.666669	0	-6.9282	
43	43	0.840225	0	-7.028403	
44	44	4.583334	0	-0.144337	
45	45	4.774931	0	-0.254956	
46	46	-0.666667	0	-6.928204	
47	47	-0.840223	0	-7.028406	
48	48	-4.166667	0	-0.866026	
49	49	-4.340223	0	-0.966229	
50	50	-6.333332	0	2.886748	
51	51	-6.506888	0	2.786545	
52	52	-2.416667	0	-3.897115	
53	53	-2.608264	0	-4.007734	
54	54	-6.5	1.999999	4.01269	
55	55	6.5	1.999999	4.01269	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-4.666667	1.999999	4.241858	
57	57	-4.666667	1.999999	4.01269	
58	58	-2.166667	1.999999	4.26269	
59	59	-2.166667	1.999999	4.01269	
60	60	1.333333	1.999999	4.241858	
61	61	1.333333	1.999999	4.01269	
62	62	5.666663	1.999999	4.241858	
63	63	5.666663	1.999999	4.01269	
64	64	6.725091	1.999999	3.62282	
65	65	0.225091	1.999999	-7.63551	
66	66	6.50689	1.999999	2.786549	
67	67	6.308425	1.999999	2.901133	
68	68	4.774931	1.999999	-0.254956	
69	69	4.558425	1.999999	-0.129956	
70	70	3.00689	1.999999	-3.275629	
71	71	2.808425	1.999999	-3.161045	
72	72	0.840225	1.999999	-7.028403	
73	73	0.64176	1.999999	-6.913819	
74	74	-0.225091	1.999999	-7.63551	
75	75	-6.725091	1.999999	3.62282	
76	76	-0.840223	1.999999	-7.028406	
77	77	-0.641758	1.999999	-6.913823	
78	78	-2.608264	1.999999	-4.007734	
79	79	-2.391758	1.999999	-3.882734	
80	80	-4.340223	1.999999	-0.966229	
81	81	-4.141758	1.999999	-0.851645	
82	82	-6.506888	1.999999	2.786545	
83	83	-6.308423	1.999999	2.901129	
84	84	-0.6225	1.999999	-6.947178	
85	85	0.6225	1.999999	-6.947178	
86	86	-5.705183	1.999999	4.01269	
87	87	-6.327683	1.999999	2.934488	
88	88	6.327683	1.999999	2.934488	
89	89	5.705183	1.999999	4.01269	
90	90	-4.666667	5.916666	4.241858	
91	91	-4.666667	-4.083334	4.241858	
92	92	-2.166667	2.416666	4.26269	
93	93	-2.166667	-4.083334	4.26269	
94	94	1.333333	2.416666	4.241858	
95	95	1.333333	-4.083334	4.241858	
96	96	5.666663	2.416666	4.241858	
97	97	5.666663	-4.083334	4.241858	
98	98	4.774931	2.416666	-0.254956	
99	99	4.774931	-4.083334	-0.254956	
100	100	3.00689	2.416666	-3.275629	
101	101	3.00689	-4.083334	-3.275629	
102	102	0.840225	2.416666	-7.028403	
103	103	0.840225	-4.083334	-7.028403	
104	104	-2.608264	2.416666	-4.007734	
105	105	-2.608264	-4.083334	-4.007734	
106	106	-4.340223	2.416666	-0.966229	
107	107	-4.340223	-4.083334	-0.966229	
108	108	-6.506888	2.416666	2.786545	
109	109	-6.506888	-4.083334	2.786545	
110	110	-0.840223	5.916666	-7.028406	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-0.840223	-4.083334	-7.028406	
112	112	6.50689	5.916666	2.786549	
113	113	6.50689	-4.083334	2.786549	
114	114	7.08588	2.416667	4.09104	
115	115	7.08588	-4.083333	4.09104	
116	116	-7.08588	2.416667	4.09104	
117	117	-7.08588	-4.083333	4.09104	
118	118	0	2.416666	-8.18207	
119	119	0	-4.083334	-8.18207	
120	120	0	-3.291667	-1.27614	
121	121	0	-3.291667	-1.609473	
122	122	-1.105169	-3.291667	0.63807	
123	123	-1.393844	-3.291667	0.804736	
124	124	1.105169	-3.291667	0.63807	
125	125	1.393844	-3.291667	0.804736	
126	126	-1.249507	-3.291667	0.721403	
127	127	-5.26795	-0.2662	3.04145	
128	128	-5.26795	-0.432866	3.04145	
129	129	-5.26795	-0.099533	3.04145	
130	130	1.249507	-3.291667	0.721403	
131	131	5.267948	-0.2662	3.041454	
132	132	5.267948	-0.432866	3.041454	
133	133	5.267948	-0.099533	3.041454	
134	134	0	-3.291667	-1.442806	
135	135	0	-0.2662	-6.082904	
136	136	0.000002	-0.432866	-6.082904	
137	137	0.000002	-0.099533	-6.082904	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	7	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	12	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	124	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	122	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	120	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	MF-H1	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
2	MF-H2	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	MF-P1	HSS2.375X0.188	Column	HSS Pipe	A500 Gr.B RND	Typical	1.2	0.733	0.733	1.47

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
4	S-CH1	C4X5X4X1/2	Beam	Channel	A36 Gr.36	Typical	6	9.458	23	0.461
5	S-A1	LL3X3X4X0	Beam	Double Angle (No Gap)	A36 Gr.36	Typical	2.88	4.5	2.46	0.063
6	S-A2	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
7	C-A1	L2.5X2.5X4	Beam	Single Angle	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
8	Kicker	LL2.5X2.5X3X6	VBrace	Double Angle (3/4 Gap)	A36 Gr.36	Typical	1.8	3.09	1.07	0.023
9	F1-CP1	PL1/2X8	Column	RECT	A36 Gr.36	Typical	4	0.083	21.333	0.32
10	F1-CP2	PL3/8X8 HRA	Beam	RECT	A36 Gr.36	Typical	3.04	0.037	16.213	0.142

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	22	24	270	MF-H1	Beam	Single Angle	A36 Gr.36	Typical
2	2	24	20	270	MF-H1	Beam	Single Angle	A36 Gr.36	Typical
3	3	20	22	270	MF-H1	Beam	Single Angle	A36 Gr.36	Typical
4	4	19	18	270	S-A2	Beam	Single Angle	A36 Gr.36	Typical
5	5	17	19	270	S-A2	Beam	Single Angle	A36 Gr.36	Typical
6	6	18	17	270	S-A2	Beam	Single Angle	A36 Gr.36	Typical
7	7	4	2	90	S-CH1	Beam	Channel	A36 Gr.36	Typical
8	8	3	4		RIGID	None	None	RIGID	Typical
9	9	5	6		RIGID	None	None	RIGID	Typical
10	10	9	7	90	S-CH1	Beam	Channel	A36 Gr.36	Typical
11	11	8	9		RIGID	None	None	RIGID	Typical
12	12	10	11		RIGID	None	None	RIGID	Typical
13	13	14	12	90	S-CH1	Beam	Channel	A36 Gr.36	Typical
14	14	13	14		RIGID	None	None	RIGID	Typical
15	15	15	16		RIGID	None	None	RIGID	Typical
16	16	20	17	180	S-A1	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
17	17	22	18	180	S-A1	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
18	18	24	19	180	S-A1	Beam	Double Angle (No Gap)	A36 Gr.36	Typical
19	19	20	21		RIGID	None	None	RIGID	Typical
20	20	22	23		RIGID	None	None	RIGID	Typical
21	21	24	25		RIGID	None	None	RIGID	Typical
22	22	30	31		RIGID	None	None	RIGID	Typical
23	23	32	33		RIGID	None	None	RIGID	Typical
24	24	34	35		RIGID	None	None	RIGID	Typical
25	25	36	37		RIGID	None	None	RIGID	Typical
26	26	38	39		RIGID	None	None	RIGID	Typical
27	27	40	41		RIGID	None	None	RIGID	Typical
28	28	42	43		RIGID	None	None	RIGID	Typical
29	29	44	45		RIGID	None	None	RIGID	Typical
30	30	46	47		RIGID	None	None	RIGID	Typical
31	31	48	49		RIGID	None	None	RIGID	Typical
32	32	50	51		RIGID	None	None	RIGID	Typical
33	33	52	53		RIGID	None	None	RIGID	Typical
34	34	54	55		MF-H2	Beam	Pipe	A53 Gr.B	Typical
35	35	56	57		RIGID	None	None	RIGID	Typical
36	36	58	59		RIGID	None	None	RIGID	Typical
37	37	60	61		RIGID	None	None	RIGID	Typical
38	38	62	63		RIGID	None	None	RIGID	Typical
39	39	64	65		MF-H2	Beam	Pipe	A53 Gr.B	Typical
40	40	66	67		RIGID	None	None	RIGID	Typical
41	41	68	69		RIGID	None	None	RIGID	Typical
42	42	70	71		RIGID	None	None	RIGID	Typical
43	43	72	73		RIGID	None	None	RIGID	Typical
44	44	74	75		MF-H2	Beam	Pipe	A53 Gr.B	Typical
45	45	76	77		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
46	46	78	79		RIGID	None	None	RIGID	Typical
47	47	80	81		RIGID	None	None	RIGID	Typical
48	48	82	83		RIGID	None	None	RIGID	Typical
49	49	84	85	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
50	50	86	87	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
51	51	88	89	180	C-A1	Beam	Single Angle	A36 Gr.36	Typical
52	52	90	91		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
53	53	92	93		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
54	54	94	95		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
55	55	96	97		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
56	56	98	99		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
57	57	100	101		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
58	58	102	103		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
59	59	104	105		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
60	60	106	107		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
61	61	108	109		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
62	62	110	111		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
63	63	112	113		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
64	64	114	115		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
65	65	116	117		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
66	66	118	119		MF-P1	Column	HSS Pipe	A500 Gr.B RND	Typical
67	67	120	121		F1-CP2	Beam	RECT	A36 Gr.36	Typical
68	68	122	123		F1-CP2	Beam	RECT	A36 Gr.36	Typical
69	69	124	125		F1-CP2	Beam	RECT	A36 Gr.36	Typical
70	70	126	127		Kicker	VBrace	Double Angle (3/4 Gap)	A36 Gr.36	Typical
71	71	129	128	150	F1-CP1	Column	RECT	A36 Gr.36	Typical
72	72	28	129		RIGID	None	None	RIGID	Typical
73	73	130	131		Kicker	VBrace	Double Angle (3/4 Gap)	A36 Gr.36	Typical
74	74	133	132	210	F1-CP1	Column	RECT	A36 Gr.36	Typical
75	75	29	133		RIGID	None	None	RIGID	Typical
76	76	134	135		Kicker	VBrace	Double Angle (3/4 Gap)	A36 Gr.36	Typical
77	77	137	136	90	F1-CP1	Column	RECT	A36 Gr.36	Typical
78	78	27	137		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	1			Yes	N/A	None
2	2			Yes	N/A	None
3	3			Yes	N/A	None
4	4			Yes	N/A	None
5	5			Yes	N/A	None
6	6			Yes	N/A	None
7	7			Yes	Default	None
8	8			Yes	** NA **	None
9	9			Yes	** NA **	None
10	10			Yes	Default	None
11	11			Yes	** NA **	None
12	12			Yes	** NA **	None
13	13			Yes	Default	None
14	14			Yes	** NA **	None
15	15			Yes	** NA **	None
16	16			Yes	N/A	None
17	17			Yes	N/A	None
18	18			Yes	N/A	None
19	19			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
20	20			Yes	** NA **	None
21	21			Yes	** NA **	None
22	22			Yes	** NA **	None
23	23			Yes	** NA **	None
24	24			Yes	** NA **	None
25	25			Yes	** NA **	None
26	26			Yes	** NA **	None
27	27			Yes	** NA **	None
28	28			Yes	** NA **	None
29	29			Yes	** NA **	None
30	30			Yes	** NA **	None
31	31			Yes	** NA **	None
32	32			Yes	** NA **	None
33	33			Yes	** NA **	None
34	34			Yes	N/A	None
35	35			Yes	** NA **	None
36	36			Yes	** NA **	None
37	37			Yes	** NA **	None
38	38			Yes	** NA **	None
39	39			Yes	N/A	None
40	40			Yes	** NA **	None
41	41			Yes	** NA **	None
42	42			Yes	** NA **	None
43	43			Yes	** NA **	None
44	44			Yes	N/A	None
45	45			Yes	** NA **	None
46	46			Yes	** NA **	None
47	47			Yes	** NA **	None
48	48			Yes	** NA **	None
49	49			Yes	N/A	None
50	50			Yes	N/A	None
51	51			Yes	N/A	None
52	52			Yes	** NA **	None
53	53			Yes	** NA **	None
54	54			Yes	** NA **	None
55	55			Yes	** NA **	None
56	56			Yes	** NA **	None
57	57			Yes	** NA **	None
58	58			Yes	** NA **	None
59	59			Yes	** NA **	None
60	60			Yes	** NA **	None
61	61			Yes	** NA **	None
62	62			Yes	** NA **	None
63	63			Yes	** NA **	None
64	64			Yes	** NA **	None
65	65			Yes	** NA **	None
66	66			Yes	** NA **	None
67	67			Yes	N/A	None
68	68			Yes	N/A	None
69	69			Yes	N/A	None
70	70	BenPIN	BenPIN	Yes	** NA **	None
71	71			Yes	** NA **	None
72	72			Yes	** NA **	None
73	73	BenPIN	BenPIN	Yes	** NA **	None
74	74			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
75	75			Yes	** NA **	None
76	76	BenPIN	BenPIN	Yes	** NA **	None
77	77			Yes	** NA **	None
78	78			Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	MF-H1	14	Lbyy	N/A	N/A	Lateral
2	2	MF-H1	14	Lbyy	N/A	N/A	Lateral
3	3	MF-H1	14	Lbyy	N/A	N/A	Lateral
4	4	S-A2	7.072	Lbyy	N/A	N/A	Lateral
5	5	S-A2	7.072	Lbyy	N/A	N/A	Lateral
6	6	S-A2	7.072	Lbyy	N/A	N/A	Lateral
7	7	S-CH1	2.917	Lbyy	N/A	N/A	Lateral
8	10	S-CH1	2.917	Lbyy	N/A	N/A	Lateral
9	13	S-CH1	2.917	Lbyy	N/A	N/A	Lateral
10	16	S-A1	4	Lbyy	N/A	N/A	Lateral
11	17	S-A1	4	Lbyy	N/A	N/A	Lateral
12	18	S-A1	4	Lbyy	N/A	N/A	Lateral
13	34	MF-H2	13	Lbyy	N/A	N/A	Lateral
14	39	MF-H2	13	Lbyy	N/A	N/A	Lateral
15	44	MF-H2	13	Lbyy	N/A	N/A	Lateral
16	49	C-A1	1.245	Lbyy	N/A	N/A	Lateral
17	50	C-A1	1.245	Lbyy	N/A	N/A	Lateral
18	51	C-A1	1.245	Lbyy	N/A	N/A	Lateral
19	52	MF-P1	10	Lbyy	N/A	N/A	Lateral
20	53	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
21	54	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
22	55	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
23	56	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
24	57	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
25	58	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
26	59	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
27	60	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
28	61	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
29	62	MF-P1	10	Lbyy	N/A	N/A	Lateral
30	63	MF-P1	10	Lbyy	N/A	N/A	Lateral
31	64	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
32	65	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
33	66	MF-P1	6.5	Lbyy	N/A	N/A	Lateral
34	67	F1-CP2	0.333	Lbyy	N/A	N/A	Lateral
35	68	F1-CP2	0.333	Lbyy	N/A	N/A	Lateral
36	69	F1-CP2	0.333	Lbyy	N/A	N/A	Lateral
37	70	Kicker	5.539	Lbyy	N/A	N/A	Lateral
38	71	F1-CP1	0.333	Lbyy	N/A	N/A	Lateral
39	73	Kicker	5.539	Lbyy	N/A	N/A	Lateral
40	74	F1-CP1	0.333	Lbyy	N/A	N/A	Lateral
41	76	Kicker	5.539	Lbyy	N/A	N/A	Lateral
42	77	F1-CP1	0.333	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Y	-0.021	%5
2	55	Y	-0.021	%95
3	55	Y	-0.109	%25
4	55	Y	0	0
5	55	Y	0	0
6	54	Y	-0.041	%5
7	54	Y	-0.041	%45
8	54	Y	0	0
9	54	Y	0	0
10	54	Y	0	0
11	52	Y	-0.075	%5
12	52	Y	-0.075	%85
13	52	Y	-0.081	%30
14	52	Y	0	0
15	52	Y	0	0
16	61	Y	-0.021	%5
17	61	Y	-0.021	%95
18	61	Y	-0.109	%25
19	61	Y	0	0
20	61	Y	0	0
21	60	Y	-0.041	%5
22	60	Y	-0.041	%45
23	60	Y	0	0
24	60	Y	0	0
25	60	Y	0	0
26	62	Y	-0.075	%5
27	62	Y	-0.075	%85
28	62	Y	-0.081	%30
29	62	Y	0	0
30	62	Y	0	0
31	58	Y	-0.021	%5
32	58	Y	-0.021	%95
33	58	Y	-0.109	%25
34	58	Y	0	0
35	58	Y	0	0
36	57	Y	-0.041	%5
37	57	Y	-0.041	%45
38	57	Y	0	0
39	57	Y	0	0
40	57	Y	0	0
41	63	Y	-0.075	%5
42	63	Y	-0.075	%85
43	63	Y	-0.081	%30
44	63	Y	0	0
45	63	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Z	-0.128	%5
2	55	Z	-0.128	%95
3	55	Z	-0.069	%25
4	55	Z	0	0
5	55	Z	0	0
6	54	Z	-0.093	%5

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	54	Z	-0.093	%45
8	54	Z	0	0
9	54	Z	0	0
10	54	Z	0	0
11	52	Z	-0.264	%5
12	52	Z	-0.264	%85
13	52	Z	-0.093	%30
14	52	Z	0	0
15	52	Z	0	0
16	61	Z	-0.128	%5
17	61	Z	-0.128	%95
18	61	Z	-0.069	%25
19	61	Z	0	0
20	61	Z	0	0
21	60	Z	-0.093	%5
22	60	Z	-0.093	%45
23	60	Z	0	0
24	60	Z	0	0
25	60	Z	0	0
26	62	Z	-0.264	%5
27	62	Z	-0.264	%85
28	62	Z	-0.093	%30
29	62	Z	0	0
30	62	Z	0	0
31	58	Z	-0.128	%5
32	58	Z	-0.128	%95
33	58	Z	-0.069	%25
34	58	Z	0	0
35	58	Z	0	0
36	57	Z	-0.093	%5
37	57	Z	-0.093	%45
38	57	Z	0	0
39	57	Z	0	0
40	57	Z	0	0
41	63	Z	-0.264	%5
42	63	Z	-0.264	%85
43	63	Z	-0.093	%30
44	63	Z	0	0
45	63	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	X	-0.05	%5
2	55	X	-0.05	%95
3	55	X	-0.055	%25
4	55	X	0	0
5	55	X	0	0
6	54	X	-0.037	%5
7	54	X	-0.037	%45
8	54	X	0	0
9	54	X	0	0
10	54	X	0	0
11	52	X	-0.096	%5
12	52	X	-0.096	%85
13	52	X	-0.044	%30

Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	52	X	0	0
15	52	X	0	0
16	61	X	-0.05	%5
17	61	X	-0.05	%95
18	61	X	-0.055	%25
19	61	X	0	0
20	61	X	0	0
21	60	X	-0.037	%5
22	60	X	-0.037	%45
23	60	X	0	0
24	60	X	0	0
25	60	X	0	0
26	62	X	-0.096	%5
27	62	X	-0.096	%85
28	62	X	-0.044	%30
29	62	X	0	0
30	62	X	0	0
31	58	X	-0.05	%5
32	58	X	-0.05	%95
33	58	X	-0.055	%25
34	58	X	0	0
35	58	X	0	0
36	57	X	-0.037	%5
37	57	X	-0.037	%45
38	57	X	0	0
39	57	X	0	0
40	57	X	0	0
41	63	X	-0.096	%5
42	63	X	-0.096	%85
43	63	X	-0.044	%30
44	63	X	0	0
45	63	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Z	-0.024	%5
2	55	Z	-0.024	%95
3	55	Z	-0.013	%25
4	55	Z	0	0
5	55	Z	0	0
6	54	Z	-0.017	%5
7	54	Z	-0.017	%45
8	54	Z	0	0
9	54	Z	0	0
10	54	Z	0	0
11	52	Z	-0.057	%5
12	52	Z	-0.057	%85
13	52	Z	-0.017	%30
14	52	Z	0	0
15	52	Z	0	0
16	61	Z	-0.024	%5
17	61	Z	-0.024	%95
18	61	Z	-0.013	%25
19	61	Z	0	0
20	61	Z	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
21	60	Z	-0.017	%5
22	60	Z	-0.017	%45
23	60	Z	0	0
24	60	Z	0	0
25	60	Z	0	0
26	62	Z	-0.057	%5
27	62	Z	-0.057	%85
28	62	Z	-0.017	%30
29	62	Z	0	0
30	62	Z	0	0
31	58	Z	-0.024	%5
32	58	Z	-0.024	%95
33	58	Z	-0.013	%25
34	58	Z	0	0
35	58	Z	0	0
36	57	Z	-0.017	%5
37	57	Z	-0.017	%45
38	57	Z	0	0
39	57	Z	0	0
40	57	Z	0	0
41	63	Z	-0.057	%5
42	63	Z	-0.057	%85
43	63	Z	-0.017	%30
44	63	Z	0	0
45	63	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	X	-0.009	%5
2	55	X	-0.009	%95
3	55	X	-0.01	%25
4	55	X	0	0
5	55	X	0	0
6	54	X	-0.007	%5
7	54	X	-0.007	%45
8	54	X	0	0
9	54	X	0	0
10	54	X	0	0
11	52	X	-0.025	%5
12	52	X	-0.025	%85
13	52	X	-0.008	%30
14	52	X	0	0
15	52	X	0	0
16	61	X	-0.009	%5
17	61	X	-0.009	%95
18	61	X	-0.01	%25
19	61	X	0	0
20	61	X	0	0
21	60	X	-0.007	%5
22	60	X	-0.007	%45
23	60	X	0	0
24	60	X	0	0
25	60	X	0	0
26	62	X	-0.025	%5
27	62	X	-0.025	%85

Member Point Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
28	62	X	-0.008	%30
29	62	X	0	0
30	62	X	0	0
31	58	X	-0.009	%5
32	58	X	-0.009	%95
33	58	X	-0.01	%25
34	58	X	0	0
35	58	X	0	0
36	57	X	-0.007	%5
37	57	X	-0.007	%45
38	57	X	0	0
39	57	X	0	0
40	57	X	0	0
41	63	X	-0.025	%5
42	63	X	-0.025	%85
43	63	X	-0.008	%30
44	63	X	0	0
45	63	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Z	-0.009	%5
2	55	Z	-0.009	%95
3	55	Z	-0.005	%25
4	55	Z	0	0
5	55	Z	0	0
6	54	Z	-0.006	%5
7	54	Z	-0.006	%45
8	54	Z	0	0
9	54	Z	0	0
10	54	Z	0	0
11	52	Z	-0.018	%5
12	52	Z	-0.018	%85
13	52	Z	-0.006	%30
14	52	Z	0	0
15	52	Z	0	0
16	61	Z	-0.009	%5
17	61	Z	-0.009	%95
18	61	Z	-0.005	%25
19	61	Z	0	0
20	61	Z	0	0
21	60	Z	-0.006	%5
22	60	Z	-0.006	%45
23	60	Z	0	0
24	60	Z	0	0
25	60	Z	0	0
26	62	Z	-0.018	%5
27	62	Z	-0.018	%85
28	62	Z	-0.006	%30
29	62	Z	0	0
30	62	Z	0	0
31	58	Z	-0.009	%5
32	58	Z	-0.009	%95
33	58	Z	-0.005	%25
34	58	Z	0	0

Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
35	58	Z	0	0
36	57	Z	-0.006	%5
37	57	Z	-0.006	%45
38	57	Z	0	0
39	57	Z	0	0
40	57	Z	0	0
41	63	Z	-0.018	%5
42	63	Z	-0.018	%85
43	63	Z	-0.006	%30
44	63	Z	0	0
45	63	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	X	-0.003	%5
2	55	X	-0.003	%95
3	55	X	-0.004	%25
4	55	X	0	0
5	55	X	0	0
6	54	X	-0.003	%5
7	54	X	-0.003	%45
8	54	X	0	0
9	54	X	0	0
10	54	X	0	0
11	52	X	-0.006	%5
12	52	X	-0.006	%85
13	52	X	-0.003	%30
14	52	X	0	0
15	52	X	0	0
16	61	X	-0.003	%5
17	61	X	-0.003	%95
18	61	X	-0.004	%25
19	61	X	0	0
20	61	X	0	0
21	60	X	-0.003	%5
22	60	X	-0.003	%45
23	60	X	0	0
24	60	X	0	0
25	60	X	0	0
26	62	X	-0.006	%5
27	62	X	-0.006	%85
28	62	X	-0.003	%30
29	62	X	0	0
30	62	X	0	0
31	58	X	-0.003	%5
32	58	X	-0.003	%95
33	58	X	-0.004	%25
34	58	X	0	0
35	58	X	0	0
36	57	X	-0.003	%5
37	57	X	-0.003	%45
38	57	X	0	0
39	57	X	0	0
40	57	X	0	0
41	63	X	-0.006	%5

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
42	63	X	-0.006	%85
43	63	X	-0.003	%30
44	63	X	0	0
45	63	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Y	-0.091	%5
2	55	Y	-0.091	%95
3	55	Y	-0.063	%25
4	55	Y	0	0
5	55	Y	0	0
6	54	Y	-0.071	%5
7	54	Y	-0.071	%45
8	54	Y	0	0
9	54	Y	0	0
10	54	Y	0	0
11	52	Y	-0.258	%5
12	52	Y	-0.258	%85
13	52	Y	-0.075	%30
14	52	Y	0	0
15	52	Y	0	0
16	61	Y	-0.091	%5
17	61	Y	-0.091	%95
18	61	Y	-0.063	%25
19	61	Y	0	0
20	61	Y	0	0
21	60	Y	-0.071	%5
22	60	Y	-0.071	%45
23	60	Y	0	0
24	60	Y	0	0
25	60	Y	0	0
26	62	Y	-0.258	%5
27	62	Y	-0.258	%85
28	62	Y	-0.075	%30
29	62	Y	0	0
30	62	Y	0	0
31	58	Y	-0.091	%5
32	58	Y	-0.091	%95
33	58	Y	-0.063	%25
34	58	Y	0	0
35	58	Y	0	0
36	57	Y	-0.071	%5
37	57	Y	-0.071	%45
38	57	Y	0	0
39	57	Y	0	0
40	57	Y	0	0
41	63	Y	-0.258	%5
42	63	Y	-0.258	%85
43	63	Y	-0.075	%30
44	63	Y	0	0
45	63	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	Z	-0.011	%5
2	55	Z	-0.011	%95
3	55	Z	-0.03	%25
4	55	Z	0	0
5	55	Z	0	0
6	54	Z	-0.022	%5
7	54	Z	-0.022	%45
8	54	Z	0	0
9	54	Z	0	0
10	54	Z	0	0
11	52	Z	-0.041	%5
12	52	Z	-0.041	%85
13	52	Z	-0.022	%30
14	52	Z	0	0
15	52	Z	0	0
16	61	Z	-0.011	%5
17	61	Z	-0.011	%95
18	61	Z	-0.03	%25
19	61	Z	0	0
20	61	Z	0	0
21	60	Z	-0.022	%5
22	60	Z	-0.022	%45
23	60	Z	0	0
24	60	Z	0	0
25	60	Z	0	0
26	62	Z	-0.041	%5
27	62	Z	-0.041	%85
28	62	Z	-0.022	%30
29	62	Z	0	0
30	62	Z	0	0
31	58	Z	-0.011	%5
32	58	Z	-0.011	%95
33	58	Z	-0.03	%25
34	58	Z	0	0
35	58	Z	0	0
36	57	Z	-0.022	%5
37	57	Z	-0.022	%45
38	57	Z	0	0
39	57	Z	0	0
40	57	Z	0	0
41	63	Z	-0.041	%5
42	63	Z	-0.041	%85
43	63	Z	-0.022	%30
44	63	Z	0	0
45	63	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	55	X	-0.011	%5
2	55	X	-0.011	%95
3	55	X	-0.03	%25
4	55	X	0	0
5	55	X	0	0
6	54	X	-0.022	%5

Member Point Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	54	X	-0.022	%45
8	54	X	0	0
9	54	X	0	0
10	54	X	0	0
11	52	X	-0.041	%5
12	52	X	-0.041	%85
13	52	X	-0.022	%30
14	52	X	0	0
15	52	X	0	0
16	61	X	-0.011	%5
17	61	X	-0.011	%95
18	61	X	-0.03	%25
19	61	X	0	0
20	61	X	0	0
21	60	X	-0.022	%5
22	60	X	-0.022	%45
23	60	X	0	0
24	60	X	0	0
25	60	X	0	0
26	62	X	-0.041	%5
27	62	X	-0.041	%85
28	62	X	-0.022	%30
29	62	X	0	0
30	62	X	0	0
31	58	X	-0.011	%5
32	58	X	-0.011	%95
33	58	X	-0.03	%25
34	58	X	0	0
35	58	X	0	0
36	57	X	-0.022	%5
37	57	X	-0.022	%45
38	57	X	0	0
39	57	X	0	0
40	57	X	0	0
41	63	X	-0.041	%5
42	63	X	-0.041	%85
43	63	X	-0.022	%30
44	63	X	0	0
45	63	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	39	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	44	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	34	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	39	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	44	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	34	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.25	%5

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	17	Y	-0.25	%5

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	16	Y	-0.25	%5

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.016	-0.016	0	%100
2	2	Z	-0.016	-0.016	0	%100
3	3	Z	-0.016	-0.016	0	%100
4	4	Z	-0.016	-0.016	0	%100
5	5	Z	-0.016	-0.016	0	%100
6	6	Z	-0.016	-0.016	0	%100
7	7	Z	-0.015	-0.015	0	%100
8	10	Z	-0.015	-0.015	0	%100
9	13	Z	-0.015	-0.015	0	%100
10	16	Z	-0.014	-0.014	0	%100
11	17	Z	-0.014	-0.014	0	%100
12	18	Z	-0.014	-0.014	0	%100
13	34	Z	-0.008	-0.008	0	%100
14	39	Z	-0.008	-0.008	0	%100
15	44	Z	-0.008	-0.008	0	%100
16	49	Z	-0.009	-0.009	0	%100
17	50	Z	-0.009	-0.009	0	%100
18	51	Z	-0.009	-0.009	0	%100
19	52	Z	-0.008	-0.008	0	%100
20	53	Z	-0.008	-0.008	0	%100
21	54	Z	-0.008	-0.008	0	%100
22	55	Z	-0.008	-0.008	0	%100
23	56	Z	-0.008	-0.008	0	%100
24	57	Z	-0.008	-0.008	0	%100
25	58	Z	-0.008	-0.008	0	%100
26	59	Z	-0.008	-0.008	0	%100
27	60	Z	-0.008	-0.008	0	%100
28	61	Z	-0.008	-0.008	0	%100
29	62	Z	-0.008	-0.008	0	%100
30	63	Z	-0.008	-0.008	0	%100
31	64	Z	-0.008	-0.008	0	%100
32	65	Z	-0.008	-0.008	0	%100
33	66	Z	-0.008	-0.008	0	%100
34	67	Z	-0.026	-0.026	0	%100
35	68	Z	-0.026	-0.026	0	%100
36	69	Z	-0.026	-0.026	0	%100
37	70	Z	-0.021	-0.021	0	%100
38	71	Z	-0.013	-0.013	0	%100
39	73	Z	-0.021	-0.021	0	%100
40	74	Z	-0.013	-0.013	0	%100
41	76	Z	-0.021	-0.021	0	%100
42	77	Z	-0.013	-0.013	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X		-0.016	-0.016	0	%100
2	2	X		-0.016	-0.016	0	%100
3	3	X		-0.016	-0.016	0	%100
4	4	X		-0.016	-0.016	0	%100
5	5	X		-0.016	-0.016	0	%100
6	6	X		-0.016	-0.016	0	%100
7	7	X		-0.015	-0.015	0	%100
8	10	X		-0.015	-0.015	0	%100
9	13	X		-0.015	-0.015	0	%100
10	16	X		-0.014	-0.014	0	%100
11	17	X		-0.014	-0.014	0	%100
12	18	X		-0.014	-0.014	0	%100
13	34	X		-0.008	-0.008	0	%100
14	39	X		-0.008	-0.008	0	%100
15	44	X		-0.008	-0.008	0	%100
16	49	X		-0.009	-0.009	0	%100
17	50	X		-0.009	-0.009	0	%100
18	51	X		-0.009	-0.009	0	%100
19	52	X		-0.008	-0.008	0	%100
20	53	X		-0.008	-0.008	0	%100
21	54	X		-0.008	-0.008	0	%100
22	55	X		-0.008	-0.008	0	%100
23	56	X		-0.008	-0.008	0	%100
24	57	X		-0.008	-0.008	0	%100
25	58	X		-0.008	-0.008	0	%100
26	59	X		-0.008	-0.008	0	%100
27	60	X		-0.008	-0.008	0	%100
28	61	X		-0.008	-0.008	0	%100
29	62	X		-0.008	-0.008	0	%100
30	63	X		-0.008	-0.008	0	%100
31	64	X		-0.008	-0.008	0	%100
32	65	X		-0.008	-0.008	0	%100
33	66	X		-0.008	-0.008	0	%100
34	67	X		-0.026	-0.026	0	%100
35	68	X		-0.026	-0.026	0	%100
36	69	X		-0.026	-0.026	0	%100
37	70	X		-0.021	-0.021	0	%100
38	71	X		-0.013	-0.013	0	%100
39	73	X		-0.021	-0.021	0	%100
40	74	X		-0.013	-0.013	0	%100
41	76	X		-0.021	-0.021	0	%100
42	77	X		-0.013	-0.013	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z		-0.007	-0.007	0	%100
2	2	Z		-0.007	-0.007	0	%100
3	3	Z		-0.007	-0.007	0	%100
4	4	Z		-0.007	-0.007	0	%100
5	5	Z		-0.007	-0.007	0	%100
6	6	Z		-0.007	-0.007	0	%100
7	7	Z		-0.006	-0.006	0	%100
8	10	Z		-0.006	-0.006	0	%100
9	13	Z		-0.006	-0.006	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
10	16	Z	-0.006	-0.006	0	%100
11	17	Z	-0.006	-0.006	0	%100
12	18	Z	-0.006	-0.006	0	%100
13	34	Z	-0.002	-0.002	0	%100
14	39	Z	-0.002	-0.002	0	%100
15	44	Z	-0.002	-0.002	0	%100
16	49	Z	-0.005	-0.005	0	%100
17	50	Z	-0.005	-0.005	0	%100
18	51	Z	-0.005	-0.005	0	%100
19	52	Z	-0.002	-0.002	0	%100
20	53	Z	-0.002	-0.002	0	%100
21	54	Z	-0.002	-0.002	0	%100
22	55	Z	-0.002	-0.002	0	%100
23	56	Z	-0.002	-0.002	0	%100
24	57	Z	-0.002	-0.002	0	%100
25	58	Z	-0.002	-0.002	0	%100
26	59	Z	-0.002	-0.002	0	%100
27	60	Z	-0.002	-0.002	0	%100
28	61	Z	-0.002	-0.002	0	%100
29	62	Z	-0.002	-0.002	0	%100
30	63	Z	-0.002	-0.002	0	%100
31	64	Z	-0.002	-0.002	0	%100
32	65	Z	-0.002	-0.002	0	%100
33	66	Z	-0.002	-0.002	0	%100
34	67	Z	-0.013	-0.013	0	%100
35	68	Z	-0.013	-0.013	0	%100
36	69	Z	-0.013	-0.013	0	%100
37	70	Z	-0.007	-0.007	0	%100
38	71	Z	-0.008	-0.008	0	%100
39	73	Z	-0.007	-0.007	0	%100
40	74	Z	-0.008	-0.008	0	%100
41	76	Z	-0.007	-0.007	0	%100
42	77	Z	-0.008	-0.008	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.007	-0.007	0	%100
2	2	X	-0.007	-0.007	0	%100
3	3	X	-0.007	-0.007	0	%100
4	4	X	-0.007	-0.007	0	%100
5	5	X	-0.007	-0.007	0	%100
6	6	X	-0.007	-0.007	0	%100
7	7	X	-0.006	-0.006	0	%100
8	10	X	-0.006	-0.006	0	%100
9	13	X	-0.006	-0.006	0	%100
10	16	X	-0.006	-0.006	0	%100
11	17	X	-0.006	-0.006	0	%100
12	18	X	-0.006	-0.006	0	%100
13	34	X	-0.002	-0.002	0	%100
14	39	X	-0.002	-0.002	0	%100
15	44	X	-0.002	-0.002	0	%100
16	49	X	-0.005	-0.005	0	%100
17	50	X	-0.005	-0.005	0	%100
18	51	X	-0.005	-0.005	0	%100
19	52	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
20	53	X	-0.002	-0.002	0	%100
21	54	X	-0.002	-0.002	0	%100
22	55	X	-0.002	-0.002	0	%100
23	56	X	-0.002	-0.002	0	%100
24	57	X	-0.002	-0.002	0	%100
25	58	X	-0.002	-0.002	0	%100
26	59	X	-0.002	-0.002	0	%100
27	60	X	-0.002	-0.002	0	%100
28	61	X	-0.002	-0.002	0	%100
29	62	X	-0.002	-0.002	0	%100
30	63	X	-0.002	-0.002	0	%100
31	64	X	-0.002	-0.002	0	%100
32	65	X	-0.002	-0.002	0	%100
33	66	X	-0.002	-0.002	0	%100
34	67	X	-0.013	-0.013	0	%100
35	68	X	-0.013	-0.013	0	%100
36	69	X	-0.013	-0.013	0	%100
37	70	X	-0.007	-0.007	0	%100
38	71	X	-0.008	-0.008	0	%100
39	73	X	-0.007	-0.007	0	%100
40	74	X	-0.008	-0.008	0	%100
41	76	X	-0.007	-0.007	0	%100
42	77	X	-0.008	-0.008	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	10	Z	-0.001	-0.001	0	%100
9	13	Z	-0.001	-0.001	0	%100
10	16	Z	-0.0009	-0.0009	0	%100
11	17	Z	-0.0009	-0.0009	0	%100
12	18	Z	-0.0009	-0.0009	0	%100
13	34	Z	-0.0003	-0.0003	0	%100
14	39	Z	-0.0003	-0.0003	0	%100
15	44	Z	-0.0003	-0.0003	0	%100
16	49	Z	-0.0006	-0.0006	0	%100
17	50	Z	-0.0006	-0.0006	0	%100
18	51	Z	-0.0006	-0.0006	0	%100
19	52	Z	-0.0003	-0.0003	0	%100
20	53	Z	-0.0003	-0.0003	0	%100
21	54	Z	-0.0003	-0.0003	0	%100
22	55	Z	-0.0003	-0.0003	0	%100
23	56	Z	-0.0003	-0.0003	0	%100
24	57	Z	-0.0003	-0.0003	0	%100
25	58	Z	-0.0003	-0.0003	0	%100
26	59	Z	-0.0003	-0.0003	0	%100
27	60	Z	-0.0003	-0.0003	0	%100
28	61	Z	-0.0003	-0.0003	0	%100
29	62	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
30	63	Z	-0.0003	-0.0003	0	%100
31	64	Z	-0.0003	-0.0003	0	%100
32	65	Z	-0.0003	-0.0003	0	%100
33	66	Z	-0.0003	-0.0003	0	%100
34	67	Z	-0.002	-0.002	0	%100
35	68	Z	-0.002	-0.002	0	%100
36	69	Z	-0.002	-0.002	0	%100
37	70	Z	-0.001	-0.001	0	%100
38	71	Z	-0.0009	-0.0009	0	%100
39	73	Z	-0.001	-0.001	0	%100
40	74	Z	-0.0009	-0.0009	0	%100
41	76	Z	-0.001	-0.001	0	%100
42	77	Z	-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.001	-0.001	0	%100
8	10	X	-0.001	-0.001	0	%100
9	13	X	-0.001	-0.001	0	%100
10	16	X	-0.0009	-0.0009	0	%100
11	17	X	-0.0009	-0.0009	0	%100
12	18	X	-0.0009	-0.0009	0	%100
13	34	X	-0.0003	-0.0003	0	%100
14	39	X	-0.0003	-0.0003	0	%100
15	44	X	-0.0003	-0.0003	0	%100
16	49	X	-0.0006	-0.0006	0	%100
17	50	X	-0.0006	-0.0006	0	%100
18	51	X	-0.0006	-0.0006	0	%100
19	52	X	-0.0003	-0.0003	0	%100
20	53	X	-0.0003	-0.0003	0	%100
21	54	X	-0.0003	-0.0003	0	%100
22	55	X	-0.0003	-0.0003	0	%100
23	56	X	-0.0003	-0.0003	0	%100
24	57	X	-0.0003	-0.0003	0	%100
25	58	X	-0.0003	-0.0003	0	%100
26	59	X	-0.0003	-0.0003	0	%100
27	60	X	-0.0003	-0.0003	0	%100
28	61	X	-0.0003	-0.0003	0	%100
29	62	X	-0.0003	-0.0003	0	%100
30	63	X	-0.0003	-0.0003	0	%100
31	64	X	-0.0003	-0.0003	0	%100
32	65	X	-0.0003	-0.0003	0	%100
33	66	X	-0.0003	-0.0003	0	%100
34	67	X	-0.002	-0.002	0	%100
35	68	X	-0.002	-0.002	0	%100
36	69	X	-0.002	-0.002	0	%100
37	70	X	-0.001	-0.001	0	%100
38	71	X	-0.0009	-0.0009	0	%100
39	73	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
40	74	X		-0.0009	-0.0009	0	%100
41	76	X		-0.001	-0.001	0	%100
42	77	X		-0.0009	-0.0009	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y		-0.013	-0.013	0	%100
2	2	Y		-0.013	-0.013	0	%100
3	3	Y		-0.013	-0.013	0	%100
4	4	Y		-0.013	-0.013	0	%100
5	5	Y		-0.013	-0.013	0	%100
6	6	Y		-0.013	-0.013	0	%100
7	7	Y		-0.017	-0.017	0	%100
8	10	Y		-0.017	-0.017	0	%100
9	13	Y		-0.017	-0.017	0	%100
10	16	Y		-0.018	-0.018	0	%100
11	17	Y		-0.018	-0.018	0	%100
12	18	Y		-0.018	-0.018	0	%100
13	34	Y		-0.009	-0.009	0	%100
14	39	Y		-0.009	-0.009	0	%100
15	44	Y		-0.009	-0.009	0	%100
16	49	Y		-0.011	-0.011	0	%100
17	50	Y		-0.011	-0.011	0	%100
18	51	Y		-0.011	-0.011	0	%100
19	52	Y		-0.009	-0.009	0	%100
20	53	Y		-0.009	-0.009	0	%100
21	54	Y		-0.009	-0.009	0	%100
22	55	Y		-0.009	-0.009	0	%100
23	56	Y		-0.009	-0.009	0	%100
24	57	Y		-0.009	-0.009	0	%100
25	58	Y		-0.009	-0.009	0	%100
26	59	Y		-0.009	-0.009	0	%100
27	60	Y		-0.009	-0.009	0	%100
28	61	Y		-0.009	-0.009	0	%100
29	62	Y		-0.009	-0.009	0	%100
30	63	Y		-0.009	-0.009	0	%100
31	64	Y		-0.009	-0.009	0	%100
32	65	Y		-0.009	-0.009	0	%100
33	66	Y		-0.009	-0.009	0	%100
34	67	Y		-0.021	-0.021	0	%100
35	68	Y		-0.021	-0.021	0	%100
36	69	Y		-0.021	-0.021	0	%100
37	70	Y		-0.017	-0.017	0	%100
38	71	Y		-0.021	-0.021	0	%100
39	73	Y		-0.017	-0.017	0	%100
40	74	Y		-0.021	-0.021	0	%100
41	76	Y		-0.017	-0.017	0	%100
42	77	Y		-0.021	-0.021	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z		-0.001	-0.001	0	%100
2	2	Z		-0.001	-0.001	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	10	Z	-0.002	-0.002	0	%100
9	13	Z	-0.002	-0.002	0	%100
10	16	Z	-0.003	-0.003	0	%100
11	17	Z	-0.003	-0.003	0	%100
12	18	Z	-0.003	-0.003	0	%100
13	34	Z	-0.001	-0.001	0	%100
14	39	Z	-0.001	-0.001	0	%100
15	44	Z	-0.001	-0.001	0	%100
16	49	Z	-0.001	-0.001	0	%100
17	50	Z	-0.001	-0.001	0	%100
18	51	Z	-0.001	-0.001	0	%100
19	52	Z	-0.001	-0.001	0	%100
20	53	Z	-0.001	-0.001	0	%100
21	54	Z	-0.001	-0.001	0	%100
22	55	Z	-0.001	-0.001	0	%100
23	56	Z	-0.001	-0.001	0	%100
24	57	Z	-0.001	-0.001	0	%100
25	58	Z	-0.001	-0.001	0	%100
26	59	Z	-0.001	-0.001	0	%100
27	60	Z	-0.001	-0.001	0	%100
28	61	Z	-0.001	-0.001	0	%100
29	62	Z	-0.001	-0.001	0	%100
30	63	Z	-0.001	-0.001	0	%100
31	64	Z	-0.001	-0.001	0	%100
32	65	Z	-0.001	-0.001	0	%100
33	66	Z	-0.001	-0.001	0	%100
34	67	Z	-0.003	-0.003	0	%100
35	68	Z	-0.003	-0.003	0	%100
36	69	Z	-0.003	-0.003	0	%100
37	70	Z	-0.002	-0.002	0	%100
38	71	Z	-0.003	-0.003	0	%100
39	73	Z	-0.002	-0.002	0	%100
40	74	Z	-0.003	-0.003	0	%100
41	76	Z	-0.002	-0.002	0	%100
42	77	Z	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.002	-0.002	0	%100
8	10	X	-0.002	-0.002	0	%100
9	13	X	-0.002	-0.002	0	%100
10	16	X	-0.003	-0.003	0	%100
11	17	X	-0.003	-0.003	0	%100
12	18	X	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
13	34	X	-0.001	-0.001	0	%100
14	39	X	-0.001	-0.001	0	%100
15	44	X	-0.001	-0.001	0	%100
16	49	X	-0.001	-0.001	0	%100
17	50	X	-0.001	-0.001	0	%100
18	51	X	-0.001	-0.001	0	%100
19	52	X	-0.001	-0.001	0	%100
20	53	X	-0.001	-0.001	0	%100
21	54	X	-0.001	-0.001	0	%100
22	55	X	-0.001	-0.001	0	%100
23	56	X	-0.001	-0.001	0	%100
24	57	X	-0.001	-0.001	0	%100
25	58	X	-0.001	-0.001	0	%100
26	59	X	-0.001	-0.001	0	%100
27	60	X	-0.001	-0.001	0	%100
28	61	X	-0.001	-0.001	0	%100
29	62	X	-0.001	-0.001	0	%100
30	63	X	-0.001	-0.001	0	%100
31	64	X	-0.001	-0.001	0	%100
32	65	X	-0.001	-0.001	0	%100
33	66	X	-0.001	-0.001	0	%100
34	67	X	-0.003	-0.003	0	%100
35	68	X	-0.003	-0.003	0	%100
36	69	X	-0.003	-0.003	0	%100
37	70	X	-0.002	-0.002	0	%100
38	71	X	-0.003	-0.003	0	%100
39	73	X	-0.002	-0.002	0	%100
40	74	X	-0.003	-0.003	0	%100
41	76	X	-0.002	-0.002	0	%100
42	77	X	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Y	-0.0004841	-0.007	0	2.333
2	2	Y	-0.007	-0.01	2.333	4.667
3	2	Y	-0.01	-0.011	4.667	7
4	2	Y	-0.011	-0.012	7	9.333
5	2	Y	-0.012	-0.007	9.333	11.667
6	2	Y	-0.007	-0.0004841	11.667	14
7	5	Y	-0.012	-0.009	0	1.768
8	5	Y	-0.009	-0.007	1.768	3.536
9	5	Y	-0.007	-0.009	3.536	5.304
10	5	Y	-0.009	-0.012	5.304	7.072
11	1	Y	-0.002	-0.006	0	2
12	1	Y	-0.006	-0.009	2	4
13	1	Y	-0.009	-0.012	4	6
14	1	Y	-0.012	-0.012	6	8
15	1	Y	-0.012	-0.009	8	10
16	1	Y	-0.009	-0.006	10	12
17	1	Y	-0.006	-0.002	12	14
18	4	Y	-0.012	-0.009	0	1.768
19	4	Y	-0.009	-0.007	1.768	3.536
20	4	Y	-0.007	-0.009	3.536	5.304
21	4	Y	-0.009	-0.012	5.304	7.072
22	17	Y	-0.006	-0.017	0.8	4

Member Distributed Loads (BLC 39 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
23	18	Y	-0.006	-0.017	0.8	4
24	3	Y	-0.0004841	-0.007	0	2.333
25	3	Y	-0.007	-0.01	2.333	4.667
26	3	Y	-0.01	-0.011	4.667	7
27	3	Y	-0.011	-0.012	7	9.333
28	3	Y	-0.012	-0.007	9.333	11.667
29	3	Y	-0.007	-0.0004841	11.667	14
30	6	Y	-0.012	-0.009	0	1.768
31	6	Y	-0.009	-0.007	1.768	3.536
32	6	Y	-0.007	-0.009	3.536	5.304
33	6	Y	-0.009	-0.012	5.304	7.072
34	16	Y	-0.006	-0.017	0.8	4

Member Distributed Loads (BLC 40 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.001	-0.005	0	2
2	1	Y	-0.005	-0.007	2	4
3	1	Y	-0.007	-0.01	4	6
4	1	Y	-0.01	-0.01	6	8
5	1	Y	-0.01	-0.007	8	10
6	1	Y	-0.007	-0.005	10	12
7	1	Y	-0.005	-0.001	12	14
8	4	Y	-0.01	-0.007	0	1.768
9	4	Y	-0.007	-0.006	1.768	3.536
10	4	Y	-0.006	-0.007	3.536	5.304
11	4	Y	-0.007	-0.01	5.304	7.072
12	17	Y	-0.005	-0.014	0.8	4
13	18	Y	-0.005	-0.014	0.8	4
14	3	Y	-0.0003873	-0.006	0	2.333
15	3	Y	-0.006	-0.008	2.333	4.667
16	3	Y	-0.008	-0.009	4.667	7
17	3	Y	-0.009	-0.009	7	9.333
18	3	Y	-0.009	-0.006	9.333	11.667
19	3	Y	-0.006	-0.0003873	11.667	14
20	6	Y	-0.009	-0.007	0	1.768
21	6	Y	-0.007	-0.006	1.768	3.536
22	6	Y	-0.006	-0.007	3.536	5.304
23	6	Y	-0.007	-0.009	5.304	7.072
24	16	Y	-0.005	-0.014	0.8	4
25	2	Y	-0.0003873	-0.006	0	2.333
26	2	Y	-0.006	-0.008	2.333	4.667
27	2	Y	-0.008	-0.009	4.667	7
28	2	Y	-0.009	-0.009	7	9.333
29	2	Y	-0.009	-0.006	9.333	11.667
30	2	Y	-0.006	-0.0003873	11.667	14
31	5	Y	-0.009	-0.007	0	1.768
32	5	Y	-0.007	-0.006	1.768	3.536
33	5	Y	-0.006	-0.007	3.536	5.304
34	5	Y	-0.007	-0.009	5.304	7.072

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	22	18	19	24	Y	Two Way	-0.01
2	20	17	18	22	Y	Two Way	-0.01
3	24	19	17	20	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	22	18	19	24	Y	Two Way	-0.008
2	20	17	18	22	Y	Two Way	-0.008
3	24	19	17	20	Y	Two Way	-0.008

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	38	L	Y	-0.5
2	46	L	Y	-0.5
3	30	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	44	L	Y	-0.5
2	52	L	Y	-0.5
3	36	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	40	L	Y	-0.5
2	48	L	Y	-0.5
3	32	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 14 : Live Load d)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	42	L	Y	-0.5
2	50	L	Y	-0.5
3	34	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		45		3
2	0 Wind - No Ice	WLZ			45	42	
3	90 Wind - No Ice	WLX			45	42	
4	0 Wind - Ice	WLZ			45	42	
5	90 Wind - Ice	WLX			45	42	
6	0 Wind - Service	WLZ			45	42	
7	90 Wind - Service	WLX			45	42	
8	Ice	OL1			45	42	3
9	0 Seismic	ELZ			45	42	
10	90 Seismic	ELX			45	42	

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL		3			
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	Maint LL 16	LL					
31	Maint LL 17	LL					
32	Maint LL 18	LL					
33	Maint LL 19	LL					
34	Maint LL 20	LL					
35	Maint LL 21	LL					
36	Maint LL 22	LL					
37	Maint LL 23	LL					
38	Maint LL 24	LL					
39	BLC 1 Transient Area Loads	None				34	
40	BLC 8 Transient Area Loads	None				34	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	2	max	2.447	5	1.225	20	0.822	2	-0.754	2	2.533	5
2		min	-2.57	11	0.335	2	-0.733	8	-3.395	20	-2.682	11
3	7	max	1.807	3	1.039	25	3.166	2	1.51	14	3.84	9
4		min	-1.722	9	0.324	7	-3.207	8	0.139	8	-3.81	3
5	12	max	1.576	7	1.052	17	3.082	13	1.479	14	3.658	13
6		min	-1.707	13	0.381	11	-3.03	7	0.292	8	-3.523	7
7	124	max	3.212	21	2.506	21	1.849	22	-0.054	3	0.012	7
8		min	0.853	3	0.641	3	0.519	4	-0.209	21	-0.012	13
9	122	max	-0.831	12	2.306	18	1.7	17	-0.05	12	0.012	3
10		min	-2.939	19	0.606	12	0.48	12	-0.192	18	-0.012	9
11	120	max	0.067	5	2.543	14	-0.783	8	0.424	14	0.012	11
12		min	-0.067	11	0.491	8	-3.757	14	0.082	8	-0.012	5
13	Totals:	max	4.273	5	10.374	20	6.275	2				
14		min	-4.273	11	4.055	2	-6.275	8				

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

Member		Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	L3X3X4	0.683	14	20	0.094	7	y	2	3.945	46.656	1.688	2.646	1.5	H2-1
2	2	L3X3X4	0.69	14	13	0.091	0	z	25	3.945	46.656	1.688	2.646	1.5	H2-1
3	3	L3X3X4	0.69	0	15	0.091	0	z	15	3.945	46.656	1.688	2.646	1.5	H2-1
4	4	L3X3X4	0.17	3.536	11	0.016	0	z	23	15.459	46.656	1.688	3.137	1.268	H2-1
5	5	L3X3X4	0.236	3.536	8	0.016	0	z	14	15.459	46.656	1.688	3.183	1.341	H2-1
6	6	L3X3X4	0.225	3.536	8	0.015	7.072	z	25	15.459	46.656	1.688	3.167	1.315	H2-1
7	7	C4X5X4X1/2	0.266	2.917	11	0.112	2.005	y	11	186.608	194.4	15.817	29.7	3	H1-1b
8	10	C4X5X4X1/2	0.341	2.917	3	0.16	2.005	y	3	186.608	194.4	15.817	29.7	3	H1-1b
9	13	C4X5X4X1/2	0.324	2.917	7	0.156	2.005	y	13	186.608	194.4	15.817	29.7	3	H1-1b
10	16	LL3X3X4X0	0.489	2	15	0.076	2	v	16	76.288	93.312	6.48	4.357	1	H1-1b

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

Member	Shape	Code	Check	Loc	LC	Shear	Check	Loc	Dir	LC	phi*	Pnc	[k]	phi*	Pnt	[k]	phi*	Mn	y-y	[k-ft]	phi*	Mn	z-z	[k-ft]	Cb	Eqn
11	17	LL3X3X4X0	0.42	2	16	0.071	2	y	21	76.288	93.312	6.48	4.357	1	H1-1b											
12	18	LL3X3X4X0	0.483	2	20	0.076	2	y	25	76.288	93.312	6.48	4.357	1	H1-1b											
13	34	PIPE 2.0	0.309	1.76	2	0.196	0.813	2	5.82	32.13	1.872	1.872	1	H1-1b												
14	39	PIPE 2.0	0.286	0.813	7	0.316	0.813	7	5.82	32.13	1.872	1.872	1	H3-6												
15	44	PIPE 2.0	0.324	0.948	8	0.18	0.813	10	5.82	32.13	1.872	1.872	1	H1-1b												
16	49	L2.5X2.5X4	0.241	1.245	2	0.07	1.245	z	3	36.654	38.556	1.114	2.537	1.5	H2-1											
17	50	L2.5X2.5X4	0.349	1.245	8	0.113	1.245	z	8	36.654	38.556	1.114	2.537	1.5	H2-1											
18	51	L2.5X2.5X4	0.384	0	8	0.048	1.245	y	7	36.654	38.556	1.114	2.537	1.5	H2-1											
19	52	HSS2.375X0.188	0.396	3.854	8	0.098	3.958	8	11.5	45.36	2.662	2.662	1	H1-1b												
20	53	HSS2.375X0.188	0.176	2.37	22	0.065	2.37	8	24.604	45.36	2.662	2.662	1	H1-1b												
21	54	HSS2.375X0.188	0.115	2.37	6	0.098	2.37	8	24.604	45.36	2.662	2.662	1	H1-1b												
22	55	HSS2.375X0.188	0.204	2.438	2	0.046	2.37	12	24.604	45.36	2.662	2.662	1	H1-1b												
23	56	HSS2.375X0.188	0.177	2.37	2	0.053	2.37	13	24.604	45.36	2.662	2.662	1	H1-1b												
24	57	HSS2.375X0.188	0.161	2.37	9	0.061	2.37	13	24.604	45.36	2.662	2.662	1	H1-1b												
25	58	HSS2.375X0.188	0.214	2.37	2	0.083	2.37	2	24.604	45.36	2.662	2.662	1	H1-1b												
26	59	HSS2.375X0.188	0.147	0.474	7	0.058	2.37	2	24.604	45.36	2.662	2.662	1	H1-1b												
27	60	HSS2.375X0.188	0.175	2.37	2	0.059	2.37	3	24.604	45.36	2.662	2.662	1	H1-1b												
28	61	HSS2.375X0.188	0.204	2.438	2	0.114	2.37	8	24.604	45.36	2.662	2.662	1	H1-1b												
29	62	HSS2.375X0.188	0.396	3.854	8	0.055	5.833	9	11.5	45.36	2.662	2.662	1	H1-1b												
30	63	HSS2.375X0.188	0.395	3.854	8	0.045	5.833	7	11.5	45.36	2.662	2.662	1	H1-1b												
31	64	HSS2.375X0.188	0.024	2.438	13	0.002	2.438	13	24.604	45.36	2.662	2.662	1	H1-1b												
32	65	HSS2.375X0.188	0.024	2.438	9	0.002	2.438	9	24.604	45.36	2.662	2.662	1	H1-1b												
33	66	HSS2.375X0.188	0.024	2.438	4	0.002	2.438	4	24.604	45.36	2.662	2.662	1	H1-1b												
34	67	PL3/8X8 HRA	0.05	0	24	0.065	0	y	14	91.837	98.496	0.78	16.416	3	H1-1b											
35	68	PL3/8X8 HRA	0.046	0	15	0.059	0	y	18	91.837	98.496	0.78	16.416	3	H1-1b											
36	69	PL3/8X8 HRA	0.05	0	19	0.064	0	y	21	91.837	98.496	0.78	16.416	3	H1-1b											
37	70	LL2.5X2.5X3X6	0.104	0	18	0.007	5.539	z	3	39.434	58.32	4.643	2.548	1	H1-1b*											
38	71	PL1/2X8	0.037	0	16	0.066	0	y	18	124.465	129.6	1.35	21.6	3	H1-1b											
39	73	LL2.5X2.5X3X6	0.113	0	21	0.006	5.539	z	7	39.434	58.32	4.643	2.548	1	H1-1b*											
40	74	PL1/2X8	0.041	0	20	0.072	0	y	21	124.465	129.6	1.35	21.6	3	H1-1b											
41	76	LL2.5X2.5X3X6	0.115	0	14	0.007	5.539	z	11	39.434	58.32	4.643	2.548	1	H1-1b*											
42	77	PL1/2X8	0.041	0	24	0.073	0	y	14	124.465	129.6	1.35	21.6	3	H1-1b											

APPENDIX D
ADDITIONAL CALCULATIONS

PROJECT	149864.007.01.0001 - ENFIELD, CT KSC			
SUBJECT	Platform Mount Analysis			
DATE	12/12/22	PAGE	1	OF 1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.225	k
Vertical Shear	:	0.822	k
Horizontal Shear	:	2.57	k
Torsion	:	2.682	k.ft
Moment from Horizontal Forces	:	0.224	k.ft
Moment from Vertical Forces	:	3.395	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	2	bolts

Summary of Forces

Shear Resultant Force	:	2.70	k
Force from Horz. Moment	:	0.41	k
Force from Vert. Moment	:	6.15	k
Shear Load / Bolt	:	1.35	k
Tension Load / Bolt	:	0.61	k
Resultant from Moments / Bolt	:	6.16	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	32.70%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	17.75%		OKAY
Unity Check, Combined	:	50.44%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	3.89%		OKAY



MORRISON HERSHFIELD

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

Date: **December 08, 2022**

Subject: **Structural Analysis Report**

Carrier Designation: **Site Number:** CTHA067A
Site Name: CT03XC221

Crown Castle Designation: **BU Number:** 876348
Site Name: Enfield
JDE Job Number: 728058
Work Order Number: 2150165
Order Number: 629447 Rev. 0

Engineering Firm Designation: **Morrison Hershfield Project Number:** CN8-725R4 / 2200039

Site Data: **Bright Meadow Blvd., Enfield, Hartford County, CT 06082**
Latitude 42° 1' 14.91", Longitude -72° 35' 6.59"
147.5 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:

LC5: Proposed Equipment Configuration

Sufficient Capacity - 79.3%

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2022 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: 2022.12.08
15:17:36+05'30'

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1) INTRODUCTION

This tower is a 147.5 ft Summit monopole tower designed by Paul J. Ford and Company.

The tower was modified per reinforcement drawings prepared by Paul J. Ford and Company in February of 2013. Reinforcement consisted of adding flat members from 39 ft to 49 ft and additional anchor rods. Per the post modification inspection completed by Tower Engineering Professionals, Inc., in August of 2013, these modifications were properly installed are 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:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
147.0	147.0	3	commscope	VV-65B-R1_TMO w/ Mount Pipe	3	1-5/8
		3	ericsson	AIR 6419 B41_TMO_CCIV2 w/ Mount Pipe		
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
		1	-	13' Support Rail Kit [#P2.0 STD]		
		1	site pro 1	Platform Reinforcement Kit [#PRK-1245L]		
		1	-	Platform Mount [LP 1201-1]		

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)
145.0	145.0	3	alcatel lucent	TME-800MHz 2x50W RRH W/FILTER	-	-
		3	alcatel lucent	TME-PCS 1900MHz 4x45W-65MHz		
		1	-	Side Arm Mount [SO 901-3]		
137.0	139.0	3	samsung telecommunications	MT6407-77A	8	1-5/8
		1	symmetricom	58532A		
	137.0	6	commscope	SBNHH-1D65B		
		3	antel	BXA-70063-6CF-EDIN-2 w/ Mount Pipe		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
137.0	137.0	3	samsung telecommunications	RFV01U-D1A	-	-
		3	samsung telecommunications	RFV01U-D2A		
		2	rfs/celwave	DB-T1-6Z-8AB-0Z		
		3	commscope	Side-By-Side Mounting Kit [#BSAMNT-SBS-1-2]		
		1	-	Platform Mount [LP 1201-1_HR-1]		
	135.0	3	samsung telecommunications	CBRS		
117.0	119.0	3	powerwave technologies	7770.00 w/ Mount Pipe	9 2 1 1	1-5/8 3/4 3/8 2C
		1	andrew	SBNHH-1D65A w/ Mount Pipe		
		1	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe		
		1	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe		
		4	kathrein	860 10025		
		3	ericsson	RRUS 32 B2		
	117.0	2	powerwave technologies	LGP17201		
		1	-	Platform Mount [LP 1201-1]		
115.0	119.0	3	ericsson	TME-RRU-11	-	-
		1	raycap	TME-DC6-48-60-18-8F		
	115.0	1	-	Side Arm Mount [SO 102-3]		
107.0	107.0	3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	7 2	1-5/8 1-3/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	rfs/celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		1	-	T-Arm Mount [TA 701-3]		
94.0	97.0	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		
	94.0	1	tower mounts	Sabre C10801018-32788		
49.0	50.0	1	symmetricom	58532A	1	1/2
	49.0	1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1532963	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1613614	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1613591	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3667620	CCISITES
4-POST-MODIFICATION INSPECTION	3966655	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	147.5 - 142.5	Pole	TP22.95x22x0.25	Pole	4.6	Pass
L2	142.5 - 137.5	Pole	TP23.9x22.95x0.25	Pole	8.7	Pass
L3	137.5 - 132.5	Pole	TP24.85x23.9x0.25	Pole	15.7	Pass
L4	132.5 - 127.5	Pole	TP25.8x24.85x0.25	Pole	21.9	Pass
L5	127.5 - 122.5	Pole	TP26.75x25.8x0.25	Pole	27.4	Pass
L6	122.5 - 117.5	Pole	TP27.7x26.75x0.25	Pole	32.5	Pass
L7	117.5 - 112.5	Pole	TP28.65x27.7x0.25	Pole	39.0	Pass
L8	112.5 - 112.25	Pole	TP29.41x28.65x0.25	Pole	39.3	Pass
L9	112.25 - 107.25	Pole	TP29.148x28.198x0.25	Pole	43.2	Pass
L10	107.25 - 102.25	Pole	TP30.098x29.148x0.25	Pole	49.7	Pass
L11	102.25 - 97.25	Pole	TP31.048x30.098x0.25	Pole	55.5	Pass
L12	97.25 - 92.25	Pole	TP31.998x31.048x0.25	Pole	61.5	Pass
L13	92.25 - 87.25	Pole	TP32.948x31.998x0.25	Pole	67.2	Pass
L14	87.25 - 82.25	Pole	TP33.898x32.948x0.25	Pole	72.6	Pass
L15	82.25 - 77.25	Pole	TP34.848x33.898x0.25	Pole	77.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L16	77.25 - 76.75	Pole	TP35.798x34.848x0.25	Pole	78.1	Pass
L17	76.75 - 71.75	Pole	TP35.393x34.443x0.3125	Pole	63.1	Pass
L18	71.75 - 66.75	Pole	TP36.343x35.393x0.3125	Pole	66.3	Pass
L19	66.75 - 61.75	Pole	TP37.293x36.343x0.3125	Pole	69.2	Pass
L20	61.75 - 56.75	Pole	TP38.242x37.293x0.3125	Pole	71.9	Pass
L21	56.75 - 51.75	Pole	TP39.192x38.242x0.3125	Pole	74.4	Pass
L22	51.75 - 47.83	Pole	TP39.937x39.192x0.3125	Pole	76.2	Pass
L23	47.83 - 47.58	Pole	TP39.985x39.937x0.3125	Pole	76.3	Pass
L24	47.58 - 42.58	Pole	TP40.934x39.985x0.3125	Pole	78.6	Pass
L25	42.58 - 41	Pole	TP42.232x40.934x0.3125	Pole	79.3	Pass
L26	41 - 34.75	Pole	TP41.797x40.61x0.375	Pole	66.2	Pass
L27	34.75 - 29.75	Pole	TP42.747x41.797x0.375	Pole	67.6	Pass
L28	29.75 - 24.75	Pole	TP43.697x42.747x0.375	Pole	68.9	Pass
L29	24.75 - 19.75	Pole	TP44.647x43.697x0.375	Pole	70.1	Pass
L30	19.75 - 14.75	Pole	TP45.597x44.647x0.375	Pole	71.2	Pass
L31	14.75 - 9.75	Pole	TP46.547x45.597x0.375	Pole	72.3	Pass
L32	9.75 - 4.75	Pole	TP47.497x46.547x0.375	Pole	73.2	Pass
L33	4.75 - 0	Pole	TP48.4x47.497x0.375	Pole	74.1	Pass
					Summary	
				Pole	79.3	Pass
				Reinforcement	0.0	Pass
				Overall	79.3	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	71.0	Pass
1	Base Plate		59.4	Pass
1	Base Foundation (Structure)	0	48.0	Pass
1	Base Foundation (Soil Interaction)		78.3	Pass

Structure Rating (max from all components) =	79.3%*
---	---------------

Notes:

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

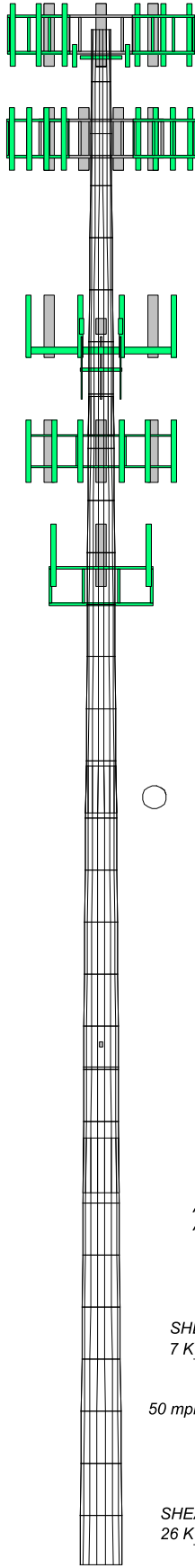
4.1) Recommendations

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

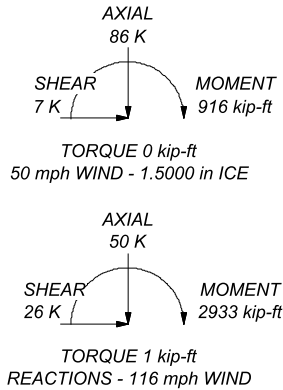
APPENDIX A
TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
2	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
3	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
4	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
5	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
6	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
7	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
8	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
9	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
10	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
11	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
12	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
13	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
14	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
15	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
16	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
17	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
18	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
19	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
20	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
21	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
22	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
23	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
24	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
25	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
26	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
27	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
28	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
29	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
30	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
31	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
32	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3
33	5.00	18	0.2500	3.75	29.1428	30.0929	A607-60	0.3

147.5 ft
142.5 ft
137.5 ft
132.5 ft
127.5 ft
122.5 ft
117.5 ft
112.5 ft
108.5 ft
102.3 ft
97.3 ft
92.3 ft
87.3 ft
82.3 ft
77.3 ft
72.3 ft
66.8 ft
61.8 ft
56.8 ft
51.8 ft
47.8 ft
42.6 ft
35.8 ft
29.8 ft
24.8 ft
19.8 ft
14.8 ft
9.8 ft
4.8 ft
0.0 ft



ALL REACTIONS
ARE FACTORED



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford 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 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. CCIPOLE RATING: 79.3%



Consulting Engineers

Morrison Hershfield

1455 Lincoln Parkway, Suite 500

Atlanta, GA 30346

Phone: (770) 379-8500

FAX: (770) 379-8501

Job: **CN8-725R4 / 2200039**

Project: **876348 / Enfield**

Client: Crown Castle USA

Code: TIA-222-H

Path:

Drawn by: KYR

Date: 12/08/22

Scale: NTS

Dwg No. E-1

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

Tower base elevation above sea level: 110.00 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 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

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

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

Maximum demand-capacity ratio is: 1.05.

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

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retention Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-H Bracing Resist.
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Use TIA-222-H Tension Splice
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Exemption
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	
		Poles
		√ Include Shear-Torsion Interaction
		Always Use Sub-Critical Flow
		Use Top Mounted Sockets
		Pole Without Linear Attachments
		Pole With Shroud Or No
		Appurtenances
		Outside and Inside Corner Radii Are
		Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	147.50-142.50	5.00	0.00	18	22.0000	22.9500	0.2500	1.0000	A607-60 (60 ksi)
L2	142.50-137.50	5.00	0.00	18	22.9500	23.9000	0.2500	1.0000	A607-60 (60 ksi)
L3	137.50-132.50	5.00	0.00	18	23.9000	24.8500	0.2500	1.0000	A607-60 (60 ksi)
L4	132.50-127.50	5.00	0.00	18	24.8500	25.8000	0.2500	1.0000	A607-60 (60 ksi)
L5	127.50-122.50	5.00	0.00	18	25.8000	26.7500	0.2500	1.0000	A607-60 (60 ksi)
L6	122.50-117.50	5.00	0.00	18	26.7500	27.7000	0.2500	1.0000	A607-60 (60 ksi)
L7	117.50-112.50	5.00	0.00	18	27.7000	28.6500	0.2500	1.0000	A607-60 (60 ksi)
L8	112.50-108.50	4.00	3.75	18	28.6500	29.4100	0.2500	1.0000	A607-60 (60 ksi)
L9	108.50-107.25	5.00	0.00	18	28.1975	29.1476	0.2500	1.0000	A607-65 (65 ksi)
L10	107.25-102.25	5.00	0.00	18	29.1476	30.0976	0.2500	1.0000	A607-65 (65 ksi)
L11	102.25-97.25	5.00	0.00	18	30.0976	31.0477	0.2500	1.0000	A607-65 (65 ksi)
L12	97.25-92.25	5.00	0.00	18	31.0477	31.9978	0.2500	1.0000	A607-65 (65 ksi)
L13	92.25-87.25	5.00	0.00	18	31.9978	32.9478	0.2500	1.0000	A607-65 (65 ksi)
L14	87.25-82.25	5.00	0.00	18	32.9478	33.8979	0.2500	1.0000	A607-65 (65 ksi)
L15	82.25-77.25	5.00	0.00	18	33.8979	34.8479	0.2500	1.0000	A607-65 (65 ksi)
L16	77.25-72.25	5.00	4.50	18	34.8479	35.7980	0.2500	1.0000	A607-65 (65 ksi)
L17	72.25-71.75	5.00	0.00	18	34.4429	35.3928	0.3125	1.2500	A607-65 (65 ksi)
L18	71.75-66.75	5.00	0.00	18	35.3928	36.3427	0.3125	1.2500	A607-65 (65 ksi)
L19	66.75-61.75	5.00	0.00	18	36.3427	37.2926	0.3125	1.2500	A607-65 (65 ksi)
L20	61.75-56.75	5.00	0.00	18	37.2926	38.2425	0.3125	1.2500	A607-65 (65 ksi)
L21	56.75-51.75	5.00	0.00	18	38.2425	39.1924	0.3125	1.2500	A607-65 (65 ksi)
L22	51.75-47.83	3.92	0.00	18	39.1924	39.9371	0.3125	1.2500	A607-65 (65 ksi)
L23	47.83-47.58	0.25	0.00	18	39.9371	39.9846	0.3125	1.2500	A607-65 (65 ksi)
L24	47.58-42.58	5.00	0.00	18	39.9846	40.9345	0.3125	1.2500	A607-65 (65 ksi)
L25	42.58-35.75	6.83	5.25	18	40.9345	42.2320	0.3125	1.2500	A607-65 (65 ksi)
L26	35.75-34.75	6.25	0.00	18	40.6096	41.7972	0.3750	1.5000	A607-65 (65 ksi)
L27	34.75-29.75	5.00	0.00	18	41.7972	42.7472	0.3750	1.5000	A607-65 (65 ksi)
L28	29.75-24.75	5.00	0.00	18	42.7472	43.6973	0.3750	1.5000	A607-65 (65 ksi)
L29	24.75-19.75	5.00	0.00	18	43.6973	44.6473	0.3750	1.5000	A607-65 (65 ksi)
L30	19.75-14.75	5.00	0.00	18	44.6473	45.5974	0.3750	1.5000	A607-65 (65 ksi)
L31	14.75-9.75	5.00	0.00	18	45.5974	46.5474	0.3750	1.5000	A607-65 (65 ksi)
L32	9.75-4.75	5.00	0.00	18	46.5474	47.4975	0.3750	1.5000	A607-65 (65 ksi)
L33	4.75-0.00	4.75		18	47.4975	48.4000	0.3750	1.5000	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	22.3008	17.2586	1031.4832	7.7212	11.1760	92.2945	2064.3237	8.6310	3.4320	13.728
	23.2655	18.0125	1172.6326	8.0585	11.6586	100.5809	2346.8081	9.0079	3.5992	14.397
L2	23.2655	18.0125	1172.6326	8.0585	11.6586	100.5809	2346.8081	9.0079	3.5992	14.397
	24.2301	18.7663	1326.1047	8.3957	12.1412	109.2235	2653.9543	9.3849	3.7664	15.066
L3	24.2301	18.7663	1326.1047	8.3957	12.1412	109.2235	2653.9543	9.3849	3.7664	15.066
	25.1948	19.5201	1492.4153	8.7330	12.6238	118.2224	2986.7944	9.7619	3.9336	15.734
L4	25.1948	19.5201	1492.4153	8.7330	12.6238	118.2224	2986.7944	9.7619	3.9336	15.734
	26.1594	20.2739	1672.0802	9.0702	13.1064	127.5774	3346.3605	10.1389	4.1008	16.403
L5	26.1594	20.2739	1672.0802	9.0702	13.1064	127.5774	3346.3605	10.1389	4.1008	16.403
	27.1241	21.0278	1865.6149	9.4075	13.5890	137.2886	3733.6846	10.5159	4.2680	17.072
L6	27.1241	21.0278	1865.6149	9.4075	13.5890	137.2886	3733.6846	10.5159	4.2680	17.072
	28.0888	21.7816	2073.5353	9.7447	14.0716	147.3560	4149.7990	10.8929	4.4352	17.741
L7	28.0888	21.7816	2073.5353	9.7447	14.0716	147.3560	4149.7990	10.8929	4.4352	17.741
	29.0534	22.5354	2296.3570	10.0820	14.5542	157.7797	4595.7356	11.2698	4.6024	18.41
L8	29.0534	22.5354	2296.3570	10.0820	14.5542	157.7797	4595.7356	11.2698	4.6024	18.41
	29.8251	23.1385	2485.6899	10.3518	14.9403	166.3751	4974.6504	11.5714	4.7362	18.945
L9	29.3175	22.1763	2188.3323	9.9214	14.3243	152.7703	4379.5441	11.0903	4.5228	18.091
	29.5586	22.9302	2419.1791	10.2586	14.8070	163.3812	4841.5414	11.4673	4.6900	18.76
L10	29.5586	22.9302	2419.1791	10.2586	14.8070	163.3812	4841.5414	11.4673	4.6900	18.76
	30.5234	23.6841	2665.7150	10.5959	15.2896	174.3483	5334.9377	11.8443	4.8572	19.429
L11	30.5234	23.6841	2665.7150	10.5959	15.2896	174.3483	5334.9377	11.8443	4.8572	19.429
	31.4881	24.4380	2928.4560	10.9332	15.7722	185.6717	5860.7654	12.2213	5.0244	20.098
L12	31.4881	24.4380	2928.4560	10.9332	15.7722	185.6717	5860.7654	12.2213	5.0244	20.098
	32.4528	25.1918	3207.9178	11.2705	16.2549	197.3513	6420.0567	12.5983	5.1916	20.766
L13	32.4528	25.1918	3207.9178	11.2705	16.2549	197.3513	6420.0567	12.5983	5.1916	20.766
	33.4175	25.9457	3504.6163	11.6077	16.7375	209.3872	7013.8441	12.9753	5.3588	21.435
L14	33.4175	25.9457	3504.6163	11.6077	16.7375	209.3872	7013.8441	12.9753	5.3588	21.435
	34.3822	26.6996	3819.0673	11.9450	17.2201	221.7794	7643.1597	13.3523	5.5260	22.104
L15	34.3822	26.6996	3819.0673	11.9450	17.2201	221.7794	7643.1597	13.3523	5.5260	22.104
	35.3470	27.4535	4151.7865	12.2823	17.7028	234.5277	8309.0360	13.7293	5.6932	22.773
L16	35.3470	27.4535	4151.7865	12.2823	17.7028	234.5277	8309.0360	13.7293	5.6932	22.773
	36.3117	28.2073	4503.2898	12.6195	18.1854	247.6324	9012.5051	14.1063	5.8604	23.442
L17	35.7942	33.8531	4982.1890	12.1163	17.4970	284.7451	9970.9337	16.9298	5.5120	17.638
	35.8906	34.7953	5409.8516	12.4535	17.9796	300.8890	10826.821	17.4010	5.6791	18.173
L18	35.8906	34.7953	5409.8516	12.4535	17.9796	300.8890	10826.821	17.4010	5.6791	18.173
	36.8552	35.7375	5861.3129	12.7907	18.4621	317.4781	11730.338	17.8721	5.8463	18.708
L19	36.8552	35.7375	5861.3129	12.7907	18.4621	317.4781	11730.338	17.8721	5.8463	18.708
	37.8197	36.6796	6337.2171	13.1279	18.9446	334.5124	12682.772	18.3433	6.0135	19.243
L20	37.8197	36.6796	6337.2171	13.1279	18.9446	334.5124	12682.772	18.3433	6.0135	19.243
	38.7842	37.6218	6838.2087	13.4651	19.4272	351.9918	13685.415	18.8145	6.1807	19.778
L21	38.7842	37.6218	6838.2087	13.4651	19.4272	351.9918	13685.415	18.8145	6.1807	19.778
	39.7488	38.5640	7364.9321	13.8024	19.9097	369.9164	14739.555	19.2856	6.3479	20.313
L22	39.7488	38.5640	7364.9321	13.8024	19.9097	369.9164	14739.555	19.2856	6.3479	20.313
	40.5050	39.3026	7796.2965	14.0667	20.2880	384.2805	15602.851	19.6550	6.4789	20.733
L23	40.5050	39.3026	7796.2965	14.0667	20.2880	384.2805	15602.851	19.6550	6.4789	20.733
	40.5532	39.3497	7824.3642	14.0836	20.3122	385.2059	15659.023	19.6786	6.4873	20.759
L24	40.5532	39.3497	7824.3642	14.0836	20.3122	385.2059	15659.023	19.6786	6.4873	20.759
	41.5177	40.2919	8399.9544	14.4208	20.7947	403.9468	16810.961	20.1498	6.6545	21.294
L25	41.5177	40.2919	8399.9544	14.4208	20.7947	403.9468	16810.961	20.1498	6.6545	21.294
	42.8353	41.5789	9230.8709	14.8814	21.4539	430.2663	18473.888	20.7934	6.8828	22.025

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
L26	42.1912	47.8893	9794.3446	14.2833	20.6297	474.7694	19601.576 8	23.9492	6.4873	17.299
	42.3841	49.3027	10687.458 8	14.7049	21.2330	503.3427	21388.980 4	24.6561	6.6963	17.857
L27	42.3841	49.3027	10687.458 8	14.7049	21.2330	503.3427	21388.980 4	24.6561	6.6963	17.857
	43.3488	50.4335	11439.826 7	15.0421	21.7156	526.8025	22894.706 2	25.2216	6.8635	18.303
L28	43.3488	50.4335	11439.826 7	15.0421	21.7156	526.8025	22894.706 2	25.2216	6.8635	18.303
	44.3135	51.5643	12226.700 9	15.3794	22.1982	550.7966	24469.490 0	25.7871	7.0307	18.749
L29	44.3135	51.5643	12226.700 9	15.3794	22.1982	550.7966	24469.490 0	25.7871	7.0307	18.749
	45.2782	52.6951	13048.855 0	15.7167	22.6808	575.3251	26114.880 0	26.3526	7.1979	19.194
L30	45.2782	52.6951	13048.855 0	15.7167	22.6808	575.3251	26114.880 0	26.3526	7.1979	19.194
	46.2429	53.8259	13907.062 7	16.0539	23.1635	600.3880	27832.424 7	26.9181	7.3651	19.64
L31	46.2429	53.8259	13907.062 7	16.0539	23.1635	600.3880	27832.424 7	26.9181	7.3651	19.64
	47.2076	54.9567	14802.097 7	16.3912	23.6461	625.9852	29623.672 4	27.4836	7.5323	20.086
L32	47.2076	54.9567	14802.097 7	16.3912	23.6461	625.9852	29623.672 4	27.4836	7.5323	20.086
	48.1723	56.0875	15734.733 6	16.7285	24.1287	652.1167	31490.171 4	28.0491	7.6996	20.532
L33	48.1723	56.0875	15734.733 6	16.7285	24.1287	652.1167	31490.171 4	28.0491	7.6996	20.532
	49.0888	57.1618	16656.270 3	17.0489	24.5872	677.4366	33334.457 4	28.5863	7.8584	20.956

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 147.50- 142.50				1	1	1			
L2 142.50- 137.50				1	1	1			
L3 137.50- 132.50				1	1	1			
L4 132.50- 127.50				1	1	1			
L5 127.50- 122.50				1	1	1			
L6 122.50- 117.50				1	1	1			
L7 117.50- 112.50				1	1	1			
L8 112.50- 108.50				1	1	1			
L9 108.50- 107.25				1	1	1			
L10 107.25- 102.25				1	1	1			
L11 102.25- 97.25				1	1	1			
L12 97.25- 92.25				1	1	1			
L13 92.25- 87.25				1	1	1			
L14 87.25- 82.25				1	1	1			
L15 82.25- 77.25				1	1	1			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L16 77.25-72.25				1	1	1			
L17 72.25-71.75				1	1	1			
L18 71.75-66.75				1	1	1			
L19 66.75-61.75				1	1	1			
L20 61.75-56.75				1	1	1			
L21 56.75-51.75				1	1	1			
L22 51.75-47.83				1	1	1			
L23 47.83-47.58				1	1	1			
L24 47.58-42.58				1	1	1			
L25 42.58-35.75				1	1	1			
L26 35.75-34.75				1	1	1			
L27 34.75-29.75				1	1	1			
L28 29.75-24.75				1	1	1			
L29 24.75-19.75				1	1	1			
L30 19.75-14.75				1	1	1			
L31 14.75-9.75				1	1	1			
L32 9.75-4.75				1	1	1			
L33 4.75-0.00				1	1	1			

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
Climbing Pegs	B	No	Surface Ar (CaAa)	147.50 - 0.00	1	1	0.400 0.500	0.7050		1.80

HCS 6X12 6AWG(1-3/8)	A	No	Surface Ar (CaAa)	107.00 - 6.00	2	2	0.400 0.470	1.3800		1.70
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	A	No	Surface Ar (CaAa)	107.00 - 6.00	1	1	0.380 0.380	1.6250		1.07
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	107.00 - 6.00	6	3	0.200 0.360	1.9800		0.82

CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	94.00 - 6.00	1	1	-0.450 -0.450	1.6000		2.35

MP3-03 Reinforcement	A	No	Surface Af (CaAa)	49.00 - 39.00	1	1	-0.417 -0.417	4.0600	11.2600	0.00
MP3-03 Reinforcement	B	No	Surface Af (CaAa)	49.00 - 39.00	1	1	-0.417 -0.417	4.0600	11.2600	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	49.00 - 39.00	1	1	-0.417 -0.417	4.0600	11.2600	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

HB158-21U6S24- xxM_TMO(1-5/8)	A	No	No	Inside Pole	147.00 - 6.00	3	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
							2" Ice	0.00	2.50

HB158-1-08U8- S8J18(1-5/8)	B	No	No	Inside Pole	137.00 - 6.00	2	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
LDF7-50A(1-5/8)	B	No	No	Inside Pole	137.00 - 6.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82

LDF7-50A(1-5/8)	C	No	No	Inside Pole	117.00 - 6.00	9	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
FB-L98B-002- 75000(3/8)	C	No	No	Inside Pole	117.00 - 6.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG86ST- BRD(3/4)	C	No	No	Inside Pole	117.00 - 6.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
							2" Ice	0.00	0.58
CONDUIT(2)	C	No	No	Inside Pole	117.00 - 6.00	1	No Ice	0.00	2.80
							1/2" Ice	0.00	2.80
							1" Ice	0.00	2.80
							2" Ice	0.00	2.80

LDF4-50A(1/2)	B	No	No	Inside Pole	49.00 - 6.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section 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
L1	147.50-142.50	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.352	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L2	142.50-137.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.352	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L3	137.50-132.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.352	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.00
L4	132.50-127.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.352	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L5	127.50-122.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.352	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L6	122.50-117.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.352	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00

Tower Sectio n	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L7	117.50-112.50	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.352	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.05
L8	112.50-108.50	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.282	0.000	0.04
		C	0.000	0.000	0.000	0.000	0.05
L9	108.50-107.25	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.088	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L10	107.25-102.25	A	0.000	0.000	4.904	0.000	0.08
		B	0.000	0.000	0.352	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.06
L11	102.25-97.25	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	0.352	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.06
L12	97.25-92.25	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	0.632	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.06
L13	92.25-87.25	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L14	87.25-82.25	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L15	82.25-77.25	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L16	77.25-72.25	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L17	72.25-71.75	A	0.000	0.000	0.516	0.000	0.01
		B	0.000	0.000	0.115	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L18	71.75-66.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L19	66.75-61.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L20	61.75-56.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L21	56.75-51.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L22	51.75-47.83	A	0.000	0.000	4.839	0.000	0.07
		B	0.000	0.000	1.695	0.000	0.05
		C	0.000	0.000	0.792	0.000	0.04
L23	47.83-47.58	A	0.000	0.000	0.427	0.000	0.00
		B	0.000	0.000	0.227	0.000	0.00
		C	0.000	0.000	0.169	0.000	0.00
L24	47.58-42.58	A	0.000	0.000	8.546	0.000	0.08
		B	0.000	0.000	4.536	0.000	0.06
		C	0.000	0.000	3.383	0.000	0.06
L25	42.58-35.75	A	0.000	0.000	9.474	0.000	0.12
		B	0.000	0.000	3.997	0.000	0.08
		C	0.000	0.000	2.422	0.000	0.08
L26	35.75-34.75	A	0.000	0.000	1.033	0.000	0.02
		B	0.000	0.000	0.231	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L27	34.75-29.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L28	29.75-24.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L29	24.75-19.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06

Tower Section 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
L30	19.75-14.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L31	14.75-9.75	A	0.000	0.000	5.162	0.000	0.08
		B	0.000	0.000	1.153	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.06
L32	9.75-4.75	A	0.000	0.000	3.872	0.000	0.06
		B	0.000	0.000	0.953	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.04
L33	4.75-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.335	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	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
L1	147.50-142.50	A	1.478	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	1.831	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
L2	142.50-137.50	A	1.473	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	1.826	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
L3	137.50-132.50	A	1.468	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	1.820	0.000	0.06
		C		0.000	0.000	0.000	0.000	0.00
L4	132.50-127.50	A	1.462	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	1.815	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.00
L5	127.50-122.50	A	1.457	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	1.809	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.00
L6	122.50-117.50	A	1.451	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	1.803	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.00
L7	117.50-112.50	A	1.445	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	1.797	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.05
L8	112.50-108.50	A	1.439	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	1.433	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.05
L9	108.50-107.25	A	1.435	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.448	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.01
L10	107.25-102.25	A	1.431	0.000	0.000	10.696	0.000	0.21
		B		0.000	0.000	1.784	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.06
L11	102.25-97.25	A	1.424	0.000	0.000	11.234	0.000	0.21
		B		0.000	0.000	1.777	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.06
L12	97.25-92.25	A	1.417	0.000	0.000	11.209	0.000	0.21
		B		0.000	0.000	2.545	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.06
L13	92.25-87.25	A	1.409	0.000	0.000	11.182	0.000	0.21
		B		0.000	0.000	3.971	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L14	87.25-82.25	A	1.401	0.000	0.000	11.154	0.000	0.21
		B		0.000	0.000	3.955	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L15	82.25-77.25	A	1.393	0.000	0.000	11.124	0.000	0.21
		B		0.000	0.000	3.938	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L16	77.25-72.25	A	1.384	0.000	0.000	11.093	0.000	0.21
		B		0.000	0.000	3.920	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06

Tower Sectio n	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
L17	72.25-71.75	A	1.378	0.000	0.000	1.109	0.000	0.02
		B		0.000	0.000	0.392	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.01
L18	71.75-66.75	A	1.373	0.000	0.000	11.056	0.000	0.21
		B		0.000	0.000	3.899	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L19	66.75-61.75	A	1.363	0.000	0.000	11.020	0.000	0.21
		B		0.000	0.000	3.878	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L20	61.75-56.75	A	1.352	0.000	0.000	10.981	0.000	0.21
		B		0.000	0.000	3.856	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L21	56.75-51.75	A	1.340	0.000	0.000	10.940	0.000	0.21
		B		0.000	0.000	3.832	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L22	51.75-47.83	A	1.329	0.000	0.000	9.537	0.000	0.17
		B		0.000	0.000	3.979	0.000	0.09
		C		0.000	0.000	0.992	0.000	0.05
L23	47.83-47.58	A	1.323	0.000	0.000	0.756	0.000	0.01
		B		0.000	0.000	0.402	0.000	0.01
		C		0.000	0.000	0.212	0.000	0.00
L24	47.58-42.58	A	1.315	0.000	0.000	15.086	0.000	0.24
		B		0.000	0.000	8.015	0.000	0.14
		C		0.000	0.000	4.232	0.000	0.10
L25	42.58-35.75	A	1.297	0.000	0.000	17.762	0.000	0.30
		B		0.000	0.000	8.141	0.000	0.16
		C		0.000	0.000	3.023	0.000	0.11
L26	35.75-34.75	A	1.283	0.000	0.000	2.158	0.000	0.04
		B		0.000	0.000	0.749	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.01
L27	34.75-29.75	A	1.272	0.000	0.000	10.702	0.000	0.20
		B		0.000	0.000	3.697	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L28	29.75-24.75	A	1.251	0.000	0.000	10.628	0.000	0.20
		B		0.000	0.000	3.654	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.06
L29	24.75-19.75	A	1.226	0.000	0.000	10.540	0.000	0.19
		B		0.000	0.000	3.604	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.06
L30	19.75-14.75	A	1.195	0.000	0.000	10.432	0.000	0.19
		B		0.000	0.000	3.542	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.06
L31	14.75-9.75	A	1.155	0.000	0.000	10.291	0.000	0.19
		B		0.000	0.000	3.462	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.06
L32	9.75-4.75	A	1.096	0.000	0.000	7.563	0.000	0.13
		B		0.000	0.000	2.870	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.04
L33	4.75-0.00	A	0.980	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	1.266	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation	CP_x	CP_z	CP_x	CP_z
	ft	in	in	Ice in	Ice in
L1	147.50-142.50	0.5125	0.2282	1.3187	0.5871
L2	142.50-137.50	0.5128	0.2283	1.3262	0.5905
L3	137.50-132.50	0.5132	0.2285	1.3330	0.5935
L4	132.50-127.50	0.5135	0.2286	1.3389	0.5961
L5	127.50-122.50	0.5137	0.2287	1.3442	0.5985
L6	122.50-117.50	0.5140	0.2288	1.3487	0.6005
L7	117.50-112.50	0.5142	0.2289	1.3525	0.6022
L8	112.50-108.50	0.5144	0.2290	1.3554	0.6035
L9	108.50-107.25	0.5144	0.2290	1.3557	0.6036

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L10	107.25-102.25	-1.5255	-5.0111	-0.8640	-4.4063
L11	102.25-97.25	-1.6065	-5.2324	-0.9366	-4.6071
L12	97.25-92.25	-1.5581	-5.4820	-0.8927	-4.9245
L13	92.25-87.25	-1.4636	-5.8897	-0.8055	-5.4334
L14	87.25-82.25	-1.4750	-5.9420	-0.8167	-5.5077
L15	82.25-77.25	-1.4860	-5.9924	-0.8277	-5.5796
L16	77.25-72.25	-1.4967	-6.0411	-0.8386	-5.6489
L17	72.25-71.75	-1.4972	-6.0433	-0.8391	-5.6520
L18	71.75-66.75	-1.5029	-6.0693	-0.8459	-5.6851
L19	66.75-61.75	-1.5130	-6.1155	-0.8567	-5.7500
L20	61.75-56.75	-1.5228	-6.1602	-0.8675	-5.8123
L21	56.75-51.75	-1.5322	-6.2034	-0.8782	-5.8719
L22	51.75-47.83	-1.3239	-5.3634	-0.8135	-5.4266
L23	47.83-47.58	-0.9998	-4.0518	-0.6838	-4.5561
L24	47.58-42.58	-1.0057	-4.0774	-0.6890	-4.5834
L25	42.58-35.75	-1.2200	-4.9501	-0.7873	-5.2142
L26	35.75-34.75	-1.5603	-6.3315	-0.9123	-6.0436
L27	34.75-29.75	-1.5653	-6.3544	-0.9215	-6.0588
L28	29.75-24.75	-1.5735	-6.3917	-0.9333	-6.1006
L29	24.75-19.75	-1.5814	-6.4279	-0.9457	-6.1367
L30	19.75-14.75	-1.5891	-6.4630	-0.9591	-6.1654
L31	14.75-9.75	-1.5966	-6.4971	-0.9743	-6.1826
L32	9.75-4.75	-1.1925	-5.2182	-0.6196	-5.0304
L33	4.75-0.00	0.5173	0.2303	1.1119	0.4950

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	1	Climbing Pegs	142.50 - 147.50	1.0000	1.0000
L2	1	Climbing Pegs	137.50 - 142.50	1.0000	1.0000
L3	1	Climbing Pegs	132.50 - 137.50	1.0000	1.0000
L4	1	Climbing Pegs	127.50 - 132.50	1.0000	1.0000
L5	1	Climbing Pegs	122.50 - 127.50	1.0000	1.0000
L6	1	Climbing Pegs	117.50 - 122.50	1.0000	1.0000
L7	1	Climbing Pegs	112.50 - 117.50	1.0000	1.0000
L8	1	Climbing Pegs	108.50 - 112.50	1.0000	1.0000
L9	1	Climbing Pegs	107.25 - 108.50	1.0000	1.0000
L10	1	Climbing Pegs	102.25 - 107.25	1.0000	1.0000
L10	17	HCS 6X12 6AWG(1-3/8)	102.25 - 107.00	1.0000	1.0000
L10	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	102.25 - 107.00	1.0000	1.0000
L10	19	LDF7-50A(1-5/8)	102.25 - 107.00	1.0000	1.0000
L11	1	Climbing Pegs	97.25 - 102.25	1.0000	1.0000
L11	17	HCS 6X12 6AWG(1-3/8)	97.25 - 102.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L11	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	97.25 - 102.25	1.0000	1.0000
L11	19	LDF7-50A(1-5/8)	97.25 - 102.25	1.0000	1.0000
L12	1	Climbing Pegs	92.25 - 97.25	1.0000	1.0000
L12	17	HCS 6X12 6AWG(1-3/8)	92.25 - 97.25	1.0000	1.0000
L12	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	92.25 - 97.25	1.0000	1.0000
L12	19	LDF7-50A(1-5/8)	92.25 - 97.25	1.0000	1.0000
L12	21	CU12PSM9P6XXX(1-1/2)	92.25 - 94.00	1.0000	1.0000
L13	1	Climbing Pegs	87.25 - 92.25	1.0000	1.0000
L13	17	HCS 6X12 6AWG(1-3/8)	87.25 - 92.25	1.0000	1.0000
L13	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	87.25 - 92.25	1.0000	1.0000
L13	19	LDF7-50A(1-5/8)	87.25 - 92.25	1.0000	1.0000
L13	21	CU12PSM9P6XXX(1-1/2)	87.25 - 92.25	1.0000	1.0000
L14	1	Climbing Pegs	82.25 - 87.25	1.0000	1.0000
L14	17	HCS 6X12 6AWG(1-3/8)	82.25 - 87.25	1.0000	1.0000
L14	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	82.25 - 87.25	1.0000	1.0000
L14	19	LDF7-50A(1-5/8)	82.25 - 87.25	1.0000	1.0000
L14	21	CU12PSM9P6XXX(1-1/2)	82.25 - 87.25	1.0000	1.0000
L15	1	Climbing Pegs	77.25 - 82.25	1.0000	1.0000
L15	17	HCS 6X12 6AWG(1-3/8)	77.25 - 82.25	1.0000	1.0000
L15	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	77.25 - 82.25	1.0000	1.0000
L15	19	LDF7-50A(1-5/8)	77.25 - 82.25	1.0000	1.0000
L15	21	CU12PSM9P6XXX(1-1/2)	77.25 - 82.25	1.0000	1.0000
L16	1	Climbing Pegs	72.25 - 77.25	1.0000	1.0000
L16	17	HCS 6X12 6AWG(1-3/8)	72.25 - 77.25	1.0000	1.0000
L16	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	72.25 - 77.25	1.0000	1.0000
L16	19	LDF7-50A(1-5/8)	72.25 - 77.25	1.0000	1.0000
L16	21	CU12PSM9P6XXX(1-1/2)	72.25 - 77.25	1.0000	1.0000
L17	1	Climbing Pegs	71.75 - 72.25	1.0000	1.0000
L17	17	HCS 6X12 6AWG(1-3/8)	71.75 - 72.25	1.0000	1.0000
L17	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	71.75 - 72.25	1.0000	1.0000
L17	19	LDF7-50A(1-5/8)	71.75 - 72.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L17	21	CU12PSM9P6XXX(1-1/2)	71.75 - 72.25	1.0000	1.0000
L18	1	Climbing Pegs	66.75 - 71.75	1.0000	1.0000
L18	17	HCS 6X12 6AWG(1-3/8)	66.75 - 71.75	1.0000	1.0000
L18	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	66.75 - 71.75	1.0000	1.0000
L18	19	LDF7-50A(1-5/8)	66.75 - 71.75	1.0000	1.0000
L18	21	CU12PSM9P6XXX(1-1/2)	66.75 - 71.75	1.0000	1.0000
L19	1	Climbing Pegs	61.75 - 66.75	1.0000	1.0000
L19	17	HCS 6X12 6AWG(1-3/8)	61.75 - 66.75	1.0000	1.0000
L19	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	61.75 - 66.75	1.0000	1.0000
L19	19	LDF7-50A(1-5/8)	61.75 - 66.75	1.0000	1.0000
L19	21	CU12PSM9P6XXX(1-1/2)	61.75 - 66.75	1.0000	1.0000
L20	1	Climbing Pegs	56.75 - 61.75	1.0000	1.0000
L20	17	HCS 6X12 6AWG(1-3/8)	56.75 - 61.75	1.0000	1.0000
L20	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	56.75 - 61.75	1.0000	1.0000
L20	19	LDF7-50A(1-5/8)	56.75 - 61.75	1.0000	1.0000
L20	21	CU12PSM9P6XXX(1-1/2)	56.75 - 61.75	1.0000	1.0000
L21	1	Climbing Pegs	51.75 - 56.75	1.0000	1.0000
L21	17	HCS 6X12 6AWG(1-3/8)	51.75 - 56.75	1.0000	1.0000
L21	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	51.75 - 56.75	1.0000	1.0000
L21	19	LDF7-50A(1-5/8)	51.75 - 56.75	1.0000	1.0000
L21	21	CU12PSM9P6XXX(1-1/2)	51.75 - 56.75	1.0000	1.0000
L22	1	Climbing Pegs	47.83 - 51.75	1.0000	1.0000
L22	17	HCS 6X12 6AWG(1-3/8)	47.83 - 51.75	1.0000	1.0000
L22	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	47.83 - 51.75	1.0000	1.0000
L22	19	LDF7-50A(1-5/8)	47.83 - 51.75	1.0000	1.0000
L22	21	CU12PSM9P6XXX(1-1/2)	47.83 - 51.75	1.0000	1.0000
L22	25	MP3-03 Reinforcement	47.83 - 49.00	1.0000	1.0000
L22	26	MP3-03 Reinforcement	47.83 - 49.00	1.0000	1.0000
L22	27	MP3-03 Reinforcement	47.83 - 49.00	1.0000	1.0000
L23	1	Climbing Pegs	47.58 - 47.83	1.0000	1.0000
L23	17	HCS 6X12 6AWG(1-3/8)	47.58 - 47.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L23	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	19	LDF7-50A(1-5/8)	47.58 - 47.83	1.0000	1.0000
L23	21	CU12PSM9P6XXX(1-1/2)	47.58 - 47.83	1.0000	1.0000
L23	25	MP3-03 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	26	MP3-03 Reinforcement	47.58 - 47.83	1.0000	1.0000
L23	27	MP3-03 Reinforcement	47.58 - 47.83	1.0000	1.0000
L24	1	Climbing Pegs	42.58 - 47.58	1.0000	1.0000
L24	17	HCS 6X12 6AWG(1-3/8)	42.58 - 47.58	1.0000	1.0000
L24	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	42.58 - 47.58	1.0000	1.0000
L24	19	LDF7-50A(1-5/8)	42.58 - 47.58	1.0000	1.0000
L24	21	CU12PSM9P6XXX(1-1/2)	42.58 - 47.58	1.0000	1.0000
L24	25	MP3-03 Reinforcement	42.58 - 47.58	1.0000	1.0000
L24	26	MP3-03 Reinforcement	42.58 - 47.58	1.0000	1.0000
L24	27	MP3-03 Reinforcement	42.58 - 47.58	1.0000	1.0000
L25	1	Climbing Pegs	35.75 - 42.58	1.0000	1.0000
L25	17	HCS 6X12 6AWG(1-3/8)	35.75 - 42.58	1.0000	1.0000
L25	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	35.75 - 42.58	1.0000	1.0000
L25	19	LDF7-50A(1-5/8)	35.75 - 42.58	1.0000	1.0000
L25	21	CU12PSM9P6XXX(1-1/2)	35.75 - 42.58	1.0000	1.0000
L25	25	MP3-03 Reinforcement	39.00 - 42.58	1.0000	1.0000
L25	26	MP3-03 Reinforcement	39.00 - 42.58	1.0000	1.0000
L25	27	MP3-03 Reinforcement	39.00 - 42.58	1.0000	1.0000
L26	1	Climbing Pegs	34.75 - 35.75	1.0000	1.0000
L26	17	HCS 6X12 6AWG(1-3/8)	34.75 - 35.75	1.0000	1.0000
L26	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.75 - 35.75	1.0000	1.0000
L26	19	LDF7-50A(1-5/8)	34.75 - 35.75	1.0000	1.0000
L26	21	CU12PSM9P6XXX(1-1/2)	34.75 - 35.75	1.0000	1.0000
L27	1	Climbing Pegs	29.75 - 34.75	1.0000	1.0000
L27	17	HCS 6X12 6AWG(1-3/8)	29.75 - 34.75	1.0000	1.0000
L27	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	29.75 - 34.75	1.0000	1.0000
L27	19	LDF7-50A(1-5/8)	29.75 - 34.75	1.0000	1.0000
L27	21	CU12PSM9P6XXX(1-1/2)	29.75 - 34.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L28	1	Climbing Pegs	24.75 - 29.75	1.0000	1.0000
L28	17	HCS 6X12 6AWG(1-3/8)	24.75 - 29.75	1.0000	1.0000
L28	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	24.75 - 29.75	1.0000	1.0000
L28	19	LDF7-50A(1-5/8)	24.75 - 29.75	1.0000	1.0000
L28	21	CU12PSM9P6XXX(1-1/2)	24.75 - 29.75	1.0000	1.0000
L29	1	Climbing Pegs	19.75 - 24.75	1.0000	1.0000
L29	17	HCS 6X12 6AWG(1-3/8)	19.75 - 24.75	1.0000	1.0000
L29	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	19.75 - 24.75	1.0000	1.0000
L29	19	LDF7-50A(1-5/8)	19.75 - 24.75	1.0000	1.0000
L29	21	CU12PSM9P6XXX(1-1/2)	19.75 - 24.75	1.0000	1.0000
L30	1	Climbing Pegs	14.75 - 19.75	1.0000	1.0000
L30	17	HCS 6X12 6AWG(1-3/8)	14.75 - 19.75	1.0000	1.0000
L30	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	14.75 - 19.75	1.0000	1.0000
L30	19	LDF7-50A(1-5/8)	14.75 - 19.75	1.0000	1.0000
L30	21	CU12PSM9P6XXX(1-1/2)	14.75 - 19.75	1.0000	1.0000
L31	1	Climbing Pegs	9.75 - 14.75	1.0000	1.0000
L31	17	HCS 6X12 6AWG(1-3/8)	9.75 - 14.75	1.0000	1.0000
L31	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	9.75 - 14.75	1.0000	1.0000
L31	19	LDF7-50A(1-5/8)	9.75 - 14.75	1.0000	1.0000
L31	21	CU12PSM9P6XXX(1-1/2)	9.75 - 14.75	1.0000	1.0000
L32	1	Climbing Pegs	4.75 - 9.75	1.0000	1.0000
L32	17	HCS 6X12 6AWG(1-3/8)	6.00 - 9.75	1.0000	1.0000
L32	18	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	6.00 - 9.75	1.0000	1.0000
L32	19	LDF7-50A(1-5/8)	6.00 - 9.75	1.0000	1.0000
L32	21	CU12PSM9P6XXX(1-1/2)	6.00 - 9.75	1.0000	1.0000
L33	1	Climbing Pegs	0.00 - 4.75	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
L22	25	MP3-03 Reinforcement	47.83 - 49.00	Auto	0.0000
L22	26	MP3-03 Reinforcement	47.83 - 49.00	Auto	0.0000
L22	27	MP3-03 Reinforcement	47.83 - 49.00	Auto	0.0000
L23	25	MP3-03 Reinforcement	47.58 - 47.83	Auto	0.0000
L23	26	MP3-03 Reinforcement	47.58 - 47.83	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L23	27	MP3-03 Reinforcement	47.58 - 47.83	Auto	0.0000
L24	25	MP3-03 Reinforcement	42.58 - 47.58	Auto	0.0000
L24	26	MP3-03 Reinforcement	42.58 - 47.58	Auto	0.0000
L24	27	MP3-03 Reinforcement	42.58 - 47.58	Auto	0.0000
L25	25	MP3-03 Reinforcement	39.00 - 42.58	Auto	0.0000
L25	26	MP3-03 Reinforcement	39.00 - 42.58	Auto	0.0000
L25	27	MP3-03 Reinforcement	39.00 - 42.58	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(2) 6.5' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.54 2.22 2.62 3.44	1.54 2.22 2.62 3.44	0.03 0.04 0.06 0.10
(2) 6.5' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.54 2.22 2.62 3.44	1.54 2.22 2.62 3.44	0.03 0.04 0.06 0.10
(2) 6.5' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.54 2.22 2.62 3.44	1.54 2.22 2.62 3.44	0.03 0.04 0.06 0.10
Platform Mount [LP 1201-1]	A	None		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	18.38 22.11 25.87 33.47	18.38 22.11 25.87 33.47	2.10 2.65 3.26 4.66

VV-65B-R1_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.82 6.37 6.94 8.12	3.48 4.00 4.54 5.65	0.07 0.12 0.19 0.35
VV-65B-R1_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.82 6.37 6.94 8.12	3.48 4.00 4.54 5.65	0.07 0.12 0.19 0.35
VV-65B-R1_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.82 6.37 6.94 8.12	3.48 4.00 4.54 5.65	0.07 0.12 0.19 0.35
AIR 6419 B41_TMO_CCIV2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.94 6.31 6.68 7.47	3.28 3.75 4.23 5.25	0.10 0.14 0.20 0.33

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
AIR 6419 B41_TMO_CCIV2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.94 6.31 6.68 7.47	3.28 3.75 4.23 5.25	0.10 0.14 0.20 0.33
AIR 6419 B41_TMO_CCIV2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.94 6.31 6.68 7.47	3.28 3.75 4.23 5.25	0.10 0.14 0.20 0.33
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
Radio 4480_TMOV2	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
13' Support Rail Kit [#P2.0 STD]	A	None		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 6.39 8.18 11.66	4.56 6.39 8.18 11.66	0.25 0.31 0.40 0.66
Platform Reinforcement Kit [#PRK-1245L]	A	None		0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.84 16.96 22.08 32.32	11.84 16.96 22.08 32.32	0.52 0.67 0.83 1.14

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

TME-PCS 1900MHz 4x45W-65MHz	A	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
TME-PCS 1900MHz 4x45W-65MHz	B	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
TME-PCS 1900MHz 4x45W-65MHz	C	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
TME-800MHz 2x50W RRH W/FILTER	A	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
TME-800MHz 2x50W RRH W/FILTER	B	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
TME-800MHz 2x50W RRH W/FILTER	C	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
6' x 3" Mount Pipe	A	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.77 2.13 2.50 3.27	1.77 2.13 2.50 3.27	0.03 0.04 0.06 0.11
6' x 3" Mount Pipe	B	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.77 2.13 2.50 3.27	1.77 2.13 2.50 3.27	0.03 0.04 0.06 0.11
6' x 3" Mount Pipe	C	From Leg	2.00 0.00 0.00	0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.77 2.13 2.50 3.27	1.77 2.13 2.50 3.27	0.03 0.04 0.06 0.11
Side Arm Mount [SO 901- 3]	A	None		0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.49 1.91 2.93	1.14 1.49 1.91 2.93	0.32 0.34 0.37 0.46

(2) SBNHH-1D65B	A	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.16 4.57 4.99 5.85	2.49 2.88 3.27 4.09	0.04 0.09 0.15 0.28
(2) SBNHH-1D65B	B	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.16 4.57 4.99 5.85	2.49 2.88 3.27 4.09	0.04 0.09 0.15 0.28
(2) SBNHH-1D65B	C	From Leg	4.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice	4.16 4.57 4.99	2.49 2.88 3.27	0.04 0.09 0.15

Description	Face or Leg	Offset Type	Offsets:	Azimuth Adjustmen t	Placement		C _A A _A Front	C _A A _A Side	Weight
			Horz Lateral Vert ft ft ft				ft	ft ²	ft ²
BXA-70063-6CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	137.00	1" Ice	5.85	4.09	0.28
						2" Ice			
						No Ice	7.40	5.39	0.04
						1/2"	8.14	6.10	0.10
						Ice	8.90	6.83	0.16
BXA-70063-6CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	137.00	1" Ice	10.46	8.34	0.33
						2" Ice			
						No Ice	7.40	5.39	0.04
						1/2"	8.14	6.10	0.10
						Ice	8.90	6.83	0.16
BXA-70063-6CF-EDIN-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	137.00	1" Ice	10.46	8.34	0.33
						2" Ice			
						No Ice	7.40	5.39	0.04
						1/2"	8.14	6.10	0.10
						Ice	8.90	6.83	0.16
CBRS	A	From Leg	4.00 0.00 -2.00	0.0000	137.00	1" Ice	10.46	8.34	0.33
						2" Ice			
						No Ice	1.54	0.61	0.02
						1/2"	1.79	0.80	0.04
						Ice	2.06	1.02	0.05
CBRS	B	From Leg	4.00 0.00 -2.00	0.0000	137.00	1" Ice	2.67	1.51	0.09
						2" Ice			
						No Ice	1.54	0.61	0.02
						1/2"	1.79	0.80	0.04
						Ice	2.06	1.02	0.05
CBRS	C	From Leg	4.00 0.00 -2.00	0.0000	137.00	1" Ice	2.67	1.51	0.09
						2" Ice			
						No Ice	1.54	0.61	0.02
						1/2"	1.79	0.80	0.04
						Ice	2.06	1.02	0.05
MT6407-77A	A	From Leg	4.00 0.00 2.00	0.0000	137.00	1" Ice	2.67	1.51	0.09
						2" Ice			
						No Ice	4.69	1.84	0.08
						1/2"	4.98	2.06	0.11
						Ice	5.28	2.29	0.14
MT6407-77A	B	From Leg	4.00 0.00 2.00	0.0000	137.00	1" Ice	5.89	2.77	0.22
						2" Ice			
						No Ice	4.69	1.84	0.08
						1/2"	4.98	2.06	0.11
						Ice	5.28	2.29	0.14
MT6407-77A	C	From Leg	4.00 0.00 2.00	0.0000	137.00	1" Ice	5.89	2.77	0.22
						2" Ice			
						No Ice	4.69	1.84	0.08
						1/2"	4.98	2.06	0.11
						Ice	5.28	2.29	0.14
58532A	A	From Leg	4.00 0.00 2.00	0.0000	137.00	1" Ice	5.89	2.77	0.22
						2" Ice			
						No Ice	0.19	0.19	0.00
						1/2"	0.25	0.25	0.00
						Ice	0.31	0.31	0.01
RFV01U-D1A	A	From Leg	4.00 0.00 0.00	0.0000	137.00	1" Ice	0.47	0.47	0.02
						2" Ice			
						No Ice	1.88	1.25	0.08
						1/2"	2.05	1.39	0.10
						Ice	2.22	1.54	0.12
RFV01U-D1A	B	From Leg	4.00 0.00 0.00	0.0000	137.00	1" Ice	2.60	1.86	0.18
						2" Ice			
						No Ice	1.88	1.25	0.08
						1/2"	2.05	1.39	0.10
						Ice	2.22	1.54	0.12
RFV01U-D1A	C	From Leg	4.00 0.00 0.00	0.0000	137.00	1" Ice	2.60	1.86	0.18
						2" Ice			
						No Ice	1.88	1.25	0.08
						1/2"	2.05	1.39	0.10
						Ice	2.22	1.54	0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
						1" Ice	2.60	1.86	0.18
						2" Ice			
DB-T1-6Z-8AB-0Z	A	From Leg	1.00	0.0000	137.00	No Ice	4.80	2.00	0.04
			0.00			1/2"	5.07	2.19	0.08
			0.00			Ice	5.35	2.39	0.12
						1" Ice	5.93	2.81	0.21
						2" Ice			
DB-T1-6Z-8AB-0Z	B	From Leg	1.00	0.0000	137.00	No Ice	4.80	2.00	0.04
			0.00			1/2"	5.07	2.19	0.08
			0.00			Ice	5.35	2.39	0.12
						1" Ice	5.93	2.81	0.21
						2" Ice			
RFV01U-D2A	A	From Leg	4.00	0.0000	137.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			0.00			Ice	2.22	1.28	0.11
						1" Ice	2.60	1.59	0.15
						2" Ice			
RFV01U-D2A	B	From Leg	4.00	0.0000	137.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			0.00			Ice	2.22	1.28	0.11
						1" Ice	2.60	1.59	0.15
						2" Ice			
RFV01U-D2A	C	From Leg	4.00	0.0000	137.00	No Ice	1.88	1.01	0.07
			0.00			1/2"	2.05	1.14	0.09
			0.00			Ice	2.22	1.28	0.11
						1" Ice	2.60	1.59	0.15
						2" Ice			
Side-By-Side Mounting Kit [#BSAMNT-SBS-1-2]	A	From Leg	4.00	0.0000	137.00	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	4.40	4.40	0.12
						2" Ice			
Side-By-Side Mounting Kit [#BSAMNT-SBS-1-2]	B	From Leg	4.00	0.0000	137.00	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	4.40	4.40	0.12
						2" Ice			
Side-By-Side Mounting Kit [#BSAMNT-SBS-1-2]	C	From Leg	4.00	0.0000	137.00	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	4.40	4.40	0.12
						2" Ice			
4' x 2" Pipe Mount	A	From Leg	2.00	0.0000	137.00	No Ice	0.79	0.79	0.03
			0.00			1/2"	1.03	1.03	0.04
			0.00			Ice	1.28	1.28	0.04
						1" Ice	1.81	1.81	0.07
						2" Ice			
(2) 7'x2" Antenna Mount Pipe	A	From Leg	4.00	0.0000	137.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			
(2) 7'x2" Antenna Mount Pipe	B	From Leg	4.00	0.0000	137.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			
(2) 7'x2" Antenna Mount Pipe	C	From Leg	4.00	0.0000	137.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			
Bracing Pipe	A	From Leg	3.00	0.0000	137.00	No Ice	0.87	0.01	0.01
			0.00			1/2"	1.11	0.05	0.02
			0.00			Ice	1.37	0.10	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
						1" Ice	1.90	0.24	0.06
						2" Ice			
Bracing Pipe	B	From Leg	3.00	0.0000	137.00	No Ice	0.87	0.01	0.01
			0.00			1/2"	1.11	0.05	0.02
			0.00			Ice	1.37	0.10	0.03
						1" Ice	1.90	0.24	0.06
						2" Ice			
Bracing Pipe	C	From Leg	3.00	0.0000	137.00	No Ice	0.87	0.01	0.01
			0.00			1/2"	1.11	0.05	0.02
			0.00			Ice	1.37	0.10	0.03
						1" Ice	1.90	0.24	0.06
						2" Ice			
Bottom Rail Kit	A	None		0.0000	137.00	No Ice	4.56	4.56	0.25
						1/2"	6.39	6.39	0.31
						Ice	8.18	8.18	0.40
						1" Ice	11.66	11.66	0.66
						2" Ice			
Platform Mount [LP 1201-1_HR-1]	A	None		0.0000	137.00	No Ice	26.39	26.39	2.36
						1/2"	31.40	31.40	3.06
						Ice	36.20	36.20	3.86
						1" Ice	45.40	45.40	5.76
						2" Ice			

7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	117.00	No Ice	3.39	2.32	0.06
			0.00			1/2"	3.75	2.66	0.10
			2.00			Ice	4.12	3.02	0.15
						1" Ice	4.89	3.75	0.28
						2" Ice			
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.0000	117.00	No Ice	3.39	2.32	0.06
			0.00			1/2"	3.75	2.66	0.10
			2.00			Ice	4.12	3.02	0.15
						1" Ice	4.89	3.75	0.28
						2" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	117.00	No Ice	3.39	2.32	0.06
			0.00			1/2"	3.75	2.66	0.10
			2.00			Ice	4.12	3.02	0.15
						1" Ice	4.89	3.75	0.28
						2" Ice			
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Leg	4.00	0.0000	117.00	No Ice	12.25	8.33	0.10
			0.00			1/2"	13.19	9.23	0.19
			2.00			Ice	14.16	10.15	0.30
						1" Ice	16.14	12.05	0.54
						2" Ice			
SBNHH-1D65A w/ Mount Pipe	B	From Leg	4.00	0.0000	117.00	No Ice	3.04	2.45	0.05
			0.00			1/2"	3.34	2.75	0.10
			2.00			Ice	3.65	3.05	0.16
						1" Ice	4.31	3.68	0.31
						2" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.0000	117.00	No Ice	9.22	6.25	0.07
			0.00			1/2"	9.98	6.96	0.14
			2.00			Ice	10.76	7.70	0.22
						1" Ice	12.36	9.22	0.42
						2" Ice			
(2) LGP17201	B	From Leg	4.00	0.0000	117.00	No Ice	1.87	0.48	0.03
			0.00			1/2"	2.04	0.58	0.04
			0.00			Ice	2.21	0.69	0.06
						1" Ice	2.59	0.93	0.10
						2" Ice			
(2) 860 10025	A	From Leg	4.00	0.0000	117.00	No Ice	0.14	0.12	0.00
			0.00			1/2"	0.20	0.17	0.00
			2.00			Ice	0.26	0.23	0.01
						1" Ice	0.41	0.38	0.01
						2" Ice			
(2) 860 10025	C	From Leg	4.00	0.0000	117.00	No Ice	0.14	0.12	0.00
			0.00				0.20	0.17	0.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			2.00			1/2" Ice	0.26 0.41	0.23 0.38	0.01 0.01
						1" Ice			
						2" Ice			
RRUS 32 B2	A	From Leg	4.00	0.0000	117.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			2.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B2	B	From Leg	4.00	0.0000	117.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			2.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B2	C	From Leg	4.00	0.0000	117.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			2.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
(2) 7'x2" Antenna Mount Pipe	A	From Leg	4.00	0.0000	117.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			
(2) 7'x2" Antenna Mount Pipe	B	From Leg	4.00	0.0000	117.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			
(2) 7'x2" Antenna Mount Pipe	C	From Leg	4.00	0.0000	117.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			
Platform Mount [LP 1201- 1]	A	None		0.0000	117.00	No Ice	18.38	18.38	2.10
						1/2"	22.11	22.11	2.65
						Ice	25.87	25.87	3.26
						1" Ice	33.47	33.47	4.66
						2" Ice			

TME-RRU-11	A	From Leg	1.00	0.0000	115.00	No Ice	1.64	1.26	0.04
			0.00			1/2"	1.80	1.41	0.06
			4.00			Ice	1.97	1.57	0.08
						1" Ice	2.34	1.90	0.12
						2" Ice			
TME-RRU-11	B	From Leg	1.00	0.0000	115.00	No Ice	1.64	1.26	0.04
			0.00			1/2"	1.80	1.41	0.06
			4.00			Ice	1.97	1.57	0.08
						1" Ice	2.34	1.90	0.12
						2" Ice			
TME-RRU-11	C	From Leg	1.00	0.0000	115.00	No Ice	1.64	1.26	0.04
			0.00			1/2"	1.80	1.41	0.06
			4.00			Ice	1.97	1.57	0.08
						1" Ice	2.34	1.90	0.12
						2" Ice			
TME-DC6-48-60-18-8F	A	From Leg	1.00	0.0000	115.00	No Ice	1.00	1.00	0.03
			0.00			1/2"	1.58	1.58	0.05
			4.00			Ice	1.77	1.77	0.07
						1" Ice	2.18	2.18	0.13
						2" Ice			
7'x2" Antenna Mount Pipe	A	From Leg	1.00	0.0000	115.00	No Ice	1.66	1.66	0.03
			0.00			1/2"	2.39	2.39	0.04
			0.00			Ice	2.83	2.83	0.06
						1" Ice	3.71	3.71	0.10
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
7"x2" Antenna Mount Pipe	B	From Leg	1.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.66 2.39 2.83 3.71	1.66 2.39 2.83 3.71	0.03 0.04 0.06 0.10
7"x2" Antenna Mount Pipe	C	From Leg	1.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.66 2.39 2.83 3.71	1.66 2.39 2.83 3.71	0.03 0.04 0.06 0.10
Side Arm Mount [SO 102-3]	A	None		0.0000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.60 4.18 4.75 5.90	3.60 4.18 4.75 5.90	0.07 0.11 0.14 0.20

ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.14 3.45 3.77 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.14 3.45 3.77 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.14 3.45 3.77 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(2) KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	107.00	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
(2) RADIO 4449 B12/B71	A	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
3' x 2" Pipe Mount	A	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.77 0.97 1.39	0.58 0.77 0.97 1.39	0.01 0.02 0.02 0.05
3' x 2" Pipe Mount	B	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.77 0.97 1.39	0.58 0.77 0.97 1.39	0.01 0.02 0.02 0.05
3' x 2" Pipe Mount	C	From Leg	4.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.77 0.97 1.39	0.58 0.77 0.97 1.39	0.01 0.02 0.02 0.05
4' x 2" Pipe Mount	A	From Leg	2.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.79 1.03 1.28 1.81	0.79 1.03 1.28 1.81	0.03 0.04 0.04 0.07
4' x 2" Pipe Mount	B	From Leg	2.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.79 1.03 1.28 1.81	0.79 1.03 1.28 1.81	0.03 0.04 0.04 0.07
4' x 2" Pipe Mount	C	From Leg	2.00 0.00 0.00	0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.79 1.03 1.28 1.81	0.79 1.03 1.28 1.81	0.03 0.04 0.04 0.07
T-Arm Mount [TA 701-3]	A	None		0.0000	107.00	No Ice 1/2" Ice 1" Ice 2" Ice	23.94 30.04 36.16 48.72	23.94 30.04 36.16 48.72	1.09 1.48 1.95 3.16

MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00 3.00	0.0000	94.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0.00 3.00	0.0000	94.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	94.00	No Ice 1/2" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
						1" Ice	10.11	6.12	0.52
						2" Ice			
TA08025-B604	A	From Leg	4.00	0.0000	94.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			3.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	B	From Leg	4.00	0.0000	94.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			3.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	C	From Leg	4.00	0.0000	94.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			3.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B605	A	From Leg	4.00	0.0000	94.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			3.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
TA08025-B605	B	From Leg	4.00	0.0000	94.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			3.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
TA08025-B605	C	From Leg	4.00	0.0000	94.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			3.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
RDIDC-9181-PF-48	A	From Leg	2.00	0.0000	94.00	No Ice	2.01	1.17	0.02
			0.00			1/2"	2.19	1.31	0.04
			3.00			Ice	2.37	1.46	0.06
						1" Ice	2.76	1.78	0.11
						2" Ice			
4' x 2" Pipe Mount	A	From Leg	2.00	0.0000	94.00	No Ice	0.79	0.79	0.03
			0.00			1/2"	1.03	1.03	0.04
			0.00			Ice	1.28	1.28	0.04
						1" Ice	1.81	1.81	0.07
						2" Ice			
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.0000	94.00	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	4.40	4.40	0.12
						2" Ice			
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.0000	94.00	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	4.40	4.40	0.12
						2" Ice			
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.0000	94.00	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	4.40	4.40	0.12
						2" Ice			
Sabre C10801018-32788	A	None		0.0000	94.00	No Ice	26.80	26.80	1.51
						1/2"	32.20	32.20	1.81
						Ice	37.60	37.60	2.11
						1" Ice	48.40	48.40	2.72
						2" Ice			

58532A	A	From Leg	3.00	0.0000	49.00	No Ice	0.19	0.19	0.00
			0.00				0.25	0.25	0.00

Description	Face or Leg	Offset Type	Offsets:	Azimuth Adjustmen t	Placement	C _A A _A	C _A A _A	Weight	
			Horz Lateral Vert ft ft ft			Front	Side		
				°	ft	ft ²	ft ²	K	
Side Arm Mount [SO 701-1]	A	From Leg	1.00	0.0000	49.00	1/2" Ice	0.31	0.31	0.01
							0.47	0.47	0.02
						1" Ice			
						2" Ice			
						No Ice	0.85	1.67	0.07
						1/2" Ice	1.14	2.34	0.08
						1" Ice	1.43	3.01	0.09
						2" Ice	2.01	4.35	0.12

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service

Comb. No.	Description
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	147.5 - 142.5	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-13.54	-0.02	0.04
			Max. Mx	8	-6.26	-23.67	0.01
			Max. My	2	-6.27	-0.00	23.63
			Max. Vy	20	-5.70	23.65	0.02
			Max. Vx	2	-5.69	-0.00	23.63
			Max. Torque	20			0.00
L2	142.5 - 137.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-14.22	-0.04	0.10
			Max. Mx	8	-6.66	-52.95	0.01
			Max. My	2	-6.67	0.00	52.86
			Max. Vy	20	-6.01	52.92	0.05
			Max. Vx	2	-6.00	0.00	52.86
			Max. Torque	20			0.00
L3	137.5 - 132.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.89	-0.36	0.59
			Max. Mx	8	-11.64	-103.29	-0.00
			Max. My	2	-11.65	0.10	103.36
			Max. Vy	20	-10.55	103.07	0.39
			Max. Vx	2	-10.57	0.10	103.36
			Max. Torque	23			-0.18
L4	132.5 - 127.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.66	-0.38	0.67
			Max. Mx	8	-12.13	-156.83	-0.17
			Max. My	2	-12.14	0.29	157.02
			Max. Vy	20	-10.87	156.60	0.60
			Max. Vx	2	-10.89	0.29	157.02
			Max. Torque	23			-0.18
L5	127.5 - 122.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.45	-0.40	0.76
			Max. Mx	8	-12.64	-211.96	-0.35
			Max. My	2	-12.65	0.48	212.25
			Max. Vy	20	-11.19	211.71	0.82
			Max. Vx	2	-11.21	0.48	212.25
			Max. Torque	23			-0.18
L6	122.5 - 117.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.27	-0.42	0.84
			Max. Mx	8	-13.18	-268.68	-0.52
			Max. My	2	-13.19	0.66	269.07
			Max. Vy	20	-11.50	268.40	1.04
			Max. Vx	2	-11.52	0.66	269.07
			Max. Torque	23			-0.18
L7	117.5 - 112.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.08	-0.67	1.55
			Max. Mx	8	-17.36	-341.63	-0.56
			Max. My	2	-17.38	0.57	342.26
			Max. Vy	20	-14.66	340.93	1.32
			Max. Vx	2	-14.70	0.57	342.26
			Max. Torque	19			-0.78
L8	112.5 - 108.5	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L9	108.5 - 107.25	Pole	Max. Compression	26	-37.12	-0.67	1.56
			Max. Mx	8	-17.40	-345.30	-0.56
			Max. My	2	-17.41	0.58	345.94
			Max. Vy	20	-14.67	344.59	1.33
			Max. Vx	2	-14.71	0.58	345.94
			Max. Torque	19			-0.78
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.59	-0.69	1.66
L10	107.25 - 102.25	Pole	Max. Mx	8	-18.37	-419.61	-0.76
			Max. My	2	-18.39	0.79	420.42
			Max. Vy	20	-15.04	418.89	1.58
			Max. Vx	2	-15.08	0.79	420.42
			Max. Torque	19			-0.78
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.35	-0.08	3.02
			Max. Mx	8	-22.35	-508.73	-0.27
L11	102.25 - 97.25	Pole	Max. My	2	-22.37	1.33	510.65
			Max. Vy	20	-18.21	508.65	2.50
			Max. Vx	2	-18.20	1.33	510.65
			Max. Torque	19			-1.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.50	0.13	3.27
			Max. Mx	20	-23.11	600.58	2.79
			Max. My	2	-23.14	1.60	602.31
L12	97.25 - 92.25	Pole	Max. Vy	20	-18.56	600.58	2.79
			Max. Vx	2	-18.47	1.60	602.31
			Max. Torque	19			-1.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.13	0.34	4.01
			Max. Mx	20	-26.69	700.39	3.26
			Max. My	2	-26.74	1.88	701.81
			Max. Vy	20	-21.13	700.39	3.26
L13	92.25 - 87.25	Pole	Max. Vx	2	-20.99	1.88	701.81
			Max. Torque	19			-1.19
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.35	0.51	4.29
			Max. Mx	20	-27.51	807.50	3.55
			Max. My	2	-27.59	2.14	807.33
			Max. Vy	20	-21.72	807.50	3.55
			Max. Vx	2	-21.23	2.14	807.33
L14	87.25 - 82.25	Pole	Max. Torque	21			-1.32
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.60	0.70	4.57
			Max. Mx	20	-28.38	916.90	3.84
			Max. My	2	-28.46	2.40	914.02
			Max. Vy	20	-22.05	916.90	3.84
			Max. Vx	2	-21.46	2.40	914.02
			Max. Torque	21			-1.32
L15	82.25 - 77.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.87	0.88	4.85
			Max. Mx	20	-29.27	1027.90	4.14
			Max. My	2	-29.35	2.66	1021.83
			Max. Vy	20	-22.37	1027.90	4.14
			Max. Vx	2	-21.68	2.66	1021.83
			Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
L16	77.25 - 72.25	Pole	Max. Compression	26	-59.00	0.90	4.87
			Max. Mx	20	-29.37	1039.09	4.17
			Max. My	2	-29.45	2.69	1032.67
			Max. Vy	20	-22.39	1039.09	4.17
			Max. Vx	2	-21.69	2.69	1032.67
			Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.00	0.90	4.87

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L17	72.25 - 71.75	Pole	Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.22	1.08	5.15
			Max. Mx	20	-30.86	1152.14	4.47
			Max. My	2	-30.94	2.95	1142.02
			Max. Vy	20	-22.82	1152.14	4.47
L18	71.75 - 66.75	Pole	Max. Vx	2	-22.03	2.95	1142.02
			Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.66	1.27	5.42
			Max. Mx	20	-31.90	1267.05	4.76
			Max. My	2	-31.99	3.21	1252.78
L19	66.75 - 61.75	Pole	Max. Vy	20	-23.15	1267.05	4.76
			Max. Vx	2	-22.27	3.21	1252.78
			Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.13	1.46	5.69
			Max. Mx	20	-32.98	1383.50	5.06
L20	61.75 - 56.75	Pole	Max. My	2	-33.07	3.48	1364.66
			Max. Vy	20	-23.45	1383.50	5.06
			Max. Vx	2	-22.49	3.48	1364.66
			Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.61	1.65	5.96
L21	56.75 - 51.75	Pole	Max. Mx	20	-34.08	1501.44	5.35
			Max. My	2	-34.17	3.74	1477.63
			Max. Vy	20	-23.74	1501.44	5.35
			Max. Vx	2	-22.70	3.74	1477.63
			Max. Torque	21			-1.31
			Max Tension	1	0.00	0.00	0.00
L22	51.75 - 47.83	Pole	Max. Compression	26	-67.12	1.84	6.23
			Max. Mx	20	-35.21	1620.77	5.64
			Max. My	2	-35.29	4.00	1591.62
			Max. Vy	20	-24.01	1620.77	5.64
			Max. Vx	2	-22.90	4.00	1591.62
			Max. Torque	21			-1.31
L23	47.83 - 47.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.48	1.99	6.84
			Max. Mx	20	-36.18	1715.34	6.11
			Max. My	2	-36.26	4.20	1681.97
			Max. Vy	20	-24.28	1715.34	6.11
			Max. Vx	2	-23.09	4.20	1681.97
L24	47.58 - 42.58	Pole	Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.56	2.00	6.86
			Max. Mx	20	-36.25	1721.41	6.12
			Max. My	2	-36.33	4.21	1687.74
			Max. Vy	20	-24.28	1721.41	6.12
L25	42.58 - 35.75	Pole	Max. Vx	2	-23.08	4.21	1687.74
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.24	2.19	7.12
			Max. Mx	20	-37.41	1843.48	6.41
			Max. My	2	-37.48	4.47	1803.63
			Max. Vy	20	-24.56	1843.48	6.41
			Max. Vx	2	-23.27	4.47	1803.63
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.75	2.25	7.20
			Max. Mx	20	-37.78	1882.33	6.50

Section n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L26	35.75 - 34.75	Pole	Max. My	2	-37.85	4.55	1840.43
			Max. Vy	20	-24.65	1882.33	6.50
			Max. Vx	2	-23.34	4.55	1840.43
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.22	2.49	7.52
			Max. Mx	20	-40.28	2037.71	6.86
			Max. My	2	-40.35	4.88	1987.35
			Max. Vy	20	-25.08	2037.71	6.86
			Max. Vx	2	-23.68	4.88	1987.35
L27	34.75 - 29.75	Pole	Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.97	2.68	7.77
			Max. Mx	20	-41.65	2163.59	7.14
			Max. My	2	-41.71	5.13	2106.13
			Max. Vy	20	-25.29	2163.59	7.14
			Max. Vx	2	-23.84	5.13	2106.13
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.75	2.86	7.99
L28	29.75 - 24.75	Pole	Max. Mx	20	-43.04	2290.52	7.43
			Max. My	2	-43.09	5.39	2225.71
			Max. Vy	20	-25.50	2290.52	7.43
			Max. Vx	2	-24.00	5.39	2225.71
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.54	3.04	8.20
			Max. Mx	20	-44.45	2418.46	7.71
			Max. My	2	-44.50	5.64	2346.06
			Max. Vy	20	-25.70	2418.46	7.71
L29	24.75 - 19.75	Pole	Max. Vx	2	-24.15	5.64	2346.06
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.35	3.22	8.42
			Max. Mx	20	-45.89	2547.38	7.99
			Max. My	2	-45.93	5.90	2467.17
			Max. Vy	20	-25.89	2547.38	7.99
			Max. Vx	2	-24.30	5.90	2467.17
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
L30	19.75 - 14.75	Pole	Max. Compression	26	-83.17	3.40	8.64
			Max. Mx	20	-47.36	2677.26	8.27
			Max. My	2	-47.38	6.15	2589.04
			Max. Vy	20	-26.08	2677.26	8.27
			Max. Vx	2	-24.45	6.15	2589.04
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.91	3.53	8.81
			Max. Mx	20	-48.79	2807.95	8.53
			Max. My	2	-48.80	6.38	2711.63
L31	14.75 - 9.75	Pole	Max. Vy	20	-26.23	2807.95	8.53
			Max. Vx	2	-24.60	6.38	2711.63
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.31	3.49	8.83
			Max. Mx	20	-50.00	2932.71	8.72
			Max. My	2	-50.01	6.54	2828.71
			Max. Vy	20	-26.36	2932.71	8.72
			Max. Vx	2	-24.74	6.54	2828.71
			Max. Torque	21			-1.48
L32	9.75 - 4.75	Pole	Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.91	3.63	9.01
			Max. Mx	20	-51.89	3057.95	9.01
			Max. My	2	-51.90	6.68	2881.63
			Max. Vy	20	-27.23	3057.95	9.01
			Max. Vx	2	-25.60	6.68	2881.63
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.31	3.79	9.13
L33	4.75 - 0	Pole	Max. Mx	20	-53.00	3182.71	9.13
			Max. My	2	-53.01	6.84	2918.71
			Max. Vy	20	-27.36	3182.71	9.13
			Max. Vx	2	-25.74	6.84	2918.71
			Max. Torque	21			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.31	3.99	9.23
			Max. Mx	20	-54.00	3307.71	9.23
			Max. My	2	-54.01	7.04	2958.71
			Max. Vy	20	-27.46	3307.71	9.23
			Max. Vx	2	-25.84	7.04	2958.71
			Max. Torque	21			-1.48

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	86.31	0.01	7.37
	Max. H _x	20	50.02	26.33	0.04
	Max. H _z	3	37.51	0.04	24.72
	Max. M _x	2	2828.71	0.04	24.72
	Max. M _z	8	2930.83	-26.33	-0.04
	Max. Torsion	9	1.47	-26.33	-0.04
	Min. Vert	23	37.51	21.35	12.39
	Min. H _x	8	50.02	-26.33	-0.04
	Min. H _z	15	37.51	-0.04	-24.72
	Min. M _x	14	-2822.46	-0.04	-24.72
	Min. M _z	20	-2932.71	26.33	0.04
	Min. Torsion	21	-1.48	26.33	0.04

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	41.68	-0.00	-0.00	-2.47	0.75	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	50.02	-0.04	-24.72	-2828.71	6.54	-0.40
0.9 Dead+1.0 Wind 0 deg - No Ice	37.51	-0.04	-24.72	-2766.74	6.16	-0.39
1.2 Dead+1.0 Wind 30 deg - No Ice	50.02	12.28	-21.39	-2447.38	-1400.70	-0.99
0.9 Dead+1.0 Wind 30 deg - No Ice	37.51	12.28	-21.39	-2393.67	-1370.65	-0.99
1.2 Dead+1.0 Wind 60 deg - No Ice	50.02	21.94	-12.69	-1438.12	-2479.21	-1.31
0.9 Dead+1.0 Wind 60 deg - No Ice	37.51	21.94	-12.69	-1406.44	-2426.16	-1.32
1.2 Dead+1.0 Wind 90 deg - No Ice	50.02	26.33	0.04	2.49	-2930.83	-1.46
0.9 Dead+1.0 Wind 90 deg - No Ice	37.51	26.33	0.04	3.20	-2868.59	-1.47
1.2 Dead+1.0 Wind 120 deg - No Ice	50.02	21.35	12.39	1414.54	-2437.95	-0.93
0.9 Dead+1.0 Wind 120 deg - No Ice	37.51	21.35	12.39	1384.70	-2385.45	-0.93
1.2 Dead+1.0 Wind 150 deg - No Ice	50.02	12.35	21.42	2446.70	-1410.38	-0.31
0.9 Dead+1.0 Wind 150 deg - No Ice	37.51	12.35	21.42	2394.54	-1380.09	-0.32
1.2 Dead+1.0 Wind 180 deg - No Ice	50.02	0.04	24.72	2822.46	-4.67	0.39
0.9 Dead+1.0 Wind 180 deg - No Ice	37.51	0.04	24.72	2762.18	-4.78	0.39
1.2 Dead+1.0 Wind 210 deg - No Ice	50.02	-12.28	21.39	2441.14	1402.57	0.99
0.9 Dead+1.0 Wind 210 deg - No Ice	37.51	-12.28	21.39	2389.11	1372.02	0.99
1.2 Dead+1.0 Wind 240 deg - No Ice	50.02	-21.94	12.69	1431.89	2481.09	1.32
0.9 Dead+1.0 Wind 240 deg - No Ice	37.51	-21.94	12.69	1401.89	2427.55	1.33
1.2 Dead+1.0 Wind 270 deg - No Ice	50.02	-26.33	-0.04	-8.72	2932.71	1.47
0.9 Dead+1.0 Wind 270 deg - No Ice	37.51	-26.33	-0.04	-7.74	2869.98	1.48
1.2 Dead+1.0 Wind 300 deg - No Ice	50.02	-21.35	-12.39	-1420.78	2439.84	0.92

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 300 deg	37.51	-21.35	-12.39	-1389.26	2386.85	0.93
- No Ice						
1.2 Dead+1.0 Wind 330 deg	50.02	-12.35	-21.42	-2452.95	1412.26	0.30
- No Ice						
0.9 Dead+1.0 Wind 330 deg	37.51	-12.35	-21.42	-2399.11	1381.49	0.31
- No Ice						
1.2 Dead+1.0 Ice+1.0 Temp	86.31	-0.00	-0.00	-8.83	3.49	-0.00
1.2 Dead+1.0 Wind 0	86.31	-0.01	-7.37	-914.49	4.88	-0.10
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 30	86.31	3.67	-6.38	-792.51	-446.87	-0.26
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 60	86.31	6.37	-3.68	-460.56	-777.93	-0.36
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 90	86.31	7.41	0.01	-7.59	-904.35	-0.39
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120	86.31	6.38	3.69	445.01	-779.28	-0.26
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 150	86.31	3.69	6.39	775.98	-449.20	-0.09
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	86.31	0.01	7.37	896.62	2.19	0.10
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	86.31	-3.67	6.38	774.64	453.94	0.26
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	86.31	-6.37	3.68	442.69	785.01	0.36
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	86.31	-7.41	-0.01	-10.28	911.42	0.39
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	86.31	-6.38	-3.69	-462.88	786.35	0.26
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	86.31	-3.69	-6.39	-793.85	456.27	0.09
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	41.68	-0.01	-6.23	-705.78	2.17	-0.10
Dead+Wind 30 deg - Service	41.68	3.10	-5.39	-610.88	-348.04	-0.25
Dead+Wind 60 deg - Service	41.68	5.53	-3.20	-359.74	-616.51	-0.34
Dead+Wind 90 deg - Service	41.68	6.64	0.01	-1.19	-729.02	-0.38
Dead+Wind 120 deg - Service	41.68	5.38	3.12	350.23	-606.18	-0.24
Dead+Wind 150 deg - Service	41.68	3.11	5.40	607.11	-350.46	-0.08
Dead+Wind 180 deg - Service	41.68	0.01	6.23	700.62	-0.61	0.10
Dead+Wind 210 deg - Service	41.68	-3.10	5.39	605.71	349.60	0.25
Dead+Wind 240 deg - Service	41.68	-5.53	3.20	354.58	618.07	0.34
Dead+Wind 270 deg - Service	41.68	-6.64	-0.01	-3.97	730.58	0.38
Dead+Wind 300 deg - Service	41.68	-5.38	-3.12	-355.39	607.74	0.24
Dead+Wind 330 deg - Service	41.68	-3.11	-5.40	-612.27	352.02	0.08

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	-41.68	0.00	0.00	41.68	0.00	0.000%
2	-0.04	-50.02	-24.72	0.04	50.02	24.72	0.000%
3	-0.04	-37.51	-24.72	0.04	37.51	24.72	0.000%
4	12.28	-50.02	-21.39	-12.28	50.02	21.39	0.000%
5	12.28	-37.51	-21.39	-12.28	37.51	21.39	0.000%
6	21.94	-50.02	-12.69	-21.94	50.02	12.69	0.000%
7	21.94	-37.51	-12.69	-21.94	37.51	12.69	0.000%
8	26.33	-50.02	0.04	-26.33	50.02	-0.04	0.000%
9	26.33	-37.51	0.04	-26.33	37.51	-0.04	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
10	21.35	-50.02	12.39	-21.35	50.02	-12.39	0.000%
11	21.35	-37.51	12.39	-21.35	37.51	-12.39	0.000%
12	12.35	-50.02	21.42	-12.35	50.02	-21.42	0.000%
13	12.35	-37.51	21.42	-12.35	37.51	-21.42	0.000%
14	0.04	-50.02	24.72	-0.04	50.02	-24.72	0.000%
15	0.04	-37.51	24.72	-0.04	37.51	-24.72	0.000%
16	-12.28	-50.02	21.39	12.28	50.02	-21.39	0.000%
17	-12.28	-37.51	21.39	12.28	37.51	-21.39	0.000%
18	-21.94	-50.02	12.69	21.94	50.02	-12.69	0.000%
19	-21.94	-37.51	12.69	21.94	37.51	-12.69	0.000%
20	-26.33	-50.02	-0.04	26.33	50.02	0.04	0.000%
21	-26.33	-37.51	-0.04	26.33	37.51	0.04	0.000%
22	-21.35	-50.02	-12.39	21.35	50.02	12.39	0.000%
23	-21.35	-37.51	-12.39	21.35	37.51	12.39	0.000%
24	-12.35	-50.02	-21.42	12.35	50.02	21.42	0.000%
25	-12.35	-37.51	-21.42	12.35	37.51	21.42	0.000%
26	0.00	-86.31	0.00	0.00	86.31	0.00	0.000%
27	-0.01	-86.31	-7.37	0.01	86.31	7.37	0.000%
28	3.67	-86.31	-6.38	-3.67	86.31	6.38	0.000%
29	6.37	-86.31	-3.68	-6.37	86.31	3.68	0.000%
30	7.41	-86.31	0.01	-7.41	86.31	-0.01	0.000%
31	6.38	-86.31	3.69	-6.38	86.31	-3.69	0.000%
32	3.69	-86.31	6.39	-3.69	86.31	-6.39	0.000%
33	0.01	-86.31	7.37	-0.01	86.31	-7.37	0.000%
34	-3.67	-86.31	6.38	3.67	86.31	-6.38	0.000%
35	-6.37	-86.31	3.68	6.37	86.31	-3.68	0.000%
36	-7.41	-86.31	-0.01	7.41	86.31	0.01	0.000%
37	-6.38	-86.31	-3.69	6.38	86.31	3.69	0.000%
38	-3.69	-86.31	-6.39	3.69	86.31	6.39	0.000%
39	-0.01	-41.68	-6.23	0.01	41.68	6.23	0.000%
40	3.10	-41.68	-5.39	-3.10	41.68	5.39	0.000%
41	5.53	-41.68	-3.20	-5.53	41.68	3.20	0.000%
42	6.64	-41.68	0.01	-6.64	41.68	-0.01	0.000%
43	5.38	-41.68	3.12	-5.38	41.68	-3.12	0.000%
44	3.11	-41.68	5.40	-3.11	41.68	-5.40	0.000%
45	0.01	-41.68	6.23	-0.01	41.68	-6.23	0.000%
46	-3.10	-41.68	5.39	3.10	41.68	-5.39	0.000%
47	-5.53	-41.68	3.20	5.53	41.68	-3.20	0.000%
48	-6.64	-41.68	-0.01	6.64	41.68	0.01	0.000%
49	-5.38	-41.68	-3.12	5.38	41.68	3.12	0.000%
50	-3.11	-41.68	-5.40	3.11	41.68	5.40	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001050
2	Yes	6	0.00000001	0.00020960
3	Yes	5	0.00000001	0.00094737
4	Yes	8	0.00000001	0.00010379
5	Yes	7	0.00000001	0.00025823
6	Yes	8	0.00000001	0.00010941
7	Yes	7	0.00000001	0.00027233
8	Yes	6	0.00000001	0.00035185
9	Yes	6	0.00000001	0.00012652
10	Yes	8	0.00000001	0.00010441
11	Yes	7	0.00000001	0.00025994
12	Yes	8	0.00000001	0.00010628
13	Yes	7	0.00000001	0.00026502
14	Yes	6	0.00000001	0.00012287
15	Yes	5	0.00000001	0.00049934
16	Yes	8	0.00000001	0.00010674
17	Yes	7	0.00000001	0.00026656
18	Yes	8	0.00000001	0.00010486
19	Yes	7	0.00000001	0.00026027
20	Yes	6	0.00000001	0.00046755
21	Yes	6	0.00000001	0.00016750
22	Yes	8	0.00000001	0.00010768
23	Yes	7	0.00000001	0.00026847
24	Yes	8	0.00000001	0.00010601
25	Yes	7	0.00000001	0.00026374
26	Yes	5	0.00000001	0.00025975
27	Yes	7	0.00000001	0.00081707
28	Yes	8	0.00000001	0.00030352
29	Yes	8	0.00000001	0.00031011
30	Yes	7	0.00000001	0.00080861
31	Yes	8	0.00000001	0.00029505
32	Yes	8	0.00000001	0.00029860
33	Yes	7	0.00000001	0.00079731
34	Yes	8	0.00000001	0.00030111
35	Yes	8	0.00000001	0.00029421
36	Yes	7	0.00000001	0.00081403
37	Yes	8	0.00000001	0.00031340
38	Yes	8	0.00000001	0.00031022
39	Yes	5	0.00000001	0.00021934
40	Yes	6	0.00000001	0.00015049
41	Yes	6	0.00000001	0.00017024
42	Yes	5	0.00000001	0.00030236
43	Yes	6	0.00000001	0.00015001
44	Yes	6	0.00000001	0.00015724
45	Yes	5	0.00000001	0.00021212
46	Yes	6	0.00000001	0.00016087
47	Yes	6	0.00000001	0.00015063
48	Yes	5	0.00000001	0.00031530
49	Yes	6	0.00000001	0.00016476
50	Yes	6	0.00000001	0.00015759

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.5 - 142.5	29.925	48	1.7136	0.0024
L2	142.5 - 137.5	28.132	48	1.7104	0.0024
L3	137.5 - 132.5	26.346	48	1.6997	0.0024
L4	132.5 - 127.5	24.576	48	1.6807	0.0024
L5	127.5 - 122.5	22.830	48	1.6520	0.0023
L6	122.5 - 117.5	21.119	48	1.6155	0.0023
L7	117.5 - 112.5	19.449	48	1.5728	0.0023
L8	112.5 - 108.5	17.827	48	1.5240	0.0021

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L9	112.25 - 107.25	17.748	48	1.5214	0.0021
L10	107.25 - 102.25	16.170	48	1.4854	0.0020
L11	102.25 - 97.25	14.648	48	1.4214	0.0019
L12	97.25 - 92.25	13.196	48	1.3518	0.0017
L13	92.25 - 87.25	11.819	48	1.2774	0.0016
L14	87.25 - 82.25	10.522	48	1.1985	0.0014
L15	82.25 - 77.25	9.310	48	1.1157	0.0012
L16	77.25 - 72.25	8.187	48	1.0298	0.0011
L17	76.75 - 71.75	8.079	48	1.0211	0.0011
L18	71.75 - 66.75	7.031	48	0.9773	0.0010
L19	66.75 - 61.75	6.047	48	0.9017	0.0009
L20	61.75 - 56.75	5.143	48	0.8252	0.0008
L21	56.75 - 51.75	4.319	48	0.7480	0.0007
L22	51.75 - 47.83	3.576	48	0.6705	0.0006
L23	47.83 - 47.58	3.051	48	0.6096	0.0005
L24	47.58 - 42.58	3.019	48	0.6057	0.0005
L25	42.58 - 35.75	2.425	48	0.5282	0.0004
L26	41 - 34.75	2.255	48	0.5037	0.0004
L27	34.75 - 29.75	1.625	48	0.4524	0.0004
L28	29.75 - 24.75	1.187	48	0.3853	0.0003
L29	24.75 - 19.75	0.818	48	0.3188	0.0002
L30	19.75 - 14.75	0.519	48	0.2529	0.0002
L31	14.75 - 9.75	0.288	48	0.1877	0.0001
L32	9.75 - 4.75	0.125	48	0.1233	0.0001
L33	4.75 - 0	0.030	48	0.0597	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	(2) 6.5' x 2" Mount Pipe	48	29.746	1.7134	0.0024	41014
145.00	TME-PCS 1900MHz 4x45W-65MHz	48	29.028	1.7125	0.0024	41014
137.00	(2) SBNHH-1D65B	48	26.168	1.6982	0.0024	18442
117.00	7770.00 w/ Mount Pipe	48	19.285	1.5682	0.0023	6156
115.00	TME-RRU-11	48	18.632	1.5493	0.0022	6233
107.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	48	16.093	1.4831	0.0020	5268
94.00	MX08FRO665-21 w/ Mount Pipe	48	12.292	1.3041	0.0016	3795
49.00	58532A	48	3.203	0.6278	0.0005	3703

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147.5 - 142.5	120.487	20	6.9182	0.0095
L2	142.5 - 137.5	113.264	20	6.9053	0.0095
L3	137.5 - 132.5	106.070	20	6.8621	0.0095
L4	132.5 - 127.5	98.938	20	6.7847	0.0093
L5	127.5 - 122.5	91.907	20	6.6683	0.0091
L6	122.5 - 117.5	85.015	20	6.5205	0.0090
L7	117.5 - 112.5	78.289	20	6.3473	0.0088
L8	112.5 - 108.5	71.757	20	6.1492	0.0083
L9	112.25 - 107.25	71.436	20	6.1386	0.0083
L10	107.25 - 102.25	65.082	20	5.9926	0.0079
L11	102.25 - 97.25	58.951	20	5.7334	0.0072
L12	97.25 - 92.25	53.102	20	5.4514	0.0066
L13	92.25 - 87.25	47.557	20	5.1507	0.0060
L14	87.25 - 82.25	42.336	20	4.8312	0.0054
L15	82.25 - 77.25	37.457	20	4.4963	0.0047
L16	77.25 - 72.25	32.933	20	4.1492	0.0042
L17	76.75 - 71.75	32.501	20	4.1139	0.0041

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L18	71.75 - 66.75	28.281	20	3.9371	0.0038
L19	66.75 - 61.75	24.321	20	3.6317	0.0034
L20	61.75 - 56.75	20.682	20	3.3226	0.0030
L21	56.75 - 51.75	17.367	20	3.0110	0.0027
L22	51.75 - 47.83	14.379	20	2.6983	0.0023
L23	47.83 - 47.58	12.265	20	2.4528	0.0021
L24	47.58 - 42.58	12.137	20	2.4372	0.0021
L25	42.58 - 35.75	9.749	20	2.1246	0.0017
L26	41 - 34.75	9.062	20	2.0260	0.0016
L27	34.75 - 29.75	6.531	20	1.8192	0.0014
L28	29.75 - 24.75	4.768	20	1.5491	0.0012
L29	24.75 - 19.75	3.287	20	1.2813	0.0009
L30	19.75 - 14.75	2.084	20	1.0162	0.0007
L31	14.75 - 9.75	1.157	20	0.7541	0.0005
L32	9.75 - 4.75	0.503	20	0.4951	0.0003
L33	4.75 - 0	0.119	20	0.2396	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	(2) 6.5' x 2" Mount Pipe	20	119.764	6.9176	0.0096	10413
145.00	TME-PCS 1900MHz 4x45W-65MHz	20	116.874	6.9141	0.0096	10413
137.00	(2) SBNHH-1D65B	20	105.354	6.8560	0.0096	4691
117.00	7770.00 w/ Mount Pipe	20	77.627	6.3287	0.0089	1558
115.00	TME-RRU-11	20	74.997	6.2519	0.0087	1578
107.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	20	64.769	5.9833	0.0080	1333
94.00	MX08FRO665-21 w/ Mount Pipe	20	49.462	5.2586	0.0063	957
49.00	58532A	20	12.875	2.5261	0.0021	921

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	147.5 - 142.5 (1)	TP22.95x22x0.25	5.00	0.00	0.0	18.012 4	-6.26	972.67	0.006
L2	142.5 - 137.5 (2)	TP23.9x22.95x0.25	5.00	0.00	0.0	18.766 3	-6.66	1013.38	0.007
L3	137.5 - 132.5 (3)	TP24.85x23.9x0.25	5.00	0.00	0.0	19.520 1	-11.64	1054.09	0.011
L4	132.5 - 127.5 (4)	TP25.8x24.85x0.25	5.00	0.00	0.0	20.273 9	-12.14	1094.79	0.011
L5	127.5 - 122.5 (5)	TP26.75x25.8x0.25	5.00	0.00	0.0	21.027 8	-12.65	1135.50	0.011
L6	122.5 - 117.5 (6)	TP27.7x26.75x0.25	5.00	0.00	0.0	21.781 6	-13.19	1176.21	0.011
L7	117.5 - 112.5 (7)	TP28.65x27.7x0.25	5.00	0.00	0.0	22.535 4	-17.37	1216.91	0.014
L8	112.5 - 108.5 (8)	TP29.41x28.65x0.25	4.00	0.00	0.0	22.573 1	-17.41	1218.95	0.014
L9	108.5 - 107.25 (9)	TP29.1476x28.1975x0.25	5.00	0.00	0.0	22.930 2	-18.38	1341.42	0.014
L10	107.25 - 102.25 (10)	TP30.0976x29.1476x0.25	5.00	0.00	0.0	23.684 1	-22.37	1385.52	0.016

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L11	102.25 - 97.25 (11)	TP31.0477x30.0976x0.25	5.00	0.00	0.0	24.4380	-23.14	1429.62	0.016
L12	97.25 - 92.25 (12)	TP31.9978x31.0477x0.25	5.00	0.00	0.0	25.1918	-26.74	1473.72	0.018
L13	92.25 - 87.25 (13)	TP32.9478x31.9978x0.25	5.00	0.00	0.0	25.9457	-27.58	1517.82	0.018
L14	87.25 - 82.25 (14)	TP33.8979x32.9478x0.25	5.00	0.00	0.0	26.6996	-28.38	1561.93	0.018
L15	82.25 - 77.25 (15)	TP34.8479x33.8979x0.25	5.00	0.00	0.0	27.4535	-29.27	1606.03	0.018
L16	77.25 - 72.25 (16)	TP35.798x34.8479x0.25	5.00	0.00	0.0	27.5289	-29.37	1610.44	0.018
L17	72.25 - 71.75 (17)	TP35.3928x34.4429x0.3125	5.00	0.00	0.0	34.7953	-30.86	2035.53	0.015
L18	71.75 - 66.75 (18)	TP36.3427x35.3928x0.3125	5.00	0.00	0.0	35.7375	-31.90	2090.64	0.015
L19	66.75 - 61.75 (19)	TP37.2926x36.3427x0.3125	5.00	0.00	0.0	36.6796	-32.98	2145.76	0.015
L20	61.75 - 56.75 (20)	TP38.2425x37.2926x0.3125	5.00	0.00	0.0	37.6218	-34.08	2200.88	0.015
L21	56.75 - 51.75 (21)	TP39.1924x38.2425x0.3125	5.00	0.00	0.0	38.5640	-35.21	2255.99	0.016
L22	51.75 - 47.83 (22)	TP39.9371x39.1924x0.3125	3.92	0.00	0.0	39.3026	-36.18	2299.20	0.016
L23	47.83 - 47.58 (23)	TP39.9846x39.9371x0.3125	0.25	0.00	0.0	39.3497	-36.25	2301.96	0.016
L24	47.58 - 42.58 (24)	TP40.9345x39.9846x0.3125	5.00	0.00	0.0	40.2919	-37.41	2357.08	0.016
L25	42.58 - 35.75 (25)	TP42.232x40.9345x0.3125	6.83	0.00	0.0	40.5896	-37.78	2374.49	0.016
L26	35.75 - 34.75 (26)	TP41.7972x40.6096x0.375	6.25	0.00	0.0	49.3027	-40.28	2884.21	0.014
L27	34.75 - 29.75 (27)	TP42.7472x41.7972x0.375	5.00	0.00	0.0	50.4335	-41.65	2950.36	0.014
L28	29.75 - 24.75 (28)	TP43.6973x42.7472x0.375	5.00	0.00	0.0	51.5643	-43.04	3016.51	0.014
L29	24.75 - 19.75 (29)	TP44.6473x43.6973x0.375	5.00	0.00	0.0	52.6951	-44.45	3082.66	0.014
L30	19.75 - 14.75 (30)	TP45.5974x44.6473x0.375	5.00	0.00	0.0	53.8259	-45.89	3148.82	0.015
L31	14.75 - 9.75 (31)	TP46.5474x45.5974x0.375	5.00	0.00	0.0	54.9567	-47.36	3214.97	0.015
L32	9.75 - 4.75 (32)	TP47.4975x46.5474x0.375	5.00	0.00	0.0	56.0875	-48.79	3281.12	0.015
L33	4.75 - 0 (33)	TP48.4x47.4975x0.375	4.75	0.00	0.0	57.1618	-50.00	3343.96	0.015

Pole Bending Design Data

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 $\frac{M_{uy}}{\phi M_{ny}}$
L1	147.5 - 142.5 (1)	TP22.95x22x0.25	23.67	574.82	0.041	0.00	574.82	0.000
L2	142.5 - 137.5 (2)	TP23.9x22.95x0.25	52.95	624.21	0.085	0.00	624.21	0.000
L3	137.5 - 132.5 (3)	TP24.85x23.9x0.25	103.39	675.64	0.153	0.00	675.64	0.000
L4	132.5 - 127.5 (4)	TP25.8x24.85x0.25	157.14	723.10	0.217	0.00	723.10	0.000
L5	127.5 - 122.5 (5)	TP26.75x25.8x0.25	212.48	770.96	0.276	0.00	770.96	0.000
L6	122.5 - 117.5 (6)	TP27.7x26.75x0.25	269.40	819.78	0.329	0.00	819.78	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 $\frac{M_{uy}}{\phi M_{ny}}$
L7	117.5 - 112.5 (7)	TP28.65x27.7x0.25	342.48	869.52	0.394	0.00	869.52	0.000
L8	112.5 - 108.5 (8)	TP29.41x28.65x0.25	346.16	872.02	0.397	0.00	872.02	0.000
L9	108.5 - 107.25 (9)	TP29.1476x28.1975x0.25	420.74	959.47	0.439	0.00	959.47	0.000
L10	107.25 - 102.25 (10)	TP30.0976x29.1476x0.25	511.10	1013.58	0.504	0.00	1013.58	0.000
L11	102.25 - 97.25 (11)	TP31.0477x30.0976x0.25	602.85	1068.46	0.564	0.00	1068.46	0.000
L12	97.25 - 92.25 (12)	TP31.9978x31.0477x0.25	702.38	1124.03	0.625	0.00	1124.03	0.000
L13	92.25 - 87.25 (13)	TP32.9478x31.9978x0.25	807.96	1180.22	0.685	0.00	1180.22	0.000
L14	87.25 - 82.25 (14)	TP33.8979x32.9478x0.25	916.90	1236.98	0.741	0.00	1236.98	0.000
L15	82.25 - 77.25 (15)	TP34.8479x33.8979x0.25	1027.91	1294.25	0.794	0.00	1294.25	0.000
L16	77.25 - 72.25 (16)	TP35.798x34.8479x0.25	1039.09	1300.01	0.799	0.00	1300.01	0.000
L17	72.25 - 71.75 (17)	TP35.3928x34.4429x0.3125	1152.15	1782.56	0.646	0.00	1782.56	0.000
L18	71.75 - 66.75 (18)	TP36.3427x35.3928x0.3125	1267.06	1865.85	0.679	0.00	1865.85	0.000
L19	66.75 - 61.75 (19)	TP37.2926x36.3427x0.3125	1383.51	1950.18	0.709	0.00	1950.18	0.000
L20	61.75 - 56.75 (20)	TP38.2425x37.2926x0.3125	1501.44	2035.47	0.738	0.00	2035.47	0.000
L21	56.75 - 51.75 (21)	TP39.1924x38.2425x0.3125	1620.78	2121.67	0.764	0.00	2121.67	0.000
L22	51.75 - 47.83 (22)	TP39.9371x39.1924x0.3125	1715.35	2189.83	0.783	0.00	2189.83	0.000
L23	47.83 - 47.58 (23)	TP39.9846x39.9371x0.3125	1721.42	2194.20	0.785	0.00	2194.20	0.000
L24	47.58 - 42.58 (24)	TP40.9345x39.9846x0.3125	1843.49	2281.89	0.808	0.00	2281.89	0.000
L25	42.58 - 35.75 (25)	TP42.232x40.9345x0.3125	1882.34	2309.75	0.815	0.00	2309.75	0.000
L26	35.75 - 34.75 (26)	TP41.7972x40.6096x0.375	2037.72	2996.00	0.680	0.00	2996.00	0.000
L27	34.75 - 29.75 (27)	TP42.7472x41.7972x0.375	2163.60	3114.92	0.695	0.00	3114.92	0.000
L28	29.75 - 24.75 (28)	TP43.6973x42.7472x0.375	2290.53	3235.13	0.708	0.00	3235.13	0.000
L29	24.75 - 19.75 (29)	TP44.6473x43.6973x0.375	2418.47	3356.57	0.721	0.00	3356.57	0.000
L30	19.75 - 14.75 (30)	TP45.5974x44.6473x0.375	2547.39	3479.18	0.732	0.00	3479.18	0.000
L31	14.75 - 9.75 (31)	TP46.5474x45.5974x0.375	2677.27	3602.88	0.743	0.00	3602.88	0.000
L32	9.75 - 4.75 (32)	TP47.4975x46.5474x0.375	2807.97	3727.64	0.753	0.00	3727.64	0.000
L33	4.75 - 0 (33)	TP48.4x47.4975x0.375	2932.72	3847.06	0.762	0.00	3847.06	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	147.5 - 142.5 (1)	TP22.95x22x0.25	5.70	291.80	0.020	0.00	580.09	0.000
L2	142.5 - 137.5 (2)	TP23.9x22.95x0.25	6.01	304.01	0.020	0.00	629.66	0.000
L3	137.5 - 132.5 (3)	TP24.85x23.9x0.25	10.60	316.23	0.034	0.16	681.26	0.000
L4	132.5 - 127.5 (4)	TP25.8x24.85x0.25	10.91	328.44	0.033	0.16	734.89	0.000
L5	127.5 - 122.5 (5)	TP26.75x25.8x0.25	11.23	340.65	0.033	0.16	790.56	0.000
L6	122.5 - 117.5 (6)	TP27.7x26.75x0.25	11.55	352.86	0.033	0.16	848.26	0.000
L7	117.5 - 112.5 (7)	TP28.65x27.7x0.25	14.72	365.07	0.040	0.10	907.98	0.000
L8	112.5 - 108.5 (8)	TP29.41x28.65x0.25	14.73	365.68	0.040	0.10	911.02	0.000
L9	108.5 - 107.25 (9)	TP29.1476x28.1975x0.25	15.10	402.43	0.038	0.10	1018.42	0.000
L10	107.25 - 102.25 (10)	TP30.0976x29.1476x0.25	18.21	415.66	0.044	0.13	1086.48	0.000
L11	102.25 - 97.25 (11)	TP31.0477x30.0976x0.25	18.48	428.89	0.043	0.13	1156.75	0.000
L12	97.25 - 92.25 (12)	TP31.9978x31.0477x0.25	21.00	442.12	0.047	0.22	1229.22	0.000
L13	92.25 - 87.25 (13)	TP32.9478x31.9978x0.25	21.24	455.35	0.047	0.22	1303.89	0.000
L14	87.25 - 82.25 (14)	TP33.8979x32.9478x0.25	22.05	468.58	0.047	1.31	1380.77	0.001
L15	82.25 - 77.25 (15)	TP34.8479x33.8979x0.25	22.37	481.81	0.046	1.30	1459.83	0.001
L16	77.25 - 72.25 (16)	TP35.798x34.8479x0.25	22.39	483.13	0.046	1.30	1467.87	0.001
L17	72.25 - 71.75 (17)	TP35.3928x34.4429x0.3125	22.82	610.66	0.037	1.30	1876.03	0.001
L18	71.75 - 66.75 (18)	TP36.3427x35.3928x0.3125	23.15	627.19	0.037	1.30	1979.01	0.001
L19	66.75 - 61.75 (19)	TP37.2926x36.3427x0.3125	23.45	643.73	0.036	1.30	2084.73	0.001
L20	61.75 - 56.75 (20)	TP38.2425x37.2926x0.3125	23.74	660.26	0.036	1.30	2193.21	0.001
L21	56.75 - 51.75 (21)	TP39.1924x38.2425x0.3125	24.01	676.80	0.035	1.30	2304.43	0.001
L22	51.75 - 47.83 (22)	TP39.9371x39.1924x0.3125	24.28	689.76	0.035	1.47	2393.56	0.001
L23	47.83 - 47.58 (23)	TP39.9846x39.9371x0.3125	24.28	690.59	0.035	1.47	2399.30	0.001
L24	47.58 - 42.58 (24)	TP40.9345x39.9846x0.3125	24.56	707.12	0.035	1.47	2515.57	0.001
L25	42.58 - 35.75 (25)	TP42.232x40.9345x0.3125	24.65	712.35	0.035	1.47	2552.88	0.001
L26	35.75 - 34.75 (26)	TP41.7972x40.6096x0.375	25.08	865.26	0.029	1.47	3138.78	0.000
L27	34.75 - 29.75 (27)	TP42.7472x41.7972x0.375	25.29	885.11	0.029	1.47	3284.42	0.000
L28	29.75 - 24.75 (28)	TP43.6973x42.7472x0.375	25.50	904.95	0.028	1.47	3433.35	0.000
L29	24.75 - 19.75 (29)	TP44.6473x43.6973x0.375	25.70	924.80	0.028	1.47	3585.58	0.000
L30	19.75 - 14.75 (30)	TP45.5974x44.6473x0.375	25.89	944.64	0.027	1.47	3741.13	0.000
L31	14.75 - 9.75 (31)	TP46.5474x45.5974x0.375	26.08	964.49	0.027	1.47	3899.96	0.000
L32	9.75 - 4.75 (32)	TP47.4975x46.5474x0.375	26.23	984.34	0.027	1.47	4062.11	0.000
L33	4.75 - 0 (33)	TP48.4x47.4975x0.375	26.36	1003.19	0.026	1.47	4219.20	0.000

Pole Interaction Design Data

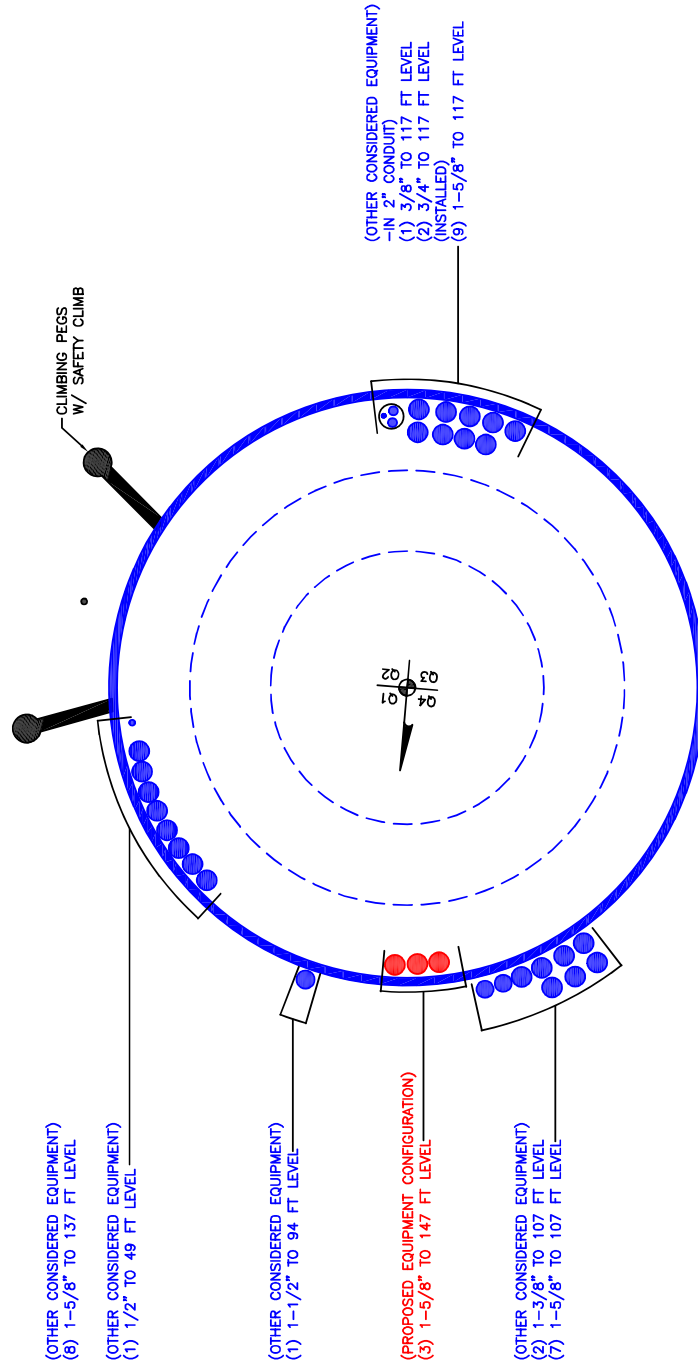
Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	147.5 - 142.5 (1)	0.006	0.041	0.000	0.020	0.000	0.048	1.050	4.8.2
L2	142.5 - 137.5 (2)	0.007	0.085	0.000	0.020	0.000	0.092	1.050	4.8.2
L3	137.5 - 132.5 (3)	0.011	0.153	0.000	0.034	0.000	0.165	1.050	4.8.2
L4	132.5 - 127.5 (4)	0.011	0.217	0.000	0.033	0.000	0.230	1.050	4.8.2
L5	127.5 - 122.5 (5)	0.011	0.276	0.000	0.033	0.000	0.288	1.050	4.8.2
L6	122.5 - 117.5 (6)	0.011	0.329	0.000	0.033	0.000	0.341	1.050	4.8.2
L7	117.5 - 112.5 (7)	0.014	0.394	0.000	0.040	0.000	0.410	1.050	4.8.2
L8	112.5 - 108.5 (8)	0.014	0.397	0.000	0.040	0.000	0.413	1.050	4.8.2
L9	108.5 - 107.25 (9)	0.014	0.439	0.000	0.038	0.000	0.454	1.050	4.8.2
L10	107.25 - 102.25 (10)	0.016	0.504	0.000	0.044	0.000	0.522	1.050	4.8.2
L11	102.25 - 97.25 (11)	0.016	0.564	0.000	0.043	0.000	0.582	1.050	4.8.2
L12	97.25 - 92.25 (12)	0.018	0.625	0.000	0.047	0.000	0.645	1.050	4.8.2
L13	92.25 - 87.25 (13)	0.018	0.685	0.000	0.047	0.000	0.705	1.050	4.8.2
L14	87.25 - 82.25 (14)	0.018	0.741	0.000	0.047	0.001	0.762	1.050	4.8.2
L15	82.25 - 77.25 (15)	0.018	0.794	0.000	0.046	0.001	0.815	1.050	4.8.2
L16	77.25 - 72.25 (16)	0.018	0.799	0.000	0.046	0.001	0.820	1.050	4.8.2
L17	72.25 - 71.75 (17)	0.015	0.646	0.000	0.037	0.001	0.663	1.050	4.8.2
L18	71.75 - 66.75 (18)	0.015	0.679	0.000	0.037	0.001	0.696	1.050	4.8.2
L19	66.75 - 61.75 (19)	0.015	0.709	0.000	0.036	0.001	0.726	1.050	4.8.2
L20	61.75 - 56.75 (20)	0.015	0.738	0.000	0.036	0.001	0.754	1.050	4.8.2
L21	56.75 - 51.75 (21)	0.016	0.764	0.000	0.035	0.001	0.781	1.050	4.8.2
L22	51.75 - 47.83 (22)	0.016	0.783	0.000	0.035	0.001	0.800	1.050	4.8.2
L23	47.83 - 47.58 (23)	0.016	0.785	0.000	0.035	0.001	0.802	1.050	4.8.2
L24	47.58 - 42.58 (24)	0.016	0.808	0.000	0.035	0.001	0.825	1.050	4.8.2
L25	42.58 - 35.75 (25)	0.016	0.815	0.000	0.035	0.001	0.832	1.050	4.8.2
L26	35.75 - 34.75 (26)	0.014	0.680	0.000	0.029	0.000	0.695	1.050	4.8.2
L27	34.75 - 29.75 (27)	0.014	0.695	0.000	0.029	0.000	0.710	1.050	4.8.2
L28	29.75 - 24.75 (28)	0.014	0.708	0.000	0.028	0.000	0.723	1.050	4.8.2
L29	24.75 - 19.75 (29)	0.014	0.721	0.000	0.028	0.000	0.736	1.050	4.8.2
L30	19.75 - 14.75 (30)	0.015	0.732	0.000	0.027	0.000	0.748	1.050	4.8.2
L31	14.75 - 9.75 (31)	0.015	0.743	0.000	0.027	0.000	0.759	1.050	4.8.2
L32	9.75 - 4.75 (32)	0.015	0.753	0.000	0.027	0.000	0.769	1.050	4.8.2
L33	4.75 - 0 (33)	0.015	0.762	0.000	0.026	0.000	0.778	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	147.5 - 142.5	Pole	TP22.95x22x0.25	1	-6.26	1021.31	4.6	Pass
L2	142.5 - 137.5	Pole	TP23.9x22.95x0.25	2	-6.66	1064.05	8.7	Pass
L3	137.5 - 132.5	Pole	TP24.85x23.9x0.25	3	-11.64	1106.79	15.7	Pass
L4	132.5 - 127.5	Pole	TP25.8x24.85x0.25	4	-12.14	1149.53	21.9	Pass
L5	127.5 - 122.5	Pole	TP26.75x25.8x0.25	5	-12.65	1192.27	27.4	Pass
L6	122.5 - 117.5	Pole	TP27.7x26.75x0.25	6	-13.19	1235.02	32.5	Pass
L7	117.5 - 112.5	Pole	TP28.65x27.7x0.25	7	-17.37	1277.76	39.0	Pass
L8	112.5 - 108.5	Pole	TP29.41x28.65x0.25	8	-17.41	1279.90	39.3	Pass
L9	108.5 - 107.25	Pole	TP29.1476x28.1975x0.25	9	-18.38	1408.49	43.2	Pass
L10	107.25 - 102.25	Pole	TP30.0976x29.1476x0.25	10	-22.37	1454.80	49.7	Pass
L11	102.25 - 97.25	Pole	TP31.0477x30.0976x0.25	11	-23.14	1501.10	55.5	Pass
L12	97.25 - 92.25	Pole	TP31.9978x31.0477x0.25	12	-26.74	1547.41	61.5	Pass
L13	92.25 - 87.25	Pole	TP32.9478x31.9978x0.25	13	-27.58	1593.71	67.1	Pass
L14	87.25 - 82.25	Pole	TP33.8979x32.9478x0.25	14	-28.38	1640.03	72.5	Pass
L15	82.25 - 77.25	Pole	TP34.8479x33.8979x0.25	15	-29.27	1686.33	77.6	Pass
L16	77.25 - 72.25	Pole	TP35.798x34.8479x0.25	16	-29.37	1690.96	78.1	Pass
L17	72.25 - 71.75	Pole	TP35.3928x34.4429x0.3125	17	-30.86	2137.31	63.1	Pass
L18	71.75 - 66.75	Pole	TP36.3427x35.3928x0.3125	18	-31.90	2195.17	66.3	Pass
L19	66.75 - 61.75	Pole	TP37.2926x36.3427x0.3125	19	-32.98	2253.05	69.2	Pass
L20	61.75 - 56.75	Pole	TP38.2425x37.2926x0.3125	20	-34.08	2310.92	71.9	Pass
L21	56.75 - 51.75	Pole	TP39.1924x38.2425x0.3125	21	-35.21	2368.79	74.4	Pass
L22	51.75 - 47.83	Pole	TP39.9371x39.1924x0.3125	22	-36.18	2414.16	76.2	Pass
L23	47.83 - 47.58	Pole	TP39.9846x39.9371x0.3125	23	-36.25	2417.06	76.3	Pass
L24	47.58 - 42.58	Pole	TP40.9345x39.9846x0.3125	24	-37.41	2474.93	78.6	Pass
L25	42.58 - 35.75	Pole	TP42.232x40.9345x0.3125	25	-37.78	2493.21	79.2	Pass
L26	35.75 - 34.75	Pole	TP41.7972x40.6096x0.375	26	-40.28	3028.42	66.2	Pass
L27	34.75 - 29.75	Pole	TP42.7472x41.7972x0.375	27	-41.65	3097.88	67.6	Pass
L28	29.75 - 24.75	Pole	TP43.6973x42.7472x0.375	28	-43.04	3167.34	68.9	Pass
L29	24.75 - 19.75	Pole	TP44.6473x43.6973x0.375	29	-44.45	3236.79	70.1	Pass
L30	19.75 - 14.75	Pole	TP45.5974x44.6473x0.375	30	-45.89	3306.26	71.2	Pass
L31	14.75 - 9.75	Pole	TP46.5474x45.5974x0.375	31	-47.36	3375.72	72.2	Pass
L32	9.75 - 4.75	Pole	TP47.4975x46.5474x0.375	32	-48.79	3445.18	73.2	Pass
L33	4.75 - 0	Pole	TP48.4x47.4975x0.375	33	-50.00	3511.16	74.1	Pass
							Summary	
							Pole (L25)	79.2*
							RATING =	79.2*
								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: 876348
Work Order: 2150165

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Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	147.5	39	3.75	18	22	29.41	0.25	Auto	A607-60
2	112.25	40	4.5	18	28.20	35.798	0.25	Auto	A607-65
3	76.75	41	5.25	18	34.44	42.232	0.3125	Auto	A607-65
4	41	41	0	18	40.61	48.4	0.375	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	40.17	47.83	channel	MP3-03 (1.1875in)	3					x						x						x	
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65

TNX Geometry Input

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

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	147.5 - 142.5	5		18	22.000	22.950	0.25	A607-60	1.000
2	142.5 - 137.5	5		18	22.950	23.900	0.25	A607-60	1.000
3	137.5 - 132.5	5		18	23.900	24.850	0.25	A607-60	1.000
4	132.5 - 127.5	5		18	24.850	25.800	0.25	A607-60	1.000
5	127.5 - 122.5	5		18	25.800	26.750	0.25	A607-60	1.000
6	122.5 - 117.5	5		18	26.750	27.700	0.25	A607-60	1.000
7	117.5 - 112.5	5		18	27.700	28.650	0.25	A607-60	1.000
8	112.5 - 112.25	4	3.75	18	28.650	29.410	0.25	A607-60	1.000
9	112.25 - 107.25	5		18	28.198	29.148	0.25	A607-65	1.000
10	107.25 - 102.25	5		18	29.148	30.098	0.25	A607-65	1.000
11	102.25 - 97.25	5		18	30.098	31.048	0.25	A607-65	1.000
12	97.25 - 92.25	5		18	31.048	31.998	0.25	A607-65	1.000
13	92.25 - 87.25	5		18	31.998	32.948	0.25	A607-65	1.000
14	87.25 - 82.25	5		18	32.948	33.898	0.25	A607-65	1.000
15	82.25 - 77.25	5		18	33.898	34.848	0.25	A607-65	1.000
16	77.25 - 76.75	5	4.5	18	34.848	35.798	0.25	A607-65	1.000
17	76.75 - 71.75	5		18	34.443	35.393	0.3125	A607-65	1.000
18	71.75 - 66.75	5		18	35.393	36.343	0.3125	A607-65	1.000
19	66.75 - 61.75	5		18	36.343	37.293	0.3125	A607-65	1.000
20	61.75 - 56.75	5		18	37.293	38.242	0.3125	A607-65	1.000
21	56.75 - 51.75	5		18	38.242	39.192	0.3125	A607-65	1.000
22	51.75 - 47.83	3.92		18	39.192	39.937	0.3125	A607-65	1.000
23	47.83 - 47.58	0.25		18	39.937	39.985	0.3125	A607-65	1.000
24	47.58 - 42.58	5		18	39.985	40.934	0.3125	A607-65	1.000
25	42.58 - 41	6.83	5.25	18	40.934	42.232	0.3125	A607-65	1.000
26	41 - 34.75	6.25		18	40.610	41.797	0.375	A607-65	1.000
27	34.75 - 29.75	5		18	41.797	42.747	0.375	A607-65	1.000
28	29.75 - 24.75	5		18	42.747	43.697	0.375	A607-65	1.000
29	24.75 - 19.75	5		18	43.697	44.647	0.375	A607-65	1.000
30	19.75 - 14.75	5		18	44.647	45.597	0.375	A607-65	1.000
31	14.75 - 9.75	5		18	45.597	46.547	0.375	A607-65	1.000
32	9.75 - 4.75	5		18	46.547	47.497	0.375	A607-65	1.000
33	4.75 - 0	4.75		18	47.497	48.400	0.375	A607-65	1.000

TNX Section Forces

Increment (ft):		TNX Output		
		5		
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	147.5 - 142.5	6.26	23.67	5.70
2	142.5 - 137.5	6.66	52.95	6.01
3	137.5 - 132.5	11.64	103.39	10.60
4	132.5 - 127.5	12.14	157.14	10.91
5	127.5 - 122.5	12.65	212.48	11.23
6	122.5 - 117.5	13.19	269.40	11.55
7	117.5 - 112.5	17.37	342.48	14.72
8	112.5 - 112.25	17.41	346.16	14.73
9	112.25 - 107.25	18.38	420.74	15.10
10	107.25 - 102.25	22.37	511.10	18.21
11	102.25 - 97.25	23.14	602.85	18.49
12	97.25 - 92.25	26.74	702.38	21.00
13	92.25 - 87.25	27.58	807.96	21.24
14	87.25 - 82.25	28.38	916.90	22.05
15	82.25 - 77.25	29.27	1027.91	22.37
16	77.25 - 76.75	29.37	1039.09	22.39
17	76.75 - 71.75	30.86	1152.15	22.82
18	71.75 - 66.75	31.90	1267.06	23.15
19	66.75 - 61.75	32.98	1383.51	23.45
20	61.75 - 56.75	34.08	1501.45	23.74
21	56.75 - 51.75	35.21	1620.78	24.01
22	51.75 - 47.83	36.18	1715.35	24.28
23	47.83 - 47.58	36.25	1721.42	24.28
24	47.58 - 42.58	37.41	1843.49	24.56
25	42.58 - 41	37.78	1882.34	24.65
26	41 - 34.75	40.28	2037.72	25.08
27	34.75 - 29.75	41.65	2163.60	25.29
28	29.75 - 24.75	43.04	2290.53	25.50
29	24.75 - 19.75	44.45	2418.47	25.70
30	19.75 - 14.75	45.89	2547.39	25.89
31	14.75 - 9.75	47.36	2677.27	26.08
32	9.75 - 4.75	48.79	2807.96	26.23
33	4.75 - 0	50.00	2932.73	26.36

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147.5 - 142.5	Pole	TP22.95x22x0.25	Pole	4.6%	Pass
142.5 - 137.5	Pole	TP23.9x22.95x0.25	Pole	8.7%	Pass
137.5 - 132.5	Pole	TP24.85x23.9x0.25	Pole	15.7%	Pass
132.5 - 127.5	Pole	TP25.8x24.85x0.25	Pole	21.9%	Pass
127.5 - 122.5	Pole	TP26.75x25.8x0.25	Pole	27.4%	Pass
122.5 - 117.5	Pole	TP27.7x26.75x0.25	Pole	32.5%	Pass
117.5 - 112.5	Pole	TP28.65x27.7x0.25	Pole	39.0%	Pass
112.5 - 112.25	Pole	TP29.41x28.65x0.25	Pole	39.3%	Pass
112.25 - 107.25	Pole	TP29.148x28.198x0.25	Pole	43.2%	Pass
107.25 - 102.25	Pole	TP30.098x29.148x0.25	Pole	49.7%	Pass
102.25 - 97.25	Pole	TP31.048x30.098x0.25	Pole	55.5%	Pass
97.25 - 92.25	Pole	TP31.998x31.048x0.25	Pole	61.5%	Pass
92.25 - 87.25	Pole	TP32.948x31.998x0.25	Pole	67.2%	Pass
87.25 - 82.25	Pole	TP33.898x32.948x0.25	Pole	72.6%	Pass
82.25 - 77.25	Pole	TP34.848x33.898x0.25	Pole	77.6%	Pass
77.25 - 76.75	Pole	TP35.798x34.848x0.25	Pole	78.1%	Pass
76.75 - 71.75	Pole	TP35.393x34.443x0.3125	Pole	63.1%	Pass
71.75 - 66.75	Pole	TP36.343x35.393x0.3125	Pole	66.3%	Pass
66.75 - 61.75	Pole	TP37.293x36.343x0.3125	Pole	69.2%	Pass
61.75 - 56.75	Pole	TP38.242x37.293x0.3125	Pole	71.9%	Pass
56.75 - 51.75	Pole	TP39.192x38.242x0.3125	Pole	74.4%	Pass
51.75 - 47.83	Pole	TP39.937x39.192x0.3125	Pole	76.2%	Pass
47.83 - 47.58	Pole	TP39.985x39.937x0.3125	Pole	76.3%	Pass
47.58 - 42.58	Pole	TP40.934x39.985x0.3125	Pole	78.6%	Pass
42.58 - 41	Pole	TP42.232x40.934x0.3125	Pole	79.3%	Pass
41 - 34.75	Pole	TP41.797x40.61x0.375	Pole	66.2%	Pass
34.75 - 29.75	Pole	TP42.747x41.797x0.375	Pole	67.6%	Pass
29.75 - 24.75	Pole	TP43.697x42.747x0.375	Pole	68.9%	Pass
24.75 - 19.75	Pole	TP44.647x43.697x0.375	Pole	70.1%	Pass
19.75 - 14.75	Pole	TP45.597x44.647x0.375	Pole	71.2%	Pass
14.75 - 9.75	Pole	TP46.547x45.597x0.375	Pole	72.3%	Pass
9.75 - 4.75	Pole	TP47.497x46.547x0.375	Pole	73.2%	Pass
4.75 - 0	Pole	TP48.4x47.497x0.375	Pole	74.1%	Pass
				Summary	
			Pole	79.3%	Pass
			Reinforcement	0.0%	Pass
			Overall	79.3%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity* (100% Max. Allowable)	
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1
147.5 - 142.5	1172	n/a	1172	18.01	n/a	18.01	4.6%	
142.5 - 137.5	1326	n/a	1326	18.77	n/a	18.77	8.7%	
137.5 - 132.5	1492	n/a	1492	19.52	n/a	19.52	15.7%	
132.5 - 127.5	1671	n/a	1671	20.27	n/a	20.27	21.9%	
127.5 - 122.5	1865	n/a	1865	21.03	n/a	21.03	27.4%	
122.5 - 117.5	2073	n/a	2073	21.78	n/a	21.78	32.5%	
117.5 - 112.5	2296	n/a	2296	22.53	n/a	22.53	39.0%	
112.5 - 112.25	2307	n/a	2307	22.57	n/a	22.57	39.3%	
112.25 - 107.25	2418	n/a	2418	22.93	n/a	22.93	43.2%	
107.25 - 102.25	2665	n/a	2665	23.68	n/a	23.68	49.7%	
102.25 - 97.25	2927	n/a	2927	24.44	n/a	24.44	55.5%	
97.25 - 92.25	3207	n/a	3207	25.19	n/a	25.19	61.5%	
92.25 - 87.25	3503	n/a	3503	25.94	n/a	25.94	67.2%	
87.25 - 82.25	3818	n/a	3818	26.70	n/a	26.70	72.6%	
82.25 - 77.25	4150	n/a	4150	27.45	n/a	27.45	77.6%	
77.25 - 76.75	4185	n/a	4185	27.53	n/a	27.53	78.1%	
76.75 - 71.75	5408	n/a	5408	34.79	n/a	34.79	63.1%	
71.75 - 66.75	5859	n/a	5859	35.74	n/a	35.74	66.3%	
66.75 - 61.75	6335	n/a	6335	36.68	n/a	36.68	69.2%	
61.75 - 56.75	6836	n/a	6836	37.62	n/a	37.62	71.9%	
56.75 - 51.75	7362	n/a	7362	38.56	n/a	38.56	74.4%	
51.75 - 47.83	7793	n/a	7793	39.30	n/a	39.30	76.2%	
47.83 - 47.58	7822	n/a	7822	39.35	n/a	39.35	76.3%	
47.58 - 42.58	8397	n/a	8397	40.29	n/a	40.29	78.6%	
42.58 - 41	8584	n/a	8584	40.59	n/a	40.59	79.3%	
41 - 34.75	10684	n/a	10684	49.30	n/a	49.30	66.2%	
34.75 - 29.75	11436	n/a	11436	50.43	n/a	50.43	67.6%	
29.75 - 24.75	12222	n/a	12222	51.56	n/a	51.56	68.9%	
24.75 - 19.75	13044	n/a	13044	52.69	n/a	52.69	70.1%	
19.75 - 14.75	13902	n/a	13902	53.82	n/a	53.82	71.2%	
14.75 - 9.75	14797	n/a	14797	54.95	n/a	54.95	72.3%	
9.75 - 4.75	15729	n/a	15729	56.09	n/a	56.09	73.2%	
4.75 - 0	16650	n/a	16650	57.16	n/a	57.16	74.1%	

Note: Section capacity checked using 5 degree increments.

*Rating per TIA-222-H Section 15.5.

Monopole Base Plate Connection

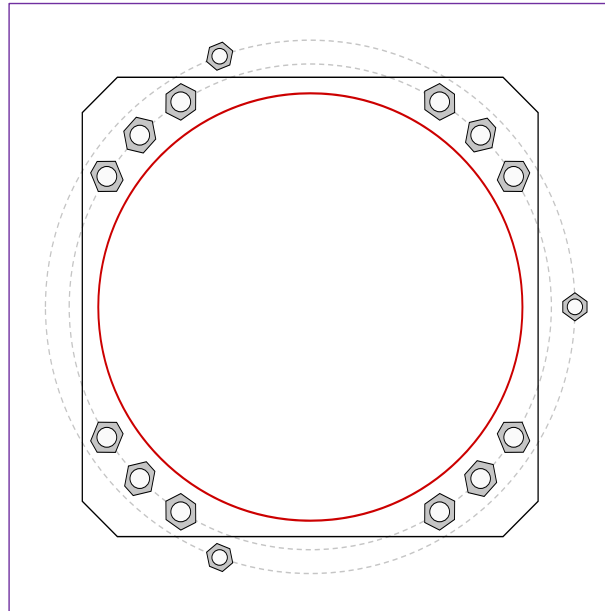


Site Info	
BU #	876348
Site Name	Enfield
Order #	629447 Rev. 0

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

Applied Loads	
Moment (kip-ft)	2932.73
Axial Force (kips)	50.00
Shear Force (kips)	26.36

*TIA-222-H Section 15.5 Applied



Connection Properties		Analysis Results	
Anchor Rod Data		Anchor Rod Summary	
GROUP 1: (12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 55" BC Anchor Spacing: 6 in		(units of kips, kip-in)	
GROUP 2: (3) 1-3/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 60.4" BC		Pu_t = 181.72	$\phi Pn_t = 243.75$ Stress Rating
		Vu = 2.2	$\phi Vn = 149.1$ 71.0%
		Mu = 4.11	$\phi Mn = 128.14$ Pass
Base Plate Data		GROUP 2:	
52" W x 3" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi); Clip: 4 in		Pu_t = 117.96	$\phi Pn_t = 178.13$ Stress Rating
		Vu = 0	$\phi Vn = 112.75$ 63.1%
		Mu = n/a	$\phi Mn = n/a$ Pass
Stiffener Data		Base Plate Summary	
N/A		Max Stress (ksi):	28.05 (Flexural)
		Allowable Stress (ksi):	45
		Stress Rating:	59.4% Pass
Pole Data			
48.4" x 0.375" 18-sided pole (A607-65; $F_y=65$ ksi, $F_u=80$ ksi)			

CClplate

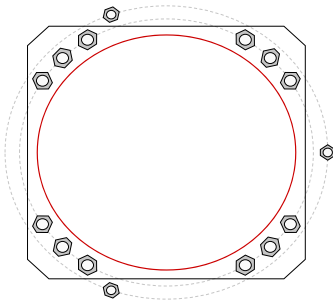
Elevation (ft) 0 (Base)

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

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

Custom Bolt Connection										
Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η	I_{ar} (in)	Thread Type	Area Override, in ²	Tension Only
1	1	32.474174	2.25	A615-75	55	0.5	2.875	N-Included		No
2	1	45	2.25	A615-75	55	0.5	2.875	N-Included		No
3	1	57.525826	2.25	A615-75	55	0.5	2.875	N-Included		No
4	1	122.47417	2.25	A615-75	55	0.5	2.875	N-Included		No
5	1	135	2.25	A615-75	55	0.5	2.875	N-Included		No
6	1	147.52583	2.25	A615-75	55	0.5	2.875	N-Included		No
7	1	212.47417	2.25	A615-75	55	0.5	2.875	N-Included		No
8	1	225	2.25	A615-75	55	0.5	2.875	N-Included		No
9	1	237.52583	2.25	A615-75	55	0.5	2.875	N-Included		No
10	1	302.47417	2.25	A615-75	55	0.5	2.875	N-Included		No
11	1	315	2.25	A615-75	55	0.5	2.875	N-Included		No
12	1	327.52583	2.25	A615-75	55	0.5	2.875	N-Included		No
13	2	110	1.75	A193 Gr. B7	60.4	0.55	0	N-Included		No
14	2	250	1.75	A193 Gr. B7	60.4	0.55	0	N-Included		No
15	2	360	1.75	A193 Gr. B7	60.4	0.55	0	N-Included		No

Plot Graphic



Pier and Pad Foundation



BU #: 876348
 Site Name: Enfield
 App. Number: 629447 Rev. 0

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	50.02	kips
Base Shear, V_u , $comp$:	26.33	kips
Moment, M_u :	2932.72	ft-kips
Tower Height, H :	147.5	ft
BP Dist. Above Fdn, bp_{dist} :	5.125	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, d_{pier} :	8	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, S_c :	11	
Pier Rebar Quantity, mc :	24	
Pier Tie/Spiral Size, St :	5	
Pier Tie/Spiral Quantity, mt :	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	9.8	ft
Pad Width, W_1 :	23.8	ft
Pad Thickness, T :	2.8	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	26	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	58	pcf
Ultimate Gross Bearing, Q_{ult} :	6.500	ksf
Cohesion, C_u :	2.000	ksf
Friction Angle, ϕ :	0	degrees
SPT Blow Count, N_{blows} :	16	
Base Friction, μ :	0.3	
Neglected Depth, N :	4.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	4	ft

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	357.60	26.33	7.0%	Pass
Bearing Pressure (ksf)	4.88	1.87	38.5%	Pass
Overturning (kip*ft)	4106.21	3215.16	78.3%	Pass
Pier Flexure (Comp.) (kip*ft)	6923.45	3130.20	43.1%	Pass
Pier Compression (kip)	30551.04	122.04	0.4%	Pass
Pad Flexure (kip*ft)	3256.93	1642.91	48.0%	Pass
Pad Shear - 1-way (kips)	678.31	260.93	36.6%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	0.0%	Pass
Flexural 2-way (Comp) (kip*ft)	4428.73	1878.12	40.4%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	48.0%
Soil Rating*:	78.3%

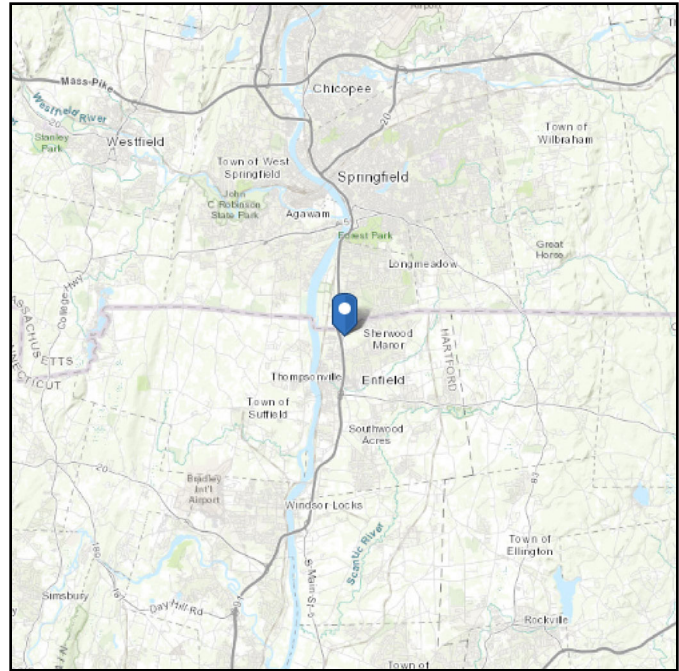
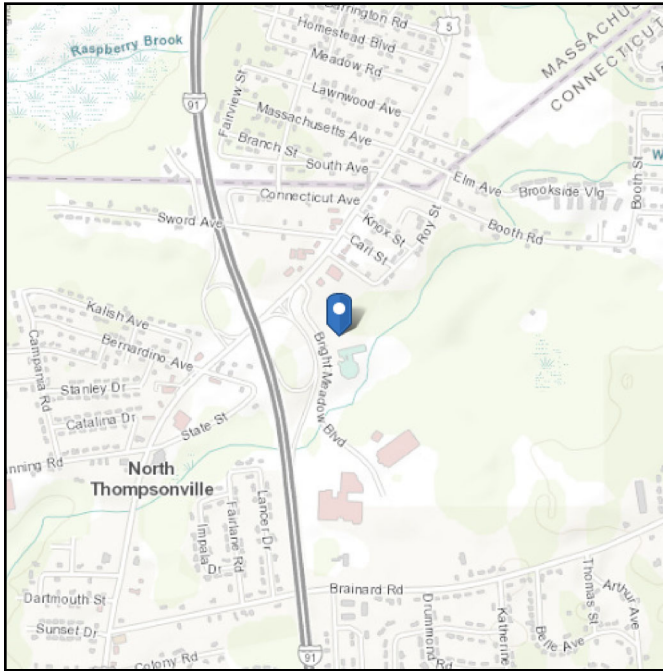
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ASCE 7 Hazards Report

Address:
No Address at This Location

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

Latitude: 42.020808
Longitude: -72.585164
Elevation: 110.38 ft (NAVD 88)



Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	83 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: Thu Dec 08 2022

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

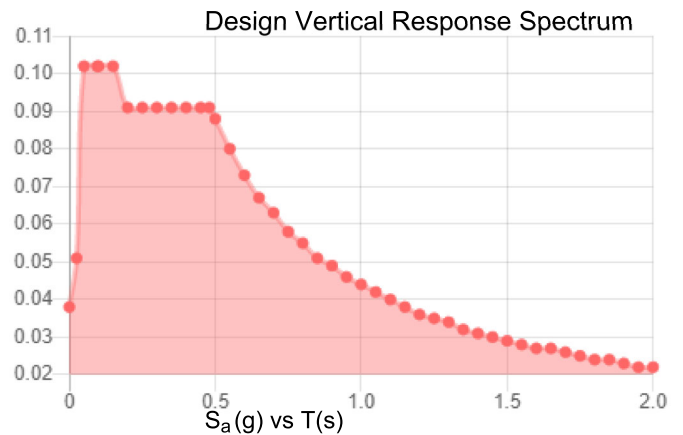
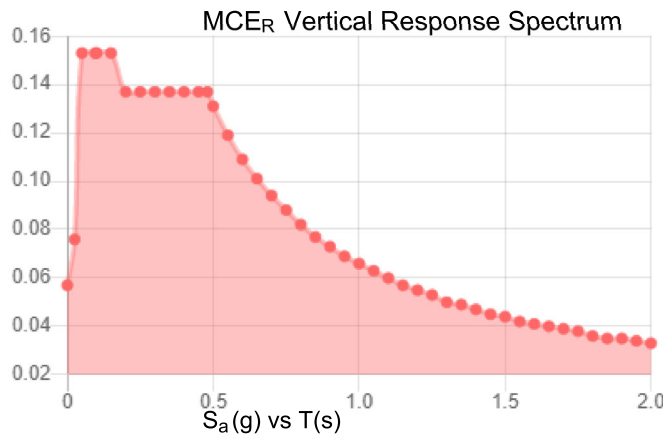
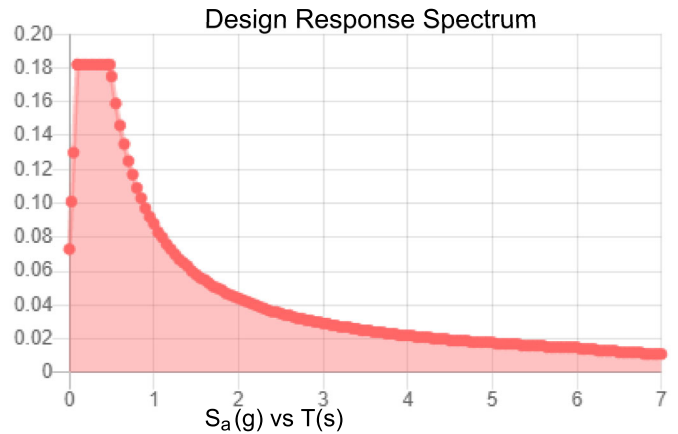
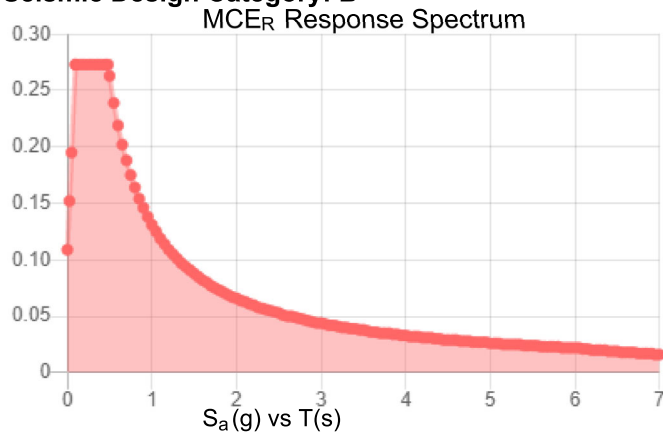
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class:

Results:

S_S :	0.171	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.089
F_v :	2.4	PGA _M :	0.143
S_{MS} :	0.273	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.182	C_v :	0.7

Seismic Design Category: B



Data Accessed:

Thu Dec 08 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 5 F
Gust Speed 50 mph

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

Date Accessed: Thu Dec 08 2022

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

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

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FOX HILL TELECOM

Radio Frequency Emissions Analysis Report



Site ID: CTHA067A

Enfield
55 Bright Meadow Blvd
Enfield, CT 06082

December 3, 2022

Fox Hill Telecom Project Number: 222022

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	4.24 %



December 3, 2022

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

Emissions Analysis for Site: **CTHA067A – Enfield**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed upgrades to the T-MOBILE facility located at **55 Bright Meadow Blvd, Enfield, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **55 Bright Meadow Blvd, Enfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4 \text{ ERP}}{R^2}$$

S = Power Density

ERP = Effective Radiated Power from antenna

R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.



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

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

Table 1: Channel Data Table



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The following T-Mobile antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	147
A	2	Commscope VV-65B-R1	147
A	3	Ericsson AIR6419 B41	147
B	1	RFS APXVAALL24_43-U-NA20	147
B	2	Commscope VV-65B-R1	147
B	3	Ericsson AIR6419 B41	147
C	1	RFS APXVAALL24_43-U-NA20	147
C	2	Commscope VV-65B-R1	147
C	3	Ericsson AIR6419 B41	147

Table 2: Antenna Data

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



RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.12
Antenna A2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	0.28
Antenna A3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	0.41
Sector A Composite MPE%							0.81
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.12
Antenna B2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	0.28
Antenna B3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	0.41
Sector B Composite MPE%							0.81
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.12
Antenna C2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	0.28
Antenna C3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	0.41
Sector C Composite MPE%							0.81

Table 3: T-MOBILE Emissions Levels



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

Site Composite MPE%	
Carrier	MPE%
T-MOBILE – Max Per Sector Value	0.81 %
Dish	1.59 %
AT&T	0.93 %
Verizon Wireless	0.84 %
XM Satellite Radio	0.07 %
Site Total MPE %:	4.24 %

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	0.81 %
T-MOBILE Sector B Total:	0.81 %
T-MOBILE Sector C Total:	0.81 %
Site Total:	4.24 %

Table 5: Site MPE Summary



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Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three T-Mobile sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	147	0.34	600 MHz	400	0.08%
T-Mobile 700 MHz LTE	2	485.32	147	0.18	700 MHz	467	0.04%
T-Mobile 1900 MHz (PCS) LTE	4	1,807.42	147	1.31	1900 MHz (PCS)	1000	0.13%
T-Mobile 1900 MHz (PCS) GSM	1	677.78	147	0.12	1900 MHz (PCS)	1000	0.01%
T-Mobile 2100 MHz (AWS) LTE	4	1,936.69	147	1.40	2100 MHz (AWS)	1000	0.14%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	147	4.09	2500 MHz (BRS)	1000	0.41%
						Total:	0.81 %

Table 6: T-MOBILE Maximum Sector MPE Power Values



Summary

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

The anticipated maximum composite contributions from the T-MOBILE facility as well as the site composite emissions estimates 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:	0.81 %
Sector B:	0.81 %
Sector C:	0.81 %
T-MOBILE Maximum Total (per sector):	0.81 %
Site Total:	4.24 %
Site Compliance Status:	COMPLIANT

The estimated composite MPE value for this site assuming all carriers present is **4.24 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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 estimated values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998



T-MOBILE SITE NUMBER:CTHA067A

T-MOBILE SITE NAME: CTHA067A

SITE TYPE: MONOPOLE

TOWER HEIGHT: 147'-6"

T-MOBILE ANCHOR SITE CONFIGURATION: 67E5D998E 6160

BUSINESS UNIT #:876348

SITE ADDRESS: BRIGHT MEADOW BLVD.

ENFIELD, CT 06082

COUNTY:

HARTFORD

JURISDICTION:

CONNECTICUT

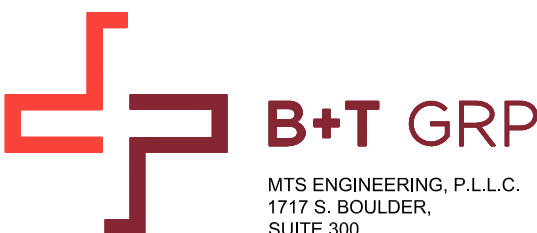
SITING COUNCIL



4 SYLVAN WAY
PARSIPPANY, NJ 07054



3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277



MTS ENGINEERING, P.L.L.C.
1717 S. BOULDER,
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
btwo@btgrp.com

T-MOBILE SITE NUMBER:
CTHA067A

BU #: 876348
ENFIELD

BRIGHT MEADOW BLVD.
ENFIELD, CT 06082

EXISTING
147'-6" MONOPOLE

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	ENFIELD
SITE ADDRESS:	BRIGHT MEADOW BLVD. ENFIELD, CT 06082
COUNTY:	HARTFORD
MAP/PARCEL #:	48700010005
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	42.020808°
LONGITUDE:	-72.585164°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	105 FT
CURRENT ZONING:	BR
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	CONN LIGHT + POWER COMPANY PO BOX 270 HARTFORD, CT 06140-0270
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	NORTHEAST UTILITIES 800-286-2000
TELCO PROVIDER:	LIGHTTOWER 855-91-FIBER

DRAWING INDEX

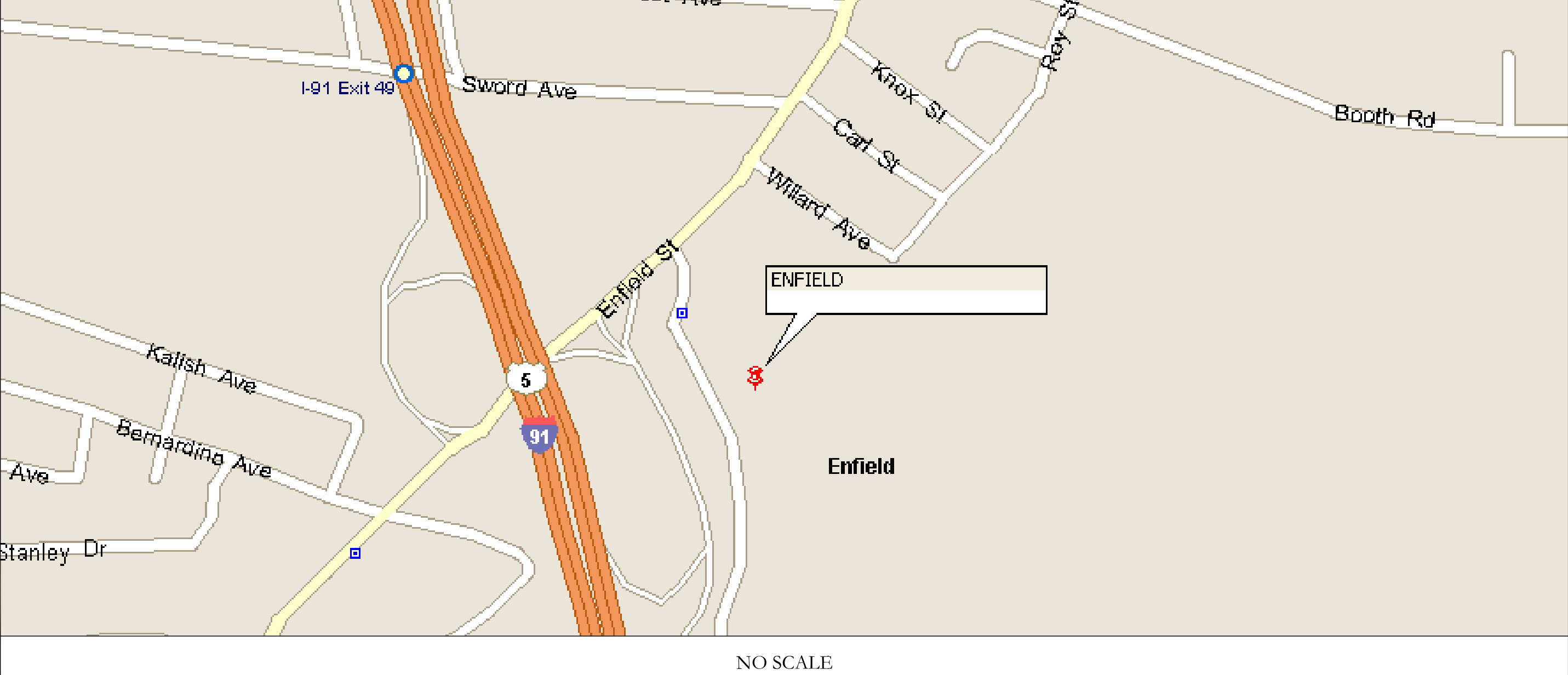
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & EXISTING ANTENNA PLANS
C-2.1	FINAL ANTENNA PLAN
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
C-6	DESIGN DETAILS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

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

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.	
TOWER SCOPE OF WORK: • REMOVE (9) ANTENNAS • REMOVE (3) TMAs • REMOVE (3) RRHs • REMOVE (6) ANTENNAS • REMOVE (9) RRHs • REMOVE (6) 1-5/8" COAX CABLES • REMOVE (3) 1-1/4" COAX CABLES • REMOVE (2) 1-3/8" HYBRID CABLE • REMOVE (2) 1-5/8" HYBRID CABLE	• REMOVE (1) 3/4" DC CABLE • INSTALL MOUNT • MODIFICATIONS PER MOUNT ANALYSIS BY MTS ENGINEERING, P.L.L.C. DATED AUGUST 23, 2022 • INSTALL (9) ANTENNAS • INSTALL (6) RRHs • INSTALL (3) 1-5/8" HYBRID TRUNK 6/24 4AWG
GROUND SCOPE OF WORK: • REMOVE (1) DUW30, (1) DUG 20 • REMOVE (6) RU22 • REMOVE (1) PTS 8003 CABINET • REMOVE (1) PPC • REMOVE (1) 6131 CABINET • REMOVE (1) AAV CABINET • REMOVE EXISTING ICE BRIDGE • RELOCATE (2) BB6630 • INSTALL CONCRETE PAD EXPANSION • INSTALL (1) ENCLOSURE 6160 AC V1 • INSTALL (1) B160 (BATTERY) CABINET • INSTALL (1) RP 6651 • INSTALL (1) CSR IXRE V2 (GEN2) • INSTALL (1) AAV CABINET • INSTALL (1) 200AMP PPC • INSTALL 15'-0" +/- ICE BRIDGE • INSTALL 5' UNISTRUT ON EXISTING H-FRAME	
NOTE: PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.	

LOCATION MAP



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	2022 CONNECTICUT SBC/2021 IBC
MECHANICAL	2022 CONNECTICUT SBC/2021 IMC
ELECTRICAL	2022 CONNECTICUT SBC/2020 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	MORRISON HERSHFIELD
DATED:	12/08/22
MOUNT ANALYSIS:	MTS ENGINEERING, P.L.L.C.
DATED:	12/12/22
RFDS REVISION:	FINAL
DATED:	11/15/22
ORDER ID:	629447
REVISION:	0

APPROVALS

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

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



MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

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

SHEET NUMBER:

T-1

REVISION:

5

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-OF-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 GROUNDDED 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 ANTIOXIDANT 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 TO 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 SCREW FITTINGS SHALL NOT BE USED ON RIGID METAL TUBING.
- 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 (WIEMOLD SPECIMATE 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
	A PHASE	BLACK
120/240V, 1Ø	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
	A PHASE	BLACK
120/208V, 3Ø	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
DC VOLTAGE	GROUND	GREEN
	POS (+)	RED**
	NEG (-)	BLACK**

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

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
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

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4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN
CASTLE

3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP

MTS ENGINEERING, P.L.L.C.
1717 S. BOULDER,
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TULSA, OK 74119
PH: (918) 587-4838
btwo@btgrp.com

T-MOBILE SITE NUMBER:
CTHA067A

BU #: 876348
ENFIELD

BRIGHT MEADOW BLVD.
ENFIELD, CT 06082

EXISTING
147'-6" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	11/8/22	YX	CONSTRUCTION	MTJ
2	11/10/22	MTJ	CONSTRUCTION	LR
3	11/11/22	LR	CONSTRUCTION	LR
4	12/16/22	YX	CONSTRUCTION	MTJ
5	12/22/22	MTJ	CONSTRUCTION	MTJ



MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

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SHEET NUMBER:

T-2

REVISION:

5

1:49364.006,01.0001_ENFIELD-11.11.2002.dwg -- Sheet: C-1.1 -- User: mjonas -- Dec. 22, 2022 -- 9:08am



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.

4 SYLVAN WAY
PARSIPPANY, NJ 07054

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CHARLOTTE, NC 28277

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T-MOBILE SITE NUMBER:
CTHA067A

BU #: **876348**
ENFIELD

BRIGHT MEADOW BLVD.
ENFIELD, CT 06082

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Expires 3/31/23

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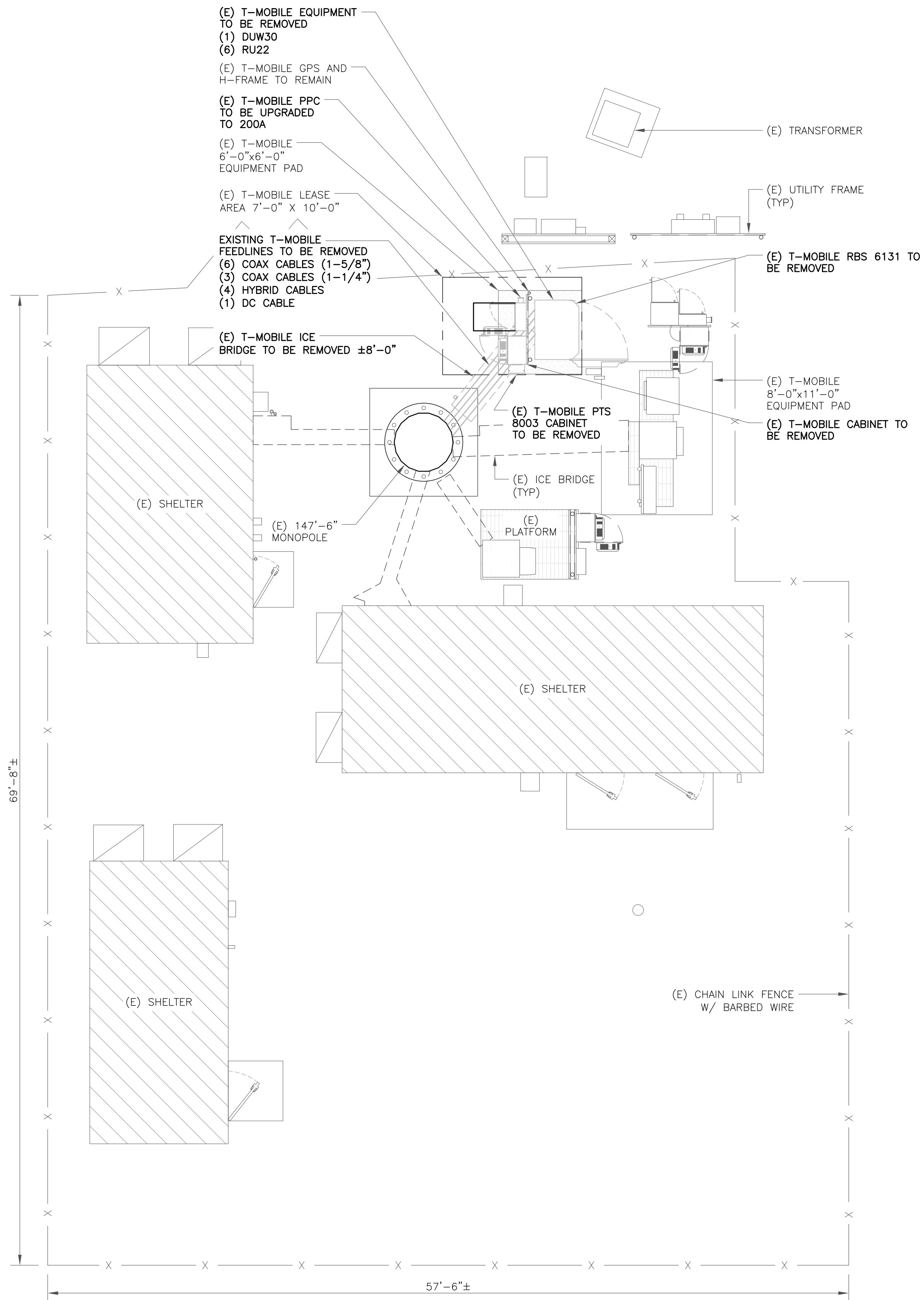
SHEET NUMBER:
C-1.1

REVISION:
5

1 OVERALL SITE PLAN

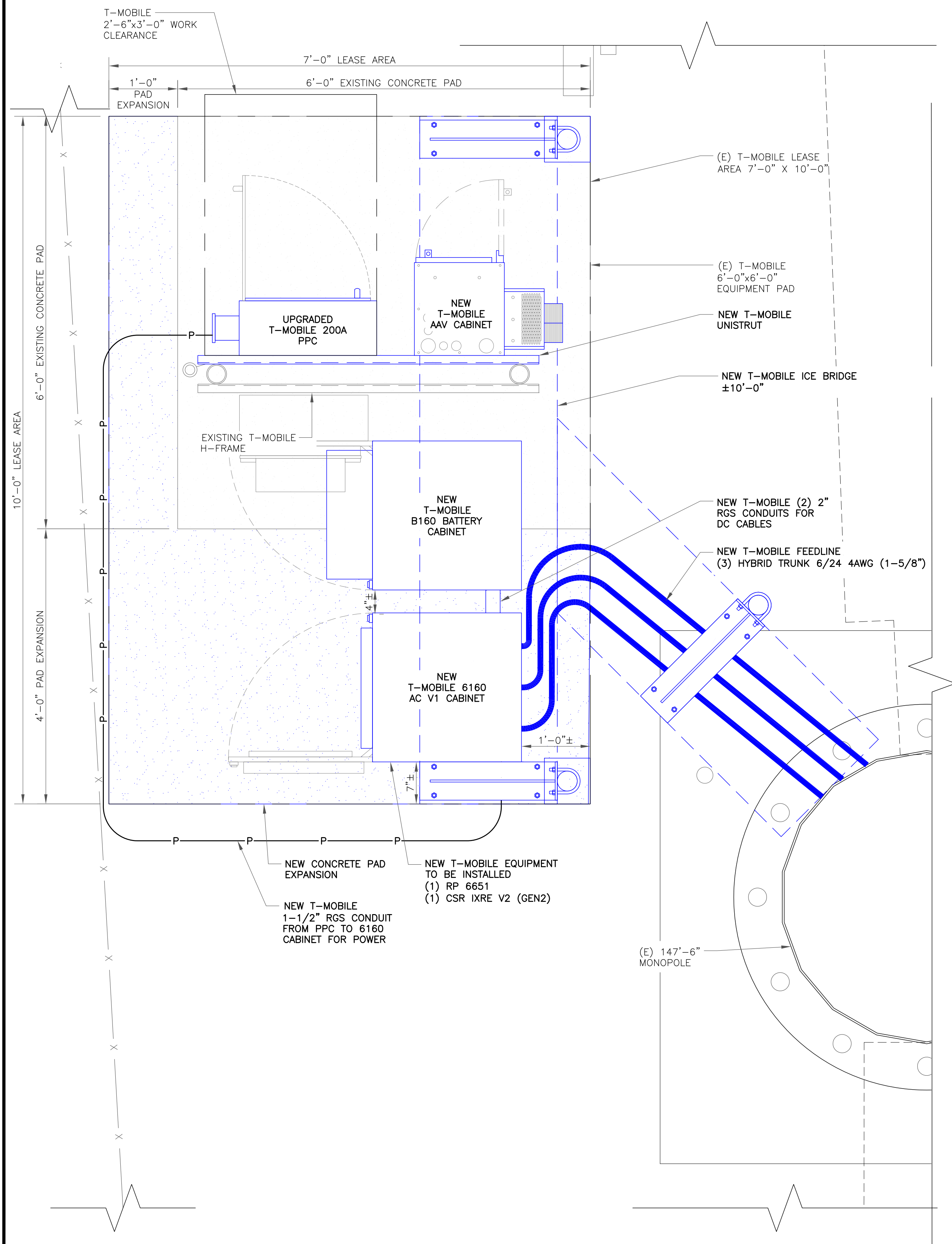
SCALE: 1" = 60'-0" (FULL SIZE)
1" = 120'-0" (11x17)

149864.006.01.0001_ENFIELD-11.11.2002.dwg -- Sheet C-1.2 -- User: mjones -- Dec. 22, 2022 -- 9:08am



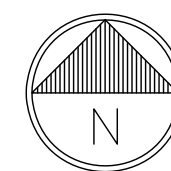
1 SITE PLAN

SCALE: 3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)



2 ENLARGED SITE PLAN

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



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5	12/22/22	MTJ	CONSTRUCTION	MTJ



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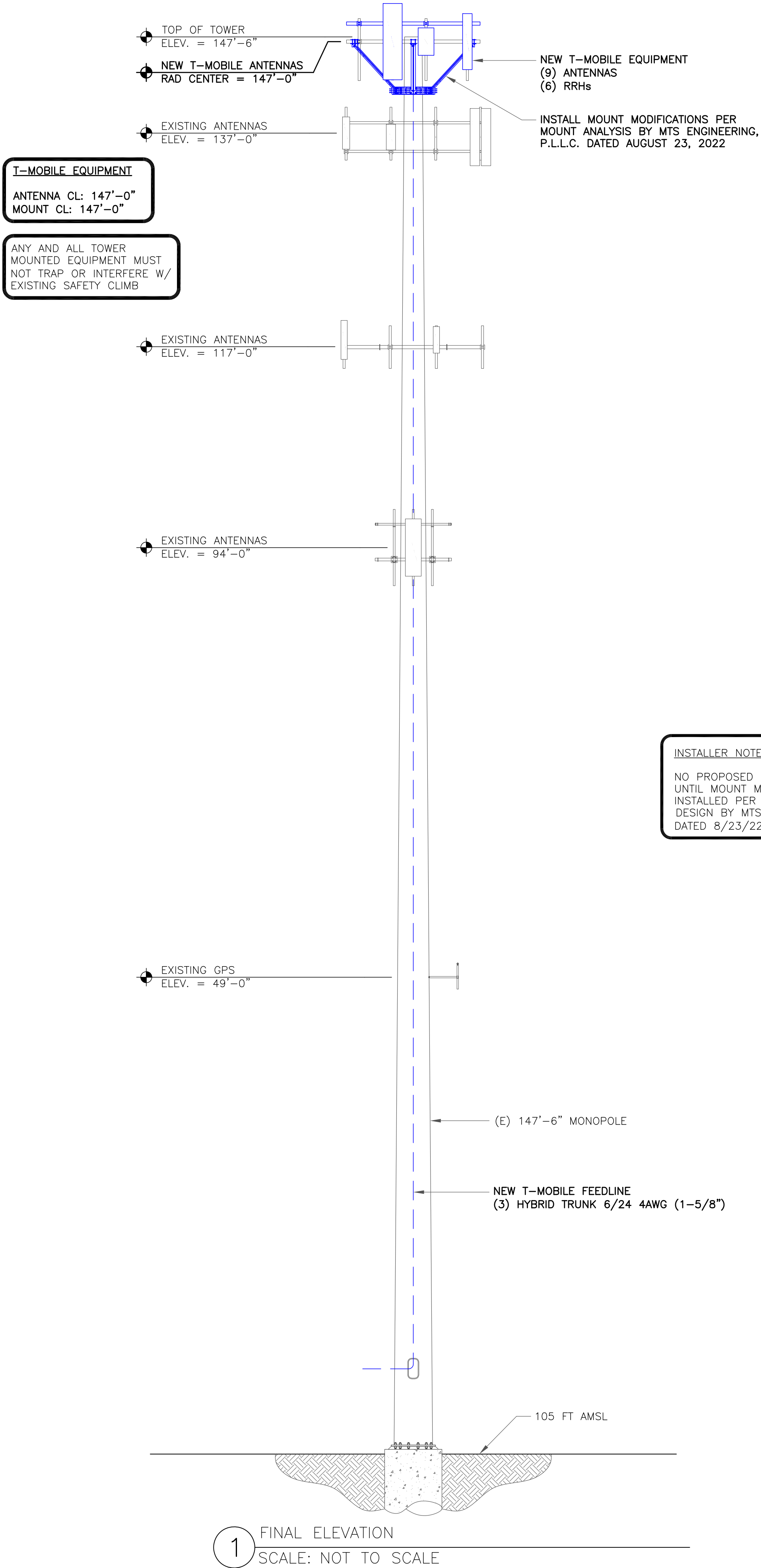
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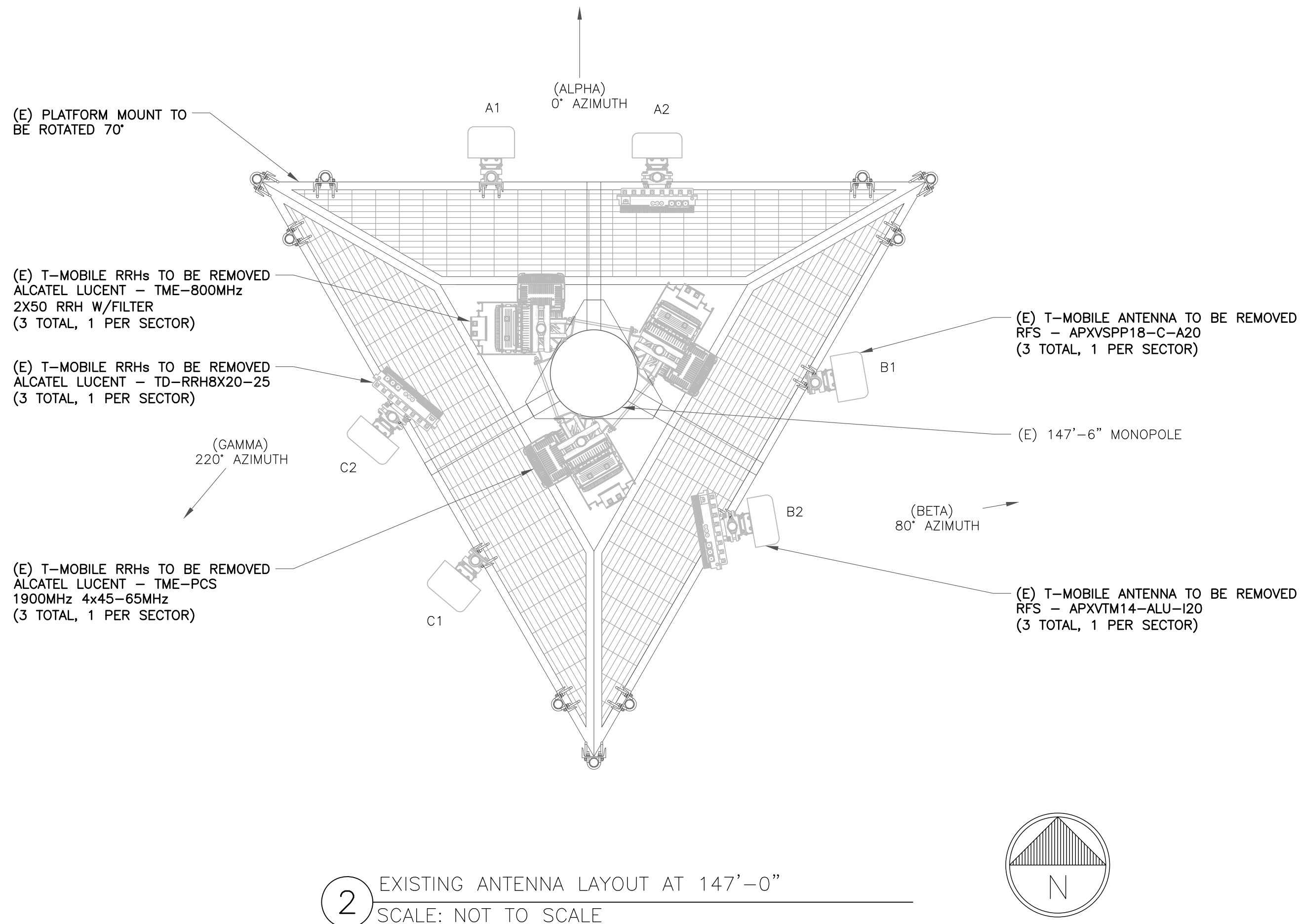
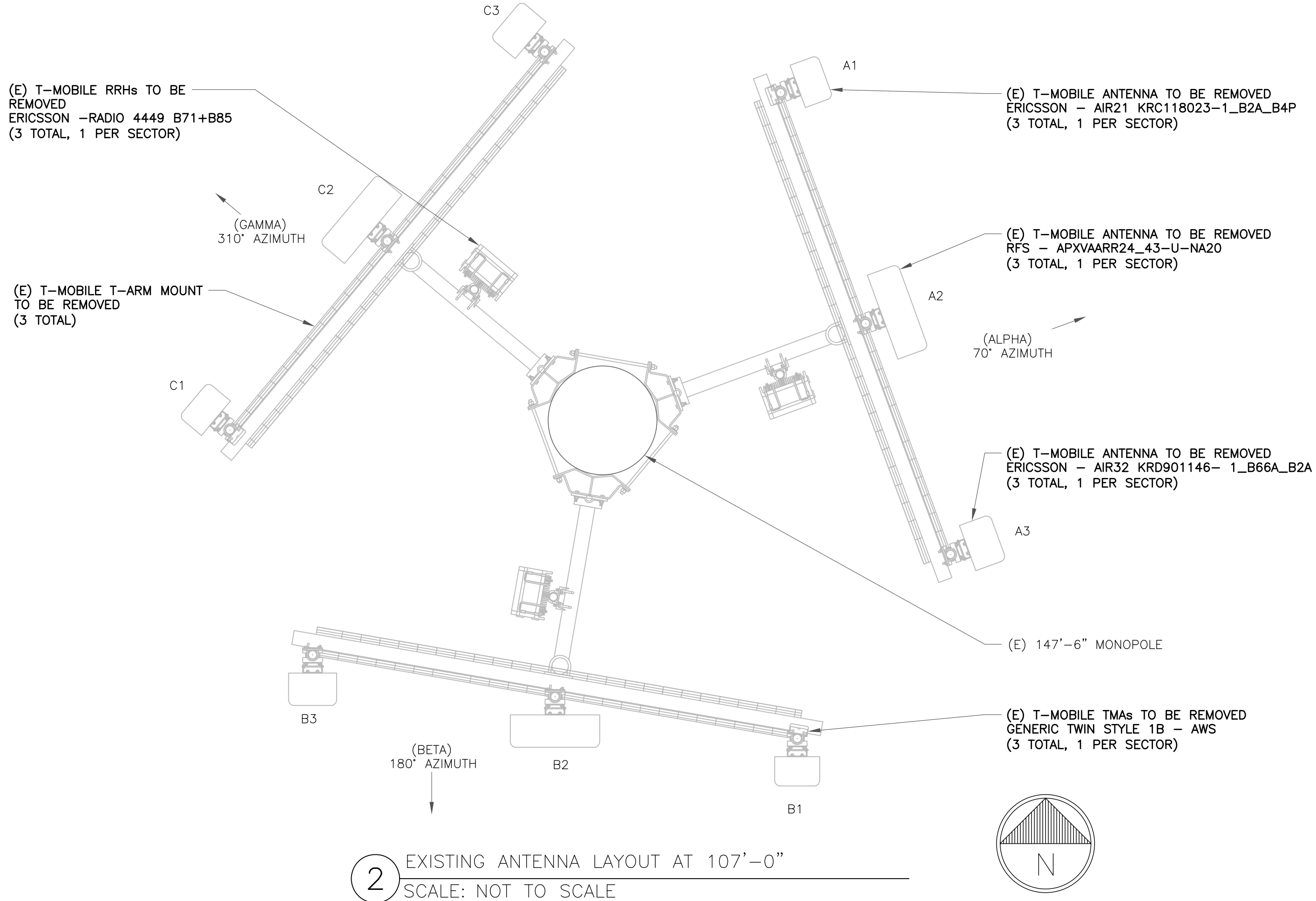
C-1.2

REVISION:

5



INSTALLER NOTE:
NO PROPOSED LOADING TO BE ADDED
UNTIL MOUNT MODIFICATIONS ARE
INSTALLED PER MOUNT MODIFICATION
DESIGN BY MTS ENGINEERING, P.L.L.C.
DATED 8/23/22.



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ENFIELD, CT 06082

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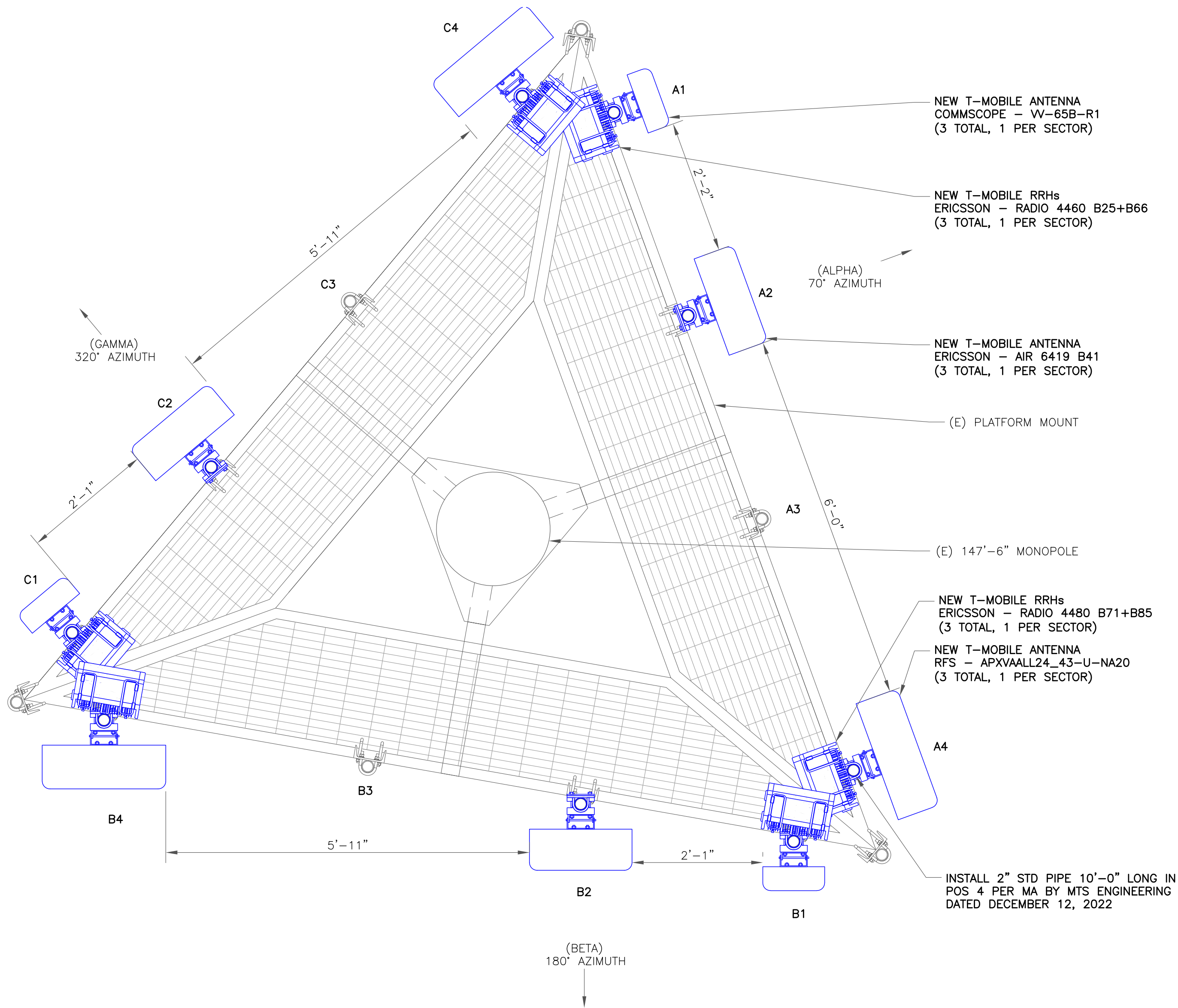
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REVISION:

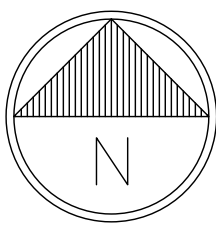
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INSTALLED PER MOUNT MODIFICATION
DESIGN BY MTS ENGINEERING, P.LLC.
DATED 8/23/22.



1 FINAL ANTENNA LAYOUT AT 147'-0"
SCALE: NOT TO SCALE



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T-MOBILE SITE NUMBER:
CTHA067A

BU #: **876348**
ENFIELD

BRIGHT MEADOW BLVD.
ENFIELD, CT 06082

EXISTING
147'-6" MONOPOLE

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5	12/22/22	MTJ	CONSTRUCTION	MTJ



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SHEET NUMBER:

C-2.1

REVISION:

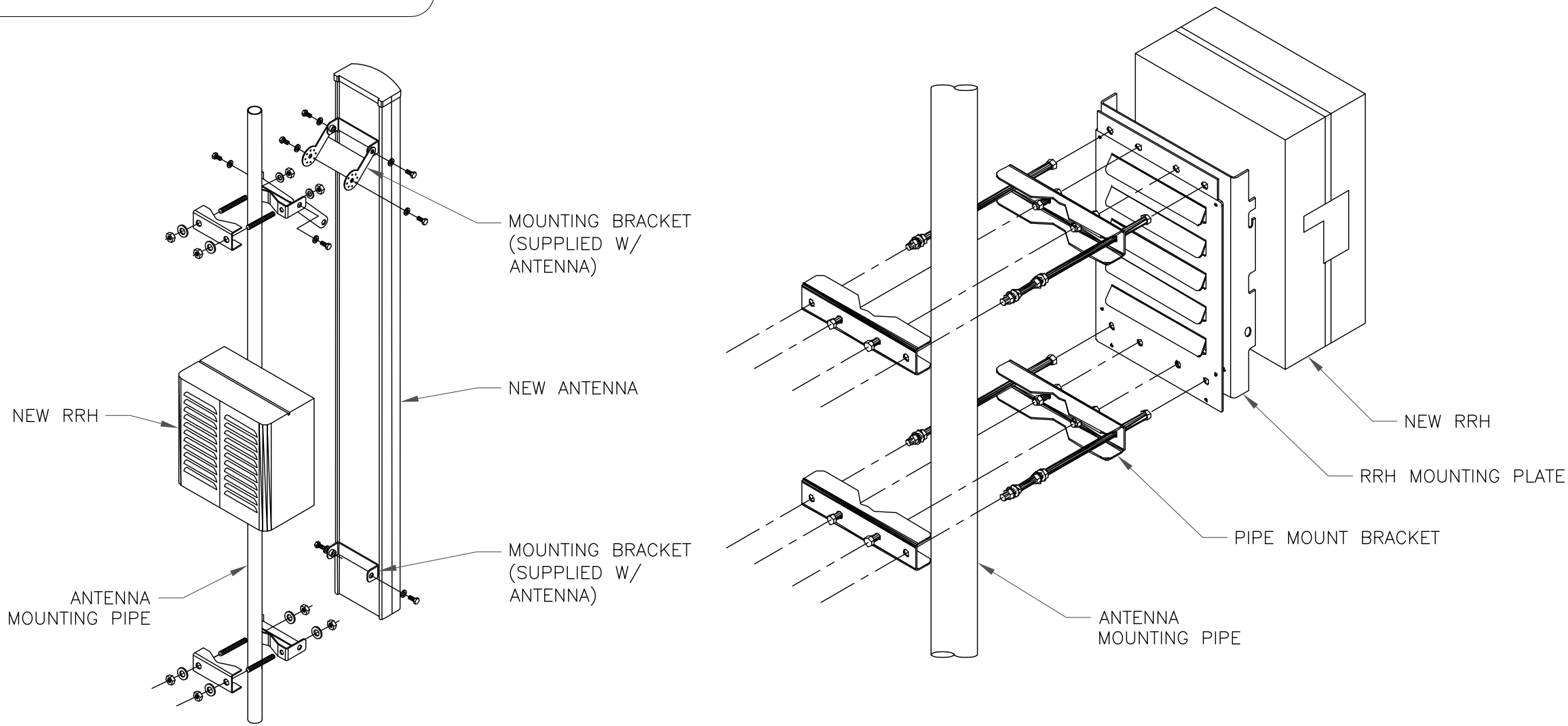
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149864.006.01.0001_ENFIELD-11.11.2002.dwg -- Sheet: C-3 -- User: m.jones -- Dec. 22, 2022 -- 9:08am

RF SYSTEM SCHEDULE										
SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	G1900/L2100/L1900	COMMSCOPE	VV-65B-R1	70°	0°	2° / 2°	147'-0"	(1) RADIO 4460 B25+B66	(1) 1 5/8" HYBRID 60m
	A2	L2500/N2500	ERICSSON	AIR 6419 B41	70°	0°	-	147'-0"	-	-
	A3	-	-	-	-	-	-	-	-	-
	A4	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	70°	0°	2° / 2°	147'-0"	(1) RADIO 4480 B71+B85	-
BETA	B1	G1900/L2100/L1900	COMMSCOPE	VV-65B-R1	180°	0°	2° / 2°	147'-0"	(1) RADIO 4460 B25+B66	(1) 1 5/8" HYBRID 60m
	B2	L2500/N2500	ERICSSON	AIR 6419 B41	180°	0°	-	147'-0"	-	-
	B3	-	-	-	-	-	-	-	-	-
	B4	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	180°	0°	2° / 2°	147'-0"	(1) RADIO 4480 B71+B85	-
GAMMA	C1	G1900/L2100/L1900	COMMSCOPE	VV-65B-R1	320°	0°	2° / 2°	147'-0"	(1) RADIO 4460 B25+B66	(1) 1 5/8" HYBRID 60m
	C2	L2500/N2500	ERICSSON	AIR 6419 B41	320°	0°	-	147'-0"	-	-
	C3	-	-	-	-	-	-	-	-	-
	C4	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	320°	0°	2° / 2°	147'-0"	(1) RADIO 4480 B71+B85	-

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

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



2 ANTENNA WITH RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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CROWN CASTLE

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btwo@btgrp.com

T-MOBILE SITE NUMBER:
CTHA067A

BU #: 876348
ENFIELD

BRIGHT MEADOW BLVD.
ENFIELD, CT 06082

EXISTING
147'-6" MONOPOLE

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BER:2386985
Expires 3/31/23

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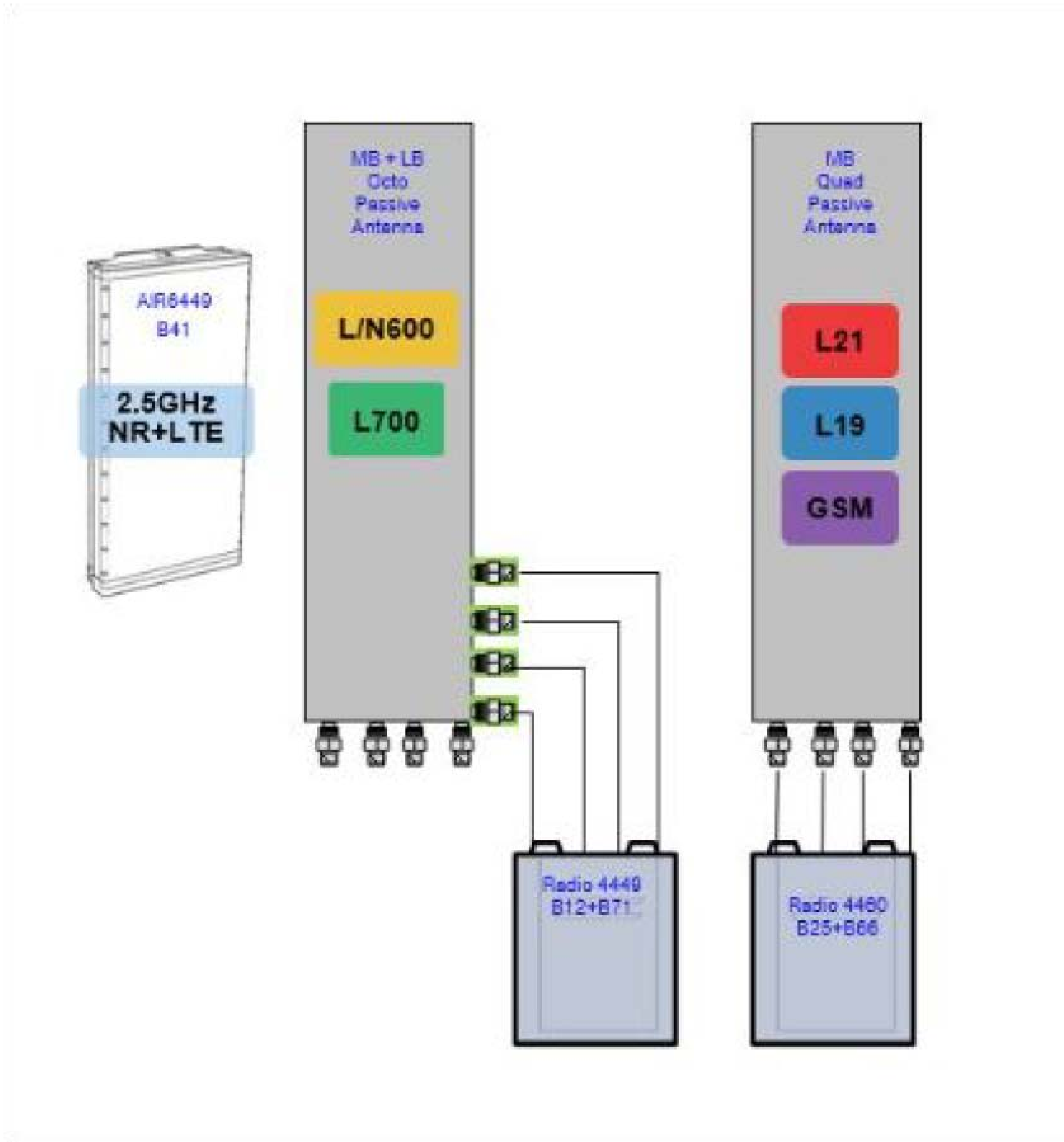
SHEET NUMBER:

C-3

REVISION:

5

149864.006.01.0001_ENFIELD-11.11.2002.dwg - SheetC-4 - User: m.jones - Dec 22, 2022 - 9:09am



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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5	12/22/22	MTJ	CONSTRUCTION	MTJ



MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

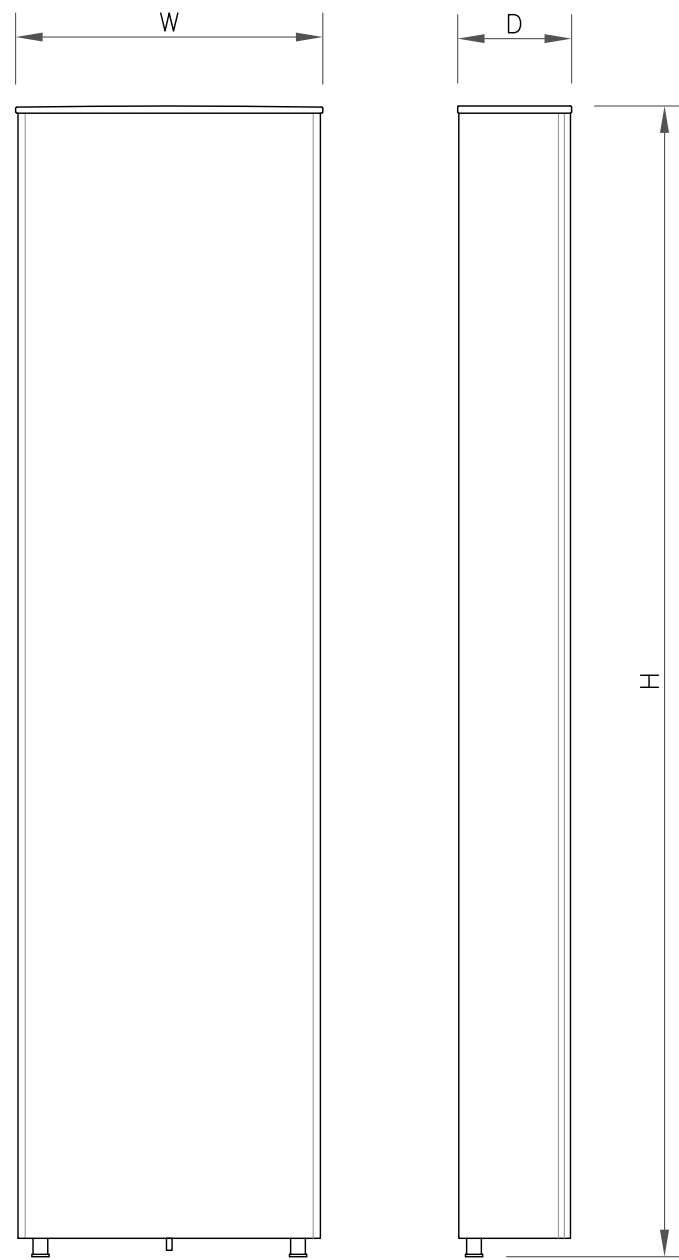
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SHEET NUMBER:

C-4

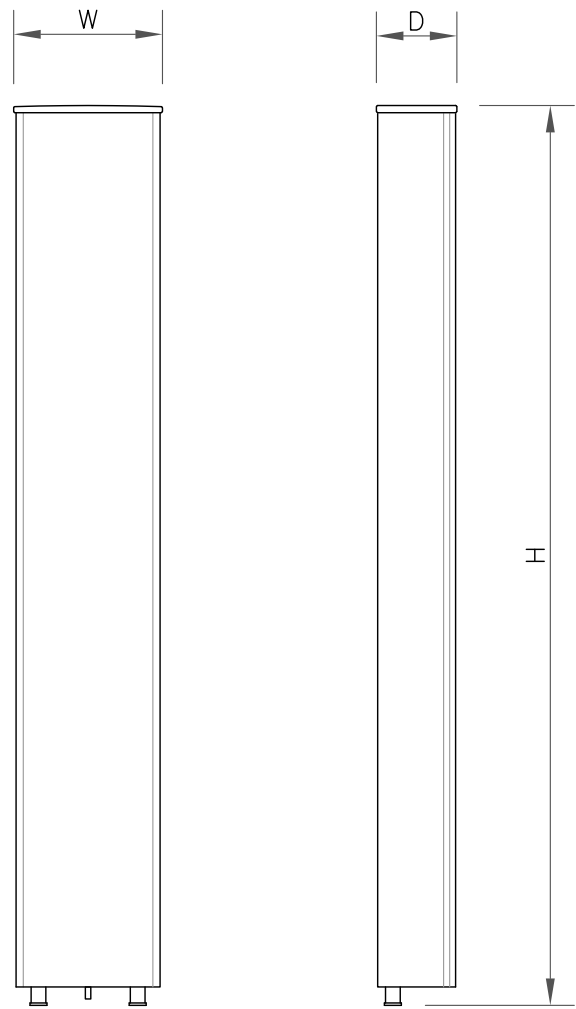
REVISION:

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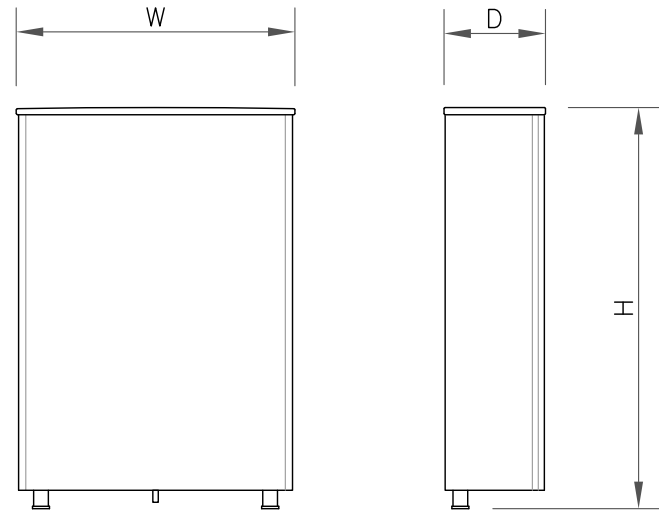
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24.0"
DEPTH	8.50"
HEIGHT	95.90"
WEIGHT	149.90 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



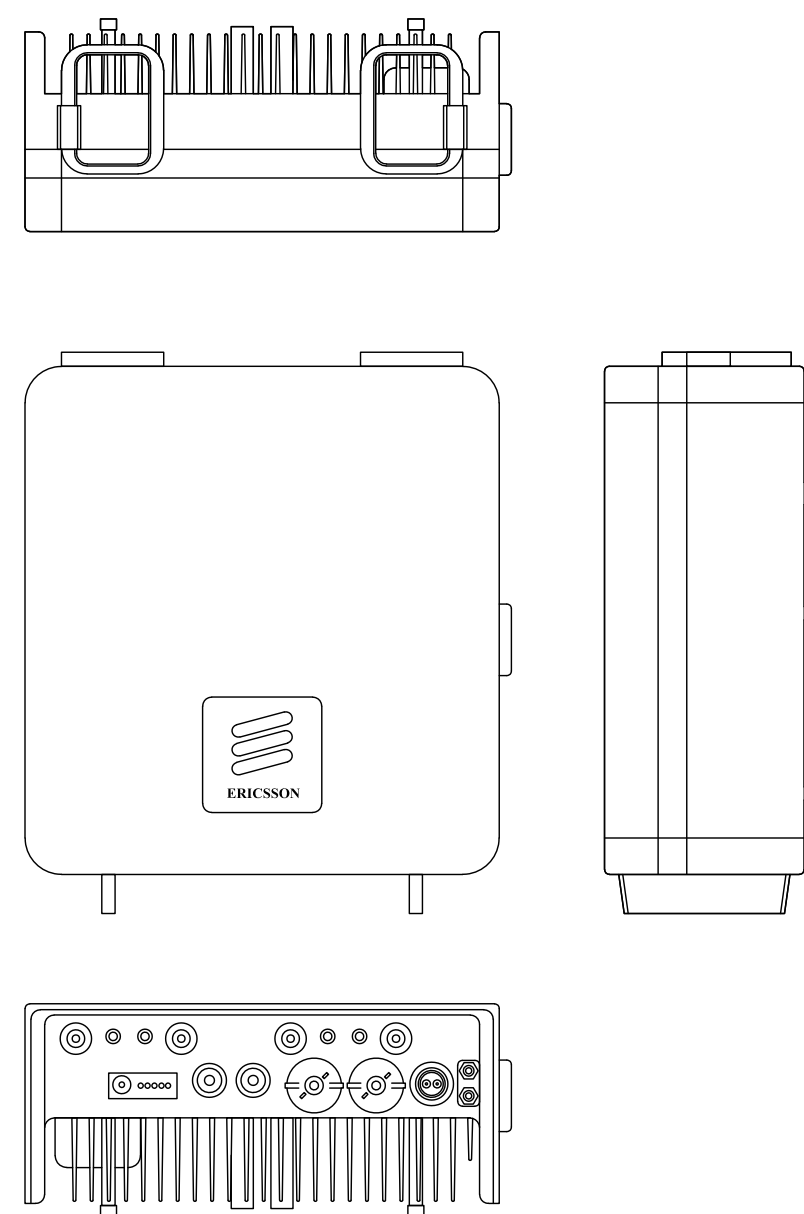
ANTENNA SPECS	
MANUFACTURER	COMMSCOPE
MODEL #	VV-65B-R1
WIDTH	12.01"
DEPTH	4.65"
HEIGHT	70.35"
WEIGHT	41.67 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



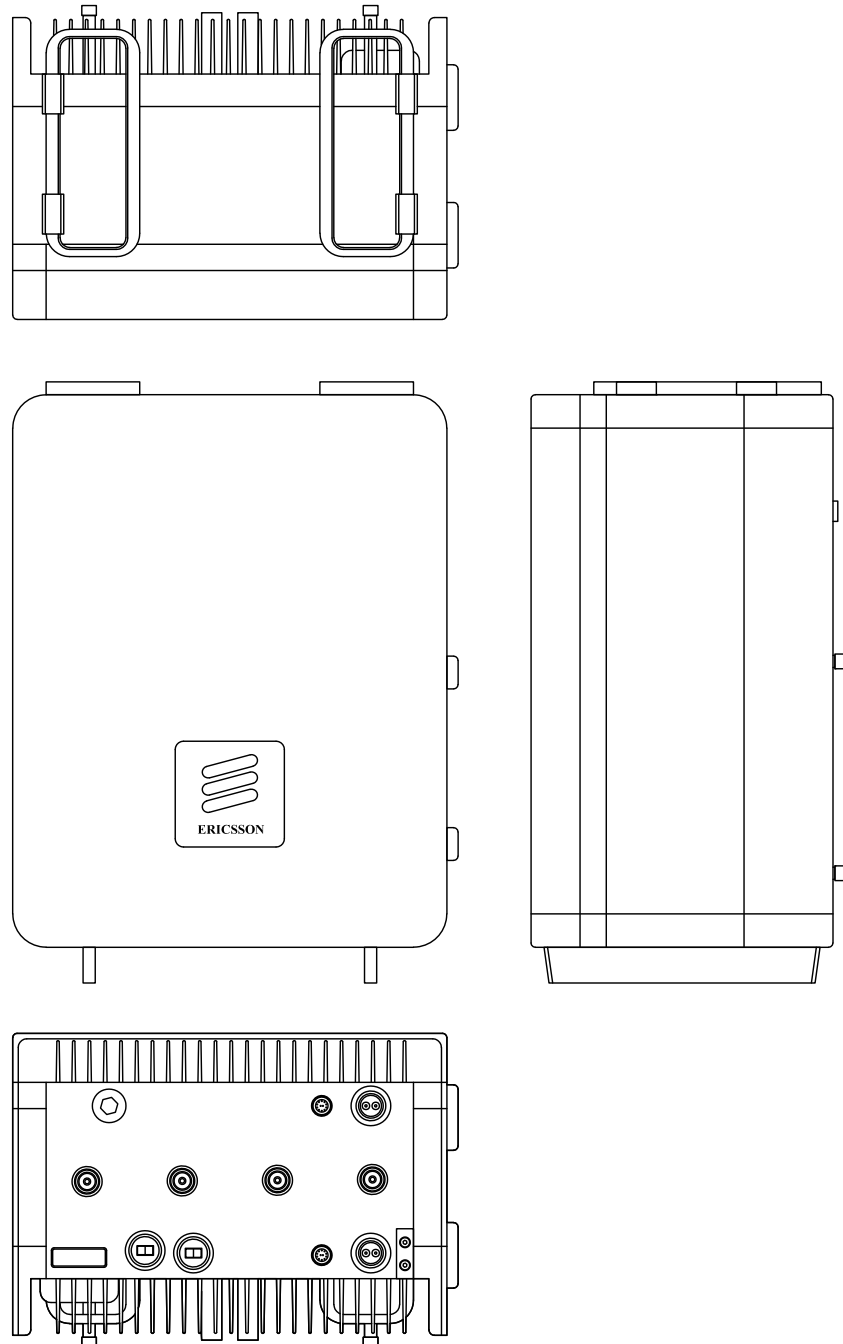
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR 6419 B41
WIDTH	19.92"
DEPTH	7.99"
HEIGHT	34.49"
WEIGHT	81.84 LBS

3 ANTENNA SPECS
SCALE: NOT TO SCALE



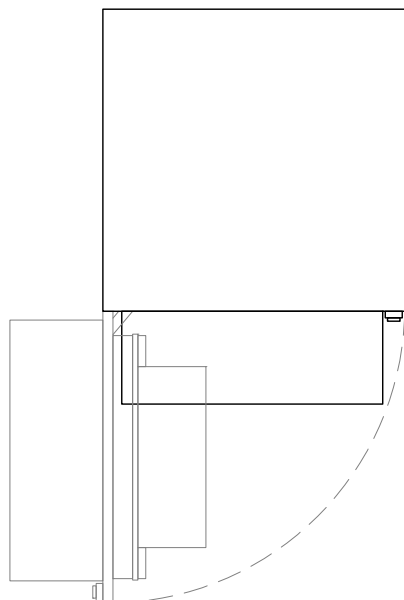
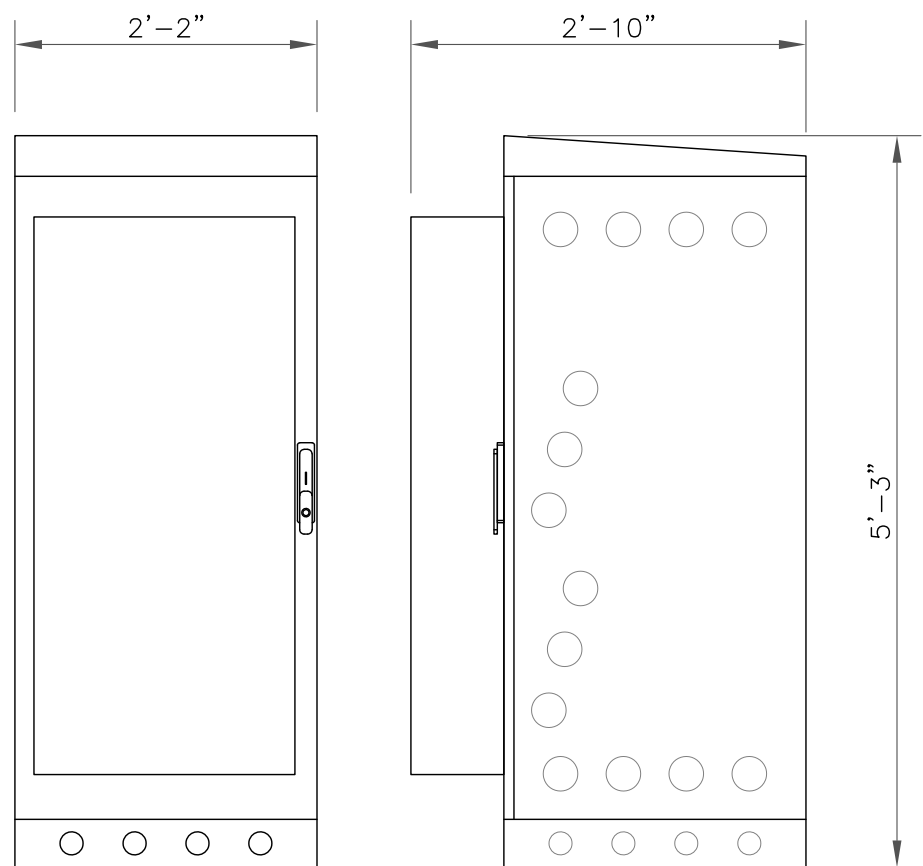
RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4480 B71+B85
WIDTH	15.70"
DEPTH	7.50"
HEIGHT	22.0"
WEIGHT	81.0 LBS

4 RRU SPECS
SCALE: NOT TO SCALE



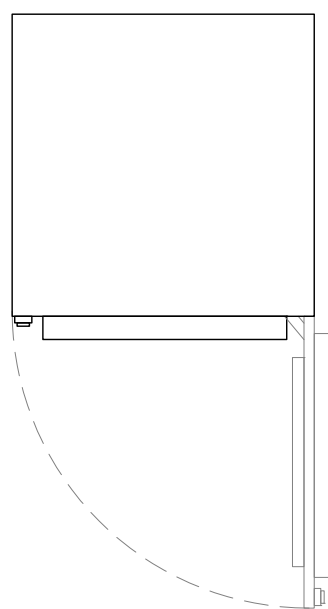
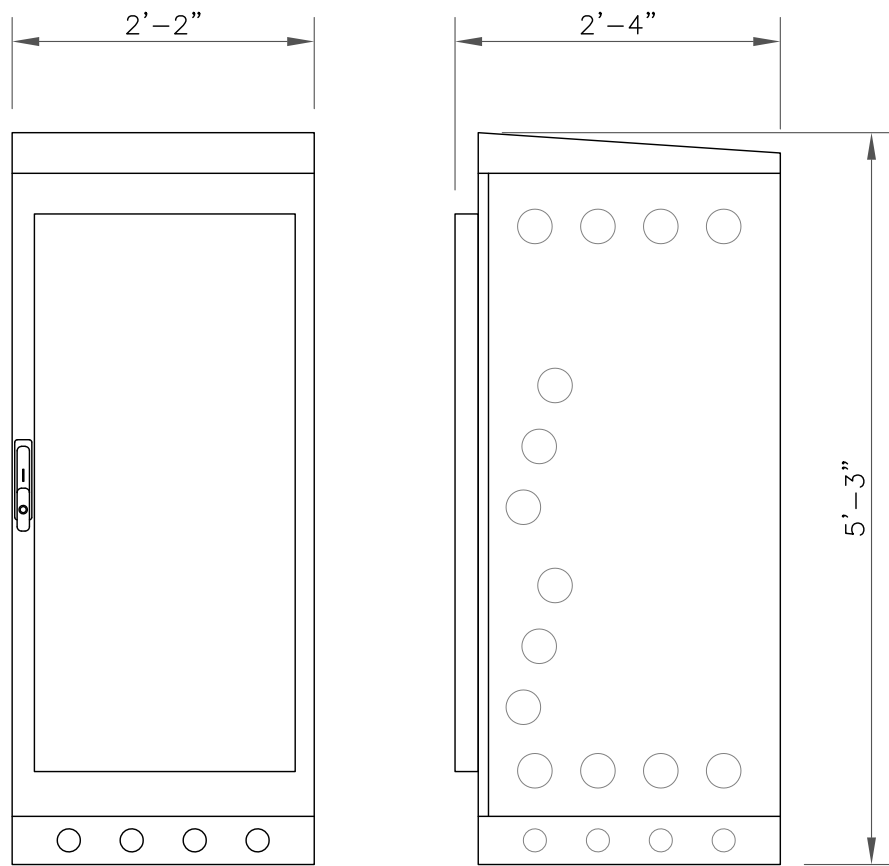
RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4460 B25+B66
WIDTH	15.10"
DEPTH	11.90"
HEIGHT	17.0"
WEIGHT	109.0 LBS

5 RRU SPECS
SCALE: NOT TO SCALE



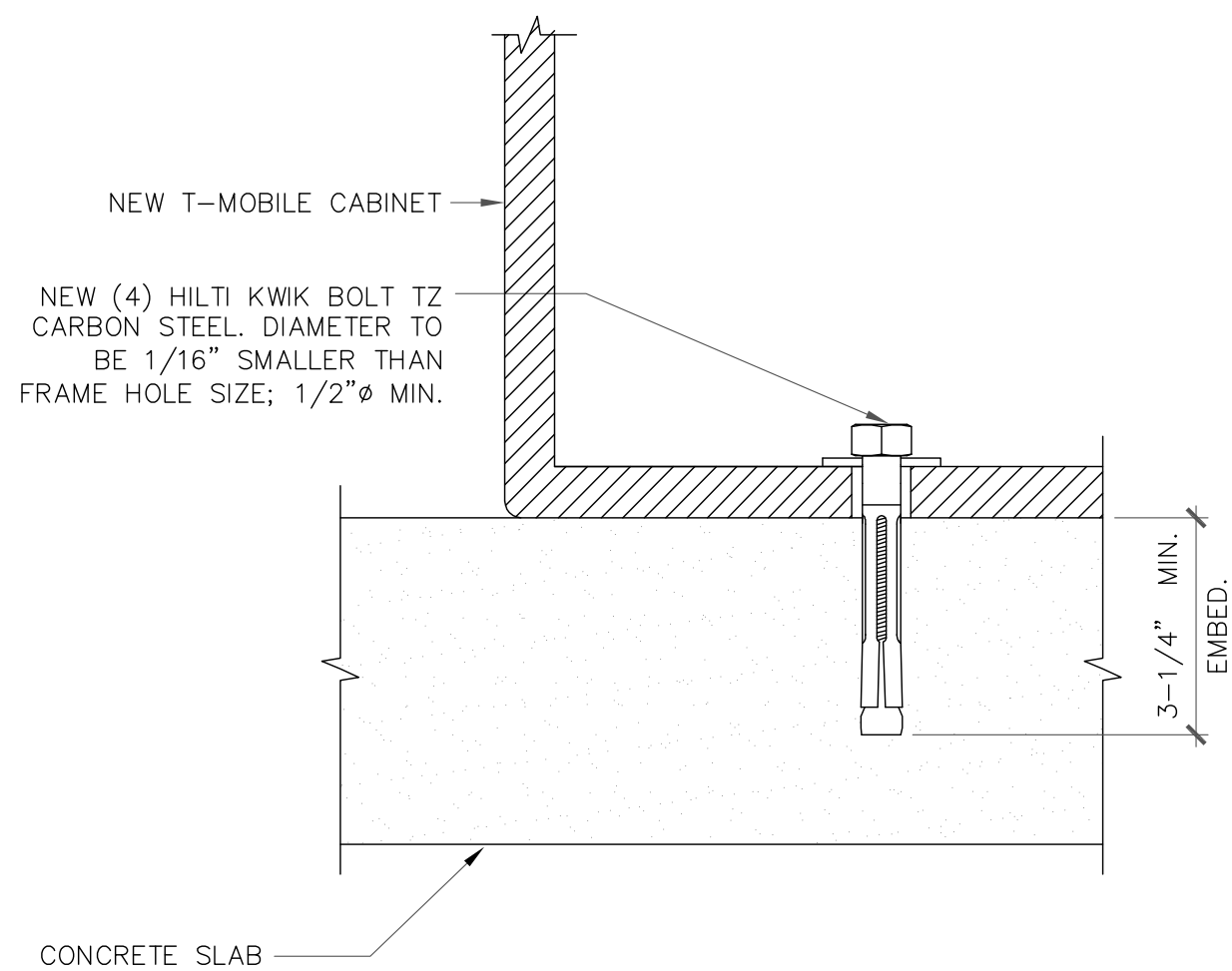
EQUIPMENT NOTES:	
HEIGHTxWIDTHxDEPTH:	63.0" x 26.0" x 34.0" (1600.0mm x 660.0mm x 864.0mm)
WEIGHT (EMPTY):	320 LBS (145 kg)
WEIGHT (FULLY LOADED):	1,500 LBS (681 kg)

6 ERICSSON - 6160
SCALE: NOT TO SCALE



EQUIPMENT NOTES:	
HEIGHTxWIDTHxDEPTH:	63.0" x 26.0" x 28.0" (1600.0mm x 660.0mm x 711.0mm)
WEIGHT (EMPTY):	295 LBS (134 kg)
WEIGHT (FULLY LOADED):	2,000 LBS (908 kg)

7 ERICSSON - B160
SCALE: NOT TO SCALE



8 CABINET ANCHOR DETAIL
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
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CROWN CASTLE
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B+T GRP
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TULSA, OK 74119
PH: (918) 587-4630
btwo@btgrp.com

T-MOBILE SITE NUMBER:
CTHA067A

BU #: **876348**
ENFIELD

BRIGHT MEADOW BLVD.
ENFIELD, CT 06082

EXISTING
147'-6" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
1	11/8/22	YX	CONSTRUCTION	MTJ
2	11/10/22	MTJ	CONSTRUCTION	LR
3	11/11/22	LR	CONSTRUCTION	LR
4	12/16/22	YX	CONSTRUCTION	MTJ
5	12/22/22	MTJ	CONSTRUCTION	MTJ



MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

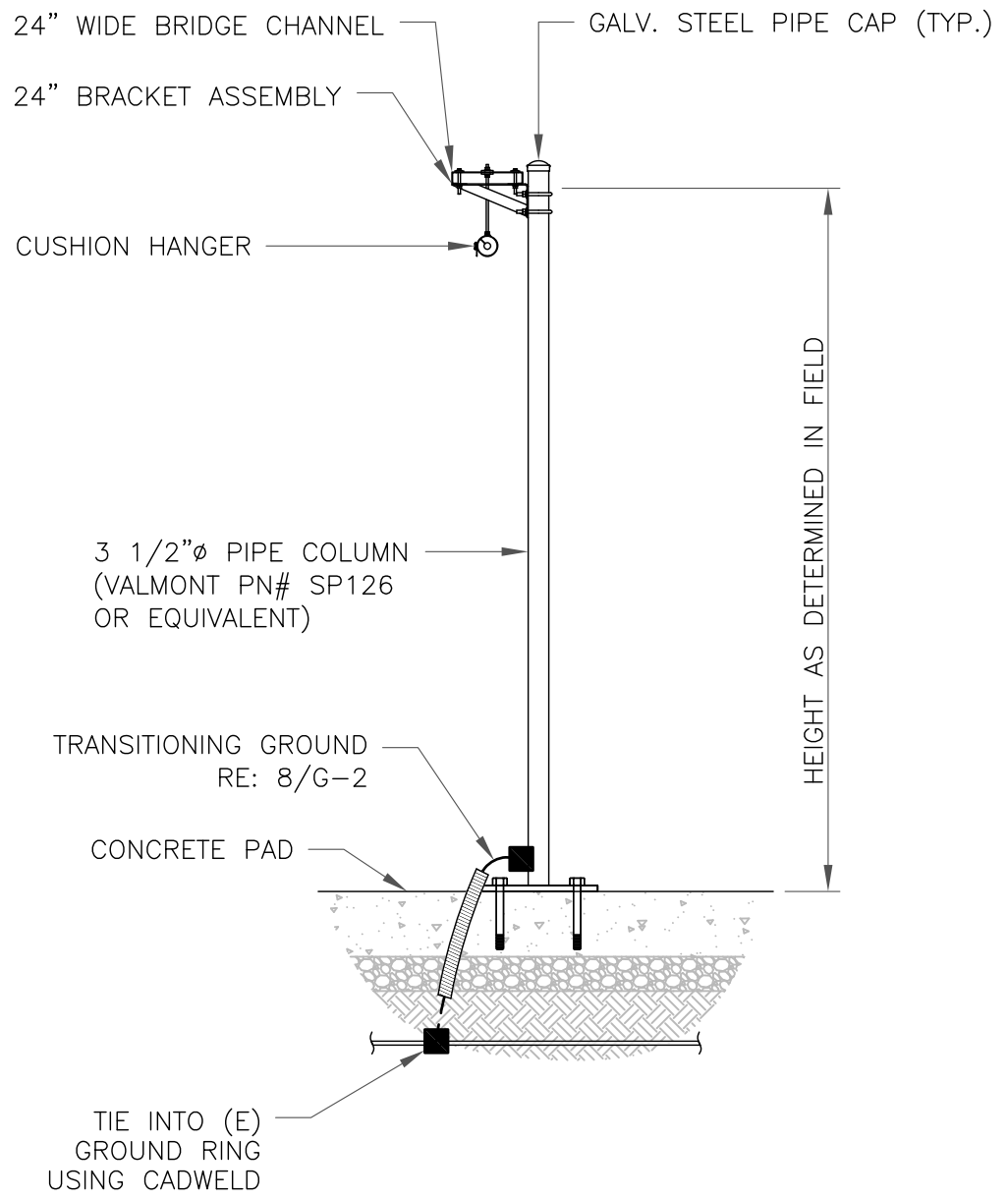
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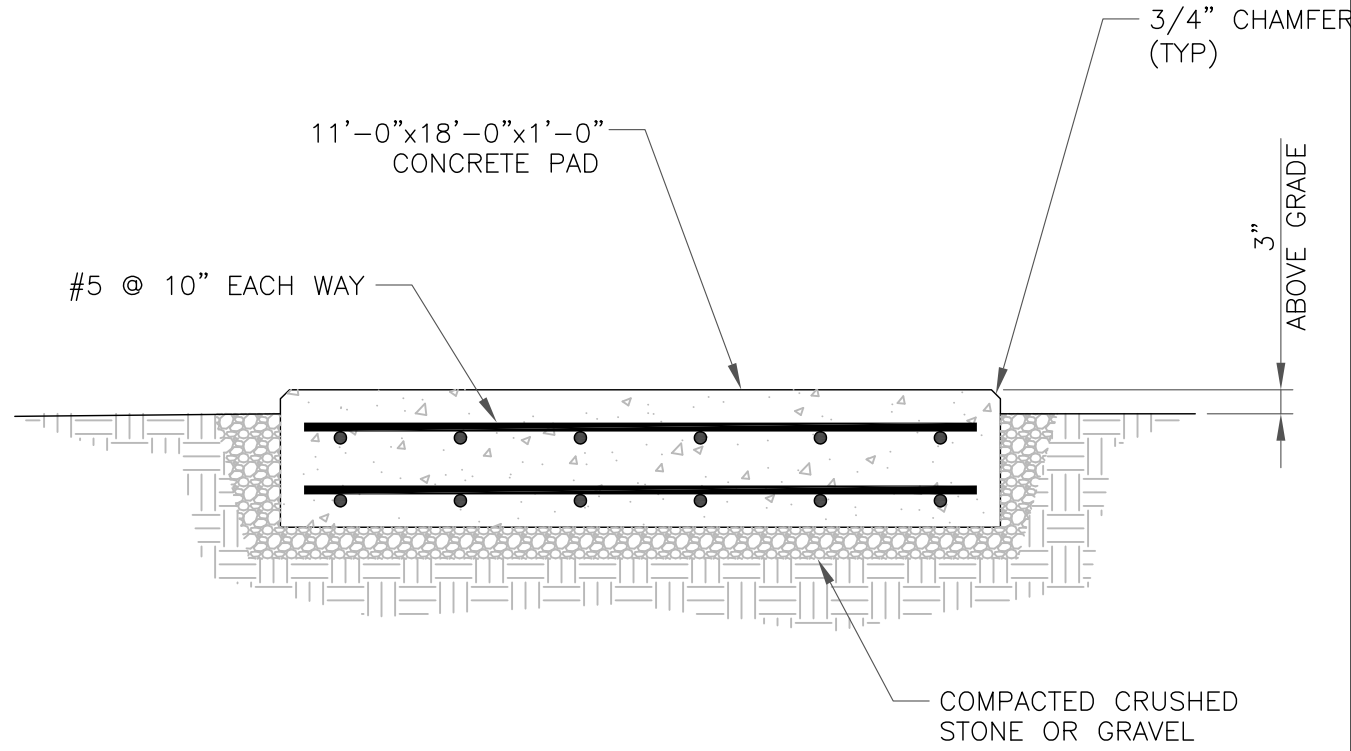
C-5

REVISION:

5



1 ICE BRIDGE DETAIL
SCALE: NOT TO SCALE



- NOTES:
- 1) FOR CONCRETE NOTES SEE T-2.
 - 2) GRAVEL SHALL BE NATURAL OR CRUSHED STONE WITH 100 PERCENT PASSING 1 INCH SIEVE.
 - 3) ALL REINFORCING TO MAINTAIN 3" COVER WHEN CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.

2 CAST IN PLACE CONCRETE PAD
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

7 NOT USED
SCALE: NOT TO SCALE

8 NOT USED
SCALE: NOT TO SCALE

T · · · Mobile · · ·

4 SYLVAN WAY
PARSIPPANY, NJ 07054

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CROWN
CASTLE

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12/22/22

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SHEET NUMBER:
C-6

REVISION:
5

1. PANEL SCHEDULE PENDING FIELD VERIFICATION.

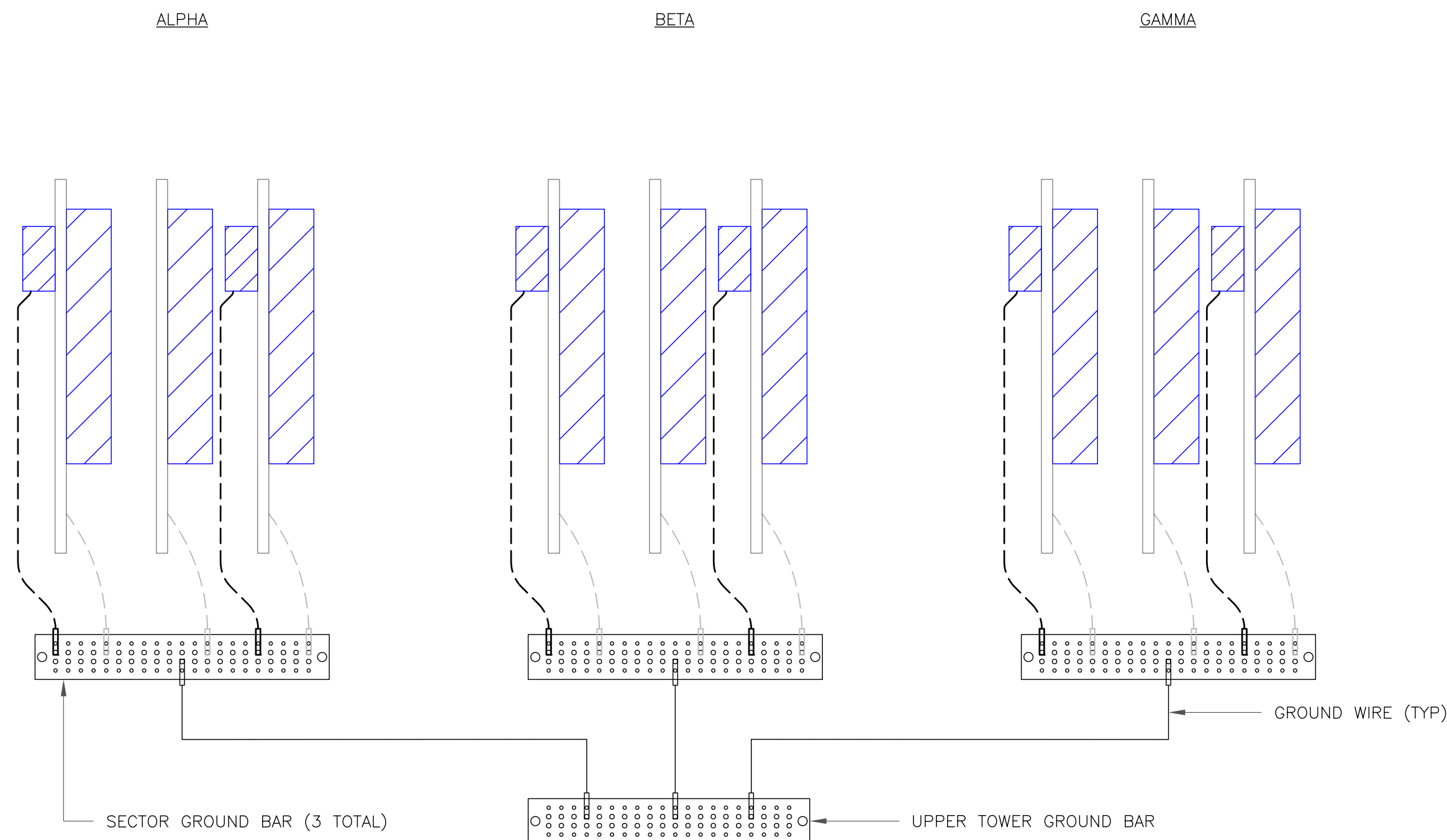
INSTALL NEW BREAKER IN POSITION 8 AND 9 WITH A NEW 2P 150A BREAKER
INSTALL NEW BREAKER IN POSITION 8 WITH A NEW 1P 20A BREAKER
IF 150A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

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



SHEET NUMBER: E-1	REVISION: 5
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149864.006.01.0001_ENFIELD-11.11.2002.dwg - Sheet:G-1 - User: m.jones - Dec 22, 2022 - 9:09am



NOTE:

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

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

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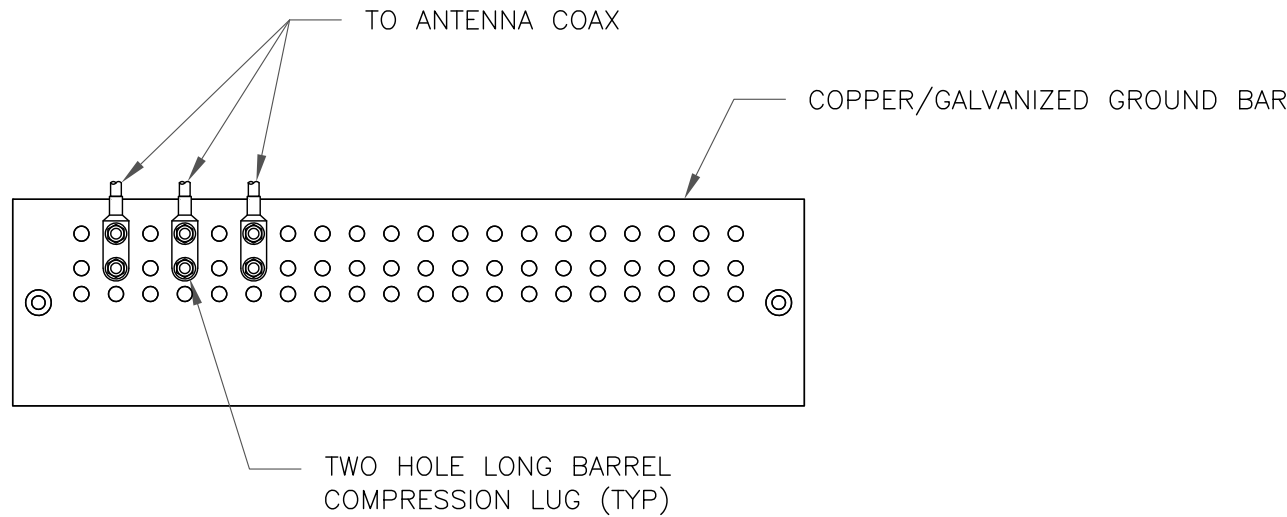
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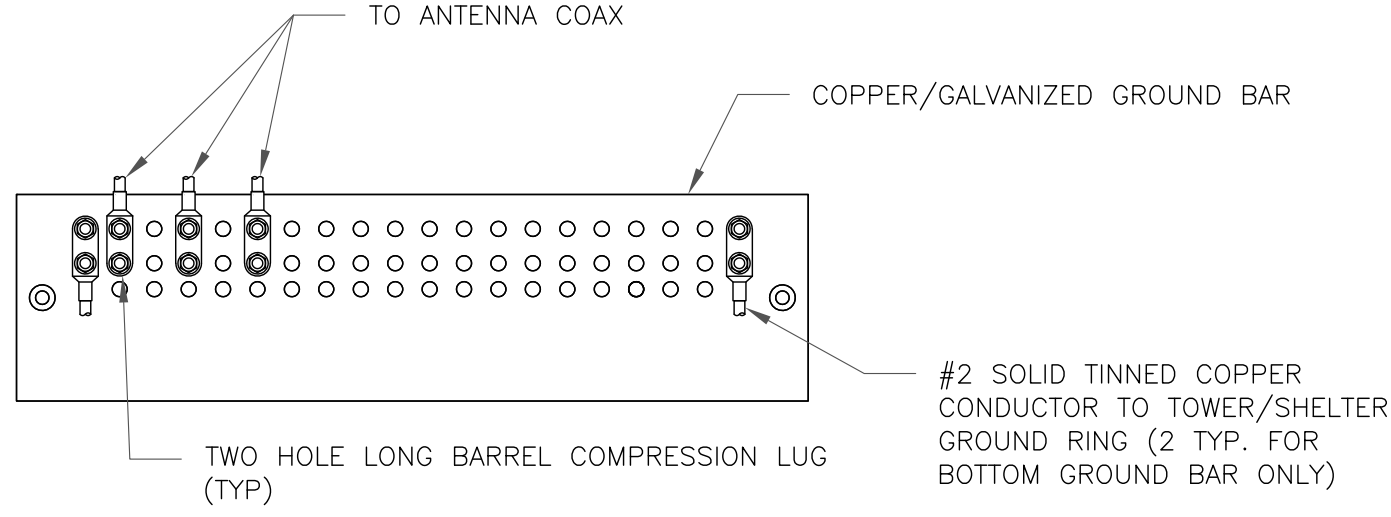
G-1

REVISION:

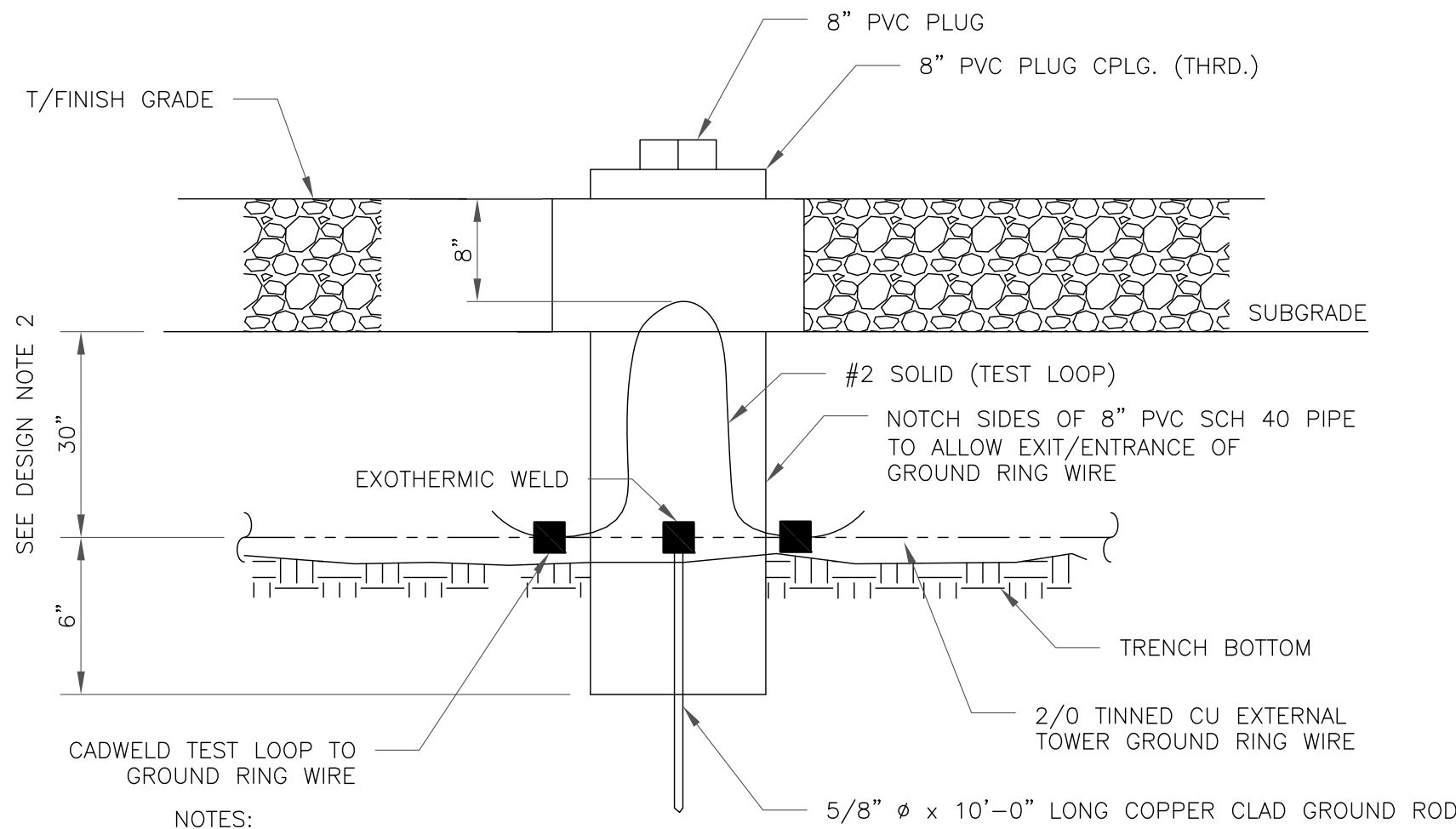
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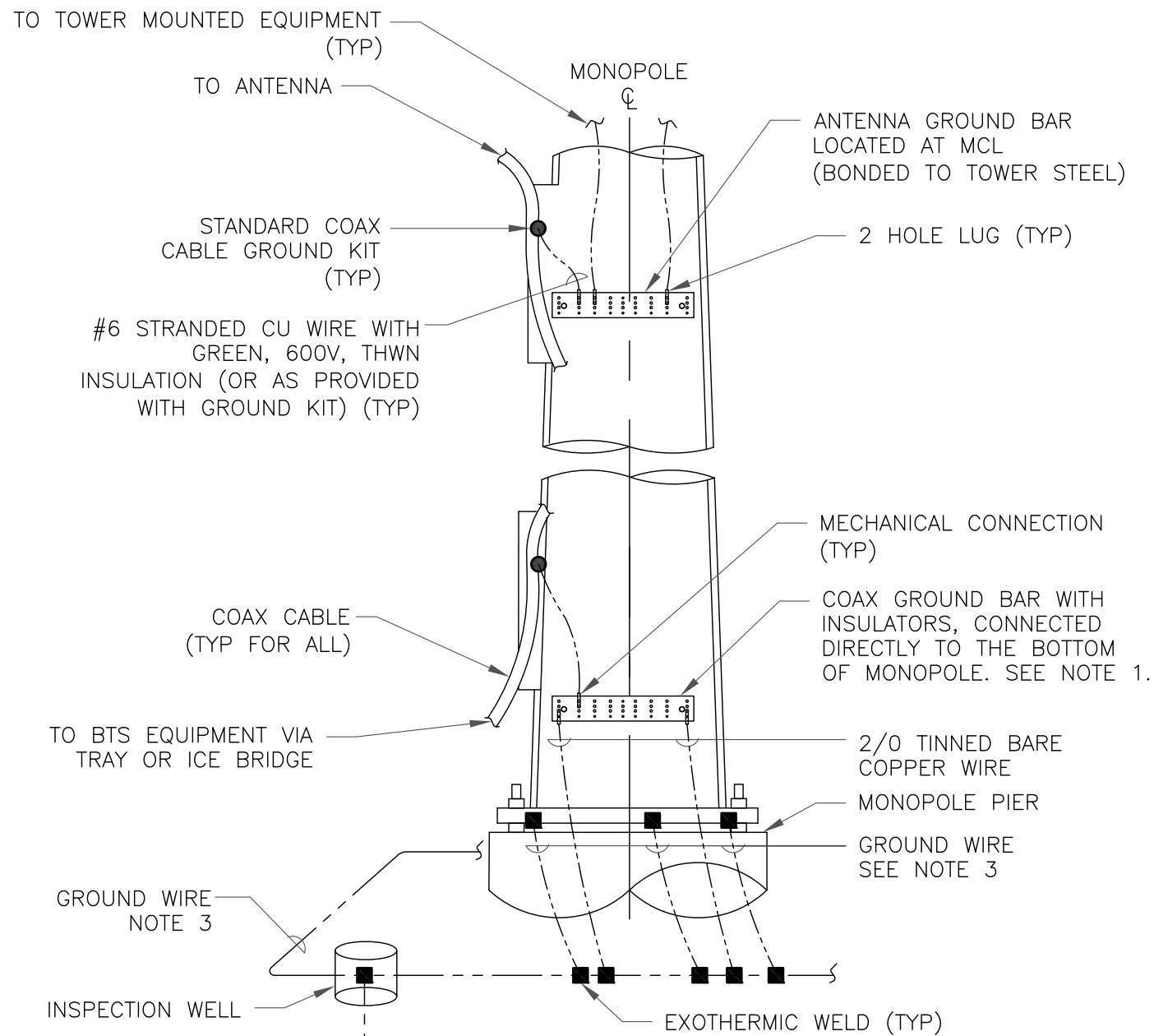
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



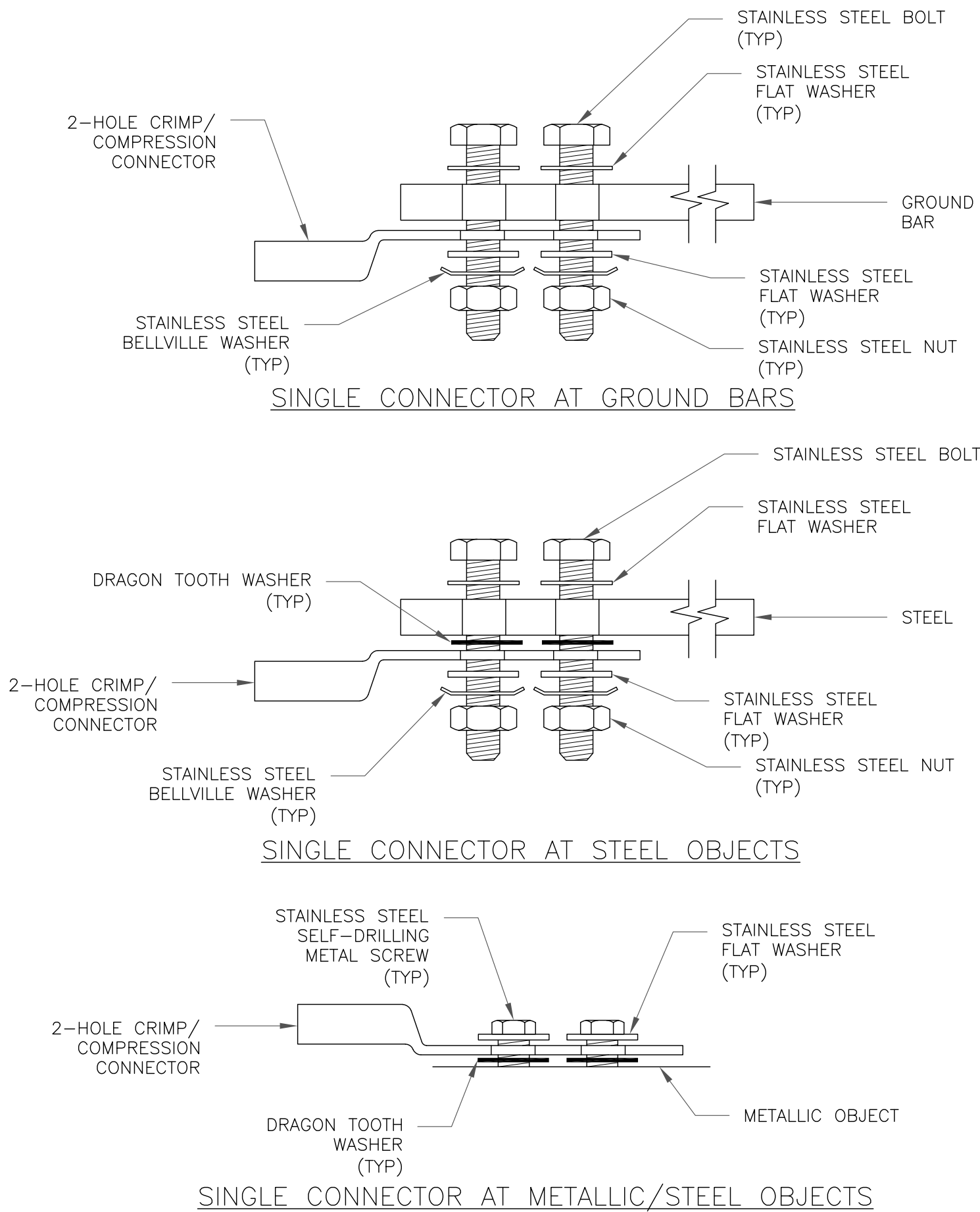
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



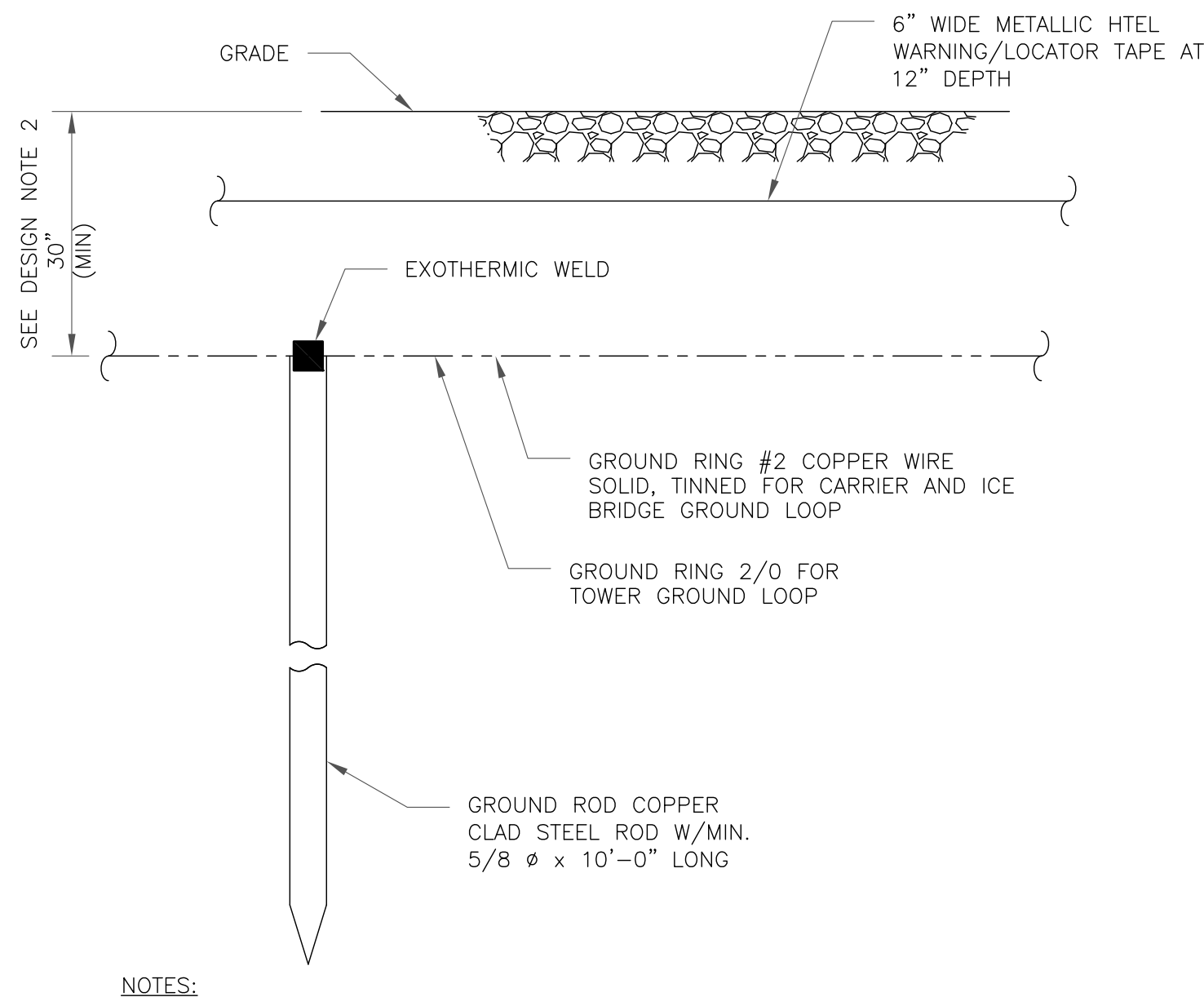
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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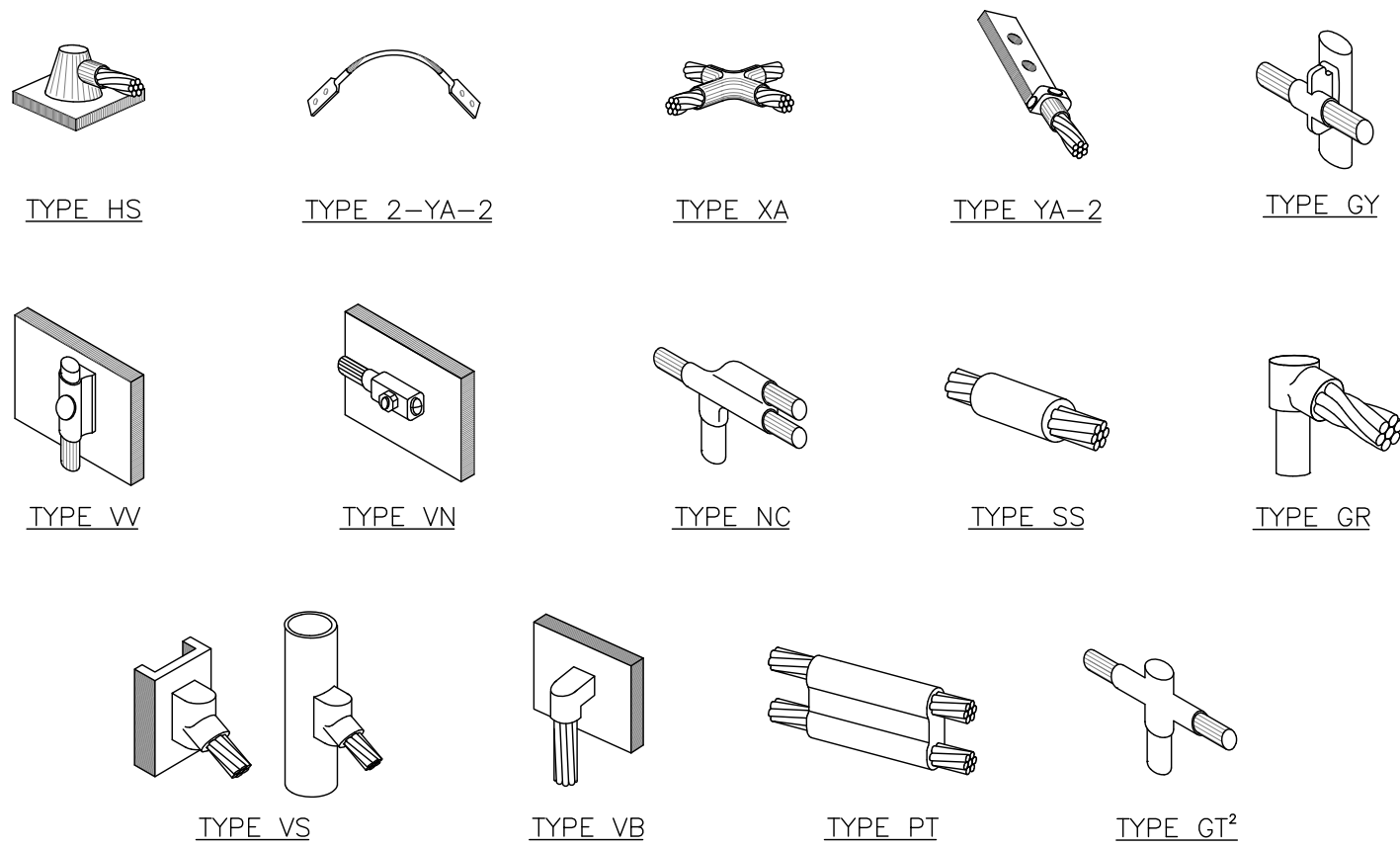
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SHEET NUMBER:

G-2

REVISION:

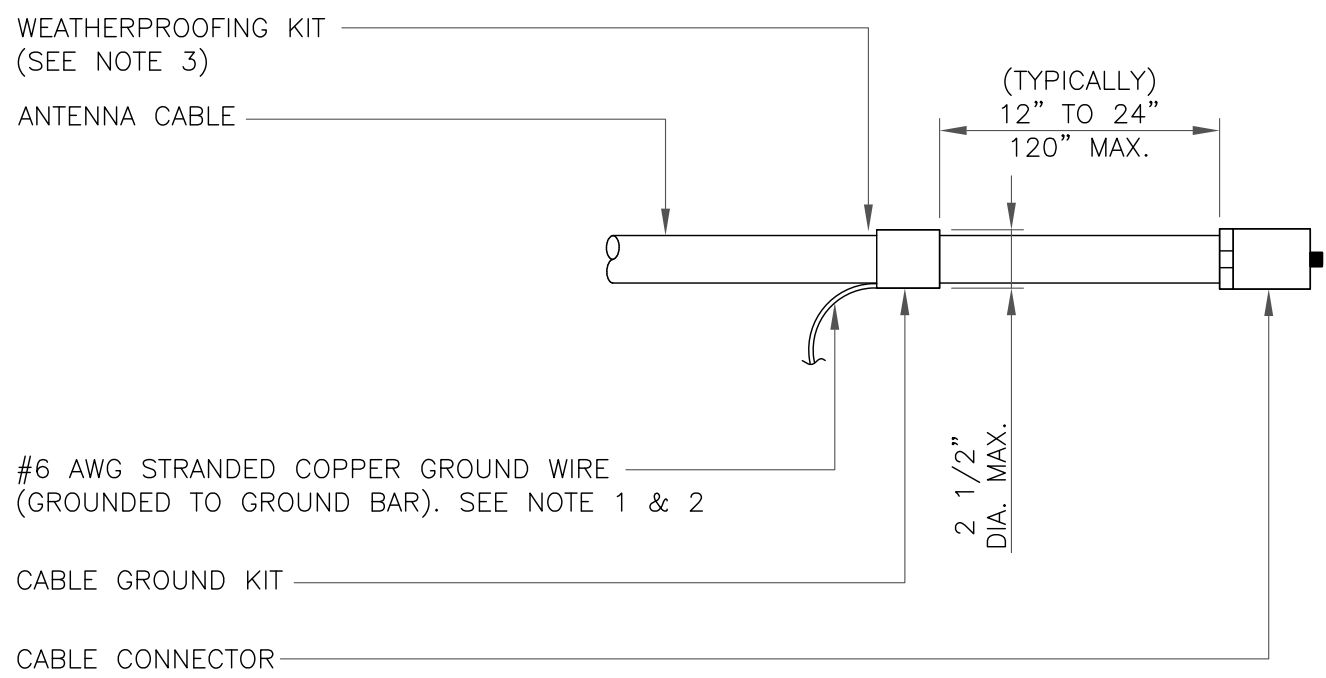
5



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.

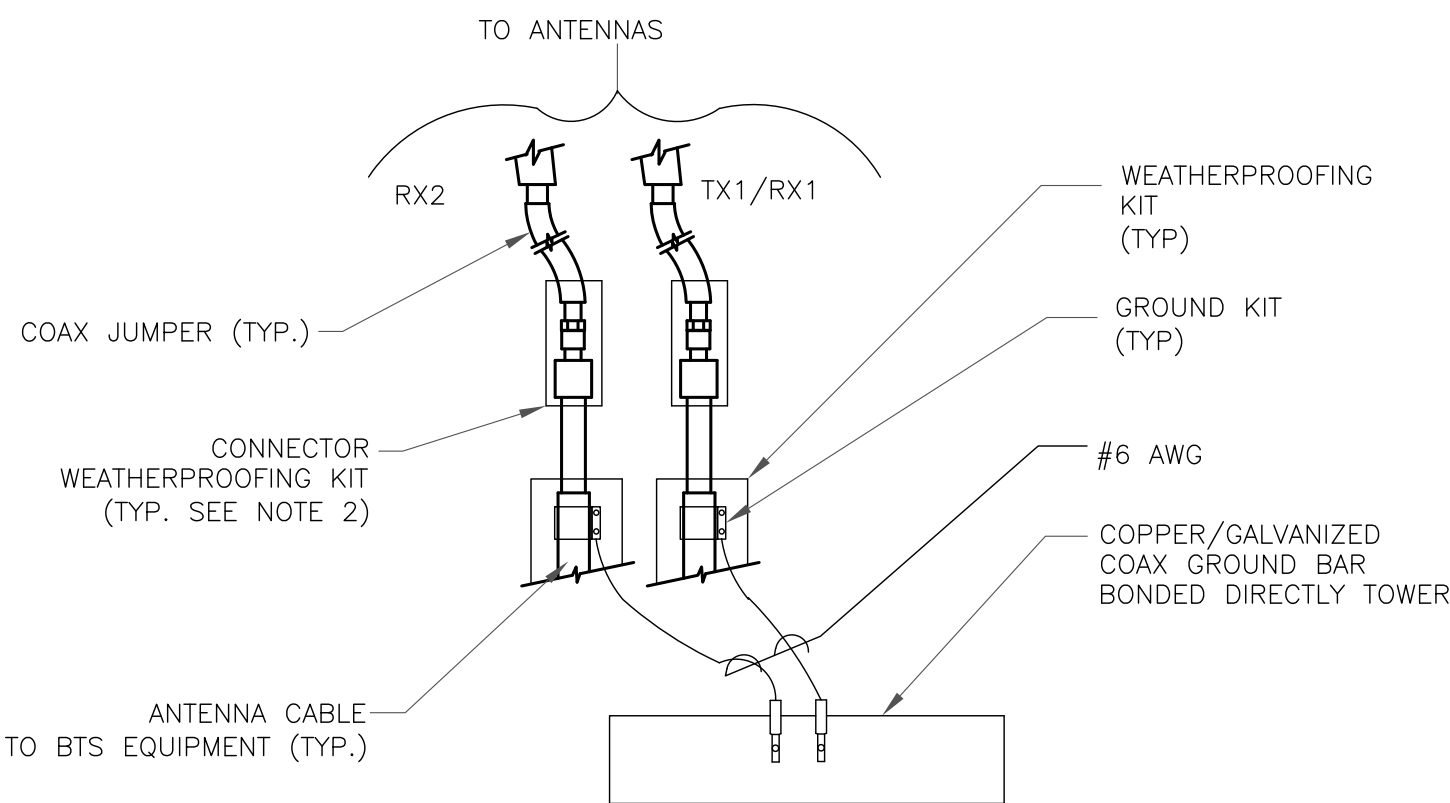
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



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.

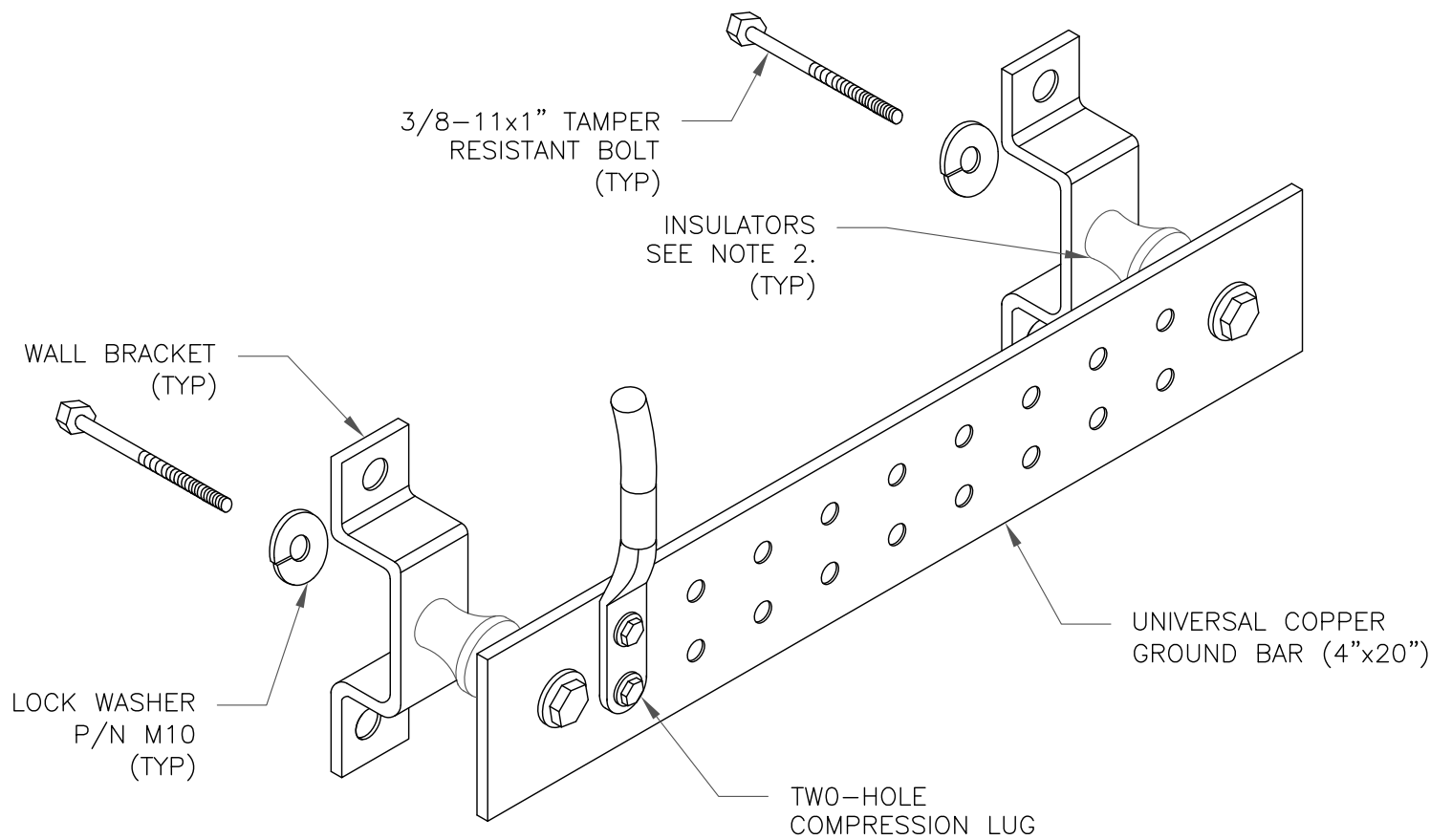
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



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.

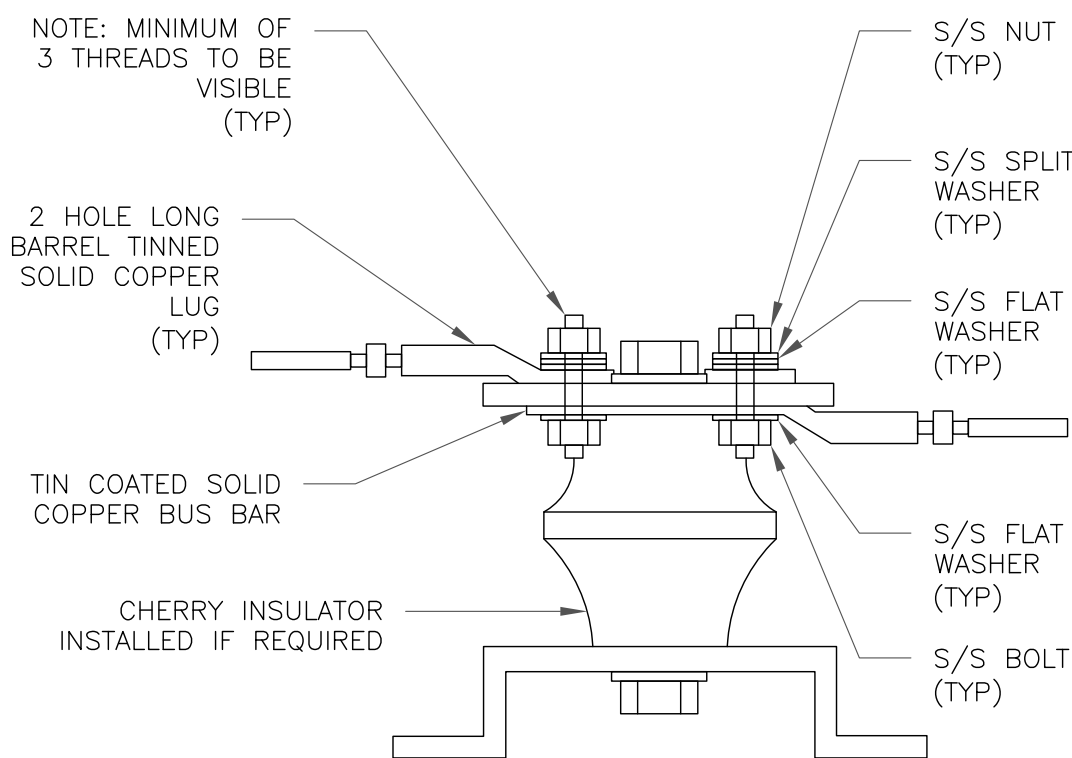
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

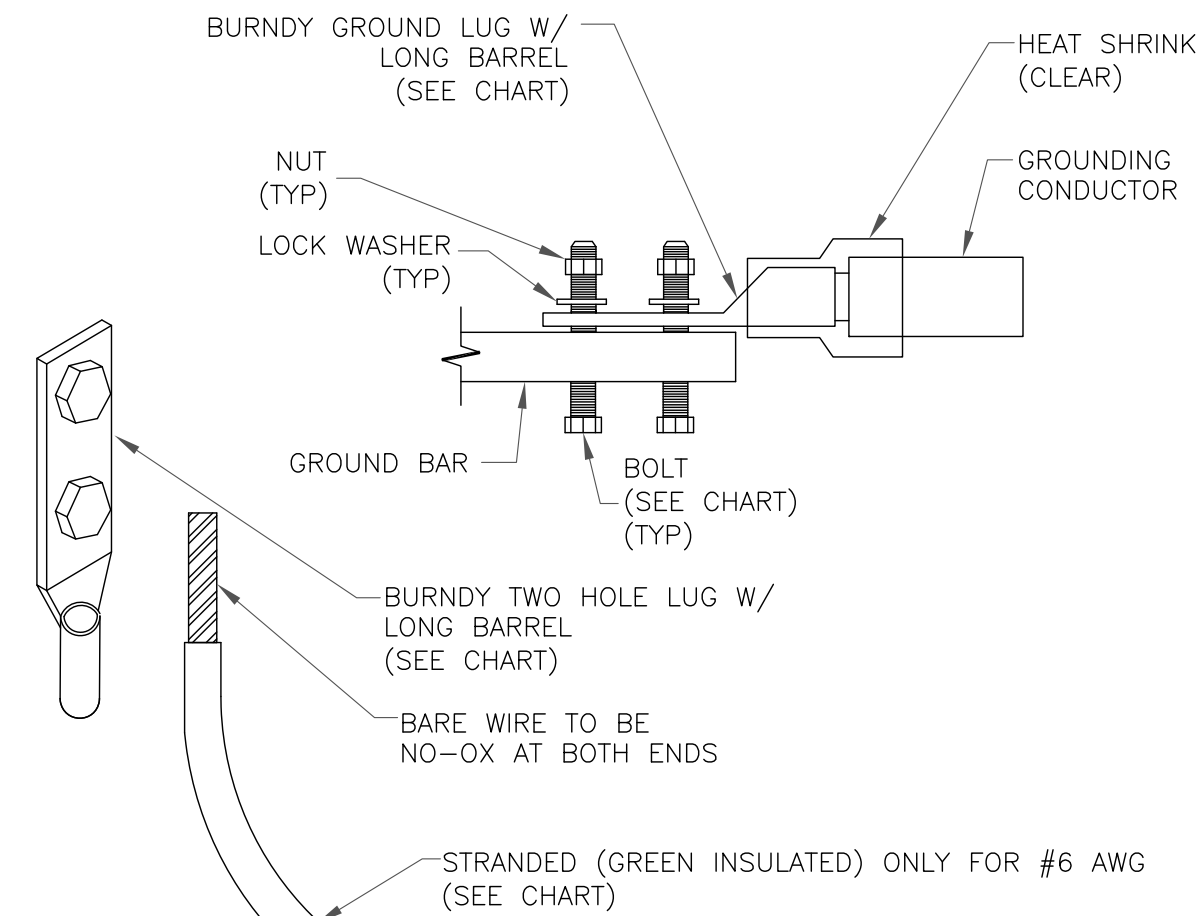
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STG-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR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

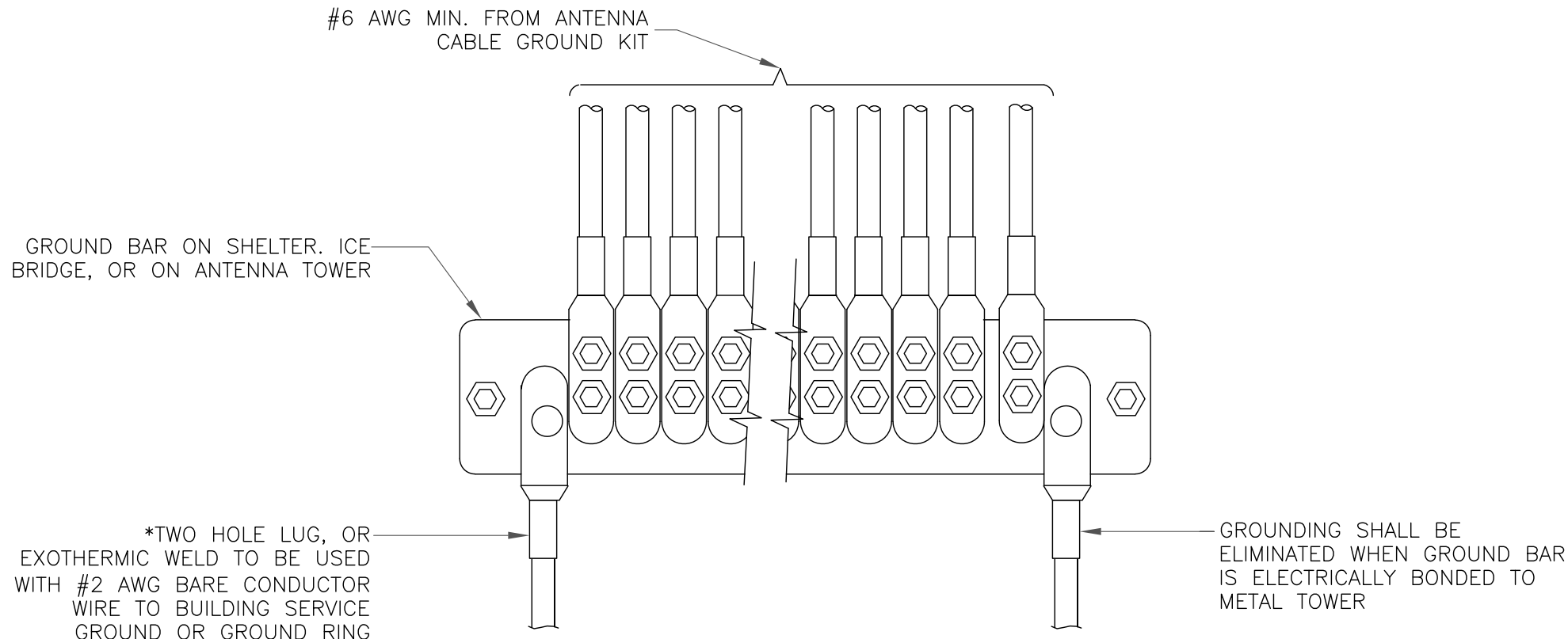
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



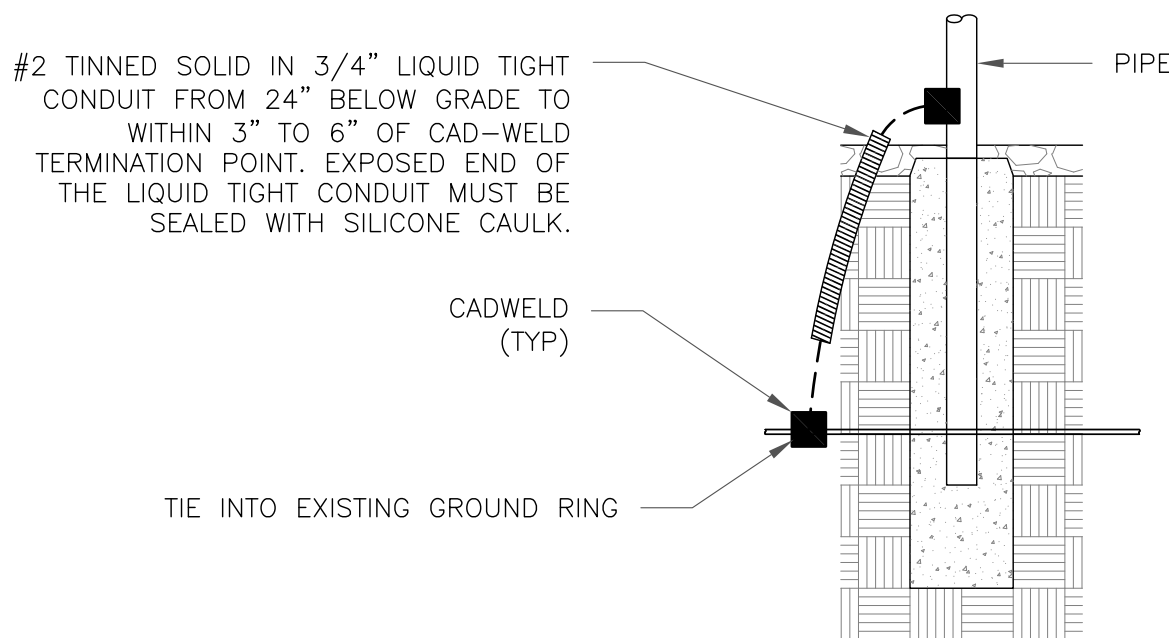
NOTES:

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

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G-3

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