



December 16, 2020

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

**RE: Notice of Exempt Modification for T-Mobile:  
Crown Site ID: 876342 - T-Mobile Site ID: CT11229A  
111 Schoolhouse Road, Milford, CT 06460 Latitude:  
41° 12' 46.06"/ Longitude: -73° 5' 7.1"**

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 116-foot mount on the existing 140-foot Monopole Tower, located at 111 Schoolhouse Road in Milford, CT. The tower is owned by Crown Castle and the property is owned by Milford Enterprises LLC. T-Mobile now intends to add three (3) new antennas and ancillary equipment at the 116-ft level. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

**Planned Modifications:**

**Tower:**

Install New:

- (3) AIR6449 B41 5G Antenna 2500 MHz
- (3) Radio 4415 B25
- (3) Diplexer SDX1926Q-43
- (1) 1 5/8" hybrid cable

Remove:

- (3) TMA
- (10) Coax cables

**Ground:**

Install New:

- (1) 6160 equipment cabinet
- (1) B160 battery cabinet
- (1) BB 6630
- (1) BB 6648
- (1) PSU 4813 voltage booster
- (1) IXRE router

Remove:

- (1) RBS 3106 Cabinet

This facility was approved by the by the City of Milford on May 15, 1997. This approval was given without conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Benjamin Blake, Mayor of the City of Milford, as well as Stephen Harris, Zoning Enforcement Officer for the City of Milford. A copy of this application will also be sent to the property owner, Milford Enterprises LLC.

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

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Richard Zajac  
Site Acquisition Specialist  
4545 East River Road, Suite 320  
West Henrietta, NY 14586  
(585) 445-5896  
richard.zajac@crowncastle.com

Melanie A. Bachman

Page 3

cc:

City of Milford  
Attn: Benjamin Blake - Mayor  
110 River St  
Milford, CT 06460  
203-783-3201

City of Milford  
Attn: Stephen H. Harris – Zoning Enforcement Officer  
70 West River St  
Milford, CT 06460  
203-783-3245

Milford Enterprises LLC  
Attn: Vipul Mehta  
1207 E Main Street  
Stamford, CT 06702

## Zajac, Richard

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**From:** Zajac, Richard  
**Sent:** Wednesday, December 16, 2020 10:27 AM  
**To:** 'mayor@ci.milford.ct.us'  
**Subject:** Connecticut Siting Council exempt modification application notification  
**Attachments:** CSC Exempt Modification Application - 111 Schoolhouse Rd.pdf

Good morning Mayor Blake,

Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 111 Schoolhouse Road in Milford.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,

**RICH ZAJAC**

Site Acquisition Specialist

T: (585) 445-5896 M: (607) 346-7212

F: (724) 416-4461

**CROWN CASTLE**

4545 East River Road, Suite 320

West Henrietta, NY 14586

## Zajac, Richard

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**From:** Zajac, Richard  
**Sent:** Wednesday, December 16, 2020 10:28 AM  
**To:** 'shharris@ci.milford.ct.us'  
**Subject:** Connecticut Siting Council exempt modification application notification  
**Attachments:** CSC Exempt Modification Application - 111 Schoolhouse Rd.pdf

Good morning Mr. Harris,  
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 111 Schoolhouse Road in Milford.

Should you have any questions/comments/concerns regarding this application, please do not hesitate to contact me.

Thank you,  
**RICH ZAJAC**  
Site Acquisition Specialist  
T: (585) 445-5896 M: (607) 346-7212  
F: (724) 416-4461  
**CROWN CASTLE**  
4545 East River Road, Suite 320  
West Henrietta, NY 14586

(585) 445-5896

ORIGIN ID: ONHA  
RICHARD ZAJAC  
CROWN CASTLE  
629 KAYLEIGH DR  
WEBSTER, NY 14580  
UNITED STATES US

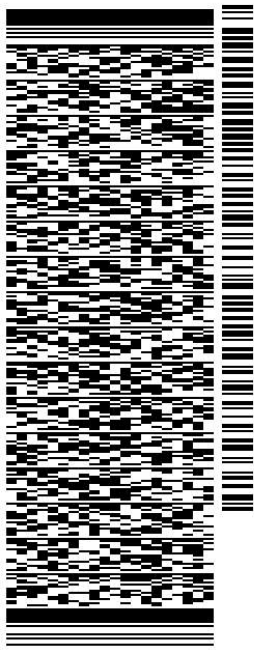
SHIP DATE: 16DEC20  
ACT WGT: 1.00 LB  
CAD: 112911364/NET4280

BILL SENDER

TO **VIPUL MEHTA**  
**MILFORD ENTERPRISES LLC**  
**1207 E MAIN STREET**

**STAMFORD CT 06702**

(585) 445-5896 REF: 799001 7690  
INV/ PO: DEPT:



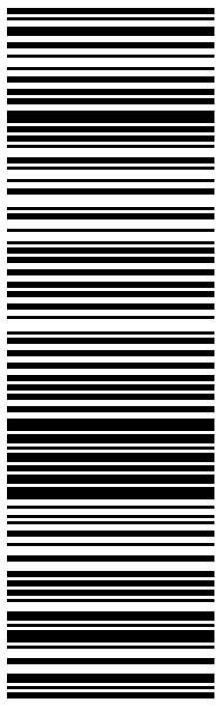
J202020071401uv

56BJ29196/B766

TRK# 7723 8806 3249  
0201

THU - 17 DEC 4:30P  
STANDARD OVERNIGHT

**XE BNHA**  
06702  
CT-US BDL



**After printing this label:**

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

**Warning:** Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

# Exhibit A

## **Original Facility Approval**



DATE FILED 5/15/97  
 RECEIPT # 10391  
 FEE (INCLUDES CZC) \$ 2200

# City of Milford, Connecticut

## APPLICATION FOR ZONING PERMIT

INSTRUCTIONS: Fill out this application in ball point pen. A scaled plot plan in duplicate, based on a certified surveyor's plot plan must be submitted with this application showing the proposed or existing lot and building dimensions and the location of all buildings in relation to the street lines, side lot lines and rear lot lines.

ADDRESS OF PROPERTY 111 School House Rd. ZONE G.I.  
 MAP 33 BLOCK 335 PARCEL 5 LOT NO. \_\_\_\_\_ ADDRESS MAP NO. \_\_\_\_\_ LOT SIZE \_\_\_\_\_  
 WIDTH OF STREET RIGHT OF WAY LESS THAN 50 FT.? YES \_\_\_\_\_ NO  CORNER LOT? YES \_\_\_\_\_ NO   
 IS ANY PORTION OF THE LOT BELOW REGULATORY FLOOD ELEVATION? YES \_\_\_\_\_ NO  CAM YES \_\_\_\_\_ NO   
 CITY WATER  PRIVATE WELL\* \_\_\_\_\_ SEWER\*\*  SEPTIC\*\*\* \_\_\_\_\_ ENGINEERING OFF STREET PERMIT # \_\_\_\_\_

OWNER Telach Prop. L.P. PHONE ( ) 877-8000

ADDRESS OF OWNER 111 School House Rd. 11162 CT

PRESENT USE OF PROPERTY Motel STREET \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

PROPOSED CONSTRUCTION NEW  ADDITION \_\_\_\_\_ ALTERATION \_\_\_\_\_ REPAIR \_\_\_\_\_

SIZE/USE OF PROPOSED CONSTRUCTION 140' Telecommunications monopole  
-Netherlands Permit Req-

NO. OF STORIES \_\_\_\_\_ HEIGHT 140' REQUIRED PARKING SPACES \_\_\_\_\_ LOT COVERAGE \_\_\_\_\_ %

DATE OF APPROVALS: ZBA 2/11/97 CASPR \_\_\_\_\_ SITE PLAN May 6, 1997 SPECIAL PERMIT May 6, 1997

EXEMPTION ISSUED \_\_\_\_\_ SUBDIV. NAME \_\_\_\_\_ HISTORIC DIST. CERT. OF APPROPRIATENESS

CERTIFICATION: (WARNING) I hereby certify that I am making this application on behalf of and with full authority of the owner of the property and that I am aware of the Zoning Regulations pertinent in this case and that the statements made herein are true and correct. APPROVAL SHALL BE VALID FOR PLANS AS SUBMITTED.

THE OCCUPANCY AND USE OF LAND AND BUILDINGS OR STRUCTURES PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY IS PROHIBITED

APPROVED BY: Richard J. Vassich  
 Zoning Official

APPLICANT: NAME MIKE EVANCHUCK AGENT FOR SPRINT PCS  
 SIGNATURE [Signature] (Please Print)

DATE ISSUED 5/15/97

ADDRESS 9 BARVES INDUSTRIAL ROAD  
 CITY WALTON STATE CT ZIP 06494  
 TELEPHONE NO. (203) 299-5609

\* Permit required from State Health Dept. for apartments, subdivisions, trailer parks, shopping centers and public buildings.  
 \*\* Permits for sewer connections are granted by Sewer Commission  
 \*\*\* Septic system approvals are granted by Health Department





MILFORD PLANNING & ZONING BOARD  
PETITION FOR SPECIAL PERMIT

Sprint PCS

I (WE) \_\_\_\_\_  
HEREBY PETITION FOR A:

SPECIAL PERMIT \_\_\_\_\_ AMENDMENT TO A SPECIAL PERMIT xx

TO ESTABLISH \_\_\_\_\_ OR CONSTRUCT Telecommunications Monopole  
(DESCRIPTION)

ON THE FOLLOWING PROPERTY:

ADDRESS OF PROPERTY 111 School House Road SEWER \_\_\_\_\_ SEPTIC \_\_\_\_\_

ASSESSOR'S MAP 33 BLOCK 335 PARCEL 5 ZONE GI ACRES 2.216

APPLICANT'S NAME Sprint PCS PHONE # (203) 294-5634

APPLICANT'S MAILING ADDRESS 95 Barnes Industrial Road, Wallingford, CT

PROPERTY OWNER'S NAME TELAHC Prop., L.P. PHONE # c/o (203) 877-8000

PROPERTY OWNER'S SIGNATURE [Signature]

PROPERTY OWNER'S MAILING ADDRESS 111 School House Road, Milford, CT

IF APPEARING BY ATTORNEY OR AGENT:

NAME Farris Beach & Wilcox, LLP

SIGNATURE [Signature] PHONE # (203) 877-8000

MAILING ADDRESS 147 North Broad Street, Milford, CT

HAS ANY PREVIOUS PETITION FOR A SPECIAL PERMIT BEEN FILED FOR THIS PROPERTY?

YES x NO \_\_\_\_\_

IF YES, GIVE DECISION: APPROVED x DENIED \_\_\_\_\_ DATE 11/6/85

APPLICANT \_\_\_\_\_

NOTE: COPIES OF THIS APPLICATION WILL NOT BE ACCEPTED

FEE - SEE SCHEDULE OF ZONING FEES.

RECEIVED OF \_\_\_\_\_ DATE \_\_\_\_\_  
RECEIVED BY \_\_\_\_\_ AMOUNT \_\_\_\_\_ RECEIPT NO. \_\_\_\_\_

DATE APPLICATION FILED \_\_\_\_\_ DATE APPLICATION CERTIFIED \_\_\_\_\_

PLANNING & ZONING BOARD ACTION: DATE \_\_\_\_\_ APPROVED \_\_\_\_\_ DENIED \_\_\_\_\_

REVISED 6/93

**PROCEDURE FOLLOWING APPROVAL  
BY  
PLANNING & ZONING BOARD**

**SITE PLAN REVIEW**

Following approval by the Planning & Zoning Board, it is necessary to obtain a zoning permit at the Planning & Zoning Office. Plans for this permit will be the Board approved plans on file in our office unless the Board has stipulated revisions to be made. Please call the reviewing officer for this application at 783-3245 to make arrangements for the issuance of a zoning permit. The fee for a zoning permit following Board approval is \$22.00. The zoning permit, associated plans and other exhibits must then be taken to the Building Inspector for the issuance of a building permit.

**SPECIAL PERMIT/SPECIAL EXCEPTION**

Following approval by the Planning & Zoning Board, it is necessary to obtain a zoning permit at the Planning & Zoning Office. Plans for this permit will be the Board approved plans on file in our office unless the Board has stipulated revisions to be made. Please call the reviewing officer for this application at 783-3245 to make arrangements for the issuance of a zoning permit. The fee for a zoning permit following Board approval is \$22.00. The zoning permit, associated plans and other exhibits must then be taken to the Building Inspector for the issuance of a building permit.

Prior to the issuance of a zoning permit, a certificate, which is being held at the office must be filed on the land records in the City Clerk's Office for which a fee of \$10.00 is required. You must present your receipt from the City Clerk's Office at the Planning & Zoning Office to be recorded in your file.

# Exhibit B

## **Property Card**

# 111 SCHOOLHOUSE RD #CELL

**Location** 111 SCHOOLHOUSE RD #CELL

**Mblu** 33/ 335/ 5/A /

**Acct#** 023043

**Owner** MILFORD ENTERPRISES LLC

**Assessment** \$245,000

**Appraisal** \$350,000

**PID** 100242

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$350,000	\$0	\$350,000

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$245,000	\$0	\$245,000

## Owner of Record

**Owner** MILFORD ENTERPRISES LLC

**Sale Price** \$3,675,000

**Other** C/O VIPUL MEHTA

**Certificate**

**Address** 1207 E MAIN STREET  
STAMFORD, CT 06702

**Book & Page** 03622/0230

**Sale Date** 03/27/2015

**Instrument** 18

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
MILFORD ENTERPRISES LLC	\$3,675,000		03622/0230	18	03/27/2015
CSMC 2007 C5 FFI HOTEL PORTFOLIO LLC	\$6,930,207		03602/0294	22	10/06/2014
MILFORD FFI LLC	\$4,800,000		03168/0407	00	05/10/2007
OLY REALTY ONE LLC	\$3,800,000		02396/0375		02/28/2000
TELAHC PROPERTIES L P	\$0		02040/0184		03/11/1994

## Building Information

### Building 1 : Section 1

**Year Built:**

**Living Area:**

0

**Building Photo**

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 Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Description:	
Kitchen Descrip:	
Num Kitchens	
Cndtn	
Usrflid 103	
Int Condition:	
Solar Panels	
House Generator	
Usrflid 107	
Num Park	
Fireplaces	
Usrflid 108	
Usrflid 101	
Usrflid 102	
Usrflid 100	



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

### Building Layout

Building Layout

([http://images.vgsi.com/photos/MilfordCTPhotos//Sketches/100242\\_100241](http://images.vgsi.com/photos/MilfordCTPhotos//Sketches/100242_100241))

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

Usrflid 300	
Usrflid 301	

**Extra Features**

Extra Features	<u>Legend</u>
No Data for Extra Features	

**Land**

Land Use	Land Line Valuation
<b>Use Code</b> 434V	<b>Size (Acres)</b> 0
<b>Description</b> CELL TOWER MDL-00	<b>Frontage</b>
<b>Zone</b>	<b>Depth</b>
<b>Neighborhood</b> C	<b>Assessed Value</b> \$0
<b>Alt Land Appr</b> No	<b>Appraised Value</b> \$0
<b>Category</b>	

**Outbuildings**

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CEL1	CEL TWR SITE			1.00 UNITS	\$350,000	1

**Valuation History**

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$350,000	\$0	\$350,000
2017	\$350,000	\$0	\$350,000
2016	\$350,000	\$0	\$350,000

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$245,000	\$0	\$245,000
2017	\$245,000	\$0	\$245,000
2016	\$245,000	\$0	\$245,000



Imagery ©2020 Maxar Technologies, New York GIS, USDA Farm Service Agency, Map data ©2020 500 ft



### 111 Schoolhouse Rd

Milford, CT 06460



Directions



Save



Nearby



Send to your phone



Share

### At this location

#### Fairfield Inn Milford

4.3 ★★★★★ (20)

2-star hotel



# Exhibit C

## **Construction Drawings**



# T-Mobile

**T-MOBILE SITE NUMBER: CT11229A**  
**T-MOBILE SITE NAME: STRATFORD/RT 1/RT 162**  
**SITE TYPE: MONOPOLE**  
**TOWER HEIGHT: 140'-0"**

**BUSINESS UNIT #: 876342**  
**SITE ADDRESS: 111 SCHOOL HOUSE ROAD MILFORD, CT 06460**  
**COUNTY: NEW HAVEN**  
**JURISDICTION: NA**

## T-MOBILE ANCHOR SITE CONFIGURATION: 67D5A997DB HYBRID

T-Mobile  
 35 GRIFFIN ROAD  
 BLOOMFIELD, CT 06002

**CROWN CASTLE**  
 3 CORPORATE PARK DRIVE, SUITE 101  
 CLIFTON PARK, NY 12065

**INFINIGY**  
 FROM ZERO TO INFINIGY  
 the solutions are endless  
 1033 Watervliet Shaker Rd | Albany, NY 12205  
 Phone: 518-690-0790 | Fax: 518-690-0793  
 www.infinigy.com

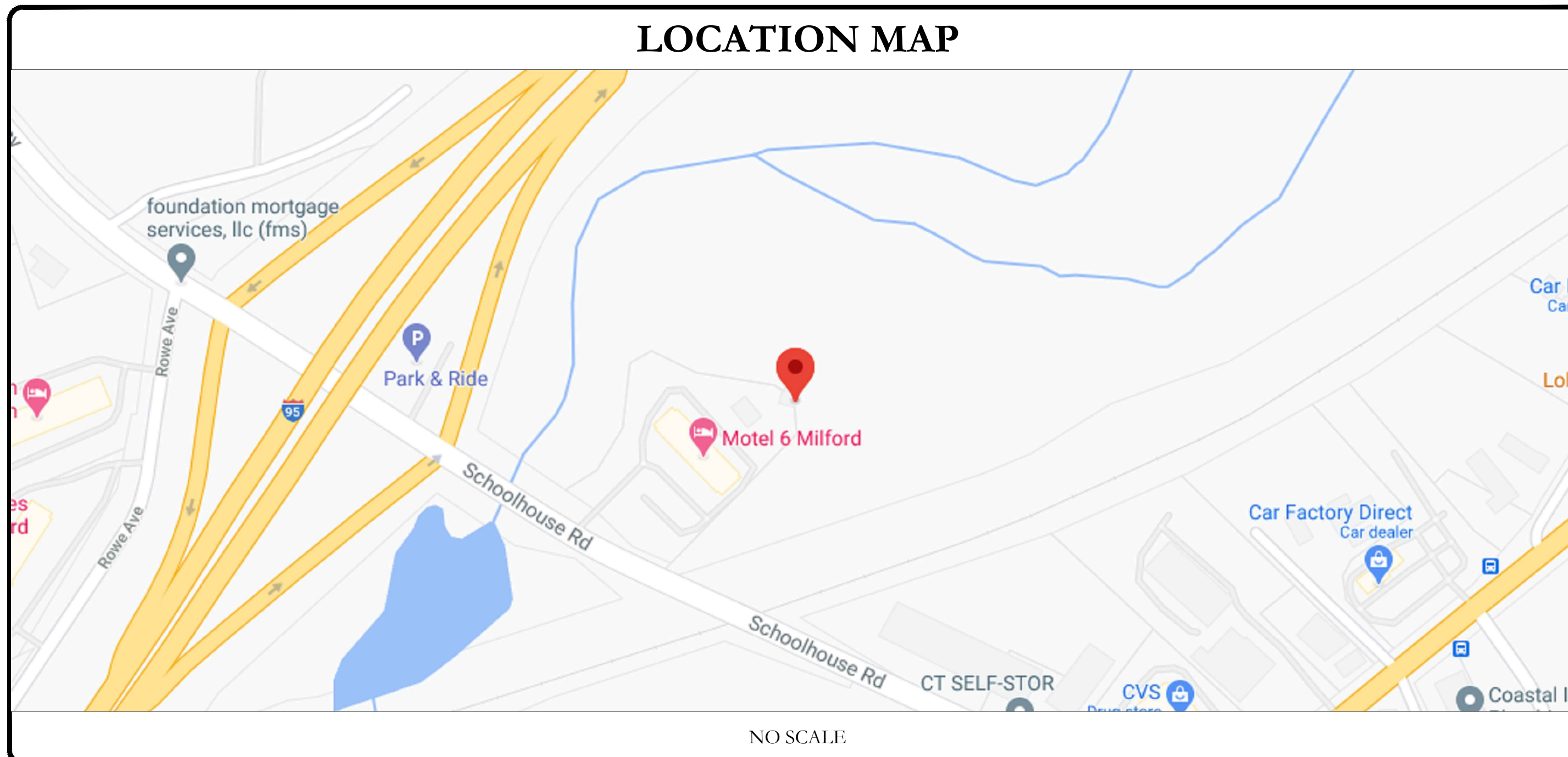
**T-MOBILE SITE NUMBER: CT11229A**  
**BU #: 876342**  
**BIC DRIVE (SSUSA)**  
 111 SCHOOL HOUSE ROAD  
 MILFORD, CT 06460  
 EXISTING 140'-0" MONOPOLE

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	10/31/20	RCD	PRELIMINARY	SS
0	11/03/20	SS	FINAL	SS
1	12/11/20	BMM	FINAL	SS

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	BIC DRIVE (SSUSA)
SITE ADDRESS:	111 SCHOOL HOUSE ROAD MILFORD, CT 06460
COUNTY:	NEW HAVEN
MAP/PARCEL #:	NA
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.21285100 (41° 12' 46.06")
LONGITUDE:	-73.08490700 (-73° 5' 7.10")
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	70.01 FT
CURRENT ZONING:	NA
JURISDICTION:	NA
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	NA
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	----
TELCO PROVIDER:	----

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR ----. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.	



PROJECT TEAM	
A&E FIRM:	INFINIGY 1033 WATERVLIET SHAKER RD. ALBANY, NY 12205
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3 CORPORATE PARK DRIVE, SUITE 101 CLIFTON PARK, NY 12065
	---- - PROJECT MANAGER
	---- - CONSTRUCTION MANAGER
NOTE: PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.	

PROJECT DESCRIPTION	
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.	
TOWER SCOPE OF WORK:	<ul style="list-style-type: none"> <li>INSTALL (3) ANTENNAS</li> <li>INSTALL (3) RRHs</li> <li>INSTALL (3) DIPLEXERS</li> <li>INSTALL (1) HYBRID CABLE</li> <li>REMOVE (3) TMAs</li> <li>REMOVE (10) COAX CABLES</li> </ul>
GROUND SCOPE OF WORK:	<ul style="list-style-type: none"> <li>REMOVE (1) EXISTING BASE STATION CABINET</li> <li>INSTALL (1) 6160 &amp; (1) B160 BATTERY CABINETS</li> <li>INSTALL (1) iXRe ROUTER IN (P) CABINET</li> <li>INSTALL (1) PSU4813 BOOSTER IN (P) CABINET</li> <li>INSTALL (1) BB6630 IN (P) CABINET</li> <li>INSTALL (1) BB6648 IN (P) CABINET</li> </ul>
NOTE: THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. T-MOBILE IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.	

APPLICABLE CODES/REFERENCE DOCUMENTS	
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:	
CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC
REFERENCE DOCUMENTS:	
STRUCTURAL ANALYSIS:	BY OTHERS
DATED:	
MOUNT ANALYSIS:	INFINIGY
DATED:	10/08/20
AC ELECTRICAL POWER DESIGN:	BY OTHERS
DATED:	
RFDS REVISION:	3
DATED:	9/22/2020
ORDER ID:	529717
REVISION:	0
CALL CONNECTICUT ONE CALL (800) 922-4455 CBYD.COM CALL 2 WORKING DAYS BEFORE YOU DIG!	

APPROVALS		
APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.	_____	_____
LAND USE PLANNER	_____	_____
T-MOBILE	_____	_____
OPERATIONS	_____	_____
RF	_____	_____
NETWORK	_____	_____
BACKHAUL	_____	_____
CONSTRUCTION MANAGER	_____	_____
THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.		

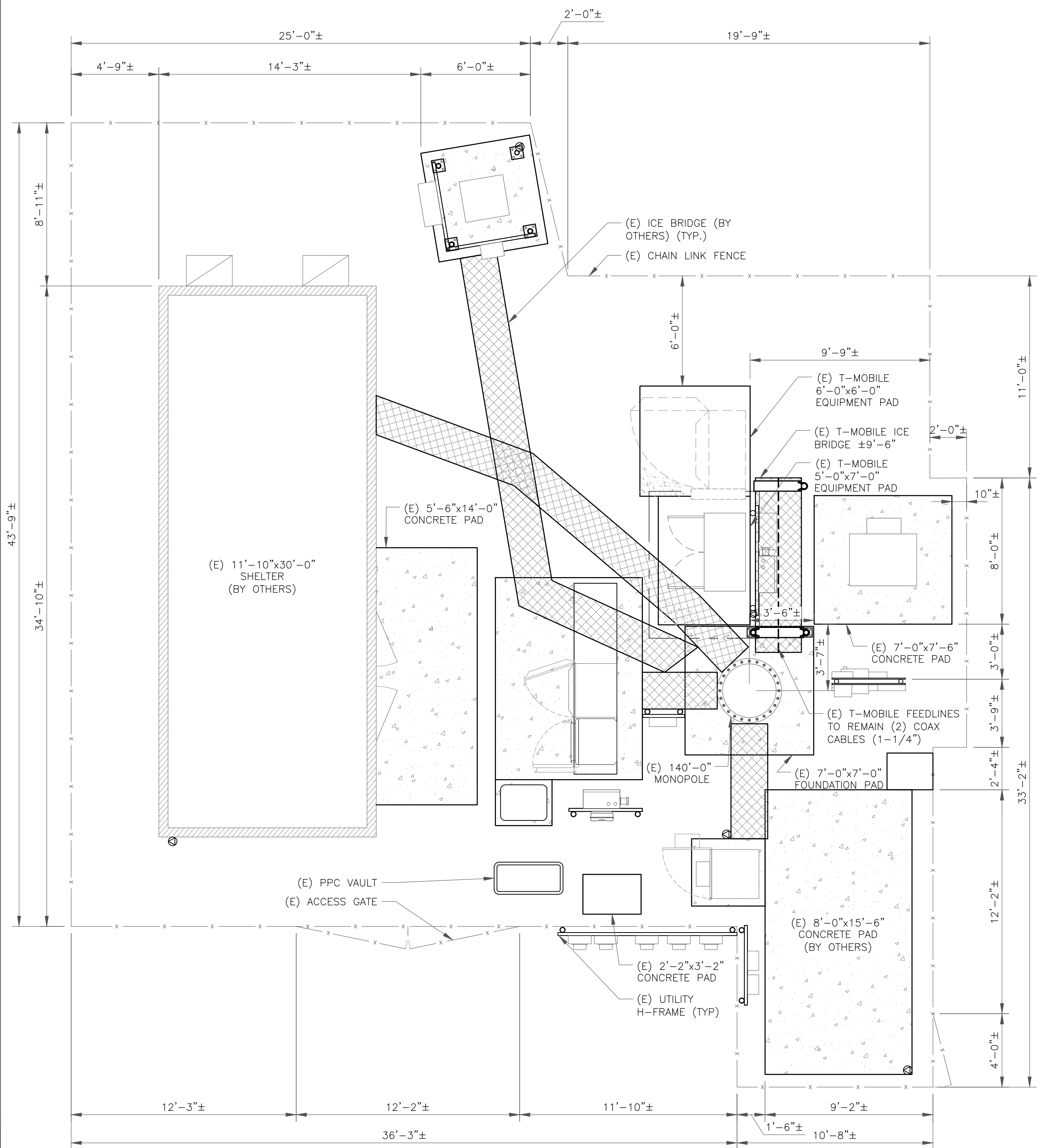
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

<b>SHEET NUMBER:</b> <b>T-1</b>	<b>REVISION:</b> <b>1</b>
------------------------------------	------------------------------

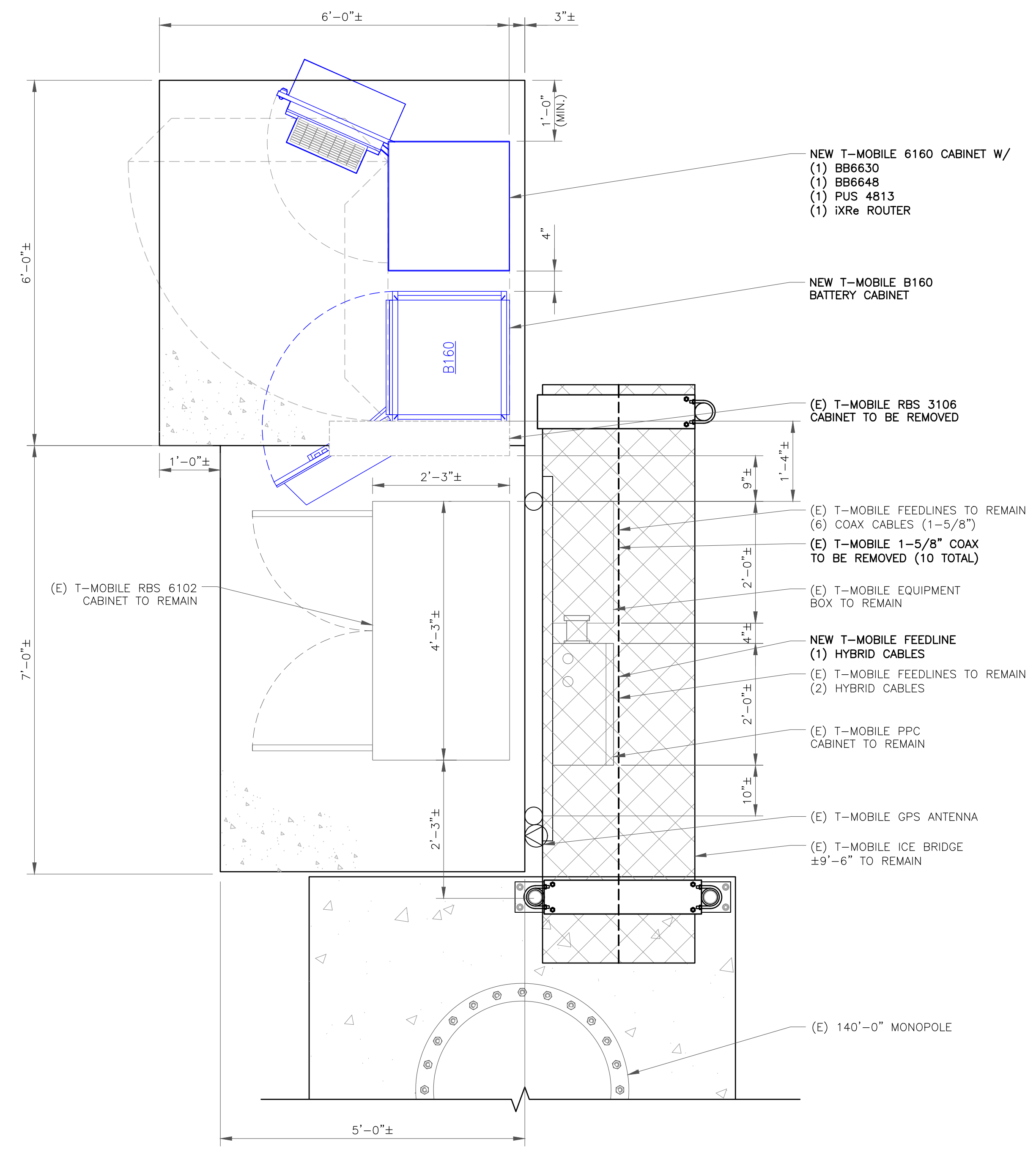
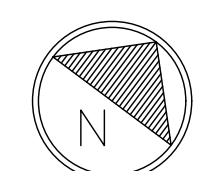


NOTE:

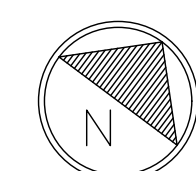
- PLANS BASED ON SITE PLAN PROVIDED BY TOWER OWNER AND SITE VISIT PERFORMED BY INFINIGY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING T-MOBILE EQUIPMENT.



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



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



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BU #: 876342  
**BIC DRIVE (SSUSA)**  
  
111 SCHOOL HOUSE ROAD  
MILFORD, CT 06460  
  
EXISTING 140'-0" MONOPOLE

ISSUED FOR:

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A	10/31/20	RCD	PRELIMINARY	SS
0	11/03/20	SS	FINAL	SS
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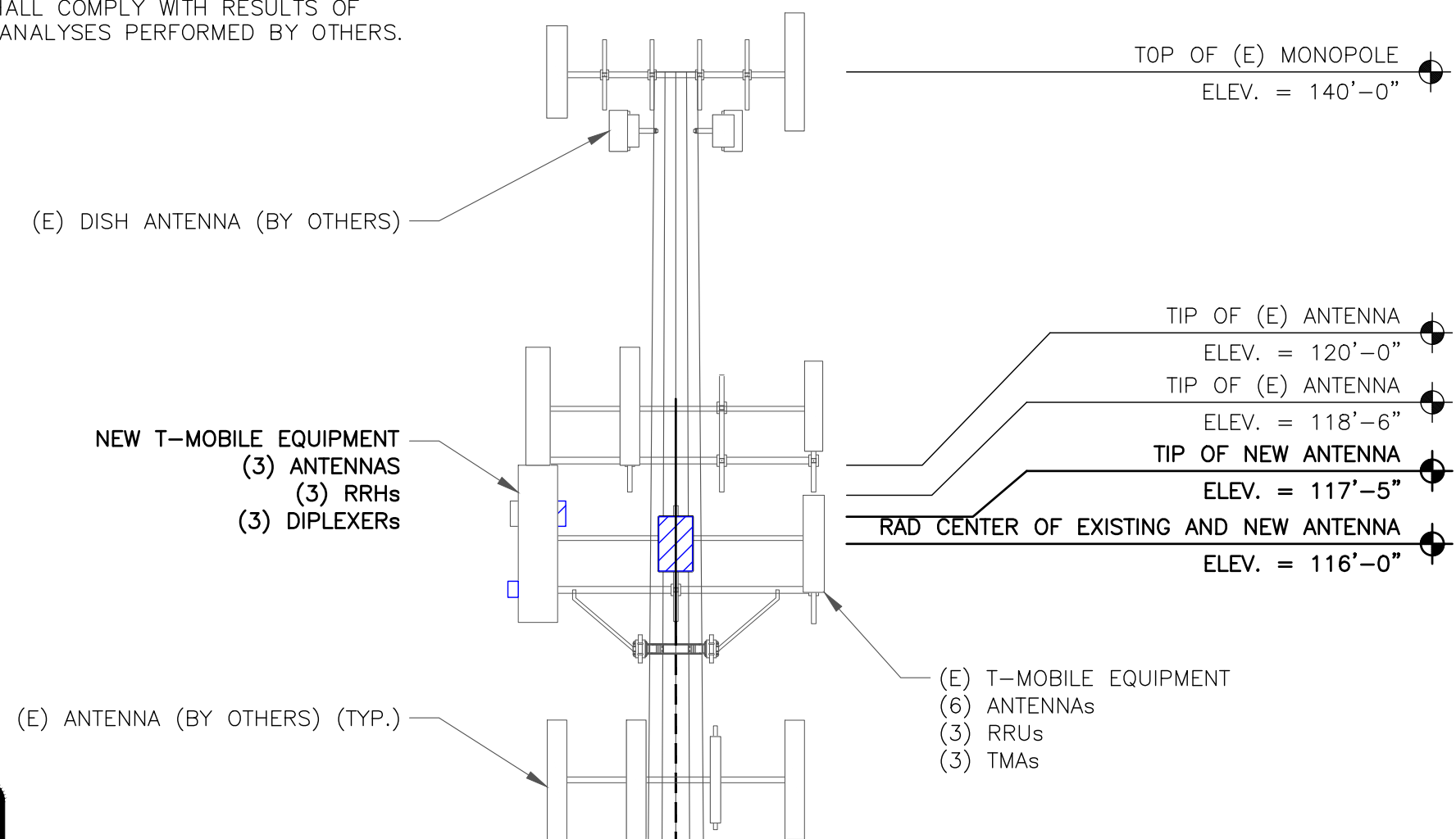
STATE OF CONNECTICUT  
CHRISTOPHER J. WATERS, P.E.  
No. 23544  
12/11/20  
LICENSED PROFESSIONAL ENGINEER

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

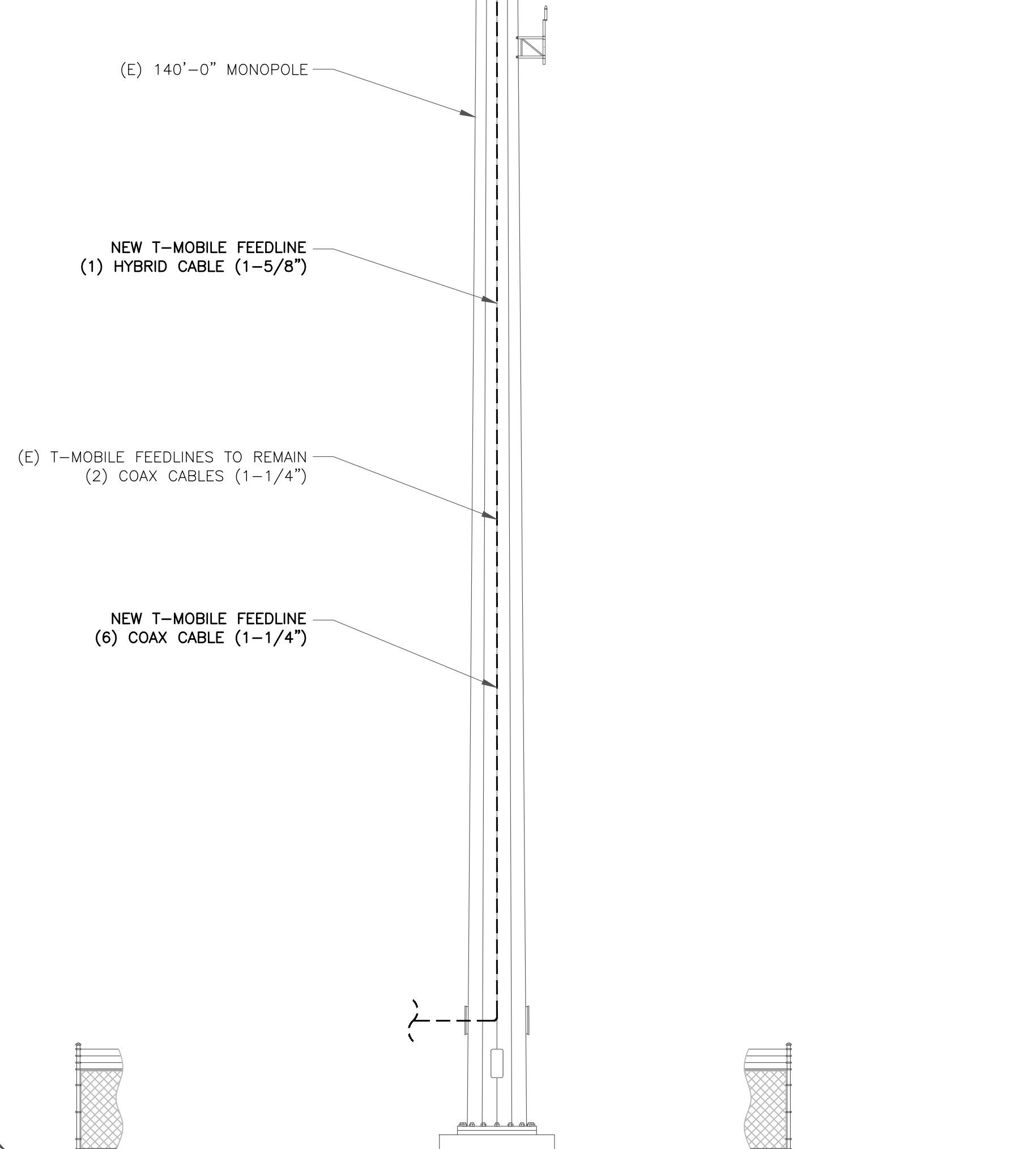
NOTES:

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

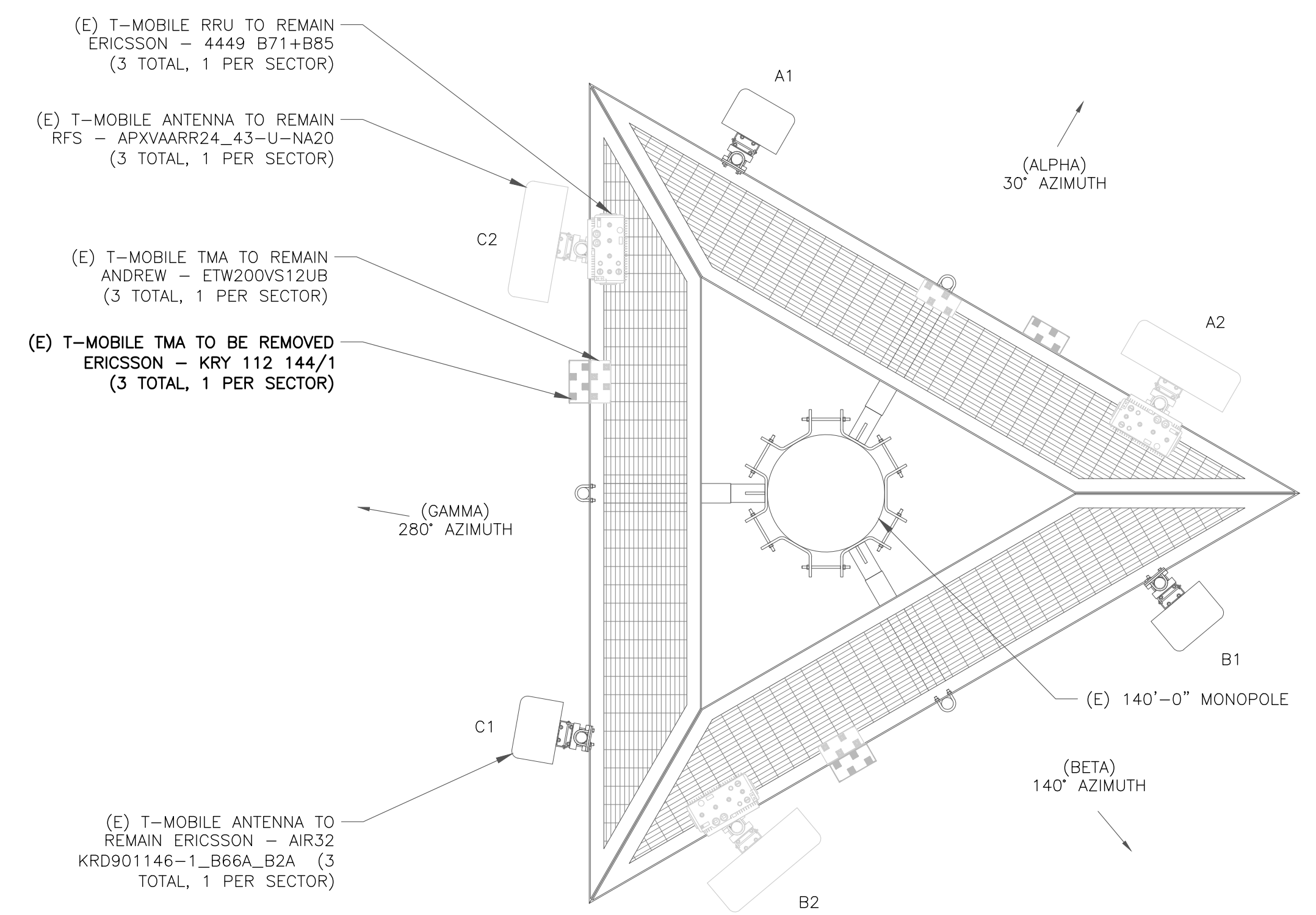


**T-MOBILE EQUIPMENT**  
ANTENNA CL: 116  
MOUNT CL: 115

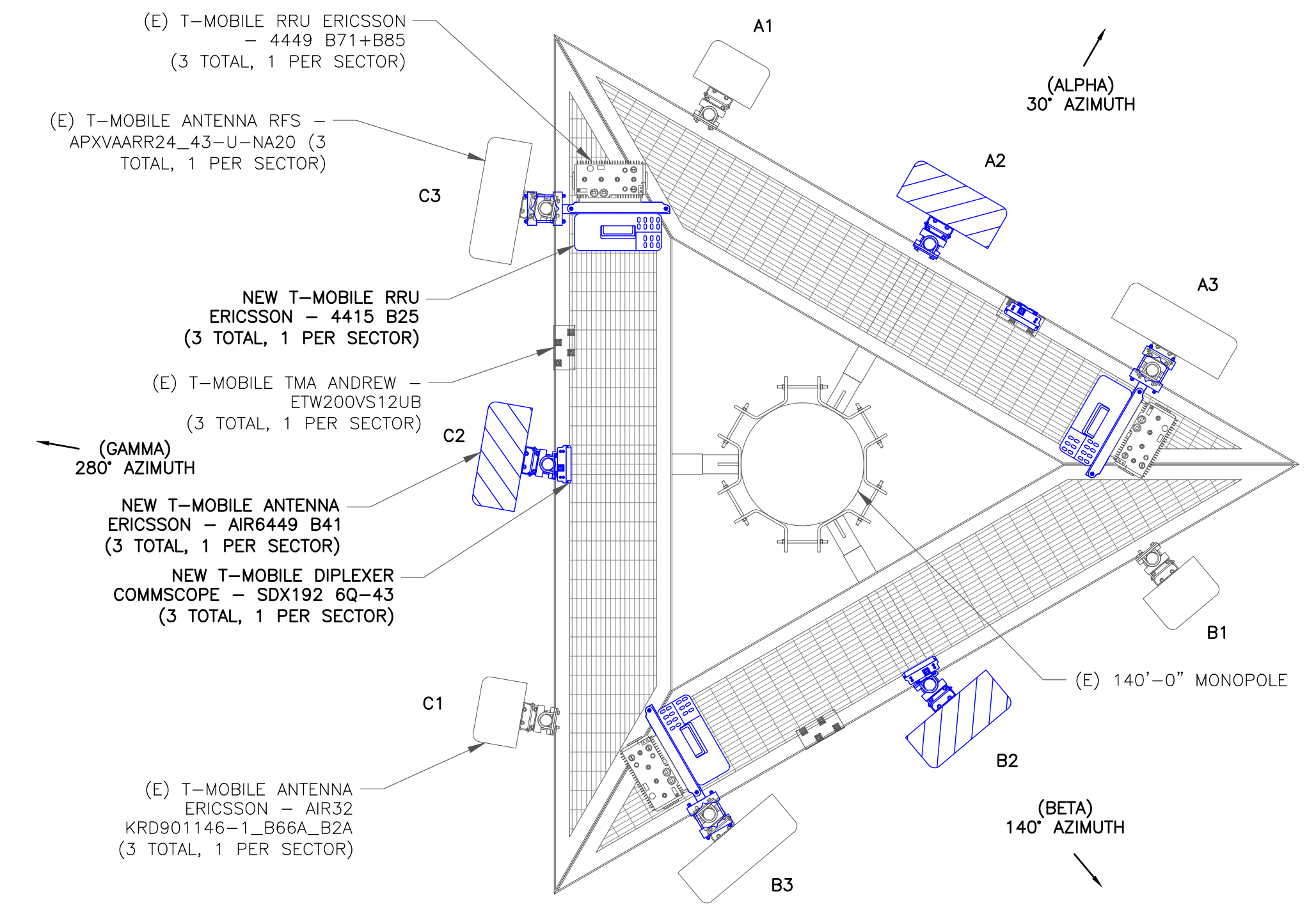
ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB



1 FINAL ELEVATION  
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT  
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT  
SCALE: NOT TO SCALE

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BU #: 876342  
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MILFORD, CT 06460  
EXISTING 140'-0" MONOPOLE

ISSUED FOR:

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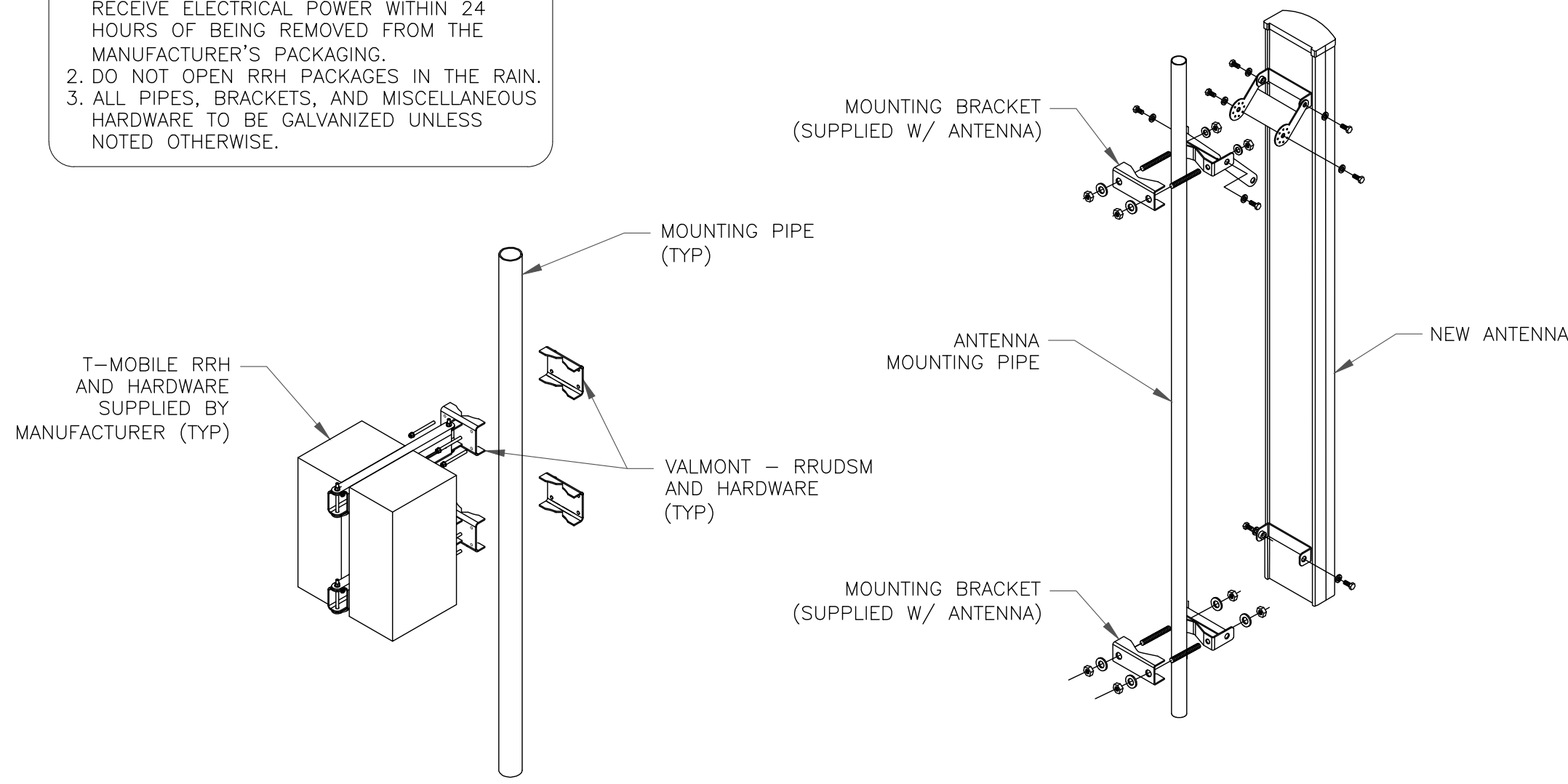
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SHEET NUMBER: **C-2** REVISION: **1**

ANTENNA SCHEDULE										
SECTOR	POS.	TECHNOLOGY	RAD CENTER	AZIMUTH	ANTENNA MANUFACTURER	ANTENNA MODEL	MECH. TILT	ELECT. TILT	TOWER MOUNTED EQUIPMENT	FEEDLINE TYPE
ALPHA	A1	L2100, L1900, G1900	116	30°	ERICSSON	AIR32 KRD901146-1_B66A_B2A	0°	-	-	(1) 6X12 HCS HYBRID (SHARED)
ALPHA	A2	L2500, N2500	116	30°	ERICSSON	AIR6449 B41	0°	-	-	(1) 6X12 HCS HYBRID (SHARED)
ALPHA	A3	L600, N600, L700, L1900, U1900, U2100	116	30°	RFS	APXVAARR24_43-U-NA20	0°	-	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4415 B25 (1) ANDREW - ETW200VS12UB (1) COMMSCOPE - SDX1926Q-43	(2) 1-5/8" COAX (1) 6X12 HCS HYBRID (SHARED)
BETA	B1	L2100, L1900, G1900	116	140	ERICSSON	AIR32 KRD901146-1_B66A_B2A	0°	-	-	(1) 6X12 HCS HYBRID (SHARED)
BETA	B2	L2500, N2500	116	140	ERICSSON	AIR6449 B41	0°	-	-	(1) 6X12 HCS HYBRID (SHARED)
BETA	B3	L600, N600, L700, L1900, U1900, U2100	116	140	RFS	APXVAARR24_43-U-NA20	0°	-	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4415 B25 (1) ANDREW - ETW200VS12UB (1) COMMSCOPE - SDX1926Q-43	(2) 1-5/8" COAX (1) 6X12 HCS HYBRID (SHARED)
GAMMA	C1	L2100, L1900, G1900	116	280	ERICSSON	AIR32 KRD901146-1_B66A_B2A	0°	-	-	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C2	L2500, N2500	116	280	ERICSSON	AIR6449 B41	0°	-	-	(1) 6X12 HCS HYBRID (SHARED)
GAMMA	C3	L600, N600, L700, L1900, U1900, U2100	116	280	RFS	APXVAARR24_43-U-NA20	0°	-	(1) ERICSSON - RRUS 4449 B71+B85 (1) ERICSSON - RRUS 4415 B25 (1) ANDREW - ETW200VS12UB (1) COMMSCOPE - SDX1926Q-43	(2) 1-5/8" COAX (1) 6X12 HCS HYBRID (SHARED)

1 ANTENNA AND CABLE SCHEDULE  
SCALE: NOT TO SCALE

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



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

2 ANTENNA WITH RRHs MOUNTING DETAIL  
SCALE: NOT TO SCALE

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 BU #: 876342  
**BIC DRIVE (SSUSA)**  
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 MILFORD, CT 06460  
 EXISTING 140'-0" MONOPOLE

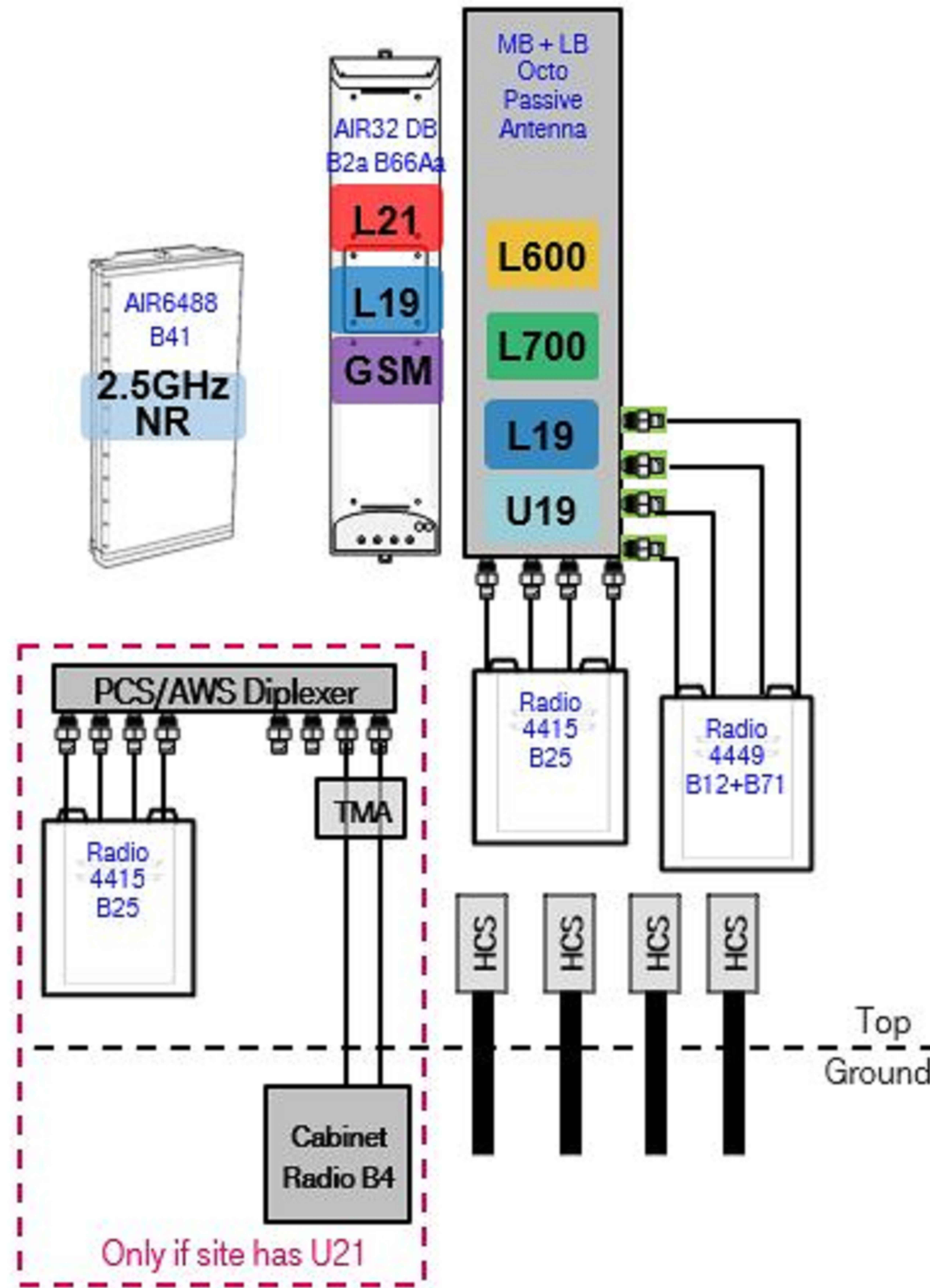
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STATE OF CONNECTICUT  
 CURTIS COOPER, P.E.  
 No. 2354  
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SHEET NUMBER: **C-3** REVISION: **1**



1 PLUMBING DIAGRAM  
SCALE: NOT TO SCALE

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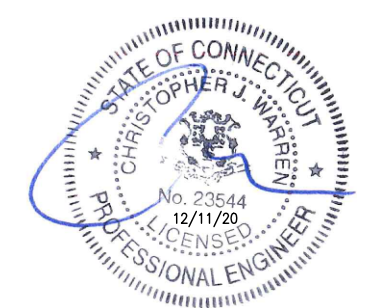
BU #: 876342  
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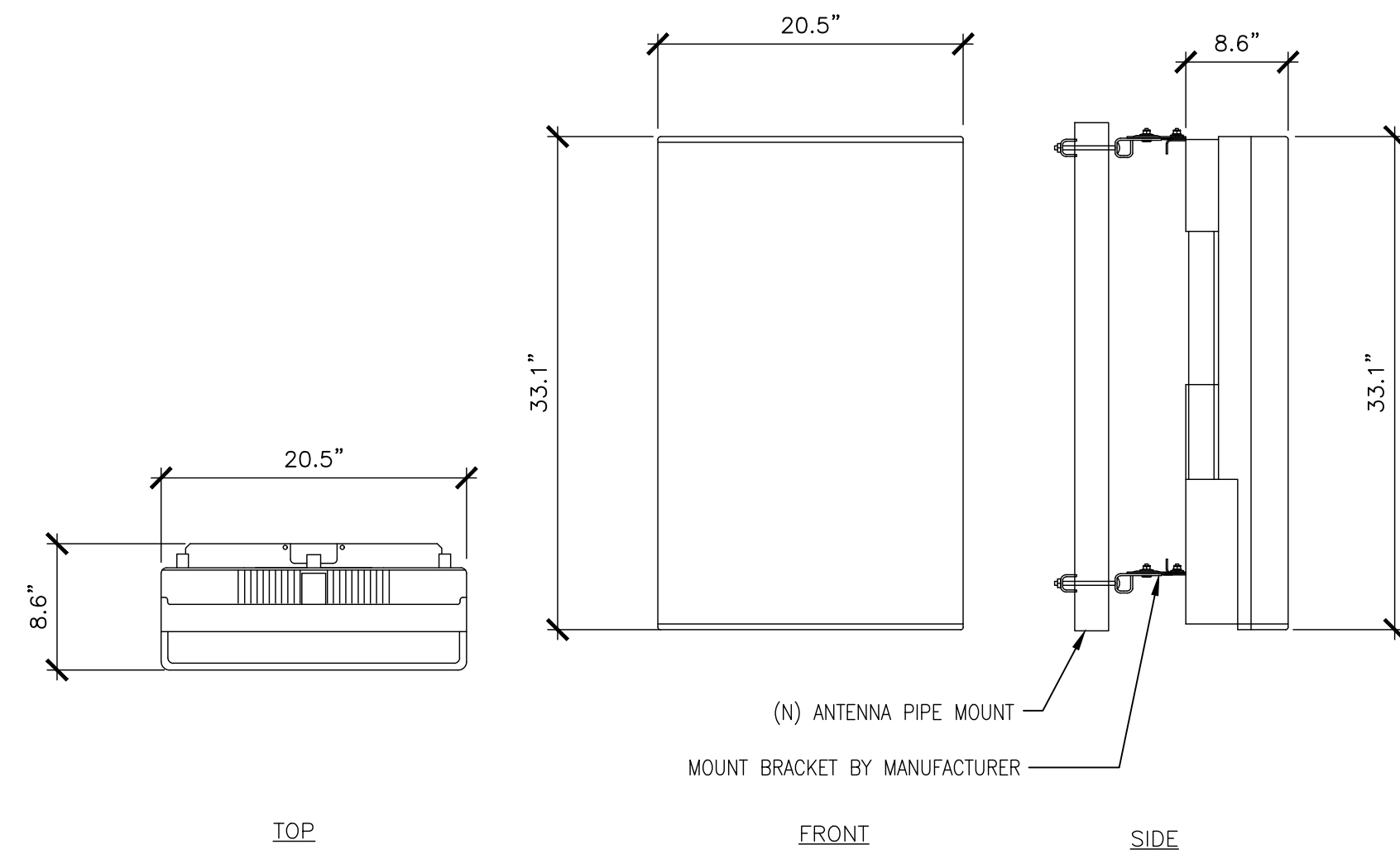
SHEET NUMBER:

C-4

REVISION:

1

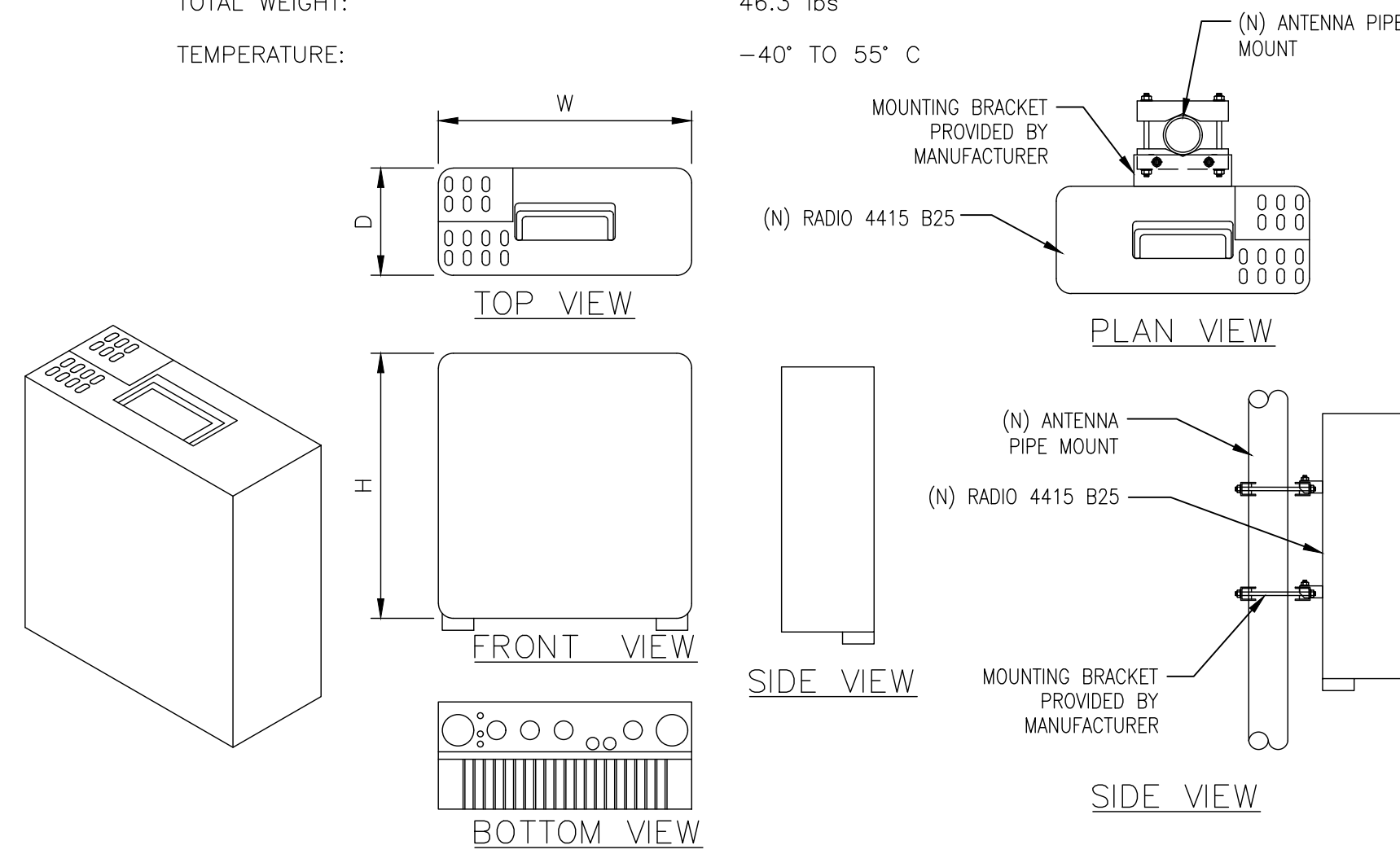
MANUFACTURER: ERICSSON  
 MODEL: AIR6449 B41  
 WEIGHT: 104 LBS (W/ MOUNT BRACKET 113)  
 DIMENSIONS: 33.1"H. X 20.5"W. X 8.6"D.  
 FREQUENCY: REFER TO RF DATA SHEET



1 (N) AIR6449 B41 ANTENNA SPEC  
 SCALE: NOT TO SCALE

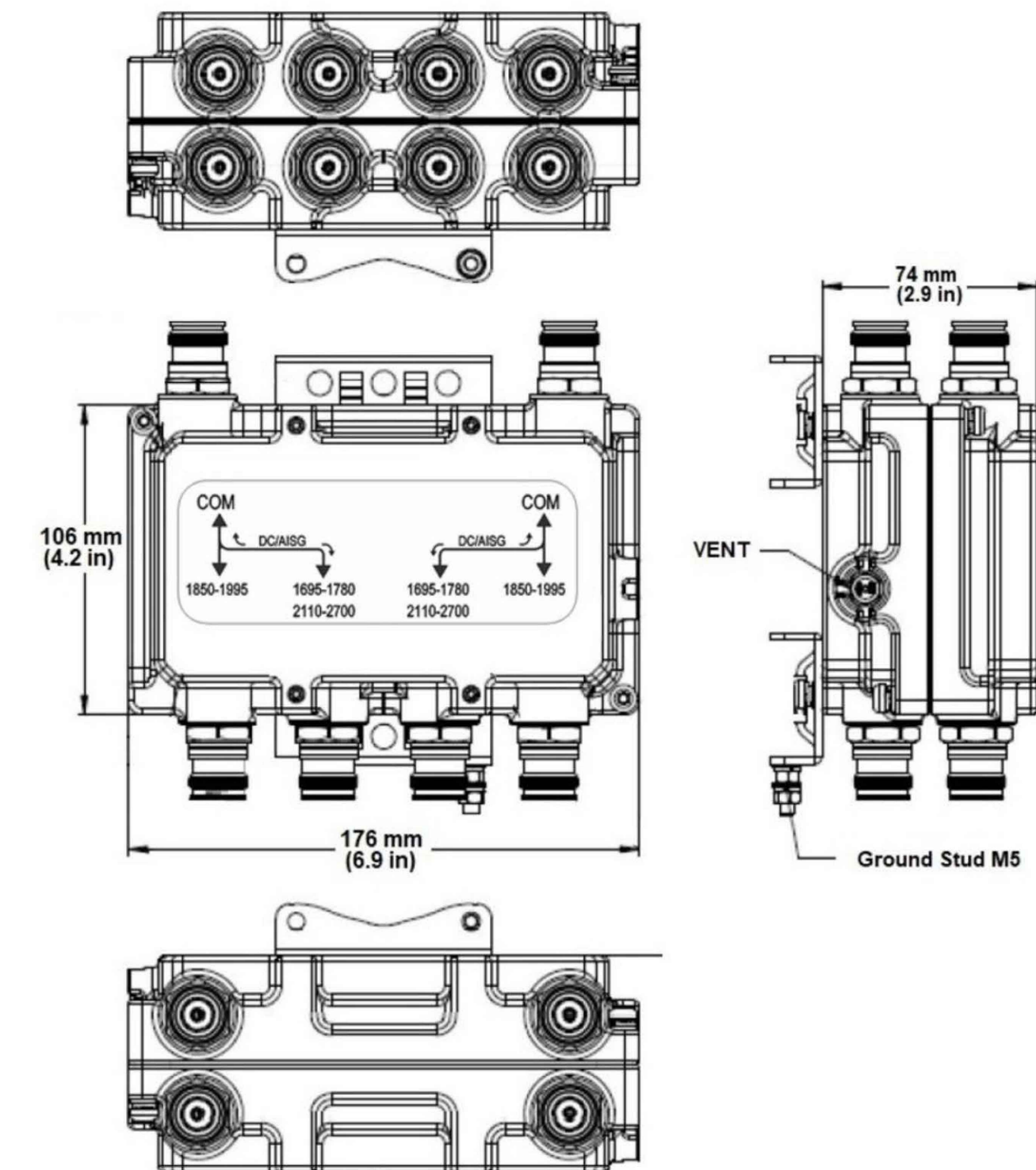
**ERICSSON RADIO-4415 B25**

DIMENSIONS, WxDxH: 13.2"x5.4"x14.9"  
 POWER CONSUMPTION: 660 WATTS  
 TOTAL WEIGHT: 46.3 lbs  
 TEMPERATURE: -40° TO 55° C



2 (N) RADIO 4415 B25 SPEC  
 SCALE: NOT TO SCALE

MANUFACTURER: COMMSCOPE  
 MODEL: SDX1926Q-43  
 WEIGHT: 6.17 LBS  
 DIMENSIONS: 6.9" X 4.2" X 2.9"  
 FREQUENCY: REFER TO RF DATA SHEET



3 (N) DIPLEX SDX1926Q-43 SPEC  
 SCALE: NOT TO SCALE

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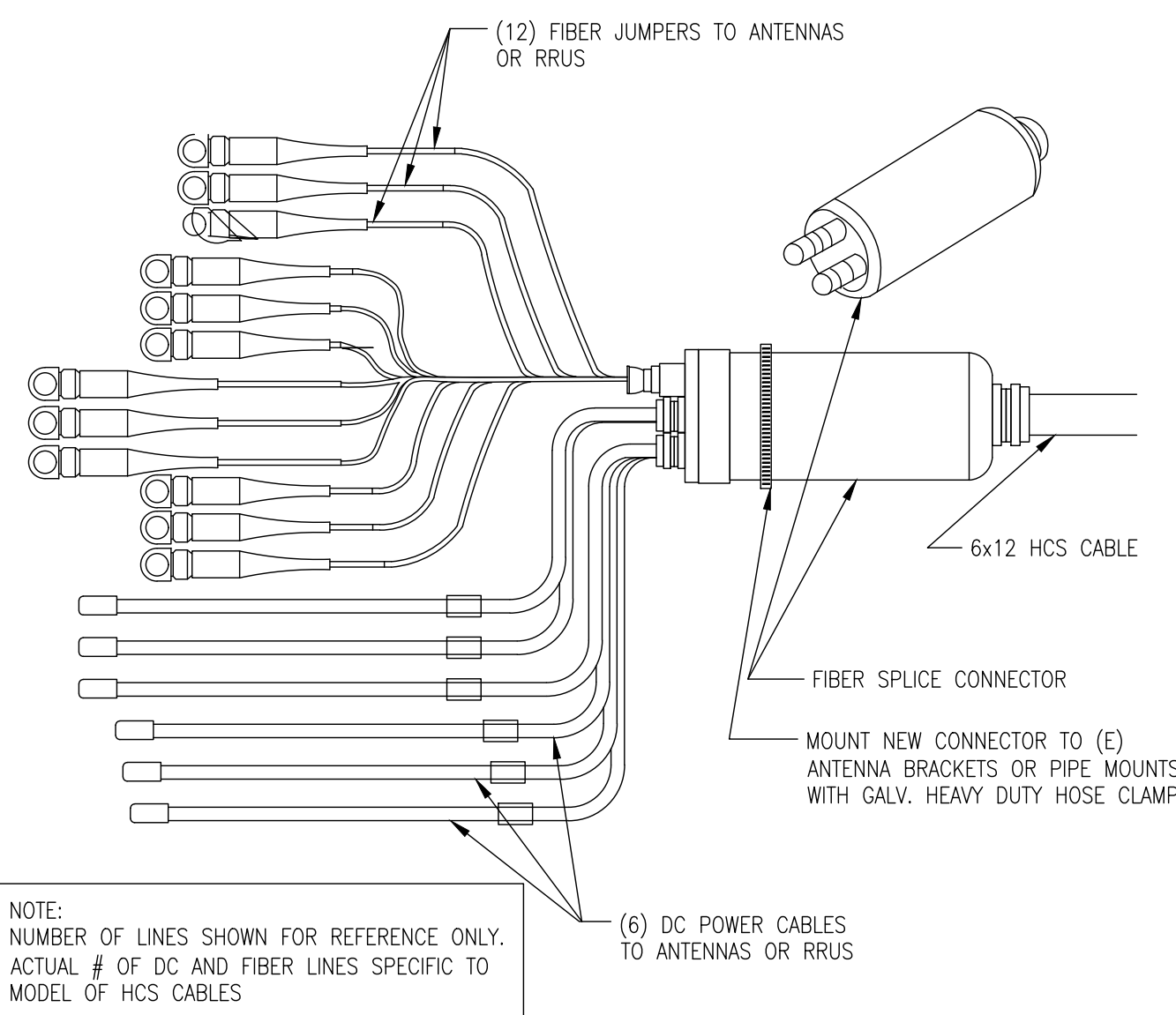
BU #: 876342  
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EXISTING 140'-0" MONOPOLE

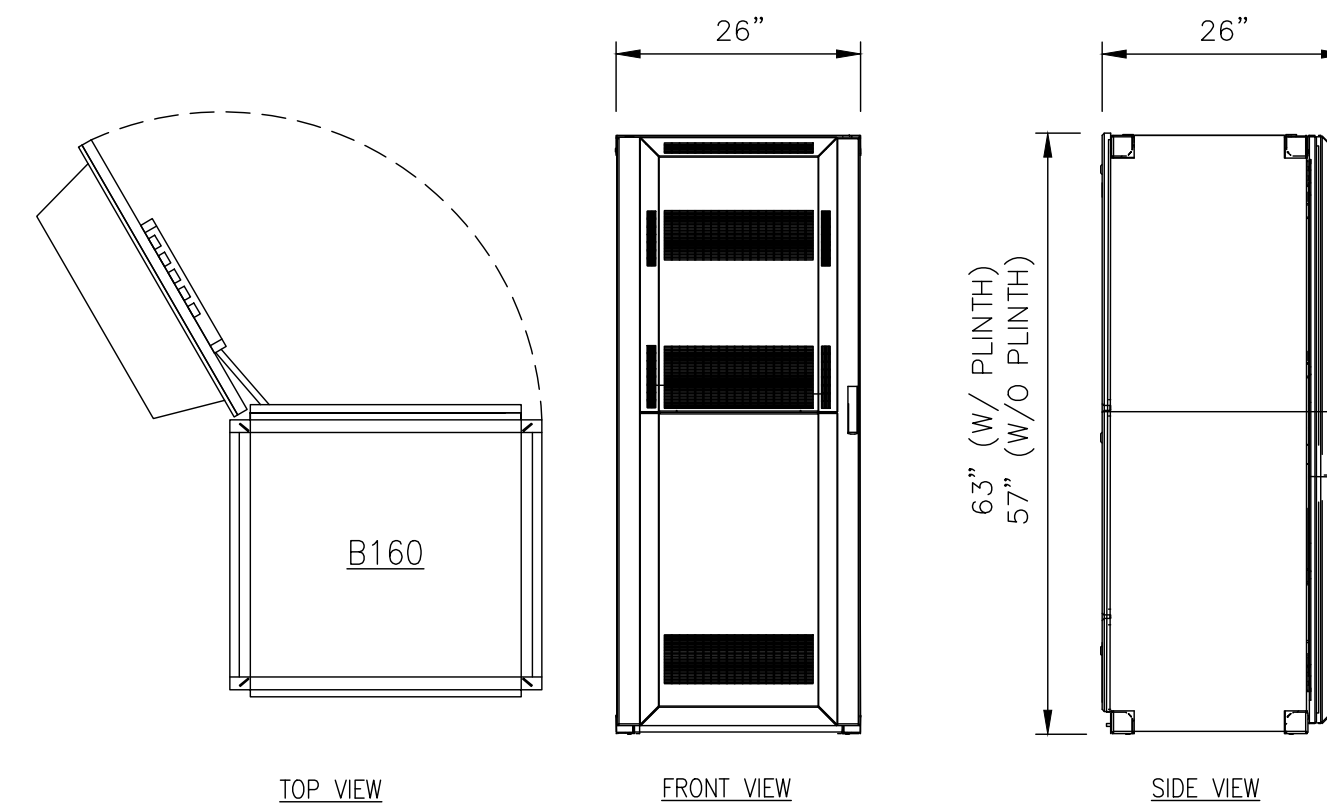
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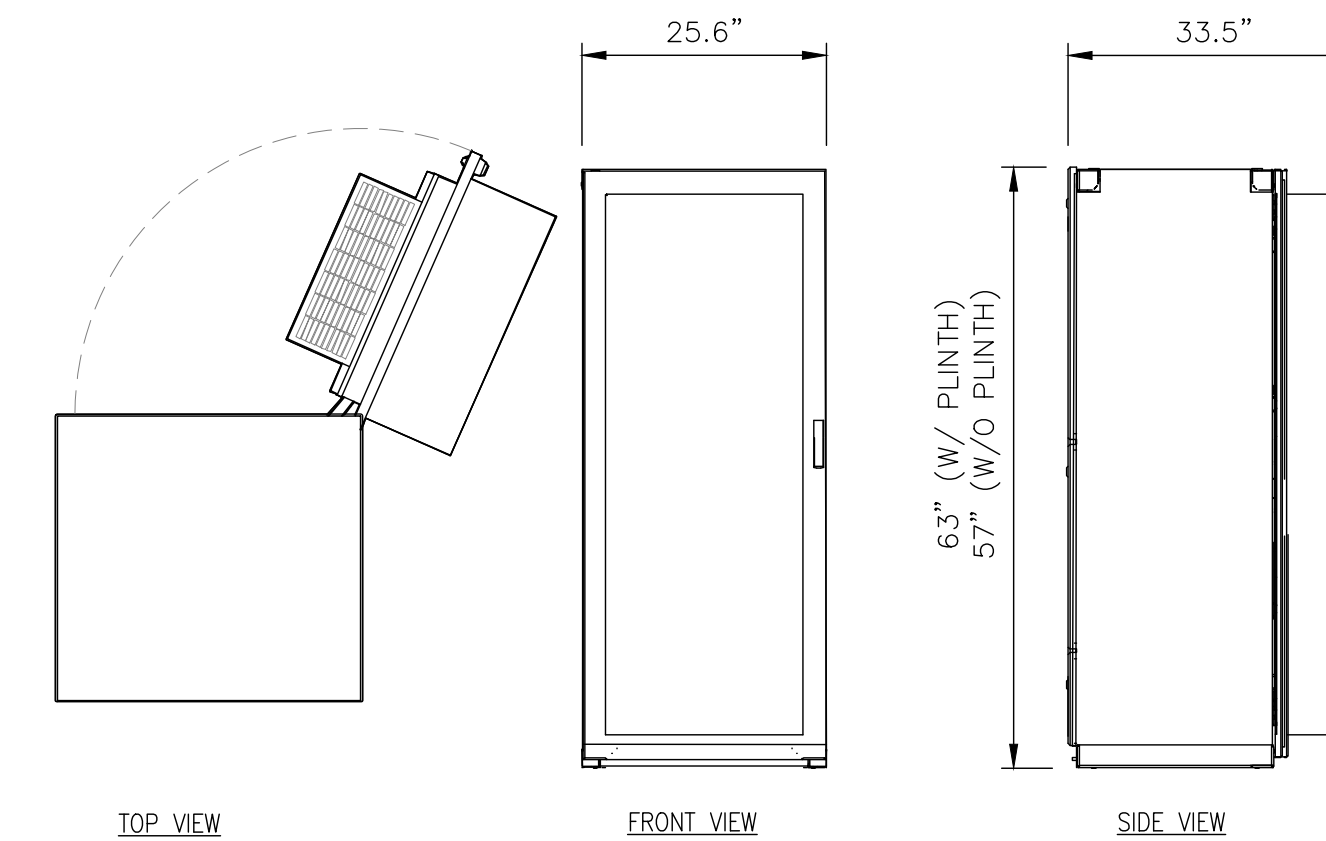
NOTE:  
 NUMBER OF LINES SHOWN FOR REFERENCE ONLY.  
 ACTUAL # OF DC AND FIBER LINES SPECIFIC TO  
 MODEL OF HCS CABLES

4 (N) 6X12 HCS CABLE DETAIL  
 SCALE: NOT TO SCALE



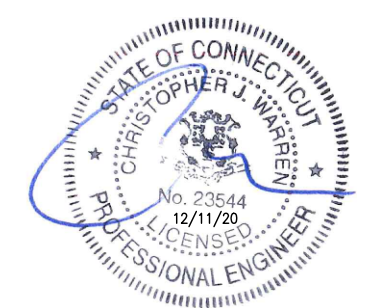
ERICSSON MODEL NO.: B160  
 RACK SPACE: 19U  
 DIMENSIONS, HxWxD: 63"x26"x26" (W/ 6" PLINTH)  
 CABINET WEIGHT, EMPTY: 485 LBS  
 MAXIMUM WEIGHT: 2100± LBS

5 B160 CABINET DETAIL  
 SCALE: NOT TO SCALE



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

6 6160 CABINET DETAIL  
 SCALE: NOT TO SCALE



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SHEET NUMBER:

**C-5**

REVISION:

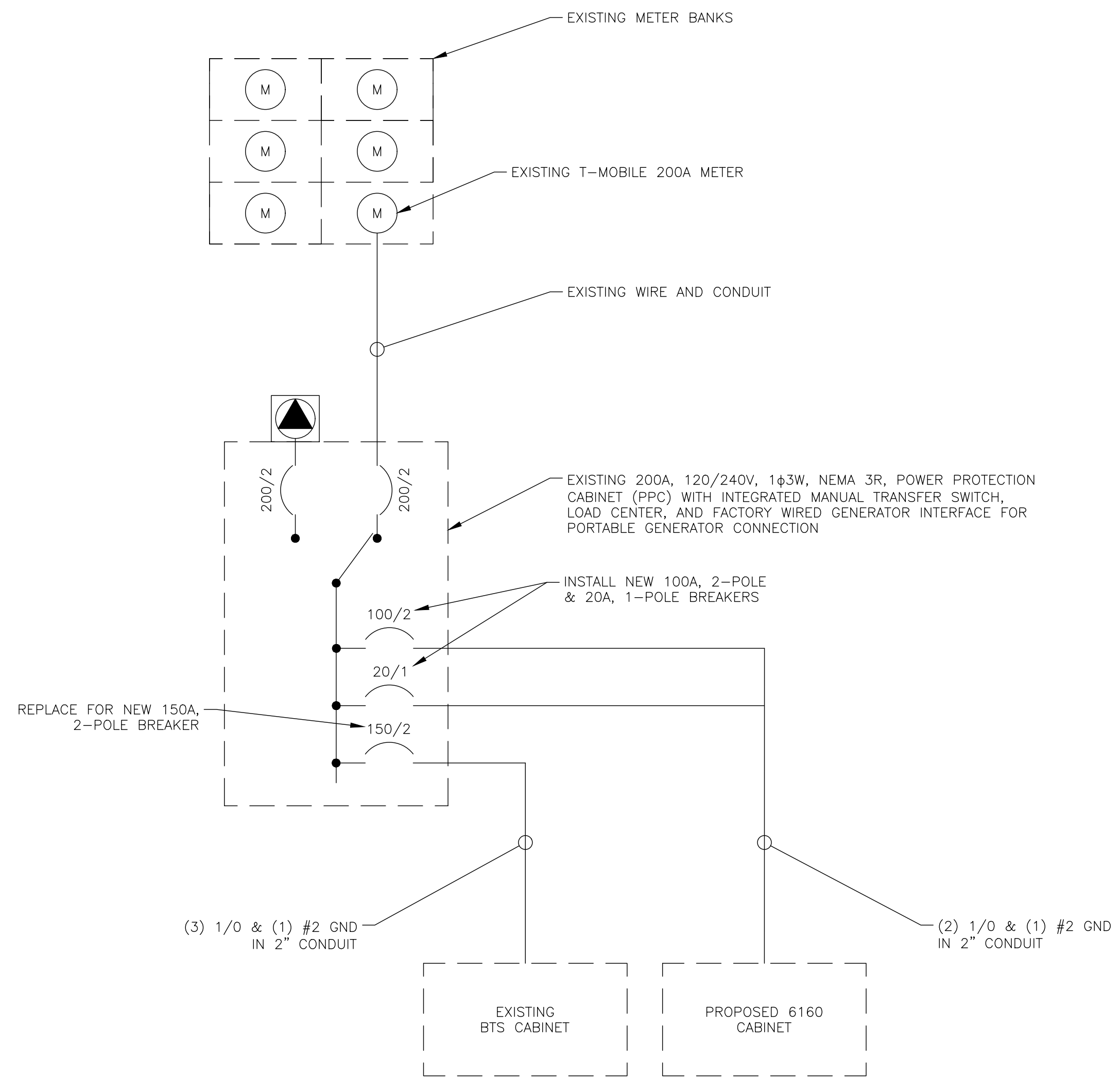
**1**

T-MOBILE PANEL SCHEDULE											
MAIN: 200A MAIN BREAKER			VOTAGE/PHASE: 120/240V, 1-PHASE, 3-WIRE				SHORT CIRCUIT CURRENT RATING: --				
MOUNTING: INSIDE PPC ENCLOSURE			ENCLOSURE: NEMA 3R				SURGE PROTECTION DEVICE: YES				
DESCRIPTION	LOAD (VA)	C or NC	C/B	CIR No.	PHASE LOADS (VA)		CIR No.	C/B	C or NC	LOAD (VA)	DESCRIPTION
					A	B					
TVSS	0	NC	60	1	180		2	20	NC	180	GFCI
TVSS	0	NC		3		0	4		C	0	UMTS (DISCONNECTED)
6102*	7500	C	150	5	7500		6		C	0	UMTS (DISCONNECTED)
6102*	7500	C		7		8500	8		C	1000	6160*
LIGHT	200	NC	20	9	1200		10		C	1000	6160*
BLANK				11		0	12				
				13		0	14				
				15		0	16				
				17		0	18				
				19		0	20				
				21		0	22				
				23		0	24				
BASE LOAD (VA) =					8880	8500	C = CONTINUOUS LOAD; NC = NON-CONTINUOUS LOAD				
25% OF CONTINUOUS LOAD (VA) =					2125	2125	*INDICATES NEW LOAD. ALL OTHER LOADS ARE EXISTING.				
TOTAL LOAD (VA) =					11005	10625	NEW BREAKER TO BE SAME TYPE AND HAVE SAME AIC RATING AS EXISTING. CUSTOMER HAS NOT PROVIDED LOADS FOR EQUIPMENT CABINETS THEREFORE THE CABINET LOADS SHOWN ARE ESTIMATED				
TOTAL LOAD (A) =					92	89					

1 AC PANEL SCHEDULE  
SCALE: NOT TO SCALE

NOTES:

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



2 ONE LINE DIAGRAM  
SCALE: NOT TO SCALE

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BU #: 876342  
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EXISTING 140'-0" MONOPOLE

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SHEET NUMBER:

E-1

REVISION:

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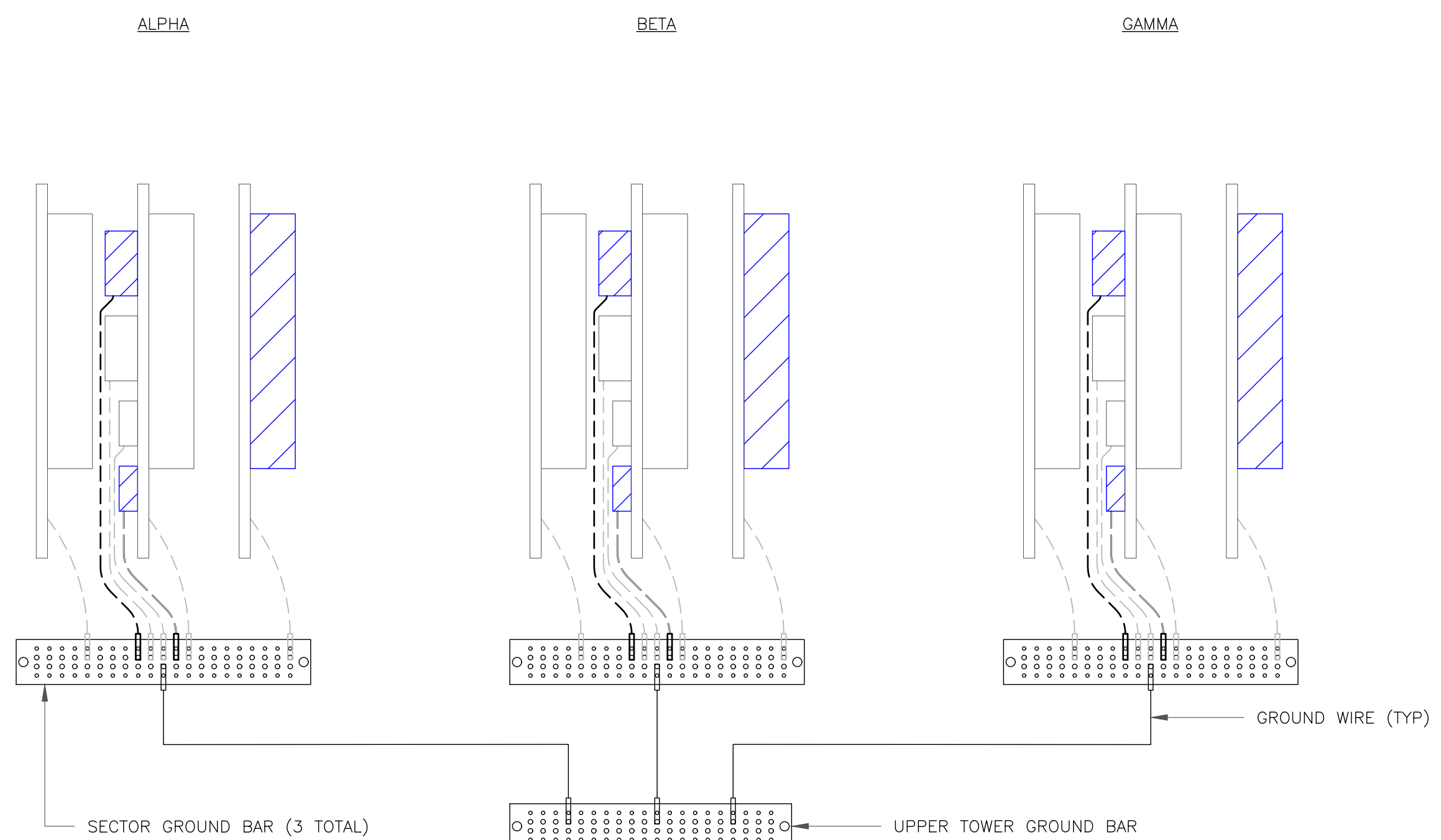
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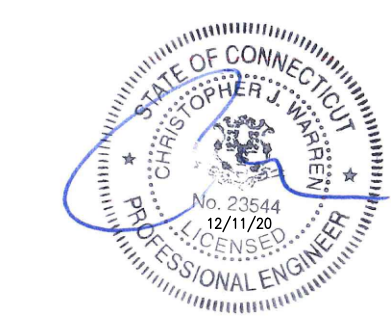
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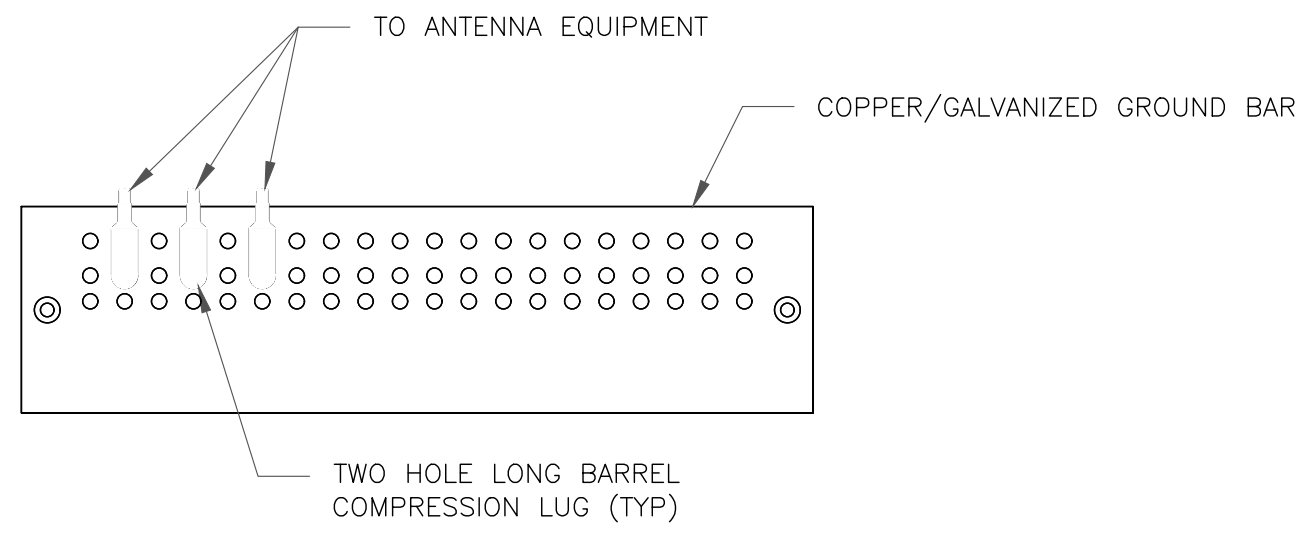
**NOTE:**  
ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM  
SCALE: NOT TO SCALE



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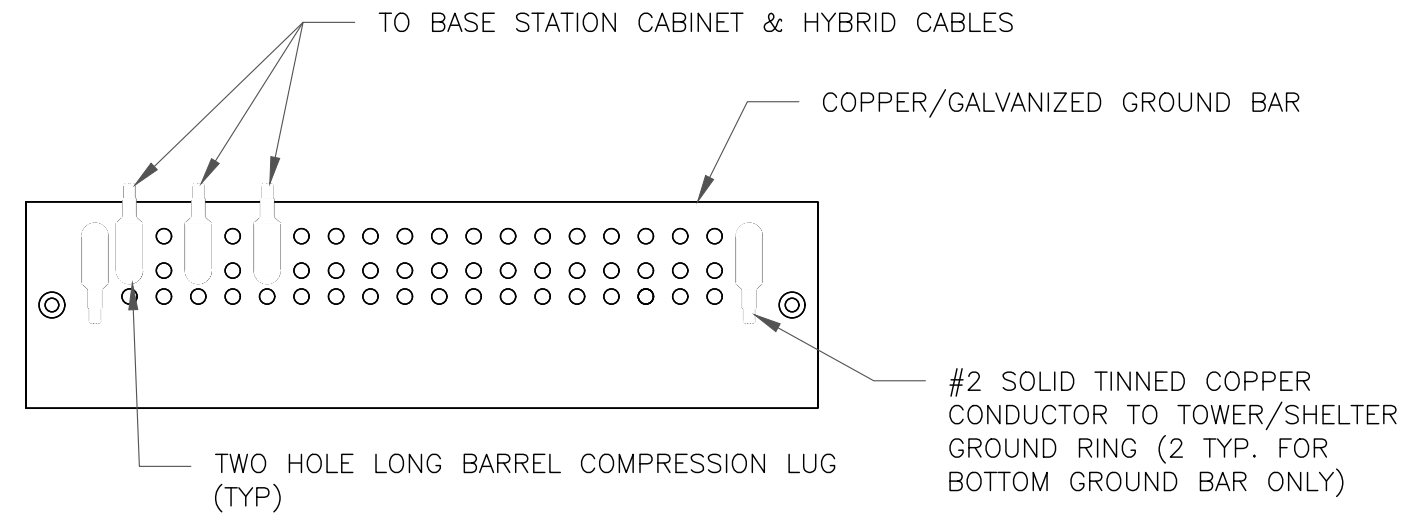
SHEET NUMBER: **G-1** REVISION: **1**



**NOTES:**

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

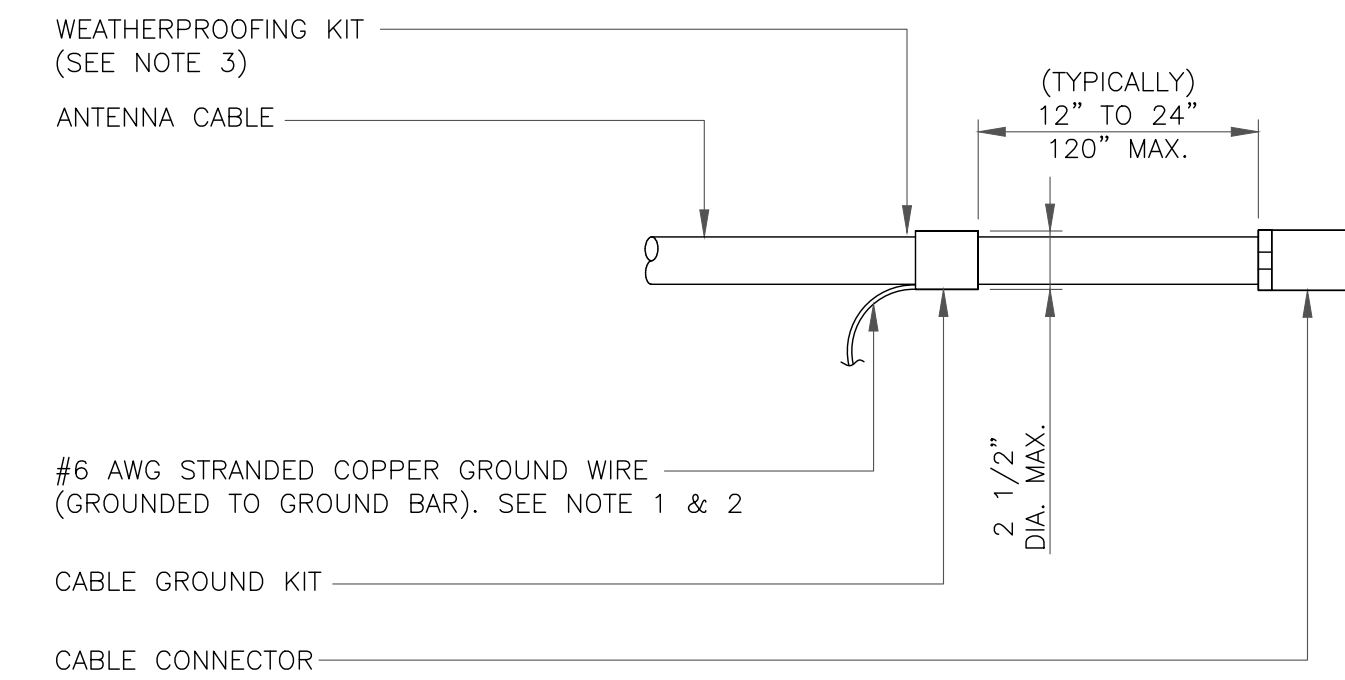
1 ANTENNA SECTOR GROUND BAR DETAIL  
SCALE: NOT TO SCALE



**NOTES:**

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

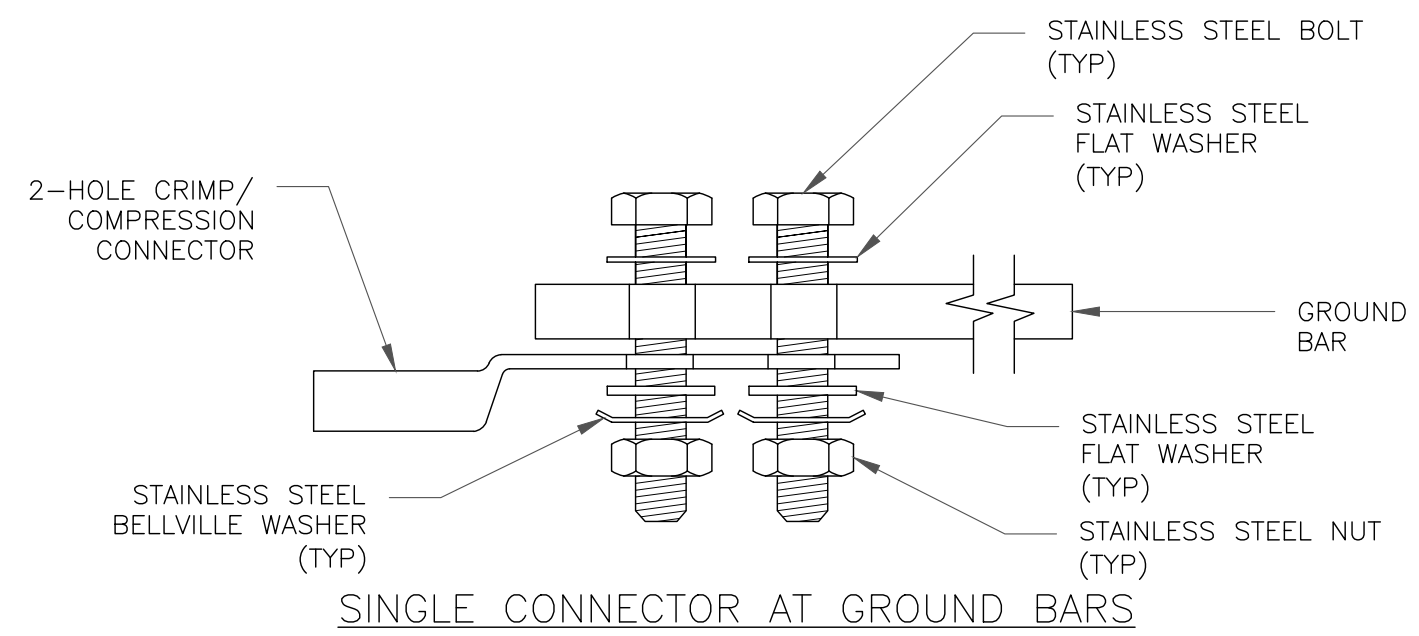
2 TOWER/SHELTER GROUND BAR DETAIL  
SCALE: NOT TO SCALE



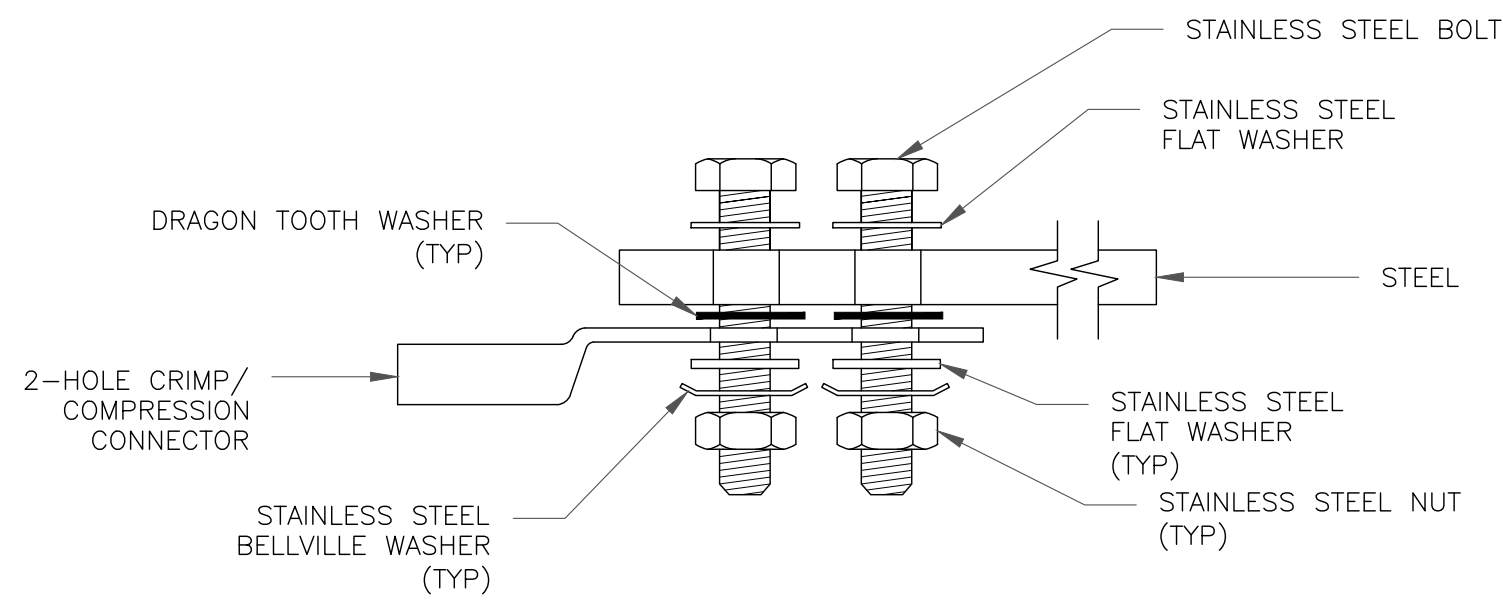
**NOTES:**

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.

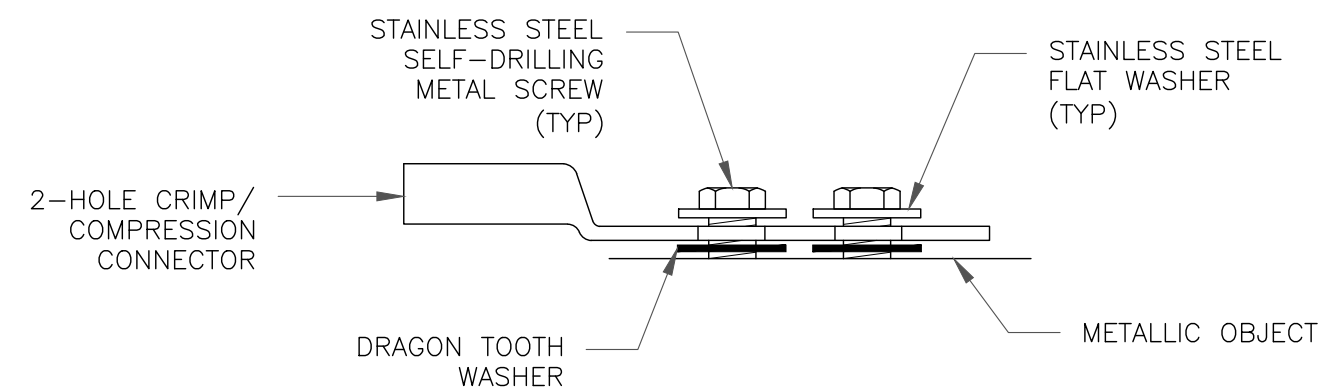
3 CABLE GROUND KIT CONNECTION  
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS



SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

4 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS  
SCALE: NOT TO SCALE

5 NOT USED  
SCALE: NOT TO SCALE

6 NOT USED  
SCALE: NOT TO SCALE

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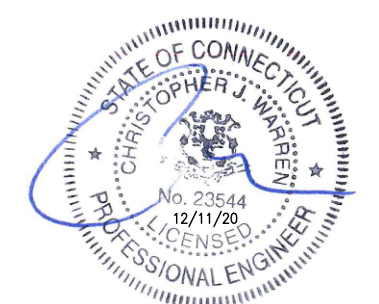
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111 SCHOOL HOUSE ROAD  
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EXISTING 140'-0" MONOPOLE

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0	11/03/20	SS	FINAL	SS
1	12/11/20	BMM	FINAL	SS



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

SHEET NUMBER:

**G-2**

REVISION:

**1**

# Exhibit D

## **Structural Analysis Report**



Date: **October 14, 2020**

Stephanie Lipscomb  
Crown Castle  
370 Mallory Station Road  
Franklin, TN 37067

Crown Castle  
2000 Corporate Drive  
Canonsburg, PA 15317  
(724) 416-2000

**Subject:** **Structural Analysis Report**

**Carrier Designation:** **T-Mobile Co-Locate**  
**Carrier Site Number:** CT11229A  
**Carrier Site Name:** Stratford/ Rt 1/ Rt 162

**Crown Castle Designation:** **Crown Castle BU Number:** 876342  
**Crown Castle Site Name:** BIC DRIVE (SSUSA)  
**Crown Castle JDE Job Number:** 620157  
**Crown Castle Work Order Number:** 1890917  
**Crown Castle Order Number:** 529717 Rev. 0

**Engineering Firm Designation:** **Crown Castle Project Number:** 1890917

**Site Data:** **111 School House Road, a/k/a Bic Drive, MILFORD, New Haven County, CT**  
**Latitude 41° 12' 46.06", Longitude -73° 5' 7.1"**  
**140 Foot - Monopole Tower**

Dear Stephanie Lipscomb,

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

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

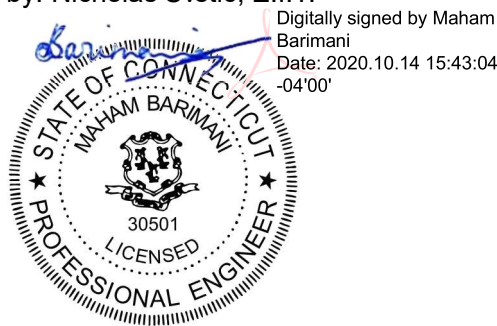
LC7: Proposed Equipment Configuration

**Sufficient Capacity**

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

Structural analysis prepared by: Nicholas Cvetic, E.I.T.

Respectfully submitted by:



Maham Barimani, P.E.  
Senior Project Engineer

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## 1) INTRODUCTION

This tower is a 140 ft monopole tower designed by Summit.

The tower has been modified multiple times to accommodate additional loading.

## 2) ANALYSIS CRITERIA

<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Wind Speed:</b>	125
<b>Exposure Category:</b>	C
<b>Topographic Factor:</b>	1
<b>Ice Thickness:</b>	1.5 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Service Wind Speed:</b>	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)
115.0	116.0	3	commscope	SDX1926Q-43	6 2 1	1-5/8 1-3/8 1-1/4
		3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	RADIO 4449 B12/B71		
		3	ericsson	RRUS 4415 B25_CCIV2		
	3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe			
	115.0	3	andrew	ETW200VS12UB		
		1	tower mounts	Platform Mount [LP 1201-1_KCKR-HR-1]		

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
140.0	140.0	3	alcatel lucent	TD-RRH8X20-25	1 3 1	1-5/8 1-1/4 1/2
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APX/SPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 1201-1]		
137.0	137.0	3	alcatel lucent	TME-1900MHz RRH (65MHz) w/ Mount Pipe	-	-
		3	alcatel lucent	TME-800MHZ RRH		
		3	alcatel lucent	TME-800MHz 2x50W RRH W/FILTER w/ Mount Pipe		
		1	tower mounts	Side Arm Mount [SO 103-3]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
121.0	123.0	3	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	12 2 2 2	1-5/8 7/16 3/4 3/8
		2	commscope	WCS-IMFT-AMT-43		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS12/RRUS A2		
		3	kaelus	DBC0061F1V51-2		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		3	quintel technology	QS66512-6 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8C		
	1	raycap	DC6-48-60-18-8F			
	121.0	1	tower mounts	Platform Mount [LP 1201-1_HR-1]		
104.0	104.0	3	andrew	LNx-6514DS-VTM w/ Mount Pipe	8	1-5/8
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	SBNHH-1D65B w/ Mount Pipe		
		2	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	samsung telecommunications	20W CBRS		
		3	samsung telecommunications	CBRS w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		1	tower mounts	Platform Mount [LP 1201-1_KCKR-HR-1]		
95.0	95.0	1	tower mounts	Pipe Mount [PM 601-3]	6	1-5/8
80.0	82.0	1	kathrein	OG-860/1920/GPS-A	1	1/2
	80.0	1	tower mounts	Side Arm Mount [SO 901-1]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH	1531894	CCISITES
4-POST-MODIFICATION INSPECTION	Paul J. Ford and Company	2547672	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	6234048	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford and Company	1631615	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Paul J. Ford and Company	1630877	CCISITES

Document	Remarks	Reference	Source
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Paul J. Ford and Company	2547673	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Paul J. Ford and Company	6173982	CCISITES

### 3.1) Analysis Method

tnxTower (version 8.0.7.5), 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.

### 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. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

## 4) ANALYSIS RESULTS

**Table 4 - Section Capacity (Summary)**

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.015x16x0.25	Pole	6.2%	Pass
135 - 130	Pole	TP18.03x17.015x0.25	Pole	12.3%	Pass
130 - 125	Pole	TP19.045x18.03x0.25	Pole	17.5%	Pass
125 - 120	Pole	TP20.061x19.045x0.25	Pole	25.2%	Pass
120 - 115	Pole	TP21.076x20.061x0.25	Pole	35.3%	Pass
115 - 110	Pole	TP22.091x21.076x0.25	Pole	50.3%	Pass
110 - 105	Pole	TP23.106x22.091x0.25	Pole	62.4%	Pass
105 - 104	Pole	TP23.309x23.106x0.25	Pole	64.7%	Pass
104 - 103.75	Pole + Reinf.	TP23.36x23.309x0.4625	Reinf. 9 Tension Rupture	60.0%	Pass
103.75 - 98.75	Pole + Reinf.	TP24.375x23.36x0.45	Reinf. 9 Tension Rupture	73.1%	Pass
98.75 - 98.5	Pole + Reinf.	TP24.426x24.375x0.45	Reinf. 9 Tension Rupture	73.7%	Pass
98.5 - 98.25	Pole + Reinf.	TP24.476x24.426x0.725	Reinf. 9 Tension Rupture	47.6%	Pass
98.25 - 97	Pole + Reinf.	TP24.73x24.476x0.725	Reinf. 9 Tension Rupture	49.6%	Pass
97 - 96.75	Pole + Reinf.	TP24.781x24.73x0.5125	Reinf. 5 Tension Rupture	59.0%	Pass
96.75 - 91.75	Pole + Reinf.	TP26.456x24.781x0.5	Reinf. 5 Tension Rupture	67.8%	Pass
91.75 - 88.17	Pole + Reinf.	TP26.023x25.296x0.5625	Reinf. 5 Tension Rupture	67.2%	Pass
88.17 - 87.92	Pole + Reinf.	TP26.074x26.023x0.7625	Reinf. 5 Tension Rupture	52.6%	Pass
87.92 - 82.92	Pole + Reinf.	TP27.089x26.074x0.7375	Reinf. 5 Tension Rupture	58.0%	Pass
82.92 - 77.92	Pole + Reinf.	TP28.104x27.089x0.725	Reinf. 5 Tension Rupture	63.0%	Pass



77.92 - 72.92	Pole + Reinf.	TP29.12x28.104x0.7125	Reinf. 5 Tension Rupture	67.6%	Pass
72.92 - 68.08	Pole + Reinf.	TP30.102x29.12x0.6875	Reinf. 5 Tension Rupture	71.8%	Pass
68.08 - 67.83	Pole + Reinf.	TP30.153x30.102x0.8125	Reinf. 7 Tension Rupture	61.3%	Pass
67.83 - 62.83	Pole + Reinf.	TP31.168x30.153x0.7875	Reinf. 7 Tension Rupture	65.0%	Pass
62.83 - 57.83	Pole + Reinf.	TP32.184x31.168x0.7625	Reinf. 7 Tension Rupture	68.5%	Pass
57.83 - 52.83	Pole + Reinf.	TP33.199x32.184x0.75	Reinf. 7 Tension Rupture	71.8%	Pass
52.83 - 51.5	Pole + Reinf.	TP34.332x33.199x0.75	Reinf. 7 Tension Rupture	72.7%	Pass
51.5 - 46.5	Pole + Reinf.	TP33.859x32.844x0.8	Reinf. 7 Tension Rupture	71.8%	Pass
46.5 - 41.5	Pole + Reinf.	TP34.874x33.859x0.8	Reinf. 7 Tension Rupture	74.4%	Pass
41.5 - 37.75	Pole + Reinf.	TP35.636x34.874x0.775	Reinf. 7 Tension Rupture	76.2%	Pass
37.75 - 37.5	Pole + Reinf.	TP35.686x35.636x0.8	Reinf. 2 Tension Rupture	74.6%	Pass
37.5 - 32.5	Pole + Reinf.	TP36.702x35.686x0.775	Reinf. 2 Tension Rupture	76.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.752x36.702x0.825	Reinf. 2 Tension Rupture	72.9%	Pass
32.25 - 27.25	Pole + Reinf.	TP37.767x36.752x0.8125	Reinf. 2 Tension Rupture	74.8%	Pass
27.25 - 23.5	Pole + Reinf.	TP38.529x37.767x0.8	Reinf. 2 Tension Rupture	76.2%	Pass
23.5 - 23.25	Pole + Reinf.	TP38.58x38.529x0.9	Reinf. 2 Tension Rupture	71.6%	Pass
23.25 - 20.75	Pole + Reinf.	TP39.087x38.58x0.9	Reinf. 2 Tension Rupture	72.4%	Pass
20.75 - 20.5	Pole + Reinf.	TP39.138x39.087x0.85	Reinf. 2 Tension Rupture	73.4%	Pass
20.5 - 15.5	Pole + Reinf.	TP40.153x39.138x0.825	Reinf. 2 Tension Rupture	75.1%	Pass
15.5 - 10.5	Pole + Reinf.	TP41.168x40.153x0.825	Reinf. 2 Tension Rupture	76.6%	Pass
10.5 - 5.5	Pole + Reinf.	TP42.183x41.168x0.8	Reinf. 2 Tension Rupture	78.0%	Pass
5.5 - 3	Pole + Reinf.	TP42.691x42.183x0.8	Reinf. 2 Tension Rupture	78.7%	Pass
3 - 2.75	Pole + Reinf.	TP42.742x42.691x0.8625	Reinf. 2 Tension Rupture	74.0%	Pass
2.75 - 1.75	Pole + Reinf.	TP42.945x42.742x0.8625	Reinf. 2 Tension Rupture	74.3%	Pass
1.75 - 1.5	Pole + Reinf.	TP42.995x42.945x0.975	Reinf. 13 Tension Yield	66.3%	Pass
1.5 - 0	Pole + Reinf.	TP43.3x42.995x0.975	Reinf. 13 Tension Yield	66.7%	Pass
				Summary	
			Pole	64.7%	Pass
			Reinforcement	78.7%	Pass
			Overall	78.7%	Pass

**Table 5 - Tower Component Stresses vs. Capacity - LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	67.1	Pass
1	Base Plate	0	56.1	Pass
1	Base Foundation (Structure)	0	51.5	Pass
1	Base Foundation (Soil Interaction)	0	51.7	Pass

<b>Structure Rating (max from all components) =</b>	<b>78.7%</b>
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Notes:

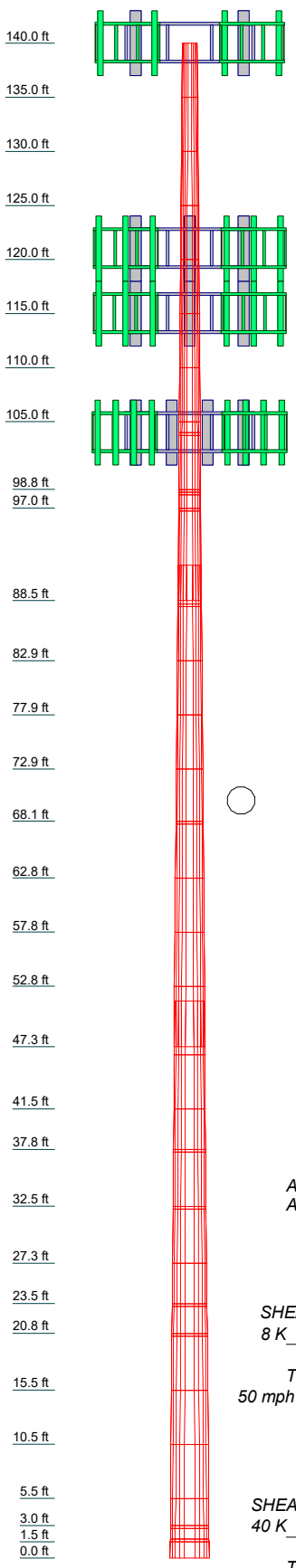
- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity consumed.

#### **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**

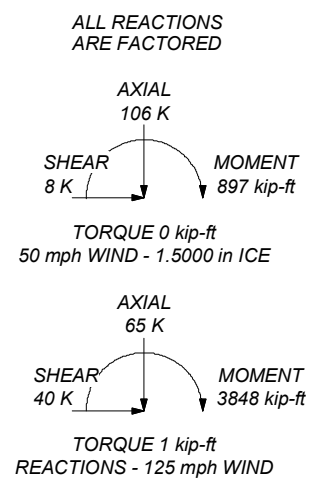
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.2
2	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.2
3	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
4	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
5	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
6	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
7	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
8	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
9	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
10	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
11	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
12	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
13	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
14	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
15	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
16	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
17	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
18	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
19	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
20	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
21	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
22	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
23	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
24	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
25	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
26	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
27	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
28	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
29	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
30	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
31	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
32	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
33	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
34	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
35	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
36	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
37	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
38	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
39	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
40	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
41	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
42	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
43	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
44	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
45	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
46	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
47	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
48	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
49	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3
50	14.32	12	0.5000	3.2500	40.1531	41.1682	18.0303	0.3



### MATERIAL STRENGTH

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

- ### TOWER DESIGN NOTES
1. Tower is located in New Haven County, Connecticut.
  2. Tower designed for Exposure C to the TIA-222-H Standard.
  3. Tower designed for a 125 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 0.0000 ft
  8. TOWER RATING: 78.7%



<p><b>CROWN CASTLE</b> The Pathway to Possible</p>	<p><b>Crown Castle</b> 2000 Corporate Drive Canonsburg, PA 15317 Phone: (724) 416-2000 FAX:</p>		<p>Job: <b>BU# 876342</b></p>	
	Project:		Client: Crown Castle	Drawn by: NCvetic
	Code: TIA-222-H		Date: 10/13/20	App'd:
	Path:		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:

- 3) Tower is located in New Haven County, Connecticut.
- 4) Tower base elevation above sea level: 40.0000 ft.
- 5) Basic wind speed of 125 mph.
- 6) Risk Category II.
- 7) Exposure Category C.
- 8) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 9) Topographic Category: 1.
- 10) Crest Height: 0.0000 ft.
- 11) Nominal ice thickness of 1.5000 in.
- 12) Ice thickness is considered to increase with height.
- 13) Ice density of 56.0000 pcf.
- 14) A wind speed of 50 mph is used in combination with ice.
- 15) Temperature drop of 50.0000 °F.
- 16) Deflections calculated using a wind speed of 60 mph.
- 17) TOWER RATING: 78.7%.
- 18) A non-linear (P-delta) analysis was used.
- 19) Pressures are calculated at each section.
- 20) Stress ratio used in pole design is 1.05.
- 21) Tower analysis based on target reliabilities in accordance with Annex S.
- 22) Load Modification Factors used:  $K_{es}(F_w) = 0.95$ ,  $K_{es}(t_i) = 0.85$ .
- 23) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile  Include Bolts In Member Capacity  Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt.  Autocalc Torque Arm Areas  Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption  <div style="text-align: center; background-color: #e0e0e0; padding: 2px;"><b>Poles</b></div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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## Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	

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	140.0000-135.0000	5.0000	0.0000	12	16.0000	17.0151	0.2500	1.0000	A572-65 (65 ksi)
L2	135.0000-130.0000	5.0000	0.0000	12	17.0151	18.0303	0.2500	1.0000	A572-65 (65 ksi)
L3	130.0000-125.0000	5.0000	0.0000	12	18.0303	19.0454	0.2500	1.0000	A572-65 (65 ksi)
L4	125.0000-120.0000	5.0000	0.0000	12	19.0454	20.0606	0.2500	1.0000	A572-65 (65 ksi)
L5	120.0000-115.0000	5.0000	0.0000	12	20.0606	21.0757	0.2500	1.0000	A572-65 (65 ksi)
L6	115.0000-110.0000	5.0000	0.0000	12	21.0757	22.0909	0.2500	1.0000	A572-65 (65 ksi)
L7	110.0000-105.0000	5.0000	0.0000	12	22.0909	23.1060	0.2500	1.0000	A572-65 (65 ksi)
L8	105.0000-104.0000	1.0000	0.0000	12	23.1060	23.3090	0.2500	1.0000	A572-65 (65 ksi)
L9	104.0000-103.7500	0.2500	0.0000	12	23.3090	23.3598	0.4625	1.8500	A572-65 (65 ksi)
L10	103.7500-98.7500	5.0000	0.0000	12	23.3598	24.3750	0.4500	1.8000	A572-65 (65 ksi)
L11	98.7500-98.5000	0.2500	0.0000	12	24.3750	24.4257	0.4500	1.8000	A572-65 (65 ksi)
L12	98.5000-98.2500	0.2500	0.0000	12	24.4257	24.4765	0.7250	2.9000	A572-65 (65 ksi)
L13	98.2500-97.0000	1.2500	0.0000	12	24.4765	24.7303	0.7250	2.9000	A572-65 (65 ksi)
L14	97.0000-96.7500	0.2500	0.0000	12	24.7303	24.7810	0.5125	2.0500	A572-65 (65 ksi)
L15	96.7500-88.5000	8.2500	3.2500	12	24.7810	26.4560	0.5000	2.0000	A572-65 (65 ksi)
L16	88.5000-88.1700	3.5800	0.0000	12	25.2962	26.0231	0.5625	2.2500	A572-65 (65 ksi)
L17	88.1700-87.9200	0.2500	0.0000	12	26.0231	26.0738	0.7625	3.0500	A572-65 (65 ksi)
L18	87.9200-82.9200	5.0000	0.0000	12	26.0738	27.0891	0.7375	2.9500	A572-65 (65 ksi)
L19	82.9200-77.9200	5.0000	0.0000	12	27.0891	28.1044	0.7250	2.9000	A572-65 (65 ksi)
L20	77.9200-72.9200	5.0000	0.0000	12	28.1044	29.1196	0.7125	2.8500	A572-65 (65 ksi)
L21	72.9200-68.0800	4.8400	0.0000	12	29.1196	30.1024	0.6875	2.7500	A572-65 (65 ksi)
L22	68.0800-67.8300	0.2500	0.0000	12	30.1024	30.1532	0.8125	3.2500	A572-65 (65 ksi)
L23	67.8300-62.8300	5.0000	0.0000	12	30.1532	31.1684	0.7875	3.1500	A572-65 (65 ksi)
L24	62.8300-57.8300	5.0000	0.0000	12	31.1684	32.1837	0.7625	3.0500	A572-65 (65 ksi)
L25	57.8300-52.8300	5.0000	0.0000	12	32.1837	33.1990	0.7500	3.0000	A572-65 (65 ksi)
L26	52.8300-47.2500	5.5800	4.2500	12	33.1990	34.3320	0.7500	3.0000	A572-65 (65 ksi)
L27	47.2500-46.5000	5.0000	0.0000	12	32.8440	33.8592	0.8000	3.2000	A572-65 (65 ksi)
L28	46.5000-41.5000	5.0000	0.0000	12	33.8592	34.8743	0.8000	3.2000	A572-65 (65 ksi)
L29	41.5000-37.7500	3.7500	0.0000	12	34.8743	35.6357	0.7750	3.1000	A572-65 (65 ksi)
L30	37.7500-37.5000	0.2500	0.0000	12	35.6357	35.6864	0.8000	3.2000	A572-65 (65 ksi)
L31	37.5000-32.5000	5.0000	0.0000	12	35.6864	36.7016	0.7750	3.1000	A572-65 (65 ksi)
L32	32.5000-32.2500	0.2500	0.0000	12	36.7016	36.7523	0.8250	3.3000	A572-65 (65 ksi)
L33	32.2500-27.2500	5.0000	0.0000	12	36.7523	37.7675	0.8125	3.2500	A572-65 (65 ksi)
L34	27.2500-23.5000	3.7500	0.0000	12	37.7675	38.5288	0.8000	3.2000	A572-65 (65 ksi)
L35	23.5000-	0.2500	0.0000	12	38.5288	38.5796	0.9000	3.6000	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L36	23.2500 23.2500- 20.7500	2.5000	0.0000	12	38.5796	39.0872	0.9000	3.6000	(65 ksi) A572-65 (65 ksi)
L37	20.7500- 20.5000	0.2500	0.0000	12	39.0872	39.1379	0.8500	3.4000	A572-65 (65 ksi)
L38	20.5000- 15.5000	5.0000	0.0000	12	39.1379	40.1531	0.8250	3.3000	A572-65 (65 ksi)
L39	15.5000- 10.5000	5.0000	0.0000	12	40.1531	41.1682	0.8250	3.3000	A572-65 (65 ksi)
L40	10.5000- 5.5000	5.0000	0.0000	12	41.1682	42.1833	0.8000	3.2000	A572-65 (65 ksi)
L41	5.5000-3.0000	2.5000	0.0000	12	42.1833	42.6909	0.8000	3.2000	A572-65 (65 ksi)
L42	3.0000-2.7500	0.2500	0.0000	12	42.6909	42.7417	0.8625	3.4500	A572-65 (65 ksi)
L43	2.7500-1.7500	1.0000	0.0000	12	42.7417	42.9447	0.8625	3.4500	A572-65 (65 ksi)
L44	1.7500-1.5000	0.2500	0.0000	12	42.9447	42.9955	0.9750	3.9000	A572-65 (65 ksi)
L45	1.5000-0.0000	1.5000		12	42.9955	43.3000	0.9750	3.9000	A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	IC in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	16.4762 17.5272	12.6788 13.4959	401.4426 484.1767	5.6385 6.0019	8.2880 8.8138	48.4366 54.9336	813.4316 981.0732	6.2401 6.6423	3.6180 3.8901	14.472 15.56
L2	17.5272 18.5781	13.4959 14.3131	484.1767 577.5618	6.0019 6.3653	8.8138 9.3397	54.9336 61.8395	981.0732 1170.2967	6.6423 7.0445	3.8901 4.1621	15.56 16.648
L3	18.5781 19.6291	14.3131 15.1303	577.5618 682.2430	6.3653 6.7288	9.3397 9.8655	61.8395 69.1542	1170.2967 1382.4094	7.0445 7.4467	4.1621 4.4342	16.648 17.737
L4	19.6291 20.6801	15.1303 15.9475	682.2430 798.8654	6.7288 7.0922	9.8655 10.3914	69.1542 76.8777	1382.4094 1618.7178	7.4467 7.8489	4.4342 4.7062	17.737 18.825
L5	20.6801 21.7310	15.9475 16.7647	798.8654 928.0736	7.0922 7.4556	10.3914 10.9172	76.8777 85.0100	1618.7178 1880.5287	7.8489 8.2511	4.7062 4.9783	18.825 19.913
L6	21.7310 22.7820	16.7647 17.5819	928.0736 1070.5128	7.4556 7.8190	10.9172 11.4431	85.0100 93.5512	1880.5287 2169.1492	8.2511 8.6533	4.9783 5.2504	19.913 21.001
L7	22.7820 23.8329	17.5819 18.3991	1070.5128 1226.8278	7.8190 8.1825	11.4431 11.9689	93.5512 102.5011	2169.1492 2485.8857	8.6533 9.0555	5.2504 5.5224	21.001 22.09
L8	23.8329 24.0431	18.3991 18.5625	1226.8278 1259.8128	8.1825 8.2551	11.9689 12.0741	102.5011 104.3402	2485.8857 2552.7222	9.0555 9.1359	5.5224 5.5768	22.09 22.307
L9	23.9682 24.0207	34.0242 34.0998	2266.8114 2281.9531	8.1791 8.1972	12.0741 12.1004	187.7418 188.5853	4593.1744 4623.8557	16.7457 16.7829	5.0073 5.0209	10.827 10.856
L10	24.0251 25.0761	33.1963 34.6673	2223.9170 2532.8385	8.2017 8.5651	12.1004 12.6262	183.7890 200.6014	4506.2587 5132.2176	16.3382 17.0622	5.0544 5.3265	11.232 11.837
L11	25.0761 25.1286	34.6673 34.7408	2532.8385 2548.9934	8.5651 8.5833	12.6262 12.6525	200.6014 201.4614	5132.2176 5164.9517	17.0622 17.0984	5.3265 5.3401	11.837 11.867
L12	25.1286 25.0841	55.3293 55.4478	3967.0150 3992.5567	8.4849 8.5030	12.6525 12.6788	313.5356 314.9000	8038.2479 8090.0023	27.2314 27.2897	4.6031 4.6167	6.349 6.368
L13	25.0841 25.3469	55.4478 56.0403	3992.5567 4121.9113	8.5030 8.5939	12.6788 12.8103	314.9000 321.7661	8090.0023 8352.1097	27.2897 27.5813	4.6167 4.6847	6.368 6.462
L14	25.3469 25.4744	56.0403 40.0491	4121.9113 3010.6830	8.5939 8.6881	12.8103 12.8366	321.7661 234.5396	8352.1097 6100.4600	27.5813 19.7110	4.6847 5.2678	6.462 10.279
L15	25.4744 27.2129	39.0924 41.7892	2941.7927 3593.5618	8.6926 9.2922	12.8366 13.7042	229.1729 262.2232	5960.8696 7281.5305	19.2401 20.5674	5.3013 5.7502	10.603 11.5
L16	26.6733 26.7427	44.7988 46.1155	3498.0760 3815.6579	8.8546 9.1149	13.7042 13.4800	266.9592 283.0616	7088.0504 7731.5574	22.0486 22.6966	5.2719 5.4667	9.372 9.719
L17	26.7427 26.6721	62.0210 62.1457	5051.4008 5081.9155	9.0433 9.0615	13.4800 13.5063	374.7342 376.2639	10235.507 10297.338	30.5249 30.5862	4.9307 4.9443	6.466 6.484
L18	26.6721 26.7335 27.7845	62.0210 60.1675 62.5785	5051.4008 4929.8743 5546.5810	9.0433 9.0704 9.4339	13.5063 14.0322	376.2639 365.0068 395.2764	10297.338 9989.2618 11238.876	30.5862 29.6126 30.7992	4.9443 5.0113 5.2834	6.484 6.795 7.164

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	IC in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L19	27.7890	61.5470	5460.3342	9.4384	14.0322	389.1300	11064.117	30.2916	5.3169	7.334
	28.8400	63.9171	6115.7591	9.8018	14.5581	420.0942	12392.186	31.4581	5.5890	7.709
L20	28.8444	62.8438	6018.5507	9.8063	14.5581	413.4169	12195.215	30.9298	5.6225	7.891
	29.8955	65.1731	6712.8832	10.1698	15.0840	445.0342	13602.121	32.0762	5.8946	8.273
L21	29.9043	62.9416	6494.4598	10.1787	15.0840	430.5537	13159.536	30.9780	5.9616	8.671
	30.9218	65.1173	7191.4619	10.5305	15.5930	461.1966	14571.851	32.0487	6.2249	9.054
L22	30.8777	76.6297	8391.1096	10.4858	15.5930	538.1314	17002.662	37.7148	5.8899	7.249
	30.9302	76.7625	8434.8145	10.5040	15.6193	540.0236	17091.221	37.7802	5.9036	7.266
L23	30.9391	74.4640	8196.1971	10.5129	15.6193	524.7465	16607.717	36.6489	5.9706	7.582
	31.9901	77.0385	9076.0308	10.8764	16.1453	562.1486	18390.499	37.9160	6.2426	7.927
L24	31.9990	74.6542	8809.6150	10.8853	16.1453	545.6474	17850.668	36.7425	6.3096	8.275
	33.0500	77.1469	9721.8764	11.2488	16.6712	583.1554	19699.157	37.9694	6.5817	8.632
L25	33.0544	75.9124	9573.9184	11.2533	16.6712	574.2803	19399.354	37.3618	6.6152	8.82
	34.1055	78.3643	10531.874	11.6167	17.1971	612.4228	21340.432	38.5685	6.8873	9.183
L26	34.1055	78.3643	10531.874	11.6167	17.1971	612.4228	21340.432	38.5685	6.8873	9.183
	35.2785	81.1005	11674.082	12.0224	17.7840	656.4383	23654.856	39.9152	7.1910	9.588
L27	34.6137	82.5454	10818.649	11.4718	17.0132	635.8972	21921.516	40.6263	6.6582	8.323
	34.7714	85.1604	11879.758	11.8352	17.5390	677.3319	24071.611	41.9134	6.9303	8.663
L28	34.7714	85.1604	11879.758	11.8352	17.5390	677.3319	24071.611	41.9134	6.9303	8.663
	35.8223	87.7754	13008.076	12.1986	18.0649	720.0749	26357.890	43.2004	7.2023	9.003
L29	35.8312	85.0948	12629.331	12.2076	18.0649	699.1091	25590.450	41.8811	7.2693	9.38
	36.6194	86.9948	13494.311	12.4801	18.4593	731.0314	27343.132	42.8162	7.4734	9.643
L30	36.6106	89.7367	13899.664	12.4712	18.4593	752.9907	28164.488	44.1657	7.4064	9.258
	36.6631	89.8674	13960.510	12.4893	18.4856	755.2113	28287.778	44.2300	7.4200	9.275
L31	36.6719	87.1215	13553.339	12.4983	18.4856	733.1849	27462.740	42.8785	7.4870	9.661
	37.7229	89.6548	14770.350	12.8617	19.0114	776.9202	29928.733	44.1253	7.7590	10.012
L32	37.7052	95.3061	15657.719	12.8438	19.0114	823.5958	31726.785	46.9068	7.6250	9.242
	37.7578	95.4409	15724.269	12.8620	19.0377	825.9541	31861.634	46.9731	7.6386	9.259
L33	37.7622	94.0276	15502.193	12.8665	19.0377	814.2889	31411.645	46.2775	7.6721	9.443
	38.8131	96.6834	16853.253	13.2299	19.5635	861.4620	34149.260	47.5846	7.9442	9.777
L34	38.8176	95.2282	16610.817	13.2344	19.5635	849.0697	33658.018	46.8684	7.9777	9.972
	39.6058	97.1895	17658.415	13.5069	19.9579	884.7818	35780.736	47.8337	8.1817	10.227
L35	39.5705	109.0483	19708.173	13.4711	19.9579	987.4857	39934.102	53.6703	7.9137	8.793
	39.6230	109.1954	19788.034	13.4893	19.9842	990.1827	40095.923	53.7427	7.9273	8.808
L36	39.6230	109.1954	19788.034	13.4893	19.9842	990.1827	40095.923	53.7427	7.9273	8.808



Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
	40.1485	110.6664	20598.5323	13.6710	20.2471	1017.3548	41738.2110	54.4666	8.0634	8.959
L37	40.1662	104.6551	19530.6859	13.6889	20.2471	964.6142	39574.4647	51.5081	8.1974	9.644
	40.2187	104.7940	19608.5658	13.7071	20.2734	967.2047	39732.2706	51.5764	8.2110	9.66
L38	40.2275	101.7783	19069.1481	13.7160	20.2734	940.5976	38639.2639	50.0922	8.2780	10.034
	41.2785	104.4750	20625.4394	14.0794	20.7993	991.6418	41792.7320	51.4194	8.5500	10.364
L39	41.2785	104.4750	20625.4394	14.0794	20.7993	991.6418	41792.7320	51.4194	8.5500	10.364
	42.3294	107.1717	22264.1832	14.4429	21.3251	1044.0352	45113.2714	52.7467	8.8221	10.693
L40	42.3382	103.9885	21629.6719	14.4518	21.3251	1014.2810	43827.5793	51.1800	8.8891	11.111
	43.3892	106.6035	23302.8222	14.8152	21.8510	1066.4433	47217.8354	52.4670	9.1611	11.451
L41	43.3892	106.6035	23302.8222	14.8152	21.8510	1066.4433	47217.8354	52.4670	9.1611	11.451
	43.9147	107.9110	24170.8163	14.9969	22.1139	1093.0150	48976.6268	53.1105	9.2972	11.621
L42	43.8926	116.1680	25942.6967	14.9746	22.1139	1173.1402	52566.9370	57.1743	9.1297	10.585
	43.9452	116.3089	26037.2525	14.9927	22.1402	1176.0178	52758.5326	57.2437	9.1433	10.601
L43	43.9452	116.3089	26037.2525	14.9927	22.1402	1176.0178	52758.5326	57.2437	9.1433	10.601
	44.1554	116.8728	26417.7748	15.0654	22.2454	1187.5637	53529.5740	57.5212	9.1977	10.664
L44	44.1157	131.7639	29624.7049	15.0252	22.2454	1331.7254	60027.6837	64.8502	8.8962	9.124
	44.1682	131.9232	29732.3168	15.0433	22.2716	1334.9851	60245.7347	64.9286	8.9098	9.138
L45	44.1682	131.9232	29732.3168	15.0433	22.2716	1334.9851	60245.7347	64.9286	8.9098	9.138
	44.4835	132.8793	30383.4676	15.1524	22.4294	1354.6269	61565.1428	65.3992	8.9914	9.222

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>r</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1 140.0000-135.0000				1	1	1			
L2 135.0000-130.0000				1	1	1			
L3 130.0000-125.0000				1	1	1			
L4 125.0000-120.0000				1	1	1			
L5 120.0000-115.0000				1	1	1			
L6 115.0000-110.0000				1	1	1			
L7 110.0000-105.0000				1	1	1			
L8 105.0000-104.0000				1	1	1			
L9 104.0000-103.7500				1	1	0.942021			
L10 103.7500-98.7500				1	1	0.950174			
L11 98.7500-98.5000				1	1	0.949339			
L12 98.5000-98.2500				1	1	0.901676			

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 <sup>2</sup>	in							
L13 98.2500-97.0000				1	1	0.895789			
L14 97.0000-96.7500				1	1	0.916918			
L15 96.7500-88.5000				1	1	0.921726			
L16 88.5000-88.1700				1	1	0.929093			
L17 88.1700-87.9200				1	1	0.980317			
L18 87.9200-82.9200				1	1	0.989862			
L19 82.9200-77.9200				1	1	0.985114			
L20 77.9200-72.9200				1	1	0.981806			
L21 72.9200-68.0800				1	1	0.997834			
L22 68.0800-67.8300				1	1	0.957491			
L23 67.8300-62.8300				1	1	0.967322			
L24 62.8300-57.8300				1	1	0.979205			
L25 57.8300-52.8300				1	1	0.97703			
L26 52.8300-47.2500				1	1	0.972405			
L27 47.2500-46.5000				1	1	0.985251			
L28 46.5000-41.5000				1	1	0.969863			
L29 41.5000-37.7500				1	1	0.989134			
L30 37.7500-37.5000				1	1	0.978813			
L31 37.5000-32.5000				1	1	0.994807			
L32 32.5000-32.2500				1	1	1.00203			
L33 32.2500-27.2500				1	1	1.00183			
L34 27.2500-23.5000				1	1	1.00607			
L35 23.5000-23.2500				1	1	1.05137			
L36 23.2500-20.7500				1	1	1.04294			
L37 20.7500-20.5000				1	1	1.00335			
L38 20.5000-15.5000				1	1	1.01814			
L39 15.5000-10.5000				1	1	1.00396			
L40 10.5000-5.5000				1	1	1.02081			
L41 5.5000-3.0000				1	1	1.01412			
L42 3.0000-2.7500				1	1	0.965642			
L43 2.7500-1.7500				1	1	0.963081			
L44 1.7500-1.5000				1	1	0.922903			
L45 1.5000-0.0000				1	1	0.91903			

### 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
WR-VG86ST-BRD(3/4)	C	No	Surface Ar	121.0000 - (CaAa) 0.0000	2	2	-0.317 -0.283	0.7950		0.5840
FB-L98B-002-75000(3/8) **	C	No	Surface Ar	121.0000 - (CaAa) 0.0000	1	1	-0.325 -0.325	0.3937		0.0586
HCS 6X12 6AWG(1-3/8) **	B	No	Surface Ar	115.0000 - (CaAa) 0.0000	2	2	-0.125 -0.083	1.3800		1.7000
CR 50 1873(1-5/8) **	C	No	Surface Ar	95.0000 - (CaAa) 0.0000	6	6	0.117 0.333	1.9800		0.8300
MP3-08 (L)	A	No	Surface Af	41.7500 - (CaAa) 0.0000	1	1	-0.250 -0.250	7.9300	21.4600	0.0000
MP3-08 (L)	B	No	Surface Af	41.7500 - (CaAa) 0.0000	1	1	-0.250 -0.250	7.9300	21.4600	0.0000
MP3-08 (L)	C	No	Surface Af	41.7500 - (CaAa) 16.7500	1	1	-0.250 -0.250	7.9300	21.4600	0.0000
MP3-06 (W)	C	No	Surface Af	26.7500 - (CaAa) 0.0000	1	1	0.000 0.000	6.8900	19.0000	0.0000
MP3-06 (L)	C	No	Surface Af	26.7500 - (CaAa) 0.0000	1	1	-0.500 -0.500	6.8900	19.0000	0.0000
MP3-06 (L)	A	No	Surface Af	71.7500 - (CaAa) 41.7500	1	1	-0.250 -0.250	6.8900	19.0000	0.0000
MP3-06 (L)	C	No	Surface Af	71.7500 - (CaAa) 41.7500	1	1	-0.250 -0.250	6.8900	19.0000	0.0000
MP3-06 (L)	B	No	Surface Af	71.7500 - (CaAa) 41.7500	1	1	-0.250 -0.250	6.8900	19.0000	0.0000
MP3-05 (L)	A	No	Surface Af	100.7500 - (CaAa) 71.7500	1	1	-0.250 -0.250	5.3300	14.8400	0.0000
MP3-05 (L)	C	No	Surface Af	100.7500 - (CaAa) 71.7500	1	1	-0.250 -0.250	5.3300	14.8400	0.0000
MP3-05 (L)	B	No	Surface Af	100.7500 - (CaAa) 71.7500	1	1	-0.250 -0.250	5.3300	14.8400	0.0000
CCI-065125 (L)	B	No	Surface Af	35.5000 - (CaAa) 0.0000	1	1	-0.500 -0.500	6.5000	15.5000	0.0000
CCI-065125 (L)	C	No	Surface Af	35.5000 - (CaAa) 0.0000	1	1	0.250 0.250	6.5000	15.5000	0.0000
CCI-065125 (L)	B	No	Surface Af	35.5000 - (CaAa) 0.0000	1	1	0.250 0.250	6.5000	15.5000	0.0000
CCI-060100 (L)	B	No	Surface Af	90.6700 - (CaAa) 35.5000	1	1	-0.500 -0.500	6.0000	14.0000	0.0000
CCI-060100 (L)	C	No	Surface Af	90.6700 - (CaAa) 35.5000	1	1	0.250 0.250	6.0000	14.0000	0.0000
CCI-060100 (L)	B	No	Surface Af	90.6700 - (CaAa) 35.5000	1	1	0.250 0.250	6.0000	14.0000	0.0000
CCI-045100 (L)	A	No	Surface Af	105.5000 - (CaAa) 95.5000	1	1	0.250 0.250	4.5000	11.0000	0.0000
CCI-045100 (L)	C	No	Surface Af	105.5000 - (CaAa) 95.5000	1	1	0.250 0.250	4.5000	11.0000	0.0000
CCI-045100 (L)	B	No	Surface Af	105.5000 - (CaAa) 95.5000	1	1	0.250 0.250	4.5000	11.0000	0.0000

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### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf	
LDF4-50A(1/2)	C	No	No	Inside Pole	140.0000 -	1	No Ice	0.0000	0.1500

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>AA</sub> ft <sup>2</sup> /ft	Weight plf
					0.0000		1/2" Ice	0.0000	0.1500
							1" Ice	0.0000	0.1500
							2" Ice	0.0000	0.1500
LDF7-50A(1-5/8)	C	No	No	Inside Pole	140.0000 - 0.0000	1	No Ice	0.0000	0.8200
							1/2" Ice	0.0000	0.8200
							1" Ice	0.0000	0.8200
							2" Ice	0.0000	0.8200
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	140.0000 - 0.0000	3	No Ice	0.0000	1.2000
							1/2" Ice	0.0000	1.2000
							1" Ice	0.0000	1.2000
							2" Ice	0.0000	1.2000
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	121.0000 - 0.0000	12	No Ice	0.0000	0.8200
							1/2" Ice	0.0000	0.8200
							1" Ice	0.0000	0.8200
							2" Ice	0.0000	0.8200
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	121.0000 - 0.0000	1	No Ice	0.0000	0.0586
							1/2" Ice	0.0000	0.0586
							1" Ice	0.0000	0.0586
							2" Ice	0.0000	0.0586
WR-VG122ST-BRDA(7/16)	C	No	No	Inside Pole	121.0000 - 0.0000	2	No Ice	0.0000	0.1410
							1/2" Ice	0.0000	0.1410
							1" Ice	0.0000	0.1410
							2" Ice	0.0000	0.1410
2 1/2" (Nominal) Conduit	C	No	No	Inside Pole	121.0000 - 0.0000	2	No Ice	0.0000	7.7500
							1/2" Ice	0.0000	7.7500
							1" Ice	0.0000	7.7500
							2" Ice	0.0000	7.7500
HJ7-50A(1-5/8)	B	No	No	Inside Pole	115.0000 - 0.0000	1	No Ice	0.0000	1.0400
							1/2" Ice	0.0000	1.0400
							1" Ice	0.0000	1.0400
							2" Ice	0.0000	1.0400
LDF6-50A(1-1/4)	C	No	No	Inside Pole	115.0000 - 0.0000	6	No Ice	0.0000	0.6000
							1/2" Ice	0.0000	0.6000
							1" Ice	0.0000	0.6000
							2" Ice	0.0000	0.6000
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	104.0000 - 0.0000	6	No Ice	0.0000	0.8200
							1/2" Ice	0.0000	0.8200
							1" Ice	0.0000	0.8200
							2" Ice	0.0000	0.8200
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	104.0000 - 0.0000	2	No Ice	0.0000	1.3000
							1/2" Ice	0.0000	1.3000
							1" Ice	0.0000	1.3000
							2" Ice	0.0000	1.3000
**									
LDF4-50A(1/2)	C	No	No	Inside Pole	80.0000 - 0.0000	1	No Ice	0.0000	0.1500
							1/2" Ice	0.0000	0.1500
							1" Ice	0.0000	0.1500
							2" Ice	0.0000	0.1500
**									

### Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
L1	140.0000-135.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0000
		C	0.000	0.000	0.000	0.000	0.0228
L2	135.0000-130.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0000

Tower Section n	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
		C	0.000	0.000	0.000	0.000	0.0228
L3	130.0000-125.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0000
		C	0.000	0.000	0.000	0.000	0.0228
L4	125.0000-120.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0000
		C	0.000	0.000	0.198	0.000	0.0498
L5	120.0000-115.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0000
		C	0.000	0.000	0.992	0.000	0.1574
L6	115.0000-110.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	1.380	0.000	0.0222
		C	0.000	0.000	0.992	0.000	0.1754
L7	110.0000-105.0000	A	0.000	0.000	0.375	0.000	0.0000
		B	0.000	0.000	1.755	0.000	0.0222
		C	0.000	0.000	1.367	0.000	0.1754
L8	105.0000-104.0000	A	0.000	0.000	0.750	0.000	0.0000
		B	0.000	0.000	1.026	0.000	0.0044
		C	0.000	0.000	0.948	0.000	0.0351
L9	104.0000-103.7500	A	0.000	0.000	0.188	0.000	0.0000
		B	0.000	0.000	0.257	0.000	0.0011
		C	0.000	0.000	0.237	0.000	0.0106
L10	103.7500-98.7500	A	0.000	0.000	5.527	0.000	0.0000
		B	0.000	0.000	6.907	0.000	0.0222
		C	0.000	0.000	6.519	0.000	0.2130
L11	98.7500-98.5000	A	0.000	0.000	0.410	0.000	0.0000
		B	0.000	0.000	0.479	0.000	0.0011
		C	0.000	0.000	0.459	0.000	0.0106
L12	98.5000-98.2500	A	0.000	0.000	0.410	0.000	0.0000
		B	0.000	0.000	0.479	0.000	0.0011
		C	0.000	0.000	0.459	0.000	0.0106
L13	98.2500-97.0000	A	0.000	0.000	2.048	0.000	0.0000
		B	0.000	0.000	2.393	0.000	0.0056
		C	0.000	0.000	2.296	0.000	0.0532
L14	97.0000-96.7500	A	0.000	0.000	0.410	0.000	0.0000
		B	0.000	0.000	0.479	0.000	0.0011
		C	0.000	0.000	0.459	0.000	0.0106
L15	96.7500-88.5000	A	0.000	0.000	8.266	0.000	0.0000
		B	0.000	0.000	14.883	0.000	0.0366
		C	0.000	0.000	19.795	0.000	0.3838
L16	88.5000-88.1700	A	0.000	0.000	0.293	0.000	0.0000
		B	0.000	0.000	1.044	0.000	0.0015
		C	0.000	0.000	1.081	0.000	0.0157
L17	88.1700-87.9200	A	0.000	0.000	0.222	0.000	0.0000
		B	0.000	0.000	0.791	0.000	0.0011
		C	0.000	0.000	0.819	0.000	0.0119
L18	87.9200-82.9200	A	0.000	0.000	4.442	0.000	0.0000
		B	0.000	0.000	15.822	0.000	0.0222
		C	0.000	0.000	16.374	0.000	0.2379
L19	82.9200-77.9200	A	0.000	0.000	4.442	0.000	0.0000
		B	0.000	0.000	15.822	0.000	0.0222
		C	0.000	0.000	16.374	0.000	0.2382
L20	77.9200-72.9200	A	0.000	0.000	4.442	0.000	0.0000
		B	0.000	0.000	15.822	0.000	0.0222
		C	0.000	0.000	16.374	0.000	0.2386
L21	72.9200-68.0800	A	0.000	0.000	5.254	0.000	0.0000
		B	0.000	0.000	16.270	0.000	0.0215
		C	0.000	0.000	16.804	0.000	0.2310
L22	68.0800-67.8300	A	0.000	0.000	0.287	0.000	0.0000
		B	0.000	0.000	0.856	0.000	0.0011
		C	0.000	0.000	0.884	0.000	0.0119
L23	67.8300-62.8300	A	0.000	0.000	5.742	0.000	0.0000
		B	0.000	0.000	17.122	0.000	0.0222
		C	0.000	0.000	17.674	0.000	0.2386
L24	62.8300-57.8300	A	0.000	0.000	5.742	0.000	0.0000
		B	0.000	0.000	17.122	0.000	0.0222
		C	0.000	0.000	17.674	0.000	0.2386
L25	57.8300-52.8300	A	0.000	0.000	5.742	0.000	0.0000
		B	0.000	0.000	17.122	0.000	0.0222

Tower Section	Tower Elevation	Face	A <sub>R</sub>	A <sub>F</sub>	C <sub>A</sub> A <sub>A</sub> In Face	C <sub>A</sub> A <sub>A</sub> Out Face	Weight
n	ft		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	K
L26	52.8300-47.2500	C	0.000	0.000	17.674	0.000	0.2386
		A	0.000	0.000	6.408	0.000	0.0000
		B	0.000	0.000	19.108	0.000	0.0248
L27	47.2500-46.5000	C	0.000	0.000	19.724	0.000	0.2663
		A	0.000	0.000	0.861	0.000	0.0000
		B	0.000	0.000	2.568	0.000	0.0033
		C	0.000	0.000	2.651	0.000	0.0358
L28	46.5000-41.5000	A	0.000	0.000	5.785	0.000	0.0000
		B	0.000	0.000	17.165	0.000	0.0222
		C	0.000	0.000	17.717	0.000	0.2386
L29	41.5000-37.7500	A	0.000	0.000	4.956	0.000	0.0000
		B	0.000	0.000	13.491	0.000	0.0167
		C	0.000	0.000	13.905	0.000	0.1790
L30	37.7500-37.5000	A	0.000	0.000	0.330	0.000	0.0000
		B	0.000	0.000	0.899	0.000	0.0011
		C	0.000	0.000	0.927	0.000	0.0119
L31	37.5000-32.5000	A	0.000	0.000	6.608	0.000	0.0000
		B	0.000	0.000	18.488	0.000	0.0222
		C	0.000	0.000	18.790	0.000	0.2386
L32	32.5000-32.2500	A	0.000	0.000	0.330	0.000	0.0000
		B	0.000	0.000	0.941	0.000	0.0011
		C	0.000	0.000	0.948	0.000	0.0119
L33	32.2500-27.2500	A	0.000	0.000	6.608	0.000	0.0000
		B	0.000	0.000	18.822	0.000	0.0222
		C	0.000	0.000	18.957	0.000	0.2386
L34	27.2500-23.5000	A	0.000	0.000	4.956	0.000	0.0000
		B	0.000	0.000	14.116	0.000	0.0167
		C	0.000	0.000	21.682	0.000	0.1790
L35	23.5000-23.2500	A	0.000	0.000	0.330	0.000	0.0000
		B	0.000	0.000	0.941	0.000	0.0011
		C	0.000	0.000	1.522	0.000	0.0119
L36	23.2500-20.7500	A	0.000	0.000	3.304	0.000	0.0000
		B	0.000	0.000	9.411	0.000	0.0111
		C	0.000	0.000	15.220	0.000	0.1193
L37	20.7500-20.5000	A	0.000	0.000	0.330	0.000	0.0000
		B	0.000	0.000	0.941	0.000	0.0011
		C	0.000	0.000	1.522	0.000	0.0119
L38	20.5000-15.5000	A	0.000	0.000	6.608	0.000	0.0000
		B	0.000	0.000	18.822	0.000	0.0222
		C	0.000	0.000	28.788	0.000	0.2386
L39	15.5000-10.5000	A	0.000	0.000	6.608	0.000	0.0000
		B	0.000	0.000	18.822	0.000	0.0222
		C	0.000	0.000	23.832	0.000	0.2386
L40	10.5000-5.5000	A	0.000	0.000	6.608	0.000	0.0000
		B	0.000	0.000	18.822	0.000	0.0222
		C	0.000	0.000	23.832	0.000	0.2386
L41	5.5000-3.0000	A	0.000	0.000	3.304	0.000	0.0000
		B	0.000	0.000	9.411	0.000	0.0111
		C	0.000	0.000	11.916	0.000	0.1193
L42	3.0000-2.7500	A	0.000	0.000	0.330	0.000	0.0000
		B	0.000	0.000	0.941	0.000	0.0011
		C	0.000	0.000	1.192	0.000	0.0119
L43	2.7500-1.7500	A	0.000	0.000	1.322	0.000	0.0000
		B	0.000	0.000	3.764	0.000	0.0044
		C	0.000	0.000	4.766	0.000	0.0477
L44	1.7500-1.5000	A	0.000	0.000	0.330	0.000	0.0000
		B	0.000	0.000	0.941	0.000	0.0011
		C	0.000	0.000	1.192	0.000	0.0119
L45	1.5000-0.0000	A	0.000	0.000	1.983	0.000	0.0000
		B	0.000	0.000	5.646	0.000	0.0067
		C	0.000	0.000	7.150	0.000	0.0716

**Feed Line/Linear Appurtenances Section Areas - With Ice**

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A <sub>R</sub>	A <sub>F</sub>	C <sub>A</sub> A <sub>A</sub> In Face	C <sub>A</sub> A <sub>A</sub> Out Face	Weight
n	ft		in	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	K
L1	140.0000-135.0000	A	1.471	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	0.000	0.000	0.0000
		C		0.000	0.000	0.000	0.000	0.0228
L2	135.0000-130.0000	A	1.465	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	0.000	0.000	0.0000
		C		0.000	0.000	0.000	0.000	0.0228
L3	130.0000-125.0000	A	1.459	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	0.000	0.000	0.0000
		C		0.000	0.000	0.000	0.000	0.0228
L4	125.0000-120.0000	A	1.454	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	0.000	0.000	0.0000
		C		0.000	0.000	0.892	0.000	0.0580
L5	120.0000-115.0000	A	1.448	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	0.000	0.000	0.0000
		C		0.000	0.000	4.448	0.000	0.1982
L6	115.0000-110.0000	A	1.441	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	3.527	0.000	0.0556
		C		0.000	0.000	4.434	0.000	0.2160
L7	110.0000-105.0000	A	1.435	0.000	0.000	0.456	0.000	0.0046
		B		0.000	0.000	3.975	0.000	0.0599
		C		0.000	0.000	4.875	0.000	0.2202
L8	105.0000-104.0000	A	1.431	0.000	0.000	0.912	0.000	0.0091
		B		0.000	0.000	1.615	0.000	0.0202
		C		0.000	0.000	1.794	0.000	0.0522
L9	104.0000-103.7500	A	1.430	0.000	0.000	0.228	0.000	0.0023
		B		0.000	0.000	0.404	0.000	0.0050
		C		0.000	0.000	0.448	0.000	0.0149
L10	103.7500-98.7500	A	1.426	0.000	0.000	6.905	0.000	0.0679
		B		0.000	0.000	10.413	0.000	0.1230
		C		0.000	0.000	11.305	0.000	0.3208
L11	98.7500-98.5000	A	1.423	0.000	0.000	0.521	0.000	0.0051
		B		0.000	0.000	0.696	0.000	0.0078
		C		0.000	0.000	0.741	0.000	0.0177
L12	98.5000-98.2500	A	1.422	0.000	0.000	0.521	0.000	0.0051
		B		0.000	0.000	0.696	0.000	0.0078
		C		0.000	0.000	0.741	0.000	0.0177
L13	98.2500-97.0000	A	1.421	0.000	0.000	2.605	0.000	0.0253
		B		0.000	0.000	3.480	0.000	0.0390
		C		0.000	0.000	3.702	0.000	0.0884
L14	97.0000-96.7500	A	1.420	0.000	0.000	0.521	0.000	0.0051
		B		0.000	0.000	0.696	0.000	0.0078
		C		0.000	0.000	0.740	0.000	0.0177
L15	96.7500-88.5000	A	1.414	0.000	0.000	10.799	0.000	0.1028
		B		0.000	0.000	22.128	0.000	0.2392
		C		0.000	0.000	32.744	0.000	0.6940
L16	88.5000-88.1700	A	1.407	0.000	0.000	0.386	0.000	0.0037
		B		0.000	0.000	1.464	0.000	0.0143
		C		0.000	0.000	1.705	0.000	0.0315
L17	88.1700-87.9200	A	1.406	0.000	0.000	0.292	0.000	0.0028
		B		0.000	0.000	1.107	0.000	0.0108
		C		0.000	0.000	1.290	0.000	0.0238
L18	87.9200-82.9200	A	1.402	0.000	0.000	5.844	0.000	0.0549
		B		0.000	0.000	22.126	0.000	0.2146
		C		0.000	0.000	25.769	0.000	0.4754
L19	82.9200-77.9200	A	1.394	0.000	0.000	5.835	0.000	0.0545
		B		0.000	0.000	22.090	0.000	0.2131
		C		0.000	0.000	25.723	0.000	0.4739
L20	77.9200-72.9200	A	1.385	0.000	0.000	5.827	0.000	0.0541
		B		0.000	0.000	22.052	0.000	0.2115
		C		0.000	0.000	25.674	0.000	0.4725
L21	72.9200-68.0800	A	1.376	0.000	0.000	6.585	0.000	0.0601
		B		0.000	0.000	22.262	0.000	0.2113
		C		0.000	0.000	25.757	0.000	0.4637
L22	68.0800-67.8300	A	1.371	0.000	0.000	0.356	0.000	0.0032
		B		0.000	0.000	1.165	0.000	0.0110
		C		0.000	0.000	1.345	0.000	0.0240
L23	67.8300-62.8300	A	1.365	0.000	0.000	7.107	0.000	0.0641
		B		0.000	0.000	23.268	0.000	0.2191
		C		0.000	0.000	26.865	0.000	0.4795

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A <sub>R</sub>	A <sub>F</sub>	C <sub>A</sub> A <sub>A</sub> In Face	C <sub>A</sub> A <sub>A</sub> Out Face	Weight
n	ft		in	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	K
L24	62.8300-57.8300	A	1.354	0.000	0.000	7.096	0.000	0.0635
		B		0.000	0.000	23.222	0.000	0.2171
		C		0.000	0.000	26.806	0.000	0.4771
L25	57.8300-52.8300	A	1.343	0.000	0.000	7.084	0.000	0.0629
		B		0.000	0.000	23.173	0.000	0.2150
		C		0.000	0.000	26.742	0.000	0.4746
L26	52.8300-47.2500	A	1.329	0.000	0.000	7.891	0.000	0.0693
		B		0.000	0.000	25.797	0.000	0.2373
		C		0.000	0.000	29.761	0.000	0.5265
L27	47.2500-46.5000	A	1.321	0.000	0.000	1.061	0.000	0.0093
		B		0.000	0.000	3.467	0.000	0.0319
		C		0.000	0.000	4.000	0.000	0.0708
L28	46.5000-41.5000	A	1.312	0.000	0.000	7.097	0.000	0.0615
		B		0.000	0.000	23.087	0.000	0.2099
		C		0.000	0.000	26.618	0.000	0.4685
L29	41.5000-37.7500	A	1.299	0.000	0.000	5.930	0.000	0.0499
		B		0.000	0.000	17.889	0.000	0.1600
		C		0.000	0.000	20.524	0.000	0.3536
L30	37.7500-37.5000	A	1.292	0.000	0.000	0.395	0.000	0.0033
		B		0.000	0.000	1.191	0.000	0.0106
		C		0.000	0.000	1.366	0.000	0.0235
L31	37.5000-32.5000	A	1.282	0.000	0.000	7.891	0.000	0.0656
		B		0.000	0.000	24.284	0.000	0.2149
		C		0.000	0.000	27.528	0.000	0.4703
L32	32.5000-32.2500	A	1.273	0.000	0.000	0.394	0.000	0.0033
		B		0.000	0.000	1.229	0.000	0.0108
		C		0.000	0.000	1.382	0.000	0.0235
L33	32.2500-27.2500	A	1.262	0.000	0.000	7.870	0.000	0.0644
		B		0.000	0.000	24.529	0.000	0.2140
		C		0.000	0.000	27.581	0.000	0.4673
L34	27.2500-23.5000	A	1.242	0.000	0.000	5.888	0.000	0.0474
		B		0.000	0.000	18.334	0.000	0.1577
		C		0.000	0.000	29.682	0.000	0.4216
L35	23.5000-23.2500	A	1.232	0.000	0.000	0.392	0.000	0.0031
		B		0.000	0.000	1.220	0.000	0.0104
		C		0.000	0.000	2.068	0.000	0.0287
L36	23.2500-20.7500	A	1.224	0.000	0.000	3.916	0.000	0.0311
		B		0.000	0.000	12.185	0.000	0.1035
		C		0.000	0.000	20.653	0.000	0.2859
L37	20.7500-20.5000	A	1.216	0.000	0.000	0.391	0.000	0.0031
		B		0.000	0.000	1.217	0.000	0.0103
		C		0.000	0.000	2.062	0.000	0.0285
L38	20.5000-15.5000	A	1.200	0.000	0.000	7.808	0.000	0.0607
		B		0.000	0.000	24.266	0.000	0.2025
		C		0.000	0.000	39.171	0.000	0.5487
L39	15.5000-10.5000	A	1.161	0.000	0.000	7.770	0.000	0.0584
		B		0.000	0.000	24.103	0.000	0.1955
		C		0.000	0.000	33.065	0.000	0.4932
L40	10.5000-5.5000	A	1.106	0.000	0.000	7.715	0.000	0.0552
		B		0.000	0.000	23.869	0.000	0.1856
		C		0.000	0.000	32.707	0.000	0.4791
L41	5.5000-3.0000	A	1.039	0.000	0.000	3.823	0.000	0.0256
		B		0.000	0.000	11.790	0.000	0.0868
		C		0.000	0.000	16.133	0.000	0.2310
L42	3.0000-2.7500	A	0.999	0.000	0.000	0.380	0.000	0.0025
		B		0.000	0.000	1.171	0.000	0.0083
		C		0.000	0.000	1.600	0.000	0.0226
L43	2.7500-1.7500	A	0.975	0.000	0.000	1.517	0.000	0.0095
		B		0.000	0.000	4.662	0.000	0.0325
		C		0.000	0.000	6.370	0.000	0.0893
L44	1.7500-1.5000	A	0.944	0.000	0.000	0.378	0.000	0.0023
		B		0.000	0.000	1.159	0.000	0.0079
		C		0.000	0.000	1.582	0.000	0.0219
L45	1.5000-0.0000	A	0.873	0.000	0.000	2.244	0.000	0.0126
		B		0.000	0.000	6.863	0.000	0.0437
		C		0.000	0.000	9.357	0.000	0.1266



### Feed Line Center of Pressure

Section	Elevation	$CP_x$	$CP_z$	$CP_x$	$CP_z$
	ft	in	in	lce in	lce in
L1	140.0000-135.0000	0.0000	0.0000	0.0000	0.0000
L2	135.0000-130.0000	0.0000	0.0000	0.0000	0.0000
L3	130.0000-125.0000	0.0000	0.0000	0.0000	0.0000
L4	125.0000-120.0000	0.1495	0.2013	0.4302	0.5688
L5	120.0000-115.0000	0.6701	0.9028	1.5128	2.0005
L6	115.0000-110.0000	1.6341	-0.1634	2.3367	0.4683
L7	110.0000-105.0000	1.5004	-0.1490	2.2702	0.4555
L8	105.0000-104.0000	0.8477	-0.0839	1.5913	0.3195
L9	104.0000-103.7500	0.8513	-0.0842	1.5983	0.3209
L10	103.7500-98.7500	0.6384	-0.0629	1.3703	0.2752
L11	98.7500-98.5000	0.5098	-0.0501	1.1278	0.2265
L12	98.5000-98.2500	0.5111	-0.0502	1.1304	0.2270
L13	98.2500-97.0000	0.5132	-0.0504	1.1354	0.2280
L14	97.0000-96.7500	0.5148	-0.0505	1.1398	0.2289
L15	96.7500-88.5000	-0.5999	1.4577	0.0560	1.7072
L16	88.5000-88.1700	-1.4779	1.5529	-0.8275	1.7782
L17	88.1700-87.9200	-1.4813	1.5564	-0.8316	1.7818
L18	87.9200-82.9200	-1.5037	1.5783	-0.8471	1.8102
L19	82.9200-77.9200	-1.5458	1.6195	-0.8767	1.8639
L20	77.9200-72.9200	-1.5871	1.6600	-0.9063	1.9168
L21	72.9200-68.0800	-1.5352	1.6031	-0.8993	1.8920
L22	68.0800-67.8300	-1.5280	1.5945	-0.9030	1.8946
L23	67.8300-62.8300	-1.5478	1.6138	-0.9179	1.9203
L24	62.8300-57.8300	-1.5850	1.6503	-0.9463	1.9688
L25	57.8300-52.8300	-1.6216	1.6863	-0.9750	2.0167
L26	52.8300-47.2500	-1.6598	1.7237	-1.0056	2.0665
L27	47.2500-46.5000	-1.6606	1.7245	-1.0062	2.0678
L28	46.5000-41.5000	-1.6772	1.7405	-1.0245	2.0902
L29	41.5000-37.7500	-1.6360	1.6961	-1.0189	2.0659
L30	37.7500-37.5000	-1.6496	1.7095	-1.0307	2.0836
L31	37.5000-32.5000	-1.7087	1.7121	-1.0814	2.0922
L32	32.5000-32.2500	-1.7539	1.7199	-1.1208	2.1055
L33	32.2500-27.2500	-1.7722	1.7368	-1.1379	2.1278
L34	27.2500-23.5000	0.2378	2.4091	0.5919	2.6988
L35	23.5000-23.2500	0.4986	2.5087	0.8225	2.7893
L36	23.2500-20.7500	0.5007	2.5211	0.8248	2.8040
L37	20.7500-20.5000	0.5028	2.5331	0.8268	2.8183
L38	20.5000-15.5000	0.1055	2.3322	0.4807	2.6520
L39	15.5000-10.5000	-1.2390	1.6226	-0.6832	2.0580
L40	10.5000-5.5000	-1.2618	1.6490	-0.7194	2.0884
L41	5.5000-3.0000	-1.2788	1.6687	-0.7584	2.1069
L42	3.0000-2.7500	-1.2851	1.6761	-0.7794	2.1116
L43	2.7500-1.7500	-1.2879	1.6793	-0.7917	2.1126
L44	1.7500-1.5000	-1.2911	1.6830	-0.8074	2.1130
L45	1.5000-0.0000	-1.2950	1.6875	-0.8413	2.1087

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 <sub>a</sub> No Ice	K <sub>a</sub> Ice
L4	8	WR-VG86ST-BRD(3/4)	120.00 - 121.00	1.0000	1.0000
L4	9	FB-L98B-002-75000(3/8)	120.00 - 121.00	1.0000	1.0000
L5	8	WR-VG86ST-BRD(3/4)	115.00 - 120.00	1.0000	1.0000
L5	9	FB-L98B-002-75000(3/8)	115.00 - 120.00	1.0000	1.0000
L6	8	WR-VG86ST-BRD(3/4)	110.00 - 115.00	1.0000	1.0000
L6	9	FB-L98B-002-75000(3/8)	110.00 - 115.00	1.0000	1.0000
L6	12	HCS 6X12 6AWG(1-3/8)	110.00 - 115.00	1.0000	1.0000
L7	8	WR-VG86ST-BRD(3/4)	105.00 - 110.00	1.0000	1.0000
L7	9	FB-L98B-002-75000(3/8)	105.00 - 110.00	1.0000	1.0000
L7	12	HCS 6X12 6AWG(1-3/8)	105.00 - 110.00	1.0000	1.0000
L7	40	CCI-045100 (L)	105.00 - 105.50	1.0000	1.0000
L7	41	CCI-045100 (L)	105.00 - 105.50	1.0000	1.0000
L7	42	CCI-045100 (L)	105.00 - 105.50	1.0000	1.0000
L8	8	WR-VG86ST-BRD(3/4)	104.00 - 105.00	1.0000	1.0000
L8	9	FB-L98B-002-75000(3/8)	104.00 - 105.00	1.0000	1.0000
L8	12	HCS 6X12 6AWG(1-3/8)	104.00 - 105.00	1.0000	1.0000
L8	40	CCI-045100 (L)	104.00 - 105.00	1.0000	1.0000
L8	41	CCI-045100 (L)	104.00 - 105.00	1.0000	1.0000
L8	42	CCI-045100 (L)	104.00 - 105.00	1.0000	1.0000
L9	8	WR-VG86ST-BRD(3/4)	103.75 - 104.00	1.0000	1.0000
L9	9	FB-L98B-002-75000(3/8)	103.75 - 104.00	1.0000	1.0000
L9	12	HCS 6X12 6AWG(1-3/8)	103.75 - 104.00	1.0000	1.0000
L9	40	CCI-045100 (L)	103.75 - 104.00	1.0000	1.0000
L9	41	CCI-045100 (L)	103.75 - 104.00	1.0000	1.0000
L9	42	CCI-045100 (L)	103.75 - 104.00	1.0000	1.0000
L10	8	WR-VG86ST-BRD(3/4)	98.75 - 103.75	1.0000	1.0000
L10	9	FB-L98B-002-75000(3/8)	98.75 - 103.75	1.0000	1.0000
L10	12	HCS 6X12 6AWG(1-3/8)	98.75 - 103.75	1.0000	1.0000
L10	31	MP3-05 (L)	98.75 - 100.75	1.0000	1.0000
L10	32	MP3-05 (L)	98.75 - 100.75	1.0000	1.0000
L10	33	MP3-05 (L)	98.75 - 100.75	1.0000	1.0000
L10	40	CCI-045100 (L)	98.75 - 103.75	1.0000	1.0000
L10	41	CCI-045100 (L)	98.75 - 103.75	1.0000	1.0000
L10	42	CCI-045100 (L)	98.75 - 103.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L11	8	WR-VG86ST-BRD(3/4)	98.50 - 98.75	1.0000	1.0000
L11	9	FB-L98B-002-75000(3/8)	98.50 - 98.75	1.0000	1.0000
L11	12	HCS 6X12 6AWG(1-3/8)	98.50 - 98.75	1.0000	1.0000
L11	31	MP3-05 (L)	98.50 - 98.75	1.0000	1.0000
L11	32	MP3-05 (L)	98.50 - 98.75	1.0000	1.0000
L11	33	MP3-05 (L)	98.50 - 98.75	1.0000	1.0000
L11	40	CCI-045100 (L)	98.50 - 98.75	1.0000	1.0000
L11	41	CCI-045100 (L)	98.50 - 98.75	1.0000	1.0000
L11	42	CCI-045100 (L)	98.50 - 98.75	1.0000	1.0000
L12	8	WR-VG86ST-BRD(3/4)	98.25 - 98.50	1.0000	1.0000
L12	9	FB-L98B-002-75000(3/8)	98.25 - 98.50	1.0000	1.0000
L12	12	HCS 6X12 6AWG(1-3/8)	98.25 - 98.50	1.0000	1.0000
L12	31	MP3-05 (L)	98.25 - 98.50	1.0000	1.0000
L12	32	MP3-05 (L)	98.25 - 98.50	1.0000	1.0000
L12	33	MP3-05 (L)	98.25 - 98.50	1.0000	1.0000
L12	40	CCI-045100 (L)	98.25 - 98.50	1.0000	1.0000
L12	41	CCI-045100 (L)	98.25 - 98.50	1.0000	1.0000
L12	42	CCI-045100 (L)	98.25 - 98.50	1.0000	1.0000
L13	8	WR-VG86ST-BRD(3/4)	97.00 - 98.25	1.0000	1.0000
L13	9	FB-L98B-002-75000(3/8)	97.00 - 98.25	1.0000	1.0000
L13	12	HCS 6X12 6AWG(1-3/8)	97.00 - 98.25	1.0000	1.0000
L13	31	MP3-05 (L)	97.00 - 98.25	1.0000	1.0000
L13	32	MP3-05 (L)	97.00 - 98.25	1.0000	1.0000
L13	33	MP3-05 (L)	97.00 - 98.25	1.0000	1.0000
L13	40	CCI-045100 (L)	97.00 - 98.25	1.0000	1.0000
L13	41	CCI-045100 (L)	97.00 - 98.25	1.0000	1.0000
L13	42	CCI-045100 (L)	97.00 - 98.25	1.0000	1.0000
L14	8	WR-VG86ST-BRD(3/4)	96.75 - 97.00	1.0000	1.0000
L14	9	FB-L98B-002-75000(3/8)	96.75 - 97.00	1.0000	1.0000
L14	12	HCS 6X12 6AWG(1-3/8)	96.75 - 97.00	1.0000	1.0000
L14	31	MP3-05 (L)	96.75 - 97.00	1.0000	1.0000
L14	32	MP3-05 (L)	96.75 - 97.00	1.0000	1.0000
L14	33	MP3-05 (L)	96.75 - 97.00	1.0000	1.0000
L14	40	CCI-045100 (L)	96.75 - 97.00	1.0000	1.0000
L14	41	CCI-045100 (L)	96.75 - 97.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
			97.00		
L14	42	CCI-045100 (L)	96.75 - 97.00	1.0000	1.0000
L15	8	WR-VG86ST-BRD(3/4)	88.50 - 96.75	1.0000	1.0000
L15	9	FB-L98B-002-75000(3/8)	88.50 - 96.75	1.0000	1.0000
L15	12	HCS 6X12 6AWG(1-3/8)	88.50 - 96.75	1.0000	1.0000
L15	19	CR 50 1873(1-5/8)	88.50 - 95.00	1.0000	1.0000
L15	31	MP3-05 (L)	88.50 - 96.75	1.0000	1.0000
L15	32	MP3-05 (L)	88.50 - 96.75	1.0000	1.0000
L15	33	MP3-05 (L)	88.50 - 96.75	1.0000	1.0000
L15	37	CCI-060100 (L)	88.50 - 90.67	1.0000	1.0000
L15	38	CCI-060100 (L)	88.50 - 90.67	1.0000	1.0000
L15	39	CCI-060100 (L)	88.50 - 90.67	1.0000	1.0000
L15	40	CCI-045100 (L)	95.50 - 96.75	1.0000	1.0000
L15	41	CCI-045100 (L)	95.50 - 96.75	1.0000	1.0000
L15	42	CCI-045100 (L)	95.50 - 96.75	1.0000	1.0000
L16	8	WR-VG86ST-BRD(3/4)	88.17 - 88.50	1.0000	1.0000
L16	9	FB-L98B-002-75000(3/8)	88.17 - 88.50	1.0000	1.0000
L16	12	HCS 6X12 6AWG(1-3/8)	88.17 - 88.50	1.0000	1.0000
L16	19	CR 50 1873(1-5/8)	88.17 - 88.50	1.0000	1.0000
L16	31	MP3-05 (L)	88.17 - 88.50	1.0000	1.0000
L16	32	MP3-05 (L)	88.17 - 88.50	1.0000	1.0000
L16	33	MP3-05 (L)	88.17 - 88.50	1.0000	1.0000
L16	37	CCI-060100 (L)	88.17 - 88.50	1.0000	1.0000
L16	38	CCI-060100 (L)	88.17 - 88.50	1.0000	1.0000
L16	39	CCI-060100 (L)	88.17 - 88.50	1.0000	1.0000
L17	8	WR-VG86ST-BRD(3/4)	87.92 - 88.17	1.0000	1.0000
L17	9	FB-L98B-002-75000(3/8)	87.92 - 88.17	1.0000	1.0000
L17	12	HCS 6X12 6AWG(1-3/8)	87.92 - 88.17	1.0000	1.0000
L17	19	CR 50 1873(1-5/8)	87.92 - 88.17	1.0000	1.0000
L17	31	MP3-05 (L)	87.92 - 88.17	1.0000	1.0000
L17	32	MP3-05 (L)	87.92 - 88.17	1.0000	1.0000
L17	33	MP3-05 (L)	87.92 - 88.17	1.0000	1.0000
L17	37	CCI-060100 (L)	87.92 - 88.17	1.0000	1.0000
L17	38	CCI-060100 (L)	87.92 - 88.17	1.0000	1.0000
L17	39	CCI-060100 (L)	87.92 - 88.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L18	8	WR-VG86ST-BRD(3/4)	82.92 - 87.92	1.0000	1.0000
L18	9	FB-L98B-002-75000(3/8)	82.92 - 87.92	1.0000	1.0000
L18	12	HCS 6X12 6AWG(1-3/8)	82.92 - 87.92	1.0000	1.0000
L18	19	CR 50 1873(1-5/8)	82.92 - 87.92	1.0000	1.0000
L18	31	MP3-05 (L)	82.92 - 87.92	1.0000	1.0000
L18	32	MP3-05 (L)	82.92 - 87.92	1.0000	1.0000
L18	33	MP3-05 (L)	82.92 - 87.92	1.0000	1.0000
L18	37	CCI-060100 (L)	82.92 - 87.92	1.0000	1.0000
L18	38	CCI-060100 (L)	82.92 - 87.92	1.0000	1.0000
L18	39	CCI-060100 (L)	82.92 - 87.92	1.0000	1.0000
L19	8	WR-VG86ST-BRD(3/4)	77.92 - 82.92	1.0000	1.0000
L19	9	FB-L98B-002-75000(3/8)	77.92 - 82.92	1.0000	1.0000
L19	12	HCS 6X12 6AWG(1-3/8)	77.92 - 82.92	1.0000	1.0000
L19	19	CR 50 1873(1-5/8)	77.92 - 82.92	1.0000	1.0000
L19	31	MP3-05 (L)	77.92 - 82.92	1.0000	1.0000
L19	32	MP3-05 (L)	77.92 - 82.92	1.0000	1.0000
L19	33	MP3-05 (L)	77.92 - 82.92	1.0000	1.0000
L19	37	CCI-060100 (L)	77.92 - 82.92	1.0000	1.0000
L19	38	CCI-060100 (L)	77.92 - 82.92	1.0000	1.0000
L19	39	CCI-060100 (L)	77.92 - 82.92	1.0000	1.0000
L20	8	WR-VG86ST-BRD(3/4)	72.92 - 77.92	1.0000	1.0000
L20	9	FB-L98B-002-75000(3/8)	72.92 - 77.92	1.0000	1.0000
L20	12	HCS 6X12 6AWG(1-3/8)	72.92 - 77.92	1.0000	1.0000
L20	19	CR 50 1873(1-5/8)	72.92 - 77.92	1.0000	1.0000
L20	31	MP3-05 (L)	72.92 - 77.92	1.0000	1.0000
L20	32	MP3-05 (L)	72.92 - 77.92	1.0000	1.0000
L20	33	MP3-05 (L)	72.92 - 77.92	1.0000	1.0000
L20	37	CCI-060100 (L)	72.92 - 77.92	1.0000	1.0000
L20	38	CCI-060100 (L)	72.92 - 77.92	1.0000	1.0000
L20	39	CCI-060100 (L)	72.92 - 77.92	1.0000	1.0000
L21	8	WR-VG86ST-BRD(3/4)	68.08 - 72.92	1.0000	1.0000
L21	9	FB-L98B-002-75000(3/8)	68.08 - 72.92	1.0000	1.0000
L21	12	HCS 6X12 6AWG(1-3/8)	68.08 - 72.92	1.0000	1.0000
L21	19	CR 50 1873(1-5/8)	68.08 - 72.92	1.0000	1.0000
L21	28	MP3-06 (L)	68.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
			71.75		
L21	29	MP3-06 (L)	68.08 - 71.75	1.0000	1.0000
L21	30	MP3-06 (L)	68.08 - 71.75	1.0000	1.0000
L21	31	MP3-05 (L)	71.75 - 72.92	1.0000	1.0000
L21	32	MP3-05 (L)	71.75 - 72.92	1.0000	1.0000
L21	33	MP3-05 (L)	71.75 - 72.92	1.0000	1.0000
L21	37	CCI-060100 (L)	68.08 - 72.92	1.0000	1.0000
L21	38	CCI-060100 (L)	68.08 - 72.92	1.0000	1.0000
L21	39	CCI-060100 (L)	68.08 - 72.92	1.0000	1.0000
L22	8	WR-VG86ST-BRD(3/4)	67.83 - 68.08	1.0000	1.0000
L22	9	FB-L98B-002-75000(3/8)	67.83 - 68.08	1.0000	1.0000
L22	12	HCS 6X12 6AWG(1-3/8)	67.83 - 68.08	1.0000	1.0000
L22	19	CR 50 1873(1-5/8)	67.83 - 68.08	1.0000	1.0000
L22	28	MP3-06 (L)	67.83 - 68.08	1.0000	1.0000
L22	29	MP3-06 (L)	67.83 - 68.08	1.0000	1.0000
L22	30	MP3-06 (L)	67.83 - 68.08	1.0000	1.0000
L22	37	CCI-060100 (L)	67.83 - 68.08	1.0000	1.0000
L22	38	CCI-060100 (L)	67.83 - 68.08	1.0000	1.0000
L22	39	CCI-060100 (L)	67.83 - 68.08	1.0000	1.0000
L23	8	WR-VG86ST-BRD(3/4)	62.83 - 67.83	1.0000	1.0000
L23	9	FB-L98B-002-75000(3/8)	62.83 - 67.83	1.0000	1.0000
L23	12	HCS 6X12 6AWG(1-3/8)	62.83 - 67.83	1.0000	1.0000
L23	19	CR 50 1873(1-5/8)	62.83 - 67.83	1.0000	1.0000
L23	28	MP3-06 (L)	62.83 - 67.83	1.0000	1.0000
L23	29	MP3-06 (L)	62.83 - 67.83	1.0000	1.0000
L23	30	MP3-06 (L)	62.83 - 67.83	1.0000	1.0000
L23	37	CCI-060100 (L)	62.83 - 67.83	1.0000	1.0000
L23	38	CCI-060100 (L)	62.83 - 67.83	1.0000	1.0000
L23	39	CCI-060100 (L)	62.83 - 67.83	1.0000	1.0000
L24	8	WR-VG86ST-BRD(3/4)	57.83 - 62.83	1.0000	1.0000
L24	9	FB-L98B-002-75000(3/8)	57.83 - 62.83	1.0000	1.0000
L24	12	HCS 6X12 6AWG(1-3/8)	57.83 - 62.83	1.0000	1.0000
L24	19	CR 50 1873(1-5/8)	57.83 - 62.83	1.0000	1.0000
L24	28	MP3-06 (L)	57.83 - 62.83	1.0000	1.0000
L24	29	MP3-06 (L)	57.83 - 62.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L24	30	MP3-06 (L)	57.83 - 62.83	1.0000	1.0000
L24	37	CCI-060100 (L)	57.83 - 62.83	1.0000	1.0000
L24	38	CCI-060100 (L)	57.83 - 62.83	1.0000	1.0000
L24	39	CCI-060100 (L)	57.83 - 62.83	1.0000	1.0000
L25	8	WR-VG86ST-BRD(3/4)	52.83 - 57.83	1.0000	1.0000
L25	9	FB-L98B-002-75000(3/8)	52.83 - 57.83	1.0000	1.0000
L25	12	HCS 6X12 6AWG(1-3/8)	52.83 - 57.83	1.0000	1.0000
L25	19	CR 50 1873(1-5/8)	52.83 - 57.83	1.0000	1.0000
L25	28	MP3-06 (L)	52.83 - 57.83	1.0000	1.0000
L25	29	MP3-06 (L)	52.83 - 57.83	1.0000	1.0000
L25	30	MP3-06 (L)	52.83 - 57.83	1.0000	1.0000
L25	37	CCI-060100 (L)	52.83 - 57.83	1.0000	1.0000
L25	38	CCI-060100 (L)	52.83 - 57.83	1.0000	1.0000
L25	39	CCI-060100 (L)	52.83 - 57.83	1.0000	1.0000
L26	8	WR-VG86ST-BRD(3/4)	47.25 - 52.83	1.0000	1.0000
L26	9	FB-L98B-002-75000(3/8)	47.25 - 52.83	1.0000	1.0000
L26	12	HCS 6X12 6AWG(1-3/8)	47.25 - 52.83	1.0000	1.0000
L26	19	CR 50 1873(1-5/8)	47.25 - 52.83	1.0000	1.0000
L26	28	MP3-06 (L)	47.25 - 52.83	1.0000	1.0000
L26	29	MP3-06 (L)	47.25 - 52.83	1.0000	1.0000
L26	30	MP3-06 (L)	47.25 - 52.83	1.0000	1.0000
L26	37	CCI-060100 (L)	47.25 - 52.83	1.0000	1.0000
L26	38	CCI-060100 (L)	47.25 - 52.83	1.0000	1.0000
L26	39	CCI-060100 (L)	47.25 - 52.83	1.0000	1.0000
L27	8	WR-VG86ST-BRD(3/4)	46.50 - 47.25	1.0000	1.0000
L27	9	FB-L98B-002-75000(3/8)	46.50 - 47.25	1.0000	1.0000
L27	12	HCS 6X12 6AWG(1-3/8)	46.50 - 47.25	1.0000	1.0000
L27	19	CR 50 1873(1-5/8)	46.50 - 47.25	1.0000	1.0000
L27	28	MP3-06 (L)	46.50 - 47.25	1.0000	1.0000
L27	29	MP3-06 (L)	46.50 - 47.25	1.0000	1.0000
L27	30	MP3-06 (L)	46.50 - 47.25	1.0000	1.0000
L27	37	CCI-060100 (L)	46.50 - 47.25	1.0000	1.0000
L27	38	CCI-060100 (L)	46.50 - 47.25	1.0000	1.0000
L27	39	CCI-060100 (L)	46.50 - 47.25	1.0000	1.0000
L28	8	WR-VG86ST-BRD(3/4)	41.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
			46.50		
L28	9	FB-L98B-002-75000(3/8)	41.50 - 46.50	1.0000	1.0000
L28	12	HCS 6X12 6AWG(1-3/8)	41.50 - 46.50	1.0000	1.0000
L28	19	CR 50 1873(1-5/8)	41.50 - 46.50	1.0000	1.0000
L28	23	MP3-08 (L)	41.50 - 41.75	1.0000	1.0000
L28	24	MP3-08 (L)	41.50 - 41.75	1.0000	1.0000
L28	25	MP3-08 (L)	41.50 - 41.75	1.0000	1.0000
L28	28	MP3-06 (L)	41.75 - 46.50	1.0000	1.0000
L28	29	MP3-06 (L)	41.75 - 46.50	1.0000	1.0000
L28	30	MP3-06 (L)	41.75 - 46.50	1.0000	1.0000
L28	37	CCI-060100 (L)	41.50 - 46.50	1.0000	1.0000
L28	38	CCI-060100 (L)	41.50 - 46.50	1.0000	1.0000
L28	39	CCI-060100 (L)	41.50 - 46.50	1.0000	1.0000
L29	8	WR-VG86ST-BRD(3/4)	37.75 - 41.50	1.0000	1.0000
L29	9	FB-L98B-002-75000(3/8)	37.75 - 41.50	1.0000	1.0000
L29	12	HCS 6X12 6AWG(1-3/8)	37.75 - 41.50	1.0000	1.0000
L29	19	CR 50 1873(1-5/8)	37.75 - 41.50	1.0000	1.0000
L29	23	MP3-08 (L)	37.75 - 41.50	1.0000	1.0000
L29	24	MP3-08 (L)	37.75 - 41.50	1.0000	1.0000
L29	25	MP3-08 (L)	37.75 - 41.50	1.0000	1.0000
L29	37	CCI-060100 (L)	37.75 - 41.50	1.0000	1.0000
L29	38	CCI-060100 (L)	37.75 - 41.50	1.0000	1.0000
L29	39	CCI-060100 (L)	37.75 - 41.50	1.0000	1.0000
L30	8	WR-VG86ST-BRD(3/4)	37.50 - 37.75	1.0000	1.0000
L30	9	FB-L98B-002-75000(3/8)	37.50 - 37.75	1.0000	1.0000
L30	12	HCS 6X12 6AWG(1-3/8)	37.50 - 37.75	1.0000	1.0000
L30	19	CR 50 1873(1-5/8)	37.50 - 37.75	1.0000	1.0000
L30	23	MP3-08 (L)	37.50 - 37.75	1.0000	1.0000
L30	24	MP3-08 (L)	37.50 - 37.75	1.0000	1.0000
L30	25	MP3-08 (L)	37.50 - 37.75	1.0000	1.0000
L30	37	CCI-060100 (L)	37.50 - 37.75	1.0000	1.0000
L30	38	CCI-060100 (L)	37.50 - 37.75	1.0000	1.0000
L30	39	CCI-060100 (L)	37.50 - 37.75	1.0000	1.0000
L31	8	WR-VG86ST-BRD(3/4)	32.50 - 37.50	1.0000	1.0000
L31	9	FB-L98B-002-75000(3/8)	32.50 - 37.50	1.0000	1.0000



Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L31	12	HCS 6X12 6AWG(1-3/8)	32.50 - 37.50	1.0000	1.0000
L31	19	CR 50 1873(1-5/8)	32.50 - 37.50	1.0000	1.0000
L31	23	MP3-08 (L)	32.50 - 37.50	1.0000	1.0000
L31	24	MP3-08 (L)	32.50 - 37.50	1.0000	1.0000
L31	25	MP3-08 (L)	32.50 - 37.50	1.0000	1.0000
L31	34	CCI-065125 (L)	32.50 - 35.50	1.0000	1.0000
L31	35	CCI-065125 (L)	32.50 - 35.50	1.0000	1.0000
L31	36	CCI-065125 (L)	32.50 - 35.50	1.0000	1.0000
L31	37	CCI-060100 (L)	35.50 - 37.50	1.0000	1.0000
L31	38	CCI-060100 (L)	35.50 - 37.50	1.0000	1.0000
L31	39	CCI-060100 (L)	35.50 - 37.50	1.0000	1.0000
L32	8	WR-VG86ST-BRD(3/4)	32.25 - 32.50	1.0000	1.0000
L32	9	FB-L98B-002-75000(3/8)	32.25 - 32.50	1.0000	1.0000
L32	12	HCS 6X12 6AWG(1-3/8)	32.25 - 32.50	1.0000	1.0000
L32	19	CR 50 1873(1-5/8)	32.25 - 32.50	1.0000	1.0000
L32	23	MP3-08 (L)	32.25 - 32.50	1.0000	1.0000
L32	24	MP3-08 (L)	32.25 - 32.50	1.0000	1.0000
L32	25	MP3-08 (L)	32.25 - 32.50	1.0000	1.0000
L32	34	CCI-065125 (L)	32.25 - 32.50	1.0000	1.0000
L32	35	CCI-065125 (L)	32.25 - 32.50	1.0000	1.0000
L32	36	CCI-065125 (L)	32.25 - 32.50	1.0000	1.0000
L33	8	WR-VG86ST-BRD(3/4)	27.25 - 32.25	1.0000	1.0000
L33	9	FB-L98B-002-75000(3/8)	27.25 - 32.25	1.0000	1.0000
L33	12	HCS 6X12 6AWG(1-3/8)	27.25 - 32.25	1.0000	1.0000
L33	19	CR 50 1873(1-5/8)	27.25 - 32.25	1.0000	1.0000
L33	23	MP3-08 (L)	27.25 - 32.25	1.0000	1.0000
L33	24	MP3-08 (L)	27.25 - 32.25	1.0000	1.0000
L33	25	MP3-08 (L)	27.25 - 32.25	1.0000	1.0000
L33	34	CCI-065125 (L)	27.25 - 32.25	1.0000	1.0000
L33	35	CCI-065125 (L)	27.25 - 32.25	1.0000	1.0000
L33	36	CCI-065125 (L)	27.25 - 32.25	1.0000	1.0000
L34	8	WR-VG86ST-BRD(3/4)	23.50 - 27.25	1.0000	1.0000
L34	9	FB-L98B-002-75000(3/8)	23.50 - 27.25	1.0000	1.0000
L34	12	HCS 6X12 6AWG(1-3/8)	23.50 - 27.25	1.0000	1.0000
L34	19	CR 50 1873(1-5/8)	23.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
			27.25		
L34	23	MP3-08 (L)	23.50 - 27.25	1.0000	1.0000
L34	24	MP3-08 (L)	23.50 - 27.25	1.0000	1.0000
L34	25	MP3-08 (L)	23.50 - 27.25	1.0000	1.0000
L34	26	MP3-06 (W)	23.50 - 26.75	1.0000	1.0000
L34	27	MP3-06 (L)	23.50 - 26.75	1.0000	1.0000
L34	34	CCI-065125 (L)	23.50 - 27.25	1.0000	1.0000
L34	35	CCI-065125 (L)	23.50 - 27.25	1.0000	1.0000
L34	36	CCI-065125 (L)	23.50 - 27.25	1.0000	1.0000
L35	8	WR-VG86ST-BRD(3/4)	23.25 - 23.50	1.0000	1.0000
L35	9	FB-L98B-002-75000(3/8)	23.25 - 23.50	1.0000	1.0000
L35	12	HCS 6X12 6AWG(1-3/8)	23.25 - 23.50	1.0000	1.0000
L35	19	CR 50 1873(1-5/8)	23.25 - 23.50	1.0000	1.0000
L35	23	MP3-08 (L)	23.25 - 23.50	1.0000	1.0000
L35	24	MP3-08 (L)	23.25 - 23.50	1.0000	1.0000
L35	25	MP3-08 (L)	23.25 - 23.50	1.0000	1.0000
L35	26	MP3-06 (W)	23.25 - 23.50	1.0000	1.0000
L35	27	MP3-06 (L)	23.25 - 23.50	1.0000	1.0000
L35	34	CCI-065125 (L)	23.25 - 23.50	1.0000	1.0000
L35	35	CCI-065125 (L)	23.25 - 23.50	1.0000	1.0000
L35	36	CCI-065125 (L)	23.25 - 23.50	1.0000	1.0000
L36	8	WR-VG86ST-BRD(3/4)	20.75 - 23.25	1.0000	1.0000
L36	9	FB-L98B-002-75000(3/8)	20.75 - 23.25	1.0000	1.0000
L36	12	HCS 6X12 6AWG(1-3/8)	20.75 - 23.25	1.0000	1.0000
L36	19	CR 50 1873(1-5/8)	20.75 - 23.25	1.0000	1.0000
L36	23	MP3-08 (L)	20.75 - 23.25	1.0000	1.0000
L36	24	MP3-08 (L)	20.75 - 23.25	1.0000	1.0000
L36	25	MP3-08 (L)	20.75 - 23.25	1.0000	1.0000
L36	26	MP3-06 (W)	20.75 - 23.25	1.0000	1.0000
L36	27	MP3-06 (L)	20.75 - 23.25	1.0000	1.0000
L36	34	CCI-065125 (L)	20.75 - 23.25	1.0000	1.0000
L36	35	CCI-065125 (L)	20.75 - 23.25	1.0000	1.0000
L36	36	CCI-065125 (L)	20.75 - 23.25	1.0000	1.0000
L37	8	WR-VG86ST-BRD(3/4)	20.50 - 20.75	1.0000	1.0000
L37	9	FB-L98B-002-75000(3/8)	20.50 - 20.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L37	12	HCS 6X12 6AWG(1-3/8)	20.50 - 20.75	1.0000	1.0000
L37	19	CR 50 1873(1-5/8)	20.50 - 20.75	1.0000	1.0000
L37	23	MP3-08 (L)	20.50 - 20.75	1.0000	1.0000
L37	24	MP3-08 (L)	20.50 - 20.75	1.0000	1.0000
L37	25	MP3-08 (L)	20.50 - 20.75	1.0000	1.0000
L37	26	MP3-06 (W)	20.50 - 20.75	1.0000	1.0000
L37	27	MP3-06 (L)	20.50 - 20.75	1.0000	1.0000
L37	34	CCI-065125 (L)	20.50 - 20.75	1.0000	1.0000
L37	35	CCI-065125 (L)	20.50 - 20.75	1.0000	1.0000
L37	36	CCI-065125 (L)	20.50 - 20.75	1.0000	1.0000
L38	8	WR-VG86ST-BRD(3/4)	15.50 - 20.50	1.0000	1.0000
L38	9	FB-L98B-002-75000(3/8)	15.50 - 20.50	1.0000	1.0000
L38	12	HCS 6X12 6AWG(1-3/8)	15.50 - 20.50	1.0000	1.0000
L38	19	CR 50 1873(1-5/8)	15.50 - 20.50	1.0000	1.0000
L38	23	MP3-08 (L)	15.50 - 20.50	1.0000	1.0000
L38	24	MP3-08 (L)	15.50 - 20.50	1.0000	1.0000
L38	25	MP3-08 (L)	16.75 - 20.50	1.0000	1.0000
L38	26	MP3-06 (W)	15.50 - 20.50	1.0000	1.0000
L38	27	MP3-06 (L)	15.50 - 20.50	1.0000	1.0000
L38	34	CCI-065125 (L)	15.50 - 20.50	1.0000	1.0000
L38	35	CCI-065125 (L)	15.50 - 20.50	1.0000	1.0000
L38	36	CCI-065125 (L)	15.50 - 20.50	1.0000	1.0000
L39	8	WR-VG86ST-BRD(3/4)	10.50 - 15.50	1.0000	1.0000
L39	9	FB-L98B-002-75000(3/8)	10.50 - 15.50	1.0000	1.0000
L39	12	HCS 6X12 6AWG(1-3/8)	10.50 - 15.50	1.0000	1.0000
L39	19	CR 50 1873(1-5/8)	10.50 - 15.50	1.0000	1.0000
L39	23	MP3-08 (L)	10.50 - 15.50	1.0000	1.0000
L39	24	MP3-08 (L)	10.50 - 15.50	1.0000	1.0000
L39	26	MP3-06 (W)	10.50 - 15.50	1.0000	1.0000
L39	27	MP3-06 (L)	10.50 - 15.50	1.0000	1.0000
L39	34	CCI-065125 (L)	10.50 - 15.50	1.0000	1.0000
L39	35	CCI-065125 (L)	10.50 - 15.50	1.0000	1.0000
L39	36	CCI-065125 (L)	10.50 - 15.50	1.0000	1.0000
L40	8	WR-VG86ST-BRD(3/4)	5.50 - 10.50	1.0000	1.0000
L40	9	FB-L98B-002-75000(3/8)	5.50 - 10.50	1.0000	1.0000
L40	12	HCS 6X12 6AWG(1-3/8)	5.50 - 10.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L40	19	CR 50 1873(1-5/8)	5.50 - 10.50	1.0000	1.0000
L40	23	MP3-08 (L)	5.50 - 10.50	1.0000	1.0000
L40	24	MP3-08 (L)	5.50 - 10.50	1.0000	1.0000
L40	26	MP3-06 (W)	5.50 - 10.50	1.0000	1.0000
L40	27	MP3-06 (L)	5.50 - 10.50	1.0000	1.0000
L40	34	CCI-065125 (L)	5.50 - 10.50	1.0000	1.0000
L40	35	CCI-065125 (L)	5.50 - 10.50	1.0000	1.0000
L40	36	CCI-065125 (L)	5.50 - 10.50	1.0000	1.0000
L41	8	WR-VG86ST-BRD(3/4)	3.00 - 5.50	1.0000	1.0000
L41	9	FB-L98B-002-75000(3/8)	3.00 - 5.50	1.0000	1.0000
L41	12	HCS 6X12 6AWG(1-3/8)	3.00 - 5.50	1.0000	1.0000
L41	19	CR 50 1873(1-5/8)	3.00 - 5.50	1.0000	1.0000
L41	23	MP3-08 (L)	3.00 - 5.50	1.0000	1.0000
L41	24	MP3-08 (L)	3.00 - 5.50	1.0000	1.0000
L41	26	MP3-06 (W)	3.00 - 5.50	1.0000	1.0000
L41	27	MP3-06 (L)	3.00 - 5.50	1.0000	1.0000
L41	34	CCI-065125 (L)	3.00 - 5.50	1.0000	1.0000
L41	35	CCI-065125 (L)	3.00 - 5.50	1.0000	1.0000
L41	36	CCI-065125 (L)	3.00 - 5.50	1.0000	1.0000
L42	8	WR-VG86ST-BRD(3/4)	2.75 - 3.00	1.0000	1.0000
L42	9	FB-L98B-002-75000(3/8)	2.75 - 3.00	1.0000	1.0000
L42	12	HCS 6X12 6AWG(1-3/8)	2.75 - 3.00	1.0000	1.0000
L42	19	CR 50 1873(1-5/8)	2.75 - 3.00	1.0000	1.0000
L42	23	MP3-08 (L)	2.75 - 3.00	1.0000	1.0000
L42	24	MP3-08 (L)	2.75 - 3.00	1.0000	1.0000
L42	26	MP3-06 (W)	2.75 - 3.00	1.0000	1.0000
L42	27	MP3-06 (L)	2.75 - 3.00	1.0000	1.0000
L42	34	CCI-065125 (L)	2.75 - 3.00	1.0000	1.0000
L42	35	CCI-065125 (L)	2.75 - 3.00	1.0000	1.0000
L42	36	CCI-065125 (L)	2.75 - 3.00	1.0000	1.0000
L43	8	WR-VG86ST-BRD(3/4)	1.75 - 2.75	1.0000	1.0000
L43	9	FB-L98B-002-75000(3/8)	1.75 - 2.75	1.0000	1.0000
L43	12	HCS 6X12 6AWG(1-3/8)	1.75 - 2.75	1.0000	1.0000
L43	19	CR 50 1873(1-5/8)	1.75 - 2.75	1.0000	1.0000
L43	23	MP3-08 (L)	1.75 - 2.75	1.0000	1.0000
L43	24	MP3-08 (L)	1.75 - 2.75	1.0000	1.0000
L43	26	MP3-06 (W)	1.75 - 2.75	1.0000	1.0000
L43	27	MP3-06 (L)	1.75 - 2.75	1.0000	1.0000
L43	34	CCI-065125 (L)	1.75 - 2.75	1.0000	1.0000
L43	35	CCI-065125 (L)	1.75 - 2.75	1.0000	1.0000
L43	36	CCI-065125 (L)	1.75 - 2.75	1.0000	1.0000
L44	8	WR-VG86ST-BRD(3/4)	1.50 - 1.75	1.0000	1.0000
L44	9	FB-L98B-002-75000(3/8)	1.50 - 1.75	1.0000	1.0000
L44	12	HCS 6X12 6AWG(1-3/8)	1.50 - 1.75	1.0000	1.0000
L44	19	CR 50 1873(1-5/8)	1.50 - 1.75	1.0000	1.0000
L44	23	MP3-08 (L)	1.50 - 1.75	1.0000	1.0000
L44	24	MP3-08 (L)	1.50 - 1.75	1.0000	1.0000
L44	26	MP3-06 (W)	1.50 - 1.75	1.0000	1.0000
L44	27	MP3-06 (L)	1.50 - 1.75	1.0000	1.0000
L44	34	CCI-065125 (L)	1.50 - 1.75	1.0000	1.0000
L44	35	CCI-065125 (L)	1.50 - 1.75	1.0000	1.0000
L44	36	CCI-065125 (L)	1.50 - 1.75	1.0000	1.0000
L45	8	WR-VG86ST-BRD(3/4)	0.00 - 1.50	1.0000	1.0000
L45	9	FB-L98B-002-75000(3/8)	0.00 - 1.50	1.0000	1.0000
L45	12	HCS 6X12 6AWG(1-3/8)	0.00 - 1.50	1.0000	1.0000
L45	19	CR 50 1873(1-5/8)	0.00 - 1.50	1.0000	1.0000
L45	23	MP3-08 (L)	0.00 - 1.50	1.0000	1.0000
L45	24	MP3-08 (L)	0.00 - 1.50	1.0000	1.0000
L45	26	MP3-06 (W)	0.00 - 1.50	1.0000	1.0000
L45	27	MP3-06 (L)	0.00 - 1.50	1.0000	1.0000
L45	34	CCI-065125 (L)	0.00 - 1.50	1.0000	1.0000
L45	35	CCI-065125 (L)	0.00 - 1.50	1.0000	1.0000
L45	36	CCI-065125 (L)	0.00 - 1.50	1.0000	1.0000

**Effective Width of Flat Linear Attachments/ Feed Lines**

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L7	40	CCI-045100 (L)	105.00 - 105.50	Manual	1.0000
L7	41	CCI-045100 (L)	105.00 - 105.50	Manual	1.0000
L7	42	CCI-045100 (L)	105.00 - 105.50	Manual	1.0000
L8	40	CCI-045100 (L)	104.00 - 105.00	Manual	1.0000
L8	41	CCI-045100 (L)	104.00 - 105.00	Manual	1.0000
L8	42	CCI-045100 (L)	104.00 - 105.00	Manual	1.0000
L9	40	CCI-045100 (L)	103.75 - 104.00	Manual	1.0000
L9	41	CCI-045100 (L)	103.75 - 104.00	Manual	1.0000
L9	42	CCI-045100 (L)	103.75 - 104.00	Manual	1.0000
L10	31	MP3-05 (L)	98.75 - 100.75	Manual	1.0000
L10	32	MP3-05 (L)	98.75 - 100.75	Manual	1.0000
L10	33	MP3-05 (L)	98.75 - 100.75	Manual	1.0000
L10	40	CCI-045100 (L)	98.75 - 103.75	Manual	1.0000
L10	41	CCI-045100 (L)	98.75 - 103.75	Manual	1.0000
L10	42	CCI-045100 (L)	98.75 - 103.75	Manual	1.0000
L11	31	MP3-05 (L)	98.50 - 98.75	Manual	1.0000
L11	32	MP3-05 (L)	98.50 - 98.75	Manual	1.0000
L11	33	MP3-05 (L)	98.50 - 98.75	Manual	1.0000
L11	40	CCI-045100 (L)	98.50 - 98.75	Manual	1.0000
L11	41	CCI-045100 (L)	98.50 - 98.75	Manual	1.0000
L11	42	CCI-045100 (L)	98.50 - 98.75	Manual	1.0000
L12	31	MP3-05 (L)	98.25 - 98.50	Manual	1.0000
L12	32	MP3-05 (L)	98.25 - 98.50	Manual	1.0000
L12	33	MP3-05 (L)	98.25 - 98.50	Manual	1.0000
L12	40	CCI-045100 (L)	98.25 - 98.50	Manual	1.0000
L12	41	CCI-045100 (L)	98.25 - 98.50	Manual	1.0000
L12	42	CCI-045100 (L)	98.25 - 98.50	Manual	1.0000
L13	31	MP3-05 (L)	97.00 - 98.25	Manual	1.0000
L13	32	MP3-05 (L)	97.00 - 98.25	Manual	1.0000
L13	33	MP3-05 (L)	97.00 - 98.25	Manual	1.0000
L13	40	CCI-045100 (L)	97.00 - 98.25	Manual	1.0000
L13	41	CCI-045100 (L)	97.00 - 98.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	42	CCI-045100 (L)	97.00 - 98.25	Manual	1.0000
L14	31	MP3-05 (L)	96.75 - 97.00	Manual	1.0000
L14	32	MP3-05 (L)	96.75 - 97.00	Manual	1.0000
L14	33	MP3-05 (L)	96.75 - 97.00	Manual	1.0000
L14	40	CCI-045100 (L)	96.75 - 97.00	Manual	1.0000
L14	41	CCI-045100 (L)	96.75 - 97.00	Manual	1.0000
L14	42	CCI-045100 (L)	96.75 - 97.00	Manual	1.0000
L15	31	MP3-05 (L)	88.50 - 96.75	Manual	1.0000
L15	32	MP3-05 (L)	88.50 - 96.75	Manual	1.0000
L15	33	MP3-05 (L)	88.50 - 96.75	Manual	1.0000
L15	37	CCI-060100 (L)	88.50 - 90.67	Manual	1.0000
L15	38	CCI-060100 (L)	88.50 - 90.67	Manual	1.0000
L15	39	CCI-060100 (L)	88.50 - 90.67	Manual	1.0000
L15	40	CCI-045100 (L)	95.50 - 96.75	Manual	1.0000
L15	41	CCI-045100 (L)	95.50 - 96.75	Manual	1.0000
L15	42	CCI-045100 (L)	95.50 - 96.75	Manual	1.0000
L16	31	MP3-05 (L)	88.17 - 88.50	Manual	1.0000
L16	32	MP3-05 (L)	88.17 - 88.50	Manual	1.0000
L16	33	MP3-05 (L)	88.17 - 88.50	Manual	1.0000
L16	37	CCI-060100 (L)	88.17 - 88.50	Manual	1.0000
L16	38	CCI-060100 (L)	88.17 - 88.50	Manual	1.0000
L16	39	CCI-060100 (L)	88.17 - 88.50	Manual	1.0000
L17	31	MP3-05 (L)	87.92 - 88.17	Manual	1.0000
L17	32	MP3-05 (L)	87.92 - 88.17	Manual	1.0000
L17	33	MP3-05 (L)	87.92 - 88.17	Manual	1.0000
L17	37	CCI-060100 (L)	87.92 - 88.17	Manual	1.0000
L17	38	CCI-060100 (L)	87.92 - 88.17	Manual	1.0000
L17	39	CCI-060100 (L)	87.92 - 88.17	Manual	1.0000
L18	31	MP3-05 (L)	82.92 - 87.92	Manual	1.0000
L18	32	MP3-05 (L)	82.92 - 87.92	Manual	1.0000
L18	33	MP3-05 (L)	82.92 - 87.92	Manual	1.0000
L18	37	CCI-060100 (L)	82.92 - 87.92	Manual	1.0000
L18	38	CCI-060100 (L)	82.92 - 87.92	Manual	1.0000
L18	39	CCI-060100 (L)	82.92 - 87.92	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	31	MP3-05 (L)	77.92 - 82.92	Manual	1.0000
L19	32	MP3-05 (L)	77.92 - 82.92	Manual	1.0000
L19	33	MP3-05 (L)	77.92 - 82.92	Manual	1.0000
L19	37	CCI-060100 (L)	77.92 - 82.92	Manual	1.0000
L19	38	CCI-060100 (L)	77.92 - 82.92	Manual	1.0000
L19	39	CCI-060100 (L)	77.92 - 82.92	Manual	1.0000
L20	31	MP3-05 (L)	72.92 - 77.92	Manual	1.0000
L20	32	MP3-05 (L)	72.92 - 77.92	Manual	1.0000
L20	33	MP3-05 (L)	72.92 - 77.92	Manual	1.0000
L20	37	CCI-060100 (L)	72.92 - 77.92	Manual	1.0000
L20	38	CCI-060100 (L)	72.92 - 77.92	Manual	1.0000
L20	39	CCI-060100 (L)	72.92 - 77.92	Manual	1.0000
L21	28	MP3-06 (L)	68.08 - 71.75	Manual	1.0000
L21	29	MP3-06 (L)	68.08 - 71.75	Manual	1.0000
L21	30	MP3-06 (L)	68.08 - 71.75	Manual	1.0000
L21	31	MP3-05 (L)	71.75 - 72.92	Manual	1.0000
L21	32	MP3-05 (L)	71.75 - 72.92	Manual	1.0000
L21	33	MP3-05 (L)	71.75 - 72.92	Manual	1.0000
L21	37	CCI-060100 (L)	68.08 - 72.92	Manual	1.0000
L21	38	CCI-060100 (L)	68.08 - 72.92	Manual	1.0000
L21	39	CCI-060100 (L)	68.08 - 72.92	Manual	1.0000
L22	28	MP3-06 (L)	67.83 - 68.08	Manual	1.0000
L22	29	MP3-06 (L)	67.83 - 68.08	Manual	1.0000
L22	30	MP3-06 (L)	67.83 - 68.08	Manual	1.0000
L22	37	CCI-060100 (L)	67.83 - 68.08	Manual	1.0000
L22	38	CCI-060100 (L)	67.83 - 68.08	Manual	1.0000
L22	39	CCI-060100 (L)	67.83 - 68.08	Manual	1.0000
L23	28	MP3-06 (L)	62.83 - 67.83	Manual	1.0000
L23	29	MP3-06 (L)	62.83 - 67.83	Manual	1.0000
L23	30	MP3-06 (L)	62.83 - 67.83	Manual	1.0000
L23	37	CCI-060100 (L)	62.83 - 67.83	Manual	1.0000
L23	38	CCI-060100 (L)	62.83 - 67.83	Manual	1.0000
L23	39	CCI-060100 (L)	62.83 - 67.83	Manual	1.0000
L24	28	MP3-06 (L)	57.83 - 62.83	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	29	MP3-06 (L)	57.83 - 62.83	Manual	1.0000
L24	30	MP3-06 (L)	57.83 - 62.83	Manual	1.0000
L24	37	CCI-060100 (L)	57.83 - 62.83	Manual	1.0000
L24	38	CCI-060100 (L)	57.83 - 62.83	Manual	1.0000
L24	39	CCI-060100 (L)	57.83 - 62.83	Manual	1.0000
L25	28	MP3-06 (L)	52.83 - 57.83	Manual	1.0000
L25	29	MP3-06 (L)	52.83 - 57.83	Manual	1.0000
L25	30	MP3-06 (L)	52.83 - 57.83	Manual	1.0000
L25	37	CCI-060100 (L)	52.83 - 57.83	Manual	1.0000
L25	38	CCI-060100 (L)	52.83 - 57.83	Manual	1.0000
L25	39	CCI-060100 (L)	52.83 - 57.83	Manual	1.0000
L26	28	MP3-06 (L)	47.25 - 52.83	Manual	1.0000
L26	29	MP3-06 (L)	47.25 - 52.83	Manual	1.0000
L26	30	MP3-06 (L)	47.25 - 52.83	Manual	1.0000
L26	37	CCI-060100 (L)	47.25 - 52.83	Manual	1.0000
L26	38	CCI-060100 (L)	47.25 - 52.83	Manual	1.0000
L26	39	CCI-060100 (L)	47.25 - 52.83	Manual	1.0000
L27	28	MP3-06 (L)	46.50 - 47.25	Manual	1.0000
L27	29	MP3-06 (L)	46.50 - 47.25	Manual	1.0000
L27	30	MP3-06 (L)	46.50 - 47.25	Manual	1.0000
L27	37	CCI-060100 (L)	46.50 - 47.25	Manual	1.0000
L27	38	CCI-060100 (L)	46.50 - 47.25	Manual	1.0000
L27	39	CCI-060100 (L)	46.50 - 47.25	Manual	1.0000
L28	23	MP3-08 (L)	41.50 - 41.75	Manual	1.0000
L28	24	MP3-08 (L)	41.50 - 41.75	Manual	1.0000
L28	25	MP3-08 (L)	41.50 - 41.75	Manual	1.0000
L28	28	MP3-06 (L)	41.75 - 46.50	Manual	1.0000
L28	29	MP3-06 (L)	41.75 - 46.50	Manual	1.0000
L28	30	MP3-06 (L)	41.75 - 46.50	Manual	1.0000
L28	37	CCI-060100 (L)	41.50 - 46.50	Manual	1.0000
L28	38	CCI-060100 (L)	41.50 - 46.50	Manual	1.0000
L28	39	CCI-060100 (L)	41.50 - 46.50	Manual	1.0000
L29	23	MP3-08 (L)	37.75 - 41.50	Manual	1.0000
L29	24	MP3-08 (L)	37.75 - 41.50	Manual	1.0000



Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	25	MP3-08 (L)	37.75 - 41.50	Manual	1.0000
L29	37	CCI-060100 (L)	37.75 - 41.50	Manual	1.0000
L29	38	CCI-060100 (L)	37.75 - 41.50	Manual	1.0000
L29	39	CCI-060100 (L)	37.75 - 41.50	Manual	1.0000
L30	23	MP3-08 (L)	37.50 - 37.75	Manual	1.0000
L30	24	MP3-08 (L)	37.50 - 37.75	Manual	1.0000
L30	25	MP3-08 (L)	37.50 - 37.75	Manual	1.0000
L30	37	CCI-060100 (L)	37.50 - 37.75	Manual	1.0000
L30	38	CCI-060100 (L)	37.50 - 37.75	Manual	1.0000
L30	39	CCI-060100 (L)	37.50 - 37.75	Manual	1.0000
L31	23	MP3-08 (L)	32.50 - 37.50	Manual	1.0000
L31	24	MP3-08 (L)	32.50 - 37.50	Manual	1.0000
L31	25	MP3-08 (L)	32.50 - 37.50	Manual	1.0000
L31	34	CCI-065125 (L)	32.50 - 35.50	Manual	1.0000
L31	35	CCI-065125 (L)	32.50 - 35.50	Manual	1.0000
L31	36	CCI-065125 (L)	32.50 - 35.50	Manual	1.0000
L31	37	CCI-060100 (L)	35.50 - 37.50	Manual	1.0000
L31	38	CCI-060100 (L)	35.50 - 37.50	Manual	1.0000
L31	39	CCI-060100 (L)	35.50 - 37.50	Manual	1.0000
L32	23	MP3-08 (L)	32.25 - 32.50	Manual	1.0000
L32	24	MP3-08 (L)	32.25 - 32.50	Manual	1.0000
L32	25	MP3-08 (L)	32.25 - 32.50	Manual	1.0000
L32	34	CCI-065125 (L)	32.25 - 32.50	Manual	1.0000
L32	35	CCI-065125 (L)	32.25 - 32.50	Manual	1.0000
L32	36	CCI-065125 (L)	32.25 - 32.50	Manual	1.0000
L33	23	MP3-08 (L)	27.25 - 32.25	Manual	1.0000
L33	24	MP3-08 (L)	27.25 - 32.25	Manual	1.0000
L33	25	MP3-08 (L)	27.25 - 32.25	Manual	1.0000
L33	34	CCI-065125 (L)	27.25 - 32.25	Manual	1.0000
L33	35	CCI-065125 (L)	27.25 - 32.25	Manual	1.0000
L33	36	CCI-065125 (L)	27.25 - 32.25	Manual	1.0000
L34	23	MP3-08 (L)	23.50 - 27.25	Manual	1.0000
L34	24	MP3-08 (L)	23.50 - 27.25	Manual	1.0000
L34	25	MP3-08 (L)	23.50 - 27.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	26	MP3-06 (W)	23.50 - 26.75	Manual	1.0000
L34	27	MP3-06 (L)	23.50 - 26.75	Manual	1.0000
L34	34	CCI-065125 (L)	23.50 - 27.25	Manual	1.0000
L34	35	CCI-065125 (L)	23.50 - 27.25	Manual	1.0000
L34	36	CCI-065125 (L)	23.50 - 27.25	Manual	1.0000
L35	23	MP3-08 (L)	23.25 - 23.50	Manual	1.0000
L35	24	MP3-08 (L)	23.25 - 23.50	Manual	1.0000
L35	25	MP3-08 (L)	23.25 - 23.50	Manual	1.0000
L35	26	MP3-06 (W)	23.25 - 23.50	Manual	1.0000
L35	27	MP3-06 (L)	23.25 - 23.50	Manual	1.0000
L35	34	CCI-065125 (L)	23.25 - 23.50	Manual	1.0000
L35	35	CCI-065125 (L)	23.25 - 23.50	Manual	1.0000
L35	36	CCI-065125 (L)	23.25 - 23.50	Manual	1.0000
L36	23	MP3-08 (L)	20.75 - 23.25	Manual	1.0000
L36	24	MP3-08 (L)	20.75 - 23.25	Manual	1.0000
L36	25	MP3-08 (L)	20.75 - 23.25	Manual	1.0000
L36	26	MP3-06 (W)	20.75 - 23.25	Manual	1.0000
L36	27	MP3-06 (L)	20.75 - 23.25	Manual	1.0000
L36	34	CCI-065125 (L)	20.75 - 23.25	Manual	1.0000
L36	35	CCI-065125 (L)	20.75 - 23.25	Manual	1.0000
L36	36	CCI-065125 (L)	20.75 - 23.25	Manual	1.0000
L37	23	MP3-08 (L)	20.50 - 20.75	Manual	1.0000
L37	24	MP3-08 (L)	20.50 - 20.75	Manual	1.0000
L37	25	MP3-08 (L)	20.50 - 20.75	Manual	1.0000
L37	26	MP3-06 (W)	20.50 - 20.75	Manual	1.0000
L37	27	MP3-06 (L)	20.50 - 20.75	Manual	1.0000
L37	34	CCI-065125 (L)	20.50 - 20.75	Manual	1.0000
L37	35	CCI-065125 (L)	20.50 - 20.75	Manual	1.0000
L37	36	CCI-065125 (L)	20.50 - 20.75	Manual	1.0000
L38	23	MP3-08 (L)	15.50 - 20.50	Manual	1.0000
L38	24	MP3-08 (L)	15.50 - 20.50	Manual	1.0000
L38	25	MP3-08 (L)	16.75 - 20.50	Manual	1.0000
L38	26	MP3-06 (W)	15.50 - 20.50	Manual	1.0000
L38	27	MP3-06 (L)	15.50 - 20.50	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L38	34	CCI-065125 (L)	15.50 - 20.50	Manual	1.0000
L38	35	CCI-065125 (L)	15.50 - 20.50	Manual	1.0000
L38	36	CCI-065125 (L)	15.50 - 20.50	Manual	1.0000
L39	23	MP3-08 (L)	10.50 - 15.50	Manual	1.0000
L39	24	MP3-08 (L)	10.50 - 15.50	Manual	1.0000
L39	26	MP3-06 (W)	10.50 - 15.50	Manual	1.0000
L39	27	MP3-06 (L)	10.50 - 15.50	Manual	1.0000
L39	34	CCI-065125 (L)	10.50 - 15.50	Manual	1.0000
L39	35	CCI-065125 (L)	10.50 - 15.50	Manual	1.0000
L39	36	CCI-065125 (L)	10.50 - 15.50	Manual	1.0000
L40	23	MP3-08 (L)	5.50 - 10.50	Manual	1.0000
L40	24	MP3-08 (L)	5.50 - 10.50	Manual	1.0000
L40	26	MP3-06 (W)	5.50 - 10.50	Manual	1.0000
L40	27	MP3-06 (L)	5.50 - 10.50	Manual	1.0000
L40	34	CCI-065125 (L)	5.50 - 10.50	Manual	1.0000
L40	35	CCI-065125 (L)	5.50 - 10.50	Manual	1.0000
L40	36	CCI-065125 (L)	5.50 - 10.50	Manual	1.0000
L41	23	MP3-08 (L)	3.00 - 5.50	Manual	1.0000
L41	24	MP3-08 (L)	3.00 - 5.50	Manual	1.0000
L41	26	MP3-06 (W)	3.00 - 5.50	Manual	1.0000
L41	27	MP3-06 (L)	3.00 - 5.50	Manual	1.0000
L41	34	CCI-065125 (L)	3.00 - 5.50	Manual	1.0000
L41	35	CCI-065125 (L)	3.00 - 5.50	Manual	1.0000
L41	36	CCI-065125 (L)	3.00 - 5.50	Manual	1.0000
L42	23	MP3-08 (L)	2.75 - 3.00	Manual	1.0000
L42	24	MP3-08 (L)	2.75 - 3.00	Manual	1.0000
L42	26	MP3-06 (W)	2.75 - 3.00	Manual	1.0000
L42	27	MP3-06 (L)	2.75 - 3.00	Manual	1.0000
L42	34	CCI-065125 (L)	2.75 - 3.00	Manual	1.0000
L42	35	CCI-065125 (L)	2.75 - 3.00	Manual	1.0000
L42	36	CCI-065125 (L)	2.75 - 3.00	Manual	1.0000
L43	23	MP3-08 (L)	1.75 - 2.75	Manual	1.0000
L43	24	MP3-08 (L)	1.75 - 2.75	Manual	1.0000
L43	26	MP3-06 (W)	1.75 - 2.75	Manual	1.0000
L43	27	MP3-06 (L)	1.75 - 2.75	Manual	1.0000
L43	34	CCI-065125 (L)	1.75 - 2.75	Manual	1.0000
L43	35	CCI-065125 (L)	1.75 - 2.75	Manual	1.0000
L43	36	CCI-065125 (L)	1.75 - 2.75	Manual	1.0000
L44	23	MP3-08 (L)	1.50 - 1.75	Manual	1.0000
L44	24	MP3-08 (L)	1.50 - 1.75	Manual	1.0000
L44	26	MP3-06 (W)	1.50 - 1.75	Manual	1.0000
L44	27	MP3-06 (L)	1.50 - 1.75	Manual	1.0000
L44	34	CCI-065125 (L)	1.50 - 1.75	Manual	1.0000
L44	35	CCI-065125 (L)	1.50 - 1.75	Manual	1.0000
L44	36	CCI-065125 (L)	1.50 - 1.75	Manual	1.0000
L45	23	MP3-08 (L)	0.00 - 1.50	Manual	1.0000
L45	24	MP3-08 (L)	0.00 - 1.50	Manual	1.0000
L45	26	MP3-06 (W)	0.00 - 1.50	Manual	1.0000
L45	27	MP3-06 (L)	0.00 - 1.50	Manual	1.0000
L45	34	CCI-065125 (L)	0.00 - 1.50	Manual	1.0000
L45	35	CCI-065125 (L)	0.00 - 1.50	Manual	1.0000
L45	36	CCI-065125 (L)	0.00 - 1.50	Manual	1.0000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement  ft		C <sub>AA</sub> Front  ft <sup>2</sup>	C <sub>AA</sub> Side  ft <sup>2</sup>	Weight  K
APXVSP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.6000	4.0100	0.0951
						1/2" Ice	5.0500	4.4500	0.1595
						1" Ice	5.5000	4.8900	0.2348
						2" Ice	6.4400	5.8200	0.4191
APXVSP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.6000	4.0100	0.0951
						1/2" Ice	5.0500	4.4500	0.1595
						1" Ice	5.5000	4.8900	0.2348
						2" Ice	6.4400	5.8200	0.4191
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.6000	4.0100	0.0951
						1/2" Ice	5.0500	4.4500	0.1595
						1" Ice	5.5000	4.8900	0.2348
						2" Ice	6.4400	5.8200	0.4191
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.0900	2.8600	0.0770
						1/2" Ice	4.4800	3.2300	0.1267
						1" Ice	4.8800	3.6100	0.1853
						2" Ice	5.7100	4.4000	0.3307
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.0900	2.8600	0.0770
						1/2" Ice	4.4800	3.2300	0.1267
						1" Ice	4.8800	3.6100	0.1853
						2" Ice	5.7100	4.4000	0.3307
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.0900	2.8600	0.0770
						1/2" Ice	4.4800	3.2300	0.1267
						1" Ice	4.8800	3.6100	0.1853
						2" Ice	5.7100	4.4000	0.3307
(3) ACU-A20-N	A	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	0.0667	0.1167	0.0010
						1/2" Ice	0.1037	0.1620	0.0023
						1" Ice	0.1481	0.2148	0.0044
						2" Ice	0.2593	0.3426	0.0118
(3) ACU-A20-N	B	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	0.0667	0.1167	0.0010
						1/2" Ice	0.1037	0.1620	0.0023
						1" Ice	0.1481	0.2148	0.0044
						2" Ice	0.2593	0.3426	0.0118
(3) ACU-A20-N	C	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	0.0667	0.1167	0.0010
						1/2" Ice	0.1037	0.1620	0.0023
						1" Ice	0.1481	0.2148	0.0044
						2" Ice	0.2593	0.3426	0.0118
TD-RRH8X20-25	A	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.0455	1.5345	0.0700
						1/2" Ice	4.2975	1.7142	0.0972
						1" Ice	4.5570	1.9008	0.1278
						2" Ice	5.0981	2.2951	0.2005
TD-RRH8X20-25	B	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.0455	1.5345	0.0700
						1/2" Ice	4.2975	1.7142	0.0972
						1" Ice	4.5570	1.9008	0.1278
						2" Ice	5.0981	2.2951	0.2005
TD-RRH8X20-25	C	From Leg	4.0000 0.0000 0.0000	0.0000	140.0000	No Ice	4.0455	1.5345	0.0700
						1/2" Ice	4.2975	1.7142	0.0972
						1" Ice	4.5570	1.9008	0.1278
						2" Ice	5.0981	2.2951	0.2005
Platform Mount [LP 1201- 1]	C	None		0.0000	140.0000	No Ice	18.3800	18.3800	2.1000
						1/2" Ice	22.1100	22.1100	2.6519

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C <sub>AA</sub> <sub>Front</sub>	C <sub>AA</sub> <sub>Side</sub>	Weight
			Horz	Lateral	Vert					
			ft	ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
							Ice	25.8700	25.8700	3.2630
							1" Ice	33.4700	33.4700	4.6624
							2" Ice			
(2) 2.375" OD x 6' Mount Pipe	A	From Leg	4.0000	0.0000	0.0000	140.0000	No Ice	1.4250	1.4250	0.0300
			0.0000				1/2"	1.9250	1.9250	0.0360
			0.0000				Ice	2.2939	2.2939	0.0509
							1" Ice	3.0596	3.0596	0.0935
							2" Ice			
(2) 2.375" OD x 6' Mount Pipe	B	From Leg	4.0000	0.0000	0.0000	140.0000	No Ice	1.4250	1.4250	0.0300
			0.0000				1/2"	1.9250	1.9250	0.0360
			0.0000				Ice	2.2939	2.2939	0.0509
							1" Ice	3.0596	3.0596	0.0935
							2" Ice			
(2) 2.375" OD x 6' Mount Pipe	C	From Leg	4.0000	0.0000	0.0000	140.0000	No Ice	1.4250	1.4250	0.0300
			0.0000				1/2"	1.9250	1.9250	0.0360
			0.0000				Ice	2.2939	2.2939	0.0509
							1" Ice	3.0596	3.0596	0.0935
							2" Ice			
**										
TME-1900MHz RRH (65MHz) w/ Mount Pipe	A	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	2.3125	2.3750	0.0600
			0.0000				1/2"	2.5168	2.5809	0.0839
			0.0000				Ice	2.7284	2.7943	0.1111
							1" Ice	3.1740	3.2431	0.1760
							2" Ice			
TME-1900MHz RRH (65MHz) w/ Mount Pipe	B	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	2.3125	2.3750	0.0600
			0.0000				1/2"	2.5168	2.5809	0.0839
			0.0000				Ice	2.7284	2.7943	0.1111
							1" Ice	3.1740	3.2431	0.1760
							2" Ice			
TME-1900MHz RRH (65MHz) w/ Mount Pipe	C	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	2.3125	2.3750	0.0600
			0.0000				1/2"	2.5168	2.5809	0.0839
			0.0000				Ice	2.7284	2.7943	0.1111
							1" Ice	3.1740	3.2431	0.1760
							2" Ice			
TME-800MHz RRH	A	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	2.1342	1.7730	0.0530
			0.0000				1/2"	2.3195	1.9461	0.0742
			0.0000				Ice	2.5123	2.1267	0.0984
							1" Ice	2.9201	2.5100	0.1566
							2" Ice			
TME-800MHz RRH	B	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	2.1342	1.7730	0.0530
			0.0000				1/2"	2.3195	1.9461	0.0742
			0.0000				Ice	2.5123	2.1267	0.0984
							1" Ice	2.9201	2.5100	0.1566
							2" Ice			
TME-800MHz RRH	C	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	2.1342	1.7730	0.0530
			0.0000				1/2"	2.3195	1.9461	0.0742
			0.0000				Ice	2.5123	2.1267	0.0984
							1" Ice	2.9201	2.5100	0.1566
							2" Ice			
TME-800MHz 2x50WRRH W/FILTER w/ Mount Pipe	A	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	3.1073	3.3567	0.0900
			0.0000				1/2"	3.6568	4.0337	0.1239
			0.0000				Ice	4.1173	4.5871	0.1667
							1" Ice	5.0809	5.7439	0.2696
							2" Ice			
TME-800MHz 2x50WRRH W/FILTER w/ Mount Pipe	B	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	3.1073	3.3567	0.0900
			0.0000				1/2"	3.6568	4.0337	0.1239
			0.0000				Ice	4.1173	4.5871	0.1667
							1" Ice	5.0809	5.7439	0.2696
							2" Ice			
TME-800MHz 2x50WRRH W/FILTER w/ Mount Pipe	C	From Leg	2.0000	0.0000	0.0000	137.0000	No Ice	3.1073	3.3567	0.0900
			0.0000				1/2"	3.6568	4.0337	0.1239
			0.0000				Ice	4.1173	4.5871	0.1667
							1" Ice	5.0809	5.7439	0.2696
							2" Ice			
Side Arm Mount [SO 103-	C	None				137.0000	No Ice	7.6400	7.6400	0.2340

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
3]						1/2"	8.8000	8.8000	0.3596
						Ice	10.1600	10.1600	0.5175
						1" Ice	13.3600	13.3600	0.9374
						2" Ice			
**									
7770.00 w/ MountPipe	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	5.7460 6.1791	4.2543 5.0137	0.0554 0.1028
						Ice 1" Ice 2" Ice	6.6067 7.4880	5.7109 7.1553	0.1566 0.2866
7770.00 w/ MountPipe	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	5.7460 6.1791	4.2543 5.0137	0.0554 0.1028
						Ice 1" Ice 2" Ice	6.6067 7.4880	5.7109 7.1553	0.1566 0.2866
7770.00 w/ MountPipe	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	5.7460 6.1791	4.2543 5.0137	0.0554 0.1028
						Ice 1" Ice 2" Ice	6.6067 7.4880	5.7109 7.1553	0.1566 0.2866
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	9.2200 9.9800	6.2500 6.9600	0.0736 0.1434
						Ice 1" Ice 2" Ice	10.7600 12.3600	7.7000 9.2200	0.2242 0.4201
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	9.2200 9.9800	6.2500 6.9600	0.0736 0.1434
						Ice 1" Ice 2" Ice	10.7600 12.3600	7.7000 9.2200	0.2242 0.4201
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	9.2200 9.9800	6.2500 6.9600	0.0736 0.1434
						Ice 1" Ice 2" Ice	10.7600 12.3600	7.7000 9.2200	0.2242 0.4201
QS66512-6 w/ MountPipe	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	4.0400 4.4200	4.1800 4.5700	0.1366 0.2062
						Ice 1" Ice 2" Ice	4.8200 5.6300	4.9700 5.7900	0.2868 0.4821
QS66512-6 w/ MountPipe	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	4.0400 4.4200	4.1800 4.5700	0.1366 0.2062
						Ice 1" Ice 2" Ice	4.8200 5.6300	4.9700 5.7900	0.2868 0.4821
QS66512-6 w/ MountPipe	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	4.0400 4.4200	4.1800 4.5700	0.1366 0.2062
						Ice 1" Ice 2" Ice	4.8200 5.6300	4.9700 5.7900	0.2868 0.4821
(2) LGP21401	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	1.1040 1.2388	0.2070 0.2738	0.0141 0.0213
						Ice 1" Ice 2" Ice	1.3810 1.6877	0.3475 0.5208	0.0303 0.0549
(2) LGP21401	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	1.1040 1.2388	0.2070 0.2738	0.0141 0.0213
						Ice 1" Ice 2" Ice	1.3810 1.6877	0.3475 0.5208	0.0303 0.0549
(2) LGP21401	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice 1/2"	1.1040 1.2388	0.2070 0.2738	0.0141 0.0213
						Ice 1" Ice 2" Ice	1.3810 1.6877	0.3475 0.5208	0.0303 0.0549

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
DC6-48-60-18-8F	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	1.2117	1.2117	0.0200
						1/2"	1.8924	1.8924	0.0420
						Ice	2.1051	2.1051	0.0668
						1" Ice	2.5703	2.5703	0.1256
						2" Ice			
RRUS12/RRUS A2	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	3.1435	1.8351	0.0715
						1/2"	3.3632	2.0121	0.0990
						Ice	3.5904	2.1965	0.1299
						1" Ice	4.0669	2.5875	0.2027
						2" Ice			
RRUS12/RRUS A2	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	3.1435	1.8351	0.0715
						1/2"	3.3632	2.0121	0.0990
						Ice	3.5904	2.1965	0.1299
						1" Ice	4.0669	2.5875	0.2027
						2" Ice			
RRUS12/RRUS A2	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	3.1435	1.8351	0.0715
						1/2"	3.3632	2.0121	0.0990
						Ice	3.5904	2.1965	0.1299
						1" Ice	4.0669	2.5875	0.2027
						2" Ice			
RRUS 11	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	2.7845	1.1872	0.0476
						1/2"	2.9919	1.3342	0.0684
						Ice	3.2066	1.4897	0.0923
						1" Ice	3.6584	1.8326	0.1498
						2" Ice			
RRUS 11	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	2.7845	1.1872	0.0476
						1/2"	2.9919	1.3342	0.0684
						Ice	3.2066	1.4897	0.0923
						1" Ice	3.6584	1.8326	0.1498
						2" Ice			
RRUS 11	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	2.7845	1.1872	0.0476
						1/2"	2.9919	1.3342	0.0684
						Ice	3.2066	1.4897	0.0923
						1" Ice	3.6584	1.8326	0.1498
						2" Ice			
RRUS 32	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	2.8571	1.7766	0.0551
						1/2"	3.0830	1.9677	0.0774
						Ice	3.3163	2.1658	0.1029
						1" Ice	3.8052	2.5829	0.1646
						2" Ice			
RRUS 32	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	2.8571	1.7766	0.0551
						1/2"	3.0830	1.9677	0.0774
						Ice	3.3163	2.1658	0.1029
						1" Ice	3.8052	2.5829	0.1646
						2" Ice			
RRUS 32	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	2.8571	1.7766	0.0551
						1/2"	3.0830	1.9677	0.0774
						Ice	3.3163	2.1658	0.1029
						1" Ice	3.8052	2.5829	0.1646
						2" Ice			
DBC0061F1V51-2	A	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	0.4133	0.4333	0.0254
						1/2"	0.4959	0.5176	0.0307
						Ice	0.5859	0.6093	0.0375
						1" Ice	0.7881	0.8148	0.0566
						2" Ice			
DBC0061F1V51-2	B	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	0.4133	0.4333	0.0254
						1/2"	0.4959	0.5176	0.0307
						Ice	0.5859	0.6093	0.0375
						1" Ice	0.7881	0.8148	0.0566
						2" Ice			
DBC0061F1V51-2	C	From Leg	4.0000 0.0000 2.0000	0.0000	121.0000	No Ice	0.4133	0.4333	0.0254
						1/2"	0.4959	0.5176	0.0307
						Ice	0.5859	0.6093	0.0375
						1" Ice	0.7881	0.8148	0.0566
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
DC6-48-60-18-8C	C	From Leg	4.0000	0.0000	0.0000	121.0000	No Ice	1.1450	1.1450	0.0262
			0.0000				1/2"	1.7924	1.7924	0.0466
			2.0000				Ice	2.0024	2.0024	0.0698
							1" Ice	2.4512	2.4512	0.1251
							2" Ice			
WCS-IMFT-AMT-43	A	From Leg	4.0000	0.0000	0.0000	121.0000	No Ice	0.3848	0.2498	0.0088
			0.0000				1/2"	0.4651	0.3190	0.0126
			2.0000				Ice	0.5529	0.3957	0.0176
							1" Ice	0.7507	0.5712	0.0326
							2" Ice			
WCS-IMFT-AMT-43	C	From Leg	4.0000	0.0000	0.0000	121.0000	No Ice	0.3848	0.2498	0.0088
			0.0000				1/2"	0.4651	0.3190	0.0126
			2.0000				Ice	0.5529	0.3957	0.0176
							1" Ice	0.7507	0.5712	0.0326
							2" Ice			
Platform Mount [LP 1201-1_HR-1]	C	None			0.0000	121.0000	No Ice	26.3900	26.3900	2.3557
							1/2"	31.4000	31.4000	3.0611
							Ice	36.2000	36.2000	3.8642
							1" Ice	45.4000	45.4000	5.7640
							2" Ice			
(4) L 4 x 4 x 1/4 x 5' Mount Angle (Horiz)	A	None			0.0000	121.0000	No Ice	2.7778	0.2217	0.0200
							1/2"	3.1457	0.7859	0.0254
							Ice	3.5210	1.3624	0.0402
							1" Ice	4.2938	2.3980	0.0837
							2" Ice			
(4) L 4 x 4 x 1/4 x 5' Mount Angle (Horiz)	B	None			0.0000	121.0000	No Ice	2.7778	0.2217	0.0200
							1/2"	3.1457	0.7859	0.0254
							Ice	3.5210	1.3624	0.0402
							1" Ice	4.2938	2.3980	0.0837
							2" Ice			
(4) L 4 x 4 x 1/4 x 5' Mount Angle (Horiz)	C	None			0.0000	121.0000	No Ice	2.7778	0.2217	0.0200
							1/2"	3.1457	0.7859	0.0254
							Ice	3.5210	1.3624	0.0402
							1" Ice	4.2938	2.3980	0.0837
							2" Ice			
3' x 2" Sch 40 Pipe Mount	A	None			0.0000	121.0000	No Ice	0.5826	0.5826	0.0100
							1/2"	0.7701	0.7701	0.0165
							Ice	0.9669	0.9669	0.0243
							1" Ice	1.3881	1.3881	0.0472
							2" Ice			
3' x 2" Sch 40 Pipe Mount	B	None			0.0000	121.0000	No Ice	0.5826	0.5826	0.0100
							1/2"	0.7701	0.7701	0.0165
							Ice	0.9669	0.9669	0.0243
							1" Ice	1.3881	1.3881	0.0472
							2" Ice			
3' x 2" Sch 40 Pipe Mount	C	None			0.0000	121.0000	No Ice	0.5826	0.5826	0.0100
							1/2"	0.7701	0.7701	0.0165
							Ice	0.9669	0.9669	0.0243
							1" Ice	1.3881	1.3881	0.0472
							2" Ice			
2.375" OD x 10' Mount Pipe	A	From Leg	4.0000	0.0000	0.0000	121.0000	No Ice	2.3750	2.3750	0.0300
			0.0000				1/2"	3.4031	3.4031	0.0431
			0.0000				Ice	4.4479	4.4479	0.0674
							1" Ice	5.9106	5.9106	0.1362
							2" Ice			
2.375" OD x 10' Mount Pipe	B	From Leg	4.0000	0.0000	0.0000	121.0000	No Ice	2.3750	2.3750	0.0300
			0.0000				1/2"	3.4031	3.4031	0.0431
			0.0000				Ice	4.4479	4.4479	0.0674
							1" Ice	5.9106	5.9106	0.1362
							2" Ice			
2.375" OD x 10' Mount Pipe	C	From Leg	4.0000	0.0000	0.0000	121.0000	No Ice	2.3750	2.3750	0.0300
			0.0000				1/2"	3.4031	3.4031	0.0431
			0.0000				Ice	4.4479	4.4479	0.0674
							1" Ice	5.9106	5.9106	0.1362
							2" Ice			



Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
**									
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	6.7474	6.0700	0.1531
						1/2" Ice	7.2017	6.8671	0.2140
						1" Ice	7.6475	7.5828	0.2819
						2" Ice	8.5651	9.0629	0.4414
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	6.7474	6.0700	0.1531
						1/2" Ice	7.2017	6.8671	0.2140
						1" Ice	7.6475	7.5828	0.2819
						2" Ice	8.5651	9.0629	0.4414
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	6.7474	6.0700	0.1531
						1/2" Ice	7.2017	6.8671	0.2140
						1" Ice	7.6475	7.5828	0.2819
						2" Ice	8.5651	9.0629	0.4414
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	5.8701	3.2700	0.1284
						1/2" Ice	6.2332	3.7282	0.1773
						1" Ice	6.6061	4.2026	0.2317
						2" Ice	7.3816	5.2001	0.3593
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	5.8701	3.2700	0.1284
						1/2" Ice	6.2332	3.7282	0.1773
						1" Ice	6.6061	4.2026	0.2317
						2" Ice	7.3816	5.2001	0.3593
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	5.8701	3.2700	0.1284
						1/2" Ice	6.2332	3.7282	0.1773
						1" Ice	6.6061	4.2026	0.2317
						2" Ice	7.3816	5.2001	0.3593
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	14.6900	6.8700	0.1862
						1/2" Ice	15.4600	7.5500	0.3147
						1" Ice	16.2300	8.2500	0.4577
						2" Ice	17.8200	9.6700	0.7882
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	14.6900	6.8700	0.1862
						1/2" Ice	15.4600	7.5500	0.3147
						1" Ice	16.2300	8.2500	0.4577
						2" Ice	17.8200	9.6700	0.7882
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	14.6900	6.8700	0.1862
						1/2" Ice	15.4600	7.5500	0.3147
						1" Ice	16.2300	8.2500	0.4577
						2" Ice	17.8200	9.6700	0.7882
RADIO 4449 B12/B71	A	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	1.6500	1.1625	0.0740
						1/2" Ice	1.8104	1.3012	0.0902
						1" Ice	1.9781	1.4473	0.1090
						2" Ice	2.3359	1.7618	0.1552
RADIO 4449 B12/B71	B	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	1.6500	1.1625	0.0740
						1/2" Ice	1.8104	1.3012	0.0902
						1" Ice	1.9781	1.4473	0.1090
						2" Ice	2.3359	1.7618	0.1552
RADIO 4449 B12/B71	C	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	1.6500	1.1625	0.0740
						1/2" Ice	1.8104	1.3012	0.0902
						1" Ice	1.9781	1.4473	0.1090
						2" Ice	2.3359	1.7618	0.1552
SDX1926Q-43	A	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	No Ice	0.2410	0.1013	0.0062
						1/2" Ice	0.3063	0.1444	0.0086
						1" Ice	0.3791	0.1948	0.0122
						2" Ice	0.5469	0.3180	0.0235

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
SDX1926Q-43	B	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	2" Ice			
						No Ice	0.2410	0.1013	0.0062
						1/2"	0.3063	0.1444	0.0086
						Ice	0.3791	0.1948	0.0122
SDX1926Q-43	C	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	1" Ice	0.5469	0.3180	0.0235
						2" Ice			
						No Ice	0.2410	0.1013	0.0062
						1/2"	0.3063	0.1444	0.0086
ETW200VS12UB	A	From Leg	4.0000 0.0000 0.0000	0.0000	115.0000	Ice	0.3791	0.1948	0.0122
						1" Ice	0.5469	0.3180	0.0235
						2" Ice			
						No Ice	0.1575	0.4043	0.0110
ETW200VS12UB	B	From Leg	4.0000 0.0000 0.0000	0.0000	115.0000	1/2"	0.2129	0.4857	0.0145
						Ice	0.2756	0.5746	0.0193
						1" Ice	0.4234	0.7746	0.0336
						2" Ice			
ETW200VS12UB	C	From Leg	4.0000 0.0000 0.0000	0.0000	115.0000	No Ice	0.1575	0.4043	0.0110
						1/2"	0.2129	0.4857	0.0145
						Ice	0.2756	0.5746	0.0193
						1" Ice	0.4234	0.7746	0.0336
RRUS 4415 B25_CCIV2	A	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	2" Ice			
						No Ice	1.8425	0.8202	0.0460
						1/2"	2.0123	0.9434	0.0601
						Ice	2.1895	1.0750	0.0767
RRUS 4415 B25_CCIV2	B	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	1" Ice	2.5662	1.3683	0.1182
						2" Ice			
						No Ice	1.8425	0.8202	0.0460
						1/2"	2.0123	0.9434	0.0601
RRUS 4415 B25_CCIV2	C	From Leg	4.0000 0.0000 1.0000	0.0000	115.0000	Ice	2.1895	1.0750	0.0767
						1" Ice	2.5662	1.3683	0.1182
						2" Ice			
						No Ice	1.8425	0.8202	0.0460
Platform Mount [LP 1201-1_KCKR-HR-1]	C	None		0.0000	115.0000	1/2"	2.0123	0.9434	0.0601
						Ice	2.1895	1.0750	0.0767
						1" Ice	2.5662	1.3683	0.1182
						2" Ice			
2.375" OD x 9' Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	115.0000	No Ice	37.6100	37.6100	2.6307
						1/2"	45.6200	45.6200	3.4778
						Ice	53.5900	53.5900	4.4618
						1" Ice	69.6500	69.6500	6.8485
2.375" OD x 9' Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	115.0000	2" Ice			
						No Ice	2.1375	2.1375	0.0300
						1/2"	3.0656	3.0656	0.0413
						Ice	4.0104	4.0104	0.0633
2.375" OD x 9' Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	115.0000	1" Ice	5.1312	5.1312	0.1255
						2" Ice			
						No Ice	2.1375	2.1375	0.0300
						1/2"	3.0656	3.0656	0.0413
LNx-6514DS-VTMw/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	Ice	4.0104	4.0104	0.0633
						1" Ice	5.1312	5.1312	0.1255
						2" Ice			
						No Ice	2.1375	2.1375	0.0300
**									
LNx-6514DS-VTMw/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	No Ice	4.0900	3.3000	0.0646
						1/2"	4.4900	3.6800	0.1277
						Ice	4.8900	4.0600	0.2016

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
LNX-6514DS-VTM w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1" Ice	5.7100	4.8700	0.3833
						2" Ice			
						No Ice	4.0900	3.3000	0.0646
						1/2" Ice	4.4900	3.6800	0.1277
LNX-6514DS-VTM w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1" Ice	4.8900	4.0600	0.2016
						2" Ice			
						No Ice	5.7100	4.8700	0.3833
						1/2" Ice	4.0900	3.3000	0.0646
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1/2" Ice	4.4900	3.6800	0.1277
						Ice	4.8900	4.0600	0.2016
						1" Ice	5.7100	4.8700	0.3833
						2" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	No Ice	4.0900	3.3000	0.0665
						1/2" Ice	4.4900	3.6800	0.1297
						Ice	4.8900	4.0700	0.2037
						1" Ice	5.7200	4.8700	0.3859
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	2" Ice			
						No Ice	4.0900	3.3000	0.0665
						1/2" Ice	4.4900	3.6800	0.1297
						Ice	4.8900	4.0700	0.2037
CBRS w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1" Ice	5.7200	4.8700	0.3859
						2" Ice			
						No Ice	4.0900	3.3000	0.0665
						1/2" Ice	4.4900	3.6800	0.1297
CBRS w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	Ice	4.8900	4.0700	0.2037
						1" Ice	5.7200	4.8700	0.3859
						2" Ice			
						No Ice	4.0900	3.3000	0.0665
CBRS w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1/2" Ice	4.4900	3.6800	0.1297
						Ice	4.8900	4.0700	0.2037
						1" Ice	5.7200	4.8700	0.3859
						2" Ice			
CBRS w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	No Ice	1.7135	1.1683	0.0317
						1/2" Ice	1.9342	1.4373	0.0500
						Ice	2.1662	1.7226	0.0716
						1" Ice	2.6643	2.3506	0.1265
CBRS w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	2" Ice			
						No Ice	1.7135	1.1683	0.0317
						1/2" Ice	1.9342	1.4373	0.0500
						Ice	2.1662	1.7226	0.0716
CBRS w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1" Ice	2.6643	2.3506	0.1265
						2" Ice			
						No Ice	1.7135	1.1683	0.0317
						1/2" Ice	1.9342	1.4373	0.0500
DB-T1-6Z-8AB-0Z	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	Ice	2.1662	1.7226	0.0716
						1" Ice	2.6643	2.3506	0.1265
						2" Ice			
						No Ice	4.8000	2.0000	0.0440
DB-T1-6Z-8AB-0Z	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1/2" Ice	5.0704	2.1926	0.0801
						Ice	5.3481	2.3926	0.1202
						1" Ice	5.9259	2.8148	0.2130
						2" Ice			
CBC78T-DS-43-2X	A	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	No Ice	4.8000	2.0000	0.0440
						1/2" Ice	5.0704	2.1926	0.0801
						Ice	5.3481	2.3926	0.1202
						1" Ice	5.9259	2.8148	0.2130
CBC78T-DS-43-2X	B	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	2" Ice			
						No Ice	0.3680	0.5120	0.0207
						1/2" Ice	0.4456	0.6046	0.0270
						Ice	0.5306	0.7046	0.0351
CBC78T-DS-43-2X	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	1" Ice	0.7228	0.9268	0.0569
						2" Ice			
						No Ice	0.3680	0.5120	0.0207
						1/2" Ice	0.4456	0.6046	0.0270
CBC78T-DS-43-2X	C	From Leg	4.0000 0.0000 0.0000	0.0000	104.0000	Ice	0.5306	0.7046	0.0351
						1" Ice	0.7228	0.9268	0.0569
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
20W CBRS	A	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	0.7228	0.9268	0.0569
							2" Ice	0.8571	0.4203	0.0186
							No Ice	0.9752	0.5105	0.0255
							1/2" Ice	1.1008	0.6082	0.0342
20W CBRS	B	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	1.3741	0.8327	0.0578
							2" Ice	0.8571	0.4203	0.0186
							No Ice	0.9752	0.5105	0.0255
							1/2" Ice	1.1008	0.6082	0.0342
20W CBRS	C	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	1.3741	0.8327	0.0578
							2" Ice	0.8571	0.4203	0.0186
							No Ice	0.9752	0.5105	0.0255
							1/2" Ice	1.1008	0.6082	0.0342
RFV01U-D2A	A	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	1.3741	0.8327	0.0578
							2" Ice	0.8571	0.4203	0.0186
							No Ice	0.9752	0.5105	0.0255
							1/2" Ice	1.1008	0.6082	0.0342
RFV01U-D2A	B	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	1.3741	0.8327	0.0578
							2" Ice	0.8571	0.4203	0.0186
							No Ice	0.9752	0.5105	0.0255
							1/2" Ice	1.1008	0.6082	0.0342
RFV01U-D2A	C	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	1.3741	0.8327	0.0578
							2" Ice	0.8571	0.4203	0.0186
							No Ice	0.9752	0.5105	0.0255
							1/2" Ice	1.1008	0.6082	0.0342
RFV01U-D1A	A	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.6009	1.5851	0.1528
							2" Ice	1.8750	1.0125	0.0703
							No Ice	2.0454	1.1445	0.0867
							1/2" Ice	2.2231	1.2840	0.1058
RFV01U-D1A	B	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.6009	1.5851	0.1528
							2" Ice	1.8750	1.0125	0.0703
							No Ice	2.0454	1.1445	0.0867
							1/2" Ice	2.2231	1.2840	0.1058
RFV01U-D1A	C	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.6009	1.5851	0.1528
							2" Ice	1.8750	1.0125	0.0703
							No Ice	2.0454	1.1445	0.0867
							1/2" Ice	2.2231	1.2840	0.1058
RFV01U-D1A	A	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.6009	1.8648	0.1753
							2" Ice	1.8750	1.2500	0.0844
							No Ice	2.0454	1.3926	0.1027
							1/2" Ice	2.2231	1.5426	0.1239
RFV01U-D1A	B	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.6009	1.8648	0.1753
							2" Ice	1.8750	1.2500	0.0844
							No Ice	2.0454	1.3926	0.1027
							1/2" Ice	2.2231	1.5426	0.1239
RFV01U-D1A	C	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.6009	1.8648	0.1753
							2" Ice	1.8750	1.2500	0.0844
							No Ice	2.0454	1.3926	0.1027
							1/2" Ice	2.2231	1.5426	0.1239
Platform Mount [LP 1201-1_KCKR-HR-1]	C	None			0.0000	104.0000	1" Ice	69.6500	69.6500	6.8485
							2" Ice	69.6500	69.6500	6.8485
							No Ice	37.6100	37.6100	2.6307
							1/2" Ice	45.6200	45.6200	3.4778
2.375" OD x 6' Mount Pipe	A	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	3.0596	3.0596	0.0509
							2" Ice	3.0596	3.0596	0.0935
							No Ice	1.4250	1.4250	0.0300
							1/2" Ice	1.9250	1.9250	0.0360
2.375" OD x 6' Mount Pipe	B	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	3.0596	3.0596	0.0509
							2" Ice	3.0596	3.0596	0.0935
							No Ice	1.4250	1.4250	0.0300
							1/2" Ice	1.9250	1.9250	0.0360
2.375" OD x 6' Mount Pipe	C	From Leg	4.0000	0.0000	0.0000	104.0000	1" Ice	2.2939	2.2939	0.0509
							2" Ice	2.2939	2.2939	0.0509
							No Ice	1.4250	1.4250	0.0300
							1/2" Ice	1.9250	1.9250	0.0360
							Ice	2.2939	2.2939	0.0509

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
						1" Ice 2" Ice	3.0596 3.0596	0.0935	
** Pipe Mount [PM601-3]	C	None		0.0000	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.1700 3.7900 4.4200 5.7600	0.1950 0.2324 0.2790 0.4015	
** OG-860/1920/GPS-A	A	From Leg	4.0000 0.0000 2.0000	0.0000	80.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3077 0.3952 0.4897 0.6997	0.3667 0.4572 0.5548 0.7708	0.0032 0.0066 0.0113 0.0259
Side Arm Mount [SO 901-1]	A	None		0.0000	80.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3300 0.4600 0.6200 1.0100	0.6200 0.7800 0.9700 1.4300	0.1053 0.1129 0.1232 0.1528
2.375" OD x 6' Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.0000	80.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0300 0.0360 0.0509 0.0935
**									

## 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

Comb. No.	Description
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	140 - 135	Pole	Max Tension	48	0.0000	-0.0000	0.0000
			Max. Compression	26	-10.0318	0.0000	0.0000
			Max. Mx	20	-4.3649	20.4674	-0.0029
			Max. My	14	-4.3657	0.0035	-20.4642
			Max. Vy	20	-5.1815	20.4674	-0.0029
			Max. Vx	14	5.1808	0.0035	-20.4642
			Max. Torque	13			0.0000
L2	135 - 130	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-10.5172	0.0000	0.0000
			Max. Mx	20	-4.6392	47.3804	-0.0064
			Max. My	14	-4.6401	0.0077	-47.3734
			Max. Vy	20	-5.5881	47.3804	-0.0064
			Max. Vx	14	5.5873	0.0077	-47.3734
			Max. Torque	14			0.0000
L3	130 - 125	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-11.0280	0.0000	0.0000
			Max. Mx	20	-4.9345	76.3624	-0.0101
			Max. My	14	-4.9355	0.0121	-76.3514
			Max. Vy	20	-6.0102	76.3624	-0.0101
			Max. Vx	14	6.0093	0.0121	-76.3514
			Max. Torque	14			0.0000
L4	125 - 120	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-22.8718	0.1205	-0.4223
			Max. Mx	20	-9.6883	121.0639	-0.1083
			Max. My	14	-9.6903	0.0968	-121.0906
			Max. Vy	20	-13.3080	121.0639	-0.1083
			Max. Vx	14	13.3092	0.0968	-121.0906
			Max. Torque	8			-0.2238
L5	120 - 115	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-23.6350	0.1205	-0.4649
			Max. Mx	20	-10.2210	188.6926	-0.1340
			Max. My	14	-10.2230	0.1184	-188.7314
			Max. Vy	20	-13.7532	188.6926	-0.1340
			Max. Vx	14	13.7543	0.1184	-188.7314
			Max. Torque	8			-0.2238
L6	115 - 110	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-35.7498	0.0759	-0.4836
			Max. Mx	20	-15.7476	290.6249	-0.1530
			Max. My	14	-15.7507	0.1276	-290.6786
			Max. Vy	20	-19.9951	290.6249	-0.1530

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L7	110 - 105	Pole	Max. Vx	14	19.9952	0.1276	-290.6786
			Max. Torque	8			-0.2241
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-36.6573	0.0296	-0.5030
			Max. Mx	20	-16.4519	391.5452	-0.1712
			Max. My	14	-16.4552	0.1360	-391.6137
			Max. Vy	20	-20.4027	391.5452	-0.1712
L8	105 - 104	Pole	Max. Vx	14	20.4027	0.1360	-391.6137
			Max. Torque	8			-0.2240
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-36.8664	0.0201	-0.5070
			Max. Mx	20	-16.5980	411.9714	-0.1747
			Max. My	14	-16.6013	0.1376	-412.0428
			Max. Vy	8	20.5050	-411.7986	0.0012
L9	104 - 103.75	Pole	Max. Vx	14	20.4832	0.1376	-412.0428
			Max. Torque	8			-0.2240
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-47.6665	0.7450	-0.0880
			Max. Mx	20	-21.1606	418.5031	-0.0747
			Max. My	2	-21.1602	0.1439	418.2659
			Max. Vy	8	25.2642	-417.8835	0.1286
L10	103.75 - 98.75	Pole	Max. Vx	14	25.2927	0.3472	-418.2307
			Max. Torque	2			0.4072
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.1094	0.6965	-0.1083
			Max. Mx	20	-22.1611	546.1693	-0.3408
			Max. My	2	-22.1619	-0.1421	546.2024
			Max. Vy	8	25.8838	-545.7272	0.4040
L11	98.75 - 98.5	Pole	Max. Vx	14	25.8990	0.6027	-546.1625
			Max. Torque	2			0.4072
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.1874	0.6940	-0.1093
			Max. Mx	20	-22.2231	552.6333	-0.3540
			Max. My	2	-22.2241	-0.1563	552.6784
			Max. Vy	8	25.9093	-552.2003	0.4181
L12	98.5 - 98.25	Pole	Max. Vx	14	25.9240	0.6158	-552.6383
			Max. Torque	2			0.4070
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.2829	0.6915	-0.1103
			Max. Mx	20	-22.2908	559.1057	-0.3673
			Max. My	2	-22.2919	-0.1705	559.1624
			Max. Vy	8	25.9434	-558.6816	0.4321
L13	98.25 - 97	Pole	Max. Vx	14	25.9576	0.6289	-559.1220
			Max. Torque	2			0.4070
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.7601	0.6790	-0.1155
			Max. Mx	20	-22.6145	591.6021	-0.4340
			Max. My	2	-22.6162	-0.2425	591.7120
			Max. Vy	8	26.1251	-591.2197	0.5006
L14	97 - 96.75	Pole	Max. Vx	14	26.1363	0.6921	-591.6704
			Max. Torque	2			0.4070
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.8421	0.6765	-0.1166
			Max. Mx	20	-22.6777	598.1284	-0.4472
			Max. My	2	-22.6795	-0.2567	598.2480
			Max. Vy	8	26.1534	-597.7538	0.5148
L15	96.75 - 88.5	Pole	Max. Vx	14	26.1641	0.7052	-598.2061
			Max. Torque	2			0.4070
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-51.8803	0.6090	-0.2423
			Max. Mx	20	-24.0271	730.9090	-0.7407
			Max. My	14	-24.0308	0.9589	-731.1362
			Max. Vy	20	-26.9574	730.9090	-0.7407
L16	88.5 - 88.17	Pole	Max. Vx	14	26.9658	0.9589	-731.1362
			Max. Torque	2			0.4069
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-53.8249	0.5576	-0.3332
			Max. Mx	20	-25.3946	828.3596	-0.9514

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L17	88.17 - 87.92	Pole	Max. My	14	-25.3998	1.1412	-828.6150
			Max. Vy	20	-27.5054	828.3596	-0.9514
			Max. Vx	14	27.4950	1.1412	-828.6150
			Max. Torque	2			0.4067
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-53.9391	0.5520	-0.3401
			Max. Mx	20	-25.4772	835.2380	-0.9663
			Max. My	14	-25.4825	1.1542	-835.4933
			Max. Vy	20	-27.5414	835.2380	-0.9663
			Max. Vx	14	27.5298	1.1542	-835.4933
L18	87.92 - 82.92	Pole	Max. Torque	2			0.4066
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-56.2220	0.4379	-0.4807
			Max. Mx	20	-27.0841	974.7119	-1.2686
			Max. My	14	-27.0913	1.4071	-974.8990
			Max. Vy	20	-28.2764	974.7119	-1.2686
			Max. Vx	14	28.2396	1.4071	-974.8990
			Max. Torque	2			0.4066
			Max Tension	1	0.0000	0.0000	0.0000
			L19	82.92 - 77.92	Pole	Max. Compression	26
Max. Mx	20	-28.8915				1118.1180	-1.3961
Max. My	2	-28.9012				-1.3481	1118.0852
Max. Vy	20	-29.1290				1118.1180	-1.3961
Max. Vx	14	29.0644				1.6594	-
Max. Torque	18						1117.8969
Max Tension	1	0.0000				0.0000	-0.5825
Max. Compression	26	-61.1110				0.1998	-0.3034
Max. Mx	20	-30.5739				1265.4695	-1.7012
Max. My	2	-30.5850				-1.6405	1265.0035
L20	77.92 - 72.92	Pole	Max. Vy	20	-29.8503	1265.4695	-1.7012
			Max. Vx	14	29.7612	1.9106	-
			Max. Torque	18			1264.9209
			Max Tension	1	0.0000	0.0000	-0.5823
			Max. Compression	26	-63.4176	0.0800	-0.4513
			Max. Mx	20	-32.2316	1411.5474	-1.9977
			Max. My	14	-32.2429	2.1524	-
			Max. Vy	20	-30.5571	1411.5474	-1.9977
			Max. Vx	14	30.4401	2.1524	-
			L21	72.92 - 68.08	Pole	Max. Torque	18
Max Tension	1	0.0000				0.0000	-0.5817
Max. Compression	26	-63.4176				0.0800	-0.4513
Max. Mx	20	-32.2316				1411.5474	-1.9977
Max. My	14	-32.2429				2.1524	-
Max. Vy	20	-30.5571				1411.5474	-1.9977
Max. Vx	14	30.4401				2.1524	-
Max. Torque	18						1410.5568
Max Tension	1	0.0000				0.0000	-0.5820
L22	68.08 - 67.83	Pole				Max. Compression	26
			Max. Mx	20	-32.3411	1419.1858	-2.0128
			Max. My	14	-32.3525	2.1652	-
			Max. Vy	20	-30.5829	1419.1858	-2.0128
			Max. Vx	14	30.4643	2.1652	-
			Max. Torque	18			1418.1687
			Max Tension	1	0.0000	0.0000	-0.5817
			Max. Compression	26	-66.1316	-0.0533	-0.6159
			Max. Mx	20	-34.2287	1573.9150	-2.3203
			Max. My	14	-34.2411	2.4133	-
L23	67.83 - 62.83	Pole	Max. Vy	20	-31.3425	1573.9150	-2.3203
			Max. Vx	14	31.1941	2.4133	-
			Max. Torque	18			1572.2912
			Max Tension	1	0.0000	0.0000	-0.5817
			Max. Compression	26	-66.1316	-0.0533	-0.6159
			Max. Mx	20	-34.2287	1573.9150	-2.3203
			Max. My	14	-34.2411	2.4133	-
			Max. Vy	20	-31.3425	1573.9150	-2.3203
			Max. Vx	14	31.1941	2.4133	-
			L24	62.83 -	Pole	Max. Torque	18
Max Tension	1	0.0000				0.0000	-0.5817



Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	57.83		Max. Compression	26	-68.7391	-0.1831	-0.7764
			Max. Mx	20	-36.1580	1732.3765	-2.6285
			Max. My	14	-36.1711	2.6604	-
							1730.0001
			Max. Vy	20	-32.0850	1732.3765	-2.6285
			Max. Vx	14	31.9074	2.6604	-
							1730.0001
L25	57.83 - 52.83	Pole	Max. Torque	18			-0.5815
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-71.3686	-0.3157	-0.9406
			Max. Mx	20	-38.1173	1894.5184	-2.9375
			Max. My	14	-38.1307	2.9059	-
							1891.2462
			Max. Vy	20	-32.8171	1894.5184	-2.9375
			Max. Vx	14	32.6107	2.9059	-
							1891.2462
L26	52.83 - 47.25	Pole	Max. Torque	18			-0.5812
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-72.0743	-0.3517	-0.9852
			Max. Mx	20	-38.6410	1938.2622	-3.0199
			Max. My	14	-38.6545	2.9709	-
							1934.7281
			Max. Vy	20	-33.0137	1938.2622	-3.0199
			Max. Vx	14	32.7999	2.9709	-
							1934.7281
L27	47.25 - 46.5	Pole	Max. Torque	18			-0.5810
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-76.4492	-0.4870	-1.1530
			Max. Mx	20	-42.0509	2105.3724	-3.3298
			Max. My	14	-42.0647	3.2153	-
							2100.7645
			Max. Vy	20	-33.8558	2105.3724	-3.3298
			Max. Vx	14	33.6136	3.2153	-
							2100.7645
L28	46.5 - 41.5	Pole	Max. Torque	18			-0.5809
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-79.2465	-0.6228	-1.3216
			Max. Mx	20	-44.1917	2276.2899	-3.6402
			Max. My	14	-44.2053	3.4585	-
							2270.4704
			Max. Vy	20	-34.5571	2276.2899	-3.6402
			Max. Vx	14	34.2876	3.4585	-
							2270.4704
L29	41.5 - 37.75	Pole	Max. Torque	18			-0.5809
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-81.3753	-0.7261	-1.4500
			Max. Mx	20	-45.8213	2406.7492	-3.8733
			Max. My	14	-45.8345	3.6397	-
							2399.9303
			Max. Vy	20	-35.0777	2406.7492	-3.8733
			Max. Vx	14	34.7865	3.6397	-
							2399.9303
L30	37.75 - 37.5	Pole	Max. Torque	18			-0.5807
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-81.5200	-0.7330	-1.4587
			Max. Mx	20	-45.9487	2415.5155	-3.8888
			Max. My	14	-45.9616	3.6519	-
							2408.6272
			Max. Vy	20	-35.0949	2415.5155	-3.8888
			Max. Vx	14	34.8024	3.6519	-
							2408.6272
L31	37.5 - 32.5	Pole	Max. Torque	18			-0.5806
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-84.4191	-0.8764	-1.6309
			Max. Mx	20	-48.1774	2592.5965	-4.1997
			Max. My	14	-48.1895	3.8915	-

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
							2584.2463
			Max. Vy	20	-35.7797	2592.5965	-4.1997
			Max. Vx	14	35.4591	3.8915	-
							2584.2463
			Max. Torque	18			-0.5805
L32	32.5 - 32.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-84.5719	-0.8838	-1.6395
			Max. Mx	20	-48.3088	2601.5393	-4.2152
			Max. My	14	-48.3208	3.9035	-
							2593.1123
			Max. Vy	20	-35.8006	2601.5393	-4.2152
			Max. Vx	14	35.4786	3.9035	-
							2593.1123
			Max. Torque	18			-0.5804
L33	32.25 - 27.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-87.6245	-1.0315	-1.8131
			Max. Mx	20	-50.6910	2782.1240	-4.5261
			Max. My	14	-50.7019	4.1412	-
							2772.0926
			Max. Vy	20	-36.4752	2782.1240	-4.5261
			Max. Vx	14	36.1262	4.1412	-
							2772.0926
			Max. Torque	18			-0.5804
L34	27.25 - 23.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-90.0022	-1.2022	-2.0709
			Max. Mx	20	-52.5051	2919.7494	-4.7592
			Max. My	14	-52.5155	4.3181	-
							2908.3768
			Max. Vy	20	-36.9853	2919.7494	-4.7592
			Max. Vx	2	-36.6097	-4.5523	2906.8237
			Max. Torque	18			-0.5803
L35	23.5 - 23.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-90.1795	-1.2142	-2.0894
			Max. Mx	20	-52.6596	2928.9920	-4.7747
			Max. My	14	-52.6697	4.3298	-
							2917.5238
			Max. Vy	20	-37.0003	2928.9920	-4.7747
			Max. Vx	2	-36.6249	-4.5671	2915.9717
			Max. Torque	18			-0.5802
L36	23.25 - 20.75	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-91.9500	-1.3343	-2.2746
			Max. Mx	20	-54.0337	3021.8854	-4.9301
			Max. My	14	-54.0436	4.4471	-
							3009.4144
			Max. Vy	20	-37.3588	3021.8854	-4.9301
			Max. Vx	2	-36.9852	-4.7141	3007.9209
			Max. Torque	18			-0.5802
L37	20.75 - 20.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-92.1171	-1.3463	-2.2931
			Max. Mx	20	-54.1766	3031.2218	-4.9457
			Max. My	14	-54.1862	4.4588	-
							3018.6460
			Max. Vy	20	-37.3745	3031.2218	-4.9457
			Max. Vx	2	-37.0013	-4.7289	3017.1631
			Max. Torque	18			-0.5801
L38	20.5 - 15.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-95.4318	-1.5733	-2.6360
			Max. Mx	20	-56.7583	3219.5755	-5.2563
			Max. My	14	-56.7665	4.6916	-
							3204.7592
			Max. Vy	20	-38.0098	3219.5755	-5.2563
			Max. Vx	2	-37.6378	-5.0227	3203.6373
			Max. Torque	18			-0.5801
L39	15.5 - 10.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-98.7043	-1.7612	-2.8969
			Max. Mx	20	-59.3799	3410.9001	-5.5667
			Max. My	14	-59.3858	4.9222	-

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L40	10.5 - 5.5	Pole	Max. Vy	20	-38.5779	3410.9001	-5.5667
			Max. Vx	2	-38.2000	-5.3158	3393.0706
			Max. Torque	18			-0.5801
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-101.9673	-1.9442	-3.1522
			Max. Mx	20	-62.0331	3605.0492	-5.8766
			Max. My	2	-62.0357	-5.6082	3585.2990
			Max. Vy	20	-39.1416	3605.0492	-5.8766
			Max. Vx	2	-38.7579	-5.6082	3585.2990
			Max. Torque	18			-0.5800
L41	5.5 - 3	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-103.5886	-2.0316	-3.2749
			Max. Mx	20	-63.3701	3703.1796	-6.0313
			Max. My	2	-63.3716	-5.7540	3682.4580
			Max. Vy	20	-39.4297	3703.1796	-6.0313
			Max. Vx	2	-39.0432	-5.7540	3682.4580
			Max. Torque	18			-0.5800
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-103.7529	-2.0401	-3.2868
			Max. Mx	20	-63.5226	3713.0315	-6.0468
L42	3 - 2.75	Pole	Max. My	2	-63.5237	-5.7686	3692.2124
			Max. Vy	20	-39.4344	3713.0315	-6.0468
			Max. Vx	2	-39.0477	-5.7686	3692.2124
			Max. Torque	18			-0.5800
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-104.4066	-2.0732	-3.3336
			Max. Mx	20	-64.0608	3752.5116	-6.1086
			Max. My	2	-64.0616	-5.8269	3731.3018
			Max. Vy	20	-39.5674	3752.5116	-6.1086
			Max. Vx	2	-39.1795	-5.8269	3731.3018
L43	2.75 - 1.75	Pole	Max. Torque	18			-0.5800
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-104.5785	-2.0813	-3.3450
			Max. Mx	20	-64.2176	3762.4000	-6.1241
			Max. My	2	-64.2182	-5.8414	3741.0923
			Max. Vy	20	-39.5804	3762.4000	-6.1241
			Max. Vx	2	-39.1922	-5.8414	3741.0923
			Max. Torque	18			-0.5800
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-105.5945	-2.1264	-3.4094
L44	1.75 - 1.5	Pole	Max. Mx	20	-65.0781	3821.8897	-6.2167
			Max. My	2	-65.0784	-5.9287	3799.9931
			Max. Vy	20	-39.7877	3821.8897	-6.2167
			Max. Vx	2	-39.3977	-5.9287	3799.9931
			Max. Torque	18			-0.5800
			Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-105.5945	-2.1264	-3.4094
			Max. Mx	20	-65.0781	3821.8897	-6.2167
			Max. My	2	-65.0784	-5.9287	3799.9931
			Max. Vy	20	-39.7877	3821.8897	-6.2167
L45	1.5 - 0	Pole	Max. Vx	2	-39.3977	-5.9287	3799.9931
			Max. Torque	18			-0.5800

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	105.5945	8.2761	-0.0090
	Max. H <sub>x</sub>	20	65.0967	39.7573	-0.0515
	Max. H <sub>z</sub>	2	65.0967	-0.0515	39.3675
	Max. M <sub>x</sub>	2	3799.9931	-0.0515	39.3675
	Max. M <sub>z</sub>	8	3783.4955	-38.8837	0.0515
	Max. Torsion	6	0.5783	-34.0234	19.7015
	Min. Vert	7	48.8225	-34.0234	19.7015
	Min. H <sub>x</sub>	8	65.0967	-38.8837	0.0515
	Min. H <sub>z</sub>	14	65.0967	0.0515	-39.1817
	Min. M <sub>x</sub>	14	-3799.0556	0.0515	-39.1817
	Min. M <sub>z</sub>	20	-3821.8897	39.7573	-0.0515
	Min. Torsion	18	-0.5800	34.4341	-19.9386

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	54.2472	0.0000	0.0000	0.4461	-0.2204	0.0000
1.2 Dead+1.0 Wind 0 deg - No Ice	65.0967	0.0515	-39.3675	-3799.9931	-5.9288	-0.4047
0.9 Dead+1.0 Wind 0 deg - No Ice	48.8225	0.0515	-39.3675	-3751.7881	-5.7939	-0.3976
1.2 Dead+1.0 Wind 30 deg - No Ice	65.0967	19.9233	-34.5057	-3317.7925	-1916.2337	-0.5675
0.9 Dead+1.0 Wind 30 deg - No Ice	48.8225	19.9233	-34.5057	-3275.8321	-1891.8593	-0.5604
1.2 Dead+1.0 Wind 60 deg - No Ice	65.0967	34.0234	-19.7015	-1903.8726	-3287.7091	-0.5783
0.9 Dead+1.0 Wind 60 deg - No Ice	48.8225	34.0234	-19.7015	-1879.7827	-3245.8099	-0.5731
1.2 Dead+1.0 Wind 90 deg - No Ice	65.0967	38.8837	-0.0515	-5.1105	-3783.4955	-0.4347
0.9 Dead+1.0 Wind 90 deg - No Ice	48.8225	38.8837	-0.0515	-5.1828	-3735.1983	-0.4329
1.2 Dead+1.0 Wind 120 deg - No Ice	65.0967	34.2810	19.7907	1917.5879	-3320.8787	0.0108
0.9 Dead+1.0 Wind 120 deg - No Ice	48.8225	34.2810	19.7907	1893.1184	-3278.6726	0.0089
1.2 Dead+1.0 Wind 150 deg - No Ice	65.0967	19.7683	34.3402	3310.0610	-1904.5913	0.1313
0.9 Dead+1.0 Wind 150 deg - No Ice	48.8225	19.7683	34.3402	3267.9026	-1880.3457	0.1261
1.2 Dead+1.0 Wind 180 deg - No Ice	65.0967	-0.0515	39.1817	3799.0556	5.3986	0.4032
0.9 Dead+1.0 Wind 180 deg - No Ice	48.8225	-0.0515	39.1817	3750.5659	5.3952	0.3961
1.2 Dead+1.0 Wind 210 deg - No Ice	65.0967	-19.8332	34.3497	3314.6170	1913.2313	0.5677
0.9 Dead+1.0 Wind 210 deg - No Ice	48.8225	-19.8332	34.3497	3272.3885	1888.9969	0.5606
1.2 Dead+1.0 Wind 240 deg - No Ice	65.0967	-34.4341	19.9386	1916.5424	3307.2075	0.5800
0.9 Dead+1.0 Wind 240 deg - No Ice	48.8225	-34.4341	19.9386	1892.0851	3265.2930	0.5748
1.2 Dead+1.0 Wind 270 deg - No Ice	65.0967	-39.7573	0.0515	6.2168	3821.8897	0.4363
0.9 Dead+1.0 Wind 270 deg - No Ice	48.8225	-39.7573	0.0515	6.0063	3773.4574	0.4344
1.2 Dead+1.0 Wind 300 deg - No Ice	65.0967	-34.6609	-20.0101	-1923.8063	3333.0296	-0.0110
0.9 Dead+1.0 Wind 300 deg - No Ice	48.8225	-34.6609	-20.0101	-1899.5731	3290.8761	-0.0091
1.2 Dead+1.0 Wind 330 deg - No Ice	65.0967	-19.7752	-34.3523	-3302.4756	1900.3204	-0.1329
0.9 Dead+1.0 Wind 330 deg - No Ice	48.8225	-19.7752	-34.3523	-3260.6555	1876.2383	-0.1277
1.2 Dead+1.0 Ice+1.0Temp	105.5945	0.0000	0.0000	3.4094	-2.1264	0.0000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0Temp	105.5945	0.0090	-8.2084	-875.6115	-3.2396	-0.1006
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0Temp	105.5945	4.1458	-7.1803	-762.6873	-444.6841	-0.1401
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0Temp	105.5945	7.0967	-4.1074	-436.7391	-762.9850	-0.1421
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0Temp	105.5945	8.1203	-0.0090	2.6343	-877.7949	-0.1060
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0Temp	105.5945	7.2266	4.1720	450.2932	-775.8216	0.0078
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0Temp	105.5945	4.1191	7.1519	768.4307	-442.5694	0.0341
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0Temp	105.5945	-0.0090	8.1771	882.6128	-1.1709	0.1006

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overtuning Moment, M <sub>x</sub>	Overtuning Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	105.5945	-4.1276	7.1488	768.7288	439.5253	0.1402
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	105.5945	-7.1674	4.1482	446.1446	762.1565	0.1422
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	105.5945	-8.2761	0.0090	4.7031	880.9585	0.1061
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	105.5945	-7.2915	-4.2095	-444.2515	773.6545	-0.0078
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	105.5945	-4.1171	-7.1484	-759.3608	437.1585	-0.0341
Dead+Wind 0 deg - Service	54.2472	0.0112	-8.5426	-818.3576	-1.4387	-0.0875
Dead+Wind 30 deg - Service	54.2472	4.3233	-7.4876	-714.5021	-413.0261	-0.1232
Dead+Wind 60 deg - Service	54.2472	7.3830	-4.2752	-409.8471	-708.4899	-0.1258
Dead+Wind 90 deg - Service	54.2472	8.4376	-0.0112	-0.7635	-815.2870	-0.0947
Dead+Wind 120 deg - Service	54.2472	7.4389	4.2945	413.4945	-715.6655	0.0024
Dead+Wind 150 deg - Service	54.2472	4.2897	7.4517	713.5042	-410.5132	0.0284
Dead+Wind 180 deg - Service	54.2472	-0.0112	8.5023	818.8289	1.0021	0.0875
Dead+Wind 210 deg - Service	54.2472	-4.3038	7.4538	714.4887	412.0543	0.1232
Dead+Wind 240 deg - Service	54.2472	-7.4721	4.3266	413.2661	712.3925	0.1259
Dead+Wind 270 deg - Service	54.2472	-8.6272	0.0112	1.6773	823.2786	0.0948
Dead+Wind 300 deg - Service	54.2472	-7.5213	-4.3421	-414.1646	717.9722	-0.0024
Dead+Wind 330 deg - Service	54.2472	-4.2912	-7.4544	-711.1884	409.2672	-0.0285

## 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	0.0000	-54.2472	0.0000	0.0000	54.2472	0.0000	0.000%
2	0.0515	-65.0967	-39.3675	-0.0515	65.0967	39.3675	0.000%
3	0.0515	-48.8225	-39.3675	-0.0515	48.8225	39.3675	0.000%
4	19.9233	-65.0967	-34.5057	-19.9233	65.0967	34.5057	0.000%
5	19.9233	-48.8225	-34.5057	-19.9233	48.8225	34.5057	0.000%
6	34.0234	-65.0967	-19.7015	-34.0234	65.0967	19.7015	0.000%
7	34.0234	-48.8225	-19.7015	-34.0234	48.8225	19.7015	0.000%
8	38.8837	-65.0967	-0.0515	-38.8837	65.0967	0.0515	0.000%
9	38.8837	-48.8225	-0.0515	-38.8837	48.8225	0.0515	0.000%
10	34.2810	-65.0967	19.7907	-34.2810	65.0967	-19.7907	0.000%
11	34.2810	-48.8225	19.7907	-34.2810	48.8225	-19.7907	0.000%
12	19.7683	-65.0967	34.3402	-19.7683	65.0967	-34.3402	0.000%
13	19.7683	-48.8225	34.3402	-19.7683	48.8225	-34.3402	0.000%
14	-0.0515	-65.0967	39.1817	0.0515	65.0967	-39.1817	0.000%
15	-0.0515	-48.8225	39.1817	0.0515	48.8225	-39.1817	0.000%
16	-19.8332	-65.0967	34.3497	19.8332	65.0967	-34.3497	0.000%
17	-19.8332	-48.8225	34.3497	19.8332	48.8225	-34.3497	0.000%
18	-34.4341	-65.0967	19.9386	34.4341	65.0967	-19.9386	0.000%
19	-34.4341	-48.8225	19.9386	34.4341	48.8225	-19.9386	0.000%
20	-39.7573	-65.0967	0.0515	39.7573	65.0967	-0.0515	0.000%
21	-39.7573	-48.8225	0.0515	39.7573	48.8225	-0.0515	0.000%
22	-34.6609	-65.0967	-20.0101	34.6609	65.0967	20.0101	0.000%
23	-34.6609	-48.8225	-20.0101	34.6609	48.8225	20.0101	0.000%
24	-19.7752	-65.0967	-34.3523	19.7752	65.0967	34.3523	0.000%
25	-19.7752	-48.8225	-34.3523	19.7752	48.8225	34.3523	0.000%
26	0.0000	-105.5945	0.0000	0.0000	105.5945	0.0000	0.000%
27	0.0090	-105.5945	-8.2084	-0.0090	105.5945	8.2084	0.000%
28	4.1458	-105.5945	-7.1803	-4.1458	105.5945	7.1803	0.000%
29	7.0967	-105.5945	-4.1074	-7.0967	105.5945	4.1074	0.000%
30	8.1203	-105.5945	-0.0090	-8.1203	105.5945	0.0090	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
31	7.2266	-105.5945	4.1720	-7.2266	105.5945	-4.1720	0.000%
32	4.1191	-105.5945	7.1519	-4.1191	105.5945	-7.1519	0.000%
33	-0.0090	-105.5945	8.1770	0.0090	105.5945	-8.1771	0.000%
34	-4.1276	-105.5945	7.1488	4.1276	105.5945	-7.1488	0.000%
35	-7.1674	-105.5945	4.1482	7.1674	105.5945	-4.1482	0.000%
36	-8.2761	-105.5945	0.0090	8.2761	105.5945	-0.0090	0.000%
37	-7.2915	-105.5945	-4.2095	7.2915	105.5945	4.2095	0.000%
38	-4.1171	-105.5945	-7.1484	4.1171	105.5945	7.1484	0.000%
39	0.0112	-54.2472	-8.5426	-0.0112	54.2472	8.5426	0.000%
40	4.3233	-54.2472	-7.4876	-4.3233	54.2472	7.4876	0.000%
41	7.3830	-54.2472	-4.2752	-7.3830	54.2472	4.2752	0.000%
42	8.4376	-54.2472	-0.0112	-8.4376	54.2472	0.0112	0.000%
43	7.4389	-54.2472	4.2945	-7.4389	54.2472	-4.2945	0.000%
44	4.2897	-54.2472	7.4517	-4.2897	54.2472	-7.4517	0.000%
45	-0.0112	-54.2472	8.5023	0.0112	54.2472	-8.5023	0.000%
46	-4.3038	-54.2472	7.4538	4.3038	54.2472	-7.4538	0.000%
47	-7.4721	-54.2472	4.3266	7.4721	54.2472	-4.3266	0.000%
48	-8.6272	-54.2472	0.0112	8.6272	54.2472	-0.0112	0.000%
49	-7.5213	-54.2472	-4.3421	7.5213	54.2472	4.3421	0.000%
50	-4.2912	-54.2472	-7.4544	4.2912	54.2472	7.4544	0.000%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00031928
3	Yes	5	0.00000001	0.00012746
4	Yes	7	0.00000001	0.00010212
5	Yes	6	0.00000001	0.00055035
6	Yes	7	0.00000001	0.00010296
7	Yes	6	0.00000001	0.00055596
8	Yes	5	0.00000001	0.00040441
9	Yes	5	0.00000001	0.00017407
10	Yes	7	0.00000001	0.00010315
11	Yes	6	0.00000001	0.00055605
12	Yes	7	0.00000001	0.00010200
13	Yes	6	0.00000001	0.00055012
14	Yes	5	0.00000001	0.00046679
15	Yes	5	0.00000001	0.00020427
16	Yes	7	0.00000001	0.00010373
17	Yes	6	0.00000001	0.00055946
18	Yes	7	0.00000001	0.00010199
19	Yes	6	0.00000001	0.00054981
20	Yes	5	0.00000001	0.00028473
21	Yes	5	0.00000001	0.00010818
22	Yes	7	0.00000001	0.00010313
23	Yes	6	0.00000001	0.00055553
24	Yes	7	0.00000001	0.00010246
25	Yes	6	0.00000001	0.00055285
26	Yes	4	0.00000001	0.00000001
27	Yes	6	0.00000001	0.00095776
28	Yes	7	0.00000001	0.00015892
29	Yes	7	0.00000001	0.00015857
30	Yes	6	0.00000001	0.00095896
31	Yes	7	0.00000001	0.00016142
32	Yes	7	0.00000001	0.00015944
33	Yes	6	0.00000001	0.00096349
34	Yes	7	0.00000001	0.00015998
35	Yes	7	0.00000001	0.00015946
36	Yes	6	0.00000001	0.00096196
37	Yes	7	0.00000001	0.00016046
38	Yes	7	0.00000001	0.00015823
39	Yes	4	0.00000001	0.00091130
40	Yes	5	0.00000001	0.00033258

41	Yes	5	0.00000001	0.00034258
42	Yes	4	0.00000001	0.00090380
43	Yes	5	0.00000001	0.00034124
44	Yes	5	0.00000001	0.00033388
45	Yes	4	0.00000001	0.00092134
46	Yes	5	0.00000001	0.00034760
47	Yes	5	0.00000001	0.00033245
48	Yes	4	0.00000001	0.00090113
49	Yes	5	0.00000001	0.00034057
50	Yes	5	0.00000001	0.00033895

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	21.1385	49	1.4087	0.0005
L2	135 - 130	19.6658	49	1.4025	0.0005
L3	130 - 125	18.2063	49	1.3833	0.0005
L4	125 - 120	16.7727	49	1.3536	0.0005
L5	120 - 115	15.3747	49	1.3151	0.0005
L6	115 - 110	14.0249	49	1.2605	0.0004
L7	110 - 105	12.7418	49	1.1871	0.0004
L8	105 - 104	11.5450	49	1.0965	0.0005
L9	104 - 103.75	11.3174	49	1.0771	0.0005
L10	103.75 - 98.75	11.2610	49	1.0743	0.0005
L11	98.75 - 98.5	10.1679	49	1.0123	0.0004
L12	98.5 - 98.25	10.1149	49	1.0090	0.0004
L13	98.25 - 97	10.0622	49	1.0069	0.0004
L14	97 - 96.75	9.8000	49	0.9963	0.0004
L15	96.75 - 88.5	9.7479	49	0.9932	0.0004
L16	91.75 - 88.17	8.7413	49	0.9285	0.0003
L17	88.17 - 87.92	8.0541	49	0.9025	0.0003
L18	87.92 - 82.92	8.0069	49	0.9000	0.0003
L19	82.92 - 77.92	7.0919	49	0.8472	0.0003
L20	77.92 - 72.92	6.2336	49	0.7920	0.0003
L21	72.92 - 68.08	5.4341	49	0.7347	0.0002
L22	68.08 - 67.83	4.7187	49	0.6768	0.0002
L23	67.83 - 62.83	4.6833	49	0.6742	0.0002
L24	62.83 - 57.83	4.0051	49	0.6211	0.0002
L25	57.83 - 52.83	3.3834	49	0.5664	0.0002
L26	52.83 - 47.25	2.8193	49	0.5110	0.0001
L27	51.5 - 46.5	2.6790	49	0.4963	0.0001
L28	46.5 - 41.5	2.1739	49	0.4648	0.0001
L29	41.5 - 37.75	1.7156	49	0.4106	0.0001
L30	37.75 - 37.5	1.4094	49	0.3692	0.0001
L31	37.5 - 32.5	1.3901	49	0.3666	0.0001
L32	32.5 - 32.25	1.0348	49	0.3121	0.0001
L33	32.25 - 27.25	1.0186	49	0.3096	0.0001
L34	27.25 - 23.5	0.7213	49	0.2583	0.0001
L35	23.5 - 23.25	0.5335	49	0.2199	0.0000
L36	23.25 - 20.75	0.5220	49	0.2176	0.0000
L37	20.75 - 20.5	0.4140	49	0.1949	0.0000
L38	20.5 - 15.5	0.4039	49	0.1925	0.0000
L39	15.5 - 10.5	0.2278	49	0.1440	0.0000
L40	10.5 - 5.5	0.1020	49	0.0963	0.0000
L41	5.5 - 3	0.0264	49	0.0482	0.0000
L42	3 - 2.75	0.0074	49	0.0244	0.0000
L43	2.75 - 1.75	0.0062	49	0.0222	0.0000
L44	1.75 - 1.5	0.0025	49	0.0135	0.0000
L45	1.5 - 0	0.0018	49	0.0116	0.0000

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.0000	APXVSP18-C-A20w/ Mount Pipe	49	21.1385	1.4087	0.0005	22565
137.0000	TME-1900MHz RRH (65MHz) w/ Mount Pipe	49	20.2540	1.4061	0.0005	22565
121.0000	7770.00 w/ Mount Pipe	49	15.6509	1.3238	0.0005	6621
115.0000	AIR 32 B2A/B66AA w/ Mount Pipe	49	14.0249	1.2605	0.0004	4492
104.0000	LNx-6514DS-VTMw/ Mount Pipe	49	11.3174	1.0771	0.0005	3694
95.0000	Pipe Mount [PM 601-3]	49	9.3883	0.9693	0.0004	4916
80.0000	OG-860/1920/GPS-A	49	6.5836	0.8151	0.0003	5167

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	98.1399	22	6.5572	0.0023
L2	135 - 130	91.3092	22	6.5285	0.0023
L3	130 - 125	84.5400	22	6.4387	0.0023
L4	125 - 120	77.8904	22	6.2997	0.0023
L5	120 - 115	71.4054	22	6.1199	0.0022
L6	115 - 110	65.1433	22	5.8657	0.0021
L7	110 - 105	59.1892	22	5.5233	0.0020
L8	105 - 104	53.6342	22	5.1014	0.0021
L9	104 - 103.75	52.5776	22	5.0107	0.0021
L10	103.75 - 98.75	52.3161	22	4.9978	0.0021
L11	98.75 - 98.5	47.2406	22	4.7096	0.0019
L12	98.5 - 98.25	46.9949	22	4.6943	0.0018
L13	98.25 - 97	46.7499	22	4.6844	0.0018
L14	97 - 96.75	45.5323	22	4.6347	0.0018
L15	96.75 - 88.5	45.2904	22	4.6207	0.0018
L16	91.75 - 88.17	40.6157	22	4.3194	0.0016
L17	88.17 - 87.92	37.4236	22	4.1982	0.0015
L18	87.92 - 82.92	37.2044	22	4.1866	0.0015
L19	82.92 - 77.92	32.9543	22	3.9410	0.0014
L20	77.92 - 72.92	28.9664	22	3.6839	0.0013
L21	72.92 - 68.08	25.2520	22	3.4174	0.0011
L22	68.08 - 67.83	21.9275	22	3.1476	0.0010
L23	67.83 - 62.83	21.7631	22	3.1356	0.0010
L24	62.83 - 57.83	18.6113	22	2.8885	0.0009
L25	57.83 - 52.83	15.7219	22	2.6337	0.0007
L26	52.83 - 47.25	13.1005	22	2.3758	0.0006
L27	51.5 - 46.5	12.4486	22	2.3074	0.0006
L28	46.5 - 41.5	10.1011	22	2.1608	0.0006
L29	41.5 - 37.75	7.9713	22	1.9088	0.0005
L30	37.75 - 37.5	6.5482	22	1.7163	0.0004
L31	37.5 - 32.5	6.4587	22	1.7039	0.0004
L32	32.5 - 32.25	4.8076	22	1.4506	0.0003
L33	32.25 - 27.25	4.7320	22	1.4388	0.0003
L34	27.25 - 23.5	3.3506	22	1.2004	0.0003
L35	23.5 - 23.25	2.4782	22	1.0217	0.0002
L36	23.25 - 20.75	2.4250	22	1.0111	0.0002
L37	20.75 - 20.5	1.9232	22	0.9056	0.0002
L38	20.5 - 15.5	1.8761	22	0.8945	0.0002
L39	15.5 - 10.5	1.0579	22	0.6689	0.0001
L40	10.5 - 5.5	0.4737	22	0.4474	0.0001
L41	5.5 - 3	0.1228	22	0.2236	0.0000
L42	3 - 2.75	0.0345	22	0.1134	0.0000
L43	2.75 - 1.75	0.0289	22	0.1032	0.0000
L44	1.75 - 1.5	0.0115	22	0.0627	0.0000
L45	1.5 - 0	0.0084	22	0.0536	0.0000



### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.0000	APXVSP18-C-A20 w/ Mount Pipe	22	98.1399	6.5572	0.0023	4945
137.0000	TME-1900MHz RRH (65MHz) w/ Mount Pipe	22	94.0376	6.5451	0.0023	4945
121.0000	7770.00 w/ Mount Pipe	22	72.6868	6.1605	0.0023	1453
115.0000	AIR 32 B2A/B66AA w/ Mount Pipe	22	65.1433	5.8657	0.0021	985
104.0000	LNx-6514DS-VTM w/ Mount Pipe	22	52.5776	5.0107	0.0021	806
95.0000	Pipe Mount [PM 601-3]	22	43.6204	4.5094	0.0017	1070
80.0000	OG-860/1920/GPS-A	22	30.5928	3.7914	0.0013	1121

### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> / φP <sub>n</sub>
L1	140 - 135 (1)	TP17.0151x16x0.25	5.0000	0.0000	0.0	13.495	-4.3632	789.5130	0.006
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	5.0000	0.0000	0.0	14.313	-4.6374	837.3180	0.006
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	5.0000	0.0000	0.0	15.130	-4.9326	885.1240	0.006
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	5.0000	0.0000	0.0	15.947	-9.6851	932.9300	0.010
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	5.0000	0.0000	0.0	16.764	-10.2177	980.7360	0.010
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	5.0000	0.0000	0.0	17.581	-15.7432	1028.5400	0.015
L7	110 - 105 (7)	TP23.106x22.0909x0.25	5.0000	0.0000	0.0	18.399	-16.4476	1076.3500	0.015
L8	105 - 104 (8)	TP23.309x23.106x0.25	1.0000	0.0000	0.0	18.562	-16.5912	1085.9100	0.015
L9	104 - 103.75 (9)	TP23.3598x23.309x0.462	0.2500	0.0000	0.0	34.099	-21.1449	1994.8400	0.011
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	5.0000	0.0000	0.0	34.667	-22.1458	2028.0300	0.011
L11	98.75 - 98.5 (11)	TP24.4257x24.375x0.45	0.2500	0.0000	0.0	34.740	-22.2079	2032.3400	0.011
L12	98.5 - 98.25 (12)	TP24.4765x24.4257x0.72	0.2500	0.0000	0.0	55.447	-22.2758	3243.7000	0.007
L13	98.25 - 97 (13)	TP24.7303x24.4765x0.72	1.2500	0.0000	0.0	56.040	-22.5998	3278.3600	0.007
L14	97 - 96.75 (14)	TP24.781x24.7303x0.512	0.2500	0.0000	0.0	40.049	-22.6631	2342.8700	0.010
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	8.2500	0.0000	0.0	40.726	-24.0146	2382.5200	0.010
L16	88.5 - 88.17 (16)	TP26.0231x25.2962x0.56	3.5800	0.0000	0.0	46.115	-25.3833	2697.7600	0.009
L17	88.17 - 87.92 (17)	TP26.0738x26.0231x0.76	0.2500	0.0000	0.0	62.145	-25.4659	3635.5200	0.007
L18	87.92 - 82.92 (18)	TP27.0891x26.0738x0.73	5.0000	0.0000	0.0	62.578	-27.0734	3660.8400	0.007
L19	82.92 - 77.92 (19)	TP28.1044x27.0891x0.72	5.0000	0.0000	0.0	63.917	-28.8815	3739.1500	0.008
L20	77.92 - 72.92	TP29.1196x28.1044x0.71	5.0000	0.0000	0.0	65.173	-30.5646	3812.6300	0.008

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> / φP <sub>n</sub>
L21	72.92 - 68.08 (20)	TP30.1024x29.1196x0.68 25	4.8400	0.0000	0.0	65.117 3	-32.2232	3809.3600	0.008
L22	68.08 - 67.83 (21)	TP30.1532x30.1024x0.81 75	0.2500	0.0000	0.0	76.762 5	-32.3329	4490.6100	0.007
L23	67.83 - 62.83 (22)	TP31.1684x30.1532x0.78 25	5.0000	0.0000	0.0	77.038 5	-34.1936	4506.7500	0.008
L24	62.83 - 57.83 (23)	TP32.1837x31.1684x0.76 75	5.0000	0.0000	0.0	77.146 9	-36.1269	4513.0900	0.008
L25	57.83 - 52.83 (24)	TP33.199x32.1837x0.75 25	5.0000	0.0000	0.0	78.364 3	-38.0900	4584.3100	0.008
L26	52.83 - 47.25 (25)	TP34.332x33.199x0.75 (26)	5.5800	0.0000	0.0	79.016 4	-38.6146	4622.4600	0.008
L27	47.25 - 46.5 (27)	TP33.8592x32.844x0.8 (28)	5.0000	0.0000	0.0	85.160 4	-42.0271	4981.8800	0.008
L28	46.5 - 41.5 (28)	TP34.8743x33.8592x0.8 (29)	5.0000	0.0000	0.0	87.775 4	-44.1714	5134.8600	0.009
L29	41.5 - 37.75 (29)	TP35.6357x34.8743x0.77 5	3.7500	0.0000	0.0	86.994 8	-45.8035	5089.2000	0.009
L30	37.75 - 37.5 (30)	TP35.6864x35.6357x0.8 (31)	0.2500	0.0000	0.0	89.867 4	-45.9313	5257.2500	0.009
L31	37.5 - 32.5 (31)	TP36.7016x35.6864x0.77 5	5.0000	0.0000	0.0	89.654 8	-48.1630	5244.8000	0.009
L32	32.5 - 32.25 (32)	TP36.7523x36.7016x0.82 5	0.2500	0.0000	0.0	95.440 9	-48.2948	5583.3000	0.009
L33	32.25 - 27.25 (33)	TP37.7675x36.7523x0.81 25	5.0000	0.0000	0.0	96.683 4	-50.6796	5655.9800	0.009
L34	27.25 - 23.5 (34)	TP38.5288x37.7675x0.8 (35)	3.7500	0.0000	0.0	97.189 5	-52.4952	5685.5800	0.009
L35	23.5 - 23.25 (35)	TP38.5796x38.5288x0.9 (36)	0.2500	0.0000	0.0	109.19 50	-52.6500	6387.9300	0.008
L36	23.25 - 20.75 (36)	TP39.0872x38.5796x0.9 (37)	2.5000	0.0000	0.0	110.66 60	-54.0248	6473.9800	0.008
L37	20.75 - 20.5 (37)	TP39.1379x39.0872x0.85 (38)	0.2500	0.0000	0.0	104.79 40	-54.1680	6130.4500	0.009
L38	20.5 - 15.5 (38)	TP40.1531x39.1379x0.82 5	5.0000	0.0000	0.0	104.47 50	-56.7517	6111.7900	0.009
L39	15.5 - 10.5 (39)	TP41.1682x40.1531x0.82 5	5.0000	0.0000	0.0	107.17 20	-59.3755	6269.5500	0.009
L40	10.5 - 5.5 (40)	TP42.1833x41.1682x0.8 (41)	5.0000	0.0000	0.0	106.60 30	-62.0308	6236.3000	0.010
L41	5.5 - 3 (41)	TP42.6909x42.1833x0.8 (42)	2.5000	0.0000	0.0	107.91 10	-63.3688	6312.7900	0.010
L42	3 - 2.75 (42)	TP42.7417x42.6909x0.86 25	0.2500	0.0000	0.0	116.30 90	-63.5216	6804.0700	0.009
L43	2.75 - 1.75 (43)	TP42.9447x42.7417x0.86 25	1.0000	0.0000	0.0	116.87 30	-64.0600	6837.0600	0.009
L44	1.75 - 1.5 (44)	TP42.9955x42.9447x0.97 5	0.2500	0.0000	0.0	131.92 30	-64.2170	7717.5100	0.008
L45	1.5 - 0 (45)	TP43.3x42.9955x0.975 90	1.5000	0.0000	0.0	132.87 90	-65.0779	7773.4400	0.008

### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft	φM <sub>rx</sub> kip-ft	Ratio M <sub>ux</sub> / φM <sub>rx</sub>	M <sub>uy</sub> kip-ft	φM <sub>ry</sub> kip-ft	Ratio M <sub>uy</sub> / φM <sub>ry</sub>
L1	140 - 135 (1)	TP17.0151x16x0.25	20.4733	337.4300	0.061	0.0000	337.4300	0.000
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	47.3935	379.8492	0.125	0.0000	379.8492	0.000
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	76.3832	424.7792	0.180	0.0000	424.7792	0.000
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	121.1533	472.2208	0.257	0.0000	472.2208	0.000
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	188.8192	519.8467	0.363	0.0000	519.8467	0.000
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	290.7942	563.7492	0.516	0.0000	563.7492	0.000
L7	110 - 105 (7)	TP23.106x22.0909x0.25	391.7575	608.5583	0.644	0.0000	608.5583	0.000
L8	105 - 104 (8)	TP23.309x23.106x0.25	412.2058	617.6200	0.667	0.0000	617.6200	0.000

Section No.	Elevation ft	Size	$M_{ux}$	$\phi M_{rx}$	Ratio	$M_{uy}$	$\phi M_{ry}$	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{rx}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{ry}}$
L9	104 - 103.75 (9)	TP23.3598x23.309x0.462 5	418.5417	1158.3833	0.361	0.0000	1158.3833	0.000
L10	103.75 - 98.75 (10)	TP24.375x23.3598x0.45	546.8567	1232.1917	0.444	0.0000	1232.1917	0.000
L11	98.75 - 98.5 (11)	TP24.4257x24.375x0.45	553.3533	1237.4750	0.447	0.0000	1237.4750	0.000
L12	98.5 - 98.25 (12)	TP24.4765x24.4257x0.72 5	559.8583	1934.2750	0.289	0.0000	1934.2750	0.000
L13	98.25 - 97 (13)	TP24.7303x24.4765x0.72 5	592.5150	1976.4500	0.300	0.0000	1976.4500	0.000
L14	97 - 96.75 (14)	TP24.781x24.7303x0.512 5	599.0725	1440.6583	0.416	0.0000	1440.6583	0.000
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	732.4575	1529.1000	0.479	0.0000	1529.1000	0.000
L16	88.5 - 88.17 (16)	TP26.0231x25.2962x0.56 25	830.2842	1738.7083	0.478	0.0000	1738.7083	0.000
L17	88.17 - 87.92 (17)	TP26.0738x26.0231x0.76 25	837.1917	2311.2000	0.362	0.0000	2311.2000	0.000
L18	87.92 - 82.92 (18)	TP27.0891x26.0738x0.73 75	977.1667	2427.9833	0.402	0.0000	2427.9833	0.000
L19	82.92 - 77.92 (19)	TP28.1044x27.0891x0.72 5	1120.8917	2580.4250	0.434	0.0000	2580.4250	0.000
L20	77.92 - 72.92 (20)	TP29.1196x28.1044x0.71 25	1268.7333	2733.6250	0.464	0.0000	2733.6250	0.000
L21	72.92 - 68.08 (21)	TP30.1024x29.1196x0.68 75	1415.2750	2832.9000	0.500	0.0000	2832.9000	0.000
L22	68.08 - 67.83 (22)	TP30.1532x30.1024x0.81 25	1422.9333	3317.0917	0.429	0.0000	3317.0917	0.000
L23	67.83 - 62.83 (23)	TP31.1684x30.1532x0.78 75	1578.6667	3453.0000	0.457	0.0000	3453.0000	0.000
L24	62.83 - 57.83 (24)	TP32.1837x31.1684x0.76 25	1739.5833	3582.0333	0.486	0.0000	3582.0333	0.000
L25	57.83 - 52.83 (25)	TP33.199x32.1837x0.75	1904.0250	3761.8083	0.506	0.0000	3761.8083	0.000
L26	52.83 - 47.25 (26)	TP34.332x33.199x0.75	1948.3500	3825.4000	0.509	0.0000	3825.4000	0.000
L27	47.25 - 46.5 (27)	TP33.8592x32.844x0.8	2117.5667	4160.5083	0.509	0.0000	4160.5083	0.000
L28	46.5 - 41.5 (28)	TP34.8743x33.8592x0.8	2290.4417	4423.0583	0.518	0.0000	4423.0583	0.000
L29	41.5 - 37.75 (29)	TP35.6357x34.8743x0.77 5	2422.2667	4490.3583	0.539	0.0000	4490.3583	0.000
L30	37.75 - 37.5 (30)	TP35.6864x35.6357x0.8	2431.1250	4638.8833	0.524	0.0000	4638.8833	0.000
L31	37.5 - 32.5 (31)	TP36.7016x35.6864x0.77 5	2609.8833	4772.2333	0.547	0.0000	4772.2333	0.000
L32	32.5 - 32.25 (32)	TP36.7523x36.7016x0.82 5	2618.9000	5073.4250	0.516	0.0000	5073.4250	0.000
L33	32.25 - 27.25 (33)	TP37.7675x36.7523x0.81 25	2801.0000	5291.5333	0.529	0.0000	5291.5333	0.000
L34	27.25 - 23.5 (34)	TP38.5288x37.7675x0.8	2939.7083	5434.7750	0.541	0.0000	5434.7750	0.000
L35	23.5 - 23.25 (35)	TP38.5796x38.5288x0.9	2949.0167	6082.2000	0.485	0.0000	6082.2000	0.000
L36	23.25 - 20.75 (36)	TP39.0872x38.5796x0.9	3042.6333	6249.1000	0.487	0.0000	6249.1000	0.000
L37	20.75 - 20.5 (37)	TP39.1379x39.0872x0.85	3052.0417	5941.0580	0.514	0.0000	5941.0580	0.000
L38	20.5 - 15.5 (38)	TP40.1531x39.1379x0.82 5	3241.8333	6091.1580	0.532	0.0000	6091.1580	0.000
L39	15.5 - 10.5 (39)	TP41.1682x40.1531x0.82 5	3434.5667	6412.9833	0.536	0.0000	6412.9833	0.000
L40	10.5 - 5.5 (40)	TP42.1833x41.1682x0.8	3630.0917	6550.6247	0.554	0.0000	6550.6247	0.000
L41	5.5 - 3 (41)	TP42.6909x42.1833x0.8	3728.8917	6713.8413	0.555	0.0000	6713.8413	0.000
L42	3 - 2.75 (42)	TP42.7417x42.6909x0.86 25	3738.8083	7223.6913	0.518	0.0000	7223.6913	0.000
L43	2.75 - 1.75 (43)	TP42.9447x42.7417x0.86 25	3778.5583	7294.6080	0.518	0.0000	7294.6080	0.000
L44	1.75 - 1.5 (44)	TP42.9955x42.9447x0.97	3788.5083	8200.1500	0.462	0.0000	8200.1500	0.000

Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$\phi M_{rx}$ kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	$M_{uy}$ kip-ft	$\phi M_{ry}$ kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
L45	1.5 - 0 (45)	5 TP43.3x42.9955x0.975	3848.3917	8320.7913	0.463	0.0000	8320.7913	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140 - 135 (1)	TP17.0151x16x0.25	5.1829	236.8540	0.022	0.0000	349.2908	0.000
L2	135 - 130 (2)	TP18.0303x17.0151x0.25	5.5896	251.1960	0.022	0.0000	392.8717	0.000
L3	130 - 125 (3)	TP19.0454x18.0303x0.25	6.0117	265.5370	0.023	0.0000	439.0133	0.000
L4	125 - 120 (4)	TP20.0606x19.0454x0.25	13.3142	279.8790	0.048	0.0772	487.7167	0.000
L5	120 - 115 (5)	TP21.0757x20.0606x0.25	13.7595	294.2210	0.047	0.0772	538.9808	0.000
L6	115 - 110 (6)	TP22.0909x21.0757x0.25	20.0023	308.5620	0.065	0.0773	592.8067	0.000
L7	110 - 105 (7)	TP23.106x22.0909x0.25	20.4101	322.9040	0.063	0.0774	649.1933	0.000
L8	105 - 104 (8)	TP23.309x23.106x0.25	20.5180	325.7720	0.063	0.0774	660.7783	0.000
L9	104 - 103.75 (9)	TP23.3598x23.309x0.462	25.3629	598.4520	0.042	0.3464	1205.3500	0.000
L10	103.75 - 98.75 (10)	5 TP24.375x23.3598x0.45	25.9843	608.4100	0.043	0.3462	1280.4083	0.000
L11	98.75 - 98.5 (11)	TP24.4257x24.375x0.45	26.0081	609.7010	0.043	0.3462	1285.8417	0.000
L12	98.5 - 98.25 (12)	5 TP24.4765x24.4257x0.72	26.0428	973.1090	0.027	0.3462	2033.0667	0.000
L13	98.25 - 97 (13)	5 TP24.7303x24.4765x0.72	26.2258	983.5070	0.027	0.3461	2076.7500	0.000
L14	97 - 96.75 (14)	5 TP24.781x24.7303x0.512	26.2525	702.8620	0.037	0.3461	1500.4167	0.000
L15	96.75 - 88.5 (15)	TP26.456x24.781x0.5	27.0629	714.7560	0.038	0.3459	1590.4167	0.000
L16	88.5 - 88.17 (16)	25 TP26.0231x25.2962x0.56	27.5975	809.3270	0.034	0.3458	1812.5583	0.000
L17	88.17 - 87.92 (17)	25 TP26.0738x26.0231x0.76	27.6330	1090.6600	0.025	0.3458	2428.3083	0.000
L18	87.92 - 82.92 (18)	75 TP27.0891x26.0738x0.73	28.3692	1098.2500	0.026	0.3456	2545.7083	0.000
L19	82.92 - 77.92 (19)	5 TP28.1044x27.0891x0.72	29.2192	1121.7500	0.026	0.5700	2701.5833	0.000
L20	77.92 - 72.92 (20)	25 TP29.1196x28.1044x0.71	29.9400	1143.7900	0.026	0.5697	2858.0667	0.000
L21	72.92 - 68.08 (21)	75 TP30.1024x29.1196x0.68	30.6415	1142.8100	0.027	0.5695	2956.9250	0.000
L22	68.08 - 67.83 (22)	25 TP30.1532x30.1024x0.81	30.6642	1347.1800	0.023	0.5694	3476.9333	0.000
L23	67.83 - 62.83 (23)	75 TP31.1684x30.1532x0.78	31.8516	1352.0300	0.024	0.0110	3613.1500	0.000
L24	62.83 - 57.83 (24)	25 TP32.1837x31.1684x0.76	32.5630	1353.9300	0.024	0.0110	3742.1250	0.000
L25	57.83 - 52.83 (25)	TP33.199x32.1837x0.75	33.2643	1375.2900	0.024	0.0110	3925.5083	0.000
L26	52.83 - 47.25 (26)	TP34.332x33.199x0.75	33.4530	1386.7400	0.024	0.0110	3991.1167	0.000
L27	47.25 - 46.5 (27)	TP33.8592x32.844x0.8	34.2651	1494.5700	0.023	0.0110	4346.1667	0.000
L28	46.5 - 41.5 (28)	TP34.8743x33.8592x0.8	34.9365	1540.4600	0.023	0.0110	4617.1833	0.000
L29	41.5 - 37.75 (29)	5 TP35.6357x34.8743x0.77	35.4334	1526.7600	0.023	0.0110	4681.7250	0.000
L30	37.75 - 37.5 (30)	TP35.6864x35.6357x0.8	35.4457	1577.1700	0.022	0.0110	4839.8917	0.000
L31	37.5 - 32.5 (31)	5 TP36.7016x35.6864x0.77	36.1028	1573.4400	0.023	0.0110	4972.4000	0.000
L32	32.5 - 32.25 (32)	5 TP36.7523x36.7016x0.82	36.1191	1674.9900	0.022	0.0110	5293.4250	0.000
L33	32.25 - 27.25	5 TP37.7675x36.7523x0.81	36.7669	1696.7900	0.022	0.0110	5515.7167	0.000

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L34	(33) 27.25 - 23.5	25 TP38.5288x37.7675x0.8	37.2758	1705.6800	0.022	0.0110	5660.6913	0.000
L35	(34) 23.5 - 23.25	TP38.5796x38.5288x0.9	37.2882	1916.3800	0.019	0.0110	6351.6667	0.000
L36	(35) 23.25 - 20.75	TP39.0872x38.5796x0.9	37.6504	1942.2000	0.019	0.0110	6523.9413	0.000
L37	(36) 20.75 - 20.5	TP39.1379x39.0872x0.85	37.6638	1839.1400	0.020	0.0110	6194.0580	0.000
L38	(37) 20.5 - 15.5	TP40.1531x39.1379x0.82	38.3007	1833.5400	0.021	0.0110	6342.9580	0.000
L39	(38) 15.5 - 10.5	5 TP41.1682x40.1531x0.82	38.8607	1880.8600	0.021	0.0110	6674.6333	0.000
L40	(39) 10.5 - 5.5 (40)	5 TP42.1833x41.1682x0.8	39.4160	1870.8900	0.021	0.0110	6810.4247	0.000
L41	(41) 5.5 - 3	TP42.6909x42.1833x0.8	39.6999	1893.8400	0.021	0.0110	6978.5080	0.000
L42	(42) 3 - 2.75	TP42.7417x42.6909x0.86	39.7036	2041.2200	0.019	0.0110	7519.4833	0.000
L43	(43) 2.75 - 1.75	25 TP42.9447x42.7417x0.86	39.8354	2051.1200	0.019	0.0110	7592.5667	0.000
L44	(44) 1.75 - 1.5	25 TP42.9955x42.9447x0.97	39.8476	2315.2500	0.017	0.0110	8557.7500	0.000
L45	(45) 1.5 - 0	5 TP43.3x42.9955x0.975	40.0528	2332.0300	0.017	0.0110	8682.2500	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $P_u$ $\phi P_n$	Ratio $M_{ux}$ $\phi M_{nx}$	Ratio $M_{uy}$ $\phi M_{ny}$	Ratio $V_u$ $\phi V_n$	Ratio $T_u$ $\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140 - 135 (1)	0.006	0.061	0.000	0.022	0.000	0.067	1.050	4.8.2
L2	135 - 130 (2)	0.006	0.125	0.000	0.022	0.000	0.131	1.050	4.8.2
L3	130 - 125 (3)	0.006	0.180	0.000	0.023	0.000	0.186	1.050	4.8.2
L4	125 - 120 (4)	0.010	0.257	0.000	0.048	0.000	0.269	1.050	4.8.2
L5	120 - 115 (5)	0.010	0.363	0.000	0.047	0.000	0.376	1.050	4.8.2
L6	115 - 110 (6)	0.015	0.516	0.000	0.065	0.000	0.535	1.050	4.8.2
L7	110 - 105 (7)	0.015	0.644	0.000	0.063	0.000	0.663	1.050	4.8.2
L8	105 - 104 (8)	0.015	0.667	0.000	0.063	0.000	0.687	1.050	4.8.2
L9	104 - 103.75 (9)	0.011	0.361	0.000	0.042	0.000	0.374	1.050	4.8.2
L10	103.75 - 98.75 (10)	0.011	0.444	0.000	0.043	0.000	0.457	1.050	4.8.2
L11	98.75 - 98.5 (11)	0.011	0.447	0.000	0.043	0.000	0.460	1.050	4.8.2
L12	98.5 - 98.25 (12)	0.007	0.289	0.000	0.027	0.000	0.297	1.050	4.8.2
L13	98.25 - 97 (13)	0.007	0.300	0.000	0.027	0.000	0.307	1.050	4.8.2
L14	97 - 96.75 (14)	0.010	0.416	0.000	0.037	0.000	0.427	1.050	4.8.2
L15	96.75 - 88.5 (15)	0.010	0.479	0.000	0.038	0.000	0.491	1.050	4.8.2
L16	88.5 - 88.17 (16)	0.009	0.478	0.000	0.034	0.000	0.488	1.050	4.8.2
L17	88.17 - 87.92 (17)	0.007	0.362	0.000	0.025	0.000	0.370	1.050	4.8.2
L18	87.92 - 82.92 (18)	0.007	0.402	0.000	0.026	0.000	0.411	1.050	4.8.2
L19	82.92 - 77.92 (19)	0.008	0.434	0.000	0.026	0.000	0.443	1.050	4.8.2
L20	77.92 - 72.92 (20)	0.008	0.464	0.000	0.026	0.000	0.473	1.050	4.8.2
L21	72.92 - 68.08 (21)	0.008	0.500	0.000	0.027	0.000	0.509	1.050	4.8.2
L22	68.08 - 67.83	0.007	0.429	0.000	0.023	0.000	0.437	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$P_u$ $\phi P_n$	$M_{ux}$ $\phi M_{nx}$	$M_{uy}$ $\phi M_{ny}$	$V_u$ $\phi V_n$	$T_u$ $\phi T_n$			
L23	67.83 - 62.83 (22)	0.008	0.457	0.000	0.024	0.000	0.465	1.050	4.8.2
L24	62.83 - 57.83 (23)	0.008	0.486	0.000	0.024	0.000	0.494	1.050	4.8.2
L25	57.83 - 52.83 (24)	0.008	0.506	0.000	0.024	0.000	0.515	1.050	4.8.2
L26	52.83 - 47.25 (25)	0.008	0.509	0.000	0.024	0.000	0.518	1.050	4.8.2
L27	47.25 - 46.5 (26)	0.008	0.509	0.000	0.023	0.000	0.518	1.050	4.8.2
L28	46.5 - 41.5 (27)	0.009	0.518	0.000	0.023	0.000	0.527	1.050	4.8.2
L29	41.5 - 37.75 (28)	0.009	0.539	0.000	0.023	0.000	0.549	1.050	4.8.2
L30	37.75 - 37.5 (29)	0.009	0.524	0.000	0.022	0.000	0.533	1.050	4.8.2
L31	37.5 - 32.5 (30)	0.009	0.547	0.000	0.023	0.000	0.557	1.050	4.8.2
L32	32.5 - 32.25 (31)	0.009	0.516	0.000	0.022	0.000	0.525	1.050	4.8.2
L33	32.25 - 27.25 (32)	0.009	0.529	0.000	0.022	0.000	0.539	1.050	4.8.2
L34	27.25 - 23.5 (33)	0.009	0.541	0.000	0.022	0.000	0.551	1.050	4.8.2
L35	23.5 - 23.25 (34)	0.008	0.485	0.000	0.019	0.000	0.493	1.050	4.8.2
L36	23.25 - 20.75 (35)	0.008	0.487	0.000	0.019	0.000	0.496	1.050	4.8.2
L37	20.75 - 20.5 (36)	0.009	0.514	0.000	0.020	0.000	0.523	1.050	4.8.2
L38	20.5 - 15.5 (37)	0.009	0.532	0.000	0.021	0.000	0.542	1.050	4.8.2
L39	15.5 - 10.5 (38)	0.009	0.536	0.000	0.021	0.000	0.545	1.050	4.8.2
L40	10.5 - 5.5 (39)	0.010	0.554	0.000	0.021	0.000	0.565	1.050	4.8.2
L41	5.5 - 3 (40)	0.010	0.555	0.000	0.021	0.000	0.566	1.050	4.8.2
L42	3 - 2.75 (41)	0.009	0.518	0.000	0.019	0.000	0.527	1.050	4.8.2
L43	2.75 - 1.75 (42)	0.009	0.518	0.000	0.019	0.000	0.528	1.050	4.8.2
L44	1.75 - 1.5 (43)	0.008	0.462	0.000	0.017	0.000	0.471	1.050	4.8.2
L45	1.5 - 0 (44)	0.008	0.463	0.000	0.017	0.000	0.471	1.050	4.8.2

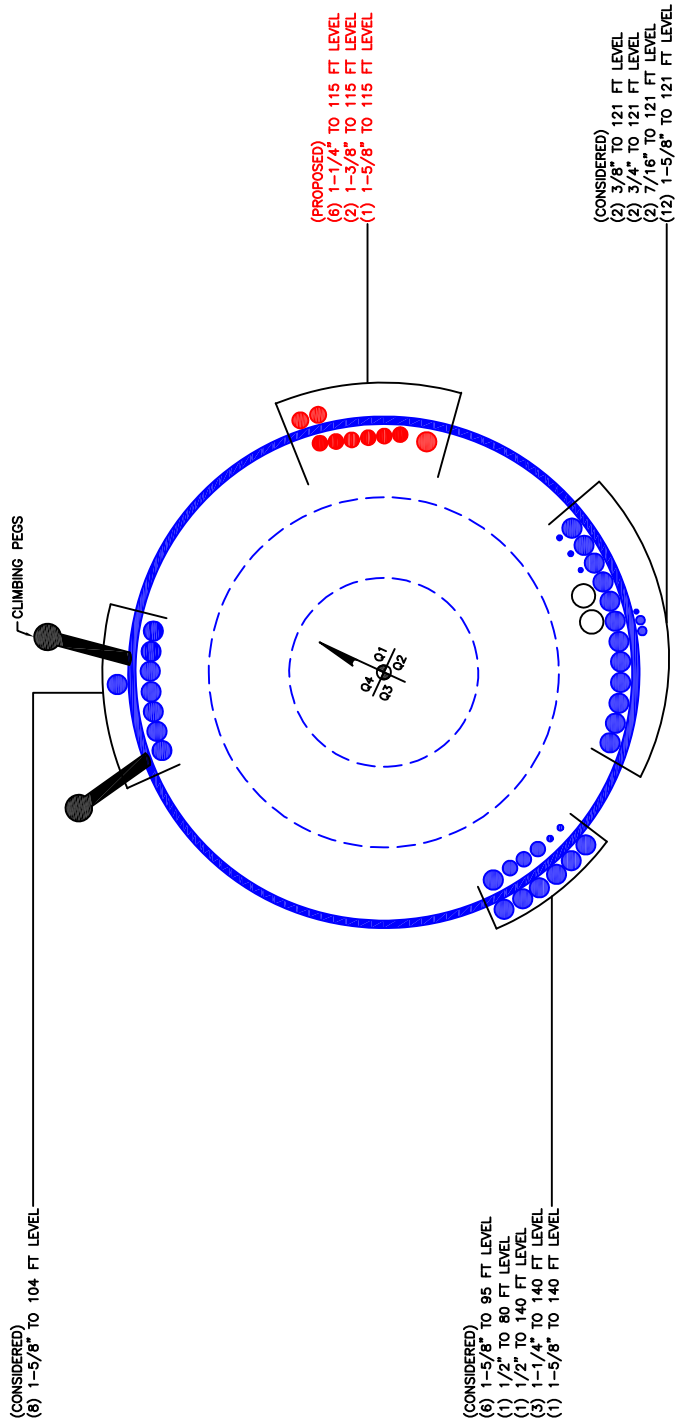
### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
L1	140 - 135	Pole	TP17.0151x16x0.25	1	-4.3632	828.9886	6.4	Pass
L2	135 - 130	Pole	TP18.0303x17.0151x0.25	2	-4.6374	879.1839	12.5	Pass
L3	130 - 125	Pole	TP19.0454x18.0303x0.25	3	-4.9326	929.3802	17.7	Pass
L4	125 - 120	Pole	TP20.0606x19.0454x0.25	4	-9.6851	979.5765	25.6	Pass
L5	120 - 115	Pole	TP21.0757x20.0606x0.25	5	-10.2177	1029.7728	35.8	Pass
L6	115 - 110	Pole	TP22.0909x21.0757x0.25	6	-15.7432	1079.9670	51.0	Pass
L7	110 - 105	Pole	TP23.106x22.0909x0.25	7	-16.4476	1130.1674	63.1	Pass
L8	105 - 104	Pole	TP23.309x23.106x0.25	8	-16.5912	1140.2054	65.4	Pass
L9	104 - 103.75	Pole	TP23.3598x23.309x0.4625	9	-21.1449	2094.5819	35.6	Pass
L10	103.75 - 98.75	Pole	TP24.375x23.3598x0.45	10	-22.1458	2129.4314	43.5	Pass
L11	98.75 - 98.5	Pole	TP24.4257x24.375x0.45	11	-22.2079	2133.9569	43.8	Pass
L12	98.5 - 98.25	Pole	TP24.4765x24.4257x0.725	12	-22.2758	3405.8848	28.3	Pass
L13	98.25 - 97	Pole	TP24.7303x24.4765x0.725	13	-22.5998	3442.2778	29.3	Pass
L14	97 - 96.75	Pole	TP24.781x24.7303x0.5125	14	-22.6631	2460.0134	40.7	Pass
L15	96.75 - 88.5	Pole	TP26.456x24.781x0.5	15	-24.0146	2501.6459	46.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail	
L16	88.5 - 88.17	Pole	TP26.0231x25.2962x0.5625	16	-25.3833	2832.6479	46.5	Pass	
L17	88.17 - 87.92	Pole	TP26.0738x26.0231x0.7625	17	-25.4659	3817.2958	35.2	Pass	
L18	87.92 - 82.92	Pole	TP27.0891x26.0738x0.7375	18	-27.0734	3843.8818	39.1	Pass	
L19	82.92 - 77.92	Pole	TP28.1044x27.0891x0.725	19	-28.8815	3926.1073	42.2	Pass	
L20	77.92 - 72.92	Pole	TP29.1196x28.1044x0.7125	20	-30.5646	4003.2613	45.0	Pass	
L21	72.92 - 68.08	Pole	TP30.1024x29.1196x0.6875	21	-32.2232	3999.8278	48.5	Pass	
L22	68.08 - 67.83	Pole	TP30.1532x30.1024x0.8125	22	-32.3329	4715.1403	41.6	Pass	
L23	67.83 - 62.83	Pole	TP31.1684x30.1532x0.7875	23	-34.1936	4732.0873	44.3	Pass	
L24	62.83 - 57.83	Pole	TP32.1837x31.1684x0.7625	24	-36.1269	4738.7443	47.1	Pass	
L25	57.83 - 52.83	Pole	TP33.199x32.1837x0.75	25	-38.0900	4813.5253	49.1	Pass	
L26	52.83 - 47.25	Pole	TP34.332x33.199x0.75	26	-38.6146	4853.5828	49.4	Pass	
L27	47.25 - 46.5	Pole	TP33.8592x32.844x0.8	27	-42.0271	5230.9738	49.3	Pass	
L28	46.5 - 41.5	Pole	TP34.8743x33.8592x0.8	28	-44.1714	5391.6028	50.2	Pass	
L29	41.5 - 37.75	Pole	TP35.6357x34.8743x0.775	29	-45.8035	5343.6598	52.3	Pass	
L30	37.75 - 37.5	Pole	TP35.6864x35.6357x0.8	30	-45.9313	5520.1122	50.8	Pass	
L31	37.5 - 32.5	Pole	TP36.7016x35.6864x0.775	31	-48.1630	5507.0397	53.0	Pass	
L32	32.5 - 32.25	Pole	TP36.7523x36.7016x0.825	32	-48.2948	5862.4647	50.0	Pass	
L33	32.25 - 27.25	Pole	TP37.7675x36.7523x0.8125	33	-50.6796	5938.7787	51.3	Pass	
L34	27.25 - 23.5	Pole	TP38.5288x37.7675x0.8	34	-52.4952	5969.8587	52.4	Pass	
L35	23.5 - 23.25	Pole	TP38.5796x38.5288x0.9	35	-52.6500	6707.3262	47.0	Pass	
L36	23.25 - 20.75	Pole	TP39.0872x38.5796x0.9	36	-54.0248	6797.6787	47.2	Pass	
L37	20.75 - 20.5	Pole	TP39.1379x39.0872x0.85	37	-54.1680	6436.9722	49.8	Pass	
L38	20.5 - 15.5	Pole	TP40.1531x39.1379x0.825	38	-56.7517	6417.3792	51.6	Pass	
L39	15.5 - 10.5	Pole	TP41.1682x40.1531x0.825	39	-59.3755	6583.0272	51.9	Pass	
L40	10.5 - 5.5	Pole	TP42.1833x41.1682x0.8	40	-62.0308	6548.1147	53.8	Pass	
L41	5.5 - 3	Pole	TP42.6909x42.1833x0.8	41	-63.3688	6628.4292	53.9	Pass	
L42	3 - 2.75	Pole	TP42.7417x42.6909x0.8625	42	-63.5216	7144.2732	50.2	Pass	
L43	2.75 - 1.75	Pole	TP42.9447x42.7417x0.8625	43	-64.0600	7178.9127	50.3	Pass	
L44	1.75 - 1.5	Pole	TP42.9955x42.9447x0.975	44	-64.2170	8103.3851	44.8	Pass	
L45	1.5 - 0	Pole	TP43.3x42.9955x0.975	45	-65.0779	8162.1116	44.9	Pass	
							Summary		
							Pole (L8)	65.4	Pass
							<b>RATING =</b>	<b>65.4</b>	<b>Pass</b>

**APPENDIX B**  
**BASE LEVEL DRAWING**





**APPENDIX C**  
**ADDITIONAL CALCULATIONS**

**Pole Geometry**

Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1 140	51.5	3.25	12	16	26.456	0.25	Auto	A572-65
2 91.75	44.5	4.25	12	25.30	34.332	0.3125	Auto	A572-65
3 51.5	51.5	0	12	32.84	43.3	0.375	Auto	A572-65

**Reinforcement Configuration**

Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	
1 1.75	23.5	channel	MP3-06(1.1875in)	2													
2 1.75	37.75	channel	MP3-06(1.1875in)	2													
3 20.75	37.75	channel	MP3-08(1.1875in)	1													
4 37.75	68.08	channel	MP3-06(1.1875in)	3													
5 68.08	98.5	channel	MP3-05(1.1875in)	3													
6 3	32.5	plate	065125(1)1.1875	3													
7 32.5	68.08	plate	CGI-AFP-060100	3													
8 68.08	88.17	plate	CGI-AFP-060100	3													
9 97	104	plate	CGI-SFP-045100	3													
10 0	3	plate	FP 1.25 x 7.25	3													
11 0	1.75	plate	FP 1 x 6.75	2													
12 0	1.75	plate	FP 1 x 4.5	4													
13 0	1.75	plate	FP 1 x 5.75	2													
14																	

**Reinforcement Details**

B (in)	H (in)	Gross Area (in <sup>2</sup> )	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L <sub>y</sub> (in)	Net Area (in <sup>2</sup> )	Bolt Hole Size (in)	Reinforcement Material
1 6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
2 6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
3 7.93	2.8	10.32	0.95	47.000	44.000	24.000	9.370	1.1875	A572-65
4 6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
5 5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
6 6.5	1.25	8.125	0.625	n/a	36.000	19.000	6.563	1.1875	A572-65
7 6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
8 6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
9 4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
10 1.25	7.25	9.0625	3.625	n/a	n/a	0.000	9.063	0.0000	A572-65
11 1	6.75	6.75	3.375	n/a	n/a	0.000	6.750	0.0000	A572-65
12 1	4.5	4.5	2.25	n/a	n/a	0.000	4.500	0.0000	A572-65
13 1	5.75	5.75	2.875	n/a	n/a	0.000	5.750	0.0000	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	140 - 135	5		12	16.000	17.015	0.25	A572-65	1.000
2	135 - 130	5		12	17.015	18.030	0.25	A572-65	1.000
3	130 - 125	5		12	18.030	19.045	0.25	A572-65	1.000
4	125 - 120	5		12	19.045	20.061	0.25	A572-65	1.000
5	120 - 115	5		12	20.061	21.076	0.25	A572-65	1.000
6	115 - 110	5		12	21.076	22.091	0.25	A572-65	1.000
7	110 - 105	5		12	22.091	23.106	0.25	A572-65	1.000
8	105 - 104	1		12	23.106	23.309	0.25	A572-65	1.000
9	104 - 103.75	0.25		12	23.309	23.360	0.4625	A572-65	0.942
10	103.75 - 98.75	5		12	23.360	24.375	0.45	A572-65	0.950
11	98.75 - 98.5	0.25		12	24.375	24.426	0.45	A572-65	0.949
12	98.5 - 98.25	0.25		12	24.426	24.476	0.725	A572-65	0.902
13	98.25 - 97	1.25		12	24.476	24.730	0.725	A572-65	0.896
14	97 - 96.75	0.25		12	24.730	24.781	0.5125	A572-65	0.917
15	96.75 - 91.75	8.25	3.25	12	24.781	26.456	0.5	A572-65	0.922
16	91.75 - 88.17	3.58		12	25.296	26.023	0.5625	A572-65	0.929
17	88.17 - 87.92	0.25		12	26.023	26.074	0.7625	A572-65	0.980
18	87.92 - 82.92	5		12	26.074	27.089	0.7375	A572-65	0.990
19	82.92 - 77.92	5		12	27.089	28.104	0.725	A572-65	0.985
20	77.92 - 72.92	5		12	28.104	29.120	0.7125	A572-65	0.982
21	72.92 - 68.08	4.84		12	29.120	30.102	0.6875	A572-65	0.998
22	68.08 - 67.83	0.25		12	30.102	30.153	0.8125	A572-65	0.957
23	67.83 - 62.83	5		12	30.153	31.168	0.7875	A572-65	0.967
24	62.83 - 57.83	5		12	31.168	32.184	0.7625	A572-65	0.979
25	57.83 - 52.83	5		12	32.184	33.199	0.75	A572-65	0.977
26	52.83 - 51.5	5.58	4.25	12	33.199	34.332	0.75	A572-65	0.972
27	51.5 - 46.5	5		12	32.844	33.859	0.8	A572-65	0.985
28	46.5 - 41.5	5		12	33.859	34.874	0.8	A572-65	0.970
29	41.5 - 37.75	3.75		12	34.874	35.636	0.775	A572-65	0.989
30	37.75 - 37.5	0.25		12	35.636	35.686	0.8	A572-65	0.979
31	37.5 - 32.5	5		12	35.686	36.702	0.775	A572-65	0.995
32	32.5 - 32.25	0.25		12	36.702	36.752	0.825	A572-65	1.002
33	32.25 - 27.25	5		12	36.752	37.767	0.8125	A572-65	1.002
34	27.25 - 23.5	3.75		12	37.767	38.529	0.8	A572-65	1.006
35	23.5 - 23.25	0.25		12	38.529	38.580	0.9	A572-65	1.051
36	23.25 - 20.75	2.5		12	38.580	39.087	0.9	A572-65	1.043
37	20.75 - 20.5	0.25		12	39.087	39.138	0.85	A572-65	1.003
38	20.5 - 15.5	5		12	39.138	40.153	0.825	A572-65	1.018
39	15.5 - 10.5	5		12	40.153	41.168	0.825	A572-65	1.004
40	10.5 - 5.5	5		12	41.168	42.183	0.8	A572-65	1.021
41	5.5 - 3	2.5		12	42.183	42.691	0.8	A572-65	1.014
42	3 - 2.75	0.25		12	42.691	42.742	0.8625	A572-65	0.966
43	2.75 - 1.75	1		12	42.742	42.945	0.8625	A572-65	0.963
44	1.75 - 1.5	0.25		12	42.945	42.995	0.975	A572-65	0.923
45	1.5 - 0	1.5		12	42.995	43.300	0.975	A572-65	0.919

## TNX Section Forces

Increment (ft):		TNX Output			
	5	P <sub>u</sub>	M <sub>ux</sub> (kip-ft)	V <sub>u</sub>	(K)
	Section Height (ft)	(K)		(K)	
1	140 - 135	4.36	20.47	5.18	
2	135 - 130	4.64	47.39	5.59	
3	130 - 125	4.93	76.38	6.01	
4	125 - 120	9.69	121.15	13.31	
5	120 - 115	10.22	188.82	13.76	
6	115 - 110	15.74	290.79	20.00	
7	110 - 105	16.45	391.76	20.41	
8	105 - 104	16.59	412.21	20.52	
9	104 - 103.75	21.16	418.55	25.21	
10	103.75 - 98.75	22.15	546.86	25.98	
11	98.75 - 98.5	22.21	553.35	26.01	
12	98.5 - 98.25	22.28	559.86	26.04	
13	98.25 - 97	22.60	592.51	26.23	
14	97 - 96.75	22.66	599.07	26.25	
15	96.75 - 91.75	24.01	732.46	27.06	
16	91.75 - 88.17	25.38	830.28	27.60	
17	88.17 - 87.92	25.47	837.19	27.63	
18	87.92 - 82.92	27.07	977.17	28.37	
19	82.92 - 77.92	28.88	1120.89	29.22	
20	77.92 - 72.92	30.56	1268.73	29.94	
21	72.92 - 68.08	32.22	1415.27	30.64	
22	68.08 - 67.83	32.33	1422.93	30.66	
23	67.83 - 62.83	34.19	1578.67	31.85	
24	62.83 - 57.83	36.13	1739.58	32.56	
25	57.83 - 52.83	38.09	1904.02	33.26	
26	52.83 - 51.5	38.61	1948.35	33.45	
27	51.5 - 46.5	42.03	2117.57	34.27	
28	46.5 - 41.5	44.17	2290.44	34.94	
29	41.5 - 37.75	45.80	2422.27	35.43	
30	37.75 - 37.5	45.93	2431.12	35.45	
31	37.5 - 32.5	48.16	2609.88	36.10	
32	32.5 - 32.25	48.29	2618.90	36.12	
33	32.25 - 27.25	50.68	2801.00	36.77	
34	27.25 - 23.5	52.50	2939.71	37.28	
35	23.5 - 23.25	52.65	2949.02	37.29	
36	23.25 - 20.75	54.02	3042.63	37.65	
37	20.75 - 20.5	54.17	3052.04	37.66	
38	20.5 - 15.5	56.75	3241.83	38.30	
39	15.5 - 10.5	59.38	3434.57	38.86	
40	10.5 - 5.5	62.03	3630.09	39.42	
41	5.5 - 3	63.37	3728.89	39.70	
42	3 - 2.75	63.52	3738.81	39.70	
43	2.75 - 1.75	64.06	3778.55	39.84	
44	1.75 - 1.5	64.22	3788.51	39.85	
45	1.5 - 0	65.08	3848.39	40.05	

# Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.015x16x0.25	Pole	6.2%	Pass
135 - 130	Pole	TP18.03x17.015x0.25	Pole	12.3%	Pass
130 - 125	Pole	TP19.045x18.03x0.25	Pole	17.5%	Pass
125 - 120	Pole	TP20.061x19.045x0.25	Pole	25.2%	Pass
120 - 115	Pole	TP21.076x20.061x0.25	Pole	35.3%	Pass
115 - 110	Pole	TP22.091x21.076x0.25	Pole	50.3%	Pass
110 - 105	Pole	TP23.106x22.091x0.25	Pole	62.4%	Pass
105 - 104	Pole	TP23.309x23.106x0.25	Pole	64.7%	Pass
104 - 103.75	Pole + Reinf.	TP23.36x23.309x0.4625	Reinf. 9 Tension Rupture	60.0%	Pass
103.75 - 98.75	Pole + Reinf.	TP24.375x23.36x0.45	Reinf. 9 Tension Rupture	73.1%	Pass
98.75 - 98.5	Pole + Reinf.	TP24.426x24.375x0.45	Reinf. 9 Tension Rupture	73.7%	Pass
98.5 - 98.25	Pole + Reinf.	TP24.476x24.426x0.725	Reinf. 9 Tension Rupture	47.6%	Pass
98.25 - 97	Pole + Reinf.	TP24.73x24.476x0.725	Reinf. 9 Tension Rupture	49.6%	Pass
97 - 96.75	Pole + Reinf.	TP24.781x24.73x0.5125	Reinf. 5 Tension Rupture	59.0%	Pass
96.75 - 91.75	Pole + Reinf.	TP26.456x24.781x0.5	Reinf. 5 Tension Rupture	67.8%	Pass
91.75 - 88.17	Pole + Reinf.	TP26.023x25.296x0.5625	Reinf. 5 Tension Rupture	67.2%	Pass
88.17 - 87.92	Pole + Reinf.	TP26.074x26.023x0.7625	Reinf. 5 Tension Rupture	52.6%	Pass
87.92 - 82.92	Pole + Reinf.	TP27.089x26.074x0.7375	Reinf. 5 Tension Rupture	58.0%	Pass
82.92 - 77.92	Pole + Reinf.	TP28.104x27.089x0.725	Reinf. 5 Tension Rupture	63.0%	Pass
77.92 - 72.92	Pole + Reinf.	TP29.12x28.104x0.7125	Reinf. 5 Tension Rupture	67.6%	Pass
72.92 - 68.08	Pole + Reinf.	TP30.102x29.12x0.6875	Reinf. 5 Tension Rupture	71.8%	Pass
68.08 - 67.83	Pole + Reinf.	TP30.153x30.102x0.8125	Reinf. 7 Tension Rupture	61.3%	Pass
67.83 - 62.83	Pole + Reinf.	TP31.168x30.153x0.7875	Reinf. 7 Tension Rupture	65.0%	Pass
62.83 - 57.83	Pole + Reinf.	TP32.184x31.168x0.7625	Reinf. 7 Tension Rupture	68.5%	Pass
57.83 - 52.83	Pole + Reinf.	TP33.199x32.184x0.75	Reinf. 7 Tension Rupture	71.8%	Pass
52.83 - 51.5	Pole + Reinf.	TP34.332x33.199x0.75	Reinf. 7 Tension Rupture	72.7%	Pass
51.5 - 46.5	Pole + Reinf.	TP33.859x32.844x0.8	Reinf. 7 Tension Rupture	71.8%	Pass
46.5 - 41.5	Pole + Reinf.	TP34.874x33.859x0.8	Reinf. 7 Tension Rupture	74.4%	Pass
41.5 - 37.75	Pole + Reinf.	TP35.636x34.874x0.775	Reinf. 7 Tension Rupture	76.2%	Pass
37.75 - 37.5	Pole + Reinf.	TP35.686x35.636x0.8	Reinf. 2 Tension Rupture	74.6%	Pass
37.5 - 32.5	Pole + Reinf.	TP36.702x35.686x0.775	Reinf. 2 Tension Rupture	76.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.752x36.702x0.825	Reinf. 2 Tension Rupture	72.9%	Pass
32.25 - 27.25	Pole + Reinf.	TP37.767x36.752x0.8125	Reinf. 2 Tension Rupture	74.8%	Pass
27.25 - 23.5	Pole + Reinf.	TP38.529x37.767x0.8	Reinf. 2 Tension Rupture	76.2%	Pass
23.5 - 23.25	Pole + Reinf.	TP38.58x38.529x0.9	Reinf. 2 Tension Rupture	71.6%	Pass
23.25 - 20.75	Pole + Reinf.	TP39.087x38.58x0.9	Reinf. 2 Tension Rupture	72.4%	Pass
20.75 - 20.5	Pole + Reinf.	TP39.138x39.087x0.85	Reinf. 2 Tension Rupture	73.4%	Pass
20.5 - 15.5	Pole + Reinf.	TP40.153x39.138x0.825	Reinf. 2 Tension Rupture	75.1%	Pass
15.5 - 10.5	Pole + Reinf.	TP41.168x40.153x0.825	Reinf. 2 Tension Rupture	76.6%	Pass
10.5 - 5.5	Pole + Reinf.	TP42.183x41.168x0.8	Reinf. 2 Tension Rupture	78.0%	Pass
5.5 - 3	Pole + Reinf.	TP42.691x42.183x0.8	Reinf. 2 Tension Rupture	78.7%	Pass
3 - 2.75	Pole + Reinf.	TP42.742x42.691x0.8625	Reinf. 2 Tension Rupture	74.0%	Pass
2.75 - 1.75	Pole + Reinf.	TP42.945x42.742x0.8625	Reinf. 2 Tension Rupture	74.3%	Pass
1.75 - 1.5	Pole + Reinf.	TP42.995x42.945x0.975	Reinf. 13 Tension Yield	66.3%	Pass
1.5 - 0	Pole + Reinf.	TP43.3x42.995x0.975	Reinf. 13 Tension Yield	66.7%	Pass
				Summary	
			Pole	64.7%	Pass
			Reinforcement	78.7%	Pass
			Overall	78.7%	Pass



# Monopole Base Plate Connection

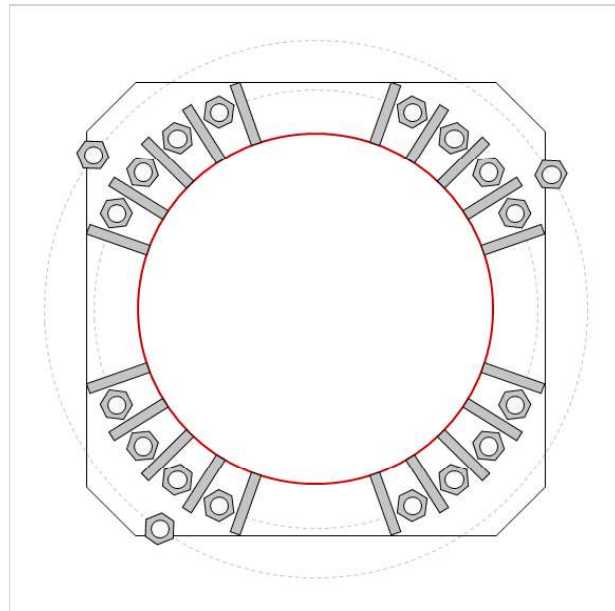


Site Info	
BU #	876342
Site Name	BIC DRIVE (SSUSA)
Order #	529717 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
$I_{ar}$ (in)	2.25

Applied Loads	
Moment (kip-ft)	3848.39
Axial Force (kips)	65.08
Shear Force (kips)	40.05

\*TIA-222-H Section 15.5 Applied



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

**Anchor Rod Data**

GROUP 1: (16) 2-1/4"  $\phi$  bolts (A615-75 N;  $F_y=75$  ksi,  $F_u=100$  ksi) on 54" BC  
*Anchor Spacing: 6 in*

GROUP 2: (3) 2-1/4"  $\phi$  bolts (A193 Gr. B7 N;  $F_y=105$  ksi,  $F_u=125$  ksi) on 66.3" BC  
*pos. (deg): 30, 145, 235*

**Base Plate Data**

56" OD x 3" Plate (A572-50;  $F_y=50$  ksi,  $F_u=65$  ksi)

**Stiffener Data**

(20) 18"H x 7.75"W x 1.25"T, Notch: 0.75"  
 plate:  $F_y=65$  ksi ; weld:  $F_y=70$  ksi  
 horiz. weld: 0.49" groove, 45° dbl bevel, 0.5" fillet  
 vert. weld: 0.3125" fillet

**Pole Data**

43.3" x 0.375" 12-sided pole (A572-65;  $F_y=65$  ksi,  $F_u=80$  ksi)

**Anchor Rod Summary** *(units of kips, kip-in)*

GROUP 1:

$P_{u\_c} = 188.95$	$\phi P_{n\_c} = 268.39$	<b>Stress Rating</b>
$V_u = 2.5$	$\phi V_n = 120.77$	<b>67.1%</b>
$M_u = n/a$	$\phi M_n = n/a$	<b>Pass</b>

GROUP 2:

$P_{u\_c} = 213.39$	$\phi P_{n\_c} = 375.74$	<b>Stress Rating</b>
$V_u = 0$	$\phi V_n = 169.08$	<b>54.1%</b>
$M_u = n/a$	$\phi M_n = n/a$	<b>Pass</b>

**Base Plate Summary**

Max Stress (ksi):	4.06	(Shear)
Allowable Stress (ksi):	29.25	
Stress Rating:	<b>13.2%</b>	<b>Pass</b>

**Stiffener Summary**

Horizontal Weld:	<b>56.1%</b>	<b>Pass</b>
Vertical Weld:	<b>60.6%</b>	<b>Pass</b>
Plate Flexure+Shear:	<b>8.6%</b>	<b>Pass</b>
Plate Tension+Shear:	<b>25.2%</b>	<b>Pass</b>
Plate Compression:	<b>32.3%</b>	<b>Pass</b>

**Pole Summary**

Punching Shear:	<b>16.2%</b>	<b>Pass</b>
-----------------	--------------	-------------



# Pier and Pad Foundation



**BU # :** 876342  
**Site Name:** BIC DRIVE (SSUS)  
**App. Number:** 529717 Rev. 0

**TIA-222 Revision:** H  
**Tower Type:** Monopole

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

Superstructure Analysis Reactions		
Compression, $P_{comp}$ :	65.1	kips
Base Shear, $V_u_{comp}$ :	40.02	kips
Moment, $M_u$ :	3848.39	ft-kips
Tower Height, $H$ :	140	ft
BP Dist. Above Fdn, $bp_{dist}$ :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	455.84	40.02	8.4%	Pass
<i>Bearing Pressure (ksf)</i>	15.00	3.38	22.6%	Pass
<i>Overturning (kip*ft)</i>	8270.99	4278.61	51.7%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	7603.50	4108.52	51.5%	Pass
<i>Pier Compression (kip)</i>	23390.64	122.43	0.5%	Pass
<i>Pad Flexure (kip*ft)</i>	6671.79	1429.91	20.4%	Pass
<i>Pad Shear - 1-way (kips)</i>	951.31	211.39	21.2%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.026	14.9%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	11089.05	2465.11	21.2%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$ :	7	ft
Ext. Above Grade, $E$ :	0.5	ft
Pier Rebar Size, $Sc$ :	11	
Pier Rebar Quantity, $mc$ :	32	
Pier Tie/Spiral Size, $St$ :	5	
Pier Tie/Spiral Quantity, $mt$ :		
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $cc_{pier}$ :	3	in

\*Rating per TIA-222-H Section 15.5

Soil Rating*:	51.7%
Structural Rating*:	51.5%

Pad Properties		
Depth, $D$ :	10	ft
Pad Width, $W$ :	22.5	ft
Pad Thickness, $T$ :	4	ft
Pad Rebar Size (Bottom), $Sp$ :	11	
Pad Rebar Quantity (Bottom), $mp$ :	23	
Pad Clear Cover, $cc_{pad}$ :	3	in

Material Properties		
Rebar Grade, $Fy$ :	60	ksi
Concrete Compressive Strength, $F'c$ :	3	ksi
Dry Concrete Density, $\delta c$ :	150	pcf

Soil Properties		
Total Soil Unit Weight, $\gamma$ :	130	pcf
Ultimate Gross Bearing, $Q_{ult}$ :	20.000	ksf
Cohesion, $Cu$ :	0.000	ksf
Friction Angle, $\phi$ :	32	degrees
SPT Blow Count, $N_{blows}$ :	22	
Base Friction, $\mu$ :		
Neglected Depth, $N$ :	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, $gw$ :	N/A	ft

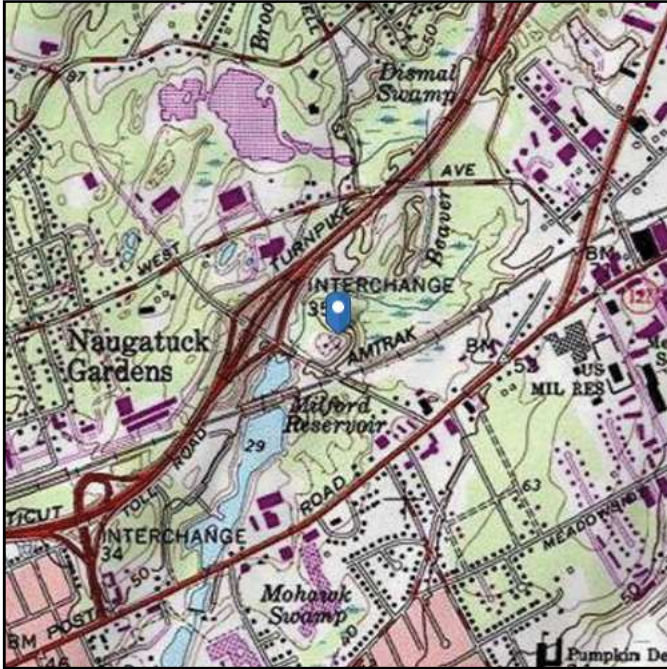
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# ASCE 7 Hazards Report

**Address:**  
No Address at This  
Location

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

**Elevation:** 40.17 ft (NAVD 88)  
**Latitude:** 41.212794  
**Longitude:** -73.085306

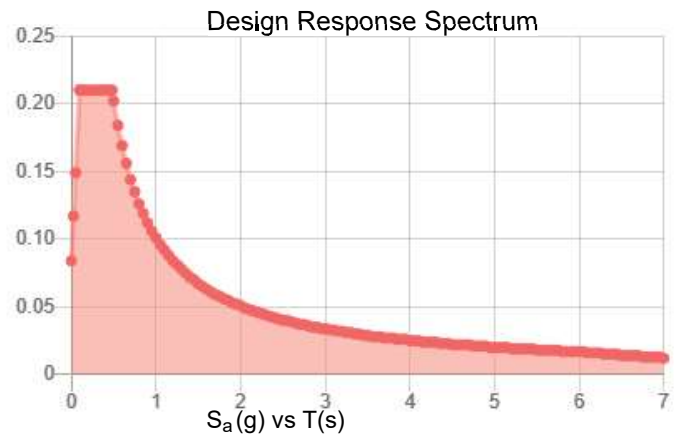
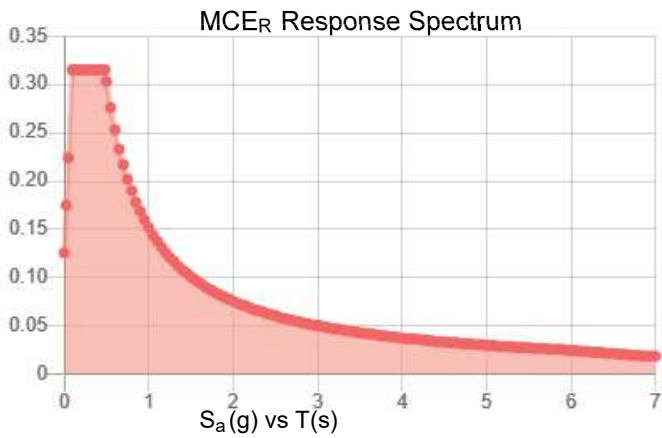


**Site Soil Class:** D - Stiff Soil

**Results:**

$S_s$ :	0.197	$S_{DS}$ :	0.21
$S_1$ :	0.063	$S_{D1}$ :	0.101
$F_a$ :	1.6	$T_L$ :	6
$F_v$ :	2.4	PGA :	0.105
$S_{MS}$ :	0.315	PGA <sub>M</sub> :	0.167
$S_{M1}$ :	0.152	F <sub>PGA</sub> :	1.59
		$I_e$ :	1

**Seismic Design Category** B



**Data Accessed:**

Fri Oct 09 2020

**Date Source:**

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

## Ice

---

**Results:**

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

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

**Date Accessed:** Fri Oct 09 2020

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

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

---

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

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# Exhibit E

## **Mount Analysis**

Date: **October 8, 2020**

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

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

**Subject:** **Mount Analysis Report**

**Carrier Designation:** **T-Mobile Anchor**  
**Carrier Site Number:** CT11229A  
**Carrier Site Name:** Stratford/ Rt 1/ Rt 162

**Crown Castle Designation:** **Crown Castle BU Number:** 876342  
**Crown Castle Site Name:** BIC DRIVE (SSUSA)  
**Crown Castle JDE Job Number:** 620157  
**Crown Castle Order Number:** 529717 Rev. 0

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

**Site Data:** **111 School House Road, a/k/a Bic Drive, Milford,  
New Haven County, CT, 06460  
Latitude 41°12'46.06", Longitude -73°5'7.10"**

**Structure Information:** **Tower Height & Type:** **140.0 ft Monopole**  
**Mount Elevation:** **115.0 ft**  
**Mount Type:** **14.0 ft Platform**

Dear Darcy Tarr,

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

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

**Platform**

**Sufficient**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code and Appendix N based upon an ultimate 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Jacques S. Grimaldi, M.S., P.E.

Respectfully Submitted by:  
John S. Stevens, P.E.  
518-690-0790  
[structural@infinigy.com](mailto:structural@infinigy.com)  
CT PE License No. PEN.0024705



10/08/2020

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Additional Calculations

**1) INTRODUCTION**

This is an existing 3 sector 14.0 ft Platform, mapped by Tower Engineering Professionals.

**2) ANALYSIS CRITERIA**

**Building Code:** 2015 IBC / 2018 Connecticut State Building Code and Appendix N  
**TIA-222 Revision:** TIA-222-H  
**Risk Category:** II  
**Ultimate Wind Speed:** 125 mph  
**Exposure Category:** C  
**Topographic Factor at Base:** 1.0  
**Topographic Factor at Mount:** 1.0  
**Ice Thickness:** 1.5 in  
**Wind Speed with Ice:** 50 mph  
**Seismic S<sub>s</sub>:** 0.194  
**Seismic S<sub>1</sub>:** 0.063  
**Live Loading Wind Speed:** 30 mph  
**Man Live Load at Mid/End-Points:** 250 lb  
**Man Live Load at Mount Pipes:** 500 lb

**Table 1 - Proposed Equipment Configuration**

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
115.0	116.0	3	Ericsson	AIR 32 B2A/B66AA	14.0 ft Platform Addition of (1) 8' pipe mount per sector
		3	Ericsson	AIR6449 B41 T-MOBILE	
		3	RFS/Celwave	APXVAARR24 43-U-NA20	
		3	Commscope	SDX1926Q-43	
		3	Ericsson	RRUS 4415 B25 CCIV2	
		3	Ericsson	RADIO 4449 B12/B71	
	115.0	3	Andrew	ETW200VS12UB	

**3) ANALYSIS PROCEDURE**

**Table 2 - Documents Provided**

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	529717 Rev. 0	CCI Sites
Loading Document	T-Mobile	RFDS Version: 3	TSA
Mount Mapping Documents	Tower Engineering Professionals	7841761	CCI Sites



### 3.1) Analysis Method

RISA-3D (Version 18.0.5), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.1.4, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

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

### 3.2) Assumptions

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

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

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

**4) ANALYSIS RESULTS**

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Mount Pipe(s)	MP5	115.0	68.2	Pass
	Frame Rail(s)	M2		97.4	Pass
	Standoff(s)	M13		14.5	Pass
	Bracing(s)	M65		21.6	Pass
	Mount Connection(s)	-		23.6	Pass

<b>Structure Rating (max from all components) =</b>	<b>97.4%</b>
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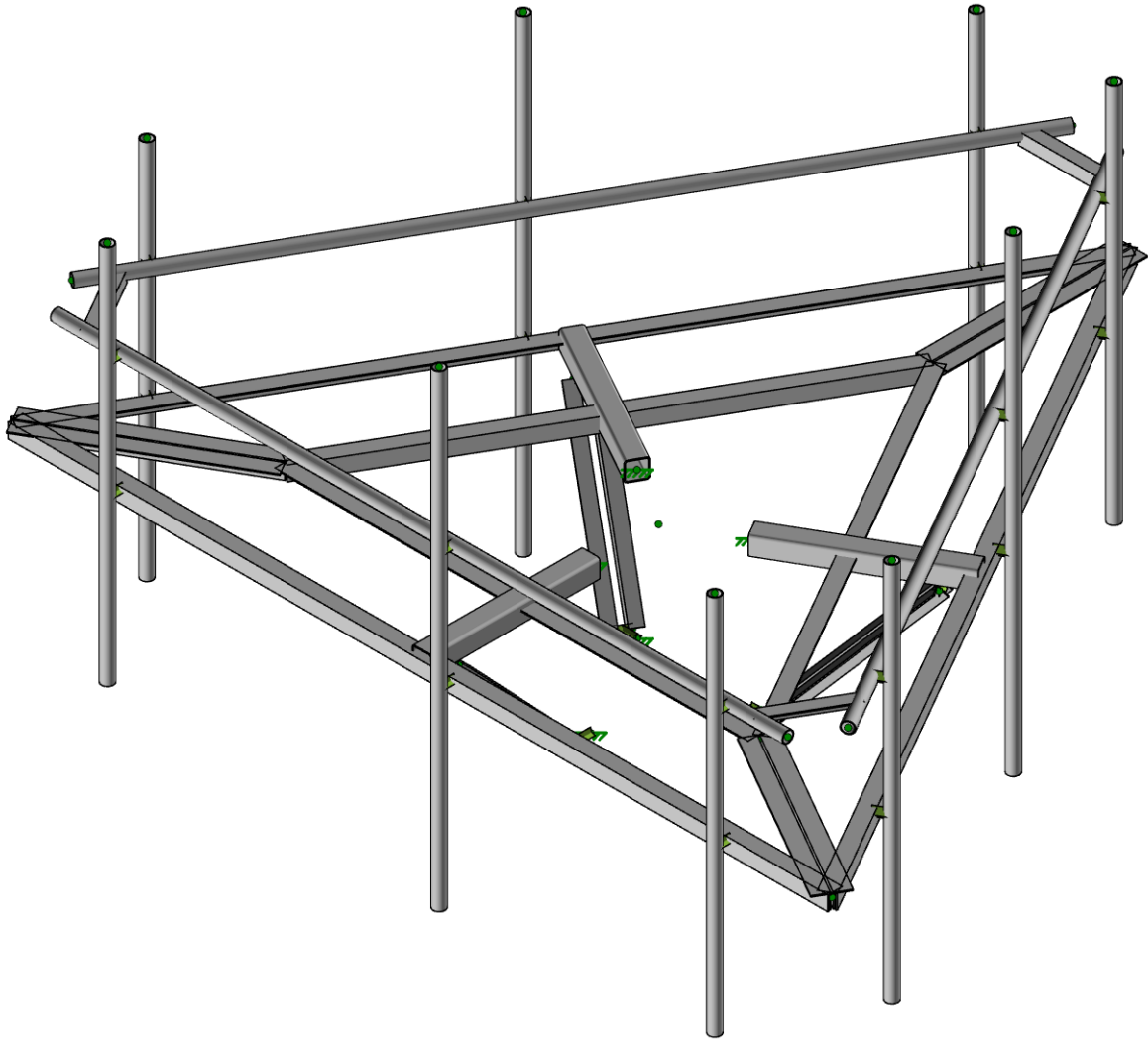
Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.

**4.1) Recommendations**

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

**APPENDIX A**  
**WIRE FRAME AND RENDERED MODELS**



Infinigy Engineering, PLLC

JG

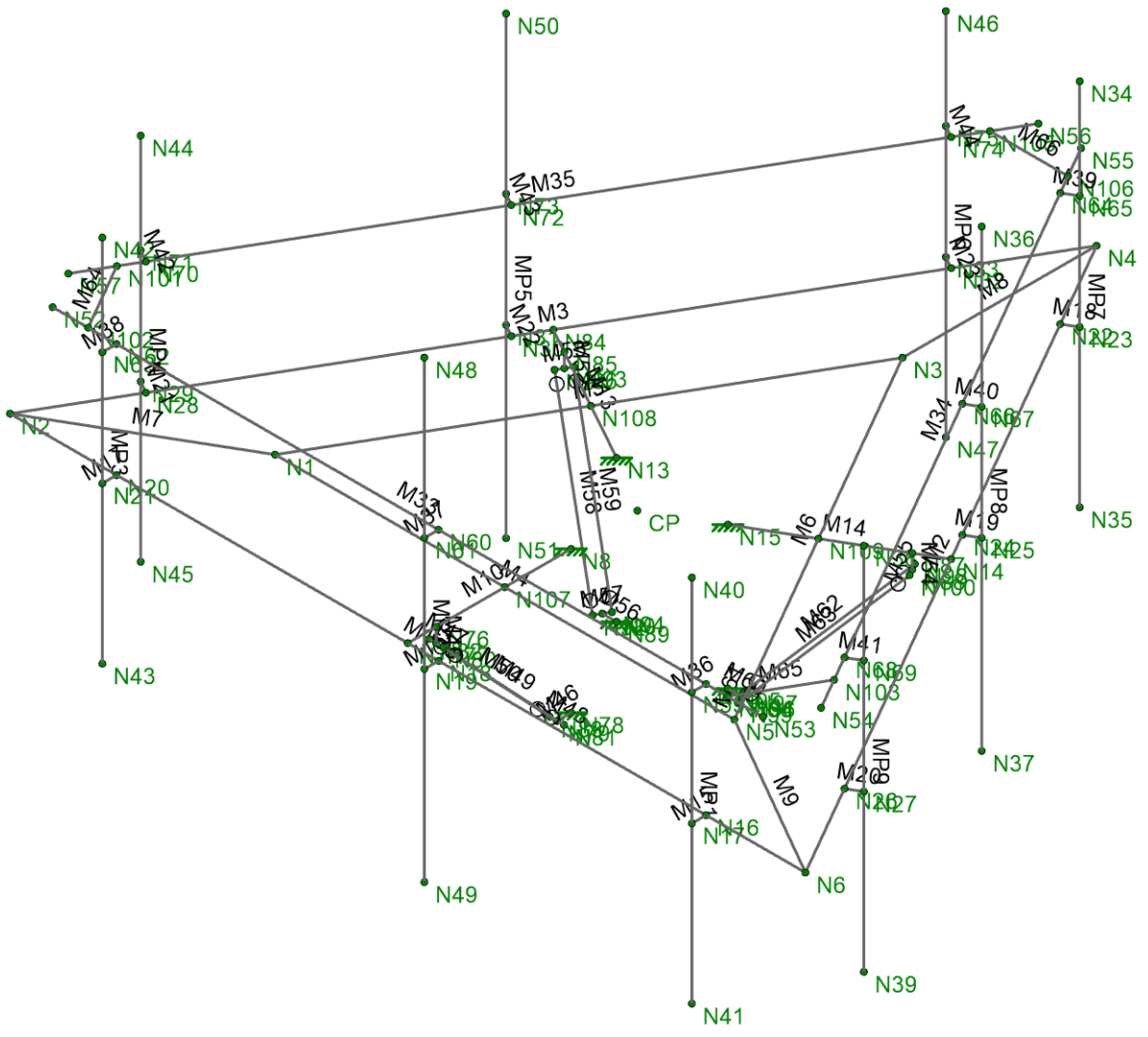
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Oct 08, 2020

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Infinigy Engineering, PLLC

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Wireframe

JG

Oct 08, 2020

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**APPENDIX B**  
**SOFTWARE INPUT CALCULATIONS**

## Program Inputs

PROJECT INFORMATION		
Client:	Crown Castle	
Carrier:	T-Mobile	
Engineer:	Jacques Grimaldi	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil	
Ground Elevation:	40.17	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	115.0	ft
Tower Height AGL:	140.0	ft

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

FACTORS		
Directionality Fact. ( $K_d$ ):	0.95	
Ground Ele. Factor ( $K_g$ ):	1.00	*Rev H Only
Rooftop Speed-Up ( $K_s$ ):	1.00	*Rev H Only
Topographic Factor ( $K_{zt}$ ):	1.00	
Gust Effect Factor ( $G_H$ ):	1.0	

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

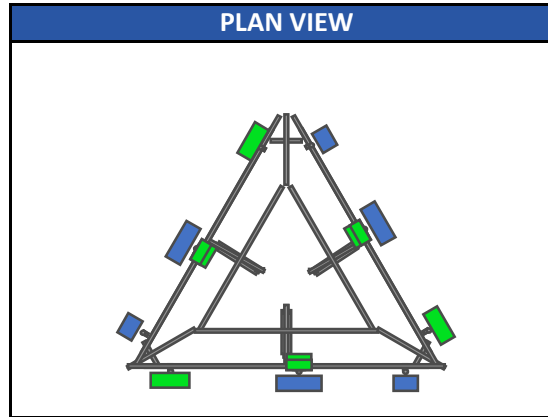
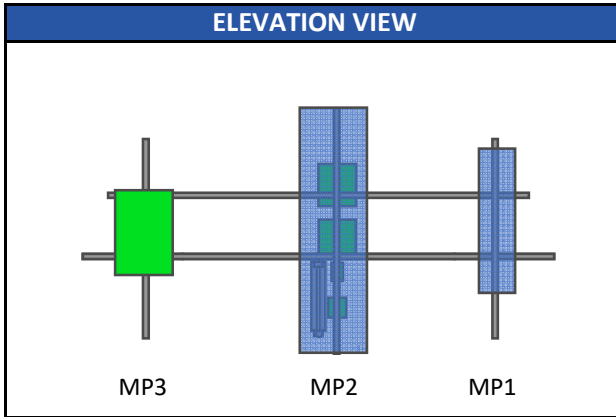
WIND AND ICE DATA		
Ultimate Wind ( $V_{ult}$ ):	125	mph
Design Wind ( $V$ ):	N/A	mph
Ice Wind ( $V_{ice}$ ):	50	mph
Base Ice Thickness ( $t_i$ ):	1.5	in
Flat Pressure:	98.92	psf
Round Pressure:	59.35	psf
Ice Wind Pressure:	9.50	psf

SEISMIC DATA		
Short-Period Accel. ( $S_s$ ):	0.194	g
1-Second Accel. ( $S_1$ ):	0.063	g
Short-Period Design ( $S_{DS}$ ):	0.21	
1-Second Design ( $S_{D1}$ ):	0.10	
Short-Period Coeff. ( $F_a$ ):	1.60	
1-Second Coeff. ( $F_v$ ):	2.40	
Amplification Factor ( $a_p$ ):	1.00	
Response Mod. ( $R_p$ ):	2.50	
Overstrength ( $\Omega_o$ ):	1.00	



Infinigy Load Calculator V2.1.4

**Program Inputs**



Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION												
Appurtenance Name	Elevation	Qty.	K <sub>a</sub>	q <sub>z</sub> (psf)	EPA <sub>N</sub> (ft <sup>2</sup> )	EPA <sub>T</sub> (ft <sup>2</sup> )	Wind F <sub>z</sub> (lbs)	Wind F <sub>x</sub> (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)	
ERICSSON AIR 32 B2A/B66AA	116.0	3	0.90	49.55	6.51	4.71	290.30	210.14	132.20	13.68	MP1	
ERICSSON AIR6449 B41_T-MOBILE	116.0	3	0.90	49.55	5.66	2.48	252.35	110.44	114.63	11.86	MP3	
RFS/CELWAVE APXVAARR24_43-U-NA20	116.0	3	0.90	49.55	14.69	6.87	655.23	306.51	128.00	13.24	MP2	
ANDREW TME-ETW200VS12UB	115.0	3	0.90	49.46	0.40	0.19	17.99	8.59	11.00	1.14	MP2	
COMMSCOPE SDX1926Q-43	116.0	3	0.90	49.55	0.24	0.17	10.74	7.49	6.17	0.64	MP2	
ERICSSON RADIO 4449 B12/B71	116.0	3	0.90	49.55	1.64	1.15	73.28	51.39	75.00	7.76	MP2	
ERICSSON TME-RRUS 4415 B25_CCIV2	116.0	3	0.90	49.55	1.84	0.82	82.16	36.57	46.00	4.76	MP2	



**APPENDIX C**  
**SOFTWARE ANALYSIS OUTPUT**

**Member Primary Data**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N2	N6	180	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N6	N4	180	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N2	N4	90	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N1	N5	90	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N1	N3	180	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
6	M6	N5	N3	90	Frame Rail	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N1	N2		Corner Angles	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
8	M8	N3	N4		Corner Angles	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
9	M9	N5	N6		Corner Angles	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical
10	M10	N8	N7		Standoff	Beam	RECT	A500 Gr.B Rect	Typical
11	M13	N13	N84		Standoff	Beam	RECT	A500 Gr.B Rect	Typical
12	M14	N15	N14		Standoff	Beam	RECT	A500 Gr.B Rect	Typical
13	M15	N16	N17		RIGID	None	None	RIGID	Typical
14	M16	N18	N19		RIGID	None	None	RIGID	Typical
15	M17	N20	N21		RIGID	None	None	RIGID	Typical
16	M18	N22	N23		RIGID	None	None	RIGID	Typical
17	M19	N24	N25		RIGID	None	None	RIGID	Typical
18	M20	N26	N27		RIGID	None	None	RIGID	Typical
19	M21	N28	N29		RIGID	None	None	RIGID	Typical
20	M22	N30	N31		RIGID	None	None	RIGID	Typical
21	M23	N32	N33		RIGID	None	None	RIGID	Typical
22	MP7	N34	N35	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
23	MP8	N36	N37	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
24	MP9	N38	N39	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
25	MP1	N40	N41	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
26	MP3	N42	N43	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
27	MP4	N44	N45	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
28	MP6	N46	N47	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
29	MP2	N48	N49	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
30	MP5	N50	N51	180	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
31	M33	N52	N53		Handrail	Beam	Pipe	A53 Gr.B	Typical
32	M34	N54	N55		Handrail	Beam	Pipe	A53 Gr.B	Typical
33	M35	N56	N57		Handrail	Beam	Pipe	A53 Gr.B	Typical
34	M36	N58	N59		RIGID	None	None	RIGID	Typical
35	M37	N60	N61		RIGID	None	None	RIGID	Typical
36	M38	N62	N63		RIGID	None	None	RIGID	Typical
37	M39	N64	N65		RIGID	None	None	RIGID	Typical
38	M40	N66	N67		RIGID	None	None	RIGID	Typical
39	M41	N68	N69		RIGID	None	None	RIGID	Typical
40	M42	N70	N71		RIGID	None	None	RIGID	Typical
41	M43	N72	N73		RIGID	None	None	RIGID	Typical
42	M44	N74	N75		RIGID	None	None	RIGID	Typical
43	M45	N76	N77	180	RIGID	None	None	RIGID	Typical
44	M46	N78	N79		RIGID	None	None	RIGID	Typical
45	M47	N82	N80		RIGID	None	None	RIGID	Typical
46	M48	N83	N81		RIGID	None	None	RIGID	Typical
47	M49	N80	N81	90	Support Angles	Beam	Single Angle	A36 Gr.36	Typical
48	M50	N82	N83	180	Support Angles	Beam	Single Angle	A36 Gr.36	Typical
49	M52	N85	N86	180	RIGID	None	None	RIGID	Typical

**Member Primary Data (Continued)**

	Label	Node J	Node K	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
50	M53	N91	N93		RIGID	None	None	RIGID	Typical
51	M54	N87	N88	180	RIGID	None	None	RIGID	Typical
52	M55	N98	N100		RIGID	None	None	RIGID	Typical
53	M56	N89	N90		RIGID	None	None	RIGID	Typical
54	M57	N92	N94		RIGID	None	None	RIGID	Typical
55	M58	N91	N92	90	Support Angles	Beam	Single Angle	A36 Gr.36	Typical
56	M59	N93	N94	180	Support Angles	Beam	Single Angle	A36 Gr.36	Typical
57	M60	N95	N96		RIGID	None	None	RIGID	Typical
58	M61	N97	N99		RIGID	None	None	RIGID	Typical
59	M62	N97	N98	180	Support Angles	Beam	Single Angle	A36 Gr.36	Typical
60	M63	N99	N100	90	Support Angles	Beam	Single Angle	A36 Gr.36	Typical
61	M64	N101	N102	90	Connection Angles	Beam	Single Angle	A36 Gr.36	Typical
62	M65	N103	N104	180	Connection Angles	Beam	Single Angle	A36 Gr.36	Typical
63	M66	N105	N106	180	Connection Angles	Beam	Single Angle	A36 Gr.36	Typical

**Material Takeoff**

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		30	90	0
3	Total General		30	90	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2.5x2.5x4	9	273.5	92.299
7	A36 Gr.36	L3X3X4	6	795	324.608
8	A36 Gr.36	LL3x3x4x3	3	123	100.45
9	A500 Gr.B Rect	HSS4X4X4	3	103.5	106.374
10	A53 Gr.B	PIPE_2.0	12	1206	348.819
11	Total HR Steel		33	2501	972.55

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			42		3
2	Wind Load AZI 0	WLZ					84		
3	Wind Load AZI 30	None					84		
4	Wind Load AZI 60	None					84		
5	Wind Load AZI 90	WLX					84		
6	Wind Load AZI 120	None					84		
7	Wind Load AZI 150	None					84		
8	Wind Load AZI 180	None					84		
9	Wind Load AZI 210	None					84		
10	Wind Load AZI 240	None					84		
11	Wind Load AZI 270	None					84		
12	Wind Load AZI 300	None					84		
13	Wind Load AZI 330	None					84		
14	Distr. Wind Load Z	WLZ						63	
15	Distr. Wind Load X	WLX						63	
16	Ice Weight	OL1					42	63	3
17	Ice Wind Load AZI 0	OL2					84		

**Basic Load Cases (Continued)**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
18	Ice Wind Load AZI 30	None					84		
19	Ice Wind Load AZI 60	None					84		
20	Ice Wind Load AZI 90	OL3					84		
21	Ice Wind Load AZI 120	None					84		
22	Ice Wind Load AZI 150	None					84		
23	Ice Wind Load AZI 180	None					84		
24	Ice Wind Load AZI 210	None					84		
25	Ice Wind Load AZI 240	None					84		
26	Ice Wind Load AZI 270	None					84		
27	Ice Wind Load AZI 300	None					84		
28	Ice Wind Load AZI 330	None					84		
29	Distr. Ice Wind Load Z	OL2						63	
30	Distr. Ice Wind Load X	OL3						63	
31	Seismic Load Z	ELZ			-0.103		42		
32	Seismic Load X	ELX	-0.103				42		
33	Service Live Loads	LL				1			
34	Maintenance Load 1	LL				2			
35	Maintenance Load 2	LL				2			
36	Maintenance Load 3	LL				2			
37	Maintenance Load 4	LL				2			
38	Maintenance Load 5	LL				2			
39	Maintenance Load 6	LL				2			
40	Maintenance Load 7	LL				2			
41	Maintenance Load 8	LL				2			
42	Maintenance Load 9	LL				2			
43	BLC 1 Transient Area Loads	None						30	
44	BLC 16 Transient Area Loads	None						30	

**Load Combinations**

	Description	Solve	P	Delta	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	1.4DL	Yes	Y	1	1.4								
2	1.2DL + 1WL AZI 0	Yes	Y	1	1.2	2	1	14	1	15			
3	1.2DL + 1WL AZI 30	Yes	Y	1	1.2	3	1	14	0.866	15	0.5		
4	1.2DL + 1WL AZI 60	Yes	Y	1	1.2	4	1	14	0.5	15	0.866		
5	1.2DL + 1WL AZI 90	Yes	Y	1	1.2	5	1	14		15	1		
6	1.2DL + 1WL AZI 120	Yes	Y	1	1.2	6	1	14	-0.5	15	0.866		
7	1.2DL + 1WL AZI 150	Yes	Y	1	1.2	7	1	14	-0.866	15	0.5		
8	1.2DL + 1WL AZI 180	Yes	Y	1	1.2	8	1	14	-1	15			
9	1.2DL + 1WL AZI 210	Yes	Y	1	1.2	9	1	14	-0.866	15	-0.5		
10	1.2DL + 1WL AZI 240	Yes	Y	1	1.2	10	1	14	-0.5	15	-0.866		
11	1.2DL + 1WL AZI 270	Yes	Y	1	1.2	11	1	14		15	-1		
12	1.2DL + 1WL AZI 300	Yes	Y	1	1.2	12	1	14	0.5	15	-0.866		
13	1.2DL + 1WL AZI 330	Yes	Y	1	1.2	13	1	14	0.866	15	-0.5		
14	0.9DL + 1WL AZI 0	Yes	Y	1	0.9	2	1	14	1	15			
15	0.9DL + 1WL AZI 30	Yes	Y	1	0.9	3	1	14	0.866	15	0.5		
16	0.9DL + 1WL AZI 60	Yes	Y	1	0.9	4	1	14	0.5	15	0.866		
17	0.9DL + 1WL AZI 90	Yes	Y	1	0.9	5	1	14		15	1		
18	0.9DL + 1WL AZI 120	Yes	Y	1	0.9	6	1	14	-0.5	15	0.866		



**Load Combinations (Continued)**

	Description	Solve	P	Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
19	0.9DL + 1WL AZI 150	Yes	Y	1	0.9	7	1	14	-0.866	15	0.5			
20	0.9DL + 1WL AZI 180	Yes	Y	1	0.9	8	1	14	-1	15				
21	0.9DL + 1WL AZI 210	Yes	Y	1	0.9	9	1	14	-0.866	15	-0.5			
22	0.9DL + 1WL AZI 240	Yes	Y	1	0.9	10	1	14	-0.5	15	-0.866			
23	0.9DL + 1WL AZI 270	Yes	Y	1	0.9	11	1	14		15	-1			
24	0.9DL + 1WL AZI 300	Yes	Y	1	0.9	12	1	14	0.5	15	-0.866			
25	0.9DL + 1WL AZI 330	Yes	Y	1	0.9	13	1	14	0.866	15	-0.5			
26	1.2D + 1.0Di	Yes	Y	1	1.2	16	1							
27	1.2D + 1.0Di + 1.0Wi AZI 0	Yes	Y	1	1.2	16	1	17	1	29	1	30		
28	1.2D + 1.0Di + 1.0Wi AZI 30	Yes	Y	1	1.2	16	1	18	1	29	0.866	30	0.5	
29	1.2D + 1.0Di + 1.0Wi AZI 60	Yes	Y	1	1.2	16	1	19	1	29	0.5	30	0.866	
30	1.2D + 1.0Di + 1.0Wi AZI 90	Yes	Y	1	1.2	16	1	20	1	29		30	1	
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y	1	1.2	16	1	21	1	29	-0.5	30	0.866	
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y	1	1.2	16	1	22	1	29	-0.866	30	0.5	
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y	1	1.2	16	1	23	1	29	-1	30		
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y	1	1.2	16	1	24	1	29	-0.866	30	-0.5	
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y	1	1.2	16	1	25	1	29	-0.5	30	-0.866	
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y	1	1.2	16	1	26	1	29		30	-1	
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y	1	1.2	16	1	27	1	29	0.5	30	-0.866	
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y	1	1.2	16	1	28	1	29	0.866	30	-0.5	
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.241	31	1	32						
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.241	31	0.866	32	0.5					
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.241	31	0.5	32	0.866					
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.241	31		32	1					
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.241	31	-0.5	32	0.866					
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.241	31	-0.866	32	0.5					
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.241	31	-1	32						
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.241	31	-0.866	32	-0.5					
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.241	31	-0.5	32	-0.866					
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.241	31		32	-1					
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.241	31	0.5	32	-0.866					
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.241	31	0.866	32	-0.5					
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.859	31	1	32						
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.859	31	0.866	32	0.5					
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.859	31	0.5	32	0.866					
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.859	31		32	1					
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.859	31	-0.5	32	0.866					
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.859	31	-0.866	32	0.5					
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.859	31	-1	32						
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.859	31	-0.866	32	-0.5					
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.859	31	-0.5	32	-0.866					
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.859	31		32	-1					
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.859	31	0.5	32	-0.866					
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.859	31	0.866	32	-0.5					
63	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 0	Yes	Y	1	1	2	0.23	14	0.23	15		33	1.5	
64	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 30	Yes	Y	1	1	3	0.23	14	0.2	15	0.115	33	1.5	
65	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 60	Yes	Y	1	1	4	0.23	14	0.115	15	0.2	33	1.5	
66	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 90	Yes	Y	1	1	5	0.23	14		15	0.23	33	1.5	
67	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 120	Yes	Y	1	1	6	0.23	14	-0.115	15	0.2	33	1.5	





**Load Combinations (Continued)**

Description	Solve	PDelta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
166 1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.058	14	-0.058	15	
167 1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.058	14	-0.05	15	-0.029
168 1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.058	14	-0.029	15	-0.05
169 1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.058	14		15	-0.058
170 1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.058	14	0.029	15	-0.05
171 1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.058	14	0.05	15	-0.029
172 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.058	14	0.058	15	
173 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.058	14	0.05	15	0.029
174 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.058	14	0.029	15	0.05
175 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.058	14		15	0.058
176 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.058	14	-0.029	15	0.05
177 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.058	14	-0.05	15	0.029
178 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.058	14	-0.058	15	
179 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.058	14	-0.05	15	-0.029
180 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.058	14	-0.029	15	-0.05
181 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.058	14		15	-0.058
182 1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.058	14	0.029	15	-0.05

**Envelope Node Reactions**

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1 N13 max	3063.298	5	108.203	36	2843.487	2	729.298	159	2240.358	12	325.207	159
2 min	-1617.342	23	-56.501	175	-1916.224	20	-700.026	141	-2135.813	18	-488.926	129
3 N8 max	1928.836	5	99.898	27	1169.041	14	-20.899	160	1544.435	4	834.894	109
4 min	-1918.549	23	-61.59	166	-2910.715	33	-153.08	37	-1530.391	22	-805.769	127
5 N15 max	1596.44	17	107.296	30	2847.855	2	752.913	149	2130.376	22	484.677	107
6 min	-3036.593	11	-58.234	97	-1910.971	20	-668.594	107	-2212.67	4	-351.52	77
7 N89 max	-348.392	22	2985.553	29	-204.526	23	159.663	86	14.555	23	-68.149	23
8 min	-2368.2	29	362.452	22	-1501.89	30	-187.561	128	-442.01	31	-777.102	30
9 N95 max	2344.243	37	2984.71	37	-208.424	17	183.033	151	410.113	109	734.573	36
10 min	346.211	18	362.672	18	-1543.458	36	-165.958	121	-50.297	17	48.578	17
11 N78 max	63.685	17	3001.855	33	2779.081	33	-89.073	14	182.781	141	220.926	111
12 min	-63.7	23	356.291	14	372.207	14	-750.354	33	-207.359	111	-194.729	141
13 Totals: max	5939.05	17	8987.145	28	6072.806	14						
14 min	-5939.053	11	2399.387	58	-6072.807	8						

**Envelope AISC 15th (360-16): LRFD Steel Code Checks**

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1 M2	L3X3X4	0.974	84	38	0.313	84	y	37	15778.129	46656	1688.138	2935.82	1	H2-1	
2 M3	L3X3X4	0.968	84	30	0.313	84	z	29	15778.129	46656	1688.138	2935.82	1	H2-1	
3 M1	L3X3X4	0.964	84	33	0.316	84	y	33	15778.129	46656	1688.138	2935.82	1	H2-1	
4 MP5	PIPE_2.0	0.682	57	10	0.093	57		11	14916.096	32130	1871.625	1871.625	1.61	H1-1b	
5 MP2	PIPE_2.0	0.672	57	2	0.096	57		3	14916.096	32130	1871.625	1871.625	2.627	H1-1b	
6 MP8	PIPE_2.0	0.67	57	6	0.095	57		12	14916.096	32130	1871.625	1871.625	1.53	H1-1b	
7 MP6	PIPE_2.0	0.455	44.688	31	0.233	44.688		5	19360.206	32130	1871.625	1871.625	2.727	H1-1b	
8 MP3	PIPE_2.0	0.454	44.688	35	0.235	44.688		9	19360.206	32130	1871.625	1871.625	2.607	H1-1b	
9 MP9	PIPE_2.0	0.454	44.688	27	0.233	44.688		13	19360.206	32130	1871.625	1871.625	2.532	H1-1b	
10 M4	L3X3X4	0.439	48.493	31	0.026	48.493	z	34	11835.775	46656	1688.138	3077.69	1.352	H2-1	
11 M6	L3X3X4	0.432	48.493	28	0.026	48.493	z	27	11835.775	46656	1688.138	3076.262	1.35	H2-1	



**Envelope AISC 15th (360-16): LRFD Steel Code Checks (Continued)**

Member	Shape	Code	Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
12	M35	PIPE_2.0	0.415	82.813	27	0.193	142.188	9	9	6295.422	32130	1871.625	1871.625	2.185	H1-1b	
13	M33	PIPE_2.0	0.414	82.813	31	0.191	142.188	13	6295.422	32130	1871.625	1871.625	2.169	H1-1b		
14	M34	PIPE_2.0	0.414	82.813	35	0.191	142.188	5	6295.422	32130	1871.625	1871.625	2.188	H1-1b		
15	M5	L3X3X4	0.4	49.503	31	0.025	49.503	y	27	11835.775	46656	1688.138	3079.388	1.354	H2-1	
16	MP7	PIPE_2.0	0.353	44.688	35	0.226	44.688	11	19360.206	32130	1871.625	1871.625	2.447	H1-1b		
17	MP4	PIPE_2.0	0.352	44.688	27	0.226	44.688	3	19360.206	32130	1871.625	1871.625	2.865	H1-1b		
18	MP1	PIPE_2.0	0.352	44.688	31	0.228	44.688	7	19360.206	32130	1871.625	1871.625	2.62	H1-1b		
19	M65	L2.5x2.5x4	0.216	16.5	2	0.098	16.5	y	7	36249.301	38556	1113.554	2537.388	1.5	H2-1	
20	M66	L2.5x2.5x4	0.214	16.5	6	0.098	16.5	y	11	36249.301	38556	1113.554	2537.388	1.5	H2-1	
21	M64	L2.5x2.5x4	0.212	0	10	0.098	0	z	3	36249.301	38556	1113.554	2537.388	1.5	H2-1	
22	M13	HSS4X4X4	0.145	0	12	0.087	28.75	y	140	134774.253	139518	16180.5	16180.5	2.603	H1-1b	
23	M14	HSS4X4X4	0.144	0	4	0.088	28.75	y	76	134774.253	139518	16180.5	16180.5	2.632	H1-1b	
24	M9	LL3x3x4x3	0.116	41	105	0.021	0	z	13	75454.767	93312	7427.012	4393.999	1.72	H1-1b	
25	M7	LL3x3x4x3	0.116	41	125	0.022	0	z	9	75454.767	93312	7427.012	4393.999	1.751	H1-1b	
26	M8	LL3x3x4x3	0.116	41	157	0.024	0	z	5	75454.767	93312	7427.012	4393.999	1.754	H1-1b	
27	M10	HSS4X4X4	0.105	0	10	0.087	28.75	y	119	134774.253	139518	16180.5	16180.5	2.698	H1-1b	
28	M58	L2.5x2.5x4	0.101	19.104	30	0.004	37.428	z	137	28069.247	38556	1113.554	2459.183	1.136	H2-1	
29	M62	L2.5x2.5x4	0.097	18.333	27	0.004	37.445	y	111	28061.077	38556	1113.554	2459.002	1.136	H2-1	
30	M49	L2.5x2.5x4	0.097	18.956	34	0.005	37.138	y	11	28207.13	38556	1113.554	2462.244	1.136	H2-1	
31	M63	L2.5x2.5x4	0.085	18.333	109	0.004	37.445	z	111	28061.077	38556	1113.554	2459.002	1.136	H2-1	
32	M50	L2.5x2.5x4	0.085	18.956	129	0.005	37.138	z	11	28207.13	38556	1113.554	2462.244	1.136	H2-1	
33	M59	L2.5x2.5x4	0.084	19.104	149	0.004	37.428	y	137	28069.247	38556	1113.554	2459.183	1.136	H2-1	

**APPENDIX D**  
**ADDITIONAL CALCUATIONS**

## Welded Calculation Tool, V1.0

PROJECT DATA	
Site Name:	BIC DRIVE (SSUSA)
Site Number:	876342
Job Code:	1039-Z0001-B
Date:	10/8/2020

WELD INFORMATION		
Design:	LRFD	-
Weld Strength (F_EXX):	70	ksi
Weld Thickness:	0.25	in

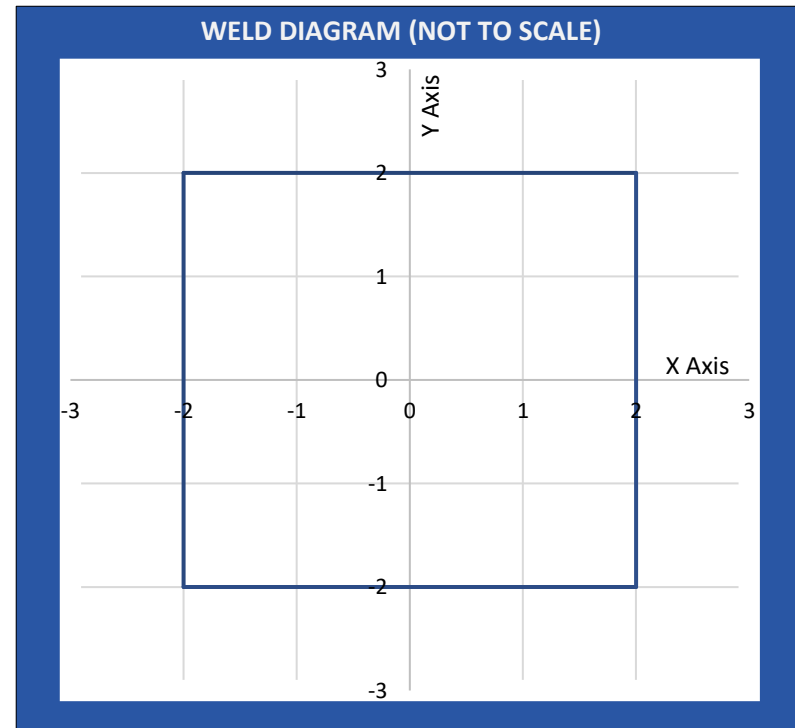
MAIN SHAPE INFORMATION		
Main Shape:	Rectangle	-
Main Shape Material:	A 500 Gr. B Rect.	-
Main Shape Thickness:	0.250	in
Main Shape Size:	4X4	in

TOTAL SUM OF LINES PROPERTIES		
Polar Moment of Inertia:	85.333	in <sup>3</sup>
Section Modulus X-X dir.:	21.333	in <sup>2</sup>
Section Modulus Y-Y dir.:	21.333	in <sup>2</sup>
Critical Usage Mode*:	Weld Critical	-
Critical Thickness Used:	0.250	in

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

WELD DESCRIPTION		

RESULTS		
Critical Risa Combination:	LC 10	-
Critical Member Label:	M14	-
Member End:	i	-
Weld Strength (Phi*Rn):	5568.466	lb/in
Weld Demand (Ru):	1313.955	lb/in
Usage ratio:	23.6%	OK



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

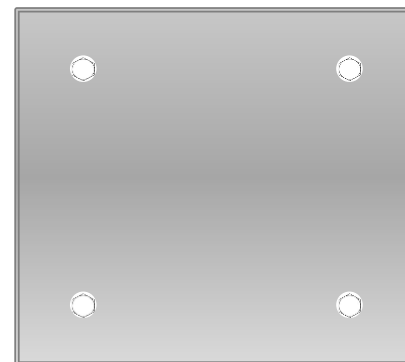
**Bolt Calculation Tool, V1.4**

PROJECT DATA	
Site Name:	BIC DRIVE (SSUSA)
Site Number:	876342
Job Code:	1039-Z0001-B
Connection Description:	Kicker to Collar

APPLIED LOADS		
Bolt Tension:	1235.43	lbs
Bolt Shear:	891.24	lbs

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

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Tensile Usage	6.1%	
Shear Usage	6.5%	
Interaction Check	0.01	≤1.05
Result	Pass	



# Exhibit F

## **Power Density/RF Emissions Report**

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

T-Mobile Existing Facility

Site ID: CT11229A

Stratford/ Rt 1/ Rt 162  
111 Schoolhouse Road  
Milford, Connecticut 06460

**October 27, 2020**

**EBI Project Number: 6220005554**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>51.60%</b>

October 27, 2020

T-Mobile

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

Emissions Analysis for Site: CT11229A - Stratford/ Rt 1/ Rt 162

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **111 Schoolhouse Road in Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$ , respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 111 Schoolhouse Road in Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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



- 6) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 8) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 9) 2 LTE channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 10) 2 NR channels (BRS Band - 2500 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 13) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power

levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 14) The antenna mounting height centerline of the proposed antennas is 116 feet above ground level (AGL).
- 15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 16) All calculations were done with respect to uncontrolled / general population threshold limits.

## T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	116 feet	Height (AGL):	116 feet	Height (AGL):	116 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A1 MPE %:	3.43%	Antenna B1 MPE %:	3.43%	Antenna C1 MPE %:	3.43%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd	Gain:	22.05 dBd / 22.05 dBd
Height (AGL):	116 feet	Height (AGL):	116 feet	Height (AGL):	116 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts	Total TX Power (W):	160 Watts
ERP (W):	25,651.93	ERP (W):	25,651.93	ERP (W):	25,651.93
Antenna A2 MPE %:	6.85%	Antenna B2 MPE %:	6.85%	Antenna C2 MPE %:	6.85%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	116 feet	Height (AGL):	116 feet	Height (AGL):	116 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	13,259.22	ERP (W):	13,259.22	ERP (W):	13,259.22
Antenna A3 MPE %:	5.04%	Antenna B3 MPE %:	5.04%	Antenna C3 MPE %:	5.04%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	15.33%
Verizon	32.75%
Metro PCS	0.86%
Sprint	0.43%
AT&T	2.23%
<b>Site Total MPE % :</b>	<b>51.60%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	15.33%
T-Mobile Sector B Total:	15.33%
T-Mobile Sector C Total:	15.33%
Site Total MPE % :	51.60%

T-Mobile Maximum MPE Power Values (Sector A)							
T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	116.0	10.99	1900 MHz GSM	1000	1.10%
T-Mobile 1900 MHz LTE	2	2056.61	116.0	10.99	1900 MHz LTE	1000	1.10%
T-Mobile 2100 MHz LTE	2	2307.55	116.0	12.33	2100 MHz LTE	1000	1.23%
T-Mobile 2500 MHz LTE	2	6412.98	116.0	34.27	2500 MHz LTE	1000	3.43%
T-Mobile 2500 MHz NR	2	6412.98	116.0	34.27	2500 MHz NR	1000	3.43%
T-Mobile 600 MHz LTE	2	591.73	116.0	3.16	600 MHz LTE	400	0.79%
T-Mobile 600 MHz NR	1	1577.94	116.0	4.22	600 MHz NR	400	1.05%
T-Mobile 700 MHz LTE	2	648.82	116.0	3.47	700 MHz LTE	467	0.74%
T-Mobile 1900 MHz UMTS	2	1101.85	116.0	5.89	1900 MHz UMTS	1000	0.59%
T-Mobile 1900 MHz LTE	2	2203.69	116.0	11.78	1900 MHz LTE	1000	1.18%
T-Mobile 2100 MHz UMTS	2	1294.56	116.0	6.92	2100 MHz UMTS	1000	0.69%
						<b>Total:</b>	<b>15.33%</b>

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

## Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	15.33%
Sector B:	15.33%
Sector C:	15.33%
T-Mobile Maximum MPE % (Sector A):	15.33%
Site Total:	51.60%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **51.60%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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