



December 11th, 2020

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

RE: **Notice of Exempt Modification for T-Mobile:
806352 - T-Mobile Site ID: CT11851C
126 Ledge Road, Darien, CT 06820
Latitude: 41° 4' 20.75" / Longitude: -73° 28' 41.40"**

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) total antennas at the 110-foot mount on the existing 117-foot Monopole Tower, located at 126 Ledge Road, Darien, CT. The tower is owned by Crown Castle and the property is owned by the Town of Darien. T-Mobile now intends to replace three (3) existing antennas with three (3) new 2500 MHz antennas. 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. T-Mobile is also proposing mount modifications as shown on the enclosed mount analysis.

Planned Modifications:

Tower:

Remove and Replace:

(3) AIR21_KRC118023-1_B2A_B4P 1900/2100 MHz Antenna (**REMOVE**) - (3) AIR6449_B41 5G Antenna 2500 MHz (**REPLACE**)

Install New:

(3) Radio 4415 B25
(3) SDX1926Q-43 Diplexers
(1) RMQP-396 and HRK12 SitePro1 Platform mount with support rails

Existing to Remain:

(3) AIR32_B66A_B2A Antenna 1900/2100 MHz
(3) RFDS APXVAARR24_43-U-NA20 Antenna 600/700 MHz
(3) TMA

Ground:

Remove:

(1) 3106 equipment cabinet

Install New:

(1) 6160 SSC cabinet

(1) B160 Battery cabinet

(1) BB 6630

(1) BB 6648

(1) 1-5/8" HCS feedline

(1) PSU 4813

Existing to Remain:

(1) 6102 Equipment cabinet

This facility was approved by the Connecticut Siting Council in Petition No. 155 on December 20, 1992. This approval included conditions that this exempt modification complies with.

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 Jayme Stevenson, First Selectman, Town of Darien, and Jeremy Ginsburg, Planning and Zoning Director for the Town of Darien. The First Selectman's notice shall serve as notification of the property owner in this instance.

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

Melanie A. Bachman

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

Sincerely,



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

Attachments

cc:

Jayne Stevenson, First Selectman
Town of Darien
Room 202, Town Hall
2 Renshaw Road
Darien, CT 06820
203.656.7300

Jeremy Ginsberg, Planning & Zoning Director
Planning and Zoning Office
Room 211, Town Hall
2 Renshaw Road
Darien, CT 06820
203.656.7300

Zajac, Richard

From: Zajac, Richard
Sent: Friday, December 11, 2020 10:50 AM
To: jstevenson@darienct.gov
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 126 Ledge Rd.pdf

Good morning Ms. Stevenson,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 126 Ledge Road in Darien.

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

From: Zajac, Richard
Sent: Friday, December 11, 2020 10:51 AM
To: 'jginsberg@darienct.gov'
Subject: Connecticut Siting Council exempt modification application notification
Attachments: CSC Exempt Modification Application - 126 Ledge Rd.pdf

Good morning Mr. Ginsberg,
Please see the attached application to the Connecticut Siting Council regarding antenna work on the existing cell tower located at 126 Ledge Road in Darien.

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

Exhibit A

Original Facility Approval

DOCKET NO. 155 - An application of Metro Mobile CTS of Fairfield County, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telephone telecommunications tower, antennas, associated equipment, and building on a 17-acre parcel of land used and owned by the Town of Darien as the Town waste transfer station off Ledge Road, with an alternative site on a 1 acre parcel owned by the Noroton Heights Fire Department, Inc., located immediately adjacent to the Noroton Heights Fire Department Building at 209 Noroton Avenue in the Town of Darien, Connecticut.

Connecticut

Siting

Council

December 30, 1992

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact, and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications tower and equipment building at the proposed Darien, Connecticut, prime site including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need as provided by section 16-50k of the Connecticut General Statutes (CGS), be issued to Metro Mobile CTS of Fairfield County, Inc. (Metro Mobile), for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building within property owned by the Town of Darien located on Ledge Road, Darien, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The self-supporting monopole tower shall be no taller than necessary to provide the proposed communications service and the tower shall not exceed a total height of 113 feet above ground level (AGL), with antennas and appurtenances.

2. The Certificate holder shall prepare a Development and Management (D&M) plan for this site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall include detailed plans of the tower, tower foundation, equipment building, access road including all upgrades, utility connection, security fence, and detailed plans for drainage, erosion, and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sedimentation Control. In addition, the D&M plan shall include detailed landscaping plans for the facility site, with options to provide landscaping on the Town property boundary north of the site and on the Middlesex Common Condominium property subject to their approval.
3. The Certificate Holder shall comply with any existing and future radio frequency (RF) standard promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted herein shall be brought into compliance with such standards.
4. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. If the facility does not initially provide, or permanently ceases to provide cellular or other services following completion of construction, this Decision and Order shall be void, and the Certificate holder shall dismantle the tower and remove all associated equipment or reapplication for any continued or new use shall be made to the Council before any such use is made.
7. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Norwalk Hour, Stamford Advocate, and Darien News-Review.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with section 16-50j-17 of the Regulations of State Agencies.

The parties and intervenors to this proceeding are:

APPLICANT	ITS REPRESENTATIVES
Metro Mobile CTS of Fairfield County, Inc.	Metro Mobile CTS of Fairfield County, Inc. 20 Alexander Drive Wallingford, CT 06492 Attn: David S. Malko, P.E. Manager, Engineering and Regulatory Services
	Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597 Attn: Earl W. Phillips, Jr., Esq. Charles R. Wolfe, Esq. Henry H. Sprague, III, Esq.
INTERVENOR	ITS REPRESENTATIVE
The Springwvich Cellular Limited Partnership	Peter J. Tyrrell Senior Attorney SNET Cellular, Inc. 227 Church Street Room 1021 New Haven, CT 06506
PARTY	ITS REPRESENTATIVE
Middlesex Common Condominium Association, Inc.	Rebecca Oldfield Smith 53 Hale Lane Darien, Connecticut 06820
INTERVENOR	
Bruce Fletcher 236 Noroton Avenue Darien, Connecticut 06820	
FOC 6689E	

Exhibit B

Property Card

Profile

Parcel:	29014	Land Use Code:	MUNICIPAL
Alternate ID:	39 20&21		
Address:	126 LEDGE ROAD	NBHD:	1032
Owner:	TOWN OF DARIEN PUBLIC WORKS GARAGE	Land Acres:	20.4
Mailing Address:	C/O DPW 2 RENSHAW ROAD DARIEN CT 06820		

Value Summary:

Appraised Land:	7,330,400	Assessed Land:	5,131,280
Appraised Building:	4,908,900	Assessed Building:	3,436,230
Appraised Total:	12,239,300	Assessed Total:	8,567,510

Primary Residential Card:

Card:	Half Baths:	Fireplace Prefab:
Stories:	HT/AC:	Fireplace OP/ST: /
Use:	Fuel:	Basement Gar.:
Type:	System:	Grade:
Year Built:	Attic:	Cond (CDU):
Year Remodeled:	Basement:	% Complete:
Total Rooms:	RecRm-Not in Liv SF:	Family Room:
Bedrooms:	Finsh Bsmt-In Liv SF:	Ext. Material:
Full Baths:	Square Feet:	

Commercial Card:

Year Built:	1980	Stories:	332 - AUTO SERVICE
Eff. Yr. Built:	2010	Gross Flr. Area:	39102
Units:	1	Grade:	A-

Land:

Classification	Type:	Acres	SF
PRIMARY	A-ACREAGE	10	435600
UNDEVELOPED	A-ACREAGE	10.4	453024

Other Items:

Code	Description	Year Built	Square Ft.
RG6	GARAGE-1S FIN	2013	1100
TT4	TOWER	2007	117
PA1	ASPHALT OR	1985	35000
TT4	TOWER	2016	110

RS3	BRICK/STN	2000	90
SH3	FINISHED	2007	720
FN1	FENCE CHAIN	1980	4200

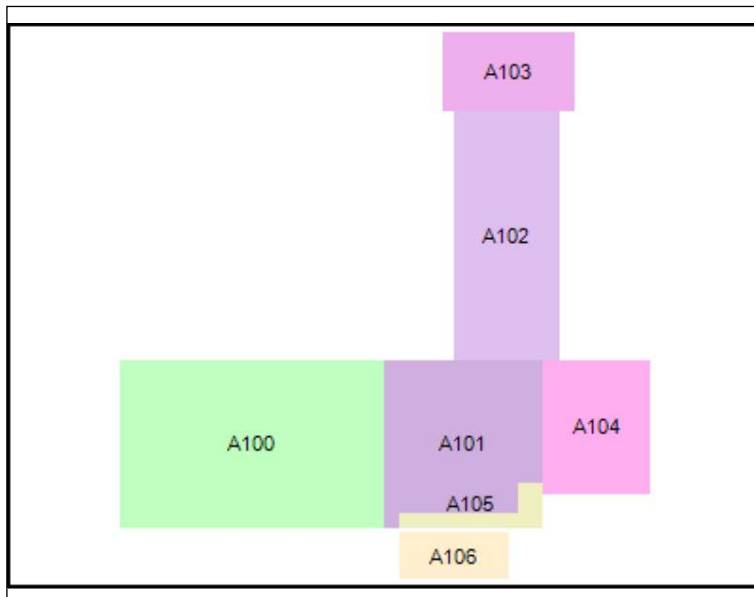
Sales History:

Date	Book-Page	Grantee	Amount
1800-JAN-01	0000--0000	TOWN OF DARIEN	

PHOTO



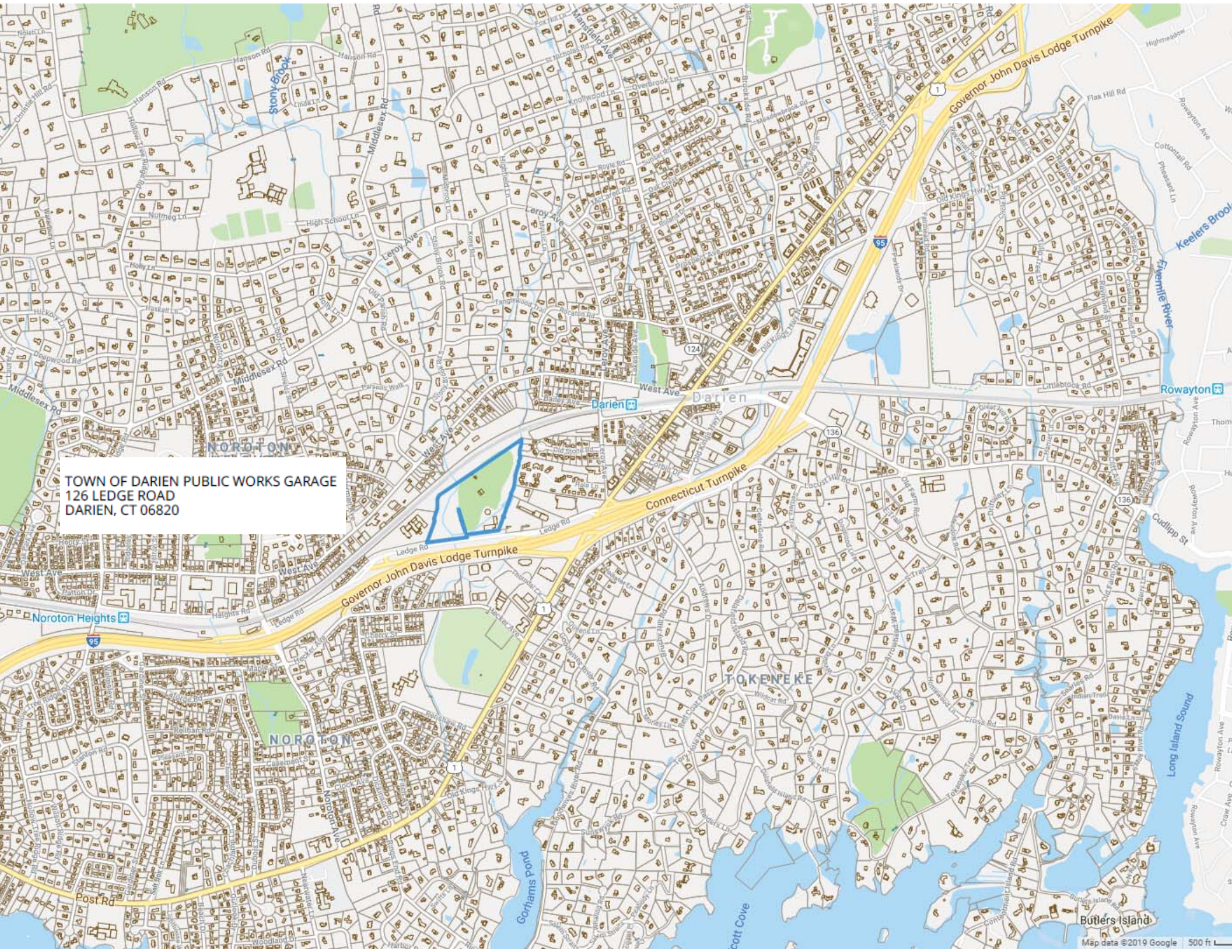
SKETCH



Sketch Legend

- 6 A100 - VB1:1S/B 7770 Sq. Ft.
- 7 A101 - VB1:1S/B 4130 Sq. Ft.
- 8 A102 - VB1:1S/B 4576 Sq. Ft.
- 9 A103 - VB1:1S/B 1815 Sq. Ft.
- 10 A104 - VS1:1S 2520 Sq. Ft.
- 11 CANPY RF/SLB - CP6:CANOPY ROOF/SLAB 490 Sq. Ft.
- 12 CANPY RF-AVG - CP8:CANOPY RF-AVERAGE 920 Sq. Ft.
- 1 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 7770 Sq. Ft.
- 2 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 7770 Sq. Ft.
- 3 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 8706 Sq. Ft.
- 4 MULTI-USE OF - 082:MULTI-USE OFFICE 4130 Sq. Ft.
- 5 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 4576 Sq. Ft.
- 6 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 2520 Sq. Ft.
- 8 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 1815 Sq. Ft.
- 9 AUTO PARTS/S - 047:AUTO PARTS/SERVICE 1815 Sq. Ft.
- 2 FENCE CHAI - FN1:FENCE CHAIN 4200 Sq. Ft.
- 3 BR/ST SHED - RS3:BRICK/STN UTILITY SHED 90 Sq. Ft.
- 4 GAR-1S FIN - RG6:GARAGE-1S FIN 1100 Sq. Ft.
- 5 TOWER CELL - TT4:TOWER CELLULAR 117 Sq. Ft.
- 6 METAL SHED - SH3:FINISHED METAL SHED 720 Sq. Ft.
- 2 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 144 Sq. Ft.
- 1 ASPH PAVE - PA1:ASPHALT OR BLACKTOP PAVING 35000 Sq. Ft.
- 1 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 196 Sq. Ft.
- 7 TOWER CELL - TT4:TOWER CELLULAR 110 Sq. Ft.

3 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 120
Sq. Ft.
4 OVRHD DR - OD1:OVERHEAD DR-WOOD/MTL 160
Sq. Ft.



TOWN OF DARIEN PUBLIC WORKS GARAGE
126 LEDGE ROAD
DARIEN, CT 06820

Exhibit C

Construction Drawings

T-Mobile

T-MOBILE SITE NUMBER: CT11851C
T-MOBILE SITE NAME: CT851/CROWN DARIEN_MP
T-MOBILE PROJECT: ANCHOR

BUSINESS UNIT #: 806352
SITE ADDRESS: 126 LEDGE ROAD
 DARIEN, CT 06820
COUNTY: FAIRFIELD
SITE TYPE: MONOPOLE
TOWER HEIGHT: 117'-0"

T-Mobile
 12920 SE 38TH STREET
 BELLEVUE, WA 98006

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

Kimley»Horn
 COA #PEC.0000738
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C
BU #: 806352
BRG 302 943052
 126 LEDGE ROAD
 DARIEN, CT 06820
 EXISTING 117'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	11/03/20	WRS	ISSUED FOR CONSTR.	MCK



11/03/20
 Exp. 01/31/21

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 UNLESS THEY ARE ACTING UNDER THE DIRECTION
 OF A LICENSED PROFESSIONAL ENGINEER,
 TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-1
REVISION: 0

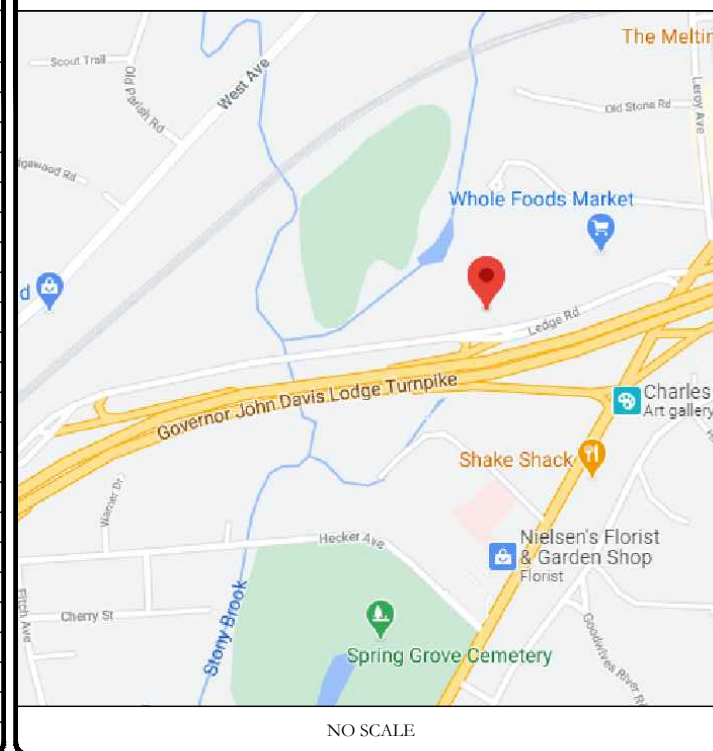
SITE INFORMATION

CROWN CASTLE USA INC. BRG 302 943052
SITE NAME:
SITE ADDRESS: 126 LEDGE ROAD
 DARIEN, CT 06820
COUNTY: FAIRFIELD
MAP/PARCEL #: 39 20-1
AREA OF CONSTRUCTION: EXISTING
LATTITUDE: 41° 04' 20.75" N
LONGITUDE: 73° 28' 41.40" W
LAT/LONG TYPE: NAD83
GROUND ELEVATION: 73'
CURRENT ZONING: SB
JURISDICTION: FRANKLIN COUNTY
OCCUPANCY CLASSIFICATION: U
TYPE OF CONSTRUCTION: IIB
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER: METRO MOBILE CTS OF FAIRFIELD COUNTY INC
 PMB 353
 MCMURRAY, PA 15317
TOWER OWNER: CROWN CASTLE
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
CARRIER/APPLICANT: T-MOBILE
 12920 SE 38TH STREET
 BELLEVUE, WA 98006
ELECTRIC PROVIDER: NORTHEAST UTILITIES
 800-286-2000
TELCO PROVIDER: AT&T
 866-620-6900

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	EXISTING EQUIPMENT PLAN
C-1.3	FINAL EQUIPMENT PLAN
C-2	TOWER ELEVATION & ANTENNA PLANS
C-3	FINAL EQUIPMENT SCHEDULE
C-4	EQUIPMENT SPECS
C-5	EQUIPMENT SPECS
C-6	EQUIPMENT SPECS
E-1	PANEL SCHEDULE & ONE-LINE DIAGRAM
G-1	GROUNDING DETAILS

LOCATION MAP



SITE PHOTO



PROJECT TEAM

A&E FIRM: KIMLEY-HORN & ASSOCIATES, INC. COA: PEC.0000738
 3875 EMBASSY PKWY, SUITE 280
 AKRON, OH 44333
 KEVIN.CLEMENTS@KIMLEY-HORN.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS: 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065
 CHRISTIAN HARRINGTON - PROJECT MANAGER
 (781) 970-0054
 CHRISTIAN.HARRINGTON@CROWNCastle.COM

SCOPING NOTES

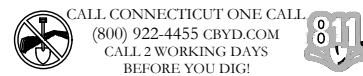
- GROUND SCOPE OF WORK:**
 - REMOVE (1) 3106 CABINET
 - INSTALL (1) ERICSSON 6x12 HCS (1-5/8")
 - INSTALL (1) BB 6630
 - INSTALL (1) BB 6648
 - INSTALL (1) PSU 4813
 - INSTALL (1) 6160 SSC CABINET
 - INSTALL (1) B160 BATTERY CABINET
- TOWER SCOPE OF WORK:**
 - REMOVE EXISTING SECTOR FRAME MOUNTS
 - REMOVE (3) ANTENNAS
 - INSTALL NEW PLATFORM MOUNT
 - INSTALL (3) ANTENNAS
 - INSTALL (3) DIPLEXERS
 - INSTALL (3) RRHS
- ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11X17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

APPLICABLE CODES/REFERENCE DOCUMENTS

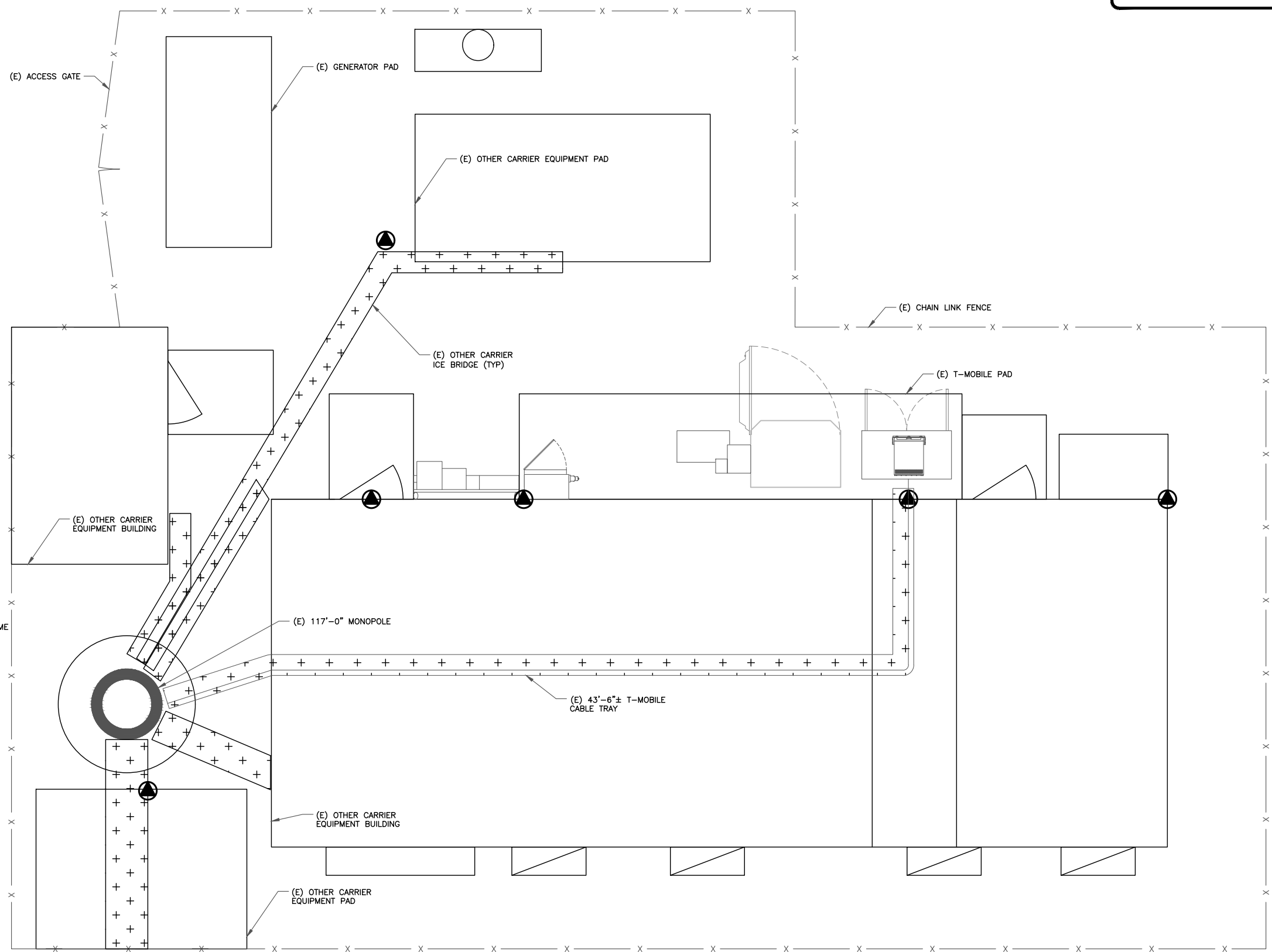
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2015 IBC (2018 CSBC)
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:
 STRUCTURAL ANALYSIS: BY OTHERS
 DATED:
 MOUNT ANALYSIS: BY B+T GROUP (PROJECT #: 145684.001.01.R1)
 DATED: 10/20/2020
 RFDS REVISION: 7
 DATED: 09/23/2020



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



T-Mobile
 12920 SE 38TH STREET
 BELLEVUE, WA 98006

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

Kimley»Horn
 COA #PEC.0000738
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: 806352
 BRG 302 943052

126 LEDGE ROAD
 DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

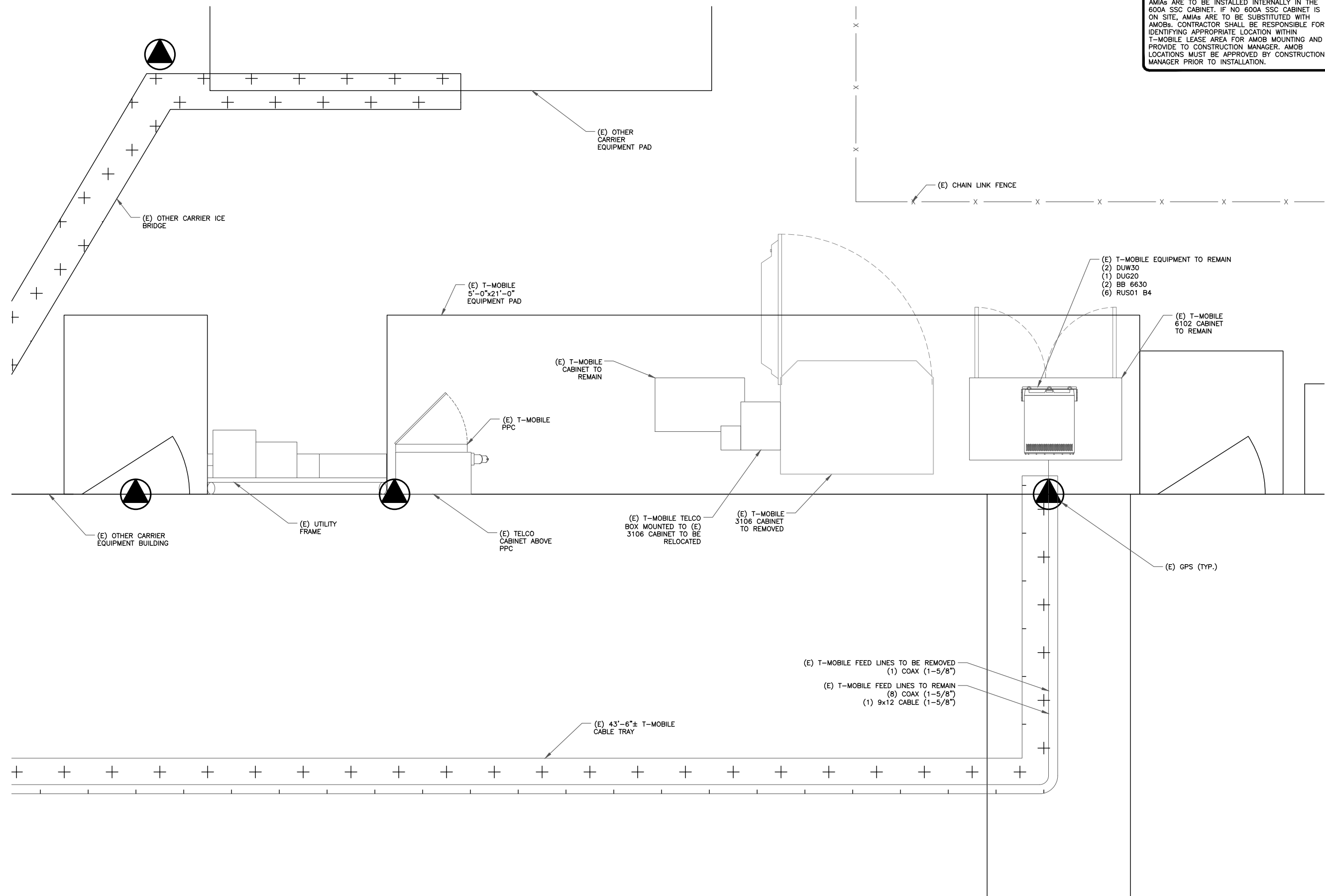
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11/03/20
 Exp. 01/31/21

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1 OVERALL SITE PLAN
 SCALE: 3/8"=1'-0" (FULL SIZE)
 3/16"=1'-0" (11x17)

SHEET NUMBER: **C-1.1** REVISION: **0**



INSTALLER NOTE:
 AMIAs ARE TO BE INSTALLED INTERNALLY IN THE 600A SSC CABINET. IF NO 600A SSC CABINET IS ON SITE, AMIAs ARE TO BE SUBSTITUTED WITH AMOBs. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE LOCATION WITHIN T-MOBILE LEASE AREA FOR AMOB MOUNTING AND PROVIDE TO CONSTRUCTION MANAGER. AMOB LOCATIONS MUST BE APPROVED BY CONSTRUCTION MANAGER PRIOR TO INSTALLATION.

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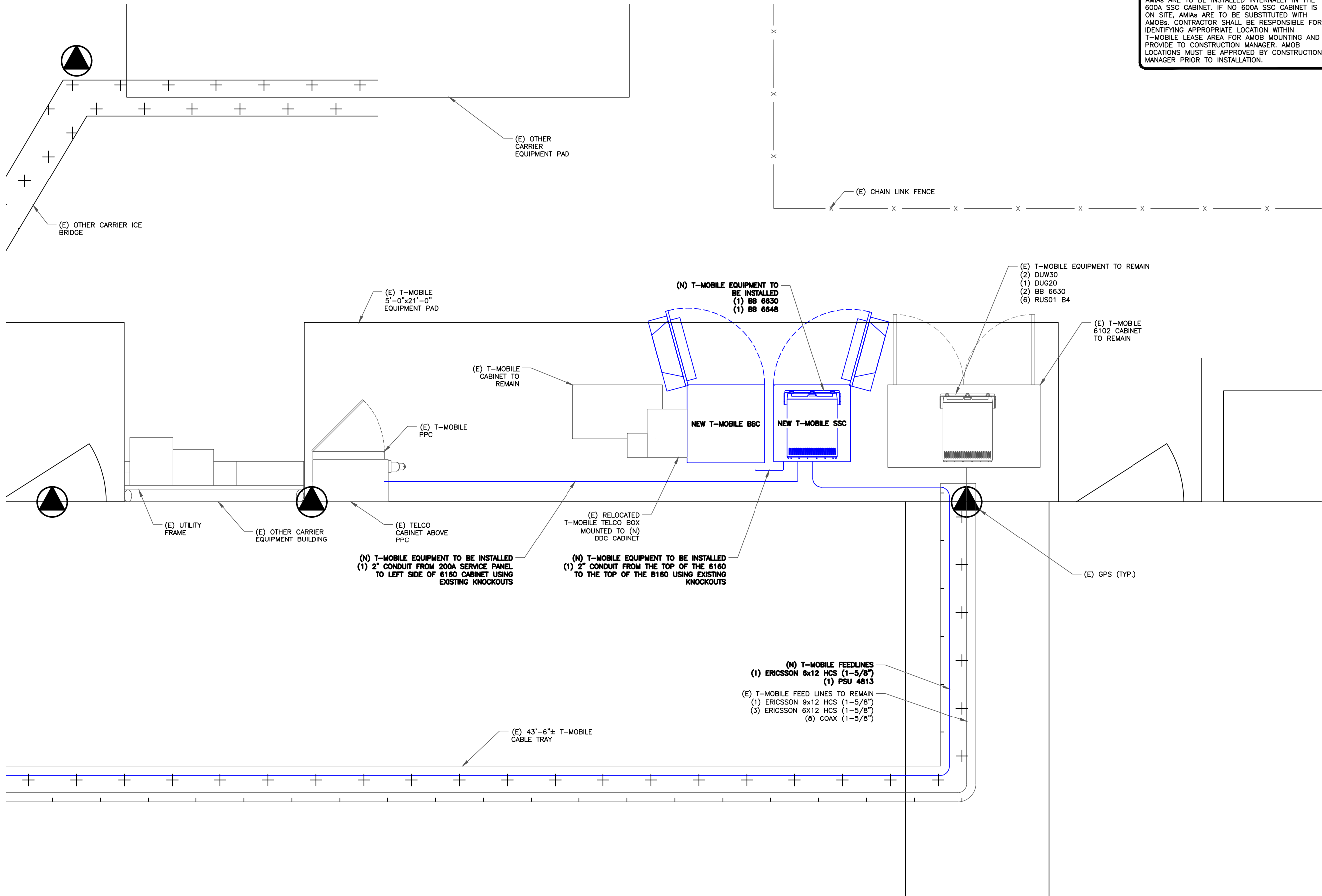
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INSTALLER NOTE:
 AMIAs ARE TO BE INSTALLED INTERNALLY IN THE 600A SSC CABINET. IF NO 600A SSC CABINET IS ON SITE, AMIAs ARE TO BE SUBSTITUTED WITH AMOBs. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING APPROPRIATE LOCATION WITHIN T-MOBILE LEASE AREA FOR AMOB MOUNTING AND PROVIDE TO CONSTRUCTION MANAGER. AMOB LOCATIONS MUST BE APPROVED BY CONSTRUCTION MANAGER PRIOR TO INSTALLATION.



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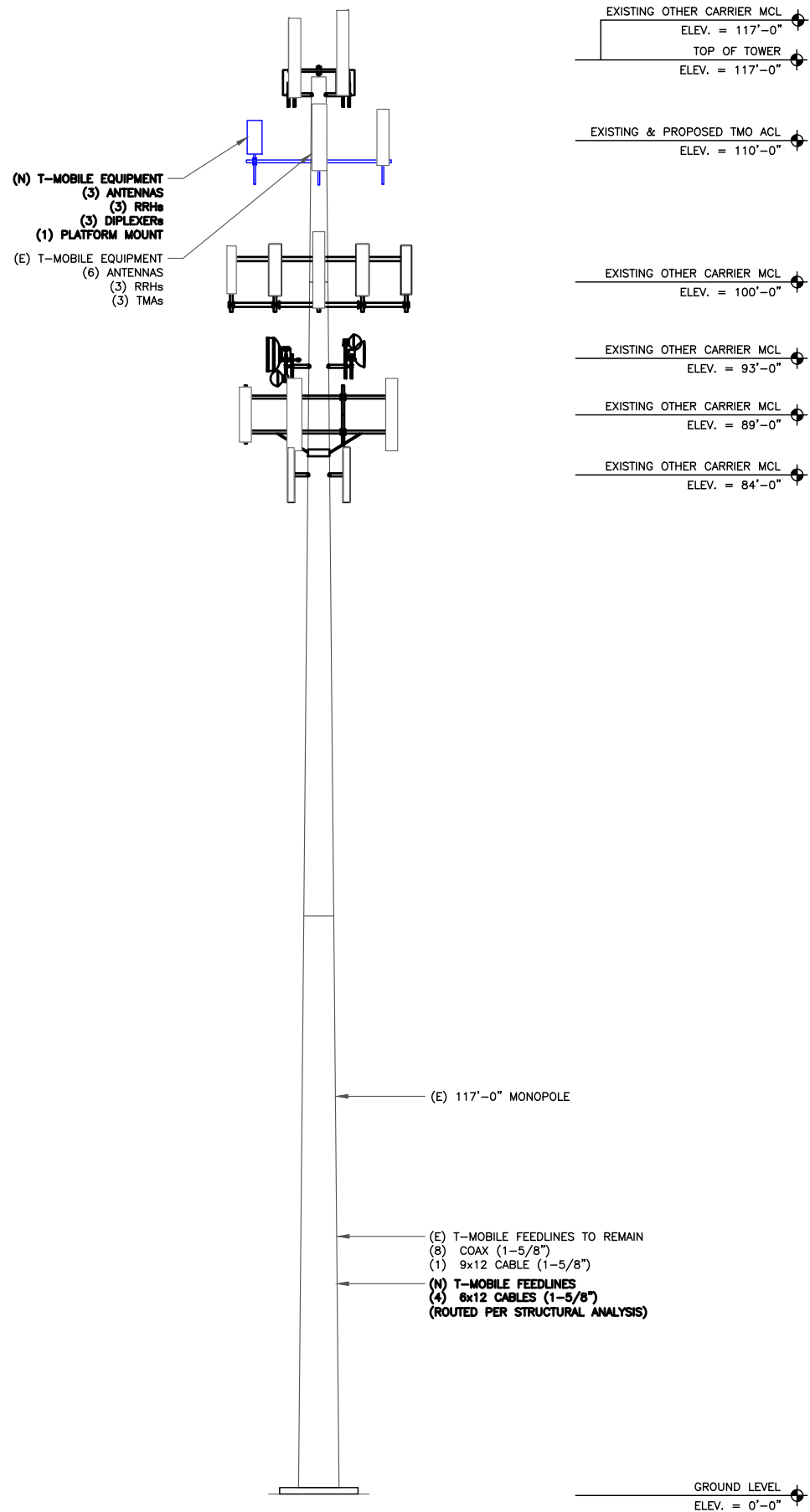
EXISTING 117'-0" MONOPOLE

ISSUED FOR:

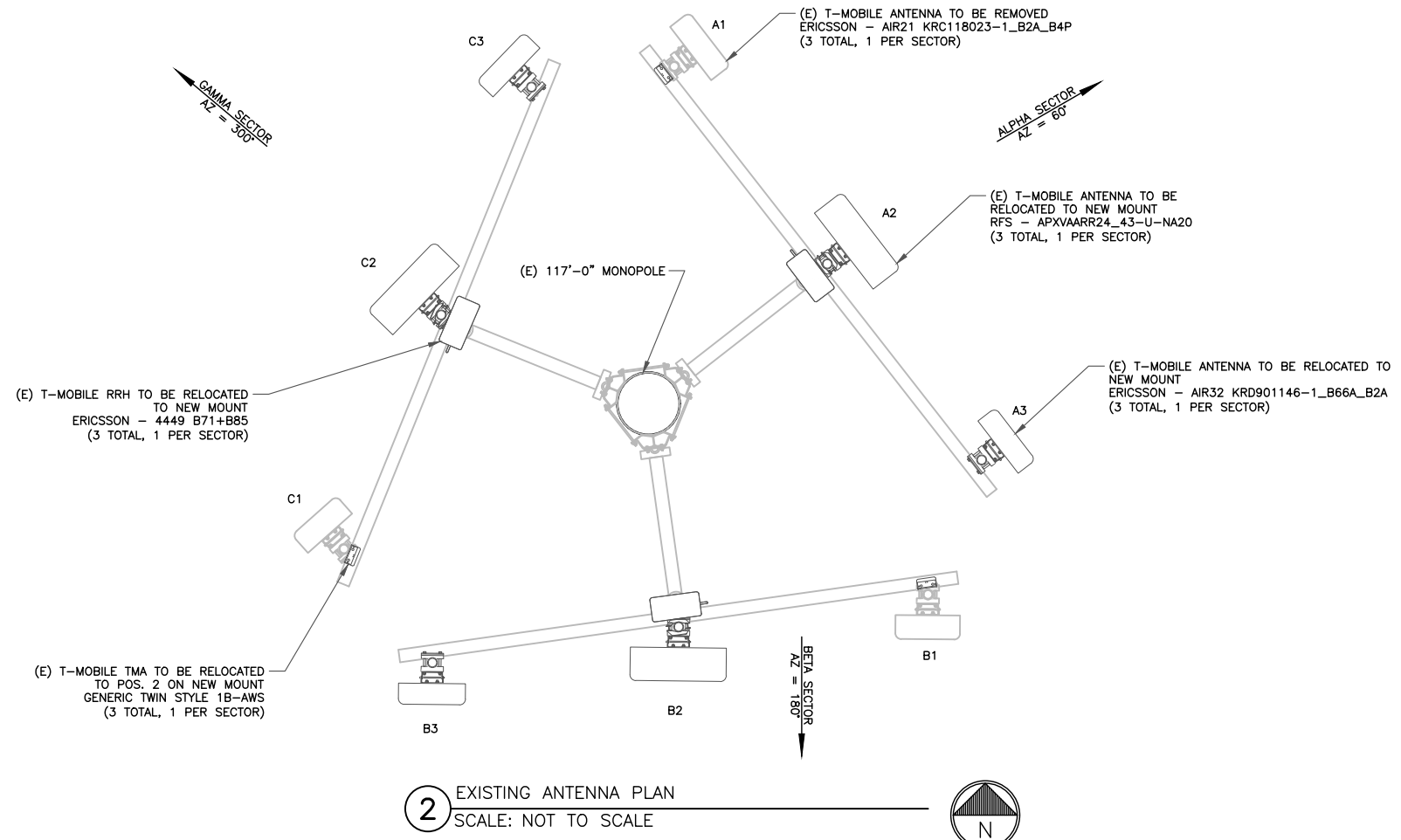
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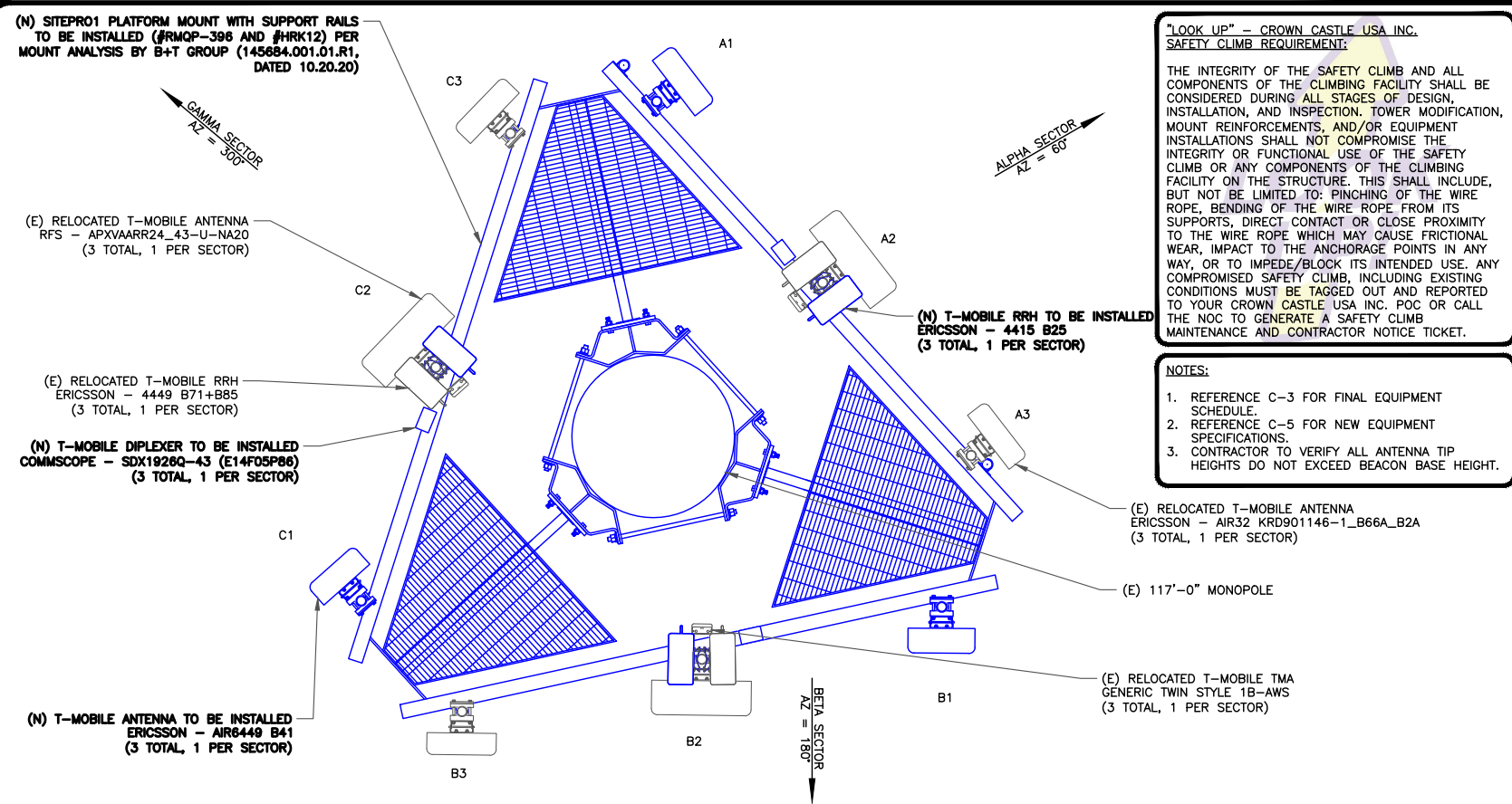
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1 FINAL ELEVATION
 SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
 SCALE: NOT TO SCALE



3 FINAL ANTENNA PLAN
 SCALE: NOT TO SCALE

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ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	11/03/20	WRS	ISSUED FOR CONSTR.	MCK

STATE OF CONNECTICUT
 BRUCE BREWER
 29510
 PROFESSIONAL ENGINEER

11/03/20
 Exp. 01/31/21

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

**FINAL EQUIPMENT SCHEDULE
(VERIFY WITH CURRENT RFDS)**

ALPHA																			
POSITION	ANTENNA				RADIO				DIPLEXER		TMA		SURGE PROTECTION		CABLES				
	TECH.	STATUS/MANUFACTURER MODEL	AZIMUTH	RAD CENTER	QTY.	STATUS/MODEL	LOCATION	QTY.	STATUS	LOCATION	QTY.	STATUS	QTY.	STATUS/MODEL	QTY.	STATUS/TYPE	SIZE	LENGTH	
A1	L2500, N2500	(N) AIR6449 B41	60°	110'-0"	-	-	-	-	-	-	-	-	-	-	1	(N) 6X12 HCS	1-5/8"	160'-0"	
A2	N600, L600, L700, L1900, U2100	(E) RFS APXVAARR24_43-U-NA20	60°	110'-0"	1	(E) 4449 B71+B85	TOWER	1	(N) COMMSCOPE SDX1926Q-43 (E14F05P86)	TOWER	1	(E)	-	-	8	(E) COAX	1-5/8"	160'-0"	
					1	(N) 4415 B25													
A3	G1900, L1900, L2100	(E) ERICSSON AIR32 KRD901146-1_B66A_B2A	60°	110'-0"	-	-	-	-	-	-	-	-	-	-	3 1	(E) 6X12 HCS (E) 9X18 HCS	1-5/8" 1-5/8"	160'-0"	
BETA																			
B1	L2500, N2500	(N) AIR6449 B41	180°	110'-0"	-	-	-	-	-	-	-	-	-	-	-	SHARED	-	-	
B2	N600, L600, L700, L1900, U2100	(E) RFS APXVAARR24_43-U-NA20	180°	110'-0"	1	(E) 4449 B71+B85	TOWER	1	(N) COMMSCOPE SDX1926Q-43 (E14F05P86)	TOWER	1	(E)	-	-	-	SHARED	-	-	
					1	(N) 4415 B25													
B3	G1900, L1900, L2100	(E) ERICSSON AIR32 KRD901146-1_B66A_B2A	180°	110'-0"	-	-	-	-	-	-	-	-	-	-	-	SHARED	-	-	
GAMMA																			
C1	L2500, N2500	(N) AIR6449 B41	300°	110'-0"	-	-	-	-	-	-	-	-	-	-	-	SHARED	-	-	
C2	N600, L600, L700, L1900, U2100	(E) RFS APXVAARR24_43-U-NA20	300°	110'-0"	1	(E) 4449 B71+B85	TOWER	1	(N) COMMSCOPE SDX1926Q-43 (E14F05P86)	TOWER	1	(E)	-	-	-	SHARED	-	-	
					1	(N) 4415 B25													
C3	G1900, L1900, L2100	(E) ERICSSON AIR32 KRD901146-1_B66A_B2A	300°	110'-0"	-	-	-	-	-	-	-	-	-	-	-	SHARED	-	-	
															0	(E) UNUSED	-	-	

NOTE:
(E) - EXISTING
(N) - NEW

T-Mobile
12920 SE 38TH STREET
BELLEVUE, WA 98006

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

Kimley Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

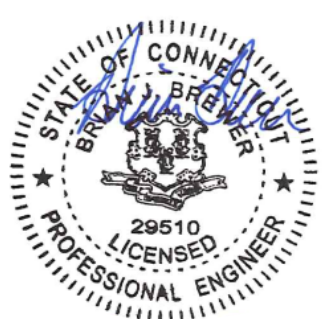
BU #: 806352
BRG 302 943052

126 LEDGE ROAD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

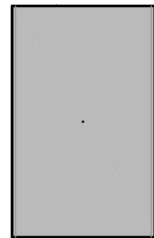
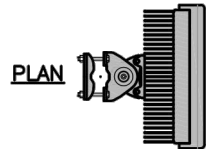
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0	11/03/20	WRS	ISSUED FOR CONSTR.	MCK


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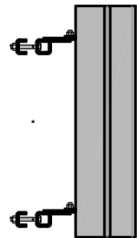
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**L25+N25 ANTENNA
DIMENSIONS**

MODEL #	AIR 6449 B41
MANUF.	ERICSSON
HEIGHT	33.1"
WIDTH	20.5"
DEPTH	8.5"
WEIGHT	103 LBS



FRONT



SIDE

1 ANTENNA SPECIFICATIONS
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

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BELLEVUE, WA 98006

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
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Kimley»Horn
COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: **806352**
BRG **302 943052**

126 LEDGE ROAD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

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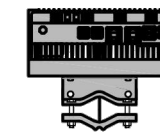
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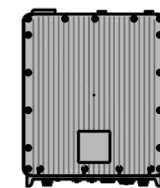
SHEET NUMBER: C-4	REVISION: 0
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1 NOT USED
SCALE: NOT TO SCALE

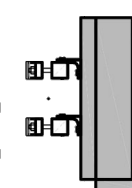
RADIO 4415 DIMENSIONS	
MODEL #	RADIO 4415 B66A RADIO 4415 B25
MANUF.	ERICSSON
WIDTH	13.47"
DEPTH	6.30"
HEIGHT	16.54"
WEIGHT	49.6 LBS



PLAN



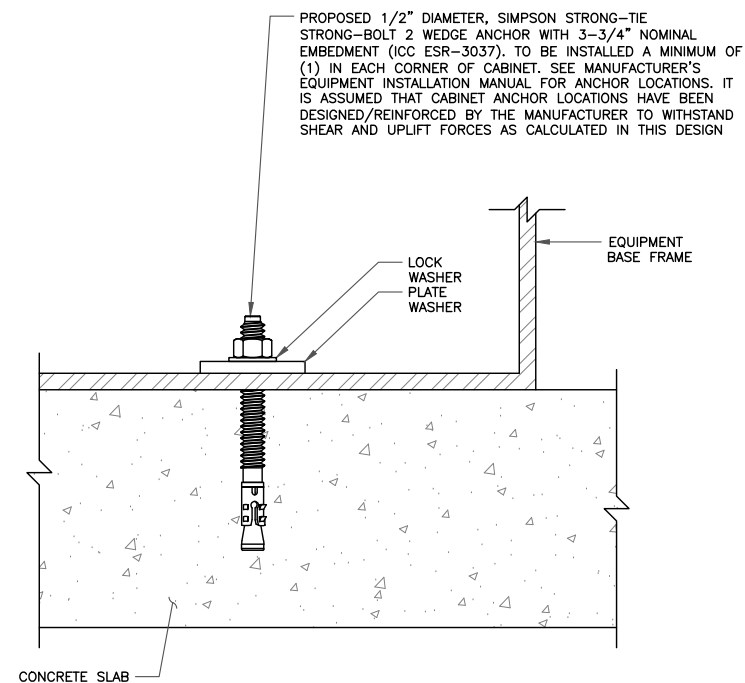
FRONT



SIDE

2 RADIO 4415 B25 DETAIL
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE



4 CABINET ANCHOR DETAIL
SCALE: NOT TO SCALE

T-Mobile

12920 SE 38TH STREET
BELLEVUE, WA 98006

CROWN
CASTLE

3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

Kimley»Horn

COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: 806352
BRG 302 943052

126 LEDGE ROAD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

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SHEET NUMBER: C-5
REVISION: 0

T-MOBILE SITE NUMBER:
CT11851C

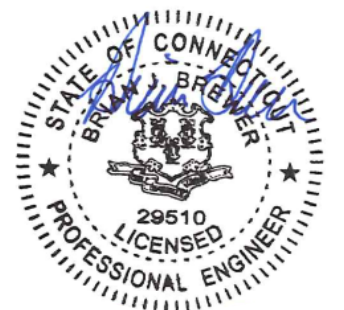
BU #: **806352**
BRG **302 943052**

126 LEDGE ROAD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

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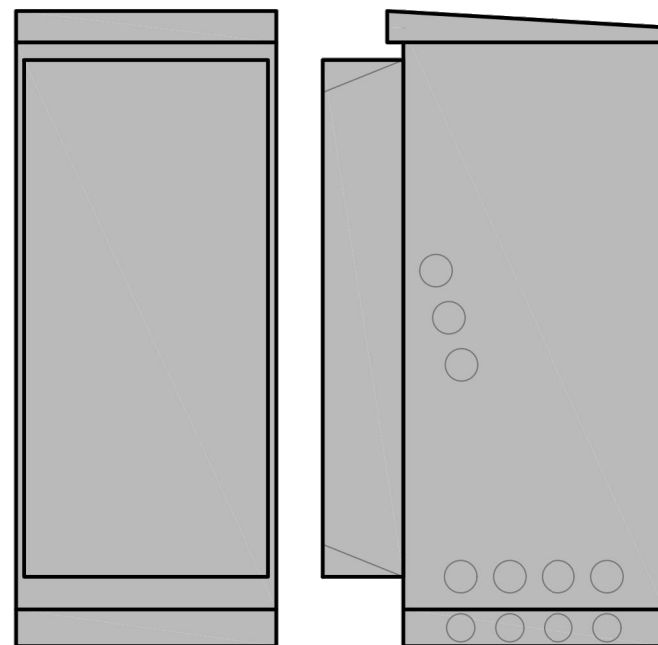
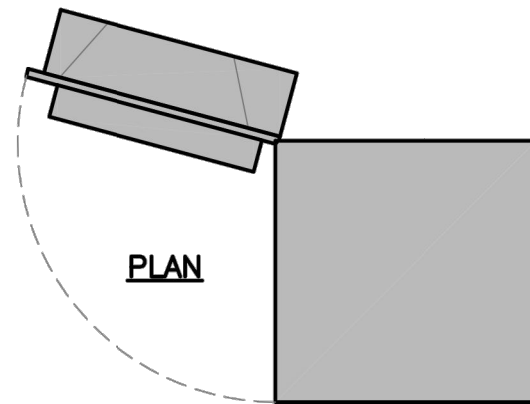


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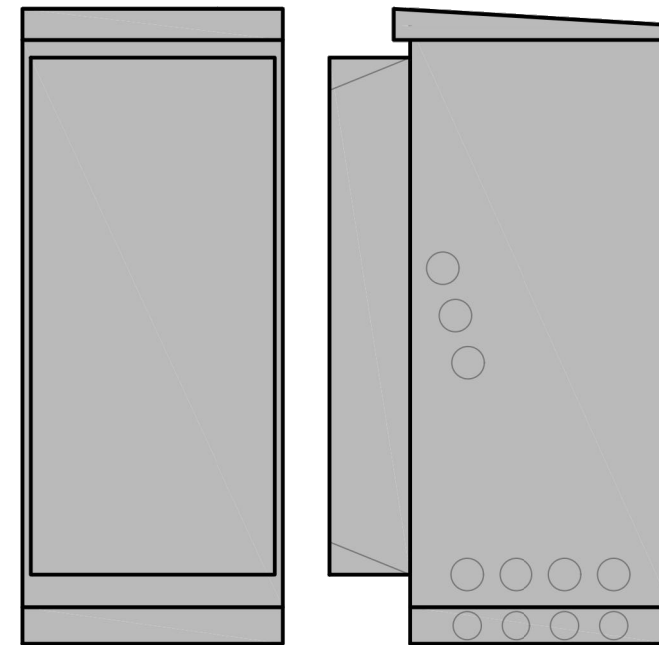
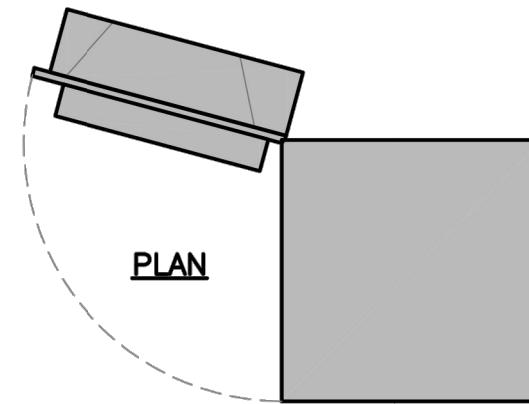
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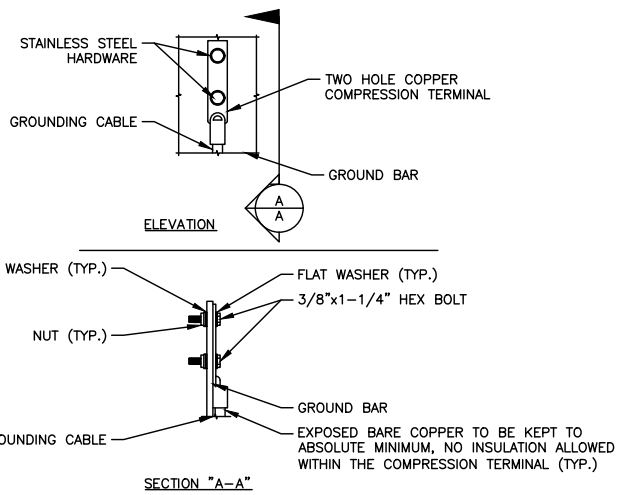
SHEET NUMBER: **C-6** REVISION: **0**

CABINET DIMENSIONS	
MODEL #	6160 SITE SUPPORT CABINET
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	25.6"
DEPTH (W/ DOOR)	33.5"
WEIGHT	1500 LBS MAX
(INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	



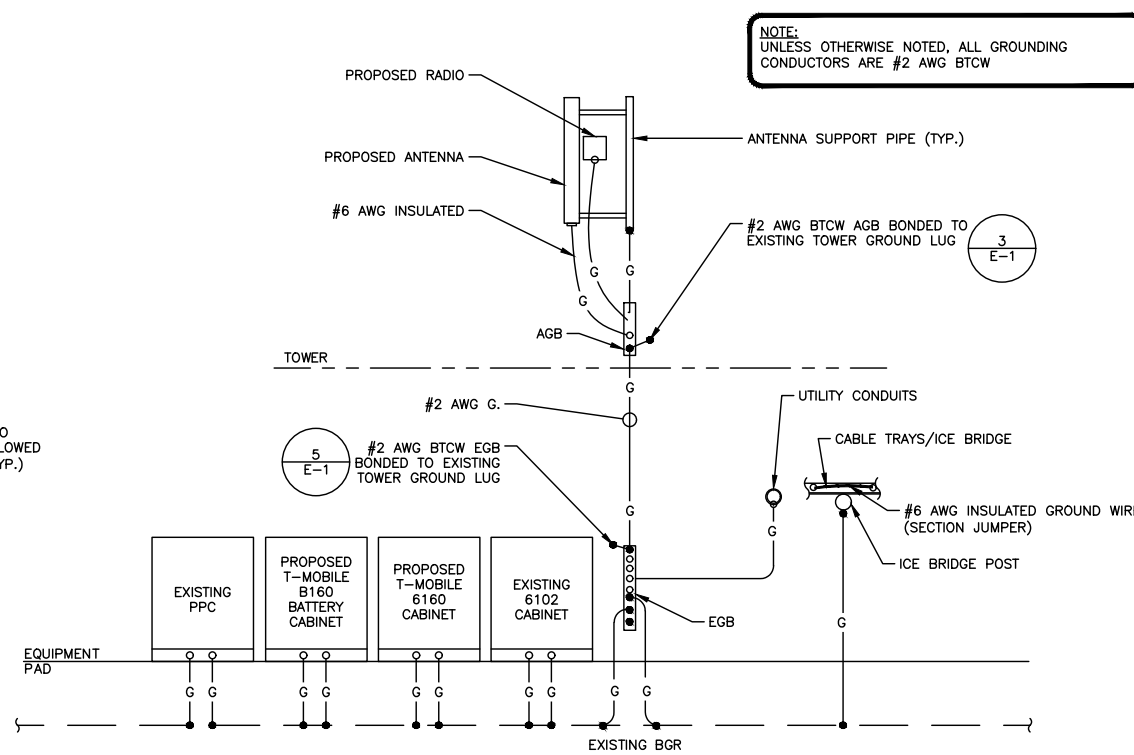
CABINET DIMENSIONS	
MODEL #	B160 BATTERY CABINET
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH (W/ DOOR)	34"
WEIGHT	2000 LBS MAX
(INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	





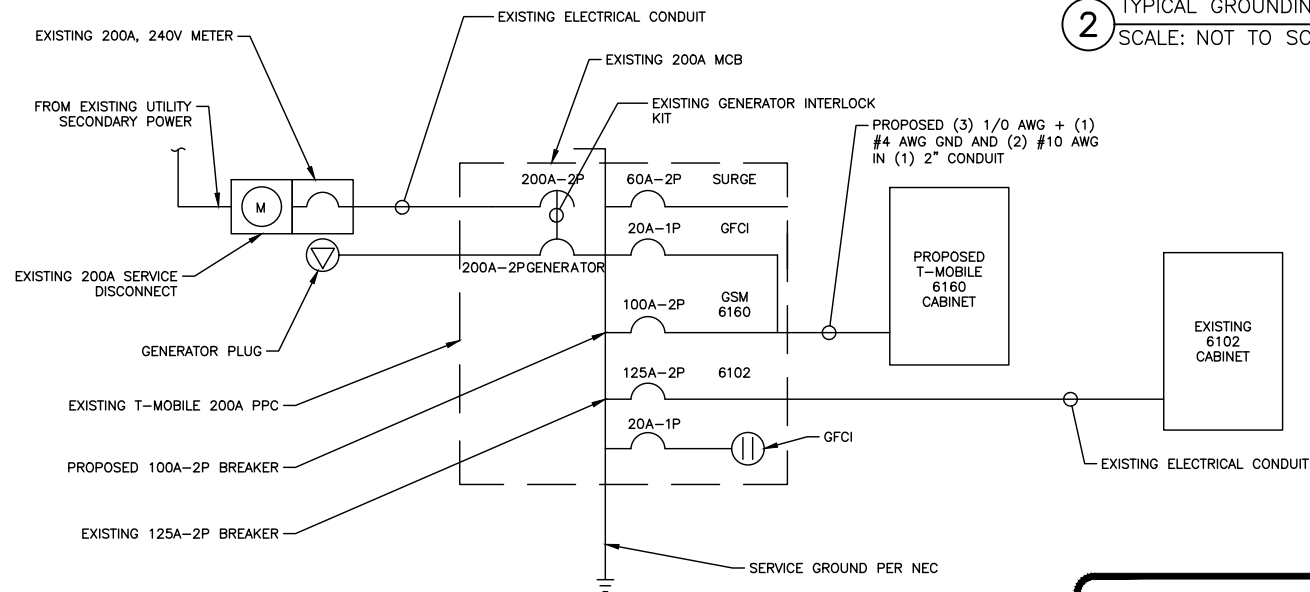
- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELD DOWNLEADS FROM UPPER/AGB/EGB, LOWER EGB, AND MGB.

1 TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: NOT TO SCALE



NOTE:
UNLESS OTHERWISE NOTED, ALL GROUNDING
CONDUCTORS ARE #2 AWG BTCW

2 TYPICAL GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE



4 ONE LINE POWER DIAGRAM
SCALE: NOT TO SCALE

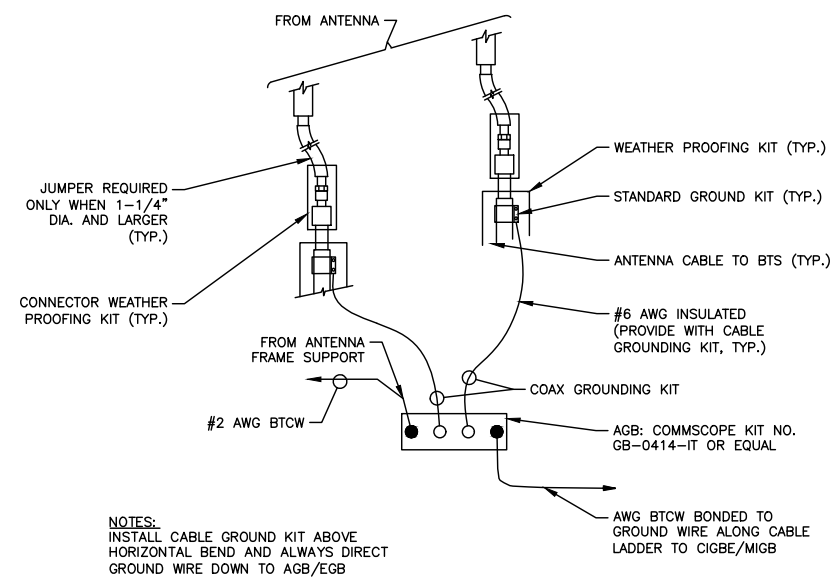
NOTES:

- LOAD STUDY REQUIRED TO CONFIRM AVAILABLE CAPACITY PRIOR TO BREAKER UPGRADE
- GC TO REPLACE LOSS OF COMMERCIAL POWER RELAY CURRENTLY INSTALLED

ELECTRICAL LEGEND

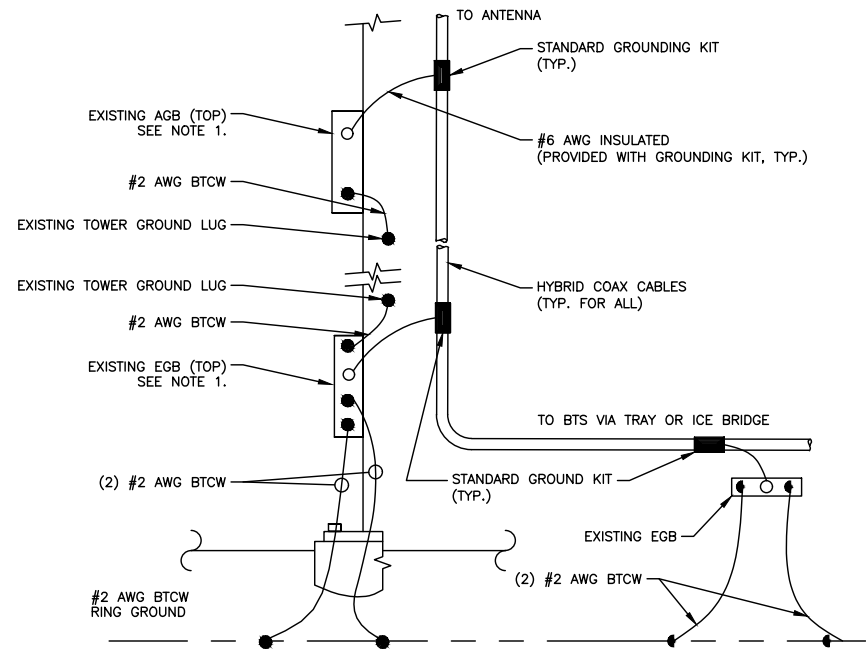
A	AMPERE	V	VOLT
KWH	KILOWATT - HOUR	C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT	BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTES OTHERWISE)
G	GROUND	⊕	GROUND
MGB	MASTER GROUND BAR	○	MECHANICAL CONNECTION
AGB/EGB	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR	⊕	CADWELD CONNECTION
— G —	GROUND COPPER WIRE, SIZE AS NOTED	—	EXPOSED WIRING
—	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)	⊕	5/8" x 6' COPPER CLAD STAINLESS STEEL GROUND ROD
⊕	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION	PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL		

- ELECTRICAL & GROUNDING NOTES:
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
 - ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
 - THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
 - GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
 - ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
 - RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
 - ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
 - RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
 - RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
 - ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
 - GROUNDING SHALL COMPLY WITH NEC ART. 250.
 - GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.



NOTES:
INSTALL CABLE GROUND KIT ABOVE
HORIZONTAL BEND AND ALWAYS DIRECT
GROUND WIRE DOWN TO AGB/EGB

3 GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: NOT TO SCALE



- NOTES:
- NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER. ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE ADDITIONAL AGB/EGB AS REQUIRED.
 - A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

5 TOWER BOTTOM CABLE GROUNDING DETAIL
SCALE: NOT TO SCALE

- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTION TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CAD WELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLES GROUND KITS, AND ALIA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
- TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
- BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

T-Mobile
12920 SE 38TH STREET
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Kimley Horn
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421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C
BU #: 806352
BRG 302 943052
126 LEDGE ROAD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

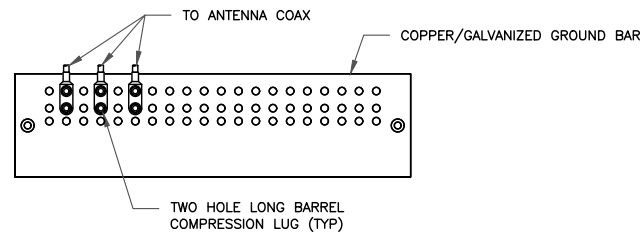
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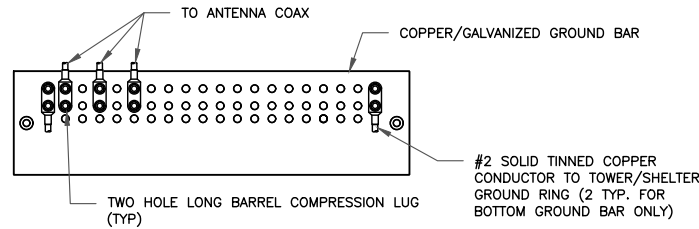
SHEET NUMBER: E-1
REVISION: 0



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 TOWER STEEL.

1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE

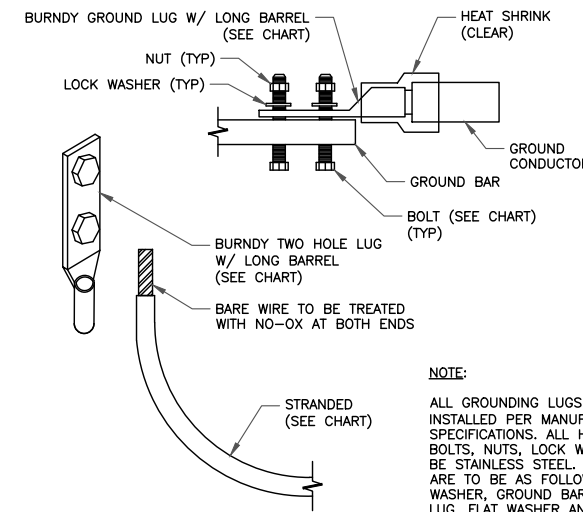


NOTES:

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

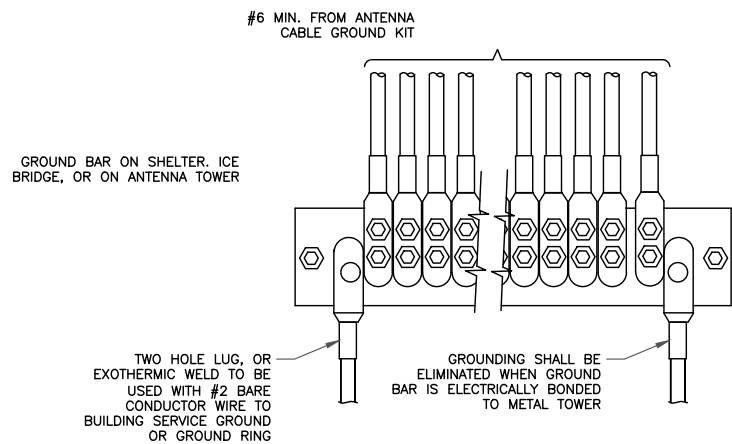
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" - 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" - 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" - 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" - 16 NC SS 2 BOLT



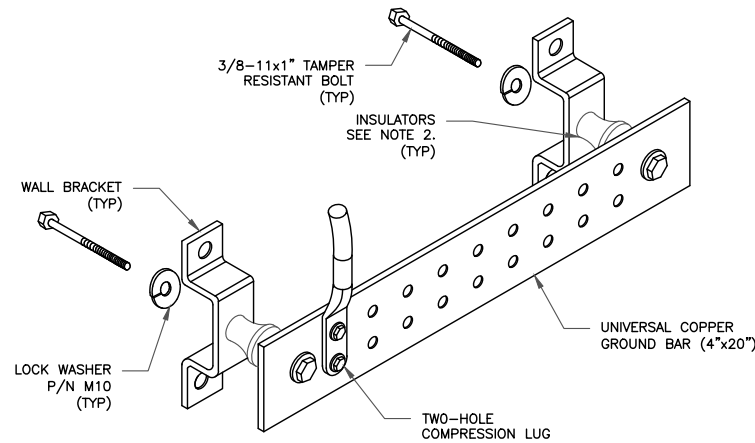
NOTE:

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

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



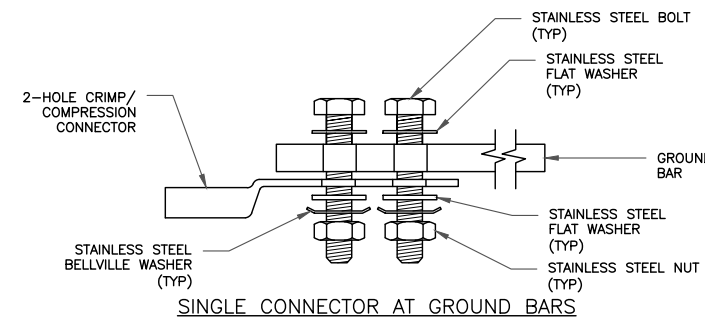
4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



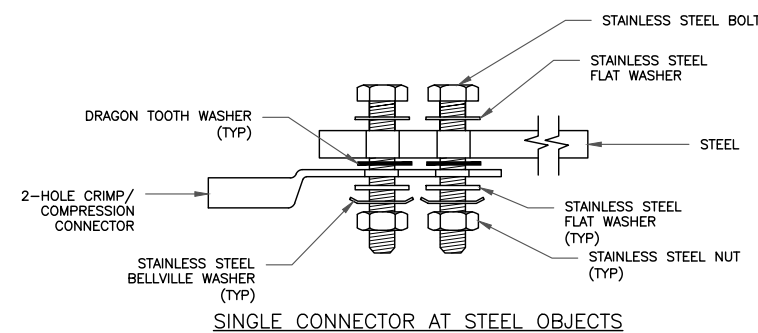
NOTES:

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

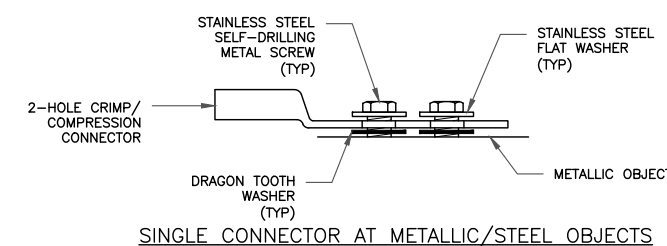
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

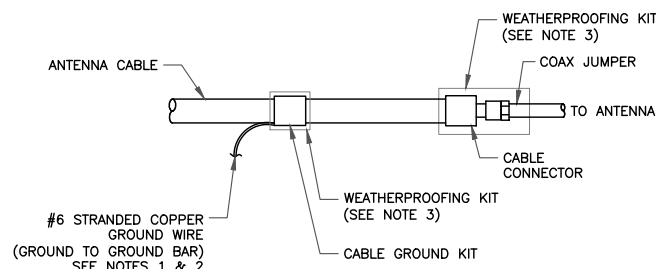


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

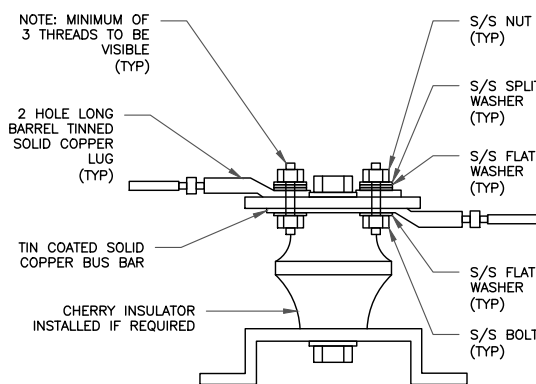
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

T-Mobile

12920 SE 38TH STREET
BELLEVUE, WA 98006

CROWN CASTLE

3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

Kimley Horn

COA #PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

T-MOBILE SITE NUMBER:
CT11851C

BU #: **806352**
BRG 302 943052

126 LEDGE ROAD
DARIEN, CT 06820

EXISTING 117'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	11/03/20	WRS	ISSUED FOR CONSTR.	MCK



11/03/20
Exp. 01/31/21

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

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

Exhibit D

Structural Analysis Report



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

Date: **October 16, 2020**

Cheryl Schultz
Crown Castle
100 Regency Forest Drive, Suite 300
Cary, NC 27518

Subject: **Structural Analysis Report**

Carrier Designation: **T-Mobile Co-Locate**
Carrier Site Number: CT11851C

Crown Castle Designation: **Crown Castle BU Number:** 806352
Crown Castle Site Name: BRG 302 943052
Crown Castle JDE Job Number: 620131
Crown Castle Work Order Number: 1892996
Crown Castle Order Number: 529727 Rev. 0

Engineering Firm Designation: **Crown Castle Project Number:** 1892996

Site Data: **126 Ledge Road, DARIEN, Fairfield County, CT**
Latitude 41° 4' 20.75", Longitude -73° 28' 41.4"
117 Foot - Monopole Tower

Dear Cheryl Schultz,

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:

LC5: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 120 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: Matthew Hussak

Respectfully submitted by:

Maham Barimani, P.E.
Senior Project Engineer

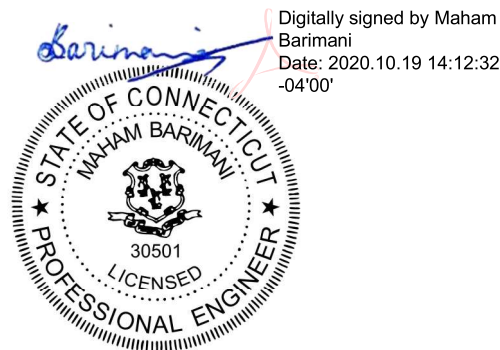


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1) INTRODUCTION

This tower is a 117 ft Monopole tower designed by VALMONT.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
110.0	110.0	3	commscope	SDX1926Q-43	13	1-5/8
		3	ericsson	AIR 32 B2A B66AA w/ Mount Pipe		
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	ericsson	RRUS 4415 B25_CCIV2		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	sitepro1	RMQP-396-HK		

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)
117.0	119.0	3	alcatel lucent	TD-RRH8X20-25	1 3	7/8 1-5/8
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
	117.0	1	tower mounts	T-Arm Mount [TA 702-3]		
115.0	115.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	-	-
		3	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz		
		1	tower mounts	Side Arm Mount [SO 102-3]		
100.0	104.0	1	gps	GPS_A	12	7/8
	101.0	3	alcatel lucent	B13 RRH 4X30	2	1-5/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	alcatel lucent	B25 RRH4X30		
		3	alcatel lucent	B4 RRH2X60-4R		
		6	andrew	HBXX-6516DS-A2M w/ Mount Pipe		
		6	decibel	DB844G65ZAXY w/ Mount Pipe		
		3	kathrein	800 10735V01 w/ Mount Pipe		
		2	raycap	RRFDC-3315-PF-48		
		6	rfs celwave	FD9R6004/2C-3L		
93.0	100.0	1	tower mounts	Platform Mount [LP 715-1]	4	7983A
	95.0	1	andrew	VHLP1-23		
	94.0	1	andrew	VHLP2-11		
	93.0	1	andrew	VHLP800-11		
89.0	89.0	1	tower mounts	Pipe Mount [PM 601-3]	12 4 2 2 3	1-1/4 5/8 7/8 3/8 conduit
		2	ccci antennas	HPA65R-BU6A		
		1	ccci antennas	HPA65R-BU8A		
		2	ccci antennas	OPA-65R-LCUU-H6		
		1	ccci antennas	OPA-65R-LCUU-H8		
		1	ccci antennas	TPA-65R-LCUUUU-H8		
		6	ccci antennas	TPX-070821		
		3	ericsson	RRUS 11 B12		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4426 B66		
		3	ericsson	RRUS E2 B29		
		3	powerwave technologies	7770.00		
		6	powerwave technologies	LGP21401		
		2	quintel technology	QS66512-2		
		1	raycap	DC6-48-60-18-8C-EV		
2	raycap	DC6-48-60-18-8F				
1	tower mounts	Platform Mount [LP 1301-1]				
84.0	84.0	3	kathrein	800 10504 w/ Mount Pipe	6	1-5/8
		1	tower mounts	Pipe Mount [PM 601-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH	217769	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	FDH (Mapping)	3907710	CCISITES

Document	Remarks	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	Valmont	217772	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD	1094732	CCISITES
4-POST-MODIFICATION INSPECTION	GPD	2218625	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP	2743848	CCISITES
4-POST-MODIFICATION INSPECTION	Sabre	2785508	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP	4062469	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	4069331	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP	4115809	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	5077215	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF	5969651	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	6122311	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF	6083070	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	6232380	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.

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

3.2) Assumptions

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

This analysis may be affected if any assumptions are not valid or have been made in error. 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
117 - 112	Pole	TP15.489x14.36x0.1875	Pole	7.6%	Pass
112 - 110	Pole	TP15.94x15.489x0.1875	Pole	9.9%	Pass
110 - 105	Pole	TP17.07x15.94x0.1875	Pole	23.6%	Pass

105 - 100	Pole	TP18.2x17.07x0.1875	Pole	34.6%	Pass
100 - 95	Pole	TP19.322x18.2x0.25	Pole	39.0%	Pass
95 - 90	Pole	TP20.444x19.322x0.25	Pole	49.7%	Pass
90 - 85	Pole	TP21.566x20.444x0.25	Pole	64.2%	Pass
85 - 81.88	Pole	TP22.266x21.566x0.25	Pole	72.9%	Pass
81.88 - 81.63	Pole + Reinf.	TP22.323x22.266x0.35	Reinf. 9 Tension Rupture	67.5%	Pass
81.63 - 76.63	Pole + Reinf.	TP23.445x22.323x0.3563	Reinf. 9 Tension Rupture	78.8%	Pass
76.63 - 76.08	Pole + Reinf.	TP23.568x23.445x0.3563	Reinf. 9 Tension Rupture	79.9%	Pass
76.08 - 75.83	Pole + Reinf.	TP23.624x23.568x0.4625	Reinf. 12 Tension Rupture	73.1%	Pass
75.83 - 71	Pole + Reinf.	TP24.708x23.624x0.4563	Reinf. 12 Tension Rupture	82.1%	Pass
71 - 70.75	Pole + Reinf.	TP24.764x24.708x0.675	Reinf. 3 Compression	66.0%	Pass
70.75 - 68.08	Pole + Reinf.	TP25.363x24.764x0.6625	Reinf. 3 Compression	69.9%	Pass
68.08 - 67.83	Pole + Reinf.	TP25.42x25.363x0.7125	Reinf. 3 Compression	61.7%	Pass
67.83 - 63.5	Pole + Reinf.	TP26.391x25.42x0.6875	Reinf. 3 Compression	67.0%	Pass
63.5 - 63.25	Pole + Reinf.	TP26.447x26.391x0.9	Reinf. 2 Compression	53.3%	Pass
63.25 - 58.25	Pole + Reinf.	TP27.57x26.447x0.85	Reinf. 2 Compression	57.9%	Pass
58.25 - 53.25	Pole + Reinf.	TP28.692x27.57x0.825	Reinf. 2 Compression	62.3%	Pass
53.25 - 52	Pole + Reinf.	TP30x28.692x0.825	Reinf. 2 Compression	63.4%	Pass
52 - 46.42	Pole + Reinf.	TP29.741x28.472x0.8438	Reinf. 5 Tension Rupture	67.9%	Pass
46.42 - 41.42	Pole + Reinf.	TP30.879x29.741x0.8188	Reinf. 5 Tension Rupture	71.3%	Pass
41.42 - 38.08	Pole + Reinf.	TP31.638x30.879x0.8063	Reinf. 5 Tension Rupture	73.4%	Pass
38.08 - 37.83	Pole + Reinf.	TP31.695x31.638x0.7563	Reinf. 5 Tension Rupture	78.5%	Pass
37.83 - 35	Pole + Reinf.	TP32.339x31.695x0.7438	Reinf. 5 Tension Rupture	80.3%	Pass
35 - 34.75	Pole + Reinf.	TP32.396x32.339x0.8438	Reinf. 6 Tension Rupture	68.1%	Pass
34.75 - 29.75	Pole + Reinf.	TP33.533x32.396x0.8313	Reinf. 6 Tension Rupture	70.7%	Pass
29.75 - 24.75	Pole + Reinf.	TP34.67x33.533x0.8063	Reinf. 6 Tension Rupture	73.1%	Pass
24.75 - 19.75	Pole + Reinf.	TP35.808x34.67x0.7938	Reinf. 6 Tension Rupture	75.3%	Pass
19.75 - 15	Pole + Reinf.	TP36.888x35.808x0.7688	Reinf. 6 Tension Rupture	77.2%	Pass
15 - 14.75	Pole + Reinf.	TP36.945x36.888x0.7688	Reinf. 6 Tension Rupture	77.3%	Pass
14.75 - 13	Pole + Reinf.	TP37.343x36.945x0.7688	Reinf. 6 Tension Rupture	78.0%	Pass
13 - 12.75	Pole + Reinf.	TP37.4x37.343x1.0188	Reinf. 6 Tension Rupture	59.9%	Pass
12.75 - 12.5	Pole + Reinf.	TP37.457x37.4x1.0188	Reinf. 6 Tension Rupture	60.0%	Pass
12.5 - 12.25	Pole + Reinf.	TP37.514x37.457x1.0188	Reinf. 4 Tension Rupture	60.7%	Pass
12.25 - 7.25	Pole + Reinf.	TP38.651x37.514x0.9938	Reinf. 4 Tension Rupture	62.4%	Pass
7.25 - 5.5	Pole + Reinf.	TP39.049x38.651x0.9938	Reinf. 4 Tension Rupture	62.9%	Pass
5.5 - 5.25	Pole + Reinf.	TP39.106x39.049x1.0688	Reinf. 7 Tension Rupture	61.2%	Pass
5.25 - 5	Pole + Reinf.	TP39.163x39.106x1.0688	Reinf. 7 Tension Rupture	61.3%	Pass
5 - 4.75	Pole + Reinf.	TP39.22x39.163x1.1938	Reinf. 4 Tension Rupture	54.1%	Pass
4.75 - 2.5	Pole + Reinf.	TP39.731x39.22x1.1688	Reinf. 4 Tension Rupture	54.8%	Pass

2.5 - 2.25	Pole + Reinf.	TP39.788x39.731x1.0438	Reinf. 4 Tension Rupture	60.9%	Pass
2.25 - 0	Pole + Reinf.	TP40.3x39.788x1.0438	Reinf. 4 Tension Rupture	61.6%	Pass
				Summary	
			Pole	72.9%	Pass
			Reinforcement	82.1%	Pass
			Overall	82.1%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	110	9.6	Pass
1	Flange Plate	110	6.3	Pass
1	Flange Bolts	100	30.6	Pass
1	Flange Plate	100	23.1	Pass
1	Anchor Rods	0	56.1	Pass
1	Base Plate	0	38.8	Pass
1	Base Foundation (Structure)	0	80.1	Pass
1	Base Foundation (Soil Interaction)	0	47.4	Pass

Structure Rating (max from all components) =	82.1%
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Notes:

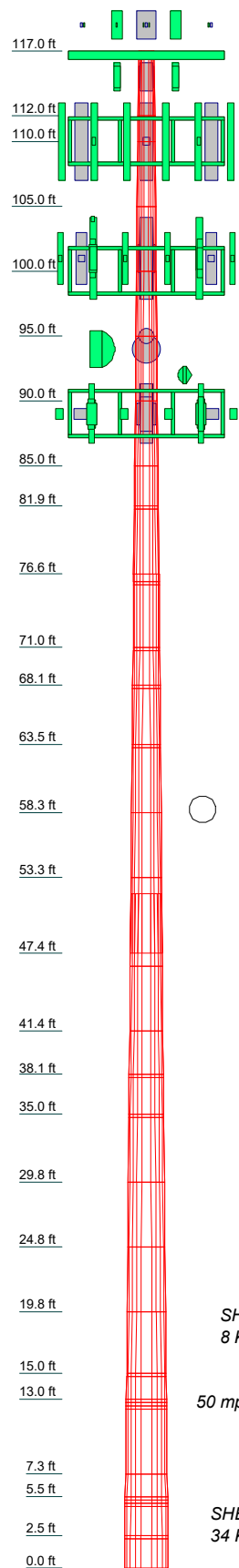
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

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	117.0	12	0.1875	4.5800	15.9400	17.0700	0.2	0.2
2	112.0	12	0.1875	4.5800	15.9400	17.0700	0.1	0.1
3	110.0	12	0.1875	4.5800	15.9400	17.0700	0.2	0.2
4	105.0	12	0.1875	4.5800	15.9400	17.0700	0.2	0.2
5	100.0	12	0.2500	4.5800	18.2000	19.3221	0.3	0.3
6	95.0	12	0.2500	4.5800	19.3221	20.4442	0.3	0.3
7	90.0	12	0.2500	4.5800	20.4442	21.5663	0.3	0.3
8	85.0	12	0.2500	4.5800	21.5663	22.6884	0.3	0.3
9	81.9	12	0.2500	4.5800	22.6884	23.8105	0.2	0.2
10	76.6	12	0.2500	4.5800	23.8105	24.9326	0.0	0.0
11	71.0	12	0.2500	4.5800	24.9326	26.0547	0.7	0.7
12	68.1	12	0.2500	4.5800	26.0547	27.1768	0.5	0.5
13	63.5	12	0.2500	4.5800	27.1768	28.2989	0.0	0.0
14	58.3	12	0.2500	4.5800	28.2989	29.4210	1.1	1.1
15	53.3	12	0.2500	4.5800	29.4210	30.5431	1.1	1.1
16	47.4	12	0.2500	4.5800	30.5431	31.6652	1.4	1.4
17	41.4	12	0.2500	4.5800	31.6652	32.7873	1.4	1.4
18	38.1	12	0.2500	4.5800	32.7873	33.9094	1.2	1.2
19	35.0	12	0.2500	4.5800	33.9094	35.0315	1.0	1.0
20	29.8	12	0.2500	4.5800	35.0315	36.1536	0.8	0.8
21	24.8	12	0.2500	4.5800	36.1536	37.2757	1.4	1.4
22	19.8	12	0.2500	4.5800	37.2757	38.3978	1.4	1.4
23	15.0	12	0.2500	4.5800	38.3978	39.5199	1.4	1.4
24	13.0	12	0.2500	4.5800	39.5199	40.6420	1.4	1.4
25	7.3	12	0.2500	4.5800	40.6420	41.7641	1.8	1.8
26	5.5	12	0.2500	4.5800	41.7641	42.8862	1.0	1.0
27	2.5	12	0.2500	4.5800	42.8862	44.0083	0.7	0.7
28	0.0	12	0.2500	4.5800	44.0083	45.1304	1.0	1.0



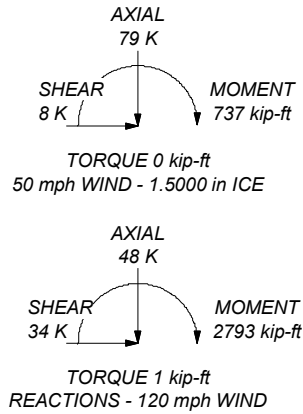
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

- Tower is located in Fairfield County, Connecticut.
- Tower designed for Exposure C to the TIA-222-H Standard.
- Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
- Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
- Deflections are based upon a 60 mph wind.
- Tower Risk Category II.
- Topographic Category 1 with Crest Height of 0.0000 ft
- Tower Rating: 82.1%

ALL REACTIONS
ARE FACTORED



Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- 1) Tower is located in Fairfield County, Connecticut.
- 2) Tower base elevation above sea level: 71.0000 ft.
- 3) Basic wind speed of 120 mph.
- 4) Risk Category II.
- 5) Exposure Category C.
- 6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7) Topographic Category: 1.
- 8) Crest Height: 0.0000 ft.
- 9) Nominal ice thickness of 1.5000 in.
- 10) Ice thickness is considered to increase with height.
- 11) Ice density of 56.00 pcf.
- 12) A wind speed of 50 mph is used in combination with ice.
- 13) Temperature drop of 50 °F.
- 14) Deflections calculated using a wind speed of 60 mph.
- 15) Tower Rating: 82.1%.
- 16) A non-linear (P-delta) analysis was used.
- 17) Pressures are calculated at each section.
- 18) Stress ratio used in pole design is 1.05.
- 19) Tower analysis based on target reliabilities in accordance with Annex S.
- 20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- 21) 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;">Poles</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	117.0000-112.0000	5.0000	0.00	12	14.3600	15.4886	0.1875	0.7500	A572-65 (65 ksi)
L2	112.0000-110.0000	2.0000	0.00	12	15.4886	15.9400	0.1875	0.7500	A572-65 (65 ksi)
L3	110.0000-105.0000	5.0000	0.00	12	15.9400	17.0700	0.1875	0.7500	A572-65 (65 ksi)
L4	105.0000-100.0000	5.0000	0.00	12	17.0700	18.2000	0.1875	0.7500	A572-65 (65 ksi)
L5	100.0000-95.0000	5.0000	0.00	12	18.2000	19.3221	0.2500	1.0000	A572-65 (65 ksi)
L6	95.0000-90.0000	5.0000	0.00	12	19.3221	20.4442	0.2500	1.0000	A572-65 (65 ksi)
L7	90.0000-85.0000	5.0000	0.00	12	20.4442	21.5663	0.2500	1.0000	A572-65 (65 ksi)
L8	85.0000-81.8800	3.1200	0.00	12	21.5663	22.2665	0.2500	1.0000	A572-65 (65 ksi)
L9	81.8800-81.6300	0.2500	0.00	12	22.2665	22.3226	0.3500	1.4000	A572-65 (65 ksi)
L10	81.6300-76.6300	5.0000	0.00	12	22.3226	23.4447	0.3563	1.4250	A572-65 (65 ksi)
L11	76.6300-76.0800	0.5500	0.00	12	23.4447	23.5681	0.3563	1.4250	A572-65 (65 ksi)
L12	76.0800-75.8300	0.2500	0.00	12	23.5681	23.6242	0.4625	1.8500	A572-65 (65 ksi)
L13	75.8300-71.0000	4.8300	0.00	12	23.6242	24.7082	0.4562	1.8250	A572-65 (65 ksi)
L14	71.0000-70.7500	0.2500	0.00	12	24.7082	24.7643	0.6750	2.7000	A572-65 (65 ksi)
L15	70.7500-68.0800	2.6700	0.00	12	24.7643	25.3635	0.6625	2.6500	A572-65 (65 ksi)
L16	68.0800-67.8300	0.2500	0.00	12	25.3635	25.4196	0.7125	2.8500	A572-65 (65 ksi)
L17	67.8300-63.5000	4.3300	0.00	12	25.4196	26.3913	0.6875	2.7500	A572-65 (65 ksi)
L18	63.5000-63.2500	0.2500	0.00	12	26.3913	26.4474	0.9000	3.6000	A572-65 (65 ksi)
L19	63.2500-58.2500	5.0000	0.00	12	26.4474	27.5695	0.8500	3.4000	A572-65 (65 ksi)
L20	58.2500-53.2500	5.0000	0.00	12	27.5695	28.6916	0.8250	3.3000	A572-65 (65 ksi)
L21	53.2500-47.4200	5.8300	4.58	12	28.6916	30.0000	0.8250	3.3000	A572-65 (65 ksi)
L22	47.4200-46.4200	5.5800	0.00	12	28.4722	29.7414	0.8438	3.3750	A572-65 (65 ksi)
L23	46.4200-41.4200	5.0000	0.00	12	29.7414	30.8787	0.8187	3.2750	A572-65 (65 ksi)
L24	41.4200-38.0800	3.3400	0.00	12	30.8787	31.6384	0.8063	3.2250	A572-65 (65 ksi)
L25	38.0800-37.8300	0.2500	0.00	12	31.6384	31.6952	0.7562	3.0250	A572-65 (65 ksi)
L26	37.8300-35.0000	2.8300	0.00	12	31.6952	32.3390	0.7438	2.9750	A572-65 (65 ksi)
L27	35.0000-34.7500	0.2500	0.00	12	32.3390	32.3958	0.8438	3.3750	A572-65 (65 ksi)
L28	34.7500-29.7500	5.0000	0.00	12	32.3958	33.5331	0.8313	3.3250	A572-65 (65 ksi)
L29	29.7500-24.7500	5.0000	0.00	12	33.5331	34.6704	0.8063	3.2250	A572-65 (65 ksi)
L30	24.7500-19.7500	5.0000	0.00	12	34.6704	35.8077	0.7937	3.1750	A572-65 (65 ksi)
L31	19.7500-15.0000	4.7500	0.00	12	35.8077	36.8881	0.7688	3.0750	A572-65 (65 ksi)
L32	15.0000-14.7500	0.2500	0.00	12	36.8881	36.9450	0.7688	3.0750	A572-65 (65 ksi)
L33	14.7500-13.0000	1.7500	0.00	12	36.9450	37.3430	0.7688	3.0750	A572-65 (65 ksi)
L34	13.0000-12.7500	0.2500	0.00	12	37.3430	37.3999	1.0188	4.0750	A572-65 (65 ksi)
L35	12.7500-	0.2500	0.00	12	37.3999	37.4568	1.0188	4.0750	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	12.5000 12.5000- 12.2500	0.2500	0.00	12	37.4568	37.5136	1.0188	4.0750	(65 ksi) A572-65
L37	12.2500- 7.2500	5.0000	0.00	12	37.5136	38.6509	0.9938	3.9750	(65 ksi) A572-65
L38	7.2500-5.5000	1.7500	0.00	12	38.6509	39.0490	0.9938	3.9750	(65 ksi) A572-65
L39	5.5000-5.2500	0.2500	0.00	12	39.0490	39.1058	1.0688	4.2750	(65 ksi) A572-65
L40	5.2500-5.0000	0.2500	0.00	12	39.1058	39.1627	1.0688	4.2750	(65 ksi) A572-65
L41	5.0000-4.7500	0.2500	0.00	12	39.1627	39.2196	1.1938	4.7750	(65 ksi) A572-65
L42	4.7500-2.5000	2.2500	0.00	12	39.2196	39.7314	1.1688	4.6750	(65 ksi) A572-65
L43	2.5000-2.2500	0.2500	0.00	12	39.7314	39.7882	1.0438	4.1750	(65 ksi) A572-65
L44	2.2500-0.0000	2.2500		12	39.7882	40.3000	1.0438	4.1750	(65 ksi) A572-65

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	14.8004	8.5566	219.3727	5.0738	7.4385	29.4916	444.5085	4.2113	3.3460	17.845
	15.9688	9.2380	276.0632	5.4778	8.0231	34.4086	559.3790	4.5467	3.6484	19.458
L2	15.9688	9.2380	276.0632	5.4778	8.0231	34.4086	559.3790	4.5467	3.6484	19.458
	16.4362	9.5106	301.2254	5.6394	8.2569	36.4816	610.3643	4.6808	3.7694	20.104
L3	16.4362	9.5106	301.2254	5.6394	8.2569	36.4816	610.3643	4.6808	3.7694	20.104
	17.6060	10.1928	370.8116	6.0439	8.8423	41.9363	751.3649	5.0166	4.0723	21.719
L4	17.6060	10.1928	370.8116	6.0439	8.8423	41.9363	751.3649	5.0166	4.0723	21.719
	18.7759	10.8750	450.3655	6.4485	9.4276	47.7710	912.5625	5.3524	4.3751	23.334
L5	18.7538	14.4498	594.2582	6.4261	9.4276	63.0339	1204.1282	7.1117	4.2076	16.83
	19.9155	15.3530	712.8159	6.8278	10.0088	71.2186	1444.3583	7.5563	4.5083	18.033
L6	19.9155	15.3530	712.8159	6.8278	10.0088	71.2186	1444.3583	7.5563	4.5083	18.033
	21.0772	16.2563	846.1780	7.2295	10.5901	79.9028	1714.5860	8.0009	4.8090	19.236
L7	21.0772	16.2563	846.1780	7.2295	10.5901	79.9028	1714.5860	8.0009	4.8090	19.236
	22.2389	17.1596	995.2158	7.6312	11.1713	89.0865	2016.5769	8.4454	5.1098	20.439
L8	22.2389	17.1596	995.2158	7.6312	11.1713	89.0865	2016.5769	8.4454	5.1098	20.439
	22.9638	17.7233	1096.5439	7.8819	11.5340	95.0702	2221.8952	8.7229	5.2974	21.19
L9	22.9285	24.6999	1514.3380	7.8461	11.5340	131.2929	3068.4593	12.1565	5.0294	14.37
	22.9866	24.7631	1525.9976	7.8662	11.5631	131.9713	3092.0849	12.1877	5.0445	14.413
L10	22.9844	25.1981	1551.9225	7.8640	11.5631	134.2133	3144.6158	12.4018	5.0277	14.113
	24.1461	26.4853	1802.1075	8.2657	12.1444	148.3906	3651.5583	13.0353	5.3284	14.957
L11	24.1461	26.4853	1802.1075	8.2657	12.1444	148.3906	3651.5583	13.0353	5.3284	14.957
	24.2738	26.6269	1831.1645	8.3099	12.2083	149.9935	3710.4358	13.1050	5.3615	15.05
L12	24.2364	34.4101	2344.8049	8.2718	12.2083	192.0666	4751.2105	16.9356	5.0768	10.977
	24.2945	34.4936	2361.9274	8.2919	12.2374	193.0097	4785.9052	16.9767	5.0918	11.009
L13	24.2967	34.0367	2331.8962	8.2941	12.2374	190.5556	4725.0538	16.7518	5.1085	11.197
	25.4188	35.6291	2674.7519	8.6822	12.7988	208.9840	5419.7726	17.5356	5.3990	11.834
L14	25.3417	52.2361	3851.0504	8.6039	12.7988	300.8907	7803.2722	25.7090	4.8128	7.13
	25.3998	52.3581	3878.0840	8.6240	12.8279	302.3164	7858.0497	25.7690	4.8278	7.152
L15	25.4042	51.4151	3812.1960	8.6284	12.8279	297.1801	7724.5426	25.3050	4.8613	7.338
	26.0245	52.6934	4103.6515	8.8430	13.1383	312.3430	8315.1104	25.9341	5.0219	7.58
L16	26.0069	56.5555	4386.6145	8.8251	13.1383	333.8803	8888.4703	27.8349	4.8879	6.86
	26.0650	56.6842	4416.6342	8.8451	13.1673	335.4232	8949.2983	27.8983	4.9029	6.881
L17	26.0738	54.7507	4274.6142	8.8541	13.1673	324.6375	8661.5273	26.9466	4.9699	7.229
	27.0798	56.9018	4798.5264	9.2020	13.6707	351.0079	9723.1155	28.0054	5.2304	7.608
L18	27.0048	73.8739	6127.1945	9.1259	13.6707	448.1988	12415.357	36.3585	4.6609	5.179
	27.0629	74.0365	6167.7404	9.1460	13.6998	450.2076	12497.514	36.4385	4.6759	5.195
L19	27.0805	70.0602	5859.3568	9.1639	13.6998	427.6975	11872.645	34.4815	4.8099	5.659
	28.2422	73.1314	6664.1887	9.5656	14.2810	466.6466	13503.453	35.9930	5.1106	6.013

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L20	28.2511	71.0468	6486.3560	9.5745	14.2810	454.1942	13143.115	34.9671	5.1776	6.276
	29.4127	74.0277	7337.5186	9.9763	14.8623	493.7012	14867.802	36.4342	5.4784	6.64
L21	29.4127	74.0277	7337.5186	9.9763	14.8623	493.7012	14867.802	36.4342	5.4784	6.64
	30.7673	77.5034	8420.3155	10.4446	15.5400	541.8478	17061.842	38.1448	5.8290	7.065
L22	30.2574	75.0629	7313.4643	9.8910	14.7486	495.8759	14819.061	36.9437	5.3693	6.364
	30.4929	78.5112	8368.3929	10.3453	15.4060	543.1894	16956.632	38.6408	5.7094	6.767
L23	30.5017	76.2509	8141.5343	10.3543	15.4060	528.4641	16496.955	37.5284	5.7764	7.055
	31.6791	79.2492	9140.2171	10.7615	15.9952	571.4368	18520.557	39.0041	6.0812	7.427
L24	31.6835	78.0718	9011.9048	10.7659	15.9952	563.4148	18260.562	38.4245	6.1147	7.584
	32.4700	80.0441	9712.3001	11.0379	16.3887	592.6225	19679.753	39.3953	6.3183	7.837
L25	32.4877	75.2018	9154.3794	11.0558	16.3887	558.5794	18549.254	37.0121	6.4523	8.532
	32.5466	75.3403	9205.0420	11.0762	16.4181	560.6630	18651.910	37.0802	6.4676	8.552
L26	32.5510	74.1250	9063.8696	11.0806	16.4181	552.0645	18365.857	36.4821	6.5011	8.741
	33.2174	75.6666	9641.2248	11.3111	16.7516	575.5413	19535.735	37.2408	6.6736	8.973
L27	33.1821	85.5685	10833.999	11.2753	16.7516	646.7450	21952.619	42.1142	6.4056	7.592
	33.2410	85.7230	10892.787	11.2956	16.7810	649.1130	22071.739	42.1903	6.4208	7.61
L28	33.2454	84.4865	10744.171	11.3001	16.7810	640.2569	21770.605	41.5817	6.4543	7.765
	34.4228	87.5306	11947.878	11.7073	17.3702	687.8397	24209.641	43.0799	6.7591	8.131
L29	34.4316	84.9630	11615.142	11.7162	17.3702	668.6840	23535.426	41.8162	6.8261	8.467
	35.6090	87.9156	12868.625	12.1234	17.9593	716.5451	26075.324	43.2694	7.1309	8.845
L30	35.6134	86.5845	12683.146	12.1278	17.9593	706.2173	25699.493	42.6143	7.1644	9.026
	36.7908	89.4913	14003.889	12.5350	18.5484	754.9923	28375.675	44.0449	7.4692	9.41
L31	36.7997	86.7345	13591.894	12.5439	18.5484	732.7804	27540.862	42.6881	7.5362	9.803
	37.9182	89.4090	14888.382	12.9307	19.1080	779.1682	30167.899	44.0044	7.8258	10.18
L32	37.9182	89.4090	14888.382	12.9307	19.1080	779.1682	30167.899	44.0044	7.8258	10.18
	37.9771	89.5498	14958.812	12.9511	19.1375	781.6491	30310.609	44.0737	7.8410	10.2
L33	37.9771	89.5498	14958.812	12.9511	19.1375	781.6491	30310.609	44.0737	7.8410	10.2
	38.3892	90.5351	15458.047	13.0936	19.3437	799.1259	31322.194	44.5586	7.9477	10.338
L34	38.3010	119.1573	20067.848	13.0041	19.3437	1037.4362	40662.901	58.6456	7.2777	7.144
	38.3599	119.3438	20162.243	13.0245	19.3732	1040.7313	40854.171	58.7374	7.2929	7.159
L35	38.3599	119.3438	20162.243	13.0245	19.3732	1040.7313	40854.171	58.7374	7.2929	7.159
	38.4187	119.5304	20256.932	13.0448	19.4026	1044.0315	41046.037	58.8292	7.3082	7.174
L36	38.4187	119.5304	20256.932	13.0448	19.4026	1044.0315	41046.037	58.8292	7.3082	7.174
	38.4776	119.7169	20351.919	13.0652	19.4321	1047.3371	41238.506	58.9210	7.3234	7.189
L37	38.4864	116.8591	19893.312	13.0741	19.4321	1023.7366	40309.243	57.5145	7.3904	7.437

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
			1				6			
	39.6638	120.4983	21810.328	13.4813	20.0212	1089.3628	44193.638	59.3056	7.6952	7.744
L38	39.6638	120.4983	21810.328	13.4813	20.0212	1089.3628	44193.638	59.3056	7.6952	7.744
			6				7			
	40.0759	121.7720	22509.297	13.6238	20.2274	1112.8138	45609.940	59.9325	7.8019	7.851
L39	40.0495	130.7042	24065.265	13.5969	20.2274	1189.7377	48762.751	64.3286	7.6009	7.112
			2				7			
	40.1083	130.8999	24173.520	13.6173	20.2568	1193.3518	48982.106	64.4249	7.6161	7.126
L40	40.1083	130.8999	24173.520	13.6173	20.2568	1193.3518	48982.106	64.4249	7.6161	7.126
			6				5			
	40.1672	131.0956	24282.098	13.6376	20.2863	1196.9713	49202.114	64.5213	7.6314	7.14
L41	40.1231	145.9479	26855.992	13.5929	20.2863	1323.8499	54417.522	71.8311	7.2964	6.112
			2				2			
	40.1820	146.1665	26976.837	13.6132	20.3157	1327.8788	54662.387	71.9387	7.3116	6.125
L42	40.1908	143.1995	26464.005	13.6222	20.3157	1302.6357	53623.249	70.4784	7.3786	6.313
			3				5			
	40.7206	145.1255	27546.251	13.8054	20.5808	1338.4415	55816.173	71.4264	7.5158	6.431
L43	40.7647	130.0242	24840.127	13.8502	20.5808	1206.9539	50332.831	63.9940	7.8508	7.522
			0				8			
	40.8236	130.2153	24949.820	13.8705	20.6103	1210.5512	50555.099	64.0880	7.8660	7.536
L44	40.8236	130.2153	24949.820	13.8705	20.6103	1210.5512	50555.099	64.0880	7.8660	7.536
			0				5			
	41.3534	131.9353	25951.636	14.0537	20.8754	1243.1683	52585.050	64.9346	8.0031	7.668
			1				6			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1 117.0000- 112.0000				1	1	1			
L2 112.0000- 110.0000				1	1	1			
L3 110.0000- 105.0000				1	1	1			
L4 105.0000- 100.0000				1	1	1			
L5 100.0000- 95.0000				1	1	1			
L6 95.0000- 90.0000				1	1	1			
L7 90.0000- 85.0000				1	1	1			
L8 85.0000- 81.8800				1	1	1			
L9 81.8800- 81.6300				1	1	1.26348			
L10 81.6300- 76.6300				1	1	1.21543			
L11 76.6300- 76.0800				1	1	1.2127			
L12 76.0800- 75.8300				1	1	1.19873			
L13 75.8300- 71.0000				1	1	1.18502			
L14 71.0000- 70.7500				1	1	1.06546			
L15 70.7500- 68.0800				1	1	1.06784			
L16 68.0800- 67.8300				1	1	0.913952			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L17 67.8300-63.5000				1	1	0.924204			
L18 63.5000-63.2500				1	1	0.893525			
L19 63.2500-58.2500				1	1	0.916935			
L20 58.2500-53.2500				1	1	0.918035			
L21 53.2500-47.4200				1	1	0.911906			
L22 47.4200-46.4200				1	1	0.931046			
L23 46.4200-41.4200				1	1	0.93826			
L24 41.4200-38.0800				1	1	0.939449			
L25 38.0800-37.8300				1	1	0.939123			
L26 37.8300-35.0000				1	1	0.94449			
L27 35.0000-34.7500				1	1	0.939563			
L28 34.7500-29.7500				1	1	0.934541			
L29 29.7500-24.7500				1	1	0.944768			
L30 24.7500-19.7500				1	1	0.9422			
L31 19.7500-15.0000				1	1	0.956443			
L32 15.0000-14.7500				1	1	0.955642			
L33 14.7500-13.0000				1	1	0.950108			
L34 13.0000-12.7500				1	1	0.886487			
L35 12.7500-12.5000				1	1	0.88563			
L36 12.5000-12.2500				1	1	0.909871			
L37 12.2500-7.2500				1	1	0.914418			
L38 7.2500-5.5000				1	1	0.908472			
L39 5.5000-5.2500				1	1	0.907762			
L40 5.2500-5.0000				1	1	0.906887			
L41 5.0000-4.7500				1	1	0.863055			
L42 4.7500-2.5000				1	1	0.873148			
L43 2.5000-2.2500				1	1	0.904396			
L44 2.2500-0.0000				1	1	0.896899			

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
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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
HCS 6X12 4AWG(1-5/8) ***	B	No	Surface Ar (CaAa)	110.0000 - 0.0000	5	5	0.050 0.250	1.6600		2.40
7983A(ELLIPTICAL) ***	A	No	Surface Ar (CaAa)	93.0000 - 0.0000	4	4	-0.332 -0.220	0.5730		0.08
AVA7-50(1-5/8)	A	No	Surface Ar (CaAa)	84.0000 - 0.0000	6	3	-0.450 -0.334	2.0100		0.70

MS-600 Reinforcement	B	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	-0.370 -0.370	0.1000	2.2000	0.00
MS-600 Reinforcement	A	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	-0.370 -0.370	0.1000	2.2000	0.00
MS-600 Reinforcement	C	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	-0.370 -0.370	0.1000	2.2000	0.00
MS-450 Reinforcement	B	No	Surface Af (CaAa)	65.0000 - 35.0000	1	1	-0.370 -0.370	0.1000	2.2000	0.00
MS-450 Reinforcement	A	No	Surface Af (CaAa)	65.0000 - 35.0000	1	1	-0.370 -0.370	0.1000	2.2000	0.00
MS-450 Reinforcement	C	No	Surface Af (CaAa)	65.0000 - 35.0000	1	1	-0.370 -0.370	0.1000	2.2000	0.00
MS-450 Reinforcement	B	No	Surface Af (CaAa)	70.0000 - 50.0000	1	1	-0.120 -0.120	0.1000	2.2000	0.00
MS-450 Reinforcement	A	No	Surface Af (CaAa)	70.0000 - 50.0000	1	1	-0.120 -0.120	0.1000	2.2000	0.00
MS-450 Reinforcement	C	No	Surface Af (CaAa)	70.0000 - 50.0000	1	1	-0.120 -0.120	0.1000	2.2000	0.00

CCI-045100 Reinforcement	A	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.380 0.380	0.1000	2.2000	0.00
CCI-045100 Reinforcement	C	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.380 0.380	0.1000	2.2000	0.00
CCI-045100 Reinforcement	B	No	Surface Af (CaAa)	35.0000 - 0.0000	1	1	0.380 0.380	0.1000	2.2000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	50.0000 - 35.0000	1	1	0.380 0.380	0.1000	1.7000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	50.0000 - 35.0000	1	1	0.380 0.380	0.1000	1.7000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	50.0000 - 35.0000	1	1	0.380 0.380	0.1000	1.7000	0.00

CCI-045100 Reinforcement	A	No	Surface Af (CaAa)	35.5000 - 10.5000	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-045100 Reinforcement	C	No	Surface Af (CaAa)	35.5000 - 0.0000	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-045100 Reinforcement	B	No	Surface Af (CaAa)	35.5000 - 0.0000	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-060100 Reinforcement	A	No	Surface Af (CaAa)	70.1800 - 35.5000	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-060100 Reinforcement	A	No	Surface Af (CaAa)	70.5000 - 70.1800	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-060100 Reinforcement	C	No	Surface Af (CaAa)	70.1800 - 35.5000	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-060100 Reinforcement	C	No	Surface Af (CaAa)	70.5000 - 70.1800	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-060100 Reinforcement	B	No	Surface Af (CaAa)	70.1800 - 35.5000	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-060100 Reinforcement	B	No	Surface Af (CaAa)	70.5000 - 70.1800	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-045100 Reinforcement	B	No	Surface Af (CaAa)	85.3300 - 65.3300	1	1	-0.370 -0.370	0.1000	2.2000	0.00
CCI-045100 Reinforcement	C	No	Surface Af (CaAa)	85.6700 - 70.6700	1	1	0.130 0.130	0.1000	2.2000	0.00
CCI-045100 Reinforcement	B	No	Surface Af (CaAa)	85.6700 - 70.6700	1	1	0.130 0.130	0.1000	2.2000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf

CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	77.1000 - 67.1000	1	1	0.380 0.380	0.1000	1.7000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	77.1000 - 67.1000	1	1	0.380 0.380	0.1000	1.7000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	77.1000 - 67.1000	1	1	0.380 0.380	0.1000	1.7000	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight plf	
LDF6-50A(1-1/4)	C	No	No	Inside Pole	117.0000 - 0.0000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.60 0.60 0.60 0.60	
HB058-1-08U1-S2F(5/8)	C	No	No	Inside Pole	117.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.40 0.40 0.40 0.40	

LDF7-50A(1-5/8)	C	No	No	Inside Pole	110.0000 - 0.0000	8	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.82 0.82 0.82 0.82	

LDF5-50A(7/8)	C	No	No	Inside Pole	100.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.33 0.33 0.33 0.33	
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	100.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.30 1.30 1.30 1.30	

LDF6-50A(1-1/4)	C	No	No	Inside Pole	89.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.60 0.60 0.60 0.60	
FB-L98-002-XXX(3/8)	C	No	No	Inside Pole	89.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.06 0.06 0.06 0.06	
WR-VG82ST-BRDA(5/8)	C	No	No	Inside Pole	89.0000 - 0.0000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.31 0.31 0.31 0.31	
WR-VG66ST-BRD_CCIV2(7/8)	C	No	No	Inside Pole	89.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.88 0.88 0.88 0.88	
2" (Nominal) Conduit	C	No	No	Inside Pole	89.0000 - 0.0000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.72 0.72 0.72 0.72	

Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	117.0000- 112.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L2	112.0000- 110.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L3	110.0000- 105.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	4.150	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L4	105.0000- 100.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	4.150	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.04
L5	100.0000- 95.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	4.150	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.08
L6	95.0000-90.0000	A	0.000	0.000	0.688	0.000	0.00
		B	0.000	0.000	4.150	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.08
L7	90.0000-85.0000	A	0.000	0.000	1.146	0.000	0.00
		B	0.000	0.000	4.167	0.000	0.06
		C	0.000	0.000	0.011	0.000	0.13
L8	85.0000-81.8800	A	0.000	0.000	1.993	0.000	0.01
		B	0.000	0.000	2.694	0.000	0.04
		C	0.000	0.000	0.052	0.000	0.09
L9	81.8800-81.6300	A	0.000	0.000	0.208	0.000	0.00
		B	0.000	0.000	0.216	0.000	0.00
		C	0.000	0.000	0.004	0.000	0.01
L10	81.6300-76.6300	A	0.000	0.000	4.169	0.000	0.02
		B	0.000	0.000	4.324	0.000	0.06
		C	0.000	0.000	0.091	0.000	0.14
L11	76.6300-76.0800	A	0.000	0.000	0.467	0.000	0.00
		B	0.000	0.000	0.484	0.000	0.01
		C	0.000	0.000	0.018	0.000	0.02
L12	76.0800-75.8300	A	0.000	0.000	0.212	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
		C	0.000	0.000	0.008	0.000	0.01
L13	75.8300-71.0000	A	0.000	0.000	4.100	0.000	0.02
		B	0.000	0.000	4.250	0.000	0.06
		C	0.000	0.000	0.161	0.000	0.13
L14	71.0000-70.7500	A	0.000	0.000	0.212	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
		C	0.000	0.000	0.008	0.000	0.01
L15	70.7500-68.0800	A	0.000	0.000	2.337	0.000	0.01
		B	0.000	0.000	2.377	0.000	0.03
		C	0.000	0.000	0.116	0.000	0.07
L16	68.0800-67.8300	A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.224	0.000	0.00
		C	0.000	0.000	0.013	0.000	0.01
L17	67.8300-63.5000	A	0.000	0.000	3.785	0.000	0.02
		B	0.000	0.000	3.817	0.000	0.05
		C	0.000	0.000	0.181	0.000	0.12
L18	63.5000-63.2500	A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
		C	0.000	0.000	0.013	0.000	0.01
L19	63.2500-58.2500	A	0.000	0.000	4.411	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06
		C	0.000	0.000	0.250	0.000	0.14
L20	58.2500-53.2500	A	0.000	0.000	4.411	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06
		C	0.000	0.000	0.250	0.000	0.14
L21	53.2500-47.4200	A	0.000	0.000	5.143	0.000	0.03
		B	0.000	0.000	5.130	0.000	0.07
		C	0.000	0.000	0.291	0.000	0.16
L22	47.4200-46.4200	A	0.000	0.000	0.882	0.000	0.00
		B	0.000	0.000	0.880	0.000	0.01
		C	0.000	0.000	0.050	0.000	0.03
L23	46.4200-41.4200	A	0.000	0.000	4.411	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L24	41.4200-38.0800	C	0.000	0.000	0.250	0.000	0.14
		A	0.000	0.000	2.947	0.000	0.02
		B	0.000	0.000	2.939	0.000	0.04
L25	38.0800-37.8300	C	0.000	0.000	0.167	0.000	0.09
		A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L26	37.8300-35.0000	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	2.497	0.000	0.01
		B	0.000	0.000	2.490	0.000	0.03
L27	35.0000-34.7500	C	0.000	0.000	0.141	0.000	0.08
		A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L28	34.7500-29.7500	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	4.411	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06
L29	29.7500-24.7500	C	0.000	0.000	0.250	0.000	0.14
		A	0.000	0.000	4.411	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06
L30	24.7500-19.7500	C	0.000	0.000	0.250	0.000	0.14
		A	0.000	0.000	4.411	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06
L31	19.7500-15.0000	C	0.000	0.000	0.250	0.000	0.14
		A	0.000	0.000	4.190	0.000	0.02
		B	0.000	0.000	4.180	0.000	0.06
L32	15.0000-14.7500	C	0.000	0.000	0.238	0.000	0.13
		A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L33	14.7500-13.0000	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	1.544	0.000	0.01
		B	0.000	0.000	1.540	0.000	0.02
L34	13.0000-12.7500	C	0.000	0.000	0.087	0.000	0.05
		A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L35	12.7500-12.5000	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L36	12.5000-12.2500	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	0.221	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L37	12.2500-7.2500	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	4.357	0.000	0.02
		B	0.000	0.000	4.400	0.000	0.06
L38	7.2500-5.5000	C	0.000	0.000	0.250	0.000	0.14
		A	0.000	0.000	1.515	0.000	0.01
		B	0.000	0.000	1.540	0.000	0.02
L39	5.5000-5.2500	C	0.000	0.000	0.087	0.000	0.05
		A	0.000	0.000	0.216	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L40	5.2500-5.0000	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	0.216	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L41	5.0000-4.7500	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	0.216	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L42	4.7500-2.5000	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	1.947	0.000	0.01
		B	0.000	0.000	1.980	0.000	0.03
L43	2.5000-2.2500	C	0.000	0.000	0.113	0.000	0.06
		A	0.000	0.000	0.216	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
L44	2.2500-0.0000	C	0.000	0.000	0.013	0.000	0.01
		A	0.000	0.000	1.947	0.000	0.01
		B	0.000	0.000	1.980	0.000	0.03
		C	0.000	0.000	0.113	0.000	0.06

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	117.0000-112.0000	A	1.444	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L2	112.0000-110.0000	A	1.439	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	110.0000-105.0000	A	1.435	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	6.981	0.000	0.13
		C		0.000	0.000	0.000	0.000	0.04
L4	105.0000-100.0000	A	1.428	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	6.972	0.000	0.13
		C		0.000	0.000	0.000	0.000	0.04
L5	100.0000-95.0000	A	1.421	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	6.964	0.000	0.13
		C		0.000	0.000	0.000	0.000	0.08
L6	95.0000-90.0000	A	1.413	0.000	0.000	1.920	0.000	0.02
		B		0.000	0.000	6.954	0.000	0.13
		C		0.000	0.000	0.000	0.000	0.08
L7	90.0000-85.0000	A	1.406	0.000	0.000	3.189	0.000	0.03
		B		0.000	0.000	7.242	0.000	0.13
		C		0.000	0.000	0.200	0.000	0.13
L8	85.0000-81.8800	A	1.399	0.000	0.000	4.324	0.000	0.06
		B		0.000	0.000	6.178	0.000	0.10
		C		0.000	0.000	0.925	0.000	0.10
L9	81.8800-81.6300	A	1.396	0.000	0.000	0.435	0.000	0.01
		B		0.000	0.000	0.495	0.000	0.01
		C		0.000	0.000	0.074	0.000	0.01
L10	81.6300-76.6300	A	1.391	0.000	0.000	8.819	0.000	0.12
		B		0.000	0.000	10.015	0.000	0.17
		C		0.000	0.000	1.613	0.000	0.16
L11	76.6300-76.0800	A	1.387	0.000	0.000	1.115	0.000	0.02
		B		0.000	0.000	1.246	0.000	0.02
		C		0.000	0.000	0.323	0.000	0.02
L12	76.0800-75.8300	A	1.386	0.000	0.000	0.507	0.000	0.01
		B		0.000	0.000	0.566	0.000	0.01
		C		0.000	0.000	0.147	0.000	0.01
L13	75.8300-71.0000	A	1.381	0.000	0.000	9.774	0.000	0.13
		B		0.000	0.000	10.923	0.000	0.18
		C		0.000	0.000	2.829	0.000	0.17
L14	71.0000-70.7500	A	1.376	0.000	0.000	0.505	0.000	0.01
		B		0.000	0.000	0.564	0.000	0.01
		C		0.000	0.000	0.146	0.000	0.01
L15	70.7500-68.0800	A	1.373	0.000	0.000	6.615	0.000	0.09
		B		0.000	0.000	6.492	0.000	0.10
		C		0.000	0.000	2.027	0.000	0.10
L16	68.0800-67.8300	A	1.371	0.000	0.000	0.649	0.000	0.01
		B		0.000	0.000	0.636	0.000	0.01
		C		0.000	0.000	0.218	0.000	0.01
L17	67.8300-63.5000	A	1.366	0.000	0.000	10.617	0.000	0.14
		B		0.000	0.000	9.852	0.000	0.16
		C		0.000	0.000	3.156	0.000	0.16
L18	63.5000-63.2500	A	1.361	0.000	0.000	0.647	0.000	0.01
		B		0.000	0.000	0.561	0.000	0.01
		C		0.000	0.000	0.217	0.000	0.01
L19	63.2500-58.2500	A	1.355	0.000	0.000	12.905	0.000	0.17
		B		0.000	0.000	11.197	0.000	0.18
		C		0.000	0.000	4.316	0.000	0.20
L20	58.2500-53.2500	A	1.344	0.000	0.000	12.841	0.000	0.17
		B		0.000	0.000	11.148	0.000	0.18
		C		0.000	0.000	4.281	0.000	0.20
L21	53.2500-47.4200	A	1.330	0.000	0.000	14.885	0.000	0.20
		B		0.000	0.000	12.931	0.000	0.21
		C		0.000	0.000	4.944	0.000	0.23
L22	47.4200-46.4200	A	1.321	0.000	0.000	2.553	0.000	0.03
		B		0.000	0.000	2.218	0.000	0.04
		C		0.000	0.000	0.848	0.000	0.04
L23	46.4200-41.4200	A	1.312	0.000	0.000	12.667	0.000	0.17
		B		0.000	0.000	11.013	0.000	0.18

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
L24	41.4200-38.0800	C	1.299	0.000	0.000	4.186	0.000	0.19
		A		0.000	0.000	8.414	0.000	0.11
		B		0.000	0.000	7.320	0.000	0.12
L25	38.0800-37.8300	C	1.293	0.000	0.000	2.770	0.000	0.13
		A		0.000	0.000	0.628	0.000	0.01
		B		0.000	0.000	0.547	0.000	0.01
L26	37.8300-35.0000	C	1.288	0.000	0.000	0.206	0.000	0.01
		A		0.000	0.000	7.094	0.000	0.09
		B		0.000	0.000	6.175	0.000	0.10
L27	35.0000-34.7500	C	1.282	0.000	0.000	2.328	0.000	0.11
		A		0.000	0.000	0.625	0.000	0.01
		B		0.000	0.000	0.544	0.000	0.01
L28	34.7500-29.7500	C	1.272	0.000	0.000	0.205	0.000	0.01
		A		0.000	0.000	12.447	0.000	0.16
		B		0.000	0.000	10.844	0.000	0.17
L29	29.7500-24.7500	C	1.251	0.000	0.000	4.066	0.000	0.19
		A		0.000	0.000	12.330	0.000	0.16
		B		0.000	0.000	10.753	0.000	0.17
L30	24.7500-19.7500	C	1.226	0.000	0.000	4.002	0.000	0.19
		A		0.000	0.000	12.192	0.000	0.16
		B		0.000	0.000	10.647	0.000	0.17
L31	19.7500-15.0000	C	1.196	0.000	0.000	3.927	0.000	0.19
		A		0.000	0.000	11.426	0.000	0.14
		B		0.000	0.000	9.993	0.000	0.16
L32	15.0000-14.7500	C	1.177	0.000	0.000	3.645	0.000	0.18
		A		0.000	0.000	0.596	0.000	0.01
		B		0.000	0.000	0.522	0.000	0.01
L33	14.7500-13.0000	C	1.169	0.000	0.000	0.189	0.000	0.01
		A		0.000	0.000	4.159	0.000	0.05
		B		0.000	0.000	3.642	0.000	0.06
L34	13.0000-12.7500	C	1.160	0.000	0.000	1.315	0.000	0.06
		A		0.000	0.000	0.592	0.000	0.01
		B		0.000	0.000	0.518	0.000	0.01
L35	12.7500-12.5000	C	1.158	0.000	0.000	0.187	0.000	0.01
		A		0.000	0.000	0.591	0.000	0.01
		B		0.000	0.000	0.518	0.000	0.01
L36	12.5000-12.2500	C	1.156	0.000	0.000	0.186	0.000	0.01
		A		0.000	0.000	0.590	0.000	0.01
		B		0.000	0.000	0.517	0.000	0.01
L37	12.2500-7.2500	C	1.129	0.000	0.000	0.186	0.000	0.01
		A		0.000	0.000	10.870	0.000	0.13
		B		0.000	0.000	10.234	0.000	0.16
L38	7.2500-5.5000	C	1.082	0.000	0.000	3.636	0.000	0.18
		A		0.000	0.000	3.582	0.000	0.04
		B		0.000	0.000	3.512	0.000	0.05
L39	5.5000-5.2500	C	1.063	0.000	0.000	1.223	0.000	0.06
		A		0.000	0.000	0.508	0.000	0.01
		B		0.000	0.000	0.498	0.000	0.01
L40	5.2500-5.0000	C	1.058	0.000	0.000	0.172	0.000	0.01
		A		0.000	0.000	0.507	0.000	0.01
		B		0.000	0.000	0.497	0.000	0.01
L41	5.0000-4.7500	C	1.053	0.000	0.000	0.171	0.000	0.01
		A		0.000	0.000	0.505	0.000	0.01
		B		0.000	0.000	0.496	0.000	0.01
L42	4.7500-2.5000	C	1.022	0.000	0.000	0.170	0.000	0.01
		A		0.000	0.000	4.486	0.000	0.05
		B		0.000	0.000	4.402	0.000	0.06
L43	2.5000-2.2500	C	0.980	0.000	0.000	1.493	0.000	0.08
		A		0.000	0.000	0.489	0.000	0.01
		B		0.000	0.000	0.480	0.000	0.01
L44	2.2500-0.0000	C	0.909	0.000	0.000	0.159	0.000	0.01
		A		0.000	0.000	4.257	0.000	0.05
		B		0.000	0.000	4.186	0.000	0.06
		C		0.000	0.000	1.340	0.000	0.08

Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L1	117.0000-112.0000	0.0000	0.0000	0.0000	0.0000
L2	112.0000-110.0000	0.0000	0.0000	0.0000	0.0000
L3	110.0000-105.0000	3.3863	-0.7198	3.1391	-0.6672
L4	105.0000-100.0000	3.4502	-0.7334	3.2383	-0.6883
L5	100.0000-95.0000	3.5115	-0.7464	3.3332	-0.7085
L6	95.0000-90.0000	2.8281	-0.6875	2.1716	-0.5885
L7	90.0000-85.0000	2.3944	-0.6438	1.5602	-0.4953
L8	85.0000-81.8800	0.5068	-0.1007	-0.0150	-0.1379
L9	81.8800-81.6300	-0.1142	0.0870	-0.5524	0.0346
L10	81.6300-76.6300	-0.1118	0.0865	-0.5530	0.0338
L11	76.6300-76.0800	-0.1083	0.0851	-0.5105	0.0304
L12	76.0800-75.8300	-0.1081	0.0852	-0.5116	0.0304
L13	75.8300-71.0000	-0.1061	0.0848	-0.5171	0.0300
L14	71.0000-70.7500	-0.1043	0.0846	-0.5229	0.0297
L15	70.7500-68.0800	-0.1271	0.0407	-0.6738	-0.2983
L16	68.0800-67.8300	-0.1264	0.0388	-0.6611	-0.3007
L17	67.8300-63.5000	-0.1169	0.0632	-0.6346	-0.1284
L18	63.5000-63.2500	-0.1031	0.0962	-0.5326	0.1289
L19	63.2500-58.2500	-0.1013	0.0959	-0.5376	0.1300
L20	58.2500-53.2500	-0.0980	0.0955	-0.5469	0.1321
L21	53.2500-47.4200	-0.0946	0.0951	-0.5563	0.1342
L22	47.4200-46.4200	-0.0939	0.0951	-0.5592	0.1348
L23	46.4200-41.4200	-0.0920	0.0948	-0.5620	0.1357
L24	41.4200-38.0800	-0.0896	0.0945	-0.5681	0.1372
L25	38.0800-37.8300	-0.0886	0.0944	-0.5705	0.1379
L26	37.8300-35.0000	-0.0877	0.0943	-0.5724	0.1384
L27	35.0000-34.7500	-0.0870	0.0942	-0.5745	0.1389
L28	34.7500-29.7500	-0.0855	0.0941	-0.5775	0.1398
L29	29.7500-24.7500	-0.0829	0.0937	-0.5823	0.1413
L30	24.7500-19.7500	-0.0805	0.0934	-0.5855	0.1426
L31	19.7500-15.0000	-0.0781	0.0931	-0.5866	0.1437
L32	15.0000-14.7500	-0.0772	0.0933	-0.5861	0.1441
L33	14.7500-13.0000	-0.0769	0.0934	-0.5856	0.1443
L34	13.0000-12.7500	-0.0767	0.0936	-0.5854	0.1445
L35	12.7500-12.5000	-0.0766	0.0936	-0.5852	0.1445
L36	12.5000-12.2500	-0.0765	0.0937	-0.5850	0.1446
L37	12.2500-7.2500	-0.0563	0.1278	-0.4372	0.4109
L38	7.2500-5.5000	-0.0446	0.1468	-0.3529	0.5501
L39	5.5000-5.2500	-0.0442	0.1472	-0.3504	0.5474
L40	5.2500-5.0000	-0.0441	0.1472	-0.3496	0.5466
L41	5.0000-4.7500	-0.0441	0.1474	-0.3489	0.5459
L42	4.7500-2.5000	-0.0436	0.1477	-0.3439	0.5400
L43	2.5000-2.2500	-0.0430	0.1480	-0.3364	0.5306
L44	2.2500-0.0000	-0.0426	0.1484	-0.3227	0.5131

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L3	6	HCS 6X12 4AWG(1-5/8)	105.00 - 110.00	1.0000	1.0000
L4	6	HCS 6X12 4AWG(1-5/8)	100.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			105.00		
L5	6	HCS 6X12 4AWG(1-5/8)	95.00 - 100.00	1.0000	1.0000
L6	6	HCS 6X12 4AWG(1-5/8)	90.00 - 95.00	1.0000	1.0000
L6	12	7983A(ELLIPTICAL)	90.00 - 93.00	1.0000	1.0000
L7	6	HCS 6X12 4AWG(1-5/8)	85.00 - 90.00	1.0000	1.0000
L7	12	7983A(ELLIPTICAL)	85.00 - 90.00	1.0000	1.0000
L7	48	CCI-045100 Reinforcement	85.00 - 85.33	1.0000	1.0000
L7	49	CCI-045100 Reinforcement	85.00 - 85.67	1.0000	1.0000
L7	50	CCI-045100 Reinforcement	85.00 - 85.67	1.0000	1.0000
L8	6	HCS 6X12 4AWG(1-5/8)	81.88 - 85.00	1.0000	1.0000
L8	12	7983A(ELLIPTICAL)	81.88 - 85.00	1.0000	1.0000
L8	20	AVA7-50(1-5/8)	81.88 - 84.00	1.0000	1.0000
L8	48	CCI-045100 Reinforcement	81.88 - 85.00	1.0000	1.0000
L8	49	CCI-045100 Reinforcement	81.88 - 85.00	1.0000	1.0000
L8	50	CCI-045100 Reinforcement	81.88 - 85.00	1.0000	1.0000
L9	6	HCS 6X12 4AWG(1-5/8)	81.63 - 81.88	1.0000	1.0000
L9	12	7983A(ELLIPTICAL)	81.63 - 81.88	1.0000	1.0000
L9	20	AVA7-50(1-5/8)	81.63 - 81.88	1.0000	1.0000
L9	48	CCI-045100 Reinforcement	81.63 - 81.88	1.0000	1.0000
L9	49	CCI-045100 Reinforcement	81.63 - 81.88	1.0000	1.0000
L9	50	CCI-045100 Reinforcement	81.63 - 81.88	1.0000	1.0000
L10	6	HCS 6X12 4AWG(1-5/8)	76.63 - 81.63	1.0000	1.0000
L10	12	7983A(ELLIPTICAL)	76.63 - 81.63	1.0000	1.0000
L10	20	AVA7-50(1-5/8)	76.63 - 81.63	1.0000	1.0000
L10	48	CCI-045100 Reinforcement	76.63 - 81.63	1.0000	1.0000
L10	49	CCI-045100 Reinforcement	76.63 - 81.63	1.0000	1.0000
L10	50	CCI-045100 Reinforcement	76.63 - 81.63	1.0000	1.0000
L10	52	CCI-040075 Reinforcement	76.63 - 77.10	1.0000	1.0000
L10	53	CCI-040075 Reinforcement	76.63 - 77.10	1.0000	1.0000
L10	54	CCI-040075 Reinforcement	76.63 - 77.10	1.0000	1.0000
L11	6	HCS 6X12 4AWG(1-5/8)	76.08 - 76.63	1.0000	1.0000
L11	12	7983A(ELLIPTICAL)	76.08 - 76.63	1.0000	1.0000
L11	20	AVA7-50(1-5/8)	76.08 - 76.63	1.0000	1.0000
L11	48	CCI-045100 Reinforcement	76.08 - 76.63	1.0000	1.0000
L11	49	CCI-045100 Reinforcement	76.08 - 76.63	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L11	50	CCI-045100 Reinforcement	76.08 - 76.63	1.0000	1.0000
L11	52	CCI-040075 Reinforcement	76.08 - 76.63	1.0000	1.0000
L11	53	CCI-040075 Reinforcement	76.08 - 76.63	1.0000	1.0000
L11	54	CCI-040075 Reinforcement	76.08 - 76.63	1.0000	1.0000
L12	6	HCS 6X12 4AWG(1-5/8)	75.83 - 76.08	1.0000	1.0000
L12	12	7983A(ELLIPTICAL)	75.83 - 76.08	1.0000	1.0000
L12	20	AVA7-50(1-5/8)	75.83 - 76.08	1.0000	1.0000
L12	48	CCI-045100 Reinforcement	75.83 - 76.08	1.0000	1.0000
L12	49	CCI-045100 Reinforcement	75.83 - 76.08	1.0000	1.0000
L12	50	CCI-045100 Reinforcement	75.83 - 76.08	1.0000	1.0000
L12	52	CCI-040075 Reinforcement	75.83 - 76.08	1.0000	1.0000
L12	53	CCI-040075 Reinforcement	75.83 - 76.08	1.0000	1.0000
L12	54	CCI-040075 Reinforcement	75.83 - 76.08	1.0000	1.0000
L13	6	HCS 6X12 4AWG(1-5/8)	71.00 - 75.83	1.0000	1.0000
L13	12	7983A(ELLIPTICAL)	71.00 - 75.83	1.0000	1.0000
L13	20	AVA7-50(1-5/8)	71.00 - 75.83	1.0000	1.0000
L13	48	CCI-045100 Reinforcement	71.00 - 75.83	1.0000	1.0000
L13	49	CCI-045100 Reinforcement	71.00 - 75.83	1.0000	1.0000
L13	50	CCI-045100 Reinforcement	71.00 - 75.83	1.0000	1.0000
L13	52	CCI-040075 Reinforcement	71.00 - 75.83	1.0000	1.0000
L13	53	CCI-040075 Reinforcement	71.00 - 75.83	1.0000	1.0000
L13	54	CCI-040075 Reinforcement	71.00 - 75.83	1.0000	1.0000
L14	6	HCS 6X12 4AWG(1-5/8)	70.75 - 71.00	1.0000	1.0000
L14	12	7983A(ELLIPTICAL)	70.75 - 71.00	1.0000	1.0000
L14	20	AVA7-50(1-5/8)	70.75 - 71.00	1.0000	1.0000
L14	48	CCI-045100 Reinforcement	70.75 - 71.00	1.0000	1.0000
L14	49	CCI-045100 Reinforcement	70.75 - 71.00	1.0000	1.0000
L14	50	CCI-045100 Reinforcement	70.75 - 71.00	1.0000	1.0000
L14	52	CCI-040075 Reinforcement	70.75 - 71.00	1.0000	1.0000
L14	53	CCI-040075 Reinforcement	70.75 - 71.00	1.0000	1.0000
L14	54	CCI-040075 Reinforcement	70.75 - 71.00	1.0000	1.0000
L15	6	HCS 6X12 4AWG(1-5/8)	68.08 - 70.75	1.0000	1.0000
L15	12	7983A(ELLIPTICAL)	68.08 - 70.75	1.0000	1.0000
L15	20	AVA7-50(1-5/8)	68.08 - 70.75	1.0000	1.0000
L15	28	MS-450 Reinforcement	68.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			70.00		
L15	29	MS-450 Reinforcement	68.08 - 70.00	1.0000	1.0000
L15	30	MS-450 Reinforcement	68.08 - 70.00	1.0000	1.0000
L15	42	CCI-060100 Reinforcement	68.08 - 70.18	1.0000	1.0000
L15	43	CCI-060100 Reinforcement	70.18 - 70.50	1.0000	1.0000
L15	44	CCI-060100 Reinforcement	68.08 - 70.18	1.0000	1.0000
L15	45	CCI-060100 Reinforcement	70.18 - 70.50	1.0000	1.0000
L15	46	CCI-060100 Reinforcement	68.08 - 70.18	1.0000	1.0000
L15	47	CCI-060100 Reinforcement	70.18 - 70.50	1.0000	1.0000
L15	48	CCI-045100 Reinforcement	68.08 - 70.75	1.0000	1.0000
L15	49	CCI-045100 Reinforcement	70.67 - 70.75	1.0000	1.0000
L15	50	CCI-045100 Reinforcement	70.67 - 70.75	1.0000	1.0000
L15	52	CCI-040075 Reinforcement	68.08 - 70.75	1.0000	1.0000
L15	53	CCI-040075 Reinforcement	68.08 - 70.75	1.0000	1.0000
L15	54	CCI-040075 Reinforcement	68.08 - 70.75	1.0000	1.0000
L16	6	HCS 6X12 4AWG(1-5/8)	67.83 - 68.08	1.0000	1.0000
L16	12	7983A(ELLIPTICAL)	67.83 - 68.08	1.0000	1.0000
L16	20	AVA7-50(1-5/8)	67.83 - 68.08	1.0000	1.0000
L16	28	MS-450 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	29	MS-450 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	30	MS-450 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	42	CCI-060100 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	44	CCI-060100 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	46	CCI-060100 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	48	CCI-045100 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	52	CCI-040075 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	53	CCI-040075 Reinforcement	67.83 - 68.08	1.0000	1.0000
L16	54	CCI-040075 Reinforcement	67.83 - 68.08	1.0000	1.0000
L17	6	HCS 6X12 4AWG(1-5/8)	63.50 - 67.83	1.0000	1.0000
L17	12	7983A(ELLIPTICAL)	63.50 - 67.83	1.0000	1.0000
L17	20	AVA7-50(1-5/8)	63.50 - 67.83	1.0000	1.0000
L17	25	MS-450 Reinforcement	63.50 - 65.00	1.0000	1.0000
L17	26	MS-450 Reinforcement	63.50 - 65.00	1.0000	1.0000
L17	27	MS-450 Reinforcement	63.50 - 65.00	1.0000	1.0000
L17	28	MS-450 Reinforcement	63.50 - 67.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L17	29	MS-450 Reinforcement	63.50 - 67.83	1.0000	1.0000
L17	30	MS-450 Reinforcement	63.50 - 67.83	1.0000	1.0000
L17	42	CCI-060100 Reinforcement	63.50 - 67.83	1.0000	1.0000
L17	44	CCI-060100 Reinforcement	63.50 - 67.83	1.0000	1.0000
L17	46	CCI-060100 Reinforcement	63.50 - 67.83	1.0000	1.0000
L17	48	CCI-045100 Reinforcement	65.33 - 67.83	1.0000	1.0000
L17	52	CCI-040075 Reinforcement	67.10 - 67.83	1.0000	1.0000
L17	53	CCI-040075 Reinforcement	67.10 - 67.83	1.0000	1.0000
L17	54	CCI-040075 Reinforcement	67.10 - 67.83	1.0000	1.0000
L18	6	HCS 6X12 4AWG(1-5/8)	63.25 - 63.50	1.0000	1.0000
L18	12	7983A(ELLIPTICAL)	63.25 - 63.50	1.0000	1.0000
L18	20	AVA7-50(1-5/8)	63.25 - 63.50	1.0000	1.0000
L18	25	MS-450 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	26	MS-450 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	27	MS-450 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	28	MS-450 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	29	MS-450 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	30	MS-450 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	42	CCI-060100 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	44	CCI-060100 Reinforcement	63.25 - 63.50	1.0000	1.0000
L18	46	CCI-060100 Reinforcement	63.25 - 63.50	1.0000	1.0000
L19	6	HCS 6X12 4AWG(1-5/8)	58.25 - 63.25	1.0000	1.0000
L19	12	7983A(ELLIPTICAL)	58.25 - 63.25	1.0000	1.0000
L19	20	AVA7-50(1-5/8)	58.25 - 63.25	1.0000	1.0000
L19	25	MS-450 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	26	MS-450 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	27	MS-450 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	28	MS-450 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	29	MS-450 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	30	MS-450 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	42	CCI-060100 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	44	CCI-060100 Reinforcement	58.25 - 63.25	1.0000	1.0000
L19	46	CCI-060100 Reinforcement	58.25 - 63.25	1.0000	1.0000
L20	6	HCS 6X12 4AWG(1-5/8)	53.25 - 58.25	1.0000	1.0000
L20	12	7983A(ELLIPTICAL)	53.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
			58.25		
L20	20	AVA7-50(1-5/8)	53.25 - 58.25	1.0000	1.0000
L20	25	MS-450 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	26	MS-450 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	27	MS-450 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	28	MS-450 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	29	MS-450 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	30	MS-450 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	42	CCI-060100 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	44	CCI-060100 Reinforcement	53.25 - 58.25	1.0000	1.0000
L20	46	CCI-060100 Reinforcement	53.25 - 58.25	1.0000	1.0000
L21	6	HCS 6X12 4AWG(1-5/8)	47.42 - 53.25	1.0000	1.0000
L21	12	7983A(ELLIPTICAL)	47.42 - 53.25	1.0000	1.0000
L21	20	AVA7-50(1-5/8)	47.42 - 53.25	1.0000	1.0000
L21	25	MS-450 Reinforcement	47.42 - 53.25	1.0000	1.0000
L21	26	MS-450 Reinforcement	47.42 - 53.25	1.0000	1.0000
L21	27	MS-450 Reinforcement	47.42 - 53.25	1.0000	1.0000
L21	28	MS-450 Reinforcement	50.00 - 53.25	1.0000	1.0000
L21	29	MS-450 Reinforcement	50.00 - 53.25	1.0000	1.0000
L21	30	MS-450 Reinforcement	50.00 - 53.25	1.0000	1.0000
L21	35	CCI-040075 Reinforcement	47.42 - 50.00	1.0000	1.0000
L21	36	CCI-040075 Reinforcement	47.42 - 50.00	1.0000	1.0000
L21	37	CCI-040075 Reinforcement	47.42 - 50.00	1.0000	1.0000
L21	42	CCI-060100 Reinforcement	47.42 - 53.25	1.0000	1.0000
L21	44	CCI-060100 Reinforcement	47.42 - 53.25	1.0000	1.0000
L21	46	CCI-060100 Reinforcement	47.42 - 53.25	1.0000	1.0000
L22	6	HCS 6X12 4AWG(1-5/8)	46.42 - 47.42	1.0000	1.0000
L22	12	7983A(ELLIPTICAL)	46.42 - 47.42	1.0000	1.0000
L22	20	AVA7-50(1-5/8)	46.42 - 47.42	1.0000	1.0000
L22	25	MS-450 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	26	MS-450 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	27	MS-450 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	35	CCI-040075 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	36	CCI-040075 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	37	CCI-040075 Reinforcement	46.42 - 47.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L22	42	CCI-060100 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	44	CCI-060100 Reinforcement	46.42 - 47.42	1.0000	1.0000
L22	46	CCI-060100 Reinforcement	46.42 - 47.42	1.0000	1.0000
L23	6	HCS 6X12 4AWG(1-5/8)	41.42 - 46.42	1.0000	1.0000
L23	12	7983A(ELLIPTICAL)	41.42 - 46.42	1.0000	1.0000
L23	20	AVA7-50(1-5/8)	41.42 - 46.42	1.0000	1.0000
L23	25	MS-450 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	26	MS-450 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	27	MS-450 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	35	CCI-040075 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	36	CCI-040075 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	37	CCI-040075 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	42	CCI-060100 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	44	CCI-060100 Reinforcement	41.42 - 46.42	1.0000	1.0000
L23	46	CCI-060100 Reinforcement	41.42 - 46.42	1.0000	1.0000
L24	6	HCS 6X12 4AWG(1-5/8)	38.08 - 41.42	1.0000	1.0000
L24	12	7983A(ELLIPTICAL)	38.08 - 41.42	1.0000	1.0000
L24	20	AVA7-50(1-5/8)	38.08 - 41.42	1.0000	1.0000
L24	25	MS-450 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	26	MS-450 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	27	MS-450 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	35	CCI-040075 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	36	CCI-040075 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	37	CCI-040075 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	42	CCI-060100 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	44	CCI-060100 Reinforcement	38.08 - 41.42	1.0000	1.0000
L24	46	CCI-060100 Reinforcement	38.08 - 41.42	1.0000	1.0000
L25	6	HCS 6X12 4AWG(1-5/8)	37.83 - 38.08	1.0000	1.0000
L25	12	7983A(ELLIPTICAL)	37.83 - 38.08	1.0000	1.0000
L25	20	AVA7-50(1-5/8)	37.83 - 38.08	1.0000	1.0000
L25	25	MS-450 Reinforcement	37.83 - 38.08	1.0000	1.0000
L25	26	MS-450 Reinforcement	37.83 - 38.08	1.0000	1.0000
L25	27	MS-450 Reinforcement	37.83 - 38.08	1.0000	1.0000
L25	35	CCI-040075 Reinforcement	37.83 - 38.08	1.0000	1.0000
L25	36	CCI-040075	37.83 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L25	37	Reinforcement CCI-040075	38.08 37.83 -	1.0000	1.0000
L25	42	Reinforcement CCI-060100	38.08 37.83 -	1.0000	1.0000
L25	44	Reinforcement CCI-060100	38.08 37.83 -	1.0000	1.0000
L25	46	Reinforcement CCI-060100	38.08 37.83 -	1.0000	1.0000
L26	6	HCS 6X12 4AWG(1-5/8)	38.08 35.00 -	1.0000	1.0000
L26	12	7983A(ELLIPTICAL)	37.83 35.00 -	1.0000	1.0000
L26	20	AVA7-50(1-5/8)	37.83 35.00 -	1.0000	1.0000
L26	25	MS-450 Reinforcement	37.83 35.00 -	1.0000	1.0000
L26	26	MS-450 Reinforcement	37.83 35.00 -	1.0000	1.0000
L26	27	MS-450 Reinforcement	37.83 35.00 -	1.0000	1.0000
L26	35	CCI-040075 Reinforcement	37.83 35.00 -	1.0000	1.0000
L26	36	CCI-040075 Reinforcement	37.83 35.00 -	1.0000	1.0000
L26	37	CCI-040075 Reinforcement	37.83 35.00 -	1.0000	1.0000
L26	39	CCI-045100 Reinforcement	37.83 35.50 -	1.0000	1.0000
L26	40	CCI-045100 Reinforcement	35.50 35.00 -	1.0000	1.0000
L26	41	CCI-045100 Reinforcement	35.50 35.00 -	1.0000	1.0000
L26	42	CCI-060100 Reinforcement	35.50 37.83 -	1.0000	1.0000
L26	44	CCI-060100 Reinforcement	37.83 35.50 -	1.0000	1.0000
L26	46	CCI-060100 Reinforcement	37.83 35.50 -	1.0000	1.0000
L27	6	HCS 6X12 4AWG(1-5/8)	37.83 34.75 -	1.0000	1.0000
L27	12	7983A(ELLIPTICAL)	35.00 34.75 -	1.0000	1.0000
L27	20	AVA7-50(1-5/8)	35.00 34.75 -	1.0000	1.0000
L27	22	MS-600 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	23	MS-600 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	24	MS-600 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	32	CCI-045100 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	33	CCI-045100 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	34	CCI-045100 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	39	CCI-045100 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	40	CCI-045100 Reinforcement	35.00 34.75 -	1.0000	1.0000
L27	41	CCI-045100 Reinforcement	35.00 34.75 -	1.0000	1.0000
L28	6	HCS 6X12 4AWG(1-5/8)	35.00 29.75 -	1.0000	1.0000
L28	12	7983A(ELLIPTICAL)	34.75 29.75 -	1.0000	1.0000
L28	20	AVA7-50(1-5/8)	34.75 29.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L28	22	MS-600 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	23	MS-600 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	24	MS-600 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	32	CCI-045100 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	33	CCI-045100 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	34	CCI-045100 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	39	CCI-045100 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	40	CCI-045100 Reinforcement	29.75 - 34.75	1.0000	1.0000
L28	41	CCI-045100 Reinforcement	29.75 - 34.75	1.0000	1.0000
L29	6	HCS 6X12 4AWG(1-5/8)	24.75 - 29.75	1.0000	1.0000
L29	12	7983A(ELLIPTICAL)	24.75 - 29.75	1.0000	1.0000
L29	20	AVA7-50(1-5/8)	24.75 - 29.75	1.0000	1.0000
L29	22	MS-600 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	23	MS-600 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	24	MS-600 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	32	CCI-045100 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	33	CCI-045100 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	34	CCI-045100 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	39	CCI-045100 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	40	CCI-045100 Reinforcement	24.75 - 29.75	1.0000	1.0000
L29	41	CCI-045100 Reinforcement	24.75 - 29.75	1.0000	1.0000
L30	6	HCS 6X12 4AWG(1-5/8)	19.75 - 24.75	1.0000	1.0000
L30	12	7983A(ELLIPTICAL)	19.75 - 24.75	1.0000	1.0000
L30	20	AVA7-50(1-5/8)	19.75 - 24.75	1.0000	1.0000
L30	22	MS-600 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	23	MS-600 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	24	MS-600 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	32	CCI-045100 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	33	CCI-045100 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	34	CCI-045100 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	39	CCI-045100 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	40	CCI-045100 Reinforcement	19.75 - 24.75	1.0000	1.0000
L30	41	CCI-045100 Reinforcement	19.75 - 24.75	1.0000	1.0000
L31	6	HCS 6X12 4AWG(1-5/8)	15.00 - 19.75	1.0000	1.0000
L31	12	7983A(ELLIPTICAL)	15.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L31	20	AVA7-50(1-5/8)	19.75 15.00 -	1.0000	1.0000
L31	22	MS-600 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	23	MS-600 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	24	MS-600 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	32	CCI-045100 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	33	CCI-045100 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	34	CCI-045100 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	39	CCI-045100 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	40	CCI-045100 Reinforcement	19.75 15.00 -	1.0000	1.0000
L31	41	CCI-045100 Reinforcement	19.75 15.00 -	1.0000	1.0000
L32	6	HCS 6X12 4AWG(1-5/8)	14.75 - 15.00	1.0000	1.0000
L32	12	7983A(ELLIPTICAL)	14.75 - 15.00	1.0000	1.0000
L32	20	AVA7-50(1-5/8)	14.75 - 15.00	1.0000	1.0000
L32	22	MS-600 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	23	MS-600 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	24	MS-600 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	32	CCI-045100 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	33	CCI-045100 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	34	CCI-045100 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	39	CCI-045100 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	40	CCI-045100 Reinforcement	14.75 - 15.00	1.0000	1.0000
L32	41	CCI-045100 Reinforcement	14.75 - 15.00	1.0000	1.0000
L33	6	HCS 6X12 4AWG(1-5/8)	13.00 - 14.75	1.0000	1.0000
L33	12	7983A(ELLIPTICAL)	13.00 - 14.75	1.0000	1.0000
L33	20	AVA7-50(1-5/8)	13.00 - 14.75	1.0000	1.0000
L33	22	MS-600 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	23	MS-600 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	24	MS-600 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	32	CCI-045100 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	33	CCI-045100 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	34	CCI-045100 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	39	CCI-045100 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	40	CCI-045100 Reinforcement	13.00 - 14.75	1.0000	1.0000
L33	41	CCI-045100 Reinforcement	13.00 - 14.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L34	6	HCS 6X12 4AWG(1-5/8)	12.75 - 13.00	1.0000	1.0000
L34	12	7983A(ELLIPTICAL)	12.75 - 13.00	1.0000	1.0000
L34	20	AVA7-50(1-5/8)	12.75 - 13.00	1.0000	1.0000
L34	22	MS-600 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	23	MS-600 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	24	MS-600 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	32	CCI-045100 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	33	CCI-045100 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	34	CCI-045100 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	39	CCI-045100 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	40	CCI-045100 Reinforcement	12.75 - 13.00	1.0000	1.0000
L34	41	CCI-045100 Reinforcement	12.75 - 13.00	1.0000	1.0000
L35	6	HCS 6X12 4AWG(1-5/8)	12.50 - 12.75	1.0000	1.0000
L35	12	7983A(ELLIPTICAL)	12.50 - 12.75	1.0000	1.0000
L35	20	AVA7-50(1-5/8)	12.50 - 12.75	1.0000	1.0000
L35	22	MS-600 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	23	MS-600 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	24	MS-600 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	32	CCI-045100 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	33	CCI-045100 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	34	CCI-045100 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	39	CCI-045100 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	40	CCI-045100 Reinforcement	12.50 - 12.75	1.0000	1.0000
L35	41	CCI-045100 Reinforcement	12.50 - 12.75	1.0000	1.0000
L36	6	HCS 6X12 4AWG(1-5/8)	12.25 - 12.50	1.0000	1.0000
L36	12	7983A(ELLIPTICAL)	12.25 - 12.50	1.0000	1.0000
L36	20	AVA7-50(1-5/8)	12.25 - 12.50	1.0000	1.0000
L36	22	MS-600 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	23	MS-600 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	24	MS-600 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	32	CCI-045100 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	33	CCI-045100 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	34	CCI-045100 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	39	CCI-045100 Reinforcement	12.25 - 12.50	1.0000	1.0000
L36	40	CCI-045100 Reinforcement	12.25 - 12.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L36	41	Reinforcement CCI-045100	12.50 12.25 -	1.0000	1.0000
L37	6	HCS 6X12 4AWG(1-5/8)	7.25 - 12.25	1.0000	1.0000
L37	12	7983A(ELLIPTICAL)	7.25 - 12.25	1.0000	1.0000
L37	20	AVA7-50(1-5/8)	7.25 - 12.25	1.0000	1.0000
L37	22	MS-600 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	23	MS-600 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	24	MS-600 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	32	CCI-045100 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	33	CCI-045100 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	34	CCI-045100 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	39	CCI-045100 Reinforcement	10.50 - 12.25	1.0000	1.0000
L37	40	CCI-045100 Reinforcement	7.25 - 12.25	1.0000	1.0000
L37	41	CCI-045100 Reinforcement	7.25 - 12.25	1.0000	1.0000
L38	6	HCS 6X12 4AWG(1-5/8)	5.50 - 7.25	1.0000	1.0000
L38	12	7983A(ELLIPTICAL)	5.50 - 7.25	1.0000	1.0000
L38	20	AVA7-50(1-5/8)	5.50 - 7.25	1.0000	1.0000
L38	22	MS-600 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	23	MS-600 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	24	MS-600 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	32	CCI-045100 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	33	CCI-045100 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	34	CCI-045100 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	40	CCI-045100 Reinforcement	5.50 - 7.25	1.0000	1.0000
L38	41	CCI-045100 Reinforcement	5.50 - 7.25	1.0000	1.0000
L39	6	HCS 6X12 4AWG(1-5/8)	5.25 - 5.50	1.0000	1.0000
L39	12	7983A(ELLIPTICAL)	5.25 - 5.50	1.0000	1.0000
L39	20	AVA7-50(1-5/8)	5.25 - 5.50	1.0000	1.0000
L39	22	MS-600 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	23	MS-600 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	24	MS-600 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	32	CCI-045100 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	33	CCI-045100 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	34	CCI-045100 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	40	CCI-045100 Reinforcement	5.25 - 5.50	1.0000	1.0000
L39	41	CCI-045100 Reinforcement	5.25 - 5.50	1.0000	1.0000
L40	6	HCS 6X12 4AWG(1-5/8)	5.00 - 5.25	1.0000	1.0000
L40	12	7983A(ELLIPTICAL)	5.00 - 5.25	1.0000	1.0000
L40	20	AVA7-50(1-5/8)	5.00 - 5.25	1.0000	1.0000
L40	22	MS-600 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	23	MS-600 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	24	MS-600 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	32	CCI-045100 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	33	CCI-045100 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	34	CCI-045100 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	40	CCI-045100 Reinforcement	5.00 - 5.25	1.0000	1.0000
L40	41	CCI-045100 Reinforcement	5.00 - 5.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	6	HCS 6X12 4AWG(1-5/8)	4.75 - 5.00	1.0000	1.0000
L41	12	7983A(ELLIPTICAL)	4.75 - 5.00	1.0000	1.0000
L41	20	AVA7-50(1-5/8)	4.75 - 5.00	1.0000	1.0000
L41	22	MS-600 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	23	MS-600 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	24	MS-600 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	32	CCI-045100 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	33	CCI-045100 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	34	CCI-045100 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	40	CCI-045100 Reinforcement	4.75 - 5.00	1.0000	1.0000
L41	41	CCI-045100 Reinforcement	4.75 - 5.00	1.0000	1.0000
L42	6	HCS 6X12 4AWG(1-5/8)	2.50 - 4.75	1.0000	1.0000
L42	12	7983A(ELLIPTICAL)	2.50 - 4.75	1.0000	1.0000
L42	20	AVA7-50(1-5/8)	2.50 - 4.75	1.0000	1.0000
L42	22	MS-600 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	23	MS-600 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	24	MS-600 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	32	CCI-045100 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	33	CCI-045100 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	34	CCI-045100 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	40	CCI-045100 Reinforcement	2.50 - 4.75	1.0000	1.0000
L42	41	CCI-045100 Reinforcement	2.50 - 4.75	1.0000	1.0000
L43	6	HCS 6X12 4AWG(1-5/8)	2.25 - 2.50	1.0000	1.0000
L43	12	7983A(ELLIPTICAL)	2.25 - 2.50	1.0000	1.0000
L43	20	AVA7-50(1-5/8)	2.25 - 2.50	1.0000	1.0000
L43	22	MS-600 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	23	MS-600 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	24	MS-600 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	32	CCI-045100 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	33	CCI-045100 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	34	CCI-045100 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	40	CCI-045100 Reinforcement	2.25 - 2.50	1.0000	1.0000
L43	41	CCI-045100 Reinforcement	2.25 - 2.50	1.0000	1.0000
L44	6	HCS 6X12 4AWG(1-5/8)	0.00 - 2.25	1.0000	1.0000
L44	12	7983A(ELLIPTICAL)	0.00 - 2.25	1.0000	1.0000
L44	20	AVA7-50(1-5/8)	0.00 - 2.25	1.0000	1.0000
L44	22	MS-600 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	23	MS-600 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	24	MS-600 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	32	CCI-045100 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	33	CCI-045100 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	34	CCI-045100 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	40	CCI-045100 Reinforcement	0.00 - 2.25	1.0000	1.0000
L44	41	CCI-045100 Reinforcement	0.00 - 2.25	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	48	CCI-045100 Reinforcement	85.00 - 85.33	Manual	1.0000
L7	49	CCI-045100 Reinforcement	85.00 - 85.67	Manual	1.0000
L7	50	CCI-045100 Reinforcement	85.00 - 85.67	Manual	1.0000
L8	48	CCI-045100 Reinforcement	81.88 - 85.00	Manual	1.0000
L8	49	CCI-045100 Reinforcement	81.88 - 85.00	Manual	1.0000
L8	50	CCI-045100 Reinforcement	81.88 - 85.00	Manual	1.0000
L9	48	CCI-045100 Reinforcement	81.63 - 81.88	Manual	1.0000
L9	49	CCI-045100 Reinforcement	81.63 - 81.88	Manual	1.0000
L9	50	CCI-045100 Reinforcement	81.63 - 81.88	Manual	1.0000
L10	48	CCI-045100 Reinforcement	76.63 - 81.63	Manual	1.0000
L10	49	CCI-045100 Reinforcement	76.63 - 81.63	Manual	1.0000
L10	50	CCI-045100 Reinforcement	76.63 - 81.63	Manual	1.0000
L10	52	CCI-040075 Reinforcement	76.63 - 77.10	Manual	1.0000
L10	53	CCI-040075 Reinforcement	76.63 - 77.10	Manual	1.0000
L10	54	CCI-040075 Reinforcement	76.63 - 77.10	Manual	1.0000
L11	48	CCI-045100 Reinforcement	76.08 - 76.63	Manual	1.0000
L11	49	CCI-045100 Reinforcement	76.08 - 76.63	Manual	1.0000
L11	50	CCI-045100 Reinforcement	76.08 - 76.63	Manual	1.0000
L11	52	CCI-040075 Reinforcement	76.08 - 76.63	Manual	1.0000
L11	53	CCI-040075 Reinforcement	76.08 - 76.63	Manual	1.0000
L11	54	CCI-040075 Reinforcement	76.08 - 76.63	Manual	1.0000
L12	48	CCI-045100 Reinforcement	75.83 - 76.08	Manual	1.0000
L12	49	CCI-045100 Reinforcement	75.83 - 76.08	Manual	1.0000
L12	50	CCI-045100 Reinforcement	75.83 - 76.08	Manual	1.0000
L12	52	CCI-040075 Reinforcement	75.83 - 76.08	Manual	1.0000
L12	53	CCI-040075 Reinforcement	75.83 - 76.08	Manual	1.0000
L12	54	CCI-040075 Reinforcement	75.83 - 76.08	Manual	1.0000
L13	48	CCI-045100 Reinforcement	71.00 - 75.83	Manual	1.0000
L13	49	CCI-045100 Reinforcement	71.00 - 75.83	Manual	1.0000
L13	50	CCI-045100 Reinforcement	71.00 - 75.83	Manual	1.0000
L13	52	CCI-040075 Reinforcement	71.00 - 75.83	Manual	1.0000
L13	53	CCI-040075 Reinforcement	71.00 - 75.83	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	54	Reinforcement CCI-040075	75.83 71.00 -	Manual	1.0000
L14	48	Reinforcement CCI-045100	75.83 70.75 -	Manual	1.0000
L14	49	Reinforcement CCI-045100	71.00 70.75 -	Manual	1.0000
L14	50	Reinforcement CCI-045100	71.00 70.75 -	Manual	1.0000
L14	52	Reinforcement CCI-040075	71.00 70.75 -	Manual	1.0000
L14	53	Reinforcement CCI-040075	71.00 70.75 -	Manual	1.0000
L14	54	Reinforcement CCI-040075	71.00 70.75 -	Manual	1.0000
L15	28	MS-450 Reinforcement	71.00 68.08 -	Manual	1.0000
L15	29	MS-450 Reinforcement	70.00 68.08 -	Manual	1.0000
L15	30	MS-450 Reinforcement	70.00 68.08 -	Manual	1.0000
L15	42	CCI-060100 Reinforcement	70.00 68.08 -	Manual	1.0000
L15	43	CCI-060100 Reinforcement	70.18 70.18 -	Manual	1.0000
L15	44	CCI-060100 Reinforcement	70.50 68.08 -	Manual	1.0000
L15	45	CCI-060100 Reinforcement	70.18 70.18 -	Manual	1.0000
L15	46	CCI-060100 Reinforcement	70.50 68.08 -	Manual	1.0000
L15	47	CCI-060100 Reinforcement	70.18 70.18 -	Manual	1.0000
L15	48	CCI-045100 Reinforcement	70.50 68.08 -	Manual	1.0000
L15	49	CCI-045100 Reinforcement	70.75 70.67 -	Manual	1.0000
L15	50	CCI-045100 Reinforcement	70.75 70.67 -	Manual	1.0000
L15	52	CCI-040075 Reinforcement	70.75 68.08 -	Manual	1.0000
L15	53	CCI-040075 Reinforcement	70.75 68.08 -	Manual	1.0000
L15	54	CCI-040075 Reinforcement	70.75 68.08 -	Manual	1.0000
L16	28	MS-450 Reinforcement	70.75 67.83 -	Manual	1.0000
L16	29	MS-450 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	30	MS-450 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	42	CCI-060100 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	44	CCI-060100 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	46	CCI-060100 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	48	CCI-045100 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	52	CCI-040075 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	53	CCI-040075 Reinforcement	68.08 67.83 -	Manual	1.0000
L16	54	CCI-040075 Reinforcement	68.08 67.83 -	Manual	1.0000
L17	25	MS-450 Reinforcement	68.08 63.50 -	Manual	1.0000
L17	26	MS-450 Reinforcement	65.00 63.50 -	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L17	27	MS-450 Reinforcement	65.00 63.50 - 65.00	Manual	1.0000
L17	28	MS-450 Reinforcement	63.50 - 67.83	Manual	1.0000
L17	29	MS-450 Reinforcement	63.50 - 67.83	Manual	1.0000
L17	30	MS-450 Reinforcement	63.50 - 67.83	Manual	1.0000
L17	42	CCI-060100 Reinforcement	63.50 - 67.83	Manual	1.0000
L17	44	CCI-060100 Reinforcement	63.50 - 67.83	Manual	1.0000
L17	46	CCI-060100 Reinforcement	63.50 - 67.83	Manual	1.0000
L17	48	CCI-045100 Reinforcement	65.33 - 67.83	Manual	1.0000
L17	52	CCI-040075 Reinforcement	67.10 - 67.83	Manual	1.0000
L17	53	CCI-040075 Reinforcement	67.10 - 67.83	Manual	1.0000
L17	54	CCI-040075 Reinforcement	67.10 - 67.83	Manual	1.0000
L18	25	MS-450 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	26	MS-450 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	27	MS-450 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	28	MS-450 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	29	MS-450 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	30	MS-450 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	42	CCI-060100 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	44	CCI-060100 Reinforcement	63.25 - 63.50	Manual	1.0000
L18	46	CCI-060100 Reinforcement	63.25 - 63.50	Manual	1.0000
L19	25	MS-450 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	26	MS-450 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	27	MS-450 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	28	MS-450 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	29	MS-450 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	30	MS-450 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	42	CCI-060100 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	44	CCI-060100 Reinforcement	58.25 - 63.25	Manual	1.0000
L19	46	CCI-060100 Reinforcement	58.25 - 63.25	Manual	1.0000
L20	25	MS-450 Reinforcement	53.25 - 58.25	Manual	1.0000
L20	26	MS-450 Reinforcement	53.25 - 58.25	Manual	1.0000
L20	27	MS-450 Reinforcement	53.25 - 58.25	Manual	1.0000
L20	28	MS-450 Reinforcement	53.25 - 58.25	Manual	1.0000
L20	29	MS-450 Reinforcement	53.25 -	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	30	MS-450 Reinforcement	58.25 53.25 - 58.25	Manual	1.0000
L20	42	CCI-060100 Reinforcement	53.25 - 58.25	Manual	1.0000
L20	44	CCI-060100 Reinforcement	53.25 - 58.25	Manual	1.0000
L20	46	CCI-060100 Reinforcement	53.25 - 58.25	Manual	1.0000
L21	25	MS-450 Reinforcement	47.42 - 53.25	Manual	1.0000
L21	26	MS-450 Reinforcement	47.42 - 53.25	Manual	1.0000
L21	27	MS-450 Reinforcement	47.42 - 53.25	Manual	1.0000
L21	28	MS-450 Reinforcement	50.00 - 53.25	Manual	1.0000
L21	29	MS-450 Reinforcement	50.00 - 53.25	Manual	1.0000
L21	30	MS-450 Reinforcement	50.00 - 53.25	Manual	1.0000
L21	35	CCI-040075 Reinforcement	47.42 - 50.00	Manual	1.0000
L21	36	CCI-040075 Reinforcement	47.42 - 50.00	Manual	1.0000
L21	37	CCI-040075 Reinforcement	47.42 - 50.00	Manual	1.0000
L21	42	CCI-060100 Reinforcement	47.42 - 53.25	Manual	1.0000
L21	44	CCI-060100 Reinforcement	47.42 - 53.25	Manual	1.0000
L21	46	CCI-060100 Reinforcement	47.42 - 53.25	Manual	1.0000
L22	25	MS-450 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	26	MS-450 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	27	MS-450 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	35	CCI-040075 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	36	CCI-040075 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	37	CCI-040075 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	42	CCI-060100 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	44	CCI-060100 Reinforcement	46.42 - 47.42	Manual	1.0000
L22	46	CCI-060100 Reinforcement	46.42 - 47.42	Manual	1.0000
L23	25	MS-450 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	26	MS-450 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	27	MS-450 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	35	CCI-040075 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	36	CCI-040075 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	37	CCI-040075 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	42	CCI-060100 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	44	CCI-060100 Reinforcement	41.42 - 46.42	Manual	1.0000
L23	46	CCI-060100 Reinforcement	41.42 -	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	25	Reinforcement MS-450 Reinforcement	46.42 38.08 - 41.42	Manual	1.0000
L24	26	MS-450 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	27	MS-450 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	35	CCI-040075 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	36	CCI-040075 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	37	CCI-040075 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	42	CCI-060100 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	44	CCI-060100 Reinforcement	38.08 - 41.42	Manual	1.0000
L24	46	CCI-060100 Reinforcement	38.08 - 41.42	Manual	1.0000
L25	25	MS-450 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	26	MS-450 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	27	MS-450 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	35	CCI-040075 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	36	CCI-040075 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	37	CCI-040075 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	42	CCI-060100 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	44	CCI-060100 Reinforcement	37.83 - 38.08	Manual	1.0000
L25	46	CCI-060100 Reinforcement	37.83 - 38.08	Manual	1.0000
L26	25	MS-450 Reinforcement	35.00 - 37.83	Manual	1.0000
L26	26	MS-450 Reinforcement	35.00 - 37.83	Manual	1.0000
L26	27	MS-450 Reinforcement	35.00 - 37.83	Manual	1.0000
L26	35	CCI-040075 Reinforcement	35.00 - 37.83	Manual	1.0000
L26	36	CCI-040075 Reinforcement	35.00 - 37.83	Manual	1.0000
L26	37	CCI-040075 Reinforcement	35.00 - 37.83	Manual	1.0000
L26	39	CCI-045100 Reinforcement	35.00 - 35.50	Manual	1.0000
L26	40	CCI-045100 Reinforcement	35.00 - 35.50	Manual	1.0000
L26	41	CCI-045100 Reinforcement	35.00 - 35.50	Manual	1.0000
L26	42	CCI-060100 Reinforcement	35.50 - 37.83	Manual	1.0000
L26	44	CCI-060100 Reinforcement	35.50 - 37.83	Manual	1.0000
L26	46	CCI-060100 Reinforcement	35.50 - 37.83	Manual	1.0000
L27	22	MS-600 Reinforcement	34.75 - 35.00	Manual	1.0000
L27	23	MS-600 Reinforcement	34.75 - 35.00	Manual	1.0000
L27	24	MS-600 Reinforcement	34.75 - 35.00	Manual	1.0000
L27	32	CCI-045100	34.75 -	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L27	33	Reinforcement CCI-045100	35.00 34.75 - 35.00	Manual	1.0000
L27	34	Reinforcement CCI-045100	35.00 34.75 - 35.00	Manual	1.0000
L27	39	Reinforcement CCI-045100	35.00 34.75 - 35.00	Manual	1.0000
L27	40	Reinforcement CCI-045100	35.00 34.75 - 35.00	Manual	1.0000
L27	41	Reinforcement CCI-045100	35.00 34.75 - 35.00	Manual	1.0000
L28	22	MS-600 Reinforcement	35.00 29.75 - 34.75	Manual	1.0000
L28	23	MS-600 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	24	MS-600 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	32	CCI-045100 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	33	CCI-045100 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	34	CCI-045100 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	39	CCI-045100 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	40	CCI-045100 Reinforcement	29.75 - 34.75	Manual	1.0000
L28	41	CCI-045100 Reinforcement	29.75 - 34.75	Manual	1.0000
L29	22	MS-600 Reinforcement	29.75 24.75 - 29.75	Manual	1.0000
L29	23	MS-600 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	24	MS-600 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	32	CCI-045100 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	33	CCI-045100 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	34	CCI-045100 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	39	CCI-045100 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	40	CCI-045100 Reinforcement	24.75 - 29.75	Manual	1.0000
L29	41	CCI-045100 Reinforcement	24.75 - 29.75	Manual	1.0000
L30	22	MS-600 Reinforcement	29.75 19.75 - 24.75	Manual	1.0000
L30	23	MS-600 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	24	MS-600 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	32	CCI-045100 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	33	CCI-045100 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	34	CCI-045100 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	39	CCI-045100 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	40	CCI-045100 Reinforcement	19.75 - 24.75	Manual	1.0000
L30	41	CCI-045100 Reinforcement	19.75 - 24.75	Manual	1.0000
L31	22	MS-600 Reinforcement	24.75 15.00 - 19.75	Manual	1.0000
L31	23	MS-600 Reinforcement	15.00 - 19.75	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	24	MS-600 Reinforcement	19.75 15.00 - 19.75	Manual	1.0000
L31	32	CCI-045100 Reinforcement	15.00 - 19.75	Manual	1.0000
L31	33	CCI-045100 Reinforcement	15.00 - 19.75	Manual	1.0000
L31	34	CCI-045100 Reinforcement	15.00 - 19.75	Manual	1.0000
L31	39	CCI-045100 Reinforcement	15.00 - 19.75	Manual	1.0000
L31	40	CCI-045100 Reinforcement	15.00 - 19.75	Manual	1.0000
L31	41	CCI-045100 Reinforcement	15.00 - 19.75	Manual	1.0000
L32	22	MS-600 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	23	MS-600 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	24	MS-600 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	32	CCI-045100 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	33	CCI-045100 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	34	CCI-045100 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	39	CCI-045100 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	40	CCI-045100 Reinforcement	14.75 - 15.00	Manual	1.0000
L32	41	CCI-045100 Reinforcement	14.75 - 15.00	Manual	1.0000
L33	22	MS-600 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	23	MS-600 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	24	MS-600 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	32	CCI-045100 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	33	CCI-045100 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	34	CCI-045100 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	39	CCI-045100 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	40	CCI-045100 Reinforcement	13.00 - 14.75	Manual	1.0000
L33	41	CCI-045100 Reinforcement	13.00 - 14.75	Manual	1.0000
L34	22	MS-600 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	23	MS-600 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	24	MS-600 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	32	CCI-045100 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	33	CCI-045100 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	34	CCI-045100 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	39	CCI-045100 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	40	CCI-045100 Reinforcement	12.75 - 13.00	Manual	1.0000
L34	41	CCI-045100 Reinforcement	12.75 - 13.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L35	22	Reinforcement MS-600 Reinforcement	13.00 12.50 - 12.75	Manual	1.0000
L35	23	MS-600 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	24	MS-600 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	32	CCI-045100 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	33	CCI-045100 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	34	CCI-045100 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	39	CCI-045100 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	40	CCI-045100 Reinforcement	12.50 - 12.75	Manual	1.0000
L35	41	CCI-045100 Reinforcement	12.50 - 12.75	Manual	1.0000
L36	22	MS-600 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	23	MS-600 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	24	MS-600 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	32	CCI-045100 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	33	CCI-045100 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	34	CCI-045100 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	39	CCI-045100 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	40	CCI-045100 Reinforcement	12.25 - 12.50	Manual	1.0000
L36	41	CCI-045100 Reinforcement	12.25 - 12.50	Manual	1.0000
L37	22	MS-600 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	23	MS-600 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	24	MS-600 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	32	CCI-045100 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	33	CCI-045100 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	34	CCI-045100 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	39	CCI-045100 Reinforcement	10.50 - 12.25	Manual	1.0000
L37	40	CCI-045100 Reinforcement	7.25 - 12.25	Manual	1.0000
L37	41	CCI-045100 Reinforcement	7.25 - 12.25	Manual	1.0000
L38	22	MS-600 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	23	MS-600 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	24	MS-600 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	32	CCI-045100 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	33	CCI-045100 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	34	CCI-045100 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	40	CCI-045100 Reinforcement	5.50 - 7.25	Manual	1.0000
L38	41	CCI-045100 Reinforcement	5.50 - 7.25	Manual	1.0000
L39	22	MS-600 Reinforcement	5.25 - 5.50	Manual	1.0000
L39	23	MS-600 Reinforcement	5.25 - 5.50	Manual	1.0000
L39	24	MS-600 Reinforcement	5.25 - 5.50	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L39	32	CCI-045100 Reinforcement	5.25 - 5.50	Manual	1.0000
L39	33	CCI-045100 Reinforcement	5.25 - 5.50	Manual	1.0000
L39	34	CCI-045100 Reinforcement	5.25 - 5.50	Manual	1.0000
L39	40	CCI-045100 Reinforcement	5.25 - 5.50	Manual	1.0000
L39	41	CCI-045100 Reinforcement	5.25 - 5.50	Manual	1.0000
L40	22	MS-600 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	23	MS-600 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	24	MS-600 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	32	CCI-045100 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	33	CCI-045100 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	34	CCI-045100 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	40	CCI-045100 Reinforcement	5.00 - 5.25	Manual	1.0000
L40	41	CCI-045100 Reinforcement	5.00 - 5.25	Manual	1.0000
L41	22	MS-600 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	23	MS-600 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	24	MS-600 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	32	CCI-045100 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	33	CCI-045100 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	34	CCI-045100 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	40	CCI-045100 Reinforcement	4.75 - 5.00	Manual	1.0000
L41	41	CCI-045100 Reinforcement	4.75 - 5.00	Manual	1.0000
L42	22	MS-600 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	23	MS-600 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	24	MS-600 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	32	CCI-045100 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	33	CCI-045100 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	34	CCI-045100 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	40	CCI-045100 Reinforcement	2.50 - 4.75	Manual	1.0000
L42	41	CCI-045100 Reinforcement	2.50 - 4.75	Manual	1.0000
L43	22	MS-600 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	23	MS-600 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	24	MS-600 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	32	CCI-045100 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	33	CCI-045100 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	34	CCI-045100 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	40	CCI-045100 Reinforcement	2.25 - 2.50	Manual	1.0000
L43	41	CCI-045100 Reinforcement	2.25 - 2.50	Manual	1.0000
L44	22	MS-600 Reinforcement	0.00 - 2.25	Manual	1.0000
L44	23	MS-600 Reinforcement	0.00 - 2.25	Manual	1.0000
L44	24	MS-600 Reinforcement	0.00 - 2.25	Manual	1.0000
L44	32	CCI-045100 Reinforcement	0.00 - 2.25	Manual	1.0000
L44	33	CCI-045100 Reinforcement	0.00 - 2.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L44	34	Reinforcement CCI-045100	0.00 - 2.25	Manual	1.0000
L44	40	Reinforcement CCI-045100	0.00 - 2.25	Manual	1.0000
L44	41	Reinforcement CCI-045100	0.00 - 2.25	Manual	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
APXVSP18-C-A20 w/ Mount Pipe	A	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.6000	4.0100	0.10
						1/2" Ice	5.0500	4.4500	0.16
						Ice	5.5000	4.8900	0.23
						1" Ice	6.4400	5.8200	0.42
						2" Ice			
APXVSP18-C-A20 w/ Mount Pipe	B	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.6000	4.0100	0.10
						1/2" Ice	5.0500	4.4500	0.16
						Ice	5.5000	4.8900	0.23
						1" Ice	6.4400	5.8200	0.42
						2" Ice			
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.6000	4.0100	0.10
						1/2" Ice	5.0500	4.4500	0.16
						Ice	5.5000	4.8900	0.23
						1" Ice	6.4400	5.8200	0.42
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.0900	2.8600	0.08
						1/2" Ice	4.4800	3.2300	0.13
						Ice	4.8800	3.6100	0.19
						1" Ice	5.7100	4.4000	0.33
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.0900	2.8600	0.08
						1/2" Ice	4.4800	3.2300	0.13
						Ice	4.8800	3.6100	0.19
						1" Ice	5.7100	4.4000	0.33
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.0900	2.8600	0.08
						1/2" Ice	4.4800	3.2300	0.13
						Ice	4.8800	3.6100	0.19
						1" Ice	5.7100	4.4000	0.33
						2" Ice			
TD-RRH8X20-25	A	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.0455	1.5345	0.07
						1/2" Ice	4.2975	1.7142	0.10
						Ice	4.5570	1.9008	0.13
						1" Ice	5.0981	2.2951	0.20
						2" Ice			
TD-RRH8X20-25	B	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.0455	1.5345	0.07
						1/2" Ice	4.2975	1.7142	0.10
						Ice	4.5570	1.9008	0.13
						1" Ice	5.0981	2.2951	0.20
						2" Ice			
TD-RRH8X20-25	C	From Leg	2.0000 0.00 2.00	0.0000	117.0000	No Ice	4.0455	1.5345	0.07
						1/2" Ice	4.2975	1.7142	0.10
						Ice	4.5570	1.9008	0.13
						1" Ice	5.0981	2.2951	0.20
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
(3) ACU-A20-N	A	From Leg	2.0000	0.0000	0.0000	117.0000	2" Ice	0.0667	0.1167	0.00
			0.00				No Ice	0.1037	0.1620	0.00
			2.00				1/2"	0.1481	0.2148	0.00
							Ice	0.2593	0.3426	0.01
(3) ACU-A20-N	B	From Leg	2.0000	0.0000	0.0000	117.0000	2" Ice	0.0667	0.1167	0.00
			0.00				No Ice	0.1037	0.1620	0.00
			2.00				1/2"	0.1481	0.2148	0.00
							Ice	0.2593	0.3426	0.01
(3) ACU-A20-N	C	From Leg	2.0000	0.0000	0.0000	117.0000	2" Ice	0.0667	0.1167	0.00
			0.00				No Ice	0.1037	0.1620	0.00
			2.00				1/2"	0.1481	0.2148	0.00
							Ice	0.2593	0.3426	0.01
T-Arm Mount [TA 702-3]	C	None			0.0000	117.0000	2" Ice			
							No Ice	4.7500	4.7500	0.34
							1/2"	5.8200	5.8200	0.43
							Ice	6.9800	6.9800	0.55
Stabalizer Bars	C	None			0.0000	117.0000	1" Ice	9.7200	9.7200	0.87
							2" Ice			
							No Ice	2.6100	2.6100	0.04
							1/2"	3.7000	3.7000	0.05
***	A	From Leg	2.0000	0.0000	0.0000	115.0000	Ice	4.7900	4.7900	0.06
			0.00				1" Ice	6.9700	6.9700	0.08
			0.00				2" Ice			
							No Ice	0.6601	0.3211	0.01
800 EXTERNAL NOTCH FILTER	A	From Leg	2.0000	0.0000	0.0000	115.0000	1/2"	0.7627	0.3983	0.02
			0.00				Ice	0.8727	0.4830	0.02
			0.00				1" Ice	1.1149	0.6744	0.04
							2" Ice			
800 EXTERNAL NOTCH FILTER	B	From Leg	2.0000	0.0000	0.0000	115.0000	No Ice	0.6601	0.3211	0.01
			0.00				1/2"	0.7627	0.3983	0.02
			0.00				Ice	0.8727	0.4830	0.02
							1" Ice	1.1149	0.6744	0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	2.0000	0.0000	0.0000	115.0000	2" Ice			
			0.00				No Ice	0.6601	0.3211	0.01
			0.00				1/2"	0.7627	0.3983	0.02
							Ice	0.8727	0.4830	0.02
PCS 1900MHz 4x45W-65MHz	A	From Leg	2.0000	0.0000	0.0000	115.0000	1" Ice	1.1149	0.6744	0.04
			0.00				2" Ice			
			0.00				No Ice	2.3218	2.2381	0.06
							1/2"	2.5266	2.4407	0.08
PCS 1900MHz 4x45W-65MHz	B	From Leg	2.0000	0.0000	0.0000	115.0000	Ice	2.7388	2.6507	0.11
			0.00				1" Ice	3.1855	3.0929	0.17
			0.00				2" Ice			
							No Ice	2.3218	2.2381	0.06
PCS 1900MHz 4x45W-65MHz	C	From Leg	2.0000	0.0000	0.0000	115.0000	1/2"	2.5266	2.4407	0.08
			0.00				Ice	2.7388	2.6507	0.11
			0.00				1" Ice	3.1855	3.0929	0.17
							2" Ice			
800MHZ RRH	A	From Leg	2.0000	0.0000	0.0000	115.0000	No Ice	2.1342	1.7730	0.05
			0.00				1/2"	2.3195	1.9461	0.07
			0.00				Ice	2.5123	2.1267	0.10
							1" Ice	2.9201	2.5100	0.16
800MHZ RRH	B	From Leg	2.0000	0.0000	0.0000	115.0000	2" Ice			
			0.00				No Ice	2.1342	1.7730	0.05
			0.00				1/2"	2.3195	1.9461	0.07
							Ice	2.5123	2.1267	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
800MHZ RRH	C	From Leg	2.0000 0.00 0.00	0.0000	115.0000	1" Ice	2.9201	2.5100	0.16
						2" Ice			
						No Ice	2.1342	1.7730	0.05
						1/2" Ice	2.3195	1.9461	0.07
						Ice	2.5123	2.1267	0.10
Side Arm Mount [SO 102-3]	C	None		0.0000	115.0000	1" Ice	2.9201	2.5100	0.16
						2" Ice			
						No Ice	3.6000	3.6000	0.07
						1/2" Ice	4.1800	4.1800	0.11
						Ice	4.7500	4.7500	0.14
*** AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	5.9000	5.9000	0.20
						2" Ice			
						No Ice	5.8701	3.2700	0.13
						1/2" Ice	6.2332	3.7282	0.18
						Ice	6.6061	4.2026	0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	7.3816	5.2001	0.36
						2" Ice			
						No Ice	5.8701	3.2700	0.13
						1/2" Ice	6.2332	3.7282	0.18
						Ice	6.6061	4.2026	0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	7.3816	5.2001	0.36
						2" Ice			
						No Ice	5.8701	3.2700	0.13
						1/2" Ice	6.2332	3.7282	0.18
						Ice	6.6061	4.2026	0.23
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	17.8200	9.6700	0.79
						2" Ice			
						No Ice	14.6900	6.8700	0.19
						1/2" Ice	15.4600	7.5500	0.31
						Ice	16.2300	8.2500	0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	17.8200	9.6700	0.79
						2" Ice			
						No Ice	14.6900	6.8700	0.19
						1/2" Ice	15.4600	7.5500	0.31
						Ice	16.2300	8.2500	0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	17.8200	9.6700	0.79
						2" Ice			
						No Ice	14.6900	6.8700	0.19
						1/2" Ice	15.4600	7.5500	0.31
						Ice	16.2300	8.2500	0.46
AIR 32 B2A B66AA w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	8.9662	9.5071	0.46
						2" Ice			
						No Ice	7.0872	6.3736	0.16
						1/2" Ice	7.5606	7.2305	0.23
						Ice	8.0206	7.9731	0.30
AIR 32 B2A B66AA w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	8.9662	9.5071	0.46
						2" Ice			
						No Ice	7.0872	6.3736	0.16
						1/2" Ice	7.5606	7.2305	0.23
						Ice	8.0206	7.9731	0.30
AIR 32 B2A B66AA w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	8.9662	9.5071	0.46
						2" Ice			
						No Ice	7.0872	6.3736	0.16
						1/2" Ice	7.5606	7.2305	0.23
						Ice	8.0206	7.9731	0.30
KRY 112 144/1	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000	1" Ice	0.6981	0.4565	0.03
						2" Ice			
						No Ice	0.3500	0.1750	0.01
						1/2" Ice	0.4259	0.2343	0.01
						Ice	0.5093	0.3009	0.02
KRY 112 144/1	B	From Leg	4.0000 0.00	0.0000	110.0000	1" Ice	0.6981	0.4565	0.03
						2" Ice			
						No Ice	0.3500	0.1750	0.01
						1/2" Ice	0.4259	0.2343	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			0.00			Ice 0.5093	0.3009	0.02
						1" Ice 0.6981	0.4565	0.03
						2" Ice		
KRY 112 144/1	C	From Leg	4.0000	0.0000	110.0000	No Ice 0.3500	0.1750	0.01
			0.00			1/2" 0.4259	0.2343	0.01
			0.00			Ice 0.5093	0.3009	0.02
						1" Ice 0.6981	0.4565	0.03
						2" Ice		
SDX1926Q-43	A	From Leg	4.0000	0.0000	110.0000	No Ice 0.2410	0.1013	0.01
			0.00			1/2" 0.3063	0.1444	0.01
			0.00			Ice 0.3791	0.1948	0.01
						1" Ice 0.5469	0.3180	0.02
						2" Ice		
SDX1926Q-43	B	From Leg	4.0000	0.0000	110.0000	No Ice 0.2410	0.1013	0.01
			0.00			1/2" 0.3063	0.1444	0.01
			0.00			Ice 0.3791	0.1948	0.01
						1" Ice 0.5469	0.3180	0.02
						2" Ice		
SDX1926Q-43	C	From Leg	4.0000	0.0000	110.0000	No Ice 0.2410	0.1013	0.01
			0.00			1/2" 0.3063	0.1444	0.01
			0.00			Ice 0.3791	0.1948	0.01
						1" Ice 0.5469	0.3180	0.02
						2" Ice		
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.0000	0.0000	110.0000	No Ice 1.9701	1.5865	0.07
			0.00			1/2" 2.1466	1.7488	0.09
			0.00			Ice 2.3306	1.9185	0.12
						1" Ice 2.7207	2.2800	0.17
						2" Ice		
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.0000	0.0000	110.0000	No Ice 1.9701	1.5865	0.07
			0.00			1/2" 2.1466	1.7488	0.09
			0.00			Ice 2.3306	1.9185	0.12
						1" Ice 2.7207	2.2800	0.17
						2" Ice		
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.0000	0.0000	110.0000	No Ice 1.9701	1.5865	0.07
			0.00			1/2" 2.1466	1.7488	0.09
			0.00			Ice 2.3306	1.9185	0.12
						1" Ice 2.7207	2.2800	0.17
						2" Ice		
RRUS 4415 B25_CCIV2	A	From Leg	4.0000	0.0000	110.0000	No Ice 1.8425	0.8202	0.05
			0.00			1/2" 2.0123	0.9434	0.06
			0.00			Ice 2.1895	1.0750	0.08
						1" Ice 2.5662	1.3683	0.12
						2" Ice		
RRUS 4415 B25_CCIV2	B	From Leg	4.0000	0.0000	110.0000	No Ice 1.8425	0.8202	0.05
			0.00			1/2" 2.0123	0.9434	0.06
			0.00			Ice 2.1895	1.0750	0.08
						1" Ice 2.5662	1.3683	0.12
						2" Ice		
RRUS 4415 B25_CCIV2	C	From Leg	4.0000	0.0000	110.0000	No Ice 1.8425	0.8202	0.05
			0.00			1/2" 2.0123	0.9434	0.06
			0.00			Ice 2.1895	1.0750	0.08
						1" Ice 2.5662	1.3683	0.12
						2" Ice		
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	110.0000	No Ice 17.0900	17.0900	1.50
						1/2" 21.4700	21.4700	1.88
						Ice 25.7200	25.7200	2.35
						1" Ice 33.9600	33.9600	3.52
						2" Ice		

(2) DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.0000	0.0000	100.0000	No Ice 4.5782	4.8023	0.03
			0.00			1/2" 4.9555	5.4160	0.08
			1.00			Ice 5.3404	6.0401	0.13
						1" Ice 6.1369	7.3370	0.26
						2" Ice		
(2) DB844G65ZAXY w/	B	From Leg	4.0000	0.0000	100.0000	No Ice 4.5782	4.8023	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
Mount Pipe			0.00 1.00			1/2" Ice 1" Ice 2" Ice	4.9555 5.3404 6.1369 7.3370	5.4160 6.0401 7.3370	0.08 0.13 0.26
(2) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.5782 4.9555 5.3404 6.1369	4.8023 5.4160 6.0401 7.3370	0.03 0.08 0.13 0.26
(2) HBXX-6516DS-A2M w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.1800 5.7000 6.2400 7.3600	3.9700 4.4700 4.9800 6.0600	0.05 0.09 0.15 0.28
(2) HBXX-6516DS-A2M w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.1800 5.7000 6.2400 7.3600	3.9700 4.4700 4.9800 6.0600	0.05 0.09 0.15 0.28
(2) HBXX-6516DS-A2M w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.1800 5.7000 6.2400 7.3600	3.9700 4.4700 4.9800 6.0600	0.05 0.09 0.15 0.28
800 10735V01 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.8727 9.4550 10.0100 11.1272	5.4888 6.7103 7.6880 9.5633	0.06 0.12 0.19 0.36
800 10735V01 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.8727 9.4550 10.0100 11.1272	5.4888 6.7103 7.6880 9.5633	0.06 0.12 0.19 0.36
800 10735V01 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.8727 9.4550 10.0100 11.1272	5.4888 6.7103 7.6880 9.5633	0.06 0.12 0.19 0.36
GPS_A	C	From Leg	4.0000 0.00 4.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.2550 0.3205 0.3934 0.5614	0.2550 0.3205 0.3934 0.5614	0.00 0.00 0.01 0.02
(2) FD9R6004/2C-3L	A	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3142 0.3862 0.4656 0.6468	0.0762 0.1189 0.1685 0.2940	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	B	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3142 0.3862 0.4656 0.6468	0.0762 0.1189 0.1685 0.2940	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	C	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3142 0.3862 0.4656 0.6468	0.0762 0.1189 0.1685 0.2940	0.00 0.01 0.01 0.02
B4 RRH2X60-4R	A	From Leg	4.0000 0.00 1.00	0.0000	100.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.3554 3.6120 3.8757 4.4240	2.0048 2.2369 2.4759 2.9750	0.06 0.08 0.10 0.17
B4 RRH2X60-4R	B	From Leg	4.0000	0.0000	100.0000	No Ice	3.3554	2.0048	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.00			1/2"	3.6120	2.2369	0.08
			1.00			Ice	3.8757	2.4759	0.10
						1" Ice	4.4240	2.9750	0.17
						2" Ice			
B4 RRH2X60-4R	C	From Leg	4.0000	0.0000	100.0000	No Ice	3.3554	2.0048	0.06
			0.00			1/2"	3.6120	2.2369	0.08
			1.00			Ice	3.8757	2.4759	0.10
						1" Ice	4.4240	2.9750	0.17
						2" Ice			
RRFDC-3315-PF-48	A	From Leg	4.0000	0.0000	100.0000	No Ice	3.3636	2.1921	0.03
			0.00			1/2"	3.5972	2.3950	0.06
			1.00			Ice	3.8383	2.6056	0.09
						1" Ice	4.3426	3.0491	0.17
						2" Ice			
RRFDC-3315-PF-48	C	From Leg	4.0000	0.0000	100.0000	No Ice	3.3636	2.1921	0.03
			0.00			1/2"	3.5972	2.3950	0.06
			1.00			Ice	3.8383	2.6056	0.09
						1" Ice	4.3426	3.0491	0.17
						2" Ice			
B13 RRH 4X30	A	From Leg	4.0000	0.0000	100.0000	No Ice	2.0552	1.3201	0.06
			0.00			1/2"	2.2405	1.4754	0.07
			1.00			Ice	2.4333	1.6376	0.09
						1" Ice	2.8411	1.9966	0.14
						2" Ice			
B13 RRH 4X30	B	From Leg	4.0000	0.0000	100.0000	No Ice	2.0552	1.3201	0.06
			0.00			1/2"	2.2405	1.4754	0.07
			1.00			Ice	2.4333	1.6376	0.09
						1" Ice	2.8411	1.9966	0.14
						2" Ice			
B13 RRH 4X30	C	From Leg	4.0000	0.0000	100.0000	No Ice	2.0552	1.3201	0.06
			0.00			1/2"	2.2405	1.4754	0.07
			1.00			Ice	2.4333	1.6376	0.09
						1" Ice	2.8411	1.9966	0.14
						2" Ice			
B25 RRH4X30	A	From Leg	4.0000	0.0000	100.0000	No Ice	2.2000	1.7417	0.06
			0.00			1/2"	2.3926	1.9204	0.08
			1.00			Ice	2.5926	2.1065	0.10
						1" Ice	3.0148	2.5009	0.16
						2" Ice			
B25 RRH4X30	B	From Leg	4.0000	0.0000	100.0000	No Ice	2.2000	1.7417	0.06
			0.00			1/2"	2.3926	1.9204	0.08
			1.00			Ice	2.5926	2.1065	0.10
						1" Ice	3.0148	2.5009	0.16
						2" Ice			
B25 RRH4X30	C	From Leg	4.0000	0.0000	100.0000	No Ice	2.2000	1.7417	0.06
			0.00			1/2"	2.3926	1.9204	0.08
			1.00			Ice	2.5926	2.1065	0.10
						1" Ice	3.0148	2.5009	0.16
						2" Ice			
Platform Mount [LP 715-1]	C	None		0.0000	100.0000	No Ice	46.7700	46.7700	1.77
						1/2"	50.2500	50.2500	2.88
						Ice	53.9700	53.9700	4.09
						1" Ice	62.2200	62.2200	6.81
						2" Ice			

Pipe Mount [PM 601-3]	C	None		0.0000	93.0000	No Ice	3.1700	3.1700	0.20
						1/2"	3.7900	3.7900	0.23
						Ice	4.4200	4.4200	0.28
						1" Ice	5.7600	5.7600	0.40
						2" Ice			

RRUS 32 B30	A	From Leg	4.0000	0.0000	89.0000	No Ice	2.6923	1.5727	0.06
			0.00			1/2"	2.9115	1.7556	0.08
			0.00			Ice	3.1382	1.9455	0.10
						1" Ice	3.6137	2.3462	0.16

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A		Weight
			Horz	Lateral			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	K
RRUS 32 B30	B	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	2.6923	1.5727	0.06
						1/2"	2.9115	1.7556	0.08
						Ice	3.1382	1.9455	0.10
						1" Ice	3.6137	2.3462	0.16
RRUS 32 B30	C	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	2.6923	1.5727	0.06
						1/2"	2.9115	1.7556	0.08
						Ice	3.1382	1.9455	0.10
						1" Ice	3.6137	2.3462	0.16
HPA65R-BU8A	A	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	8.1800	5.3200	0.05
						1/2"	8.9700	6.0800	0.12
						Ice	9.7700	6.8600	0.20
						1" Ice	11.4200	8.4500	0.37
HPA65R-BU6A	B	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	5.8800	3.8200	0.05
						1/2"	6.4700	4.3900	0.10
						Ice	7.0700	4.9600	0.16
						1" Ice	8.3200	6.1500	0.29
HPA65R-BU6A	C	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	5.8800	3.8200	0.05
						1/2"	6.4700	4.3900	0.10
						Ice	7.0700	4.9600	0.16
						1" Ice	8.3200	6.1500	0.29
OPA-65R-LCUU-H8	A	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	11.9500	6.0300	0.07
						1/2"	12.9200	6.9300	0.14
						Ice	13.9000	7.8500	0.22
						1" Ice	15.9200	9.7400	0.41
OPA-65R-LCUU-H6	B	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	9.2000	4.6300	0.08
						1/2"	9.9700	5.3400	0.14
						Ice	10.7600	6.0700	0.20
						1" Ice	12.3900	7.5700	0.35
OPA-65R-LCUU-H6	C	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	9.2000	4.6300	0.08
						1/2"	9.9700	5.3400	0.14
						Ice	10.7600	6.0700	0.20
						1" Ice	12.3900	7.5700	0.35
TPA-65R-LCUUUU-H8	C	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	11.8700	7.0200	0.08
						1/2"	12.8200	7.9100	0.16
						Ice	13.7700	8.8200	0.25
						1" Ice	15.7400	10.6800	0.45
7770.00	A	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	5.5085	2.9282	0.04
						1/2"	5.8673	3.2730	0.07
						Ice	6.2332	3.6252	0.11
						1" Ice	6.9859	4.3517	0.20
7770.00	B	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	5.5085	2.9282	0.04
						1/2"	5.8673	3.2730	0.07
						Ice	6.2332	3.6252	0.11
						1" Ice	6.9859	4.3517	0.20
7770.00	C	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	5.5085	2.9282	0.04
						1/2"	5.8673	3.2730	0.07
						Ice	6.2332	3.6252	0.11
						1" Ice	6.9859	4.3517	0.20
QS66512-2	A	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	4.0100	3.3700	0.11
						1/2"	4.4100	3.7600	0.17
						Ice	4.8100	4.1500	0.23
						1" Ice	5.6500	4.9700	0.38

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _{Front}	C _A A _{Side}	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
QS66512-2	B	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	4.0100	3.3700	0.11
						1/2"	4.4100	3.7600	0.17
						Ice	4.8100	4.1500	0.23
(2) TPX-070821	A	From Leg	4.0000	0.0000	89.0000	1" Ice	5.6500	4.9700	0.38
						2" Ice			
						No Ice	0.4688	0.1009	0.01
						1/2"	0.5585	0.1471	0.01
(2) TPX-070821	B	From Leg	4.0000	0.0000	89.0000	Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
						No Ice	0.4688	0.1009	0.01
(2) TPX-070821	C	From Leg	4.0000	0.0000	89.0000	1/2"	0.5585	0.1471	0.01
						Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
RRUS 11 B12	A	From Leg	4.0000	0.0000	89.0000	No Ice	2.8333	1.1821	0.05
						1/2"	3.0426	1.3299	0.07
						Ice	3.2593	1.4848	0.10
						1" Ice	3.7148	1.8259	0.15
RRUS 11 B12	B	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	2.8333	1.1821	0.05
						1/2"	3.0426	1.3299	0.07
						Ice	3.2593	1.4848	0.10
RRUS 11 B12	C	From Leg	4.0000	0.0000	89.0000	1" Ice	3.7148	1.8259	0.15
						2" Ice			
						No Ice	2.8333	1.1821	0.05
						1/2"	3.0426	1.3299	0.07
RRUS 32 B2	A	From Leg	4.0000	0.0000	89.0000	Ice	3.2593	1.4848	0.10
						1" Ice	3.7148	1.8259	0.15
						2" Ice			
						No Ice	2.7313	1.6681	0.05
RRUS 32 B2	B	From Leg	4.0000	0.0000	89.0000	1/2"	2.9531	1.8552	0.07
						Ice	3.1823	2.0493	0.10
						1" Ice	3.6628	2.4585	0.16
						2" Ice			
RRUS 32 B2	C	From Leg	4.0000	0.0000	89.0000	No Ice	2.7313	1.6681	0.05
						1/2"	2.9531	1.8552	0.07
						Ice	3.1823	2.0493	0.10
						1" Ice	3.6628	2.4585	0.16
RRUS 4426 B66	A	From Leg	4.0000	0.0000	89.0000	2" Ice			
						No Ice	1.6444	0.7252	0.05
						1/2"	1.8044	0.8421	0.06
						Ice	1.9719	0.9685	0.08
RRUS 4426 B66	B	From Leg	4.0000	0.0000	89.0000	1" Ice	2.3292	1.2437	0.11
						2" Ice			
						No Ice	1.6444	0.7252	0.05
						1/2"	1.8044	0.8421	0.06
RRUS 4426 B66	C	From Leg	4.0000	0.0000	89.0000	Ice	1.9719	0.9685	0.08
						1" Ice	2.3292	1.2437	0.11
						2" Ice			
						No Ice	1.6444	0.7252	0.05
RRUS 4426 B66						1/2"	1.8044	0.8421	0.06
						Ice	1.9719	0.9685	0.08
						1" Ice	2.3292	1.2437	0.11
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
RRUS E2 B29	A	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	3.1450	1.2854	0.06
						1/2"	3.3648	1.4379	0.08
						Ice	3.5920	1.5998	0.11
						1" Ice	4.0687	1.9543	0.17
RRUS E2 B29	B	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	3.1450	1.2854	0.06
						1/2"	3.3648	1.4379	0.08
						Ice	3.5920	1.5998	0.11
						1" Ice	4.0687	1.9543	0.17
RRUS E2 B29	C	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	3.1450	1.2854	0.06
						1/2"	3.3648	1.4379	0.08
						Ice	3.5920	1.5998	0.11
						1" Ice	4.0687	1.9543	0.17
(2) LGP21401	A	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	1.1040	0.2070	0.01
						1/2"	1.2388	0.2738	0.02
						Ice	1.3810	0.3475	0.03
						1" Ice	1.6877	0.5208	0.05
(2) LGP21401	B	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	1.1040	0.2070	0.01
						1/2"	1.2388	0.2738	0.02
						Ice	1.3810	0.3475	0.03
						1" Ice	1.6877	0.5208	0.05
(2) LGP21401	C	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	1.1040	0.2070	0.01
						1/2"	1.2388	0.2738	0.02
						Ice	1.3810	0.3475	0.03
						1" Ice	1.6877	0.5208	0.05
DC6-48-60-18-8F	A	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	1.2117	1.2117	0.02
						1/2"	1.8924	1.8924	0.04
						Ice	2.1051	2.1051	0.07
						1" Ice	2.5703	2.5703	0.13
DC6-48-60-18-8F	B	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	1.2117	1.2117	0.02
						1/2"	1.8924	1.8924	0.04
						Ice	2.1051	2.1051	0.07
						1" Ice	2.5703	2.5703	0.13
DC6-48-60-18-8C-EV	B	From Leg	4.0000 0.00 0.00	0.0000	89.0000	2" Ice			
						No Ice	1.1445	1.1445	0.03
						1/2"	1.7918	1.7918	0.05
						Ice	2.0017	2.0017	0.07
						1" Ice	2.4505	2.4505	0.13
Platform Mount [LP 1301-1]	C	None		0.0000	89.0000	2" Ice			
						No Ice	51.7000	51.7000	2.26
						1/2"	62.7000	62.7000	2.94
						Ice	73.7000	73.7000	3.61
						1" Ice	95.7000	95.7000	4.95
*** 800 10504 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	84.0000	2" Ice			
						No Ice	2.6900	2.2600	0.04
						1/2"	3.1200	2.6800	0.07
						Ice	3.5600	3.1200	0.11
						1" Ice	4.4900	4.0300	0.21
800 10504 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	84.0000	2" Ice			
						No Ice	2.6900	2.2600	0.04
						1/2"	3.1200	2.6800	0.07
						Ice	3.5600	3.1200	0.11
						1" Ice	4.4900	4.0300	0.21
800 10504 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	84.0000	2" Ice			
						No Ice	2.6900	2.2600	0.04
						1/2"	3.1200	2.6800	0.07
						Ice	3.5600	3.1200	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _{Front} ft ²	C _A A _{Side} ft ²	Weight K		
Pipe Mount [PM 601-3]	C	None		0.0000	84.0000	1" Ice	4.4900	4.0300	0.21	
						2" Ice				
						No Ice	3.1700	3.1700	0.20	
						1/2" Ice	3.7900	3.7900	0.23	
						Ice	4.4200	4.4200	0.28	
1" Ice	5.7600	5.7600	0.40							
2" Ice										

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K	
VHLP2-11	A	Paraboloid w/o Radome	From Leg	2.0000 0.00 1.00	48.0000		93.0000	2.1750	No Ice	3.7200	0.03
									1/2" Ice	4.0100	0.05
									1" Ice	4.3000	0.07
									2" Ice	4.8800	0.11
VHLP1-23	A	Paraboloid w/Radome	From Leg	2.0000 0.00 2.00	68.0000		93.0000	1.2750	No Ice	1.2800	0.01
									1/2" Ice	1.4500	0.02
									1" Ice	1.6200	0.03
									2" Ice	1.9700	0.04
VHLP800-11	C	Paraboloid w/Shroud (HP)	From Leg	2.0000 0.00 1.00	-2.0000		93.0000	2.8000	No Ice	6.1600	0.02
									1/2" Ice	6.5300	0.06
									1" Ice	6.9000	0.09
									2" Ice	7.6400	0.17
VHLP1-23	B	Paraboloid w/Radome	From Leg	2.0000 0.00 -1.00	-52.0000		93.0000	1.2750	No Ice	1.2800	0.01
									1/2" Ice	1.4500	0.02
									1" Ice	1.6200	0.03
									2" Ice	1.9700	0.04

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

Comb. No.	Description
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	117 - 112	Pole	Max Tension	39	0.00	-0.00	-0.00
			Max. Compression	26	-4.72	-0.00	0.00
			Max. Mx	8	-1.76	-16.33	0.01
			Max. My	14	-1.75	0.01	-16.34
			Max. Vy	8	3.10	-16.33	0.01
			Max. Vx	14	3.10	0.01	-16.34
			Max. Torque	15			0.00
L2	112 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-4.86	-0.00	0.01
			Max. Mx	8	-1.83	-22.65	0.01
			Max. My	14	-1.83	0.02	-22.68
			Max. Vy	8	3.23	-22.65	0.01
			Max. Vx	14	3.23	0.02	-22.68
			Max. Torque	15			0.00
L3	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.56	-0.10	0.07
			Max. Mx	8	-5.76	-60.05	0.06
			Max. My	2	-5.75	-0.08	60.10
			Max. Vy	8	7.64	-60.05	0.06
			Max. Vx	14	7.65	0.01	-60.05
			Max. Torque	15			0.00
L4	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-14.13	-0.21	0.14
			Max. Mx	8	-6.11	-99.10	0.11
			Max. My	2	-6.09	-0.15	99.20
			Max. Vy	8	7.97	-99.10	0.11
			Max. Vx	14	7.99	-0.00	-99.10
			Max. Torque	15			0.00
L5	100 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.29	0.28	0.50

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L6	95 - 90	Pole	Max. Mx	8	-9.72	-174.93	0.36
			Max. My	2	-9.69	-0.24	175.46
			Max. Vy	8	14.59	-174.93	0.36
			Max. Vx	14	14.64	0.24	-175.14
			Max. Torque	4			0.43
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.71	0.39	0.72
			Max. Mx	20	-10.54	251.38	-1.21
			Max. My	2	-10.52	-1.14	251.61
			Max. Vy	20	-15.66	251.38	-1.21
L7	90 - 85	Pole	Max. Vx	14	15.62	1.60	-251.38
			Max. Torque	14			-1.41
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.83	-0.40	1.15
			Max. Mx	8	-15.63	-356.79	2.15
			Max. My	14	-15.58	3.22	-356.45
			Max. Vy	20	-22.53	356.19	-3.00
			Max. Vx	14	22.50	3.22	-356.45
			Max. Torque	15			-1.48
			Max Tension	1	0.00	0.00	0.00
L8	85 - 81.88	Pole	Max. Compression	26	-39.29	-1.75	1.25
			Max. Mx	8	-16.46	-428.50	2.84
			Max. My	14	-16.41	4.17	-428.03
			Max. Vy	20	-23.14	427.21	-4.11
			Max. Vx	14	23.28	4.17	-428.03
			Max. Torque	15			-1.48
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.36	-1.75	1.26
			Max. Mx	8	-16.54	-434.28	2.90
			Max. My	14	-16.48	4.28	-433.85
L9	81.88 - 81.63	Pole	Max. Vy	20	-23.15	433.00	-4.20
			Max. Vx	14	23.30	4.28	-433.85
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.71	-1.80	1.42
			Max. Mx	8	-17.57	-550.65	3.99
			Max. My	14	-17.50	6.32	-551.82
			Max. Vy	20	-23.50	549.52	-5.95
			Max. Vx	14	23.93	6.32	-551.82
			Max. Torque	20			-0.82
L10	81.63 - 76.63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.86	-1.81	1.44
			Max. Mx	8	-17.70	-563.56	4.11
			Max. My	14	-17.62	6.55	-564.99
			Max. Vy	20	-23.53	562.44	-6.14
			Max. Vx	14	24.00	6.55	-564.99
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.94	-1.81	1.45
			Max. Mx	8	-17.77	-569.43	4.16
L11	76.63 - 76.08	Pole	Max. My	14	-17.69	6.65	-570.99
			Max. Vy	20	-23.55	568.32	-6.23
			Max. Vx	14	24.03	6.65	-570.99
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.50	-1.85	1.61
			Max. Mx	8	-18.94	-683.80	5.21
			Max. My	14	-18.85	8.62	-688.53
			Max. Vy	20	-23.91	682.83	-7.92
			Max. Vx	14	24.68	8.62	-688.53
L12	76.08 - 75.83	Pole	Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.59	-1.86	1.62
			Max. Mx	8	-19.03	-689.77	5.27
			Max. My	14	-18.94	8.73	-694.70
			Max. Vy	20	-23.91	682.83	-7.92
			Max. Vx	14	24.68	8.62	-688.53
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.59	-1.86	1.62
L13	75.83 - 71	Pole	Max. Mx	8	-19.03	-689.77	5.27
			Max. My	14	-18.94	8.73	-694.70
			Max. Vy	20	-23.91	682.83	-7.92
			Max. Vx	14	24.68	8.62	-688.53
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.59	-1.86	1.62
			Max. Mx	8	-19.03	-689.77	5.27
			Max. My	14	-18.94	8.73	-694.70
			Max. Vy	20	-23.91	682.83	-7.92
L14	71 - 70.75	Pole	Max. Vx	14	24.68	8.62	-688.53
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.59	-1.86	1.62
			Max. Mx	8	-19.03	-689.77	5.27
			Max. My	14	-18.94	8.73	-694.70
			Max. Vy	20	-23.91	682.83	-7.92
			Max. Vx	14	24.68	8.62	-688.53
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L15	70.75 - 68.08	Pole	Max. Vy	20	-23.92	688.80	-8.00
			Max. Vx	14	24.71	8.73	-694.70
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.64	-1.87	1.71
L16	68.08 - 67.83	Pole	Max. Mx	8	-19.81	-753.82	5.85
			Max. My	14	-19.72	9.81	-761.15
			Max. Vy	20	-24.15	752.93	-8.94
			Max. Vx	14	25.10	9.81	-761.15
			Max. Torque	20			-0.82
L17	67.83 - 63.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.35	-1.88	1.87
			Max. Mx	8	-21.10	-865.07	6.84
			Max. My	14	-21.00	11.68	-877.51
			Max. Vy	20	-24.53	864.30	-10.53
L18	63.5 - 63.25	Pole	Max. Vx	14	25.76	11.68	-877.51
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.46	-1.89	1.89
			Max. Mx	8	-21.20	-871.19	6.90
L19	63.25 - 58.25	Pole	Max. My	14	-21.09	11.78	-883.95
			Max. Vy	20	-24.55	870.43	-10.62
			Max. Vx	14	25.79	11.78	-883.95
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
L20	58.25 - 53.25	Pole	Max. Compression	26	-47.64	-1.89	2.03
			Max. Mx	8	-22.87	-994.80	7.99
			Max. My	14	-22.75	13.81	-1014.71
			Max. Vy	20	-24.99	994.16	-12.36
			Max. Vx	14	26.55	13.81	-1014.71
L21	53.25 - 47.42	Pole	Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.40	-1.90	2.22
			Max. Mx	8	-25.00	-1152.38	9.35
			Max. My	14	-24.88	16.34	-1183.44
L22	47.42 - 46.42	Pole	Max. Vy	20	-25.53	1151.91	-14.53
			Max. Vx	14	27.49	16.34	-1183.44
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.50	-1.91	2.41
L23	46.42 - 41.42	Pole	Max. Mx	8	-28.27	-1296.23	10.57
			Max. My	14	-28.15	18.61	-1339.30
			Max. Vy	20	-26.10	1295.90	-16.46
			Max. Vx	14	28.41	18.61	-1339.30
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.83	-1.91	2.57
			Max. Mx	8	-30.12	-1427.56	11.66

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L24	41.42 - 38.08	Pole	Max. My	14	-29.99	20.63	-1482.99
			Max. Vy	20	-26.52	1427.35	-18.19
			Max. Vx	14	29.12	20.63	-1482.99
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.40	-1.92	2.68
			Max. Mx	8	-31.37	-1516.44	12.39
			Max. My	14	-31.25	21.98	-1580.96
			Max. Vy	20	-26.80	1516.31	-19.35
			Max. Vx	14	29.60	21.98	-1580.96
L25	38.08 - 37.83	Pole	Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.52	-1.93	2.70
			Max. Mx	8	-31.46	-1523.13	12.45
			Max. My	14	-31.35	22.08	-1588.36
			Max. Vy	20	-26.81	1523.01	-19.43
			Max. Vx	14	29.62	22.08	-1588.36
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.81	-1.93	2.79
L26	37.83 - 35	Pole	Max. Mx	8	-32.48	-1599.20	13.07
			Max. My	14	-32.36	23.22	-1672.68
			Max. Vy	20	-27.04	1599.14	-20.41
			Max. Vx	14	30.02	23.22	-1672.68
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.94	-1.93	2.81
			Max. Mx	8	-32.59	-1605.95	13.12
			Max. My	14	-32.48	23.32	-1680.18
			Max. Vy	20	-27.06	1605.90	-20.49
L27	35 - 34.75	Pole	Max. Vx	14	30.04	23.32	-1680.18
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.94	-1.93	2.81
			Max. Mx	8	-32.59	-1605.95	13.12
			Max. My	14	-32.48	23.32	-1680.18
			Max. Vy	20	-27.06	1605.90	-20.49
			Max. Vx	14	30.04	23.32	-1680.18
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
L28	34.75 - 29.75	Pole	Max. Compression	26	-62.42	-1.94	2.97
			Max. Mx	20	-34.58	1742.08	-22.21
			Max. My	14	-34.48	25.32	-1832.01
			Max. Vy	20	-27.46	1742.08	-22.21
			Max. Vx	14	30.74	25.32	-1832.01
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.92	-1.95	3.15
			Max. Mx	20	-36.60	1880.24	-23.91
			Max. My	14	-36.52	27.32	-1987.24
L29	29.75 - 24.75	Pole	Max. Vy	20	-27.85	1880.24	-23.91
			Max. Vx	14	31.41	27.32	-1987.24
			Max. Torque	20			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.92	-1.95	3.15
			Max. Mx	20	-36.60	1880.24	-23.91
			Max. My	14	-36.52	27.32	-1987.24
			Max. Vy	20	-27.85	1880.24	-23.91
			Max. Vx	14	31.41	27.32	-1987.24
			Max. Torque	15			-0.82
L30	24.75 - 19.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.45	-1.96	3.33
			Max. Mx	20	-38.66	2020.31	-25.61
			Max. My	14	-38.59	29.31	-2145.37
			Max. Vy	20	-28.22	2020.31	-25.61
			Max. Vx	14	31.90	29.31	-2145.37
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.87	-1.98	3.51
			Max. Mx	20	-40.64	2155.03	-27.22
L31	19.75 - 15	Pole	Max. My	14	-40.58	31.18	-2297.81
			Max. Vy	20	-28.56	2155.03	-27.22
			Max. Vx	14	32.35	31.18	-2297.81
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.87	-1.98	3.51
			Max. Mx	20	-40.64	2155.03	-27.22
			Max. My	14	-40.58	31.18	-2297.81
			Max. Vy	20	-28.56	2155.03	-27.22
			Max. Vx	14	32.35	31.18	-2297.81
L32	15 - 14.75	Pole	Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.00	-1.98	3.52
			Max. Mx	20	-40.75	2162.17	-27.30
Max. My	14	-40.70	31.28	-2305.89			

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L33	14.75 - 13	Pole	Max. Vy	20	-28.57	2162.17	-27.30
			Max. Vx	14	32.36	31.28	-2305.89
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.90	-1.98	3.58
			Max. Mx	20	-41.47	2212.23	-27.89
			Max. My	14	-41.43	31.97	-2362.61
			Max. Vy	20	-28.70	2212.23	-27.89
			Max. Vx	14	32.54	31.97	-2362.61
			Max. Torque	15			-0.82
L34	13 - 12.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.04	-1.99	3.60
			Max. Mx	20	-41.61	2219.40	-27.97
			Max. My	14	-41.57	32.07	-2370.74
			Max. Vy	20	-28.70	2219.40	-27.97
			Max. Vx	14	32.54	32.07	-2370.74
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.19	-1.99	3.60
			Max. Mx	20	-41.74	2226.57	-28.06
L35	12.75 - 12.5	Pole	Max. My	14	-41.70	32.17	-2378.87
			Max. Vy	20	-28.72	2226.57	-28.06
			Max. Vx	14	32.56	32.17	-2378.87
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.34	-1.99	3.61
			Max. Mx	20	-41.87	2233.75	-28.14
			Max. My	14	-41.83	32.26	-2387.01
			Max. Vy	20	-28.74	2233.75	-28.14
			Max. Vx	14	32.59	32.26	-2387.01
L36	12.5 - 12.25	Pole	Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.35	-2.02	3.78
			Max. Mx	20	-44.42	2378.28	-29.82
			Max. My	14	-44.40	34.23	-2551.04
			Max. Vy	20	-29.12	2378.28	-29.82
			Max. Vx	14	33.08	34.23	-2551.04
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.41	-2.03	3.84
L37	12.25 - 7.25	Pole	Max. Mx	20	-45.32	2429.31	-30.40
			Max. My	14	-45.30	34.91	-2609.02
			Max. Vy	20	-29.26	2429.31	-30.40
			Max. Vx	14	33.26	34.91	-2609.02
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.56	-2.04	3.85
			Max. Mx	20	-45.47	2436.62	-30.48
			Max. My	14	-45.45	35.01	-2617.32
			Max. Vy	20	-29.26	2436.62	-30.48
L38	7.25 - 5.5	Pole	Max. Vx	14	33.26	35.01	-2617.32
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.72	-2.04	3.86
			Max. Mx	20	-45.61	2443.93	-30.57
			Max. My	14	-45.59	35.10	-2625.64
			Max. Vy	20	-29.28	2443.93	-30.57
			Max. Vx	14	33.29	35.10	-2625.64
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
L39	5.5 - 5.25	Pole	Max. Compression	26	-75.72	-2.04	3.86
			Max. Mx	20	-45.61	2443.93	-30.57
			Max. My	14	-45.59	35.10	-2625.64
			Max. Vy	20	-29.28	2443.93	-30.57
			Max. Vx	14	33.29	35.10	-2625.64
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.89	-2.04	3.87
			Max. Mx	20	-45.75	2451.25	-30.65
			Max. My	14	-45.74	35.20	-2633.96
L40	5.25 - 5	Pole	Max. Vy	20	-29.30	2451.25	-30.65
			Max. Vx	14	33.31	35.20	-2633.96
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.38	-2.06	3.94
			Max. Mx	20	-47.05	2517.34	-31.40
			Max. My	14	-47.05	2517.34	-31.40
			Max. Vy	20	-29.30	2451.25	-30.65
			Max. Vx	14	33.31	35.20	-2633.96
			Max. Torque	15			-0.82
L41	5 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.89	-2.04	3.87
			Max. Mx	20	-45.75	2451.25	-30.65
			Max. My	14	-45.74	35.20	-2633.96
L42	4.75 - 2.5	Pole	Max. Vy	20	-29.30	2451.25	-30.65
			Max. Vx	14	33.31	35.20	-2633.96
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
L42	4.75 - 2.5	Pole	Max. Compression	26	-77.38	-2.06	3.94
			Max. Mx	20	-47.05	2517.34	-31.40

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L43	2.5 - 2.25	Pole	Max. My	14	-47.04	36.08	-2709.11
			Max. Vy	20	-29.49	2517.34	-31.40
			Max. Vx	14	33.54	36.08	-2709.11
			Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.53	-2.06	3.95
			Max. Mx	20	-47.20	2524.71	-31.48
			Max. My	14	-47.19	36.18	-2717.49
			Max. Vy	20	-29.50	2524.71	-31.48
			Max. Vx	14	33.56	36.18	-2717.49
L44	2.25 - 0	Pole	Max. Torque	15			-0.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.92	-2.08	4.02
			Max. Mx	20	-48.42	2591.24	-32.23
			Max. My	14	-48.42	37.05	-2793.20
			Max. Vy	20	-29.68	2591.24	-32.23
			Max. Vx	14	33.79	37.05	-2793.20
			Max. Torque	15			-0.82

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	78.92	0.00	-0.00
	Max. H _x	20	48.43	29.67	-0.35
	Max. H _z	3	36.32	-0.25	33.69
	Max. M _x	2	2788.14	-0.25	33.69
	Max. M _z	8	2590.57	-29.62	0.20
	Max. Torsion	8	0.70	-29.62	0.20
	Min. Vert	21	36.32	29.67	-0.35
	Min. H _x	9	36.32	-29.62	0.20
	Min. H _z	15	36.32	0.40	-33.77
	Min. M _x	14	-2793.20	0.40	-33.77
	Min. M _z	20	-2591.24	29.67	-0.35
	Min. Torsion	15	-0.82	0.40	-33.77

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	40.36	-0.00	0.00	-1.24	-1.44	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	48.43	0.25	-33.69	-2788.14	-26.26	-0.07
0.9 Dead+1.0 Wind 0 deg - No Ice	36.32	0.25	-33.69	-2765.07	-25.59	-0.08
1.2 Dead+1.0 Wind 30 deg - No Ice	48.43	14.99	-25.68	-2246.25	-1313.18	-0.38
0.9 Dead+1.0 Wind 30 deg - No Ice	36.32	14.99	-25.68	-2226.97	-1301.69	-0.38
1.2 Dead+1.0 Wind 60 deg - No Ice	48.43	25.75	-14.94	-1307.92	-2252.95	-0.67
0.9 Dead+1.0 Wind 60 deg - No Ice	36.32	25.75	-14.94	-1296.54	-2233.55	-0.67
1.2 Dead+1.0 Wind 90 deg - No Ice	48.43	29.62	-0.20	-20.66	-2590.57	-0.70
0.9 Dead+1.0 Wind 90 deg - No Ice	36.32	29.62	-0.20	-20.11	-2568.34	-0.69
1.2 Dead+1.0 Wind 120 deg - No Ice	48.43	25.59	14.49	1261.58	-2237.36	-0.53

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 120 deg - No Ice	36.32	25.59	14.49	1251.34	-2218.09	-0.52
1.2 Dead+1.0 Wind 150 deg - No Ice	48.43	16.25	28.61	2391.20	-1357.65	0.35
0.9 Dead+1.0 Wind 150 deg - No Ice	36.32	16.25	28.61	2372.01	-1346.08	0.36
1.2 Dead+1.0 Wind 180 deg - No Ice	48.43	-0.40	33.77	2793.20	37.05	0.81
0.9 Dead+1.0 Wind 180 deg - No Ice	36.32	-0.40	33.77	2770.83	37.20	0.82
1.2 Dead+1.0 Wind 210 deg - No Ice	48.43	-15.07	25.70	2244.58	1317.78	0.78
0.9 Dead+1.0 Wind 210 deg - No Ice	36.32	-15.07	25.70	2226.08	1307.15	0.79
1.2 Dead+1.0 Wind 240 deg - No Ice	48.43	-25.76	15.00	1311.52	2250.64	0.79
0.9 Dead+1.0 Wind 240 deg - No Ice	36.32	-25.76	15.00	1300.87	2232.16	0.79
1.2 Dead+1.0 Wind 270 deg - No Ice	48.43	-29.67	0.35	32.23	2591.24	0.82
0.9 Dead+1.0 Wind 270 deg - No Ice	36.32	-29.67	0.35	32.34	2569.82	0.81
1.2 Dead+1.0 Wind 300 deg - No Ice	48.43	-25.69	-14.46	-1261.93	2243.37	0.66
0.9 Dead+1.0 Wind 300 deg - No Ice	36.32	-25.69	-14.46	-1250.92	2224.95	0.65
1.2 Dead+1.0 Wind 330 deg - No Ice	48.43	-16.38	-28.52	-2385.53	1366.87	-0.15
0.9 Dead+1.0 Wind 330 deg - No Ice	36.32	-16.38	-28.52	-2365.62	1356.14	-0.16
1.2 Dead+1.0 Ice+1.0 Temp	78.92	-0.00	0.00	-4.02	-2.08	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	78.92	0.05	-8.28	-736.52	-7.55	0.03
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	78.92	3.81	-6.54	-603.64	-351.63	-0.03
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	78.92	6.56	-3.80	-352.66	-602.99	-0.14
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	78.92	7.55	-0.04	-8.49	-693.55	-0.19
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	78.92	6.52	3.71	334.54	-599.43	-0.19
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	78.92	3.99	7.00	623.25	-358.89	0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	78.92	-0.09	8.29	729.78	6.31	0.13
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	78.92	-3.83	6.55	595.49	349.01	0.11
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	78.92	-6.56	3.82	345.59	598.86	0.16
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	78.92	-7.56	0.07	3.13	690.12	0.21
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	78.92	-6.54	-3.70	-342.52	597.15	0.22
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	78.92	-4.01	-6.98	-629.93	357.22	0.04
Dead+Wind 0 deg - Service	40.36	0.06	-7.93	-654.31	-7.23	-0.02
Dead+Wind 30 deg - Service	40.36	3.53	-6.05	-527.30	-308.81	-0.09
Dead+Wind 60 deg - Service	40.36	6.06	-3.52	-307.41	-529.03	-0.16
Dead+Wind 90 deg - Service	40.36	6.97	-0.05	-5.76	-608.04	-0.17
Dead+Wind 120 deg - Service	40.36	6.02	3.41	294.72	-525.37	-0.13
Dead+Wind 150 deg - Service	40.36	3.83	6.74	559.53	-319.27	0.09
Dead+Wind 180 deg - Service	40.36	-0.09	7.95	653.66	7.61	0.19
Dead+Wind 210 deg - Service	40.36	-3.55	6.05	525.08	307.74	0.19
Dead+Wind 240 deg - Service	40.36	-6.07	3.53	306.43	526.34	0.19

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 270 deg - Service	40.36	-6.98	0.08	6.64	606.06	0.19
Dead+Wind 300 deg - Service	40.36	-6.05	-3.40	-296.63	524.63	0.15
Dead+Wind 330 deg - Service	40.36	-3.86	-6.71	-560.02	319.29	-0.04

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-40.36	0.00	0.00	40.36	-0.00	0.000%
2	0.25	-48.43	-33.69	-0.25	48.43	33.69	0.002%
3	0.25	-36.32	-33.69	-0.25	36.32	33.69	0.001%
4	14.99	-48.43	-25.68	-14.99	48.43	25.68	0.000%
5	14.99	-36.32	-25.68	-14.99	36.32	25.68	0.000%
6	25.75	-48.43	-14.94	-25.75	48.43	14.94	0.000%
7	25.75	-36.32	-14.94	-25.75	36.32	14.94	0.000%
8	29.62	-48.43	-0.20	-29.62	48.43	0.20	0.001%
9	29.62	-36.32	-0.20	-29.62	36.32	0.20	0.000%
10	25.59	-48.43	14.49	-25.59	48.43	-14.49	0.000%
11	25.59	-36.32	14.49	-25.59	36.32	-14.49	0.000%
12	16.25	-48.43	28.61	-16.25	48.43	-28.61	0.000%
13	16.25	-36.32	28.61	-16.25	36.32	-28.61	0.000%
14	-0.40	-48.43	33.77	0.40	48.43	-33.77	0.001%
15	-0.40	-36.32	33.77	0.40	36.32	-33.77	0.000%
16	-15.07	-48.43	25.70	15.07	48.43	-25.70	0.000%
17	-15.07	-36.32	25.70	15.07	36.32	-25.70	0.000%
18	-25.76	-48.43	15.00	25.76	48.43	-15.00	0.000%
19	-25.76	-36.32	15.00	25.76	36.32	-15.00	0.000%
20	-29.67	-48.43	0.35	29.67	48.43	-0.35	0.002%
21	-29.67	-36.32	0.35	29.67	36.32	-0.35	0.004%
22	-25.69	-48.43	-14.46	25.69	48.43	14.46	0.000%
23	-25.69	-36.32	-14.46	25.69	36.32	14.46	0.000%
24	-16.38	-48.43	-28.52	16.38	48.43	28.52	0.000%
25	-16.38	-36.32	-28.52	16.38	36.32	28.52	0.000%
26	0.00	-78.92	0.00	0.00	78.92	-0.00	0.002%
27	0.05	-78.92	-8.28	-0.05	78.92	8.28	0.000%
28	3.81	-78.92	-6.54	-3.81	78.92	6.54	0.000%
29	6.56	-78.92	-3.80	-6.56	78.92	3.80	0.000%
30	7.55	-78.92	-0.04	-7.55	78.92	0.04	0.000%
31	6.52	-78.92	3.71	-6.52	78.92	-3.71	0.000%
32	3.99	-78.92	7.00	-3.99	78.92	-7.00	0.000%
33	-0.09	-78.92	8.29	0.09	78.92	-8.29	0.000%
34	-3.83	-78.92	6.55	3.83	78.92	-6.55	0.000%
35	-6.56	-78.92	3.82	6.56	78.92	-3.82	0.000%
36	-7.56	-78.92	0.07	7.56	78.92	-0.07	0.000%
37	-6.54	-78.92	-3.70	6.54	78.92	3.70	0.000%
38	-4.01	-78.92	-6.98	4.01	78.92	6.98	0.000%
39	0.06	-40.36	-7.93	-0.06	40.36	7.93	0.003%
40	3.53	-40.36	-6.05	-3.53	40.36	6.05	0.000%
41	6.06	-40.36	-3.52	-6.06	40.36	3.52	0.000%
42	6.98	-40.36	-0.05	-6.97	40.36	0.05	0.003%
43	6.03	-40.36	3.41	-6.02	40.36	-3.41	0.000%
44	3.83	-40.36	6.74	-3.83	40.36	-6.74	0.000%
45	-0.09	-40.36	7.95	0.09	40.36	-7.95	0.003%
46	-3.55	-40.36	6.05	3.55	40.36	-6.05	0.000%
47	-6.07	-40.36	3.53	6.07	40.36	-3.53	0.000%
48	-6.99	-40.36	0.08	6.98	40.36	-0.08	0.003%
49	-6.05	-40.36	-3.40	6.05	40.36	3.40	0.000%
50	-3.86	-40.36	-6.71	3.86	40.36	6.71	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	14	0.00000001	0.00012096
3	Yes	14	0.00000001	0.00008426
4	Yes	18	0.00000001	0.00008308
5	Yes	18	0.00000001	0.00005943
6	Yes	18	0.00000001	0.00008509
7	Yes	18	0.00000001	0.00006093
8	Yes	15	0.00000001	0.00009217
9	Yes	15	0.00000001	0.00006998
10	Yes	18	0.00000001	0.00007881
11	Yes	18	0.00000001	0.00005654
12	Yes	18	0.00000001	0.00008577
13	Yes	18	0.00000001	0.00006084
14	Yes	15	0.00000001	0.00012566
15	Yes	15	0.00000001	0.00009701
16	Yes	18	0.00000001	0.00008540
17	Yes	18	0.00000001	0.00006126
18	Yes	18	0.00000001	0.00008225
19	Yes	18	0.00000001	0.00005890
20	Yes	14	0.00000001	0.00008177
21	Yes	13	0.00004270	0.00013389
22	Yes	18	0.00000001	0.00008137
23	Yes	18	0.00000001	0.00005841
24	Yes	18	0.00000001	0.00008704
25	Yes	18	0.00000001	0.00006183
26	Yes	7	0.00000001	0.00003155
27	Yes	17	0.00000001	0.00008582
28	Yes	17	0.00000001	0.00009366
29	Yes	17	0.00000001	0.00009378
30	Yes	17	0.00000001	0.00008342
31	Yes	17	0.00000001	0.00009113
32	Yes	17	0.00000001	0.00009406
33	Yes	17	0.00000001	0.00008472
34	Yes	17	0.00000001	0.00009183
35	Yes	17	0.00000001	0.00009173
36	Yes	17	0.00000001	0.00008259
37	Yes	17	0.00000001	0.00009170
38	Yes	17	0.00000001	0.00009462
39	Yes	12	0.00000001	0.00010198
40	Yes	14	0.00000001	0.00008277
41	Yes	14	0.00000001	0.00008938
42	Yes	12	0.00000001	0.00011650
43	Yes	14	0.00000001	0.00007708
44	Yes	14	0.00000001	0.00008660
45	Yes	12	0.00000001	0.00012620
46	Yes	14	0.00000001	0.00008891
47	Yes	14	0.00000001	0.00007944
48	Yes	12	0.00000001	0.00011103
49	Yes	14	0.00000001	0.00008452
50	Yes	14	0.00000001	0.00008954

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	117 - 112	15.5482	39	1.3665	0.0028
L2	112 - 110	14.1223	39	1.3545	0.0028
L3	110 - 105	13.5568	39	1.3455	0.0028
L4	105 - 100	12.1666	39	1.3050	0.0028
L5	100 - 95	10.8320	39	1.2408	0.0028
L6	95 - 90	9.5676	39	1.1701	0.0025
L7	90 - 85	8.3884	39	1.0791	0.0019

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L8	85 - 81.88	7.3136	39	0.9702	0.0012
L9	81.88 - 81.63	6.7047	39	0.8924	0.0009
L10	81.63 - 76.63	6.6581	39	0.8877	0.0009
L11	76.63 - 76.08	5.7789	39	0.7899	0.0007
L12	76.08 - 75.83	5.6886	39	0.7788	0.0007
L13	75.83 - 71	5.6479	39	0.7748	0.0007
L14	71 - 70.75	4.9047	39	0.6939	0.0005
L15	70.75 - 68.08	4.8684	39	0.6909	0.0005
L16	68.08 - 67.83	4.4911	39	0.6583	0.0005
L17	67.83 - 63.5	4.4567	39	0.6554	0.0005
L18	63.5 - 63.25	3.8860	39	0.6032	0.0004
L19	63.25 - 58.25	3.8545	39	0.6008	0.0004
L20	58.25 - 53.25	3.2517	39	0.5503	0.0003
L21	53.25 - 47.42	2.7026	39	0.4982	0.0003
L22	52 - 46.42	2.5739	39	0.4852	0.0003
L23	46.42 - 41.42	2.0244	39	0.4504	0.0002
L24	41.42 - 38.08	1.5812	39	0.3960	0.0002
L25	38.08 - 37.83	1.3169	39	0.3597	0.0002
L26	37.83 - 35	1.2982	39	0.3568	0.0002
L27	35 - 34.75	1.0964	39	0.3240	0.0002
L28	34.75 - 29.75	1.0795	39	0.3214	0.0002
L29	29.75 - 24.75	0.7700	39	0.2699	0.0001
L30	24.75 - 19.75	0.5147	39	0.2179	0.0001
L31	19.75 - 15	0.3136	39	0.1663	0.0001
L32	15 - 14.75	0.1727	39	0.1170	0.0000
L33	14.75 - 13	0.1667	39	0.1144	0.0000
L34	13 - 12.75	0.1280	39	0.0968	0.0000
L35	12.75 - 12.5	0.1229	39	0.0948	0.0000
L36	12.5 - 12.25	0.1180	39	0.0929	0.0000
L37	12.25 - 7.25	0.1132	39	0.0909	0.0000
L38	7.25 - 5.5	0.0387	39	0.0515	0.0000
L39	5.5 - 5.25	0.0223	39	0.0381	0.0000
L40	5.25 - 5	0.0203	39	0.0363	0.0000
L41	5 - 4.75	0.0185	39	0.0345	0.0000
L42	4.75 - 2.5	0.0167	39	0.0329	0.0000
L43	2.5 - 2.25	0.0047	39	0.0180	0.0000
L44	2.25 - 0	0.0038	39	0.0162	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.0000	APXVSP18-C-A20 w/ Mount Pipe	39	15.5482	1.3665	0.0028	14284
115.0000	800 EXTERNAL NOTCH FILTER	39	14.9766	1.3628	0.0028	14284
110.0000	AIR6449 B41_T-MOBILE w/ Mount Pipe	39	13.5568	1.3455	0.0028	10143
100.0000	(2) DB844G65ZAXY w/ Mount Pipe	39	10.8320	1.2408	0.0028	4276
95.0000	VHLP1-23	39	9.5676	1.1701	0.0025	3520
94.0000	VHLP2-11	39	9.3243	1.1535	0.0024	3380
93.0000	Pipe Mount [PM 601-3]	39	9.0847	1.1359	0.0023	3245
92.0000	VHLP1-23	39	8.8487	1.1175	0.0021	3114
89.0000	RRUS 32 B30	39	8.1645	1.0594	0.0017	2760
84.0000	800 10504 w/ Mount Pipe	39	7.1129	0.9436	0.0011	2450

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	117 - 112	66.3861	14	5.8387	0.0128
L2	112 - 110	60.3036	14	5.7872	0.0128
L3	110 - 105	57.8912	14	5.7488	0.0127
L4	105 - 100	51.9606	14	5.5760	0.0126
L5	100 - 95	46.2665	14	5.3015	0.0123
L6	95 - 90	40.8708	14	5.0002	0.0110
L7	90 - 85	35.8371	14	4.6123	0.0080
L8	85 - 81.88	31.2468	14	4.1475	0.0050
L9	81.88 - 81.63	28.6458	14	3.8148	0.0038
L10	81.63 - 76.63	28.4467	14	3.7948	0.0038
L11	76.63 - 76.08	24.6907	14	3.3769	0.0029
L12	76.08 - 75.83	24.3047	14	3.3291	0.0028
L13	75.83 - 71	24.1309	14	3.3120	0.0027
L14	71 - 70.75	20.9553	14	2.9663	0.0022
L15	70.75 - 68.08	20.8004	14	2.9536	0.0022
L16	68.08 - 67.83	19.1882	14	2.8139	0.0020
L17	67.83 - 63.5	19.0413	14	2.8016	0.0020
L18	63.5 - 63.25	16.6024	14	2.5782	0.0017
L19	63.25 - 58.25	16.4677	14	2.5680	0.0017
L20	58.25 - 53.25	13.8920	14	2.3522	0.0014
L21	53.25 - 47.42	11.5459	14	2.1294	0.0012
L22	52 - 46.42	10.9958	14	2.0737	0.0012
L23	46.42 - 41.42	8.6479	14	1.9249	0.0011
L24	41.42 - 38.08	6.7544	14	1.6924	0.0009
L25	38.08 - 37.83	5.6252	14	1.5368	0.0008
L26	37.83 - 35	5.5450	14	1.5246	0.0008
L27	35 - 34.75	4.6831	14	1.3842	0.0007
L28	34.75 - 29.75	4.6109	14	1.3732	0.0007
L29	29.75 - 24.75	3.2886	14	1.1529	0.0005
L30	24.75 - 19.75	2.1980	14	0.9309	0.0004
L31	19.75 - 15	1.3390	14	0.7104	0.0003
L32	15 - 14.75	0.7375	14	0.4995	0.0002
L33	14.75 - 13	0.7116	14	0.4885	0.0002
L34	13 - 12.75	0.5463	14	0.4133	0.0002
L35	12.75 - 12.5	0.5249	14	0.4050	0.0002
L36	12.5 - 12.25	0.5039	14	0.3966	0.0002
L37	12.25 - 7.25	0.4833	14	0.3883	0.0002
L38	7.25 - 5.5	0.1653	14	0.2198	0.0001
L39	5.5 - 5.25	0.0951	14	0.1627	0.0001
L40	5.25 - 5	0.0868	14	0.1550	0.0001
L41	5 - 4.75	0.0789	14	0.1473	0.0001
L42	4.75 - 2.5	0.0714	14	0.1404	0.0001
L43	2.5 - 2.25	0.0202	14	0.0770	0.0000
L44	2.25 - 0	0.0163	14	0.0693	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.0000	APXVSP18-C-A20 w/ Mount Pipe	14	66.3861	5.8387	0.0128	3408
115.0000	800 EXTERNAL NOTCH FILTER	14	63.9478	5.8226	0.0128	3408
110.0000	AIR6449 B41_T-MOBILE w/ Mount Pipe	14	57.8912	5.7488	0.0127	2418
100.0000	(2) DB844G65ZAXY w/ Mount Pipe	14	46.2665	5.3015	0.0123	1017
95.0000	VHLP1-23	14	40.8708	5.0002	0.0110	836
94.0000	VHLP2-11	14	39.8327	4.9295	0.0105	803
93.0000	Pipe Mount [PM 601-3]	14	38.8096	4.8545	0.0099	770
92.0000	VHLP1-23	14	37.8022	4.7760	0.0093	739
89.0000	RRUS 32 B30	14	34.8808	4.5284	0.0074	656
84.0000	800 10504 w/ Mount Pipe	14	30.3899	4.0338	0.0045	582

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	117 - 112 (1)	TP15.4886x14.36x0.1875	5.0000	0.0000	0.0	9.2380	-1.75	540.42	0.003
L2	112 - 110 (2)	TP15.94x15.4886x0.1875	2.0000	0.0000	0.0	9.5106	-1.83	556.37	0.003
L3	110 - 105 (3)	TP17.07x15.94x0.1875	5.0000	0.0000	0.0	10.192	-5.75	596.28	0.010
L4	105 - 100 (4)	TP18.2x17.07x0.1875	5.0000	0.0000	0.0	10.875	-6.09	636.19	0.010
L5	100 - 95 (5)	TP19.3221x18.2x0.25	5.0000	0.0000	0.0	15.353	-9.69	898.15	0.011
L6	95 - 90 (6)	TP20.4442x19.3221x0.25	5.0000	0.0000	0.0	16.256	-10.53	951.00	0.011
L7	90 - 85 (7)	TP21.5663x20.4442x0.25	5.0000	0.0000	0.0	17.159	-15.61	1003.84	0.016
L8	85 - 81.88 (8)	TP22.2665x21.5663x0.25	3.1200	0.0000	0.0	17.723	-16.45	1036.81	0.016
L9	81.88 - 81.63 (9)	TP22.3226x22.2665x0.35	0.2500	0.0000	0.0	24.763	-16.52	1448.64	0.011
L10	81.63 - 76.63 (10)	TP23.4447x22.3226x0.35	5.0000	0.0000	0.0	26.485	-17.56	1549.39	0.011
L11	76.63 - 76.08 (11)	TP23.5681x23.4447x0.35	0.5500	0.0000	0.0	26.626	-17.68	1557.67	0.011
L12	76.08 - 75.83 (12)	TP23.6242x23.5681x0.46	0.2500	0.0000	0.0	34.493	-17.75	2017.88	0.009
L13	75.83 - 71 (13)	TP24.7082x23.6242x0.45	4.8300	0.0000	0.0	35.629	-18.85	2084.30	0.009
L14	71 - 70.75 (14)	TP24.7643x24.7082x0.67	0.2500	0.0000	0.0	52.358	-18.94	3062.95	0.006
L15	70.75 - 68.08 (15)	TP25.3635x24.7643x0.66	2.6700	0.0000	0.0	52.693	-19.72	3082.56	0.006
L16	68.08 - 67.83 (16)	TP25.4196x25.3635x0.71	0.2500	0.0000	0.0	56.684	-19.80	3316.03	0.006
L17	67.83 - 63.5 (17)	TP26.3913x25.4196x0.68	4.3300	0.0000	0.0	56.901	-21.00	3328.76	0.006
L18	63.5 - 63.25 (18)	TP26.4474x26.3913x0.9	0.2500	0.0000	0.0	74.036	-21.09	4331.13	0.005
L19	63.25 - 58.25 (19)	TP27.5695x26.4474x0.85	5.0000	0.0000	0.0	73.131	-22.75	4278.18	0.005
L20	58.25 - 53.25 (20)	TP28.6916x27.5695x0.82	5.0000	0.0000	0.0	74.027	-24.45	4330.62	0.006
L21	53.25 - 47.42 (21)	TP30x28.6916x0.825	5.8300	0.0000	0.0	74.772	-24.88	4374.22	0.006
L22	47.42 - 46.42 (22)	TP29.7414x28.4722x0.84	5.5800	0.0000	0.0	78.511	-28.15	4592.91	0.006
L23	46.42 - 41.42 (23)	TP30.8787x29.7414x0.81	5.0000	0.0000	0.0	79.249	-29.99	4636.08	0.006
L24	41.42 - 38.08 (24)	TP31.6384x30.8787x0.80	3.3400	0.0000	0.0	80.044	-31.25	4682.58	0.007
L25	38.08 - 37.83 (25)	TP31.6952x31.6384x0.75	0.2500	0.0000	0.0	75.340	-31.35	4407.41	0.007
L26	37.83 - 35 (26)	TP32.339x31.6952x0.743	2.8300	0.0000	0.0	75.666	-32.36	4426.49	0.007
L27	35 - 34.75 (27)	TP32.3958x32.339x0.843	0.2500	0.0000	0.0	85.723	-32.48	5014.80	0.006
L28	34.75 - 29.75 (28)	TP33.5331x32.3958x0.83	5.0000	0.0000	0.0	87.530	-34.48	5120.54	0.007
L29	29.75 - 24.75 (29)	TP34.6704x33.5331x0.80	5.0000	0.0000	0.0	87.915	-36.52	5143.06	0.007
L30	24.75 - 19.75 (30)	TP35.8077x34.6704x0.79	5.0000	0.0000	0.0	89.491	-38.59	5235.24	0.007
L31	19.75 - 15	TP36.8881x35.8077x0.76	4.7500	0.0000	0.0	89.409	-40.58	5230.43	0.008

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L32	(31) 15 - 14.75	88 TP36.945x36.8881x0.768	0.2500	0.0000	0.0	0 89.549	-40.70	5238.66	0.008
L33	(32) 14.75 - 13	8 TP37.343x36.945x0.7688	1.7500	0.0000	0.0	8 90.535	-41.43	5296.30	0.008
L34	(33) 13 - 12.75	1 TP37.3999x37.343x1.018	0.2500	0.0000	0.0	1 119.34	-41.57	6981.61	0.006
L35	(34) 12.75 - 12.5	8 TP37.4568x37.3999x1.01	0.2500	0.0000	0.0	40 119.53	-41.70	6992.53	0.006
L36	(35) 12.5 - 12.25	88 TP37.5136x37.4568x1.01	0.2500	0.0000	0.0	00 119.71	-41.83	7003.44	0.006
L37	(36) 12.25 - 7.25	88 TP38.6509x37.5136x0.99	5.0000	0.0000	0.0	70 120.49	-44.40	7049.15	0.006
L38	(37) 7.25 - 5.5 (38)	38 TP39.049x38.6509x0.993	1.7500	0.0000	0.0	80 121.77	-45.30	7123.66	0.006
L39	5.5 - 5.25 (39)	8 TP39.1058x39.049x1.068	0.2500	0.0000	0.0	20 130.90	-45.45	7657.64	0.006
L40	5.25 - 5 (40)	8 TP39.1627x39.1058x1.06	0.2500	0.0000	0.0	00 131.09	-45.59	7669.09	0.006
L41	5 - 4.75 (41)	88 TP39.2196x39.1627x1.19	0.2500	0.0000	0.0	60 146.16	-45.74	8550.74	0.005
L42	4.75 - 2.5 (42)	38 TP39.7314x39.2196x1.16	2.2500	0.0000	0.0	70 145.12	-47.04	8489.84	0.006
L43	2.5 - 2.25 (43)	88 TP39.7882x39.7314x1.04	0.2500	0.0000	0.0	60 130.21	-47.19	7617.60	0.006
L44	2.25 - 0 (44)	38 TP40.3x39.7882x1.0438	2.2500	0.0000	0.0	50 131.93	-48.42	7718.22	0.006
						50			

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} / φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} / φM _{ny}
L1	117 - 112 (1)	TP15.4886x14.36x0.1875	16.34	211.35	0.077	0.00	211.35	0.000
L2	112 - 110 (2)	TP15.94x15.4886x0.1875	22.68	222.52	0.102	0.00	222.52	0.000
L3	110 - 105 (3)	TP17.07x15.94x0.1875	60.10	250.25	0.240	0.00	250.25	0.000
L4	105 - 100 (4)	TP18.2x17.07x0.1875	99.20	278.76	0.356	0.00	278.76	0.000
L5	100 - 95 (5)	TP19.3221x18.2x0.25	175.46	437.46	0.401	0.00	437.46	0.000
L6	95 - 90 (6)	TP20.4442x19.3221x0.25	252.07	490.80	0.514	0.00	490.80	0.000
L7	90 - 85 (7)	TP21.5663x20.4442x0.25	358.25	540.94	0.662	0.00	540.94	0.000
L8	85 - 81.88 (8)	TP22.2665x21.5663x0.25	430.40	571.44	0.753	0.00	571.44	0.000
L9	81.88 - 81.63 (9)	TP22.3226x22.2665x0.35	436.21	810.63	0.538	0.00	810.63	0.000
L10	81.63 - 76.63 (10)	TP23.4447x22.3226x0.35	553.36	911.49	0.607	0.00	911.49	0.000
L11	76.63 - 76.08 (11)	TP23.5681x23.4447x0.35	566.35	921.33	0.615	0.00	921.33	0.000
L12	76.08 - 75.83 (12)	TP23.6242x23.5681x0.46	572.27	1185.56	0.483	0.00	1185.56	0.000
L13	75.83 - 71 (13)	TP24.7082x23.6242x0.45	688.58	1283.68	0.536	0.00	1283.68	0.000
L14	71 - 70.75 (14)	TP24.7643x24.7082x0.67	694.75	1856.97	0.374	0.00	1856.97	0.000
L15	70.75 - 68.08 (15)	TP25.3635x24.7643x0.66	761.21	1918.57	0.397	0.00	1918.57	0.000
L16	68.08 - 67.83 (16)	TP25.4196x25.3635x0.71	767.49	2060.33	0.373	0.00	2060.33	0.000
L17	67.83 - 63.5 (17)	TP26.3913x25.4196x0.68	877.59	2156.07	0.407	0.00	2156.07	0.000
L18	63.5 - 63.25 (18)	TP26.4474x26.3913x0.9	884.03	2765.40	0.320	0.00	2765.40	0.000
L19	63.25 - 58.25 (19)	TP27.5695x26.4474x0.85	1014.80	2866.38	0.354	0.00	2866.38	0.000
L20	58.25 - 53.25 (20)	TP28.6916x27.5695x0.82	1149.33	3032.56	0.379	0.00	3032.56	0.000

Section No.	Elevation ft	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy} kip-ft	ϕM_{ny}	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{nx}}$		kip-ft	$\frac{M_{uy}}{\phi M_{ny}}$
L21	53.25 - 47.42 (21)	TP30x28.6916x0.825	1183.56	3094.81	0.382	0.00	3094.81	0.000
L22	47.42 - 46.42 (22)	TP29.7414x28.4722x0.84 38	1339.43	3336.54	0.401	0.00	3336.54	0.000
L23	46.42 - 41.42 (23)	TP30.8787x29.7414x0.81 88	1483.14	3510.05	0.423	0.00	3510.05	0.000
L24	41.42 - 38.08 (24)	TP31.6384x30.8787x0.80 63	1581.11	3640.18	0.434	0.00	3640.18	0.000
L25	38.08 - 37.83 (25)	TP31.6952x31.6384x0.75 63	1588.51	3443.88	0.461	0.00	3443.88	0.000
L26	37.83 - 35 (26)	TP32.339x31.6952x0.743 8	1672.83	3535.26	0.473	0.00	3535.26	0.000
L27	35 - 34.75 (27)	TP32.3958x32.339x0.843 8	1680.34	3987.18	0.421	0.00	3987.18	0.000
L28	34.75 - 29.75 (28)	TP33.5331x32.3958x0.83 13	1832.19	4225.06	0.434	0.00	4225.06	0.000
L29	29.75 - 24.75 (29)	TP34.6704x33.5331x0.80 63	1987.43	4401.38	0.452	0.00	4401.38	0.000
L30	24.75 - 19.75 (30)	TP35.8077x34.6704x0.79 38	2145.57	4637.54	0.463	0.00	4637.54	0.000
L31	19.75 - 15 (31)	TP36.8881x35.8077x0.76 88	2298.02	4786.04	0.480	0.00	4786.04	0.000
L32	15 - 14.75 (32)	TP36.945x36.8881x0.768 8	2306.10	4801.28	0.480	0.00	4801.28	0.000
L33	14.75 - 13 (33)	TP37.343x36.945x0.7688	2362.82	4908.63	0.481	0.00	4908.63	0.000
L34	13 - 12.75 (34)	TP37.3999x37.343x1.018 8	2370.96	6392.69	0.371	0.00	6392.69	0.000
L35	12.75 - 12.5 (35)	TP37.4568x37.3999x1.01 88	2379.08	6412.97	0.371	0.00	6412.97	0.000
L36	12.5 - 12.25 (36)	TP37.5136x37.4568x1.01 88	2387.22	6433.27	0.371	0.00	6433.27	0.000
L37	12.25 - 7.25 (37)	TP38.6509x37.5136x0.99 38	2551.27	6691.41	0.381	0.00	6691.41	0.000
L38	7.25 - 5.5 (38)	TP39.049x38.6509x0.993 8	2609.25	6835.46	0.382	0.00	6835.46	0.000
L39	5.5 - 5.25 (39)	TP39.1058x39.049x1.068 8	2617.56	7330.17	0.357	0.00	7330.17	0.000
L40	5.25 - 5 (40)	TP39.1627x39.1058x1.06 88	2625.87	7352.40	0.357	0.00	7352.40	0.000
L41	5 - 4.75 (41)	TP39.2196x39.1627x1.19 38	2634.19	8156.49	0.323	0.00	8156.49	0.000
L42	4.75 - 2.5 (42)	TP39.7314x39.2196x1.16 88	2709.35	8221.37	0.330	0.00	8221.37	0.000
L43	2.5 - 2.25 (43)	TP39.7882x39.7314x1.04 38	2717.73	7435.81	0.365	0.00	7435.81	0.000
L44	2.25 - 0 (44)	TP40.3x39.7882x1.0438	2793.44	7636.16	0.366	0.00	7636.16	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual	ϕV_n	Ratio	Actual	ϕT_n	Ratio
			V_u K	K	$\frac{V_u}{\phi V_n}$	T_u kip-ft	kip-ft	$\frac{T_u}{\phi T_n}$
L1	117 - 112 (1)	TP15.4886x14.36x0.1875	3.10	162.13	0.019	0.00	218.21	0.000
L2	112 - 110 (2)	TP15.94x15.4886x0.1875	3.23	166.91	0.019	0.00	231.28	0.000
L3	110 - 105 (3)	TP17.07x15.94x0.1875	7.65	178.88	0.043	0.00	265.65	0.000
L4	105 - 100 (4)	TP18.2x17.07x0.1875	7.99	190.86	0.042	0.00	302.40	0.000
L5	100 - 95 (5)	TP19.3221x18.2x0.25	14.63	269.45	0.054	0.39	452.03	0.001
L6	95 - 90 (6)	TP20.4442x19.3221x0.25	15.69	285.30	0.055	0.75	506.79	0.001
L7	90 - 85 (7)	TP21.5663x20.4442x0.25	22.65	301.15	0.075	1.03	564.67	0.002
L8	85 - 81.88 (8)	TP22.2665x21.5663x0.25	23.25	311.04	0.075	0.67	602.38	0.001
L9	81.88 - 81.63 (9)	TP22.3226x22.2665x0.35	23.26	434.59	0.054	0.67	839.97	0.001
L10	81.63 - 76.63 (10)	TP23.4447x22.3226x0.35 63	23.60	464.82	0.051	0.67	944.01	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L11	76.63 - 76.08 (11)	TP23.5681x23.4447x0.35 63	23.63	467.30	0.051	0.67	954.13	0.001
L12	76.08 - 75.83 (12)	TP23.6242x23.5681x0.46 25	23.65	605.36	0.039	0.67	1233.35	0.001
L13	75.83 - 71 (13)	TP24.7082x23.6242x0.45 63	24.69	625.29	0.039	0.77	1333.92	0.001
L14	71 - 70.75 (14)	TP24.7643x24.7082x0.67 5	24.71	918.88	0.027	0.77	1947.08	0.000
L15	70.75 - 68.08 (15)	TP25.3635x24.7643x0.66 25	25.11	924.77	0.027	0.78	2009.31	0.000
L16	68.08 - 67.83 (16)	TP25.4196x25.3635x0.71 25	25.13	994.81	0.025	0.78	2162.03	0.000
L17	67.83 - 63.5 (17)	TP26.3913x25.4196x0.68 75	25.76	998.63	0.026	0.78	2257.88	0.000
L18	63.5 - 63.25 (18)	TP26.4474x26.3913x0.9	25.80	1299.34	0.020	0.78	2919.92	0.000
L19	63.25 - 58.25 (19)	TP27.5695x26.4474x0.85	26.55	1283.46	0.021	0.78	3016.54	0.000
L20	58.25 - 53.25 (20)	TP28.6916x27.5695x0.82 5	27.31	1299.19	0.021	0.79	3184.61	0.000
L21	53.25 - 47.42 (21)	TP30x28.6916x0.825	27.49	1312.26	0.021	0.79	3249.05	0.000
L22	47.42 - 46.42 (22)	TP29.7414x28.4722x0.84 38	28.41	1377.87	0.021	0.79	3502.44	0.000
L23	46.42 - 41.42 (23)	TP30.8787x29.7414x0.81 88	29.13	1390.82	0.021	0.80	3677.56	0.000
L24	41.42 - 38.08 (24)	TP31.6384x30.8787x0.80 63	29.60	1404.77	0.021	0.80	3809.87	0.000
L25	38.08 - 37.83 (25)	TP31.6952x31.6384x0.75 63	29.63	1322.22	0.022	0.80	3598.41	0.000
L26	37.83 - 35 (26)	TP32.339x31.6952x0.743 8	30.03	1327.95	0.023	0.80	3690.64	0.000
L27	35 - 34.75 (27)	TP32.3958x32.339x0.843 8	30.05	1504.44	0.020	0.80	4175.44	0.000
L28	34.75 - 29.75 (28)	TP33.5331x32.3958x0.83 13	30.74	1536.16	0.020	0.80	4418.85	0.000
L29	29.75 - 24.75 (29)	TP34.6704x33.5331x0.80 63	31.41	1542.92	0.020	0.81	4596.03	0.000
L30	24.75 - 19.75 (30)	TP35.8077x34.6704x0.79 38	31.91	1570.57	0.020	0.81	4837.25	0.000
L31	19.75 - 15 (31)	TP36.8881x35.8077x0.76 88	32.35	1569.13	0.021	0.81	4985.38	0.000
L32	15 - 14.75 (32)	TP36.945x36.8881x0.768 8	32.36	1571.60	0.021	0.81	5001.09	0.000
L33	14.75 - 13 (33)	TP37.343x36.945x0.7688	32.54	1588.89	0.020	0.81	5111.75	0.000
L34	13 - 12.75 (34)	TP37.3999x37.343x1.018 8	32.54	2094.48	0.016	0.81	6702.76	0.000
L35	12.75 - 12.5 (35)	TP37.4568x37.3999x1.01 88	32.56	2097.76	0.016	0.81	6723.72	0.000
L36	12.5 - 12.25 (36)	TP37.5136x37.4568x1.01 88	32.59	2101.03	0.016	0.81	6744.72	0.000
L37	12.25 - 7.25 (37)	TP38.6509x37.5136x0.99 38	33.08	2114.74	0.016	0.81	7004.96	0.000
L38	7.25 - 5.5 (38)	TP39.049x38.6509x0.993 8	33.26	2137.10	0.016	0.81	7153.83	0.000
L39	5.5 - 5.25 (39)	TP39.1058x39.049x1.068 8	33.26	2297.29	0.014	0.81	7686.41	0.000
L40	5.25 - 5 (40)	TP39.1627x39.1058x1.06 88	33.29	2300.73	0.014	0.81	7709.41	0.000
L41	5 - 4.75 (41)	TP39.2196x39.1627x1.19 38	33.31	2565.22	0.013	0.81	8580.33	0.000
L42	4.75 - 2.5 (42)	TP39.7314x39.2196x1.16 88	33.55	2546.95	0.013	0.81	8639.50	0.000
L43	2.5 - 2.25 (43)	TP39.7882x39.7314x1.04 38	33.56	2285.28	0.015	0.81	7788.41	0.000
L44	2.25 - 0 (44)	TP40.3x39.7882x1.0438	33.79	2315.47	0.015	0.81	7995.52	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
L1	117 - 112 (1)	0.003	0.077	0.000	0.019	0.000	0.081	1.050	4.8.2
L2	112 - 110 (2)	0.003	0.102	0.000	0.019	0.000	0.106	1.050	4.8.2
L3	110 - 105 (3)	0.010	0.240	0.000	0.043	0.000	0.252	1.050	4.8.2
L4	105 - 100 (4)	0.010	0.356	0.000	0.042	0.000	0.367	1.050	4.8.2
L5	100 - 95 (5)	0.011	0.401	0.000	0.054	0.001	0.415	1.050	4.8.2
L6	95 - 90 (6)	0.011	0.514	0.000	0.055	0.001	0.528	1.050	4.8.2
L7	90 - 85 (7)	0.016	0.662	0.000	0.075	0.002	0.684	1.050	4.8.2
L8	85 - 81.88 (8)	0.016	0.753	0.000	0.075	0.001	0.775	1.050	4.8.2
L9	81.88 - 81.63 (9)	0.011	0.538	0.000	0.054	0.001	0.552	1.050	4.8.2
L10	81.63 - 76.63 (10)	0.011	0.607	0.000	0.051	0.001	0.621	1.050	4.8.2
L11	76.63 - 76.08 (11)	0.011	0.615	0.000	0.051	0.001	0.629	1.050	4.8.2
L12	76.08 - 75.83 (12)	0.009	0.483	0.000	0.039	0.001	0.493	1.050	4.8.2
L13	75.83 - 71 (13)	0.009	0.536	0.000	0.039	0.001	0.547	1.050	4.8.2
L14	71 - 70.75 (14)	0.006	0.374	0.000	0.027	0.000	0.381	1.050	4.8.2
L15	70.75 - 68.08 (15)	0.006	0.397	0.000	0.027	0.000	0.404	1.050	4.8.2
L16	68.08 - 67.83 (16)	0.006	0.373	0.000	0.025	0.000	0.379	1.050	4.8.2
L17	67.83 - 63.5 (17)	0.006	0.407	0.000	0.026	0.000	0.414	1.050	4.8.2
L18	63.5 - 63.25 (18)	0.005	0.320	0.000	0.020	0.000	0.325	1.050	4.8.2
L19	63.25 - 58.25 (19)	0.005	0.354	0.000	0.021	0.000	0.360	1.050	4.8.2
L20	58.25 - 53.25 (20)	0.006	0.379	0.000	0.021	0.000	0.385	1.050	4.8.2
L21	53.25 - 47.42 (21)	0.006	0.382	0.000	0.021	0.000	0.389	1.050	4.8.2
L22	47.42 - 46.42 (22)	0.006	0.401	0.000	0.021	0.000	0.408	1.050	4.8.2
L23	46.42 - 41.42 (23)	0.006	0.423	0.000	0.021	0.000	0.429	1.050	4.8.2
L24	41.42 - 38.08 (24)	0.007	0.434	0.000	0.021	0.000	0.441	1.050	4.8.2
L25	38.08 - 37.83 (25)	0.007	0.461	0.000	0.022	0.000	0.469	1.050	4.8.2
L26	37.83 - 35 (26)	0.007	0.473	0.000	0.023	0.000	0.481	1.050	4.8.2
L27	35 - 34.75 (27)	0.006	0.421	0.000	0.020	0.000	0.428	1.050	4.8.2
L28	34.75 - 29.75 (28)	0.007	0.434	0.000	0.020	0.000	0.441	1.050	4.8.2
L29	29.75 - 24.75 (29)	0.007	0.452	0.000	0.020	0.000	0.459	1.050	4.8.2
L30	24.75 - 19.75 (30)	0.007	0.463	0.000	0.020	0.000	0.470	1.050	4.8.2
L31	19.75 - 15 (31)	0.008	0.480	0.000	0.021	0.000	0.488	1.050	4.8.2
L32	15 - 14.75 (32)	0.008	0.480	0.000	0.021	0.000	0.489	1.050	4.8.2
L33	14.75 - 13 (33)	0.008	0.481	0.000	0.020	0.000	0.490	1.050	4.8.2
L34	13 - 12.75 (34)	0.006	0.371	0.000	0.016	0.000	0.377	1.050	4.8.2
L35	12.75 - 12.5 (35)	0.006	0.371	0.000	0.016	0.000	0.377	1.050	4.8.2
L36	12.5 - 12.25 (36)	0.006	0.371	0.000	0.016	0.000	0.377	1.050	4.8.2
L37	12.25 - 7.25 (37)	0.006	0.381	0.000	0.016	0.000	0.388	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
L38	7.25 - 5.5 (38)	0.006	0.382	0.000	0.016	0.000	0.388	1.050	4.8.2
L39	5.5 - 5.25 (39)	0.006	0.357	0.000	0.014	0.000	0.363	1.050	4.8.2
L40	5.25 - 5 (40)	0.006	0.357	0.000	0.014	0.000	0.363	1.050	4.8.2
L41	5 - 4.75 (41)	0.005	0.323	0.000	0.013	0.000	0.328	1.050	4.8.2
L42	4.75 - 2.5 (42)	0.006	0.330	0.000	0.013	0.000	0.335	1.050	4.8.2
L43	2.5 - 2.25 (43)	0.006	0.365	0.000	0.015	0.000	0.372	1.050	4.8.2
L44	2.25 - 0 (44)	0.006	0.366	0.000	0.015	0.000	0.372	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L1	117 - 112	Pole	TP15.4886x14.36x0.1875	1	-1.75	567.45	7.7	Pass	
L2	112 - 110	Pole	TP15.94x15.4886x0.1875	2	-1.83	584.19	10.1	Pass	
L3	110 - 105	Pole	TP17.07x15.94x0.1875	3	-5.75	626.09	24.0	Pass	
L4	105 - 100	Pole	TP18.2x17.07x0.1875	4	-6.09	668.00	35.0	Pass	
L5	100 - 95	Pole	TP19.3221x18.2x0.25	5	-9.69	943.06	39.5	Pass	
L6	95 - 90	Pole	TP20.4442x19.3221x0.25	6	-10.53	998.54	50.3	Pass	
L7	90 - 85	Pole	TP21.5663x20.4442x0.25	7	-15.61	1054.03	65.1	Pass	
L8	85 - 81.88	Pole	TP22.2665x21.5663x0.25	8	-16.45	1088.65	73.8	Pass	
L9	81.88 - 81.63	Pole	TP22.3226x22.2665x0.35	9	-16.52	1521.07	52.6	Pass	
L10	81.63 - 76.63	Pole	TP23.4447x22.3226x0.3563	10	-17.56	1626.86	59.2	Pass	
L11	76.63 - 76.08	Pole	TP23.5681x23.4447x0.3563	11	-17.68	1635.55	59.9	Pass	
L12	76.08 - 75.83	Pole	TP23.6242x23.5681x0.4625	12	-17.75	2118.77	47.0	Pass	
L13	75.83 - 71	Pole	TP24.7082x23.6242x0.4563	13	-18.85	2188.51	52.1	Pass	
L14	71 - 70.75	Pole	TP24.7643x24.7082x0.675	14	-18.94	3216.10	36.3	Pass	
L15	70.75 - 68.08	Pole	TP25.3635x24.7643x0.6625	15	-19.72	3236.69	38.5	Pass	
L16	68.08 - 67.83	Pole	TP25.4196x25.3635x0.7125	16	-19.80	3481.83	36.1	Pass	
L17	67.83 - 63.5	Pole	TP26.3913x25.4196x0.6875	17	-21.00	3495.20	39.4	Pass	
L18	63.5 - 63.25	Pole	TP26.4474x26.3913x0.9	18	-21.09	4547.69	30.9	Pass	
L19	63.25 - 58.25	Pole	TP27.5695x26.4474x0.85	19	-22.75	4492.09	34.3	Pass	
L20	58.25 - 53.25	Pole	TP28.6916x27.5695x0.825	20	-24.45	4547.15	36.7	Pass	
L21	53.25 - 47.42	Pole	TP30x28.6916x0.825	21	-24.88	4592.93	37.0	Pass	
L22	47.42 - 46.42	Pole	TP29.7414x28.4722x0.8438	22	-28.15	4822.56	38.9	Pass	
L23	46.42 - 41.42	Pole	TP30.8787x29.7414x0.8188	23	-29.99	4867.88	40.9	Pass	
L24	41.42 - 38.08	Pole	TP31.6384x30.8787x0.8063	24	-31.25	4916.71	42.0	Pass	
L25	38.08 - 37.83	Pole	TP31.6952x31.6384x0.7563	25	-31.35	4627.78	44.7	Pass	
L26	37.83 - 35	Pole	TP32.339x31.6952x0.7438	26	-32.36	4647.81	45.8	Pass	
L27	35 - 34.75	Pole	TP32.3958x32.339x0.8438	27	-32.48	5265.54	40.8	Pass	
L28	34.75 - 29.75	Pole	TP33.5331x32.3958x0.8313	28	-34.48	5376.57	42.0	Pass	
L29	29.75 - 24.75	Pole	TP34.6704x33.5331x0.8063	29	-36.52	5400.21	43.7	Pass	
L30	24.75 - 19.75	Pole	TP35.8077x34.6704x0.7938	30	-38.59	5497.00	44.8	Pass	
L31	19.75 - 15	Pole	TP36.8881x35.8077x0.7688	31	-40.58	5491.95	46.5	Pass	
L32	15 - 14.75	Pole	TP36.945x36.8881x0.7688	32	-40.70	5500.59	46.5	Pass	
L33	14.75 - 13	Pole	TP37.343x36.945x0.7688	33	-41.43	5561.11	46.6	Pass	
L34	13 - 12.75	Pole	TP37.3999x37.343x1.0188	34	-41.57	7330.69	35.9	Pass	
L35	12.75 - 12.5	Pole	TP37.4568x37.3999x1.0188	35	-41.70	7342.16	35.9	Pass	
L36	12.5 - 12.25	Pole	TP37.5136x37.4568x1.0188	36	-41.83	7353.61	35.9	Pass	
L37	12.25 - 7.25	Pole	TP38.6509x37.5136x0.9938	37	-44.40	7401.61	36.9	Pass	
L38	7.25 - 5.5	Pole	TP39.049x38.6509x0.9938	38	-45.30	7479.84	37.0	Pass	
L39	5.5 - 5.25	Pole	TP39.1058x39.049x1.0688	39	-45.45	8040.52	34.6	Pass	
L40	5.25 - 5	Pole	TP39.1627x39.1058x1.0688	40	-45.59	8052.54	34.6	Pass	
L41	5 - 4.75	Pole	TP39.2196x39.1627x1.1938	41	-45.74	8978.28	31.3	Pass	
L42	4.75 - 2.5	Pole	TP39.7314x39.2196x1.1688	42	-47.04	8914.33	31.9	Pass	
L43	2.5 - 2.25	Pole	TP39.7882x39.7314x1.0438	43	-47.19	7998.48	35.4	Pass	
L44	2.25 - 0	Pole	TP40.3x39.7882x1.0438	44	-48.42	8104.13	35.5	Pass	
							Summary		
							Pole (L8)	73.8	Pass
							RATING =	73.8	Pass

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

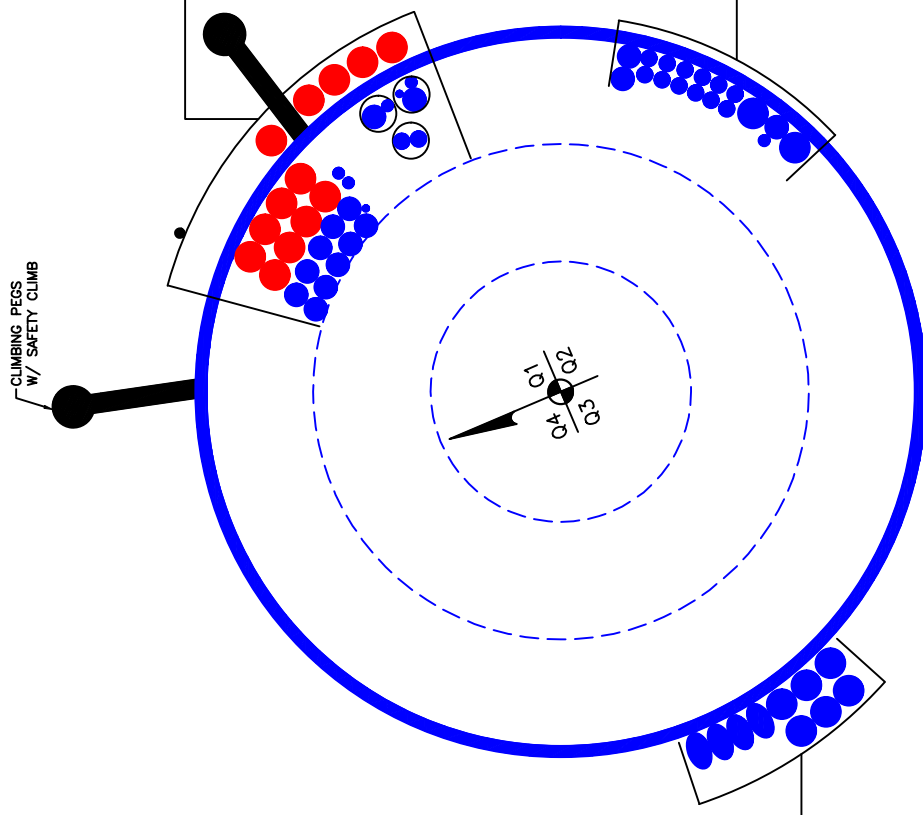
APPENDIX B
BASE LEVEL DRAWING



- (OTHER CONSIDERED EQUIPMENT—IN CONDUITS)
- (1) 3/8" TO 89 FT LEVEL
 - (2) 5/8" TO 89 FT LEVEL
 - (2) 7/8" TO 89 FT LEVEL
 - (2) 1-1/4" TO 89 FT LEVEL
- (OTHER CONSIDERED EQUIPMENT)
- (1) 3/8" TO 89 FT LEVEL
 - (2) 5/8" TO 89 FT LEVEL
 - (10) 1-1/4" TO 89 FT LEVEL

(PROPOSED EQUIPMENT CONFIGURATION)

(13) 1-5/8" TO 110 FT LEVEL



- (OTHER CONSIDERED EQUIPMENT)
- (1) 5/8" TO 117 FT LEVEL
 - (3) 1-1/4" TO 117 FT LEVEL

- (OTHER CONSIDERED EQUIPMENT)
- (12) 7/8" TO 100 FT LEVEL
 - (2) 1-5/8" TO 100 FT LEVEL

- (OTHER CONSIDERED EQUIPMENT)
- (6) 1-5/8" TO 84 FT LEVEL

- (OTHER CONSIDERED EQUIPMENT)
- (4) 7983A TO 93 FT LEVEL

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	117	7	0	12	14.36	15.94	0.1875	Auto	A572-65
2	110	10	0	12	15.94	18.2	0.1875	Auto	A572-65
3	100	52.58	4.58	12	18.20	30	0.25	Auto	A572-65
4	52	52	0	12	28.47	40.3	0.34375	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	0	35	plate	MS-600 -Welded	3												
2	35	63.5	plate	MS-450 (1.1875")	3												
3	51.5	71	plate	MS-450 (1.1875")	3												
4	0	35	plate	CCI-WSP-045100	3												
5	35	49	plate	CCI-SFP-040075	3												
6	12.5	38.08	plate	CCI-AFP-045100	1												
7	2.5	38.08	plate	CCI-AFP-045100	2												
8	38.08	68.08	plate	CCI-AFP-060100	3												
9	68.08	81.88	plate	CCI-SFP-045100	3												
10	0	15	plate	TS 1.25 x 6	1			c									
11	0	5.5	plate	TS 1.25 x 6.5	1												c
12	68.08	76.08	plate	CCI-SFP-040075	3												
13	0	13	plate	TS 1.25 x 5.25	3			c									c
14	0	5	plate	ARB 1.25 x 5.75	1												c
15																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L _w (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	6	1	6	0.5	n/a	24.000	16.375	4.750	1.1875	A572-65
2	4.5	1	4.5	0.5	18.000	18.000	20.625	3.250	1.1875	A572-65
3	4.5	1	4.5	0.5	18.000	18.000	20.625	3.250	1.1875	A572-65
4	4.5	1	4.5	0.5	n/a	18.000	20.000	3.250	1.1875	A572-65
5	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
6	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
7	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	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	6	7.5	3	n/a	n/a	0.000	7.500	0.0000	A572-65
11	1.25	6.5	8.125	3.25	n/a	n/a	0.000	8.125	0.0000	A572-65
12	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
13	1.25	5.25	6.5625	2.625	n/a	n/a	0.000	6.563	0.0000	A572-65
14	1.25	5.75	7.1875	2.875	n/a	n/a	0.000	7.188	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	117 - 112	5		12	14.360	15.489	0.1875	A572-65	1.000
2	112 - 110	2	0	12	15.489	15.940	0.1875	A572-65	1.000
3	110 - 105	5		12	15.940	17.070	0.1875	A572-65	1.000
4	105 - 100	5	0	12	17.070	18.200	0.1875	A572-65	1.000
5	100 - 95	5		12	18.200	19.322	0.25	A572-65	1.000
6	95 - 90	5		12	19.322	20.444	0.25	A572-65	1.000
7	90 - 85	5		12	20.444	21.566	0.25	A572-65	1.000
8	85 - 81.88	3.12		12	21.566	22.266	0.25	A572-65	1.000
9	81.88 - 81.63	0.25		12	22.266	22.323	0.35	A572-65	1.263
10	81.63 - 76.63	5		12	22.323	23.445	0.35625	A572-65	1.215
11	76.63 - 76.08	0.55		12	23.445	23.568	0.35625	A572-65	1.213
12	76.08 - 75.83	0.25		12	23.568	23.624	0.4625	A572-65	1.199
13	75.83 - 71	4.83		12	23.624	24.708	0.45625	A572-65	1.185
14	71 - 70.75	0.25		12	24.708	24.764	0.675	A572-65	1.065
15	70.75 - 68.08	2.67		12	24.764	25.363	0.6625	A572-65	1.068
16	68.08 - 67.83	0.25		12	25.363	25.420	0.7125	A572-65	0.914
17	67.83 - 63.5	4.33		12	25.420	26.391	0.6875	A572-65	0.924
18	63.5 - 63.25	0.25		12	26.391	26.447	0.9	A572-65	0.894
19	63.25 - 58.25	5		12	26.447	27.570	0.85	A572-65	0.917
20	58.25 - 53.25	5		12	27.570	28.692	0.825	A572-65	0.918
21	53.25 - 52	5.83	4.58	12	28.692	30.000	0.825	A572-65	0.912
22	52 - 46.42	5.58		12	28.472	29.741	0.84375	A572-65	0.931
23	46.42 - 41.42	5		12	29.741	30.879	0.81875	A572-65	0.938
24	41.42 - 38.08	3.34		12	30.879	31.638	0.80625	A572-65	0.939
25	38.08 - 37.83	0.25		12	31.638	31.695	0.75625	A572-65	0.939
26	37.83 - 35	2.83		12	31.695	32.339	0.74375	A572-65	0.944
27	35 - 34.75	0.25		12	32.339	32.396	0.84375	A572-65	0.940
28	34.75 - 29.75	5		12	32.396	33.533	0.83125	A572-65	0.935
29	29.75 - 24.75	5		12	33.533	34.670	0.80625	A572-65	0.945
30	24.75 - 19.75	5		12	34.670	35.808	0.79375	A572-65	0.942
31	19.75 - 15	4.75		12	35.808	36.888	0.76875	A572-65	0.956
32	15 - 14.75	0.25		12	36.888	36.945	0.76875	A572-65	0.956
33	14.75 - 13	1.75		12	36.945	37.343	0.76875	A572-65	0.950
34	13 - 12.75	0.25		12	37.343	37.400	1.01875	A572-65	0.886
35	12.75 - 12.5	0.25		12	37.400	37.457	1.01875	A572-65	0.886
36	12.5 - 12.25	0.25		12	37.457	37.514	1.01875	A572-65	0.910
37	12.25 - 7.25	5		12	37.514	38.651	0.99375	A572-65	0.914
38	7.25 - 5.5	1.75		12	38.651	39.049	0.99375	A572-65	0.908
39	5.5 - 5.25	0.25		12	39.049	39.106	1.06875	A572-65	0.908
40	5.25 - 5	0.25		12	39.106	39.163	1.06875	A572-65	0.907
41	5 - 4.75	0.25		12	39.163	39.220	1.19375	A572-65	0.863
42	4.75 - 2.5	2.25		12	39.220	39.731	1.16875	A572-65	0.873
43	2.5 - 2.25	0.25		12	39.731	39.788	1.04375	A572-65	0.904
44	2.25 - 0	2.25		12	39.788	40.300	1.04375	A572-65	0.897

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	117 - 112		1.75	16.34	3.10
2	112 - 110		1.83	22.68	3.23
3	110 - 105		5.75	60.10	7.65
4	105 - 100		6.09	99.20	7.99
5	100 - 95		9.69	175.46	14.63
6	95 - 90		10.53	252.06	15.69
7	90 - 85		15.61	358.25	22.65
8	85 - 81.88		16.45	430.40	23.25
9	81.88 - 81.63		16.52	436.22	23.26
10	81.63 - 76.63		17.56	553.36	23.60
11	76.63 - 76.08		17.68	566.35	23.63
12	76.08 - 75.83		17.75	572.27	23.65
13	75.83 - 71		18.85	688.58	24.69
14	71 - 70.75		18.94	694.75	24.71
15	70.75 - 68.08		19.72	761.21	25.11
16	68.08 - 67.83		19.80	767.48	25.13
17	67.83 - 63.5		21.00	877.59	25.76
18	63.5 - 63.25		21.09	884.03	25.80
19	63.25 - 58.25		22.75	1014.80	26.55
20	58.25 - 53.25		24.45	1149.34	27.31
21	53.25 - 52		24.88	1183.55	27.49
22	52 - 46.42		28.15	1339.43	28.41
23	46.42 - 41.42		29.99	1483.14	29.13
24	41.42 - 38.08		31.25	1581.11	29.60
25	38.08 - 37.83		31.35	1588.51	29.62
26	37.83 - 35		32.36	1672.84	30.03
27	35 - 34.75		32.48	1680.34	30.05
28	34.75 - 29.75		34.48	1832.19	30.74
29	29.75 - 24.75		36.52	1987.43	31.41
30	24.75 - 19.75		38.59	2145.57	31.91
31	19.75 - 15		40.58	2298.02	32.35
32	15 - 14.75		40.70	2306.10	32.36
33	14.75 - 13		41.43	2362.83	32.54
34	13 - 12.75		41.57	2370.95	32.54
35	12.75 - 12.5		41.70	2379.09	32.56
36	12.5 - 12.25		41.83	2387.23	32.59
37	12.25 - 7.25		44.40	2551.27	33.08
38	7.25 - 5.5		45.30	2609.25	33.26
39	5.5 - 5.25		45.45	2617.56	33.26
40	5.25 - 5		45.59	2625.87	33.29
41	5 - 4.75		45.74	2634.19	33.31
42	4.75 - 2.5		47.04	2709.35	33.55
43	2.5 - 2.25		47.19	2717.73	33.56
44	2.25 - 0		48.42	2793.44	33.79

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
117 - 112	Pole	TP15.489x14.36x0.1875	Pole	7.6%	Pass
112 - 110	Pole	TP15.94x15.489x0.1875	Pole	9.9%	Pass
110 - 105	Pole	TP17.07x15.94x0.1875	Pole	23.6%	Pass
105 - 100	Pole	TP18.2x17.07x0.1875	Pole	34.6%	Pass
100 - 95	Pole	TP19.322x18.2x0.25	Pole	39.0%	Pass
95 - 90	Pole	TP20.444x19.322x0.25	Pole	49.7%	Pass
90 - 85	Pole	TP21.566x20.444x0.25	Pole	64.2%	Pass
85 - 81.88	Pole	TP22.266x21.566x0.25	Pole	72.9%	Pass
81.88 - 81.63	Pole + Reinf.	TP22.323x22.266x0.35	Reinf. 9 Tension Rupture	67.5%	Pass
81.63 - 76.63	Pole + Reinf.	TP23.445x22.323x0.3563	Reinf. 9 Tension Rupture	78.8%	Pass
76.63 - 76.08	Pole + Reinf.	TP23.568x23.445x0.3563	Reinf. 9 Tension Rupture	79.9%	Pass
76.08 - 75.83	Pole + Reinf.	TP23.624x23.568x0.4625	Reinf. 12 Tension Rupture	73.1%	Pass
75.83 - 71	Pole + Reinf.	TP24.708x23.624x0.4563	Reinf. 12 Tension Rupture	82.1%	Pass
71 - 70.75	Pole + Reinf.	TP24.764x24.708x0.675	Reinf. 3 Compression	66.0%	Pass
70.75 - 68.08	Pole + Reinf.	TP25.363x24.764x0.6625	Reinf. 3 Compression	69.9%	Pass
68.08 - 67.83	Pole + Reinf.	TP25.42x25.363x0.7125	Reinf. 3 Compression	61.7%	Pass
67.83 - 63.5	Pole + Reinf.	TP26.391x25.42x0.6875	Reinf. 3 Compression	67.0%	Pass
63.5 - 63.25	Pole + Reinf.	TP26.447x26.391x0.9	Reinf. 2 Compression	53.3%	Pass
63.25 - 58.25	Pole + Reinf.	TP27.57x26.447x0.85	Reinf. 2 Compression	57.9%	Pass
58.25 - 53.25	Pole + Reinf.	TP28.692x27.57x0.825	Reinf. 2 Compression	62.3%	Pass
53.25 - 52	Pole + Reinf.	TP30x28.692x0.825	Reinf. 2 Compression	63.4%	Pass
52 - 46.42	Pole + Reinf.	TP29.741x28.472x0.8438	Reinf. 5 Tension Rupture	67.9%	Pass
46.42 - 41.42	Pole + Reinf.	TP30.879x29.741x0.8188	Reinf. 5 Tension Rupture	71.3%	Pass
41.42 - 38.08	Pole + Reinf.	TP31.638x30.879x0.8063	Reinf. 5 Tension Rupture	73.4%	Pass
38.08 - 37.83	Pole + Reinf.	TP31.695x31.638x0.7563	Reinf. 5 Tension Rupture	78.5%	Pass
37.83 - 35	Pole + Reinf.	TP32.339x31.695x0.7438	Reinf. 5 Tension Rupture	80.3%	Pass
35 - 34.75	Pole + Reinf.	TP32.396x32.339x0.8438	Reinf. 6 Tension Rupture	68.1%	Pass
34.75 - 29.75	Pole + Reinf.	TP33.533x32.396x0.8313	Reinf. 6 Tension Rupture	70.7%	Pass
29.75 - 24.75	Pole + Reinf.	TP34.67x33.533x0.8063	Reinf. 6 Tension Rupture	73.1%	Pass
24.75 - 19.75	Pole + Reinf.	TP35.808x34.67x0.7938	Reinf. 6 Tension Rupture	75.3%	Pass
19.75 - 15	Pole + Reinf.	TP36.888x35.808x0.7688	Reinf. 6 Tension Rupture	77.2%	Pass
15 - 14.75	Pole + Reinf.	TP36.945x36.888x0.7688	Reinf. 6 Tension Rupture	77.3%	Pass
14.75 - 13	Pole + Reinf.	TP37.343x36.945x0.7688	Reinf. 6 Tension Rupture	78.0%	Pass
13 - 12.75	Pole + Reinf.	TP37.4x37.343x1.0188	Reinf. 6 Tension Rupture	59.9%	Pass
12.75 - 12.5	Pole + Reinf.	TP37.457x37.4x1.0188	Reinf. 6 Tension Rupture	60.0%	Pass
12.5 - 12.25	Pole + Reinf.	TP37.514x37.457x1.0188	Reinf. 4 Tension Rupture	60.7%	Pass
12.25 - 7.25	Pole + Reinf.	TP38.651x37.514x0.9938	Reinf. 4 Tension Rupture	62.4%	Pass
7.25 - 5.5	Pole + Reinf.	TP39.049x38.651x0.9938	Reinf. 4 Tension Rupture	62.9%	Pass
5.5 - 5.25	Pole + Reinf.	TP39.106x39.049x1.0688	Reinf. 7 Tension Rupture	61.2%	Pass
5.25 - 5	Pole + Reinf.	TP39.163x39.106x1.0688	Reinf. 7 Tension Rupture	61.3%	Pass
5 - 4.75	Pole + Reinf.	TP39.22x39.163x1.1938	Reinf. 4 Tension Rupture	54.1%	Pass
4.75 - 2.5	Pole + Reinf.	TP39.731x39.22x1.1688	Reinf. 4 Tension Rupture	54.8%	Pass
2.5 - 2.25	Pole + Reinf.	TP39.788x39.731x1.0438	Reinf. 4 Tension Rupture	60.9%	Pass
2.25 - 0	Pole + Reinf.	TP40.3x39.788x1.0438	Reinf. 4 Tension Rupture	61.6%	Pass
				Summary	
			Pole	72.9%	Pass
			Reinforcement	82.1%	Pass
			Overall	82.1%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*															
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	
117 - 112	276	n/a	276	9.22	n/a	9.22	7.6%															
112 - 110	302	n/a	302	9.50	n/a	9.50	9.9%															
110 - 105	371	n/a	371	10.18	n/a	10.18	23.6%															
105 - 100	451	n/a	451	10.86	n/a	10.86	34.6%															
100 - 95	714	n/a	714	15.33	n/a	15.33	39.0%															
95 - 90	847	n/a	847	16.23	n/a	16.23	49.7%															
90 - 85	997	n/a	997	17.14	n/a	17.14	64.2%															
85 - 81.88	1098	n/a	1098	17.70	n/a	17.70	72.9%															
81.88 - 81.63	1148	415	1563	17.74	13.50	31.24	58.0%								67.5%							
81.63 - 76.63	1332	519	1851	18.64	13.50	32.14	66.9%								78.8%							
76.63 - 76.08	1353	524	1877	18.74	13.50	32.24	68.0%								79.9%							
76.08 - 75.83	1334	1071	2404	18.79	22.50	41.29	51.6%									61.0%					73.1%	
75.83 - 71	1527	1166	2693	19.66	22.50	42.16	58.7%									68.6%					82.1%	
71 - 70.75	1530	2346	3876	19.71	36.00	55.71	40.3%			66.0%						51.2%					59.5%	
70.75 - 68.08	1645	2455	4100	20.19	36.00	56.19	43.1%			69.9%						54.4%					63.1%	
68.08 - 67.83	1641	2788	4429	20.23	31.50	51.73	37.3%			61.7%					55.8%							
67.83 - 63.5	1838	2994	4832	21.01	31.50	52.51	41.1%			67.0%					60.6%							
63.5 - 63.25	1850	4289	6139	21.06	45.00	66.06	32.7%		53.3%	53.3%					48.1%							
63.25 - 58.25	2098	4643	6741	21.96	45.00	66.96	36.3%		57.9%	57.9%					52.4%							
58.25 - 53.25	2367	5011	7378	22.86	45.00	67.86	39.7%		62.3%	62.3%					56.3%							
53.25 - 52	2438	5105	7543	23.09	45.00	68.09	40.6%		63.4%	63.4%					57.3%							
52 - 46.42	3594	4813	8407	32.49	40.50	72.99	37.8%		65.9%			67.9%			59.6%							
46.42 - 41.42	4028	5173	9201	33.75	40.50	74.25	40.2%		69.2%			71.3%			62.5%							
41.42 - 38.08	4336	5421	9756	34.59	40.50	75.09	41.8%		71.2%			73.4%			64.3%							
38.08 - 37.83	4360	4822	9182	34.65	36.00	70.65	44.7%		76.1%			78.5%	75.3%	75.3%								
37.83 - 35	4634	5013	9647	35.36	36.00	71.36	46.0%		77.8%			80.3%	77.0%	77.0%								
35 - 34.75	4658	6325	10984	35.43	45.00	80.43	40.7%	62.2%			68.1%		68.1%	68.1%								
34.75 - 29.75	5172	6760	11932	36.68	45.00	81.68	42.8%	64.5%			70.7%		70.7%	70.7%								
29.75 - 24.75	5722	7209	12931	37.94	45.00	82.94	44.9%	66.7%			73.1%		73.1%	73.1%								
24.75 - 19.75	6310	7672	13982	39.20	45.00	84.20	46.9%	68.7%			75.3%		75.3%	75.3%								
19.75 - 15	6904	8126	15031	40.39	45.00	85.39	48.7%	70.5%			77.2%		77.2%	77.2%								
15 - 14.75	6937	8151	15087	40.45	45.00	85.45	48.8%	70.6%			77.3%		77.3%	77.3%								
14.75 - 13	7166	8321	15487	40.89	45.00	85.89	49.4%	71.2%			78.0%		78.0%	78.0%								
13 - 12.75	7199	13128	20326	40.96	64.69	105.65	38.1%	54.7%			59.9%		59.9%	59.9%							50.9%	
12.75 - 12.5	7232	13165	20397	41.02	64.69	105.71	38.2%	54.8%			60.0%		60.0%	60.0%							51.0%	
12.5 - 12.25	7270	13280	20550	41.08	67.69	108.77	39.5%	55.4%			60.7%		60.7%	60.6%			45.5%				51.9%	
12.25 - 7.25	7958	14044	22001	42.34	67.69	110.03	41.2%	57.0%			62.4%		62.3%	46.7%							53.2%	
7.25 - 5.5	8208	14316	22524	42.78	67.69	110.47	41.7%	57.5%			62.9%		62.9%	47.2%							53.6%	
5.5 - 5.25	8298	15932	24230	42.84	75.81	118.66	40.6%	53.2%			61.2%		61.2%	46.8%			42.9%				50.3%	
5.25 - 5	8335	15975	24310	42.91	75.81	118.72	40.7%	53.2%			61.3%		61.3%	46.8%			43.0%				50.4%	
5 - 4.75	8328	18653	26982	42.97	83.00	125.97	36.0%	51.1%			54.1%		50.4%	44.6%			43.3%				46.6%	41.7%
4.75 - 2.5	8661	19104	27766	43.53	83.00	126.53	36.7%	51.8%			54.8%		51.1%	45.1%			43.8%				47.2%	42.2%
2.5 - 2.25	8698	16365	25062	43.60	74.00	117.60	40.8%	55.8%			60.9%			45.4%			47.9%				51.8%	46.4%
2.25 - 0	9041	16751	25792	44.16	74.00	118.16	41.5%	56.4%			61.6%			45.9%			51.5%				52.4%	46.9%

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

Monopole Flange Plate Connection

Elevation = 110 ft.

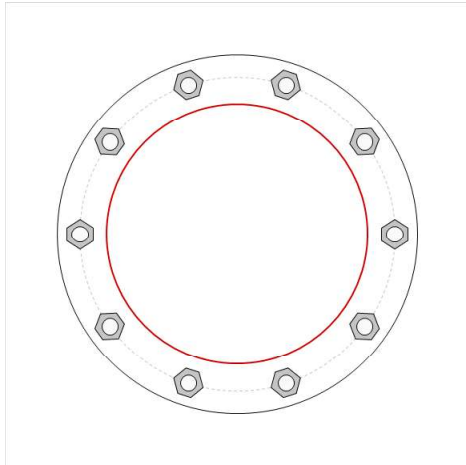


BU #	806352
Site Name	BRG 302 943052
Order #	529727 Rev. 0
TIA-222 Revision	H

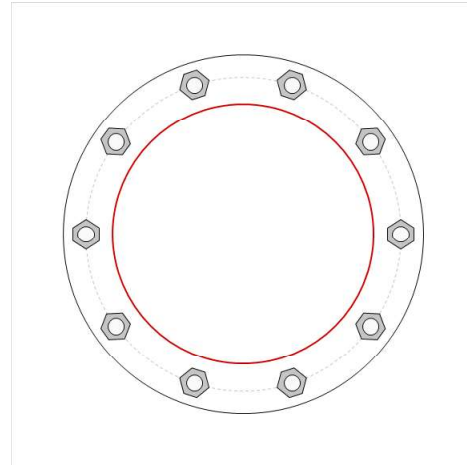
Applied Loads	
Moment (kip-ft)	22.68
Axial Force (kips)	1.83
Shear Force (kips)	3.23

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(10) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19.2" BC

Top Plate Data

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

Bottom Plate Data

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

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

15.94" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

15.94" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	5.48
Allowable (kips)	54.54
Stress Rating:	9.6% Pass

Top Plate Capacity

Max Stress (ksi):	2.15	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	6.3%	Pass
Tension Side Stress Rating:	2.2%	Pass

Bottom Plate Capacity

Max Stress (ksi):	2.15	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	6.3%	Pass
Tension Side Stress Rating:	2.2%	Pass

Monopole Flange Plate Connection

Elevation = 100 ft.

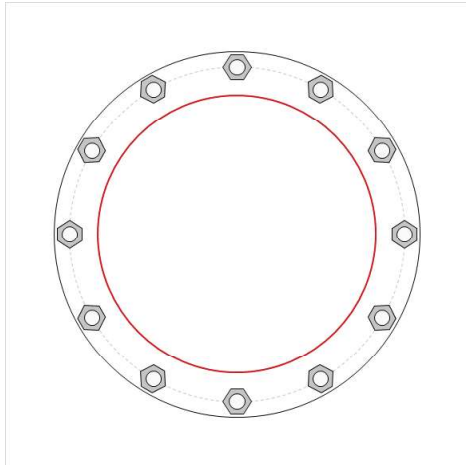


BU #	806352
Site Name	BRG 302 943052
Order #	529727 Rev. 0
TIA-222 Revision	H

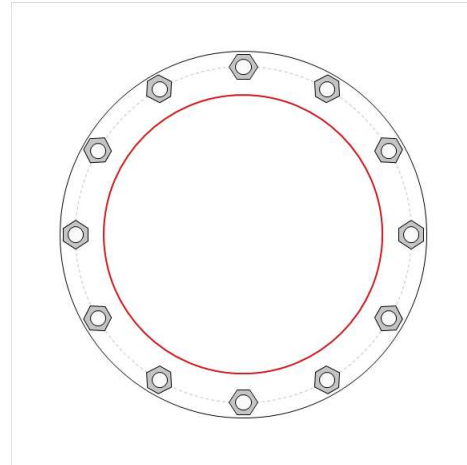
Applied Loads	
Moment (kip-ft)	99.20
Axial Force (kips)	6.09
Shear Force (kips)	7.99

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" \emptyset bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 22" BC

Top Plate Data

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

Bottom Plate Data

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

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

18.2" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

18.2" x 0.25" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	17.51
Allowable (kips)	54.53
Stress Rating:	30.6% Pass

Top Plate Capacity

Max Stress (ksi):	7.86	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	23.1%	Pass
Tension Side Stress Rating:	9.4%	Pass

Bottom Plate Capacity

Max Stress (ksi):	7.86	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	23.1%	Pass
Tension Side Stress Rating:	9.4%	Pass

Monopole Base Plate Connection

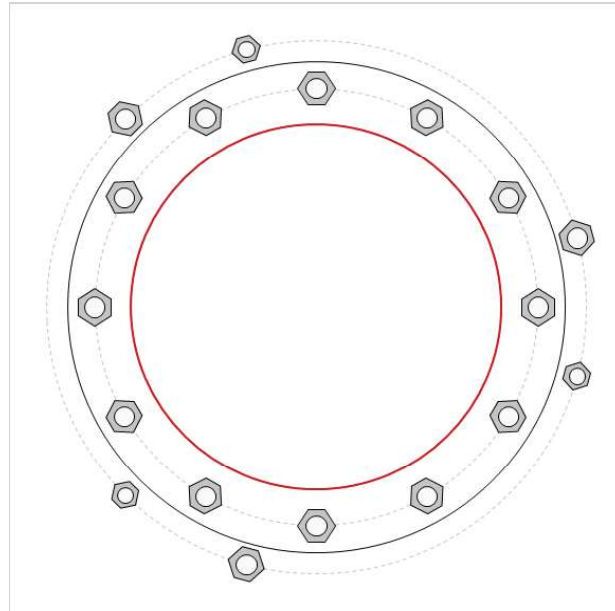


Site Info	
BU #	806352
Site Name	BRG 302 943052
Order #	529727 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1

Applied Loads	
Moment (kip-ft)	2793.44
Axial Force (kips)	48.42
Shear Force (kips)	33.79

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
GROUP 1: (12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 48.22" BC
GROUP 2: (3) 1-3/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 58.72" BC
GROUP 3: (3) 2-1/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 58.72" BC

Base Plate Data
54.22" OD x 2.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)

Stiffener Data
N/A

Pole Data
40.3" x 1.04375" 12-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary		(units of kips, kip-in)
GROUP 1:		
$P_{u,c} = 149.9$	$\phi P_{n,c} = 268.39$	Stress Rating
$V_u = 2.82$	$\phi V_n = 120.77$	53.2%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:		
$P_{u,c} = 103.84$	$\phi P_{n,c} = 176.79$	Stress Rating
$V_u = 0$	$\phi V_n = 102.28$	55.9%
$M_u = 0$	$\phi M_n = 84.41$	Pass
GROUP 3:		
$P_{u,c} = 177.62$	$\phi P_{n,c} = 301.49$	Stress Rating
$V_u = 0$	$\phi V_n = 169.08$	56.1%
$M_u = 0$	$\phi M_n = 179.4$	Pass
Base Plate Summary		
Max Stress (ksi):	21.99	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	38.8%	Pass

Drilled Pier Foundation

BU #: 806352
 Site Name: BRG 302 943052
 Order Number: 529727 Rev. 0

TIA-222 Revision: H
 Tower Type: Monopole

Applied Loads		
Comp.	Uplift	
Moment (kip-ft)	2793.45	
Axial Force (kips)	48.43	
Shear Force (kips)	33.77	

Material Properties	
Concrete Strength, f _c :	3 ksi
Rebar Strength, F _y :	60 ksi
Tie Yield Strength, F _{yt} :	40 ksi

Pier Design Data	
Depth	16.4 ft
Ext. Above Grade	0.2 ft
Pier Section 1	
<i>From 0.2' above grade to 16.4' below grade</i>	
Pier Diameter	6.5 ft
Rebar Quantity	22
Rebar Size	10
Clear Cover to Ties	5 in
Tie Size	6
Tie Spacing	in

Rebar & Pier Options

Embedded Pole Inputs

Balled Pier Inputs

Analysis Results			
Soil Lateral Check	Compression	Uplift	
D _{v=0} (ft. from TOC)	6.04	-	-
Soil Safety Factor	2.67	-	-
Max Moment (kip-ft)	3057.29	-	-
Rating*	47.4%	-	-
Soil Vertical Check			
Skin Friction (kips)		569.51	-
End Bearing (kips)		918.34	-
Weight of Concrete (kips)		99.15	-
Total Capacity (kips)		1487.85	-
Axial (kips)		147.58	-
Rating*		9.4%	-
Reinforced Concrete Flexure			
Critical Depth (ft. from TOC)		5.77	-
Critical Moment (kip-ft)		3056.47	-
Critical Moment Capacity		4078.85	-
Rating*		71.4%	-
Reinforced Concrete Shear			
Critical Depth (ft. from TOC)		13.41	-
Critical Shear (kip)		497.00	-
Critical Shear Capacity		590.81	-
Rating*		80.1%	-

Soil Interaction Rating*	47.4%
Structural Foundation Rating*	80.1%

*Rating per TIA-222-H Section 15.5



Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A:	<input type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Soil Profile

# of Layers	4
-------------	---

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ _{soil} (pcf)	γ _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Override (ksf)	Ultimate Skin Friction Override (ksf)	Ult. Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	4	6	2	120	150	0	39	0.000	0.000	0.42	0.00			Cohesionless
3	6	11	5	135	150	0	45	0.000	0.000	2.15	0.00			Cohesionless
4	11	16.4	5.4	135	150	14	0	6.300	6.300	4.74	0.00	36.9		Cohesive

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LPile for Windows, Version 2016-09.010

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method
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Files Used for Analysis

Path to file locations on this computer:
\SA Models - Letters\Work Area\RDel Toro\Tep. LPile\806352\

Name of the input data file:
New LPile (USCS units).lp9d

Name of the output report file:
New LPile (USCS units).lp9o

Name of the plot output file:
New LPile (USCS units).lp9p

Name of the runtime message file:
New LPile (USCS units).lp9r

Date and Time of Analysis

Date: October 16, 2020

Time: 11:57:53

Problem Title

Project Name:

Job Number:

Client:

Engineer:

Description:

Program Options and Settings

Computational Options:

- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:

- US Customary System Units (pounds, feet, inches)

Analysis Control Options:

- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 199

Loading Type and Number of Cycles of Loading:

- Static loading specified
- Use of p-y modification factors for p-y curves not selected
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected

- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 3
- No p-y curves to be computed and reported for user-specified depths
- Print using narrow report formats
(Note: Some output information is omitted from the narrow report formats)

 Pile Structural Properties and Geometry

Number of pile sections defined = 1
 Total length of pile = 16.600 ft
 Depth of ground surface below top of pile = 0.2000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	78.0000
2	16.600	78.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile
 Length of section = 16.600000 ft
 Shaft Diameter = 78.000000 in
 Shear capacity of section = 0.0000 lbs

Ground Slope and Pile Batter Angles

Ground Slope Angle	=	0.000 degrees
	=	0.000 radians
Pile Batter Angle	=	0.000 degrees
	=	0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	0.200000 ft
Distance from top of pile to bottom of layer	=	4.200000 ft
Effective unit weight at top of layer	=	115.000000 pcf
Effective unit weight at bottom of layer	=	115.000000 pcf
Friction angle at top of layer	=	20.000000 deg.
Friction angle at bottom of layer	=	20.000000 deg.
Subgrade k at top of layer	=	0.0000 pci
Subgrade k at bottom of layer	=	0.0000 pci

NOTE: Default values for subgrade k will be computed for this layer.

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	4.200000 ft
Distance from top of pile to bottom of layer	=	6.200000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Friction angle at top of layer	=	39.000000 deg.
Friction angle at bottom of layer	=	39.000000 deg.
Subgrade k at top of layer	=	0.0000 pci
Subgrade k at bottom of layer	=	0.0000 pci

NOTE: Default values for subgrade k will be computed for this layer.

Layer 3 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	6.200000 ft
Distance from top of pile to bottom of layer	=	11.200000 ft
Effective unit weight at top of layer	=	135.000000 pcf
Effective unit weight at bottom of layer	=	135.000000 pcf

Friction angle at top of layer = 45.000000 deg.
 Friction angle at bottom of layer = 45.000000 deg.
 Subgrade k at top of layer = 0.0000 pci
 Subgrade k at bottom of layer = 0.0000 pci

NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is stiff clay without free water

Distance from top of pile to top of layer = 11.200000 ft
 Distance from top of pile to bottom of layer = 17.000000 ft
 Effective unit weight at top of layer = 135.000000 pcf
 Effective unit weight at bottom of layer = 135.000000 pcf
 Undrained cohesion at top of layer = 14000. psf
 Undrained cohesion at bottom of layer = 14000. psf
 Epsilon-50 at top of layer = 0.0000
 Epsilon-50 at bottom of layer = 0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

(Depth of the lowest soil layer extends 0.400 ft below the pile tip)

 Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs
1	1	V = 33770. lbs	M = 33521400. in-lbs	48430.

V = shear force applied normal to pile axis

M = bending moment applied to pile head

y = lateral deflection normal to pile axis

S = pile slope relative to original pile batter angle

R = rotational stiffness applied to pile head

Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).

Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Drilled Shaft (Bored Pile):

Length of Section	=	16.600000	ft
Shaft Diameter	=	78.000000	in
Concrete Cover Thickness	=	5.000000	in
Number of Reinforcing Bars	=	22	bars
Yield Stress of Reinforcing Bars	=	60000.	psi
Modulus of Elasticity of Reinforcing Bars	=	29000000.	psi
Gross Area of Shaft	=	4778.	sq. in.
Total Area of Reinforcing Steel	=	27.940000	sq. in.
Area Ratio of Steel Reinforcement	=	0.58	percent
Edge-to-Edge Bar Spacing	=	8.226669	in
Maximum Concrete Aggregate Size	=	0.750000	in
Ratio of Bar Spacing to Aggregate Size	=	10.97	
Offset of Center of Rebar Cage from Center of Pile	=	0.0000	in

Axial Structural Capacities:

Nom. Axial Structural Capacity = $0.85 F_c A_c + F_y A_s$	=	13789.977	kips
Tensile Load for Cracking of Concrete	=	-1813.714	kips
Nominal Axial Tensile Capacity	=	-1676.400	kips

Reinforcing Bar Dimensions and Positions Used in Computations:

Bar Number	Bar Diam. inches	Bar Area sq. in.	X inches	Y inches
1	1.270000	1.270000	33.365000	0.000000
2	1.270000	1.270000	32.013483	9.400007
3	1.270000	1.270000	28.068424	18.038481
4	1.270000	1.270000	21.849428	25.215585
5	1.270000	1.270000	13.860322	30.349872

6	1.270000	1.270000	4.748335	33.025392
7	1.270000	1.270000	-4.748335	33.025392
8	1.270000	1.270000	-13.860322	30.349872
9	1.270000	1.270000	-21.849428	25.215585
10	1.270000	1.270000	-28.068424	18.038481
11	1.270000	1.270000	-32.013483	9.400007
12	1.270000	1.270000	-33.365000	0.000000
13	1.270000	1.270000	-32.013483	-9.400007
14	1.270000	1.270000	-28.068424	-18.038481
15	1.270000	1.270000	-21.849428	-25.215585
16	1.270000	1.270000	-13.860322	-30.349872
17	1.270000	1.270000	-4.748335	-33.025392
18	1.270000	1.270000	4.748335	-33.025392
19	1.270000	1.270000	13.860322	-30.349872
20	1.270000	1.270000	21.849428	-25.215585
21	1.270000	1.270000	28.068424	-18.038481
22	1.270000	1.270000	32.013483	-9.400007

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 8.227 inches between bars 15 and 16.

Ratio of bar spacing to maximum aggregate size = 10.97

Concrete Properties:

Compressive Strength of Concrete	=	3000. psi
Modulus of Elasticity of Concrete	=	3122019. psi
Modulus of Rupture of Concrete	=	-410.791918 psi
Compression Strain at Peak Stress	=	0.001634
Tensile Strain at Fracture of Concrete	=	-0.0001160
Maximum Coarse Aggregate Size	=	0.750000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
-----	-----
1	48.430

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.

- Y = stress in reinforcing steel has reached yield stress.
- T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
- Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
 Position of neutral axis is measured from edge of compression side of pile.
 Compressive stresses and strains are positive in sign.
 Tensile stresses and strains are negative in sign.

Axial Thrust Force = 48.430 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in ²	Depth to N Axis in	Run Msg
0.0000004167	2935.	7044210890.	45.3920743554	
0.0000008333	5852.	7022609702.	42.2089441038	
0.0000012500	8751.	7000518476.	41.1480093357	
0.0000016667	11631.	6978303455.	40.6176029488	
0.0000020833	14492.	6956038771.	40.2994045708	
0.0000025000	17334.	6933749247.	40.0873103461	
0.0000029167	20158.	6911445509.	39.9358465770	
0.0000033333	20158.	6047514821.	20.3165605732	C
0.0000037500	20158.	5375568729.	19.9550504899	C
0.0000041667	20158.	4838011856.	19.6565075767	C
0.0000045833	20158.	4398192597.	19.4108111362	C
0.0000050000	20158.	4031676547.	19.2070440855	C
0.0000054167	20158.	3721547582.	19.0318969155	C
0.0000058333	20158.	3455722755.	18.8785795840	C
0.0000062500	20158.	3225341238.	18.7465147696	C
0.0000066667	20158.	3023757410.	18.6317204018	C
0.0000070833	20158.	2845889327.	18.5311513861	C
0.0000075000	20158.	2687784365.	18.4424393331	C
0.0000079167	20158.	2546322030.	18.3637144785	C
0.0000083333	20158.	2419005928.	18.2916172860	C
0.0000087500	20158.	2303815170.	18.2254440186	C
0.0000091667	20158.	2199096298.	18.1658729430	C
0.0000095833	20158.	2103483416.	18.1120451157	C
0.0000100000	20158.	2015838274.	18.0632447657	C
0.0000104167	20158.	1935204743.	18.0188706606	C
0.0000108333	20158.	1860773791.	17.9784140799	C
0.0000112500	20158.	1791856243.	17.9414416834	C
0.0000116667	20158.	1727861377.	17.9075820506	C
0.0000120833	20158.	1668279951.	17.8765150046	C
0.0000125000	20158.	1612670619.	17.8479630724	C
0.0000129167	20158.	1560648986.	17.8216845968	C

0.0000133333	20158.	1511878705.	17.7974681403	C
0.0000137500	20158.	1466064199.	17.7751279066	C
0.0000141667	20158.	1422944664.	17.7544999702	C
0.0000145833	20158.	1382289102.	17.7354391516	C
0.0000150000	20158.	1343892182.	17.7178164142	C
0.0000154167	20158.	1307570772.	17.7015166831	C
0.0000158333	20158.	1273161015.	17.6864370075	C
0.0000162500	20158.	1240515861.	17.6724850072	C
0.0000170833	20158.	1180002892.	17.6476396285	C
0.0000179167	20158.	1125119036.	17.6264072864	C
0.0000187500	20208.	1077755336.	17.6083167956	C
0.0000195833	21047.	1074733287.	17.5929773311	C
0.0000204167	21885.	1071909162.	17.5800620317	C
0.0000212500	22722.	1069259474.	17.5692954614	C
0.0000220833	23558.	1066764051.	17.5604439095	C
0.0000229167	24393.	1064405732.	17.5533078082	C
0.0000237500	25227.	1062169709.	17.5475881197	C
0.0000245833	26059.	1060043225.	17.5431564735	C
0.0000254167	26891.	1058015317.	17.5400621332	C
0.0000262500	27722.	1056076258.	17.5381874360	C
0.0000270833	28552.	1054217524.	17.5374293637	C
0.0000279167	29380.	1052431607.	17.5376973601	C
0.0000287500	30208.	1050711862.	17.5389115293	C
0.0000295833	31034.	1049052390.	17.5410011381	C
0.0000304167	31860.	1047447931.	17.5439033644	C
0.0000312500	32684.	1045893783.	17.5475622466	C
0.0000320833	33507.	1044385801.	17.5518225917	C
0.0000329167	34329.	1042920235.	17.5565744758	C
0.0000337500	35150.	1041493638.	17.5619121685	C
0.0000345833	35970.	1040102910.	17.5678011568	CY
0.0000354167	36789.	1038745246.	17.5742103122	CY
0.0000362500	37606.	1037418095.	17.5811115059	CY
0.0000370833	38423.	1036119132.	17.5884792744	CY
0.0000379167	39232.	1034693855.	17.5954609285	CY
0.0000387500	39893.	1029507305.	17.5818505010	CY
0.0000395833	40523.	1023748149.	17.5651100105	CY
0.0000404167	41052.	1015711351.	17.5341699381	CY
0.0000412500	41506.	1006207072.	17.4929893292	CY
0.0000420833	41960.	997064552.	17.4539133911	CY
0.0000429167	42413.	988262619.	17.4168231821	CY
0.0000437500	42862.	979709294.	17.3811132381	CY
0.0000445833	43239.	969844280.	17.3359217367	CY
0.0000454167	43549.	958869030.	17.2825017599	CY
0.0000462500	43851.	948128752.	17.2302854705	CY
0.0000470833	44153.	937759298.	17.1802624116	CY
0.0000479167	44454.	927741264.	17.1323203532	CY
0.0000487500	44755.	918056574.	17.0863547681	CY
0.0000495833	45056.	908688362.	17.0422681848	CY
0.0000529167	46077.	870742530.	16.8550692436	CY
0.0000562500	46809.	832167950.	16.6441388878	CY

0.0000595833	47534.	797778546.	16.4551057902	CY
0.0000629167	48254.	766954590.	16.2897132411	CY
0.0000662500	48789.	736444131.	16.1132534706	CY
0.0000695833	49188.	706898511.	15.9304345509	CY
0.0000729167	49578.	679930798.	15.7579022778	CY
0.0000762500	49965.	655277432.	15.6030294510	CY
0.0000795833	50348.	632646649.	15.4636485571	CY
0.0000829167	50728.	611793552.	15.3379430505	CY
0.0000862500	51089.	592331320.	15.2212511810	CY
0.0000895833	51326.	572943267.	15.0823142223	CY
0.0000929167	51509.	554352651.	14.9433745197	CY
0.0000962500	51689.	537025971.	14.8159182915	CY
0.0000995833	51867.	520835758.	14.6988267142	CY
0.0001029167	52042.	505671040.	14.5911275220	CY
0.0001062500	52215.	491434754.	14.4919721172	CY
0.0001095833	52384.	478025401.	14.3975174025	CY
0.0001129167	52546.	465354770.	14.3042907913	CY
0.0001162500	52707.	453390508.	14.2181359631	CY
0.0001195833	52864.	442071526.	14.1385906586	CY
0.0001229167	53019.	431343980.	14.0652083167	CY
0.0001262500	53172.	421164911.	13.9972916145	CY
0.0001295833	53311.	411404577.	13.9318359388	CY
0.0001329167	53419.	401901563.	13.8636383595	CY
0.0001362500	53500.	392656980.	13.7927848456	CY
0.0001395833	53560.	383716230.	13.7219760768	CY
0.0001429167	53619.	375179575.	13.6558519658	CY
0.0001462500	53673.	366996369.	13.5863609565	CY
0.0001495833	53726.	359168657.	13.5201651592	CY
0.0001529167	53777.	351674204.	13.4579353310	CY
0.0001562500	53827.	344489735.	13.3996193517	CY
0.0001595833	53875.	337600718.	13.3444795861	CY
0.0001629167	53924.	330988922.	13.2923341018	CY
0.0001662500	53971.	324637575.	13.2430160963	CY
0.0001695833	54017.	318529243.	13.1965958623	CY
0.0001729167	54062.	312649376.	13.1529656029	CY
0.0001762500	54107.	306988619.	13.1115622381	CY
0.0001795833	54151.	301534708.	13.0722712788	CY
0.0001829167	54194.	296276271.	13.0349869439	CY
0.0002029167	54437.	268272306.	12.8460391171	CY
0.0002229167	54653.	245170957.	12.6855449232	CY
0.0002429167	54828.	225707497.	12.5514066255	CYT
0.0002629167	54914.	208865810.	12.4134784960	CYT
0.0002829167	54954.	194239715.	12.2817952204	CYT
0.0003029167	54987.	181525262.	12.1748944009	CYT
0.0003229167	54987.	170282407.	12.1723951641	CYT

Summary of Results for Nominal (Unfactored) Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
 or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	48.430	54789.284	0.00300000

Note that the values of moment capacity in the table above are not factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.70).

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to ACI 318, Section 9.3.2.2 or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding bending stiffnesses computed for common resistance factor values used for reinforced concrete sections.

Axial Load No.	Resist. Factor for Moment	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in ²
1	0.65	54789.	31.479500	35613.	1.0407E+09
1	0.70	54789.	33.901000	38352.	1.0362E+09
1	0.75	54789.	36.322500	41092.	1.0149E+09

 Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.2000	0.00	N.A.	No	0.00	28125.
2	4.2000	4.0000	Yes	No	28125.	125555.
3	6.2000	6.0000	Yes	No	153680.	954074.
4	11.2000	3.8460	No	No	1107754.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

 Computed Values of Pile Loading and Deflection
 for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 33770.0 lbs
 Applied moment at pile head = 33521400.0 in-lbs
 Axial thrust load on pile head = 48430.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Soil Res. p lb/inch	Bending Stiffness in-lb^2
0.000	1.20097	33521400.	33770.	0.000	1.044E+12
0.25025	1.16920	33624350.	33767.	-5.20670	1.044E+12
0.50050	1.13773	33727221.	33714.	-30.29792	1.044E+12
0.75075	1.10655	33829805.	33587.	-54.00734	1.044E+12
1.00101	1.07566	33931890.	33391.	-76.35441	1.044E+12
1.25126	1.04506	34033272.	33130.	-97.35867	1.043E+12
1.50151	1.01475	34133763.	32808.	-117.03972	1.043E+12
1.75176	0.98475	34233185.	32428.	-135.41727	1.043E+12
2.00201	0.95503	34331372.	31996.	-152.51109	1.043E+12
2.25226	0.92562	34428171.	31513.	-168.34103	1.043E+12
2.50251	0.89650	34523437.	30986.	-182.92703	1.043E+12
2.75276	0.86768	34617041.	30416.	-196.28909	1.042E+12
3.00302	0.83916	34708860.	29808.	-208.44729	1.042E+12
3.25327	0.81094	34798786.	29165.	-219.42178	1.042E+12
3.50352	0.78302	34886720.	28492.	-229.23279	1.042E+12
3.75377	0.75541	34972572.	27790.	-237.90061	1.042E+12
4.00402	0.72809	35056265.	27064.	-245.44558	1.042E+12
4.25427	0.70108	35137731.	25175.	-2533.	1.042E+12
4.50452	0.67438	35202987.	17326.	-2694.	1.041E+12
4.75477	0.64798	35243935.	8998.	-2851.	1.041E+12
5.00503	0.62188	35259157.	203.95864	-3005.	1.041E+12
5.25528	0.59609	35247269.	-9044.	-3154.	1.041E+12
5.50553	0.57060	35206929.	-18732.	-3298.	1.041E+12
5.75578	0.54542	35136840.	-28844.	-3436.	1.042E+12
6.00603	0.52055	35035757.	-39361.	-3568.	1.042E+12
6.25628	0.49597	34902489.	-51256.	-5675.	1.042E+12

6.50653	0.47170	34723848.	-68639.	-5900.	1.042E+12
6.75678	0.44773	34491995.	-86679.	-6114.	1.043E+12
7.00704	0.42406	34204995.	-105353.	-6321.	1.043E+12
7.25729	0.40068	33860982.	-124631.	-6515.	1.044E+12
7.50754	0.37760	33458213.	-144466.	-6693.	1.044E+12
7.75779	0.35480	32995079.	-164814.	-6855.	1.045E+12
8.00804	0.33229	32470122.	-185620.	-6999.	1.046E+12
8.25829	0.31006	31882045.	-206831.	-7124.	1.047E+12
8.50854	0.28811	31229723.	-228385.	-7228.	1.049E+12
8.75879	0.26642	30512225.	-250216.	-7308.	1.050E+12
9.00905	0.24499	29728825.	-272251.	-7364.	1.052E+12
9.25930	0.22382	28879025.	-294413.	-7392.	1.053E+12
9.50955	0.20290	27962573.	-316615.	-7389.	1.056E+12
9.75980	0.18221	26979493.	-338759.	-7353.	1.058E+12
10.01005	0.16176	25930115.	-360741.	-7284.	1.060E+12
10.26030	0.14152	24815274.	-382039.	-6744.	1.063E+12
10.51055	0.12150	23639637.	-401082.	-5934.	1.067E+12
10.76080	0.10168	22410505.	-417637.	-5086.	1.070E+12
11.01106	0.08204	21135523.	-431590.	-4201.	1.074E+12
11.26131	0.06257	19822671.	-444622.	-6860.	6.160E+12
11.51156	0.04316	18458176.	-464407.	-6291.	6.924E+12
11.76181	0.02377	17037115.	-482131.	-5454.	6.936E+12
12.01206	0.004398	15567381.	-496222.	-3600.	6.947E+12
12.26231	-0.01495	14082990.	-488312.	4918.	6.959E+12
12.51256	-0.03428	12641494.	-471632.	6090.	6.969E+12
12.76281	-0.05359	11254667.	-452149.	6851.	6.981E+12
13.01307	-0.07289	9929517.	-430657.	7444.	6.990E+12
13.26332	-0.09218	8671439.	-407537.	7943.	7.001E+12
13.51357	-0.11146	7484947.	-383018.	8379.	7.008E+12
13.76382	-0.13072	6373990.	-357257.	8772.	7.017E+12
14.01407	-0.14998	5342122.	-330365.	9133.	7.025E+12
14.26432	-0.16923	4392603.	-302427.	9470.	7.030E+12
14.51457	-0.18848	3528468.	-273512.	9786.	7.037E+12
14.76482	-0.20772	2752569.	-243672.	10085.	7.044E+12
15.01508	-0.22695	2067610.	-212954.	10371.	7.044E+12
15.26533	-0.24619	1476174.	-181394.	10646.	7.044E+12
15.51558	-0.26542	980739.	-149024.	10911.	7.044E+12
15.76583	-0.28465	583693.	-115871.	11167.	7.044E+12
16.01608	-0.30388	287348.	-81961.	11416.	7.044E+12
16.26633	-0.32311	93951.	-47313.	11658.	7.044E+12
16.51658	-0.34234	5688.	-11946.	11895.	7.044E+12

Output Summary for Load Case No. 1:

Pile-head deflection	=	1.20096851 inches
Computed slope at pile head	=	-0.01062590 radians
Maximum bending moment	=	35259157. inch-lbs
Maximum shear force	=	-496532. lbs
Depth of maximum bending moment	=	5.00502513 feet below pile head
Depth of maximum shear force	=	12.09547739 feet below pile head

Number of iterations = 44
Number of zero deflection points = 1

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	1	1.200969	-0.010626	-496532.	35259157.

Maximum pile-head deflection = 1.2009685081 inches
Maximum pile-head rotation = -0.0106259048 radians = -0.608819 deg.

Summary of Warning Messages

The following warning was reported 2860 times

**** Warning ****

An unreasonable input value for shear strength has been specified for a layer. defined using the stiff clay without free water criteria. The input value is greater than 8000 psf. Please check your input data for correctness.

The analysis ended normally.

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 71.42 ft (NAVD 88)
Latitude: 41.072431
Longitude: -73.478167

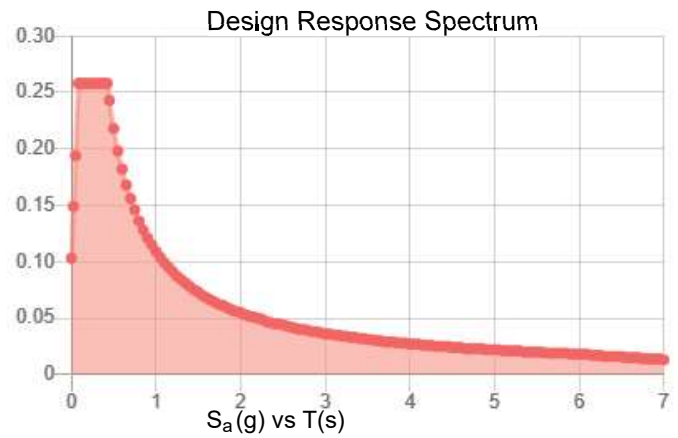
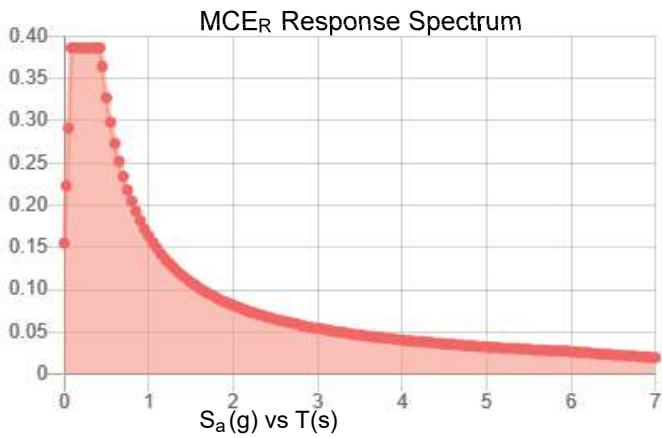


Site Soil Class: D - Stiff Soil

Results:

S_s :	0.242	S_{DS} :	0.258
S_1 :	0.068	S_{D1} :	0.109
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.139
S_{MS} :	0.386	PGA _M :	0.212
S_{M1} :	0.164	F _{PGA} :	1.522
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Oct 15 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: Thu Oct 15 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 20, 2020

Ms. Darcy Tarr
Crown Castle USA
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

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

Subject: Mount Replacement Analysis Report

Carrier Designation: T-Mobile
Site Number: CT11851C
Site Name: --

Crown Castle Designation: BU Number: 806352
Site Name: BRG 302 943052
JDE Job Number: 620131
Order Number: 529727, Rev.0

Engineering Firm Designation: B+T Group Report Designation: 145684.001.01.R1

Site Data: 126 Ledge Road, Darien, CT 06820. Fairfield County
Latitude 41° 4' 20.75" Longitude -73° 28' 41.40"

Structure Information: Tower Height & Type: 117.0 ft. Monopole
Mount Elevation: 110.0 ft.
Mount Type: 12.5 ft. Platform with Support Rails

Dear Ms. Tarr,

B+T Group is pleased to submit this "Mount Replacement Analysis Report" to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the above-mentioned 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.

Based upon our analysis, we have determined the adequacy of the antenna mounting system that will support the existing and proposed loading to be:

Platform with Support Rails

Sufficient

This analysis has been performed in accordance with the ANSI/TIA-222-H Standard and the 2018 International Building Code based upon a Basic Wind Speed of 117 mph 3-second gust. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

We appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Khup Hatzaw, P.E.

Respectfully submitted by: B+T Engineering, Inc.
COA #: PEC.0001564, Expires: 02/10/2021.

Scott S. Vance, P.E.
Engineer of Record



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ASCE Hazards Report

1) INTRODUCTION

The Mount is a proposed 12.5 ft. Platform with Support Rails designed by SitePro1 (Party #RMQP-396 with #HRK12), attached to the 117.0' Monopole at the elevation of 110.0 ft.

2) ANALYSIS CRITERIA

Building Code:	2018 International Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Basic Wind Speed:	117 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Escalated Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic S _s :	0.251
Seismic S ₁ :	0.057
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 RAD Elev. (ft.)	Quantity	Manufacturer	Model/Type	Mount / Modification Details
110.0	110.0	3	Ericsson	AIR 32 B2A B66AA	12.5 ft. New Platform Mount
		3	Ericsson	AIR6449 B41_T-MOBILE	
		3	RFS	APXVAARR24_43-U-NA20	
		3	Commscope	SDX1926Q-43	
		3	Ericsson	KRY 112 144/1	
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE	
		3	Ericsson	RRUS 4415 B25_CCIV2	

Table 2 – Documents Provided

Document	Descriptions	Reference	Source
Crown Castle Order Information	Existing Loading and Proposed Loading	Order ID: 529727, Rev. 0	Crown Castle
806352_RFDS	Existing Loading and Proposed Loading	Dated: 09/23/2020	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

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

A tool internally developed by B+T Group, was used to calculate wind loading on all Appurtenances, Dishes and Mount members for various load cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 Tower Mount Analysis (Revision D). In addition, this analysis is in accordance with other SOW.

3.2) Assumptions

1. The mount was properly fabricated and installed in accordance with its original design and manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer’s specifications and is free of damage.
3. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
6. The following assumptions have been included in the analysis of the mount

Component	Section	Length	Note
New Mounting Pipe	PIPE 2”STD	9’-0”	All Positions, All Sectors

7. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
8. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
9. 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.
10. 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.
11. The following material grades were assumed (Unless Noted Otherwise):
 - (a) Connection Bolts : ASTM A325
 - (b) Steel Pipe : ASTM A53 (GR. 35)
 - (c) HSS (Round) : ASTM 500 (GR. B-42)
 - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - (e) Channel : ASTM A36 (GR. 36)
 - (f) Steel Solid Rod : ASTM A36 (GR. 36)
 - (g) Steel Plate : ASTM A36 (GR. 36)
 - (h) Steel Angle : ASTM A36 (GR. 36)
 - (i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group 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

Notes	Component	Elevation (ft.)	Critical Member	Capacity (%)	Pass / Fail
1	Antenna Mount – Pipes	110.0	MP22	58.5	Pass
	Face Horizontal – Pipes	110.0	F3	19.6	Pass
	Face Bridge – Plates	110.0	FB22	56.9	Pass
	Platform Support – Tubes	110.0	S2	48.8	Pass
	Platform Beam – Tubes	110.0	B3	21.1	Pass
	Platform Joist – Angles	110.0	J1	23.8	Pass
	Frame Connection – Plates	110.0	FC7	62.7	Pass
	Support Rails – Pipes	110.0	H1	48.4	Pass
	Rail Bridge – Angles	110.0	HB1	59.5	Pass

Note:

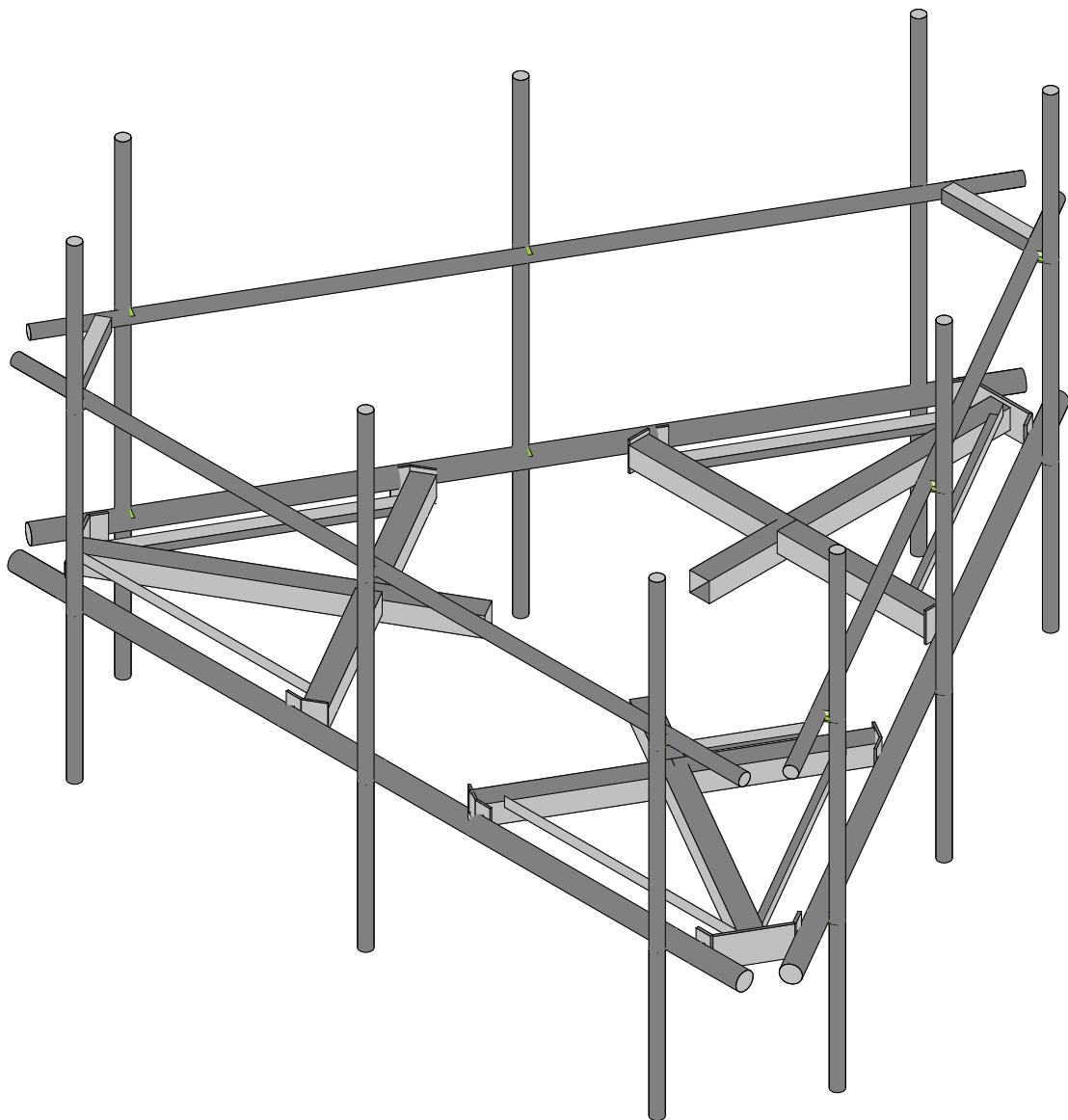
1. See additional documentation in Appendix C: "Software Input and Output" for the analysis supporting the Capacity percentage usage.

Structural Rating (Max. from Components)	62.7%
---	--------------

5) RECOMMENDATIONS

The proposed Mount (SitePro1 #RMQP-396 with #HRK12) has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

B+T Group

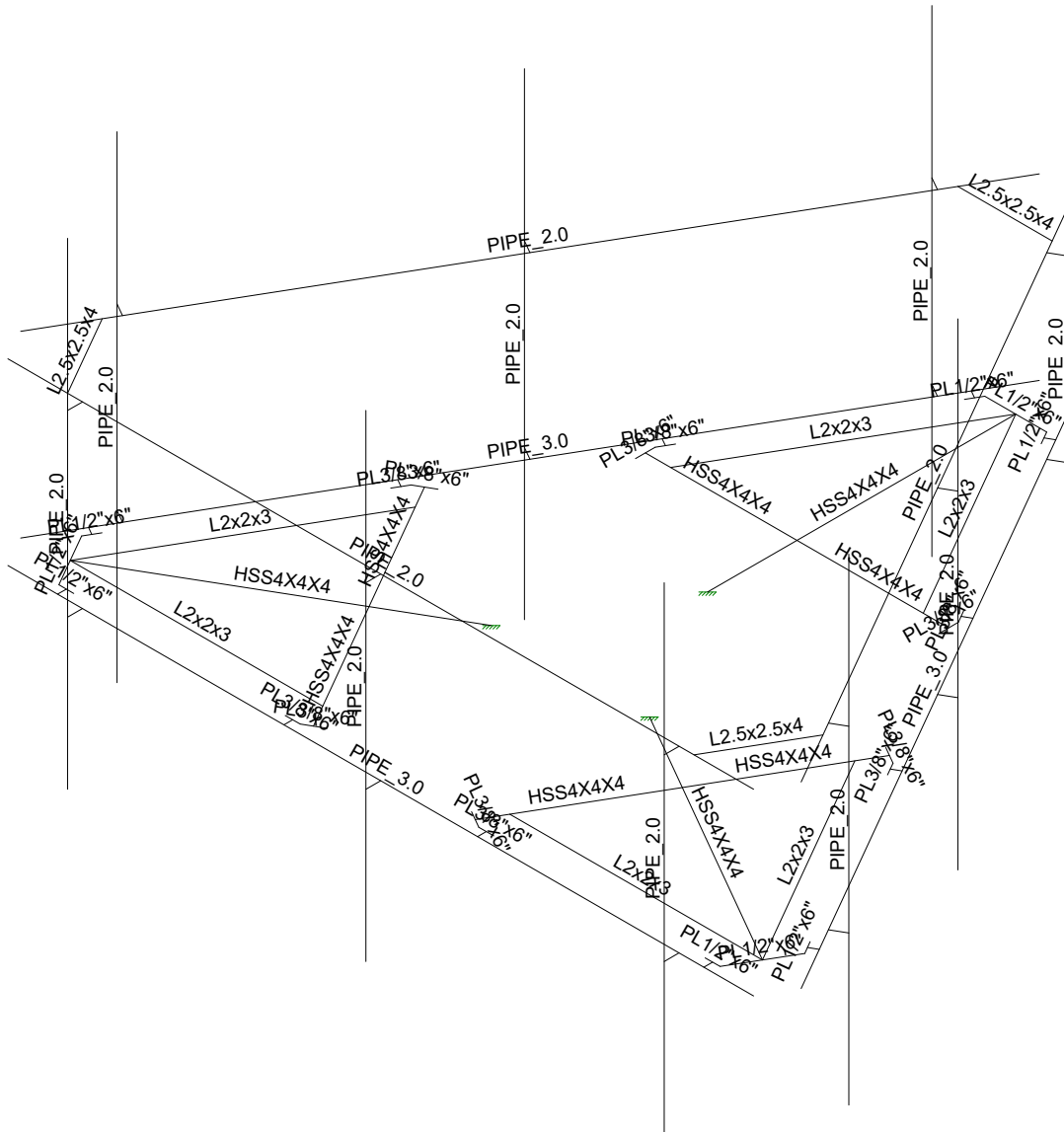
RMQP

PLATFORM WITH SUPPORT RAILS

SK - 1

Oct 14, 2020 at 8:53 AM

145684.001.01_Platform(#RMQP)...



Envelope Only Solution

B+T Group

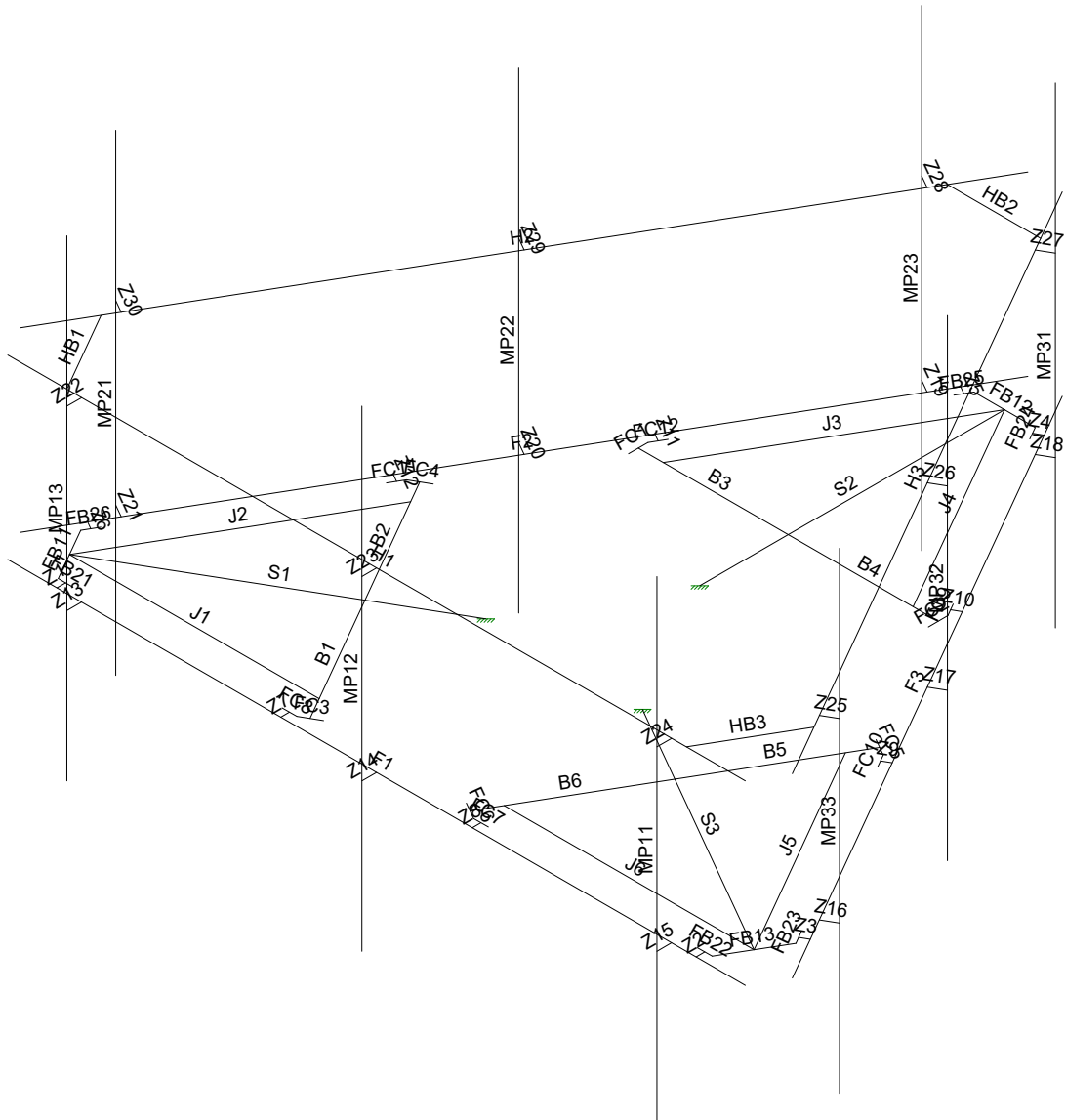
RMQP

PLATFORM W/SUPPORT RAILS - MEMBERS

SK - 2

Oct 14, 2020 at 8:54 AM

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Envelope Only Solution

B+T Group

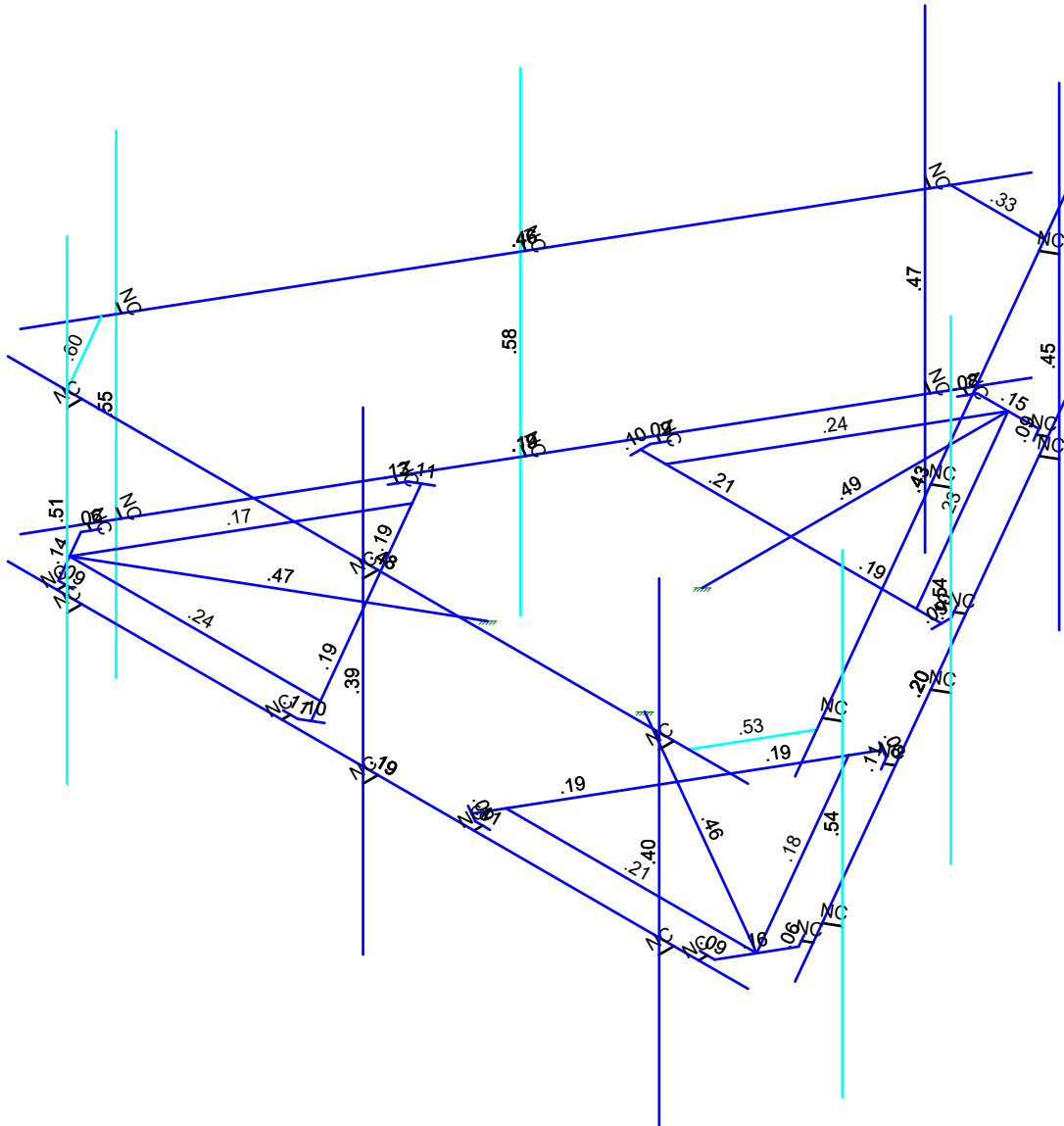
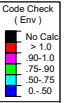
RMQP

PLATFORM W/SUPPORT RAILS - LABEL

SK - 3

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145684.001.01_Platform(#RMQP)...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group

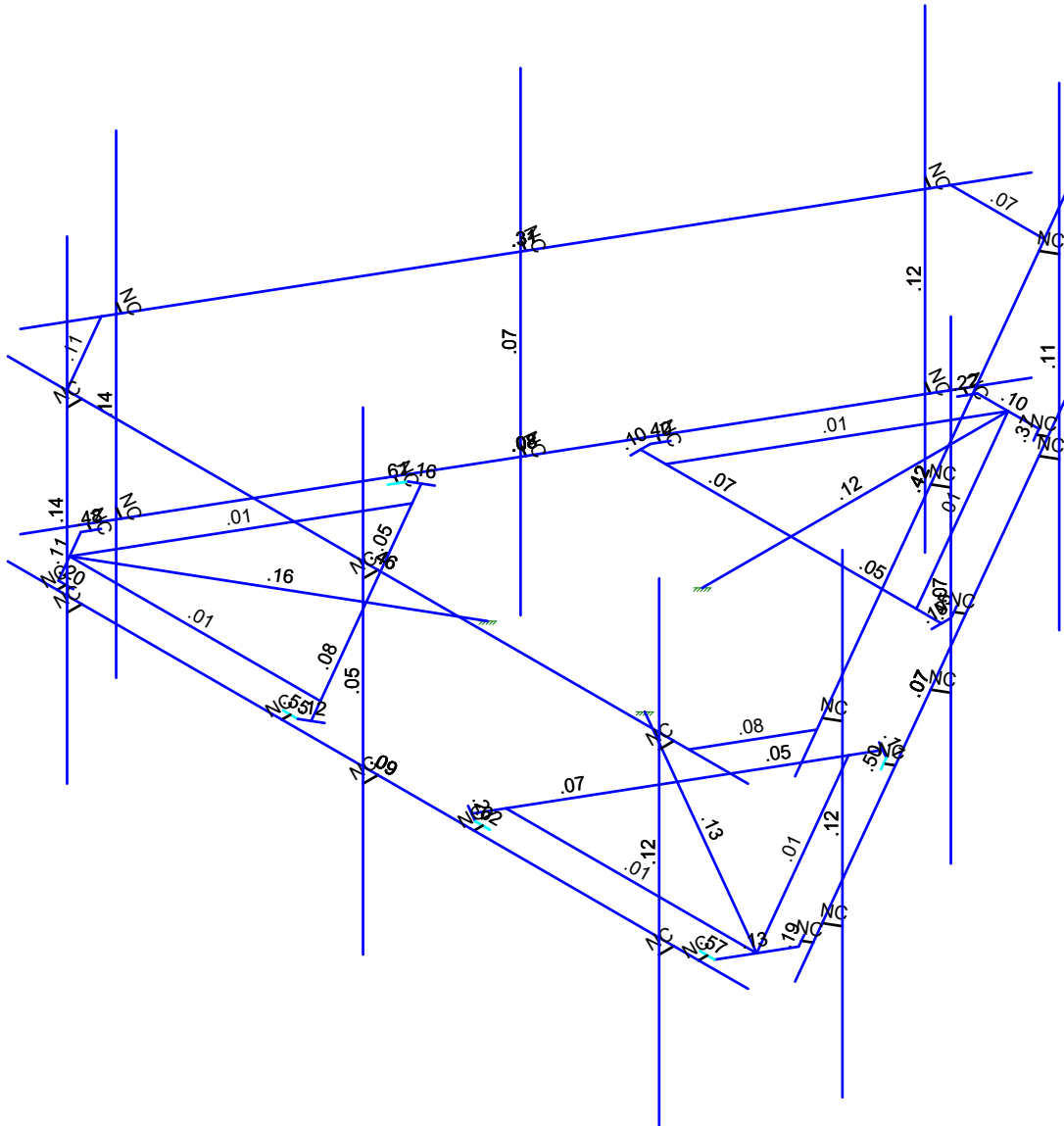
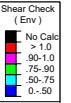
RMQP

SK - 4

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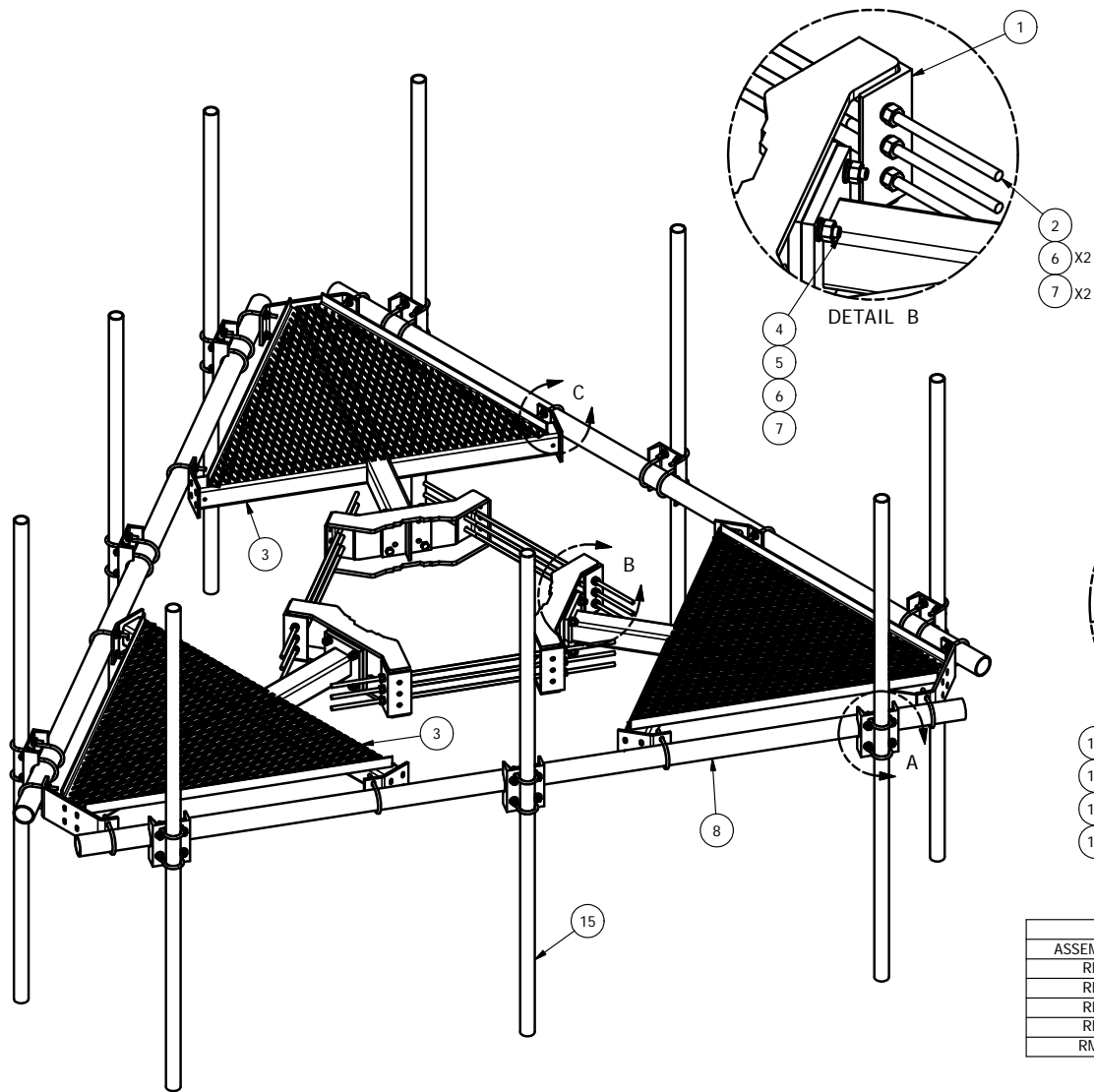
PLATFORM W/SUPPORT RAILS - CODE CHECK

145684.001.01_Platform(#RMQP)...

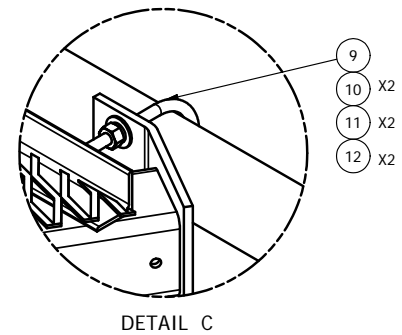
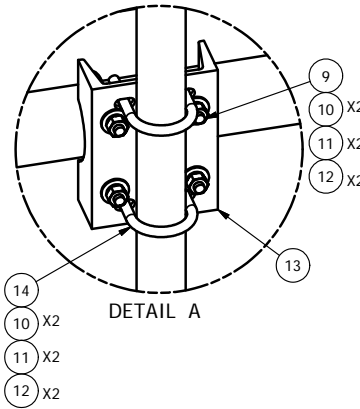


Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	RMQP PLATFORM W/SUPPORT RAILS - SHEAR CHECK	SK - 5
		Oct 14, 2020 at 8:55 AM
		145684.001.01_Platform(#RMQP)....



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.40	3.59
2	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.40	3.59
3	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
4	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
5	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
6	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
7	30	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.90
8	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150.000 in	94.80	284.40
9	30	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.26	7.71
10	96	G12FW	1/2" HDG USS FLATWASHER		0.03	3.27
11	96	G12LW	1/2" HDG LOCKWASHER		0.01	1.33
12	96	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	6.88
13	9	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	77.50
14	18	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.26	4.63
15	9	B	ANTENNA MOUNTING PIPE	C	D	E



2-3/8" O.D. VERTICAL MOUNTING PIPES					
ASSEMBLY NO. "A"	PART NO. "B"	LENGTH, "C"	UNIT WEIGHT, "D"	NET WEIGHT, "E"	TOTAL WEIGHT
RMQP-363	P263	63"	20.18	181.62	1494.37
RMQP-372	P272	72"	23.07	207.63	1520.38
RMQP-384	P284	84"	26.91	242.19	1554.94
RMQP-396	P296	96"	30.76	276.84	1589.59
RMQP-3126	P2126	126"	40.75	366.75	1679.50

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED 10' 6" ANTENNA MOUNTING PIPES	CEK		7/7/2015
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
REVISION HISTORY				

TOLERANCE NOTE
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE - ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

PROPRIETARY NOTE
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION
 LOW PROFILE CO-LOCATION PLATFORM
 FOR 9 ANTENNAS WITH 12' 6" FACE WIDTH
 FOR 12" - 38" DIAMETER POLES

DRAWN BY
 CEK 1/19/2012

CPD NO.
 semb

DRAWING USAGE
 CUSTOMER

ENG. APPROVAL
 BMC

CHECKED BY
 1/23/2012

A valmont COMPANY

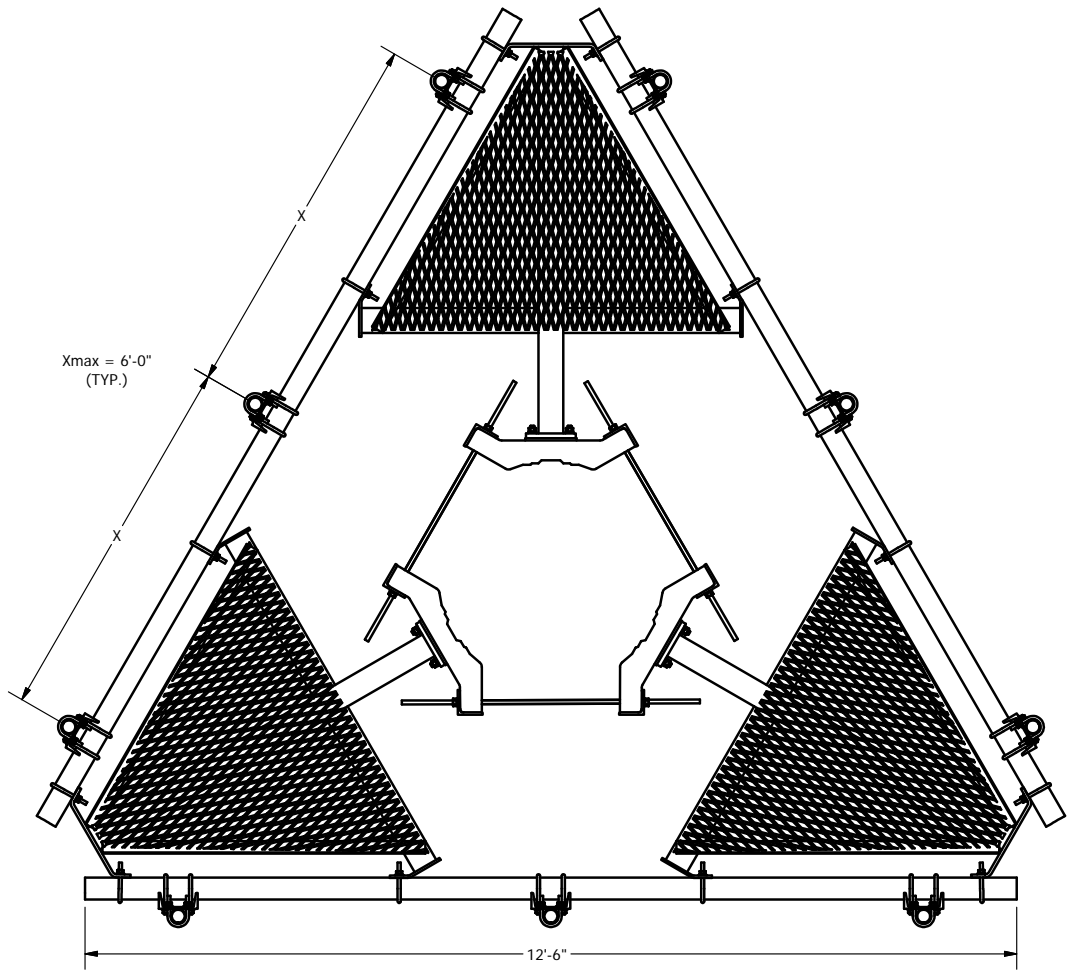
Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

Engineering Support Team:
 1-888-753-7446

PART NO. SEE ASSEMBLY NO. "A"

DWG. NO. RMQP-3XX

PAGE 2
1 OF 2



Xmax = 6'-0"
(TYP.)

12'-6"

TOLERANCE NOTE

**TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES (± 0.030 ")
 DRILLED AND GAS CUT HOLES (± 0.030 ") - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES (± 0.010 ") - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE - ALL OTHER MACHINING (± 0.030 ")
 ALL OTHER ASSEMBLY (± 0.060 ")**

PROPRIETARY NOTE

THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION
**LOW PROFILE CO-LOCATION PLATFORM
 FOR 9 ANTENNAS WITH 12' 6" FACE WIDTH
 FOR 12" - 38" DIAMETER POLES**

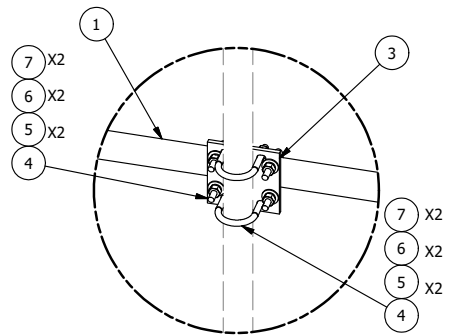
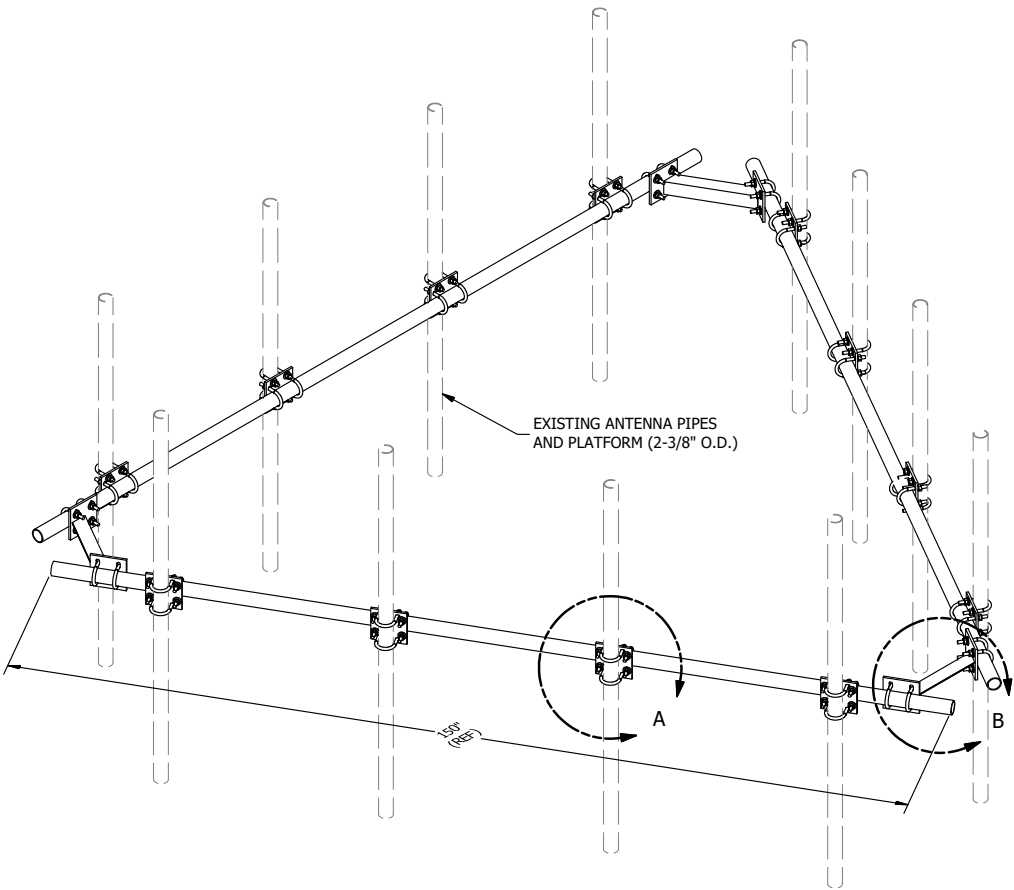
DRAWN BY CEK	1/19/2012	CPD NO. semb	DRAWING USAGE CUSTOMER
ENG. APPROVAL		CHECKED BY BMC	
		1/23/2012	

	Engineering Support Team: 1-888-753-7446	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	A valmont COMPANY	

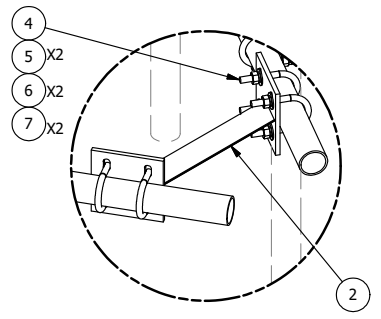
PART NO.	SEE ASSEMBLY NO. "A"	PAGE 2 OF 2
DWG. NO.	RMQP-3XX	

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	ADDED 10' 6" ANTENNA MOUNTING PIPES		CEK	7/7/2015
REVISION HISTORY				

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCX1	CROSSOVER PLATE 2-3/8" X 2-3/8"	6 in	3.71	44.50
4	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	37.51
5	120	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	4.09
6	120	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	1.67
7	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
TOTAL WT. #						272.43



DETAIL A



DETAIL B

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	REPLACED HCP WITH X-AHCP	CEK		7/10/2014
REVISION HISTORY				

TOLERANCE NOTES
**TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWED, SHEARED AND GAS CUT EDGES ($\pm 0.030"$)
 DRILLED AND GAS CUT HOLES ($\pm 0.030"$) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES ($\pm 0.010"$) - NO CONING OF HOLES
 BENDS ARE $\pm 1/2$ DEGREE
 ALL OTHER MACHINING ($\pm 0.030"$)
 ALL OTHER ASSEMBLY ($\pm 0.060"$)**

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION			
HANDRAIL KIT FOR 12'-6" FACE			
CPD NO.	DRAWN BY	ENG. APPROVAL	
	KC8 5/30/2012		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 7/13/2014

SITE PRO 1 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	Engineering Support Team: 1-888-753-7446
PART NO.	HRK12
DWG. NO.	HRK12

APPENDIX B SOFTWARE INPUT CALCULATIONS

PROJECT	145684.001.01 - BRG 302 94		KSC
SUBJECT	NEW PLATFORM MOUNT Mount Analysis		
DATE	10/14/20	PAGE	OF



Tower Type	:	Monopole	
Ground Elevation	Z_g	: 70 ft	[ASCE7 Hazard Tool]
Tower Height	:	117.00 ft	
Mount Elevation	:	110.00 ft	
Antenna Elevation	:	110.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V	: 117 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	: 50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	: 30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	: 1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S	: 0.25	
	S_1	: 0.06	
	S_{DS}	: 0.27	
	S_{D1}	: 0.09	
Gust Factor	G_H	: 1.00	[Sec. 16.6]
Pressure Coefficient	K_z	: 1.29	[Sec. 2.6.5.2]
Topography Factor	K_{zt}	: 1.00	[Sec. 2.6.6]
Elevation Factor	K_e	: 1.00	[Sec. 2.6.8]
Directionality Factor	K_d	: 0.95	[Sec. 16.6]
Shielding Factor	K_a	: 0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz}	: 1.13 in	[Sec. 2.6.10]
Importance Factor	I_e	: 1	[Table 2-3]
Response Coefficient	C_s	: 0.134	[Sec. 2.7.7.1]
Amplification	A_s	: 2.760684	[Sec. 16.7]
	q_z	: 42.88 psf	

PROJECT	145684.001.01 - BRG 302 94		KSC
SUBJECT	NEW PLATFORM MOUNT Mount Analysis		
DATE	10/14/20	PAGE	OF



Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft ²)	EPA _T (ft ²)	EPA _{N-Ice} (ft ²)	EPA _{T-Ice} (ft ²)	F _A No Ice (N)	F _A No Ice (T)	F _A Ice (N)	F _A Ice (T)
ERICSSON	AIR6449 B41	0.5	1.61	1.20	2.37	0.99	2.81	1.33	0.11	0.05	0.02	0.01
ERICSSON	AIR6449 B41	0.5	1.61	1.20	2.37	0.99	2.81	1.33	0.11	0.05	0.02	0.01
ERICSSON	TME-KRY 112 144/1	1	1.17	1.20	0.29	0.15	0.53	0.34	0.01	0.01	0.00	0.00
COMMSCOPE	SDX1926Q-43	1	0.60	1.20	0.20	0.08	0.41	0.23	0.01	0.00	0.00	0.00
ERICSSON	AIR 32 B2A B66AA	0.5	4.60	1.29	2.65	1.78	3.23	2.33	0.13	0.09	0.02	0.02
ERICSSON	AIR 32 B2A B66AA	0.5	4.60	1.29	2.65	1.78	3.23	2.33	0.13	0.09	0.02	0.02
RFS/CELWAVE	APXVAARR24_43-U-NA20	0.5	4.00	1.27	7.99	2.90	8.95	3.73	0.31	0.11	0.06	0.03
RFS/CELWAVE	APXVAARR24_43-U-NA20	0.5	4.00	1.27	7.99	2.90	8.95	3.73	0.31	0.11	0.06	0.03
ERICSSON	RADIO 4449	1	1.36	1.20	1.64	1.32	2.16	1.80	0.08	0.06	0.01	0.01
ERICSSON	TME-RRUS 4415 B25_CCIV2	1	1.23	1.20	1.54	0.68	2.04	1.06	0.07	0.03	0.01	0.01
ERICSSON	AIR6449 B41	0.5	1.61	1.20	2.37	0.99	2.81	1.33	0.11	0.05	0.02	0.01
ERICSSON	AIR6449 B41	0.5	1.61	1.20	2.37	0.99	2.81	1.33	0.11	0.05	0.02	0.01
ERICSSON	TME-KRY 112 144/1	1	1.17	1.20	0.29	0.15	0.53	0.34	0.01	0.01	0.00	0.00
COMMSCOPE	SDX1926Q-43	1	0.60	1.20	0.20	0.08	0.41	0.23	0.01	0.00	0.00	0.00
ERICSSON	AIR 32 B2A B66AA	0.5	4.60	1.29	2.65	1.78	3.23	2.33	0.13	0.09	0.02	0.02
ERICSSON	AIR 32 B2A B66AA	0.5	4.60	1.29	2.65	1.78	3.23	2.33	0.13	0.09	0.02	0.02
RFS/CELWAVE	APXVAARR24_43-U-NA20	0.5	4.00	1.27	7.99	2.90	8.95	3.73	0.31	0.11	0.06	0.03
RFS/CELWAVE	APXVAARR24_43-U-NA20	0.5	4.00	1.27	7.99	2.90	8.95	3.73	0.31	0.11	0.06	0.03
ERICSSON	RADIO 4449	1	1.36	1.20	1.64	1.32	2.16	1.80	0.08	0.06	0.01	0.01
ERICSSON	TME-RRUS 4415 B25_CCIV2	1	1.23	1.20	1.54	0.68	2.04	1.06	0.07	0.03	0.01	0.01

PROJECT: CROWN CASTLE - BRG 302 943052		KH	
SUBJECT: 145684.001.01 Mount Analysis			
DATE: 10/14/20	PAGE 1	OF	2



[REF: AISC 360-05]

Reactions at Bolted Connection

Tension : 3.115 k
 Vertical Shear : 2.561 k
 Horizontal Shear : 0.822 k
 Torsion : 0.581 k.ft
 Moment from Horizontal Forces : 0.807 k.ft
 Moment from Vertical Forces : 5.741 k.ft

Bolt Parameters

Bolt Grade : A307
 Bolt Diameter : 0.625 in
 Nominal Bolt Area : 0.307 in²
 Bolt spacing, Horizontal : 6 in
 Bolt spacing, Vertical : 6 in
 Bolt edge distance, plate height : 1 in
 Bolt edge distance, plate width : 1 in
 Total Number of Bolts : 4 bolts

Summary of Forces

Shear Resultant Force : 2.69 k
 Force from Horz. Moment : 1.46 k
 Force from Vert. Moment : 10.40 k
 Shear Load / Bolt : 0.67 k
 Tension Load / Bolt : 0.78 k
 Resultant from Moments / Bolt : 5.25 k

Bolt Checks

Nominal Tensile Stress, F_{nt} : 45.00 ksi [AISC Table J3.2]
 Available Tensile Stress, ΦR_{nt} : 10.36 k/bolt [Eq. J3-1]
 Unity Check, Bolt Tension : **58.2%** **OKAY**

Nominal Shear Stress, F_{nv} : 24.00 ksi [AISC Table J3.2]
 Available Shear Stress, ΦR_{nv} : 5.53 k/bolt [Eq. J3-1]
 Unity Check, Bolt Shear : **26.3%** **OKAY**

Unity Check, Combined : **84.45%** **OKAY**

Available Bearing Strength, Φ : 27.53 k/bolt
 Unity Check, Bolt Bearing : **2.4%** **OKAY**

PROJECT: CROWN CASTLE - BRG 302 943052	KH
SUBJECT: 145684.001.01 Mount Analysis	
DATE: 10/14/20	PAGE 2 OF 2



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

[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00 ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00 ksi	[AISC Table 2-5]
Plate Height	:	8.00 in	
Plate Width	:	8.00 in	
Plate Thickness	:	0.75 in	
Edge Distance	:	0.56 in	
Gross Tension Area, A_{gt}	:	6.00 in ²	
Gross Shear Area, A_{gv}	:	0.75 in ²	
Net Area for tension, A_{nt}	:	5.48 in ²	
Net Area for shear, A_{nt}	:	4.50 in ²	

Plate Check

Available Tensile Yield	:	194.40 k	[Eq. J4-1]
Available Tensile Rupture	:	238.57 k	[Eq. J4-2]
Unity Check, Plate Tension	:	3.1%	OKAY
Available Shear Yield	:	16.20 k	[Eq. J4-3]
Available Shear Rupture	:	156.60 k	[Eq. J4-4]
Unity Check, Plate Shear	:	16.6%	OKAY
Available Block Shear, ΦR_n	:	110.03 k	[Eq. J4-5]
Unity Check, Block Shear	:	2.4%	OKAY

APPENDIX C SOFTWARE ANALYSIS INPUT AND OUTPUT

>c]bh@UXg'UbX'9bZfWYX'8]gd'UWwA YbHg f6 @ %&.'@j Y@UX'VL

	R ä o'Åaa^)	SÖË	Öä^&ç)	T æ } ä á ^ Z É É Æ G É ä a U Q É á C Æ
F	pÍF	S	Y	Æ
G	pÍI	S	Y	Æ

>c]bh@UXg'UbX'9bZfWYX'8]gd'UWwA YbHg f6 @ % :.'@j Y@UX'VL

	R ä o'Åaa^)	SÖË	Öä^&ç)	T æ } ä á ^ Z É É Æ G É ä a U Q É á C Æ
F	pFÆF	S	Y	Æ
G	pÍI	S	Y	Æ

A Ya Vyf'8]ghjVi hYX'@UXg'f6 @ '&.'\$'K]bX!'Bc=MYL

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G€	ØÓG	Z	ÆÆEG	ÆÆEG	€	€
GF	ØÓH	Z	ÆÆEG	ÆÆEG	€	€
GG	ØÓI	Z	ÆÆEG	ÆÆEG	€	€
GH	ØÓI	Z	ÆÆEG	ÆÆEG	€	€
GI	ØÓI	Z	ÆÆEG	ÆÆEG	€	€
GÍ	ØÓI	Z	ÆÆEG	ÆÆEG	€	€
GÎ	ØÓJ	Z	ÆÆEG	ÆÆEG	€	€
GÏ	ØÓF€	Z	ÆÆEG	ÆÆEG	€	€
GJ	ØÓFF	Z	ÆÆEG	ÆÆEG	€	€
H€	ØÓFG	Z	ÆÆEG	ÆÆEG	€	€
HF	PF	Z	ÆÆEJ	ÆÆEJ	€	€
HG	PG	Z	ÆÆEJ	ÆÆEJ	€	€
HH	PH	Z	ÆÆEJ	ÆÆEJ	€	€
HI	PÓF	Z	ÆÆFF	ÆÆFF	€	€
HÍ	PÓG	Z	ÆÆFF	ÆÆFF	€	€
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HÍ	RG	Z	ÆÆFH	ÆÆFH	€	€
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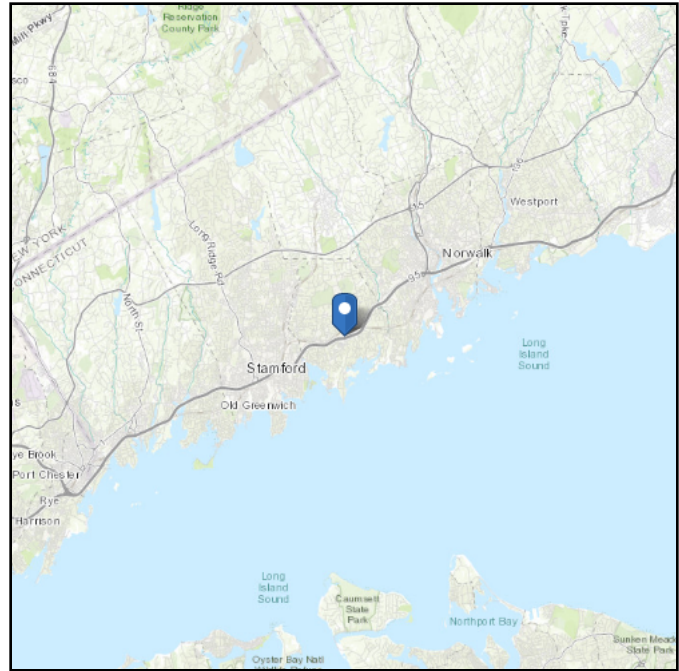
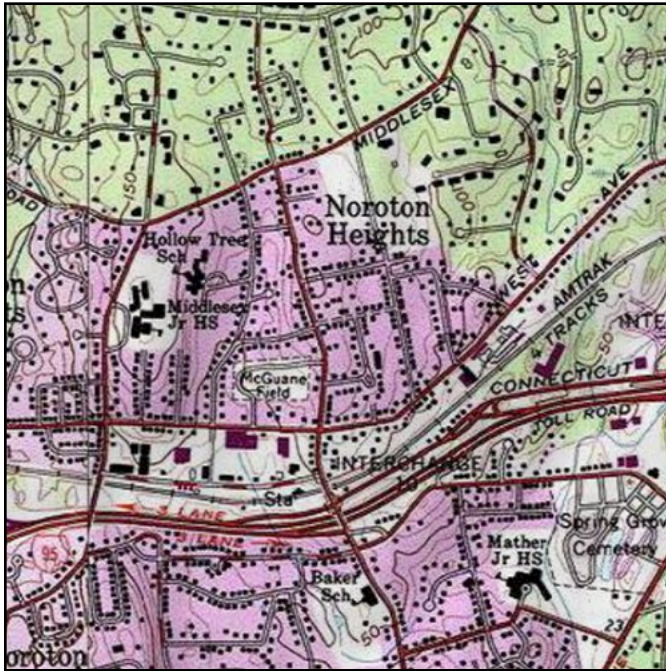
APPENDIX D ASCE HAZARDS REPORT

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 70.43 ft (NAVD 88)
Latitude: 41.07249
Longitude: -73.47813



Wind

Results:

Wind Speed:	117 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4

Date Accessed: Tue Oct 13 2020

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

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

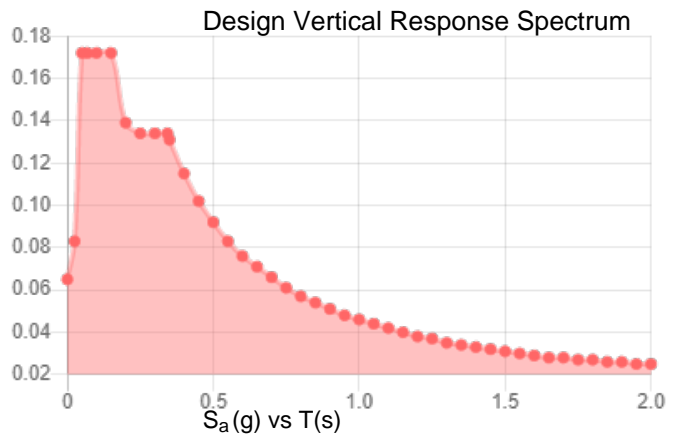
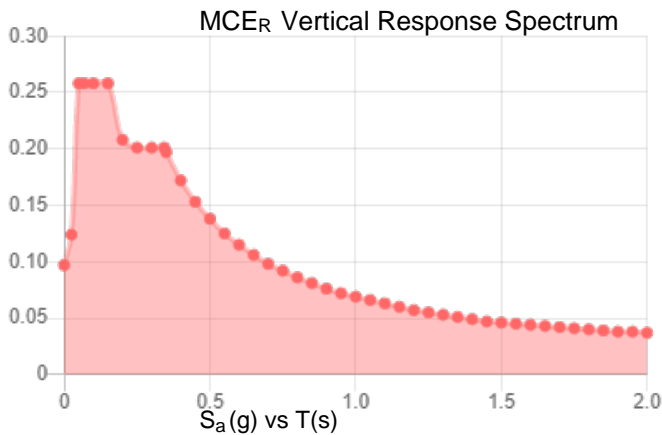
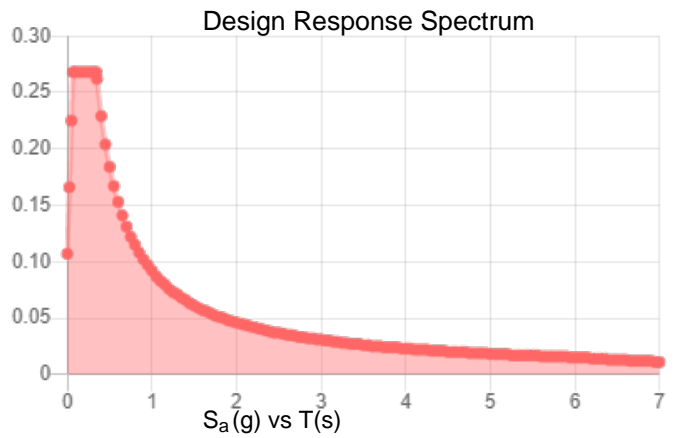
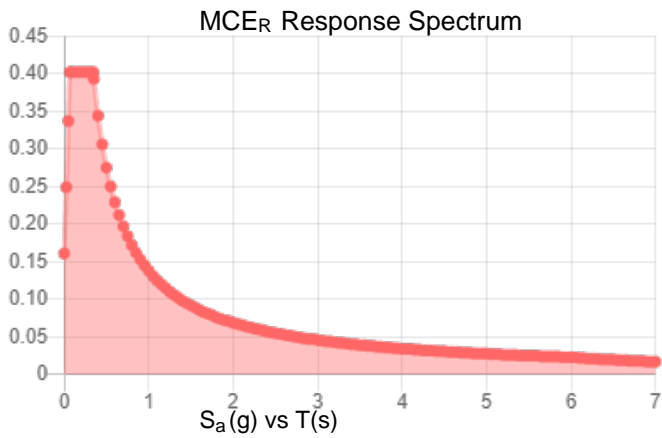
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.251	S_{D1} :	0.092
S_1 :	0.057	T_L :	6
F_a :	1.599	PGA :	0.15
F_v :	2.4	PGA _M :	0.225
S_{MS} :	0.402	F_{PGA} :	1.5
S_{M1} :	0.138	I_e :	1
S_{DS} :	0.268	C_v :	0.803

Seismic Design Category B



Data Accessed:

Tue Oct 13 2020

Date Source:

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

Ice

Results:

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

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

Date Accessed: Tue Oct 13 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 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Snow

Results:

Ground Snow Load, p_g : 30 lb/ft²
Elevation: 70.4 ft

Data Source: ASCE/SEI 7-16, Table 7.2-8

Date Accessed: Tue Oct 13 2020

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

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

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

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

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: CT11851C

CT851/Crown Darien_MP
130 Ledge Road
Darien, Connecticut 06820

October 30, 2020

EBI Project Number: 6220005628

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	44.66%

October 30, 2020

T-Mobile

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

Emissions Analysis for Site: CT11851C - CT851/Crown Darien_MP

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **130 Ledge Road in Darien, 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 130 Ledge Road in Darien, 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) 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.

- 6) 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.
- 7) 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.
- 8) 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.
- 9) 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.
- 10) 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.
- 11) 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.
- 12) The antennas used in this modeling are 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 / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, 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 / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, 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 / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a

very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 13) The antenna mounting height centerline of the proposed antennas is 110 feet above ground level (AGL).
- 14) 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.
- 15) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	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):	110 feet	Height (AGL):	110 feet	Height (AGL):	110 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 A1 MPE %:	7.62%	Antenna B1 MPE %:	7.62%	Antenna C1 MPE %:	7.62%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	110 feet	Height (AGL):	110 feet	Height (AGL):	110 feet
Channel Count:	9	Channel Count:	9	Channel Count:	9
Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts	Total TX Power (W):	380 Watts
ERP (W):	11,055.53	ERP (W):	11,055.53	ERP (W):	11,055.53
Antenna A2 MPE %:	4.96%	Antenna B2 MPE %:	4.96%	Antenna C2 MPE %:	4.96%
Antenna #:	3	Antenna #:	3	Antenna #:	3
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):	110 feet	Height (AGL):	110 feet	Height (AGL):	110 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 A3 MPE %:	3.82%	Antenna B3 MPE %:	3.82%	Antenna C3 MPE %:	3.82%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	16.39%
AT&T	14%
Verizon	3.98%
Clearwire	0.39%
Sprint	5.95%
Metro PCS	3.95%
Site Total MPE % :	44.66%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	16.39%
T-Mobile Sector B Total:	16.39%
T-Mobile Sector C Total:	16.39%
Site Total MPE % :	44.66%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2500 MHz LTE	2	6412.98	110.0	38.11	2500 MHz LTE	1000	3.81%
T-Mobile 2500 MHz NR	2	6412.98	110.0	38.11	2500 MHz NR	1000	3.81%
T-Mobile 600 MHz LTE	2	591.73	110.0	3.52	600 MHz LTE	400	0.88%
T-Mobile 600 MHz NR	1	1577.94	110.0	4.69	600 MHz NR	400	1.17%
T-Mobile 700 MHz LTE	2	648.82	110.0	3.86	700 MHz LTE	467	0.83%
T-Mobile 1900 MHz LTE	2	2203.69	110.0	13.10	1900 MHz LTE	1000	1.31%
T-Mobile 2100 MHz UMTS	2	1294.56	110.0	7.69	2100 MHz UMTS	1000	0.77%
T-Mobile 1900 MHz GSM	4	1028.30	110.0	12.22	1900 MHz GSM	1000	1.22%
T-Mobile 1900 MHz LTE	2	2056.61	110.0	12.22	1900 MHz LTE	1000	1.22%
T-Mobile 2100 MHz LTE	2	2307.55	110.0	13.71	2100 MHz LTE	1000	1.37%
						Total:	16.39%

• 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:	16.39%
Sector B:	16.39%
Sector C:	16.39%
T-Mobile Maximum MPE % (Sector A):	16.39%
Site Total:	44.66%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **44.66%** 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.