



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

August 31, 2020

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

RE: **Notice of Exempt Modification for T-Mobile:  
841288 - T-Mobile Site ID: CTFF334A  
205 Kaechele Place, Bridgeport, CT 06606  
Latitude: 41° 13' 24.04" / Longitude: -73° 13' 0.38"**

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 120-foot mount on the existing 150-foot Monopole Tower, located at 205 Kaechele Place, Bridgeport, CT. The tower is owned by Crown Castle and the property is owned by Southern New England Telephone. T-Mobile now intends to replace three (3) existing antennas with three (3) new 2500/2500 MHz antennas and three (3) new 600/700 MHz antennas for a total antenna inventory of twelve (12) antennas. The new antennas will be installed at the 120-ft level of the tower.

**Planned Modifications:**

**Tower:**

Remove:

(6) 1 5/8" Coax

Remove and Replace:

(3) LNX 6515DS-A1M Antenna (**REMOVE**) - (3) AIR6449 B41 Antenna 2500/2500 MHz (**REPLACE**)

(3) RRUS11 B12 (**REMOVE**) – (3) Radio 4449 B71/B12 (**REPLACE**)

Install New:

(2) 1 5/8" Hybrid Fiber Line

(3) Radio 4415 B25

(3) RFS-APXVAARR24\_43-U-NA20 Antenna 600/700 MHz

Existing to Remain:

(6) 1 5/8" Coax

(1) Fiber line

(3) AIR21 KRC118023-1\_B2A\_B4P Antenna 1900/2100 MHz

(3) AIR32\_B66A\_B2A Antenna 1900/2100 MHz

(3) TMA

**Ground:**

Upgrade and replacement of existing ground cabinet. (Internally)

The facility was approved by the Connecticut Siting Council on September 14, 1984 in Docket No. 45. The approval was given without conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Joseph P. Ganim, Mayor for the City of Bridgeport, Thomas F. Gill, Director of Planning and Economic Development, Crown Castle as the tower owner, and Southern New England Telephone as the property owner.

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

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

Sincerely,

Anne Marie Zsamba  
Site Acquisition Specialist  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
(201) 236-9224  
AnneMarie.Zsamba@crowncastle.com

Attachments

cc:

Joseph P. Ganim, Mayor (*via email only to mayor@bridgeportct.gov*)  
City of Bridgeport  
999 Broad Street  
Bridgeport, CT 06604

Melanie A. Bachman

Page 3

Thomas F. Gill, Director of OPED (*via email only to Thomas.gill@bridgeportct.gov*)  
Office of Planning and Economic Development  
999 Broad Street  
Bridgeport, CT 06604

Southern New England Telephone, Property Owner  
C/O Frontier Communications  
401 Merritt 7  
Norwalk, CT 06851

Crown Castle, Tower Owner

ORIGIN ID: SCHA (518) 350-3639  
ANNE MARIE ZSAMBRA  
CROWN CASTLE  
21 HEATHER DRIVE  
GANSEVOORT, NY 12831  
UNITED STATES US

SHIP DATE: 31AUG20  
ACTWGT: 1.00 LB  
CAD: 104924194/IN/ET4280

BILL SENDER

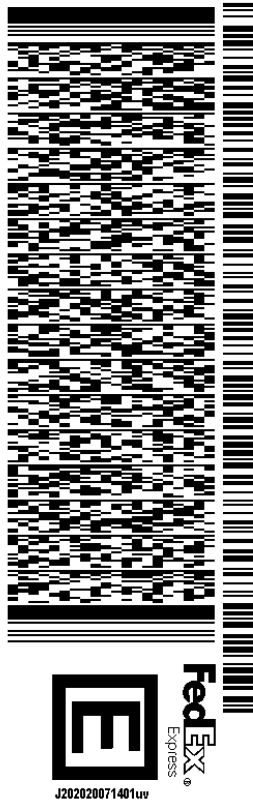
TO SOUTHERN NEW ENGLAND TELEPHONE

C/O FRONTIER COMMUNICATIONS

401 MERRITT 7

NORWALK CT 06851

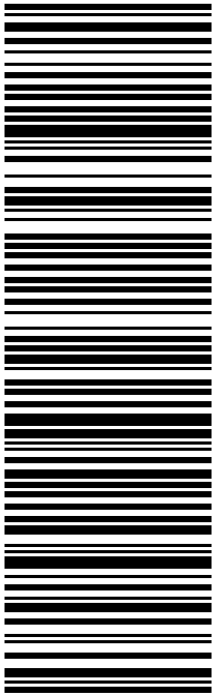
(201) 236-9224 REF: 1734.7890  
INV: DEPT:  
PO:



TRK# 7714 0052 8319  
0201

TUE - 01 SEP 10:30A  
PRIORITY OVERNIGHT

E4 YAKA 06851  
CT-US JFK



56BJ3044/B766

**After printing this label:**

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

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

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

**From:** [Zsamba, Anne Marie](#)  
**To:** [mayor@bridgeportct.gov](mailto:mayor@bridgeportct.gov)  
**Subject:** Notice of Exempt Modification - 205 Kaechele Place - T-Mobile - 841288  
**Date:** Monday, August 31, 2020 12:38:00 PM  
**Attachments:** [EM-T-MOBILE-205 KAECELE PLACE BRIDGEPORT-841288-CTFF334A-notice.pdf](#)

---

Dear Mayor Ganim:

Attached please find T-Mobile's exempt modification application that is being submitted to the Connecticut Siting Council today, August 31, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,  
Anne Marie Zsamba

**ANNE MARIE ZSAMBA**  
Site Acquisition Specialist  
T: (201) 236-9224  
M: (518) 350-3639  
F: (724) 416-6112

**CROWN CASTLE**  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
[CrownCastle.com](http://CrownCastle.com)

**From:** [Zsamba, Anne Marie](#)  
**To:** [Thomas.gill@bridgeportct.gov](mailto:Thomas.gill@bridgeportct.gov)  
**Subject:** Notice of Exempt Modification - 205 Kaechele Place - T-Mobile - 841288  
**Date:** Monday, August 31, 2020 12:38:00 PM  
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Dear Planning Director Gill:

Attached please find T-Mobile's exempt modification application that is being submitted to the Connecticut Siting Council today, August 31, 2020.

In light of the present circumstances with Covid-19, The Council has advised that electronic notification of this filing is acceptable. If you could kindly confirm receipt. Thank you.

Best,  
Anne Marie Zsamba

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Site Acquisition Specialist  
T: (201) 236-9224  
M: (518) 350-3639  
F: (724) 416-6112

**CROWN CASTLE**  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
[CrownCastle.com](http://CrownCastle.com)

# Exhibit A

## **Original Facility Approval**

DOCKET NO. 45

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN FAIRFIELD COUNTY. : CONNECTICUT SITING COUNCIL : September 14, 1984

DECISION AND ORDER

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Kaechele Place, Bridgeport, Connecticut;  
Connecticut Avenue, Norwalk, Connecticut;  
Nells Rock Road, Shelton, Connecticut;  
Newfield Avenue, Stamford, Connecticut; and  
Bayberry Lane, (former Nike site), Westport, Connecticut.

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

1. The towers shall be no taller than necessary to provide the proposed service, and in no event shall exceed
  - a) 167' at the Bridgeport site,
  - b) 167' at the Norwalk site,
  - c) 189.5' at the Shelton site,
  - d) 167' at the Stamford site,
  - e) 117' at the Westport site;
2. A fence not lower than eight feet shall surround each tower and its associated equipment;
3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;



4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Bridgeport, Stamford, and Westport sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall consult with the Stamford Environmental Protection Board in the preparation of a drainage and erosion control plan for the Stamford tower. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and

removed, or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Bridgeport Post, the Norwalk Hour, the Stamford Advocate, and the Shelton Suburban News, and the Westport News.

The parties to this proceeding are

The Southern New England Telephone Company (Applicant)  
Room 314  
227 Church Street  
New Haven, Connecticut 06506

Attention: Mr. Peter J. Tyrrell (its attorney)  
Senior Attorney

Rolnick Observatory represented by:  
52 Sawyer Road  
Fairfield, Connecticut  
Frederick H. Bump  
Director

Mr. Adam Norton  
40 Highland Road  
Westport, Connecticut 06880

Representative John Wayne Fox (service waived)  
13 Apple Tree Drive  
Stamford, Connecticut 06906

Mr. George C. Lenfest  
4 Highland Road  
Westport, Connecticut

Mr. William Seiden  
First Selectman  
Town of Westport  
110 Myrtle Avenue  
P.O. Box 549  
Westport, Connecticut 06881

Mr. Arthur L. Schime1  
174 Bayberry Lane  
Westport, Connecticut

Mr. Seymour Bendremer  
11 Apache Trail  
Westport, Connecticut

Ms. Gladys Floch  
32 Woody Lane  
Westport, Connecticut

Ms. Helen S. Cohen  
15 Highland Road  
Westport, Connecticut

(service waived)

Mr. Jack Braverman  
226 Bayberry Lane  
Westport, Connecticut

Mr. Kevin Gavin  
191 Bayberry Lane  
Westport, Connecticut

(service waived)

Mr. A.B. Beiser  
12 Highland Road  
Westport, Connecticut

Mr. Edward V. Polusky  
4 Hooper Road  
Westport, Connecticut

(service waived)

Ms. Lois Schine

represented by:

Mary D. Mix, Esquire  
830 Post Road - East  
Suite 100  
Westport, Connecticut 06880

Mr. Allen Witt  
3 Apache Trail  
Westport, Connecticut

Ms. Gayle Shiller  
5 Apache Trail  
Westport, Connecticut

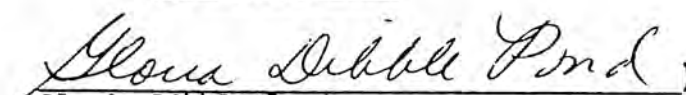
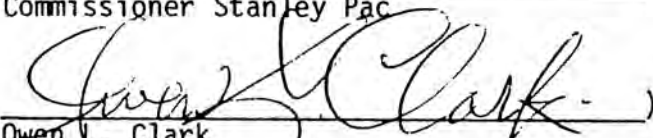
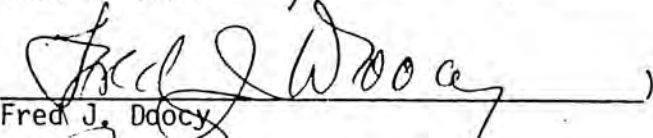
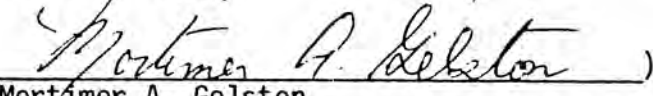


(service waived)

Mrs. Ronnie Hammer 3 Hooper Road Westport, Connecticut	
Mr. Paul Rosenblatt 7 Apache Trail Westport, Connecticut	(service waived)
Mr. Henry J. Wolfson 179 Bayberry Lane Westport, Connecticut	(service waived)
Mr. Melvin H. Barr Planning Director Town of Westport 110 Myrtle Avenue P.O. Box 549 Westport, Connecticut 06881	(service waived)
Mr. Mark Infeld 6 Apache Trail Westport, Connecticut	(service waived)
Ms. Barbara Saipe Representative Town Meeting Member District #8 Town Hall P.O. Box 549 Westport, Connecticut 06881	(service waived)
Ms. Peggy Goldenberg 201 Bayberry Lane Westport, Connecticut	(service waived)
Ms. Martha Hauhuth Board of Selectman Town Hall P.O. Box 549 Westport, Connecticut 06881	(service waived)
Ms. Meg Coffee 32 Otter Trail Westport, Connecticut	(service waived)

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 14th day of September, 1984.

<u>Council Members</u>	<u>Vote Cast</u>
 Gloria Dibble Pond Chairperson	Yes
_____) Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
_____) Commissioner Stanley Pac	Absent
 Owen L. Clark	Yes
 Fred J. Doocy	Yes
 Mortimer A. Gelston	Yes
 James G. Horsfall	Yes
 Janet Sitty	Yes
_____) Colin C. Tait	Absent

STATE OF CONNECTICUT

)

COUNTY OF HARTFORD

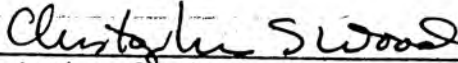
:

)

ss. New Britain, September 14, 1984

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

  
Christopher S. Wood, Executive Director  
Connecticut Siting Council

# Exhibit B

## **Property Card**

# 205 KAECELE PL

**Location** 205 KAECELE PL

**Mblu** 81/ 2602/ 9/ /

**Acct#** R--0148640

**Owner** SOUTHERN NEW ENGLAND  
TEL

**Assessment** \$104,120

**Appraisal** \$148,730

**PID** 29859

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$51,340	\$97,390	\$148,730

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$35,950	\$68,170	\$104,120

## Owner of Record

**Owner** SOUTHERN NEW ENGLAND TEL  
**Co-Owner** C/O FRONTIER COMMUNICATIONS - TAX DPMT  
**Address** 401 MERRITT 7  
NORWALK , CT 06851

**Sale Price** \$0  
**Certificate**  
**Book & Page** 0000/0000  
**Sale Date**  
**Instrument**

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
SOUTHERN NEW ENGLAND TEL	\$0		0000/0000		

## Building Information

### Building 1 : Section 1

**Year Built:**  
**Living Area:** 0  
**Replacement Cost:** \$0  
**Building Percent Good:**  
**Replacement Cost**  
**Less Depreciation:** \$0



### Building Attributes

Field	Description
Style	Vacant Land
Model	
Grade:	
Stories:	
Occupancy:	
Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs:	
Total Rooms	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplaces	
Usrflid 103	
Usrflid 104	
Usrflid 105	
Fin Bsmt Area	
Fin Bsmt Quality	
Num Park	
Bsmt Garages	
Usrflid 108	
Usrflid 101	
Usrflid 102	
.	
Usrflid 300	
Usrflid 301	

### Building Photo



(<http://images.vgsi.com/photos2/BridgeportCTPhotos/\00\03\05\86.JPG>)

### Building Layout

(ParcelSketch.ashx?pid=29859&bid=29859)

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

**Extra Features**

Extra Features	Legend
No Data for Extra Features	

**Land**

Land Use	Land Line Valuation
<b>Use Code</b> 499	<b>Size (Acres)</b> 0.15
<b>Description</b> Utility Vac Ln	<b>Frontage</b> 0
<b>Zone</b> RA	<b>Depth</b> 0
<b>Neighborhood</b> 2080	<b>Assessed Value</b> \$68,170
<b>Alt Land Appr</b> No	<b>Appraised Value</b> \$97,390
<b>Category</b>	

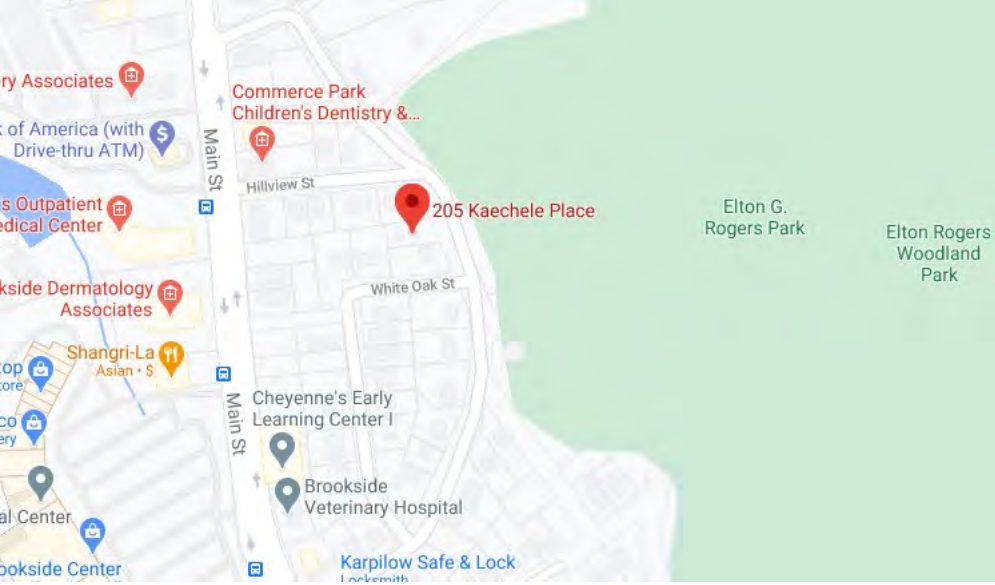
**Outbuildings**

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD3	Shed w/ Lt	CM	Comm	384.00 SF	\$6,910	1
SHD3	Shed w/ Lt	CM	Comm	384.00 SF	\$6,910	1
SHD3	Shed w/ Lt	CM	Comm	576.00 SF	\$10,370	1
FN1	Fence, Chain	8	8 ft	350.00 LF	\$3,150	1
TWR	Tower			120.00 LF	\$24,000	1

**Valuation History**

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$51,340	\$97,390	\$148,730
2017	\$51,340	\$97,390	\$148,730
2016	\$51,340	\$97,390	\$148,730

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$35,950	\$68,170	\$104,120
2017	\$35,950	\$68,170	\$104,120
2016	\$35,950	\$68,170	\$104,120



# Exhibit C

## **Construction Drawings**

# T-Mobile

T-MOBILE SITE NAME:

**CTFF334A**

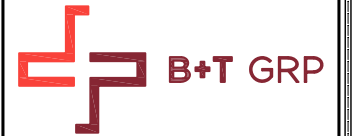
T-MOBILE SITE NUMBER:

**CTFF334A**

**CROWN BU: 841288 / APP#: 494425  
67D5A992DB CONFIGURATION**

205 KAEICHELE PL  
BRIDGEPORT, CT 06606

EXISTING 150'-0" MONOPOLE



## PROJECT SUMMARY

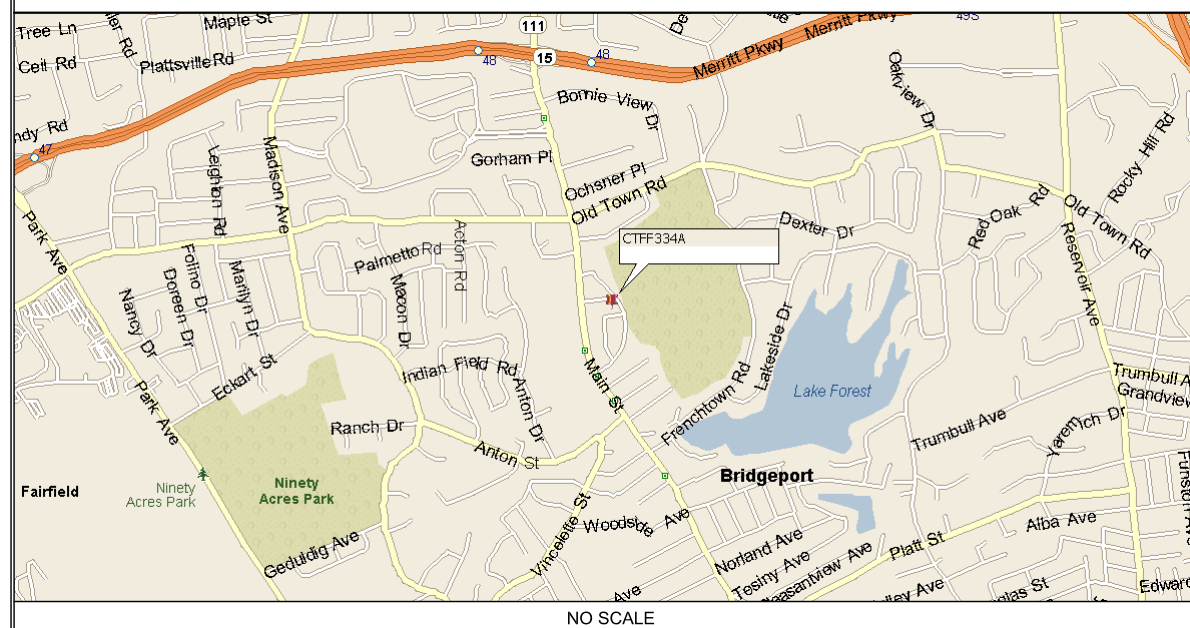
SITE TYPE: EXISTING EQUIPMENT UPGRADE  
SITE ADDRESS: 205 KAEICHELE PL  
BRIDGEPORT, CT 06606  
JURISDICTION: FAIRFIELD COUNTY

NAD83  
LATITUDE: 41.223341° N  
LONGITUDE: 73.216752° W  
TOWER OWNER: CROWN CASTLE  
3200 HORIZON DRIVE, SUITE 150  
KING OF PRUSSIA, PA 19406  
JASON SMITH  
(610) 635-3225

CUSTOMER/APPLICANT: T-MOBILE  
4 SYLVAN WAY  
PARSIPPANY, NJ 07054  
(973) 397-4800

OCCUPANCY TYPE: UNMANNED  
A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

## LOCATION MAP



## DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	3
A-1	OVERALL SITE PLAN	3
A-1.1	ENLARGED SITE PLAN	3
A-2	ANTENNA/CABLE SCHEDULE AND AZIMUTH PLANS	3
A-3	TOWER ELEVATION	3
A-4	ANTENNA AND RRU DETAILS	3
E-1	PANEL SCHEDULE AND ONE-LINE DIAGRAM	3
SP-1	CABINET SPECIFICATION SHEET	3
SP-2	CABINET SPECIFICATION SHEET	3
SP-3	GENERATOR IMAGERY	3

CTFF334A  
BU #: 841288  
CTFF334A  
205 KAEICHELE PL  
BRIDGEPORT, CT 06606  
EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
CHECKED BY: MTJ

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
0	8/15/19	BEL	CONSTRUCTION
1	7/6/20	BEL	CONSTRUCTION
2	7/31/20	MLC	CONSTRUCTION
3	8/14/20	MLC	CONSTRUCTION

## CONTACT INFORMATION

A&E FIRM: B+T GROUP  
1717 S. BOULDER, STE. 300  
TULSA, OK 74119  
CONTACT: MIKE OAKES  
PHONE: (918) 587-4630  
ELECTRIC PROVIDER: COMPARE ELECTRIC CO.  
203-923-8600  
TELCO PROVIDER: COMCAST  
800-934-6489

## DRIVING DIRECTIONS

DEPART JOHN F. KENNEDY INTERNATIONAL AIRPORT ON LOCAL ROAD. BEAR RIGHT ONTO LOCAL ROAD. TAKE RAMP ONTO JFK EXPY. TAKE RAMP ONTO I-678. STAY ON I-678. ROAD NAME CHANGES TO HUTCHINSON RIVER PKWY N. AT EXIT 6, TAKE RAMP ONTO I-95. STAY ON I-95. ENTERING CONNECTICUT. AT EXIT 15, TURN RIGHT ONTO RAMP. ROAD NAME CHANGES TO US-7. AT EXIT 2, KEEP RIGHT ONTO RAMP. TURN LEFT ONTO CT-123. TURN LEFT ONTO MAIN ST. ROAD NAME CHANGES TO MAIN AVE. TAKE RAMP ONTO CT-15. AT EXIT 48, KEEP RIGHT ONTO RAMP. KEEP RIGHT TO STAY ON RAMP. BEAR RIGHT ONTO CT-111. ROAD NAME CHANGES TO MAIN ST. TURN LEFT ONTO KAEICHELE PL. TURN RIGHT ONTO WHITE OAK ST. TURN RIGHT ONTO LOCAL ROAD AND ARRIVE AT CTFF334A.

## A/E DOCUMENT REVIEW STATUS

TITLE	SIGNATURE	DATE
T-MOBILE PROP:		
T-MOBILE R.F. MGR.:		
T-MOBILE NetOps:		
T-MOBILE CONST. MGR.:		
INTERCONNECT:		
T-MOBILE SITE DEV. MGR.:		
PROPERTY OWNER:		
PLANNING:		

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

## CODE COMPLIANCE

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/DWELLING	2018 CONNECTICUT STATE BUILDING CODE
STRUCTURAL	2018 CONNECTICUT STATE BUILDING CODE
MECHANICAL	2018 CONNECTICUT STATE BUILDING CODE
ELECTRICAL	NEC 2017

## PROJECT DESCRIPTION

- THE PROPOSED PROJECT INCLUDES:
- REMOVE (3) EXISTING ANTENNAS AT 120'-0".
  - REMOVE (3) EXISTING RRU'S AT 120'-0".
  - INSTALL (6) NEW ANTENNAS AT 120'-0".
  - INSTALL (6) NEW RRU'S AT 120'-0".
  - REMOVE (1) EXISTING XMU & (2) DUS 41 FROM EXISTING 6102 CABINET.
  - INSTALL (1) NEW B6160 CABINET.
  - INSTALL (1) NEW B160 CABINET.
  - INSTALL (5) BB 6630s.
  - INSTALL (1) BB 6648.
  - INSTALL (2) ERICSSON 6x12 HCS.

## DO NOT SCALE DRAWINGS

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.



CALL CONNECTICUT ONE CALL  
(800) 922-4455  
CALL 3 WORKING DAYS  
BEFORE YOU DIG!



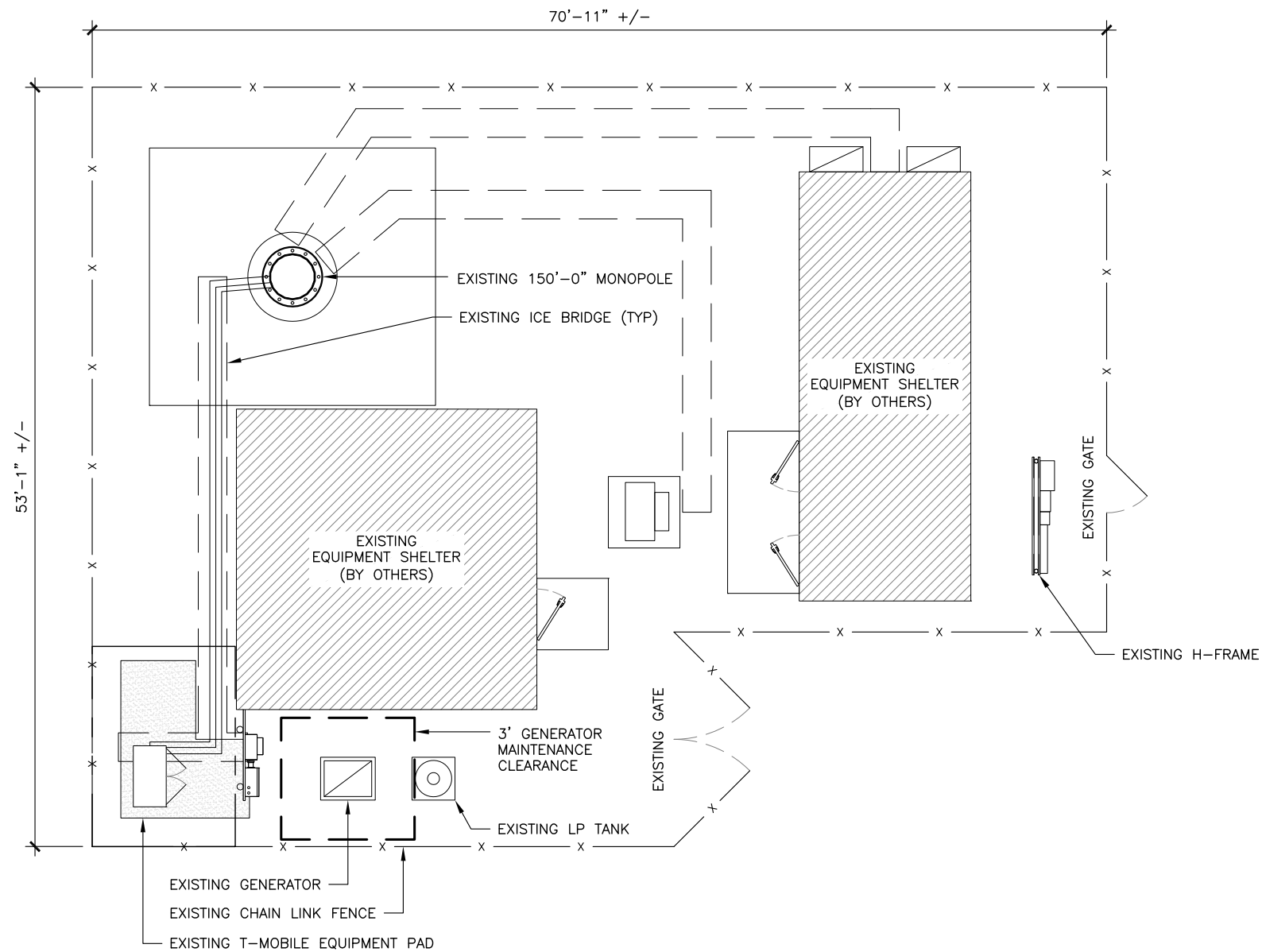
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PEC.0001564  
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SHEET NUMBER: **T-1** REVISION: **3**

126536\_BRIDGEPORT NORTH\_CROWN CASTLE\_T-MOBILE.dwg - Sheet:A-1 - User: mjonas - Aug 14, 2020 - 3:21pm



**1** OVERALL SITE PLAN  
 SCALE: 0' 4' 8' 16' 32'



**GENERAL NOTES:**

1. SUBJECT PROPERTY IS SITUATED AT 205 KAEICHELE PL, BRIDGEPORT, CT 06606.
2. APPLICANT: T-MOBILE  
 A DELAWARE LIMITED LIABILITY COMPANY  
 4 SYLVAN WAY  
 PARSIPPANY, NEW JERSEY 07054  
 (973) 397-4800  
  
 TOWER OWNER: CROWN CASTLE INTERNATIONAL
- THE APPLICANT IS TO UPDATE THEIR NETWORK BY INSTALLING THREE (6) NEW ANTENNAS, THREE (6) RRUS, AND TWO (2) ADDITIONAL CABLES MOUNTED ON AN EXISTING MONOPOLE.
3. THIS FACILITY SHALL BE VISITED ON THE AVERAGE OF ONCE A MONTH FOR MAINTENANCE AND SHALL BE MONITORED FROM A REMOTE FACILITY.
4. THE EXISTING SITE IS LOCATED AT LATITUDE OF 41.223341° N± AND LONGITUDE OF 73.216752° W±. THE HORIZONTAL DATUM ARE IN TERMS OF NORTH AMERICAN DATUM OF 1983 (NAD 83).
5. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED AND EACH OF THE DRAWINGS HAVE BEEN REVISED TO INDICATED "ISSUED FOR CONSTRUCTION"
6. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH:
  - 6.A. CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS.
  - 6.B. CURRENT PREVAILING UTILITY COMPANY AUTHORITY SPECIFICATIONS, STANDARDS AND REQUIREMENTS.
7. THE CONTRACTOR SHALL NOTIFY B+T GROUP, P.A. IMMEDIATELY IF ANY FIELD-CONDITIONS ENCOUNTERED DIFFER FROM THOSE REPRESENTED HEREON, AND/OR IF SUCH CONDITIONS WOULD OR COULD RENDER THE DESIGNS SHOWN HEREON INAPPROPRIATE AND/OR INEFFECTIVE.
8. THE CONTRACTOR IS RESPONSIBLE TO PROTECT, REPAIR AND/OR REPLACE ANY DAMAGED STRUCTURES, UTILITIES OR LANDSCAPED AREA WHICH MAY BE DISTURBED DURING THE CONSTRUCTION OF THIS FACILITY.
9. THE CONSTRUCTION CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ALL CONSTRUCTION MEANS AND METHODS. THE CONSTRUCTION CONTRACTOR IS ALSO RESPONSIBLE FOR ALL JOB SITE SAFETY.
10. SITE INFORMATION SHOWN TAKEN FROM CROWN SITE PLANS AND FROM CROWN INSPECTION PHOTOS.
11. NO GUARANTEE IS MADE NOR SHOULD BE ASSUMED AS TO THE COMPLETENESS OR ACCURACY OF THE HORIZONTAL OR VERTICAL LOCATIONS. ALL PARTIES UTILIZING THIS INFORMATION SHALL FIELD VERIFY THE ACCURACY AND COMPLETENESS OF THE INFORMATION SHOWN PRIOR TO CONSTRUCTION ACTIVITIES.
12. ALL IMPROVEMENTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE TOWNSHIP ENGINEER WHO WILL BE GIVEN PROPER NOTIFICATION PRIOR TO THE START OF ANY CONSTRUCTION.



CTFF334A  
 BU #: 841288  
 CTFF334A  
 205 KAEICHELE PL  
 BRIDGEPORT, CT 06606  
 EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
 CHECKED BY: MTJ

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION
0	8/15/19	BEL	CONSTRUCTION
1	7/6/20	BEL	CONSTRUCTION
2	7/31/20	MLC	CONSTRUCTION
3	8/14/20	MLC	CONSTRUCTION

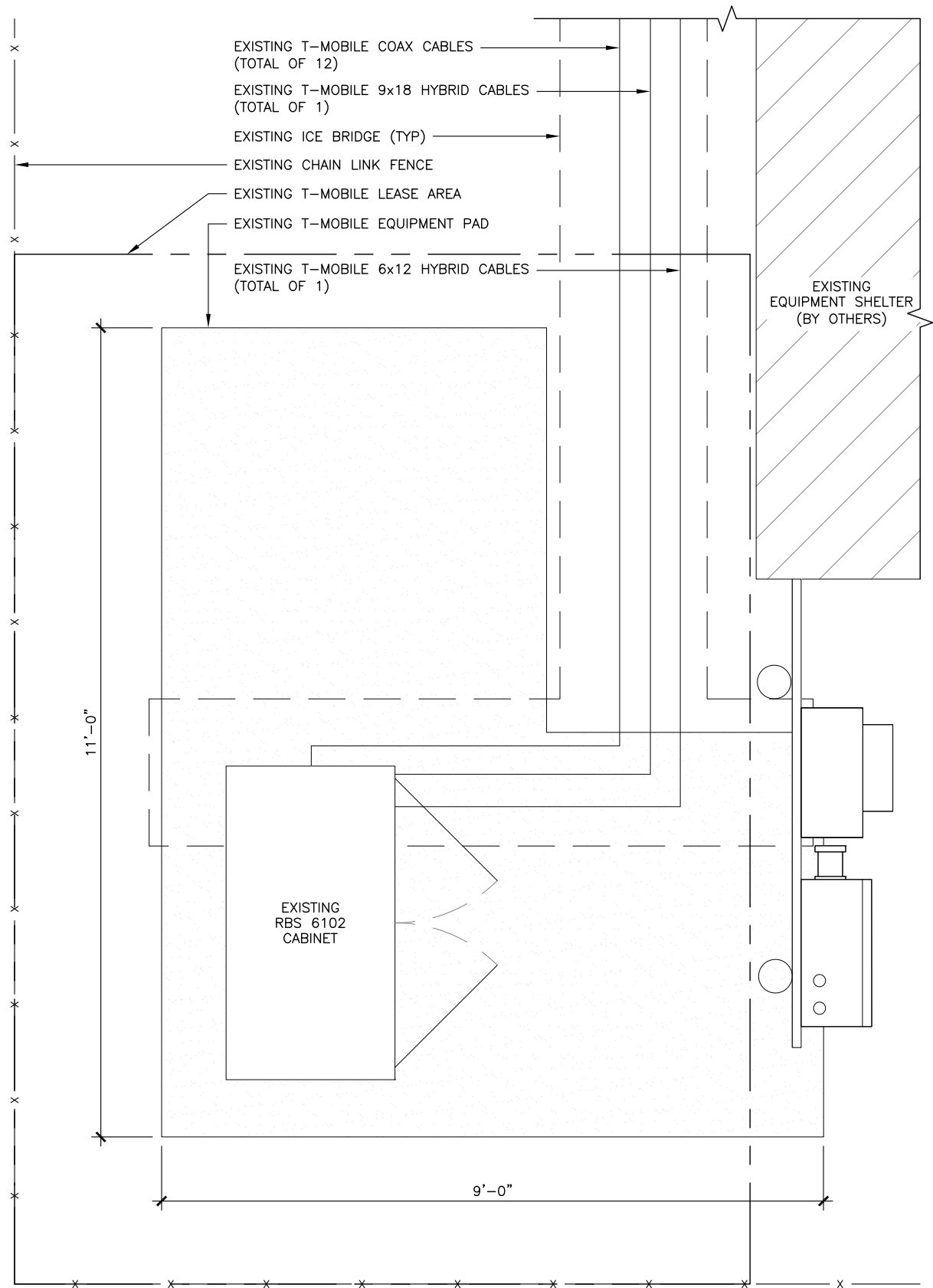
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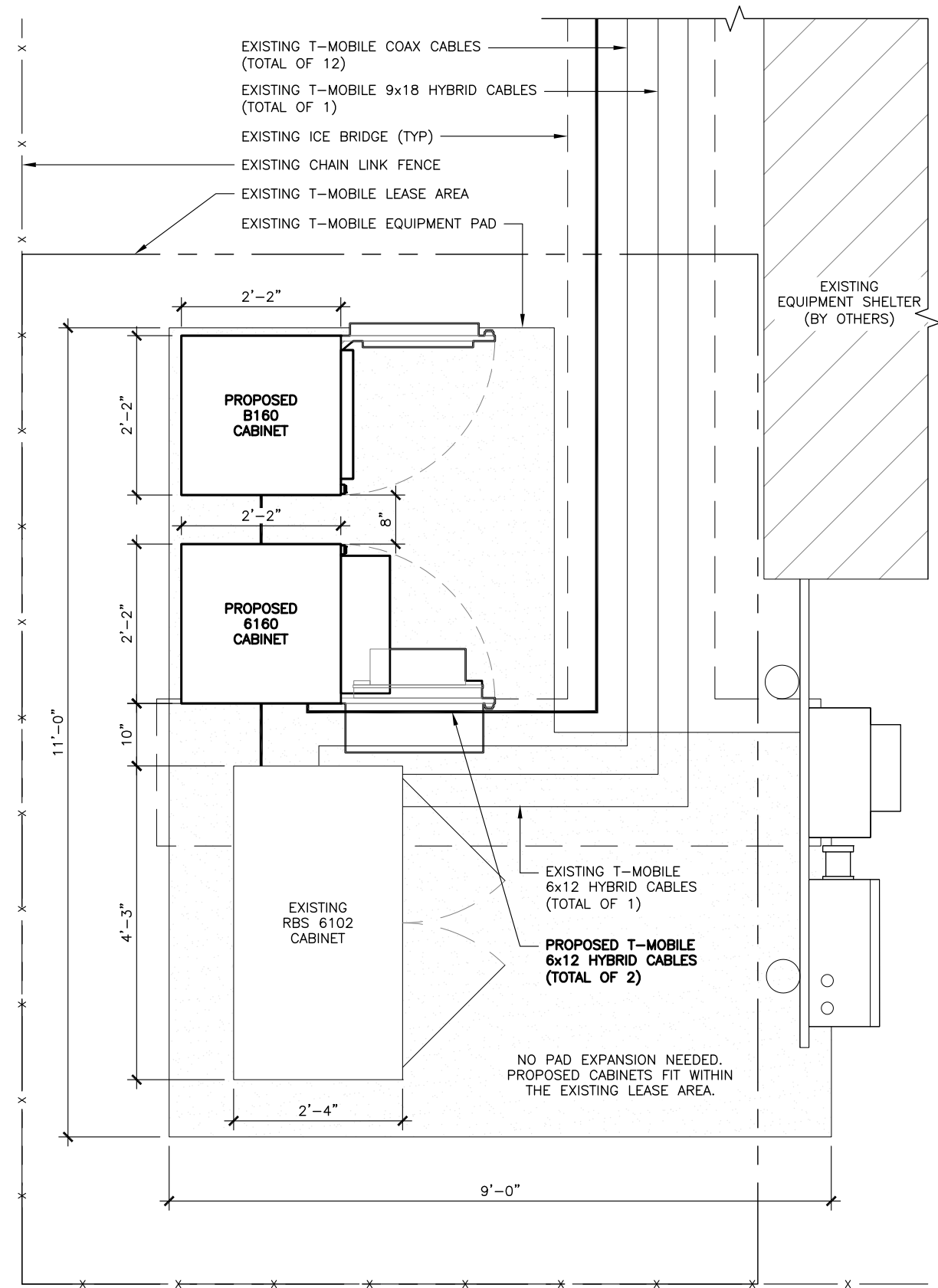
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SHEET NUMBER: **A-1** REVISION: **3**

126536\_BRIDGEPORT\_NORTH\_CROWN\_CASTLE\_T-MOBILE.dwg - Sheet: A-1.1 - User: mjonas - Aug 14, 2020 - 3:22pm



**1** EXISTING SITE PLAN  
 SCALE: 0' 4' 8' 16' 32'



**2** PROPOSED SITE PLAN  
 SCALE: 0' 4' 8' 16' 32'



CTFF334A  
 BU #: 841288  
 CTFF334A  
 205 KAECELE PL  
 BRIDGEPORT, CT 06606  
 EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
 CHECKED BY: MTJ

ISSUED FOR:

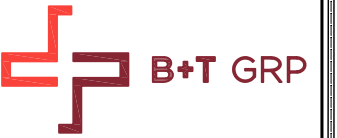
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SHEET NUMBER: **A-1.1** REVISION: **3**



CTFF334A  
 BU #: 841288  
 CTFF334A  
 205 KAECELE PL  
 BRIDGEPORT, CT 06606  
 EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
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B&T ENGINEERING, INC.  
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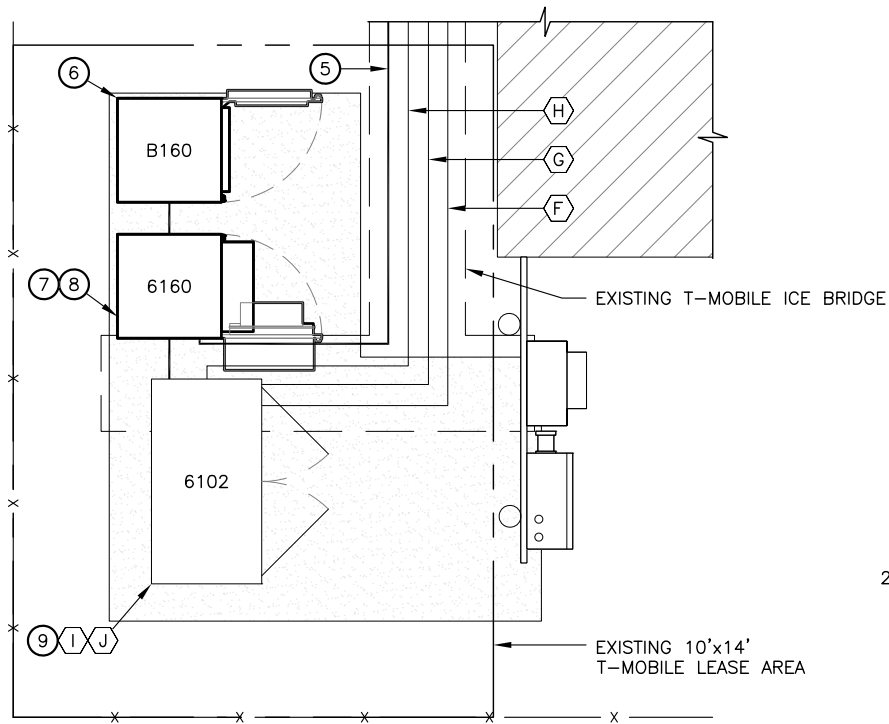


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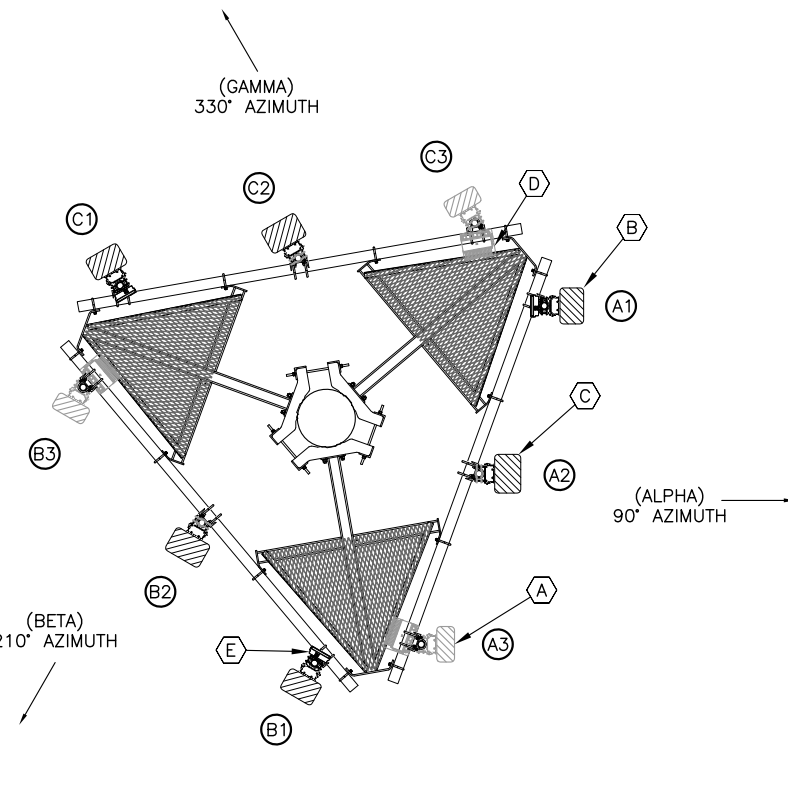
SHEET NUMBER: **A-2** REVISION: **3**

ANTENNA AND CABLE SCHEDULE											
SECTOR	POSITION	EXISTING ANTENNAS	PROPOSED ANTENNA CONFIGURATION		E-TILT	M-TILT	ANTENNA CENTERLINE	TMA/RRU	CABLES	JUMPER TYPE	CABLE LENGTH
90° - ALPHA	A1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	-	0°/0°	0°	120'-0"	1/0	(2) 1 5/8" COAX	DC/FIBER	170'-0"
	A2	ERICSSON AIR-32 KRD901146-1_B66A_B2A	LTE	-	0°/0°	0°		0/0	(1) 9x18 HCS FIBER	DC/FIBER	170'-0"
	A3	<b>ERICSSON AIR6449 B41</b>	LTE	-	0°/0°	0°		0/0	<b>(1) 6x12 HCS FIBER</b>	<b>DC/FIBER</b>	<b>170'-0"</b>
	A4	<b>RFS APXVAARR24_43-U-NA20</b>	LTE	<b>(1) B25 (1) B71+B85</b>	0°/0°	0°		0/2	<b>(1) 6x12 HCS FIBER</b>	<b>DC/FIBER</b>	<b>170'-0"</b>
210° - BETA	B1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	-	0°/0°	0°	120'-0"	1/0	(2) 1 5/8" COAX	DC/FIBER	170'-0"
	B2	ERICSSON AIR-32 KRD901146-1_B66A_B2A	LTE	-	0°/0°	0°		0/0	SHARED FIBER	DC/FIBER	170'-0"
	B3	<b>ERICSSON AIR6449 B41</b>	LTE	-	0°/0°	0°		0/0	<b>SHARED FIBER</b>	<b>DC/FIBER</b>	<b>170'-0"</b>
	B4	<b>RFS APXVAARR24_43-U-NA20</b>	LTE	<b>(1) B25 (1) B71+B85</b>	0°/0°	0°		0/2	<b>SHARED FIBER</b>	<b>DC/FIBER</b>	<b>170'-0"</b>
330° - GAMMA	C1	ERICSSON AIR21 KRC118023-1_B2A_B4P	GSM UMTS	-	0°/0°	0°	120'-0"	1/0	(2) 1 5/8" COAX	DC/FIBER	170'-0"
	C2	ERICSSON AIR-32 KRD901146-1_B66A_B2A	LTE	-	0°/0°	0°		0/0	SHARED FIBER	DC/FIBER	170'-0"
	C3	<b>ERICSSON AIR6449 B41</b>	LTE	-	0°/0°	0°		0/0	<b>SHARED FIBER</b>	<b>DC/FIBER</b>	<b>170'-0"</b>
	C4	<b>RFS APXVAARR24_43-U-NA20</b>	LTE	<b>(1) B25 (1) B71+B85</b>	0°/0°	0°		0/2	<b>SHARED FIBER</b>	<b>DC/FIBER</b>	<b>170'-0"</b>

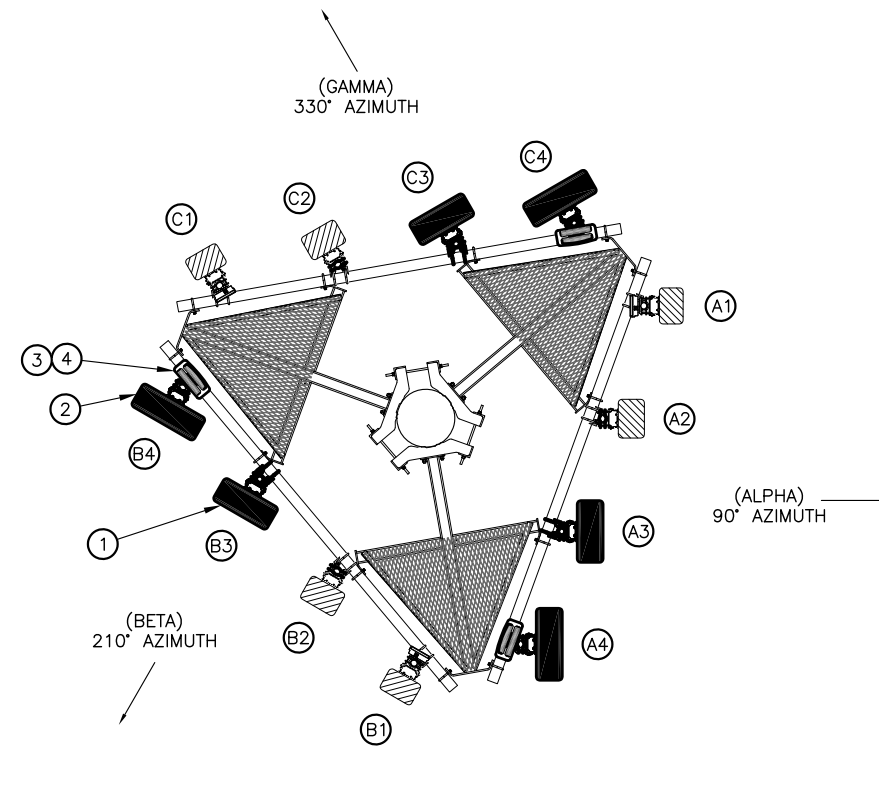
LEGEND	
EXISTING/DEMOLITION NOTES	INSTALLATION NOTES
A EXISTING ANDREW LNX-6515DS-A1M ANTENNA TO BE REMOVED (TOTAL OF 3).	1 INSTALL AIR6449 B41 ANTENNAS ON PROPOSED MOUNT. PROVIDE NEW 2 7/8" OD SCH.40 PIPE MAST (LENGTH TO BE V.I.F) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
B EXISTING ERICSSON AIR21 KRC118023-1_B2A_B4P ANTENNA TO REMAIN (TOTAL OF 3).	2 INSTALL RFS APXVAARR24_43-U-NA20 (8 FT) ANTENNAS ON EXISTING MOUNT. PROVIDE NEW 2 3/8" OD SCH.40 PIPE MAST (LENGTH TO BE V.I.F) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
C EXISTING ERICSSON AIR32 KRD901146-1_B66A_B2A ANTENNA TO REMAIN (TOTAL OF 3).	3 INSTALL RADIO 4449 B71+B85 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
D EXISTING RADIO RRUS 11 B12 TO BE REMOVED (TOTAL OF 3).	4 INSTALL RADIO 4415 B25 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
E EXISTING TMA TO REMAIN (SEE INSTALLATION NOTE 2).	5 INSTALL (2) 6x12 HCS FIBER. RUN FROM EQUIPMENT TO ANTENNAS FOLLOWING EXISTING ROUTING.
F EXISTING 1 5/8" COAX TO REMAIN (TOTAL OF 6).	6 INSTALL (1) NEW B160 CABINET.
G EXISTING 9x18 HCS FIBER TO REMAIN (TOTAL OF 1).	7 INSTALL (1) NEW ENCLOSURE 6160 CABINET.
H EXISTING 6x12 HCS FIBER TO REMAIN (TOTAL OF 1).	8 INSTALL (3) BB6630 & (1) BB6648 IN NEW 6160 CABINET.
I EXISTING RBS 6102 CABINET TO REMAIN.	9 INSTALL (2) BB6630 IN EXISTING RBS 6201 CABINET.
J EXISTING (1) XMU AND (2) DUS41 TO BE REMOVED.	



1 ENLARGED AREA PLAN  
 SCALE: 0' 1' 2' 4' 10'



2 EXISTING ANTENNA ORIENTATION  
 SCALE: 0' 1' 4' 8' 16'



3 PROPOSED ANTENNA ORIENTATION  
 SCALE: 0' 1' 4' 8' 16'



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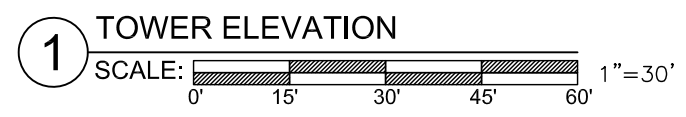
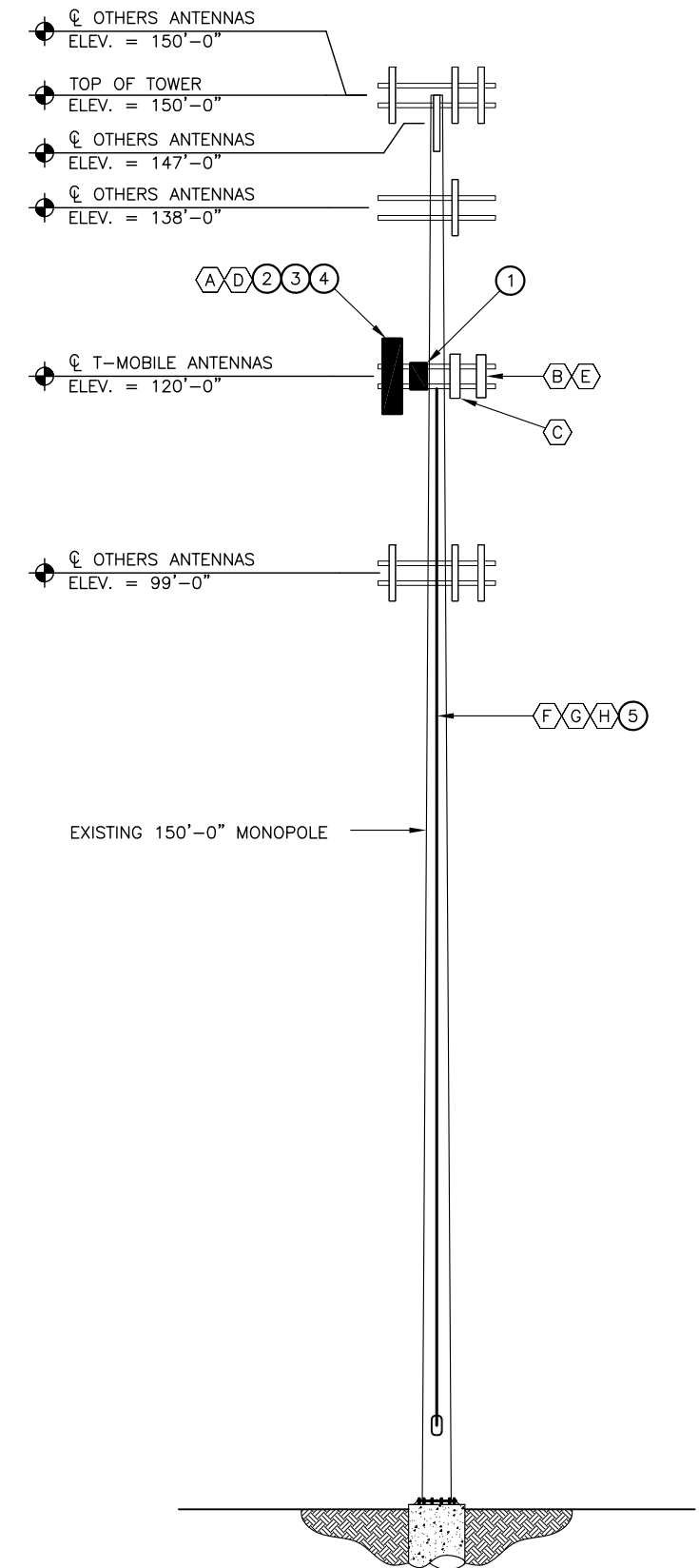


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LEGEND	
EXISTING/DEMOLITION NOTES	INSTALLATION NOTES
(A) EXISTING ANDREW LNX-6515DS-A1M ANTENNA TO BE REMOVED (TOTAL OF 3).	(1) INSTALL AIR6449 B41 ANTENNAS ON PROPOSED MOUNT. PROVIDE NEW 2 7/8" OD SCH.40 PIPE MAST (LENGTH TO BE V.I.F) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
(B) EXISTING ERICSSON AIR21 KRC118023-1_B2A_B4P ANTENNA TO REMAIN (TOTAL OF 3).	(2) INSTALL RFS APXVAARR24_43-U-NA20 (8 FT) ANTENNAS ON EXISTING MOUNT. PROVIDE NEW 2 3/8" OD SCH.40 PIPE MAST (LENGTH TO BE V.I.F) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
(C) EXISTING ERICSSON AIR32 KRD901146-1_B66A_B2A ANTENNA TO REMAIN (TOTAL OF 3).	(3) INSTALL RADIO 4449 B71+B85 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
(D) EXISTING RADIO RRUS 11 B12 TO BE REMOVED (TOTAL OF 3).	(4) INSTALL RADIO 4415 B25 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
(E) EXISTING TMA TO REMAIN (SEE INSTALLATION NOTE 2).	(5) INSTALL (2) 6x12 HCS FIBER. RUN FROM EQUIPMENT TO ANTENNAS FOLLOWING EXISTING ROUTING.
(F) EXISTING 1 5/8" COAX TO REMAIN (TOTAL OF 6).	
(G) EXISTING 9x18 HCS FIBER TO REMAIN (TOTAL OF 1).	
(H) EXISTING 6x12 HCS FIBER TO REMAIN (TOTAL OF 1).	

EXISTING MOUNT IS SUFFICIENT PER MOUNT ANALYSIS BY INFINIGY ENGINEERING DATED 6/17/20.

LEGEND:  
 NEW  
 EXISTING



CTFF334A  
 BU #: 841288  
 CTFF334A  
 205 KAECELE PL  
 BRIDGEPORT, CT 06606  
 EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
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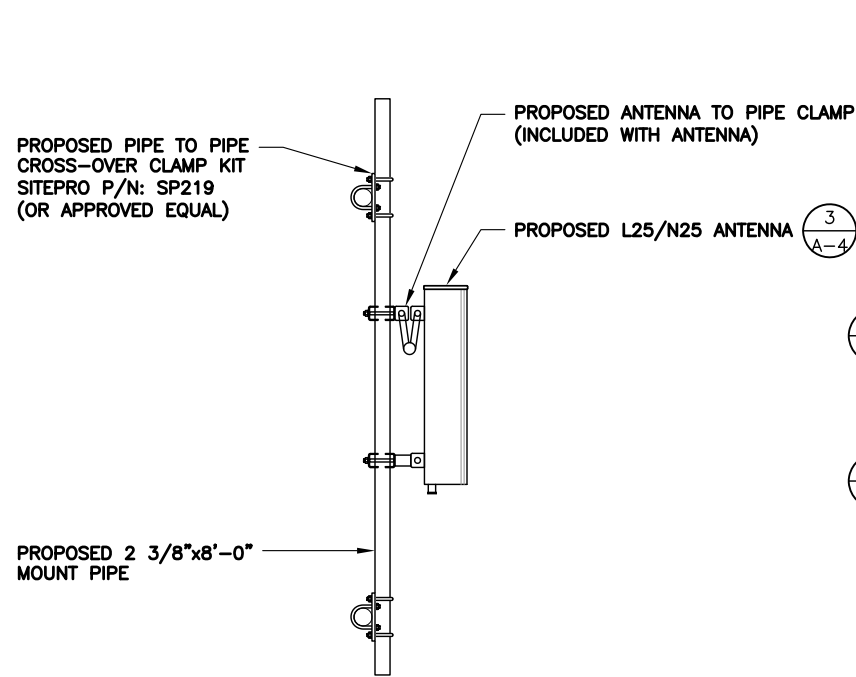
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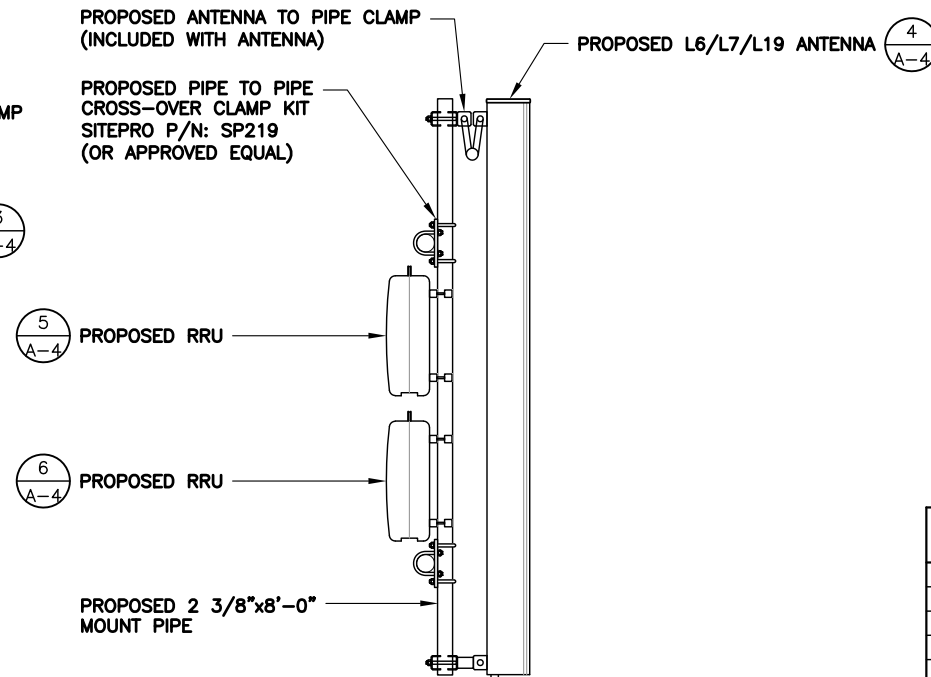


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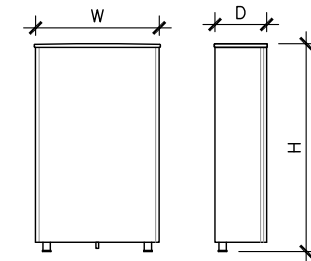
SHEET NUMBER: **A-3** REVISION: **3**



**1** PROPOSED L25/N25 ANTENNA MOUNTING DETAIL  
SCALE: 3/8" = 1'-0"

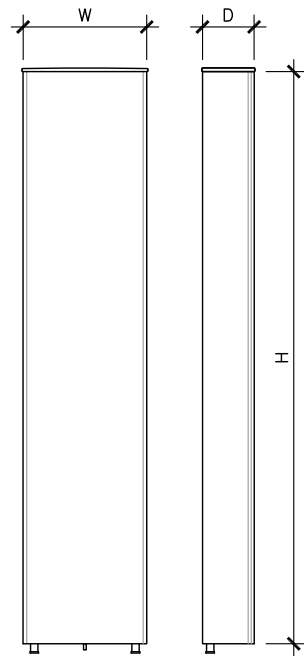


**2** PROPOSED L6/L7/L19 ANTENNA & RRU MOUNTING DETAIL  
SCALE: 3/8" = 1'-0"



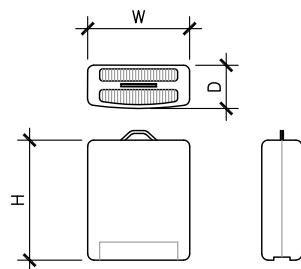
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.6"
DEPTH	8.6"
HEIGHT	33.1"
WEIGHT	104 LBS

**3** L25/N25 ANTENNA DETAIL  
SCALE: 3/8" = 1'-0"



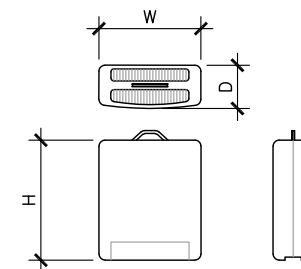
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.6"
DEPTH	8.6"
HEIGHT	33.1"
WEIGHT	104 LBS

**4** L6/L7/L19 ANTENNA DETAIL  
SCALE: 3/8" = 1'-0"



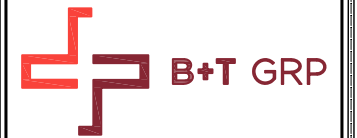
RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4415 B25
WIDTH	13.4"
DEPTH	5.9"
HEIGHT	16.5"
WEIGHT	46 LBS

**5** REMOTE RADIO UNIT (RRU)  
SCALE: 3/8" = 1'-0"



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	4449 B71+B85
WIDTH	13.2"
DEPTH	10.63"
HEIGHT	17.91"
WEIGHT	73.21 LBS

**6** REMOTE RADIO UNIT (RRU)  
SCALE: 3/8" = 1'-0"

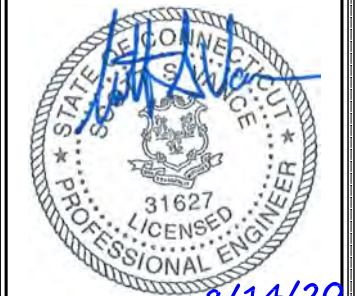


CTFF334A  
BU #: 841288  
CTFF334A  
205 KAECELE PL  
BRIDGEPORT, CT 06606  
EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
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ISSUED FOR:			
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SHEET NUMBER: A-4  
REVISION: 3



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 CTFF334A  
 205 KAECELE PL  
 BRIDGEPORT, CT 06606  
 EXISTING 150'-0" MONOPOLE

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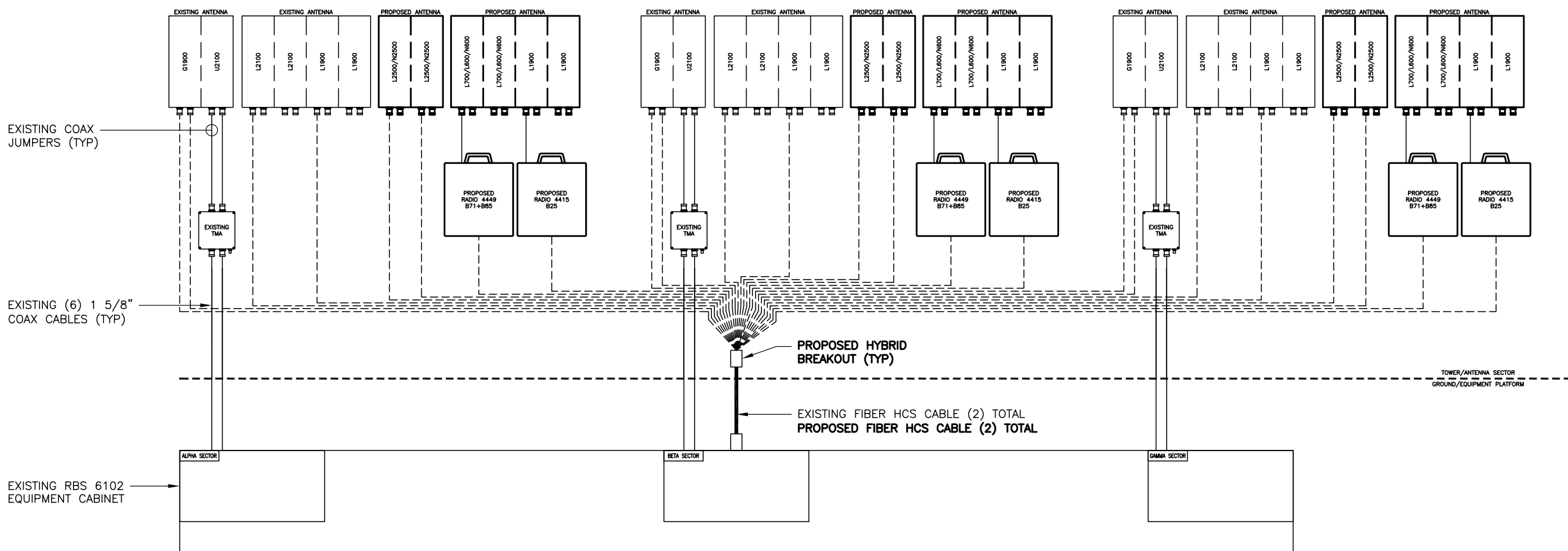


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SHEET NUMBER: REVISION:

A-5 3

- NOTES:
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS.
  2. SEE RF SCHEDULE FOR CABLE AND JUMPER LENGTHS.
  3. REFER TO ANTENNA ORIENTATION ON SHEET A-2 FOR EXACT ANTENNA POSITIONING.



1 ANTENNA & CABLING SCHEMATIC  
 SCALE: N.T.S.

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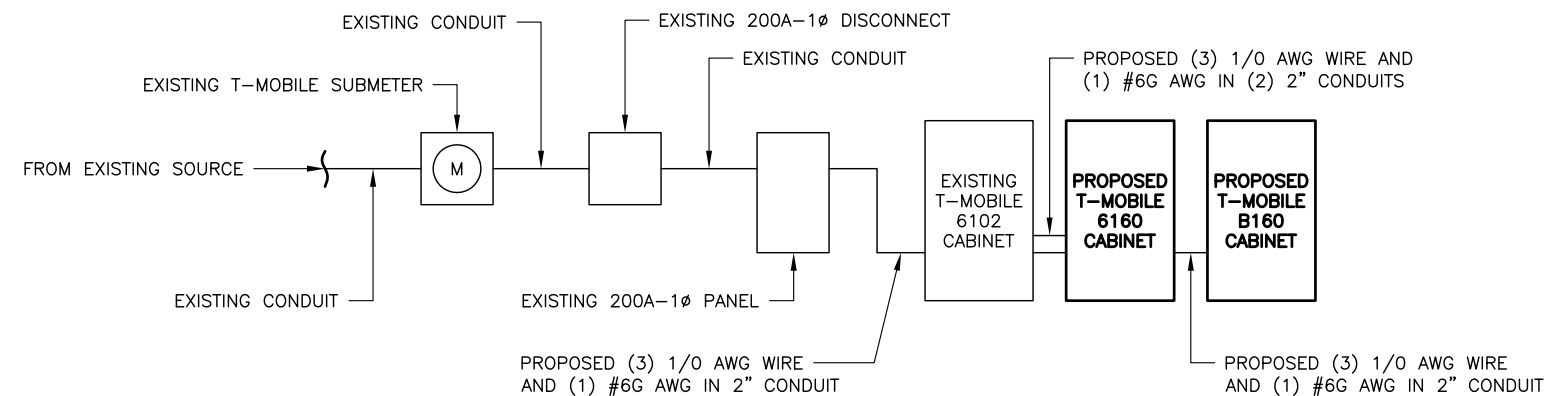


FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS		AMPS	POLES	LOAD
			L1	L2			
EQUIPMENT	2	60A	1	2	20A	1	EQUIPMENT
EQUIPMENT	1	20A	3	4	150A	2	RBS 6102
			5	6			
<b>6160</b>	<b>2</b>	<b>100A</b>	7	8	20A	1	EQUIPMENT
			9	10			

RATED VOLTAGE:  120/240  \_\_\_\_\_ 1 PHASE, 3 WIRE  
 BRANCH POLES:  12  24  30  42 APPROVED MF'RS  
 RATED AMPS:  100  200  400  \_\_\_\_\_  
 CABINET:  SURFACE  FLUSH NEMA  1  3R  4X  
 MAIN LUGS ONLY  MAIN 200 AMPS  BREAKER  FUSED SWITCH  HINGED DOOR  KEYPED DOOR LATCH  
 FUSED  CIRCUIT BREAKER BRANCH DEVICES  \_\_\_\_\_ TO BE GFCI BREAKERS FULL NEUTRAL BUS GROUND BAR  
 ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL

REPLACE EXISTING BREAKER IN POSITION 4 AND 6 WITH A NEW 2P 125A BREAKER  
 REPLACE EXISTING WIRES FOR EXISTING 6102 CABINET WITH (3) 1/0 AWG THWN (COPPER) AND (1) #6G AWG. MINIMUM CONDUIT SIZE TO BE 2".  
 IF 125A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL Q012040M200RB (OR APPROVED EQUAL).  
 UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.  
 FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

**1** FINAL T-MOBILE PANEL DETAIL  
SCALE: N.T.S.



**2** ONE-LINE DIAGRAM  
SCALE: N.T.S.

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PROJECT NO: 126536.005.01  
 CHECKED BY: MTJ

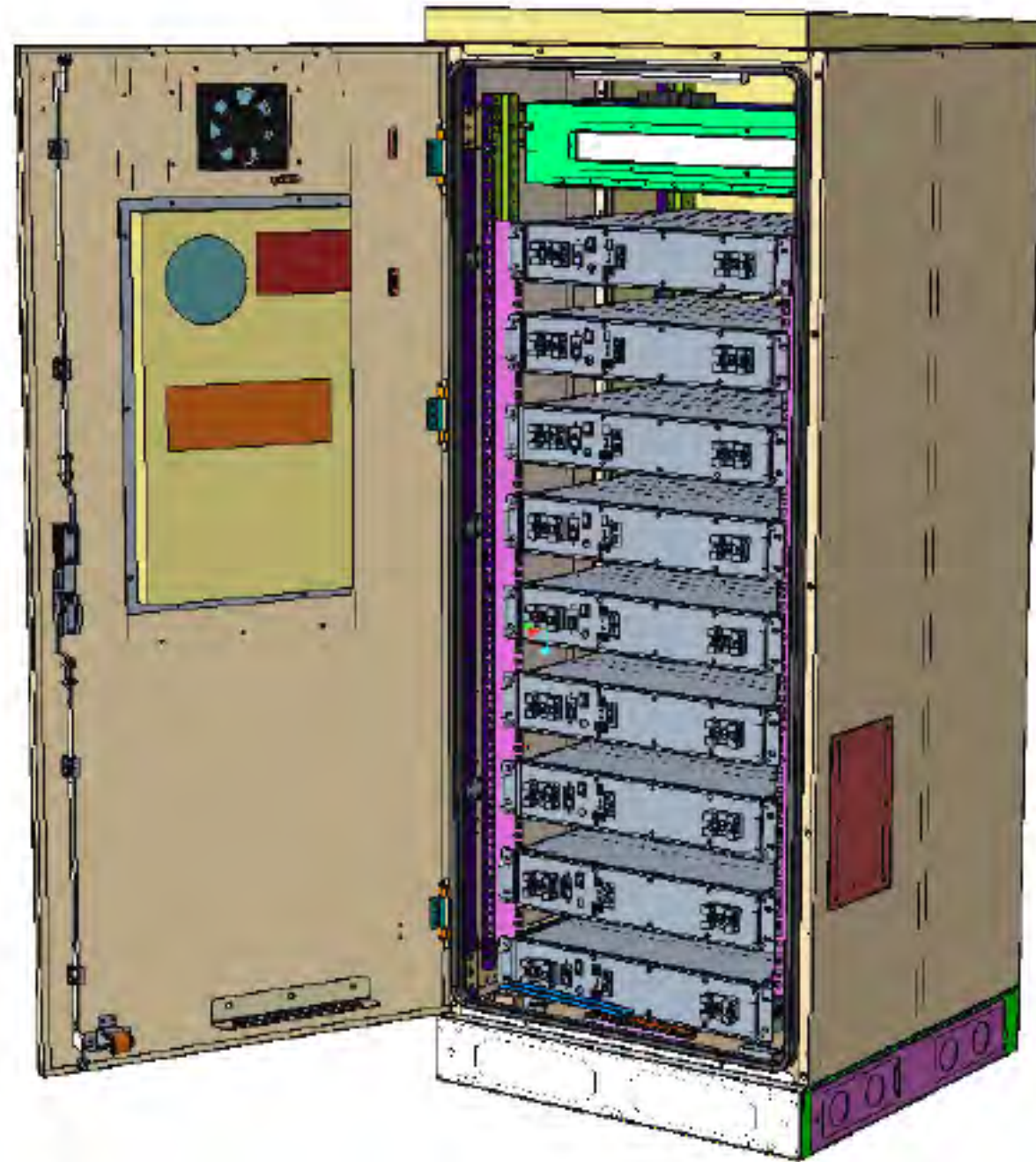
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1	7/6/20	BEL	CONSTRUCTION
2	7/31/20	MLC	CONSTRUCTION
3	8/14/20	MLC	CONSTRUCTION

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SHEET NUMBER: E-1  
 REVISION: 3



# Enclosure B160

## Capacity

- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

## Electrical specification

- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

## Mechanical specification

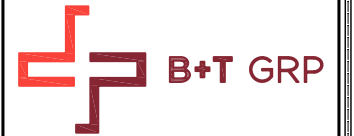
- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m<sup>2</sup>)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

## Environmental specification

- Ingress protection: VRLA/Sodium IP44  
Li-Ion IP55
- Relative humidity: 15-100%

## Climate system

- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
- Convection cooling
  - Emergency fan



CTFF334A  
BU #: 841288  
CTFF334A  
205 KAECELE PL  
BRIDGEPORT, CT 06606  
EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
CHECKED BY: MTJ

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SHEET NUMBER: **SP-1** REVISION: **3**

1 ERICSSON B160 OUTDOOR CABINET  
SCALE: N.T.S.

2 ERICSSON B160 OUTDOOR CABINET SPECIFICATIONS  
SCALE: N.T.S.

# Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31.5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such as fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.



## Preliminary technical specification for Enclosure 6160 AC

### CAPACITY

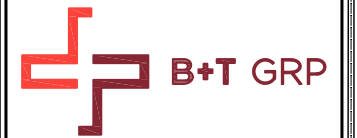
Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

### MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

### POWER SYSTEM

Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	8x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W



CTFF334A  
BU #: 841288  
CTFF334A  
205 KAECELE PL  
BRIDGEPORT, CT 06606  
EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01

CHECKED BY: MTJ

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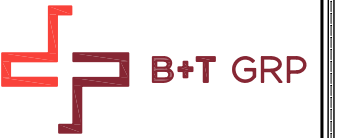


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SHEET NUMBER: SP-2  
REVISION: 3

1 ERICSSON 6160 OUTDOOR CABINET  
SCALE: N.T.S.

2 ERICSSON 6160 OUTDOOR CABINET SPECIFICATIONS  
SCALE: N.T.S.



CTFF334A  
 BU #: 841288  
 CTFF334A  
 205 KAECELE PL  
 BRIDGEPORT, CT 06606  
 EXISTING 150'-0" MONOPOLE

PROJECT NO: 126536.005.01  
 CHECKED BY: MTJ

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
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3	8/14/20	MLC	CONSTRUCTION

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SHEET NUMBER: SP-3  
 REVISION: 3

1 GENERATOR PHOTO  
 SCALE: N.T.S.

# Exhibit D

## **Structural Analysis Report**



Date: **June 22, 2020**

Darcy Tarr  
Crown Castle  
6325 Ardrey Kell Rd, Suite 600  
Charlotte, NC 28277

Paul J. Ford and Company  
250 East Broad St., Ste 600  
Columbus, OH 43215  
614-221-6679

**Subject:** Structural Analysis Report

**Carrier Designation:** *T-Mobile Co-Locate*  
Carrier Site Number: CFFF334A  
Carrier Site Name: CFFF334A

**Crown Castle Designation:**  
Crown Castle BU Number: 841288  
Crown Castle Site Name: BRIDGEPORT NORTH  
Crown Castle JDE Job Number: 576586  
Crown Castle Work Order Number: 1861586  
Crown Castle Order Number: 494425 Rev. 1

**Engineering Firm Designation:** Paul J. Ford and Company Project Number: 37520-1130.001.7805

**Site Data:** 205 KAECHLE PLACE, BRIDGEPORT, Fairfield County, CT  
Latitude 41° 13' 24.04", Longitude -73° 13' 0.38"  
150 Foot - Monopole Tower

Dear Darcy Tarr,

Paul J. Ford and Company is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower.

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

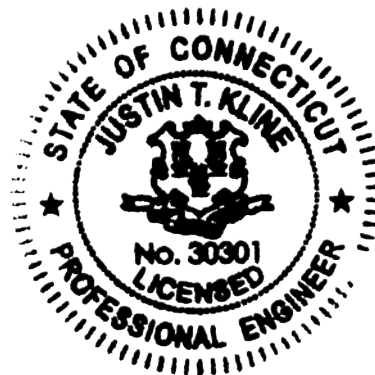
LC7: Proposed Equipment Configuration

**Sufficient Capacity (81.7%)**

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

Respectfully submitted by:

  
Jared Forbes, E.I.  
Structural Designer  
[jforbes@pauljford.com](mailto:jforbes@pauljford.com) *RMF*



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tnxTower Output

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Additional Calculations

**1) INTRODUCTION**

This tower is a 150 ft Monopole tower designed by ITT MEYER INC. and mapped by GPD in April of 2008.

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

**2) ANALYSIS CRITERIA**

TIA-222 Revision: TIA-222-H  
 Risk Category: II  
 Wind Speed: 125 mph  
 Exposure Category: B  
 Topographic Factor: 1  
 Ice Thickness: 1.5 in  
 Wind Speed with Ice: 50 mph  
 Service Wind Speed: 60 mph

**Table 1 - Proposed Equipment Configuration**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0	120.0	3	ericsson	AIR -32 B2A/B66AA	9 1	1-5/8 1-1/2
		3	ericsson	AIR 21 B2A/B4P		
		3	ericsson	AIR6449 B41		
		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		
		1	tower mounts	Platform Mount [LP 1301-1]		

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	154.0	3	cci antennas	HPA-65R-BUU-H6	12 2 4 2	1-5/8 3/8 3/4 2" Conduit
		6	cci antennas	TPX-070821		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		3	powerwave technologies	1001940		
		6	powerwave technologies	7020.00		
		3	powerwave technologies	7770.00		
		3	powerwave technologies	TT19-08BP111-001		
		3	quintel technology	QS66512-2		
	2	raycap	DC6-48-60-18-8F			
	150.0	1	tower mounts	Platform Mount (LP 101-1)		
147.0	147.0	3	ericsson	TME-RRUS-11	-	-
		1	raycap	TME-DC6-48-60-18-8F		
		1	tower mounts	Side Arm Mount [SO 102-3]		
		1	tower mounts	Pipe Mount [PM 601-3]		
138.0	143.0	1	andrew	VHLP2-18	3 1 2	1-1/4 1-5/8 1/2
		1	andrew	VHLP2-23		
		1	clearwire	CW JUNCTION BOX		
		2	dragonwave	HORIZON COMPACT		
	140.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		6	alcatel lucent	RRH2X50-800		
		3	commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	nokia	AAHC w/ Mount Pipe		
138.0	1	tower mounts	Platform Mount [LP 1202_KCKR_HR1]			
99.0	100.0	3	antel	BXA-70063/4CF w/ Mount Pipe	6 1	1-5/8 1-1/4
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	JAHH-65A-R3B w/ Mount Pipe		
		1	rfs celwave	DB-C1-12C-24AB-0Z		
		3	samsung telecommunications	20W CBRS		
		3	samsung telecommunications	CBRS w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	99.0	1	tower mounts	T-Arm Mount [TA 602-3]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 08-09065E G1, 09/23/2008	5110784	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	FDH, 08-09065E NA, 09/23/2008 (Mapping)	5110783	CCISITES
4-TOWER MANUFACTURER DRAWINGS	GPD, 2014777.841288.02, 04/11/2008 (Mapping)	4710143	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2013801.02, 04/03/2013	4945043	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2008264.38, 10/16/2008	5237204	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567.42283, 10/22/2014	5401472	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2014777.814288.03, 09/19/2014	5303781	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567_26102, 06/05/2015	5739992	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2017777.84128807, 01/09/2017	6650617	CCISITES
4-POST-MODIFICATION INSPECTION	Crown Castle, 841288, 05/31/2017	6894091	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37517-0750.003.7700, 03/31/2017	6801057	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567.87194, 06/08/2018	7594134	CCISITES

#### 3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

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

#### 3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 3) The structure was modified in conformance with the referenced modification drawings as shown in the referenced post modification inspection.
- 4) The monopole manufacturer drawings are not available at the time of this analysis. Therefore, we have assumed the steel yield strength(s) ( $F_y$ ) as per the following:
  - Anchor rods: ASTM A615 ( $F_u = 100$  ksi,  $F_y = 75$  ksi)
  - Pole Shaft: ASTM A572/A607 Gr 50
  - Base Plate: ASTM A572 Gr 50

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company 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
150 - 145	Pole	TP15.732x15x0.2188	Pole	22.6%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	36.4%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	55.9%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	73.6%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	78.4%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 12 Tension Rupture	39.5%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 12 Tension Rupture	48.0%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 12 Tension Rupture	57.9%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 12 Tension Rupture	69.7%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 12 Tension Rupture	79.3%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 7 Tension Rupture	60.5%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 7 Tension Rupture	68.1%	Pass
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 7 Tension Rupture	61.0%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.95	Reinf. 7 Tension Rupture	62.1%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 7 Tension Rupture	50.6%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.1	Reinf. 7 Tension Rupture	51.2%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.925	Reinf. 7 Tension Rupture	56.4%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.925	Reinf. 7 Tension Rupture	57.9%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1	Reinf. 7 Tension Rupture	56.7%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 7 Tension Rupture	58.0%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.375	Reinf. 17 Tension Rupture	41.6%	Pass
99.33 - 95.25	Pole + Reinf.	TP23.076x22.46x1.325	Reinf. 17 Tension Rupture	45.9%	Pass
95.25 - 95	Pole + Reinf.	TP23.114x23.076x1.025	Reinf. 18 Tension Rupture	56.7%	Pass
95 - 90	Pole + Reinf.	TP23.869x23.114x1	Reinf. 18 Tension Rupture	62.5%	Pass
90 - 85	Pole + Reinf.	TP24.624x23.869x0.9625	Reinf. 18 Tension Rupture	68.1%	Pass
85 - 80.5	Pole + Reinf.	TP25.304x24.624x0.925	Reinf. 18 Tension Rupture	72.9%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 6 Tension Rupture	60.4%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 6 Tension Rupture	64.8%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.225	Reinf. 6 Tension Rupture	66.2%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 6 Tension Rupture	66.4%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.2	Reinf. 6 Tension Rupture	67.5%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2625	Reinf. 6 Tension Rupture	69.2%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2625	Reinf. 6 Tension Rupture	69.4%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 5 Tension Rupture	60.4%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 5 Tension Rupture	63.5%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2625	Reinf. 5 Tension Rupture	66.4%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 5 Tension Rupture	69.3%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 5 Tension Rupture	71.1%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6375	Reinf. 2 Connection	62.4%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.6125	Reinf. 2 Compression	64.1%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.7125	Reinf. 2 Compression	60.6%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
44 - 43.08	Pole + Reinf.	TP30.771x30.622x1.7125	Reinf. 2 Compression	60.9%	Pass
43.08 - 42.83	Pole + Reinf.	TP30.812x30.771x1.7125	Reinf. 2 Compression	61.0%	Pass
42.83 - 37.83	Pole + Reinf.	TP31.622x30.812x1.6375	Reinf. 2 Compression	63.1%	Pass
37.83 - 34	Pole + Reinf.	TP32.89x31.622x1.6125	Reinf. 2 Compression	64.7%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.7063	Reinf. 2 Compression	64.1%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6563	Reinf. 2 Compression	65.7%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6563	Reinf. 2 Compression	65.8%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6563	Reinf. 2 Compression	65.9%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.6063	Reinf. 2 Compression	67.4%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5563	Reinf. 2 Compression	68.9%	Pass
13.5 - 11	Pole + Reinf.	TP35.502x35.08x1.5313	Reinf. 2 Connection	69.6%	Pass
11 - 10.75	Pole + Reinf.	TP35.544x35.502x1.2313	Reinf. 3 Tension Rupture	66.2%	Pass
10.75 - 6	Pole + Reinf.	TP36.347x35.544x1.2563	Reinf. 3 Tension Rupture	67.6%	Pass
6 - 5.75	Pole + Reinf.	TP36.389x36.347x1.5313	Reinf. 3 Tension Rupture	58.4%	Pass
5.75 - 3.25	Pole + Reinf.	TP36.811x36.389x1.5063	Reinf. 3 Tension Rupture	59.1%	Pass
3.25 - 3	Pole + Reinf.	TP36.853x36.811x1.1563	Reinf. 20 Compression	74.6%	Pass
3 - 0	Pole + Reinf.	TP37.36x36.853x1.1313	Reinf. 20 Compression	75.4%	Pass
				Summary	
			Pole	78.4%	Pass
			Reinforcement	79.3%	Pass
			Overall	79.3%	Pass

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

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	109	81.7	Pass
1	Anchor Rods	0	74.0	Pass
1	Base Plate	0	53.8	Pass
1	Base Foundation Structural Steel	0	42.5	Pass
1	Base Foundation Soil Interaction	0	65.5	Pass

<b>Structure Rating (max from all components) =</b>	<b>81.7%</b>
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Notes:

- All structural ratings are per TIA-222-H Section 15.5
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

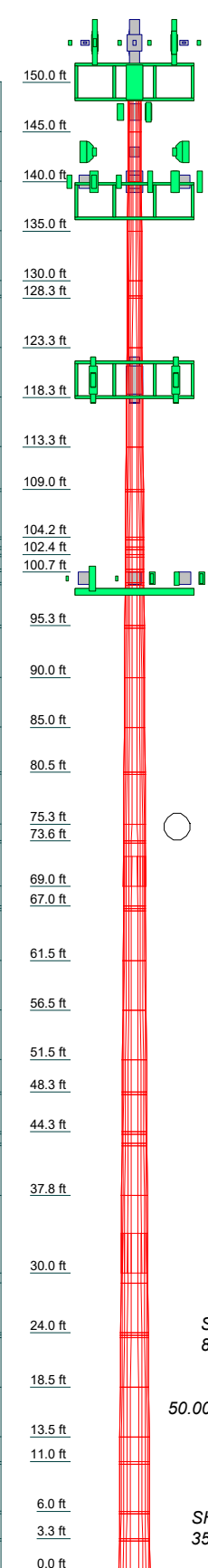
**4.1) Recommendations**

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		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
2		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
3		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
4		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
5		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
6		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
7		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
8		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
9		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
10		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
11		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
12		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
13		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
14		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
15		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
16		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
17		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
18		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
19		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
20		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
21		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
22		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
23		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
24		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
25		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
26		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
27		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
28		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
29		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
30		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
31		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
32		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
33		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
34		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
35		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
36		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
37		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
38		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
39		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
40		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
41		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
42		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
43		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
44		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
45		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
46		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
47		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
48		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
49		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
50		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
51		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
52		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
53		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
54		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
55		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
56		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
57		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
58		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
59		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317
60		12	0.2188	0.6488	18.9146	18.9146	16.4634	15.7317

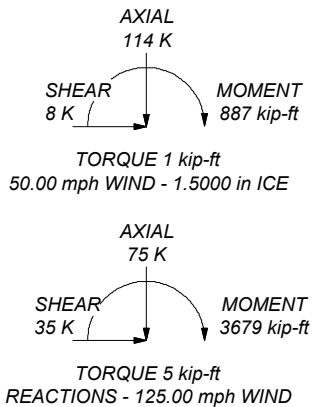


MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

### TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125.00 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.00 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 79.3%

ALL REACTIONS ARE FACTORED



	<b>Paul J. Ford and Company</b>		
	250 East Broad St., Ste 600 Columbus, OH 43215 Phone: 614-221-6679 FAX:		
Job: <b>150' Monopole   Bridgeport, CT</b> Project: <b>PJF# 37520-1130   BU 841288</b> Client: <b>Crown Castle</b> Code: <b>TIA-222-H</b> Path:	Drawn by: <b>jforbes</b> Date: <b>06/22/20</b>	App'd: Scale: <b>NTS</b> Dwg No. <b>E-1</b>	

## 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: 240.0000 ft.
- 3) Basic wind speed of 125.00 mph.
- 4) Risk Category II.
- 5) Exposure Category B.
- 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 50.00 mph is used in combination with ice.
- 13) Temperature drop of 50.00 °F.
- 14) Deflections calculated using a wind speed of 60.00 mph.
- 15) TIA-222-H Annex S.
- 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;"><b>Poles</b></div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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## Tapered Pole Section Geometry

Section	Elevation 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	150.0000- 145.0000	5.0000	0.00	12	15.0000	15.7317	0.2188	0.8750	A572-50 (50 ksi)
L2	145.0000- 140.0000	5.0000	0.00	12	15.7317	16.4634	0.2188	0.8750	A572-50 (50 ksi)
L3	140.0000- 135.0000	5.0000	0.00	12	16.4634	17.1951	0.2188	0.8750	A572-50 (50 ksi)
L4	135.0000- 130.0000	5.0000	0.00	12	17.1951	17.9268	0.2188	0.8750	A572-50 (50 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L5	130.0000-128.5000	1.5000	0.00	12	17.9268	18.1463	0.2188	0.8750	A572-50 (50 ksi)
L6	128.5000-128.2500	0.2500	0.00	12	18.1463	18.1829	0.6687	2.6750	A572-50 (50 ksi)
L7	128.2500-123.2500	5.0000	0.00	12	18.1829	18.9146	0.6438	2.5750	A572-50 (50 ksi)
L8	123.2500-118.2500	5.0000	0.00	12	18.9146	19.6463	0.6188	2.4750	A572-50 (50 ksi)
L9	118.2500-113.2500	5.0000	0.00	12	19.6463	20.3780	0.6062	2.4250	A572-50 (50 ksi)
L10	113.2500-109.0000	4.2500	0.00	12	20.3780	21.0000	0.5938	2.3750	A572-50 (50 ksi)
L11	109.0000-108.7500	0.2500	0.00	12	21.0000	21.0377	0.7250	2.9000	A572-50 (50 ksi)
L12	108.7500-104.1700	4.5800	0.00	12	21.0377	21.7293	0.7000	2.8000	A572-50 (50 ksi)
L13	104.1700-103.9200	0.2500	0.00	12	21.7293	21.7671	0.9750	3.9000	A572-50 (50 ksi)
L14	103.9200-103.1700	0.7500	0.00	12	21.7671	21.8803	0.9500	3.8000	A572-50 (50 ksi)
L15	103.1700-102.9200	0.2500	0.00	12	21.8803	21.9181	1.1250	4.5000	A572-50 (50 ksi)
L16	102.9200-102.4200	0.5000	0.00	12	21.9181	21.9936	1.1000	4.4000	A572-50 (50 ksi)
L17	102.4200-102.1700	0.2500	0.00	12	21.9936	22.0313	0.9250	3.7000	A572-50 (50 ksi)
L18	102.1700-100.9200	1.2500	0.00	12	22.0313	22.2201	0.9250	3.7000	A572-50 (50 ksi)
L19	100.9200-100.6700	0.2500	0.00	12	22.2201	22.2578	1.0000	4.0000	A572-50 (50 ksi)
L20	100.6700-99.5800	1.0900	0.00	12	22.2578	22.4224	1.0000	4.0000	A572-50 (50 ksi)
L21	99.5800-99.3300	0.2500	0.00	12	22.4224	22.4602	1.3750	5.5000	A572-50 (50 ksi)
L22	99.3300-95.2500	4.0800	0.00	12	22.4602	23.0763	1.3250	5.3000	A572-50 (50 ksi)
L23	95.2500-95.0000	0.2500	0.00	12	23.0763	23.1140	1.0250	4.1000	A572-50 (50 ksi)
L24	95.0000-90.0000	5.0000	0.00	12	23.1140	23.8690	1.0000	4.0000	A572-50 (50 ksi)
L25	90.0000-85.0000	5.0000	0.00	12	23.8690	24.6240	0.9625	3.8500	A572-50 (50 ksi)
L26	85.0000-80.5000	4.5000	0.00	12	24.6240	25.3035	0.9250	3.7000	A572-50 (50 ksi)
L27	80.5000-80.2500	0.2500	0.00	12	25.3035	25.3412	1.3000	5.2000	A572-50 (50 ksi)
L28	80.2500-75.2500	5.0000	0.00	12	25.3412	26.0963	1.2500	5.0000	A572-50 (50 ksi)
L29	75.2500-73.5800	1.6700	0.00	12	26.0963	26.3484	1.2250	4.9000	A572-50 (50 ksi)
L30	73.5800-73.3300	0.2500	0.00	12	26.3484	26.3862	1.2250	4.9000	A572-50 (50 ksi)
L31	73.3300-69.0000	4.3300	3.00	12	26.3862	27.0400	1.2000	4.8000	A572-50 (50 ksi)
L32	69.0000-67.0000	5.0000	0.00	12	26.0870	26.8969	1.2625	5.0500	A572-50 (50 ksi)
L33	67.0000-66.7500	0.2500	0.00	12	26.8969	26.9374	1.2625	5.0500	A572-50 (50 ksi)
L34	66.7500-66.5000	0.2500	0.00	12	26.9374	26.9779	1.3625	5.4500	A572-50 (50 ksi)
L35	66.5000-61.5000	5.0000	0.00	12	26.9779	27.7877	1.3125	5.2500	A572-50 (50 ksi)
L36	61.5000-56.5000	5.0000	0.00	12	27.7877	28.5976	1.2625	5.0500	A572-50 (50 ksi)
L37	56.5000-51.5000	5.0000	0.00	12	28.5976	29.4075	1.2375	4.9500	A572-50 (50 ksi)
L38	51.5000-48.2500	3.2500	0.00	12	29.4075	29.9339	1.2125	4.8500	A572-50 (50 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L39	48.2500-48.0000	0.2500	0.00	12	29.9339	29.9744	1.6375	6.5500	A572-50 (50 ksi)
L40	48.0000-44.2500	3.7500	0.00	12	29.9744	30.5818	1.6125	6.4500	A572-50 (50 ksi)
L41	44.2500-44.0000	0.2500	0.00	12	30.5818	30.6223	1.7125	6.8500	A572-50 (50 ksi)
L42	44.0000-43.0800	0.9200	0.00	12	30.6223	30.7714	1.7125	6.8500	A572-50 (50 ksi)
L43	43.0800-42.8300	0.2500	0.00	12	30.7714	30.8118	1.7125	6.8500	A572-50 (50 ksi)
L44	42.8300-37.8300	5.0000	0.00	12	30.8118	31.6217	1.6375	6.5500	A572-50 (50 ksi)
L45	37.8300-30.0000	7.8300	4.00	12	31.6217	32.8900	1.6125	6.4500	A572-50 (50 ksi)
L46	30.0000-29.0000	5.0000	0.00	12	31.6171	32.4616	1.7063	6.8252	A572-50 (50 ksi)
L47	29.0000-24.0000	5.0000	0.00	12	32.4616	33.3062	1.6563	6.6252	A572-50 (50 ksi)
L48	24.0000-23.7500	0.2500	0.00	12	33.3062	33.3484	1.6563	6.6252	A572-50 (50 ksi)
L49	23.7500-23.5000	0.2500	0.00	12	33.3484	33.3906	1.6563	6.6252	A572-50 (50 ksi)
L50	23.5000-18.5000	5.0000	0.00	12	33.3906	34.2352	1.6063	6.4252	A572-50 (50 ksi)
L51	18.5000-13.5000	5.0000	0.00	12	34.2352	35.0797	1.5563	6.2252	A572-50 (50 ksi)
L52	13.5000-11.0000	2.5000	0.00	12	35.0797	35.5020	1.5313	6.1252	A572-50 (50 ksi)
L53	11.0000-10.7500	0.2500	0.00	12	35.5020	35.5442	1.2313	4.9252	A572-50 (50 ksi)
L54	10.7500-6.0000	4.7500	0.00	12	35.5442	36.3465	1.2563	5.0252	A572-50 (50 ksi)
L55	6.0000-5.7500	0.2500	0.00	12	36.3465	36.3888	1.5313	6.1252	A572-50 (50 ksi)
L56	5.7500-3.2500	2.5000	0.00	12	36.3888	36.8110	1.5063	6.0252	A572-50 (50 ksi)
L57	3.2500-3.0000	0.2500	0.00	12	36.8110	36.8533	1.1563	4.6252	A572-50 (50 ksi)
L58	3.0000-0.0000	3.0000		12	36.8533	37.3600	1.1313	4.5252	A572-50 (50 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L1	15.4520	10.4115	290.3510	5.2917	7.7700	37.3682	588.3299	5.1242	3.4337	15.697
	16.2095	10.9269	335.6400	5.5536	8.1490	41.1877	680.0975	5.3779	3.6298	16.594
L2	16.2095	10.9269	335.6400	5.5536	8.1490	41.1877	680.0975	5.3779	3.6298	16.594
	16.9670	11.4423	385.4093	5.8156	8.5280	45.1931	780.9437	5.6316	3.8259	17.49
L3	16.9670	11.4423	385.4093	5.8156	8.5280	45.1931	780.9437	5.6316	3.8259	17.49
	17.7245	11.9577	439.8702	6.0775	8.9071	49.3844	891.2963	5.8852	4.0220	18.386
L4	17.7245	11.9577	439.8702	6.0775	8.9071	49.3844	891.2963	5.8852	4.0220	18.386
	18.4821	12.4731	499.2341	6.3395	9.2861	53.7615	1011.5836	6.1389	4.2181	19.283
L5	18.4821	12.4731	499.2341	6.3395	9.2861	53.7615	1011.5836	6.1389	4.2181	19.283
	18.7093	12.6277	518.0309	6.4181	9.3998	55.1108	1049.6711	6.2150	4.2770	19.552
L6	18.5506	37.6358	1467.4061	6.2570	9.3998	156.1103	2973.3627	18.5232	3.0710	4.592
	18.5884	37.7146	1476.6407	6.2701	9.4188	156.7766	2992.0743	18.5620	3.0808	4.607
L7	18.5973	36.3565	1427.5348	6.2790	9.4188	151.5630	2892.5725	17.8936	3.1478	4.89
	19.3548	37.8733	1613.7555	6.5410	9.7978	164.7062	3269.9062	18.6401	3.3439	5.194
L8	19.3636	36.4523	1557.4612	6.5499	9.7978	158.9606	3155.8386	17.9407	3.4109	5.513
	20.1211	37.9101	1751.8965	6.8119	10.1768	172.1460	3549.8174	18.6582	3.6070	5.829
L9	20.1255	37.1686	1719.8898	6.8164	10.1768	169.0010	3484.9631	18.2933	3.6405	6.005
	20.8830	38.5970	1925.8929	7.0783	10.5558	182.4483	3902.3812	18.9963	3.8366	6.328
L10	20.8875	37.8251	1889.7635	7.0828	10.5558	179.0256	3829.1731	18.6164	3.8701	6.518
	21.5313	39.0142	2073.6481	7.3054	10.8780	190.6277	4201.7732	19.2016	4.0367	6.799
L11	21.4850	47.3320	2483.4900	7.2584	10.8780	228.3039	5032.2241	23.2954	3.6850	5.083
	21.5241	47.4201	2497.3879	7.2720	10.8976	229.1696	5060.3849	23.3387	3.6951	5.097

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L12	21.5329	45.8413	2420.1851	7.2809	10.8976	222.0852	4903.9511	22.5617	3.7621	5.374
	22.2489	47.4001	2675.5691	7.5285	11.2558	237.7060	5421.4284	23.3289	3.9475	5.639
L13	22.1519	65.1582	3582.3878	7.4301	11.2558	318.2706	7258.8888	32.0689	3.2105	3.293
	22.1910	65.2767	3601.9713	7.4436	11.2753	319.4555	7298.5704	32.1272	3.2206	3.303
L14	22.1998	63.6794	3522.2880	7.4525	11.2753	312.3884	7137.1104	31.3411	3.2876	3.461
	22.3171	64.0259	3580.0876	7.4931	11.3340	315.8712	7254.2281	31.5116	3.3179	3.493
L15	22.2553	75.1862	4134.1218	7.4304	11.3340	364.7536	8376.8517	37.0044	2.8489	2.532
	22.2944	75.3229	4156.7204	7.4439	11.3536	366.1159	8422.6426	37.0717	2.8590	2.541
L16	22.3032	73.7376	4079.0265	7.4529	11.3536	359.2727	8265.2136	36.2914	2.9260	2.66
	22.3814	74.0051	4123.5673	7.4799	11.3927	361.9490	8355.4653	36.4230	2.9463	2.678
L17	22.4431	62.7528	3555.4072	7.5426	11.3927	312.0784	7204.2190	30.8850	3.4153	3.692
	22.4822	62.8652	3574.5529	7.5561	11.4122	313.2213	7243.0133	30.9403	3.4254	3.703
L18	22.4822	62.8652	3574.5529	7.5561	11.4122	313.2213	7243.0133	30.9403	3.4254	3.703
	22.6776	63.4274	3671.3127	7.6236	11.5100	318.9672	7439.0750	31.2170	3.4760	3.758
L19	22.6512	68.3287	3927.1987	7.5968	11.5100	341.1988	7957.5692	33.6293	3.2750	3.275
	22.6902	68.4502	3948.1952	7.6103	11.5296	342.4412	8000.1138	33.6891	3.2851	3.285
L20	22.6902	68.4502	3948.1952	7.6103	11.5296	342.4412	8000.1138	33.6891	3.2851	3.285
	22.8606	68.9802	4040.6144	7.6692	11.6148	347.8846	8187.3803	33.9500	3.3292	3.329
L21	22.7283	93.1875	5269.1568	7.5350	11.6148	453.6583	10676.740	45.8640	2.3242	1.69
	22.7674	93.3546	5297.5595	7.5485	11.6344	455.3371	10734.291	45.9463	2.3343	1.698
L22	22.7851	90.1732	5141.3236	7.5664	11.6344	441.9083	10417.715	44.3805	2.4683	1.863
	23.4229	92.8017	5604.1579	7.7869	11.9535	468.8300	11355.543	45.6742	2.6334	1.987
L23	23.5287	72.7802	4517.1585	7.8943	11.9535	377.8943	9152.9877	35.8202	3.4374	3.354
	23.5678	72.9047	4540.3973	7.9079	11.9731	379.2180	9200.0758	35.8815	3.4476	3.363
L24	23.5766	71.2071	4444.7131	7.9168	11.9731	371.2264	9006.1939	35.0460	3.5146	3.515
	24.3582	73.6382	4915.6771	8.1871	12.3641	397.5753	9960.4945	36.2425	3.7169	3.717
L25	24.3715	70.9930	4754.6524	8.2005	12.3641	384.5517	9634.2147	34.9406	3.8174	3.966
	25.1531	73.3329	5240.4596	8.4708	12.7552	410.8478	10618.591	36.0922	4.0197	4.176
L26	25.1663	70.5875	5060.2692	8.4842	12.7552	396.7211	10253.477	34.7410	4.1202	4.454
	25.8698	72.6114	5508.1340	8.7275	13.1072	420.2369	11160.972	35.7371	4.3023	4.651
L27	25.7375	100.4787	7389.3951	8.5933	13.1072	563.7655	14972.917	49.4525	3.2973	2.536
	25.7766	100.6367	7424.3136	8.6068	13.1268	565.5858	15043.672	49.5303	3.3075	2.544
L28	25.7942	96.9673	7183.3965	8.6247	13.1268	547.2327	14555.508	47.7243	3.4415	2.753
	26.5759	100.0062	7880.1482	8.8950	13.5179	582.9436	15967.316	49.2200	3.6438	2.915
L29	26.5847	98.1046	7745.8797	8.9039	13.5179	573.0109	15695.252	48.2841	3.7108	3.029
	26.8458	99.0993	7983.8834	8.9942	13.6485	584.9650	16177.512	48.7737	3.7784	3.084
L30	26.8458	99.0993	7983.8834	8.9942	13.6485	584.9650	16177.512	48.7737	3.7784	3.084
	26.8848	99.2482	8019.9268	9.0077	13.6680	586.7651	16250.546	48.8470	3.7885	3.093
L31	26.8937	97.3194	7879.6959	9.0166	13.6680	576.5054	15966.400	47.8976	3.8555	3.213
	27.5706	99.8458	8509.4325	9.2507	14.0067	607.5250	17242.417	49.1410	4.0307	3.359
L32	27.0650	100.9178	7938.0666	8.8872	13.5131	587.4364	16084.675	49.6687	3.6078	2.858
	27.4003	104.2102	8740.6094	9.1771	13.9326	627.3502	17710.844	51.2891	3.8249	3.03
L33	27.4003	104.2102	8740.6094	9.1771	13.9326	627.3502	17710.844	51.2891	3.8249	3.03
	27.4423	104.3748	8782.0969	9.1916	13.9536	629.3804	17794.909	51.3701	3.8357	3.038
L34	27.4070	112.2034	9367.3963	9.1558	13.9536	671.3266	18980.884	55.2231	3.5677	2.619
	27.4489	112.3810	9411.9624	9.1703	13.9745	673.5080	19071.187	55.3105	3.5786	2.626

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L35	27.4665	108.4683	9119.7655	9.1882	13.9745	652.5988	18479.117	53.3848	3.7126	2.829
	28.3050	111.8910	10010.628	9.4781	14.3941	695.4697	20284.247	55.0694	3.9296	2.994
L36	28.3226	107.8318	9683.9305	9.4960	14.3941	672.7730	19622.268	53.0715	4.0636	3.219
	29.1611	111.1241	10598.311	9.7860	14.8136	715.4460	21475.052	54.6919	4.2807	3.391
L37	29.1699	109.0233	10416.973	9.7949	14.8136	703.2046	21107.611	53.6579	4.3477	3.513
	30.0084	112.2505	11369.677	10.0849	15.2331	746.3802	23038.048	55.2463	4.5647	3.689
L38	30.0172	110.0804	11169.672	10.0938	15.2331	733.2505	22632.783	54.1782	4.6317	3.82
	30.5622	112.1357	11807.065	10.2823	15.5058	761.4623	23924.315	55.1898	4.7728	3.936
L39	30.4122	149.2000	15248.190	10.1301	15.5058	983.3876	30896.967	73.4317	3.6338	2.219
	30.4542	149.4135	15313.747	10.1446	15.5268	986.2813	31029.803	73.5368	3.6446	2.226
L40	30.4630	147.2622	15119.897	10.1536	15.5268	973.7964	30637.011	72.4780	3.7116	2.302
	31.0918	150.4161	16112.291	10.3710	15.8414	1017.1007	32647.870	74.0302	3.8744	2.403
L41	31.0565	159.1928	16934.911	10.3352	15.8414	1069.0292	34314.721	78.3498	3.6064	2.106
	31.0985	159.4160	17006.273	10.3497	15.8624	1072.1144	34459.320	78.4597	3.6173	2.112
L42	31.0985	159.4160	17006.273	10.3497	15.8624	1072.1144	34459.320	78.4597	3.6173	2.112
	31.2527	160.2378	17270.611	10.4031	15.9396	1083.5062	34994.941	78.8642	3.6572	2.136
L43	31.2527	160.2378	17270.611	10.4031	15.9396	1083.5062	34994.941	78.8642	3.6572	2.136
	31.2947	160.4611	17342.912	10.4176	15.9605	1086.6122	35141.443	78.9741	3.6681	2.142
L44	31.3211	153.8290	16711.924	10.4444	15.9605	1047.0779	33862.890	75.7100	3.8691	2.363
	32.1596	158.0993	18142.689	10.7344	16.3801	1107.6086	36762.006	77.8117	4.0861	2.495
L45	32.1684	155.8154	17910.426	10.7433	16.3801	1093.4290	36291.379	76.6876	4.1531	2.576
	33.4814	162.4006	20278.584	11.1973	17.0370	1190.2660	41089.910	79.9286	4.4930	2.786
L46	32.8300	164.3385	18766.404	10.7081	16.3777	1145.8542	38025.824	80.8824	3.9005	2.286
	33.0048	168.9786	20401.345	11.0104	16.8151	1213.2732	41338.657	83.1661	4.1268	2.419
L47	33.0225	164.2937	19900.264	11.0283	16.8151	1183.4737	40323.330	80.8604	4.2608	2.573
	33.8968	168.7979	21582.275	11.3307	17.2526	1250.9576	43731.541	83.0772	4.4872	2.709
L48	33.8968	168.7979	21582.275	11.3307	17.2526	1250.9576	43731.541	83.0772	4.4872	2.709
	33.9405	169.0231	21668.775	11.3458	17.2745	1254.3810	43906.813	83.1880	4.4985	2.716
L49	33.9405	169.0231	21668.775	11.3458	17.2745	1254.3810	43906.813	83.1880	4.4985	2.716
	33.9843	169.2483	21755.506	11.3609	17.2964	1257.8090	44082.553	83.2989	4.5098	2.723
L50	34.0019	164.3977	21198.641	11.3788	17.2964	1225.6135	42954.195	80.9115	4.6438	2.891
	34.8762	168.7659	22933.753	11.6811	17.7338	1293.2209	46470.002	83.0615	4.8701	3.032
L51	34.8939	163.7632	22322.189	11.6990	17.7338	1258.7352	45230.807	80.5993	5.0041	3.215
	35.7682	167.9955	24097.969	12.0014	18.1713	1326.1555	48829.018	82.6823	5.2305	3.361
L52	35.7770	165.4201	23763.952	12.0103	18.1713	1307.7739	48152.209	81.4148	5.2975	3.459

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I <sub>t</sub> /Q in <sup>2</sup>	w in	w/t
	36.2142	167.5023	24672.640 5	12.1615	18.3900	1341.6309	49993.458 7	82.4395	5.4107	3.533
L53	36.3200	135.8760	20369.232 5	12.2689	18.3900	1107.6233	41273.587 4	66.8740	6.2147	5.047
	36.3637	136.0434	20444.621 6	12.2840	18.4119	1110.4020	41426.346 1	66.9564	6.2260	5.056
L54	36.3549	138.7045	20814.162 7	12.2751	18.4119	1130.4727	42175.136 6	68.2661	6.1590	4.902
	37.1855	141.9501	22309.735 4	12.5623	18.8275	1184.9541	45205.572 5	69.8635	6.3740	5.074
L55	37.0885	171.6665	26558.926 0	12.4639	18.8275	1410.6446	53815.584 6	84.4890	5.6370	3.681
	37.1322	171.8747	26655.682 3	12.4790	18.8494	1414.1407	54011.639 0	84.5915	5.6483	3.689
L56	37.1411	169.1900	26276.958 7	12.4879	18.8494	1394.0486	53244.242 3	83.2702	5.7153	3.794
	37.5782	171.2381	27242.852 1	12.6391	19.0681	1428.7119	55201.404 2	84.2782	5.8285	3.869
L57	37.7017	132.7528	21540.927 0	12.7644	19.0681	1129.6827	43647.758 1	65.3369	6.7665	5.852
	37.7454	132.9100	21617.552 4	12.7795	19.0900	1132.4022	43803.021 9	65.4143	6.7778	5.862
L58	37.7542	130.1275	21194.634 1	12.7885	19.0900	1110.2483	42946.074 8	64.0448	6.8448	6.05
	38.2788	131.9734	22109.446 0	12.9699	19.3525	1142.4606	44799.731 8	64.9533	6.9806	6.17

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>r</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 150.0000- 145.0000				1	1	1			
L2 145.0000- 140.0000				1	1	1			
L3 140.0000- 135.0000				1	1	1			
L4 135.0000- 130.0000				1	1	1			
L5 130.0000- 128.5000				1	1	1			
L6 128.5000- 128.2500				1	1	0.866566			
L7 128.2500- 123.2500				1	1	0.876544			
L8 123.2500- 118.2500				1	1	0.889288			
L9 118.2500- 113.2500				1	1	0.886814			
L10 113.2500- 109.0000				1	1	0.88856			
L11 109.0000- 108.7500				1	1	0.880849			
L12 108.7500- 104.1700				1	1	0.892966			
L13 104.1700- 103.9200				1	1	0.971053			
L14 103.9200- 103.1700				1	1	0.991449			
L15 103.1700- 102.9200				1	1	0.982753			

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>r</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L16				1	1	1.00107			
102.9200-102.4200									
L17				1	1	1.07939			
102.4200-102.1700									
L18				1	1	1.07222			
102.1700-100.9200									
L19				1	1	0.993983			
100.9200-100.6700									
L20				1	1	0.988267			
100.6700-99.5800									
L21				1	1	0.843197			
99.5800-99.3300									
L22				1	1	0.853564			
99.3300-95.2500									
L23				1	1	0.82938			
95.2500-95.0000									
L24				1	1	0.829373			
95.0000-90.0000									
L25				1	1	0.841113			
90.0000-85.0000									
L26				1	1	0.857005			
85.0000-80.5000									
L27				1	1	0.817668			
80.5000-80.2500									
L28				1	1	0.8289			
80.2500-75.2500									
L29				1	1	0.838534			
75.2500-73.5800									
L30				1	1	0.837582			
73.5800-73.3300									
L31				1	1	0.849073			
73.3300-69.0000									
L32				1	1	0.852502			
69.0000-67.0000									
L33				1	1	0.851548			
67.0000-66.7500									
L34				1	1	0.8358			
66.7500-66.5000									
L35				1	1	0.846744			
66.5000-61.5000									
L36				1	1	0.859921			
61.5000-56.5000									
L37				1	1	0.858553			
56.5000-51.5000									
L38				1	1	0.864155			
51.5000-48.2500									
L39				1	1	0.780428			
48.2500-48.0000									
L40				1	1	0.77929			
48.0000-44.2500									
L41				1	1	0.782664			
44.2500-44.0000									
L42				1	1	0.779586			
44.0000-43.0800									
L43				1	1	0.778755			
43.0800-42.8300									
L44				1	1	0.795543			
42.8300-37.8300									
L45				1	1	0.79478			
37.8300-30.0000									
L46				1	1	0.806063			
30.0000-29.0000									



Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>r</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L47 29.0000-24.0000				1	1	0.813472			
L48 24.0000-23.7500				1	1	0.812715			
L49 23.7500-23.5000				1	1	0.81196			
L50 23.5000-18.5000				1	1	0.820828			
L51 18.5000-13.5000				1	1	0.831169			
L52 13.5000-11.0000				1	1	0.836915			
L53 11.0000-10.7500				1	1	1.00049			
L54 10.7500-6.0000				1	1	0.966249			
L55 6.0000-5.7500				1	1	0.774305			
L56 5.7500-3.2500				1	1	0.78041			
L57 3.2500-3.0000				1	1	0.761			
L58 3.0000-0.0000				1	1	0.771424			

**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 r in	Perimeter r in	Weight plf
2" flat Climb Ladder Rail *	C	No	Surface Af (CaAa)	150.0000 - 0.0000	1	1	0.000 0.000	2.0000	8.0000	1.65
HB114-21U3M12-XXXF(1-1/4)	B	No	Surface Ar (CaAa)	138.0000 - 0.0000	3	3	0.375 0.497	1.5400		1.22
HB158-21U6S12-60M-01(1-5/8) *	B	No	Surface Ar (CaAa)	138.0000 - 0.0000	1	1	0.492 0.492	1.9900		1.90
AL7-50(1-5/8) *	C	No	Surface Ar (CaAa)	120.0000 - 0.0000	10	5	-0.286 -0.077	1.9600		0.52
LDF7-50A(1-5/8) ***	B	No	Surface Ar (CaAa)	99.0000 - 0.0000	3	2	0.235 0.320	1.9800		0.82
2.5" Solid Rod Reinforcing	C	No	Surface Ar (CaAa)	51.0000 - 0.0000	1	1	0.308 0.308	2.5000		0.00
2.5" Solid Rod Reinforcing	C	No	Surface Ar (CaAa)	51.0000 - 0.0000	1	1	-0.443 -0.443	2.5000		0.00
2.5" Solid Rod Reinforcing	B	No	Surface Ar (CaAa)	51.0000 - 0.0000	1	1	-0.193 -0.193	2.5000		0.00
2.5" Solid Rod Reinforcing *	A	No	Surface Ar (CaAa)	51.0000 - 0.0000	1	1	0.058 0.058	2.5000		0.00
CCI-065125 Reinforcement	A	No	Surface Af (CaAa)	47.0000 - 0.0000	1	1	-0.484 -0.484	0.1000	2.7000	0.00
CCI-065125 Reinforcement	C	No	Surface Af (CaAa)	47.0000 - 0.0000	1	1	-0.234 -0.234	0.1000	2.7000	0.00
CCI-065125 Reinforcement	B	No	Surface Af (CaAa)	47.0000 - 0.0000	1	1	0.016 0.016	0.1000	2.7000	0.00
CCI-065125 Reinforcement	A	No	Surface Af (CaAa)	47.0000 - 0.0000	1	1	0.266 0.266	0.1000	2.7000	0.00
CCI-050125 Reinforcement	A	No	Surface Af (CaAa)	69.0000 - 47.0000	1	1	-0.484 -0.484	0.1000	2.7000	0.00
CCI-050125 Reinforcement	C	No	Surface Af (CaAa)	69.0000 - 47.0000	1	1	-0.234 -0.234	0.1000	2.7000	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-050125 Reinforcement	B	No	Surface Af (CaAa)	69.0000 - 47.0000	1	1	0.016	0.1000	2.7000	0.00
CCI-050125 Reinforcement	A	No	Surface Af (CaAa)	69.0000 - 47.0000	1	1	0.266	0.1000	2.7000	0.00
CCI-040125 Reinforcement	C	No	Surface Af (CaAa)	82.0000 - 66.5000	1	1	0.266	0.1000	2.7000	0.00
CCI-040125 Reinforcement	C	No	Surface Af (CaAa)	82.0000 - 66.5000	1	1	-0.484	0.1000	2.7000	0.00
CCI-040125 Reinforcement	B	No	Surface Af (CaAa)	82.0000 - 66.5000	1	1	-0.234	0.1000	2.7000	0.00
CCI-040125 Reinforcement	A	No	Surface Af (CaAa)	82.0000 - 66.5000	1	1	0.016	0.1000	2.7000	0.00
CCI-050125 Reinforcement	A	No	Surface Af (CaAa)	109.5000 - 93.5000	1	1	-0.484	0.1000	2.7000	0.00
CCI-050125 Reinforcement	C	No	Surface Af (CaAa)	109.5000 - 93.5000	1	1	-0.234	0.1000	2.7000	0.00
CCI-050125 Reinforcement	B	No	Surface Af (CaAa)	100.5000 - 93.5000	1	1	-0.234	0.1000	2.7000	0.00
CCI-050125 Reinforcement	B	No	Surface Af (CaAa)	109.5000 - 98.0000	1	1	0.016	0.1000	2.7000	0.00
CCI-050125 Reinforcement	A	No	Surface Af (CaAa)	109.5000 - 98.0000	1	1	0.266	0.1000	2.7000	0.00
CCI-040125 Reinforcement	A	No	Surface Af (CaAa)	130.0000 - 110.0000	1	1	-0.484	0.1000	2.7000	0.00
CCI-040125 Reinforcement	C	No	Surface Af (CaAa)	130.0000 - 110.0000	1	1	-0.234	0.1000	2.7000	0.00
CCI-040125 Reinforcement	B	No	Surface Af (CaAa)	130.0000 - 110.0000	1	1	0.016	0.1000	2.7000	0.00
CCI-040125 Reinforcement	A	No	Surface Af (CaAa)	130.0000 - 110.0000	1	1	0.266	0.1000	2.7000	0.00
FP 6 x 2 Reinforcement	A	No	Surface Af (CaAa)	83.2230 - 3.5000	1	1	-0.234	0.1000	4.2000	0.00
FP 6 x 2 Reinforcement	A	No	Surface Af (CaAa)	108.6670 - 83.2230	1	1	-0.234	1.0295	6.0589	0.00
FP 6 x 2 Reinforcement	C	No	Surface Af (CaAa)	83.2230 - 8.5000	1	1	0.016	0.1000	4.2000	0.00
FP 6 x 2 Reinforcement	C	No	Surface Af (CaAa)	108.6670 - 83.2230	1	1	0.016	1.0295	6.0589	0.00
FP 6 x 2 Reinforcement	B	No	Surface Af (CaAa)	83.2230 - 3.5000	1	1	0.266	0.1000	4.2000	0.00
FP 6 x 2 Reinforcement	B	No	Surface Af (CaAa)	108.6670 - 83.2230	1	1	0.266	1.0295	6.0589	0.00
FP 6 x 2 Reinforcement	B	No	Surface Af (CaAa)	83.2230 - 8.5000	1	1	-0.484	0.1000	4.2000	0.00
FP 6 x 2 Reinforcement	B	No	Surface Af (CaAa)	108.6670 - 83.2230	1	1	-0.484	1.0295	6.0589	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 <sub>A,A</sub> ft <sup>2</sup> /ft	Weight plf
*****								
*****								
FXL-1873(1-5/8)	C	No	No	Inside Pole	150.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.67 0.67 0.67 0.67
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	150.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.05 0.05 0.05 0.05
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	150.0000 - 0.0000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.58 0.58 0.58 0.58

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>AA</sub> ft <sup>2</sup> /ft	Weight plf
2" (Nominal) Conduit	C	No	No	Inside Pole	150.0000 - 0.0000	2	No Ice	0.0000	0.72
							1/2" Ice	0.0000	0.72
							1" Ice	0.0000	0.72
							2" Ice	0.0000	0.72
EC4-50(1/2")	C	No	No	Inside Pole	138.0000 - 0.0000	2	No Ice	0.0000	0.16
							1/2" Ice	0.0000	0.16
							1" Ice	0.0000	0.16
							2" Ice	0.0000	0.16
LDF7-50A(1-5/8)	C	No	No	Inside Pole	99.0000 - 0.0000	3	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
							2" Ice	0.0000	0.82
HB114-U6S12-XXX-LI(1-1/4)	C	No	No	Inside Pole	99.0000 - 0.0000	1	No Ice	0.0000	1.70
							1/2" Ice	0.0000	1.70
							1" Ice	0.0000	1.70
							2" Ice	0.0000	1.70

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
L1	150.0000-145.0000	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	1.667	0.000	0.07
L2	145.0000-140.0000	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	1.667	0.000	0.07
L3	140.0000-135.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.983	0.000	0.02
		C	0.000	0.000	1.667	0.000	0.07
L4	135.0000-130.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	3.305	0.000	0.03
		C	0.000	0.000	1.667	0.000	0.07
L5	130.0000-128.5000	A	0.000	0.000	0.050	0.000	0.00
		B	0.000	0.000	1.017	0.000	0.01
		C	0.000	0.000	0.525	0.000	0.02
L6	128.5000-128.2500	A	0.000	0.000	0.008	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.087	0.000	0.00
L7	128.2500-123.2500	A	0.000	0.000	0.167	0.000	0.00
		B	0.000	0.000	3.388	0.000	0.03
		C	0.000	0.000	1.750	0.000	0.07
L8	123.2500-118.2500	A	0.000	0.000	0.167	0.000	0.00
		B	0.000	0.000	3.388	0.000	0.03
		C	0.000	0.000	3.465	0.000	0.08
L9	118.2500-113.2500	A	0.000	0.000	0.167	0.000	0.00
		B	0.000	0.000	3.388	0.000	0.03
		C	0.000	0.000	6.650	0.000	0.10
L10	113.2500-109.0000	A	0.000	0.000	0.125	0.000	0.00
		B	0.000	0.000	2.872	0.000	0.02
		C	0.000	0.000	5.644	0.000	0.08
L11	109.0000-108.7500	A	0.000	0.000	0.008	0.000	0.00
		B	0.000	0.000	0.169	0.000	0.00
		C	0.000	0.000	0.333	0.000	0.00
L12	108.7500-104.1700	A	0.000	0.000	0.924	0.000	0.00
		B	0.000	0.000	4.647	0.000	0.03
		C	0.000	0.000	6.863	0.000	0.09
L13	104.1700-103.9200	A	0.000	0.000	0.051	0.000	0.00
		B	0.000	0.000	0.255	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.00
L14	103.9200-103.1700	A	0.000	0.000	0.154	0.000	0.00
		B	0.000	0.000	0.766	0.000	0.00
		C	0.000	0.000	1.126	0.000	0.01
L15	103.1700-102.9200	A	0.000	0.000	0.051	0.000	0.00
		B	0.000	0.000	0.255	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.00

Tower Sectio n	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L16	102.9200-102.4200	A	0.000	0.000	0.102	0.000	0.00
		B	0.000	0.000	0.510	0.000	0.00
		C	0.000	0.000	0.751	0.000	0.01
L17	102.4200-102.1700	A	0.000	0.000	0.051	0.000	0.00
		B	0.000	0.000	0.255	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.00
L18	102.1700-100.9200	A	0.000	0.000	0.256	0.000	0.00
		B	0.000	0.000	1.276	0.000	0.01
		C	0.000	0.000	1.877	0.000	0.02
L19	100.9200-100.6700	A	0.000	0.000	0.051	0.000	0.00
		B	0.000	0.000	0.255	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.00
L20	100.6700-99.5800	A	0.000	0.000	0.223	0.000	0.00
		B	0.000	0.000	1.128	0.000	0.01
		C	0.000	0.000	1.637	0.000	0.02
L21	99.5800-99.3300	A	0.000	0.000	0.051	0.000	0.00
		B	0.000	0.000	0.259	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.00
L22	99.3300-95.2500	A	0.000	0.000	0.790	0.000	0.00
		B	0.000	0.000	5.672	0.000	0.03
		C	0.000	0.000	6.126	0.000	0.09
L23	95.2500-95.0000	A	0.000	0.000	0.047	0.000	0.00
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.375	0.000	0.01
L24	95.0000-90.0000	A	0.000	0.000	0.883	0.000	0.00
		B	0.000	0.000	7.026	0.000	0.04
		C	0.000	0.000	7.450	0.000	0.12
L25	90.0000-85.0000	A	0.000	0.000	0.858	0.000	0.00
		B	0.000	0.000	7.001	0.000	0.04
		C	0.000	0.000	7.425	0.000	0.12
L26	85.0000-80.5000	A	0.000	0.000	0.375	0.000	0.00
		B	0.000	0.000	5.482	0.000	0.04
		C	0.000	0.000	6.310	0.000	0.10
L27	80.5000-80.2500	A	0.000	0.000	0.008	0.000	0.00
		B	0.000	0.000	0.277	0.000	0.00
		C	0.000	0.000	0.341	0.000	0.01
L28	80.2500-75.2500	A	0.000	0.000	0.167	0.000	0.00
		B	0.000	0.000	5.535	0.000	0.04
		C	0.000	0.000	6.817	0.000	0.12
L29	75.2500-73.5800	A	0.000	0.000	0.056	0.000	0.00
		B	0.000	0.000	1.849	0.000	0.01
		C	0.000	0.000	2.277	0.000	0.04
L30	73.5800-73.3300	A	0.000	0.000	0.008	0.000	0.00
		B	0.000	0.000	0.277	0.000	0.00
		C	0.000	0.000	0.341	0.000	0.01
L31	73.3300-69.0000	A	0.000	0.000	0.144	0.000	0.00
		B	0.000	0.000	4.793	0.000	0.03
		C	0.000	0.000	5.903	0.000	0.10
L32	69.0000-67.0000	A	0.000	0.000	0.133	0.000	0.00
		B	0.000	0.000	2.247	0.000	0.02
		C	0.000	0.000	2.760	0.000	0.05
L33	67.0000-66.7500	A	0.000	0.000	0.017	0.000	0.00
		B	0.000	0.000	0.281	0.000	0.00
		C	0.000	0.000	0.345	0.000	0.01
L34	66.7500-66.5000	A	0.000	0.000	0.017	0.000	0.00
		B	0.000	0.000	0.281	0.000	0.00
		C	0.000	0.000	0.345	0.000	0.01
L35	66.5000-61.5000	A	0.000	0.000	0.250	0.000	0.00
		B	0.000	0.000	5.535	0.000	0.04
		C	0.000	0.000	6.733	0.000	0.12
L36	61.5000-56.5000	A	0.000	0.000	0.250	0.000	0.00
		B	0.000	0.000	5.535	0.000	0.04
		C	0.000	0.000	6.733	0.000	0.12
L37	56.5000-51.5000	A	0.000	0.000	0.250	0.000	0.00
		B	0.000	0.000	5.535	0.000	0.04
		C	0.000	0.000	6.733	0.000	0.12
L38	51.5000-48.2500	A	0.000	0.000	0.850	0.000	0.00
		B	0.000	0.000	4.285	0.000	0.03
		C	0.000	0.000	5.752	0.000	0.08

Tower Sectio n	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L39	48.2500-48.0000	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.339	0.000	0.00
		C	0.000	0.000	0.462	0.000	0.01
L40	48.0000-44.2500	A	0.000	0.000	1.125	0.000	0.00
		B	0.000	0.000	5.089	0.000	0.03
		C	0.000	0.000	6.925	0.000	0.09
L41	44.2500-44.0000	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.339	0.000	0.00
		C	0.000	0.000	0.462	0.000	0.01
L42	44.0000-43.0800	A	0.000	0.000	0.276	0.000	0.00
		B	0.000	0.000	1.248	0.000	0.01
		C	0.000	0.000	1.699	0.000	0.02
L43	43.0800-42.8300	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.339	0.000	0.00
		C	0.000	0.000	0.462	0.000	0.01
L44	42.8300-37.8300	A	0.000	0.000	1.500	0.000	0.00
		B	0.000	0.000	6.785	0.000	0.04
		C	0.000	0.000	9.233	0.000	0.12
L45	37.8300-30.0000	A	0.000	0.000	2.349	0.000	0.00
		B	0.000	0.000	10.625	0.000	0.06
		C	0.000	0.000	14.459	0.000	0.18
L46	30.0000-29.0000	A	0.000	0.000	0.300	0.000	0.00
		B	0.000	0.000	1.357	0.000	0.01
		C	0.000	0.000	1.847	0.000	0.02
L47	29.0000-24.0000	A	0.000	0.000	1.500	0.000	0.00
		B	0.000	0.000	6.785	0.000	0.04
		C	0.000	0.000	9.233	0.000	0.12
L48	24.0000-23.7500	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.339	0.000	0.00
		C	0.000	0.000	0.462	0.000	0.01
L49	23.7500-23.5000	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.339	0.000	0.00
		C	0.000	0.000	0.462	0.000	0.01
L50	23.5000-18.5000	A	0.000	0.000	1.500	0.000	0.00
		B	0.000	0.000	6.785	0.000	0.04
		C	0.000	0.000	9.233	0.000	0.12
L51	18.5000-13.5000	A	0.000	0.000	1.500	0.000	0.00
		B	0.000	0.000	6.785	0.000	0.04
		C	0.000	0.000	9.233	0.000	0.12
L52	13.5000-11.0000	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	3.393	0.000	0.02
		C	0.000	0.000	4.617	0.000	0.06
L53	11.0000-10.7500	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.339	0.000	0.00
		C	0.000	0.000	0.462	0.000	0.01
L54	10.7500-6.0000	A	0.000	0.000	1.425	0.000	0.00
		B	0.000	0.000	6.404	0.000	0.04
		C	0.000	0.000	8.730	0.000	0.11
L55	6.0000-5.7500	A	0.000	0.000	0.075	0.000	0.00
		B	0.000	0.000	0.335	0.000	0.00
		C	0.000	0.000	0.457	0.000	0.01
L56	5.7500-3.2500	A	0.000	0.000	0.746	0.000	0.00
		B	0.000	0.000	3.347	0.000	0.02
		C	0.000	0.000	4.575	0.000	0.06
L57	3.2500-3.0000	A	0.000	0.000	0.071	0.000	0.00
		B	0.000	0.000	0.331	0.000	0.00
		C	0.000	0.000	0.457	0.000	0.01
L58	3.0000-0.0000	A	0.000	0.000	0.850	0.000	0.00
		B	0.000	0.000	3.971	0.000	0.02
		C	0.000	0.000	5.490	0.000	0.07

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

Tower Sectio n	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L1	150.0000- 145.0000	A	1.481	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
		C		0.000	0.000	3.148	0.000	0.11
L2	145.0000-140.0000	A	1.476	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	3.142	0.000	0.11
L3	140.0000-135.0000	A	1.471	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	4.315	0.000	0.06
		C		0.000	0.000	3.137	0.000	0.11
L4	135.0000-130.0000	A	1.465	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	7.179	0.000	0.11
		C		0.000	0.000	3.132	0.000	0.11
L5	130.0000-128.5000	A	1.462	0.000	0.000	0.927	0.000	0.01
		B		0.000	0.000	2.615	0.000	0.04
		C		0.000	0.000	1.402	0.000	0.04
L6	128.5000-128.2500	A	1.461	0.000	0.000	0.154	0.000	0.00
		B		0.000	0.000	0.436	0.000	0.01
		C		0.000	0.000	0.234	0.000	0.01
L7	128.2500-123.2500	A	1.457	0.000	0.000	3.082	0.000	0.05
		B		0.000	0.000	8.703	0.000	0.13
		C		0.000	0.000	4.665	0.000	0.13
L8	123.2500-118.2500	A	1.452	0.000	0.000	3.070	0.000	0.05
		B		0.000	0.000	8.683	0.000	0.13
		C		0.000	0.000	7.432	0.000	0.17
L9	118.2500-113.2500	A	1.445	0.000	0.000	3.058	0.000	0.05
		B		0.000	0.000	8.664	0.000	0.13
		C		0.000	0.000	12.573	0.000	0.26
L10	113.2500-109.0000	A	1.440	0.000	0.000	2.284	0.000	0.03
		B		0.000	0.000	7.196	0.000	0.10
		C		0.000	0.000	10.518	0.000	0.21
L11	109.0000-108.7500	A	1.437	0.000	0.000	0.152	0.000	0.00
		B		0.000	0.000	0.432	0.000	0.01
		C		0.000	0.000	0.627	0.000	0.01
L12	108.7500-104.1700	A	1.433	0.000	0.000	4.839	0.000	0.07
		B		0.000	0.000	12.022	0.000	0.17
		C		0.000	0.000	13.542	0.000	0.26
L13	104.1700-103.9200	A	1.430	0.000	0.000	0.266	0.000	0.00
		B		0.000	0.000	0.659	0.000	0.01
		C		0.000	0.000	0.741	0.000	0.01
L14	103.9200-103.1700	A	1.429	0.000	0.000	0.797	0.000	0.01
		B		0.000	0.000	1.978	0.000	0.03
		C		0.000	0.000	2.221	0.000	0.04
L15	103.1700-102.9200	A	1.429	0.000	0.000	0.266	0.000	0.00
		B		0.000	0.000	0.659	0.000	0.01
		C		0.000	0.000	0.740	0.000	0.01
L16	102.9200-102.4200	A	1.428	0.000	0.000	0.531	0.000	0.01
		B		0.000	0.000	1.318	0.000	0.02
		C		0.000	0.000	1.480	0.000	0.03
L17	102.4200-102.1700	A	1.428	0.000	0.000	0.265	0.000	0.00
		B		0.000	0.000	0.659	0.000	0.01
		C		0.000	0.000	0.740	0.000	0.01
L18	102.1700-100.9200	A	1.427	0.000	0.000	1.326	0.000	0.02
		B		0.000	0.000	3.293	0.000	0.05
		C		0.000	0.000	3.699	0.000	0.07
L19	100.9200-100.6700	A	1.426	0.000	0.000	0.265	0.000	0.00
		B		0.000	0.000	0.658	0.000	0.01
		C		0.000	0.000	0.740	0.000	0.01
L20	100.6700-99.5800	A	1.425	0.000	0.000	1.155	0.000	0.02
		B		0.000	0.000	3.128	0.000	0.05
		C		0.000	0.000	3.224	0.000	0.06
L21	99.5800-99.3300	A	1.424	0.000	0.000	0.265	0.000	0.00
		B		0.000	0.000	0.728	0.000	0.01
		C		0.000	0.000	0.739	0.000	0.01
L22	99.3300-95.2500	A	1.421	0.000	0.000	3.486	0.000	0.05
		B		0.000	0.000	14.229	0.000	0.21
		C		0.000	0.000	12.053	0.000	0.25
L23	95.2500-95.0000	A	1.417	0.000	0.000	0.189	0.000	0.00
		B		0.000	0.000	0.864	0.000	0.01
		C		0.000	0.000	0.738	0.000	0.02
L24	95.0000-90.0000	A	1.413	0.000	0.000	2.720	0.000	0.04
		B		0.000	0.000	16.267	0.000	0.24

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L25	90.0000-85.0000	C		0.000	0.000	13.692	0.000	0.29
		A	1.406	0.000	0.000	2.263	0.000	0.03
		B		0.000	0.000	15.804	0.000	0.23
L26	85.0000-80.5000	C		0.000	0.000	13.218	0.000	0.28
		A	1.398	0.000	0.000	2.053	0.000	0.03
		B		0.000	0.000	13.786	0.000	0.20
		C		0.000	0.000	12.340	0.000	0.26
L27	80.5000-80.2500	A	1.394	0.000	0.000	0.148	0.000	0.00
		B		0.000	0.000	0.783	0.000	0.01
		C		0.000	0.000	0.768	0.000	0.02
L28	80.2500-75.2500	A	1.389	0.000	0.000	2.945	0.000	0.05
		B		0.000	0.000	15.636	0.000	0.24
		C		0.000	0.000	15.334	0.000	0.32
L29	75.2500-73.5800	A	1.383	0.000	0.000	0.980	0.000	0.02
		B		0.000	0.000	5.209	0.000	0.08
		C		0.000	0.000	5.111	0.000	0.11
L30	73.5800-73.3300	A	1.381	0.000	0.000	0.146	0.000	0.00
		B		0.000	0.000	0.779	0.000	0.01
		C		0.000	0.000	0.765	0.000	0.02
L31	73.3300-69.0000	A	1.377	0.000	0.000	2.529	0.000	0.04
		B		0.000	0.000	13.472	0.000	0.20
		C		0.000	0.000	13.224	0.000	0.27
L32	69.0000-67.0000	A	1.371	0.000	0.000	2.336	0.000	0.04
		B		0.000	0.000	6.807	0.000	0.10
		C		0.000	0.000	6.692	0.000	0.13
L33	67.0000-66.7500	A	1.368	0.000	0.000	0.290	0.000	0.00
		B		0.000	0.000	0.848	0.000	0.01
		C		0.000	0.000	0.834	0.000	0.02
L34	66.7500-66.5000	A	1.368	0.000	0.000	0.290	0.000	0.00
		B		0.000	0.000	0.847	0.000	0.01
		C		0.000	0.000	0.834	0.000	0.02
L35	66.5000-61.5000	A	1.362	0.000	0.000	4.337	0.000	0.07
		B		0.000	0.000	15.462	0.000	0.23
		C		0.000	0.000	13.748	0.000	0.29
L36	61.5000-56.5000	A	1.351	0.000	0.000	4.304	0.000	0.07
		B		0.000	0.000	15.391	0.000	0.23
		C		0.000	0.000	13.701	0.000	0.29
L37	56.5000-51.5000	A	1.339	0.000	0.000	4.268	0.000	0.06
		B		0.000	0.000	15.313	0.000	0.23
		C		0.000	0.000	13.651	0.000	0.29
L38	51.5000-48.2500	A	1.329	0.000	0.000	4.172	0.000	0.06
		B		0.000	0.000	11.327	0.000	0.16
		C		0.000	0.000	11.680	0.000	0.22
L39	48.2500-48.0000	A	1.324	0.000	0.000	0.340	0.000	0.00
		B		0.000	0.000	0.889	0.000	0.01
		C		0.000	0.000	0.937	0.000	0.02
L40	48.0000-44.2500	A	1.318	0.000	0.000	5.080	0.000	0.07
		B		0.000	0.000	13.309	0.000	0.19
		C		0.000	0.000	14.024	0.000	0.26
L41	44.2500-44.0000	A	1.313	0.000	0.000	0.338	0.000	0.00
		B		0.000	0.000	0.885	0.000	0.01
		C		0.000	0.000	0.933	0.000	0.02
L42	44.0000-43.0800	A	1.311	0.000	0.000	1.241	0.000	0.02
		B		0.000	0.000	3.255	0.000	0.05
		C		0.000	0.000	3.432	0.000	0.06
L43	43.0800-42.8300	A	1.309	0.000	0.000	0.337	0.000	0.00
		B		0.000	0.000	0.884	0.000	0.01
		C		0.000	0.000	0.932	0.000	0.02
L44	42.8300-37.8300	A	1.301	0.000	0.000	6.703	0.000	0.09
		B		0.000	0.000	17.613	0.000	0.25
		C		0.000	0.000	18.588	0.000	0.34
L45	37.8300-30.0000	A	1.278	0.000	0.000	10.357	0.000	0.14
		B		0.000	0.000	27.320	0.000	0.38
		C		0.000	0.000	28.890	0.000	0.53
L46	30.0000-29.0000	A	1.261	0.000	0.000	1.323	0.000	0.02
		B		0.000	0.000	3.489	0.000	0.05
		C		0.000	0.000	3.690	0.000	0.07
L47	29.0000-24.0000	A	1.247	0.000	0.000	6.489	0.000	0.09
		B		0.000	0.000	17.212	0.000	0.24

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L48	24.0000-23.7500	C		0.000	0.000	18.254	0.000	0.33
		A	1.234	0.000	0.000	0.322	0.000	0.00
		B		0.000	0.000	0.856	0.000	0.01
L49	23.7500-23.5000	C		0.000	0.000	0.909	0.000	0.02
		A	1.233	0.000	0.000	0.322	0.000	0.00
		B		0.000	0.000	0.855	0.000	0.01
L50	23.5000-18.5000	C		0.000	0.000	0.908	0.000	0.02
		A	1.219	0.000	0.000	6.374	0.000	0.08
		B		0.000	0.000	16.997	0.000	0.23
L51	18.5000-13.5000	C		0.000	0.000	18.075	0.000	0.32
		A	1.186	0.000	0.000	6.244	0.000	0.08
		B		0.000	0.000	16.752	0.000	0.22
L52	13.5000-11.0000	C		0.000	0.000	17.870	0.000	0.32
		A	1.155	0.000	0.000	3.059	0.000	0.04
		B		0.000	0.000	8.259	0.000	0.11
L53	11.0000-10.7500	C		0.000	0.000	8.838	0.000	0.16
		A	1.141	0.000	0.000	0.303	0.000	0.00
		B		0.000	0.000	0.821	0.000	0.01
L54	10.7500-6.0000	C		0.000	0.000	0.879	0.000	0.02
		A	1.112	0.000	0.000	5.649	0.000	0.07
		B		0.000	0.000	14.787	0.000	0.19
L55	6.0000-5.7500	C		0.000	0.000	15.938	0.000	0.28
		A	1.073	0.000	0.000	0.290	0.000	0.00
		B		0.000	0.000	0.737	0.000	0.01
L56	5.7500-3.2500	C		0.000	0.000	0.800	0.000	0.01
		A	1.045	0.000	0.000	2.783	0.000	0.03
		B		0.000	0.000	7.226	0.000	0.09
L57	3.2500-3.0000	C		0.000	0.000	7.930	0.000	0.14
		A	1.007	0.000	0.000	0.222	0.000	0.00
		B		0.000	0.000	0.662	0.000	0.01
L58	3.0000-0.0000	C		0.000	0.000	0.783	0.000	0.01
		A	0.936	0.000	0.000	2.534	0.000	0.03
		B		0.000	0.000	7.703	0.000	0.09
		C		0.000	0.000	9.173	0.000	0.15

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>x</sub> in	CP <sub>z</sub> in	CP <sub>x</sub> Ice in	CP <sub>z</sub> Ice in
L1	150.0000-145.0000	0.0000	1.8242	0.0000	2.1788
L2	145.0000-140.0000	0.0000	1.8318	0.0000	2.2022
L3	140.0000-135.0000	1.5998	2.2162	1.8964	2.4019
L4	135.0000-130.0000	2.3825	2.4213	2.6556	2.5144
L5	130.0000-128.5000	2.4199	2.4015	2.7661	2.2148
L6	128.5000-128.2500	2.4377	2.4189	2.7854	2.2301
L7	128.2500-123.2500	2.4538	2.4344	2.8207	2.2577
L8	123.2500-118.2500	2.6991	3.4370	2.9153	2.9316
L9	118.2500-113.2500	3.0274	4.7975	3.0187	3.8501
L10	113.2500-109.0000	3.0708	4.8720	3.0772	3.9814
L11	109.0000-108.7500	3.0961	4.9007	3.1186	3.9734
L12	108.7500-104.1700	2.0207	4.1526	2.1165	3.7651
L13	104.1700-103.9200	2.0272	4.1872	2.1273	3.8088
L14	103.9200-103.1700	2.0298	4.1927	2.1322	3.8176



Section	Elevation ft	CP <sub>x</sub> in	CP <sub>z</sub> in	CP <sub>x</sub> Ice in	CP <sub>z</sub> Ice in
L15	103.1700-102.9200	2.0353	4.2042	2.1385	3.8289
L16	102.9200-102.4200	2.0372	4.2081	2.1421	3.8354
L17	102.4200-102.1700	2.0369	4.2076	2.1445	3.8399
L18	102.1700-100.9200	2.0413	4.2168	2.1520	3.8534
L19	100.9200-100.6700	2.0467	4.2283	2.1601	3.8680
L20	100.6700-99.5800	2.0499	4.1888	2.1583	3.5066
L21	99.5800-99.3300	2.0591	4.1992	2.1661	3.4547
L22	99.3300-95.2500	2.8188	4.0476	2.7285	3.5908
L23	95.2500-95.0000	2.8877	4.0734	2.7618	3.8126
L24	95.0000-90.0000	2.9123	4.1075	2.8183	3.8504
L25	90.0000-85.0000	2.9528	4.1662	2.8891	3.9311
L26	85.0000-80.5000	3.4161	4.2676	3.0136	3.7377
L27	80.5000-80.2500	3.7271	4.2883	2.9002	3.2323
L28	80.2500-75.2500	3.7477	4.3117	2.9307	3.2667
L29	75.2500-73.5800	3.7744	4.3420	2.9696	3.3105
L30	73.5800-73.3300	3.7822	4.3509	2.9808	3.3231
L31	73.3300-69.0000	3.7999	4.3710	3.0072	3.3529
L32	69.0000-67.0000	3.8117	4.3363	3.1493	3.1721
L33	67.0000-66.7500	3.8215	4.3473	3.1660	3.1900
L34	66.7500-66.5000	3.8262	4.3526	3.1703	3.1944
L35	66.5000-61.5000	3.9097	4.4910	3.6388	4.0307
L36	61.5000-56.5000	3.9503	4.5371	3.7100	4.1102
L37	56.5000-51.5000	3.9903	4.5824	3.7804	4.1889
L38	51.5000-48.2500	3.4886	4.0060	3.3354	3.6963
L39	48.2500-48.0000	3.4286	3.9369	3.2835	3.6388
L40	48.0000-44.2500	3.4442	3.9547	3.3082	3.6665
L41	44.2500-44.0000	3.4621	3.9750	3.3340	3.6952
L42	44.0000-43.0800	3.4667	3.9803	3.3413	3.7034
L43	43.0800-42.8300	3.4713	3.9855	3.3485	3.7114
L44	42.8300-37.8300	3.4905	4.0074	3.3803	3.7469
L45	37.8300-30.0000	3.5393	4.0629	3.4585	3.8342
L46	30.0000-29.0000	3.5467	4.0713	3.4681	3.8450
L47	29.0000-24.0000	3.5691	4.0968	3.5074	3.8889
L48	24.0000-23.7500	3.5892	4.1197	3.5403	3.9256
L49	23.7500-23.5000	3.5911	4.1219	3.5434	3.9291
L50	23.5000-18.5000	3.6101	4.1434	3.5757	3.9652
L51	18.5000-13.5000	3.6462	4.1846	3.6374	4.0341
L52	13.5000-11.0000	3.6730	4.2150	3.6836	4.0857
L53	11.0000-10.7500	3.6774	4.2200	3.6977	4.1015
L54	10.7500-6.0000	3.7268	4.2518	3.9745	4.2219
L55	6.0000-5.7500	3.7776	4.2876	4.2304	4.3376
L56	5.7500-3.2500	3.7887	4.2956	4.2588	4.3379
L57	3.2500-3.0000	4.0796	4.5829	4.4132	4.1941
L58	3.0000-0.0000	4.0979	4.6033	4.4119	4.2211

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

### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L1	1	2" flat Climb Ladder Rail	145.00 - 150.00	1.0000	1.0000
L2	1	2" flat Climb Ladder Rail	140.00 - 145.00	1.0000	1.0000
L3	1	2" flat Climb Ladder Rail	135.00 - 140.00	1.0000	1.0000
L3	8	HB114-21U3M12-XXXF(1-1/4)	135.00 - 138.00	1.0000	1.0000
L3	9	HB158-21U6S12-60M-01(1-5/8)	135.00 - 138.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L4	1	2" flat Climb Ladder Rail	130.00 - 135.00	1.0000	1.0000
L4	8	HB114-21U3M12-XXXF(1-1/4)	130.00 - 135.00	1.0000	1.0000
L4	9	HB158-21U6S12-60M-01(1-5/8)	130.00 - 135.00	1.0000	1.0000
L5	1	2" flat Climb Ladder Rail	128.50 - 130.00	1.0000	1.0000
L5	8	HB114-21U3M12-XXXF(1-1/4)	128.50 - 130.00	1.0000	1.0000
L5	9	HB158-21U6S12-60M-01(1-5/8)	128.50 - 130.00	1.0000	1.0000
L5	41	CCI-040125 Reinforcement	128.50 - 130.00	1.0000	1.0000
L5	42	CCI-040125 Reinforcement	128.50 - 130.00	1.0000	1.0000
L5	43	CCI-040125 Reinforcement	128.50 - 130.00	1.0000	1.0000
L5	44	CCI-040125 Reinforcement	128.50 - 130.00	1.0000	1.0000
L6	1	2" flat Climb Ladder Rail	128.25 - 128.50	1.0000	1.0000
L6	8	HB114-21U3M12-XXXF(1-1/4)	128.25 - 128.50	1.0000	1.0000
L6	9	HB158-21U6S12-60M-01(1-5/8)	128.25 - 128.50	1.0000	1.0000
L6	41	CCI-040125 Reinforcement	128.25 - 128.50	1.0000	1.0000
L6	42	CCI-040125 Reinforcement	128.25 - 128.50	1.0000	1.0000
L6	43	CCI-040125 Reinforcement	128.25 - 128.50	1.0000	1.0000
L6	44	CCI-040125 Reinforcement	128.25 - 128.50	1.0000	1.0000
L7	1	2" flat Climb Ladder Rail	123.25 - 128.25	1.0000	1.0000
L7	8	HB114-21U3M12-XXXF(1-1/4)	123.25 - 128.25	1.0000	1.0000
L7	9	HB158-21U6S12-60M-01(1-5/8)	123.25 - 128.25	1.0000	1.0000
L7	41	CCI-040125 Reinforcement	123.25 - 128.25	1.0000	1.0000
L7	42	CCI-040125 Reinforcement	123.25 - 128.25	1.0000	1.0000
L7	43	CCI-040125 Reinforcement	123.25 - 128.25	1.0000	1.0000
L7	44	CCI-040125 Reinforcement	123.25 - 128.25	1.0000	1.0000
L8	1	2" flat Climb Ladder Rail	118.25 - 123.25	1.0000	1.0000
L8	8	HB114-21U3M12-XXXF(1-1/4)	118.25 - 123.25	1.0000	1.0000
L8	9	HB158-21U6S12-60M-01(1-5/8)	118.25 - 123.25	1.0000	1.0000
L8	12	AL7-50(1-5/8)	118.25 - 120.00	1.0000	1.0000
L8	41	CCI-040125 Reinforcement	118.25 - 123.25	1.0000	1.0000
L8	42	CCI-040125 Reinforcement	118.25 - 123.25	1.0000	1.0000
L8	43	CCI-040125 Reinforcement	118.25 - 123.25	1.0000	1.0000
L8	44	CCI-040125 Reinforcement	118.25 - 123.25	1.0000	1.0000
L9	1	2" flat Climb Ladder Rail	113.25 - 118.25	1.0000	1.0000
L9	8	HB114-21U3M12-XXXF(1-1/4)	113.25 - 118.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L9	9	HB158-21U6S12-60M-01(1-5/8)	113.25 - 118.25	1.0000	1.0000
L9	12	AL7-50(1-5/8)	113.25 - 118.25	1.0000	1.0000
L9	41	CCI-040125 Reinforcement	113.25 - 118.25	1.0000	1.0000
L9	42	CCI-040125 Reinforcement	113.25 - 118.25	1.0000	1.0000
L9	43	CCI-040125 Reinforcement	113.25 - 118.25	1.0000	1.0000
L9	44	CCI-040125 Reinforcement	113.25 - 118.25	1.0000	1.0000
L10	1	2" flat Climb Ladder Rail	109.00 - 113.25	1.0000	1.0000
L10	8	HB114-21U3M12-XXXF(1-1/4)	109.00 - 113.25	1.0000	1.0000
L10	9	HB158-21U6S12-60M-01(1-5/8)	109.00 - 113.25	1.0000	1.0000
L10	12	AL7-50(1-5/8)	109.00 - 113.25	1.0000	1.0000
L10	36	CCI-050125 Reinforcement	109.00 - 109.50	1.0000	1.0000
L10	37	CCI-050125 Reinforcement	109.00 - 109.50	1.0000	1.0000
L10	39	CCI-050125 Reinforcement	109.00 - 109.50	1.0000	1.0000
L10	40	CCI-050125 Reinforcement	109.00 - 109.50	1.0000	1.0000
L10	41	CCI-040125 Reinforcement	110.00 - 113.25	1.0000	1.0000
L10	42	CCI-040125 Reinforcement	110.00 - 113.25	1.0000	1.0000
L10	43	CCI-040125 Reinforcement	110.00 - 113.25	1.0000	1.0000
L10	44	CCI-040125 Reinforcement	110.00 - 113.25	1.0000	1.0000
L11	1	2" flat Climb Ladder Rail	108.75 - 109.00	1.0000	1.0000
L11	8	HB114-21U3M12-XXXF(1-1/4)	108.75 - 109.00	1.0000	1.0000
L11	9	HB158-21U6S12-60M-01(1-5/8)	108.75 - 109.00	1.0000	1.0000
L11	12	AL7-50(1-5/8)	108.75 - 109.00	1.0000	1.0000
L11	36	CCI-050125 Reinforcement	108.75 - 109.00	1.0000	1.0000
L11	37	CCI-050125 Reinforcement	108.75 - 109.00	1.0000	1.0000
L11	39	CCI-050125 Reinforcement	108.75 - 109.00	1.0000	1.0000
L11	40	CCI-050125 Reinforcement	108.75 - 109.00	1.0000	1.0000
L12	1	2" flat Climb Ladder Rail	104.17 - 108.75	1.0000	1.0000
L12	8	HB114-21U3M12-XXXF(1-1/4)	104.17 - 108.75	1.0000	1.0000
L12	9	HB158-21U6S12-60M-01(1-5/8)	104.17 - 108.75	1.0000	1.0000
L12	12	AL7-50(1-5/8)	104.17 - 108.75	1.0000	1.0000
L12	36	CCI-050125 Reinforcement	104.17 - 108.75	1.0000	1.0000
L12	37	CCI-050125 Reinforcement	104.17 - 108.75	1.0000	1.0000
L12	39	CCI-050125 Reinforcement	104.17 - 108.75	1.0000	1.0000
L12	40	CCI-050125 Reinforcement	104.17 - 108.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L12	46	FP 6 x 2 Reinforcement	104.17 - 108.67	1.0000	1.0000
L12	48	FP 6 x 2 Reinforcement	104.17 - 108.67	1.0000	1.0000
L12	50	FP 6 x 2 Reinforcement	104.17 - 108.67	1.0000	1.0000
L12	52	FP 6 x 2 Reinforcement	104.17 - 108.67	1.0000	1.0000
L13	1	2" flat Climb Ladder Rail	103.92 - 104.17	1.0000	1.0000
L13	8	HB114-21U3M12-XXXF(1-1/4)	103.92 - 104.17	1.0000	1.0000
L13	9	HB158-21U6S12-60M-01(1-5/8)	103.92 - 104.17	1.0000	1.0000
L13	12	AL7-50(1-5/8)	103.92 - 104.17	1.0000	1.0000
L13	36	CCI-050125 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	37	CCI-050125 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	39	CCI-050125 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	40	CCI-050125 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	46	FP 6 x 2 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	48	FP 6 x 2 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	50	FP 6 x 2 Reinforcement	103.92 - 104.17	1.0000	1.0000
L13	52	FP 6 x 2 Reinforcement	103.92 - 104.17	1.0000	1.0000
L14	1	2" flat Climb Ladder Rail	103.17 - 103.92	1.0000	1.0000
L14	8	HB114-21U3M12-XXXF(1-1/4)	103.17 - 103.92	1.0000	1.0000
L14	9	HB158-21U6S12-60M-01(1-5/8)	103.17 - 103.92	1.0000	1.0000
L14	12	AL7-50(1-5/8)	103.17 - 103.92	1.0000	1.0000
L14	36	CCI-050125 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	37	CCI-050125 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	39	CCI-050125 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	40	CCI-050125 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	46	FP 6 x 2 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	48	FP 6 x 2 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	50	FP 6 x 2 Reinforcement	103.17 - 103.92	1.0000	1.0000
L14	52	FP 6 x 2 Reinforcement	103.17 - 103.92	1.0000	1.0000
L15	1	2" flat Climb Ladder Rail	102.92 - 103.17	1.0000	1.0000
L15	8	HB114-21U3M12-XXXF(1-1/4)	102.92 - 103.17	1.0000	1.0000
L15	9	HB158-21U6S12-60M-01(1-5/8)	102.92 - 103.17	1.0000	1.0000
L15	12	AL7-50(1-5/8)	102.92 - 103.17	1.0000	1.0000
L15	36	CCI-050125 Reinforcement	102.92 - 103.17	1.0000	1.0000
L15	37	CCI-050125 Reinforcement	102.92 - 103.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L15	39	CCI-050125 Reinforcement	102.92 - 103.17	1.0000	1.0000
L15	40	CCI-050125 Reinforcement	102.92 - 103.17	1.0000	1.0000
L15	46	FP 6 x 2 Reinforcement	102.92 - 103.17	1.0000	1.0000
L15	48	FP 6 x 2 Reinforcement	102.92 - 103.17	1.0000	1.0000
L15	50	FP 6 x 2 Reinforcement	102.92 - 103.17	1.0000	1.0000
L15	52	FP 6 x 2 Reinforcement	102.92 - 103.17	1.0000	1.0000
L16	1	2" flat Climb Ladder Rail	102.42 - 102.92	1.0000	1.0000
L16	8	HB114-21U3M12-XXXF(1-1/4)	102.42 - 102.92	1.0000	1.0000
L16	9	HB158-21U6S12-60M-01(1-5/8)	102.42 - 102.92	1.0000	1.0000
L16	12	AL7-50(1-5/8)	102.42 - 102.92	1.0000	1.0000
L16	36	CCI-050125 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	37	CCI-050125 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	39	CCI-050125 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	40	CCI-050125 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	46	FP 6 x 2 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	48	FP 6 x 2 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	50	FP 6 x 2 Reinforcement	102.42 - 102.92	1.0000	1.0000
L16	52	FP 6 x 2 Reinforcement	102.42 - 102.92	1.0000	1.0000
L17	1	2" flat Climb Ladder Rail	102.17 - 102.42	1.0000	1.0000
L17	8	HB114-21U3M12-XXXF(1-1/4)	102.17 - 102.42	1.0000	1.0000
L17	9	HB158-21U6S12-60M-01(1-5/8)	102.17 - 102.42	1.0000	1.0000
L17	12	AL7-50(1-5/8)	102.17 - 102.42	1.0000	1.0000
L17	36	CCI-050125 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	37	CCI-050125 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	39	CCI-050125 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	40	CCI-050125 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	46	FP 6 x 2 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	48	FP 6 x 2 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	50	FP 6 x 2 Reinforcement	102.17 - 102.42	1.0000	1.0000
L17	52	FP 6 x 2 Reinforcement	102.17 - 102.42	1.0000	1.0000
L18	1	2" flat Climb Ladder Rail	100.92 - 102.17	1.0000	1.0000
L18	8	HB114-21U3M12-XXXF(1-1/4)	100.92 - 102.17	1.0000	1.0000
L18	9	HB158-21U6S12-60M-01(1-5/8)	100.92 - 102.17	1.0000	1.0000
L18	12	AL7-50(1-5/8)	100.92 - 102.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L18	36	CCI-050125 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	37	CCI-050125 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	39	CCI-050125 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	40	CCI-050125 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	46	FP 6 x 2 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	48	FP 6 x 2 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	50	FP 6 x 2 Reinforcement	100.92 - 102.17	1.0000	1.0000
L18	52	FP 6 x 2 Reinforcement	100.92 - 102.17	1.0000	1.0000
L19	1	2" flat Climb Ladder Rail	100.67 - 100.92	1.0000	1.0000
L19	8	HB114-21U3M12-XXXF(1-1/4)	100.67 - 100.92	1.0000	1.0000
L19	9	HB158-21U6S12-60M-01(1-5/8)	100.67 - 100.92	1.0000	1.0000
L19	12	AL7-50(1-5/8)	100.67 - 100.92	1.0000	1.0000
L19	36	CCI-050125 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	37	CCI-050125 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	39	CCI-050125 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	40	CCI-050125 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	46	FP 6 x 2 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	48	FP 6 x 2 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	50	FP 6 x 2 Reinforcement	100.67 - 100.92	1.0000	1.0000
L19	52	FP 6 x 2 Reinforcement	100.67 - 100.92	1.0000	1.0000
L20	1	2" flat Climb Ladder Rail	99.58 - 100.67	1.0000	1.0000
L20	8	HB114-21U3M12-XXXF(1-1/4)	99.58 - 100.67	1.0000	1.0000
L20	9	HB158-21U6S12-60M-01(1-5/8)	99.58 - 100.67	1.0000	1.0000
L20	12	AL7-50(1-5/8)	99.58 - 100.67	1.0000	1.0000
L20	36	CCI-050125 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	37	CCI-050125 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	38	CCI-050125 Reinforcement	99.58 - 100.50	1.0000	1.0000
L20	39	CCI-050125 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	40	CCI-050125 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	46	FP 6 x 2 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	48	FP 6 x 2 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	50	FP 6 x 2 Reinforcement	99.58 - 100.67	1.0000	1.0000
L20	52	FP 6 x 2 Reinforcement	99.58 - 100.67	1.0000	1.0000
L21	1	2" flat Climb Ladder Rail	99.33 - 99.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L21	8	HB114-21U3M12-XXXF(1-1/4)	99.33 - 99.58	1.0000	1.0000
L21	9	HB158-21U6S12-60M-01(1-5/8)	99.33 - 99.58	1.0000	1.0000
L21	12	AL7-50(1-5/8)	99.33 - 99.58	1.0000	1.0000
L21	36	CCI-050125 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	37	CCI-050125 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	38	CCI-050125 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	39	CCI-050125 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	40	CCI-050125 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	46	FP 6 x 2 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	48	FP 6 x 2 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	50	FP 6 x 2 Reinforcement	99.33 - 99.58	1.0000	1.0000
L21	52	FP 6 x 2 Reinforcement	99.33 - 99.58	1.0000	1.0000
L22	1	2" flat Climb Ladder Rail	95.25 - 99.33	1.0000	1.0000
L22	8	HB114-21U3M12-XXXF(1-1/4)	95.25 - 99.33	1.0000	1.0000
L22	9	HB158-21U6S12-60M-01(1-5/8)	95.25 - 99.33	1.0000	1.0000
L22	12	AL7-50(1-5/8)	95.25 - 99.33	1.0000	1.0000
L22	15	LDF7-50A(1-5/8)	95.25 - 99.00	1.0000	1.0000
L22	36	CCI-050125 Reinforcement	95.25 - 99.33	1.0000	1.0000
L22	37	CCI-050125 Reinforcement	95.25 - 99.33	1.0000	1.0000
L22	38	CCI-050125 Reinforcement	95.25 - 99.33	1.0000	1.0000
L22	39	CCI-050125 Reinforcement	98.00 - 99.33	1.0000	1.0000
L22	40	CCI-050125 Reinforcement	98.00 - 99.33	1.0000	1.0000
L22	46	FP 6 x 2 Reinforcement	95.25 - 99.33	1.0000	1.0000
L22	48	FP 6 x 2 Reinforcement	95.25 - 99.33	1.0000	1.0000
L22	50	FP 6 x 2 Reinforcement	95.25 - 99.33	1.0000	1.0000
L22	52	FP 6 x 2 Reinforcement	95.25 - 99.33	1.0000	1.0000
L23	1	2" flat Climb Ladder Rail	95.00 - 95.25	1.0000	1.0000
L23	8	HB114-21U3M12-XXXF(1-1/4)	95.00 - 95.25	1.0000	1.0000
L23	9	HB158-21U6S12-60M-01(1-5/8)	95.00 - 95.25	1.0000	1.0000
L23	12	AL7-50(1-5/8)	95.00 - 95.25	1.0000	1.0000
L23	15	LDF7-50A(1-5/8)	95.00 - 95.25	1.0000	1.0000
L23	36	CCI-050125 Reinforcement	95.00 - 95.25	1.0000	1.0000
L23	37	CCI-050125 Reinforcement	95.00 - 95.25	1.0000	1.0000
L23	38	CCI-050125 Reinforcement	95.00 - 95.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L23	46	FP 6 x 2 Reinforcement	95.00 - 95.25	1.0000	1.0000
L23	48	FP 6 x 2 Reinforcement	95.00 - 95.25	1.0000	1.0000
L23	50	FP 6 x 2 Reinforcement	95.00 - 95.25	1.0000	1.0000
L23	52	FP 6 x 2 Reinforcement	95.00 - 95.25	1.0000	1.0000
L24	1	2" flat Climb Ladder Rail	90.00 - 95.00	1.0000	1.0000
L24	8	HB114-21U3M12-XXXF(1-1/4)	90.00 - 95.00	1.0000	1.0000
L24	9	HB158-21U6S12-60M-01(1-5/8)	90.00 - 95.00	1.0000	1.0000
L24	12	AL7-50(1-5/8)	90.00 - 95.00	1.0000	1.0000
L24	15	LDF7-50A(1-5/8)	90.00 - 95.00	1.0000	1.0000
L24	36	CCI-050125 Reinforcement	93.50 - 95.00	1.0000	1.0000
L24	37	CCI-050125 Reinforcement	93.50 - 95.00	1.0000	1.0000
L24	38	CCI-050125 Reinforcement	93.50 - 95.00	1.0000	1.0000
L24	46	FP 6 x 2 Reinforcement	90.00 - 95.00	1.0000	1.0000
L24	48	FP 6 x 2 Reinforcement	90.00 - 95.00	1.0000	1.0000
L24	50	FP 6 x 2 Reinforcement	90.00 - 95.00	1.0000	1.0000
L24	52	FP 6 x 2 Reinforcement	90.00 - 95.00	1.0000	1.0000
L25	1	2" flat Climb Ladder Rail	85.00 - 90.00	1.0000	1.0000
L25	8	HB114-21U3M12-XXXF(1-1/4)	85.00 - 90.00	1.0000	1.0000
L25	9	HB158-21U6S12-60M-01(1-5/8)	85.00 - 90.00	1.0000	1.0000
L25	12	AL7-50(1-5/8)	85.00 - 90.00	1.0000	1.0000
L25	15	LDF7-50A(1-5/8)	85.00 - 90.00	1.0000	1.0000
L25	46	FP 6 x 2 Reinforcement	85.00 - 90.00	1.0000	1.0000
L25	48	FP 6 x 2 Reinforcement	85.00 - 90.00	1.0000	1.0000
L25	50	FP 6 x 2 Reinforcement	85.00 - 90.00	1.0000	1.0000
L25	52	FP 6 x 2 Reinforcement	85.00 - 90.00	1.0000	1.0000
L26	1	2" flat Climb Ladder Rail	80.50 - 85.00	1.0000	1.0000
L26	8	HB114-21U3M12-XXXF(1-1/4)	80.50 - 85.00	1.0000	1.0000
L26	9	HB158-21U6S12-60M-01(1-5/8)	80.50 - 85.00	1.0000	1.0000
L26	12	AL7-50(1-5/8)	80.50 - 85.00	1.0000	1.0000
L26	15	LDF7-50A(1-5/8)	80.50 - 85.00	1.0000	1.0000
L26	32	CCI-040125 Reinforcement	80.50 - 82.00	1.0000	1.0000
L26	33	CCI-040125 Reinforcement	80.50 - 82.00	1.0000	1.0000
L26	34	CCI-040125 Reinforcement	80.50 - 82.00	1.0000	1.0000
L26	35	CCI-040125 Reinforcement	80.50 - 82.00	1.0000	1.0000



Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L26	45	FP 6 x 2 Reinforcement	80.50 - 83.22	1.0000	1.0000
L26	46	FP 6 x 2 Reinforcement	83.22 - 85.00	1.0000	1.0000
L26	47	FP 6 x 2 Reinforcement	80.50 - 83.22	1.0000	1.0000
L26	48	FP 6 x 2 Reinforcement	83.22 - 85.00	1.0000	1.0000
L26	49	FP 6 x 2 Reinforcement	80.50 - 83.22	1.0000	1.0000
L26	50	FP 6 x 2 Reinforcement	83.22 - 85.00	1.0000	1.0000
L26	51	FP 6 x 2 Reinforcement	80.50 - 83.22	1.0000	1.0000
L26	52	FP 6 x 2 Reinforcement	83.22 - 85.00	1.0000	1.0000
L27	1	2" flat Climb Ladder Rail	80.25 - 80.50	1.0000	1.0000
L27	8	HB114-21U3M12-XXXF(1-1/4)	80.25 - 80.50	1.0000	1.0000
L27	9	HB158-21U6S12-60M-01(1-5/8)	80.25 - 80.50	1.0000	1.0000
L27	12	AL7-50(1-5/8)	80.25 - 80.50	1.0000	1.0000
L27	15	LDF7-50A(1-5/8)	80.25 - 80.50	1.0000	1.0000
L27	32	CCI-040125 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	33	CCI-040125 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	34	CCI-040125 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	35	CCI-040125 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	45	FP 6 x 2 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	47	FP 6 x 2 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	49	FP 6 x 2 Reinforcement	80.25 - 80.50	1.0000	1.0000
L27	51	FP 6 x 2 Reinforcement	80.25 - 80.50	1.0000	1.0000
L28	1	2" flat Climb Ladder Rail	75.25 - 80.25	1.0000	1.0000
L28	8	HB114-21U3M12-XXXF(1-1/4)	75.25 - 80.25	1.0000	1.0000
L28	9	HB158-21U6S12-60M-01(1-5/8)	75.25 - 80.25	1.0000	1.0000
L28	12	AL7-50(1-5/8)	75.25 - 80.25	1.0000	1.0000
L28	15	LDF7-50A(1-5/8)	75.25 - 80.25	1.0000	1.0000
L28	32	CCI-040125 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	33	CCI-040125 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	34	CCI-040125 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	35	CCI-040125 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	45	FP 6 x 2 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	47	FP 6 x 2 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	49	FP 6 x 2 Reinforcement	75.25 - 80.25	1.0000	1.0000
L28	51	FP 6 x 2 Reinforcement	75.25 - 80.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L29	1	2" flat Climb Ladder Rail	73.58 - 75.25	1.0000	1.0000
L29	8	HB114-21U3M12-XXXF(1-1/4)	73.58 - 75.25	1.0000	1.0000
L29	9	HB158-21U6S12-60M-01(1-5/8)	73.58 - 75.25	1.0000	1.0000
L29	12	AL7-50(1-5/8)	73.58 - 75.25	1.0000	1.0000
L29	15	LDF7-50A(1-5/8)	73.58 - 75.25	1.0000	1.0000
L29	32	CCI-040125 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	33	CCI-040125 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	34	CCI-040125 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	35	CCI-040125 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	45	FP 6 x 2 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	47	FP 6 x 2 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	49	FP 6 x 2 Reinforcement	73.58 - 75.25	1.0000	1.0000
L29	51	FP 6 x 2 Reinforcement	73.58 - 75.25	1.0000	1.0000
L30	1	2" flat Climb Ladder Rail	73.33 - 73.58	1.0000	1.0000
L30	8	HB114-21U3M12-XXXF(1-1/4)	73.33 - 73.58	1.0000	1.0000
L30	9	HB158-21U6S12-60M-01(1-5/8)	73.33 - 73.58	1.0000	1.0000
L30	12	AL7-50(1-5/8)	73.33 - 73.58	1.0000	1.0000
L30	15	LDF7-50A(1-5/8)	73.33 - 73.58	1.0000	1.0000
L30	32	CCI-040125 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	33	CCI-040125 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	34	CCI-040125 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	35	CCI-040125 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	45	FP 6 x 2 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	47	FP 6 x 2 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	49	FP 6 x 2 Reinforcement	73.33 - 73.58	1.0000	1.0000
L30	51	FP 6 x 2 Reinforcement	73.33 - 73.58	1.0000	1.0000
L31	1	2" flat Climb Ladder Rail	69.00 - 73.33	1.0000	1.0000
L31	8	HB114-21U3M12-XXXF(1-1/4)	69.00 - 73.33	1.0000	1.0000
L31	9	HB158-21U6S12-60M-01(1-5/8)	69.00 - 73.33	1.0000	1.0000
L31	12	AL7-50(1-5/8)	69.00 - 73.33	1.0000	1.0000
L31	15	LDF7-50A(1-5/8)	69.00 - 73.33	1.0000	1.0000
L31	32	CCI-040125 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	33	CCI-040125 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	34	CCI-040125 Reinforcement	69.00 - 73.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L31	35	CCI-040125 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	45	FP 6 x 2 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	47	FP 6 x 2 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	49	FP 6 x 2 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	51	FP 6 x 2 Reinforcement	69.00 - 73.33	1.0000	1.0000
L31	28	CCI-050125 Reinforcement	69.00 - 69.00	1.0000	1.0000
L31	29	CCI-050125 Reinforcement	69.00 - 69.00	1.0000	1.0000
L31	30	CCI-050125 Reinforcement	69.00 - 69.00	1.0000	1.0000
L31	31	CCI-050125 Reinforcement	69.00 - 69.00	1.0000	1.0000
L33	1	2" flat Climb Ladder Rail	66.75 - 67.00	1.0000	1.0000
L33	8	HB114-21U3M12-XXXF(1-1/4)	66.75 - 67.00	1.0000	1.0000
L33	9	HB158-21U6S12-60M-01(1-5/8)	66.75 - 67.00	1.0000	1.0000
L33	12	AL7-50(1-5/8)	66.75 - 67.00	1.0000	1.0000
L33	15	LDF7-50A(1-5/8)	66.75 - 67.00	1.0000	1.0000
L33	28	CCI-050125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	29	CCI-050125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	30	CCI-050125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	31	CCI-050125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	32	CCI-040125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	33	CCI-040125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	34	CCI-040125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	35	CCI-040125 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	45	FP 6 x 2 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	47	FP 6 x 2 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	49	FP 6 x 2 Reinforcement	66.75 - 67.00	1.0000	1.0000
L33	51	FP 6 x 2 Reinforcement	66.75 - 67.00	1.0000	1.0000
L34	1	2" flat Climb Ladder Rail	66.50 - 66.75	1.0000	1.0000
L34	8	HB114-21U3M12-XXXF(1-1/4)	66.50 - 66.75	1.0000	1.0000
L34	9	HB158-21U6S12-60M-01(1-5/8)	66.50 - 66.75	1.0000	1.0000
L34	12	AL7-50(1-5/8)	66.50 - 66.75	1.0000	1.0000
L34	15	LDF7-50A(1-5/8)	66.50 - 66.75	1.0000	1.0000
L34	28	CCI-050125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	29	CCI-050125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	30	CCI-050125 Reinforcement	66.50 - 66.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L34	31	CCI-050125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	32	CCI-040125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	33	CCI-040125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	34	CCI-040125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	35	CCI-040125 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	45	FP 6 x 2 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	47	FP 6 x 2 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	49	FP 6 x 2 Reinforcement	66.50 - 66.75	1.0000	1.0000
L34	51	FP 6 x 2 Reinforcement	66.50 - 66.75	1.0000	1.0000
L35	1	2" flat Climb Ladder Rail	61.50 - 66.50	1.0000	1.0000
L35	8	HB114-21U3M12-XXXF(1-1/4)	61.50 - 66.50	1.0000	1.0000
L35	9	HB158-21U6S12-60M-01(1-5/8)	61.50 - 66.50	1.0000	1.0000
L35	12	AL7-50(1-5/8)	61.50 - 66.50	1.0000	1.0000
L35	15	LDF7-50A(1-5/8)	61.50 - 66.50	1.0000	1.0000
L35	28	CCI-050125 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	29	CCI-050125 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	30	CCI-050125 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	31	CCI-050125 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	45	FP 6 x 2 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	47	FP 6 x 2 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	49	FP 6 x 2 Reinforcement	61.50 - 66.50	1.0000	1.0000
L35	51	FP 6 x 2 Reinforcement	61.50 - 66.50	1.0000	1.0000
L36	1	2" flat Climb Ladder Rail	56.50 - 61.50	1.0000	1.0000
L36	8	HB114-21U3M12-XXXF(1-1/4)	56.50 - 61.50	1.0000	1.0000
L36	9	HB158-21U6S12-60M-01(1-5/8)	56.50 - 61.50	1.0000	1.0000
L36	12	AL7-50(1-5/8)	56.50 - 61.50	1.0000	1.0000
L36	15	LDF7-50A(1-5/8)	56.50 - 61.50	1.0000	1.0000
L36	28	CCI-050125 Reinforcement	56.50 - 61.50	1.0000	1.0000
L36	29	CCI-050125 Reinforcement	56.50 - 61.50	1.0000	1.0000
L36	30	CCI-050125 Reinforcement	56.50 - 61.50	1.0000	1.0000
L36	31	CCI-050125 Reinforcement	56.50 - 61.50	1.0000	1.0000
L36	45	FP 6 x 2 Reinforcement	56.50 - 61.50	1.0000	1.0000
L36	47	FP 6 x 2 Reinforcement	56.50 - 61.50	1.0000	1.0000
L36	49	FP 6 x 2 Reinforcement	56.50 - 61.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L36	51	FP 6 x 2 Reinforcement	56.50 - 61.50	1.0000	1.0000
L37	1	2" flat Climb Ladder Rail	51.50 - 56.50	1.0000	1.0000
L37	8	HB114-21U3M12-XXXF(1-1/4)	51.50 - 56.50	1.0000	1.0000
L37	9	HB158-21U6S12-60M-01(1-5/8)	51.50 - 56.50	1.0000	1.0000
L37	12	AL7-50(1-5/8)	51.50 - 56.50	1.0000	1.0000
L37	15	LDF7-50A(1-5/8)	51.50 - 56.50	1.0000	1.0000
L37	28	CCI-050125 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	29	CCI-050125 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	30	CCI-050125 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	31	CCI-050125 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	45	FP 6 x 2 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	47	FP 6 x 2 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	49	FP 6 x 2 Reinforcement	51.50 - 56.50	1.0000	1.0000
L37	51	FP 6 x 2 Reinforcement	51.50 - 56.50	1.0000	1.0000
L38	1	2" flat Climb Ladder Rail	48.25 - 51.50	1.0000	1.0000
L38	8	HB114-21U3M12-XXXF(1-1/4)	48.25 - 51.50	1.0000	1.0000
L38	9	HB158-21U6S12-60M-01(1-5/8)	48.25 - 51.50	1.0000	1.0000
L38	12	AL7-50(1-5/8)	48.25 - 51.50	1.0000	1.0000
L38	15	LDF7-50A(1-5/8)	48.25 - 51.50	1.0000	1.0000
L38	19	2.5" Solid Rod Reinforcing	48.25 - 51.00	1.0000	1.0000
L38	20	2.5" Solid Rod Reinforcing	48.25 - 51.00	1.0000	1.0000
L38	21	2.5" Solid Rod Reinforcing	48.25 - 51.00	1.0000	1.0000
L38	22	2.5" Solid Rod Reinforcing	48.25 - 51.00	1.0000	1.0000
L38	28	CCI-050125 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	29	CCI-050125 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	30	CCI-050125 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	31	CCI-050125 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	45	FP 6 x 2 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	47	FP 6 x 2 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	49	FP 6 x 2 Reinforcement	48.25 - 51.50	1.0000	1.0000
L38	51	FP 6 x 2 Reinforcement	48.25 - 51.50	1.0000	1.0000
L39	1	2" flat Climb Ladder Rail	48.00 - 48.25	1.0000	1.0000
L39	8	HB114-21U3M12-XXXF(1-1/4)	48.00 - 48.25	1.0000	1.0000
L39	9	HB158-21U6S12-60M-01(1-5/8)	48.00 - 48.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L39	12	AL7-50(1-5/8)	48.00 - 48.25	1.0000	1.0000
L39	15	LDF7-50A(1-5/8)	48.00 - 48.25	1.0000	1.0000
L39	19	2.5" Solid Rod Reinforcing	48.00 - 48.25	1.0000	1.0000
L39	20	2.5" Solid Rod Reinforcing	48.00 - 48.25	1.0000	1.0000
L39	21	2.5" Solid Rod Reinforcing	48.00 - 48.25	1.0000	1.0000
L39	22	2.5" Solid Rod Reinforcing	48.00 - 48.25	1.0000	1.0000
L39	28	CCI-050125 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	29	CCI-050125 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	30	CCI-050125 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	31	CCI-050125 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	45	FP 6 x 2 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	47	FP 6 x 2 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	49	FP 6 x 2 Reinforcement	48.00 - 48.25	1.0000	1.0000
L39	51	FP 6 x 2 Reinforcement	48.00 - 48.25	1.0000	1.0000
L40	1	2" flat Climb Ladder Rail	44.25 - 48.00	1.0000	1.0000
L40	8	HB114-21U3M12-XXXF(1- 1/4)	44.25 - 48.00	1.0000	1.0000
L40	9	HB158-21U6S12-60M- 01(1-5/8)	44.25 - 48.00	1.0000	1.0000
L40	12	AL7-50(1-5/8)	44.25 - 48.00	1.0000	1.0000
L40	15	LDF7-50A(1-5/8)	44.25 - 48.00	1.0000	1.0000
L40	19	2.5" Solid Rod Reinforcing	44.25 - 48.00	1.0000	1.0000
L40	20	2.5" Solid Rod Reinforcing	44.25 - 48.00	1.0000	1.0000
L40	21	2.5" Solid Rod Reinforcing	44.25 - 48.00	1.0000	1.0000
L40	22	2.5" Solid Rod Reinforcing	44.25 - 48.00	1.0000	1.0000
L40	24	CCI-065125 Reinforcement	44.25 - 47.00	1.0000	1.0000
L40	25	CCI-065125 Reinforcement	44.25 - 47.00	1.0000	1.0000
L40	26	CCI-065125 Reinforcement	44.25 - 47.00	1.0000	1.0000
L40	27	CCI-065125 Reinforcement	44.25 - 47.00	1.0000	1.0000
L40	28	CCI-050125 Reinforcement	47.00 - 48.00	1.0000	1.0000
L40	29	CCI-050125 Reinforcement	47.00 - 48.00	1.0000	1.0000
L40	30	CCI-050125 Reinforcement	47.00 - 48.00	1.0000	1.0000
L40	31	CCI-050125 Reinforcement	47.00 - 48.00	1.0000	1.0000
L40	45	FP 6 x 2 Reinforcement	44.25 - 48.00	1.0000	1.0000
L40	47	FP 6 x 2 Reinforcement	44.25 - 48.00	1.0000	1.0000
L40	49	FP 6 x 2 Reinforcement	44.25 - 48.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L40	51	FP 6 x 2 Reinforcement	44.25 - 48.00	1.0000	1.0000
L41	1	2" flat Climb Ladder Rail	44.00 - 44.25	1.0000	1.0000
L41	8	HB114-21U3M12-XXXF(1-1/4)	44.00 - 44.25	1.0000	1.0000
L41	9	HB158-21U6S12-60M-01(1-5/8)	44.00 - 44.25	1.0000	1.0000
L41	12	AL7-50(1-5/8)	44.00 - 44.25	1.0000	1.0000
L41	15	LDF7-50A(1-5/8)	44.00 - 44.25	1.0000	1.0000
L41	19	2.5" Solid Rod Reinforcing	44.00 - 44.25	1.0000	1.0000
L41	20	2.5" Solid Rod Reinforcing	44.00 - 44.25	1.0000	1.0000
L41	21	2.5" Solid Rod Reinforcing	44.00 - 44.25	1.0000	1.0000
L41	22	2.5" Solid Rod Reinforcing	44.00 - 44.25	1.0000	1.0000
L41	24	CCI-065125 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	25	CCI-065125 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	26	CCI-065125 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	27	CCI-065125 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	45	FP 6 x 2 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	47	FP 6 x 2 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	49	FP 6 x 2 Reinforcement	44.00 - 44.25	1.0000	1.0000
L41	51	FP 6 x 2 Reinforcement	44.00 - 44.25	1.0000	1.0000
L42	1	2" flat Climb Ladder Rail	43.08 - 44.00	1.0000	1.0000
L42	8	HB114-21U3M12-XXXF(1-1/4)	43.08 - 44.00	1.0000	1.0000
L42	9	HB158-21U6S12-60M-01(1-5/8)	43.08 - 44.00	1.0000	1.0000
L42	12	AL7-50(1-5/8)	43.08 - 44.00	1.0000	1.0000
L42	15	LDF7-50A(1-5/8)	43.08 - 44.00	1.0000	1.0000
L42	19	2.5" Solid Rod Reinforcing	43.08 - 44.00	1.0000	1.0000
L42	20	2.5" Solid Rod Reinforcing	43.08 - 44.00	1.0000	1.0000
L42	21	2.5" Solid Rod Reinforcing	43.08 - 44.00	1.0000	1.0000
L42	22	2.5" Solid Rod Reinforcing	43.08 - 44.00	1.0000	1.0000
L42	24	CCI-065125 Reinforcement	43.08 - 44.00	1.0000	1.0000
L42	25	CCI-065125 Reinforcement	43.08 - 44.00	1.0000	1.0000
L42	26	CCI-065125 Reinforcement	43.08 - 44.00	1.0000	1.0000
L42	27	CCI-065125 Reinforcement	43.08 - 44.00	1.0000	1.0000
L42	45	FP 6 x 2 Reinforcement	43.08 - 44.00	1.0000	1.0000
L42	47	FP 6 x 2 Reinforcement	43.08 - 44.00	1.0000	1.0000
L42	49	FP 6 x 2 Reinforcement	43.08 - 44.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L42	51	FP 6 x 2 Reinforcement	43.08 - 44.00	1.0000	1.0000
L43	1	2" flat Climb Ladder Rail	42.83 - 43.08	1.0000	1.0000
L43	8	HB114-21U3M12-XXXF(1-1/4)	42.83 - 43.08	1.0000	1.0000
L43	9	HB158-21U6S12-60M-01(1-5/8)	42.83 - 43.08	1.0000	1.0000
L43	12	AL7-50(1-5/8)	42.83 - 43.08	1.0000	1.0000
L43	15	LDF7-50A(1-5/8)	42.83 - 43.08	1.0000	1.0000
L43	19	2.5" Solid Rod Reinforcing	42.83 - 43.08	1.0000	1.0000
L43	20	2.5" Solid Rod Reinforcing	42.83 - 43.08	1.0000	1.0000
L43	21	2.5" Solid Rod Reinforcing	42.83 - 43.08	1.0000	1.0000
L43	22	2.5" Solid Rod Reinforcing	42.83 - 43.08	1.0000	1.0000
L43	24	CCI-065125 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	25	CCI-065125 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	26	CCI-065125 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	27	CCI-065125 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	45	FP 6 x 2 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	47	FP 6 x 2 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	49	FP 6 x 2 Reinforcement	42.83 - 43.08	1.0000	1.0000
L43	51	FP 6 x 2 Reinforcement	42.83 - 43.08	1.0000	1.0000
L44	1	2" flat Climb Ladder Rail	37.83 - 42.83	1.0000	1.0000
L44	8	HB114-21U3M12-XXXF(1-1/4)	37.83 - 42.83	1.0000	1.0000
L44	9	HB158-21U6S12-60M-01(1-5/8)	37.83 - 42.83	1.0000	1.0000
L44	12	AL7-50(1-5/8)	37.83 - 42.83	1.0000	1.0000
L44	15	LDF7-50A(1-5/8)	37.83 - 42.83	1.0000	1.0000
L44	19	2.5" Solid Rod Reinforcing	37.83 - 42.83	1.0000	1.0000
L44	20	2.5" Solid Rod Reinforcing	37.83 - 42.83	1.0000	1.0000
L44	21	2.5" Solid Rod Reinforcing	37.83 - 42.83	1.0000	1.0000
L44	22	2.5" Solid Rod Reinforcing	37.83 - 42.83	1.0000	1.0000
L44	24	CCI-065125 Reinforcement	37.83 - 42.83	1.0000	1.0000
L44	25	CCI-065125 Reinforcement	37.83 - 42.83	1.0000	1.0000
L44	26	CCI-065125 Reinforcement	37.83 - 42.83	1.0000	1.0000
L44	27	CCI-065125 Reinforcement	37.83 - 42.83	1.0000	1.0000
L44	45	FP 6 x 2 Reinforcement	37.83 - 42.83	1.0000	1.0000
L44	47	FP 6 x 2 Reinforcement	37.83 - 42.83	1.0000	1.0000
L44	49	FP 6 x 2 Reinforcement	37.83 - 42.83	1.0000	1.0000



Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L44	51	FP 6 x 2 Reinforcement	37.83 - 42.83	1.0000	1.0000
L45	1	2" flat Climb Ladder Rail	30.00 - 37.83	1.0000	1.0000
L45	8	HB114-21U3M12-XXXF(1-1/4)	30.00 - 37.83	1.0000	1.0000
L45	9	HB158-21U6S12-60M-01(1-5/8)	30.00 - 37.83	1.0000	1.0000
L45	12	AL7-50(1-5/8)	30.00 - 37.83	1.0000	1.0000
L45	15	LDF7-50A(1-5/8)	30.00 - 37.83	1.0000	1.0000
L45	19	2.5" Solid Rod Reinforcing	30.00 - 37.83	1.0000	1.0000
L45	20	2.5" Solid Rod Reinforcing	30.00 - 37.83	1.0000	1.0000
L45	21	2.5" Solid Rod Reinforcing	30.00 - 37.83	1.0000	1.0000
L45	22	2.5" Solid Rod Reinforcing	30.00 - 37.83	1.0000	1.0000
L45	24	CCI-065125 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	25	CCI-065125 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	26	CCI-065125 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	27	CCI-065125 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	45	FP 6 x 2 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	47	FP 6 x 2 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	49	FP 6 x 2 Reinforcement	30.00 - 37.83	1.0000	1.0000
L45	51	FP 6 x 2 Reinforcement	30.00 - 37.83	1.0000	1.0000
L47	1	2" flat Climb Ladder Rail	24.00 - 29.00	1.0000	1.0000
L47	8	HB114-21U3M12-XXXF(1-1/4)	24.00 - 29.00	1.0000	1.0000
L47	9	HB158-21U6S12-60M-01(1-5/8)	24.00 - 29.00	1.0000	1.0000
L47	12	AL7-50(1-5/8)	24.00 - 29.00	1.0000	1.0000
L47	15	LDF7-50A(1-5/8)	24.00 - 29.00	1.0000	1.0000
L47	19	2.5" Solid Rod Reinforcing	24.00 - 29.00	1.0000	1.0000
L47	20	2.5" Solid Rod Reinforcing	24.00 - 29.00	1.0000	1.0000
L47	21	2.5" Solid Rod Reinforcing	24.00 - 29.00	1.0000	1.0000
L47	22	2.5" Solid Rod Reinforcing	24.00 - 29.00	1.0000	1.0000
L47	24	CCI-065125 Reinforcement	24.00 - 29.00	1.0000	1.0000
L47	25	CCI-065125 Reinforcement	24.00 - 29.00	1.0000	1.0000
L47	26	CCI-065125 Reinforcement	24.00 - 29.00	1.0000	1.0000
L47	27	CCI-065125 Reinforcement	24.00 - 29.00	1.0000	1.0000
L47	45	FP 6 x 2 Reinforcement	24.00 - 29.00	1.0000	1.0000
L47	47	FP 6 x 2 Reinforcement	24.00 - 29.00	1.0000	1.0000
L47	49	FP 6 x 2 Reinforcement	24.00 - 29.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L47	51	FP 6 x 2 Reinforcement	24.00 - 29.00	1.0000	1.0000
L48	1	2" flat Climb Ladder Rail	23.75 - 24.00	1.0000	1.0000
L48	8	HB114-21U3M12-XXXF(1-1/4)	23.75 - 24.00	1.0000	1.0000
L48	9	HB158-21U6S12-60M-01(1-5/8)	23.75 - 24.00	1.0000	1.0000
L48	12	AL7-50(1-5/8)	23.75 - 24.00	1.0000	1.0000
L48	15	LDF7-50A(1-5/8)	23.75 - 24.00	1.0000	1.0000
L48	19	2.5" Solid Rod Reinforcing	23.75 - 24.00	1.0000	1.0000
L48	20	2.5" Solid Rod Reinforcing	23.75 - 24.00	1.0000	1.0000
L48	21	2.5" Solid Rod Reinforcing	23.75 - 24.00	1.0000	1.0000
L48	22	2.5" Solid Rod Reinforcing	23.75 - 24.00	1.0000	1.0000
L48	24	CCI-065125 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	25	CCI-065125 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	26	CCI-065125 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	27	CCI-065125 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	45	FP 6 x 2 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	47	FP 6 x 2 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	49	FP 6 x 2 Reinforcement	23.75 - 24.00	1.0000	1.0000
L48	51	FP 6 x 2 Reinforcement	23.75 - 24.00	1.0000	1.0000
L49	1	2" flat Climb Ladder Rail	23.50 - 23.75	1.0000	1.0000
L49	8	HB114-21U3M12-XXXF(1-1/4)	23.50 - 23.75	1.0000	1.0000
L49	9	HB158-21U6S12-60M-01(1-5/8)	23.50 - 23.75	1.0000	1.0000
L49	12	AL7-50(1-5/8)	23.50 - 23.75	1.0000	1.0000
L49	15	LDF7-50A(1-5/8)	23.50 - 23.75	1.0000	1.0000
L49	19	2.5" Solid Rod Reinforcing	23.50 - 23.75	1.0000	1.0000
L49	20	2.5" Solid Rod Reinforcing	23.50 - 23.75	1.0000	1.0000
L49	21	2.5" Solid Rod Reinforcing	23.50 - 23.75	1.0000	1.0000
L49	22	2.5" Solid Rod Reinforcing	23.50 - 23.75	1.0000	1.0000
L49	24	CCI-065125 Reinforcement	23.50 - 23.75	1.0000	1.0000
L49	25	CCI-065125 Reinforcement	23.50 - 23.75	1.0000	1.0000
L49	26	CCI-065125 Reinforcement	23.50 - 23.75	1.0000	1.0000
L49	27	CCI-065125 Reinforcement	23.50 - 23.75	1.0000	1.0000
L49	45	FP 6 x 2 Reinforcement	23.50 - 23.75	1.0000	1.0000
L49	47	FP 6 x 2 Reinforcement	23.50 - 23.75	1.0000	1.0000
L49	49	FP 6 x 2 Reinforcement	23.50 - 23.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L49	51	FP 6 x 2 Reinforcement	23.50 - 23.75	1.0000	1.0000
L50	1	2" flat Climb Ladder Rail	18.50 - 23.50	1.0000	1.0000
L50	8	HB114-21U3M12-XXXF(1-1/4)	18.50 - 23.50	1.0000	1.0000
L50	9	HB158-21U6S12-60M-01(1-5/8)	18.50 - 23.50	1.0000	1.0000
L50	12	AL7-50(1-5/8)	18.50 - 23.50	1.0000	1.0000
L50	15	LDF7-50A(1-5/8)	18.50 - 23.50	1.0000	1.0000
L50	19	2.5" Solid Rod Reinforcing	18.50 - 23.50	1.0000	1.0000
L50	20	2.5" Solid Rod Reinforcing	18.50 - 23.50	1.0000	1.0000
L50	21	2.5" Solid Rod Reinforcing	18.50 - 23.50	1.0000	1.0000
L50	22	2.5" Solid Rod Reinforcing	18.50 - 23.50	1.0000	1.0000
L50	24	CCI-065125 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	25	CCI-065125 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	26	CCI-065125 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	27	CCI-065125 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	45	FP 6 x 2 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	47	FP 6 x 2 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	49	FP 6 x 2 Reinforcement	18.50 - 23.50	1.0000	1.0000
L50	51	FP 6 x 2 Reinforcement	18.50 - 23.50	1.0000	1.0000
L51	1	2" flat Climb Ladder Rail	13.50 - 18.50	1.0000	1.0000
L51	8	HB114-21U3M12-XXXF(1-1/4)	13.50 - 18.50	1.0000	1.0000
L51	9	HB158-21U6S12-60M-01(1-5/8)	13.50 - 18.50	1.0000	1.0000
L51	12	AL7-50(1-5/8)	13.50 - 18.50	1.0000	1.0000
L51	15	LDF7-50A(1-5/8)	13.50 - 18.50	1.0000	1.0000
L51	19	2.5" Solid Rod Reinforcing	13.50 - 18.50	1.0000	1.0000
L51	20	2.5" Solid Rod Reinforcing	13.50 - 18.50	1.0000	1.0000
L51	21	2.5" Solid Rod Reinforcing	13.50 - 18.50	1.0000	1.0000
L51	22	2.5" Solid Rod Reinforcing	13.50 - 18.50	1.0000	1.0000
L51	24	CCI-065125 Reinforcement	13.50 - 18.50	1.0000	1.0000
L51	25	CCI-065125 Reinforcement	13.50 - 18.50	1.0000	1.0000
L51	26	CCI-065125 Reinforcement	13.50 - 18.50	1.0000	1.0000
L51	27	CCI-065125 Reinforcement	13.50 - 18.50	1.0000	1.0000
L51	45	FP 6 x 2 Reinforcement	13.50 - 18.50	1.0000	1.0000
L51	47	FP 6 x 2 Reinforcement	13.50 - 18.50	1.0000	1.0000
L51	49	FP 6 x 2 Reinforcement	13.50 - 18.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L51	51	FP 6 x 2 Reinforcement	13.50 - 18.50	1.0000	1.0000
L52	1	2" flat Climb Ladder Rail	11.00 - 13.50	1.0000	1.0000
L52	8	HB114-21U3M12-XXXF(1-1/4)	11.00 - 13.50	1.0000	1.0000
L52	9	HB158-21U6S12-60M-01(1-5/8)	11.00 - 13.50	1.0000	1.0000
L52	12	AL7-50(1-5/8)	11.00 - 13.50	1.0000	1.0000
L52	15	LDF7-50A(1-5/8)	11.00 - 13.50	1.0000	1.0000
L52	19	2.5" Solid Rod Reinforcing	11.00 - 13.50	1.0000	1.0000
L52	20	2.5" Solid Rod Reinforcing	11.00 - 13.50	1.0000	1.0000
L52	21	2.5" Solid Rod Reinforcing	11.00 - 13.50	1.0000	1.0000
L52	22	2.5" Solid Rod Reinforcing	11.00 - 13.50	1.0000	1.0000
L52	24	CCI-065125 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	25	CCI-065125 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	26	CCI-065125 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	27	CCI-065125 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	45	FP 6 x 2 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	47	FP 6 x 2 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	49	FP 6 x 2 Reinforcement	11.00 - 13.50	1.0000	1.0000
L52	51	FP 6 x 2 Reinforcement	11.00 - 13.50	1.0000	1.0000
L53	1	2" flat Climb Ladder Rail	10.75 - 11.00	1.0000	1.0000
L53	8	HB114-21U3M12-XXXF(1-1/4)	10.75 - 11.00	1.0000	1.0000
L53	9	HB158-21U6S12-60M-01(1-5/8)	10.75 - 11.00	1.0000	1.0000
L53	12	AL7-50(1-5/8)	10.75 - 11.00	1.0000	1.0000
L53	15	LDF7-50A(1-5/8)	10.75 - 11.00	1.0000	1.0000
L53	19	2.5" Solid Rod Reinforcing	10.75 - 11.00	1.0000	1.0000
L53	20	2.5" Solid Rod Reinforcing	10.75 - 11.00	1.0000	1.0000
L53	21	2.5" Solid Rod Reinforcing	10.75 - 11.00	1.0000	1.0000
L53	22	2.5" Solid Rod Reinforcing	10.75 - 11.00	1.0000	1.0000
L53	24	CCI-065125 Reinforcement	10.75 - 11.00	1.0000	1.0000
L53	25	CCI-065125 Reinforcement	10.75 - 11.00	1.0000	1.0000
L53	26	CCI-065125 Reinforcement	10.75 - 11.00	1.0000	1.0000
L53	27	CCI-065125 Reinforcement	10.75 - 11.00	1.0000	1.0000
L53	45	FP 6 x 2 Reinforcement	10.75 - 11.00	1.0000	1.0000
L53	47	FP 6 x 2 Reinforcement	10.75 - 11.00	1.0000	1.0000
L53	49	FP 6 x 2 Reinforcement	10.75 - 11.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L53	51	FP 6 x 2 Reinforcement	10.75 - 11.00	1.0000	1.0000
L54	1	2" flat Climb Ladder Rail	6.00 - 10.75	1.0000	1.0000
L54	8	HB114-21U3M12-XXXF(1-1/4)	6.00 - 10.75	1.0000	1.0000
L54	9	HB158-21U6S12-60M-01(1-5/8)	6.00 - 10.75	1.0000	1.0000
L54	12	AL7-50(1-5/8)	6.00 - 10.75	1.0000	1.0000
L54	15	LDF7-50A(1-5/8)	6.00 - 10.75	1.0000	1.0000
L54	19	2.5" Solid Rod Reinforcing	6.00 - 10.75	1.0000	1.0000
L54	20	2.5" Solid Rod Reinforcing	6.00 - 10.75	1.0000	1.0000
L54	21	2.5" Solid Rod Reinforcing	6.00 - 10.75	1.0000	1.0000
L54	22	2.5" Solid Rod Reinforcing	6.00 - 10.75	1.0000	1.0000
L54	24	CCI-065125 Reinforcement	6.00 - 10.75	1.0000	1.0000
L54	25	CCI-065125 Reinforcement	6.00 - 10.75	1.0000	1.0000
L54	26	CCI-065125 Reinforcement	6.00 - 10.75	1.0000	1.0000
L54	27	CCI-065125 Reinforcement	6.00 - 10.75	1.0000	1.0000
L54	45	FP 6 x 2 Reinforcement	6.00 - 10.75	1.0000	1.0000
L54	47	FP 6 x 2 Reinforcement	8.50 - 10.75	1.0000	1.0000
L54	49	FP 6 x 2 Reinforcement	6.00 - 10.75	1.0000	1.0000
L54	51	FP 6 x 2 Reinforcement	8.50 - 10.75	1.0000	1.0000
L55	1	2" flat Climb Ladder Rail	5.75 - 6.00	1.0000	1.0000
L55	8	HB114-21U3M12-XXXF(1-1/4)	5.75 - 6.00	1.0000	1.0000
L55	9	HB158-21U6S12-60M-01(1-5/8)	5.75 - 6.00	1.0000	1.0000
L55	12	AL7-50(1-5/8)	5.75 - 6.00	1.0000	1.0000
L55	15	LDF7-50A(1-5/8)	5.75 - 6.00	1.0000	1.0000
L55	19	2.5" Solid Rod Reinforcing	5.75 - 6.00	1.0000	1.0000
L55	20	2.5" Solid Rod Reinforcing	5.75 - 6.00	1.0000	1.0000
L55	21	2.5" Solid Rod Reinforcing	5.75 - 6.00	1.0000	1.0000
L55	22	2.5" Solid Rod Reinforcing	5.75 - 6.00	1.0000	1.0000
L55	24	CCI-065125 Reinforcement	5.75 - 6.00	1.0000	1.0000
L55	25	CCI-065125 Reinforcement	5.75 - 6.00	1.0000	1.0000
L55	26	CCI-065125 Reinforcement	5.75 - 6.00	1.0000	1.0000
L55	27	CCI-065125 Reinforcement	5.75 - 6.00	1.0000	1.0000
L55	45	FP 6 x 2 Reinforcement	5.75 - 6.00	1.0000	1.0000
L55	49	FP 6 x 2 Reinforcement	5.75 - 6.00	1.0000	1.0000
L56	1	2" flat Climb Ladder Rail	3.25 - 5.75	1.0000	1.0000
L56	8	HB114-21U3M12-XXXF(1-1/4)	3.25 - 5.75	1.0000	1.0000
L56	9	HB158-21U6S12-60M-01(1-5/8)	3.25 - 5.75	1.0000	1.0000
L56	12	AL7-50(1-5/8)	3.25 - 5.75	1.0000	1.0000
L56	15	LDF7-50A(1-5/8)	3.25 - 5.75	1.0000	1.0000
L56	19	2.5" Solid Rod Reinforcing	3.25 - 5.75	1.0000	1.0000
L56	20	2.5" Solid Rod Reinforcing	3.25 - 5.75	1.0000	1.0000
L56	21	2.5" Solid Rod Reinforcing	3.25 - 5.75	1.0000	1.0000
L56	22	2.5" Solid Rod Reinforcing	3.25 - 5.75	1.0000	1.0000
L56	24	CCI-065125 Reinforcement	3.25 - 5.75	1.0000	1.0000
L56	25	CCI-065125 Reinforcement	3.25 - 5.75	1.0000	1.0000
L56	26	CCI-065125 Reinforcement	3.25 - 5.75	1.0000	1.0000
L56	27	CCI-065125 Reinforcement	3.25 - 5.75	1.0000	1.0000
L56	45	FP 6 x 2 Reinforcement	3.50 - 5.75	1.0000	1.0000
L56	49	FP 6 x 2 Reinforcement	3.50 - 5.75	1.0000	1.0000
L57	1	2" flat Climb Ladder Rail	3.00 - 3.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L57	8	HB114-21U3M12-XXXF(1-1/4)	3.00 - 3.25	1.0000	1.0000
L57	9	HB158-21U6S12-60M-01(1-5/8)	3.00 - 3.25	1.0000	1.0000
L57	12	AL7-50(1-5/8)	3.00 - 3.25	1.0000	1.0000
L57	15	LDF7-50A(1-5/8)	3.00 - 3.25	1.0000	1.0000
L57	19	2.5" Solid Rod Reinforcing	3.00 - 3.25	1.0000	1.0000
L57	20	2.5" Solid Rod Reinforcing	3.00 - 3.25	1.0000	1.0000
L57	21	2.5" Solid Rod Reinforcing	3.00 - 3.25	1.0000	1.0000
L57	22	2.5" Solid Rod Reinforcing	3.00 - 3.25	1.0000	1.0000
L57	24	CCI-065125 Reinforcement	3.00 - 3.25	1.0000	1.0000
L57	25	CCI-065125 Reinforcement	3.00 - 3.25	1.0000	1.0000
L57	26	CCI-065125 Reinforcement	3.00 - 3.25	1.0000	1.0000
L57	27	CCI-065125 Reinforcement	3.00 - 3.25	1.0000	1.0000
L58	1	2" flat Climb Ladder Rail	0.00 - 3.00	1.0000	1.0000
L58	8	HB114-21U3M12-XXXF(1-1/4)	0.00 - 3.00	1.0000	1.0000
L58	9	HB158-21U6S12-60M-01(1-5/8)	0.00 - 3.00	1.0000	1.0000
L58	12	AL7-50(1-5/8)	0.00 - 3.00	1.0000	1.0000
L58	15	LDF7-50A(1-5/8)	0.00 - 3.00	1.0000	1.0000
L58	19	2.5" Solid Rod Reinforcing	0.00 - 3.00	1.0000	1.0000
L58	20	2.5" Solid Rod Reinforcing	0.00 - 3.00	1.0000	1.0000
L58	21	2.5" Solid Rod Reinforcing	0.00 - 3.00	1.0000	1.0000
L58	22	2.5" Solid Rod Reinforcing	0.00 - 3.00	1.0000	1.0000
L58	24	CCI-065125 Reinforcement	0.00 - 3.00	1.0000	1.0000
L58	25	CCI-065125 Reinforcement	0.00 - 3.00	1.0000	1.0000
L58	26	CCI-065125 Reinforcement	0.00 - 3.00	1.0000	1.0000
L58	27	CCI-065125 Reinforcement	0.00 - 3.00	1.0000	1.0000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C <sub>A</sub> A <sub>A</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Side ft <sup>2</sup>	Weight K	
7770.00	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	5.5085	2.9282	0.04
						1/2" Ice	5.8673	3.2730	0.07
						Ice	6.2332	3.6252	0.11
						1" Ice	6.9859	4.3517	0.20
						2" Ice			
7770.00	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	5.5085	2.9282	0.04
						1/2" Ice	5.8673	3.2730	0.07
						Ice	6.2332	3.6252	0.11
						1" Ice	6.9859	4.3517	0.20
						2" Ice			
7770.00	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	5.5085	2.9282	0.04
						1/2" Ice	5.8673	3.2730	0.07
						Ice	6.2332	3.6252	0.11
						1" Ice	6.9859	4.3517	0.20
						2" Ice			
QS66512-2	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	4.0100	3.3700	0.11
						1/2" Ice	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: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
QS66512-2	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	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
QS66512-2	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1" Ice	5.6500	4.9700	0.38
						2" Ice			
						No Ice	4.0100	3.3700	0.11
						1/2"	4.4100	3.7600	0.17
HPA-65R-BUU-H6	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	Ice	4.8100	4.1500	0.23
						1" Ice	5.6500	4.9700	0.38
						2" Ice			
						No Ice	9.2200	4.6500	0.05
HPA-65R-BUU-H6	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1/2"	10.0000	5.3600	0.11
						Ice	10.7900	6.0900	0.17
						1" Ice	12.4300	7.6000	0.32
						2" Ice			
HPA-65R-BUU-H6	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	9.2200	4.6500	0.05
						1/2"	10.0000	5.3600	0.11
						Ice	10.7900	6.0900	0.17
						1" Ice	12.4300	7.6000	0.32
TT19-08BP111-001	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	0.5527	0.4455	0.02
						1/2"	0.6487	0.5342	0.02
						Ice	0.7520	0.6303	0.03
TT19-08BP111-001	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1" Ice	0.9809	0.8448	0.05
						2" Ice			
						No Ice	0.5527	0.4455	0.02
						1/2"	0.6487	0.5342	0.02
TT19-08BP111-001	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	Ice	0.7520	0.6303	0.03
						1" Ice	0.9809	0.8448	0.05
						2" Ice			
						No Ice	0.5527	0.4455	0.02
(2) 7020.00	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1/2"	0.6487	0.5342	0.02
						Ice	0.7520	0.6303	0.03
						1" Ice	0.9809	0.8448	0.05
						2" Ice			
(2) 7020.00	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	0.1021	0.1750	0.00
						1/2"	0.1469	0.2393	0.01
						Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
(2) 7020.00	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	0.1021	0.1750	0.00
						1/2"	0.1469	0.2393	0.01
						Ice	0.1991	0.3109	0.01
RRUS 32	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1" Ice	0.3258	0.4765	0.02
						2" Ice			
						No Ice	2.8571	1.7766	0.06
						1/2"	3.0830	1.9677	0.08
RRUS 32	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
						No Ice	2.8571	1.7766	0.06
RRUS 32	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1/2"	3.0830	1.9677	0.08
						Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
RRUS 32	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	2.8571	1.7766	0.06
						1/2"	3.0830	1.9677	0.08
						Ice	3.3163	2.1658	0.10
1001940	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1" Ice	3.8052	2.5829	0.16
						2" Ice			
						No Ice	0.1758	0.0833	0.00
						1/2"	0.2317	0.1264	0.00
1001940	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	Ice	0.2950	0.1778	0.01
						1" Ice	0.4439	0.3045	0.01
						2" Ice			
						No Ice	0.1758	0.0833	0.00
1001940	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1/2"	0.2317	0.1264	0.00
						Ice	0.2950	0.1778	0.01
						1" Ice	0.4439	0.3045	0.01
						2" Ice			
(2) DC6-48-60-18-8F	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	1.2117	1.2117	0.03
						1/2"	1.8924	1.8924	0.05
						Ice	2.1051	2.1051	0.08
						1" Ice	2.5703	2.5703	0.14
(2) TPX-070821	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	0.4688	0.1009	0.01
						1/2"	0.5585	0.1471	0.01
						Ice	0.6556	0.2020	0.02
(2) TPX-070821	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1" Ice	0.8721	0.3340	0.03
						2" Ice			
						No Ice	0.4688	0.1009	0.01
						1/2"	0.5585	0.1471	0.01
(2) TPX-070821	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	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
RRUS 32 B2	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	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 32 B2	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	No Ice	2.7427	1.6681	0.05
						1/2"	2.9647	1.8552	0.07
						Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
RRUS 32 B2	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	2.7427	1.6681	0.05
						1/2"	2.9647	1.8552	0.07
						Ice	3.1941	2.0493	0.10
RRUS 11	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1" Ice	3.6753	2.4585	0.16
						2" Ice			
						No Ice	2.7908	1.1923	0.05
						1/2"	2.9984	1.3395	0.07
RRUS 11	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
						No Ice	2.7908	1.1923	0.05
RRUS 11	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	1/2"	2.9984	1.3395	0.07
						Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			



Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
RRUS 11	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	2.7908	1.1923	0.05
						1/2"	2.9984	1.3395	0.07
						Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
RRUS 32 B66	A	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	2.7427	1.6681	0.05
						1/2"	2.9647	1.8552	0.07
						Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
RRUS 32 B66	B	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	2.7427	1.6681	0.05
						1/2"	2.9647	1.8552	0.07
						Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
RRUS 32 B66	C	From Leg	4.0000 0.00 4.00	0.0000	150.0000	2" Ice			
						No Ice	2.7427	1.6681	0.05
						1/2"	2.9647	1.8552	0.07
						Ice	3.1941	2.0493	0.10
						1" Ice	3.6753	2.4585	0.16
Platform Mount (LP 101-1)	C	None		0.0000	150.0000	2" Ice			
						No Ice	35.8300	35.8300	1.50
						1/2"	40.9800	40.9800	2.32
						Ice	46.5700	46.5700	3.26
						1" Ice	60.4600	60.4600	5.51
Top Hat 20" Diameter x 3'-6" Tall	C	None		0.0000	150.0000	2" Ice			
						No Ice	2.9167	2.9167	0.20
						1/2"	4.3896	4.3896	0.26
						Ice	4.7056	4.7056	0.31
						1" Ice	5.3667	5.3667	0.45
Side Arm Mount [SO 201-3]	C	None		0.0000	150.0000	2" Ice			
						No Ice	5.2700	5.2700	0.29
						1/2"	6.4700	6.4700	0.35
						Ice	7.7800	7.7800	0.43
						1" Ice	10.6600	10.6600	0.66
***									
TME-RRUS-11	A	From Leg	1.0000 0.00 0.00	0.0000	147.0000	2" Ice			
						No Ice	2.7845	1.1872	0.05
						1/2"	2.9919	1.3342	0.07
						Ice	3.2066	1.4897	0.09
						1" Ice	3.6584	1.8326	0.15
TME-RRUS-11	B	From Leg	1.0000 0.00 0.00	0.0000	147.0000	2" Ice			
						No Ice	2.7845	1.1872	0.05
						1/2"	2.9919	1.3342	0.07
						Ice	3.2066	1.4897	0.09
						1" Ice	3.6584	1.8326	0.15
TME-RRUS-11	C	From Leg	1.0000 0.00 0.00	0.0000	147.0000	2" Ice			
						No Ice	2.7845	1.1872	0.05
						1/2"	2.9919	1.3342	0.07
						Ice	3.2066	1.4897	0.09
						1" Ice	3.6584	1.8326	0.15
TME-DC6-48-60-18-8F	B	From Leg	1.0000 0.00 0.00	0.0000	147.0000	2" Ice			
						No Ice	0.9167	0.9167	0.02
						1/2"	1.4583	1.4583	0.04
						Ice	1.6431	1.6431	0.06
						1" Ice	2.0417	2.0417	0.11
Pipe Mount [PM 601-3]	C	None		0.0000	147.0000	2" Ice			
						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
Side Arm Mount [SO 102-3]	C	None		0.0000	147.0000	2" Ice			
						No Ice	3.6000	3.6000	0.07
						1/2"	4.1800	4.1800	0.11
						Ice	4.7500	4.7500	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
						1" Ice 2" Ice	5.9000	5.9000	0.20
***									
HORIZON COMPACT	B	From Leg	4.0000 0.00 5.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.7208 0.8278 0.9422 1.1933	0.3681 0.4499 0.5391 0.7396	0.01 0.02 0.03 0.05
HORIZON COMPACT	C	From Leg	4.0000 0.00 5.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.7208 0.8278 0.9422 1.1933	0.3681 0.4499 0.5391 0.7396	0.01 0.02 0.03 0.05
CW JUNCTION BOX	A	From Leg	4.0000 0.00 5.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2000 1.3370 1.4815 1.7926	0.6000 0.7037 0.8148 1.0593	0.00 0.01 0.02 0.05
AAHC w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.4091 4.7270 5.0553 5.7429	2.6915 3.0786 3.4862 4.3595	0.12 0.16 0.20 0.31
AAHC w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.4091 4.7270 5.0553 5.7429	2.6915 3.0786 3.4862 4.3595	0.12 0.16 0.20 0.31
AAHC w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.4091 4.7270 5.0553 5.7429	2.6915 3.0786 3.4862 4.3595	0.12 0.16 0.20 0.31
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.5500 8.0400 8.5300 9.5600	4.2300 4.6700 5.1200 6.0500	0.11 0.20 0.30 0.53
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.5500 8.0400 8.5300 9.5600	4.2300 4.6700 5.1200 6.0500	0.11 0.20 0.30 0.53
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.5500 8.0400 8.5300 9.5600	4.2300 4.6700 5.1200 6.0500	0.11 0.20 0.30 0.53
(3) RRH2X50-800	A	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
(3) RRH2X50-800	C	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
(3) PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.0000 0.00 2.00	0.0000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.06 0.08 0.11 0.17
Platform Mount [LP 1202-1_KCKR-HR-1]	C	None		0.0000	138.0000	No Ice 2" Ice	40.4600 49.5800	40.4600 49.5800	3.98 4.90

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
							1/2" Ice	58.6500	58.6500	5.98
							1" Ice	76.8500	76.8500	8.58
							2" Ice			
***										
AIR -32 B2A/B66AA	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	6.5099	4.7123	0.13	
						1/2"	6.8870	5.0683	0.18	
						Ice	7.2712	5.4313	0.23	
						1" Ice	8.0604	6.1782	0.35	
						2" Ice				
AIR -32 B2A/B66AA	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	6.5099	4.7123	0.13	
						1/2"	6.8870	5.0683	0.18	
						Ice	7.2712	5.4313	0.23	
						1" Ice	8.0604	6.1782	0.35	
						2" Ice				
AIR -32 B2A/B66AA	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	6.5099	4.7123	0.13	
						1/2"	6.8870	5.0683	0.18	
						Ice	7.2712	5.4313	0.23	
						1" Ice	8.0604	6.1782	0.35	
						2" Ice				
AIR 21 B2A/B4P	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	5.9244	4.2192	0.08	
						1/2"	6.2883	4.5624	0.12	
						Ice	6.6592	4.9126	0.17	
						1" Ice	7.4219	5.6341	0.28	
						2" Ice				
AIR 21 B2A/B4P	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	5.9244	4.2192	0.08	
						1/2"	6.2883	4.5624	0.12	
						Ice	6.6592	4.9126	0.17	
						1" Ice	7.4219	5.6341	0.28	
						2" Ice				
AIR 21 B2A/B4P	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	5.9244	4.2192	0.08	
						1/2"	6.2883	4.5624	0.12	
						Ice	6.6592	4.9126	0.17	
						1" Ice	7.4219	5.6341	0.28	
						2" Ice				
APXVAARR24_43-U-NA20	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	14.6700	5.3200	0.15	
						1/2"	15.4300	5.9900	0.27	
						Ice	16.2100	6.6800	0.39	
						1" Ice	17.8100	8.0800	0.66	
						2" Ice				
APXVAARR24_43-U-NA20	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	14.6700	5.3200	0.15	
						1/2"	15.4300	5.9900	0.27	
						Ice	16.2100	6.6800	0.39	
						1" Ice	17.8100	8.0800	0.66	
						2" Ice				
APXVAARR24_43-U-NA20	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	14.6700	5.3200	0.15	
						1/2"	15.4300	5.9900	0.27	
						Ice	16.2100	6.6800	0.39	
						1" Ice	17.8100	8.0800	0.66	
						2" Ice				
AIR6449 B41	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	5.6822	2.4907	0.10	
						1/2"	5.9842	2.7180	0.14	
						Ice	6.2936	2.9523	0.19	
						1" Ice	6.9348	3.4420	0.29	
						2" Ice				
AIR6449 B41	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	5.6822	2.4907	0.10	
						1/2"	5.9842	2.7180	0.14	
						Ice	6.2936	2.9523	0.19	
						1" Ice	6.9348	3.4420	0.29	
						2" Ice				
AIR6449 B41	C	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	5.6822	2.4907	0.10	
						1/2"	5.9842	2.7180	0.14	
						Ice	6.2936	2.9523	0.19	
						1" Ice	6.9348	3.4420	0.29	
						2" Ice				

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
KRY 112 144/1	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	0.3500	0.1750	0.01
						1/2" Ice	0.4259	0.2343	0.01
						Ice	0.5093	0.3009	0.02
						1" Ice	0.6981	0.4565	0.03
						2" Ice			
KRY 112 144/1	B	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	0.3500	0.1750	0.01
						1/2" Ice	0.4259	0.2343	0.01
						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 0.00 0.00	0.0000	120.0000	No Ice	0.3500	0.1750	0.01
						1/2" Ice	0.4259	0.2343	0.01
						Ice	0.5093	0.3009	0.02
						1" Ice	0.6981	0.4565	0.03
						2" Ice			
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.0000 0.00 0.00	0.0000	120.0000	No Ice	1.9701	1.5865	0.07
						1/2" Ice	2.1466	1.7488	0.09
						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 0.00 0.00	0.0000	120.0000	No Ice	1.9701	1.5865	0.07
						1/2" Ice	2.1466	1.7488	0.09
						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 0.00 0.00	0.0000	120.0000	No Ice	1.9701	1.5865	0.07
						1/2" Ice	2.1466	1.7488	0.09
						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 0.00 0.00	0.0000	120.0000	No Ice	1.8425	0.8202	0.05
						1/2" Ice	2.0123	0.9434	0.06
						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 0.00 0.00	0.0000	120.0000	No Ice	1.8425	0.8202	0.05
						1/2" Ice	2.0123	0.9434	0.06
						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 0.00 0.00	0.0000	120.0000	No Ice	1.8425	0.8202	0.05
						1/2" Ice	2.0123	0.9434	0.06
						Ice	2.1895	1.0750	0.08
						1" Ice	2.5662	1.3683	0.12
						2" Ice			
Platform Mount [LP 1301-1]	C	None		0.0000	120.0000	No Ice	51.7000	51.7000	2.26
						1/2" Ice	62.7000	62.7000	2.94
						Ice	73.7000	73.7000	3.61
						1" Ice	95.7000	95.7000	4.95
						2" Ice			
***									
BXA-70063/4CF w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	99.0000	No Ice	4.8400	3.5400	0.04
						1/2" Ice	5.3500	4.0300	0.08
						Ice	5.8800	4.5300	0.12
						1" Ice	6.9900	5.5900	0.24
						2" Ice			
BXA-70063/4CF w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	99.0000	No Ice	4.8400	3.5400	0.04
						1/2" Ice	5.3500	4.0300	0.08
						Ice	5.8800	4.5300	0.12
						1" Ice	6.9900	5.5900	0.24
						2" Ice			
BXA-70063/4CF w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	99.0000	No Ice	4.8400	3.5400	0.04
						1/2" Ice	5.3500	4.0300	0.08
						Ice	5.8800	4.5300	0.12
						1" Ice	6.9900	5.5900	0.24
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
CBRS w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	99.0000	2" Ice			
						No Ice	1.7135	1.1683	0.03
						1/2"	1.9342	1.4373	0.05
						Ice	2.1662	1.7226	0.07
CBRS w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	99.0000	1" Ice	2.6643	2.3506	0.13
						2" Ice			
						No Ice	1.7135	1.1683	0.03
						1/2"	1.9342	1.4373	0.05
CBRS w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	99.0000	Ice	2.1662	1.7226	0.07
						1" Ice	2.6643	2.3506	0.13
						2" Ice			
						No Ice	1.7135	1.1683	0.03
(2) JAHH-65A-R3B w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.0000	99.0000	1/2"	1.9342	1.4373	0.05
						Ice	2.1662	1.7226	0.07
						1" Ice	2.6643	2.3506	0.13
						2" Ice			
(2) JAHH-65A-R3B w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.0000	99.0000	No Ice	3.3500	2.6100	0.07
						1/2"	3.6400	2.8900	0.13
						Ice	3.9500	3.1800	0.19
						1" Ice	4.5900	3.7900	0.35
(2) JAHH-65A-R3B w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.0000	99.0000	2" Ice			
						No Ice	3.3500	2.6100	0.07
						1/2"	3.6400	2.8900	0.13
						Ice	3.9500	3.1800	0.19
CBC78T-DS-43-2X	A	From Leg	4.0000 0.00 1.00	0.0000	99.0000	1" Ice	4.5900	3.7900	0.35
						2" Ice			
						No Ice	0.3680	0.5120	0.02
						1/2"	0.4456	0.6046	0.03
(2) CBC78T-DS-43-2X	C	From Leg	4.0000 0.00 1.00	0.0000	99.0000	Ice	0.5306	0.7046	0.04
						1" Ice	0.7228	0.9268	0.06
						2" Ice			
						No Ice	0.3680	0.5120	0.02
(3) RFV01U-D1A	A	From Leg	4.0000 0.00 1.00	0.0000	99.0000	1/2"	0.4456	0.6046	0.03
						Ice	0.5306	0.7046	0.04
						1" Ice	0.7228	0.9268	0.06
						2" Ice			
RFV01U-D2A	A	From Leg	4.0000 0.00 1.00	0.0000	99.0000	No Ice	1.8750	1.2500	0.08
						1/2"	2.0454	1.3926	0.10
						Ice	2.2231	1.5426	0.12
						1" Ice	2.6009	1.8648	0.18
(2) RFV01U-D2A	B	From Leg	4.0000 0.00 1.00	0.0000	99.0000	2" Ice			
						No Ice	1.8750	1.0125	0.07
						1/2"	2.0454	1.1445	0.09
						Ice	2.2231	1.2840	0.11
(2) 20W CBRS	B	From Leg	4.0000 0.00 1.00	0.0000	99.0000	1" Ice	2.6009	1.5851	0.15
						2" Ice			
						No Ice	0.8571	0.4203	0.02
						1/2"	0.9752	0.5105	0.03
20W CBRS	C	From Leg	4.0000 0.00 1.00	0.0000	99.0000	Ice	1.1008	0.6082	0.03
						1" Ice	1.3741	0.8327	0.06
						2" Ice			
						No Ice	0.8571	0.4203	0.02
						1/2"	0.9752	0.5105	0.03
						Ice	1.1008	0.6082	0.03
						1" Ice	1.3741	0.8327	0.06
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
DB-C1-12C-24AB-0Z	C	From Leg	4.0000 0.00 1.00	0.0000	99.0000	2" Ice			
						No Ice	4.0563	3.0975	0.03
						1/2"	4.3155	3.3351	0.07
						Ice	4.5822	3.5801	0.11
						1" Ice	5.1377	4.0923	0.20
T-Arm Mount [TA 602-3]	C	None		0.0000	99.0000	2" Ice			
						No Ice	14.5167	14.5167	0.83
						1/2"	17.8100	17.8100	1.08
						Ice	21.1033	21.1033	1.33
						1" Ice	27.6899	27.6899	1.83
*** Bridge Stiffener (76" x 10.5" x 1.25")	A	From Leg	0.0000 0.00 0.00	0.0000	109.5000	2" Ice			
						No Ice	1.3194	7.8023	0.28
						1/2"	2.0409	8.2878	0.31
						Ice	2.7747	8.7656	0.35
						1" Ice	3.9288	9.7423	0.45
Bridge Stiffener (76" x 10.5" x 1.25")	B	From Leg	0.0000 0.00 0.00	0.0000	109.5000	2" Ice			
						No Ice	1.3194	7.8023	0.28
						1/2"	2.0409	8.2878	0.31
						Ice	2.7747	8.7656	0.35
						1" Ice	3.9288	9.7423	0.45
Bridge Stiffener (76" x 10.5" x 1.25")	C	From Leg	0.0000 0.00 0.00	0.0000	109.5000	2" Ice			
						No Ice	1.3194	7.8023	0.28
						1/2"	2.0409	8.2878	0.31
						Ice	2.7747	8.7656	0.35
						1" Ice	3.9288	9.7423	0.45
***									

### Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft <sup>2</sup>	Weight K	
VHLP2-23	B	Paraboloid w/Shroud (HP)	From Leg	4.0000 0.00 5.00	0.0000		138.0000	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
VHLP2-18	C	Paraboloid w/Shroud (HP)	From Leg	4.0000 0.00 5.00	0.0000		138.0000	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

### Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
L1 150.0000-145.0000	147.4802	1.104	39.519	6.596	A	0.000	6.596	6.596	100.00	0.000	0.000
					B	0.000	6.596	100.00	0.000	0.000	
					C	0.000	6.596	100.00	1.667	0.000	
L2 145.0000-140.0000	142.4811	1.093	39.131	6.912	A	0.000	6.912	6.912	100.00	0.000	0.000
					B	0.000	6.912	100.00	0.000	0.000	
					C	0.000	6.912	100.00	1.667	0.000	
L3 140.0000-135.0000	137.4819	1.082	38.734	7.227	A	0.000	7.227	7.227	100.00	0.000	0.000
					B	0.000	7.227	100.00	1.983	0.000	
					C	0.000	7.227	100.00	1.667	0.000	

Section Elevation ft	z ft	$K_z$	$q_z$ psf	$A_G$ ft <sup>2</sup>	F a c e	$A_F$ ft <sup>2</sup>	$A_R$ ft <sup>2</sup>	$A_{leg}$ ft <sup>2</sup>	Leg %	$C_A A_A$ In Face ft <sup>2</sup>	$C_A A_A$ Out Face ft <sup>2</sup>
L4 135.0000- 130.0000	132.4826	1.071	38.32	7.543	A	0.000	7.543	7.543	100.00	0.000	0.000
					B	0.000	7.543	100.00	3.305	0.000	
					C	0.000	7.543	100.00	1.667	0.000	
L5 130.0000- 128.5000	129.2485	1.063	38.05	2.324	A	0.000	2.324	2.324	100.00	0.050	0.000
					B	0.000	2.324	100.00	1.017	0.000	
					C	0.000	2.324	100.00	0.525	0.000	
L6 128.5000- 128.2500	128.3750	1.061	37.98	0.387	A	0.000	0.387	0.387	100.00	0.008	0.000
					B	0.000	0.387	100.00	0.169	0.000	
					C	0.000	0.387	100.00	0.087	0.000	
L7 128.2500- 123.2500	125.7336	1.055	37.75	7.907	A	0.000	7.907	7.907	100.00	0.167	0.000
					B	0.000	7.907	100.00	3.388	0.000	
					C	0.000	7.907	100.00	1.750	0.000	
L8 123.2500- 118.2500	120.7342	1.043	37.32	8.226	A	0.000	8.226	8.226	100.00	0.167	0.000
					B	0.000	8.226	100.00	3.388	0.000	
					C	0.000	8.226	100.00	3.465	0.000	
L9 118.2500- 113.2500	115.7348	1.03	36.87	8.543	A	0.000	8.543	8.543	100.00	0.167	0.000
					B	0.000	8.543	100.00	3.388	0.000	
					C	0.000	8.543	100.00	6.650	0.000	
L10 113.2500- 109.0000	111.1144	1.018	36.44	7.512	A	0.000	7.512	7.512	100.00	0.125	0.000
					B	0.000	7.512	100.00	2.872	0.000	
					C	0.000	7.512	100.00	5.644	0.000	
L11 109.0000- 108.7500	108.8750	1.013	36.23	0.448	A	0.000	0.448	0.448	100.00	0.008	0.000
					B	0.000	0.448	100.00	0.169	0.000	
					C	0.000	0.448	100.00	0.333	0.000	
L12 108.7500- 104.1700	106.4477	1.006	36.00	8.355	A	0.000	8.355	8.355	100.00	0.924	0.000
					B	0.000	8.355	100.00	4.647	0.000	
					C	0.000	8.355	100.00	6.863	0.000	
L13 104.1700- 103.9200	104.0450	0.999	35.77	0.462	A	0.000	0.462	0.462	100.00	0.051	0.000
					B	0.000	0.462	100.00	0.255	0.000	
					C	0.000	0.462	100.00	0.375	0.000	
L14 103.9200- 103.1700	103.5447	0.998	35.72	1.391	A	0.000	1.391	1.391	100.00	0.154	0.000
					B	0.000	1.391	100.00	0.766	0.000	
					C	0.000	1.391	100.00	1.126	0.000	
L15 103.1700- 102.9200	103.0450	0.997	35.67	0.464	A	0.000	0.464	0.464	100.00	0.051	0.000
					B	0.000	0.464	100.00	0.255	0.000	
					C	0.000	0.464	100.00	0.375	0.000	
L16 102.9200- 102.4200	102.6699	0.996	35.63	0.931	A	0.000	0.931	0.931	100.00	0.102	0.000
					B	0.000	0.931	100.00	0.510	0.000	
					C	0.000	0.931	100.00	0.751	0.000	
L17 102.4200- 102.1700	102.2950	0.995	35.59	0.468	A	0.000	0.468	0.468	100.00	0.051	0.000
					B	0.000	0.468	100.00	0.255	0.000	
					C	0.000	0.468	100.00	0.375	0.000	
L18 102.1700- 100.9200	101.5441	0.993	35.52	2.352	A	0.000	2.352	2.352	100.00	0.256	0.000
					B	0.000	2.352	100.00	1.276	0.000	
					C	0.000	2.352	100.00	1.877	0.000	
L19 100.9200- 100.6700	100.7950	0.99	35.44	0.472	A	0.000	0.472	0.472	100.00	0.051	0.000
					B	0.000	0.472	100.00	0.255	0.000	
					C	0.000	0.472	100.00	0.375	0.000	
L20 100.6700- 99.5800	100.1243	0.989	35.37	2.069	A	0.000	2.069	2.069	100.00	0.223	0.000
					B	0.000	2.069	100.00	1.128	0.000	
					C	0.000	2.069	100.00	1.637	0.000	
L21 99.5800- 99.3300	99.4550	0.987	35.31	0.474	A	0.000	0.474	0.474	100.00	0.051	0.000
					B	0.000	0.474	100.00	0.259	0.000	
					C	0.000	0.474	100.00	0.375	0.000	
L22 99.3300- 95.2500	97.2808	0.98	35.08	7.855	A	0.000	7.855	7.855	100.00	0.790	0.000
					B	0.000	7.855	100.00	5.672	0.000	
					C	0.000	7.855	100.00	6.126	0.000	
L23 95.2500- 95.0000	95.1250	0.974	34.86	0.491	A	0.000	0.491	0.491	100.00	0.047	0.000
					B	0.000	0.491	100.00	0.354	0.000	
					C	0.000	0.491	100.00	0.375	0.000	
L24 95.0000- 90.0000	92.4866	0.966	34.58	9.986	A	0.000	9.986	9.986	100.00	0.883	0.000
					B	0.000	9.986	100.00	7.026	0.000	
					C	0.000	9.986	100.00	7.450	0.000	
L25 90.0000- 85.0000	87.4870	0.951	34.04	10.318	A	0.000	10.318	10.318	100.00	0.858	0.000
					B	0.000	10.318	100.00	7.001	0.000	
					C	0.000	10.318	100.00	7.425	0.000	
L26 85.0000- 80.5000	82.7398	0.936	33.50	9.569	A	0.000	9.569	9.569	100.00	0.375	0.000
					B	0.000	9.569	100.00	5.482	0.000	
					C	0.000	9.569	100.00	5.482	0.000	

Section Elevation ft	z ft	$K_z$	$q_z$ psf	$A_G$ ft <sup>2</sup>	F a c e	$A_F$ ft <sup>2</sup>	$A_R$ ft <sup>2</sup>	$A_{leg}$ ft <sup>2</sup>	Leg %	$C_A A_A$ In Face ft <sup>2</sup>	$C_A A_A$ Out Face ft <sup>2</sup>
L27 80.5000- 80.2500	80.3750	0.928	33.22 6	0.537	C	0.000	9.569	0.537	100.00	6.310	0.000
					A	0.000	0.537		100.00	0.008	0.000
					B	0.000	0.537		100.00	0.277	0.000
L28 80.2500- 75.2500	77.7378	0.92	32.91 1	10.910	C	0.000	0.537	10.910	100.00	0.341	0.000
					A	0.000	10.910		100.00	0.167	0.000
					B	0.000	10.910		100.00	5.535	0.000
L29 75.2500- 73.5800	74.4137	0.908	32.50 3	3.718	C	0.000	3.718	3.718	100.00	6.817	0.000
					A	0.000	3.718		100.00	0.056	0.000
					B	0.000	3.718		100.00	1.849	0.000
L30 73.5800- 73.3300	73.4550	0.905	32.38 3	0.560	C	0.000	3.718	0.560	100.00	2.277	0.000
					A	0.000	0.560		100.00	0.008	0.000
					B	0.000	0.560		100.00	0.277	0.000
L31 73.3300- 69.0000	71.1562	0.897	32.09 0	9.826	C	0.000	0.560	9.826	100.00	0.341	0.000
					A	0.000	9.826		100.00	0.144	0.000
					B	0.000	9.826		100.00	4.793	0.000
L32 69.0000- 67.0000	67.9980	0.885	31.67 6	4.539	C	0.000	9.826	4.539	100.00	5.903	0.000
					A	0.000	4.539		100.00	0.133	0.000
					B	0.000	4.539		100.00	2.247	0.000
L33 67.0000- 66.7500	66.8750	0.881	31.52 6	0.571	C	0.000	4.539	0.571	100.00	2.760	0.000
					A	0.000	0.571		100.00	0.017	0.000
					B	0.000	0.571		100.00	0.281	0.000
L34 66.7500- 66.5000	66.6250	0.88	31.49 2	0.571	C	0.000	0.571	0.571	100.00	0.345	0.000
					A	0.000	0.571		100.00	0.017	0.000
					B	0.000	0.571		100.00	0.281	0.000
L35 66.5000- 61.5000	63.9877	0.87	31.13 1	11.619	C	0.000	0.571	11.619	100.00	0.345	0.000
					A	0.000	11.619		100.00	0.250	0.000
					B	0.000	11.619		100.00	5.535	0.000
L36 61.5000- 56.5000	58.9880	0.85	30.41 6	11.976	C	0.000	11.619	11.976	100.00	6.733	0.000
					A	0.000	11.976		100.00	0.250	0.000
					B	0.000	11.976		100.00	5.535	0.000
L37 56.5000- 51.5000	53.9884	0.829	29.65 6	12.329	C	0.000	11.976	12.329	100.00	6.733	0.000
					A	0.000	12.329		100.00	0.250	0.000
					B	0.000	12.329		100.00	5.535	0.000
L38 51.5000- 48.2500	49.8702	0.81	28.99 1	8.203	C	0.000	12.329	8.203	100.00	6.733	0.000
					A	0.000	8.203		100.00	0.850	0.000
					B	0.000	8.203		100.00	4.285	0.000
L39 48.2500- 48.0000	48.1250	0.802	28.69 7	0.634	C	0.000	8.203	0.634	100.00	5.752	0.000
					A	0.000	0.634		100.00	0.075	0.000
					B	0.000	0.634		100.00	0.339	0.000
L40 48.0000- 44.2500	46.1187	0.792	28.35 0	9.618	C	0.000	0.634	9.618	100.00	0.462	0.000
					A	0.000	9.618		100.00	1.125	0.000
					B	0.000	9.618		100.00	5.089	0.000
L41 44.2500- 44.0000	44.1250	0.782	27.99 5	0.647	C	0.000	9.618	0.647	100.00	6.925	0.000
					A	0.000	0.647		100.00	0.075	0.000
					B	0.000	0.647		100.00	0.339	0.000
L42 44.0000- 43.0800	43.5396	0.779	27.88 8	2.390	C	0.000	0.647	2.390	100.00	0.462	0.000
					A	0.000	2.390		100.00	0.276	0.000
					B	0.000	2.390		100.00	1.248	0.000
L43 43.0800- 42.8300	42.9550	0.776	27.78 0	0.652	C	0.000	2.390	0.652	100.00	1.699	0.000
					A	0.000	0.652		100.00	0.075	0.000
					B	0.000	0.652		100.00	0.339	0.000
L44 42.8300- 37.8300	40.3192	0.762	27.28 2	13.225	C	0.000	0.652	13.225	100.00	0.462	0.000
					A	0.000	13.225		100.00	1.500	0.000
					B	0.000	13.225		100.00	6.785	0.000
L45 37.8300- 30.0000	33.8893	0.725	25.96 1	21.418	C	0.000	13.225	21.418	100.00	9.233	0.000
					A	0.000	21.418		100.00	2.349	0.000
					B	0.000	21.418		100.00	10.625	0.000
L46 30.0000- 29.0000	29.4996	0.7	25.05 1	2.743	C	0.000	21.418	2.743	100.00	14.459	0.000
					A	0.000	2.743		100.00	0.300	0.000
					B	0.000	2.743		100.00	1.357	0.000
L47 29.0000- 24.0000	26.4893	0.7	25.05 1	13.942	C	0.000	2.743	13.942	100.00	1.847	0.000
					A	0.000	13.942		100.00	1.500	0.000
					B	0.000	13.942		100.00	6.785	0.000
L48 24.0000- 23.7500	23.8750	0.7	25.05 1	0.707	C	0.000	13.942	0.707	100.00	9.233	0.000
					A	0.000	0.707		100.00	0.075	0.000
					B	0.000	0.707		100.00	0.339	0.000
					C	0.000	0.707		100.00	0.462	0.000



Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L49 23.7500-23.5000	23.6250	0.7	25.05	0.708	A	0.000	0.708	0.708	100.00	0.075	0.000
					B	0.000	0.708	100.00	0.339	0.000	
					C	0.000	0.708	100.00	0.462	0.000	
L50 23.5000-18.5000	20.9896	0.7	25.05	14.350	A	0.000	14.350	14.350	100.00	1.500	0.000
					B	0.000	14.350	100.00	6.785	0.000	
					C	0.000	14.350	100.00	9.233	0.000	
L51 18.5000-13.5000	15.9898	0.7	25.05	14.721	A	0.000	14.721	14.721	100.00	1.500	0.000
					B	0.000	14.721	100.00	6.785	0.000	
					C	0.000	14.721	100.00	9.233	0.000	
L52 13.5000-11.0000	12.2475	0.7	25.05	7.499	A	0.000	7.499	7.499	100.00	0.750	0.000
					B	0.000	7.499	100.00	3.393	0.000	
					C	0.000	7.499	100.00	4.617	0.000	
L53 11.0000-10.7500	10.8750	0.7	25.05	0.757	A	0.000	0.757	0.757	100.00	0.075	0.000
					B	0.000	0.757	100.00	0.339	0.000	
					C	0.000	0.757	100.00	0.462	0.000	
L54 10.7500-6.0000	8.3662	0.7	25.05	14.555	A	0.000	14.555	14.555	100.00	1.425	0.000
					B	0.000	14.555	100.00	6.404	0.000	
					C	0.000	14.555	100.00	8.730	0.000	
L55 6.0000-5.7500	5.8750	0.7	25.05	0.773	A	0.000	0.773	0.773	100.00	0.075	0.000
					B	0.000	0.773	100.00	0.335	0.000	
					C	0.000	0.773	100.00	0.457	0.000	
L56 5.7500-3.2500	4.4976	0.7	25.05	7.783	A	0.000	7.783	7.783	100.00	0.746	0.000
					B	0.000	7.783	100.00	3.347	0.000	
					C	0.000	7.783	100.00	4.575	0.000	
L57 3.2500-3.0000	3.1250	0.7	25.05	0.786	A	0.000	0.786	0.786	100.00	0.071	0.000
					B	0.000	0.786	100.00	0.331	0.000	
					C	0.000	0.786	100.00	0.457	0.000	
L58 3.0000-0.0000	1.4966	0.7	25.05	9.504	A	0.000	9.504	9.504	100.00	0.850	0.000
					B	0.000	9.504	100.00	3.971	0.000	
					C	0.000	9.504	100.00	5.490	0.000	

**Tower Pressure - With Ice**

G<sub>H</sub> = 1.100

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L1 150.0000-145.0000	147.4802	1.104	6.323	1.4809	7.830	A	0.000	7.830	7.830	100.00	0.000	0.000
						B	0.000	7.830	100.00	0.000	0.000	
						C	0.000	7.830	100.00	3.148	0.000	
L2 145.0000-140.0000	142.4811	1.093	6.261	1.4758	8.142	A	0.000	8.142	8.142	100.00	0.000	0.000
						B	0.000	8.142	100.00	0.000	0.000	
						C	0.000	8.142	100.00	3.142	0.000	
L3 140.0000-135.0000	137.4819	1.082	6.197	1.4706	8.453	A	0.000	8.453	8.453	100.00	0.000	0.000
						B	0.000	8.453	100.00	4.315	0.000	
						C	0.000	8.453	100.00	3.137	0.000	
L4 135.0000-130.0000	132.4826	1.071	6.132	1.4651	8.764	A	0.000	8.764	8.764	100.00	0.000	0.000
						B	0.000	8.764	100.00	7.179	0.000	
						C	0.000	8.764	100.00	3.132	0.000	
L5 130.0000-128.5000	129.2485	1.063	6.089	1.4615	2.690	A	0.000	2.690	2.690	100.00	0.927	0.000
						B	0.000	2.690	100.00	2.615	0.000	
						C	0.000	2.690	100.00	1.402	0.000	
L6 128.5000-128.2500	128.3750	1.061	6.077	1.4605	0.448	A	0.000	0.448	0.448	100.00	0.154	0.000
						B	0.000	0.448	100.00	0.436	0.000	
						C	0.000	0.448	100.00	0.234	0.000	
L7 128.2500-123.2500	125.7336	1.055	6.041	1.4575	9.121	A	0.000	9.121	9.121	100.00	3.082	0.000
						B	0.000	9.121	100.00	8.703	0.000	
						C	0.000	9.121	100.00	4.665	0.000	
L8 123.2500-118.2500	120.7342	1.043	5.972	1.4516	9.436	A	0.000	9.436	9.436	100.00	3.070	0.000
						B	0.000	9.436	100.00	8.683	0.000	
						C	0.000	9.436	100.00	7.432	0.000	
L9 118.2500-113.2500	115.7348	1.03	5.900	1.4455	9.748	A	0.000	9.748	9.748	100.00	3.058	0.000
						B	0.000	9.748	100.00	8.664	0.000	
						C	0.000	9.748	100.00	12.573	0.000	

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L10 113.2500-109.0000	111.1144	1.018	5.832	1.4396	8.531	A	0.000	8.531	8.531	100.00	2.284	0.000
						B	0.000	8.531	100.00	7.196	0.000	
						C	0.000	8.531	100.00	10.518	0.000	
L11 109.0000-108.7500	108.8750	1.013	5.798	1.4367	0.508	A	0.000	0.508	0.508	100.00	0.152	0.000
						B	0.000	0.508	100.00	0.432	0.000	
						C	0.000	0.508	100.00	0.627	0.000	
L12 108.7500-104.1700	106.4477	1.006	5.761	1.4334	9.449	A	0.000	9.449	9.449	100.00	4.839	0.000
						B	0.000	9.449	100.00	12.022	0.000	
						C	0.000	9.449	100.00	13.542	0.000	
L13 104.1700-103.9200	104.0450	0.999	5.723	1.4301	0.521	A	0.000	0.521	0.521	100.00	0.266	0.000
						B	0.000	0.521	100.00	0.659	0.000	
						C	0.000	0.521	100.00	0.741	0.000	
L14 103.9200-103.1700	103.5447	0.998	5.715	1.4295	1.570	A	0.000	1.570	1.570	100.00	0.797	0.000
						B	0.000	1.570	100.00	1.978	0.000	
						C	0.000	1.570	100.00	2.221	0.000	
L15 103.1700-102.9200	103.0450	0.997	5.707	1.4288	0.524	A	0.000	0.524	0.524	100.00	0.266	0.000
						B	0.000	0.524	100.00	0.659	0.000	
						C	0.000	0.524	100.00	0.740	0.000	
L16 102.9200-102.4200	102.6699	0.996	5.701	1.4282	1.050	A	0.000	1.050	1.050	100.00	0.531	0.000
						B	0.000	1.050	100.00	1.318	0.000	
						C	0.000	1.050	100.00	1.480	0.000	
L17 102.4200-102.1700	102.2950	0.995	5.695	1.4277	0.527	A	0.000	0.527	0.527	100.00	0.265	0.000
						B	0.000	0.527	100.00	0.659	0.000	
						C	0.000	0.527	100.00	0.740	0.000	
L18 102.1700-100.9200	101.5441	0.993	5.683	1.4267	2.649	A	0.000	2.649	2.649	100.00	1.326	0.000
						B	0.000	2.649	100.00	3.293	0.000	
						C	0.000	2.649	100.00	3.699	0.000	
L19 100.9200-100.6700	100.7950	0.99	5.671	1.4256	0.532	A	0.000	0.532	0.532	100.00	0.265	0.000
						B	0.000	0.532	100.00	0.658	0.000	
						C	0.000	0.532	100.00	0.740	0.000	
L20 100.6700-99.5800	100.1243	0.989	5.661	1.4247	2.328	A	0.000	2.328	2.328	100.00	1.155	0.000
						B	0.000	2.328	100.00	3.128	0.000	
						C	0.000	2.328	100.00	3.224	0.000	
L21 99.5800-99.3300	99.4550	0.987	5.650	1.4237	0.533	A	0.000	0.533	0.533	100.00	0.265	0.000
						B	0.000	0.533	100.00	0.728	0.000	
						C	0.000	0.533	100.00	0.739	0.000	
L22 99.3300-95.2500	97.2808	0.98	5.614	1.4206	8.821	A	0.000	8.821	8.821	100.00	3.486	0.000
						B	0.000	8.821	100.00	14.229	0.000	
						C	0.000	8.821	100.00	12.053	0.000	
L23 95.2500-95.0000	95.1250	0.974	5.578	1.4174	0.550	A	0.000	0.550	0.550	100.00	0.189	0.000
						B	0.000	0.550	100.00	0.864	0.000	
						C	0.000	0.550	100.00	0.738	0.000	
L24 95.0000-90.0000	92.4866	0.966	5.534	1.4134	11.164	A	0.000	11.164	11.164	100.00	2.720	0.000
						B	0.000	11.164	100.00	16.267	0.000	
						C	0.000	11.164	100.00	13.692	0.000	
L25 90.0000-85.0000	87.4870	0.951	5.447	1.4056	11.489	A	0.000	11.489	11.489	100.00	2.263	0.000
						B	0.000	11.489	100.00	15.804	0.000	
						C	0.000	11.489	100.00	13.218	0.000	
L26 85.0000-80.5000	82.7398	0.936	5.360	1.3978	10.618	A	0.000	10.618	10.618	100.00	2.053	0.000
						B	0.000	10.618	100.00	13.786	0.000	
						C	0.000	10.618	100.00	12.340	0.000	
L27 80.5000-80.2500	80.3750	0.928	5.316	1.3937	0.595	A	0.000	0.595	0.595	100.00	0.148	0.000
						B	0.000	0.595	100.00	0.783	0.000	
						C	0.000	0.595	100.00	0.768	0.000	
L28 80.2500-75.2500	77.7378	0.92	5.266	1.3891	12.068	A	0.000	12.068	12.068	100.00	2.945	0.000
						B	0.000	12.068	100.00	15.636	0.000	
						C	0.000	12.068	100.00	15.334	0.000	
L29 75.2500-73.5800	74.4137	0.908	5.200	1.3830	4.103	A	0.000	4.103	4.103	100.00	0.980	0.000
						B	0.000	4.103	100.00	5.209	0.000	
						C	0.000	4.103	100.00	5.111	0.000	
L30 73.5800-73.3300	73.4550	0.905	5.181	1.3812	0.617	A	0.000	0.617	0.617	100.00	0.146	0.000
						B	0.000	0.617	100.00	0.779	0.000	
						C	0.000	0.617	100.00	0.765	0.000	
L31 73.3300-69.0000	71.1562	0.897	5.134	1.3768	10.820	A	0.000	10.820	10.820	100.00	2.529	0.000
						B	0.000	10.820	100.00	13.472	0.000	
						C	0.000	10.820	100.00	13.224	0.000	
L32 69.0000-67.0000	67.9980	0.885	5.068	1.3706	4.998	A	0.000	4.998	4.998	100.00	2.336	0.000
						B	0.000	4.998	100.00	6.807	0.000	
						C	0.000	4.998	100.00	6.807	0.000	

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L33 67.0000-66.7500	66.8750	0.881	5.044	1.3683	0.628	C	0.000	4.998	0.628	100.00	6.692	0.000
						A	0.000	0.628		100.00	0.290	0.000
						B	0.000	0.628		100.00	0.848	0.000
L34 66.7500-66.5000	66.6250	0.88	5.039	1.3678	0.628	C	0.000	0.628	0.628	100.00	0.834	0.000
						A	0.000	0.628		100.00	0.290	0.000
						B	0.000	0.628		100.00	0.847	0.000
L35 66.5000-61.5000	63.9877	0.87	4.981	1.3623	12.754	C	0.000	0.628	12.754	100.00	0.834	0.000
						A	0.000	12.754		100.00	4.337	0.000
						B	0.000	12.754		100.00	15.462	0.000
L36 61.5000-56.5000	58.9880	0.85	4.866	1.3512	13.102	C	0.000	12.754	13.102	100.00	13.748	0.000
						A	0.000	13.102		100.00	4.304	0.000
						B	0.000	13.102		100.00	15.391	0.000
L37 56.5000-51.5000	53.9884	0.829	4.745	1.3393	13.445	C	0.000	13.102	13.445	100.00	13.701	0.000
						A	0.000	13.445		100.00	4.268	0.000
						B	0.000	13.445		100.00	15.313	0.000
L38 51.5000-48.2500	49.8702	0.81	4.639	1.3287	8.923	C	0.000	13.445	8.923	100.00	13.651	0.000
						A	0.000	8.923		100.00	4.172	0.000
						B	0.000	8.923		100.00	11.327	0.000
L39 48.2500-48.0000	48.1250	0.802	4.592	1.3240	0.689	C	0.000	8.923	0.689	100.00	11.680	0.000
						A	0.000	0.689		100.00	0.340	0.000
						B	0.000	0.689		100.00	0.889	0.000
L40 48.0000-44.2500	46.1187	0.792	4.536	1.3184	10.442	C	0.000	0.689	10.442	100.00	0.937	0.000
						A	0.000	10.442		100.00	5.080	0.000
						B	0.000	10.442		100.00	13.309	0.000
L41 44.2500-44.0000	44.1250	0.782	4.479	1.3126	0.702	C	0.000	10.442	0.702	100.00	14.024	0.000
						A	0.000	0.702		100.00	0.338	0.000
						B	0.000	0.702		100.00	0.885	0.000
L42 44.0000-43.0800	43.5396	0.779	4.462	1.3108	2.591	C	0.000	0.702	2.591	100.00	0.933	0.000
						A	0.000	2.591		100.00	1.241	0.000
						B	0.000	2.591		100.00	3.255	0.000
L43 43.0800-42.8300	42.9550	0.776	4.445	1.3091	0.706	C	0.000	2.591	0.706	100.00	3.432	0.000
						A	0.000	0.706		100.00	0.337	0.000
						B	0.000	0.706		100.00	0.884	0.000
L44 42.8300-37.8300	40.3192	0.762	4.365	1.3008	14.309	C	0.000	0.706	14.309	100.00	0.932	0.000
						A	0.000	14.309		100.00	6.703	0.000
						B	0.000	14.309		100.00	17.613	0.000
L45 37.8300-30.0000	33.8893	0.725	4.154	1.2784	23.087	C	0.000	14.309	23.087	100.00	18.588	0.000
						A	0.000	23.087		100.00	10.357	0.000
						B	0.000	23.087		100.00	27.320	0.000
L46 30.0000-29.0000	29.4996	0.7	4.008	1.2608	2.956	C	0.000	23.087	2.956	100.00	28.890	0.000
						A	0.000	2.956		100.00	1.323	0.000
						B	0.000	2.956		100.00	3.489	0.000
L47 29.0000-24.0000	26.4893	0.7	4.008	1.2473	14.981	C	0.000	2.956	14.981	100.00	3.690	0.000
						A	0.000	14.981		100.00	6.489	0.000
						B	0.000	14.981		100.00	17.212	0.000
L48 24.0000-23.7500	23.8750	0.7	4.008	1.2344	0.758	C	0.000	14.981	0.758	100.00	18.254	0.000
						A	0.000	0.758		100.00	0.322	0.000
						B	0.000	0.758		100.00	0.856	0.000
L49 23.7500-23.5000	23.6250	0.7	4.008	1.2331	0.759	C	0.000	0.758	0.759	100.00	0.909	0.000
						A	0.000	0.759		100.00	0.322	0.000
						B	0.000	0.759		100.00	0.855	0.000
L50 23.5000-18.5000	20.9896	0.7	4.008	1.2186	15.365	C	0.000	0.759	15.365	100.00	0.908	0.000
						A	0.000	15.365		100.00	6.374	0.000
						B	0.000	15.365		100.00	16.997	0.000
L51 18.5000-13.5000	15.9898	0.7	4.008	1.1859	15.710	C	0.000	15.365	15.710	100.00	18.075	0.000
						A	0.000	15.710		100.00	6.244	0.000
						B	0.000	15.710		100.00	16.752	0.000
L52 13.5000-11.0000	12.2475	0.7	4.008	1.1547	7.980	C	0.000	15.710	7.980	100.00	17.870	0.000
						A	0.000	7.980		100.00	3.059	0.000
						B	0.000	7.980		100.00	8.259	0.000
L53 11.0000-10.7500	10.8750	0.7	4.008	1.1410	0.805	C	0.000	7.980	0.805	100.00	8.838	0.000
						A	0.000	0.805		100.00	0.303	0.000
						B	0.000	0.805		100.00	0.821	0.000
L54 10.7500-6.0000	8.3662	0.7	4.008	1.1115	15.435	C	0.000	0.805	15.435	100.00	0.879	0.000
						A	0.000	15.435		100.00	5.649	0.000
						B	0.000	15.435		100.00	14.787	0.000
						C	0.000	15.435		100.00	15.938	0.000

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L55 6.0000-5.7500	5.8750	0.7	4.008	1.0729	0.818	A	0.000	0.818	0.818	100.00	0.290	0.000
						B	0.000	0.818	100.00	0.737	0.000	
						C	0.000	0.818	100.00	0.800	0.000	
L56 5.7500-3.2500	4.4976	0.7	4.008	1.0446	8.219	A	0.000	8.219	8.219	100.00	2.783	0.000
						B	0.000	8.219	100.00	7.226	0.000	
						C	0.000	8.219	100.00	7.930	0.000	
L57 3.2500-3.0000	3.1250	0.7	4.008	1.0073	0.828	A	0.000	0.828	0.828	100.00	0.222	0.000
						B	0.000	0.828	100.00	0.662	0.000	
						C	0.000	0.828	100.00	0.783	0.000	
L58 3.0000-0.0000	1.4966	0.7	4.008	0.9358	9.972	A	0.000	9.972	9.972	100.00	2.534	0.000
						B	0.000	9.972	100.00	7.703	0.000	
						C	0.000	9.972	100.00	9.173	0.000	

### Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L1 150.0000-145.0000	147.4802	1.104	8.575	6.596	A	0.000	6.596	6.596	100.00	0.000	0.000
					B	0.000	6.596	100.00	0.000	0.000	
					C	0.000	6.596	100.00	1.667	0.000	
L2 145.0000-140.0000	142.4811	1.093	8.491	6.912	A	0.000	6.912	6.912	100.00	0.000	0.000
					B	0.000	6.912	100.00	0.000	0.000	
					C	0.000	6.912	100.00	1.667	0.000	
L3 140.0000-135.0000	137.4819	1.082	8.405	7.227	A	0.000	7.227	7.227	100.00	0.000	0.000
					B	0.000	7.227	100.00	1.983	0.000	
					C	0.000	7.227	100.00	1.667	0.000	
L4 135.0000-130.0000	132.4826	1.071	8.317	7.543	A	0.000	7.543	7.543	100.00	0.000	0.000
					B	0.000	7.543	100.00	3.305	0.000	
					C	0.000	7.543	100.00	1.667	0.000	
L5 130.0000-128.5000	129.2485	1.063	8.258	2.324	A	0.000	2.324	2.324	100.00	0.050	0.000
					B	0.000	2.324	100.00	1.017	0.000	
					C	0.000	2.324	100.00	0.525	0.000	
L6 128.5000-128.2500	128.3750	1.061	8.242	0.387	A	0.000	0.387	0.387	100.00	0.008	0.000
					B	0.000	0.387	100.00	0.169	0.000	
					C	0.000	0.387	100.00	0.087	0.000	
L7 128.2500-123.2500	125.7336	1.055	8.193	7.907	A	0.000	7.907	7.907	100.00	0.167	0.000
					B	0.000	7.907	100.00	3.388	0.000	
					C	0.000	7.907	100.00	1.750	0.000	
L8 123.2500-118.2500	120.7342	1.043	8.099	8.226	A	0.000	8.226	8.226	100.00	0.167	0.000
					B	0.000	8.226	100.00	3.388	0.000	
					C	0.000	8.226	100.00	3.465	0.000	
L9 118.2500-113.2500	115.7348	1.03	8.002	8.543	A	0.000	8.543	8.543	100.00	0.167	0.000
					B	0.000	8.543	100.00	3.388	0.000	
					C	0.000	8.543	100.00	6.650	0.000	
L10 113.2500-109.0000	111.1144	1.018	7.909	7.512	A	0.000	7.512	7.512	100.00	0.125	0.000
					B	0.000	7.512	100.00	2.872	0.000	
					C	0.000	7.512	100.00	5.644	0.000	
L11 109.0000-108.7500	108.8750	1.013	7.863	0.448	A	0.000	0.448	0.448	100.00	0.008	0.000
					B	0.000	0.448	100.00	0.169	0.000	
					C	0.000	0.448	100.00	0.333	0.000	
L12 108.7500-104.1700	106.4477	1.006	7.813	8.355	A	0.000	8.355	8.355	100.00	0.924	0.000
					B	0.000	8.355	100.00	4.647	0.000	
					C	0.000	8.355	100.00	6.863	0.000	
L13 104.1700-103.9200	104.0450	0.999	7.762	0.462	A	0.000	0.462	0.462	100.00	0.051	0.000
					B	0.000	0.462	100.00	0.255	0.000	
					C	0.000	0.462	100.00	0.375	0.000	
L14 103.9200-103.1700	103.5447	0.998	7.751	1.391	A	0.000	1.391	1.391	100.00	0.154	0.000
					B	0.000	1.391	100.00	0.766	0.000	
					C	0.000	1.391	100.00	1.126	0.000	
L15 103.1700-102.9200	103.0450	0.997	7.740	0.464	A	0.000	0.464	0.464	100.00	0.051	0.000
					B	0.000	0.464	100.00	0.255	0.000	
					C	0.000	0.464	100.00	0.375	0.000	

Section Elevation ft	z ft	$K_z$	$q_z$ psf	$A_G$ ft <sup>2</sup>	F a c e	$A_F$ ft <sup>2</sup>	$A_R$ ft <sup>2</sup>	$A_{leg}$ ft <sup>2</sup>	Leg %	$C_A A_A$ In Face ft <sup>2</sup>	$C_A A_A$ Out Face ft <sup>2</sup>
L16 102.9200- 102.4200	102.6699	0.996	7.732	0.931	A	0.000	0.931	0.931	100.00	0.102	0.000
					B	0.000	0.931	100.00	0.510	0.000	
					C	0.000	0.931	100.00	0.751	0.000	
L17 102.4200- 102.1700	102.2950	0.995	7.724	0.468	A	0.000	0.468	0.468	100.00	0.051	0.000
					B	0.000	0.468	100.00	0.255	0.000	
					C	0.000	0.468	100.00	0.375	0.000	
L18 102.1700- 100.9200	101.5441	0.993	7.708	2.352	A	0.000	2.352	2.352	100.00	0.256	0.000
					B	0.000	2.352	100.00	1.276	0.000	
					C	0.000	2.352	100.00	1.877	0.000	
L19 100.9200- 100.6700	100.7950	0.99	7.692	0.472	A	0.000	0.472	0.472	100.00	0.051	0.000
					B	0.000	0.472	100.00	0.255	0.000	
					C	0.000	0.472	100.00	0.375	0.000	
L20 100.6700- 99.5800	100.1243	0.989	7.677	2.069	A	0.000	2.069	2.069	100.00	0.223	0.000
					B	0.000	2.069	100.00	1.128	0.000	
					C	0.000	2.069	100.00	1.637	0.000	
L21 99.5800- 99.3300	99.4550	0.987	7.662	0.474	A	0.000	0.474	0.474	100.00	0.051	0.000
					B	0.000	0.474	100.00	0.259	0.000	
					C	0.000	0.474	100.00	0.375	0.000	
L22 99.3300- 95.2500	97.2808	0.98	7.614	7.855	A	0.000	7.855	7.855	100.00	0.790	0.000
					B	0.000	7.855	100.00	5.672	0.000	
					C	0.000	7.855	100.00	6.126	0.000	
L23 95.2500- 95.0000	95.1250	0.974	7.566	0.491	A	0.000	0.491	0.491	100.00	0.047	0.000
					B	0.000	0.491	100.00	0.354	0.000	
					C	0.000	0.491	100.00	0.375	0.000	
L24 95.0000- 90.0000	92.4866	0.966	7.505	9.986	A	0.000	9.986	9.986	100.00	0.883	0.000
					B	0.000	9.986	100.00	7.026	0.000	
					C	0.000	9.986	100.00	7.450	0.000	
L25 90.0000- 85.0000	87.4870	0.951	7.387	10.318	A	0.000	10.318	10.318	100.00	0.858	0.000
					B	0.000	10.318	100.00	7.001	0.000	
					C	0.000	10.318	100.00	7.425	0.000	
L26 85.0000- 80.5000	82.7398	0.936	7.270	9.569	A	0.000	9.569	9.569	100.00	0.375	0.000
					B	0.000	9.569	100.00	5.482	0.000	
					C	0.000	9.569	100.00	6.310	0.000	
L27 80.5000- 80.2500	80.3750	0.928	7.210	0.537	A	0.000	0.537	0.537	100.00	0.008	0.000
					B	0.000	0.537	100.00	0.277	0.000	
					C	0.000	0.537	100.00	0.341	0.000	
L28 80.2500- 75.2500	77.7378	0.92	7.142	10.910	A	0.000	10.910	10.910	100.00	0.167	0.000
					B	0.000	10.910	100.00	5.535	0.000	
					C	0.000	10.910	100.00	6.817	0.000	
L29 75.2500- 73.5800	74.4137	0.908	7.053	3.718	A	0.000	3.718	3.718	100.00	0.056	0.000
					B	0.000	3.718	100.00	1.849	0.000	
					C	0.000	3.718	100.00	2.277	0.000	
L30 73.5800- 73.3300	73.4550	0.905	7.027	0.560	A	0.000	0.560	0.560	100.00	0.008	0.000
					B	0.000	0.560	100.00	0.277	0.000	
					C	0.000	0.560	100.00	0.341	0.000	
L31 73.3300- 69.0000	71.1562	0.897	6.963	9.826	A	0.000	9.826	9.826	100.00	0.144	0.000
					B	0.000	9.826	100.00	4.793	0.000	
					C	0.000	9.826	100.00	5.903	0.000	
L32 69.0000- 67.0000	67.9980	0.885	6.874	4.539	A	0.000	4.539	4.539	100.00	0.133	0.000
					B	0.000	4.539	100.00	2.247	0.000	
					C	0.000	4.539	100.00	2.760	0.000	
L33 67.0000- 66.7500	66.8750	0.881	6.841	0.571	A	0.000	0.571	0.571	100.00	0.017	0.000
					B	0.000	0.571	100.00	0.281	0.000	
					C	0.000	0.571	100.00	0.345	0.000	
L34 66.7500- 66.5000	66.6250	0.88	6.834	0.571	A	0.000	0.571	0.571	100.00	0.017	0.000
					B	0.000	0.571	100.00	0.281	0.000	
					C	0.000	0.571	100.00	0.345	0.000	
L35 66.5000- 61.5000	63.9877	0.87	6.755	11.619	A	0.000	11.619	11.619	100.00	0.250	0.000
					B	0.000	11.619	100.00	5.535	0.000	
					C	0.000	11.619	100.00	6.733	0.000	
L36 61.5000- 56.5000	58.9880	0.85	6.600	11.976	A	0.000	11.976	11.976	100.00	0.250	0.000
					B	0.000	11.976	100.00	5.535	0.000	
					C	0.000	11.976	100.00	6.733	0.000	
L37 56.5000- 51.5000	53.9884	0.829	6.435	12.329	A	0.000	12.329	12.329	100.00	0.250	0.000
					B	0.000	12.329	100.00	5.535	0.000	
					C	0.000	12.329	100.00	6.733	0.000	
L38 51.5000- 48.2500	49.8702	0.81	6.291	8.203	A	0.000	8.203	8.203	100.00	0.850	0.000
					B	0.000	8.203	100.00	4.285	0.000	
					B	0.000	8.203	100.00	4.285	0.000	

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L39 48.2500- 48.0000	48.1250	0.802	6.227	0.634	C	0.000	8.203	0.634	100.00	5.752	0.000
					A	0.000	0.634		100.00	0.075	0.000
					B	0.000	0.634		100.00	0.339	0.000
L40 48.0000- 44.2500	46.1187	0.792	6.152	9.618	C	0.000	0.634	9.618	100.00	0.462	0.000
					A	0.000	0.634		100.00	1.125	0.000
					B	0.000	9.618		100.00	5.089	0.000
L41 44.2500- 44.0000	44.1250	0.782	6.075	0.647	C	0.000	0.647	0.647	100.00	6.925	0.000
					A	0.000	0.647		100.00	0.075	0.000
					B	0.000	0.647		100.00	0.339	0.000
L42 44.0000- 43.0800	43.5396	0.779	6.052	2.390	C	0.000	0.647	2.390	100.00	0.462	0.000
					A	0.000	2.390		100.00	0.276	0.000
					B	0.000	2.390		100.00	1.248	0.000
L43 43.0800- 42.8300	42.9550	0.776	6.028	0.652	C	0.000	2.390	0.652	100.00	1.699	0.000
					A	0.000	0.652		100.00	0.075	0.000
					B	0.000	0.652		100.00	0.339	0.000
L44 42.8300- 37.8300	40.3192	0.762	5.920	13.225	C	0.000	0.652	13.225	100.00	0.462	0.000
					A	0.000	13.225		100.00	1.500	0.000
					B	0.000	13.225		100.00	6.785	0.000
L45 37.8300- 30.0000	33.8893	0.725	5.634	21.418	C	0.000	13.225	21.418	100.00	9.233	0.000
					A	0.000	21.418		100.00	2.349	0.000
					B	0.000	21.418		100.00	10.625	0.000
L46 30.0000- 29.0000	29.4996	0.7	5.436	2.743	C	0.000	21.418	2.743	100.00	14.459	0.000
					A	0.000	2.743		100.00	0.300	0.000
					B	0.000	2.743		100.00	1.357	0.000
L47 29.0000- 24.0000	26.4893	0.7	5.436	13.942	C	0.000	2.743	13.942	100.00	1.847	0.000
					A	0.000	13.942		100.00	1.500	0.000
					B	0.000	13.942		100.00	6.785	0.000
L48 24.0000- 23.7500	23.8750	0.7	5.436	0.707	C	0.000	13.942	0.707	100.00	9.233	0.000
					A	0.000	0.707		100.00	0.075	0.000
					B	0.000	0.707		100.00	0.339	0.000
L49 23.7500- 23.5000	23.6250	0.7	5.436	0.708	C	0.000	0.707	0.708	100.00	0.462	0.000
					A	0.000	0.708		100.00	0.075	0.000
					B	0.000	0.708		100.00	0.339	0.000
L50 23.5000- 18.5000	20.9896	0.7	5.436	14.350	C	0.000	0.708	14.350	100.00	0.462	0.000
					A	0.000	14.350		100.00	1.500	0.000
					B	0.000	14.350		100.00	6.785	0.000
L51 18.5000- 13.5000	15.9898	0.7	5.436	14.721	C	0.000	14.350	14.721	100.00	9.233	0.000
					A	0.000	14.721		100.00	1.500	0.000
					B	0.000	14.721		100.00	6.785	0.000
L52 13.5000- 11.0000	12.2475	0.7	5.436	7.499	C	0.000	14.721	7.499	100.00	0.462	0.000
					A	0.000	7.499		100.00	0.750	0.000
					B	0.000	7.499		100.00	3.393	0.000
L53 11.0000- 10.7500	10.8750	0.7	5.436	0.757	C	0.000	7.499	0.757	100.00	4.617	0.000
					A	0.000	0.757		100.00	0.075	0.000
					B	0.000	0.757		100.00	0.339	0.000
L54 10.7500- 6.0000	8.3662	0.7	5.436	14.555	C	0.000	0.757	14.555	100.00	0.462	0.000
					A	0.000	14.555		100.00	1.425	0.000
					B	0.000	14.555		100.00	6.404	0.000
L55 6.0000- 5.7500	5.8750	0.7	5.436	0.773	C	0.000	14.555	0.773	100.00	8.730	0.000
					A	0.000	0.773		100.00	0.075	0.000
					B	0.000	0.773		100.00	0.335	0.000
L56 5.7500- 3.2500	4.4976	0.7	5.436	7.783	C	0.000	0.773	7.783	100.00	0.457	0.000
					A	0.000	7.783		100.00	0.746	0.000
					B	0.000	7.783		100.00	3.347	0.000
L57 3.2500- 3.0000	3.1250	0.7	5.436	0.786	C	0.000	7.783	0.786	100.00	4.575	0.000
					A	0.000	0.786		100.00	0.071	0.000
					B	0.000	0.786		100.00	0.331	0.000
L58 3.0000- 0.0000	1.4966	0.7	5.436	9.504	C	0.000	0.786	9.504	100.00	0.457	0.000
					A	0.000	9.504		100.00	0.850	0.000
					B	0.000	9.504		100.00	3.971	0.000
					C	0.000	9.504		100.00	5.490	0.000

### Load Combinations

Comb. No.	Description
1	Dead Only

Comb. No.	Description
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
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	150 - 145	Pole	Max Tension	26	0.00	0.00	-0.00
			Max. Compression	26	-11.68	-0.14	0.96
			Max. Mx	8	-4.09	-44.75	0.25
			Max. My	2	-4.11	-0.04	44.92
			Max. Vy	8	6.73	-44.75	0.25
			Max. Vx	2	-6.70	-0.04	44.92
			Max. Torque	20			-0.53
L2	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-12.38	-0.15	0.49
			Max. Mx	8	-4.42	-80.22	0.15
			Max. My	2	-4.46	-0.05	79.76
			Max. Vy	8	7.39	-80.22	0.15
			Max. Vx	2	-7.26	-0.05	79.76
			Max. Torque	20			-0.50

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.39	-0.58	0.28
			Max. Mx	8	-10.55	-133.44	0.17
			Max. My	2	-10.59	-0.25	132.10
			Max. Vy	8	11.70	-133.44	0.17
			Max. Vx	2	-11.56	-0.25	132.10
L4	135 - 130	Pole	Max. Torque	16			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.05	-0.68	0.29
			Max. Mx	8	-10.98	-192.58	0.32
			Max. My	2	-11.02	-0.36	190.51
			Max. Vy	8	11.96	-192.58	0.32
L5	130 - 128.5	Pole	Max. Vx	2	-11.82	-0.36	190.51
			Max. Torque	16			0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.28	-0.71	0.29
			Max. Mx	8	-11.11	-210.56	0.36
			Max. My	2	-11.15	-0.39	208.28
L6	128.5 - 128.25	Pole	Max. Vy	8	12.04	-210.56	0.36
			Max. Vx	2	-11.89	-0.39	208.28
			Max. Torque	16			0.61
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.34	-0.72	0.29
			Max. Mx	8	-11.16	-213.57	0.37
L7	128.25 - 123.25	Pole	Max. My	2	-11.21	-0.40	211.25
			Max. Vy	8	12.04	-213.57	0.37
			Max. Vx	2	-11.90	-0.40	211.25
			Max. Torque	16			0.61
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.51	-0.81	0.31
L8	123.25 - 118.25	Pole	Max. Mx	8	-11.95	-274.68	0.52
			Max. My	2	-12.00	-0.51	271.58
			Max. Vy	8	12.40	-274.68	0.52
			Max. Vx	2	-12.24	-0.51	271.58
			Max. Torque	16			0.61
			Max Tension	1	0.00	0.00	0.00
L9	118.25 - 113.25	Pole	Max. Compression	26	-37.27	-0.91	0.28
			Max. Mx	8	-17.13	-346.99	0.65
			Max. My	2	-17.19	-0.62	342.91
			Max. Vy	8	18.13	-346.99	0.65
			Max. Vx	2	-17.90	-0.62	342.91
			Max. Torque	16			0.69
L10	113.25 - 109	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.60	-1.01	0.16
			Max. Mx	8	-18.00	-438.98	0.78
			Max. My	2	-18.09	-0.74	433.11
			Max. Vy	8	18.67	-438.98	0.78
			Max. Vx	2	-18.21	-0.74	433.11
L11	109 - 108.75	Pole	Max. Torque	16			0.80
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.09	-1.10	0.06
			Max. Mx	8	-19.73	-519.58	0.89
			Max. My	2	-19.83	-0.84	511.30
			Max. Vy	8	19.76	-519.58	0.89
L12	108.75 - 104.17	Pole	Max. Vx	2	-19.09	-0.84	511.30
			Max. Torque	16			0.89
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.16	-1.11	0.05
			Max. Mx	8	-19.79	-524.52	0.89
			Max. My	2	-19.89	-0.84	516.07



Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L13	104.17 - 103.92	Pole	Max. Compression	26	-42.66	-1.22	-0.04
			Max. Mx	8	-20.74	-616.43	1.01
			Max. My	2	-20.85	-0.95	604.61
			Max. Vy	8	20.37	-616.43	1.01
			Max. Vx	2	-19.59	-0.95	604.61
			Max. Torque	16			0.98
			Max Tension	1	0.00	0.00	0.00
L14	103.92 - 103.17	Pole	Max. Compression	26	-42.76	-1.23	-0.05
			Max. Mx	8	-20.83	-621.53	1.01
			Max. My	2	-20.93	-0.95	609.50
			Max. Vy	8	20.39	-621.53	1.01
			Max. Vx	2	-19.61	-0.95	609.50
			Max. Torque	16			0.98
			Max Tension	1	0.00	0.00	0.00
L15	103.17 - 102.92	Pole	Max. Compression	26	-43.07	-1.24	-0.06
			Max. Mx	8	-21.04	-636.86	1.03
			Max. My	2	-21.15	-0.97	624.24
			Max. Vy	8	20.50	-636.86	1.03
			Max. Vx	2	-19.70	-0.97	624.24
			Max. Torque	16			1.00
			Max Tension	1	0.00	0.00	0.00
L16	102.92 - 102.42	Pole	Max. Compression	26	-43.19	-1.25	-0.07
			Max. Mx	8	-21.13	-641.99	1.04
			Max. My	2	-21.24	-0.98	629.16
			Max. Vy	8	20.53	-641.99	1.04
			Max. Vx	2	-19.73	-0.98	629.16
			Max. Torque	16			1.00
			Max Tension	1	0.00	0.00	0.00
L17	102.42 - 102.17	Pole	Max. Compression	26	-43.42	-1.26	-0.08
			Max. Mx	8	-21.30	-652.28	1.05
			Max. My	2	-21.40	-0.99	639.04
			Max. Vy	8	20.61	-652.28	1.05
			Max. Vx	2	-19.79	-0.99	639.04
			Max. Torque	16			1.01
			Max Tension	1	0.00	0.00	0.00
L18	102.17 - 100.92	Pole	Max. Compression	26	-43.52	-1.27	-0.09
			Max. Mx	8	-21.38	-657.43	1.06
			Max. My	2	-21.48	-0.99	643.99
			Max. Vy	8	20.64	-657.43	1.06
			Max. Vx	2	-19.82	-0.99	643.99
			Max. Torque	16			1.02
			Max Tension	1	0.00	0.00	0.00
L19	100.92 - 100.67	Pole	Max. Compression	26	-44.07	-1.30	-0.11
			Max. Mx	8	-21.76	-683.34	1.09
			Max. My	2	-21.87	-1.02	668.84
			Max. Vy	8	20.82	-683.34	1.09
			Max. Vx	2	-19.97	-1.02	668.84
			Max. Torque	16			1.04
			Max Tension	1	0.00	0.00	0.00
L20	100.67 - 99.58	Pole	Max. Compression	26	-44.18	-1.31	-0.12
			Max. Mx	8	-21.85	-688.55	1.10
			Max. My	2	-21.96	-1.03	673.83
			Max. Vy	8	20.85	-688.55	1.10
			Max. Vx	2	-19.99	-1.03	673.83
			Max. Torque	16			1.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.65	-1.33	-0.14
			Max. Mx	8	-22.18	-711.36	1.12
			Max. My	2	-22.29	-1.05	695.68
			Max. Vy	8	21.01	-711.36	1.12
			Max. Vx	2	-20.13	-1.05	695.68

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L21	99.58 - 99.33	Pole	Max. Torque	16			1.06
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.77	-1.35	-0.14
			Max. Mx	8	-22.28	-716.62	1.13
			Max. My	2	-22.39	-1.06	700.71
			Max. Vy	8	21.04	-716.62	1.13
			Max. Vx	2	-20.15	-1.06	700.71
L22	99.33 - 95.25	Pole	Max. Torque	16			1.07
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.32	-1.83	1.45
			Max. Mx	8	-26.07	-814.34	2.28
			Max. My	2	-26.18	-1.54	795.51
			Max. Vy	8	23.94	-814.34	2.28
			Max. Vx	2	-23.05	-1.54	795.51
L23	95.25 - 95	Pole	Max. Torque	16			1.07
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.43	-1.84	1.45
			Max. Mx	8	-26.15	-820.33	2.28
			Max. My	2	-26.26	-1.55	801.27
			Max. Vy	8	23.97	-820.33	2.28
			Max. Vx	2	-23.08	-1.55	801.27
L24	95 - 90	Pole	Max. Torque	16			0.88
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.47	-2.05	1.36
			Max. Mx	8	-27.62	-941.83	2.31
			Max. My	2	-27.72	-1.57	918.22
			Max. Vy	8	24.63	-941.83	2.31
			Max. Vx	2	-23.73	-1.57	918.22
L25	90 - 85	Pole	Max. Torque	16			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.50	-2.26	1.28
			Max. Mx	8	-29.12	-1066.58	2.34
			Max. My	2	-29.22	-1.60	1038.35
			Max. Vy	8	25.28	-1066.58	2.34
			Max. Vx	2	-24.36	-1.60	1038.35
L26	85 - 80.5	Pole	Max. Torque	16			1.17
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.36	-2.45	1.20
			Max. Mx	8	-30.49	-1181.55	2.37
			Max. My	2	-30.59	-1.63	1149.10
			Max. Vy	8	25.84	-1181.55	2.37
			Max. Vx	2	-24.91	-1.63	1149.10
L27	80.5 - 80.25	Pole	Max. Torque	16			1.34
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.49	-2.47	1.19
			Max. Mx	8	-30.60	-1188.02	2.37
			Max. My	2	-30.70	-1.63	1155.32
			Max. Vy	8	25.86	-1188.02	2.37
			Max. Vx	2	-24.93	-1.63	1155.32
L28	80.25 - 75.25	Pole	Max. Torque	16			1.35
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.02	-2.66	1.08
			Max. Mx	8	-32.52	-1318.99	2.40
			Max. My	2	-32.61	-1.66	1281.53
			Max. Vy	8	26.53	-1318.99	2.40
			Max. Vx	2	-25.59	-1.66	1281.53
L29	75.25 - 73.58	Pole	Max. Torque	16			1.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.88	-2.72	1.05
			Max. Mx	8	-33.16	-1363.48	2.41
			Max. My	2	-33.25	-1.67	1324.41
			Max. Vy	8	26.76	-1363.48	2.41
			Max. Vx	2	-25.81	-1.67	1324.41
			Max. Torque	16			1.65

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L30	73.58 - 73.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.00	-2.74	1.04
			Max. Mx	8	-33.27	-1370.17	2.41
			Max. My	2	-33.36	-1.67	1330.86
			Max. Vy	8	26.78	-1370.17	2.41
			Max. Vx	2	-25.83	-1.67	1330.86
L31	73.33 - 69	Pole	Max. Torque	16			1.66
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.69	-2.79	1.01
			Max. Mx	8	-33.78	-1405.90	2.41
			Max. My	2	-33.87	-1.68	1365.31
			Max. Vy	8	26.96	-1405.90	2.41
L32	69 - 67	Pole	Max. Vx	2	-26.01	-1.68	1365.31
			Max. Torque	16			1.72
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.55	-2.98	0.90
			Max. Mx	8	-36.83	-1542.59	2.44
			Max. My	2	-36.92	-1.71	1497.11
L33	67 - 66.75	Pole	Max. Vy	8	27.69	-1542.59	2.44
			Max. Vx	2	-26.72	-1.71	1497.11
			Max. Torque	16			1.94
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.68	-2.99	0.89
			Max. Mx	8	-36.95	-1549.51	2.44
L34	66.75 - 66.5	Pole	Max. My	2	-37.03	-1.71	1503.79
			Max. Vy	8	27.71	-1549.51	2.44
			Max. Vx	2	-26.74	-1.71	1503.79
			Max. Torque	16			1.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.83	-3.00	0.89
L35	66.5 - 61.5	Pole	Max. Mx	8	-37.06	-1556.44	2.44
			Max. My	2	-37.14	-1.71	1510.48
			Max. Vy	8	27.74	-1556.44	2.44
			Max. Vx	2	-26.77	-1.71	1510.48
			Max. Torque	16			1.96
			Max Tension	1	0.00	0.00	0.00
L36	61.5 - 56.5	Pole	Max. Compression	26	-69.60	-3.17	0.79
			Max. Mx	8	-39.22	-1696.71	2.47
			Max. My	2	-39.30	-1.74	1645.78
			Max. Vy	8	28.37	-1696.71	2.47
			Max. Vx	2	-27.39	-1.74	1645.78
			Max. Torque	16			2.14
L37	56.5 - 51.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.38	-3.35	0.69
			Max. Mx	8	-41.43	-1840.00	2.49
			Max. My	2	-41.50	-1.77	1784.06
			Max. Vy	8	28.96	-1840.00	2.49
			Max. Vx	2	-27.97	-1.77	1784.06
L38	51.5 - 48.25	Pole	Max. Torque	16			2.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.18	-3.54	0.59
			Max. Mx	8	-43.65	-1986.21	2.51
			Max. My	2	-43.72	-1.80	1925.20
			Max. Vy	8	29.54	-1986.21	2.51
L39	48.25 - 48	Pole	Max. Vx	2	-28.53	-1.80	1925.20
			Max. Torque	16			2.49
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.09	-3.66	0.50
			Max. Mx	8	-45.12	-2082.76	2.52
			Max. My	2	-45.18	-1.83	2018.43
L39	48.25 - 48	Pole	Max. Vy	8	29.90	-2082.76	2.52
			Max. Vx	2	-28.89	-1.83	2018.43
			Max. Torque	16			2.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.26	-3.67	0.50
			Max. Mx	8	-45.26	-2090.24	2.52
L39	48.25 - 48	Pole	Max. My	2	-45.32	-1.83	2025.65
			Max. Vy	8	29.91	-2090.24	2.52
			Max. Vx	8	29.91	-2090.24	2.52

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L40	48 - 44.25	Pole	Max. Vx	2	-28.90	-1.83	2025.65
			Max. Torque	16			2.63
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.77	-3.81	0.39
			Max. Mx	8	-47.23	-2203.25	2.54
			Max. My	2	-47.29	-1.85	2134.81
			Max. Vy	8	30.37	-2203.25	2.54
L41	44.25 - 44	Pole	Max. Vx	2	-29.35	-1.85	2134.81
			Max. Torque	16			2.77
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.95	-3.82	0.38
			Max. Mx	8	-47.38	-2210.84	2.54
			Max. My	2	-47.44	-1.86	2142.14
			Max. Vy	8	30.38	-2210.84	2.54
L42	44 - 43.08	Pole	Max. Vx	2	-29.37	-1.86	2142.14
			Max. Torque	16			2.78
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.60	-3.85	0.35
			Max. Mx	8	-47.89	-2238.85	2.54
			Max. My	2	-47.95	-1.86	2169.20
			Max. Vy	8	30.50	-2238.85	2.54
L43	43.08 - 42.83	Pole	Max. Vx	2	-29.48	-1.86	2169.20
			Max. Torque	16			2.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.77	-3.87	0.35
			Max. Mx	8	-48.04	-2246.48	2.54
			Max. My	2	-48.09	-1.86	2176.57
			Max. Vy	8	30.52	-2246.48	2.54
L44	42.83 - 37.83	Pole	Max. Vx	2	-29.50	-1.86	2176.57
			Max. Torque	16			2.83
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.28	-4.05	0.20
			Max. Mx	8	-50.84	-2400.52	2.56
			Max. My	2	-50.88	-1.90	2325.40
			Max. Vy	8	31.10	-2400.52	2.56
L45	37.83 - 30	Pole	Max. Vx	2	-30.07	-1.90	2325.40
			Max. Torque	16			3.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.98	-4.20	0.08
			Max. Mx	8	-53.00	-2520.37	2.57
			Max. My	2	-53.04	-1.93	2441.24
			Max. Vy	8	31.51	-2520.37	2.57
L46	30 - 29	Pole	Max. Vx	2	-30.47	-1.93	2441.24
			Max. Torque	16			3.17
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.00	-4.40	-0.07
			Max. Mx	8	-58.07	-2679.52	2.58
			Max. My	2	-58.11	-1.97	2595.10
			Max. Vy	8	32.14	-2679.52	2.58
L47	29 - 24	Pole	Max. Vx	2	-31.10	-1.97	2595.10
			Max. Torque	16			3.36
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.71	-4.59	-0.21
			Max. Mx	8	-61.12	-2841.40	2.60
			Max. My	2	-61.15	-2.00	2751.66
			Max. Vy	8	32.63	-2841.40	2.60
L48	24 - 23.75	Pole	Max. Vx	2	-31.58	-2.00	2751.66
			Max. Torque	16			3.55
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.90	-4.61	-0.22
			Max. Mx	8	-61.28	-2849.56	2.60
			Max. My	2	-61.31	-2.01	2759.55
			Max. Vy	8	32.64	-2849.56	2.60
L49	23.75 - 23.5	Pole	Max. Vx	2	-31.59	-2.01	2759.55
			Max. Torque	16			3.56
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.09	-4.62	-0.23

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L50	23.5 - 18.5	Pole	Max. Mx	8	-61.43	-2857.73	2.60
			Max. My	2	-61.47	-2.01	2767.45
			Max. Vy	8	32.66	-2857.73	2.60
			Max. Vx	2	-31.61	-2.01	2767.45
			Max. Torque	16			3.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.82	-4.81	-0.38
			Max. Mx	8	-64.50	-3022.26	2.61
			Max. My	2	-64.53	-2.05	2926.62
			Max. Vy	8	33.15	-3022.26	2.61
L51	18.5 - 13.5	Pole	Max. Vx	2	-32.10	-2.05	2926.62
			Max. Torque	16			3.76
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-104.55	-5.01	-0.53
			Max. Mx	8	-67.61	-3189.16	2.62
			Max. My	2	-67.63	-2.09	3088.12
			Max. Vy	8	33.62	-3189.16	2.62
			Max. Vx	2	-32.56	-2.09	3088.12
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
L52	13.5 - 11	Pole	Max. Compression	26	-106.43	-5.10	-0.61
			Max. Mx	8	-69.17	-3273.49	2.63
			Max. My	2	-69.19	-2.11	3169.75
			Max. Vy	8	33.86	-3273.49	2.63
			Max. Vx	2	-32.80	-2.11	3169.75
			Max. Torque	16			4.05
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.61	-5.11	-0.61
			Max. Mx	8	-69.34	-3281.96	2.63
			Max. My	2	-69.36	-2.11	3177.94
L53	11 - 10.75	Pole	Max. Vy	8	33.86	-3281.96	2.63
			Max. Vx	2	-32.80	-2.11	3177.94
			Max. Torque	16			4.06
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.05	-5.29	-0.76
			Max. Mx	8	-72.26	-3443.69	2.64
			Max. My	2	-72.27	-2.15	3334.60
			Max. Vy	8	34.25	-3443.69	2.64
			Max. Vx	2	-33.22	-2.15	3334.60
			Max. Torque	16			4.26
L54	10.75 - 6	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.23	-5.30	-0.76
			Max. Mx	8	-72.42	-3452.25	2.64
			Max. My	2	-72.43	-2.15	3342.90
			Max. Vy	8	34.24	-3452.25	2.64
			Max. Vx	2	-33.21	-2.15	3342.90
			Max. Torque	16			4.27
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-111.98	-5.39	-0.84
			Max. Mx	8	-73.91	-3538.01	2.64
L55	6 - 5.75	Pole	Max. My	2	-73.92	-2.17	3426.17
			Max. Vy	8	34.38	-3538.01	2.64
			Max. Vx	2	-33.46	-2.17	3426.17
			Max. Torque	16			4.38
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-112.12	-5.40	-0.85
			Max. Mx	8	-74.04	-3546.60	2.64
			Max. My	2	-74.05	-2.17	3434.53
			Max. Vy	8	34.37	-3546.60	2.64
			Max. Vx	2	-33.44	-2.17	3434.53
L56	5.75 - 3.25	Pole	Max. Torque	16			4.39
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.78	-5.50	-0.94
			Max. Mx	8	-75.47	-3649.88	2.65
			Max. My	2	-75.47	-2.20	3534.97
			Max. Vy	8	34.49	-3649.88	2.65
			Max. Vx	2	-33.56	-2.20	3534.97
			Max. Torque	16			4.52
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.78	-5.50	-0.94

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	113.78	0.00	-0.00
	Max. H <sub>x</sub>	21	56.61	34.46	0.02
	Max. H <sub>z</sub>	3	56.61	0.01	33.53
	Max. M <sub>x</sub>	2	3534.97	0.01	33.53
	Max. M <sub>z</sub>	8	3649.88	-34.46	0.01
	Max. Torsion	16	4.52	17.69	-30.63
	Min. Vert	15	56.61	-0.01	-33.51
	Min. H <sub>x</sub>	9	56.61	-34.46	0.01
	Min. H <sub>z</sub>	14	75.48	-0.01	-33.51
	Min. M <sub>x</sub>	14	-3530.95	-0.01	-33.51
	Min. M <sub>z</sub>	20	-3645.72	34.46	0.02
	Min. Torsion	4	-4.50	-17.76	30.64

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	62.90	-0.00	0.00	-0.47	-1.62	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	75.48	-0.01	-33.53	-3534.97	-2.20	2.34
0.9 Dead+1.0 Wind 0 deg - No Ice	56.61	-0.01	-33.53	-3482.27	-1.64	2.34
1.2 Dead+1.0 Wind 30 deg - No Ice	75.48	17.76	-30.64	-3180.44	-1849.32	4.50
0.9 Dead+1.0 Wind 30 deg - No Ice	56.61	17.76	-30.64	-3133.22	-1821.41	4.49
1.2 Dead+1.0 Wind 60 deg - No Ice	75.48	28.35	-16.31	-1739.26	-3027.31	2.42
0.9 Dead+1.0 Wind 60 deg - No Ice	56.61	28.35	-16.31	-1712.94	-2981.24	2.42
1.2 Dead+1.0 Wind 90 deg - No Ice	75.48	34.46	-0.01	-2.65	-3649.88	2.80
0.9 Dead+1.0 Wind 90 deg - No Ice	56.61	34.46	-0.01	-2.42	-3595.24	2.79
1.2 Dead+1.0 Wind 120 deg - No Ice	75.48	24.43	14.01	1591.86	-2786.19	-0.25
0.9 Dead+1.0 Wind 120 deg - No Ice	56.61	24.43	14.01	1567.47	-2742.61	-0.26
1.2 Dead+1.0 Wind 150 deg - No Ice	75.48	14.55	25.16	2813.55	-1629.78	-0.10
0.9 Dead+1.0 Wind 150 deg - No Ice	56.61	14.55	25.16	2770.52	-1604.24	-0.10
1.2 Dead+1.0 Wind 180 deg - No Ice	75.48	0.01	33.51	3530.95	-1.95	-2.33
0.9 Dead+1.0 Wind 180 deg - No Ice	56.61	0.01	33.51	3478.60	-1.42	-2.33
1.2 Dead+1.0 Wind 210 deg - No Ice	75.48	-17.69	30.63	3177.49	1835.91	-4.52
0.9 Dead+1.0 Wind 210 deg - No Ice	56.61	-17.69	30.63	3130.65	1809.24	-4.51
1.2 Dead+1.0 Wind 240 deg - No Ice	75.48	-28.34	16.27	1730.59	3022.07	-2.36
0.9 Dead+1.0 Wind 240 deg - No Ice	56.61	-28.34	16.27	1704.75	2977.11	-2.35
1.2 Dead+1.0 Wind 270 deg - No Ice	75.48	-34.46	-0.02	-2.40	3645.72	-2.80
0.9 Dead+1.0 Wind 270 deg - No Ice	56.61	-34.46	-0.02	-2.20	3592.18	-2.80
1.2 Dead+1.0 Wind 300 deg - No Ice	75.48	-24.43	-14.06	-1600.52	2783.12	0.18

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 300 deg - No Ice	56.61	-24.43	-14.06	-1575.65	2740.62	0.19
1.2 Dead+1.0 Wind 330 deg - No Ice	75.48	-14.61	-25.17	-2816.49	1634.91	0.13
0.9 Dead+1.0 Wind 330 deg - No Ice	56.61	-14.61	-25.17	-2773.08	1610.31	0.13
1.2 Dead+1.0 Ice+1.0 Temp	113.78	-0.00	0.00	0.94	-5.50	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	113.78	-0.00	-7.49	-855.53	-5.74	0.45
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	113.78	3.96	-6.84	-764.45	-450.07	0.83
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	113.78	6.38	-3.67	-420.35	-738.57	0.49
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	113.78	7.56	-0.00	0.63	-876.47	0.38
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	113.78	5.55	3.19	392.30	-689.04	-0.12
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	113.78	3.22	5.57	683.28	-400.49	-0.07
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	113.78	0.00	7.49	856.81	-5.94	-0.45
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	113.78	-3.95	6.84	765.94	436.42	-0.83
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	113.78	-6.38	3.66	420.64	726.64	-0.48
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	113.78	-7.56	-0.00	0.43	864.79	-0.38
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	113.78	-5.56	-3.20	-392.00	677.59	0.10
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	113.78	-3.23	-5.57	-681.78	390.77	0.07
Dead+Wind 0 deg - Service	62.90	-0.00	-7.28	-760.69	-1.75	0.51
Dead+Wind 30 deg - Service	62.90	3.85	-6.65	-684.67	-399.16	0.98
Dead+Wind 60 deg - Service	62.90	6.15	-3.54	-374.50	-652.45	0.53
Dead+Wind 90 deg - Service	62.90	7.48	-0.00	-0.95	-786.37	0.61
Dead+Wind 120 deg - Service	62.90	5.30	3.04	341.91	-600.37	-0.06
Dead+Wind 150 deg - Service	62.90	3.16	5.46	604.63	-351.74	-0.02
Dead+Wind 180 deg - Service	62.90	0.00	7.27	759.05	-1.70	-0.51
Dead+Wind 210 deg - Service	62.90	-3.84	6.65	683.23	393.70	-0.98
Dead+Wind 240 deg - Service	62.90	-6.15	3.53	371.86	648.77	-0.51
Dead+Wind 270 deg - Service	62.90	-7.48	-0.00	-0.90	782.92	-0.61
Dead+Wind 300 deg - Service	62.90	-5.30	-3.05	-344.54	597.16	0.04
Dead+Wind 330 deg - Service	62.90	-3.17	-5.46	-606.04	350.30	0.03

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-62.90	0.00	0.00	62.90	-0.00	0.000%
2	-0.01	-75.48	-33.53	0.01	75.48	33.53	0.001%
3	-0.01	-56.61	-33.53	0.01	56.61	33.53	0.001%
4	17.76	-75.48	-30.64	-17.76	75.48	30.64	0.000%
5	17.76	-56.61	-30.64	-17.76	56.61	30.64	0.000%
6	28.35	-75.48	-16.31	-28.35	75.48	16.31	0.000%
7	28.35	-56.61	-16.31	-28.35	56.61	16.31	0.000%
8	34.46	-75.48	-0.01	-34.46	75.48	0.01	0.001%
9	34.46	-56.61	-0.01	-34.46	56.61	0.01	0.001%
10	24.43	-75.48	14.01	-24.43	75.48	-14.01	0.000%
11	24.43	-56.61	14.01	-24.43	56.61	-14.01	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
12	14.55	-75.48	25.16	-14.55	75.48	-25.16	0.000%
13	14.55	-56.61	25.16	-14.55	56.61	-25.16	0.000%
14	0.01	-75.48	33.52	-0.01	75.48	-33.51	0.001%
15	0.01	-56.61	33.52	-0.01	56.61	-33.51	0.001%
16	-17.69	-75.48	30.63	17.69	75.48	-30.63	0.000%
17	-17.69	-56.61	30.63	17.69	56.61	-30.63	0.000%
18	-28.34	-75.48	16.27	28.34	75.48	-16.27	0.000%
19	-28.34	-56.61	16.27	28.34	56.61	-16.27	0.000%
20	-34.46	-75.48	-0.02	34.46	75.48	0.02	0.001%
21	-34.46	-56.61	-0.02	34.46	56.61	0.02	0.001%
22	-24.43	-75.48	-14.06	24.43	75.48	14.06	0.000%
23	-24.43	-56.61	-14.06	24.43	56.61	14.06	0.000%
24	-14.61	-75.48	-25.17	14.61	75.48	25.17	0.000%
25	-14.61	-56.61	-25.17	14.61	56.61	25.17	0.000%
26	0.00	-113.78	0.00	0.00	113.78	-0.00	0.000%
27	-0.00	-113.78	-7.49	0.00	113.78	7.49	0.000%
28	3.96	-113.78	-6.84	-3.96	113.78	6.84	0.000%
29	6.38	-113.78	-3.67	-6.38	113.78	3.67	0.000%
30	7.56	-113.78	-0.00	-7.56	113.78	0.00	0.000%
31	5.55	-113.78	3.19	-5.55	113.78	-3.19	0.000%
32	3.22	-113.78	5.57	-3.22	113.78	-5.57	0.000%
33	0.00	-113.78	7.49	-0.00	113.78	-7.49	0.000%
34	-3.95	-113.78	6.84	3.95	113.78	-6.84	0.000%
35	-6.38	-113.78	3.66	6.38	113.78	-3.66	0.000%
36	-7.56	-113.78	-0.00	7.56	113.78	0.00	0.000%
37	-5.56	-113.78	-3.20	5.56	113.78	3.20	0.000%
38	-3.23	-113.78	-5.57	3.23	113.78	5.57	0.000%
39	-0.00	-62.90	-7.28	0.00	62.90	7.28	0.002%
40	3.85	-62.90	-6.65	-3.85	62.90	6.65	0.000%
41	6.15	-62.90	-3.54	-6.15	62.90	3.54	0.001%
42	7.48	-62.90	-0.00	-7.48	62.90	0.00	0.002%
43	5.30	-62.90	3.04	-5.30	62.90	-3.04	0.001%
44	3.16	-62.90	5.46	-3.16	62.90	-5.46	0.001%
45	0.00	-62.90	7.27	-0.00	62.90	-7.27	0.002%
46	-3.84	-62.90	6.65	3.84	62.90	-6.65	0.001%
47	-6.15	-62.90	3.53	6.15	62.90	-3.53	0.001%
48	-7.48	-62.90	-0.00	7.48	62.90	0.00	0.002%
49	-5.30	-62.90	-3.05	5.30	62.90	3.05	0.001%
50	-3.17	-62.90	-5.46	3.17	62.90	5.46	0.001%

**Non-Linear Convergence Results**



Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	20	0.00000001	0.00010214
3	Yes	20	0.00000001	0.00007735
4	Yes	25	0.00000001	0.00011335
5	Yes	25	0.00000001	0.00007562
6	Yes	25	0.00000001	0.00010027
7	Yes	24	0.00000001	0.00013770
8	Yes	20	0.00000001	0.00010939
9	Yes	20	0.00000001	0.00008433
10	Yes	25	0.00000001	0.00008868
11	Yes	24	0.00000001	0.00012315
12	Yes	25	0.00000001	0.00009102
13	Yes	24	0.00000001	0.00012621
14	Yes	20	0.00000001	0.00009931
15	Yes	19	0.00000001	0.00014776
16	Yes	25	0.00000001	0.00010617
17	Yes	24	0.00000001	0.00014494
18	Yes	25	0.00000001	0.00010184
19	Yes	24	0.00000001	0.00014020
20	Yes	20	0.00000001	0.00011194
21	Yes	20	0.00000001	0.00008624
22	Yes	25	0.00000001	0.00008979
23	Yes	24	0.00000001	0.00012474
24	Yes	25	0.00000001	0.00009132
25	Yes	24	0.00000001	0.00012662
26	Yes	12	0.00000001	0.00011434
27	Yes	22	0.00000001	0.00012450
28	Yes	23	0.00000001	0.00008580
29	Yes	23	0.00000001	0.00008195
30	Yes	22	0.00000001	0.00012720
31	Yes	22	0.00000001	0.00014163
32	Yes	22	0.00000001	0.00014197
33	Yes	22	0.00000001	0.00012400
34	Yes	23	0.00000001	0.00008311
35	Yes	22	0.00000001	0.00014773
36	Yes	22	0.00000001	0.00012523
37	Yes	22	0.00000001	0.00014045
38	Yes	22	0.00000001	0.00014048
39	Yes	16	0.00012639	0.00008350
40	Yes	19	0.00000001	0.00008816
41	Yes	18	0.00000001	0.00012972
42	Yes	16	0.00012626	0.00009228
43	Yes	18	0.00000001	0.00011425
44	Yes	18	0.00000001	0.00011983
45	Yes	16	0.00012637	0.00008283
46	Yes	18	0.00000001	0.00013402
47	Yes	18	0.00000001	0.00013994
48	Yes	16	0.00012624	0.00009207
49	Yes	18	0.00000001	0.00011779
50	Yes	18	0.00000001	0.00011854

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	22.6608	40	1.5919	0.0030
L2	145 - 140	21.0070	40	1.5630	0.0033
L3	140 - 135	19.3965	40	1.5098	0.0033
L4	135 - 130	17.8536	40	1.4325	0.0029
L5	130 - 128.5	16.4067	40	1.3270	0.0024
L6	128.5 - 128.25	15.9954	40	1.2914	0.0023
L7	128.25 - 123.25	15.9279	40	1.2892	0.0023
L8	123.25 - 118.25	14.6031	40	1.2403	0.0021
L9	118.25 - 113.25	13.3336	40	1.1835	0.0020
L10	113.25 - 109	12.1283	40	1.1175	0.0018
L11	109 - 108.75	11.1614	40	1.0545	0.0017
L12	108.75 - 104.17	11.1062	40	1.0513	0.0017

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L13	104.17 - 103.92	10.1278	40	0.9883	0.0015
L14	103.92 - 103.17	10.0761	40	0.9857	0.0015
L15	103.17 - 102.92	9.9219	40	0.9776	0.0015
L16	102.92 - 102.42	9.8708	40	0.9752	0.0015
L17	102.42 - 102.17	9.7690	40	0.9704	0.0015
L18	102.17 - 100.92	9.7182	40	0.9676	0.0015
L19	100.92 - 100.67	9.4668	40	0.9535	0.0015
L20	100.67 - 99.58	9.4169	40	0.9509	0.0015
L21	99.58 - 99.33	9.2012	40	0.9393	0.0015
L22	99.33 - 95.25	9.1521	40	0.9372	0.0014
L23	95.25 - 95	8.3665	40	0.9013	0.0014
L24	95 - 90	8.3194	40	0.8985	0.0014
L25	90 - 85	7.4087	40	0.8405	0.0013
L26	85 - 80.5	6.5609	40	0.7785	0.0012
L27	80.5 - 80.25	5.8549	40	0.7196	0.0011
L28	80.25 - 75.25	5.8173	40	0.7171	0.0011
L29	75.25 - 73.58	5.0931	40	0.6659	0.0011
L30	73.58 - 73.33	4.8632	40	0.6486	0.0010
L31	73.33 - 69	4.8293	40	0.6460	0.0010
L32	72 - 67	4.6513	40	0.6318	0.0010
L33	67 - 66.75	4.0062	40	0.5938	0.0010
L34	66.75 - 66.5	3.9751	40	0.5911	0.0009
L35	66.5 - 61.5	3.9443	40	0.5886	0.0009
L36	61.5 - 56.5	3.3553	40	0.5363	0.0009
L37	56.5 - 51.5	2.8219	40	0.4826	0.0008
L38	51.5 - 48.25	2.3448	40	0.4286	0.0007
L39	48.25 - 48	2.0650	40	0.3933	0.0006
L40	48 - 44.25	2.0445	40	0.3912	0.0006
L41	44.25 - 44	1.7497	40	0.3595	0.0006
L42	44 - 43.08	1.7310	40	0.3575	0.0006
L43	43.08 - 42.83	1.6628	40	0.3502	0.0006
L44	42.83 - 37.83	1.6445	40	0.3482	0.0006
L45	37.83 - 30	1.3014	40	0.3072	0.0005
L46	34 - 29	1.0676	40	0.2758	0.0004
L47	29 - 24	0.7897	40	0.2515	0.0004
L48	24 - 23.75	0.5479	40	0.2105	0.0003
L49	23.75 - 23.5	0.5369	40	0.2085	0.0003
L50	23.5 - 18.5	0.5260	40	0.2065	0.0003
L51	18.5 - 13.5	0.3314	40	0.1654	0.0003
L52	13.5 - 11	0.1798	40	0.1242	0.0002
L53	11 - 10.75	0.1201	40	0.1036	0.0002
L54	10.75 - 6	0.1148	40	0.1012	0.0002
L55	6 - 5.75	0.0369	40	0.0555	0.0001
L56	5.75 - 3.25	0.0341	40	0.0535	0.0001
L57	3.25 - 3	0.0113	40	0.0333	0.0001
L58	3 - 0	0.0097	40	0.0308	0.0000

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	7770.00	40	22.6608	1.5919	0.0031	6928
147.0000	TME-RRUS-11	40	21.6654	1.5765	0.0033	6928
143.0000	VHLP2-23	40	20.3561	1.5451	0.0034	5543
138.0000	HORIZON COMPACT	40	18.7698	1.4811	0.0032	3822
120.0000	AIR -32 B2A/B66AA	40	13.7711	1.2040	0.0021	4923
109.5000	Bridge Stiffener (76" x 10.5" x 1.25")	40	11.2722	1.0611	0.0017	4005
99.0000	BXA-70063/4CF w/ Mount Pipe	40	9.0874	0.9346	0.0015	5974

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	105.1277	4	7.3962	0.0133
L2	145 - 140	97.4768	4	7.2658	0.0147
L3	140 - 135	90.0208	4	7.0215	0.0146
L4	135 - 130	82.8728	4	6.6635	0.0128
L5	130 - 128.5	76.1662	4	6.1728	0.0106
L6	128.5 - 128.25	74.2589	4	6.0073	0.0101
L7	128.25 - 123.25	73.9456	4	5.9971	0.0100
L8	123.25 - 118.25	67.8010	4	5.7694	0.0094
L9	118.25 - 113.25	61.9119	4	5.5048	0.0087
L10	113.25 - 109	56.3193	4	5.1973	0.0081
L11	109 - 108.75	51.8324	4	4.9035	0.0075
L12	108.75 - 104.17	51.5766	4	4.8885	0.0075
L13	104.17 - 103.92	47.0357	4	4.5949	0.0069
L14	103.92 - 103.17	46.7959	4	4.5826	0.0069
L15	103.17 - 102.92	46.0804	4	4.5448	0.0068
L16	102.92 - 102.42	45.8431	4	4.5338	0.0068
L17	102.42 - 102.17	45.3704	4	4.5114	0.0068
L18	102.17 - 100.92	45.1350	4	4.4982	0.0067
L19	100.92 - 100.67	43.9679	4	4.4328	0.0066
L20	100.67 - 99.58	43.7365	4	4.4204	0.0066
L21	99.58 - 99.33	42.7353	4	4.3663	0.0065
L22	99.33 - 95.25	42.5073	4	4.3567	0.0065
L23	95.25 - 95	38.8612	4	4.1899	0.0063
L24	95 - 90	38.6425	4	4.1770	0.0063
L25	90 - 85	34.4148	4	3.9073	0.0059
L26	85 - 80.5	30.4780	4	3.6195	0.0056
L27	80.5 - 80.25	27.1990	4	3.3454	0.0052
L28	80.25 - 75.25	27.0243	4	3.3340	0.0052
L29	75.25 - 73.58	23.6605	4	3.0958	0.0048
L30	73.58 - 73.33	22.5926	4	3.0155	0.0047
L31	73.33 - 69	22.4351	4	3.0033	0.0047
L32	72 - 67	21.6084	4	2.9371	0.0046
L33	67 - 66.75	18.6111	4	2.7606	0.0043
L34	66.75 - 66.5	18.4670	4	2.7480	0.0043
L35	66.5 - 61.5	18.3235	4	2.7362	0.0043
L36	61.5 - 56.5	15.5873	4	2.4929	0.0039
L37	56.5 - 51.5	13.1088	4	2.2434	0.0035
L38	51.5 - 48.25	10.8921	4	1.9922	0.0031
L39	48.25 - 48	9.5925	4	1.8276	0.0029
L40	48 - 44.25	9.4971	4	1.8179	0.0029
L41	44.25 - 44	8.1277	4	1.6705	0.0026
L42	44 - 43.08	8.0405	4	1.6612	0.0026
L43	43.08 - 42.83	7.7237	4	1.6273	0.0026
L44	42.83 - 37.83	7.6388	4	1.6181	0.0025
L45	37.83 - 30	6.0447	4	1.4274	0.0022
L46	34 - 29	4.9584	4	1.2816	0.0020
L47	29 - 24	3.6677	4	1.1683	0.0018
L48	24 - 23.75	2.5444	4	0.9779	0.0015
L49	23.75 - 23.5	2.4934	4	0.9685	0.0015
L50	23.5 - 18.5	2.4429	4	0.9591	0.0015
L51	18.5 - 13.5	1.5388	4	0.7684	0.0012
L52	13.5 - 11	0.8348	4	0.5768	0.0009
L53	11 - 10.75	0.5578	4	0.4813	0.0008
L54	10.75 - 6	0.5329	4	0.4698	0.0007
L55	6 - 5.75	0.1714	4	0.2575	0.0004
L56	5.75 - 3.25	0.1581	4	0.2483	0.0004
L57	3.25 - 3	0.0526	4	0.1547	0.0002
L58	3 - 0	0.0448	4	0.1430	0.0002

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	7770.00	4	105.1277	7.3962	0.0144	1566
147.0000	TME-RRUS-11	4	100.5232	7.3269	0.0153	1566

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
143.0000	VHLP2-23	4	94.4638	7.1840	0.0159	1245
138.0000	HORIZON COMPACT	4	87.1177	6.8888	0.0151	848
120.0000	AIR -32 B2A/B66AA	4	63.9415	5.6003	0.0096	1077
109.5000	Bridge Stiffener (76" x 10.5" x 1.25")	4	52.3467	4.9345	0.0079	874
99.0000	BXA-70063/4CF w/ Mount Pipe	4	42.2072	4.3444	0.0067	1301

### Compression Checks Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K
L1	150 - 145 (1)	TP15.7317x15x0.2188	5.0000	0.0000	0.0	10.9269	-4.09
L2	145 - 140 (2)	TP16.4634x15.7317x0.2188	5.0000	0.0000	0.0	11.4423	-4.42
L3	140 - 135 (3)	TP17.1951x16.4634x0.2188	5.0000	0.0000	0.0	11.9577	-10.55
L4	135 - 130 (4)	TP17.9268x17.1951x0.2188	5.0000	0.0000	0.0	12.4731	-10.98
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	1.5000	0.0000	0.0	12.6277	-11.11
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	0.2500	0.0000	0.0	37.7146	-11.16
L7	128.25 - 123.25 (7)	TP18.9146x18.1829x0.6438	5.0000	0.0000	0.0	37.8733	-11.95
L8	123.25 - 118.25 (8)	TP19.6463x18.9146x0.6188	5.0000	0.0000	0.0	37.9101	-17.09
L9	118.25 - 113.25 (9)	TP20.378x19.6463x0.6063	5.0000	0.0000	0.0	38.5970	-17.97
L10	113.25 - 109 (10)	TP21x20.378x0.5938	4.2500	0.0000	0.0	39.0142	-19.70
L11	109 - 108.75 (11)	TP21.0378x21x0.725	0.2500	0.0000	0.0	47.4201	-19.76
L12	108.75 - 104.17 (12)	TP21.7293x21.0378x0.7	4.5800	0.0000	0.0	47.4001	-20.72
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	0.2500	0.0000	0.0	65.2767	-20.80
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.95	0.7500	0.0000	0.0	64.0259	-21.02
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	0.2500	0.0000	0.0	75.3229	-21.11
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.1	0.5000	0.0000	0.0	74.0051	-21.28
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.925	0.2500	0.0000	0.0	62.8652	-21.36
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.925	1.2500	0.0000	0.0	63.4274	-21.74
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1	0.2500	0.0000	0.0	68.4502	-21.83
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	1.0900	0.0000	0.0	68.9802	-22.17
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.375	0.2500	0.0000	0.0	93.3546	-22.26
L22	99.33 - 95.25 (22)	TP23.0763x22.4602x1.325	4.0800	0.0000	0.0	92.8017	-26.05
L23	95.25 - 95 (23)	TP23.114x23.0763x1.025	0.2500	0.0000	0.0	72.9047	-26.13
L24	95 - 90 (24)	TP23.869x23.114x1	5.0000	0.0000	0.0	73.6382	-27.60
L25	90 - 85 (25)	TP24.624x23.869x0.9625	5.0000	0.0000	0.0	73.3329	-29.11
L26	85 - 80.5 (26)	TP25.3035x24.624x0.925	4.5000	0.0000	0.0	72.6114	-30.48
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	0.2500	0.0000	0.0	100.6370	-30.59
L28	80.25 - 75.25 (28)	TP26.0963x25.3413x1.25	5.0000	0.0000	0.0	100.0060	-32.50
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.225	1.6700	0.0000	0.0	99.0993	-33.15
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	0.2500	0.0000	0.0	99.2482	-33.26
L31	73.33 - 69 (31)	TP27.04x26.3862x1.2	4.3300	0.0000	0.0	98.0954	-33.77
L32	69 - 67 (32)	TP26.8969x26.087x1.2625	5.0000	0.0000	0.0	104.2100	-36.82
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2625	0.2500	0.0000	0.0	104.3750	-36.93
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	0.2500	0.0000	0.0	112.3810	-37.04
L35	66.5 - 61.5 (35)	TP27.7878x26.9779x1.3125	5.0000	0.0000	0.0	111.8910	-39.21
L36	61.5 - 56.5 (36)	TP28.5976x27.7878x1.2625	5.0000	0.0000	0.0	111.1240	-41.42
L37	56.5 - 51.5 (37)	TP29.4075x28.5976x1.2375	5.0000	0.0000	0.0	112.2500	-43.65
L38	51.5 - 48.25 (38)	TP29.9339x29.4075x1.2125	3.2500	0.0000	0.0	112.1360	-45.11
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6375	0.2500	0.0000	0.0	149.4140	-45.25
L40	48 - 44.25 (40)	TP30.5818x29.9744x1.6125	3.7500	0.0000	0.0	150.4160	-47.22
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.7125	0.2500	0.0000	0.0	159.4160	-47.37
L42	44 - 43.08 (42)	TP30.7714x30.6223x1.7125	0.9200	0.0000	0.0	160.2380	-47.88
L43	43.08 - 42.83 (43)	TP30.8118x30.7714x1.7125	0.2500	0.0000	0.0	160.4610	-48.03
L44	42.83 - 37.83 (44)	TP31.6217x30.8118x1.6375	5.0000	0.0000	0.0	158.0990	-50.83
L45	37.83 - 30 (45)	TP32.89x31.6217x1.6125	7.8300	0.0000	0.0	159.0370	-52.99
L46	30 - 29 (46)	TP32.4616x31.6171x1.7063	5.0000	0.0000	0.0	168.9790	-58.06
L47	29 - 24 (47)	TP33.3062x32.4616x1.6563	5.0000	0.0000	0.0	168.7980	-61.11
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6563	0.2500	0.0000	0.0	169.0230	-61.27
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6563	0.2500	0.0000	0.0	169.2480	-61.42
L50	23.5 - 18.5 (50)	TP34.2352x33.3906x1.6063	5.0000	0.0000	0.0	168.7660	-64.49
L51	18.5 - 13.5 (51)	TP35.0797x34.2352x1.5563	5.0000	0.0000	0.0	167.9950	-67.60
L52	13.5 - 11 (52)	TP35.502x35.0797x1.5313	2.5000	0.0000	0.0	167.5020	-69.17
L53	11 - 10.75 (53)	TP35.5442x35.502x1.2313	0.2500	0.0000	0.0	136.0430	-69.33
L54	10.75 - 6 (54)	TP36.3465x35.5442x1.2563	4.7500	0.0000	0.0	141.9500	-72.25
L55	6 - 5.75 (55)	TP36.3888x36.3465x1.5313	0.2500	0.0000	0.0	171.8750	-72.42

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K
L56	5.75 - 3.25 (56)	TP36.811x36.3888x1.5063	2.5000	0.0000	0.0	171.2380	-73.91
L57	3.25 - 3 (57)	TP36.8533x36.811x1.1563	0.2500	0.0000	0.0	132.9100	-74.04
L58	3 - 0 (58)	TP37.36x36.8533x1.1313	3.0000	0.0000	0.0	131.9730	-75.47

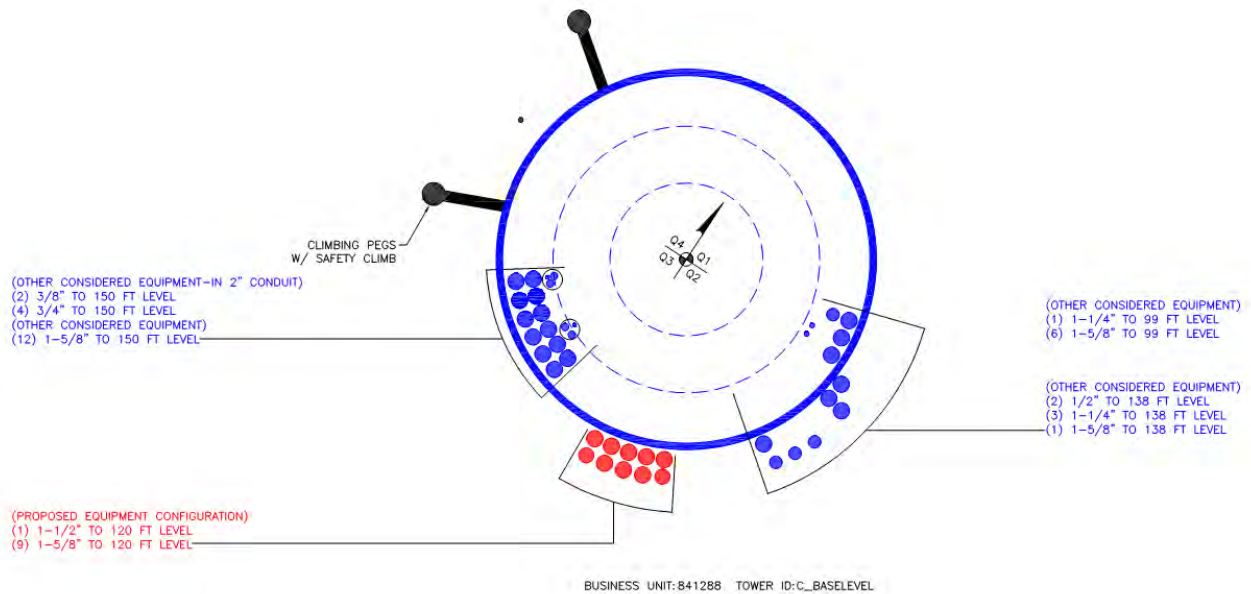
### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft
L1	150 - 145 (1)	TP15.7317x15x0.2188	44.95
L2	145 - 140 (2)	TP16.4634x15.7317x0.2188	80.22
L3	140 - 135 (3)	TP17.1951x16.4634x0.2188	133.44
L4	135 - 130 (4)	TP17.9268x17.1951x0.2188	192.58
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	210.57
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	213.57
L7	128.25 - 123.25 (7)	TP18.9146x18.1829x0.6438	274.68
L8	123.25 - 118.25 (8)	TP19.6463x18.9146x0.6188	347.80
L9	118.25 - 113.25 (9)	TP20.378x19.6463x0.6063	441.07
L10	113.25 - 109 (10)	TP21x20.378x0.5938	522.76
L11	109 - 108.75 (11)	TP21.0378x21x0.725	527.77
L12	108.75 - 104.17 (12)	TP21.7293x21.0378x0.7	620.68
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	625.82
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.95	641.29
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	646.46
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.1	656.83
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.925	662.02
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.925	688.11
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1	693.36
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	716.30
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.375	721.58
L22	99.33 - 95.25 (22)	TP23.0763x22.4602x1.325	820.49
L23	95.25 - 95 (23)	TP23.114x23.0763x1.025	826.50
L24	95 - 90 (24)	TP23.869x23.114x1	948.45
L25	90 - 85 (25)	TP24.624x23.869x0.9625	1073.58
L26	85 - 80.5 (26)	TP25.3035x24.624x0.925	1188.84
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	1195.33
L28	80.25 - 75.25 (28)	TP26.0963x25.3413x1.25	1326.68
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.225	1371.33
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	1378.04
L31	73.33 - 69 (31)	TP27.04x26.3862x1.2	1413.91
L32	69 - 67 (32)	TP26.8969x26.087x1.2625	1551.19
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2625	1558.15
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	1565.12
L35	66.5 - 61.5 (35)	TP27.7878x26.9779x1.3125	1705.97
L36	61.5 - 56.5 (36)	TP28.5976x27.7878x1.2625	1849.71
L37	56.5 - 51.5 (37)	TP29.4075x28.5976x1.2375	1996.22
L38	51.5 - 48.25 (38)	TP29.9339x29.4075x1.2125	2092.97
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6375	2100.47
L40	48 - 44.25 (40)	TP30.5818x29.9744x1.6125	2213.89
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.7125	2221.52
L42	44 - 43.08 (42)	TP30.7714x30.6223x1.7125	2249.66
L43	43.08 - 42.83 (43)	TP30.8118x30.7714x1.7125	2257.32
L44	42.83 - 37.83 (44)	TP31.6217x30.8118x1.6375	2412.27
L45	37.83 - 30 (45)	TP32.89x31.6217x1.6125	2533.03
L46	30 - 29 (46)	TP32.4616x31.6171x1.7063	2693.62
L47	29 - 24 (47)	TP33.3062x32.4616x1.6563	2857.23
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6563	2865.48
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6563	2873.74
L50	23.5 - 18.5 (50)	TP34.2352x33.3906x1.6063	3040.32
L51	18.5 - 13.5 (51)	TP35.0797x34.2352x1.5563	3209.56
L52	13.5 - 11 (52)	TP35.502x35.0797x1.5313	3295.16
L53	11 - 10.75 (53)	TP35.5442x35.502x1.2313	3303.76
L54	10.75 - 6 (54)	TP36.3465x35.5442x1.2563	3468.19
L55	6 - 5.75 (55)	TP36.3888x36.3465x1.5313	3476.91
L56	5.75 - 3.25 (56)	TP36.811x36.3888x1.5063	3564.40
L57	3.25 - 3 (57)	TP36.8533x36.811x1.1563	3573.18
L58	3 - 0 (58)	TP37.36x36.8533x1.1313	3679.03

## Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K
L1	150 - 145 (1)	TP15.7317x15x0.2188	6.71
L2	145 - 140 (2)	TP16.4634x15.7317x0.2188	7.39
L3	140 - 135 (3)	TP17.1951x16.4634x0.2188	11.70
L4	135 - 130 (4)	TP17.9268x17.1951x0.2188	11.96
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	12.04
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	12.04
L7	128.25 - 123.25 (7)	TP18.9146x18.1829x0.6438	12.40
L8	123.25 - 118.25 (8)	TP19.6463x18.9146x0.6188	18.39
L9	118.25 - 113.25 (9)	TP20.378x19.6463x0.6063	18.94
L10	113.25 - 109 (10)	TP21x20.378x0.5938	20.02
L11	109 - 108.75 (11)	TP21.0378x21x0.725	20.05
L12	108.75 - 104.17 (12)	TP21.7293x21.0378x0.7	20.56
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	20.60
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.95	20.68
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	20.72
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.1	20.78
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.925	20.82
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.925	20.97
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1	21.00
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	21.13
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.375	21.18
L22	99.33 - 95.25 (22)	TP23.0763x22.4602x1.325	24.04
L23	95.25 - 95 (23)	TP23.114x23.0763x1.025	24.09
L24	95 - 90 (24)	TP23.869x23.114x1	24.72
L25	90 - 85 (25)	TP24.624x23.869x0.9625	25.35
L26	85 - 80.5 (26)	TP25.3035x24.624x0.925	25.91
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	25.94
L28	80.25 - 75.25 (28)	TP26.0963x25.3413x1.25	26.63
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.225	26.87
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	26.89
L31	73.33 - 69 (31)	TP27.04x26.3862x1.2	27.07
L32	69 - 67 (32)	TP26.8969x26.087x1.2625	27.83
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2625	27.86
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	27.89
L35	66.5 - 61.5 (35)	TP27.7878x26.9779x1.3125	28.48
L36	61.5 - 56.5 (36)	TP28.5976x27.7878x1.2625	29.05
L37	56.5 - 51.5 (37)	TP29.4075x28.5976x1.2375	29.59
L38	51.5 - 48.25 (38)	TP29.9339x29.4075x1.2125	29.99
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6375	30.01
L40	48 - 44.25 (40)	TP30.5818x29.9744x1.6125	30.51
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.7125	30.53
L42	44 - 43.08 (42)	TP30.7714x30.6223x1.7125	30.66
L43	43.08 - 42.83 (43)	TP30.8118x30.7714x1.7125	30.68
L44	42.83 - 37.83 (44)	TP31.6217x30.8118x1.6375	31.32
L45	37.83 - 30 (45)	TP32.89x31.6217x1.6125	31.77
L46	30 - 29 (46)	TP32.4616x31.6171x1.7063	32.47
L47	29 - 24 (47)	TP33.3062x32.4616x1.6563	33.01
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6563	33.03
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6563	33.05
L50	23.5 - 18.5 (50)	TP34.2352x33.3906x1.6063	33.60
L51	18.5 - 13.5 (51)	TP35.0797x34.2352x1.5563	34.13
L52	13.5 - 11 (52)	TP35.502x35.0797x1.5313	34.40
L53	11 - 10.75 (53)	TP35.5442x35.502x1.2313	34.40
L54	10.75 - 6 (54)	TP36.3465x35.5442x1.2563	34.88
L55	6 - 5.75 (55)	TP36.3888x36.3465x1.5313	34.87
L56	5.75 - 3.25 (56)	TP36.811x36.3888x1.5063	35.15
L57	3.25 - 3 (57)	TP36.8533x36.811x1.1563	35.15
L58	3 - 0 (58)	TP37.36x36.8533x1.1313	35.44

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





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

**Pole Geometry**

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	150	41	0	12	15	21	0.21875	Auto	A572-50
2	109	40	3	12	21.00	27.04	0.25	Auto	A572-50
3	72	42	4	12	26.09	32.89	0.3125	Auto	A572-50
4	34	34	0	12	31.62	37.36	0.4063	Auto	A572-50

**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	11	solid round	Hydag; (2.5 Max); (2.5	4			o			o			o			o
2	11	48.25	solid round	Hydag; (2.5 Max); (2.5	4			o			o			o			o
3	3.25	23.75	plate	6.5 x 1.25; (1) (1.1875	4		o			o			o				o
4	23.75	44.25	plate	6.5 x 1.25; (1) (1.1875	4		o			o			o				o
5	44.25	66.75	plate	5 x 1.25; (1) (1.1875)	4		o			o			o				o
6	66.75	80.5	plate	4 x 1.25; (1) (1.1875)	4		o			o			o				o
7	95.25	109	plate	5 x 1.25; (1) (1.1875)	2		o			o							
8	95.25	100.92	plate	5 x 1.25; (1) (1.1875)	1									o			
9	0	0	plate	5 x 1.25; (1) (1.1875)	1												o
10	100.92	109	plate	5 x 1.25; (1) (1.1875)	1								o				
11	102.42	109	plate	5 x 1.25; (1) (1.1875)	1												o
12	109	128.5	plate	4 x 1.25; (1) (1.1875)	4		o			o			o				o
13	6	43.08	plate	inst pole w/ FP 6 x 1; (	1	o											
14	11	43.08	plate	inst pole w/ FP 6 x 1; (	2				o							o	
15	6	43.08	plate	inst pole w/ FP 6 x 1; (	1							o					
16	43.08	73.58	plate	inst pole w/ FP 6 x 1; (	4	o			o			o				o	
17	73.58	104.17	plate	inst pole w/ FP 6 x 1; (	2	o										o	
18	73.58	99.58	plate	inst pole w/ FP 6 x 1; (	1				o								
19	73.58	103.17	plate	inst pole w/ FP 6 x 1; (	1							o					
20	0	6	plate	FP 1.25 x 6.75_1	2		c						c				
21	0	11	plate	FP 1.25 x 6.75_1	2					c							c
22																	

**Reinforcement Details**

	B (in)	H (in)	Gross Area (in <sup>2</sup> )	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L <sub>w</sub> (in)	Net Area (in <sup>2</sup> )	Bolt Hole Size (in)	Reinforcement Material
1	-	-	4.908738521	3.9375	n/a	n/a	34.440	4.909	0.0000	A722-07
2	-	-	4.908738521	3.9375	n/a	n/a	34.440	4.909	0.0000	A722-07
3	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
4	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
5	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
6	4	1.25	5	0.625	18.000	18.000	18.000	3.438	1.1875	A572-65
7	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
8	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
9	5	1.25	6.25	0.625	n/a	n/a	18.000	4.688	1.1875	A572-65
10	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
11	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
12	4	1.25	5	0.625	18.000	18.000	18.000	3.438	1.1875	A572-65
13	5.40898723	1.941213679	10.5	0.970606839	45.000	54.000	17.000	8.073	1.1875	A572-65
14	5.40898723	1.941213679	10.5	0.970606839	39.000	54.000	17.000	8.073	1.1875	A572-65
15	5.40898723	1.941213679	10.5	0.970606839	39.000	54.000	17.000	8.073	1.1875	A572-65
16	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
17	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
18	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
19	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
20	1.25	6.75	8.4375	3.375	n/a	n/a	6.000	8.438	0.0000	A572-65
21	1.25	6.75	8.4375	3.375	n/a	n/a	6.000	8.438	0.0000	A572-65

# TNX Geometry Input

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

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	150 - 145	5		12	15.000	15.732	0.21875	A572-50	1.000
2	145 - 140	5		12	15.732	16.463	0.21875	A572-50	1.000
3	140 - 135	5		12	16.463	17.195	0.21875	A572-50	1.000
4	135 - 130	5		12	17.195	17.927	0.21875	A572-50	1.000
5	130 - 128.5	1.5		12	17.927	18.146	0.21875	A572-50	1.000
6	128.5 - 128.25	0.25		12	18.146	18.183	0.66875	A572-50	0.867
7	128.25 - 123.25	5		12	18.183	18.915	0.64375	A572-50	0.877
8	123.25 - 118.25	5		12	18.915	19.646	0.61875	A572-50	0.889
9	118.25 - 113.25	5		12	19.646	20.378	0.60625	A572-50	0.887
10	113.25 - 109	4.25	0	12	20.378	21.000	0.59375	A572-50	0.889
11	109 - 108.75	0.25		12	21.000	21.038	0.725	A572-50	0.881
12	108.75 - 104.17	4.58		12	21.038	21.729	0.7	A572-50	0.893
13	104.17 - 103.92	0.25		12	21.729	21.767	0.975	A572-50	0.971
14	103.92 - 103.17	0.75		12	21.767	21.880	0.95	A572-50	0.991
15	103.17 - 102.92	0.25		12	21.880	21.918	1.125	A572-50	0.983
16	102.92 - 102.42	0.5		12	21.918	21.994	1.1	A572-50	1.001
17	102.42 - 102.17	0.25		12	21.994	22.031	0.925	A572-50	1.079
18	102.17 - 100.92	1.25		12	22.031	22.220	0.925	A572-50	1.072
19	100.92 - 100.67	0.25		12	22.220	22.258	1	A572-50	0.994
20	100.67 - 99.58	1.09		12	22.258	22.422	1	A572-50	0.988
21	99.58 - 99.33	0.25		12	22.422	22.460	1.375	A572-50	0.843
22	99.33 - 95.25	4.08		12	22.460	23.076	1.325	A572-50	0.854
23	95.25 - 95	0.25		12	23.076	23.114	1.025	A572-50	0.829
24	95 - 90	5		12	23.114	23.869	1	A572-50	0.829
25	90 - 85	5		12	23.869	24.624	0.9625	A572-50	0.841
26	85 - 80.5	4.5		12	24.624	25.304	0.925	A572-50	0.857
27	80.5 - 80.25	0.25		12	25.304	25.341	1.3	A572-50	0.818
28	80.25 - 75.25	5		12	25.341	26.096	1.25	A572-50	0.829
29	75.25 - 73.58	1.67		12	26.096	26.348	1.225	A572-50	0.839
30	73.58 - 73.33	0.25		12	26.348	26.386	1.225	A572-50	0.838
31	73.33 - 72	4.33	3	12	26.386	27.040	1.2	A572-50	0.849
32	72 - 67	5		12	26.087	26.897	1.2625	A572-50	0.853
33	67 - 66.75	0.25		12	26.897	26.937	1.2625	A572-50	0.852
34	66.75 - 66.5	0.25		12	26.937	26.978	1.3625	A572-50	0.836
35	66.5 - 61.5	5		12	26.978	27.788	1.3125	A572-50	0.847
36	61.5 - 56.5	5		12	27.788	28.598	1.2625	A572-50	0.860
37	56.5 - 51.5	5		12	28.598	29.408	1.2375	A572-50	0.859
38	51.5 - 48.25	3.25		12	29.408	29.934	1.2125	A572-50	0.864
39	48.25 - 48	0.25		12	29.934	29.974	1.6375	A572-50	0.780
40	48 - 44.25	3.75		12	29.974	30.582	1.6125	A572-50	0.779
41	44.25 - 44	0.25		12	30.582	30.622	1.7125	A572-50	0.783
42	44 - 43.08	0.92		12	30.622	30.771	1.7125	A572-50	0.780
43	43.08 - 42.83	0.25		12	30.771	30.812	1.7125	A572-50	0.779
44	42.83 - 37.83	5		12	30.812	31.622	1.6375	A572-50	0.796
45	37.83 - 34	7.83	4	12	31.622	32.890	1.6125	A572-50	0.795
46	34 - 29	5		12	31.617	32.462	1.7063	A572-50	0.806
47	29 - 24	5		12	32.462	33.306	1.6563	A572-50	0.813
48	24 - 23.75	0.25		12	33.306	33.348	1.6563	A572-50	0.813
49	23.75 - 23.5	0.25		12	33.348	33.391	1.6563	A572-50	0.812
50	23.5 - 18.5	5		12	33.391	34.235	1.6063	A572-50	0.821
51	18.5 - 13.5	5		12	34.235	35.080	1.5563	A572-50	0.831
52	13.5 - 11	2.5		12	35.080	35.502	1.5313	A572-50	0.837
53	11 - 10.75	0.25		12	35.502	35.544	1.2313	A572-50	1.000
54	10.75 - 6	4.75		12	35.544	36.347	1.2563	A572-50	0.966
55	6 - 5.75	0.25		12	36.347	36.389	1.5313	A572-50	0.774
56	5.75 - 3.25	2.5		12	36.389	36.811	1.5063	A572-50	0.780
57	3.25 - 3	0.25		12	36.811	36.853	1.1563	A572-50	0.761
58	3 - 0	3		12	36.853	37.360	1.1313	A572-50	0.771

# TNX Section Forces

Increment (ft):		TNX Output		
5				
	Section Height (ft)	P <sub>u</sub> (K)	M <sub>ux</sub> (kip-ft)	V <sub>u</sub> (K)
1	150 - 145	4.09	44.95	6.71
2	145 - 140	4.42	80.22	7.39
3	140 - 135	10.55	133.44	11.70
4	135 - 130	10.98	192.58	11.96
5	130 - 128.5	11.11	210.56	12.04
6	128.5 - 128.25	11.16	213.57	12.04
7	128.25 - 123.25	11.95	274.68	12.40
8	123.25 - 118.25	17.09	347.80	18.39
9	118.25 - 113.25	17.97	441.07	18.94
10	113.25 - 109	19.70	522.76	20.02
11	109 - 108.75	19.76	527.77	20.05
12	108.75 - 104.17	20.72	620.68	20.56
13	104.17 - 103.92	20.80	625.82	20.60
14	103.92 - 103.17	21.02	641.29	20.68
15	103.17 - 102.92	21.11	646.46	20.72
16	102.92 - 102.42	21.28	656.83	20.78
17	102.42 - 102.17	21.36	662.02	20.82
18	102.17 - 100.92	21.74	688.11	20.97
19	100.92 - 100.67	21.83	693.35	21.00
20	100.67 - 99.58	22.17	716.30	21.13
21	99.58 - 99.33	22.26	721.58	21.18
22	99.33 - 95.25	26.05	820.49	24.04
23	95.25 - 95	26.13	826.50	24.09
24	95 - 90	27.60	948.45	24.72
25	90 - 85	29.11	1073.57	25.35
26	85 - 80.5	30.48	1188.84	25.91
27	80.5 - 80.25	30.59	1195.32	25.94
28	80.25 - 75.25	32.50	1326.68	26.63
29	75.25 - 73.58	33.15	1371.33	26.87
30	73.58 - 73.33	33.26	1378.04	26.89
31	73.33 - 72	33.77	1413.91	27.07
32	72 - 67	36.82	1551.19	27.83
33	67 - 66.75	36.93	1558.15	27.86
34	66.75 - 66.5	37.04	1565.11	27.89
35	66.5 - 61.5	39.21	1705.97	28.48
36	61.5 - 56.5	41.42	1849.71	29.05
37	56.5 - 51.5	43.65	1996.22	29.59
38	51.5 - 48.25	45.11	2092.98	29.99
39	48.25 - 48	45.25	2100.47	30.01
40	48 - 44.25	47.22	2213.89	30.51
41	44.25 - 44	47.37	2221.52	30.53
42	44 - 43.08	47.88	2249.66	30.66
43	43.08 - 42.83	48.03	2257.32	30.68
44	42.83 - 37.83	50.83	2412.27	31.32
45	37.83 - 34	52.99	2533.02	31.77
46	34 - 29	58.06	2693.61	32.47
47	29 - 24	61.11	2857.23	33.01
48	24 - 23.75	61.27	2865.49	33.03
49	23.75 - 23.5	61.42	2873.74	33.05
50	23.5 - 18.5	64.49	3040.33	33.60
51	18.5 - 13.5	67.60	3209.56	34.13
52	13.5 - 11	69.17	3295.16	34.40
53	11 - 10.75	69.33	3303.76	34.40
54	10.75 - 6	72.25	3468.19	34.88
55	6 - 5.75	72.42	3476.91	34.87
56	5.75 - 3.25	73.91	3564.40	35.15
57	3.25 - 3	74.04	3573.18	35.15
58	3 - 0	75.47	3679.02	35.44

# Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.732x15x0.2188	Pole	22.6%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	36.4%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	55.9%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	73.6%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	78.4%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 12 Tension Rupture	39.5%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 12 Tension Rupture	48.0%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 12 Tension Rupture	57.9%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 12 Tension Rupture	69.7%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 12 Tension Rupture	79.3%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 7 Tension Rupture	60.5%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 7 Tension Rupture	68.1%	Pass
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 7 Tension Rupture	61.0%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.95	Reinf. 7 Tension Rupture	62.1%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 7 Tension Rupture	50.6%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.1	Reinf. 7 Tension Rupture	51.2%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.925	Reinf. 7 Tension Rupture	56.4%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.925	Reinf. 7 Tension Rupture	57.9%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1	Reinf. 7 Tension Rupture	56.7%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 7 Tension Rupture	58.0%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.375	Reinf. 17 Tension Rupture	41.6%	Pass
99.33 - 95.25	Pole + Reinf.	TP23.076x22.46x1.325	Reinf. 17 Tension Rupture	45.9%	Pass
95.25 - 95	Pole + Reinf.	TP23.114x23.076x1.025	Reinf. 18 Tension Rupture	56.7%	Pass
95 - 90	Pole + Reinf.	TP23.869x23.114x1	Reinf. 18 Tension Rupture	62.5%	Pass
90 - 85	Pole + Reinf.	TP24.624x23.869x0.9625	Reinf. 18 Tension Rupture	68.1%	Pass
85 - 80.5	Pole + Reinf.	TP25.304x24.624x0.925	Reinf. 18 Tension Rupture	72.9%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 6 Tension Rupture	60.4%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 6 Tension Rupture	64.8%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.225	Reinf. 6 Tension Rupture	66.2%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 6 Tension Rupture	66.4%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.2	Reinf. 6 Tension Rupture	67.5%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2625	Reinf. 6 Tension Rupture	69.2%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2625	Reinf. 6 Tension Rupture	69.4%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 5 Tension Rupture	60.4%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 5 Tension Rupture	63.5%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2625	Reinf. 5 Tension Rupture	66.4%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 5 Tension Rupture	69.3%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 5 Tension Rupture	71.1%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6375	Reinf. 2 Connection	62.4%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.6125	Reinf. 2 Compression	64.1%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.7125	Reinf. 2 Compression	60.6%	Pass
44 - 43.08	Pole + Reinf.	TP30.771x30.622x1.7125	Reinf. 2 Compression	60.9%	Pass
43.08 - 42.83	Pole + Reinf.	TP30.812x30.771x1.7125	Reinf. 2 Compression	61.0%	Pass
42.83 - 37.83	Pole + Reinf.	TP31.622x30.812x1.6375	Reinf. 2 Compression	63.1%	Pass
37.83 - 34	Pole + Reinf.	TP32.89x31.622x1.6125	Reinf. 2 Compression	64.7%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.7063	Reinf. 2 Compression	64.1%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6563	Reinf. 2 Compression	65.7%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6563	Reinf. 2 Compression	65.8%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6563	Reinf. 2 Compression	65.9%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.6063	Reinf. 2 Compression	67.4%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5563	Reinf. 2 Compression	68.9%	Pass
13.5 - 11	Pole + Reinf.	TP35.502x35.08x1.5313	Reinf. 2 Connection	69.6%	Pass
11 - 10.75	Pole + Reinf.	TP35.544x35.502x1.2313	Reinf. 3 Tension Rupture	66.2%	Pass
10.75 - 6	Pole + Reinf.	TP36.347x35.544x1.2563	Reinf. 3 Tension Rupture	67.6%	Pass
6 - 5.75	Pole + Reinf.	TP36.389x36.347x1.5313	Reinf. 3 Tension Rupture	58.4%	Pass
5.75 - 3.25	Pole + Reinf.	TP36.811x36.389x1.5063	Reinf. 3 Tension Rupture	59.1%	Pass
3.25 - 3	Pole + Reinf.	TP36.853x36.811x1.1563	Reinf. 20 Compression	74.6%	Pass
3 - 0	Pole + Reinf.	TP37.36x36.853x1.1313	Reinf. 20 Compression	75.4%	Pass
				Summary	
			Pole	78.4%	Pass
			Reinforcement	79.3%	Pass
			Overall	79.3%	Pass

# Additional Calculations

Section Elevation (ft)	Moment of Inertia (in <sup>4</sup> )			Area (in <sup>2</sup> )			% Capacity*																					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21
150 - 145	336	n/a	336	10.91	n/a	10.91	22.6%																					
145 - 140	386	n/a	386	11.43	n/a	11.43	36.4%																					
140 - 135	440	n/a	440	11.94	n/a	11.94	55.9%																					
135 - 130	500	n/a	500	12.46	n/a	12.46	73.6%																					
130 - 128.5	519	n/a	519	12.61	n/a	12.61	78.4%																					
128.5 - 128.25	522	959	1481	12.64	20.00	32.64	27.1%												39.5%									
128.25 - 123.25	588	1031	1619	13.15	20.00	33.15	33.0%												48.0%									
123.25 - 118.25	660	1106	1766	13.66	20.00	33.66	39.9%												57.9%									
118.25 - 113.25	738	1184	1922	14.18	20.00	34.18	48.1%												69.7%									
113.25 - 109	808	1252	2060	14.62	20.00	34.62	55.1%												79.3%									
109 - 108.75	924	1580	2504	16.71	25.00	41.71	45.6%							60.5%			60.5%	60.5%										
108.75 - 104.17	1020	1678	2697	17.27	25.00	42.27	51.3%							68.1%			68.1%	68.1%										
104.17 - 103.92	1155	2583	3738	17.30	46.00	63.30	47.3%							61.0%			49.3%	37.9%						39.3%				
103.92 - 103.17	1173	2608	3781	17.39	46.00	63.39	48.1%							62.1%			50.2%	38.6%						40.1%				
103.17 - 102.92	1093	3108	4201	17.42	56.50	73.92	40.8%							50.6%			33.9%	38.1%						40.6%			34.4%	
102.92 - 102.42	1105	3127	4232	17.48	56.50	73.98	41.2%							51.2%			34.3%	38.6%						41.1%			34.8%	
102.42 - 102.17	1073	2543	3617	17.51	50.25	67.76	45.4%							56.4%			35.4%							50.9%			35.9%	
102.17 - 100.92	1101	2583	3684	17.66	50.25	67.91	46.7%							58.0%			36.4%							52.3%			37.0%	
100.92 - 100.67	1122	2888	4010	17.69	50.25	67.94	44.7%							56.7%	41.1%									46.2%			41.3%	
100.67 - 99.58	1147	2927	4074	17.82	50.25	68.07	45.8%							58.0%	42.1%									47.3%			42.2%	
99.58 - 99.33	1128	4186	5314	17.85	60.75	78.60	32.8%							39.4%	37.3%									41.6%	36.6%	40.4%		
99.33 - 95.25	1225	4398	5622	18.35	60.75	79.10	36.2%							43.4%	41.2%									45.9%	40.4%	44.6%		
95.25 - 95	1230	3354	4583	18.38	42.00	60.38	42.8%																	56.7%	56.7%	56.7%		
95 - 90	1356	3555	4911	18.99	42.00	60.99	47.5%																	62.5%	62.5%	62.5%		
90 - 85	1490	3763	5253	19.59	42.00	61.59	52.3%																	68.1%	68.1%	68.1%		
85 - 80.5	1618	3955	5573	20.14	42.00	62.14	56.5%																	72.9%	72.9%	72.9%		
80.5 - 80.25	1625	5748	7373	20.17	62.00	82.17	43.1%							60.4%										55.5%	55.5%	55.5%		
80.25 - 75.25	1776	6069	7845	20.78	62.00	82.78	46.7%							64.8%										59.4%	59.4%	59.4%		
75.25 - 73.58	1829	6178	8007	20.98	62.00	82.98	47.9%							66.2%										60.7%	60.7%	60.7%		
73.58 - 73.33	1837	6195	8032	21.01	62.00	83.01	48.1%							66.4%									60.9%					
73.33 - 72	1880	6282	8162	21.17	62.00	83.17	49.0%							67.5%									61.9%					
72 - 67	2416	6419	8836	26.71	62.00	88.71	48.3%							69.2%									63.5%					
67 - 66.75	2427	6437	8865	26.75	62.00	88.75	48.5%							69.4%									63.6%					
66.75 - 66.5	2439	6966	9405	26.79	67.00	93.79	46.0%							60.4%									60.3%					
66.5 - 61.5	2668	7360	10028	27.61	67.00	94.61	48.4%							63.5%									63.4%					
61.5 - 56.5	2910	7766	10676	28.42	67.00	95.42	50.7%							66.4%									66.3%					
56.5 - 51.5	3168	8182	11350	29.23	67.00	96.23	52.9%							69.3%									69.1%					
51.5 - 48.25	3343	8458	11801	29.76	67.00	96.76	54.6%							71.1%									70.9%					
48.25 - 48	3356	12004	15360	29.80	86.63	116.44	42.3%							62.4%									54.8%					
48 - 44.25	3567	12443	16010	30.41	86.63	117.05	43.9%							64.1%									56.4%					
44.25 - 44	3581	13457	17038	30.46	94.13	124.59	41.4%							60.6%									53.3%					
44 - 43.08	3634	13574	17209	30.61	94.13	124.74	41.8%							60.9%									53.7%					
43.08 - 42.83	3649	13607	17255	30.65	94.13	124.78	41.9%							61.0%							53.8%	53.8%	53.8%					
42.83 - 37.83	3947	14258	18205	31.46	94.13	125.59	43.9%							63.1%							55.8%	55.8%	55.8%					
37.83 - 34	4187	14767	18953	32.08	94.13	126.22	45.5%							64.7%							57.4%	57.4%	57.4%					
34 - 29	5508	14949	20457	41.88	94.13	136.01	43.8%							64.1%							56.9%	56.9%	56.9%					
29 - 24	5955	15661	21616	42.98	94.13	137.12	45.2%							65.7%							58.5%	58.5%	58.5%					
24 - 23.75	5978	15697	21675	43.04	94.13	137.17	45.2%							65.8%							58.6%	58.6%	58.6%					
23.75 - 23.5	6001	15733	21734	43.09	94.13	137.23	45.3%							65.9%							58.7%	58.7%	58.7%					
23.5 - 18.5	6474	16464	22937	44.19	94.13	138.33	46.6%							67.4%							60.2%	60.2%	60.2%					
18.5 - 13.5	6971	17211	24182	45.30	94.13	139.43	47.8%							68.9%							61.7%	61.7%	61.7%					
13.5 - 11	7228	17591	24819	45.85	94.13	139.98	48.4%							69.6%							62.5%	62.5%	62.5%					
11 - 10.75	7255	13339	20593	45.90	90.01	135.91	60.1%	52.5%													57.7%	57.7%						52.4%
10.75 - 6	7763	14489	22251	46.95	90.01	136.96	59.9%	53.4%													58.9%	58.9%						53.5%
6 - 5.75	7790	19023	26813	47.01	85.88	132.89	48.4%	41.9%																				57.8%
5.75 - 3.25	8068	19409	27477	47.56	85.88	133.44	49.0%	42.3%																				58.4%
3.25 - 3	8096	13491	21587	47.61	53.38	101.00	64.7%	54.1%																				74.6%
3 - 0	8438	13803	22241	48.28	53.38	101.66	65.6%	54.6%																				75.4%

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

**Welded Bridge Stiffener Analysis**

**General Parameters and Loading:**

Flange Elevation:	109.00	ft
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	522.8	k-ft
Axial, Puf:	19.7	kips
Shear, Vf:	20.0	kips

**Pole Parameters:**

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	21.00	21.00	in
Pole Thickness, tp:	0.2188	0.2500	in
Pole Fy:	50	50	ksi
Pole Fu:	65	65	ksi
Flange Diameter, Df:	28.50	28.50	in

**Bridge Stiffener Parameters:**

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	4	0	
Upper Weld Length, L1:	30.00	0.00	in
Lower Weld Length, L2:	30.00	0.00	in
Weld Size, w:	0.3750	0.0000	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	4.00	0.00	in
Stiffener Thickness, ts:	1.25	0.00	in
Notch, n:	2.25	0.00	in
Stiffener Fy:	65	0	ksi
Stiffener Fu:	80	0	ksi
Unbraced Length, L:	15.00	0.00	in
K:	0.80	0.00	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	37.00	28.50	in = Df + 2 n + Ws
Upper Eccentricity, e1:	8.00	3.75	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	8.00	3.75	in = (Df - Dp) / 2 + n + Ws / 2

**Flange Bolt Parameters:**

Number of Bolt Circles:	(1) Bolt Circle		
	Bolt Circle 1	Bolt Circle 2	
Qty. Bolts:	0	0	
Bolt Diameter:	1.00	0.00	in
Bolt Circle:	26.00	0.00	in
Bolt Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Bolt Area, Ag:	0.0000	0.0000	in
Max. Tension:	0.00	0.00	kips
Max. Net Tension:	0.00	0.00	kips
Max. Net Compression:	0.00	0.00	kips
Moment to Bolt Circle:	0.00	0.00	k-ft
Axial to Bolt Circle:	0.00	0.00	kips
Shear to Bolt Circle:	0.00	0.00	kips
Equivalent Bolt Circle:	0.00	0.00	in

**Weld Analysis per AISC Tables 8-4 & 8-3:**

	Stiffener Type 1	Stiffener Type 2	
<b>Upper Pole</b>			
D:	6	0	Num. of Sixteenths in Weld
a:	0.2667	0.0000	= e1 / L1
k:	0	0	
C:	3.2367	3.7100	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	174.7	0.0	kips
Axial Capacity, ΦPn:	437.0	0.0	kips = Φ C C1 D L
<b>Ratio:</b>	<b>40.0%</b>	<b>0.0%</b>	
<b>Lower Pole</b>			
D:	6	0	Num. of Sixteenths in Weld
a:	0.2667	0.0000	= e2 / L2
k:	0	0	
C:	3.2367	3.7100	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	174.7	0.0	kips
Axial Capacity, ΦPn:	437.0	0.0	kips = Φ C C1 D L
<b>Ratio:</b>	<b>40.0%</b>	<b>0.0%</b>	

**Pole Analysis per AISC Table J2.5 & Sect. J4.2:**

	Stiffener Type 1	Stiffener Type 2	
<b>Upper Pole</b>			
Stiffener Axial, Pu:	174.7	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fuv:	2.9	0.0	kips/in = Pu / (2 L1)
Section Modulus, S:	300.0	0.0	in <sup>2</sup> = L <sup>2</sup> / 3
Bending Stress, fub:	4.7	0.0	kips/in = Pu e1 / S
Combined Stress, fu:	5.5	0.0	kips/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	0.7500	0.0000	
Stress Capacity, ΦFn:	6.4	0.0	kips/in = Φ 0.6 Fu tp
<b>Ratio:</b>	<b>85.8%</b>	<b>0.0%</b>	
<b>Lower Pole</b>			
Stiffener Axial, Pu:	174.7	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fuv:	2.9	0.0	ksi = Pu / (2 L2)
Section Modulus, S:	300.0	0.0	in <sup>2</sup> = L <sup>2</sup> / 3
Bending Stress, fub:	4.7	0.0	ksi = Pu e2 / S
Combined Stress, fu:	5.5	0.0	kips/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	0.7500	0.0000	
Stress Capacity, ΦFn:	7.3	0.0	kips/in = Φ 0.6 Fu tp
<b>Ratio:</b>	<b>75.1%</b>	<b>0.0%</b>	

**Stiffener 1 Analysis per AISC Sect. D2, E3 & E7**

	Stiffener Type 1	
Gross Area, Ag:	5.0000	in <sup>2</sup>
Effective Net Area, Aen:	5.0000	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	174.7	kips
Stiffener Stress, fu:	34.9	ksi = Pu / Ag
b:	10.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	8.0000	in
Q, Where Qa = 1.0:	1.0000	
r:	0.3608	in <sup>3</sup>
K L / r:	33.2554	
Φ:	0.9000	
Axial Capacity, ΦFcr:	52.66	ksi = Φ [0.658 <sup>Fy / Fe</sup> ] Fy
Φ:	0.9000	
Ten. Yielding Cap., ΦFnt:	58.50	ksi = Φ Fy
Φ:	0.7500	
Ten. Rupture Cap., ΦFnr:	60.00	ksi = Φ Fu (Aen / Ag)
<b>Ratio:</b>	<b>66.3%</b>	

**Stiffener 2 Analysis per AISC Sect. D2, E3 & E7**

	Stiffener Type 2	
Gross Area, Ag:	0.0000	in <sup>2</sup>
Effective Net Area, Aen:	0.0000	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	0.0	kips
Stiffener Stress, fu:	0.0	ksi = Pu / Ag
b:	0.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	0.0000	in
Q, Where Qa = 1.0:	0.0000	
r:	0.0000	in <sup>3</sup>
K L / r:	0.0000	
Φ:	0.0000	
Axial Capacity, ΦFcr:	0.00	ksi = Φ Fy
Φ:	0.0000	
Ten. Yielding Cap., ΦFnt:	0.00	ksi = Φ Fy
Φ:	0.0000	
Ten. Rupture Cap., ΦFnr:		ksi = Φ Fu (Aen / Ag)
<b>Ratio:</b>	<b>0.0%</b>	

**Analysis Summary:**

**Bridge Stiffener Type 1**  
 Weld Analysis Ratio: 38.1% PASS  
 Pole Analysis Ratio: 81.7% PASS  
 Stiffener Analysis Ratio: 63.1% PASS

**Bridge Stiffener Type 2**  
 Weld Analysis Ratio: 0.0% PASS  
 Pole Analysis Ratio: 0.0% PASS  
 Stiffener Analysis Ratio: 0.0% PASS

\*Structural rating per TIA-222-H Section 15.5

# Monopole Base Plate Connection

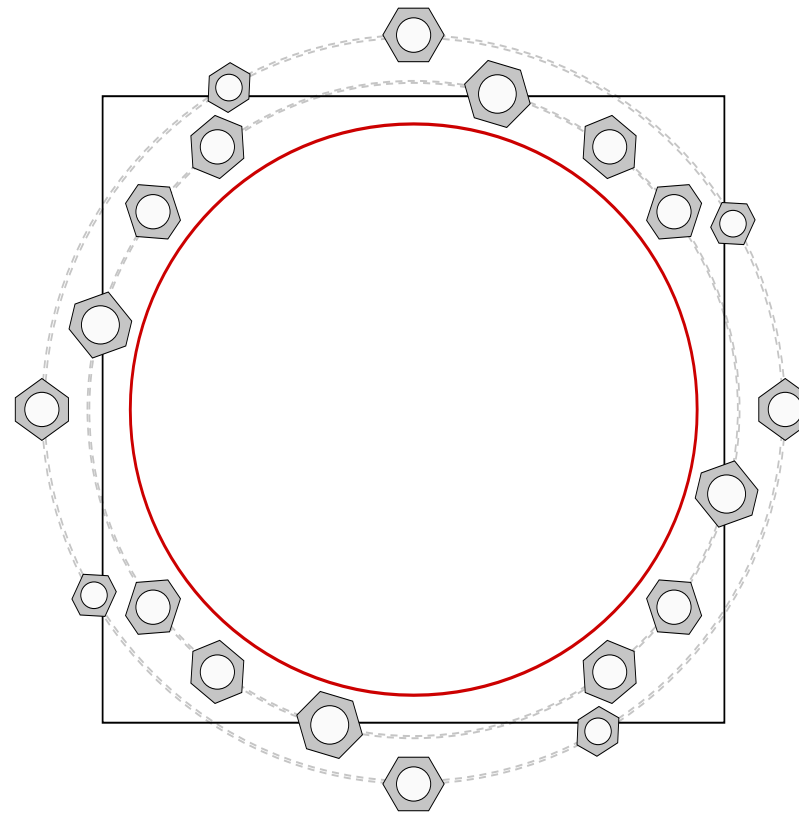


Site Info	
BU #	841288
Site Name	BRIDGEPORT NORTH
Order #	494425 Rev. 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
$l_{ar}$ (in)	2.75

Applied Loads	
Moment (kip-ft)	3679.02
Axial Force (kips)	75.47
Shear Force (kips)	35.44

\*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data	
GROUP 1: (8) 2-1/4" $\phi$ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 43" BC <i>Anchor Spacing: 6 in</i>	
GROUP 2: (4) 2-1/2" $\phi$ bolts (WILLIAMS N; $F_y=120$ ksi, $F_u=125$ ksi) on 42.74" BC	
GROUP 3: (4) 2-1/4" $\phi$ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 49" BC	
GROUP 4: (4) 1-3/4" $\phi$ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 48.63" BC	

Base Plate Data
41" OD x 2.75" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi)

Stiffener Data
N/A

Pole Data
37.36" x 0.4063" 12-sided pole (A572-50; $F_y=50$ ksi, $F_u=65$ ksi)

Anchor Rod Summary			<i>(units of kips, kip-in)</i>
GROUP 1:			
$P_{u\_c} = 191.67$	$\phi P_{n\_c} = 268.39$	<b>Stress Rating</b>	
$V_u = 4.43$	$\phi V_n = 120.77$		<b>74.0%</b>
$M_u = 7.92$	$\phi M_n = 128.14$		<b>Pass</b>
GROUP 2:			
$P_{u\_c} = 289.43$	$\phi P_{n\_c} = 464.75$	<b>Stress Rating</b>	
$V_u = 0$	$\phi V_n = 252.23$		<b>59.3%</b>
$M_u = 0$	$\phi M_n = 305.77$		<b>Pass</b>
GROUP 3:			
$P_{u\_c} = 207.79$	$\phi P_{n\_c} = 375.74$	<b>Stress Rating</b>	
$V_u = 0$	$\phi V_n = 169.08$		<b>52.7%</b>
$M_u = 0$	$\phi M_n = 179.4$		<b>Pass</b>
GROUP 4:			
$P_{u\_c} = 120.56$	$\phi P_{n\_c} = 198.89$	<b>Stress Rating</b>	
$V_u = 0$	$\phi V_n = 102.28$		<b>57.7%</b>
$M_u = 0$	$\phi M_n = 84.41$		<b>Pass</b>

Base Plate Summary		
Max Stress (ksi):	25.43	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	<b>53.8%</b>	<b>Pass</b>



## Flexible Foundation Analysis

### Applied Reactions for RISA-3D

TNX Moment = **3679.02** k-ft  
 TNX Axial = **75.47** kips  
 TNX Shear = **35.44** kips  
 Total Unfactored Axial = **62.9** kips

TIA Standard = **H**

### Passive Pressure on Pad/Mat

Horiz Subgr Modulus = **25** kcf  
 Plate Width = **0.5** ft  
 Depth to Ignore = **3.333** ft  
 Pad Thickness = **6.8** ft  
 k (side) = **2.81** k/in  
 k (corner) = **1.41** k/in

### Pad/Mat & Pier Input

Pier Number Sides = **4**  
 Pier Width/Diameter = **5** ft  
 Pier Height = **0** ft  
 Ht Above Grade = **0.8** ft (Pier or Pad)

Location = 

Width	Length
<b>11</b>	<b>11</b>

  
 Top Bar Quantity = 

<b>10</b>	<b>10</b>
-----------	-----------

  
 Top Bar Size # = 

<b>3</b>	<b>3</b>
----------	----------

 in  
 Top Clear Cover = 

<b>3</b>	<b>3</b>
----------	----------

 in

Pad Thickness = **6.8333** ft  
 Pad Width = **20** ft  
 Pad Length = **18** ft

Bottom Bar Quantity = 

<b>11</b>	<b>11</b>
-----------	-----------

  
 Bottom Bar Size # = 

<b>10</b>	<b>10</b>
-----------	-----------

  
 Bottom Clear Cover = 

<b>3</b>	<b>3</b>
----------	----------

 in

Concrete Density = **150** pcf  
 Concrete f<sub>c</sub> = **3** ksi  
 β<sub>1</sub> = **0.85**

As, min = 

35.42	31.88
-------	-------

 in<sup>2</sup>  
 Use Comp Side Rebar? 

<b>No</b>	<b>No</b>
-----------	-----------

Rebar F<sub>y</sub> = **60** ksi

Mu (Comp Top) = 

<b>2143</b>	<b>1352</b>
-------------	-------------

 k-ft  
 Mu (Comp Bot) = 

<b>2143</b>	<b>1352</b>
-------------	-------------

 k-ft

### Pad/Mat Analysis

Location	Comp Side	c, in	d, in	ε <sub>t</sub> , in/in	Mu, k-ft	Φ	ΦMn, k-ft	Ratio
Width	Top	1.61	77.09	-0.141	2143.0	0.90	4803.5	42.5%
Width	Bot	1.61	77.09	-0.141	2143.0	0.90	4803.5	42.5%
Length	Top	1.79	77.09	-0.126	1352.0	0.90	4798.7	26.8%
Length	Bot	1.79	77.09	-0.126	1352.0	0.90	4798.7	26.8%

### Soil Weight

Soil Unit Weight =                      pcf  
 Apply Soil Weight =                      ft<sup>3</sup>  
 Volume =                      ft<sup>3</sup>  
 Weight =                      kips  
 Weight per Sq Ft =                      ksf

### Soil Modulus by Layer

Layer	Start, ft	End, ft	Vert, pci	Horiz, pci
1	0.0			
2				
3				
4				
5				
6				
7				
8				
9				

### Rock Anchor Capacity

Anchor Type = **Rock Anchor**  
 Pile Type = **1.75" WILLIAMS R71**  
 A<sub>g</sub> = **2.66** in<sup>2</sup>  
 A<sub>g</sub> Override =  in<sup>2</sup>  
 E = **29000** ksi  
 L<sub>u</sub> = **21.83333** ft  
 k = A<sub>n</sub> (E) / L<sub>u</sub> = **294.8** k/in  
 P<sub>u</sub> = **390.0** ksi  
 Capacity = 0.8 (P<sub>u</sub>) = **312.0** kips  
 Capacity Override =  kips  
 Max Tension from RISA = **19.3** kips

### Bearing Check

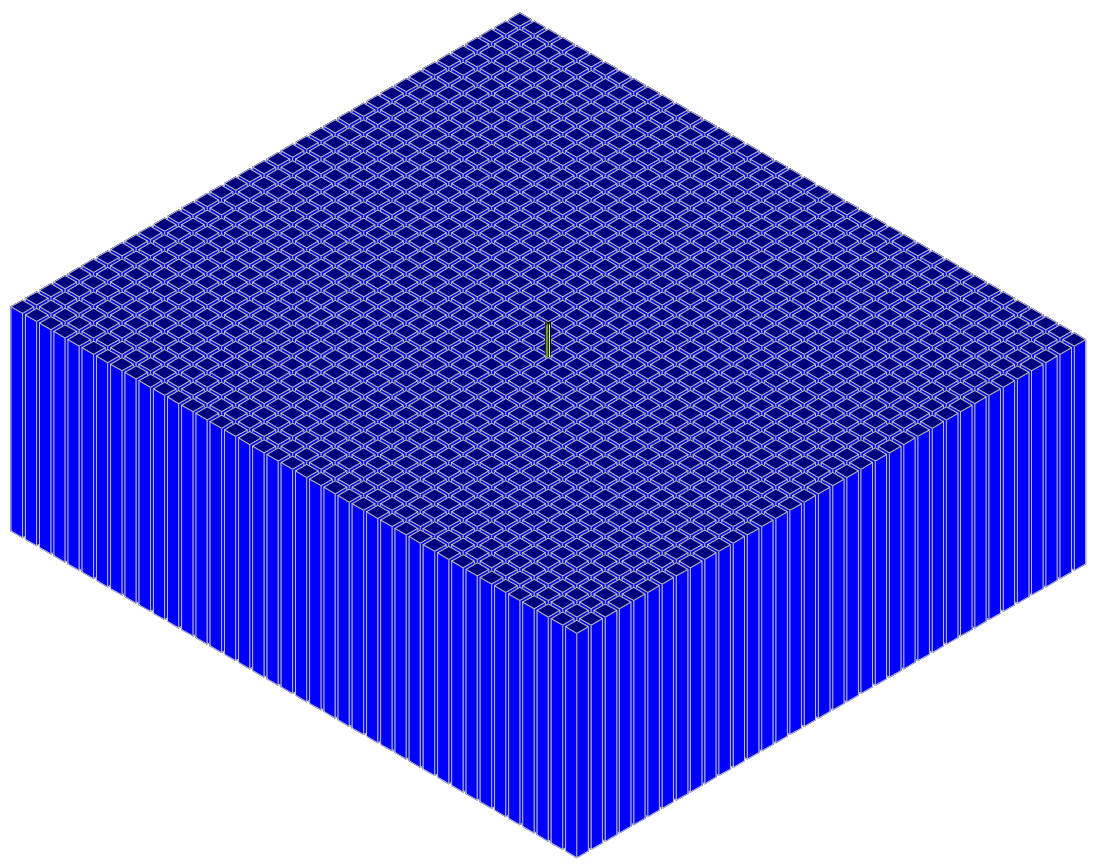
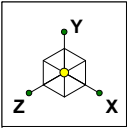
Max Bearing Load = **2.901** kip  
 Plate Width = **0.5** ft  
 Plate Length = **0.5** ft  
 Design Brg Capacity = **22.5** ksf = Φq<sub>n</sub>  
 Bearing Pressure = **11.6** ksf

Ratio = **65.5%** OK

### Subgrade Modulus Conversion

Subgrade Modulus = **3000** pci  
 k<sub>s</sub> = **5184.0** kcf

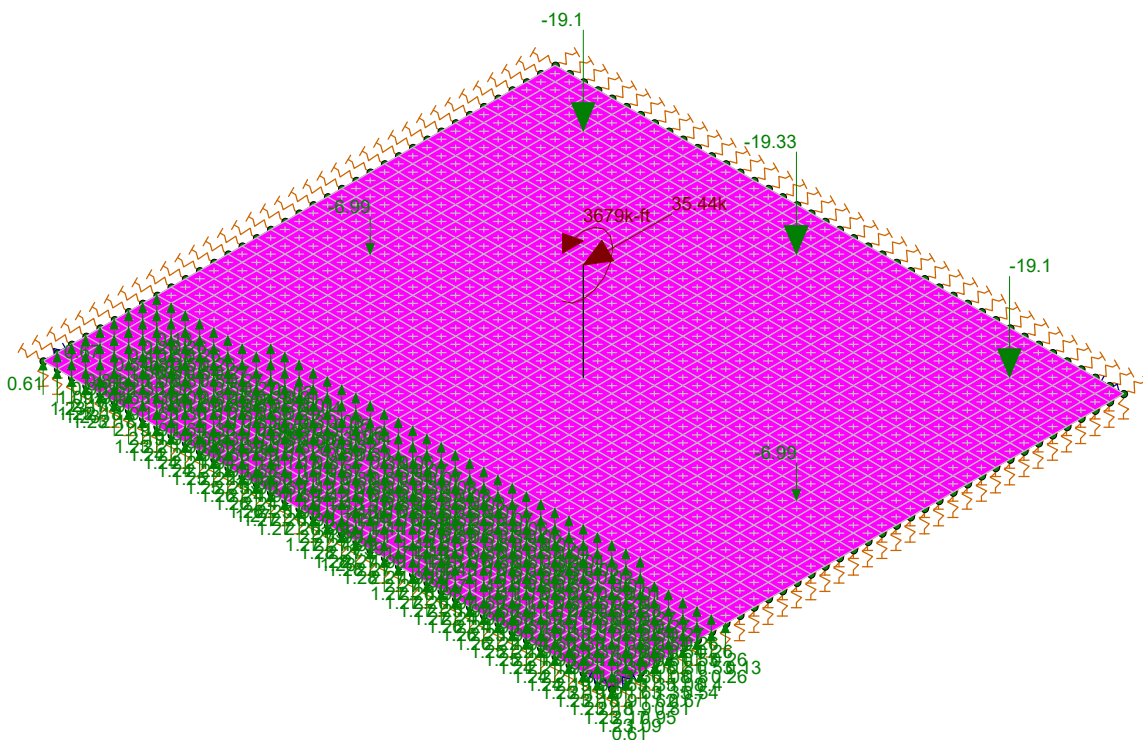
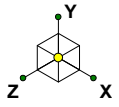
Ratio = **5.9%** OK



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JGF  
37520-1130.001.7805

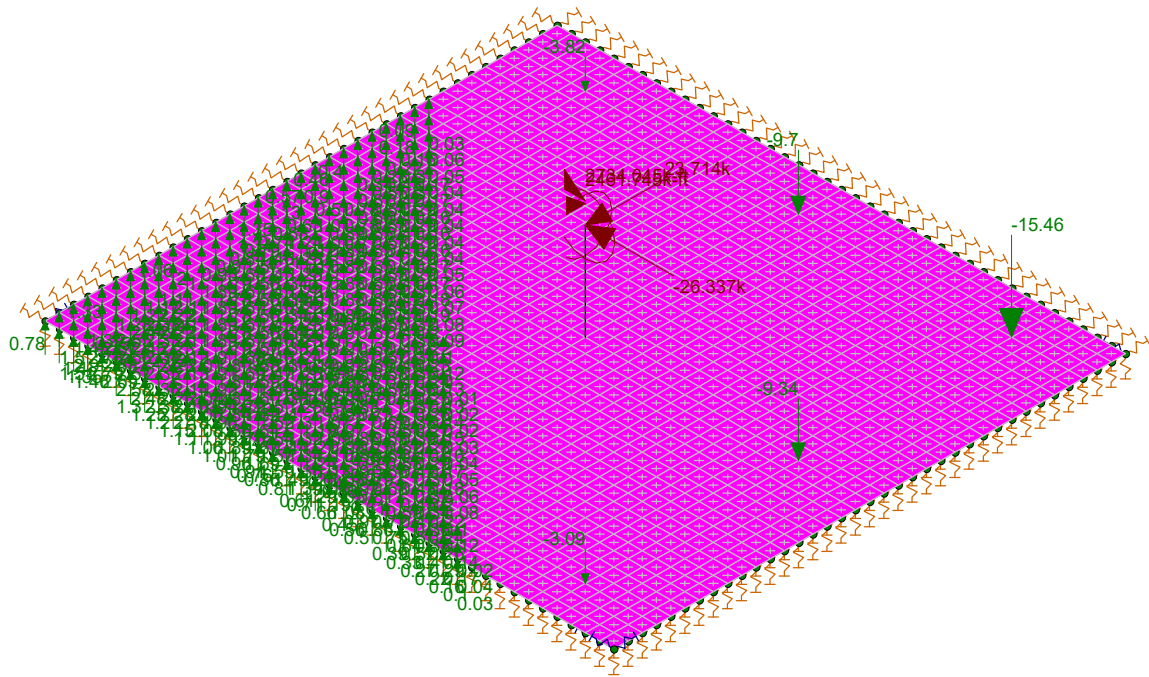
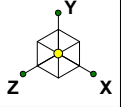
BU 841288 / Bridgeport North

SK - 1  
June 22, 2020 at 11:50 AM  
37520-1130.001.7805 Composite ...



Loads: BLC 2, Wind 0  
Results for LC 2, 0.9 Dead + 1.0 Wind 0  
Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company	BU 841288 / Bridgeport North	SK - 2
JGF		June 22, 2020 at 11:42 AM
37520-1130.001.7805		37520-1130.001.7805 Composite ...

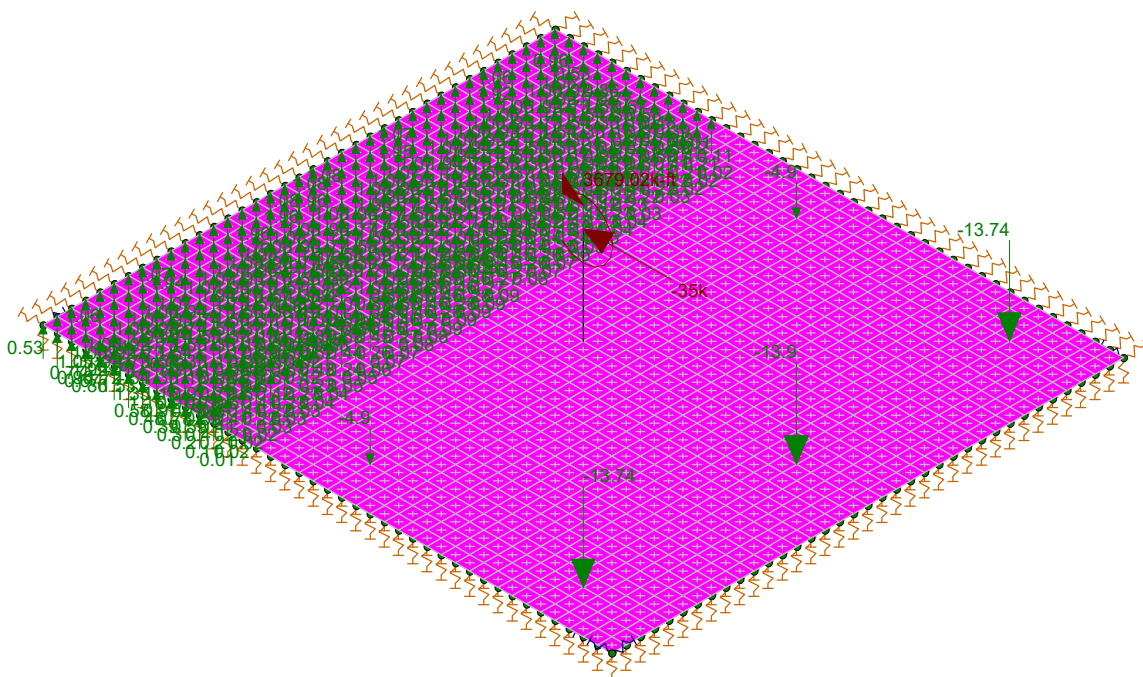
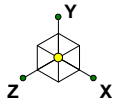


Loads: BLC 3, WIND 48  
Results for LC 4, 0.9 Dead + 1.0 Wind 48  
Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company  
JGF  
37520-1130.001.7805

BU 841288 / Bridgeport North

SK - 3  
June 22, 2020 at 11:47 AM  
37520-1130.001.7805 Composite ...



Loads: BLC 4, Wind 90  
Results for LC 6, 0.9 Dead + 1.0 Wind 90  
Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company	BU 841288 / Bridgeport North	SK - 4
JGF		June 22, 2020 at 11:48 AM
37520-1130.001.7805		37520-1130.001.7805 Composite ...



**(Global) Model Settings**

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	None
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



**(Global) Model Settings, Continued**

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...)	Surface(...)
1	Dead	None		-1		1				
2	Wind 0	None				2				
3	WIND 48	None				4				
4	Wind 90	None				2				

**Load Combinations**

	Description	Solve P...	S...	B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...B...	Fa...	B...	Fa...
1	1.2 Dead + 1.0 Wind 0	Yes	Y		1	1.2	2	1											
2	0.9 Dead + 1.0 Wind 0	Yes	Y		1	.9	2	1											
3	1.2 Dead + 1.0 Wind 48	Yes	Y		1	1.2	3	1											
4	0.9 Dead + 1.0 Wind 48	Yes	Y		1	.9	3	1											
5	1.2 Dead + 1.0 Wind 90	Yes	Y		1	1.2	4	1											
6	0.9 Dead + 1.0 Wind 90	Yes	Y		1	.9	4	1											

**Joint Loads and Enforced Displacements (BLC 1 : Dead)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^...
1	CENTER	L	Y	-62.89

**Joint Loads and Enforced Displacements (BLC 2 : Wind 0)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^...
1	CENTER	L	Mx	3679
2	CENTER	L	Z	35.44

**Joint Loads and Enforced Displacements (BLC 3 : WIND 48)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^...
1	CENTER	L	Mz	2734.045



Company : Paul J. Ford and Company  
 Designer : JGF  
 Job Number : 37520-1130.001.7805  
 Model Name : BU 841288 / Bridgeport North

June 22, 2020  
 10:46 AM  
 Checked By: \_\_\_\_\_

**Joint Loads and Enforced Displacements (BLC 3 : WIND 48) (Continued)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in.rad), (k*s^2/ft, k*s^...
2	CENTER	L	Mx	2461.745
3	CENTER	L	X	-26.337
4	CENTER	L	Z	23.714

**Joint Loads and Enforced Displacements (BLC 4 : Wind 90)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in.rad), (k*s^2/ft, k*s^...
1	CENTER	L	Mz	3679.02
2	CENTER	L	X	-35

**Concrete Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	f'c[ksi]	Lambda	Flex Steel[...	Shear Stee...
1	Conc3000NW	3156	1372	.15	.6	.145	3	1	60	60
2	Conc3500NW	3409	1482	.15	.6	.145	3.5	1	60	60
3	Conc4000NW	3644	1584	.15	.6	.145	4	1	60	60
4	Conc3000LW	2085	907	.15	.6	.11	3	.75	60	60
5	Conc3500LW	2252	979	.15	.6	.11	3.5	.75	60	60
6	Conc4000LW	2408	1047	.15	.6	.11	4	.75	60	60

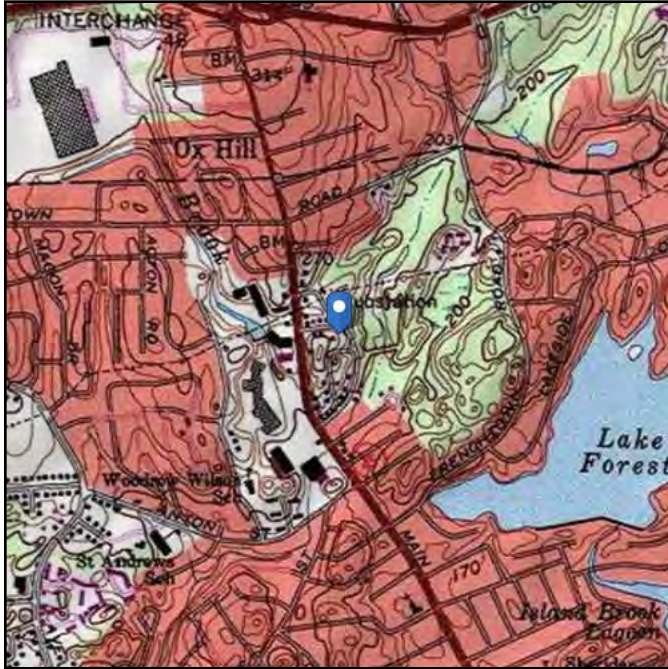


# ASCE 7 Hazards Report

**Address:**  
No Address at This  
Location

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

**Elevation:** 240.76 ft (NAVD 88)  
**Latitude:** 41.223344  
**Longitude:** -73.216772



## Wind

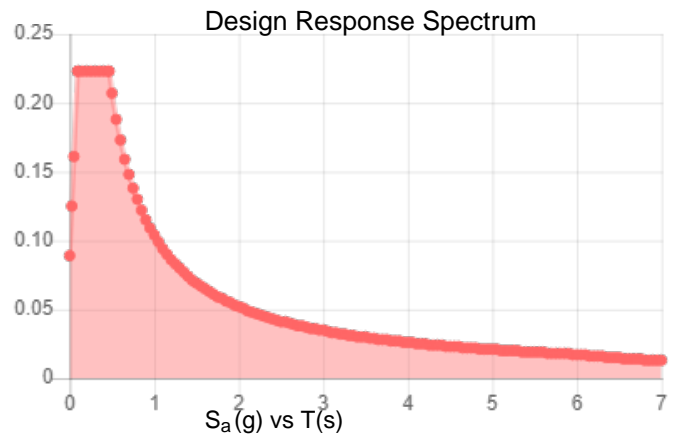
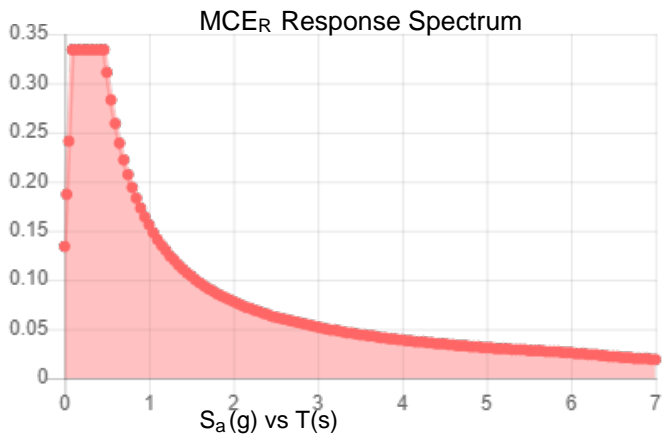
---

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

**Results:**

$S_s$ :	0.209	$S_{DS}$ :	0.223
$S_1$ :	0.065	$S_{D1}$ :	0.104
$F_a$ :	1.6	$T_L$ :	6
$F_v$ :	2.4	PGA :	0.113
$S_{MS}$ :	0.334	PGA <sub>M</sub> :	0.178
$S_{M1}$ :	0.156	F <sub>PGA</sub> :	1.573
		$I_e$ :	1

**Seismic Design Category** B



**Data Accessed:**

Thu Apr 25 2019

**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 Apr 25 2019

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: **June 17, 2020**

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

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

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

**Carrier Designation:** **T-Mobile Anchor**  
**Carrier Site Number:** CTF334A  
**Carrier Site Name:** CTF334A

**Crown Castle Designation:** **Crown Castle BU Number:** 841288  
**Crown Castle Site Name:** Bridgeport North  
**Crown Castle JDE Job Number:** 576586  
**Crown Castle Order Number:** 494425 Rev. 1

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

**Site Data:** **205 Kaechele Place, Bridgeport, Fairfield County, CT, 06606**  
**Latitude 41°13'24.04" Longitude -73°13'0.38"**

**Structure Information:** **Tower Height & Type:** **150.0 ft Monopole**  
**Mount Elevation:** **120.0 ft**  
**Mount Type:** **13.0 ft Platform**

Dear Darcy Tarr,

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

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

**Platform**

**Sufficient**

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

Mount analysis prepared by: Steven Youssef, E.I.T.

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



6-17-2020

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### 1) INTRODUCTION

This is an existing 3 sector 13.0 ft Platform, mapped by Infinigy Engineering.

### 2) ANALYSIS CRITERIA

<b>Building Code:</b>	2015 IBC / 2018 Connecticut Building Code
<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Ultimate Wind Speed:</b>	125 mph
<b>Exposure Category:</b>	B
<b>Topographic Factor at Base:</b>	1.0
<b>Topographic Factor at Mount:</b>	1.0
<b>Ice Thickness:</b>	1.50 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Seismic S<sub>s</sub>:</b>	0.209
<b>Seismic S<sub>1</sub>:</b>	0.064
<b>Live Loading Wind Speed:</b>	30 mph
<b>Man Live Load at Mid/End-Points:</b>	250 lb
<b>Man Live Load at Mount Pipes:</b>	500 lb

**Table 1 - Proposed Equipment Configuration**

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
120.0	120.0	3	Ericsson	Air -32 B2A/B66AA	13.0 ft Platform
		3	Ericsson	Air 21 B2A/B4P	
		3	RFS/Celwave	APXVAARR24_43-U-NA20	
		3	Ericsson	Air6449 B41	
		3	Ericsson	KRY 112 144/1	
		3	Ericsson	Radio 4449 B71 B85A T-Mobile	
		3	Ericsson	RRUS 4415 B25_CCV2	

### 3) ANALYSIS PROCEDURE

**Table 2 - Documents Provided**

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	494425 Rev. 1	CCI Sites
Mount Mapping	Infinigy Engineering	8506415	CCI Sites

### 3.1) Analysis Method

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

Infinigy Mount Analysis Tool 2.1.4, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

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

### 3.2) Assumptions

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

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

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



**4) ANALYSIS RESULTS**

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP4	120.0	21.9	Pass
	Reinforcement Angle(s)	M83		28.8	Pass
	Connection Plate(s)	M77A		27.8	Pass
	Handrail(s)	M13		24.0	Pass
	Handrail Corner Angle(s)	M94		17.5	Pass
	Horizontal(s)	M12		12.0	Pass
	Standoff Crossing Brace(s)	M59		14.8	Pass
	Grating Angle(s)	M70		16.8	Pass
	Standoff(s)	M51		19.3	Pass
	Mount Connection(s)	-		10.0	Pass

<b>Structure Rating (max from all components) =</b>	<b>28.8%</b>
---	--------------

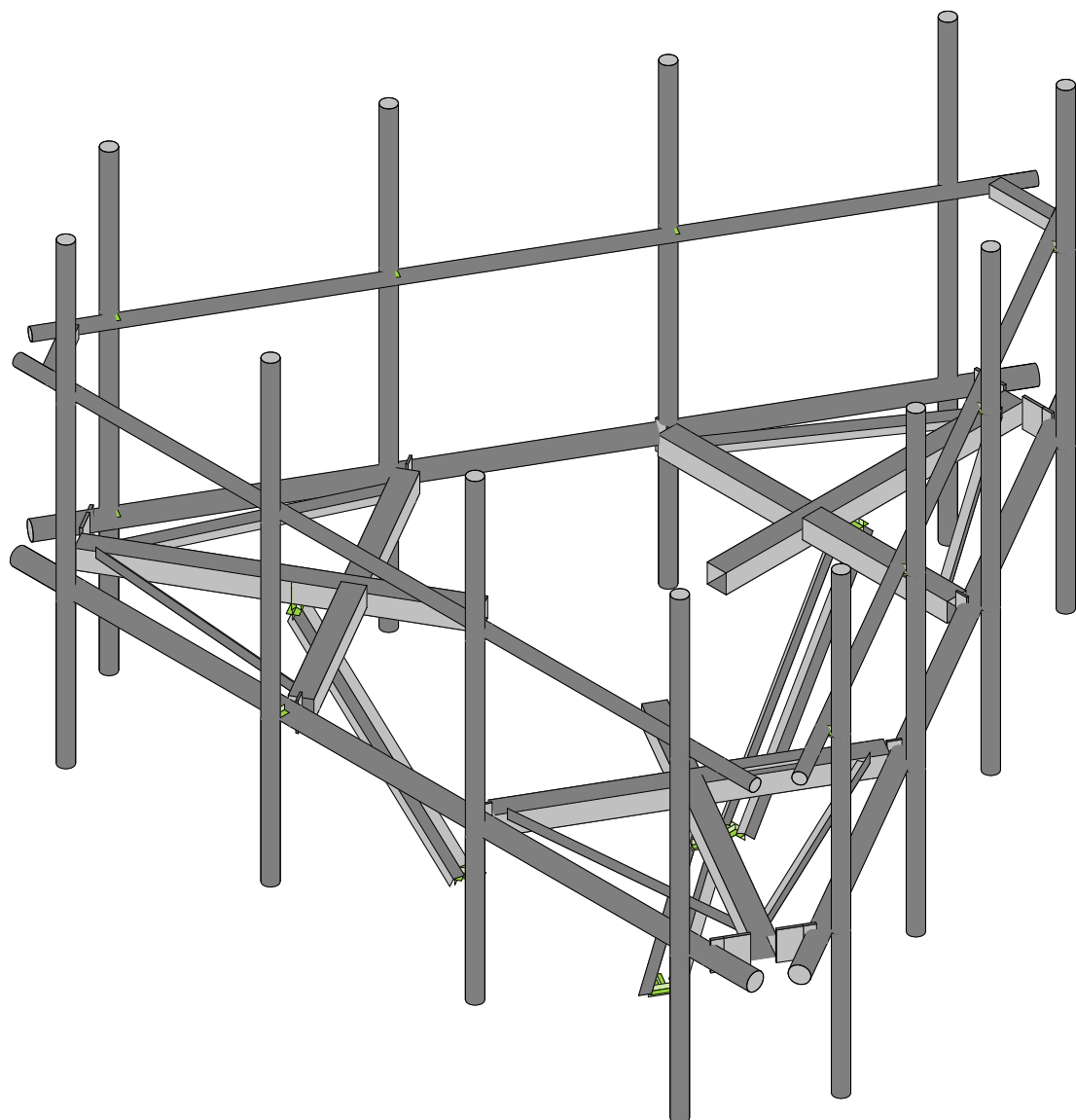
Notes:

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

**4.1) Recommendations**

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

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

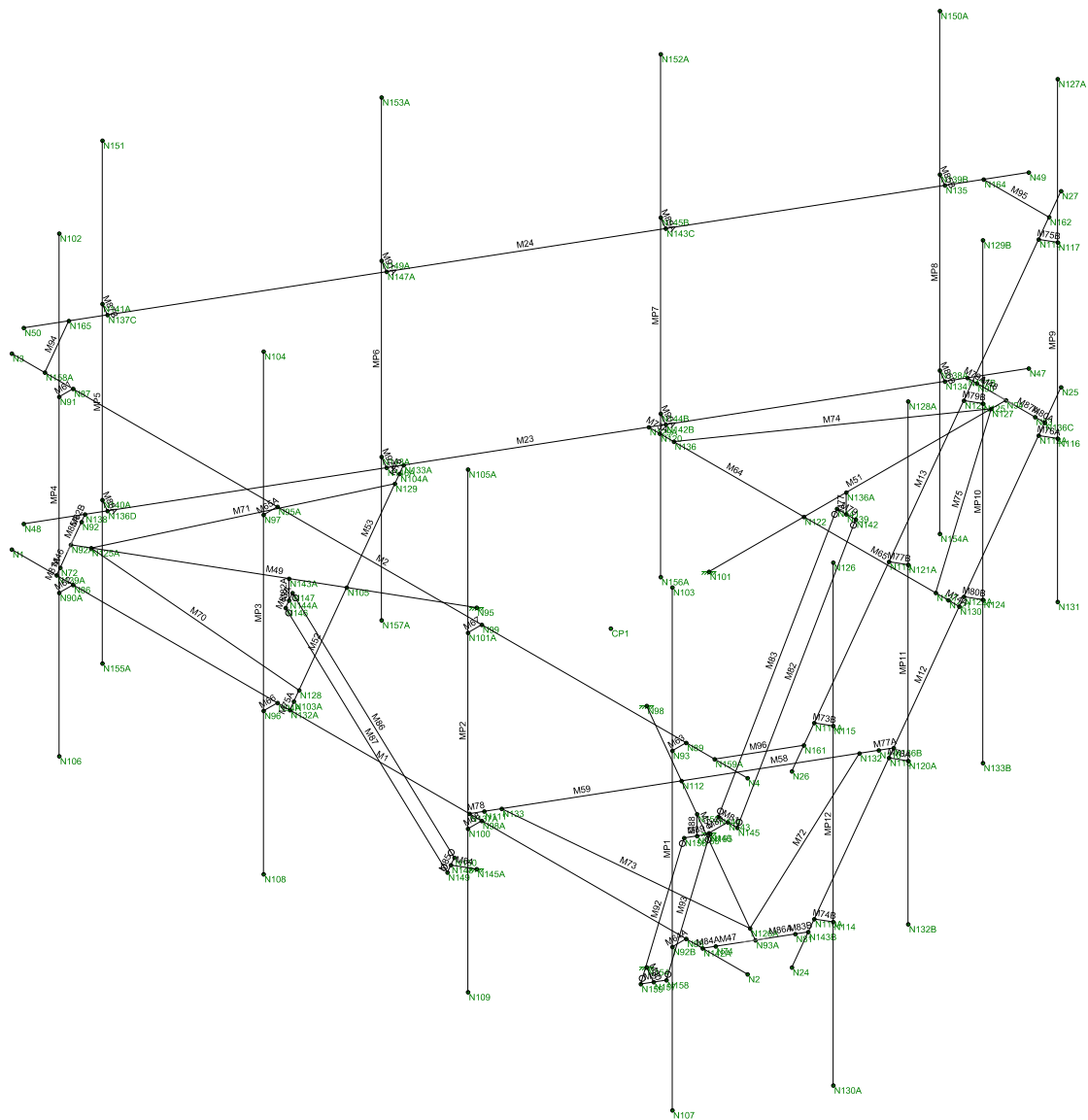


Envelope Only Solution

Infinigy Engineering, PLLC  
SY  
1039-Z0001-B

Bridgeport North

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Envelope Only Solution

Infinigy Engineering, PLLC  
SY  
1039-Z0001-B

### Bridgeport North

Wire Frame  
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**APPENDIX B**  
**SOFTWARE INPUT CALCULATIONS**

## Program Inputs

PROJECT INFORMATION		
Client:	Crown Castle	
Carrier:	T-Mobile	
Engineer:	Steven Youssef	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil	
Ground Elevation:	241	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	120.0	ft
Tower Height AGL:	150.0	ft

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

FACTORS		
Directionality Fact. ( $K_d$ ):	0.95	
Ground Ele. Factor ( $K_e$ ):	0.99	*Rev H Only
Rooftop Speed-Up ( $K_s$ ):	1.00	*Rev H Only
Topographic Factor ( $K_{zt}$ ):	1.00	
Gust Effect Factor ( $G_h$ ):	1.0	

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

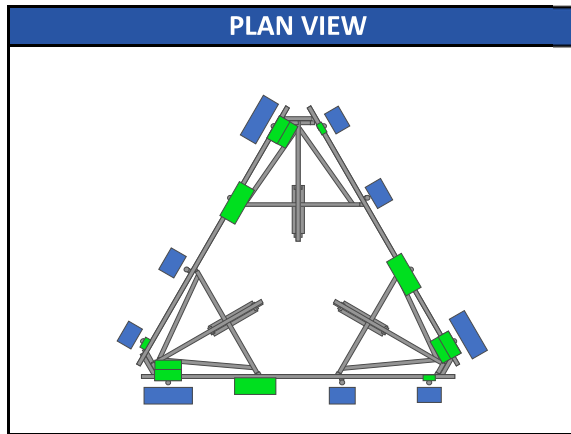
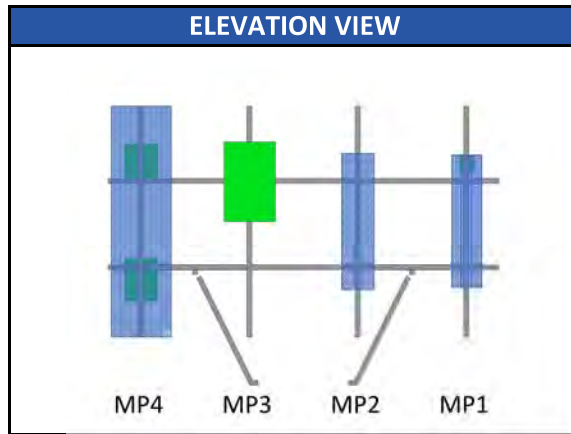
WIND AND ICE DATA		
Ultimate Wind ( $V_{ult}$ ):	125	mph
Design Wind ( $V$ ):	N/A	mph
Ice Wind ( $V_{ice}$ ):	50	mph
Base Ice Thickness ( $t_i$ ):	1.5	in
Flat Pressure:	78.43	psf
Round Pressure:	47.06	psf
Ice Wind Pressure:	7.53	psf

SEISMIC DATA		
Short-Period Accel. ( $S_s$ ):	0.21	g
1-Second Accel. ( $S_1$ ):	0.06	g
Short-Period Design ( $S_{DS}$ ):	0.22	
1-Second Design ( $S_{D1}$ ):	0.10	
Short-Period Coeff. ( $F_a$ ):	1.60	
1-Second Coeff. ( $F_v$ ):	2.40	
Amplification Factor ( $a_p$ ):	1.00	
Response Mod. ( $R_p$ ):	2.50	
Overstrength ( $\Omega_o$ ):	1.00	



Infinigy Load Calculator V2.1.4

# Program Inputs



## INFINIGY

FROM ZERO TO INFINIGY  
the solutions are endless

Infinigy Load Calculator V2.1.4

APPURTENANCE INFORMATION												
Appurtenance Name	Elevation	Qty.	$K_a$	$q_z$ (psf)	$EPA_N$ (ft <sup>2</sup> )	$EPA_T$ (ft <sup>2</sup> )	Wind $F_z$ (lbs)	Wind $F_x$ (lbs)	Weight (lbs)	Seismic F (lbs)	Member ( $\alpha$ sector)	
ERICSSON AIR -32 B2A/B66AA	120.0	3	0.90	39.22	6.51	4.71	229.77	166.32	132.20	14.74	MP2	
ERICSSON AIR 21 B2A/B4P	120.0	3	0.90	39.22	5.92	4.22	209.10	148.92	83.00	9.25	MP1	
RFS/CELWAVE APXVAARR24_43-U-NA2C	120.0	3	0.90	39.22	14.69	6.87	518.61	242.60	96.80	10.79	MP4	
ERICSSON AIR6449 B41	120.0	3	0.90	39.22	5.68	2.49	200.55	87.91	104.00	11.59	MP3	
ERICSSON TME-KRY 112 144/1	120.0	3	0.90	39.22	0.35	0.18	12.35	6.18	11.00	1.23	MP1	
ERICSSON RADIO 4449 B71 B85A_T-MOBI	120.0	3	0.90	39.22	1.97	1.59	69.54	56.00	73.21	8.16	MP4	
ERICSSON TME-RRUS 4415 B25_CCIV2	120.0	3	0.90	39.22	1.84	0.82	65.03	28.95	46.00	5.13	MP4	

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





Company : Infinigy Engineering, PLLC  
 Designer : SY  
 Job Number : 1039-Z0001-B  
 Model Name : Bridgeport North

June 17, 2020  
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**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Sh...	Type	Design List	Material	Design Rules
1	M1	N1	N2			Horizontal ...	Beam Pipe		A53 Gr.B	Typical
2	M2	N3	N4			Handrail	Beam Pipe		A53 Gr.B	Typical
3	M12	N24	N25			Horizontal ...	Beam Pipe		A53 Gr.B	Typical
4	M13	N26	N27			Handrail	Beam Pipe		A53 Gr.B	Typical
5	M23	N47	N48			Horizontal ...	Beam Pipe		A53 Gr.B	Typical
6	M24	N49	N50			Handrail	Beam Pipe		A53 Gr.B	Typical
7	M46	N72	N92A			Corner Plate	Beam RECT		A36 Gr.36	Typical
8	M47	N74	N93A			Corner Plate	Beam RECT		A36 Gr.36	Typical
9	M48	N90	N94			Corner Plate	Beam RECT		A36 Gr.36	Typical
10	M49	N92A	N95			Standoff	Beam Tube		A500 Gr.B Rect	Typical
11	M50	N93A	N98			Standoff	Beam Tube		A500 Gr.B Rect	Typical
12	M51	N94	N101			Standoff	Beam Tube		A500 Gr.B Rect	Typical
13	M52	N103A	N105			Standoff T...	Beam Tube		A500 Gr.B Rect	Typical
14	M53	N105	N104A			Standoff T...	Beam Tube		A500 Gr.B Rect	Typical
15	M58	N110	N112			Standoff T...	Beam Tube		A500 Gr.B Rect	Typical
16	M59	N112	N111			Standoff T...	Beam Tube		A500 Gr.B Rect	Typical
17	M64	N120	N122			Standoff T...	Beam Tube		A500 Gr.B Rect	Typical
18	M65	N122	N121			Standoff T...	Beam Tube		A500 Gr.B Rect	Typical
19	M70	N125A	N128		270	Gating An...	Beam Single Angle		A36 Gr.36	Typical
20	M71	N129	N125A		270	Gating An...	Beam Single Angle		A36 Gr.36	Typical
21	M72	N126A	N132		270	Gating An...	Beam Single Angle		A36 Gr.36	Typical
22	M73	N133	N126A		270	Gating An...	Beam Single Angle		A36 Gr.36	Typical
23	M74	N127	N136		270	Gating An...	Beam Single Angle		A36 Gr.36	Typical
24	M75	N137	N127		270	Gating An...	Beam Single Angle		A36 Gr.36	Typical
25	M77	N136A	N139			RIGID	None None		RIGID	Typical
26	M79	N141	N142			RIGID	None None		RIGID	Typical
27	M80	N140	N143			RIGID	None None		RIGID	Typical
28	M81	N144	N145			RIGID	None None		RIGID	Typical
29	M82	N145	N142			Kicker Angle	Beam Single Angle		A36 Gr.36	Typical
30	M83	N144	N141		270	Kicker Angle	Beam Single Angle		A36 Gr.36	Typical
31	M82A	N143A	N144A			RIGID	None None		RIGID	Typical
32	M83A	N146	N147			RIGID	None None		RIGID	Typical
33	M84	N145A	N148			RIGID	None None		RIGID	Typical
34	M85	N149	N150			RIGID	None None		RIGID	Typical
35	M86	N150	N147			Kicker Angle	Beam Single Angle		A36 Gr.36	Typical
36	M87	N149	N146		270	Kicker Angle	Beam Single Angle		A36 Gr.36	Typical
37	M88	N152	N153			RIGID	None None		RIGID	Typical
38	M89	N155	N156			RIGID	None None		RIGID	Typical
39	M90	N154	N157			RIGID	None None		RIGID	Typical
40	M91	N158	N159			RIGID	None None		RIGID	Typical
41	M92	N159	N156			Kicker Angle	Beam Single Angle		A36 Gr.36	Typical
42	M93	N158	N155		270	Kicker Angle	Beam Single Angle		A36 Gr.36	Typical
43	M94	N158A	N165		180	Corner Ha...	Beam Single Angle		A36 Gr.36	Typical
44	M95	N164	N162		180	Corner Ha...	Beam Single Angle		A36 Gr.36	Typical
45	M96	N161	N159A		180	Corner Ha...	Beam Single Angle		A36 Gr.36	Typical
46	M73A	N120	N129A			Grating Pl...	Beam RECT		A36 Gr.36	Typical
47	M74A	N121	N130			Grating Pl...	Beam RECT		A36 Gr.36	Typical
48	M75A	N103A	N132A			Grating Pl...	Beam RECT		A36 Gr.36	Typical
49	M76	N104A	N133A			Grating Pl...	Beam RECT		A36 Gr.36	Typical
50	M77A	N110	N136B			Grating Pl...	Beam RECT		A36 Gr.36	Typical
51	M78	N111	N137A			Grating Pl...	Beam RECT		A36 Gr.36	Typical
52	M79A	N90	N137B			Corner Plate	Beam RECT		A36 Gr.36	Typical
53	M80A	N83	N136C			Corner Plate	Beam RECT		A36 Gr.36	Typical
54	M81A	N72	N139A			Corner Plate	Beam RECT		A36 Gr.36	Typical
55	M82B	N92	N138			Corner Plate	Beam RECT		A36 Gr.36	Typical
56	M83B	N81	N143B			Corner Plate	Beam RECT		A36 Gr.36	Typical



Company : Infinigy Engineering, PLLC  
 Designer : SY  
 Job Number : 1039-Z0001-B  
 Model Name : Bridgeport North

June 17, 2020  
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**Member Primary Data (Continued)**

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Sh...	Type	Design List	Material	Design Rules
57	M84A	N74	N142A			Corner Plate	Beam	RECT	A36 Gr.36	Typical
58	M85A	N92A	N92			Corner Plate	Beam	RECT	A36 Gr.36	Typical
59	M86A	N93A	N81			Corner Plate	Beam	RECT	A36 Gr.36	Typical
60	M87A	N94	N83			Corner Plate	Beam	RECT	A36 Gr.36	Typical
61	M61	N87	N91			RIGID	None	None	RIGID	Typical
62	M62	N86	N90A			RIGID	None	None	RIGID	Typical
63	M63	N89	N93			RIGID	None	None	RIGID	Typical
64	M64A	N88	N92B			RIGID	None	None	RIGID	Typical
65	M65A	N95A	N97			RIGID	None	None	RIGID	Typical
66	M66	N94A	N96			RIGID	None	None	RIGID	Typical
67	M67	N99	N101A			RIGID	None	None	RIGID	Typical
68	M68	N98A	N100			RIGID	None	None	RIGID	Typical
69	MP1	N103	N107			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
70	MP2	N105A	N109			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
71	MP3	N104	N108			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
72	MP4	N102	N106			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
73	M73B	N111A	N115			RIGID	None	None	RIGID	Typical
74	M74B	N110A	N114			RIGID	None	None	RIGID	Typical
75	M75B	N113	N117			RIGID	None	None	RIGID	Typical
76	M76A	N112A	N116			RIGID	None	None	RIGID	Typical
77	M77B	N119	N121A			RIGID	None	None	RIGID	Typical
78	M78A	N118	N120A			RIGID	None	None	RIGID	Typical
79	M79B	N123	N125			RIGID	None	None	RIGID	Typical
80	M80B	N122A	N124			RIGID	None	None	RIGID	Typical
81	MP9	N127A	N131			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
82	MP10	N129B	N133B			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
83	MP11	N128A	N132B			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
84	MP12	N126	N130A			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
85	M85B	N135	N139B			RIGID	None	None	RIGID	Typical
86	M86B	N134	N138A			RIGID	None	None	RIGID	Typical
87	M87B	N137C	N141A			RIGID	None	None	RIGID	Typical
88	M88A	N136D	N140A			RIGID	None	None	RIGID	Typical
89	M89A	N143C	N145B			RIGID	None	None	RIGID	Typical
90	M90A	N142B	N144B			RIGID	None	None	RIGID	Typical
91	M91A	N147A	N149A			RIGID	None	None	RIGID	Typical
92	M92A	N146A	N148A			RIGID	None	None	RIGID	Typical
93	MP5	N151	N155A			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
94	MP6	N153A	N157A			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
95	MP7	N152A	N156A			Pipe Mount	Column	Pipe	A53 Gr.B	Typical
96	MP8	N150A	N154A			Pipe Mount	Column	Pipe	A53 Gr.B	Typical

**Material Takeoff**

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		36	118.8	0
3	Total General		36	118.8	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6"x0.37" Plate	6	13.9	8.723
7	A36 Gr.36	L2.5x2.5x6	3	41.6	20.413
8	A36 Gr.36	L2x2x3	6	304	62.241
9	A36 Gr.36	L2x2x4	6	290.6	77.784
10	A36 Gr.36	PL6x0.5	12	37.1	31.597
11	A500 Gr.B Rect	HSS4X4X4	9	372.7	383.01
12	A53 Gr.B	PIPE_2.0	3	468	135.363



Company : Infinigy Engineering, PLLC  
 Designer : SY  
 Job Number : 1039-Z0001-B  
 Model Name : Bridgeport North

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**Material Takeoff (Continued)**

	Material	Size	Pieces	Length[in]	Weight[LB]
13	A53 Gr.B	PIPE 2.5	12	1152	525.934
14	A53 Gr.B	PIPE 3.0	3	468	274.706
15	Total HR Steel		60	3147.9	1519.771

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me... Surface(...	
1	Self Weight	DL		-1			33	3	
2	Wind Load AZI 0	WLZ					66		
3	Wind Load AZI 30	None					66		
4	Wind Load AZI 60	None					66		
5	Wind Load AZI 90	WLX					66		
6	Wind Load AZI 120	None					66		
7	Wind Load AZI 150	None					66		
8	Wind Load AZI 180	None					66		
9	Wind Load AZI 210	None					66		
10	Wind Load AZI 240	None					66		
11	Wind Load AZI 270	None					66		
12	Wind Load AZI 300	None					66		
13	Wind Load AZI 330	None					66		
14	Distr. Wind Load Z	WLZ						96	
15	Distr. Wind Load X	WLX						96	
16	Ice Weight	OL1					33	96	3
17	Ice Wind Load AZI 0	OL2					66		
18	Ice Wind Load AZI 30	None					66		
19	Ice Wind Load AZI 60	None					66		
20	Ice Wind Load AZI 90	OL3					66		
21	Ice Wind Load AZI 120	None					66		
22	Ice Wind Load AZI 150	None					66		
23	Ice Wind Load AZI 180	None					66		
24	Ice Wind Load AZI 210	None					66		
25	Ice Wind Load AZI 240	None					66		
26	Ice Wind Load AZI 270	None					66		
27	Ice Wind Load AZI 300	None					66		
28	Ice Wind Load AZI 330	None					66		
29	Distr. Ice Wind Load Z	OL2						96	
30	Distr. Ice Wind Load X	OL3						96	
31	Seismic Load Z	ELZ			-.111		33		
32	Seismic Load X	ELX	-.111				33		
33	Service Live Loads	LL					1		
34	Maintenance Load 1	LL				1			
35	Maintenance Load 2	LL				1			
36	Maintenance Load 3	LL				1			
37	Maintenance Load 4	LL				1			
38	Maintenance Load 5	LL				1			
39	Maintenance Load 6	LL				1			
40	Maintenance Load 7	LL				1			
41	Maintenance Load 8	LL				1			
42	Maintenance Load 9	LL				1			
43	Maintenance Load 10	LL				1			
44	Maintenance Load 11	LL				1			
45	Maintenance Load 12	LL				1			
46	BLC 1 Transient Area Loads	None						21	
47	BLC 16 Transient Area Loads	None						21	











### Envelope Joint Reactions (Continued)

	Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
5	N101	m...1394.392	17	210.908	20	3922.652	2	140.756	20	1633.272	11	480.729	23
6		min -1394.71	11	-549.229	124	-2742.429	20	-279.689	1...	-1629.461	17	-496.137	5
7	N140	m... 54.851	17	4025.596	27	-33.366	20	1341.668	27	138.361	23	210.293	23
8		min -54.861	23	-16.173	20	-2257.229	27	-5.391	20	-143.9	5	-220.089	5
9	N145A	m... -53.282	24	4021.73	31	1124.974	31	64.503	14	134.771	15	.3	24
10		min -1949.027	31	-3.941	24	32.093	24	-703.901	32	-140.302	9	-1146.919	31
11	N154	m... 1948.93	35	4021.722	35	1125.134	35	41.372	15	134.775	19	1170.986	35
12		min 53.28	16	-3.943	16	32.093	16	-660.735	34	-140.33	13	7.701	16
13	Totals:	m...5876.522	17	10159.5	32	5990.776	14						
14		min -5876.523	11	2736.095	62	-5990.777	8						

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

Member	Shape	Code ...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn y-y...	phi*Mn ...	Cb	Eqn	
1	M83	L2x2x3	.288	24.806	28	.005	0	y	5	9576.1...	23392.8	557.717	1070.126	1.136	H2-1
2	M87	L2x2x3	.287	24.806	32	.005	50.668	y	9	9576.1...	23392.8	557.717	1070.126	1.136	H2-1
3	M93	L2x2x3	.284	24.806	36	.005	50.668	y	13	9576.1...	23392.8	557.717	1070.126	1.136	H2-1
4	M77A	6"x0.37...	.278	2.309	5	.169	0	y	11	70156...	71928	553.5	8991	1.042	H1-...
5	M75A	6"x0.37...	.271	2.309	13	.171	0	y	7	70156...	71928	553.5	8991	1.04	H1-...
6	M82	L2x2x3	.270	24.806	38	.005	0	z	5	9576.1...	23392.8	557.717	1070.126	1.136	H2-1
7	M92	L2x2x3	.269	24.806	34	.005	50.668	z	13	9576.1...	23392.8	557.717	1070.126	1.136	H2-1
8	M73A	6"x0.37...	.269	2.309	9	.170	0	y	3	70156...	71928	553.5	8991	1.041	H1-...
9	M86	L2x2x3	.267	24.806	31	.005	0	z	9	9576.1...	23392.8	557.717	1070.126	1.136	H2-1
10	M76	6"x0.37...	.255	2.309	11	.149	0	y	29	70156...	71928	553.5	8991	1.044	H1-...
11	M78	6"x0.37...	.248	2.309	3	.151	0	y	8	70156...	71928	553.5	8991	1.043	H1-...
12	M74A	6"x0.37...	.245	2.309	7	.150	0	y	12	70156...	71928	553.5	8991	1.044	H1-...
13	M13	PIPE_2.0	.240	13	7	.219	8.125		7	5820.4...	32130	1871.625	1871.625	4.547	H1-...
14	M2	PIPE_2.0	.239	13	3	.220	8.125		2	5820.4...	32130	1871.625	1871.625	4.563	H1-...
15	M24	PIPE_2.0	.238	13	11	.220	8.125		11	5820.4...	32130	1871.625	1871.625	4.534	H1-...
16	MP4	PIPE_2.5	.219	30	8	.084	66		8	30038...	50715	3596.25	3596.25	2.935	H1-...
17	MP8	PIPE_2.5	.215	30	4	.083	66		4	30038...	50715	3596.25	3596.25	1.481	H1-...
18	MP3	PIPE_2.5	.209	66	2	.037	66		10	30038...	50715	3596.25	3596.25	3.466	H1-...
19	MP12	PIPE_2.5	.209	66	12	.083	66		12	30038...	50715	3596.25	3596.25	1.374	H1-...
20	MP11	PIPE_2.5	.207	66	4	.037	66		2	30038...	50715	3596.25	3596.25	3.239	H1-...
21	MP10	PIPE_2.5	.207	66	10	.036	66		11	30038...	50715	3596.25	3596.25	2.979	H1-...
22	MP7	PIPE_2.5	.206	66	10	.038	66		6	30038...	50715	3596.25	3596.25	2.576	H1-...
23	MP6	PIPE_2.5	.204	66	2	.035	66		3	30038...	50715	3596.25	3596.25	3.57	H1-...
24	MP2	PIPE_2.5	.202	66	13	.036	66		7	30038...	50715	3596.25	3596.25	3.176	H1-...
25	M51	HSS4X...	.193	33.469	27	.077	34.125	y	28	124317...	139518	16180.5	16180.5	1.582	H1-...
26	M49	HSS4X...	.193	33.469	31	.077	34.125	y	33	124317...	139518	16180.5	16180.5	1.582	H1-...
27	M50	HSS4X...	.193	33.469	35	.077	34.125	y	36	124317...	139518	16180.5	16180.5	1.582	H1-...
28	M94	L2.5x2....	.175	0	2	.082	13.87	y	2	53651...	56052	1512.192	3536.758	2.213	H2-1
29	M95	L2.5x2....	.174	0	10	.082	13.87	y	10	53651...	56052	1512.192	3536.758	2.204	H2-1
30	M96	L2.5x2....	.171	0	6	.082	13.87	y	6	53651...	56052	1512.192	3536.758	2.205	H2-1
31	M70	L2x2x4	.168	48.342	7	.008	48.342	z	34	13451...	30585.6	690.934	1447.268	1.055	H2-1
32	M72	L2x2x4	.167	48.342	11	.008	48.342	z	38	13451...	30585.6	690.934	1446.457	1.052	H2-1
33	M74	L2x2x4	.165	48.342	3	.008	48.342	z	30	13451...	30585.6	690.934	1441.544	1.034	H2-1
34	M73	L2x2x4	.159	0	9	.005	48.518	z	38	13371...	30585.6	690.934	1445.838	1.053	H2-1
35	M71	L2x2x4	.158	0	5	.005	48.518	z	34	13371...	30585.6	690.934	1445.264	1.051	H2-1
36	M75	L2x2x4	.156	0	13	.005	48.518	z	30	13371...	30585.6	690.934	1441.138	1.036	H2-1
37	M59	HSS4X...	.148	0	34	.035	0	y	35	135769...	139518	16180.5	16180.5	1.744	H1-...
38	M53	HSS4X...	.147	0	30	.035	0	y	31	135769...	139518	16180.5	16180.5	1.746	H1-...
39	M65	HSS4X...	.147	0	38	.035	0	y	27	135769...	139518	16180.5	16180.5	1.747	H1-...
40	M52	HSS4X...	.145	30.61	32	.036	30.61	y	31	135769...	139518	16180.5	16180.5	1.745	H1-...
41	M58	HSS4X...	.145	30.61	36	.036	30.61	y	35	135769...	139518	16180.5	16180.5	1.747	H1-...
42	M64	HSS4X...	.145	30.61	28	.036	30.61	y	27	135769...	139518	16180.5	16180.5	1.748	H1-...





Company : Infinigy Engineering, PLLC  
 Designer : SY  
 Job Number : 1039-Z0001-B  
 Model Name : Bridgeport North

June 17, 2020  
 12:09 PM  
 Checked By: \_\_\_\_\_

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

Member	Shape	Code ...	Loc[in]	LC	Shear Ch...	Loc[in]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn y-y...	phi*Mn ...	Cb	Eqn
43	MP5	PIPE_2.5	.141	66	2	.061	66		3	30038....	50715	3596.25	3596.25	4.485 H1-...
44	MP9	PIPE_2.5	.141	66	10	.062	66		11	30038....	50715	3596.25	3596.25	3.502 H1-...
45	MP1	PIPE_2.5	.138	66	6	.062	66		7	30038....	50715	3596.25	3596.25	3.769 H1-...
46	M87A	PL6x0.5	.132	0	13	.139	0	y	29	93022....	97200	1012.5	12150	1.136 H1-...
47	M47	PL6x0.5	.131	4.17	9	.139	4.17	y	36	93022....	97200	1012.5	12150	1.134 H1-...
48	M48	PL6x0.5	.129	4.17	2	.138	4.17	y	38	93022....	97200	1012.5	12150	1.178 H1-...
49	M85A	PL6x0.5	.129	0	5	.139	0	y	33	93022....	97200	1012.5	12150	1.137 H1-...
50	M46	PL6x0.5	.127	4.17	6	.138	4.17	y	30	93022....	97200	1012.5	12150	1.174 H1-...
51	M86A	PL6x0.5	.126	0	10	.138	0	y	34	93022....	97200	1012.5	12150	1.179 H1-...
52	M12	PIPE_3.0	.120	97.5	4	.145	58.5		6	26386....	65205	5748.75	5748.75	3.472 H1-...
53	M23	PIPE_3.0	.119	58.5	12	.148	58.5		10	26386....	65205	5748.75	5748.75	4.162 H1-...
54	M1	PIPE_3.0	.115	58.5	4	.149	58.5		2	26386....	65205	5748.75	5748.75	4.156 H1-...
55	M80A	PL6x0.5	.101	2.021	2	.139	0	y	29	96202....	97200	1012.5	12150	1.093 H1-...
56	M84A	PL6x0.5	.101	2.021	10	.139	0	y	36	96202....	97200	1012.5	12150	1.09 H1-...
57	M82B	PL6x0.5	.095	2.021	6	.139	0	y	33	96202....	97200	1012.5	12150	1.094 H1-...
58	M79A	PL6x0.5	.091	2.021	2	.138	0	y	38	96202....	97200	1012.5	12150	1.132 H1-...
59	M81A	PL6x0.5	.090	2.021	6	.138	0	y	30	96202....	97200	1012.5	12150	1.127 H1-...
60	M83B	PL6x0.5	.085	2.021	10	.138	0	y	34	96202....	97200	1012.5	12150	1.133 H1-...

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

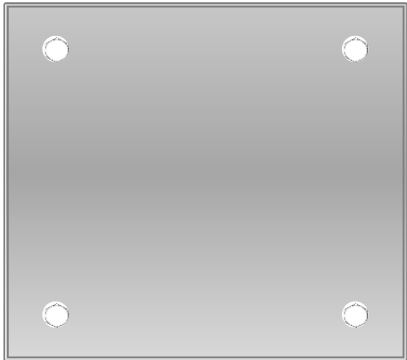
**Bolt Calculation Tool, V1.4**

PROJECT DATA	
Site Name:	Bridgeport North
Site Number:	841288
Job Code:	1039-Z0001-B
Connection Description:	off & Reinforcement Angle Conn

APPLIED LOADS		
Bolt Tension:	2042.18	lbs
Bolt Shear:	604.52	lbs

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

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Tensile Usage	10.0%	
Shear Usage	4.4%	
Interaction Check	0.01	<b>≤1.05</b>
Result	Pass	



# Exhibit F

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

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

T-Mobile Existing Facility

Site ID: CTFF334A

205 Kaechele Place  
Bridgeport, Connecticut 06606

**July 14, 2020**

**EBI Project Number: 6220003049**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>50.44%</b>

July 14, 2020

T-Mobile

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

Emissions Analysis for Site: CTFF334A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **205 Kaechele Place in Bridgeport, 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 205 Kaechele Place in Bridgeport, 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 21 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz 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 120 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 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	6,169.82	ERP (W):	6,169.82	ERP (W):	6,169.82
Antenna A1 MPE %:	<b>1.54%</b>	Antenna B1 MPE %:	<b>1.54%</b>	Antenna C1 MPE %:	<b>1.54%</b>
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A2 MPE %:	<b>2.18%</b>	Antenna B2 MPE %:	<b>2.18%</b>	Antenna C2 MPE %:	<b>2.18%</b>
Antenna #:	3	Antenna #:	3	Antenna #:	3
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):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 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 A3 MPE %:	<b>6.40%</b>	Antenna B3 MPE %:	<b>6.40%</b>	Antenna C3 MPE %:	<b>6.40%</b>
Antenna #:	4	Antenna #:	4	Antenna #:	4
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	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	8,466.41	ERP (W):	8,466.41	ERP (W):	8,466.41
Antenna A4 MPE %:	<b>3.52%</b>	Antenna B4 MPE %:	<b>3.52%</b>	Antenna C4 MPE %:	<b>3.52%</b>

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	13.64%
Verizon	29.65%
Sprint	4.28%
AT&T	2.87%
<b>Site Total MPE % :</b>	<b>50.44%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	13.64%
T-Mobile Sector B Total:	13.64%
T-Mobile Sector C Total:	13.64%
Site Total MPE % :	50.44%

### T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	120.0	10.27	1900 MHz GSM	1000	1.03%
T-Mobile 2100 MHz UMTS	2	1028.30	120.0	5.13	2100 MHz UMTS	1000	0.51%
T-Mobile 1900 MHz LTE	2	2056.61	120.0	10.27	1900 MHz LTE	1000	1.03%
T-Mobile 2100 MHz LTE	2	2307.55	120.0	11.52	2100 MHz LTE	1000	1.15%
T-Mobile 2500 MHz LTE	2	6412.98	120.0	32.02	2500 MHz LTE	1000	3.20%
T-Mobile 2500 MHz NR	2	6412.98	120.0	32.02	2500 MHz NR	1000	3.20%
T-Mobile 600 MHz LTE	2	591.73	120.0	2.95	600 MHz LTE	400	0.74%
T-Mobile 600 MHz NR	1	1577.94	120.0	3.94	600 MHz NR	400	0.98%
T-Mobile 700 MHz LTE	2	648.82	120.0	3.24	700 MHz LTE	467	0.69%
T-Mobile 1900 MHz LTE	2	2203.69	120.0	11.00	1900 MHz LTE	1000	1.10%
						<b>Total:</b>	<b>13.64%</b>

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

## Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	13.64%
Sector B:	13.64%
Sector C:	13.64%
T-Mobile Maximum MPE % (Sector A):	13.64%
Site Total:	50.44%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **50.44%** 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.