



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

9/6/18

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

**RE: Notice of Exempt Modification for T-Mobile Crown Site BU: 876331**  
**T-Mobile Site ID: CT11423B**  
**115 North Mountain Rd, New Britain, CT 06053**  
**Latitude: 41° 40' 35.72"/ Longitude: -72° 49' 17.09"**

Dear Ms. Bachman:

T-Mobile currently maintains six (9) antennas at the 108-foot level of the existing 118'9"- tall monopole tower at 115 North Mountain Rd, New Britain, CT 06053. The tower is owned by Crown Castle. The property is owned by October Twenty Four, Inc. T-Mobile intends to replace (6) panel antennas for (6) proposed panel antennas, swap out (3) RRUs as well as add (1) hybrid fiber line and remove (3) bias T's and (1) coax.

This facility was approved by the by the Town of New Britain on November 22, 1996. A copy of the Zoning Permit is attached hereto.

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.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Erin Stewart, Mayor, City of New Britain, Sergio Lupo, Director of Health/Director of Licenses, Permits, and Inspections, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

**The Foundation for a Wireless World.**

CrownCastle.com

Melanie A. Bachman

8/23/18

Page 2

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: William Stone.

Sincerely,

William Stone  
Real Estate Specialist  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
518-373-3543  
William.stone@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes

Tab 2: Exhibit-2: Structural Modification Report

Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc:

The Honorable Erin Stewart, Mayor  
27 West Main St  
New Britain, CT 06051

Sergio Lupo  
27 West Main Street  
Room 404  
New Britain, CT 06051

October Twenty Four, Inc  
190 Camp St  
Plainville, CT 06062

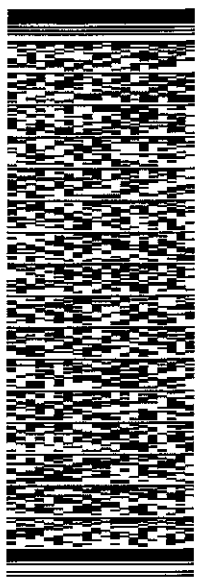
ORIGIN ID: GFLA (518) 373-3547  
WILL STONE  
CROWN CASTLE  
3 CORPORATE PARK DRIVE  
SUITE 101  
CLIFTON PARK, NY 12065  
UNITED STATES US

SHIP DATE: 11/SEP/18  
ACTWGT: 3.00 LB  
CAD: 104924194/INET4040  
BILL SENDER

TO MELANIE BACHMAN  
CONNECTICUT SITING COUNCIL  
10 FRANKLIN SQUARE

NEW BRITAIN CT 06051  
(860) 827-2951 REF: 1755 8690  
PO: DEPT:

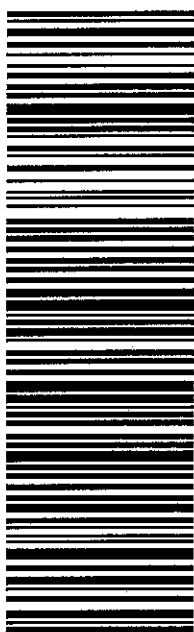
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J182118051551uv

TRK# 7731 9002 2880  
0201  
WED - 12 SEP 3:00P  
STANDARD OVERNIGHT

EB BDLA  
06051  
CT-US BDL



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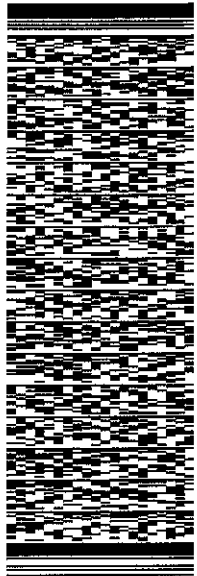
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](http://fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or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

ORIGIN: GFLA (516) 373-3547  
MILL STONE  
CROWN CASTLE  
3 CORPORATE PARK DRIVE  
SUITE 101  
CLIFTON PARK, NY 12065  
UNITED STATES US

SHIP DATE: 11 SEP 18  
ACTWGT: 2.00 LB  
CAD: 104924194NNET4040  
BILL SENDER

TO HON. ERIN STEWART, MAYOR  
CITY OF NEW BRITAIN  
27 WEST MAIN STREET

NEW BRITAIN CT 06051  
(860) 826-3383 REF: 17656890  
INV. DEPT.  
PO:

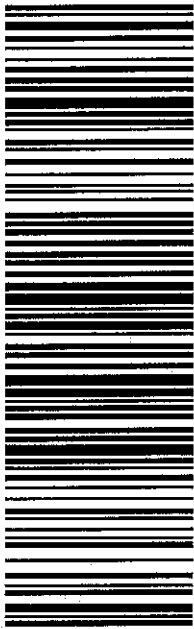


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STANDARD OVERNIGHT

**EBBDLA**

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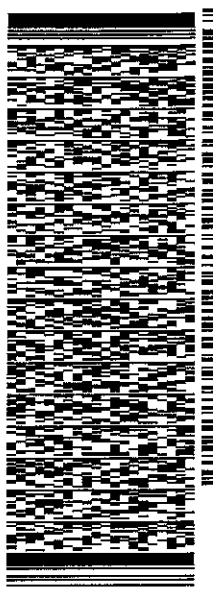


ORIGIN ID: GFLA (518) 373-3547  
WILL STONE  
CROWN CASTLE  
3 CORPORATE PARK DRIVE  
SUITE 101  
CLIFTON PARK, NY 12065  
UNITED STATES US

SHIP DATE: 11SEP18  
ACTWGT: 2.00 LB  
CAD: 104924194/NET4040  
BILL SENDER

TO SERGIO LUPO  
CITY OF NEW BRITAIN  
27 WEST MAIN STREET

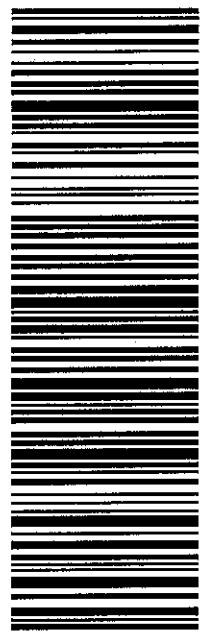
NEW BRITAIN CT 06051  
(860) 826-3383 REF: 17656890  
PO. DEPT.



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UNITED STATES US

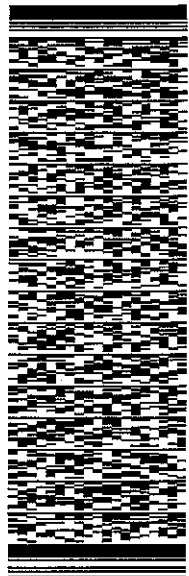
SHIP DATE: 11SEP18  
ACTWGT: 2.00 LB  
CAD: 104824194/NET4040  
BILL SENDER

TO

OCTOBER TWENTY FOUR, INC.  
190 CAMP STREET

PLAINVILLE CT 06062  
(555) 555-5555 REF: 1734/7830  
INV: DEPT:  
PO:

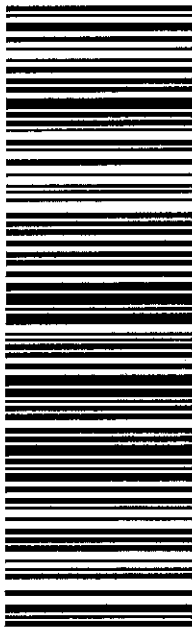
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WED - 12 SEP 3:00P  
STANDARD OVERNIGHT

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### 115 NORTH MOUNTAIN RD

**Location** 115 NORTH MOUNTAIN RD

**Mblu** F2D/ 102/ / /

**Acct#** 66600115

**Owner** OCTOBER TWENTY FOUR INC

**Assessment** \$232,330

**Appraisal** \$331,900

**PID** 1134

**Building Count** 1

**Current Value**

Appraisal			
Valuation Year	Improvements	Land	Total
2012	\$234,100	\$97,800	\$331,900
Assessment			
Valuation Year	Improvements	Land	Total
2012	\$163,870	\$68,460	\$232,330

**Owner of Record**

**Owner** OCTOBER TWENTY FOUR INC  
**Co-Owner**  
**Address** C/O A AIUDI + SONS LLC  
 PO BOX 279  
 PLAINVILLE, CT 06062

**Sale Price** \$550,000  
**Certificate** 1  
**Book & Page** 1826/ 309  
**Sale Date** 09/29/2011  
**Instrument** 19

**Ownership History**

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
OCTOBER TWENTY FOUR INC	\$550,000	1	1826/ 309	19	09/29/2011
OCTOBER TWENTY FOUR INC	\$0		733/ 284		02/02/1978
GIUSEPPE CACCAMO SALVATORE	\$0		431/ 424		01/01/1900
	\$0		224/ 239		01/01/1900

**Building Information**

**Building 1 : Section 1**

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

**Building Photo**

Building Attributes

Field	Description
Style	Outbuildings
Model	
Grade	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Central Heat Sys	
AC Type	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs	
Total Rooms	
Bath Style	
Kitchen Style	
Whirlpool Tub	
Fireplaces	
Rec Room Finish	
Rec Room Qual	
Bsmt Garages	
Bldg Nbhd	



(http://images.vgsi.com/photos/NewBritainCTPhotos//default.jpg)

**Building Layout**

Building Layout

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



**Extra Features**

Extra Features	Legend
No Data for Extra Features	

**Land**

**Land Use**

**Use Code** 4400  
**Description** Ind Ld De  
**Zone** TP  
**Neighborhood** 101G  
**Alt Land Appr Category** No

**Land Line Valuation**

**Size (Acres)** 0.82  
**Depth**  
**Assessed Value** \$68,460  
**Appraised Value** \$97,800

**Outbuildings**

<b>Outbuildings</b>						<u>Legend</u>
<b>Code</b>	<b>Description</b>	<b>Sub Code</b>	<b>Sub Description</b>	<b>Size</b>	<b>Value</b>	<b>Bldg #</b>
PAV5	Conc Pad			256 S.F.	\$3,100	1
FN3	Fence-6' Chain			150 L.F.	\$1,500	1
CB3	PreCastConcCel			286 S.F.	\$89,200	1
CB3	PreCastConcCel			360 S.F.	\$140,300	1

**Valuation History**

<b>Appraisal</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2015	\$234,100	\$97,800	\$331,900
2014	\$234,100	\$97,800	\$331,900
2013	\$234,100	\$97,800	\$331,900

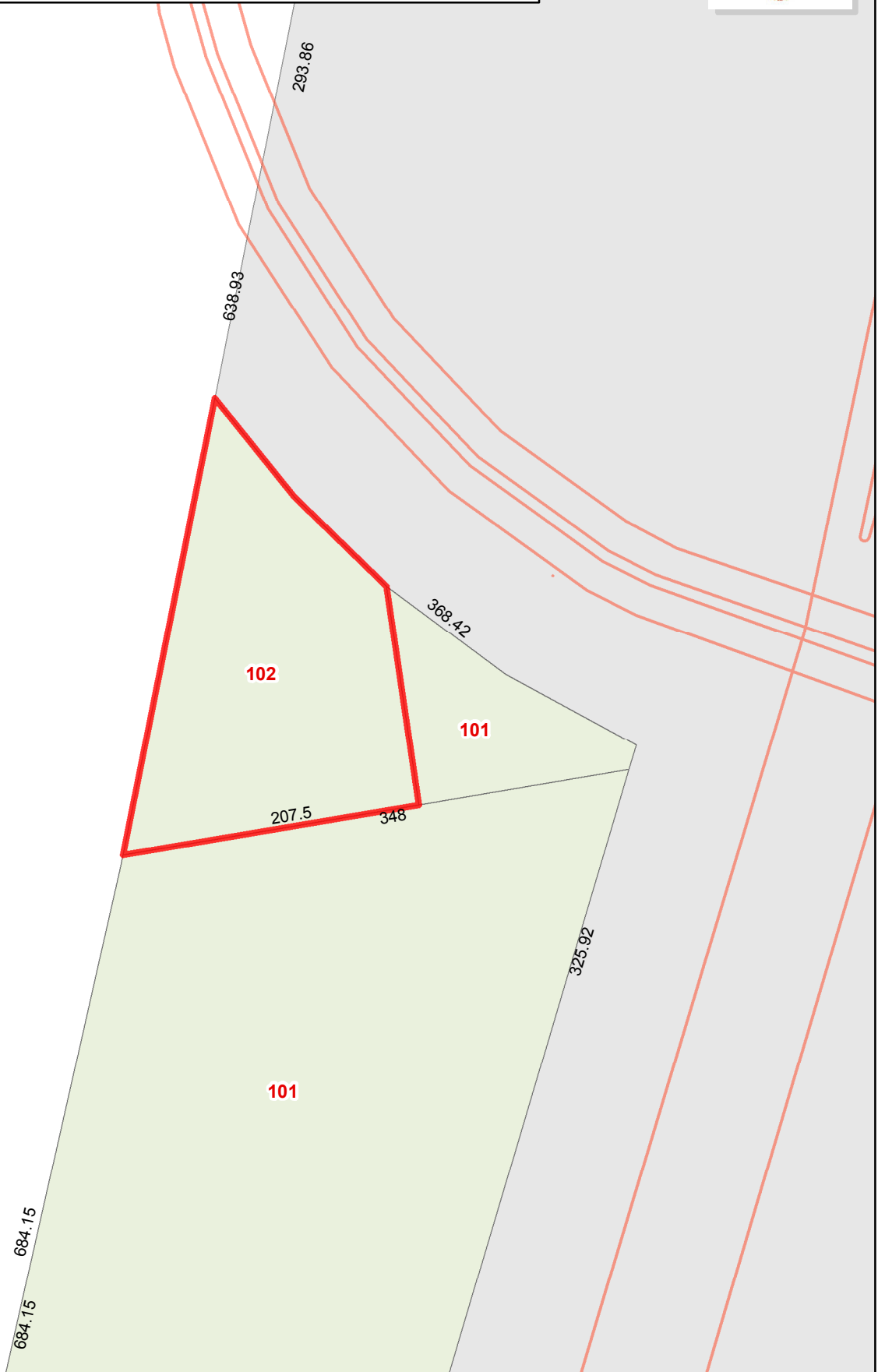
<b>Assessment</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2015	\$163,870	\$68,460	\$232,330
2014	\$163,870	\$68,460	\$232,330
2013	\$163,870	\$68,460	\$232,330

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# City of New Britain, Connecticut - Assessment Parcel Map

MBL: F2D 102

Address: 115 NORTH MOUNTAIN RD



Approximate Scale:

1 inch = 100 feet

**Disclaimer:**

This map is for informational purposes only.  
All information is subject to verification by any user.  
The City of New Britain and its mapping contractors  
assume no legal responsibility for the information contained herein.

Map Produced January 2015

10:AM (ELECT) WAYNE GLEIFERT

083

**B 85**

CITY OF NEW BRITAIN  
DEPARTMENT OF LICENSES, PERMITS  
AND INSPECTIONS  
TELEPHONE: 826-3383

**BUILDING/ZONING  
PERMIT**

DATE	11/22/96
COST	112,000.
FEE	1,780.

**APPLICANT** Sprint PCS **TEL. NO.** 294-5609

**ADDRESS** 9 Barnes Industrial Rd, Wallingford, CT 06492

**PERMIT FOR:** Construct 120' Monopole Tower, per engineered drawings/specifications.

**LOCATION** North Mountain Rd, Lot C

**BUILDING DIMENSIONS** FT. WIDE BY FT. LONG AND FT. IN HEIGHT

**BUILDING TYPE** USE GROUP LOT SIZE ZONE

**OWNER** October 24 Corporation **CERT. OF OCCUPANCY REQUIRED** YES NO

**ADDRESS** **AS-BUILT SURVEY REQUIRED** YES NO

THE MATCHING APPLICATION IS PART AND PARCEL OF THIS BUILDING PERMIT.

WHERE APPLICABLE SEPARATE PERMITS ARE  
REQUIRED FOR ELECTRICAL, PLUMBING AND  
MECHANICAL INSTALLATIONS.

APPLICANT'S COPY

*Wayne Gleifert*  
BUILDING OFFICIAL  
11-5-96  
WNUK

**MANDATORY INSPECTIONS REQUIRED**

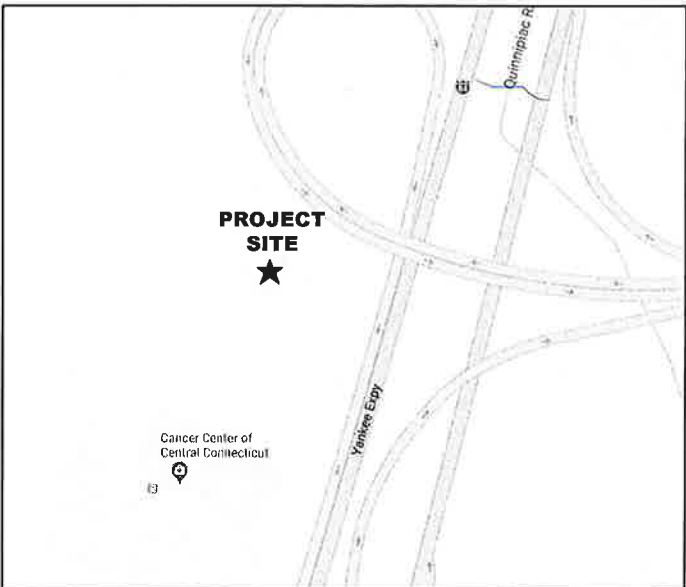
**POST PERMIT FOR DURATION OF WORK**

SHEET INDEX	
NO.	DESCRIPTION
T1	TITLE PAGE
N1	NOTES
C1	PLAN & ELEVATION
C2	RF CHART AND ORIENTATION
D1	EQUIPMENT DETAILS
E1	GROUNDING DIAGRAM
E2	RF PLUMBING DIAGRAM

TOWER OWNER NOTIFICATION

ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE NOTICE TO PROCEED, CONTRACTOR WILL CONTACT THE CROWN CASTLE CONSTRUCTION MANAGER OF RECORD (NOTED ON THE FIRST PAGE ON THIS CONSTRUCTION DRAWING) A MINIMUM OF 48 HOURS PRIOR TO WORK START. UPON ARRIVAL TO THE JOB SITE, CONTRACTOR CREW IS REQUIRED CALL 1-800-788-7011 TO NOTIFY THE CROWN CASTLE NOC WORK HAS BEGUN.

LOCATION MAP



**CBU**  
**876331**  
SITE ID  
**CT11423B**  
SITE NAME  
**I-84/NEW BRITAIN**  
SITE ADDRESS  
 115 NORTH MOUNTAIN ROAD  
 NEW BRITAIN, CT 06053  
CONFIGURATION  
**67D92DB\_2XAIR+1OP.**

GENERAL NOTES

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRH AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON STORMWATER DRAINAGE.
- NO SANITARY SEWER, POTABLE WATER, OR TRASH DISPOSAL SERVICE IS REQUIRED
- NO COMMERCIAL SIGNAGE IS PROPOSED

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED WITH ANY LOCAL AMENDMENTS BY THE LOCAL GOVERNING AUTHORITIES:

- INTERNATIONAL BUILDING CODE
- NATIONAL ELECTRICAL CODE
- NATIONAL FIRE PROTECTION ASSOCIATION 101
- NATIONAL FIRE PROTECTION ASSOCIATION 1
- LOCAL BUILDING CODES
- CITY/COUNTY ORDINANCES
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC)
- UNDERWRITERS LABORATORIES APPROVED ELECTRICAL PRODUCTS.
- ANSI EIA/TIA 222 REV. G
- TIA 607
- INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
- IEEE C2 (LATEST EDITION)
- TELCORDIA GR-1275
- ANSI T1.311

PROJECT SITE INFORMATION

SITE ID:	CT11423B
SITE NAME:	I-84/NEW BRITAIN
SITE ADDRESS:	115 NORTH MOUNTAIN ROAD NEW BRITAIN, CT 06053
PERMITTING JURISDICTION:	CITY OF NEW BRITAIN
COUNTY:	HARTFORD
ZONING:	CSC
SITE COORDINATES:	
LATITUDE:	41° 40' 35.0" (NAD 83)
LONGITUDE:	-72° 49' 17.4" (NAD 83)
APPLICANT:	T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088

STRUCTURAL ANALYSIS INFORMATION

**TOWER ANALYSIS**  
 INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING TOWER FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS FROM TOWER OWNER PRIOR TO ANY CONSTRUCTION.

**ANTENNA MOUNTS**  
 BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY ENGINEERING, PLLC DATED 07/19/2018. THE EXISTING ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION

PROJECT TEAM INFORMATION

<b>CLIENT REPRESENTATIVE:</b>	CROWN CASTLE 3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065
<b>CLIENT REP. CONTACT:</b>	WILL STONE (518) 373-3543
<b>ENGINEER:</b>	INFINIGY 6865 DEERPATH ROAD SUITE 152 ELKRIDGE, MD 21075
<b>ENGINEER CONTACT:</b>	MATTHEW LIVERETTE (518) 690-0790

SCOPE OF WORK

**SCOPE OF WORK:**  
 L700 4X2 67D92DB OUTDOOR CONFIGURATION: (UPSTATE NY MARKET)  
 REPLACING (6) EXISTING ANTENNAS WITH NEW MODELS. ADDING (1) HYBRID FIBER CABLE AND (3) RRUs. REMOVING (3) RRUs, (3) BIAS Ts AND (1) COAX.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG TOLL FREE: 1-800-922-4455 OR [www.cbyd.com](http://www.cbyd.com)

CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

Know what's below. Call before you dig.

**T-Mobile**

T-MOBILE NORTHEAST LLC  
103 MONARCH DRIVE  
LIVERPOOL, NY 13088

---

**INFINIGY**

6865 DEERPATH ROAD SUITE 152  
ELKRIDGE, MD 21075  
TEL (443) 592-3143

---

STATE OF CONNECTICUT  
JOHN S. STEVENS  
0087018  
PROFESSIONAL ENGINEER

---

D	ISSUED FOR CONSTRUCTION	REV	08/06/18
A	ISSUED FOR REVIEW	REV	07/31/18
No. Submittal / Revision App'd Date			

Drawn: RCG  
 Designed: MRL  
 Checked: AJD

Project Number: 800-007

Project Title:  
**CT11423B**  
**I-84/NEW BRITAIN**  
 115 NORTH MOUNTAIN ROAD  
 NEW BRITAIN, CT 06053

Prepared For:

---

**TITLE PAGE**

---

Drawing Number  
**T1**



# GENERAL NOTES

## PART 1 – GENERAL REQUIREMENTS

- 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
  - B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
  - C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC"), AND NFPA 101 (LIFE SAFETY CODE).
  - E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
  - F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).
- 1.2 DEFINITIONS:
- A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
  - B. COMPANY: T-MOBILE CORPORATION
  - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
  - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
  - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
- 1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.
- 1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
- A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
- 1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.7 NOTICE TO PROCEED:
- A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
  - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE T-MOBILE WITH AN OPERATIONAL WIRELESS FACILITY.

## PART 2 – EXECUTION

- 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

- 2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
- A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY T-MOBILE TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.
- 2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.
- 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

## PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR T-MOBILE PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
- A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
  - B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
  - C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
  - D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO T-MOBILE OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
  - E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
  - F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

## PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

- 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
- A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
  - B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- 4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.
- 4.5 CONDUCT TESTING AS REQUIRED HEREIN.

## PART 5 – TESTS AND INSPECTIONS

- 5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
  - B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
  - C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
  - D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
  - E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

## PART 6 – TRENCHING AND BACKFILLING

- 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.
- A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.
  - B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.
  - C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
  - D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.
  - E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.
  - F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.
  - G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
	DC POWER CABLES
	REPRESENTS DETAIL NUMBER
	REF. DRAWING NUMBER

## ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

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103 MONARCH DRIVE  
LIVERPOOL, NY 13088

**INFINIGY8**

6865 DEERPATH ROAD SUITE 152  
ELK RIDGE, MD 21075  
TEL (443) 582-3143



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Drawn: RCD  
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Checked: AJD

Project Number: 600-007

Project Title: **CT11423B**  
I-84/NEW BRITAIN

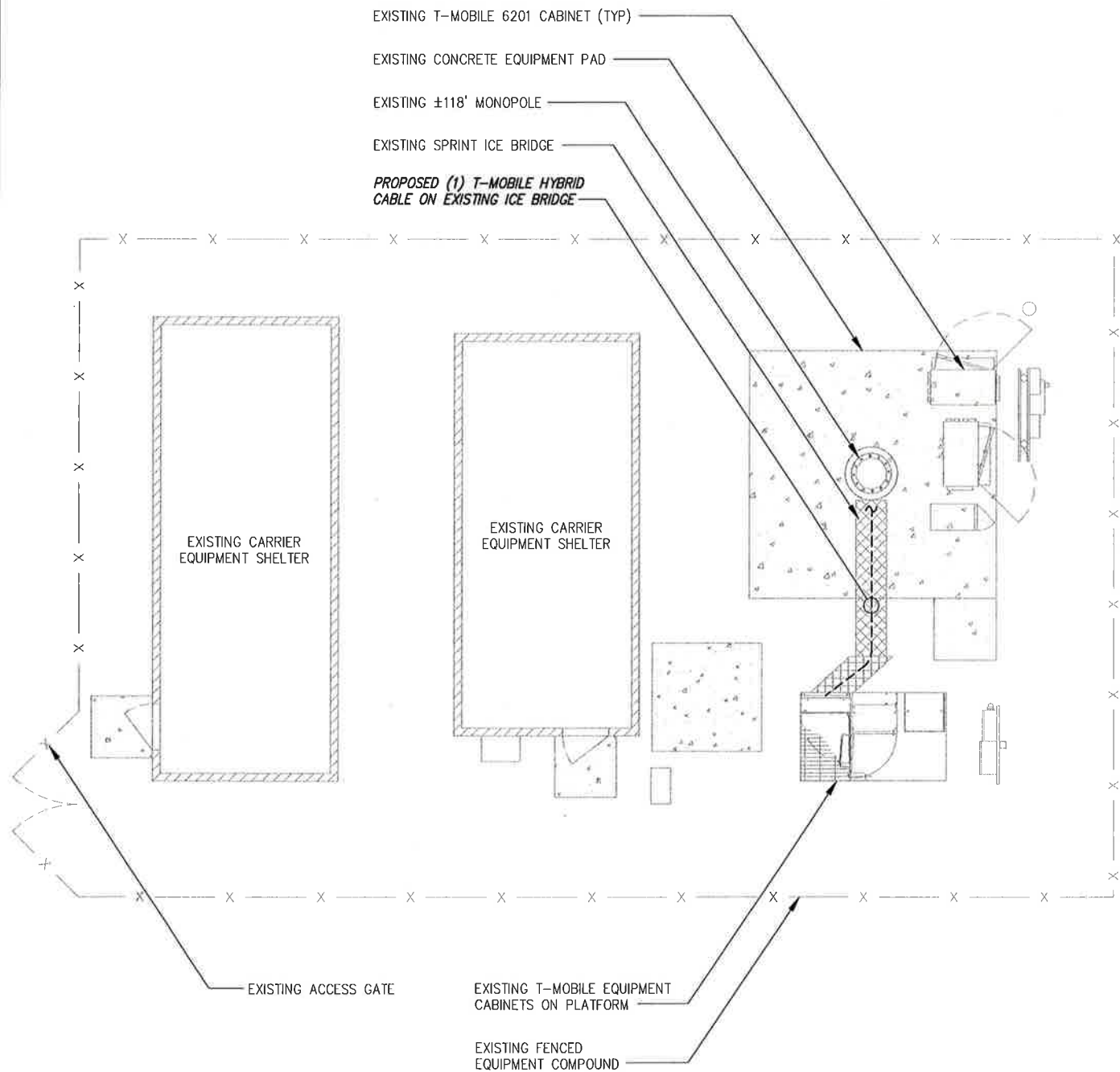
115 NORTH MOUNTAIN ROAD  
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Prepared For: **CROWN CASTLE**

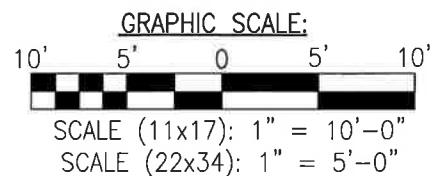
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**NOTES**

Drawing Number **N1**



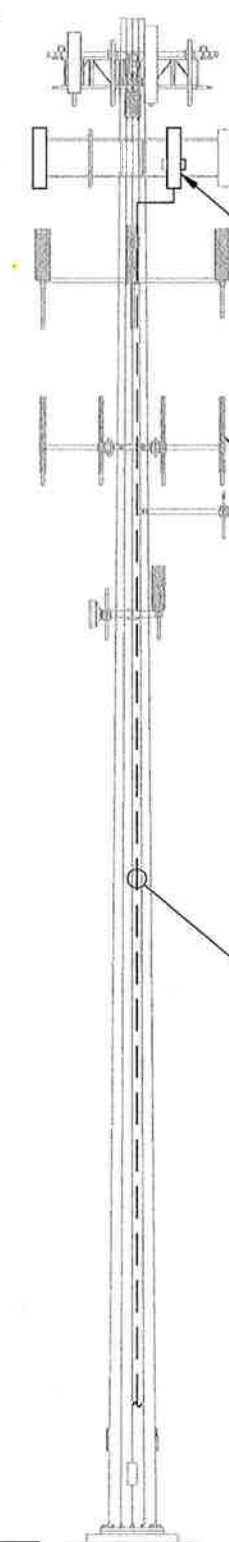
**1** PLAN VIEW  
C1 SCALE: AS NOTED



TOP OF EXISTING MONOPOLE  
118'-9" ±AGL

T-MOBILE ANTENNA CENTERLINE  
108'-0" ±AGL

EXISTING GRADE  
0'-0" ±AGL



**2** ELEVATION  
C1 SCALE: NOT TO SCALE



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A	ISSUED FOR REVIEW	RCD	07/31/18
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	Designed: MRL		
	Checked: AD		

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I-84/NEW BRITAIN

115 NORTH MOUNTAIN ROAD  
NEW BRITAIN, CT 06053

Prepared For:



Drawing Title:  
**PLAN AND ELEVATION**

Drawing Number:  
**C1**

**T-Mobile**

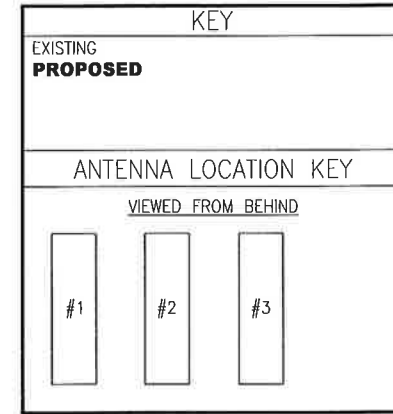
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LIVERPOOL, NY 13088

**INFINIGY &**

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TEL: (443) 592-3143



SECTOR	ANTENNA POSITION	ANTENNA MODEL #	VENDOR	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA/RRU MODEL #	CABLE LENGTH	CABLE TYPE AND QUANTITY
ALPHA	A-1	AIR21 KRC118023-1_B2A_B4P	ERICSSON	20°	TBD	2/2	108'-0"	(1) GENERIC TWIN STYLE 1B-AWS	120'±/ 158'±	(2) 7/8" COAX (1) 9x18 HCS CABLE
	A-2	APXVAARR24_43-U-NA20	RFS	20°	TBD	2/2	108'-0"	(1) RRU 449	175'±	(1) 6X12 HYBRID TRUNK CABLE (SHARED)
	A-3	AIR32 KRD901146-1_B66A_B2A	ERICSSON	20°	TBD	2/2	108'-0"	-	-	(1) 6x12 HCS CABLE
BETA	B-1	AIR21 KRC118023-1_B2A_B4P	ERICSSON	100°	TBD	2/2	108'-0"	(1) GENERIC TWIN STYLE 1B-AWS	120'±/ 158'±	(2) 7/8" COAX (1) 9x18 HCS CABLE
	B-2	APXVAARR24_43-U-NA20	RFS	100°	TBD	2/2	108'-0"	(1) RRU 449	175'±	(1) 6X12 HYBRID TRUNK CABLE (SHARED)
	B-3	AIR32 KRD901146-1_B66A_B2A	ERICSSON	100°	TBD	2/2	108'-0"	-	-	(1) 6x12 HCS CABLE
GAMMA	C-1	AIR21 KRC118023-1_B2A_B4P	ERICSSON	200°	TBD	2/2	108'-0"	(1) GENERIC TWIN STYLE 1B-AWS	120'±/ 158'±	(2) 7/8" COAX (1) 9x18 HCS CABLE
	C-2	APXVAARR24_43-U-NA20	RFS	200°	TBD	2/2	108'-0"	(1) RRU 449	175'±	(1) 6X12 HYBRID TRUNK CABLE (SHARED)
	C-3	AIR32 KRD901146-1_B66A_B2A	ERICSSON	200°	TBD	2/2	108'-0"	-	-	(1) 6x12 HCS CABLE

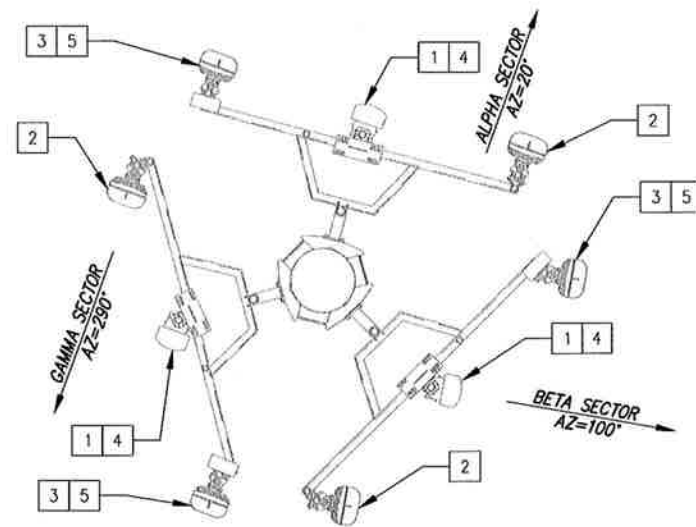


**GENERAL NOTES:**

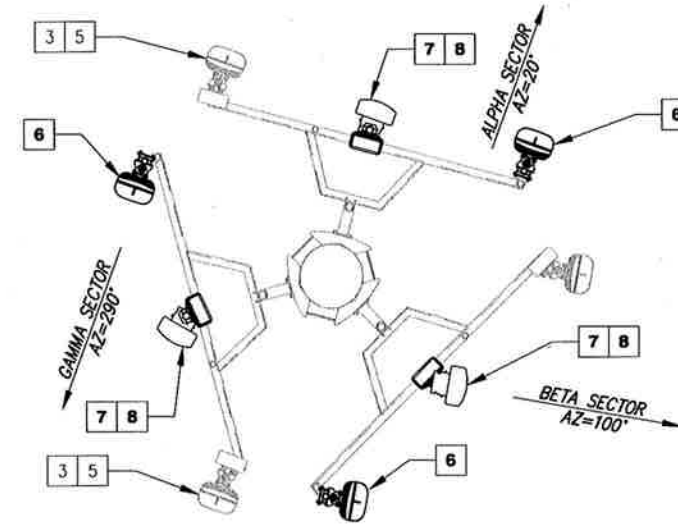
- CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT AT TIME OF CONSTRUCTION.
- CONTRACTOR TO CONFIRM CABLE LENGTHS FOR ANY PROPOSED CABLES/JUMPERS PRIOR TO CONSTRUCTION.

ORIENTATION PLAN KEY				
KEY	DESCRIPTION	TYPE	QTY	STATUS
1	LNK-6515DS-A1M	ANTENNA	3	REMOVED
2	AIR21 KRC118023-1_B2P_B4A	ANTENNA	3	REMOVED
3	AIR21 KRC118023-1_B2A_B4P	ANTENNA	3	REMAIN
4	RRUS 11-B12	RRU	3	REMOVED
5	GENERIC TWIN STYLE 1B-AWS	TMA	3	REMAIN
6	AIR32 KRD901146-1_B66A_B2A	ANTENNA	3	PROPOSED
7	APXVAARR24_43-U-NA20	ANTENNA	3	PROPOSED
8	RRUS 4449	RRU	3	PROPOSED

1 RF SYSTEM CHART  
SCALE: NOT TO SCALE



2 EXISTING ANTENNA ORIENTATION  
SCALE: NOT TO SCALE



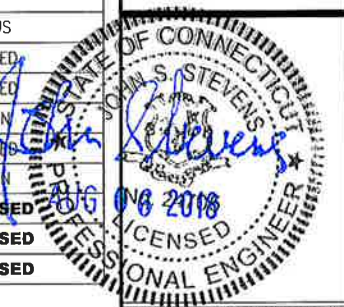
3 PROPOSED ANTENNA ORIENTATION  
SCALE: NOT TO SCALE

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103 MONARCH DRIVE  
LIVERPOOL, NY 13088

**INFINIGY**

6865 DEERPATH ROAD SUITE 162  
ELK RIDGE, MD 21075  
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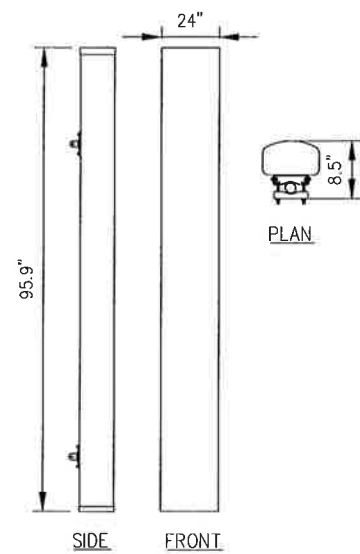
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Drawing Title:  
**RF CHART**

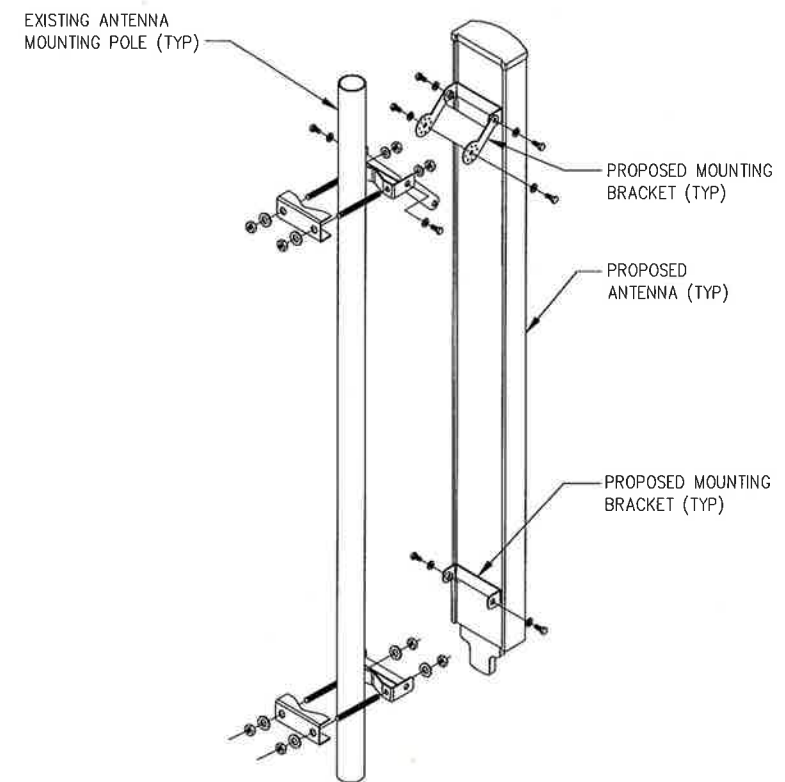
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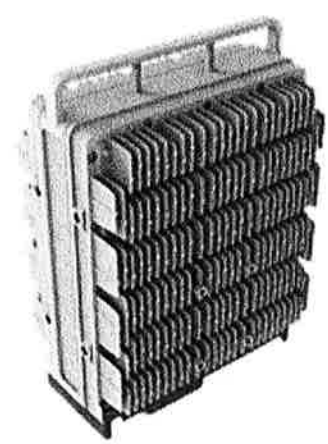
RFS MODEL NO.: **APXVAARR24\_43-U-NA20**

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD:	95.9"x24"x8.5"
WEIGHT, W/O MOUNTING KIT:	128 LBS

**1** ANTENNA DETAIL  
D1 SCALE: NOT TO SCALE



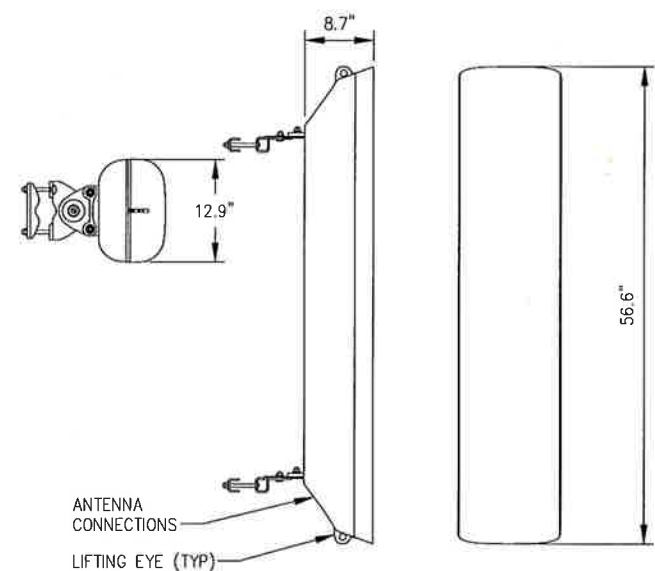
**2** ANTENNA/RRU MOUNTING DETAIL  
D1 SCALE: NOT TO SCALE



**ERICSSON 4449 B71+B12 SPECIFICATIONS**

- HxWxD, (INCHES) : 17.91"x13.19"x10.63"
- WEIGHT (LBS) : 74.96
- COLOR : GRAY

**3** 4449 B71+B12 RRU DETAIL  
D1 SCALE: NOT TO SCALE



ERICSSON MODEL NO.: **AIR32 B66 B2**

RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	56.6"x12.9"x8.7"
WEIGHT, W/ PRE-MOUNTED BRACKETS:	132.2 LBS

**4** AIR32 B66 B2 ANTENNA DETAIL  
D1 SCALE: NOT TO SCALE



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T-MOBILE NORTHEAST LLC  
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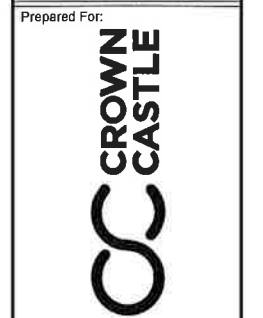
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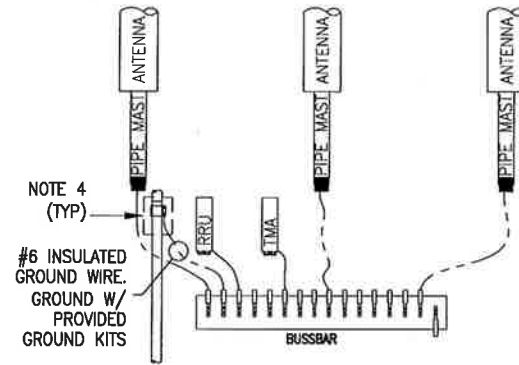


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**EQUIPMENT DETAILS**

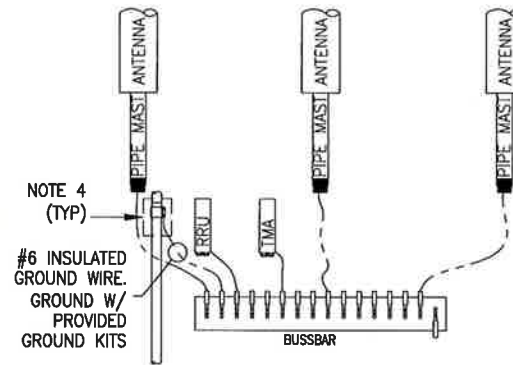
Drawing Number  
**D1**



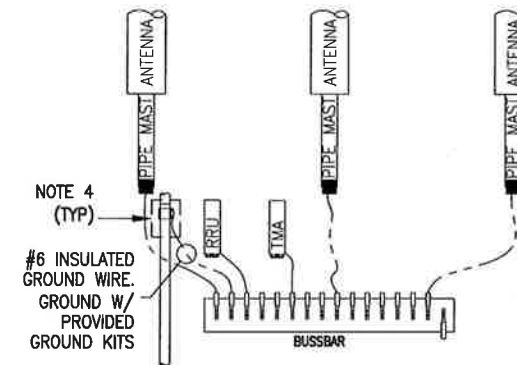
ALPHA SECTOR  
(LAYOUT SHOWN GENERICALLY,  
SEE ANTENNA ORIENTATION)



BETA SECTOR  
(LAYOUT SHOWN GENERICALLY,  
SEE ANTENNA ORIENTATION)



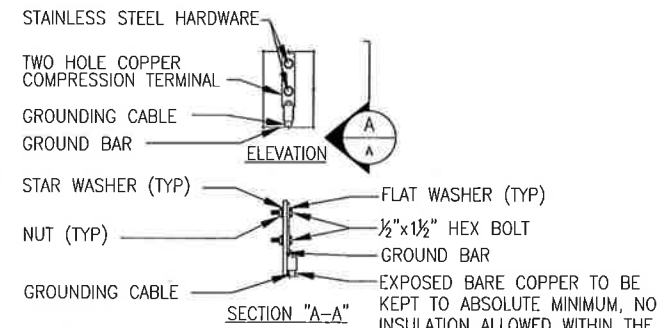
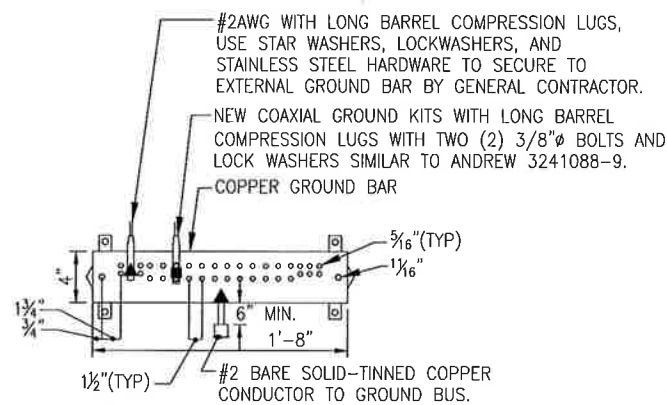
GAMMA SECTOR  
(LAYOUT SHOWN GENERICALLY,  
SEE ANTENNA ORIENTATION)



NOTES:

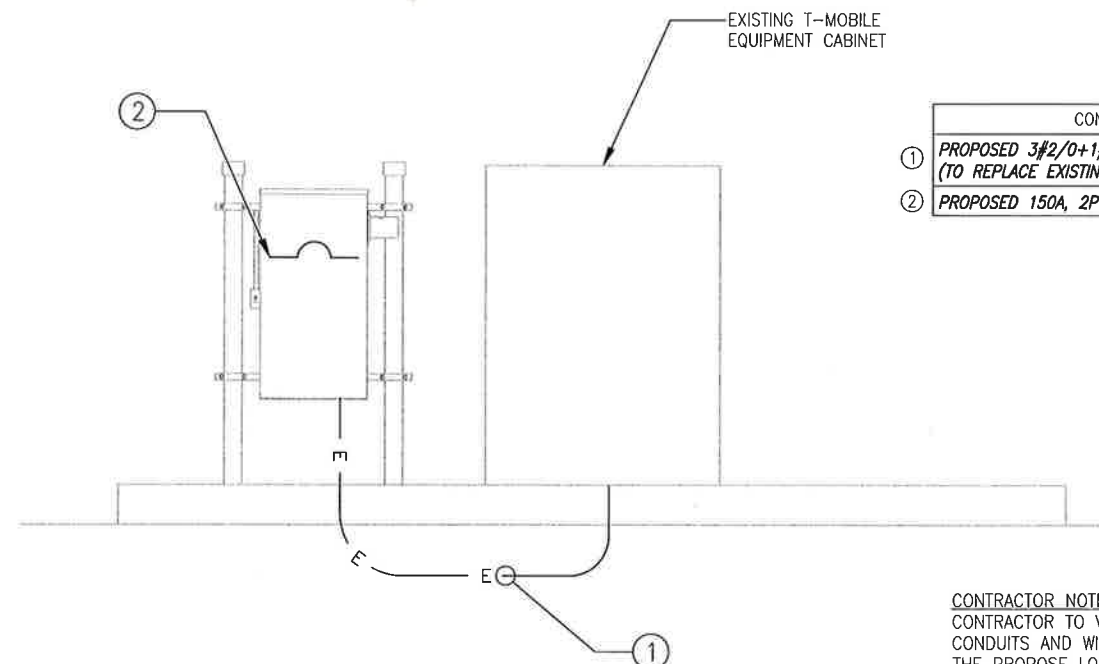
1. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
2. PROVIDE BONDING AND GROUNDING CONDUCTORS WITH GREEN TYPE THWN INSULATION, U.O.N.
3. PROVIDE SOLID TINNED BARE COPPER WIRE (BCW) GROUNDING CONDUCTOR.
4. PROVIDE STANDARD COAX OR HYBRID CABLE GROUNDING KIT OR FIELD FABRICATE TO SUIT CONDITIONS. TOTAL LENGTH OF GROUNDING CONDUCTOR SHALL NOT EXCEED 10'-0".
5. PROVIDE GROUNDING ELECTRODES QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
6. LEAVE GROUND WIRE COILED UP ABOVE GRADE. CAP END OF CONDUIT.
7. ADD COAX OR HYBRID CABLE GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF CABLE TRAY (FROM TOWER OR MONOPOLE TO EQUIPMENT) IS GREATER THAN 20'-0".
8. ADD #2/0 GREEN INSULATED CONDUCTOR BETWEEN CABLE TRAY AND GRIPSTRUT/COVER.
9. BUSSBARS ARE TO BE TINNED COPPER BARS (1/4"x2"x12") MOUNTED ON INSULATORS, U.O.N.
10. GROUND ALL PROPOSED ANTENNAS, DIPLEXERS, TMAS, AND RRUS PER MANU. SPECS.

1 GROUNDING DIAGRAM  
E1 SCALE: NOT TO SCALE



- NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
  2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
  3. ALL HOLES ARE COUNTERSUNK 1/16".

2 GROUND BAR CONNECTION DETAIL  
E1 SCALE: NOT TO SCALE



CONDUIT SCHEDULE	
1	PROPOSED 3#2/0+1#4G IN 2" CONDUIT (TO REPLACE EXISTING CONDUCTOR AND CONDUIT)
2	PROPOSED 150A, 2P C.B.

CONTRACTOR NOTE:  
CONTRACTOR TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

3 ONE LINE DIAGRAM  
E1 SCALE: NOT TO SCALE



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Issue	Issued For	By	Date
0	ISSUED FOR CONSTRUCTION	RWF	08/08/18
A	ISSUED FOR REVIEW	RCD	07/31/18

Drawn: RCD  
Designed: URL  
Checked: A.D.

Project Number:  
600-007

Project Title:  
CT11423B  
I-84/NEW BRITAIN

115 NORTH MOUNTAIN ROAD  
NEW BRITAIN, CT 06053

Prepared For:



Drawing Title:  
RISER AND ONE-LINE DIAGRAMS

Drawing Number:  
E1

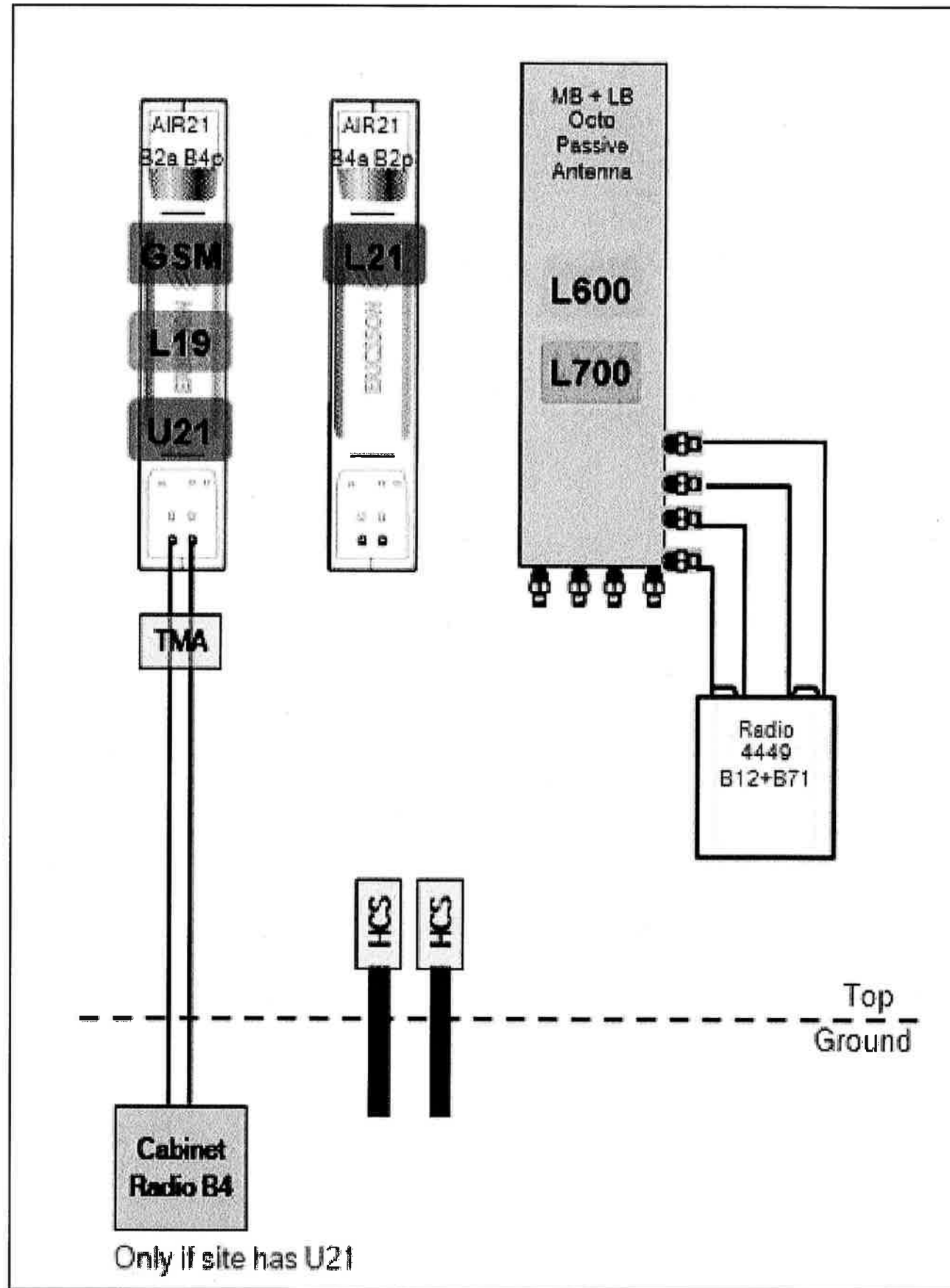
T-Mobile

T-MOBILE NORTHEAST, LLC  
103 MONARCH DRIVE  
LIVERPOOL, NY 13086

INFINIGY&

6865 DEERPATH ROAD SUITE 152  
ELK RIDGE, MD 21075  
TEL (443) 592-3143

COPY/PASTE THE PLUMBING DIAGRAM OUT OF THE RFDS UNDER SECTION 3 "PROPOSED TEMPLATE IMAGES"



1 RF PLUMBING DIAGRAM  
E2 SCALE: AS NOTED



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ISSUED FOR CONSTRUCTION	REV	08/06/18
ISSUED FOR REVIEW	REV	07/31/18
No.	Submital / Revision	App'd Date

Drawn: RCD  
Designed: MBL  
Checked: AAD

Project Number: 600-007

Project Title: CT11423B  
I-84/NEW BRITAIN

115 NORTH MOUNTAIN ROAD  
NEW BRITAIN, CT 06053

Prepared For:



Drawing Title  
**RF PLUMBING DIAGRAM**

Drawing Number  
**E2**

**T-Mobile**

T-MOBILE NORTHEAST LLC  
103 MONARCH DRIVE  
LIVERPOOL, NY 13088

**INFINIGY**

8865 DEERPATH ROAD SUITE 152  
ELK RIDGE, MD 21075  
TEL (443) 582-3143

Date: August 20, 2018

Charles Trask  
Crown Castle  
3530 Toringdon Way Suite 300  
Charlotte, NC 28277

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

**Subject: Structural Analysis Report**

**Carrier Designation:** *T-Mobile Co-Locate*  
**Carrier Site Number:** CT11423B  
**Carrier Site Name:** N/A

**Crown Castle Designation:**  
**Crown Castle BU Number:** 876331  
**Crown Castle Site Name:** NEW BRITAIN GRAVEL PIT  
**Crown Castle JDE Job Number:** 515661  
**Crown Castle Work Order Number:** 1615519  
**Crown Castle Order Number:** 447838 Rev. 0

**Engineering Firm Designation:** Paul J. Ford and Company Project Number: 37518-1085.002.7805

**Site Data:** 115 North Mountain Rd, NEW BRITAIN, Hartford County, CT  
Latitude 41° 40' 35.72", Longitude -72° 49' 17.09"  
118 Foot - Monopole Tower

Dear Charles Trask,

Paul J. Ford and Company is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1241894, in accordance with order 447838, revision 0.

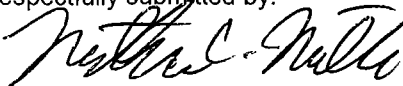

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

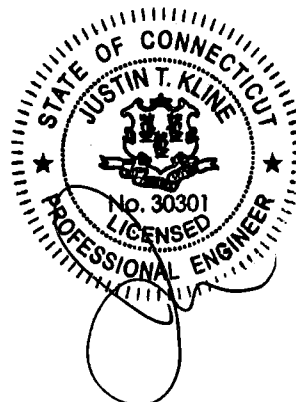
LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**  
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

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

Respectfully submitted by:

  
Nathan C. Miller, E.I.  
Structural Designer 



Date: **August 20, 2018**

Charles Trask  
Crown Castle  
3530 Toringdon Way Suite 300  
Charlotte, NC 28277

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

**Subject: Structural Analysis Report**

**Carrier Designation:** **T-Mobile Co-Locate**  
**Carrier Site Number:** CT11423B  
**Carrier Site Name:** N/A

**Crown Castle Designation:** **Crown Castle BU Number:** 876331  
**Crown Castle Site Name:** NEW BRITAIN GRAVEL PIT  
**Crown Castle JDE Job Number:** 515661  
**Crown Castle Work Order Number:** 1615519  
**Crown Castle Order Number:** 447838 Rev. 0

**Engineering Firm Designation:** **Paul J. Ford and Company Project Number:** 37518-1085.002.7805

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**118 Foot - Monopole Tower**

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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: Existing + Reserved + Proposed Equipment

**Sufficient Capacity**

Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

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

Respectfully submitted by:

Nathan C. Miller, E.I.  
Structural Designer



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## 1) INTRODUCTION

This tower is a 118 ft Monopole tower designed by ROHN in October of 1996. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-E.

## 2) ANALYSIS CRITERIA

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

**Table 1 - Proposed Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
108.0	108.0	3	ericsson	AIR 32 B2A/B66AA w/ MP	1	1-5/8	---
		3	ericsson	RADIO 4449 B12/B71			
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ MP			

**Table 2 - Existing and Reserved Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
116.0	116.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	---	---	1
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		1	tower mounts	Pipe Mount [PM 601-3]			
114.0	116.0	3	alcatel lucent	TD-RRH8x20-25	1	1 1/4 1/2	2
		1	andrew	VHLP1-23			
		3	rfs celwave	APXVTM14-C-120 w/ MP			
		1	samsung	WIMAX DAP HEAD			
		1	rfs celwave	APXV9ERR18-C-A20 w/ MP			
		2	rfs celwave	APXVSP18-C-A20 w/ MP			
	114.0	1	tower mounts	Platform Mount [LP 502-1]	3	1-1/4	1
108.0	108.0	3	commscope	LNx-6515DS-VTM w/ MP	1	7/8	3
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		3	ericsson	RRUS 11 B12			
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ MP	11 1	7/8 1-5/8	1
		3	ericsson	KRY 112 144/1			
		1	tower mounts	Sector Mount [SM 801-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note	
98.0	98.0	2	cci antennas	HPA-65R-BUU-H6 w/ MP	---	---	2	
		1	cci antennas	HPA-65R-BUU-H8 w/ MP				
		3	ericsson	RRUS 32 B2				
		6	powerwave technologies	7020.00				
		3	powerwave technologies	TT19-08BP111-001				
		1	andrew	SBNH-1D6565C w/ MP				
		3	communication components inc.	DTMABP7819VG12A				
		3	ericsson	RRUS 11 B12				
		2	kmw communications	AM-X-CD-16-65-00T-RET w/ MP				
		3	powerwave technologies	7770.00 w/ MP				
		1	raycap	DC6-48-60-18-8F				
		1	tower mounts	Platform Mount [LP 712-1]				
85.0	86.0	3	alcatel lucent	RRH2X60-AWS	13	1-5/8	1	
		3	alcatel lucent	RRH2X60-PCS				
		6	andrew	CBC721-DF				
		6	andrew	HBXX-6517DS-A2M w/ MP				
		2	antel	BXA-70040-6CF-EDIN-2 w/ MP				
		4	antel	BXA-70063-6CF-2 w/ MP				
		1	rfs celwave	DB-B1-6C-12AB-0Z				
85.0	1	tower mounts	Platform Mount [LP 303-1]					
80.0	81.0	1	lucent	KS24019-L112A	1	1/2	1	
	80.0	1	tower mounts	Side Arm Mount [SO 701-1]				
72.0	74.0	2	argus technologies	LLPX310R w/ MP	3 3 2	5/8 1/4 1/2	1	
		1	dragonwave	HORIZON COMPACT				
		1	samsung	WIMAX DAP HEAD				
	73.0	1	samsung	WIMAX DAP HEAD				
	72.0	72.0	1	argus technologies				LLPX310R w/ MP
		72.0	1	dragonwave				A-ANT-18G-2-C
		72.0	1	dragonwave				HORIZON COMPACT
		72.0	1	samsung				WIMAX DAP HEAD
72.0	1	tower mounts	Side Arm Mount [SO 101-3]					

- Notes:  
 1) Existing Equipment  
 2) Reserved Equipment  
 3) Equipment To Be Removed

**Table 3 - Design Antenna and Cable Information**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
---	---	---	---	---	---	---

**3) ANALYSIS PROCEDURE**

**Table 4 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 07-11435G, 01/23/2008	2192549	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Rohn, 34738SW, 10/24/1996	1947809	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Rohn, 34738SW, 10/24/1996	1947800	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 126879, 03/07/2013	3684848	CCISITES
4-POST-MODIFICATION INSPECTION	SGS, 145041, 11/21/2014	5407775	CCISITES
4-POST-MODIFICATION INSPECTION	SGS, 146127, 3/12/2015	5596857	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25663.40942, 3/9/2016	6131239	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 41707-0508, 5/23/2008	2268906	CCISITES

**3.1) Analysis Method**

tnxTower (version 8.0.2.1), 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.

**3.2) Assumptions**

- 1) Tower and structures were built in accordance with the manufacturer’s specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer’s specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) Monopole was reinforced in conformance with the referenced modification drawings.

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 5 - Section Capacity (Summary)**

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
118 - 113	Pole	TP24x24x0.25	Pole	3.3%	Pass
113 - 108	Pole	TP24x24x0.25	Pole	9.7%	Pass
108 - 103	Pole	TP24x24x0.25	Pole	22.8%	Pass
103 - 98	Pole	TP24x24x0.25	Pole	35.8%	Pass
98 - 93	Pole	TP24x24x0.25	Pole	55.5%	Pass
93 - 90	Pole	TP24x24x0.25	Pole	67.3%	Pass
90 - 85	Pole	TP24x24x0.375	Pole	55.8%	Pass
85 - 80	Pole	TP24x24x0.375	Pole	73.7%	Pass
80 - 76.5	Pole	TP24x24x0.375	Pole	86.0%	Pass
76.5 - 76.25	Pole + Reinf.	TP24x24x0.5875	Reinf. 18 Tension Rupture	62.7%	Pass
76.25 - 74	Pole + Reinf.	TP24x24x0.5875	Reinf. 18 Tension Rupture	68.5%	Pass
74 - 73.75	Pole + Reinf.	TP24x24x0.8375	Reinf. 18 Tension Rupture	50.5%	Pass
73.75 - 68.88	Pole + Reinf.	TP24x24x0.8375	Reinf. 18 Tension Rupture	60.3%	Pass
68.88 - 68.63	Pole + Reinf.	TP24x24x0.825	Reinf. 13 Tension Rupture	61.0%	Pass
68.63 - 64.5	Pole + Reinf.	TP24x24x0.825	Reinf. 13 Tension Rupture	69.6%	Pass
64.5 - 64.25	Pole + Reinf.	TP24x24x1.025	Reinf. 9 Compression	63.7%	Pass
64.25 - 63	Pole + Reinf.	TP24x24x1.025	Reinf. 9 Compression	66.1%	Pass
63 - 62.75	Pole + Reinf.	TP24x24x0.9625	Reinf. 12 Tension Rupture	69.5%	Pass
62.75 - 60	Pole + Reinf.	TP24x24x0.9625	Reinf. 12 Tension Rupture	75.1%	Pass
60 - 59.75	Pole + Reinf.	TP30x30x0.6375	Pole	60.7%	Pass
59.75 - 54.75	Pole + Reinf.	TP30x30x0.6375	Pole	69.3%	Pass
54.75 - 49.75	Pole + Reinf.	TP30x30x0.6375	Pole	78.0%	Pass
49.75 - 49.25	Pole + Reinf.	TP30x30x0.6375	Pole	78.9%	Pass
49.25 - 49	Pole + Reinf.	TP30x30x0.7875	Reinf. 17 Tension Rupture	71.6%	Pass
49 - 44	Pole + Reinf.	TP30x30x0.7875	Reinf. 17 Tension Rupture	79.8%	Pass
44 - 42	Pole + Reinf.	TP30x30x0.7875	Reinf. 17 Tension Rupture	83.1%	Pass
42 - 41.75	Pole + Reinf.	TP30x30x0.9125	Reinf. 11 Tension Rupture	74.2%	Pass
41.75 - 36.75	Pole + Reinf.	TP30x30x0.9125	Reinf. 11 Tension Rupture	81.7%	Pass
36.75 - 34.5	Pole + Reinf.	TP30x30x0.9125	Reinf. 11 Tension Rupture	85.2%	Pass
34.5 - 34.25	Pole + Reinf.	TP30x30x1.025	Reinf. 8 Compression	77.3%	Pass
34.25 - 34	Pole + Reinf.	TP30x30x1.025	Reinf. 8 Compression	77.7%	Pass
34 - 33.75	Pole + Reinf.	TP30x30x0.925	Reinf. 8 Compression	87.6%	Pass
33.75 - 30	Pole + Reinf.	TP30x30x0.925	Reinf. 8 Compression	93.5%	Pass
30 - 29.75	Pole + Reinf.	TP36x36x0.6875	Pole	76.0%	Pass
29.75 - 28.5	Pole + Reinf.	TP36x36x0.6875	Pole	77.6%	Pass
28.5 - 28.25	Pole + Reinf.	TP36x36x0.8375	Reinf. 16 Tension Rupture	65.9%	Pass
28.25 - 23.25	Pole + Reinf.	TP36x36x0.8375	Reinf. 16 Tension Rupture	71.6%	Pass
23.25 - 23	Pole + Reinf.	TP36x36x0.95	Reinf. 16 Tension Rupture	65.4%	Pass
23 - 21.5	Pole + Reinf.	TP36x36x0.95	Reinf. 16 Tension Rupture	67.0%	Pass
21.5 - 21.25	Pole + Reinf.	TP36x36x0.8	Pole	79.5%	Pass
21.25 - 19	Pole + Reinf.	TP36x36x0.8	Pole	82.3%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
19 - 18.75	Pole + Reinf.	TP36x36x0.95	Pole	69.3%	Pass
18.75 - 18.5	Pole + Reinf.	TP36x36x0.95	Pole	69.6%	Pass
18.5 - 18.25	Pole + Reinf.	TP36x36x0.85	Pole	76.0%	Pass
18.25 - 13.25	Pole + Reinf.	TP36x36x0.85	Pole	81.7%	Pass
13.25 - 12.7	Pole + Reinf.	TP36x36x0.85	Pole	82.4%	Pass
12.7 - 12.45	Pole + Reinf.	TP36x36x0.85	Pole	84.1%	Pass
12.45 - 11.5	Pole + Reinf.	TP36x36x0.85	Pole	85.2%	Pass
11.5 - 11.25	Pole + Reinf.	TP36x36x0.9	Reinf. 4 Compression	81.6%	Pass
11.25 - 10.5	Pole + Reinf.	TP36x36x0.9	Reinf. 4 Compression	82.5%	Pass
10.5 - 10.25	Pole + Reinf.	TP36x36x1.35	Reinf. 24 Compression	77.7%	Pass
10.25 - 7.5	Pole + Reinf.	TP36x36x1.35	Reinf. 24 Compression	80.6%	Pass
7.5 - 7.25	Pole + Reinf.	TP36x36x1.4	Reinf. 24 Compression	78.7%	Pass
7.25 - 6.25	Pole + Reinf.	TP36x36x1.4	Reinf. 24 Compression	79.7%	Pass
6.25 - 6	Pole + Reinf.	TP36x36x1.425	Reinf. 24 Compression	79.8%	Pass
6 - 3.73	Pole + Reinf.	TP36x36x1.8	Reinf. 24 Compression	68.0%	Pass
3.73 - 3.48	Pole + Reinf.	TP36x36x1.8	Reinf. 24 Compression	68.2%	Pass
3.48 - 2.75	Pole + Reinf.	TP36x36x1.8	Reinf. 24 Compression	68.8%	Pass
2.75 - 2.5	Pole + Reinf.	TP36x36x1.675	Reinf. 24 Compression	73.9%	Pass
2.5 - 2	Pole + Reinf.	TP36x36x1.675	Reinf. 24 Compression	74.3%	Pass
2 - 1.75	Pole + Reinf.	TP36x36x1.475	Reinf. 24 Compression	82.5%	Pass
1.75 - 0	Pole + Reinf.	TP36x36x1.475	Reinf. 24 Compression	84.3%	Pass
				Summary	
			Pole	86.0%	Pass
			Reinforcement	93.5%	Pass
			Overall	93.5%	Pass

**Table 6 - Tower Component Stresses vs. Capacity - LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	90.2	Pass
1	Base Plate	0	70.7	Pass
1	Base Foundation Structural Steel	0	70.1	Pass
1	Base Foundation Soil Interaction	0	52.7	Pass
1	Flange Connection	30	69.9	Pass
1	Flange Connection	60	73.4	Pass
1	Flange Connection	90	35.2	Pass

<b>Structure Rating (max from all components) =</b>	<b>93.5%</b>
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Notes:

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

#### 4.1) Recommendations

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

**APPENDIX A**  
**TNXTOWER OUTPUT**



## Tower Input Data

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

The following design criteria apply:

- 1) Tower is located in Hartford County, Connecticut.
- 2) ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
- 3) Basic wind speed of 95.0 mph.
- 4) Structure Class II.
- 5) Exposure Category C.
- 6) Topographic Category 1.
- 7) Crest Height 0.00 ft.
- 8) Nominal ice thickness of 1.00 in.
- 9) Ice thickness is considered to increase with height.
- 10) Ice density of 56 pcf.
- 11) A wind speed of 50.0 mph is used in combination with ice.
- 12) Temperature drop of 50 °F.
- 13) Deflections calculated using a wind speed of 60.0 mph.
- 14) A non-linear (P-delta) analysis was used.
- 15) Pressures are calculated at each section.
- 16) Stress ratio used in pole design is 1.
- 17) 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	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-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption  <div style="text-align: center; border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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## Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	118.00-113.00	5.00	P24x0.25	A572-42 (42 ksi)	
L2	113.00-108.00	5.00	P24x0.25	A572-42 (42 ksi)	
L3	108.00-103.00	5.00	P24x0.25	A572-42 (42 ksi)	
L4	103.00-98.00	5.00	P24x0.25	A572-42 (42 ksi)	
L5	98.00-93.00	5.00	P24x0.25	A572-42 (42 ksi)	
L6	93.00-90.00	3.00	P24x0.25	A572-42 (42 ksi)	
L7	90.00-85.00	5.00	P24x0.375	A572-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L8	85.00-80.00	5.00	P24x0.375	(42 ksi) A572-42	
L9	80.00-76.50	3.50	P24x0.375	(42 ksi) A572-42	
L10	76.50-76.25	0.25	P24x0.5875	(42 ksi) A572-42	
L11	76.25-74.00	2.25	P24x0.5875	(42 ksi) A572-42	
L12	74.00-73.75	0.25	P24x0.8375	(42 ksi) A572-42	
L13	73.75-68.88	4.87	P24x0.8375	(42 ksi) A572-42	
L14	68.88-68.63	0.25	P24x0.825	(42 ksi) A572-42	
L15	68.63-64.50	4.13	P24x0.825	(42 ksi) A572-42	
L16	64.50-64.25	0.25	P24x1.025	(42 ksi) A572-42	
L17	64.25-63.00	1.25	P24x1.025	(42 ksi) A572-42	
L18	63.00-62.75	0.25	P24x0.9625	(42 ksi) A572-42	
L19	62.75-60.00	2.75	P24x0.9625	(42 ksi) A572-42	
L20	60.00-59.75	0.25	P30x0.6375	(42 ksi) A572-42	
L21	59.75-54.75	5.00	P30x0.6375	(42 ksi) A572-42	
L22	54.75-49.75	5.00	P30x0.6375	(42 ksi) A572-42	
L23	49.75-49.25	0.50	P30x0.6375	(42 ksi) A572-42	
L24	49.25-49.00	0.25	P30x0.7875	(42 ksi) A572-42	
L25	49.00-44.00	5.00	P30x0.7875	(42 ksi) A572-42	
L26	44.00-42.00	2.00	P30x0.7875	(42 ksi) A572-42	
L27	42.00-41.75	0.25	P30x0.9125	(42 ksi) A572-42	
L28	41.75-36.75	5.00	P30x0.9125	(42 ksi) A572-42	
L29	36.75-34.50	2.25	P30x0.9125	(42 ksi) A572-42	
L30	34.50-34.25	0.25	P30x1.025	(42 ksi) A572-42	
L31	34.25-34.00	0.25	P30x1.025	(42 ksi) A572-42	
L32	34.00-33.75	0.25	P30x0.925	(42 ksi) A572-42	
L33	33.75-30.00	3.75	P30x0.925	(42 ksi) A572-42	
L34	30.00-29.75	0.25	P36x0.6875	(42 ksi) A572-42	
L35	29.75-28.50	1.25	P36x0.6875	(42 ksi) A572-42	
L36	28.50-28.25	0.25	P36x0.8375	(42 ksi) A572-42	
L37	28.25-23.25	5.00	P36x0.8375	(42 ksi) A572-42	
L38	23.25-23.00	0.25	P36x0.95	(42 ksi) A572-42	
L39	23.00-21.50	1.50	P36x0.95	(42 ksi) A572-42	
L40	21.50-21.25	0.25	P36x0.8	(42 ksi) A572-42	
L41	21.25-19.00	2.25	P36x0.8	(42 ksi) A572-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L42	19.00-18.75	0.25	P36x0.95	A572-42 (42 ksi)	
L43	18.75-18.50	0.25	P36x0.95	A572-42 (42 ksi)	
L44	18.50-18.25	0.25	P36x0.85	A572-42 (42 ksi)	
L45	18.25-13.25	5.00	P36x0.85	A572-42 (42 ksi)	
L46	13.25-12.70	0.55	P36x0.85	A572-42 (42 ksi)	
L47	12.70-12.45	0.25	P36x0.85	A572-42 (42 ksi)	
L48	12.45-11.50	0.95	P36x0.85	A572-42 (42 ksi)	
L49	11.50-11.25	0.25	P36x0.9	A572-42 (42 ksi)	
L50	11.25-10.50	0.75	P36x0.9	A572-42 (42 ksi)	
L51	10.50-10.25	0.25	P36x1.35	A572-42 (42 ksi)	
L52	10.25-7.50	2.75	P36x1.35	A572-42 (42 ksi)	
L53	7.50-7.25	0.25	P36x1.4	A572-42 (42 ksi)	
L54	7.25-6.25	1.00	P36x1.4	A572-42 (42 ksi)	
L55	6.25-6.00	0.25	P36x1.425	A572-42 (42 ksi)	
L56	6.00-3.73	2.27	P36x1.8	A572-42 (42 ksi)	
L57	3.73-3.48	0.25	P36x1.8	A572-42 (42 ksi)	
L58	3.48-2.75	0.73	P36x1.8	A572-42 (42 ksi)	
L59	2.75-2.50	0.25	P36x1.675	A572-42 (42 ksi)	
L60	2.50-2.00	0.50	P36x1.675	A572-42 (42 ksi)	
L61	2.00-1.75	0.25	P36x1.475	A572-42 (42 ksi)	
L62	1.75-0.00	1.75	P36x1.475	A572-42 (42 ksi)	

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 118.00- 113.00				1	1	1			
L2 113.00- 108.00				1	1	1			
L3 108.00- 103.00				1	1	1			
L4 103.00- 98.00				1	1	1			
L5 98.00- 93.00				1	1	1			
L6 93.00- 90.00				1	1	1			
L7 90.00- 85.00				1	1	1			
L8 85.00- 80.00				1	1	1			
L9 80.00- 76.50				1	1	1			
L10 76.50-				1	1	0.956504			

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
76.25									
L11 76.25-74.00				1	1	0.956504			
L12 74.00-73.75				1	1	1.00562			
L13 73.75-68.88				1	1	1.00562			
L14 68.88-68.63				1	1	1.02031			
L15 68.63-64.50				1	1	1.02031			
L16 64.50-64.25				1	1	0.950021			
L17 64.25-63.00				1	1	0.950021			
L18 63.00-62.75				1	1	0.976667			
L19 62.75-60.00				1	1	0.976667			
L20 60.00-59.75				1	1	1.09465			
L21 59.75-54.75				1	1	1.09465			
L22 54.75-49.75				1	1	1.09465			
L23 49.75-49.25				1	1	1.09465			
L24 49.25-49.00				1	1	0.973715			
L25 49.00-44.00				1	1	0.973715			
L26 44.00-42.00				1	1	0.973715			
L27 42.00-41.75				1	1	0.951873			
L28 41.75-36.75				1	1	0.951873			
L29 36.75-34.50				1	1	0.951873			
L30 34.50-34.25				1	1	0.947149			
L31 34.25-34.00				1	1	0.947149			
L32 34.00-33.75				1	1	0.939414			
L33 33.75-30.00				1	1	0.939414			
L34 30.00-29.75				1	1	1.04814			
L35 29.75-28.50				1	1	1.04814			
L36 28.50-28.25				1	1	1.01			
L37 28.25-23.25				1	1	1.01			
L38 23.25-23.00				1	1	1.00797			
L39 23.00-21.50				1	1	1.00797			
L40 21.50-21.25				1	1	1.03926			
L41 21.25-19.00				1	1	1.03926			
L42 19.00-18.75				1	1	1.00797			
L43 18.75-18.50				1	1	1.00797			

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
L44 18.50-18.25				1	1	1.03279			
L45 18.25-13.25				1	1	1.03279			
L46 13.25-12.70				1	1	1.03279			
L47 12.70-12.45				1	1	1.03812			
L48 12.45-11.50				1	1	1.03812			
L49 11.50-11.25				1	1	1.07001			
L50 11.25-10.50				1	1	1.07001			
L51 10.50-10.25				1	1	0.884216			
L52 10.25-7.50				1	1	0.884216			
L53 7.50-7.25				1	1	0.885582			
L54 7.25-6.25				1	1	0.885582			
L55 6.25-6.00				1	1	0.888845			
L56 6.00-3.73				1	1	0.744821			
L57 3.73-3.48				1	1	0.744821			
L58 3.48-2.75				1	1	0.744821			
L59 2.75-2.50				1	1	0.731053			
L60 2.50-2.00				1	1	0.731053			
L61 2.00-1.75				1	1	0.740986			
L62 1.75-0.00				1	1	0.740986			

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

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
1" Flat Reinforcement	C	No	CaAa (Out Of Face)	78.00 - 0.00	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
1" Flat Reinforcement	C	No	CaAa (Out Of Face)	35.50 - 0.00	1	No Ice	0.17	0.00
						1/2" Ice	0.28	0.00
						1" Ice	0.39	0.00
3/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	50.25 - 35.50	1	No Ice	0.13	0.00
						1/2" Ice	0.24	0.00
						1" Ice	0.35	0.00
3/4" Flat Reinforcement	C	No	CaAa (Out Of Face)	75.00 - 60.00	1	No Ice	0.13	0.00
						1/2" Ice	0.24	0.00
						1" Ice	0.35	0.00
*****								
*****								
HB114-1-08U4-M5J(1-1/4)	C	No	Inside Pole	114.00 - 0.00	3	No Ice	0.00	1.08
						1/2" Ice	0.00	1.08
						1" Ice	0.00	1.08
LDF4-50A(1/2)	C	No	Inside Pole	114.00 - 0.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
HB114-21U3M12-XXXF(1-1/4)	C	No	Inside Pole	114.00 - 0.00	1	No Ice	0.00	1.22
						1/2" Ice	0.00	1.22
						1" Ice	0.00	1.22
***								
AL5-50(7/8)	C	No	Inside Pole	108.00 - 0.00	11	No Ice	0.00	0.26
						1/2" Ice	0.00	0.26
						1" Ice	0.00	0.26
MLE HYBRID	C	No	Inside Pole	108.00 - 0.00	1	No Ice	0.00	1.07
9POWER/18FIBER RL						1/2" Ice	0.00	1.07
2(1-5/8)						1" Ice	0.00	1.07
HCS 6X12 4AWG(1-5/8)	C	No	Inside Pole	108.00 - 0.00	1	No Ice	0.00	2.40
						1/2" Ice	0.00	2.40

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
						1" Ice	0.00	2.40
***						No Ice	0.00	0.33
LDF5-50A(7/8)	C	No	Inside Pole	98.00 - 0.00	12	1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
2" (Nominal) Conduit	C	No	Inside Pole	98.00 - 0.00	1	No Ice	0.00	0.72
						1/2" Ice	0.00	0.72
						1" Ice	0.00	0.72
FB-L98B-002-75000(3/8)	C	No	Inside Pole	98.00 - 0.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	98.00 - 0.00	2	No Ice	0.00	0.58
						1/2" Ice	0.00	0.58
						1" Ice	0.00	0.58
***						No Ice	0.20	0.82
LDF7-50A(1-5/8)	C	No	CaAa (Out Of Face)	85.00 - 0.00	2	1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
LDF7-50A(1-5/8)	C	No	CaAa (Out Of Face)	85.00 - 0.00	10	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
HB158-1-08U8-S8J18(1-5/8)	C	No	CaAa (Out Of Face)	85.00 - 0.00	1	No Ice	0.00	1.30
						1/2" Ice	0.00	2.81
						1" Ice	0.00	4.94
***						No Ice	0.00	0.15
LDF4-50A(1/2)	C	No	Inside Pole	80.00 - 0.00	1	1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
1" Rigid Conduit (3/4" EMT)	C	No	CaAa (Out Of Face)	72.00 - 0.00	1	No Ice	0.00	0.46
						1/2" Ice	0.00	1.33
						1" Ice	0.00	2.81
1" Rigid Conduit (3/4" EMT)	C	No	CaAa (Out Of Face)	80.00 - 72.00	1	No Ice	0.09	0.46
						1/2" Ice	0.19	1.33
						1" Ice	0.29	2.81
***						No Ice	0.24	0.72
2" (Nominal) Conduit	C	No	CaAa (Out Of Face)	72.00 - 0.00	1	1/2" Ice	0.34	2.48
						1" Ice	0.44	4.84
2" (Nominal) Conduit	C	No	CaAa (Out Of Face)	72.00 - 0.00	1	No Ice	0.00	0.72
						1/2" Ice	0.00	2.48
						1" Ice	0.00	4.84
FSJ1-50A(1/4)	C	No	Inside Pole	72.00 - 0.00	3	No Ice	0.00	0.04
						1/2" Ice	0.00	0.04
						1" Ice	0.00	0.04
HJ4.5-50(5/8)	C	No	Inside Pole	72.00 - 0.00	3	No Ice	0.00	0.40
						1/2" Ice	0.00	0.40
						1" Ice	0.00	0.40
FSJ4P-50B-1(1/2)	C	No	CaAa (Out Of Face)	72.00 - 0.00	2	No Ice	0.00	0.14
						1/2" Ice	0.00	0.77
						1" Ice	0.00	2.01

### Feed Line/Linear Appurtenances Section Areas

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
L1	118.00-113.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	113.00-108.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	108.00-103.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L4	103.00-98.00	A	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	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
L5	98.00-93.00	C	0.000	0.000	0.000	0.000	0.05
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L6	93.00-90.00	C	0.000	0.000	0.000	0.000	0.08
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L7	90.00-85.00	C	0.000	0.000	0.000	0.000	0.05
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L8	85.00-80.00	C	0.000	0.000	0.000	0.000	0.08
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L9	80.00-76.50	C	0.000	0.000	0.000	1.980	0.14
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L10	76.50-76.25	C	0.000	0.000	0.000	1.959	0.10
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L11	76.25-74.00	C	0.000	0.000	0.000	0.164	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L12	74.00-73.75	C	0.000	0.000	0.000	1.598	0.06
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L13	73.75-68.88	C	0.000	0.000	0.000	0.195	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L14	68.88-68.63	C	0.000	0.000	0.000	4.251	0.15
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L15	68.63-64.50	C	0.000	0.000	0.000	0.231	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L16	64.50-64.25	C	0.000	0.000	0.000	3.821	0.13
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L17	64.25-63.00	C	0.000	0.000	0.000	0.231	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L18	63.00-62.75	C	0.000	0.000	0.000	1.156	0.04
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L19	62.75-60.00	C	0.000	0.000	0.000	0.231	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L20	60.00-59.75	C	0.000	0.000	0.000	2.544	0.09
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L21	59.75-54.75	C	0.000	0.000	0.000	0.200	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L22	54.75-49.75	C	0.000	0.000	0.000	4.001	0.16
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L23	49.75-49.25	C	0.000	0.000	0.000	4.063	0.16
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L24	49.25-49.00	C	0.000	0.000	0.000	0.463	0.02
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L25	49.00-44.00	C	0.000	0.000	0.000	0.231	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L26	44.00-42.00	C	0.000	0.000	0.000	4.626	0.16
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L27	42.00-41.75	C	0.000	0.000	0.000	1.850	0.06
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	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
L28	41.75-36.75	C	0.000	0.000	0.000	0.231	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L29	36.75-34.50	C	0.000	0.000	0.000	4.626	0.16
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L30	34.50-34.25	C	0.000	0.000	0.000	2.123	0.07
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L31	34.25-34.00	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L32	34.00-33.75	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L33	33.75-30.00	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L34	30.00-29.75	C	0.000	0.000	0.000	3.626	0.12
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L35	29.75-28.50	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L36	28.50-28.25	C	0.000	0.000	0.000	1.209	0.04
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L37	28.25-23.25	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L38	23.25-23.00	C	0.000	0.000	0.000	4.834	0.16
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L39	23.00-21.50	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L40	21.50-21.25	C	0.000	0.000	0.000	1.450	0.05
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L41	21.25-19.00	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L42	19.00-18.75	C	0.000	0.000	0.000	2.175	0.07
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L43	18.75-18.50	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L44	18.50-18.25	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L45	18.25-13.25	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L46	13.25-12.70	C	0.000	0.000	0.000	4.834	0.16
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L47	12.70-12.45	C	0.000	0.000	0.000	0.532	0.02
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L48	12.45-11.50	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L49	11.50-11.25	C	0.000	0.000	0.000	0.918	0.03
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L50	11.25-10.50	C	0.000	0.000	0.000	0.242	0.01
		A	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	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
L51	10.50-10.25	C	0.000	0.000	0.000	0.725	0.02
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L52	10.25-7.50	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L53	7.50-7.25	C	0.000	0.000	0.000	2.659	0.09
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L54	7.25-6.25	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L55	6.25-6.00	C	0.000	0.000	0.000	0.967	0.03
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L56	6.00-3.73	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L57	3.73-3.48	C	0.000	0.000	0.000	2.195	0.07
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L58	3.48-2.75	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L59	2.75-2.50	C	0.000	0.000	0.000	0.706	0.02
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L60	2.50-2.00	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L61	2.00-1.75	C	0.000	0.000	0.000	0.483	0.02
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
L62	1.75-0.00	C	0.000	0.000	0.000	0.242	0.01
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.692	0.06

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

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
L1	118.00-113.00	A	2.267	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	113.00-108.00	A	2.257	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	108.00-103.00	A	2.246	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L4	103.00-98.00	A	2.236	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L5	98.00-93.00	A	2.224	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.08
L6	93.00-90.00	A	2.215	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L7	90.00-85.00	A	2.205	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.08
L8	85.00-80.00	A	2.192	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.364	0.89

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L9	80.00-76.50	A	2.180	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	7.264	0.65
L10	76.50-76.25	A	2.175	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.611	0.05
L11	76.25-74.00	A	2.171	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.098	0.42
L12	74.00-73.75	A	2.168	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.761	0.05
L13	73.75-68.88	A	2.160	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	15.239	1.03
L14	68.88-68.63	A	2.152	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.793	0.06
L15	68.63-64.50	A	2.145	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	13.075	0.92
L16	64.50-64.25	A	2.138	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.790	0.06
L17	64.25-63.00	A	2.136	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	3.945	0.28
L18	63.00-62.75	A	2.133	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.788	0.06
L19	62.75-60.00	A	2.128	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	8.656	0.61
L20	60.00-59.75	A	2.123	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.636	0.06
L21	59.75-54.75	A	2.113	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	12.689	1.09
L22	54.75-49.75	A	2.094	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	12.905	1.08
L23	49.75-49.25	A	2.083	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.550	0.11
L24	49.25-49.00	A	2.081	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.775	0.05
L25	49.00-44.00	A	2.070	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	15.435	1.05
L26	44.00-42.00	A	2.054	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.140	0.42
L27	42.00-41.75	A	2.048	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.766	0.05
L28	41.75-36.75	A	2.035	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	15.253	1.02
L29	36.75-34.50	A	2.015	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.859	0.45
L30	34.50-34.25	A	2.008	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.766	0.05
L31	34.25-34.00	A	2.007	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.766	0.05

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L32	34.00-33.75	A	2.005	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.765	0.05
L33	33.75-30.00	A	1.993	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	11.432	0.74
L34	30.00-29.75	A	1.980	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.759	0.05
L35	29.75-28.50	A	1.975	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	3.787	0.25
L36	28.50-28.25	A	1.970	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.756	0.05
L37	28.25-23.25	A	1.951	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	15.023	0.97
L38	23.25-23.00	A	1.930	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.746	0.05
L39	23.00-21.50	A	1.923	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	4.462	0.29
L40	21.50-21.25	A	1.915	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.742	0.05
L41	21.25-19.00	A	1.903	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.649	0.42
L42	19.00-18.75	A	1.891	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.736	0.05
L43	18.75-18.50	A	1.889	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.735	0.05
L44	18.50-18.25	A	1.886	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.734	0.05
L45	18.25-13.25	A	1.857	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	14.534	0.92
L46	13.25-12.70	A	1.822	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.578	0.10
L47	12.70-12.45	A	1.816	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.716	0.04
L48	12.45-11.50	A	1.807	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	2.712	0.17
L49	11.50-11.25	A	1.798	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.711	0.04
L50	11.25-10.50	A	1.790	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	2.127	0.13
L51	10.50-10.25	A	1.781	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.707	0.04
L52	10.25-7.50	A	1.754	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	7.696	0.48
L53	7.50-7.25	A	1.722	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.691	0.04
L54	7.25-6.25	A	1.707	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	2.749	0.17

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
L55	6.25-6.00	A	1.690	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.683	0.04
L56	6.00-3.73	A	1.652	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.110	0.37
L57	3.73-3.48	A	1.603	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.660	0.04
L58	3.48-2.75	A	1.580	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.910	0.11
L59	2.75-2.50	A	1.553	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.647	0.04
L60	2.50-2.00	A	1.529	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	1.282	0.07
L61	2.00-1.75	A	1.501	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.634	0.04
L62	1.75-0.00	A	1.391	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	4.235	0.24

### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft	Azimuth Adjustmen t °	Placement ft	$C_{AA}$ Front ft <sup>2</sup>	$C_{AA}$ Side ft <sup>2</sup>	Weight K	
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.00	0.000	116.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.00	0.000	116.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.00	0.000	116.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
800MHz 2X50W RRH W/FILTER	A	From Leg	1.00	0.000	116.00	No Ice	2.06	1.93	0.06
			0.00			1/2"	2.24	2.11	0.09
			0.00			Ice	2.43	2.29	0.11
800MHz 2X50W RRH W/FILTER	B	From Leg	1.00	0.000	116.00	No Ice	2.06	1.93	0.06
			0.00			1/2"	2.24	2.11	0.09
			0.00			Ice	2.43	2.29	0.11
800MHz 2X50W RRH W/FILTER	C	From Leg	1.00	0.000	116.00	No Ice	2.06	1.93	0.06
			0.00			1/2"	2.24	2.11	0.09
			0.00			Ice	2.43	2.29	0.11
Pipe Mount [PM 601-3]	C	None		0.000	116.00	1" Ice			
						No Ice	4.39	4.39	0.20
						1/2"	5.48	5.48	0.24

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft	Azimuth Adjustment 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
						Ice	6.57	6.57	0.28
						1" Ice			
***									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	8.26	6.95	0.08
						1/2"	8.82	8.13	0.15
						Ice	9.35	9.02	0.23
						1" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	8.26	6.95	0.08
						1/2"	8.82	8.13	0.15
						Ice	9.35	9.02	0.23
						1" Ice			
APXV9ERR18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	8.26	7.47	0.09
						1/2"	8.82	8.66	0.16
						Ice	9.35	9.56	0.24
						1" Ice			
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	6.58	4.96	0.08
						1/2"	7.03	5.75	0.13
						Ice	7.47	6.47	0.19
						1" Ice			
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	6.58	4.96	0.08
						1/2"	7.03	5.75	0.13
						Ice	7.47	6.47	0.19
						1" Ice			
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	6.58	4.96	0.08
						1/2"	7.03	5.75	0.13
						Ice	7.47	6.47	0.19
						1" Ice			
TD-RRH8x20-25	A	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	4.05	1.53	0.07
						1/2"	4.30	1.71	0.10
						Ice	4.56	1.90	0.13
						1" Ice			
TD-RRH8x20-25	B	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	4.05	1.53	0.07
						1/2"	4.30	1.71	0.10
						Ice	4.56	1.90	0.13
						1" Ice			
TD-RRH8x20-25	C	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	4.05	1.53	0.07
						1/2"	4.30	1.71	0.10
						Ice	4.56	1.90	0.13
						1" Ice			
WIMAX DAP HEAD	B	From Leg	4.00 0.00 2.00	0.000	114.00	No Ice	1.55	0.68	0.03
						1/2"	1.70	0.80	0.04
						Ice	1.87	0.92	0.06
						1" Ice			
(2) 2.375" OD x 3' Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	0.58	0.58	0.03
						1/2"	0.77	0.77	0.03
						Ice	0.97	0.97	0.04
						1" Ice			
(2) 2.375" OD x 3' Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	0.58	0.58	0.03
						1/2"	0.77	0.77	0.03
						Ice	0.97	0.97	0.04
						1" Ice			
(2) 2.375" OD x 3' Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	114.00	No Ice	0.58	0.58	0.03
						1/2"	0.77	0.77	0.03
						Ice	0.97	0.97	0.04
						1" Ice			
Platform Mount [LP 502-1]	C	None		0.000	114.00	No Ice	32.35	32.35	0.93
						1/2"	45.67	45.67	1.19
						Ice	58.99	58.99	1.46
						1" Ice			
***									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	108.00	No Ice	6.33	5.64	0.11
						1/2"	6.78	6.43	0.17
						Ice	7.21	7.13	0.23
						1" Ice			
ERICSSON AIR 21 B2A	B	From Leg	4.00	0.000	108.00	No Ice	6.33	5.64	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert 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
B4P w/ Mount Pipe			0.00 0.00			1/2" Ice 7.21	6.43 7.13	0.17 0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 7.21	6.33 6.43 7.13	0.11 0.17 0.23
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 0.51	0.17 0.23 0.30	0.01 0.01 0.02
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 0.51	0.17 0.23 0.30	0.01 0.01 0.02
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 0.51	0.17 0.23 0.30	0.01 0.01 0.02
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 7.65	6.07 6.87 7.58	0.15 0.21 0.28
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 7.65	6.07 6.87 7.58	0.15 0.21 0.28
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 7.65	6.07 6.87 7.58	0.15 0.21 0.28
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 21.99	11.02 12.55 14.10	0.16 0.30 0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 21.99	11.02 12.55 14.10	0.16 0.30 0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 21.99	11.02 12.55 14.10	0.16 0.30 0.44
RADIO 4449 B12/B71	A	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4449 B12/B71	B	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4449 B12/B71	C	From Leg	4.00 0.00 0.00	0.000	108.00	1" Ice No Ice 1/2" Ice 1.98	1.16 1.30 1.45	0.07 0.09 0.11
Sector Mount [SM 801-3]	C	None		0.000	108.00	1" Ice No Ice 1/2" Ice 32.20	20.40 26.30 32.20	0.88 1.25 1.63
*** SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	98.00	1" Ice No Ice 1/2" Ice 12.89	9.72 11.19 12.59	0.10 0.19 0.28
AM-X-CD-16-65-00T-RET	B	From Leg	4.00	0.000	98.00	1" Ice No Ice	6.30	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert 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	
w/ Mount Pipe			0.00			1/2"	8.82	7.48	0.14
			0.00			Ice	9.35	8.37	0.21
						1" Ice			
AM-X-CD-16-65-00T-RET	C	From Leg	4.00	0.000	98.00	No Ice	8.26	6.30	0.07
w/ Mount Pipe			0.00			1/2"	8.82	7.48	0.14
			0.00			Ice	9.35	8.37	0.21
						1" Ice			
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.000	98.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice			
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.000	98.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.000	98.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			0.00			Ice	6.61	5.71	0.16
						1" Ice			
RRUS 11 B12	A	From Leg	4.00	0.000	98.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	B	From Leg	4.00	0.000	98.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
RRUS 11 B12	C	From Leg	4.00	0.000	98.00	No Ice	2.83	1.18	0.05
			0.00			1/2"	3.04	1.33	0.07
			0.00			Ice	3.26	1.48	0.10
						1" Ice			
DTMABP7819VG12A	A	From Leg	4.00	0.000	98.00	No Ice	0.98	0.34	0.02
			0.00			1/2"	1.10	0.42	0.03
			0.00			Ice	1.23	0.51	0.04
						1" Ice			
DTMABP7819VG12A	B	From Leg	4.00	0.000	98.00	No Ice	0.98	0.34	0.02
			0.00			1/2"	1.10	0.42	0.03
			0.00			Ice	1.23	0.51	0.04
						1" Ice			
DTMABP7819VG12A	C	From Leg	4.00	0.000	98.00	No Ice	0.98	0.34	0.02
			0.00			1/2"	1.10	0.42	0.03
			0.00			Ice	1.23	0.51	0.04
						1" Ice			
DC6-48-60-18-8F	A	From Leg	4.00	0.000	98.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.00	0.000	98.00	No Ice	9.90	8.11	0.08
			0.00			1/2"	10.47	9.30	0.16
			0.00			Ice	11.01	10.21	0.25
						1" Ice			
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.00	0.000	98.00	No Ice	13.21	9.58	0.10
			0.00			1/2"	13.90	11.05	0.20
			0.00			Ice	14.59	12.50	0.30
						1" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.000	98.00	No Ice	9.90	8.11	0.08
			0.00			1/2"	10.47	9.30	0.16
			0.00			Ice	11.01	10.21	0.25
						1" Ice			
RRUS 32 B2	A	From Leg	4.00	0.000	98.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10
						1" Ice			
RRUS 32 B2	B	From Leg	4.00	0.000	98.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert 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				
			0.00			Ice	3.18	2.05	0.10			
RRUS 32 B2	C	From Leg	4.00	0.000	98.00	1" Ice	2.73	1.67	0.05			
			0.00			No Ice						
			0.00			1/2"				2.95	1.86	0.07
			0.00			Ice	3.18	2.05	0.10			
						1" Ice						
						No Ice						
TT19-08BP111-001	A	From Leg	4.00	0.000	98.00	1/2"	0.55	0.45	0.02			
			0.00			No Ice						
			0.00			1/2"				0.65	0.53	0.02
			0.00			Ice	0.75	0.63	0.03			
						1" Ice						
						No Ice						
TT19-08BP111-001	B	From Leg	4.00	0.000	98.00	1/2"	0.55	0.45	0.02			
			0.00			No Ice						
			0.00			1/2"				0.65	0.53	0.02
			0.00			Ice	0.75	0.63	0.03			
						1" Ice						
						No Ice						
TT19-08BP111-001	C	From Leg	4.00	0.000	98.00	1/2"	0.55	0.45	0.02			
			0.00			No Ice						
			0.00			1/2"				0.65	0.53	0.02
			0.00			Ice	0.75	0.63	0.03			
						1" Ice						
						No Ice						
(2) 7020.00	A	From Leg	4.00	0.000	98.00	1/2"	0.10	0.17	0.00			
			0.00			No Ice						
			0.00			1/2"				0.15	0.24	0.01
			0.00			Ice	0.20	0.31	0.01			
						1" Ice						
						No Ice						
(2) 7020.00	B	From Leg	4.00	0.000	98.00	1/2"	0.10	0.17	0.00			
			0.00			No Ice						
			0.00			1/2"				0.15	0.24	0.01
			0.00			Ice	0.20	0.31	0.01			
						1" Ice						
						No Ice						
(2) 7020.00	C	From Leg	4.00	0.000	98.00	1/2"	0.10	0.17	0.00			
			0.00			No Ice						
			0.00			1/2"				0.15	0.24	0.01
			0.00			Ice	0.20	0.31	0.01			
						1" Ice						
						No Ice						
Platform Mount [LP 712-1]	C	None		0.000	98.00	1" Ice	24.53	24.53	1.34			
						No Ice						
						1/2"				29.94	29.94	1.65
						Ice				35.35	35.35	1.96
***												
(2) HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	4.00	0.000	85.00	1" Ice	8.77	6.96	0.07			
			0.00			No Ice						
			1.00			1/2"				9.34	8.18	0.14
			1.00			Ice	9.89	9.14	0.21			
						1" Ice						
						No Ice						
(2) HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	4.00	0.000	85.00	1/2"	8.77	6.96	0.07			
			0.00			No Ice						
			1.00			1/2"				9.34	8.18	0.14
			1.00			Ice	9.89	9.14	0.21			
						1" Ice						
						No Ice						
(2) HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	4.00	0.000	85.00	1" Ice	8.77	6.96	0.07			
			0.00			No Ice						
			1.00			1/2"				9.34	8.18	0.14
			1.00			Ice	9.89	9.14	0.21			
						1" Ice						
						No Ice						
(2) BXA-70040-6CF-EDIN- 2 w/ Mount Pipe	A	From Leg	4.00	0.000	85.00	1" Ice	14.65	7.37	0.06			
			0.00			No Ice						
			1.00			1/2"				15.26	8.54	0.16
			1.00			Ice	15.84	9.42	0.27			
						1" Ice						
						No Ice						
(2) BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	4.00	0.000	85.00	1" Ice	7.81	5.80	0.04			
			0.00			No Ice						
			1.00			1/2"				8.36	6.95	0.10
			1.00			Ice	8.87	7.82	0.17			
						1" Ice						
						No Ice						
(2) BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	4.00	0.000	85.00	1" Ice	7.81	5.80	0.04			
			0.00			No Ice						
			1.00			1/2"				8.36	6.95	0.10
			1.00			Ice	8.87	7.82	0.17			
						1" Ice						
						No Ice						
(2) CBC721-DF	B	From Leg	4.00	0.000	85.00	1" Ice	0.39	0.11	0.00			
			0.00			No Ice						
			1.00			1/2"				0.46	0.17	0.01
			1.00			Ice	0.55	0.23	0.01			
						1" Ice						
						No Ice						
(4) CBC721-DF	C	From Leg	4.00	0.000	85.00	1" Ice	0.39	0.11	0.00			
			0.00			No Ice						
						1/2"	0.46	0.17	0.01			



Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert 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	
			1.00			Ice	0.55	0.23	0.01
(2) RRH2X60-AWS	A	From Leg	4.00	0.000	85.00	1" Ice No Ice	1.88	1.24	0.04
			0.00			1/2"	2.06	1.39	0.06
			1.00			Ice	2.24	1.54	0.08
RRH2X60-AWS	B	From Leg	4.00	0.000	85.00	1" Ice No Ice	1.88	1.24	0.04
			0.00			1/2"	2.06	1.39	0.06
			1.00			Ice	2.24	1.54	0.08
RRH2X60-PCS	B	From Leg	4.00	0.000	85.00	1" Ice No Ice	2.20	1.72	0.06
			0.00			1/2"	2.39	1.90	0.08
			1.00			Ice	2.59	2.09	0.10
(2) RRH2X60-PCS	C	From Leg	4.00	0.000	85.00	1" Ice No Ice	2.20	1.72	0.06
			0.00			1/2"	2.39	1.90	0.08
			1.00			Ice	2.59	2.09	0.10
DB-B1-6C-12AB-0Z	B	From Leg	4.00	0.000	85.00	1" Ice No Ice	3.36	2.19	0.03
			0.00			1/2"	3.60	2.39	0.06
			1.00			Ice	3.84	2.61	0.09
Platform Mount [LP 303-1]	C	None		0.000	85.00	1" Ice No Ice	14.66	14.66	1.25
						1/2"	18.87	18.87	1.48
						Ice	23.08	23.08	1.71
						1" Ice			
***									
KS24019-L112A	A	From Leg	3.00	0.000	80.00	No Ice	0.14	0.14	0.01
			0.00			1/2"	0.20	0.20	0.01
			1.00			Ice	0.26	0.26	0.01
Side Arm Mount [SO 701-1]	A	None		0.000	80.00	1" Ice No Ice	0.85	1.67	0.07
						1/2"	1.14	2.34	0.08
						Ice	1.43	3.01	0.09
						1" Ice			
***									
LLPX310R w/ Mount Pipe	A	From Leg	2.00	0.000	72.00	No Ice	4.46	2.85	0.04
			0.00			1/2"	4.79	3.37	0.08
			2.00			Ice	5.12	3.91	0.12
LLPX310R w/ Mount Pipe	B	From Leg	2.00	0.000	72.00	1" Ice No Ice	4.46	2.85	0.04
			0.00			1/2"	4.79	3.37	0.08
			0.00			Ice	5.12	3.91	0.12
LLPX310R w/ Mount Pipe	C	From Leg	2.00	0.000	72.00	1" Ice No Ice	4.46	2.85	0.04
			0.00			1/2"	4.79	3.37	0.08
			2.00			Ice	5.12	3.91	0.12
WIMAX DAP HEAD	A	From Leg	2.00	0.000	72.00	1" Ice No Ice	1.55	0.68	0.03
			0.00			1/2"	1.70	0.80	0.04
			2.00			Ice	1.87	0.92	0.06
WIMAX DAP HEAD	B	From Leg	2.00	0.000	72.00	1" Ice No Ice	1.55	0.68	0.03
			0.00			1/2"	1.70	0.80	0.04
			0.00			Ice	1.87	0.92	0.06
WIMAX DAP HEAD	B	From Leg	2.00	0.000	72.00	1" Ice No Ice	1.55	0.68	0.03
			0.00			1/2"	1.70	0.80	0.04
			1.00			Ice	1.87	0.92	0.06
HORIZON COMPACT	A	From Leg	2.00	0.000	72.00	1" Ice No Ice	0.72	0.37	0.01
			0.00			1/2"	0.83	0.45	0.02
			0.00			Ice	0.94	0.54	0.03
HORIZON COMPACT	C	From Leg	2.00	0.000	72.00	1" Ice No Ice	0.72	0.37	0.01

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
			0.00			1/2"	0.83	0.02
			2.00			Ice	0.94	0.03
Side Arm Mount [SO 101-3]	C	None		0.000	72.00	1" Ice		
						No Ice	7.50	0.25
						1/2"	8.90	0.33
						Ice	10.30	0.41
						1" Ice		
***								
Bridge Stiffener (84" x 9" x 1.25")	A	None		0.000	90.00	No Ice	7.76	0.27
						1/2"	8.29	0.30
						Ice	8.83	0.34
						1" Ice		
Bridge Stiffener (84" x 9" x 1.25")	B	None		0.000	90.00	No Ice	0.00	0.27
						1/2"	0.00	0.30
						Ice	0.00	0.34
						1" Ice		
Bridge Stiffener (84" x 9" x 1.25")	C	None		0.000	90.00	No Ice	0.00	0.27
						1/2"	0.00	0.30
						Ice	0.00	0.34
						1" Ice		
***								
Bridge Stiffener (84" x 14.5" x 1.25")	A	None		0.000	60.00	No Ice	11.39	0.43
						1/2"	11.92	0.48
						Ice	12.46	0.53
						1" Ice		
Bridge Stiffener (84" x 14.5" x 1.25")	B	None		0.000	60.00	No Ice	0.00	0.43
						1/2"	0.00	0.48
						Ice	0.00	0.53
						1" Ice		
Bridge Stiffener (84" x 14.5" x 1.25")	C	None		0.000	60.00	No Ice	0.00	0.43
						1/2"	0.00	0.48
						Ice	0.00	0.53
						1" Ice		
***								
Bridge Stiffener (84" x 14.5" x 1.25")	A	None		0.000	30.00	No Ice	11.39	0.43
						1/2"	11.92	0.48
						Ice	12.46	0.53
						1" Ice		
Bridge Stiffener (84" x 14.5" x 1.25")	B	None		0.000	30.00	No Ice	0.00	0.43
						1/2"	0.00	0.48
						Ice	0.00	0.53
						1" Ice		
Bridge Stiffener (84" x 14.5" x 1.25")	C	None		0.000	30.00	No Ice	0.00	0.43
						1/2"	0.00	0.48
						Ice	0.00	0.53
						1" Ice		
***								

### 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	
A-ANT-18G-2-C	A	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.000		72.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.03 0.04 0.05
VHLP1-23	B	Paraboloid w/o Radome	From Leg	2.00 0.00 1.00	0.000		72.00	1.27	No Ice 1/2" Ice 1" Ice	1.28 1.45 1.62	0.01 0.02 0.03
VHLP1-23	B	Paraboloid w/o Radome	From Leg	4.00 0.00	0.000		114.00	1.27	No Ice 1/2" Ice	1.28 1.45	0.01 0.02

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft²	Weight K
				2.00				1" Ice	1.62	0.03

**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> ft²	F a c e	A <sub>F</sub> ft²	A <sub>R</sub> ft²	A <sub>leg</sub> ft²	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft²	C <sub>A</sub> A <sub>A</sub> Out Face ft²
L1 118.00-113.00	115.50	1.305	27	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L2 113.00-108.00	110.50	1.293	27	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L3 108.00-103.00	105.50	1.28	27	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L4 103.00-98.00	100.50	1.267	26	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L5 98.00-93.00	95.50	1.253	26	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L6 93.00-90.00	91.50	1.242	26	6.000	A	0.000	6.000	6.000	100.00	0.000	0.000
					B	0.000	6.000		100.00	0.000	0.000
					C	0.000	6.000		100.00	0.000	0.000
L7 90.00-85.00	87.50	1.231	26	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L8 85.00-80.00	82.50	1.215	25	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	1.980
L9 80.00-76.50	78.25	1.202	25	7.000	A	0.000	7.000	7.000	100.00	0.000	0.000
					B	0.000	7.000		100.00	0.000	0.000
					C	0.000	7.000		100.00	0.000	1.959
L10 76.50-76.25	76.38	1.196	25	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.164
L11 76.25-74.00	75.13	1.192	25	4.500	A	0.000	4.500	4.500	100.00	0.000	0.000
					B	0.000	4.500		100.00	0.000	0.000
					C	0.000	4.500		100.00	0.000	1.598
L12 74.00-73.75	73.88	1.187	25	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.195
L13 73.75-68.88	71.32	1.179	25	9.740	A	0.000	9.740	9.740	100.00	0.000	0.000
					B	0.000	9.740		100.00	0.000	0.000
					C	0.000	9.740		100.00	0.000	4.251
L14 68.88-68.63	68.76	1.17	24	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.231
L15 68.63-64.50	66.57	1.162	24	8.260	A	0.000	8.260	8.260	100.00	0.000	0.000
					B	0.000	8.260		100.00	0.000	0.000
					C	0.000	8.260		100.00	0.000	3.821
L16 64.50-64.25	64.38	1.154	24	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.231
L17 64.25-63.00	63.63	1.151	24	2.500	A	0.000	2.500	2.500	100.00	0.000	0.000
					B	0.000	2.500		100.00	0.000	0.000
					C	0.000	2.500		100.00	0.000	1.156
L18 63.00-62.75	62.88	1.148	24	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.231
L19 62.75-60.00	61.38	1.142	24	5.500	A	0.000	5.500	5.500	100.00	0.000	0.000
					B	0.000	5.500		100.00	0.000	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>
L20 60.00-59.75	59.88	1.136	24	0.625	C	0.000	5.500		100.00	0.000	2.544
					A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.200
L21 59.75-54.75	57.25	1.125	23	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500		100.00	0.000	0.000
					C	0.000	12.500		100.00	0.000	4.001
L22 54.75-49.75	52.25	1.104	23	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500		100.00	0.000	0.000
					C	0.000	12.500		100.00	0.000	4.063
L23 49.75-49.25	49.50	1.091	23	1.250	A	0.000	1.250	1.250	100.00	0.000	0.000
					B	0.000	1.250		100.00	0.000	0.000
					C	0.000	1.250		100.00	0.000	0.463
L24 49.25-49.00	49.13	1.09	23	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.231
L25 49.00-44.00	46.50	1.077	22	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500		100.00	0.000	0.000
					C	0.000	12.500		100.00	0.000	4.626
L26 44.00-42.00	43.00	1.06	22	5.000	A	0.000	5.000	5.000	100.00	0.000	0.000
					B	0.000	5.000		100.00	0.000	0.000
					C	0.000	5.000		100.00	0.000	1.850
L27 42.00-41.75	41.88	1.054	22	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.231
L28 41.75-36.75	39.25	1.039	22	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500		100.00	0.000	0.000
					C	0.000	12.500		100.00	0.000	4.626
L29 36.75-34.50	35.63	1.018	21	5.625	A	0.000	5.625	5.625	100.00	0.000	0.000
					B	0.000	5.625		100.00	0.000	0.000
					C	0.000	5.625		100.00	0.000	2.123
L30 34.50-34.25	34.38	1.011	21	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.242
L31 34.25-34.00	34.13	1.009	21	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.242
L32 34.00-33.75	33.88	1.008	21	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.242
L33 33.75-30.00	31.88	0.995	21	9.375	A	0.000	9.375	9.375	100.00	0.000	0.000
					B	0.000	9.375		100.00	0.000	0.000
					C	0.000	9.375		100.00	0.000	3.626
L34 30.00-29.75	29.88	0.981	20	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
					C	0.000	0.750		100.00	0.000	0.242
L35 29.75-28.50	29.13	0.976	20	3.750	A	0.000	3.750	3.750	100.00	0.000	0.000
					B	0.000	3.750		100.00	0.000	0.000
					C	0.000	3.750		100.00	0.000	1.209
L36 28.50-28.25	28.38	0.971	20	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
					C	0.000	0.750		100.00	0.000	0.242
L37 28.25-23.25	25.75	0.951	20	15.000	A	0.000	15.000	15.000	100.00	0.000	0.000
					B	0.000	15.000		100.00	0.000	0.000
					C	0.000	15.000		100.00	0.000	4.834
L38 23.25-23.00	23.13	0.93	19	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
					C	0.000	0.750		100.00	0.000	0.242
L39 23.00-21.50	22.25	0.922	19	4.500	A	0.000	4.500	4.500	100.00	0.000	0.000
					B	0.000	4.500		100.00	0.000	0.000
					C	0.000	4.500		100.00	0.000	1.450
L40 21.50-21.25	21.38	0.915	19	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
					C	0.000	0.750		100.00	0.000	0.242
L41 21.25-19.00	20.13	0.903	19	6.750	A	0.000	6.750	6.750	100.00	0.000	0.000
					B	0.000	6.750		100.00	0.000	0.000
					C	0.000	6.750		100.00	0.000	2.175
L42 19.00-	18.88	0.891	19	0.750	A	0.000	0.750	0.750	100.00	0.000	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>
18.75					B	0.000	0.750		100.00	0.000	0.000
L43 18.75-18.50	18.63	0.888	19	0.750	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L44 18.50-18.25	18.38	0.886	18	0.750	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L45 18.25-13.25	15.75	0.858	18	15.000	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	15.000	15.000	100.00	0.000	0.000
					B	0.000	15.000		100.00	0.000	0.000
L46 13.25-12.70	12.98	0.85	18	1.650	C	0.000	15.000		100.00	0.000	4.834
					A	0.000	1.650	1.650	100.00	0.000	0.000
					B	0.000	1.650		100.00	0.000	0.000
L47 12.70-12.45	12.58	0.85	18	0.750	C	0.000	1.650		100.00	0.000	0.532
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L48 12.45-11.50	11.98	0.85	18	2.850	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	2.850	2.850	100.00	0.000	0.000
					B	0.000	2.850		100.00	0.000	0.000
L49 11.50-11.25	11.38	0.85	18	0.750	C	0.000	2.850		100.00	0.000	0.918
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L50 11.25-10.50	10.88	0.85	18	2.250	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	2.250	2.250	100.00	0.000	0.000
					B	0.000	2.250		100.00	0.000	0.000
L51 10.50-10.25	10.38	0.85	18	0.750	C	0.000	2.250		100.00	0.000	0.725
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L52 10.25-7.50	8.88	0.85	18	8.250	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	8.250	8.250	100.00	0.000	0.000
					B	0.000	8.250		100.00	0.000	0.000
L53 7.50-7.25	7.38	0.85	18	0.750	C	0.000	8.250		100.00	0.000	2.659
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L54 7.25-6.25	6.75	0.85	18	3.000	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	3.000	3.000	100.00	0.000	0.000
					B	0.000	3.000		100.00	0.000	0.000
L55 6.25-6.00	6.13	0.85	18	0.750	C	0.000	3.000		100.00	0.000	0.967
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L56 6.00-3.73	4.87	0.85	18	6.810	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	6.810	6.810	100.00	0.000	0.000
					B	0.000	6.810		100.00	0.000	0.000
L57 3.73-3.48	3.61	0.85	18	0.750	C	0.000	6.810		100.00	0.000	2.195
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L58 3.48-2.75	3.12	0.85	18	2.190	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	2.190	2.190	100.00	0.000	0.000
					B	0.000	2.190		100.00	0.000	0.000
L59 2.75-2.50	2.63	0.85	18	0.750	C	0.000	2.190		100.00	0.000	0.706
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L60 2.50-2.00	2.25	0.85	18	1.500	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	1.500	1.500	100.00	0.000	0.000
					B	0.000	1.500		100.00	0.000	0.000
L61 2.00-1.75	1.88	0.85	18	0.750	C	0.000	1.500		100.00	0.000	0.483
					A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L62 1.75-0.00	0.88	0.85	18	5.250	C	0.000	0.750		100.00	0.000	0.242
					A	0.000	5.250	5.250	100.00	0.000	0.000
					B	0.000	5.250		100.00	0.000	0.000
					C	0.000	5.250		100.00	0.000	1.692

**Tower Pressure - With Ice**

$G_H = 1.100$

Section Elevation ft	z ft	$K_z$	$q_z$ psf	$t_z$ in	$A_G$ 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 %	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>
L1 118.00-113.00	115.50	1.305	8	2.27	11.889	A	0.000	11.889	11.889	100.00	0.000	0.000
						B	0.000	11.889	100.00	0.000	0.000	
						C	0.000	11.889	100.00	0.000	0.000	
L2 113.00-108.00	110.50	1.293	7	2.26	11.881	A	0.000	11.881	11.881	100.00	0.000	0.000
						B	0.000	11.881	100.00	0.000	0.000	
						C	0.000	11.881	100.00	0.000	0.000	
L3 108.00-103.00	105.50	1.28	7	2.25	11.872	A	0.000	11.872	11.872	100.00	0.000	0.000
						B	0.000	11.872	100.00	0.000	0.000	
						C	0.000	11.872	100.00	0.000	0.000	
L4 103.00-98.00	100.50	1.267	7	2.24	11.863	A	0.000	11.863	11.863	100.00	0.000	0.000
						B	0.000	11.863	100.00	0.000	0.000	
						C	0.000	11.863	100.00	0.000	0.000	
L5 98.00-93.00	95.50	1.253	7	2.22	11.854	A	0.000	11.854	11.854	100.00	0.000	0.000
						B	0.000	11.854	100.00	0.000	0.000	
						C	0.000	11.854	100.00	0.000	0.000	
L6 93.00-90.00	91.50	1.242	7	2.21	7.107	A	0.000	7.107	7.107	100.00	0.000	0.000
						B	0.000	7.107	100.00	0.000	0.000	
						C	0.000	7.107	100.00	0.000	0.000	
L7 90.00-85.00	87.50	1.231	7	2.20	11.837	A	0.000	11.837	11.837	100.00	0.000	0.000
						B	0.000	11.837	100.00	0.000	0.000	
						C	0.000	11.837	100.00	0.000	0.000	
L8 85.00-80.00	82.50	1.215	7	2.19	11.827	A	0.000	11.827	11.827	100.00	0.000	0.000
						B	0.000	11.827	100.00	0.000	0.000	
						C	0.000	11.827	100.00	0.000	6.364	
L9 80.00-76.50	78.25	1.202	7	2.18	8.272	A	0.000	8.272	8.272	100.00	0.000	0.000
						B	0.000	8.272	100.00	0.000	0.000	
						C	0.000	8.272	100.00	0.000	7.264	
L10 76.50-76.25	76.38	1.196	7	2.18	0.591	A	0.000	0.591	0.591	100.00	0.000	0.000
						B	0.000	0.591	100.00	0.000	0.000	
						C	0.000	0.591	100.00	0.000	0.611	
L11 76.25-74.00	75.13	1.192	7	2.17	5.314	A	0.000	5.314	5.314	100.00	0.000	0.000
						B	0.000	5.314	100.00	0.000	0.000	
						C	0.000	5.314	100.00	0.000	6.098	
L12 74.00-73.75	73.88	1.187	7	2.17	0.590	A	0.000	0.590	0.590	100.00	0.000	0.000
						B	0.000	0.590	100.00	0.000	0.000	
						C	0.000	0.590	100.00	0.000	0.761	
L13 73.75-68.88	71.32	1.179	7	2.16	11.493	A	0.000	11.493	11.493	100.00	0.000	0.000
						B	0.000	11.493	100.00	0.000	0.000	
						C	0.000	11.493	100.00	0.000	15.239	
L14 68.88-68.63	68.76	1.17	7	2.15	0.590	A	0.000	0.590	0.590	100.00	0.000	0.000
						B	0.000	0.590	100.00	0.000	0.000	
						C	0.000	0.590	100.00	0.000	0.793	
L15 68.63-64.50	66.57	1.162	7	2.15	9.737	A	0.000	9.737	9.737	100.00	0.000	0.000
						B	0.000	9.737	100.00	0.000	0.000	
						C	0.000	9.737	100.00	0.000	13.075	
L16 64.50-64.25	64.38	1.154	7	2.14	0.589	A	0.000	0.589	0.589	100.00	0.000	0.000
						B	0.000	0.589	100.00	0.000	0.000	
						C	0.000	0.589	100.00	0.000	0.790	
L17 64.25-63.00	63.63	1.151	7	2.14	2.945	A	0.000	2.945	2.945	100.00	0.000	0.000
						B	0.000	2.945	100.00	0.000	0.000	
						C	0.000	2.945	100.00	0.000	3.945	
L18 63.00-62.75	62.88	1.148	7	2.13	0.589	A	0.000	0.589	0.589	100.00	0.000	0.000
						B	0.000	0.589	100.00	0.000	0.000	
						C	0.000	0.589	100.00	0.000	0.788	
L19 62.75-60.00	61.38	1.142	7	2.13	6.475	A	0.000	6.475	6.475	100.00	0.000	0.000
						B	0.000	6.475	100.00	0.000	0.000	
						C	0.000	6.475	100.00	0.000	8.656	
L20 60.00-59.75	59.88	1.136	7	2.12	0.713	A	0.000	0.713	0.713	100.00	0.000	0.000
						B	0.000	0.713	100.00	0.000	0.000	
						C	0.000	0.713	100.00	0.000	0.636	
L21 59.75-54.75	57.25	1.125	7	2.11	14.261	A	0.000	14.261	14.261	100.00	0.000	0.000
						B	0.000	14.261	100.00	0.000	0.000	
						C	0.000	14.261	100.00	0.000	12.689	
L22 54.75-	52.25	1.104	6	2.09	14.245	A	0.000	14.245	14.245	100.00	0.000	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>
49.75						B	0.000	14.245		100.00	0.000	0.000
						C	0.000	14.245		100.00	0.000	12.905
L23 49.75-49.25	49.50	1.091	6	2.08	1.424	A	0.000	1.424	1.424	100.00	0.000	0.000
						B	0.000	1.424		100.00	0.000	0.000
						C	0.000	1.424		100.00	0.000	1.550
L24 49.25-49.00	49.13	1.09	6	2.08	0.712	A	0.000	0.712	0.712	100.00	0.000	0.000
						B	0.000	0.712		100.00	0.000	0.000
						C	0.000	0.712		100.00	0.000	0.775
L25 49.00-44.00	46.50	1.077	6	2.07	14.225	A	0.000	14.225	14.225	100.00	0.000	0.000
						B	0.000	14.225		100.00	0.000	0.000
						C	0.000	14.225		100.00	0.000	15.435
L26 44.00-42.00	43.00	1.06	6	2.05	5.685	A	0.000	5.685	5.685	100.00	0.000	0.000
						B	0.000	5.685		100.00	0.000	0.000
						C	0.000	5.685		100.00	0.000	6.140
L27 42.00-41.75	41.88	1.054	6	2.05	0.710	A	0.000	0.710	0.710	100.00	0.000	0.000
						B	0.000	0.710		100.00	0.000	0.000
						C	0.000	0.710		100.00	0.000	0.766
L28 41.75-36.75	39.25	1.039	6	2.03	14.196	A	0.000	14.196	14.196	100.00	0.000	0.000
						B	0.000	14.196		100.00	0.000	0.000
						C	0.000	14.196		100.00	0.000	15.253
L29 36.75-34.50	35.63	1.018	6	2.02	6.381	A	0.000	6.381	6.381	100.00	0.000	0.000
						B	0.000	6.381		100.00	0.000	0.000
						C	0.000	6.381		100.00	0.000	6.859
L30 34.50-34.25	34.38	1.011	6	2.01	0.709	A	0.000	0.709	0.709	100.00	0.000	0.000
						B	0.000	0.709		100.00	0.000	0.000
						C	0.000	0.709		100.00	0.000	0.766
L31 34.25-34.00	34.13	1.009	6	2.01	0.709	A	0.000	0.709	0.709	100.00	0.000	0.000
						B	0.000	0.709		100.00	0.000	0.000
						C	0.000	0.709		100.00	0.000	0.766
L32 34.00-33.75	33.88	1.008	6	2.01	0.709	A	0.000	0.709	0.709	100.00	0.000	0.000
						B	0.000	0.709		100.00	0.000	0.000
						C	0.000	0.709		100.00	0.000	0.765
L33 33.75-30.00	31.88	0.995	6	1.99	10.621	A	0.000	10.621	10.621	100.00	0.000	0.000
						B	0.000	10.621		100.00	0.000	0.000
						C	0.000	10.621		100.00	0.000	11.432
L34 30.00-29.75	29.88	0.981	6	1.98	0.833	A	0.000	0.833	0.833	100.00	0.000	0.000
						B	0.000	0.833		100.00	0.000	0.000
						C	0.000	0.833		100.00	0.000	0.759
L35 29.75-28.50	29.13	0.976	6	1.98	4.161	A	0.000	4.161	4.161	100.00	0.000	0.000
						B	0.000	4.161		100.00	0.000	0.000
						C	0.000	4.161		100.00	0.000	3.787
L36 28.50-28.25	28.38	0.971	6	1.97	0.832	A	0.000	0.832	0.832	100.00	0.000	0.000
						B	0.000	0.832		100.00	0.000	0.000
						C	0.000	0.832		100.00	0.000	0.756
L37 28.25-23.25	25.75	0.951	5	1.95	16.626	A	0.000	16.626	16.626	100.00	0.000	0.000
						B	0.000	16.626		100.00	0.000	0.000
						C	0.000	16.626		100.00	0.000	15.023
L38 23.25-23.00	23.13	0.93	5	1.93	0.830	A	0.000	0.830	0.830	100.00	0.000	0.000
						B	0.000	0.830		100.00	0.000	0.000
						C	0.000	0.830		100.00	0.000	0.746
L39 23.00-21.50	22.25	0.922	5	1.92	4.981	A	0.000	4.981	4.981	100.00	0.000	0.000
						B	0.000	4.981		100.00	0.000	0.000
						C	0.000	4.981		100.00	0.000	4.462
L40 21.50-21.25	21.38	0.915	5	1.92	0.830	A	0.000	0.830	0.830	100.00	0.000	0.000
						B	0.000	0.830		100.00	0.000	0.000
						C	0.000	0.830		100.00	0.000	0.742
L41 21.25-19.00	20.13	0.903	5	1.90	7.464	A	0.000	7.464	7.464	100.00	0.000	0.000
						B	0.000	7.464		100.00	0.000	0.000
						C	0.000	7.464		100.00	0.000	6.649
L42 19.00-18.75	18.88	0.891	5	1.89	0.829	A	0.000	0.829	0.829	100.00	0.000	0.000
						B	0.000	0.829		100.00	0.000	0.000
						C	0.000	0.829		100.00	0.000	0.736
L43 18.75-18.50	18.63	0.888	5	1.89	0.829	A	0.000	0.829	0.829	100.00	0.000	0.000
						B	0.000	0.829		100.00	0.000	0.000
						C	0.000	0.829		100.00	0.000	0.735
L44 18.50-18.25	18.38	0.886	5	1.89	0.829	A	0.000	0.829	0.829	100.00	0.000	0.000
						B	0.000	0.829		100.00	0.000	0.000
						C	0.000	0.829		100.00	0.000	0.734

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>
L45 18.25-13.25	15.75	0.858	5	1.86	16.548	A	0.000	16.548	16.548	100.00	0.000	0.000
						B	0.000	16.548		100.00	0.000	0.000
						C	0.000	16.548		100.00	0.000	14.534
L46 13.25-12.70	12.98	0.85	5	1.82	1.817	A	0.000	1.817	1.817	100.00	0.000	0.000
						B	0.000	1.817		100.00	0.000	0.000
						C	0.000	1.817		100.00	0.000	1.578
L47 12.70-12.45	12.58	0.85	5	1.82	0.826	A	0.000	0.826	0.826	100.00	0.000	0.000
						B	0.000	0.826		100.00	0.000	0.000
						C	0.000	0.826		100.00	0.000	0.716
L48 12.45-11.50	11.98	0.85	5	1.81	3.136	A	0.000	3.136	3.136	100.00	0.000	0.000
						B	0.000	3.136		100.00	0.000	0.000
						C	0.000	3.136		100.00	0.000	2.712
L49 11.50-11.25	11.38	0.85	5	1.80	0.825	A	0.000	0.825	0.825	100.00	0.000	0.000
						B	0.000	0.825		100.00	0.000	0.000
						C	0.000	0.825		100.00	0.000	0.711
L50 11.25-10.50	10.88	0.85	5	1.79	2.474	A	0.000	2.474	2.474	100.00	0.000	0.000
						B	0.000	2.474		100.00	0.000	0.000
						C	0.000	2.474		100.00	0.000	2.127
L51 10.50-10.25	10.38	0.85	5	1.78	0.824	A	0.000	0.824	0.824	100.00	0.000	0.000
						B	0.000	0.824		100.00	0.000	0.000
						C	0.000	0.824		100.00	0.000	0.707
L52 10.25-7.50	8.88	0.85	5	1.75	9.054	A	0.000	9.054	9.054	100.00	0.000	0.000
						B	0.000	9.054		100.00	0.000	0.000
						C	0.000	9.054		100.00	0.000	7.696
L53 7.50-7.25	7.38	0.85	5	1.72	0.822	A	0.000	0.822	0.822	100.00	0.000	0.000
						B	0.000	0.822		100.00	0.000	0.000
						C	0.000	0.822		100.00	0.000	0.691
L54 7.25-6.25	6.75	0.85	5	1.71	3.284	A	0.000	3.284	3.284	100.00	0.000	0.000
						B	0.000	3.284		100.00	0.000	0.000
						C	0.000	3.284		100.00	0.000	2.749
L55 6.25-6.00	6.13	0.85	5	1.69	0.820	A	0.000	0.820	0.820	100.00	0.000	0.000
						B	0.000	0.820		100.00	0.000	0.000
						C	0.000	0.820		100.00	0.000	0.683
L56 6.00-3.73	4.87	0.85	5	1.65	7.435	A	0.000	7.435	7.435	100.00	0.000	0.000
						B	0.000	7.435		100.00	0.000	0.000
						C	0.000	7.435		100.00	0.000	6.110
L57 3.73-3.48	3.61	0.85	5	1.60	0.817	A	0.000	0.817	0.817	100.00	0.000	0.000
						B	0.000	0.817		100.00	0.000	0.000
						C	0.000	0.817		100.00	0.000	0.660
L58 3.48-2.75	3.12	0.85	5	1.58	2.382	A	0.000	2.382	2.382	100.00	0.000	0.000
						B	0.000	2.382		100.00	0.000	0.000
						C	0.000	2.382		100.00	0.000	1.910
L59 2.75-2.50	2.63	0.85	5	1.55	0.815	A	0.000	0.815	0.815	100.00	0.000	0.000
						B	0.000	0.815		100.00	0.000	0.000
						C	0.000	0.815		100.00	0.000	0.647
L60 2.50-2.00	2.25	0.85	5	1.53	1.627	A	0.000	1.627	1.627	100.00	0.000	0.000
						B	0.000	1.627		100.00	0.000	0.000
						C	0.000	1.627		100.00	0.000	1.282
L61 2.00-1.75	1.88	0.85	5	1.50	0.813	A	0.000	0.813	0.813	100.00	0.000	0.000
						B	0.000	0.813		100.00	0.000	0.000
						C	0.000	0.813		100.00	0.000	0.634
L62 1.75-0.00	0.88	0.85	5	1.39	5.656	A	0.000	5.656	5.656	100.00	0.000	0.000
						B	0.000	5.656		100.00	0.000	0.000
						C	0.000	5.656		100.00	0.000	4.235

**Tower Pressure - Service**

G<sub>H</sub> = 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 118.00-113.00	115.50	1.305	10	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L2 113.00-	110.50	1.293	10	10.000	A	0.000	10.000	10.000	100.00	0.000	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>
108.00					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L3 108.00- 103.00	105.50	1.28	10	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L4 103.00- 98.00	100.50	1.267	9	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L5 98.00- 93.00	95.50	1.253	9	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L6 93.00- 90.00	91.50	1.242	9	6.000	A	0.000	6.000	6.000	100.00	0.000	0.000
					B	0.000	6.000		100.00	0.000	0.000
					C	0.000	6.000		100.00	0.000	0.000
L7 90.00- 85.00	87.50	1.231	9	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	0.000
L8 85.00- 80.00	82.50	1.215	9	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	1.980
L9 80.00- 76.50	78.25	1.202	9	7.000	A	0.000	7.000	7.000	100.00	0.000	0.000
					B	0.000	7.000		100.00	0.000	0.000
					C	0.000	7.000		100.00	0.000	1.959
L10 76.50- 76.25	76.38	1.196	9	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.164
L11 76.25- 74.00	75.13	1.192	9	4.500	A	0.000	4.500	4.500	100.00	0.000	0.000
					B	0.000	4.500		100.00	0.000	0.000
					C	0.000	4.500		100.00	0.000	1.598
L12 74.00- 73.75	73.88	1.187	9	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.195
L13 73.75- 68.88	71.32	1.179	9	9.740	A	0.000	9.740	9.740	100.00	0.000	0.000
					B	0.000	9.740		100.00	0.000	0.000
					C	0.000	9.740		100.00	0.000	4.251
L14 68.88- 68.63	68.76	1.17	9	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.231
L15 68.63- 64.50	66.57	1.162	9	8.260	A	0.000	8.260	8.260	100.00	0.000	0.000
					B	0.000	8.260		100.00	0.000	0.000
					C	0.000	8.260		100.00	0.000	3.821
L16 64.50- 64.25	64.38	1.154	9	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.231
L17 64.25- 63.00	63.63	1.151	9	2.500	A	0.000	2.500	2.500	100.00	0.000	0.000
					B	0.000	2.500		100.00	0.000	0.000
					C	0.000	2.500		100.00	0.000	1.156
L18 63.00- 62.75	62.88	1.148	9	0.500	A	0.000	0.500	0.500	100.00	0.000	0.000
					B	0.000	0.500		100.00	0.000	0.000
					C	0.000	0.500		100.00	0.000	0.231
L19 62.75- 60.00	61.38	1.142	8	5.500	A	0.000	5.500	5.500	100.00	0.000	0.000
					B	0.000	5.500		100.00	0.000	0.000
					C	0.000	5.500		100.00	0.000	2.544
L20 60.00- 59.75	59.88	1.136	8	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.200
L21 59.75- 54.75	57.25	1.125	8	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500		100.00	0.000	0.000
					C	0.000	12.500		100.00	0.000	4.001
L22 54.75- 49.75	52.25	1.104	8	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500		100.00	0.000	0.000
					C	0.000	12.500		100.00	0.000	4.063
L23 49.75- 49.25	49.50	1.091	8	1.250	A	0.000	1.250	1.250	100.00	0.000	0.000
					B	0.000	1.250		100.00	0.000	0.000
					C	0.000	1.250		100.00	0.000	0.463
L24 49.25- 49.00	49.13	1.09	8	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625		100.00	0.000	0.000
					C	0.000	0.625		100.00	0.000	0.231

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>
L25 49.00- 44.00	46.50	1.077	8	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500	100.00	0.000	0.000	
					C	0.000	12.500	100.00	0.000	4.626	
L26 44.00- 42.00	43.00	1.06	8	5.000	A	0.000	5.000	5.000	100.00	0.000	0.000
					B	0.000	5.000	100.00	0.000	0.000	
					C	0.000	5.000	100.00	0.000	1.850	
L27 42.00- 41.75	41.88	1.054	8	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625	100.00	0.000	0.000	
					C	0.000	0.625	100.00	0.000	0.231	
L28 41.75- 36.75	39.25	1.039	8	12.500	A	0.000	12.500	12.500	100.00	0.000	0.000
					B	0.000	12.500	100.00	0.000	0.000	
					C	0.000	12.500	100.00	0.000	4.626	
L29 36.75- 34.50	35.63	1.018	8	5.625	A	0.000	5.625	5.625	100.00	0.000	0.000
					B	0.000	5.625	100.00	0.000	0.000	
					C	0.000	5.625	100.00	0.000	2.123	
L30 34.50- 34.25	34.38	1.011	8	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625	100.00	0.000	0.000	
					C	0.000	0.625	100.00	0.000	0.242	
L31 34.25- 34.00	34.13	1.009	8	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625	100.00	0.000	0.000	
					C	0.000	0.625	100.00	0.000	0.242	
L32 34.00- 33.75	33.88	1.008	7	0.625	A	0.000	0.625	0.625	100.00	0.000	0.000
					B	0.000	0.625	100.00	0.000	0.000	
					C	0.000	0.625	100.00	0.000	0.242	
L33 33.75- 30.00	31.88	0.995	7	9.375	A	0.000	9.375	9.375	100.00	0.000	0.000
					B	0.000	9.375	100.00	0.000	0.000	
					C	0.000	9.375	100.00	0.000	3.626	
L34 30.00- 29.75	29.88	0.981	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L35 29.75- 28.50	29.13	0.976	7	3.750	A	0.000	3.750	3.750	100.00	0.000	0.000
					B	0.000	3.750	100.00	0.000	0.000	
					C	0.000	3.750	100.00	0.000	1.209	
L36 28.50- 28.25	28.38	0.971	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L37 28.25- 23.25	25.75	0.951	7	15.000	A	0.000	15.000	15.000	100.00	0.000	0.000
					B	0.000	15.000	100.00	0.000	0.000	
					C	0.000	15.000	100.00	0.000	4.834	
L38 23.25- 23.00	23.13	0.93	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L39 23.00- 21.50	22.25	0.922	7	4.500	A	0.000	4.500	4.500	100.00	0.000	0.000
					B	0.000	4.500	100.00	0.000	0.000	
					C	0.000	4.500	100.00	0.000	1.450	
L40 21.50- 21.25	21.38	0.915	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L41 21.25- 19.00	20.13	0.903	7	6.750	A	0.000	6.750	6.750	100.00	0.000	0.000
					B	0.000	6.750	100.00	0.000	0.000	
					C	0.000	6.750	100.00	0.000	2.175	
L42 19.00- 18.75	18.88	0.891	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L43 18.75- 18.50	18.63	0.888	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L44 18.50- 18.25	18.38	0.886	7	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	0.000	
					C	0.000	0.750	100.00	0.000	0.242	
L45 18.25- 13.25	15.75	0.858	6	15.000	A	0.000	15.000	15.000	100.00	0.000	0.000
					B	0.000	15.000	100.00	0.000	0.000	
					C	0.000	15.000	100.00	0.000	4.834	
L46 13.25- 12.70	12.98	0.85	6	1.650	A	0.000	1.650	1.650	100.00	0.000	0.000
					B	0.000	1.650	100.00	0.000	0.000	
					C	0.000	1.650	100.00	0.000	0.532	
L47 12.70- 12.45	12.58	0.85	6	0.750	A	0.000	0.750	0.750	100.00	0.000	0.000
					B	0.000	0.750	100.00	0.000	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>
L48 12.45-11.50	11.98	0.85	6	2.850	C	0.000	0.750	2.850	100.00	0.000	0.242
					A	0.000	2.850		100.00	0.000	0.000
					B	0.000	2.850		100.00	0.000	0.000
L49 11.50-11.25	11.38	0.85	6	0.750	C	0.000	2.850	0.750	100.00	0.000	0.918
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L50 11.25-10.50	10.88	0.85	6	2.250	C	0.000	0.750	2.250	100.00	0.000	0.242
					A	0.000	2.250		100.00	0.000	0.000
					B	0.000	2.250		100.00	0.000	0.000
L51 10.50-10.25	10.38	0.85	6	0.750	C	0.000	2.250	0.750	100.00	0.000	0.725
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L52 10.25-7.50	8.88	0.85	6	8.250	C	0.000	0.750	8.250	100.00	0.000	0.242
					A	0.000	8.250		100.00	0.000	0.000
					B	0.000	8.250		100.00	0.000	0.000
L53 7.50-7.25	7.38	0.85	6	0.750	C	0.000	8.250	0.750	100.00	0.000	2.659
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L54 7.25-6.25	6.75	0.85	6	3.000	C	0.000	0.750	3.000	100.00	0.000	0.242
					A	0.000	3.000		100.00	0.000	0.000
					B	0.000	3.000		100.00	0.000	0.000
L55 6.25-6.00	6.13	0.85	6	0.750	C	0.000	3.000	0.750	100.00	0.000	0.967
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L56 6.00-3.73	4.87	0.85	6	6.810	C	0.000	0.750	6.810	100.00	0.000	0.242
					A	0.000	6.810		100.00	0.000	0.000
					B	0.000	6.810		100.00	0.000	0.000
L57 3.73-3.48	3.61	0.85	6	0.750	C	0.000	6.810	0.750	100.00	0.000	2.195
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L58 3.48-2.75	3.12	0.85	6	2.190	C	0.000	0.750	2.190	100.00	0.000	0.242
					A	0.000	2.190		100.00	0.000	0.000
					B	0.000	2.190		100.00	0.000	0.000
L59 2.75-2.50	2.63	0.85	6	0.750	C	0.000	2.190	0.750	100.00	0.000	0.706
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L60 2.50-2.00	2.25	0.85	6	1.500	C	0.000	0.750	1.500	100.00	0.000	0.242
					A	0.000	1.500		100.00	0.000	0.000
					B	0.000	1.500		100.00	0.000	0.000
L61 2.00-1.75	1.88	0.85	6	0.750	C	0.000	1.500	0.750	100.00	0.000	0.483
					A	0.000	0.750		100.00	0.000	0.000
					B	0.000	0.750		100.00	0.000	0.000
L62 1.75-0.00	0.88	0.85	6	5.250	C	0.000	0.750	5.250	100.00	0.000	0.242
					A	0.000	5.250		100.00	0.000	0.000
					B	0.000	5.250		100.00	0.000	0.000
					C	0.000	5.250		100.00	0.000	1.692

### Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice

Comb. No.	Description
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 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	118 - 113	Pole	Max Tension	39	0.00	0	0
			Max. Compression	26	-8.82	-1	0
			Max. Mx	8	-2.88	-11	0
			Max. My	14	-2.88	0	-11
			Max. Vy	20	-4.92	11	0
			Max. Vx	2	-4.89	0	11
			Max. Torque	6			0
L2	113 - 108	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-9.59	-1	0
			Max. Mx	8	-3.26	-36	0
			Max. My	14	-3.26	0	-36
			Max. Vy	20	-5.23	36	0
			Max. Vx	2	-5.21	1	36
			Max. Torque	6			0
L3	108 - 103	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-19.53	-1	0
			Max. Mx	20	-6.18	86	1
			Max. My	2	-6.18	1	86
			Max. Vy	20	-10.10	86	1
			Max. Vx	2	-10.08	1	86
			Max. Torque	6			0
L4	103 - 98	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-20.33	-1	0
			Max. Mx	20	-6.62	137	1
			Max. My	2	-6.62	2	137
			Max. Vy	20	-10.40	137	1
			Max. Vx	2	-10.38	2	137
			Max. Torque	6			0

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	98 - 93	Pole	Max. Torque	6			0
			Max Tension	1	0.00	0	0
			Max. Compression	26	-30.22	-1	1
			Max. Mx	20	-9.74	213	2
			Max. My	2	-9.74	2	212
			Max. Vy	20	-15.29	213	2
			Max. Vx	2	-15.23	2	212
L6	93 - 90	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-30.72	-1	1
			Max. Mx	20	-10.06	259	2
			Max. My	2	-10.05	3	258
			Max. Vy	20	-15.45	259	2
			Max. Vx	2	-15.39	3	258
L7	90 - 85	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-33.29	-1	1
			Max. Mx	20	-11.71	339	3
			Max. My	2	-11.71	3	338
			Max. Vy	20	-16.15	339	3
			Max. Vx	2	-16.09	3	338
L8	85 - 80	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-44.55	-2	2
			Max. Mx	20	-14.97	448	3
			Max. My	2	-14.95	4	449
			Max. Vy	20	-21.20	448	3
			Max. Vx	2	-21.48	4	449
L9	80 - 76.5	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-46.03	-2	2
			Max. Mx	20	-15.63	523	4
			Max. My	2	-15.60	5	525
			Max. Vy	20	-21.71	523	4
			Max. Vx	2	-21.99	5	525
L10	76.5 - 76.25	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-46.14	-2	2
			Max. Mx	20	-15.70	528	4
			Max. My	2	-15.67	5	530
			Max. Vy	20	-21.74	528	4
			Max. Vx	2	-22.02	5	530
L11	76.25 - 74	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-47.10	-2	2
			Max. Mx	20	-16.17	578	4
			Max. My	2	-16.15	5	580
			Max. Vy	20	-22.04	578	4
			Max. Vx	2	-22.32	5	580
L12	74 - 73.75	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-47.23	-2	2
			Max. Mx	20	-16.26	583	4
			Max. My	2	-16.23	5	586
			Max. Vy	20	-22.07	583	4
			Max. Vx	2	-22.36	5	586
L13	73.75 - 68.88	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-51.83	-2	2
			Max. Mx	20	-18.26	696	5
			Max. My	2	-18.23	6	700
			Max. Vy	20	-23.81	696	5
			Max. Vx	2	-24.13	6	700
L14	68.88 - 68.63	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-51.97	-2	2
			Max. Mx	20	-18.35	702	5

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L15	68.63 - 64.5	Pole	Max. My	2	-18.32	6	707
			Max. Vy	20	-23.84	702	5
			Max. Vx	2	-24.16	6	707
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-54.24	-2	2
			Max. Mx	20	-19.59	802	6
			Max. My	2	-19.56	7	807
			Max. Vy	20	-24.42	802	6
			Max. Vx	2	-24.73	7	807
L16	64.5 - 64.25	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-54.38	-2	2
			Max. Mx	20	-19.68	808	6
			Max. My	2	-19.66	7	814
			Max. Vy	20	-24.44	808	6
			Max. Vx	2	-24.77	7	814
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-55.11	-2	2
L17	64.25 - 63	Pole	Max. Mx	20	-20.09	838	6
			Max. My	2	-20.07	8	845
			Max. Vy	20	-24.63	838	6
			Max. Vx	2	-24.94	8	845
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-55.26	-2	2
			Max. Mx	20	-20.19	845	6
			Max. My	2	-20.16	8	851
			Max. Vy	20	-24.65	845	6
L18	63 - 62.75	Pole	Max. Vx	2	-24.98	8	851
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-55.26	-2	2
			Max. Mx	20	-20.19	845	6
			Max. My	2	-20.16	8	851
			Max. Vy	20	-24.65	845	6
			Max. Vx	2	-24.98	8	851
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
L19	62.75 - 60	Pole	Max. Compression	26	-56.83	-2	2
			Max. Mx	20	-21.09	913	6
			Max. My	2	-21.06	8	920
			Max. Vy	20	-25.03	913	6
			Max. Vx	2	-25.35	8	920
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-56.83	-2	2
			Max. Mx	20	-21.09	913	6
			Max. My	2	-21.06	8	920
L20	60 - 59.75	Pole	Max. Vy	20	-25.03	913	6
			Max. Vx	2	-25.35	8	920
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-59.27	-2	2
			Max. Mx	20	-22.70	919	6
			Max. My	2	-22.68	8	927
			Max. Vy	20	-25.60	919	6
			Max. Vx	2	-25.93	8	927
			Max. Torque	12			1
L21	59.75 - 54.75	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-62.12	-2	2
			Max. Mx	20	-24.27	1049	7
			Max. My	2	-24.24	10	1058
			Max. Vy	20	-26.37	1049	7
			Max. Vx	2	-26.69	10	1058
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-64.96	-2	2
			Max. Mx	20	-25.85	1183	8
L22	54.75 - 49.75	Pole	Max. My	2	-25.83	11	1193
			Max. Vy	20	-27.09	1183	8
			Max. Vx	2	-27.41	11	1193
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-64.96	-2	2
			Max. Mx	20	-25.85	1183	8
			Max. My	2	-25.83	11	1193
			Max. Vy	20	-27.09	1183	8
			Max. Vx	2	-27.41	11	1193
L23	49.75 - 49.25	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-65.24	-2	2
			Max. Mx	20	-26.02	1196	8
			Max. My	2	-26.00	11	1207
			Max. Vy	20	-27.16	1196	8
			Max. Vx	2	-27.48	11	1207
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-65.24	-2	2

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L24	49.25 - 49	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-65.39	-2	2
			Max. Mx	20	-26.11	1203	8
			Max. My	2	-26.09	11	1214
			Max. Vy	20	-27.19	1203	8
			Max. Vx	2	-27.52	11	1214
L25	49 - 44	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-68.31	-2	2
			Max. Mx	20	-27.81	1341	9
			Max. My	2	-27.79	12	1353
			Max. Vy	20	-27.92	1341	9
			Max. Vx	2	-28.24	12	1353
L26	44 - 42	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-69.48	-2	2
			Max. Mx	20	-28.50	1397	9
			Max. My	2	-28.48	13	1410
			Max. Vy	20	-28.19	1397	9
			Max. Vx	2	-28.51	13	1410
L27	42 - 41.75	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-69.63	-2	2
			Max. Mx	20	-28.61	1404	9
			Max. My	2	-28.59	13	1417
			Max. Vy	20	-28.22	1404	9
			Max. Vx	2	-28.55	13	1417
L28	41.75 - 36.75	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-72.71	-2	2
			Max. Mx	20	-30.51	1547	10
			Max. My	2	-30.49	14	1561
			Max. Vy	20	-28.91	1547	10
			Max. Vx	2	-29.22	14	1561
L29	36.75 - 34.5	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-74.08	-2	2
			Max. Mx	20	-31.37	1612	11
			Max. My	2	-31.35	15	1627
			Max. Vy	20	-29.20	1612	11
			Max. Vx	2	-29.51	15	1627
L30	34.5 - 34.25	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-74.24	-2	2
			Max. Mx	20	-31.48	1619	11
			Max. My	2	-31.47	15	1635
			Max. Vy	20	-29.22	1619	11
			Max. Vx	2	-29.54	15	1635
L31	34.25 - 34	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-74.41	-2	2
			Max. Mx	20	-31.59	1627	11
			Max. My	2	-31.58	15	1642
			Max. Vy	20	-29.25	1627	11
			Max. Vx	2	-29.57	15	1642
L32	34 - 33.75	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-74.56	-2	2
			Max. Mx	20	-31.68	1634	11
			Max. My	2	-31.67	15	1650
			Max. Vy	20	-29.28	1634	11
			Max. Vx	2	-29.61	15	1650
L33	33.75 - 30	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-76.83	-2	2
			Max. Mx	20	-33.12	1745	11
			Max. My	2	-33.11	16	1761

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	30 - 29.75	Pole	Max. Vy	20	-29.76	1745	11
			Max. Vx	2	-30.07	16	1761
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-79.21	-2	2
			Max. Mx	20	-34.77	1752	11
			Max. My	2	-34.76	16	1769
			Max. Vy	20	-30.22	1752	11
L35	29.75 - 28.5	Pole	Max. Vx	2	-30.54	16	1769
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-79.99	-2	2
			Max. Mx	20	-35.24	1790	12
			Max. My	2	-35.23	16	1807
			Max. Vy	20	-30.41	1790	12
			Max. Vx	2	-30.73	16	1807
L36	28.5 - 28.25	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-80.16	-2	2
			Max. Mx	20	-35.36	1798	12
			Max. My	2	-35.35	16	1815
			Max. Vy	20	-30.43	1798	12
			Max. Vx	2	-30.76	16	1815
			Max. Torque	12			1
L37	28.25 - 23.25	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-83.52	-2	2
			Max. Mx	20	-37.54	1952	12
			Max. My	2	-37.53	17	1971
			Max. Vy	20	-31.16	1952	12
			Max. Vx	2	-31.47	17	1971
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
L38	23.25 - 23	Pole	Max. Compression	26	-83.70	-2	2
			Max. Mx	20	-37.67	1959	12
			Max. My	2	-37.66	17	1978
			Max. Vy	20	-31.18	1959	12
			Max. Vx	2	-31.50	17	1978
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-84.77	-2	2
L39	23 - 21.5	Pole	Max. Mx	20	-38.38	2006	13
			Max. My	2	-38.37	18	2026
			Max. Vy	20	-31.40	2006	13
			Max. Vx	2	-31.72	18	2026
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-84.94	-2	2
			Max. Mx	20	-38.50	2014	13
L40	21.5 - 21.25	Pole	Max. My	2	-38.49	18	2034
			Max. Vy	20	-31.42	2014	13
			Max. Vx	2	-31.74	18	2034
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-86.42	-2	2
			Max. Mx	20	-39.47	2085	13
			Max. My	2	-39.46	18	2105
L41	21.25 - 19	Pole	Max. Vy	20	-31.72	2085	13
			Max. Vx	2	-32.04	18	2105
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-86.60	-2	2
			Max. Mx	20	-39.60	2093	13
			Max. My	2	-39.60	18	2113
			Max. Vy	20	-31.74	2093	13
L42	19 - 18.75	Pole	Max. Vx	2	-32.06	18	2113
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-86.78	-2	2
			Max. Mx	20	-39.60	2093	13
			Max. My	2	-39.60	18	2113
			Max. Vy	20	-31.74	2093	13
			Max. Vx	2	-32.06	18	2113
L43	18.75 - 18.5	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-86.78	-2	2



Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L44	18.5 - 18.25	Pole	Max. Mx	20	-39.72	2101	13
			Max. My	2	-39.72	18	2121
			Max. Vy	20	-31.77	2101	13
			Max. Vx	2	-32.09	18	2121
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-86.95	-2	2
			Max. Mx	20	-39.84	2109	13
			Max. My	2	-39.83	19	2130
			Max. Vy	20	-31.80	2109	13
L45	18.25 - 13.25	Pole	Max. Vx	2	-32.12	19	2130
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-90.31	-2	2
			Max. Mx	20	-42.11	2269	14
			Max. My	2	-42.11	20	2292
			Max. Vy	20	-32.40	2269	14
			Max. Vx	2	-32.71	20	2292
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
L46	13.25 - 12.7	Pole	Max. Compression	26	-90.67	-2	2
			Max. Mx	20	-42.37	2287	14
			Max. My	2	-42.36	20	2310
			Max. Vy	20	-32.46	2287	14
			Max. Vx	2	-32.77	20	2310
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-90.84	-2	2
			Max. Mx	20	-42.49	2295	14
			Max. My	2	-42.48	20	2318
L47	12.7 - 12.45	Pole	Max. Vy	20	-32.48	2295	14
			Max. Vx	2	-32.80	20	2318
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-91.47	-2	2
			Max. Mx	20	-42.92	2326	14
			Max. My	2	-42.91	20	2349
			Max. Vy	20	-32.60	2326	14
			Max. Vx	2	-32.91	20	2349
			Max. Torque	12			1
L48	12.45 - 11.5	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-91.65	-2	2
			Max. Mx	20	-43.05	2334	14
			Max. My	2	-43.04	20	2357
			Max. Vy	20	-32.61	2334	14
			Max. Vx	2	-32.93	20	2357
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-92.17	-2	2
			Max. Mx	20	-43.41	2359	14
L49	11.5 - 11.25	Pole	Max. My	2	-43.41	20	2382
			Max. Vy	20	-32.71	2359	14
			Max. Vx	2	-33.02	20	2382
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-92.37	-2	2
			Max. Mx	20	-43.57	2367	15
			Max. My	2	-43.56	20	2390
			Max. Vy	20	-32.73	2367	15
			Max. Vx	2	-33.04	20	2390
L50	11.25 - 10.5	Pole	Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-94.55	-2	2
			Max. Mx	20	-45.17	2458	15
			Max. My	2	-45.17	21	2481
			Max. Vy	20	-33.07	2458	15
			Max. Vx	2	-33.39	21	2481
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-94.55	-2	2
L51	10.5 - 10.25	Pole	Max. Mx	20	-43.41	2359	14
			Max. My	2	-43.41	20	2382
			Max. Vy	20	-32.71	2359	14
			Max. Vx	2	-33.02	20	2382
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-92.37	-2	2
			Max. Mx	20	-43.57	2367	15
			Max. My	2	-43.56	20	2390
			Max. Vy	20	-32.73	2367	15
L52	10.25 - 7.5	Pole	Max. Vx	2	-33.04	20	2390
			Max. Torque	12			1
			Max Tension	1	0.00	0	0
			Max. Compression	26	-94.55	-2	2
			Max. Mx	20	-45.17	2458	15
			Max. My	2	-45.17	21	2481
			Max. Vy	20	-33.07	2458	15
			Max. Vx	2	-33.39	21	2481
			Max. Torque	12			1

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L53	7.5 - 7.25	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-94.75	-2	2
			Max. Mx	20	-45.33	2466	15
			Max. My	2	-45.33	21	2490
			Max. Vy	20	-33.09	2466	15
			Max. Vx	2	-33.40	21	2490
			Max. Torque	12			1
L54	7.25 - 6.25	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-95.55	-2	2
			Max. Mx	20	-45.93	2499	15
			Max. My	2	-45.93	21	2523
			Max. Vy	20	-33.22	2499	15
			Max. Vx	2	-33.53	21	2523
			Max. Torque	12			1
L55	6.25 - 6	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-95.75	-2	2
			Max. Mx	20	-46.09	2507	15
			Max. My	2	-46.09	21	2532
			Max. Vy	20	-33.24	2507	15
			Max. Vx	2	-33.55	21	2532
			Max. Torque	12			1
L56	6 - 3.73	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-97.64	-2	2
			Max. Mx	20	-47.54	2583	16
			Max. My	2	-47.54	22	2608
			Max. Vy	20	-33.53	2583	16
			Max. Vx	2	-33.84	22	2608
			Max. Torque	12			1
L57	3.73 - 3.48	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-97.85	-2	2
			Max. Mx	20	-47.70	2591	16
			Max. My	2	-47.70	22	2617
			Max. Vy	20	-33.55	2591	16
			Max. Vx	2	-33.86	22	2617
			Max. Torque	12			1
L58	3.48 - 2.75	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-98.45	-2	2
			Max. Mx	20	-48.17	2616	16
			Max. My	2	-48.17	22	2641
			Max. Vy	20	-33.64	2616	16
			Max. Vx	2	-33.95	22	2641
			Max. Torque	12			1
L59	2.75 - 2.5	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-98.64	-2	2
			Max. Mx	20	-48.32	2624	16
			Max. My	2	-48.32	22	2650
			Max. Vy	20	-33.67	2624	16
			Max. Vx	2	-33.98	22	2650
			Max. Torque	12			1
L60	2.5 - 2	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-99.02	-2	2
			Max. Mx	20	-48.62	2641	16
			Max. My	2	-48.61	22	2667
			Max. Vy	20	-33.73	2641	16
			Max. Vx	2	-34.04	22	2667
			Max. Torque	12			1
L61	2 - 1.75	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-99.20	-2	2
			Max. Mx	20	-48.75	2650	16
			Max. My	2	-48.75	23	2675
			Max. Vy	20	-33.76	2650	16
			Max. Vx	2	-34.07	23	2675
			Max. Torque	12			1
L62	1.75 - 0	Pole	Max Tension	1	0.00	0	0
			Max. Compression	26	-100.41	-2	2
			Max. Mx	20	-49.68	2709	16
			Max. My	2	-49.68	23	2735
			Max. Vy	20	-33.98	2709	16
			Max. Vx	2	-34.29	23	2735
			Max. Torque	12			1

Sectio n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	12			1

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	100.41	0.00	-0.00
	Max. H <sub>x</sub>	20	49.70	33.96	0.16
	Max. H <sub>z</sub>	3	37.28	0.24	34.27
	Max. M <sub>x</sub>	2	2735	0.24	34.27
	Max. M <sub>z</sub>	8	2704	-33.90	-0.11
	Max. Torsion	12	1	-17.06	-29.72
	Min. Vert	3	37.28	0.24	34.27
	Min. H <sub>x</sub>	8	49.70	-33.90	-0.11
	Min. H <sub>z</sub>	15	37.28	-0.11	-34.25
	Min. M <sub>x</sub>	14	-2732	-0.10	-34.25
	Min. M <sub>z</sub>	20	-2709	33.96	0.16
	Min. Torsion	22	-1	29.47	17.21

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturing Moment, M <sub>x</sub> kip-ft	Overturing Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	41.42	0.00	-0.00	0	0	0
1.2 Dead+1.6 Wind 0 deg - No Ice	49.70	-0.24	-34.27	-2735	23	1
0.9 Dead+1.6 Wind 0 deg - No Ice	37.28	-0.24	-34.27	-2714	23	1
1.2 Dead+1.6 Wind 30 deg - No Ice	49.70	16.86	-29.55	-2357	-1343	0
0.9 Dead+1.6 Wind 30 deg - No Ice	37.28	16.86	-29.55	-2339	-1333	0
1.2 Dead+1.6 Wind 60 deg - No Ice	49.70	29.30	-16.99	-1354	-2337	0
0.9 Dead+1.6 Wind 60 deg - No Ice	37.28	29.30	-16.99	-1344	-2318	0
1.2 Dead+1.6 Wind 90 deg - No Ice	49.70	33.90	0.11	10	-2704	-1
0.9 Dead+1.6 Wind 90 deg - No Ice	37.28	33.90	0.11	10	-2683	-1
1.2 Dead+1.6 Wind 120 deg - No Ice	49.70	29.45	17.22	1376	-2350	-1
0.9 Dead+1.6 Wind 120 deg - No Ice	37.28	29.45	17.22	1365	-2332	-1
1.2 Dead+1.6 Wind 150 deg - No Ice	49.70	17.06	29.72	2373	-1363	-1
0.9 Dead+1.6 Wind 150 deg - No Ice	37.28	17.06	29.72	2354	-1352	-1
1.2 Dead+1.6 Wind 180 deg - No Ice	49.70	0.10	34.25	2732	-11	-1
0.9 Dead+1.6 Wind 180 deg - No Ice	37.28	0.11	34.25	2711	-11	-1
1.2 Dead+1.6 Wind 210 deg - No Ice	49.70	-16.88	29.59	2360	1344	0
0.9 Dead+1.6 Wind 210 deg - No Ice	37.28	-16.88	29.59	2341	1333	0
1.2 Dead+1.6 Wind 240 deg - No Ice	49.70	-29.43	16.94	1348	2348	0
0.9 Dead+1.6 Wind 240 deg - No Ice	37.28	-29.43	16.94	1338	2330	0
1.2 Dead+1.6 Wind 270 deg - No Ice	49.70	-33.96	-0.16	-16	2709	1

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+1.6 Wind 270 deg - No Ice	37.28	-33.96	-0.16	-16	2688	1
1.2 Dead+1.6 Wind 300 deg - No Ice	49.70	-29.47	-17.21	-1376	2352	1
0.9 Dead+1.6 Wind 300 deg - No Ice	37.28	-29.47	-17.21	-1365	2334	1
1.2 Dead+1.6 Wind 330 deg - No Ice	49.70	-17.14	-29.69	-2370	1370	1
0.9 Dead+1.6 Wind 330 deg - No Ice	37.28	-17.14	-29.69	-2352	1360	1
1.2 Dead+1.0 Ice+1.0 Temp	100.41	-0.00	0.00	-2	-2	0
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	100.41	-0.06	-10.20	-892	3	0
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	100.41	5.05	-8.80	-769	-442	0
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	100.41	8.76	-5.07	-444	-766	0
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	100.41	10.13	0.02	0	-886	0
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	100.41	8.79	5.11	444	-769	0
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	100.41	5.09	8.84	769	-446	0
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	100.41	0.02	10.19	886	-4	0
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	100.41	-5.05	8.81	766	438	0
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	100.41	-8.80	5.05	438	765	0
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	100.41	-10.15	-0.03	-6	883	0
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	100.41	-8.80	-5.11	-448	765	0
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	100.41	-5.11	-8.83	-772	444	0
Dead+Wind 0 deg - Service	41.42	-0.05	-7.64	-607	5	0
Dead+Wind 30 deg - Service	41.42	3.76	-6.59	-523	-299	0
Dead+Wind 60 deg - Service	41.42	6.54	-3.79	-301	-519	0
Dead+Wind 90 deg - Service	41.42	7.56	0.03	2	-601	0
Dead+Wind 120 deg - Service	41.42	6.57	3.84	305	-522	0
Dead+Wind 150 deg - Service	41.42	3.81	6.63	527	-303	0
Dead+Wind 180 deg - Service	41.42	0.02	7.64	607	-3	0
Dead+Wind 210 deg - Service	41.42	-3.76	6.60	524	298	0
Dead+Wind 240 deg - Service	41.42	-6.57	3.78	299	521	0
Dead+Wind 270 deg - Service	41.42	-7.57	-0.04	-4	601	0
Dead+Wind 300 deg - Service	41.42	-6.57	-3.84	-306	522	0
Dead+Wind 330 deg - Service	41.42	-3.82	-6.62	-527	304	0

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-41.42	0.00	-0.00	41.42	0.00	0.000%
2	-0.24	-49.70	-34.27	0.24	49.70	34.27	0.002%
3	-0.24	-37.28	-34.27	0.24	37.28	34.27	0.001%
4	16.86	-49.70	-29.55	-16.86	49.70	29.55	0.000%
5	16.86	-37.28	-29.55	-16.86	37.28	29.55	0.000%
6	29.30	-49.70	-16.99	-29.30	49.70	16.99	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
7	29.30	-37.28	-16.99	-29.30	37.28	16.99	0.000%
8	33.90	-49.70	0.11	-33.90	49.70	-0.11	0.001%
9	33.90	-37.28	0.11	-33.90	37.28	-0.11	0.001%
10	29.45	-49.70	17.22	-29.45	49.70	-17.22	0.000%
11	29.45	-37.28	17.22	-29.45	37.28	-17.22	0.000%
12	17.06	-49.70	29.72	-17.06	49.70	-29.72	0.000%
13	17.06	-37.28	29.72	-17.06	37.28	-29.72	0.000%
14	0.11	-49.70	34.25	-0.10	49.70	-34.25	0.001%
15	0.11	-37.28	34.25	-0.11	37.28	-34.25	0.001%
16	-16.88	-49.70	29.59	16.88	49.70	-29.59	0.000%
17	-16.88	-37.28	29.59	16.88	37.28	-29.59	0.000%
18	-29.43	-49.70	16.94	29.43	49.70	-16.94	0.000%
19	-29.43	-37.28	16.94	29.43	37.28	-16.94	0.000%
20	-33.96	-49.70	-0.16	33.96	49.70	0.16	0.000%
21	-33.96	-37.28	-0.16	33.96	37.28	0.16	0.001%
22	-29.47	-49.70	-17.21	29.47	49.70	17.21	0.000%
23	-29.47	-37.28	-17.21	29.47	37.28	17.21	0.000%
24	-17.14	-49.70	-29.69	17.14	49.70	29.69	0.000%
25	-17.14	-37.28	-29.69	17.14	37.28	29.69	0.000%
26	0.00	-100.41	0.00	0.00	100.41	-0.00	0.001%
27	-0.06	-100.41	-10.20	0.06	100.41	10.20	0.000%
28	5.05	-100.41	-8.80	-5.05	100.41	8.80	0.000%
29	8.77	-100.41	-5.07	-8.76	100.41	5.07	0.000%
30	10.13	-100.41	0.02	-10.13	100.41	-0.02	0.000%
31	8.79	-100.41	5.11	-8.79	100.41	-5.11	0.000%
32	5.09	-100.41	8.84	-5.09	100.41	-8.84	0.000%
33	0.02	-100.41	10.19	-0.02	100.41	-10.19	0.000%
34	-5.05	-100.41	8.81	5.05	100.41	-8.81	0.000%
35	-8.80	-100.41	5.05	8.80	100.41	-5.05	0.000%
36	-10.15	-100.41	-0.03	10.15	100.41	0.03	0.000%
37	-8.80	-100.41	-5.11	8.80	100.41	5.11	0.000%
38	-5.11	-100.41	-8.83	5.11	100.41	8.83	0.000%
39	-0.05	-41.42	-7.64	0.05	41.42	7.64	0.003%
40	3.76	-41.42	-6.59	-3.76	41.42	6.59	0.000%
41	6.54	-41.42	-3.79	-6.54	41.42	3.79	0.000%
42	7.56	-41.42	0.03	-7.56	41.42	-0.03	0.003%
43	6.57	-41.42	3.84	-6.57	41.42	-3.84	0.000%
44	3.81	-41.42	6.63	-3.81	41.42	-6.63	0.000%
45	0.02	-41.42	7.64	-0.02	41.42	-7.64	0.003%
46	-3.76	-41.42	6.60	3.76	41.42	-6.60	0.000%
47	-6.57	-41.42	3.78	6.57	41.42	-3.78	0.000%
48	-7.57	-41.42	-0.04	7.57	41.42	0.04	0.001%
49	-6.57	-41.42	-3.84	6.57	41.42	3.84	0.000%
50	-3.82	-41.42	-6.62	3.82	41.42	6.62	0.000%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	14	0.00000001	0.00011543
3	Yes	14	0.00000001	0.00007677
4	Yes	18	0.00000001	0.00012921
5	Yes	18	0.00000001	0.00009409
6	Yes	18	0.00000001	0.00012966
7	Yes	18	0.00000001	0.00009451
8	Yes	15	0.00000001	0.00007590
9	Yes	14	0.00000001	0.00014365
10	Yes	18	0.00000001	0.00012873
11	Yes	18	0.00000001	0.00009361
12	Yes	18	0.00000001	0.00013577
13	Yes	18	0.00000001	0.00009883
14	Yes	15	0.00000001	0.00012300
15	Yes	15	0.00000001	0.00009404
16	Yes	18	0.00000001	0.00012826
17	Yes	18	0.00000001	0.00009342
18	Yes	18	0.00000001	0.00012723

19	Yes	18	0.00000001	0.00009267
20	Yes	16	0.00000001	0.00005966
21	Yes	15	0.00000001	0.00012048
22	Yes	18	0.00000001	0.00013567
23	Yes	18	0.00000001	0.00009884
24	Yes	18	0.00000001	0.00012991
25	Yes	18	0.00000001	0.00009444
26	Yes	8	0.00000001	0.00013691
27	Yes	18	0.00000001	0.00007976
28	Yes	18	0.00000001	0.00009258
29	Yes	18	0.00000001	0.00009247
30	Yes	18	0.00000001	0.00007938
31	Yes	18	0.00000001	0.00009212
32	Yes	18	0.00000001	0.00009261
33	Yes	18	0.00000001	0.00007888
34	Yes	18	0.00000001	0.00009075
35	Yes	18	0.00000001	0.00009074
36	Yes	18	0.00000001	0.00007866
37	Yes	18	0.00000001	0.00009253
38	Yes	18	0.00000001	0.00009237
39	Yes	12	0.00000001	0.00012896
40	Yes	14	0.00000001	0.00010282
41	Yes	14	0.00000001	0.00010403
42	Yes	12	0.00000001	0.00013462
43	Yes	14	0.00000001	0.00009707
44	Yes	14	0.00000001	0.00011537
45	Yes	12	0.00000001	0.00014148
46	Yes	14	0.00000001	0.00009992
47	Yes	14	0.00000001	0.00009749
48	Yes	13	0.00000001	0.00007006
49	Yes	14	0.00000001	0.00011412
50	Yes	14	0.00000001	0.00009819

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	118 - 113	14.00	50	1.048	0.002
L2	113 - 108	12.90	50	1.048	0.002
L3	108 - 103	11.81	50	1.042	0.002
L4	103 - 98	10.73	50	1.027	0.002
L5	98 - 93	9.66	50	1.001	0.002
L6	93 - 90	8.64	50	0.959	0.002
L7	90 - 85	8.04	50	0.925	0.001
L8	85 - 80	7.10	50	0.876	0.001
L9	80 - 76.5	6.21	50	0.812	0.001
L10	76.5 - 76.25	5.64	50	0.757	0.001
L11	76.25 - 74	5.60	50	0.754	0.001
L12	74 - 73.75	5.25	50	0.727	0.001
L13	73.75 - 68.88	5.21	50	0.725	0.001
L14	68.88 - 68.63	4.50	50	0.677	0.001
L15	68.63 - 64.5	4.46	50	0.674	0.001
L16	64.5 - 64.25	3.90	50	0.625	0.001
L17	64.25 - 63	3.87	50	0.622	0.001
L18	63 - 62.75	3.71	50	0.609	0.001
L19	62.75 - 60	3.67	50	0.606	0.001
L20	60 - 59.75	3.33	50	0.573	0.001
L21	59.75 - 54.75	3.30	50	0.571	0.001
L22	54.75 - 49.75	2.73	50	0.521	0.000
L23	49.75 - 49.25	2.22	50	0.465	0.000
L24	49.25 - 49	2.17	50	0.459	0.000
L25	49 - 44	2.14	50	0.457	0.000
L26	44 - 42	1.69	50	0.404	0.000
L27	42 - 41.75	1.53	50	0.382	0.000
L28	41.75 - 36.75	1.51	50	0.379	0.000
L29	36.75 - 34.5	1.14	50	0.326	0.000
L30	34.5 - 34.25	0.99	50	0.300	0.000
L31	34.25 - 34	0.97	50	0.297	0.000
L32	34 - 33.75	0.96	50	0.295	0.000
L33	33.75 - 30	0.94	50	0.292	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L34	30 - 29.75	0.73	50	0.247	0.000
L35	29.75 - 28.5	0.72	50	0.244	0.000
L36	28.5 - 28.25	0.66	50	0.232	0.000
L37	28.25 - 23.25	0.64	50	0.230	0.000
L38	23.25 - 23	0.42	50	0.189	0.000
L39	23 - 21.5	0.42	50	0.187	0.000
L40	21.5 - 21.25	0.36	50	0.175	0.000
L41	21.25 - 19	0.35	50	0.173	0.000
L42	19 - 18.75	0.27	50	0.151	0.000
L43	18.75 - 18.5	0.26	50	0.149	0.000
L44	18.5 - 18.25	0.26	50	0.147	0.000
L45	18.25 - 13.25	0.25	50	0.145	0.000
L46	13.25 - 12.7	0.12	50	0.097	0.000
L47	12.7 - 12.45	0.11	50	0.091	0.000
L48	12.45 - 11.5	0.11	50	0.088	0.000
L49	11.5 - 11.25	0.09	50	0.079	0.000
L50	11.25 - 10.5	0.09	50	0.076	0.000
L51	10.5 - 10.25	0.08	50	0.069	0.000
L52	10.25 - 7.5	0.07	50	0.067	0.000
L53	7.5 - 7.25	0.04	50	0.048	0.000
L54	7.25 - 6.25	0.04	50	0.046	0.000
L55	6.25 - 6	0.03	50	0.039	0.000
L56	6 - 3.73	0.03	50	0.038	0.000
L57	3.73 - 3.48	0.01	50	0.025	0.000
L58	3.48 - 2.75	0.01	50	0.023	0.000
L59	2.75 - 2.5	0.01	50	0.019	0.000
L60	2.5 - 2	0.00	50	0.017	0.000
L61	2 - 1.75	0.00	50	0.014	0.000
L62	1.75 - 0	0.00	50	0.013	0.000

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
116.00	VHLP1-23	50	13.56	1.048	0.002	99078
114.00	APXVSP18-C-A20 w/ Mount Pipe	50	13.12	1.048	0.002	99078
108.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	50	11.81	1.042	0.002	29145
98.00	SBNH-1D6565C w/ Mount Pipe	50	9.66	1.001	0.002	8422
90.00	Bridge Stiffener (84" x 9" x 1.25")	50	8.04	0.925	0.001	5598
85.00	(2) HBXX-6517DS-A2M w/ Mount Pipe	50	7.10	0.876	0.001	5100
80.00	KS24019-L112A	50	6.21	0.812	0.001	3996
73.00	VHLP1-23	50	5.10	0.718	0.001	5398
72.00	A-ANT-18G-2-C	50	4.95	0.709	0.001	5561
60.00	Bridge Stiffener (84" x 14.5" x 1.25")	50	3.33	0.573	0.001	5329
30.00	Bridge Stiffener (84" x 14.5" x 1.25")	50	0.73	0.247	0.000	5485

**Maximum Tower Deflections - Design Wind**

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	118 - 113	63.09	24	4.730	0.008
L2	113 - 108	58.15	24	4.727	0.008
L3	108 - 103	53.22	24	4.702	0.008
L4	103 - 98	48.33	24	4.636	0.008
L5	98 - 93	43.54	24	4.516	0.008
L6	93 - 90	38.92	24	4.326	0.007
L7	90 - 85	36.25	24	4.173	0.006
L8	85 - 80	31.99	24	3.953	0.006

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L9	80 - 76.5	28.01	24	3.663	0.005
L10	76.5 - 76.25	25.41	24	3.413	0.004
L11	76.25 - 74	25.23	24	3.400	0.004
L12	74 - 73.75	23.66	24	3.280	0.004
L13	73.75 - 68.88	23.49	24	3.269	0.004
L14	68.88 - 68.63	20.27	24	3.051	0.003
L15	68.63 - 64.5	20.11	24	3.039	0.003
L16	64.5 - 64.25	17.57	24	2.818	0.003
L17	64.25 - 63	17.43	24	2.807	0.003
L18	63 - 62.75	16.70	24	2.746	0.003
L19	62.75 - 60	16.56	24	2.733	0.003
L20	60 - 59.75	15.03	24	2.583	0.003
L21	59.75 - 54.75	14.89	24	2.573	0.003
L22	54.75 - 49.75	12.31	24	2.350	0.002
L23	49.75 - 49.25	9.98	24	2.097	0.002
L24	49.25 - 49	9.76	24	2.070	0.002
L25	49 - 44	9.66	24	2.059	0.002
L26	44 - 42	7.62	24	1.822	0.001
L27	42 - 41.75	6.88	24	1.720	0.001
L28	41.75 - 36.75	6.79	24	1.708	0.001
L29	36.75 - 34.5	5.13	24	1.468	0.001
L30	34.5 - 34.25	4.46	24	1.352	0.001
L31	34.25 - 34	4.39	24	1.341	0.001
L32	34 - 33.75	4.32	24	1.329	0.001
L33	33.75 - 30	4.25	24	1.316	0.001
L34	30 - 29.75	3.30	24	1.112	0.001
L35	29.75 - 28.5	3.24	24	1.101	0.001
L36	28.5 - 28.25	2.96	24	1.048	0.001
L37	28.25 - 23.25	2.90	24	1.039	0.001
L38	23.25 - 23	1.91	24	0.850	0.001
L39	23 - 21.5	1.87	24	0.841	0.001
L40	21.5 - 21.25	1.61	24	0.788	0.001
L41	21.25 - 19	1.57	24	0.778	0.001
L42	19 - 18.75	1.23	24	0.681	0.000
L43	18.75 - 18.5	1.19	24	0.672	0.000
L44	18.5 - 18.25	1.16	24	0.662	0.000
L45	18.25 - 13.25	1.12	24	0.652	0.000
L46	13.25 - 12.7	0.55	24	0.435	0.000
L47	12.7 - 12.45	0.51	24	0.410	0.000
L48	12.45 - 11.5	0.48	24	0.399	0.000
L49	11.5 - 11.25	0.41	24	0.355	0.000
L50	11.25 - 10.5	0.39	24	0.344	0.000
L51	10.5 - 10.25	0.34	24	0.311	0.000
L52	10.25 - 7.5	0.32	24	0.303	0.000
L53	7.5 - 7.25	0.17	24	0.217	0.000
L54	7.25 - 6.25	0.16	24	0.209	0.000
L55	6.25 - 6	0.12	24	0.178	0.000
L56	6 - 3.73	0.11	24	0.170	0.000
L57	3.73 - 3.48	0.05	24	0.112	0.000
L58	3.48 - 2.75	0.04	24	0.105	0.000
L59	2.75 - 2.5	0.03	24	0.086	0.000
L60	2.5 - 2	0.02	24	0.079	0.000
L61	2 - 1.75	0.01	24	0.064	0.000
L62	1.75 - 0	0.01	24	0.056	0.000

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
116.00	VHLP1-23	24	61.11	4.730	0.008	23148
114.00	APXVSP18-C-A20 w/ Mount Pipe	24	59.13	4.729	0.008	23148
108.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	24	53.22	4.702	0.008	6654
98.00	SBNH-1D6565C w/ Mount Pipe	24	43.54	4.516	0.008	1898



Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
90.00	Bridge Stiffener (84" x 9" x 1.25") (2) HBXX-6517DS-A2M w/ Mount Pipe	24	36.25	4.173	0.006	1256
85.00		24	31.99	3.953	0.006	1142
80.00	KS24019-L112A	24	28.01	3.663	0.005	893
73.00	VHLP1-23	24	22.98	3.239	0.004	1204
72.00	A-ANT-18G-2-C	24	22.31	3.196	0.004	1240
60.00	Bridge Stiffener (84" x 14.5" x 1.25")	24	15.03	2.583	0.003	1186
30.00	Bridge Stiffener (84" x 14.5" x 1.25")	24	3.30	1.112	0.001	1217

**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	118 - 113 (1)	P24x0.25	5.00	0.00	0.0	18.65	-2.87
L2	113 - 108 (2)	P24x0.25	5.00	0.00	0.0	18.65	-3.26
L3	108 - 103 (3)	P24x0.25	5.00	0.00	0.0	18.65	-6.18
L4	103 - 98 (4)	P24x0.25	5.00	0.00	0.0	18.65	-6.62
L5	98 - 93 (5)	P24x0.25	5.00	0.00	0.0	18.65	-9.73
L6	93 - 90 (6)	P24x0.25	3.00	0.00	0.0	18.65	-10.05
L7	90 - 85 (7)	P24x0.375	5.00	0.00	0.0	27.83	-11.70
L8	85 - 80 (8)	P24x0.375	5.00	0.00	0.0	27.83	-14.94
L9	80 - 76.5 (9)	P24x0.375	3.50	0.00	0.0	27.83	-15.60
L10	76.5 - 76.25 (10)	P24x0.5875	0.25	0.00	0.0	43.21	-15.67
L11	76.25 - 74 (11)	P24x0.5875	2.25	0.00	0.0	43.21	-16.14
L12	74 - 73.75 (12)	P24x0.8375	0.25	0.00	0.0	60.94	-16.23
L13	73.75 - 68.88 (13)	P24x0.8375	4.87	0.00	0.0	60.94	-18.23
L14	68.88 - 68.63 (14)	P24x0.825	0.25	0.00	0.0	60.07	-18.32
L15	68.63 - 64.5 (15)	P24x0.825	4.13	0.00	0.0	60.07	-19.56
L16	64.5 - 64.25 (16)	P24x1.025	0.25	0.00	0.0	73.98	-19.65
L17	64.25 - 63 (17)	P24x1.025	1.25	0.00	0.0	73.98	-20.07
L18	63 - 62.75 (18)	P24x0.9625	0.25	0.00	0.0	69.66	-20.16
L19	62.75 - 60 (19)	P24x0.9625	2.75	0.00	0.0	69.66	-21.06
L20	60 - 59.75 (20)	P30x0.6375	0.25	0.00	0.0	58.81	-22.68
L21	59.75 - 54.75 (21)	P30x0.6375	5.00	0.00	0.0	58.81	-24.24
L22	54.75 - 49.75 (22)	P30x0.6375	5.00	0.00	0.0	58.81	-25.83
L23	49.75 - 49.25 (23)	P30x0.6375	0.50	0.00	0.0	58.81	-26.00
L24	49.25 - 49 (24)	P30x0.7875	0.25	0.00	0.0	72.27	-26.09
L25	49 - 44 (25)	P30x0.7875	5.00	0.00	0.0	72.27	-27.79
L26	44 - 42 (26)	P30x0.7875	2.00	0.00	0.0	72.27	-28.48
L27	42 - 41.75 (27)	P30x0.9125	0.25	0.00	0.0	83.39	-28.59
L28	41.75 - 36.75 (28)	P30x0.9125	5.00	0.00	0.0	83.39	-30.49
L29	36.75 - 34.5 (29)	P30x0.9125	2.25	0.00	0.0	83.39	-31.35
L30	34.5 - 34.25 (30)	P30x1.025	0.25	0.00	0.0	93.30	-31.47

Section No.	Elevation ft	Size	L ft	$L_u$ ft	$KI/r$	A in <sup>2</sup>	$\frac{P_u}{K}$
L31	34.25 - 34 (31)	P30x1.025	0.25	0.00	0.0	93.30	-31.57
L32	34 - 33.75 (32)	P30x0.925	0.25	0.00	0.0	84.49	-31.67
L33	33.75 - 30 (33)	P30x0.925	3.75	0.00	0.0	84.49	-33.11
L34	30 - 29.75 (34)	P36x0.6875	0.25	0.00	0.0	76.27	-34.76
L35	29.75 - 28.5 (35)	P36x0.6875	1.25	0.00	0.0	76.27	-35.23
L36	28.5 - 28.25 (36)	P36x0.8375	0.25	0.00	0.0	92.52	-35.35
L37	28.25 - 23.25 (37)	P36x0.8375	5.00	0.00	0.0	92.52	-37.53
L38	23.25 - 23 (38)	P36x0.95	0.25	0.00	0.0	104.61	-37.66
L39	23 - 21.5 (39)	P36x0.95	1.50	0.00	0.0	104.61	-38.37
L40	21.5 - 21.25 (40)	P36x0.8	0.25	0.00	0.0	88.47	-38.49
L41	21.25 - 19 (41)	P36x0.8	2.25	0.00	0.0	88.47	-39.46
L42	19 - 18.75 (42)	P36x0.95	0.25	0.00	0.0	104.61	-39.59
L43	18.75 - 18.5 (43)	P36x0.95	0.25	0.00	0.0	104.61	-39.72
L44	18.5 - 18.25 (44)	P36x0.85	0.25	0.00	0.0	93.86	-39.83
L45	18.25 - 13.25 (45)	P36x0.85	5.00	0.00	0.0	93.86	-42.11
L46	13.25 - 12.7 (46)	P36x0.85	0.55	0.00	0.0	93.86	-42.36
L47	12.7 - 12.45 (47)	P36x0.85	0.25	0.00	0.0	93.86	-42.48
L48	12.45 - 11.5 (48)	P36x0.85	0.95	0.00	0.0	93.86	-42.91
L49	11.5 - 11.25 (49)	P36x0.9	0.25	0.00	0.0	99.24	-43.04
L50	11.25 - 10.5 (50)	P36x0.9	0.75	0.00	0.0	99.24	-43.41
L51	10.5 - 10.25 (51)	P36x1.35	0.25	0.00	0.0	146.96	-43.56
L52	10.25 - 7.5 (52)	P36x1.35	2.75	0.00	0.0	146.96	-45.17
L53	7.5 - 7.25 (53)	P36x1.4	0.25	0.00	0.0	152.18	-45.33
L54	7.25 - 6.25 (54)	P36x1.4	1.00	0.00	0.0	152.18	-45.93
L55	6.25 - 6 (55)	P36x1.425	0.25	0.00	0.0	154.78	-46.09
L56	6 - 3.73 (56)	P36x1.8	2.27	0.00	0.0	193.40	-47.54
L57	3.73 - 3.48 (57)	P36x1.8	0.25	0.00	0.0	193.40	-47.70
L58	3.48 - 2.75 (58)	P36x1.8	0.73	0.00	0.0	193.40	-48.17
L59	2.75 - 2.5 (59)	P36x1.675	0.25	0.00	0.0	180.62	-48.32
L60	2.5 - 2 (60)	P36x1.675	0.50	0.00	0.0	180.62	-48.61
L61	2 - 1.75 (61)	P36x1.475	0.25	0.00	0.0	159.98	-48.75
L62	1.75 - 0 (62)	P36x1.475	1.75	0.00	0.0	159.98	-49.68

### Pole Bending Design Data

Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$M_{uy}$ kip-ft
L1	118 - 113 (1)	P24x0.25	11	0
L2	113 - 108 (2)	P24x0.25	36	0
L3	108 - 103 (3)	P24x0.25	86	0
L4	103 - 98 (4)	P24x0.25	138	0
L5	98 - 93 (5)	P24x0.25	214	0
L6	93 - 90 (6)	P24x0.25	260	0

Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$M_{uy}$ kip-ft
L7	90 - 85 (7)	P24x0.375	340	0
L8	85 - 80 (8)	P24x0.375	450	0
L9	80 - 76.5 (9)	P24x0.375	526	0
L10	76.5 - 76.25 (10)	P24x0.5875	532	0
L11	76.25 - 74 (11)	P24x0.5875	582	0
L12	74 - 73.75 (12)	P24x0.8375	587	0
L13	73.75 - 68.88 (13)	P24x0.8375	702	0
L14	68.88 - 68.63 (14)	P24x0.825	708	0
L15	68.63 - 64.5 (15)	P24x0.825	809	0
L16	64.5 - 64.25 (16)	P24x1.025	815	0
L17	64.25 - 63 (17)	P24x1.025	846	0
L18	63 - 62.75 (18)	P24x0.9625	853	0
L19	62.75 - 60 (19)	P24x0.9625	922	0
L20	60 - 59.75 (20)	P30x0.6375	928	0
L21	59.75 - 54.75 (21)	P30x0.6375	1060	0
L22	54.75 - 49.75 (22)	P30x0.6375	1195	0
L23	49.75 - 49.25 (23)	P30x0.6375	1209	0
L24	49.25 - 49 (24)	P30x0.7875	1216	0
L25	49 - 44 (25)	P30x0.7875	1355	0
L26	44 - 42 (26)	P30x0.7875	1412	0
L27	42 - 41.75 (27)	P30x0.9125	1419	0
L28	41.75 - 36.75 (28)	P30x0.9125	1564	0
L29	36.75 - 34.5 (29)	P30x0.9125	1630	0
L30	34.5 - 34.25 (30)	P30x1.025	1637	0
L31	34.25 - 34 (31)	P30x1.025	1644	0
L32	34 - 33.75 (32)	P30x0.925	1652	0
L33	33.75 - 30 (33)	P30x0.925	1764	0
L34	30 - 29.75 (34)	P36x0.6875	1771	0
L35	29.75 - 28.5 (35)	P36x0.6875	1810	0
L36	28.5 - 28.25 (36)	P36x0.8375	1817	0
L37	28.25 - 23.25 (37)	P36x0.8375	1973	0
L38	23.25 - 23 (38)	P36x0.95	1981	0
L39	23 - 21.5 (39)	P36x0.95	2028	0
L40	21.5 - 21.25 (40)	P36x0.8	2036	0
L41	21.25 - 19 (41)	P36x0.8	2108	0
L42	19 - 18.75 (42)	P36x0.95	2116	0
L43	18.75 - 18.5 (43)	P36x0.95	2124	0
L44	18.5 - 18.25 (44)	P36x0.85	2132	0

Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$M_{uy}$ kip-ft
L45	18.25 - 13.25 (45)	P36x0.85	2294	0
L46	13.25 - 12.7 (46)	P36x0.85	2312	0
L47	12.7 - 12.45 (47)	P36x0.85	2320	0
L48	12.45 - 11.5 (48)	P36x0.85	2352	0
L49	11.5 - 11.25 (49)	P36x0.9	2360	0
L50	11.25 - 10.5 (50)	P36x0.9	2384	0
L51	10.5 - 10.25 (51)	P36x1.35	2393	0
L52	10.25 - 7.5 (52)	P36x1.35	2484	0
L53	7.5 - 7.25 (53)	P36x1.4	2492	0
L54	7.25 - 6.25 (54)	P36x1.4	2526	0
L55	6.25 - 6 (55)	P36x1.425	2534	0
L56	6 - 3.73 (56)	P36x1.8	2611	0
L57	3.73 - 3.48 (57)	P36x1.8	2619	0
L58	3.48 - 2.75 (58)	P36x1.8	2644	0
L59	2.75 - 2.5 (59)	P36x1.675	2653	0
L60	2.5 - 2 (60)	P36x1.675	2670	0
L61	2 - 1.75 (61)	P36x1.475	2678	0
L62	1.75 - 0 (62)	P36x1.475	2738	0

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K	Actual $T_u$ kip-ft
L1	118 - 113 (1)	P24x0.25	4.92	0
L2	113 - 108 (2)	P24x0.25	5.23	0
L3	108 - 103 (3)	P24x0.25	10.10	0
L4	103 - 98 (4)	P24x0.25	10.44	0
L5	98 - 93 (5)	P24x0.25	15.34	1
L6	93 - 90 (6)	P24x0.25	15.50	1
L7	90 - 85 (7)	P24x0.375	16.20	1
L8	85 - 80 (8)	P24x0.375	21.49	1
L9	80 - 76.5 (9)	P24x0.375	22.00	1
L10	76.5 - 76.25 (10)	P24x0.5875	22.03	1
L11	76.25 - 74 (11)	P24x0.5875	22.33	1
L12	74 - 73.75 (12)	P24x0.8375	22.37	1
L13	73.75 - 68.88 (13)	P24x0.8375	24.14	1
L14	68.88 - 68.63 (14)	P24x0.825	24.18	1
L15	68.63 - 64.5 (15)	P24x0.825	24.75	1
L16	64.5 - 64.25 (16)	P24x1.025	24.79	1
L17	64.25 - 63 (17)	P24x1.025	24.96	1
L18	63 - 62.75 (18)	P24x0.9625	25.00	1
L19	62.75 - 60 (19)	P24x0.9625	25.37	1
L20	60 - 59.75 (20)	P30x0.6375	25.95	1
L21	59.75 - 54.75	P30x0.6375	26.71	1

Section No.	Elevation ft	Size	Actual $V_u$ K	Actual $T_u$ kip-ft
	(21)			
L22	54.75 - 49.75	P30x0.6375	27.43	1
	(22)			
L23	49.75 - 49.25	P30x0.6375	27.49	1
	(23)			
L24	49.25 - 49	P30x0.7875	27.53	1
	(24)			
L25	49 - 44 (25)	P30x0.7875	28.26	1
L26	44 - 42 (26)	P30x0.7875	28.53	1
L27	42 - 41.75	P30x0.9125	28.56	1
	(27)			
L28	41.75 - 36.75	P30x0.9125	29.24	1
	(28)			
L29	36.75 - 34.5	P30x0.9125	29.53	1
	(29)			
L30	34.5 - 34.25	P30x1.025	29.56	1
	(30)			
L31	34.25 - 34	P30x1.025	29.59	1
	(31)			
L32	34 - 33.75	P30x0.925	29.62	1
	(32)			
L33	33.75 - 30	P30x0.925	30.09	1
	(33)			
L34	30 - 29.75	P36x0.6875	30.55	1
	(34)			
L35	29.75 - 28.5	P36x0.6875	30.74	1
	(35)			
L36	28.5 - 28.25	P36x0.8375	30.77	1
	(36)			
L37	28.25 - 23.25	P36x0.8375	31.49	1
	(37)			
L38	23.25 - 23	P36x0.95	31.52	1
	(38)			
L39	23 - 21.5 (39)	P36x0.95	31.74	1
L40	21.5 - 21.25	P36x0.8	31.75	1
	(40)			
L41	21.25 - 19	P36x0.8	32.05	1
	(41)			
L42	19 - 18.75	P36x0.95	32.07	1
	(42)			
L43	18.75 - 18.5	P36x0.95	32.11	1
	(43)			
L44	18.5 - 18.25	P36x0.85	32.14	1
	(44)			
L45	18.25 - 13.25	P36x0.85	32.73	1
	(45)			
L46	13.25 - 12.7	P36x0.85	32.79	1
	(46)			
L47	12.7 - 12.45	P36x0.85	32.81	1
	(47)			
L48	12.45 - 11.5	P36x0.85	32.93	1
	(48)			
L49	11.5 - 11.25	P36x0.9	32.94	1
	(49)			
L50	11.25 - 10.5	P36x0.9	33.04	1
	(50)			
L51	10.5 - 10.25	P36x1.35	33.06	1
	(51)			
L52	10.25 - 7.5	P36x1.35	33.40	1
	(52)			
L53	7.5 - 7.25 (53)	P36x1.4	33.42	1
L54	7.25 - 6.25	P36x1.4	33.55	1
	(54)			
L55	6.25 - 6 (55)	P36x1.425	33.57	1
L56	6 - 3.73 (56)	P36x1.8	33.86	1
L57	3.73 - 3.48	P36x1.8	33.88	1
	(57)			
L58	3.48 - 2.75	P36x1.8	33.97	1
	(58)			

Section No.	Elevation ft	Size	Actual $V_u$ K	Actual $T_u$ kip-ft
L59	2.75 - 2.5 (59)	P36x1.675	34.00	1
L60	2.5 - 2 (60)	P36x1.675	34.06	1
L61	2 - 1.75 (61)	P36x1.475	34.09	1
L62	1.75 - 0 (62)	P36x1.475	34.31	1

Site BU: 876331  
Work Order: \_\_\_\_\_

**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	118	28		0	24	24	0.25		A572-42
2	90	30		0	24.00	24	0.375		A572-42
3	60	30		0	30.00	30	0.375		A572-42
4	30	30		0	36.00	36	0.375		A572-42

**Reinforcement Configuration**

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	3.83	30	plate	(2) (1.1875) (P 36 & 2	3																			
2	30	60	plate	(2) (1.1875) (P 30 & 2	3	0	135	225																
3	60	74	plate	(2) (1.1875) (P 24 & 3	3				0	135	225													
4	2	19	plate	MS-450 (1.1875")	2							0	195	295										
5	2	7.5	plate	MS-450 (1.1875")	1																	180		
6	7.5	12.7	plate	FP 1.25 x 4 1	1																	200		
7	12.7	19	plate	MS-450 (1.1875")	1																	180		
8	30	34.5	plate	MS-400 (1.1875")	3																	45	180	295
9	60	64.5	plate	MS-400 (1.1875")	3	65	180	295																
10	2.75	23.25	plate	CCI-AFP-060100	2				30	310														
11	34	42	plate	CCI-SFP-040075	3						75	205	320											
12	60	63	plate	3.75 x 1; (1) (1.1875)	3								90	195	320									
13	63	68.88	plate	CCI-SFP-045100	3											90	195	320						
14	0	3.75	plate	FP 1.25 x 7.25 1	3																	34	214	304
15	0	3.75	plate	FP 1.25 x 7 1	1																			124
16	21.5	28.5	plate	CCI-SFP-045100	3	90	200	330																
17	30	49.25	plate	CCI-SFP-040075	2				100	270														
18	68.88	76.5	plate	CCI-SFP-045100	3						40	160	275											
19	18.5	30	plate	FP 4 x 3; (1) (1.1875)	1									50										
20	18.5	30	plate	CCI-SFP-045100	1									253										
21	0	10.5	plate	FP 1.25 x 5.5 1	2										106	350								
22	0	6.25	plate	FP 1.25 x 9.25 1	1																	169		
23	6.25	11.5	plate	FP 1.25 x 7 1	1																	160		
24	0	10.5	plate	FP 1.25 x 8 1	1																	282		
25	0	7.5	solid round	1.75" Williams R71 1	2																	106	350	
26																								

**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>c</sub> (in)	Net Area (in <sup>2</sup> )	Bolt Hole Size (in)	Reinforcement Material
1	9.675987649	1.01526308	9.823673019	0.361918473	n/a	n/a	24.000	7.324	1.1875	A572-65
2	9.675987649	1.01526308	9.823673019	0.315638637	n/a	n/a	24.000	7.324	1.1875	A572-65
3	8.734004699	0.761485287	6.650816073	0.182801308	n/a	n/a	24.000	4.776	1.1875	A572-65
4	4.5	1	4.5	0.5	18.000	18.000	20.625	3.250	1.1875	A572-65
5	4.5	1	4.5	0.5	18.000	18.000	20.625	3.250	1.1875	A572-65
6	1.25	4	5	2	n/a	n/a	20.625	5.000	0.0000	A572-65
7	4.5	1	4.5	0.5	18.000	18.000	20.625	3.250	1.1875	A572-65
8	4	0.75	3	0.375	12.000	12.000	16.875	2.063	1.1875	A572-65
9	4	0.75	3	0.375	12.000	12.000	16.875	2.063	1.1875	A572-65
10	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
11	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
12	3.75	1	3.75	0.5	n/a	n/a	16.000	2.500	1.1875	A572-65
13	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
14	1.25	7.25	9.0625	3.625	n/a	n/a	0.000	9.063	0.0000	A572-65
15	1.25	7	8.75	3.5	n/a	n/a	0.000	8.750	0.0000	A572-65
16	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
17	4	0.75	3	0.375	12.000	12.000	16.000	2.063	1.1875	A572-65
18	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
19	4	1	4	0.5	n/a	n/a	20.000	2.750	1.1875	A572-65
20	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
21	1.25	5.5	6.875	2.75	n/a	n/a	0.000	6.875	0.0000	A572-65
22	1.25	9.25	11.5625	4.625	n/a	n/a	0.000	11.563	0.0000	A572-65
23	1.25	7	8.75	3.5	n/a	n/a	0.000	8.750	0.0000	A572-65
24	1.25	8	10	4	n/a	n/a	27.000	10.000	0.0000	A572-65
25	-	-	2.662999375	9.625	n/a	n/a	6.000	2.663	0.0000	A722-07

# TNX Geometry Input

Increment (ft): 5

	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	118 - 113	5		0	24.000	24.000	0.25	A572-42	1.000
2	113 - 108	5		0	24.000	24.000	0.25	A572-42	1.000
3	108 - 103	5		0	24.000	24.000	0.25	A572-42	1.000
4	103 - 98	5		0	24.000	24.000	0.25	A572-42	1.000
5	98 - 93	5		0	24.000	24.000	0.25	A572-42	1.000
6	93 - 90	3	0	0	24.000	24.000	0.25	A572-42	1.000
7	90 - 85	5		0	24.000	24.000	0.375	A572-42	1.000
8	85 - 80	5		0	24.000	24.000	0.375	A572-42	1.000
9	80 - 76.5	3.5		0	24.000	24.000	0.375	A572-42	1.000
10	76.5 - 76.25	0.25		0	24.000	24.000	0.5875	A572-42	0.957
11	76.25 - 74	2.25		0	24.000	24.000	0.5875	A572-42	0.957
12	74 - 73.75	0.25		0	24.000	24.000	0.8375	A572-42	1.006
13	73.75 - 68.88	4.87		0	24.000	24.000	0.8375	A572-42	1.006
14	68.88 - 68.63	0.25		0	24.000	24.000	0.825	A572-42	1.020
15	68.63 - 64.5	4.13		0	24.000	24.000	0.825	A572-42	1.020
16	64.5 - 64.25	0.25		0	24.000	24.000	1.025	A572-42	0.950
17	64.25 - 63	1.25		0	24.000	24.000	1.025	A572-42	0.950
18	63 - 62.75	0.25		0	24.000	24.000	0.9625	A572-42	0.977
19	62.75 - 60	2.75	0	0	24.000	24.000	0.9625	A572-42	0.977
20	60 - 59.75	0.25		0	30.000	30.000	0.6375	A572-42	1.095
21	59.75 - 54.75	5		0	30.000	30.000	0.6375	A572-42	1.095
22	54.75 - 49.75	5		0	30.000	30.000	0.6375	A572-42	1.095
23	49.75 - 49.25	0.5		0	30.000	30.000	0.6375	A572-42	1.095
24	49.25 - 49	0.25		0	30.000	30.000	0.7875	A572-42	0.974
25	49 - 44	5		0	30.000	30.000	0.7875	A572-42	0.974
26	44 - 42	2		0	30.000	30.000	0.7875	A572-42	0.974
27	42 - 41.75	0.25		0	30.000	30.000	0.9125	A572-42	0.952
28	41.75 - 36.75	5		0	30.000	30.000	0.9125	A572-42	0.952
29	36.75 - 34.5	2.25		0	30.000	30.000	0.9125	A572-42	0.952
30	34.5 - 34.25	0.25		0	30.000	30.000	1.025	A572-42	0.947
31	34.25 - 34	0.25		0	30.000	30.000	1.025	A572-42	0.947
32	34 - 33.75	0.25		0	30.000	30.000	0.925	A572-42	0.939
33	33.75 - 30	3.75	0	0	30.000	30.000	0.925	A572-42	0.939
34	30 - 29.75	0.25		0	36.000	36.000	0.6875	A572-42	1.048
35	29.75 - 28.5	1.25		0	36.000	36.000	0.6875	A572-42	1.048
36	28.5 - 28.25	0.25		0	36.000	36.000	0.8375	A572-42	1.010
37	28.25 - 23.25	5		0	36.000	36.000	0.8375	A572-42	1.010
38	23.25 - 23	0.25		0	36.000	36.000	0.95	A572-42	1.008
39	23 - 21.5	1.5		0	36.000	36.000	0.95	A572-42	1.008
40	21.5 - 21.25	0.25		0	36.000	36.000	0.8	A572-42	1.039
41	21.25 - 19	2.25		0	36.000	36.000	0.8	A572-42	1.039
42	19 - 18.75	0.25		0	36.000	36.000	0.95	A572-42	1.008
43	18.75 - 18.5	0.25		0	36.000	36.000	0.95	A572-42	1.008
44	18.5 - 18.25	0.25		0	36.000	36.000	0.85	A572-42	1.033
45	18.25 - 13.25	5		0	36.000	36.000	0.85	A572-42	1.033
46	13.25 - 12.7	0.55		0	36.000	36.000	0.85	A572-42	1.033
47	12.7 - 12.45	0.25		0	36.000	36.000	0.85	A572-42	1.038
48	12.45 - 11.5	0.95		0	36.000	36.000	0.85	A572-42	1.038
49	11.5 - 11.25	0.25		0	36.000	36.000	0.9	A572-42	1.070
50	11.25 - 10.5	0.75		0	36.000	36.000	0.9	A572-42	1.070
51	10.5 - 10.25	0.25		0	36.000	36.000	1.35	A572-42	0.884
52	10.25 - 7.5	2.75		0	36.000	36.000	1.35	A572-42	0.884
53	7.5 - 7.25	0.25		0	36.000	36.000	1.4	A572-42	0.886
54	7.25 - 6.25	1		0	36.000	36.000	1.4	A572-42	0.886
55	6.25 - 6	0.25		0	36.000	36.000	1.425	A572-42	0.889
56	6 - 3.73	2.27		0	36.000	36.000	1.8	A572-42	0.745
57	3.73 - 3.48	0.25		0	36.000	36.000	1.8	A572-42	0.745
58	3.48 - 2.75	0.73		0	36.000	36.000	1.8	A572-42	0.745
59	2.75 - 2.5	0.25		0	36.000	36.000	1.675	A572-42	0.731
60	2.5 - 2	0.5		0	36.000	36.000	1.675	A572-42	0.731
61	2 - 1.75	0.25		0	36.000	36.000	1.475	A572-42	0.741
62	1.75 - 0	1.75		0	36.000	36.000	1.475	A572-42	0.741



# TNX Section Forces

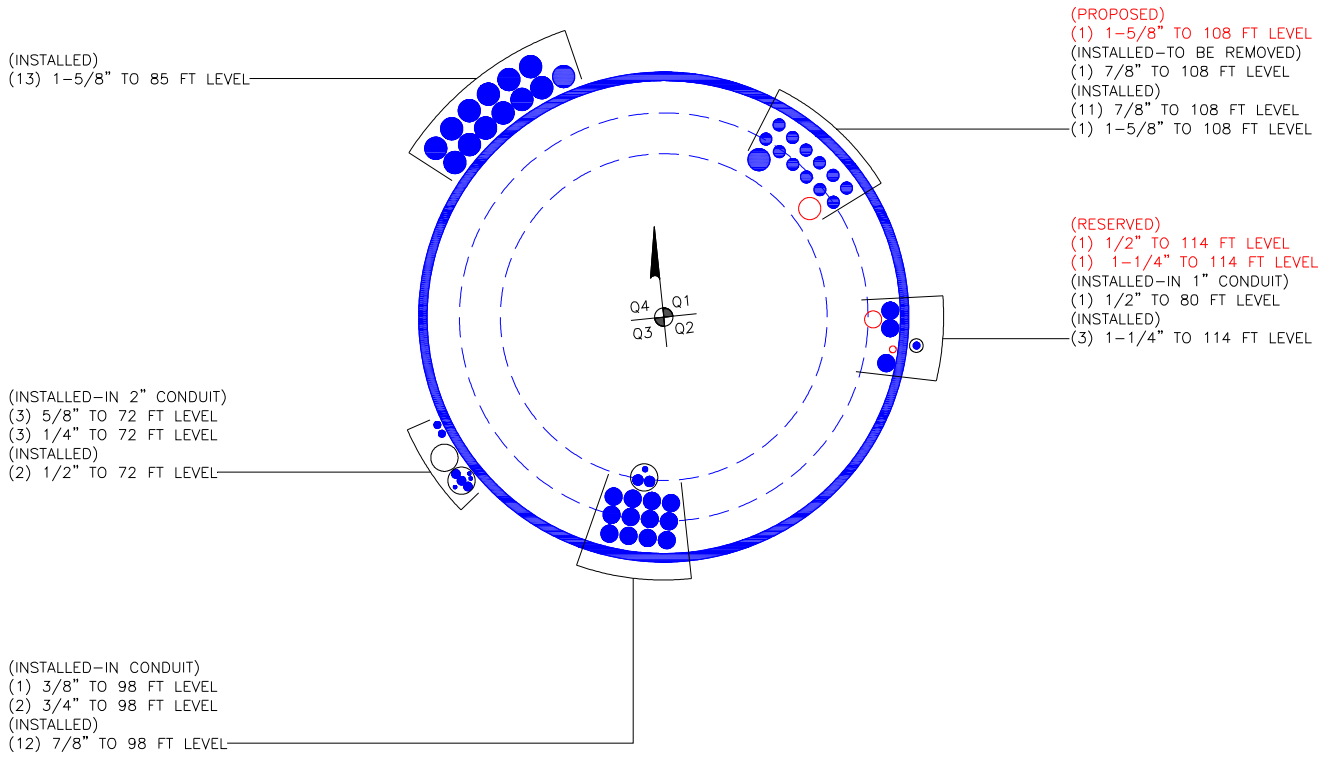
Increment (ft): 5		TNX Output		
	Section Height (ft)	P <sub>u</sub> (K)	M <sub>ux</sub> (kip-ft)	V <sub>u</sub> (K)
1	118 - 113	2.87	11.11	4.92
2	113 - 108	3.26	36.49	5.23
3	108 - 103	6.18	86.23	10.10
4	103 - 98	6.62	137.63	10.44
5	98 - 93	9.73	213.66	15.34
6	93 - 90	10.05	259.92	15.50
7	90 - 85	11.70	340.21	16.20
8	85 - 80	14.94	450.07	21.49
9	80 - 76.5	15.60	526.32	22.00
10	76.5 - 76.25	15.67	531.82	22.03
11	76.25 - 74	16.14	581.70	22.33
12	74 - 73.75	16.23	587.28	22.37
13	73.75 - 68.88	18.23	701.95	24.14
14	68.88 - 68.63	18.32	707.99	24.18
15	68.63 - 64.5	19.56	809.00	24.75
16	64.5 - 64.25	19.65	815.19	24.79
17	64.25 - 63	20.07	846.27	24.96
18	63 - 62.75	20.16	852.52	25.00
19	62.75 - 60	21.06	921.74	25.37
20	60 - 59.75	22.68	928.22	25.95
21	59.75 - 54.75	24.24	1059.81	26.71
22	54.75 - 49.75	25.83	1195.10	27.43
23	49.75 - 49.25	26.00	1208.83	27.49
24	49.25 - 49	26.09	1215.71	27.53
25	49 - 44	27.79	1355.14	28.26
26	44 - 42	28.48	1411.90	28.53
27	42 - 41.75	28.59	1419.04	28.56
28	41.75 - 36.75	30.49	1563.50	29.24
29	36.75 - 34.5	31.35	1629.59	29.53
30	34.5 - 34.25	31.47	1636.97	29.56
31	34.25 - 34	31.57	1644.37	29.59
32	34 - 33.75	31.67	1651.77	29.62
33	33.75 - 30	33.11	1763.68	30.09
34	30 - 29.75	34.76	1771.31	30.55
35	29.75 - 28.5	35.23	1809.61	30.74
36	28.5 - 28.25	35.35	1817.29	30.77
37	28.25 - 23.25	37.53	1972.91	31.49
38	23.25 - 23	37.66	1980.78	31.52
39	23 - 21.5	38.37	2028.20	31.74
40	21.5 - 21.25	38.49	2036.14	31.75
41	21.25 - 19	39.46	2107.90	32.05
42	19 - 18.75	39.59	2115.91	32.07
43	18.75 - 18.5	39.72	2123.93	32.11
44	18.5 - 18.25	39.83	2131.96	32.14
45	18.25 - 13.25	42.11	2294.10	32.73
46	13.25 - 12.7	42.36	2312.11	32.79
47	12.7 - 12.45	42.48	2320.30	32.81
48	12.45 - 11.5	42.91	2351.52	32.93
49	11.5 - 11.25	43.04	2359.75	32.94
50	11.25 - 10.5	43.41	2384.49	33.04
51	10.5 - 10.25	43.56	2392.75	33.06
52	10.25 - 7.5	45.17	2484.11	33.40
53	7.5 - 7.25	45.33	2492.46	33.42
54	7.25 - 6.25	45.93	2525.93	33.55
55	6.25 - 6	46.09	2534.32	33.57
56	6 - 3.73	47.54	2610.83	33.86
57	3.73 - 3.48	47.70	2619.30	33.88
58	3.48 - 2.75	48.17	2644.06	33.97
59	2.75 - 2.5	48.32	2652.55	34.00
60	2.5 - 2	48.61	2669.57	34.06
61	2 - 1.75	48.75	2678.08	34.09
62	1.75 - 0	49.68	2737.90	34.31

# Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
118 - 113	Pole	TP24x24x0.25	Pole	3.3%	Pass
113 - 108	Pole	TP24x24x0.25	Pole	9.7%	Pass
108 - 103	Pole	TP24x24x0.25	Pole	22.8%	Pass
103 - 98	Pole	TP24x24x0.25	Pole	35.8%	Pass
98 - 93	Pole	TP24x24x0.25	Pole	55.5%	Pass
93 - 90	Pole	TP24x24x0.25	Pole	67.3%	Pass
90 - 85	Pole	TP24x24x0.375	Pole	55.8%	Pass
85 - 80	Pole	TP24x24x0.375	Pole	73.7%	Pass
80 - 76.5	Pole	TP24x24x0.375	Pole	86.0%	Pass
76.5 - 76.25	Pole + Reinf.	TP24x24x0.5875	Reinf. 18 Tension Rupture	62.7%	Pass
76.25 - 74	Pole + Reinf.	TP24x24x0.5875	Reinf. 18 Tension Rupture	68.5%	Pass
74 - 73.75	Pole + Reinf.	TP24x24x0.8375	Reinf. 18 Tension Rupture	50.5%	Pass
73.75 - 68.88	Pole + Reinf.	TP24x24x0.8375	Reinf. 18 Tension Rupture	60.3%	Pass
68.88 - 68.63	Pole + Reinf.	TP24x24x0.825	Reinf. 13 Tension Rupture	61.0%	Pass
68.63 - 64.5	Pole + Reinf.	TP24x24x0.825	Reinf. 13 Tension Rupture	69.6%	Pass
64.5 - 64.25	Pole + Reinf.	TP24x24x1.025	Reinf. 9 Compression	63.7%	Pass
64.25 - 63	Pole + Reinf.	TP24x24x1.025	Reinf. 9 Compression	66.1%	Pass
63 - 62.75	Pole + Reinf.	TP24x24x0.9625	Reinf. 12 Tension Rupture	69.5%	Pass
62.75 - 60	Pole + Reinf.	TP24x24x0.9625	Reinf. 12 Tension Rupture	75.1%	Pass
60 - 59.75	Pole + Reinf.	TP30x30x0.6375	Pole	60.7%	Pass
59.75 - 54.75	Pole + Reinf.	TP30x30x0.6375	Pole	69.3%	Pass
54.75 - 49.75	Pole + Reinf.	TP30x30x0.6375	Pole	78.0%	Pass
49.75 - 49.25	Pole + Reinf.	TP30x30x0.6375	Pole	78.9%	Pass
49.25 - 49	Pole + Reinf.	TP30x30x0.7875	Reinf. 17 Tension Rupture	71.6%	Pass
49 - 44	Pole + Reinf.	TP30x30x0.7875	Reinf. 17 Tension Rupture	79.8%	Pass
44 - 42	Pole + Reinf.	TP30x30x0.7875	Reinf. 17 Tension Rupture	83.1%	Pass
42 - 41.75	Pole + Reinf.	TP30x30x0.9125	Reinf. 11 Tension Rupture	74.2%	Pass
41.75 - 36.75	Pole + Reinf.	TP30x30x0.9125	Reinf. 11 Tension Rupture	81.7%	Pass
36.75 - 34.5	Pole + Reinf.	TP30x30x0.9125	Reinf. 11 Tension Rupture	85.2%	Pass
34.5 - 34.25	Pole + Reinf.	TP30x30x1.025	Reinf. 8 Compression	77.3%	Pass
34.25 - 34	Pole + Reinf.	TP30x30x1.025	Reinf. 8 Compression	77.7%	Pass
34 - 33.75	Pole + Reinf.	TP30x30x0.925	Reinf. 8 Compression	87.6%	Pass
33.75 - 30	Pole + Reinf.	TP30x30x0.925	Reinf. 8 Compression	93.5%	Pass
30 - 29.75	Pole + Reinf.	TP36x36x0.6875	Pole	76.0%	Pass
29.75 - 28.5	Pole + Reinf.	TP36x36x0.6875	Pole	77.6%	Pass
28.5 - 28.25	Pole + Reinf.	TP36x36x0.8375	Reinf. 16 Tension Rupture	65.9%	Pass
28.25 - 23.25	Pole + Reinf.	TP36x36x0.8375	Reinf. 16 Tension Rupture	71.6%	Pass
23.25 - 23	Pole + Reinf.	TP36x36x0.95	Reinf. 16 Tension Rupture	65.4%	Pass
23 - 21.5	Pole + Reinf.	TP36x36x0.95	Reinf. 16 Tension Rupture	67.0%	Pass
21.5 - 21.25	Pole + Reinf.	TP36x36x0.8	Pole	79.5%	Pass
21.25 - 19	Pole + Reinf.	TP36x36x0.8	Pole	82.3%	Pass
19 - 18.75	Pole + Reinf.	TP36x36x0.95	Pole	69.3%	Pass
18.75 - 18.5	Pole + Reinf.	TP36x36x0.95	Pole	69.6%	Pass
18.5 - 18.25	Pole + Reinf.	TP36x36x0.85	Pole	76.0%	Pass
18.25 - 13.25	Pole + Reinf.	TP36x36x0.85	Pole	81.7%	Pass
13.25 - 12.7	Pole + Reinf.	TP36x36x0.85	Pole	82.4%	Pass
12.7 - 12.45	Pole + Reinf.	TP36x36x0.85	Pole	84.1%	Pass
12.45 - 11.5	Pole + Reinf.	TP36x36x0.85	Pole	85.2%	Pass
11.5 - 11.25	Pole + Reinf.	TP36x36x0.9	Reinf. 4 Compression	81.6%	Pass
11.25 - 10.5	Pole + Reinf.	TP36x36x0.9	Reinf. 4 Compression	82.5%	Pass
10.5 - 10.25	Pole + Reinf.	TP36x36x1.35	Reinf. 24 Compression	77.7%	Pass
10.25 - 7.5	Pole + Reinf.	TP36x36x1.35	Reinf. 24 Compression	80.6%	Pass
7.5 - 7.25	Pole + Reinf.	TP36x36x1.4	Reinf. 24 Compression	78.7%	Pass
7.25 - 6.25	Pole + Reinf.	TP36x36x1.4	Reinf. 24 Compression	79.7%	Pass
6.25 - 6	Pole + Reinf.	TP36x36x1.425	Reinf. 24 Compression	79.8%	Pass
6 - 3.73	Pole + Reinf.	TP36x36x1.8	Reinf. 24 Compression	68.0%	Pass
3.73 - 3.48	Pole + Reinf.	TP36x36x1.8	Reinf. 24 Compression	68.2%	Pass
3.48 - 2.75	Pole + Reinf.	TP36x36x1.8	Reinf. 24 Compression	68.8%	Pass
2.75 - 2.5	Pole + Reinf.	TP36x36x1.675	Reinf. 24 Compression	73.9%	Pass
2.5 - 2	Pole + Reinf.	TP36x36x1.675	Reinf. 24 Compression	74.3%	Pass
2 - 1.75	Pole + Reinf.	TP36x36x1.475	Reinf. 24 Compression	82.5%	Pass
1.75 - 0	Pole + Reinf.	TP36x36x1.475	Reinf. 24 Compression	84.3%	Pass
				Summary	
			Pole	86.0%	Pass
			Reinforcement	93.5%	Pass
			Overall	93.5%	Pass



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



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



v2.1, Effective Date: 05-03-17

**Welded Bridge Stiffener Analysis per TIA-222-G & AISC 13th Ed. (Black)**

**General Parameters and Loading:**

Flange Elevation:	90.00	ft
TIA Reference Standard:	TIA-222-G	
AISC Manual:	13th Ed. (Black)	
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	259.9	k-ft
Axial, Puf:	10.1	kips
Shear, Vf:	15.5	kips

**Pole Parameters:**

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	24.00	24.00	in
Pole Thickness, tp:	0.2500	0.3750	in
Pole Fy:	42	42	ksi
Pole Fu:	60	60	ksi
Flange Diameter, Df:	32.00	32.00	in

**Bridge Stiffener Parameters:**

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	0	
Upper Weld Length, L1:	39.00	0.00	in
Lower Weld Length, L2:	39.00	0.00	in
Weld Size, w:	0.3750	0.0000	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	4.50	0.00	in
Stiffener Thickness, ts:	1.25	0.00	in
Notch, n:	0.50	0.00	in
Stiffener Fy:	65	0	ksi
Stiffener Fu:	80	0	ksi
Unbraced Length, L:	4.63	0.00	in
K:	0.80	0.00	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	37.50	32.00	in = Df + 2 n + Ws
Upper Eccentricity, e1:	6.75	4.00	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	6.75	4.00	in = (Df - Dp) / 2 + n + Ws / 2

**Flange Bolt Parameters:**

	Bolt Circle 1	Bolt Circle 2	
Number of Bolt Circles:			
Qty. Bolts:	0	0	
Bolt Diameter:	0.00	0.00	in
Bolt Circle:	0.00	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:	0.1731	0.0000	= e1 / L1
k:	0	0	
C:	3.5962	3.7100	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	114.6	0.0	kips
Axial Capacity, ΦPn:	631.1	0.0	kips = Φ C C1 D L
<b>Ratio:</b>	18.2%	0.0%	
<b>Lower Pole</b>			
D:	6	0	Num. of Sixteenths in Weld
a:	0.1731	0.0000	= e2 / L2
k:	0	0	
C:	3.5962	3.7100	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	114.6	0.0	kips
Axial Capacity, ΦPn:	631.1	0.0	kips = Φ C C1 D L
<b>Ratio:</b>	18.2%	0.0%	

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

	Stiffener Type 1	Stiffener Type 2	
<b>Upper Pole</b>			
Stiffener Axial, Pu:	114.6	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fuv:	1.5	0.0	ksi/in = Pu / (2 L1)
Section Modulus, S:	507.0	0.0	in <sup>2</sup> = L <sup>2</sup> / 3
Bending Stress, fub:	1.5	0.0	ksi/in = Pu e1 / S
Combined Stress, fu:	2.1	0.0	ksi/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	1.0000	0.0000	
Stress Capacity, ΦFn:	6.3	0.0	kips/in = Φ 0.6 Fy tp
<b>Ratio:</b>	33.6%	0.0%	
<b>Lower Pole</b>			
Stiffener Axial, Pu:	114.6	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fuv:	1.5	0.0	ksi = Pu / (2 L2)
Section Modulus, S:	507.0	0.0	in <sup>2</sup> = L <sup>2</sup> / 3
Bending Stress, fub:	1.5	0.0	ksi = Pu e2 / S
Combined Stress, fu:	2.1	0.0	ksi/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	1.0000	0.0000	
Stress Capacity, ΦFn:	9.5	0.0	kips/in = Φ 0.6 Fy tp
<b>Ratio:</b>	22.4%	0.0%	

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

	Stiffener Type 1	
Gross Area, Ag:	5.6250	in <sup>2</sup>
Effective Net Area, Aen:	5.6250	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	114.6	kips
Stiffener Stress, fu:	20.4	ksi = Pu / Ag
b:	9.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	7.2000	in
Q, Where Qa = 1.0:	1.0000	
r:	0.3608	in <sup>3</sup>
K L / r:	10.2537	
Φ:	0.9000	
Axial Capacity, ΦFcr:	57.92	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>	35.2%	

**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>	0.0%	

**Analysis Summary:**

**Bridge Stiffener Type 1**  
 Weld Analysis Ratio: 18.2% PASS  
 Pole Analysis Ratio: 33.6% PASS  
 Stiffener Analysis Ratio: 35.2% PASS

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



v2.1, Effective Date: 05-03-17

**Welded Bridge Stiffener Analysis per TIA-222-G & AISC 13th Ed. (Black)**

**General Parameters and Loading:**

Flange Elevation:	60.00	ft
TIA Reference Standard:	TIA-222-G	
AISC Manual:	13th Ed. (Black)	
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	921.7	k-ft
Axial, Puf:	21.1	kips
Shear, Vf:	25.4	kips

**Pole Parameters:**

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	24.00	30.00	in
Pole Thickness, tp:	0.3750	0.3750	in
Pole Fy:	42	42	ksi
Pole Fu:	60	60	ksi
Flange Diameter, Df:	41.00	41.00	in

**Bridge Stiffener Parameters:**

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	3	
Upper Weld Length, L1:	39.00	23.25	in
Lower Weld Length, L2:	39.00	20.00	in
Weld Size, w:	0.3750	0.3750	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	4.50	3.00	in
Stiffener Thickness, ts:	1.25	1.00	in
Notch, n:	0.50	0.50	in
Stiffener Fy:	65	65	ksi
Stiffener Fu:	80	80	ksi
Unbraced Length, L:	5.63	5.63	in
K:	0.80	0.80	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	46.50	45.00	in = Df + 2 n + Ws
Upper Eccentricity, e1:	11.25	10.50	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	8.25	7.50	in = (Df - Dp) / 2 + n + Ws / 2

**Flange Bolt Parameters:**

	Bolt Circle 1	Bolt Circle 2	
Number of Bolt Circles:			
Qty. Bolts:	0	0	
Bolt Diameter:	0.00	0.00	in
Bolt Circle:	0.00	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	6	Num. of Sixteenths in Weld
a:	0.2885	0.4516	= e1 / L1
k:	0	0	
C:	3.1408	2.4690	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	216.3	111.7	kips
Axial Capacity, ΦPn:	551.2	258.3	kips = Φ C C1 D L
<b>Ratio:</b>	<b>39.2%</b>	<b>43.3%</b>	
<b>Lower Pole</b>			
D:	6	6	Num. of Sixteenths in Weld
a:	0.2115	0.3750	= e2 / L2
k:	0	0	
C:	3.4638	2.7675	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	216.3	111.7	kips
Axial Capacity, ΦPn:	607.9	249.1	kips = Φ C C1 D L
<b>Ratio:</b>	<b>35.6%</b>	<b>44.9%</b>	

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

	Stiffener Type 1	Stiffener Type 2	
<b>Upper Pole</b>			
Stiffener Axial, Pu:	216.3	111.7	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	2.8	2.4	kips/in = Pu / (2 L1)
Section Modulus, S:	507.0	180.2	in <sup>2</sup> = L1 <sup>2</sup> / 3
Bending Stress, fub:	4.8	6.5	kips/in = Pu e1 / S
Combined Stress, fu:	5.5	6.9	kips/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn:	9.5	9.5	kips/in = Φ 0.6 Fy tp
<b>Ratio:</b>	<b>58.7%</b>	<b>73.4%</b>	
<b>Lower Pole</b>			
Stiffener Axial, Pu:	216.3	111.7	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	2.8	2.8	ksi = Pu / (2 L2)
Section Modulus, S:	507.0	133.3	in <sup>2</sup> = L2 <sup>2</sup> / 3
Bending Stress, fub:	3.5	6.3	ksi = Pu e2 / S
Combined Stress, fu:	4.5	6.9	kips/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn:	9.5	9.5	kips/in = Φ 0.6 Fy tp
<b>Ratio:</b>	<b>47.4%</b>	<b>72.8%</b>	

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

	Stiffener Type 1	
Gross Area, Ag:	5.6250	in <sup>2</sup>
Effective Net Area, Aen:	5.6250	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	216.3	kips
Stiffener Stress, fu:	38.5	ksi = Pu / Ag
b:	13.5000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	10.8000	in
Q, Where Qa = 1.0:	0.9514	= Qa 1.34 - 0.76 (b / ts) (Fy / E) <sup>1/2</sup>
r:	0.3608	in <sup>3</sup>
KL / r:	12.4708	
Φ:	0.9000	
Axial Capacity, ΦFcr:	54.88	ksi = Φ Q [0.658 <sup>Q</sup> Fy / F <sub>e</sub> ] 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>70.1%</b>	

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

	Stiffener Type 2	
Gross Area, Ag:	3.0000	in <sup>2</sup>
Effective Net Area, Aen:	3.0000	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	111.7	kips
Stiffener Stress, fu:	37.2	ksi = Pu / Ag
b:	12.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	12.0000	in
Q, Where Qa = 1.0:	0.9082	= Qa 1.34 - 0.76 (b / ts) (Fy / E) <sup>1/2</sup>
r:	0.2887	in <sup>3</sup>
KL / r:	15.5885	
Φ:	0.9000	
Axial Capacity, ΦFcr:	52.03	ksi = Φ Q [0.658 <sup>Q</sup> Fy / F <sub>e</sub> ] 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>71.6%</b>	

**Analysis Summary:**

**Bridge Stiffener Type 1**  
 Weld Analysis Ratio: 39.2% PASS  
 Pole Analysis Ratio: 58.7% PASS  
 Stiffener Analysis Ratio: 70.1% PASS

**Bridge Stiffener Type 2**  
 Weld Analysis Ratio: 44.9% PASS  
 Pole Analysis Ratio: 73.4% PASS  
 Stiffener Analysis Ratio: 71.6% PASS

v2.1, Effective Date: 05-03-17

**Welded Bridge Stiffener Analysis per TIA-222-G & AISC 13th Ed. (Black)**

**General Parameters and Loading:**

Flange Elevation:	30.00	ft
TIA Reference Standard:	TIA-222-G	
AISC Manual:	13th Ed. (Black)	
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	1763.7	k-ft
Axial, Puf:	33.1	kips
Shear, Vf:	30.1	kips

**Pole Parameters:**

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	30.00	36.00	in
Pole Thickness, tp:	0.3750	0.3750	in
Pole Fy:	42	42	ksi
Pole Fu:	60	60	ksi
Flange Diameter, Df:	47.00	47.00	in

**Bridge Stiffener Parameters:**

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	3	
Upper Weld Length, L1:	39.00	32.25	in
Lower Weld Length, L2:	39.00	28.25	in
Weld Size, w:	0.3750	0.3750	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	7.20	5.50	in
Stiffener Thickness, ts:	1.47	1.00	in
Notch, n:	0.50	0.50	in
Stiffener Fy:	65	65	ksi
Stiffener Fu:	80	80	ksi
Unbraced Length, L:	5.63	5.63	in
K:	0.80	0.80	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	55.20	53.50	in = Df + 2 n + Ws
Upper Eccentricity, e1:	12.60	11.75	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	9.60	8.75	in = (Df - Dp) / 2 + n + Ws / 2

**Flange Bolt Parameters:**

	Bolt Circle 1	Bolt Circle 2	
Number of Bolt Circles:			
Qty. Bolts:	0	0	
Bolt Diameter:	0.00	0.00	in
Bolt Circle:	0.00	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	6	Num. of Sixteenths in Weld
a:	0.3231	0.3643	= e1 / L1
k:	0	0	
C:	2.9908	2.8133	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	351.0	176.9	kips
Axial Capacity, ΦPn:	524.9	408.3	kips = Φ C C1 D L
<b>Ratio:</b>	<b>66.9%</b>	<b>43.3%</b>	
<b>Lower Pole</b>			
D:	6	6	Num. of Sixteenths in Weld
a:	0.2462	0.3097	= e2 / L2
k:	0	0	
C:	3.3254	3.0481	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	351.0	176.9	kips
Axial Capacity, ΦPn:	583.6	387.5	kips = Φ C C1 D L
<b>Ratio:</b>	<b>60.1%</b>	<b>45.6%</b>	

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

	Stiffener Type 1	Stiffener Type 2	
<b>Upper Pole</b>			
Stiffener Axial, Pu:	351.0	176.9	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	4.5	2.7	kips/in = Pu / (2 L1)
Section Modulus, S:	507.0	346.7	in <sup>2</sup> = L1 <sup>2</sup> / 3
Bending Stress, fub:	8.7	6.0	kips/in = Pu e1 / S
Combined Stress, fu:	9.8	6.6	kips/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn:	9.5	9.5	kips/in = Φ 0.6 Fy tp
<b>Ratio:</b>	<b>103.9%</b>	<b>69.8%</b>	
<b>Lower Pole</b>			
Stiffener Axial, Pu:	351.0	176.9	kips
Effective Throat, te:	0.2651	0.2651	in = 0.707 w
Shear Stress, fuv:	4.5	3.1	ksi = Pu / (2 L2)
Section Modulus, S:	507.0	266.0	in <sup>2</sup> = L2 <sup>2</sup> / 3
Bending Stress, fub:	6.6	5.8	ksi = Pu e2 / S
Combined Stress, fu:	8.0	6.6	kips/in = (fuv <sup>2</sup> + fub <sup>2</sup> ) <sup>1/2</sup>
Φ:	1.0000	1.0000	
Stress Capacity, ΦFn:	9.5	9.5	kips/in = Φ 0.6 Fy tp
<b>Ratio:</b>	<b>84.9%</b>	<b>69.9%</b>	

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

	Stiffener Type 1	
Gross Area, Ag:	10.5840	in <sup>2</sup>
Effective Net Area, Aen:	10.5840	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	351.0	kips
Stiffener Stress, fu:	33.2	ksi = Pu / Ag
b:	16.2000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	11.0204	in
Q, Where Qa = 1.0:	0.9435	= Qa 1.34 - 0.76 (b / ts) (Fy / E) <sup>1/2</sup>
r:	0.4244	in <sup>3</sup>
KL / r:	10.6044	
Φ:	0.9000	
Axial Capacity, ΦFcr:	54.64	ksi = Φ Q [0.658 <sup>QFy/Fa</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>60.7%</b>	

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

	Stiffener Type 2	
Gross Area, Ag:	5.5000	in <sup>2</sup>
Effective Net Area, Aen:	5.5000	in <sup>2</sup> = Ag U, where U = 1.000
Stiffener Axial, Pu:	176.9	kips
Stiffener Stress, fu:	32.2	ksi = Pu / Ag
b:	14.5000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	14.5000	in
Q, Where Qa = 1.0:	0.8183	= Qa 1.34 - 0.76 (b / ts) (Fy / E) <sup>1/2</sup>
r:	0.2887	in <sup>3</sup>
KL / r:	15.5885	
Φ:	0.9000	
Axial Capacity, ΦFcr:	46.97	ksi = Φ Q [0.658 <sup>QFy/Fa</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>68.5%</b>	

**Analysis Summary:**

**Bridge Stiffener Type 1**  
 Weld Analysis Ratio: 66.9% PASS  
 Pole Analysis Ratio: 103.9% PASS  
 Stiffener Analysis Ratio: 60.7% PASS

**Bridge Stiffener Type 2**  
 Weld Analysis Ratio: 45.6% PASS  
 Pole Analysis Ratio: 69.9% PASS  
 Stiffener Analysis Ratio: 68.5% PASS

v4.4 - Effective 7-12-13

**Asymmetric Anchor Rod Analysis**

Moment = 2738 k-ft  
 Axial = 50.0 kips  
 Shear = 34.0 kips  
 Anchor Qty = 23

TIA Ref. = G  
 ASIF = N/A  
 Max Ratio = 100.0%

Location = Base Plate  
 η = 0.50 for BP, Rev. G Sect. 4.9.9  
 Threads = X-Excluded for FP, Rev. G

**\*\* For Post Installed Anchors: Check anchors for embedment, epoxy/grout bond, and capacity based on proof load. \*\***

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Area Override, in <sup>2</sup>	Area, in <sup>2</sup>	Max Net Compression, kips	Max Net Tension, kips	Load for Capacity Calc, kips	Capacity Override, kips	Capacity, kips	Capacity Ratio
1	1.500	A354 Gr BC	109	125	0.0	41.00	0.00	1.77	83.06	79.42	85.55	0.00	141.00	60.7%
2	1.500	A354 Gr BC	109	125	22.5	41.00	0.00	1.77	86.80	83.15	89.28	0.00	141.00	63.3%
3	1.500	A354 Gr BC	109	125	45.0	41.00	0.00	1.77	93.47	89.82	95.95	0.00	141.00	68.1%
4	1.500	A354 Gr BC	109	125	67.5	41.00	0.00	1.77	98.19	94.54	100.67	0.00	141.00	71.4%
5	1.500	A354 Gr BC	109	125	90.0	41.00	0.00	1.77	97.84	94.19	100.32	0.00	141.00	71.2%
6	1.500	A354 Gr BC	109	125	112.5	41.00	0.00	1.77	92.01	88.36	94.49	0.00	141.00	67.0%
7	1.500	A354 Gr BC	109	125	135.0	41.00	0.00	1.77	83.15	79.50	85.63	0.00	141.00	60.7%
8	1.500	A354 Gr BC	109	125	157.5	41.00	0.00	1.77	76.41	72.76	78.89	0.00	141.00	56.0%
9	1.500	A354 Gr BC	109	125	180.0	41.00	0.00	1.77	77.13	73.48	79.61	0.00	141.00	56.5%
10	1.500	A354 Gr BC	109	125	202.5	41.00	0.00	1.77	85.45	81.80	87.93	0.00	141.00	62.4%
11	1.500	A354 Gr BC	109	125	225.0	41.00	0.00	1.77	96.22	92.57	98.70	0.00	141.00	70.0%
12	1.500	A354 Gr BC	109	125	247.5	41.00	0.00	1.77	104.08	100.43	106.57	0.00	141.00	75.6%
13	1.500	A354 Gr BC	109	125	270.0	41.00	0.00	1.77	106.09	102.44	108.57	0.00	141.00	77.0%
14	1.500	A354 Gr BC	109	125	292.5	41.00	0.00	1.77	101.90	98.25	104.38	0.00	141.00	74.0%
15	1.500	A354 Gr BC	109	125	315.0	41.00	0.00	1.77	93.69	90.04	96.17	0.00	141.00	68.2%
16	1.500	A354 Gr BC	109	125	337.5	41.00	0.00	1.77	85.81	82.16	88.30	0.00	141.00	62.6%
17	1.750	Dywidag (150 ksi)	127.7	150	56.0	51.50	0.00	2.71	185.65	180.05	189.46	217.53	217.53	87.1%
18	1.750	Dywidag (150 ksi)	127.7	150	154.0	51.50	0.00	2.71	149.74	144.14	153.55	217.53	217.53	70.6%
19	1.750	Dywidag (150 ksi)	127.7	150	236.0	51.50	0.00	2.71	192.40	186.80	196.21	217.53	217.53	90.2%
20	1.750	Dywidag (150 ksi)	127.7	150	330.0	51.50	0.00	2.71	167.08	161.48	170.89	217.53	217.53	78.6%
21	2.250	A193 Gr B7	105	125	191.3	51.50	0.00	3.98	227.68	219.47	233.26	0.00	325.00	71.8%
22	1.750	Williams R71	127.7	150	350.0	64.50	0.00	2.66	192.78	187.28	196.52	0.00	312.00	63.0%
23	1.750	Williams R71	127.7	150	106.0	64.50	0.00	2.66	225.73	220.23	229.47	0.00	312.00	73.5%

48.42

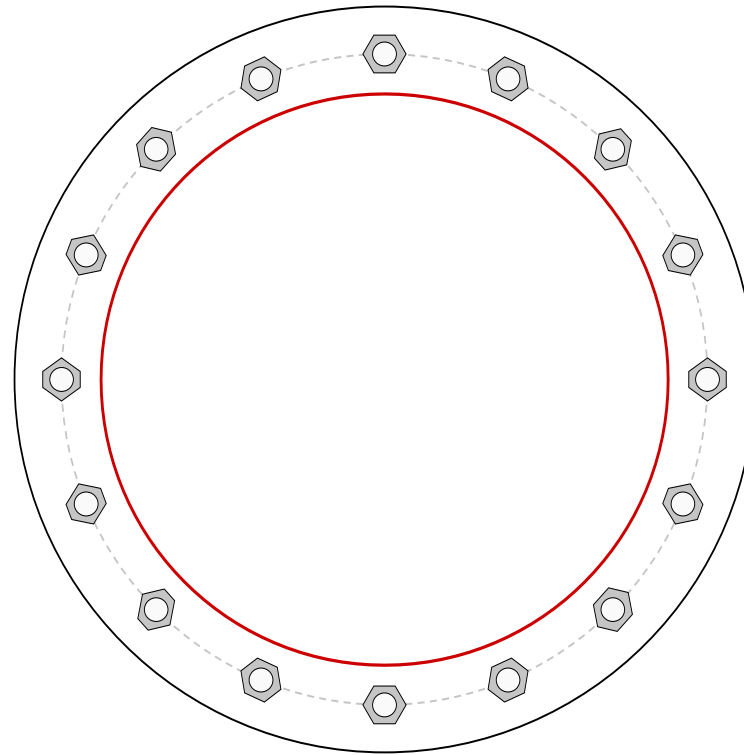
# Monopole Base Plate Connection



Site Info	
BU #	876331
Site Name	New Britain Gravel Pit
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
$l_{ar}$ (in)	0
Eta Factor, $\eta$	0.5

Applied Loads	
Moment (kip-ft)	1425.00
Axial Force (kips)	29.20
Shear Force (kips)	19.90



Connection Properties		Analysis Results		
<b>Anchor Rod Data</b>		<b>Anchor Rod Summary</b> <i>(units of kips, kip-ft)</i>		
(16) 1-1/2" $\phi$ bolts (A354-BC; $F_y=109$ ksi, $F_u=125$ ksi) on 41" BC		$P_u = 106.04$	$\phi P_n = 141$	<b>Stress Rating</b>
<b>Base Plate Data</b>		$V_u = 1.24$	$\phi V_n = n/a$	<b>77.0%</b>
47" OD x 2" Plate (A36; $F_y=36$ ksi, $F_u=58$ ksi)		$M_u = n/a$	$\phi M_n = n/a$	<b>Pass</b>
<b>Stiffener Data</b>		<b>Base Plate Summary</b>		
N/A		Max Stress (ksi):	22.91	
<b>Pole Data</b>		Allowable Stress (ksi):	32.4	
36" x 0.375" round pole (A572-42; $F_y=42$ ksi, $F_u=60$ ksi)		Stress Ratio:	<b>70.7%</b>	<b>Pass</b>



Company : Paul J. Ford and Company  
 Designer : MLS  
 Job Number : 37518-1085.002.7805  
 Model Name : BU 876331

Aug 21, 2018  
 4:40 PM  
 Checked By: \_\_\_\_\_

**(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 318-11
Masonry Code	None
Aluminum Code	None - Building

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	1
Cd X	1
Rho Z	1
Rho X	1

**Basic Load Cases**

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1 Dead	None		-1		1			
2 Wind 0	None				2			
3 Wind 45	None				4			
4 Wind 90	None				2			
5 PRETENSION	None				4			

**Load Combinations**

Description	S... 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... B...	Fa... B...
1 1.2 Dead + Wind 0	Yes Y	1 1.2	2 1	5 1													
2 0.9 Dead + Wind 0	Yes Y	1 .9	2 1	5 .9													
3 1.2 Dead + Wind 45	Yes Y	1 1.2	3 1	5 1													
4 0.9 Dead + Wind 45	Yes Y	1 .9	3 1	5 .9													
5 1.2 Dead + Wind 90	Yes Y	1 1.2	4 1	5 1													
6 0.9 Dead + Wind 90	Yes Y	1 .9	4 1	5 .9													

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

Joint Label	L,D,M	Direction	Magnitude((k.k-ft), (in.rad), (k*s^2/ft...
1 CENTER	L	Y	-41.67

**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...
1 CENTER	L	Mx	2942
2 CENTER	L	Z	34

**Joint Loads and Enforced Displacements (BLC 3 : Wind 45)**

Joint Label	L,D,M	Direction	Magnitude((k.k-ft), (in.rad), (k*s^2/ft...
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Company : Paul J. Ford and Company  
 Designer : MLS  
 Job Number : 37518-1085.002.7805  
 Model Name : BU 876331

Aug 21, 2018  
 4:40 PM  
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**Joint Loads and Enforced Displacements (BLC 3 : Wind 45) (Continued)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1	CENTER	L	Mx	2080.308
2	CENTER	L	Mz	2080.308
3	CENTER	L	Z	24.042
4	CENTER	L	X	-24.042

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

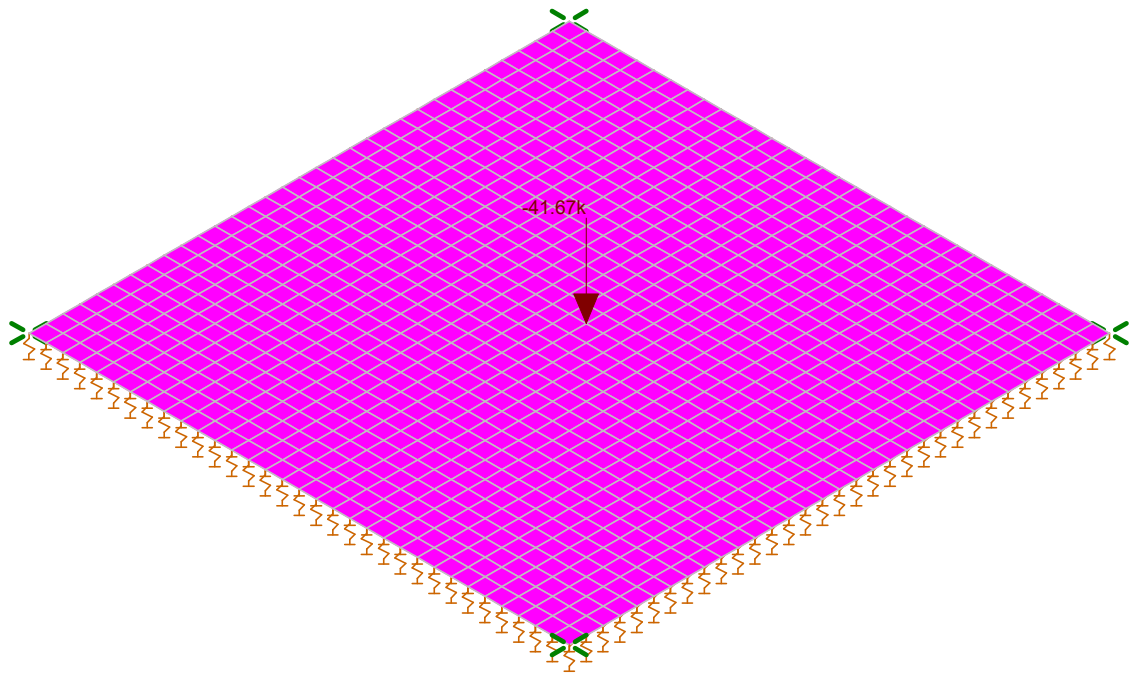
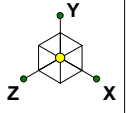
	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1	CENTER	L	Mz	2942
2	CENTER	L	X	-34

**Joint Loads and Enforced Displacements (BLC 5 : PRETENSION)**

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft...
1	N226	L	Y	-130
2	N250	L	Y	-130
3	N801	L	Y	-130
4	N969	L	Y	-130

**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



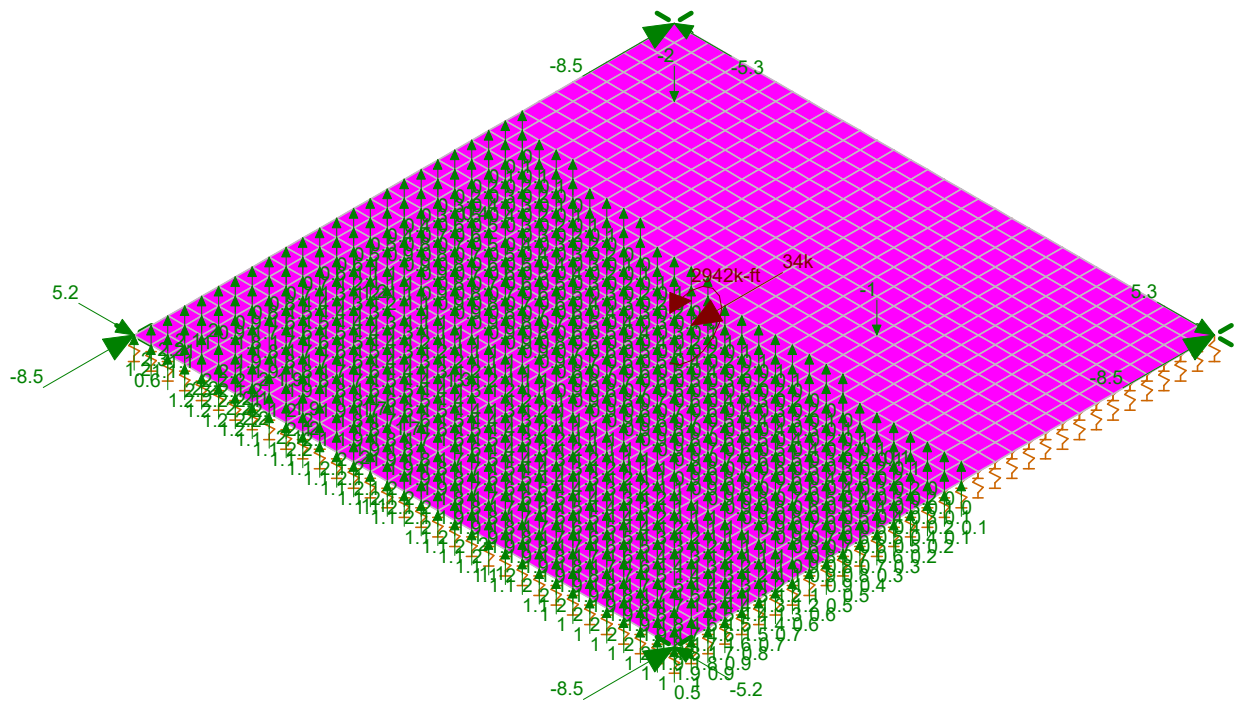
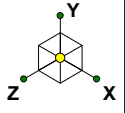
Loads: BLC 1, Dead

Paul J. Ford and Company  
MLS  
37518-1085.002.7805

BU 876331

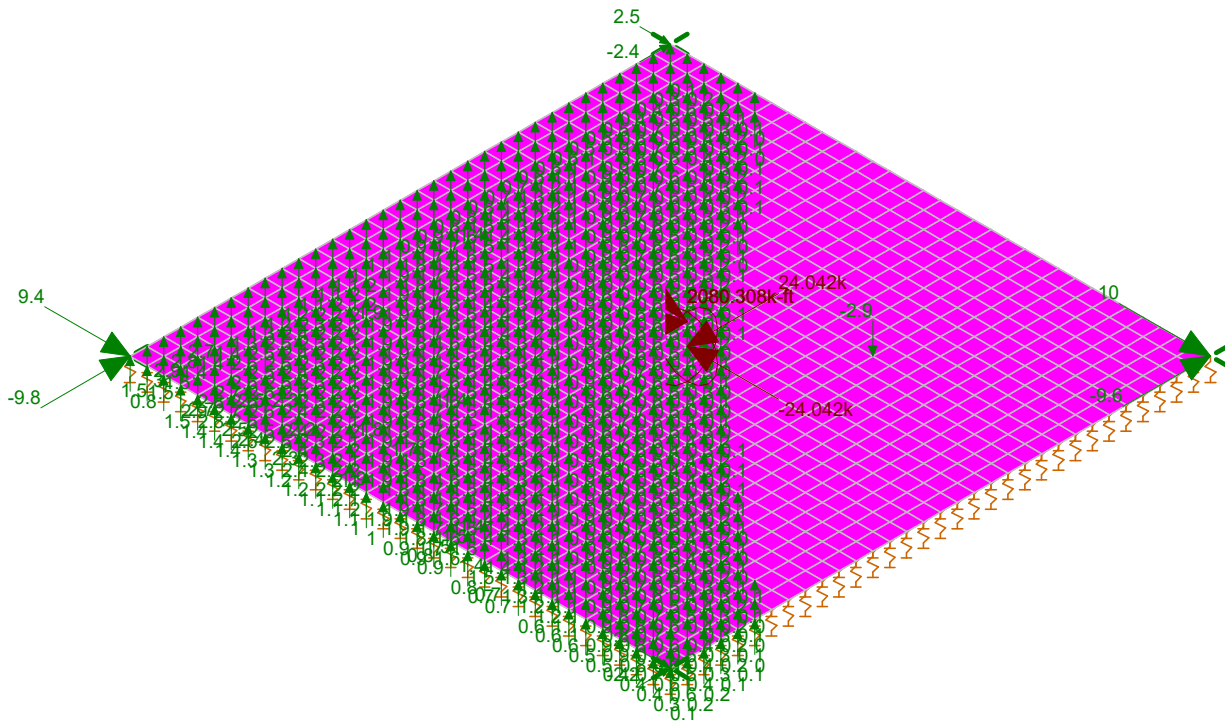
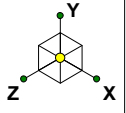
SK - 1  
Aug 21, 2018 at 4:37 PM  
37518-1085.002.7805\_Composite ...





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

Paul J. Ford and Company	BU 876331	SK - 2
MLS		Aug 21, 2018 at 4:39 PM
37518-1085.002.7805		37518-1085.002.7805_Composite ...



Loads: BLC 3, Wind 45  
 Results for LC 4, 0.9 Dead + Wind 45  
 Reaction and Moment Units are k and k-ft

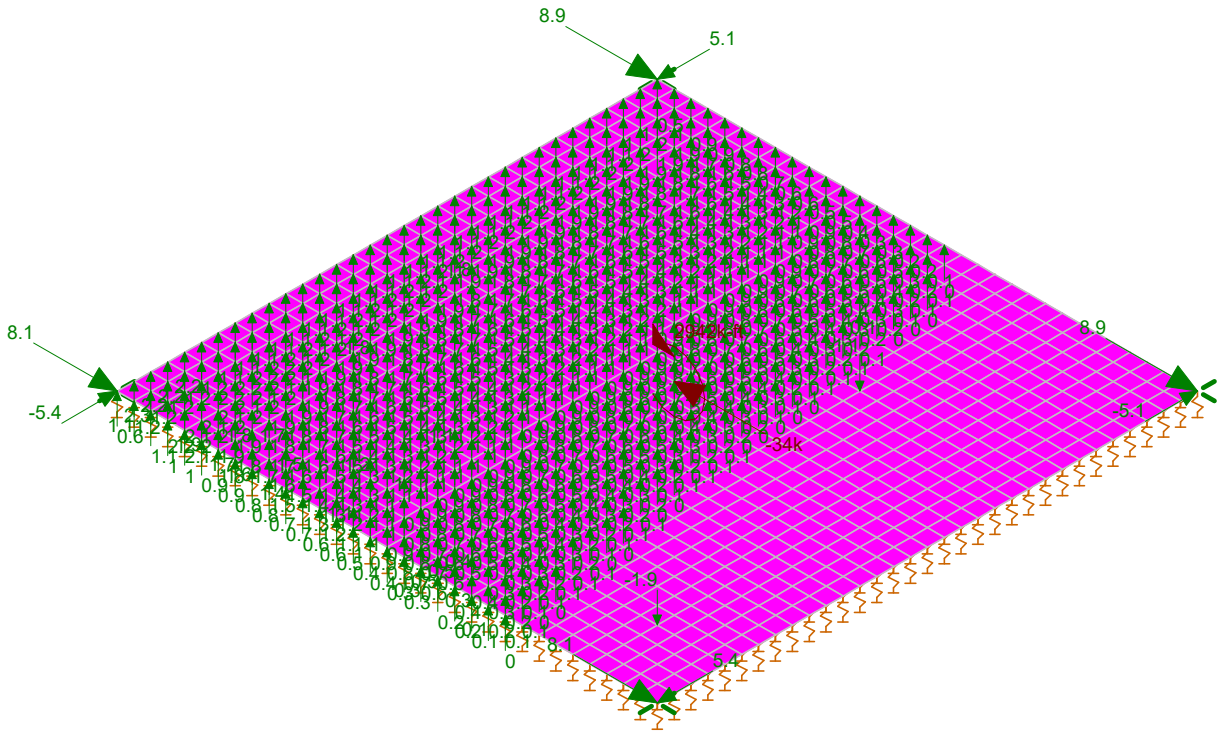
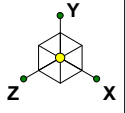
Paul J. Ford and Company  
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BU 876331

SK - 3

Aug 21, 2018 at 4:39 PM

37518-1085.002.7805\_Composite ...



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

Paul J. Ford and Company  
MLS  
37518-1085.002.7805

BU 876331

SK - 4

Aug 21, 2018 at 4:40 PM

37518-1085.002.7805\_Composite ...

### Composite Foundation Analysis

(W) RISA-3D Plate Forces		(1) RISA-3D Plate Forces		Applied Reactions for RISA 3D			Pad/Mat Analysis			
Comp (1.2)	Tension (0.9)	Comp (1.2)	Tension (0.9)				Width	Length		
-12.423	-2.644			TNX Moment =	2738	k-ft	Thickness	6	6	ft
-12.799	-3.313			TNX Axial =	50	kips	Width	16	16	ft
-12.397	-3.444			TNX Shear =	34	kips	f'c	3		ksi
-11.246	-3.256			Total Unfactored Axial =	41.67	kips	Top Bar Quantity	17		
-9.32	-2.898			Side Bending Moment =	2942	k-ft	Top Bar Size #	8		
-6.539	-2.509			<b>Anchor Spring Constant</b>			Top Clear Spacing	3		in
-2.736	-2.276			Ag =	1.68	in <sup>2</sup>	Bot Bar Quantity	17		
2.409	-2.485			E =	29000	ksi	Bot Bar Size #	8		
9.511	-3.61			Lu =	15	ft	Bot Clear Spacing	3		in
19.711	-6.535			k = An*E / Lu =	270.67	k/in	As,min	24.8832	24.8832	in <sup>2</sup>
35.008	-12.97			<b>Soil Spring Constant</b>			As, compression	13.43	24.8832	in <sup>2</sup>
58.853	-27.206			Vertical Subgrade Modulus =	2000	lb/in <sup>3</sup>	d,compression	67.5	67.5	in
95.309	-57.1			ks =	3456	k/ft <sup>2</sup>	a	19.8	#DIV/0!	in
144.955	-138.195			<b>Foundation Weight</b>			c	28.8	#DIV/0!	in
198.069	-297.381			Number Sides =	4		c/d	0.427	#DIV/0!	
234.111	-452.421			Pier Width/Diameter =		ft	Ø	0.819	#DIV/0!	
234.657	-450.843			Pier Height =		ft	ØMn,compression	3667	#DIV/0!	k-ft
199.712	-292.679			Height Above Grade =		ft	Mu	897.0	0.0	k-ft
147.72	-130.503			Pad Thickness =	6	ft	<b>Ratio</b>	=	24.5%	#DIV/0!
99.239	-46.744			Pad Width =	16	ft	As, Tension	13.43	24.8832	in <sup>2</sup>
64.005	-15.005			Pad Length =	16	ft	d,tension	67.5	67.5	in
41.449	0.524			Concrete Density =	150	pcf	a	19.8	#DIV/0!	in
27.505	8.644			Volume =	0	ft <sup>3</sup>	c	28.8	#DIV/0!	in
18.696	13.649			Weight =	0	kips	c/d	0.427	#DIV/0!	
12.981	16.299			<b>Soil Weight</b>			Ø	0.819	#DIV/0!	
9.156	17.207			Soil Unit Weight =		pcf	ØMn,tension	3667	#DIV/0!	k-ft
6.533	17.333			Apply Soil Weight =			Mu	802.6	0.0	k-ft
4.703	17.148			Volume =		ft <sup>3</sup>	<b>Ratio</b>	=	21.9%	#DIV/0!
3.404	16.943			Weight =		kips				
2.439	16.916			Weight per Sq. Ft =		ksf				
1.635	17.252			<b>Passive Pressure on Mat/Pad</b>						
0.833	18.175			Horizontal Subgrade Modulus =		kcf				
				Plate Width =		ft				
				Depth to Ignore =		ft				
				Pad/Mat Thickness =	6	ft				
				k (side) =	0.000	k/in				
				k (corner) =	0.000	k/in				
				<b>Anchor Capacity</b>			<b>Bearing Check</b>			
				Max Tension from RISA =	132.907	kips	Max Bearing Load =	2.967	kip	
				Anchor Type =	Rock Anchor		Plate Width =	0.5	ft	
				Pile Type =	.375" WILLIAMS R7		Plate Length =	0.5	ft	
				Fu =	150	ksi	Ult. Bearing Capacity =	30	ksf	
				An =	1.58	in <sup>2</sup>	Bearing Pressure =	11.868	ksf	
				Capacity = 0.8*Fu*An =	189.6	kips	<b>Ratio</b>	=	52.7%	
				Capacity Override =		kips				
				<b>Ratio = 132.907 / 189.6 =</b>	<b>70.1%</b>					
1605.143	-1793.927	0	0							
802.5715	-896.9635	0	0							

(per linear ft of plate)  
 (Multiply by 0.5 ft length plate)

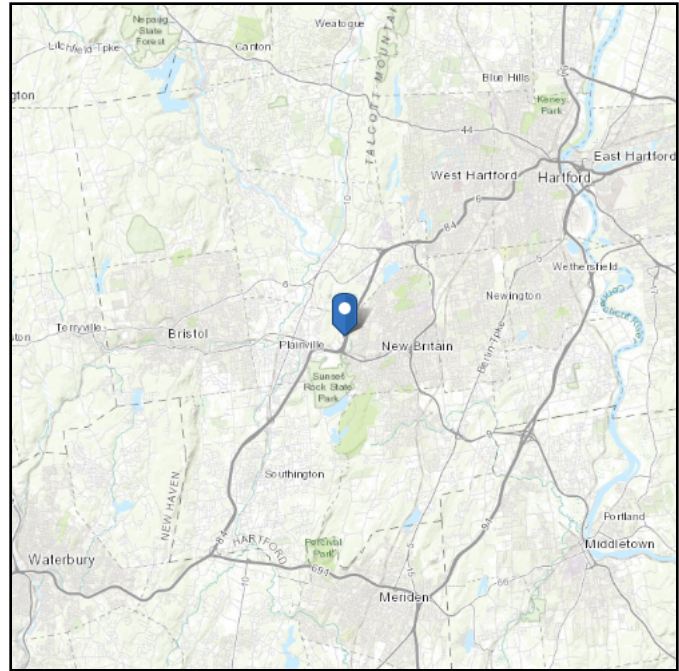


# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

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

**Elevation:** 350.25 ft (NAVD 88)  
**Latitude:** 41.676589  
**Longitude:** -72.821414



## Wind

### Results:

Wind Speed:	122 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

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

**Date Accessed:** Mon Aug 20 2018

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

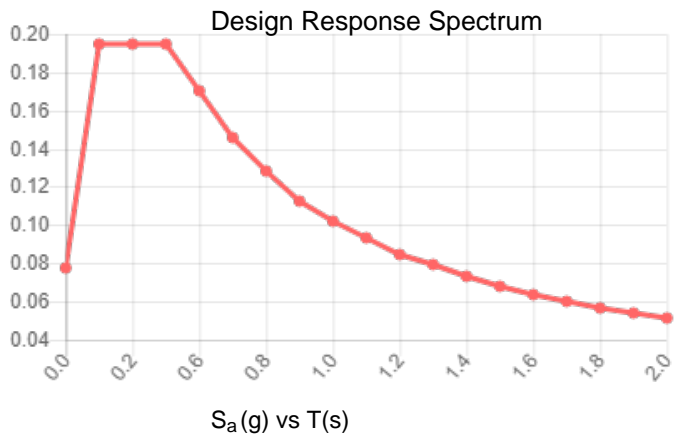
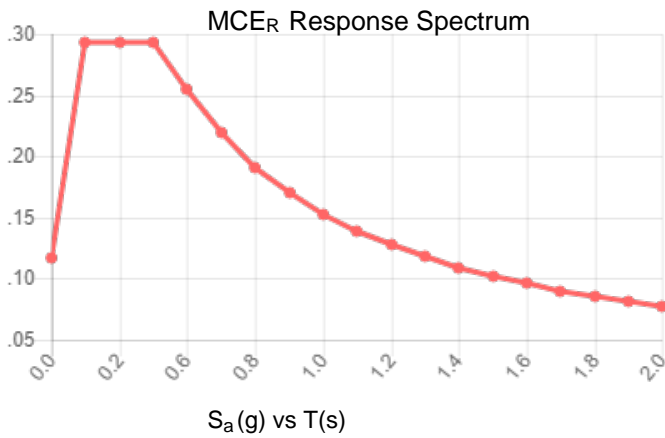
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

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

**Results:**

$S_S$ :	0.183	$S_{DS}$ :	0.195
$S_1$ :	0.064	$S_{D1}$ :	0.102
$F_a$ :	1.600	$T_L$ :	6.000
$F_v$ :	2.400	PGA :	0.093
$S_{MS}$ :	0.293	PGA <sub>M</sub> :	0.149
$S_{M1}$ :	0.153	F <sub>PGA</sub> :	1.600
		$I_e$ :	1

**Seismic Design Category** B



**Data Accessed:** Mon Aug 20 2018  
**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: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

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

**Date Accessed:** Mon Aug 20 2018

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.

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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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Date: July 19, 2018

Christine Trotta  
Crown Castle  
3 Corporate Dr., St 101  
Clifton Park, NY 12065

**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 Structural Analysis

**Carrier Designation:** T-Mobile Co-Locate  
Carrier Site Number: CT11423B  
Carrier Site Name: CT11423B

**Crown Castle Designation:** Crown Castle BU Number: 876331  
Crown Castle Site Name: New Britain Gravel Pit  
Crown Castle JDE Job Number: 515661  
Crown Castle Application Number: 447838, Rev.0

**Engineering Firm Designation:** Infinigy Report Designation: 600-005

**Site Data:** 115 North Mountain Road, New Britain,  
Hartford County, CT 06053  
Latitude 41°40'35.72" Longitude -72°49'17.09"

**Structure Information:** Tower Height & Type: 118.9 ft Monopole  
Mount Elevation: 108 ft  
Mount Type: 12 ft Sector Frame

Dear Christine Trotta,

Infinigy Engineering, PLLC is pleased to submit this "Mount Structural 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.

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

**Sector Frame**

**Sufficient**

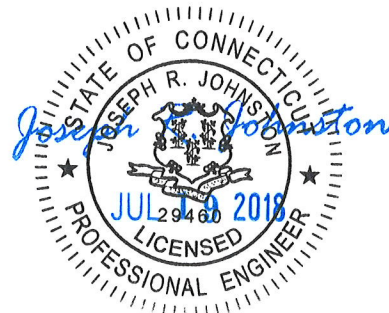
This analysis has been performed in accordance with the 2012 International Building Code and 2016 Connecticut State Building Code and the Infinigy Engineering, PLLC wind speed requirement of a 95 mph nominal 3-second gust wind speed as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1. Exposure Category C and Risk Category II were used in this analysis.

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

Mount structural analysis prepared by: Dmitriy Albul, P.E.

Respectfully Submitted by:

Joe Johnston, P.E.  
VP Structural Engineering / Principal





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3.2) Assumptions

### 4) ANALYSIS RESULTS

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### 5) APPENDIX A

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### 6) APPENDIX B

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### 7) APPENDIX C

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Reference Material

## 1) INTRODUCTION

The mount consists of a 12 ft Sector Frame at the 108 ft elevation. The existing and proposed antenna loading was obtained from the Application provided by CCI, Application Number 447838, Revision 0 and the Mount Photos.

## 2) ANALYSIS CRITERIA

The structural analysis was performed in accordance with the requirements of TIA 222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 95 mph with no ice, 50 mph with 1 inch escalated ice thickness, Exposure Category C and Topographic Category 1. In addition, the [mount has/mounts have] been analyzed for various live loading conditions consisting of a 250-pound man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust wind speed of 30 mph.

**Table 1 - Proposed Equipment Loading Information**

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Proposed Mount Type	Note
108.0	108.0	3	Ericsson	AIR 32 B2A/B66AA	-	1
		3	RFS	APXVAARR24_43-U-NA2		
		3	Ericsson	Radio 4449 B12/B71		

Notes:

- 1) Proposed equipment

**Table 2 - Existing Antenna and Cable Information**

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Existing Mount Type	Note
108.0	108.0	3	Ericsson	AIR 21 B2A B4P	12 Sector Frame	1
		3	Ericsson	KRY 112 144/1		
		3	Commscope	LNx-6515DS-VTM	-	2
		3	Ericsson	RRUS 11 B12		
		3	Ericsson	AIR 21 B4A B2P		

Notes:

- 1) Existing equipment to remain
- 2) Existing equipment to be removed, not considered in this analysis

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	447838, Rev.0	CCI Sites
Mount Photos	Photos	876331	CCI Sites
Design Drawings	Boom Assembly Drawing	DWG # BOOM	D&D Welding

#### 3.1) Analysis Method

RISA-3D (Version 16.0.5), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool 3.0.2, a tool internally developed by Infinigy, was used to calculate member loading for various load cases. Selected output from the analysis is included in Appendix 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 Tables 1 and 2 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) Steel grades have been assumed as follows:
 

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. Crown Castle should be notified to determine the effect on the structural integrity of the antenna mounting system.

#### 4) ANALYSIS RESULTS

**Table 4 - Mount Component Stresses vs. Capacity (Sector Frame)**

Notes	Component	Mount Centerline (ft)	% Capacity	Pass / Fail
1,2	Arms	108.0	77.2%	Pass
	Frame Rail		48.6%	Pass
	Mount Pipe		19.5%	Pass
	Bolts		5.1%	Pass

<b>Tieback End Reaction</b>	<b>292.3 lb</b>
-----------------------------	-----------------

<b>Structure Rating (max from all components) =</b>	<b>77.2%</b>
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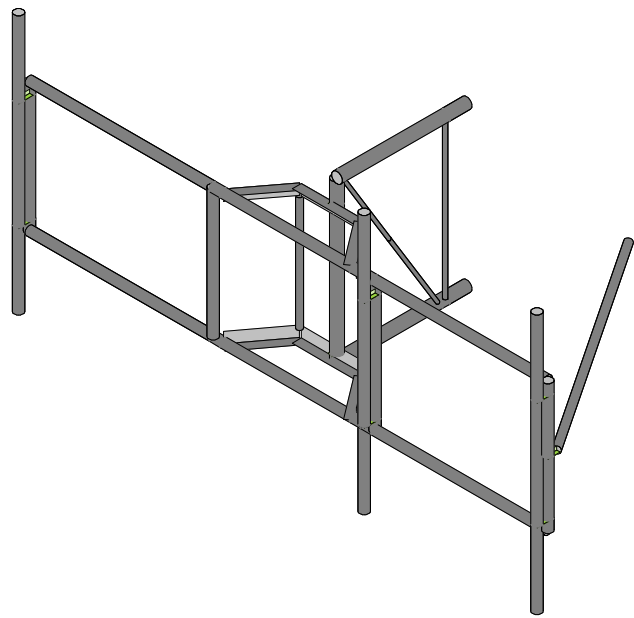
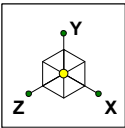
Notes:

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

#### 4.1) Recommendations

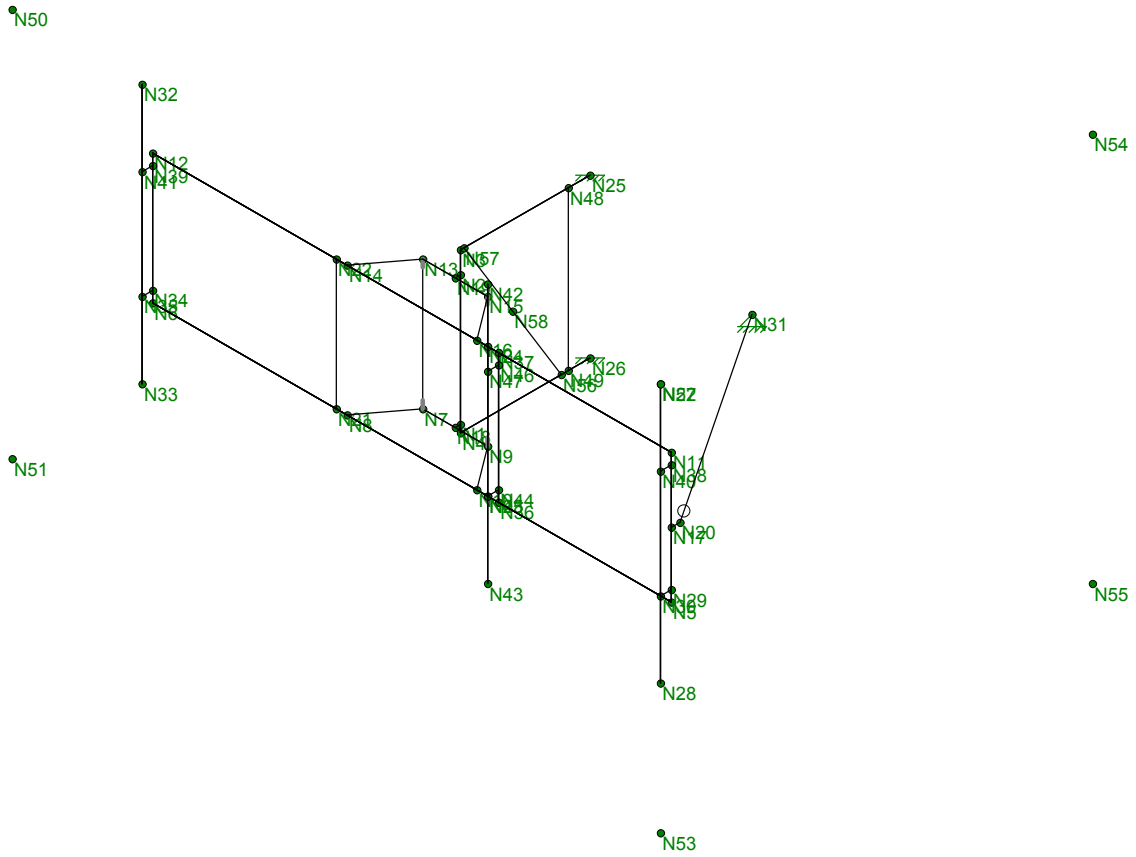
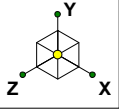
The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

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



Envelope Only Solution

Infinigy Engineering, PLLC	New Britain Gravel Pit	Rendered Model
DVA		July 17, 2018 at 5:13 PM
600-005		New Britain Gravel Pit.r3d



Envelope Only Solution

Infinigy Engineering, PLLC  
DVA  
600-005

New Britain Gravel Pit

Wire Frame Model

July 17, 2018 at 5:13 PM

New Britain Gravel Pit.r3d

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



Site Name: **New Britain Gravel Pit**  
 Client: **Crown Castle**  
 Carrier: **T-Mobile**  
 Engineer: **DVA**  
 Date: **7/17/2018**



INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:  
 Adopted Building Code: **2015 IBC**  
 Structure Load Standard: **ASCE 7-10**  
 Antenna Load Standard: **ASCE 7-10**  
 Structure Risk Category: **II**  
 Structure Type: **Monopole**  
 Number of Sectors: **3**  
 Structure Shape 1: **Round**

Rooftop Inputs:  
 Rooftop Wind Speed-Up?: **No**

Wind Loading Inputs:  
 Design Wind Velocity: **95** mph (ultimate 3-second gust)  
 Wind Centerline 1 ( $z_1$ ): **108.0** ft  
 Side Face Angle ( $\theta$ ): **60** degrees  
 Exposure Category: **C**  
 Topographic Category: **1**

Wind with No Ice		
$q_z$ (psf)	Gh	$F_{ST}$ (psf)
28.23	0.85	28.80

Wind with Ice		
$q_z$ (psf)	Gh	$F_{ST}$ (psf)
7.82	0.85	23.86

Ice Loading Inputs:  
 Is Ice Loading Needed?: **Yes**  
 Ice Wind Velocity: **50** mph (ultimate 3-second gust)  
 Base Ice Thickness: **1.00** in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	$K_a$	Front Shape	Side Shape	$q_z$ (psf)	EPA ( $ft^2$ )	$F_z$ (lbs)	$F_x$ (lbs)	$F_z(60)$ (lbs)	$F_x(30)$ (lbs)
Ericsson AIR 32 B2A/B66AA	108.0	3	1.00	Flat	Flat	28.23	6.51	156.22	113.08	123.87	145.44
Ericsson ERICSSON AIR 21 B2A	108.0	3	1.00	Flat	Flat	28.23	6.09	146.19	103.11	113.88	135.42
RFS/Celwave APXVAARR24_43-UNA20	108.0	3	1.00	Flat	Flat	28.23	20.24	485.78	213.30	281.42	417.66
Ericsson KRY 112 144/1	108.0	3	1.00	Flat	Flat	28.23	0.35	8.40	4.20	5.25	7.35
Ericsson RADIO 4449 B12/B71	108.0	3	1.00	Flat	Flat	28.23	1.64	39.43	27.65	30.60	36.49

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

**Member Primary Data**

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N4	N3			Support Pipe ...	Column	Pipe	A53 Gr. B	Typical
2	M2	N6	N5			Frame Rail	Beam	Pipe	A53 Gr. B	Typical
3	M3	N7	N9			Arms	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N8	N7			Arms	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N9	N10			Arms	Beam	Single Angle	A36 Gr.36	Typical
6	M6	N12	N11		90	Frame Rail	Beam	Pipe	A53 Gr. B	Typical
7	M7	N15	N13		180	Arms	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N13	N14		180	Arms	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N16	N15		180	Arms	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N13	N7		90	Solid Rod	Column	BAR	A36 Gr.36	Typical
11	M11	N9	N15		90	Solid Rod	Column	BAR	A36 Gr.36	Typical
12	M12	N18	N1			RIGID	None	None	RIGID	DR1
13	M13	N19	N2			RIGID	None	None	RIGID	DR1
14	M14	N17	N20			RIGID	None	None	RIGID	DR1
15	M15	N25	N3		90	Support Pipe	Beam	Pipe	A53 Gr. B	Typical
16	M16	N26	N4		90	Support Pipe	Beam	Pipe	A53 Gr. B	Typical
17	M17	N28	N27			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
18	M18	N30	N29			RIGID	None	None	RIGID	DR1
19	M19	N31	N20			Stabilizer	Beam	Pipe	A53 Gr. B	Typical
20	M20	N33	N32			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
21	M21	N35	N34			RIGID	None	None	RIGID	DR1
22	M22	N22	N21			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
23	M23	N6	N12			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
24	M24	N23	N24			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
25	M25	N5	N11			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
26	M26	N36	N37			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
27	M27	N40	N38			RIGID	None	None	RIGID	DR1
28	M28	N41	N39			RIGID	None	None	RIGID	DR1
29	M29	N43	N42			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
30	M30	N45	N44			RIGID	None	None	RIGID	DR1
31	M31	N47	N46			RIGID	None	None	RIGID	DR1
32	M32	N48	N49			Solid Rod 1	Column	BAR	A36 Gr.36	Typical
33	M33	N56	N58			Solid Rod 2	VBrace	BAR	A36 Gr.36	Typical
34	M34	N58	N57			Solid Rod 2	VBrace	BAR	A36 Gr.36	Typical

**Material Takeoff**

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		9	23.2	0
3	Total General		9	23.2	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	0.75" S.R. HRA	2	51.6	6.5
7	A36 Gr.36	1" SR	1	44	9.8
8	A36 Gr.36	1.5" SR	2	64	32.1
9	A36 Gr.36	L3x2.5x4	6	96.1	36
10	A53 Gr. B	PIPE_1.5	1	72.1	15.3
11	A53 Gr. B	PIPE_2.0	10	684	197.8
12	A53 Gr. B	PIPE_2.5	3	116	53
13	Total HR Steel		25	1127.8	350.4

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(...
1	Self Weight	DL		-1			8		
2	Wind Load AZI 000	WLZ					8	1	
3	Wind Load AZI 090	WLX					8	1	
4	Ice Weight	OL1					8	34	
5	Wind + Ice Load AZI 000	OL2					8	1	
6	Wind + Ice Load AZI 090	OL3					8	1	
7	Service Live 1	LL				1			
8	BLC 2 Transient Area Loads	None						22	
9	BLC 3 Transient Area Loads	None						28	
10	BLC 5 Transient Area Loads	None						22	
11	BLC 6 Transient Area Loads	None						28	

**Load Combinations**

	Description	So...	PDelta	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.4D	Yes	Y		DL 1.4										
2	1.2D + 1W AZI 000	Yes	Y		DL 1.2	W...	1								
3	1.2D + 1W AZI 030	Yes	Y		DL 1.2	W...	.866	W...	.5						
4	1.2D + 1W AZI 060	Yes	Y		DL 1.2	W...	.5	W...	.866						
5	1.2D + 1W AZI 090	Yes	Y		DL 1.2			W...	1						
6	1.2D + 1W AZI 120	Yes	Y		DL 1.2	W...	-.5	W...	.866						
7	1.2D + 1W AZI 150	Yes	Y		DL 1.2	W...	.866	W...	.5						
8	1.2D + 1W AZI 180	Yes	Y		DL 1.2	W...	-1								
9	1.2D + 1W AZI 210	Yes	Y		DL 1.2	W...	.866	W...	-.5						
10	1.2D + 1W AZI 240	Yes	Y		DL 1.2	W...	-.5	W...	.866						
11	1.2D + 1W AZI 270	Yes	Y		DL 1.2			W...	-1						
12	1.2D + 1W AZI 300	Yes	Y		DL 1.2	W...	.5	W...	.866						
13	1.2D + 1W AZI 330	Yes	Y		DL 1.2	W...	.866	W...	-.5						
14	0.9D + 1W AZI 000	Yes	Y		DL .9	W...	1								
15	0.9D + 1W AZI 030	Yes	Y		DL .9	W...	.866	W...	.5						
16	0.9D + 1W AZI 060	Yes	Y		DL .9	W...	.5	W...	.866						
17	0.9D + 1W AZI 090	Yes	Y		DL .9			W...	1						
18	0.9D + 1W AZI 120	Yes	Y		DL .9	W...	-.5	W...	.866						
19	0.9D + 1W AZI 150	Yes	Y		DL .9	W...	.866	W...	.5						
20	0.9D + 1W AZI 180	Yes	Y		DL .9	W...	-1								
21	0.9D + 1W AZI 210	Yes	Y		DL .9	W...	.866	W...	-.5						
22	0.9D + 1W AZI 240	Yes	Y		DL .9	W...	-.5	W...	.866						
23	0.9D + 1W AZI 270	Yes	Y		DL .9			W...	-1						
24	0.9D + 1W AZI 300	Yes	Y		DL .9	W...	.5	W...	.866						
25	0.9D + 1W AZI 330	Yes	Y		DL .9	W...	.866	W...	-.5						
26	1.2D + 1.0Di	Yes	Y		DL 1.2	OL1	1								
27	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	1						
28	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	.866	OL3	.5				
29	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	.5	OL3	.866				
30	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1			OL3	1				
31	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	-.5	OL3	.866				
32	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	.866	OL3	.5				
33	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	-1						
34	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	.866	OL3	-.5				
35	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	-.5	OL3	.866				
36	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1			OL3	-1				
37	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	.5	OL3	.866				
38	1.2D + 1.0Di + 1.0...	Yes	Y		DL 1.2	OL1	1	OL2	.866	OL3	-.5				
39	1.2D + 1.5L + 1.0...	Yes	Y		DL 1.2	LL	1.5	W...	.11						
40	1.2D + 1.5L + 1.0...	Yes	Y		DL 1.2	LL	1.5	W...	.095	W...	.055				

**Load Combinations (Continued)**

Description	So...	PDelta	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
41	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...055	W...095								
42	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5		W...11								
43	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...055	W...095								
44	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...095	W...055								
45	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...11									
46	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...095	W...055								
47	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...055	W...095								
48	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5		W...11								
49	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...055	W...095								
50	1.2D + 1.5L + 1.0...	Yes	Y	DL 1.2	LL 1.5	W...095	W...055								

**Envelope Joint Reactions**

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-in]	LC	MY [lb-in]	LC	MZ [lb-in]	LC		
1	N25	max	449.313	42	1389.163	27	-151.516	14	-1794.605	14	14319.872	17	2680.915	30
2		min	-630.958	36	255.54	20	-3282.32	33	-9555.792	33	-16907.657	36	-2921.839	48
3	N26	max	633.39	30	1935.094	33	3315.998	27	-3072.846	20	17324.768	30	2916.306	27
4		min	-454.075	48	375.66	14	108.738	20	-15370.143	27	-14907.443	23	-3401.293	44
5	N31	max	185.611	25	45.269	32	291.726	25	0	1	0	1	0	1
6		min	-183.602	7	6.311	25	-292.347	7	0	1	0	1	0	1
7	Totals:	max	796.258	17	3330.123	29	1273.449	2						
8		min	-796.258	11	712.002	23	-1273.448	20						

**Envelope AISC 14th(360-10): LRFD Steel Code Checks**

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[.Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Egn	
1	M7	L3x2.5x4	.772	8.812	35	.129	8.812	y	34	40153....	42768	15016....	35555....	1... H2-1
2	M3	L3x2.5x4	.692	9.187	30	.123	9.187	z	28	40153....	42768	15016....	35555....	1... H2-1
3	M16	PIPE 2.5	.568	0	30	.284	6		28	47114....	50715	43155	43155	2... H1-1b
4	M34	0.75" S.R._HRA	.503	25.812	38	.022	25.8...	36	8779.194	14313....	2147.144	2147.144	2...	H1-1a
5	M33	0.75" S.R._HRA	.492	25.812	36	.021	0	36	8779.194	14313....	2147.144	2147.144	1...	H1-1a
6	M2	PIPE 2.0	.486	93	29	.406	91.5	28	26521....	32130	22459.5	22459.5	1	H3-6
7	M15	PIPE 2.5	.479	0	36	.278	35.25	31	47114....	50715	43155	43155	2...	H1-1b
8	M6	PIPE 2.0	.460	93	35	.396	91.5	34	26521....	32130	22459.5	22459.5	1	H3-6
9	M26	PIPE 2.0	.414	0	38	.096	36	35	28843....	32130	22459.5	22459.5	3...	H1-1b
10	M23	PIPE 2.0	.385	36	27	.099	36	30	28843....	32130	22459.5	22459.5	3...	H1-1b
11	M9	L3x2.5x4	.383	0	28	.079	15.0...	y	34	40930....	42768	15016....	35555....	2... H2-1
12	M5	L3x2.5x4	.380	15.019	34	.082	0	y	28	40930....	42768	15016....	35555....	2... H2-1
13	M22	PIPE 2.0	.375	36	27	.069	36	47	28843....	32130	22459.5	22459.5	2...	H1-1b
14	M25	PIPE 2.0	.332	0	32	.083	36	36	28843....	32130	22459.5	22459.5	2...	H1-1b
15	M24	PIPE 2.0	.319	0	29	.051	0	28	28843....	32130	22459.5	22459.5	2...	H1-1b
16	M11	1.5" SR	.317	0	27	.038	32	46	39024....	57255.53	17176....	17176....	2...	H1-1b
17	M8	L3x2.5x4	.312	15.019	8	.054	15.0...	z	33	40930....	42768	15016....	35555....	2... H2-1
18	M4	L3x2.5x4	.305	0	2	.055	0	z	27	40930....	42768	15016....	35555....	2... H2-1
19	M10	1.5" SR	.209	0	28	.032	32	28	39024....	57255.53	17176....	17176....	2...	H1-1b
20	M29	PIPE 2.0	.195	51	35	.036	21	28	20866....	32130	22459.5	22459.5	4...	H1-1b
21	M1	PIPE 2.5	.178	44	33	.227	0	31	45431....	50715	43155	43155	4...	H1-1b
22	M20	PIPE 2.0	.166	51	29	.027	51	29	20866....	32130	22459.5	22459.5	4.6	H1-1b
23	M17	PIPE 2.0	.146	51	32	.022	51	36	20866....	32130	22459.5	22459.5	4...	H1-1b
24	M32	1" SR	.074	44	27	.020	44	49	5727.973	25446....	5089.34	5089.34	2...	H1-1b
25	M19	PIPE 1.5	.067	36.056	37	.006	72.1...	37	11948....	23593.5	13261.5	13261.5	1...	H1-1b

**APPENDIX D**  
**REFERENCE MATERIAL**

Date: 7/17/2018  
 Client: Crown Castle  
 Carrier: T-Mobile  
 Engineer: DVA  
 Site: New Britain Gravel Pit  
 Job #: 600-005

Code: LRFD  
 Axial: 1935.10 lbs  
 Shear: 3316.00 lbs

Bolt Capacity (5/8" A307 Thru Bolt)				
	Ult Load / Bolt	Factored Load ( $\phi=0.75$ )	# of Bolts	Factor Joint Capacity
Axial (lb)	8284.0	6213.0	2	12426
Shear(lb)	13560.0	10170.0	2	20340

Interaction Check	
$T / \phi T_n$	15.6%
$V / \phi V_n$	16.3%
$\leq 1.0$	5.1%
	OK



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

T-Mobile Existing Facility

Site ID: CT11423B

I-84/New Britain  
115 North Mountain Road  
New Britain, CT 06053

**August 27, 2018**

**EBI Project Number: 6218005865**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>27.92 %</b>





August 27, 2018

T-Mobile USA  
Attn: Jason Overbey, RF Manager  
35 Griffin Road South  
Bloomfield, CT 06002

## Emissions Analysis for Site: **CT11423B – I-84/New Britain**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **115 North Mountain Road, New Britain, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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) and 2100 MHz (AWS) 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 **115 North Mountain Road, New Britain, CT**, 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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) 1 GSM channels (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 15 Watts per Channel.
- 2) 1 UMTS channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) 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.
- 5) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 6) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.



- 7) 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.
- 8) 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.
- 9) The antennas used in this modeling are the **Ericsson AIR32 KRD901146-1 B66A/B2A** & **Ericsson AIR21 KRC118023-1 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **RFS APXVAARR24\_43-U-NA20** for 600 MHz and 700 MHz channels. 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 manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.
- 10) The antenna mounting height centerline of the proposed antennas is **108 feet** above ground level (AGL).
- 11) 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.
- 12) 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 AIR32 KRD901146-1 B66A/B2A	Make / Model:	Ericsson AIR32 KRD901146-1 B66A/B2A	Make / Model:	Ericsson AIR32 KRD901146-1 B66A/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	108 feet	Height (AGL):	108 feet	Height (AGL):	108 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	200	Total TX Power(W):	200	Total TX Power(W):	200
ERP (W):	7,780.90	ERP (W):	7,780.90	ERP (W):	7,780.90
Antenna A1 MPE%	<b>2.69</b>	Antenna B1 MPE%	<b>2.69</b>	Antenna C1 MPE%	<b>2.69</b>
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 KRC118023-1 B2A/B4P	Make / Model:	Ericsson AIR21 KRC118023-1 B2A/B4P	Make / Model:	Ericsson AIR21 KRC118023-1 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	108 feet	Height (AGL):	108 feet	Height (AGL):	108 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	55	Total TX Power(W):	55	Total TX Power(W):	55
ERP (W):	2,139.75	ERP (W):	2,139.75	ERP (W):	2,139.75
Antenna A2 MPE%	<b>0.74</b>	Antenna B2 MPE%	<b>0.74</b>	Antenna C2 MPE%	<b>0.74</b>
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	RFS APXVAARR24_43-U- NA20	Make / Model:	RFS APXVAARR24_43-U- NA20	Make / Model:	RFS APXVAARR24_43-U- NA20
Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd
Height (AGL):	108 feet	Height (AGL):	108 feet	Height (AGL):	108 feet
Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03
Antenna A3 MPE%	<b>2.00</b>	Antenna B3 MPE%	<b>2.00</b>	Antenna C3 MPE%	<b>2.00</b>

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	<b>5.43 %</b>
AT&T	<b>6.68 %</b>
Clearwire	<b>0.25 %</b>
Sprint	<b>6.80 %</b>
Verizon Wireless	<b>8.76 %</b>
<b>Site Total MPE %:</b>	<b>27.92 %</b>

T-Mobile Sector A Total:	5.43 %
T-Mobile Sector B Total:	5.43 %
T-Mobile Sector C Total:	5.43 %
<hr/>	
Site Total:	27.92 %



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

T-Mobile Frequency Band / Technology (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,556.18	108	10.75	PCS - 1900 MHz	1000.00	1.08%
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	108	16.13	AWS - 2100 MHz	1000.00	1.61%
T-Mobile PCS - 1900 MHz GSM	1	583.57	108	2.02	PCS - 1900 MHz	1000.00	0.20%
T-Mobile AWS - 2100 MHz UMTS	1	1,556.18	108	5.38	AWS - 2100 MHz	1000.00	0.54%
T-Mobile 600 MHz LTE	2	788.97	108	5.45	600 MHz	400.00	1.36%
T-Mobile 700 MHz LTE	2	432.54	108	2.99	700 MHz	467.00	0.64%
						<b>Total:</b>	<b>5.43%</b>



## 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:	5.43 %
Sector B:	5.43 %
Sector C:	5.43 %
T-Mobile Maximum MPE % (Per Sector):	5.43 %
Site Total:	27.92 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **27.92%** 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.