



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

August 2, 2019

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

RE: Notice of Exempt Modification for Crown Site BU: 806376
AT&T Site ID: 10090919
1455 Forbes Street, East Hartford, CT 06118
Latitude: 41° 43' 53.30"/ Longitude: -72° 36' 28.00"

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 121-foot mount of the existing 131-foot monopole at 1455 Forbes Street in East Hartford, Connecticut. The tower is owned by Crown Castle. The property is owned by Mr. Robert D. Handel. AT&T proposes to replace three (3) antennas with six (6) new antennas, remove and replace (15) RRHs, and add (1) DC6.

The facility was approved by the Connecticut Siting Council Petition No. 535 on May 21, 2002. This approval was given without conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Marcia A. Leclerc, Mayor, Town of East Hartford, Eileen Buckheit, Development Director, 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.
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.

The Foundation for a Wireless World.

CrownCastle.com

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

Sincerely,

Anne Marie Zsamba
Real Estate Specialist
3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065
(201) 236-9224
annemarie.zsamba@crowncastle.com

Attachments:

cc: Marcia A. Leclerc, Mayor
Town of East Hartford
740 Main Street
East Hartford, CT 06108
860-291-7200

Eileen Buckheit, Development Director
Town of East Hartford
740 Main Street
East Hartford, CT 06108
860-291-7300

Robert Handel
1473 Forbes Street
East Hartford, CT 06118

ORIGIN ID:GFLA (518) 373-3523
ANNE MARIE ZSAMBA
CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

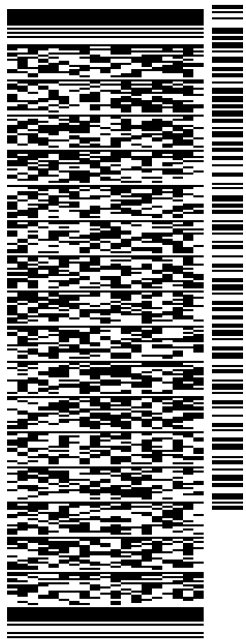
SHIP DATE: 27 JUN19
ACTWGT: 1.50 LB
CAD: 104924194IN/ET4100
BILL SENDER

TO **ROBERT HANDEL**

1473 FORBES STREET

EAST HARTFORD CT 06118

(201) 236-9224 REF: 1734.7690
INV: DEPT:
PO:



J191019010701uv

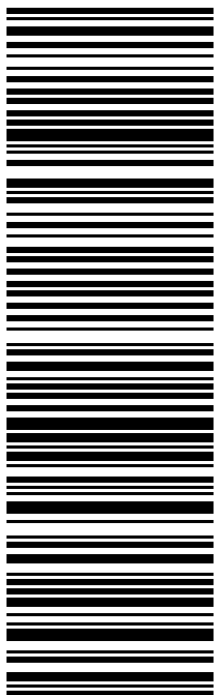
565J1/D210/23AD

TRK# 7755 8067 5621
0201

FRI - 28 JUN 10:30A
PRIORITY OVERNIGHT

EB QCWA

06118
CT-US BDL



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ORIGIN ID:GFLA (518) 373-3523
ANNE MARIE ZSAMBRA
CROWN CASTLE
3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

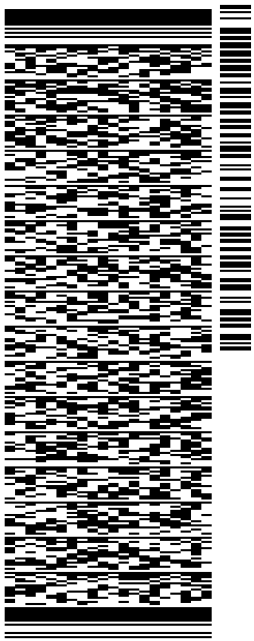
SHIP DATE: 27 JUN19
ACTWGT: 1.50 LB
CAD: 104924194INNET4100

BILL SENDER

TO EILEEN BUCKHEIT - DEV DIRECTOR
TOWN OF EAST HARTFORD
740 MAIN ST

EAST HARTFORD CT 06108

(518) 373-3543 REF: 1734.7890
INV/ PO: DEPT:

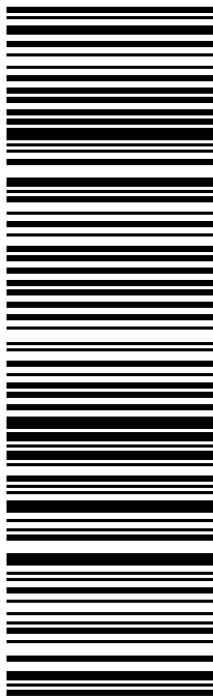


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565J1/D210/23AD

TRK# 7755 8065 8710 FRI - 28 JUN 10:30A
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CT-US BDL



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SUITE 101
CLIFTON PARK, NY 12065
UNITED STATES US

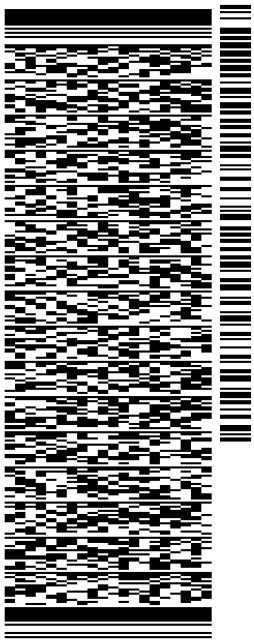
SHIP DATE: 27 JUN19
ACTWGT: 1.50 LB
CAD: 104924194INLET4100

BILL SENDER

TO **MARCIA A. LECLERC, MAYOR**
TOWN OF EAST HARTFORD
740 MAIN STREET

EAST HARTFORD CT 06108

(860) 291-7200 REF: 1734.7890
INV/ DEPT:
PO:

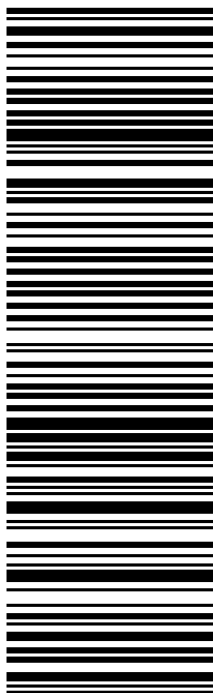


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PRIORITY OVERNIGHT

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06108
CT-US BDL



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UNITED STATES US

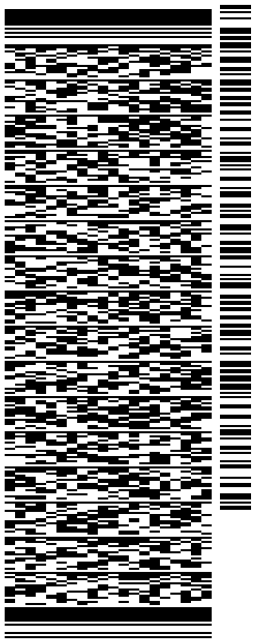
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ACTWGT: 3.30 LB
CAD: 104924194IN/ET4100

BILL SENDER

TO **MELANIE BACHMAN**
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE

NEW BRITAIN CT 06051

(860) 827-2951 REF: 1765 6880
INV: DEPT:
PO:



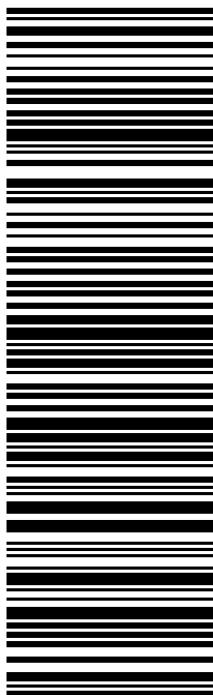
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PRIORITY OVERNIGHT

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06051
CT-US BDL



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Exhibit A

Original Facility Approval

DOCKET NO. 139 - An application of
Metro Mobile CTS of Hartford, Inc., : Connecticut
for a Certificate of Environmental :
Compatibility and Public Need for : Siting
the construction, maintenance, and :
operation of cellular facilities in : Council
the Towns of Enfield, East Hartford,
and Wethersfield, Connecticut. September 18, 1991

Decision and Order

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

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

1. The self-supporting monopole towers shall be no taller than necessary to provide the proposed communication service and in no event shall the towers exceed a total height of 163 feet above ground level (AGL) at the proposed Enfield alternate site and 123 feet AGL at the proposed East Hartford prime site, with antennas and appurtenances.
2. The Certificate holder shall prepare a Development and Management (D&M) Plan, for approval by the Council, for these sites in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. This D&M plan

- shall include detailed plans of the towers, tower foundations, soil boring reports, equipment buildings, access roads, security fences, landscaping plans, detailed erosion and sedimentation control plans, and a final schedule. In addition, the D&M plan shall include for Council consideration, detailed plans and itemized costs for the placement of service utilities underground in order to further mitigate the visual effect of the facilities.
3. The Certificate holder shall comply with any existing and future radio frequency (RF) standards promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted herein shall be brought into compliance with such standards.
 4. The Certificate holder shall provide the Council with a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.
 5. The Certificate holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
 6. If the facility does not initially provide or permanently ceases to provide cellular service following completion of construction, this Decision and Order shall be void, and the tower and all associated equipment shall be dismantled and removed or reapplication for any new use shall be made to the Council as soon as practicable before any such new use is made.
 7. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of this issuance shall be published in the Hartford Courant and the Journal Inquirer.

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

The parties to this proceeding are:

PARTIES	ITS REPRESENTATIVE
Metro Mobile CTS of Hartford, Inc. 20 Alexander Drive P.O. Box 5029 Wallingford, CT 06492 Attn: Gary Schulman	Robinson and Cole One Commercial Plaza Hartford, CT 06103-3597 Attn: Earl Phillips, Jr. (203) 275-8200
The Town of East Hartford	G. Barry Goodberg Assistant Corporation Counsel Town of East Hartford 740 Main Street East Hartford, CT 06108 (203) 289-2781
The Town of Enfield	Christopher W. Bromson Enfield Town Attorney 47 No. Main Street Enfield, CT 06082 (203) 745-0371 Ext. 290

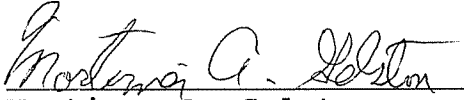
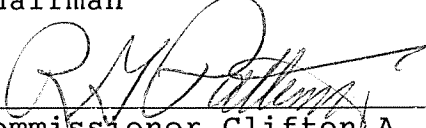
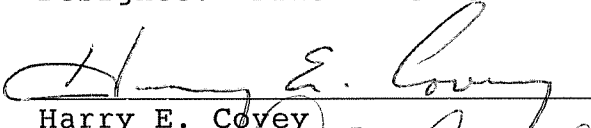
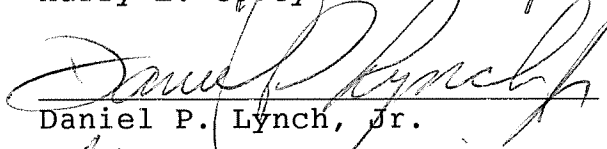
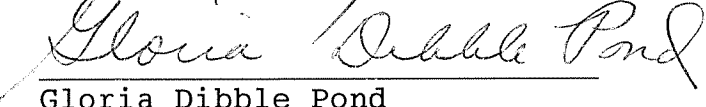
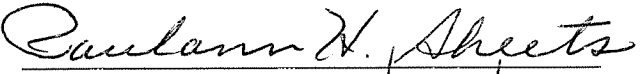
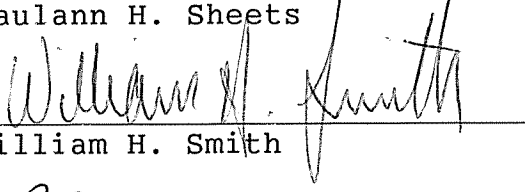
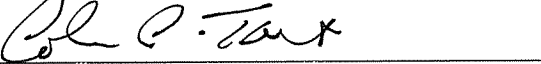
SMH:bw

5534E

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in DOCKET NO. 139 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of cellular facilities in the Towns of Enfield, East Hartford, and Wethersfield, Connecticut, or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 18th day of September, 1991.

<u>Council Members</u>	<u>Vote Cast</u>
 Mortimer A. Gelston Chairman	YES
 Commissioner Clifton A. Leonhardt Designee: Commissioner Richard G. Patterson	ABSTAIN
Commissioner Timothy R.E. Keeney Designee: Brian Emerick	ABSENT
 Harry E. Covey	NO
 Daniel P. Lynch, Jr.	NO
 Gloria Dibble Pond	YES
 Paulann H. Sheets	YES
 William H. Smith	YES
 Colin C. Tait	YES

PETITION NO. 535 - AT&T Wireless PCS, LLC and Crown Atlantic Company LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for proposed modification of an existing telecommunications tower located at 1455 Forbes Street, East Hartford, Connecticut.	} } } } }	Connecticut Siting Council May 21, 2002
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Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the extension of an existing telecommunications tower and installation of associated equipment at an existing facility located at 1455 Forbes Street in East Hartford, Connecticut, are not significant, are not disproportionate either alone or cumulatively with other effects, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny this petition.

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

1. The tower extension shall be compatible with and installed on the existing monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS, LLC (AT&T) and XM Satellite Radio, but such extension shall not exceed a height of 133 feet above ground level, including antennas and appurtenances.
2. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
3. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
4. The Certificate Holder shall permit public or private entities to share space on the tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
5. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
6. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.
7. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not completed within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

8. All other applicable provisions of the Council's September 18, 1991 Decision and Order in Docket No. 139 remain in effect.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, and The East Hartford Gazette.

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

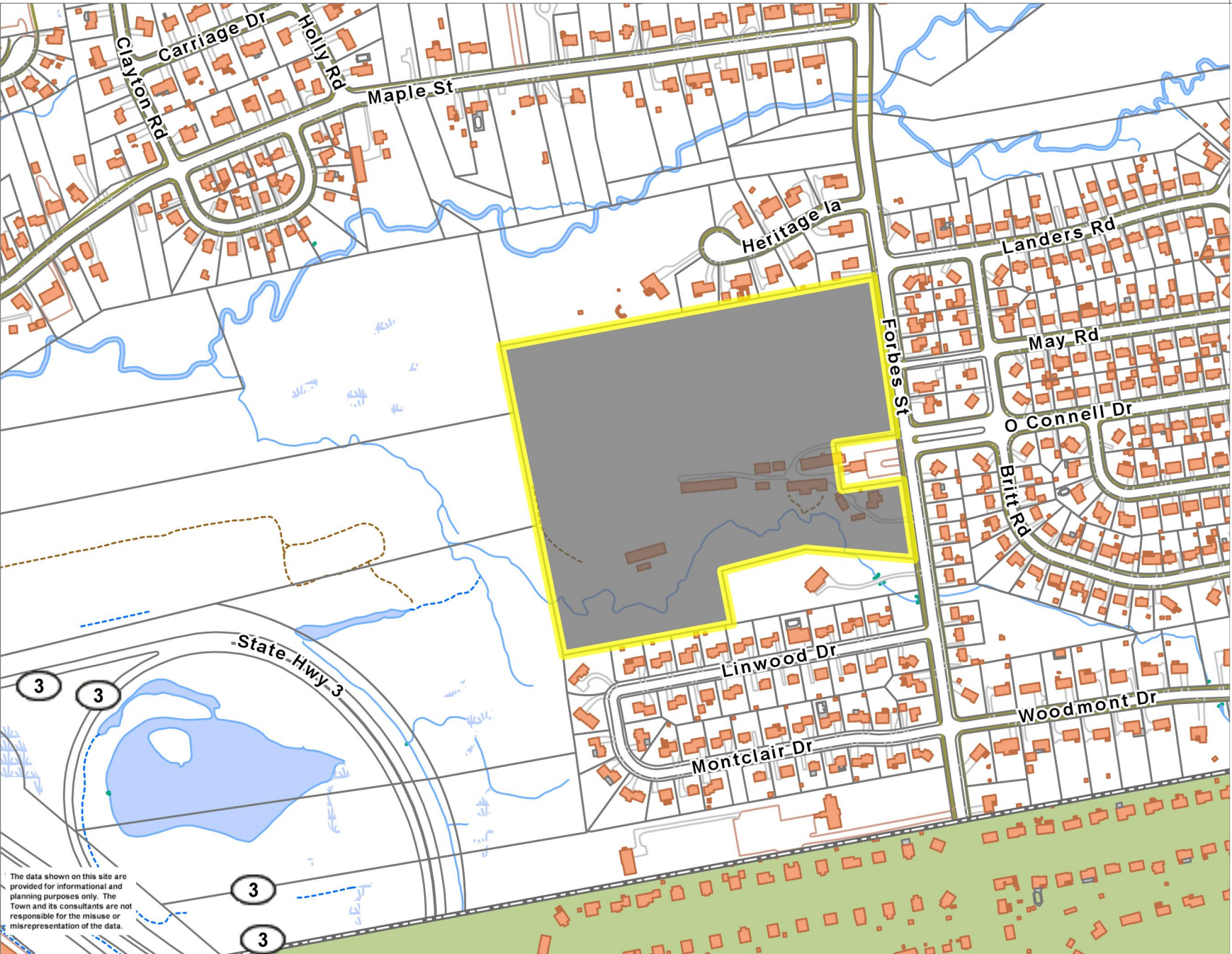
The parties and intervenors to this proceeding are:

Crown Atlantic Company LLC and
AT&T Wireless PCS, LLC

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

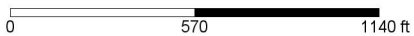
Exhibit B

Property Card



- Town Boundary
- Schools
- Buildings
- Building
- Cement
- Deck
- Foundation
- Greenhouse
- Tank
- Parcels
- Paved Features
- Driveway
- Road Edge
- Parking Lot
- Sidewalk
- Trail
- Tunnel
- Unpaved
- Water Features Arc
- Perennial Stream
- Draining Ditch
- Culvert
- Spillway
- Headwall
- Dam
- Directional Flow Arrow
- Water Features Poly
- Open Water
- Swamp
- Pier
- CT Highways
- Interstate
- US Highway
- State Highway
- Abutting Town Labels
- Az
- Abutting Towns
- Streets

The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.



Printed on 06/20/2016 at 10:16 AM

Town of East Hartford Property Summary Report

1455 FORBES ST

MAP LOT:	41-233	CAMA PID:	4723
LOCATION:	1455 FORBES ST		
OWNER NAME:	HANDEL ROBERT D		



OWNER OF RECORD
HANDEL ROBERT D
1473 FORBES ST
EAST HARTFORD, CT 06118



LIVING AREA:	720	ZONING:	R2	ACREAGE:	25.74
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SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
HANDEL ROBERT D	3582/ 113	25-Jan-2016	\$0.00
HANDEL JESSIE K EST OF C/O ROBERT D HANDEL EXECUTOR	3534/ 329	21-May-2015	\$0.00
HANDEL JESSIE K	1874/ 345	03-Jan-2000	\$0.00
HANDEL ALBERT P JR EST OF HANDEL JESSIE K EXEC	0/ 0	01-Jan-2000	\$0.00
HANDEL ALBERT P JR EST OF HANDEL JESSIE K EXEC	1693/ 161	05-Aug-1997	\$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	\$330,170.00	IMPROVEMENTS:	\$285,940.00	LAND:	\$44,230.00
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ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2015	\$346,650.00	\$302,420.00	\$44,230.00
2014	\$346,650.00	\$302,420.00	\$44,230.00
2013	\$346,650.00	\$302,420.00	\$44,230.00
2012	\$346,650.00	\$302,420.00	\$44,230.00
2011	\$346,650.00	\$302,420.00	\$44,230.00

Town of East Hartford Property Summary Report

1455 FORBES ST

MAP LOT:	41-233	CAMA PID:	4723
LOCATION:	1455 FORBES ST		
OWNER NAME:	HANDEL ROBERT D		

BUILDING # 1

YEAR BUILT	1865	EXT WALL 1	Vinyl Siding
STYLE	Colonial	INT WALLS 1	Plaster
MODEL	Residential	HEAT FUEL	Gas
STORIES	2.0	HEAT TYPE	Hot Water
OCCUPANCY	One Family	AC TYPE	None
ROOF	Gable	BEDROOMS	4
ROOF COVER	Asphalt	FULL BATHS	1
FLOOR COVER 1	Hardwood	HALF BATHS	1
% BSMT	100	TOTAL ROOMS	9
% FIN BSMT	0	% REC RM	60
% SEMI FIN BSMT	0	% ATTIC FINISH	0
BSMT GARAGE		FIREPLACES	0



OUTBUILDINGS

DESCRIPTION	CODE	UNITS
1 Story Barn	BRN1	1x5112 (5112 SF)
Shed	SHD1	1x64 (64 S.F.)
1 Story Barn	BRN1	1x3072 (3072 SF)
Shed	SHD1	1x300 (300 S.F.)
Shed	SHD1	1x561 (561 S.F.)
1 Story Barn	BRN1	1x4928 (4928 SF)
Shed	SHD1	1x600 (600 S.F.)

Town of East Hartford Property Summary Report

1455 FORBES ST

MAP LOT:	41-233	CAMA PID:	4723
LOCATION:	1455 FORBES ST		
OWNER NAME:	HANDEL ROBERT D		

BUILDING # 2

YEAR BUILT	1934	EXT WALL 1	Vinyl Siding
STYLE	Single Family	INT WALLS 1	Plaster
MODEL	Residential	HEAT FUEL	Other
STORIES	1.0	HEAT TYPE	Other
OCCUPANCY	One Family	AC TYPE	None
ROOF	Gable	BEDROOMS	1
ROOF COVER	Asphalt	FULL BATHS	1
FLOOR COVER 1	Hardwood	HALF BATHS	0
% BSMT	0	TOTAL ROOMS	4
% FIN BSMT	0	% REC RM	0
% SEMI FIN BSMT	0	% ATTIC FINISH	0
BSMT GARAGE		FIREPLACES	0



OUTBUILDINGS

DESCRIPTION	CODE	UNITS
Shed	SHD1	1x105 (105 S.F.)
1 Story Barn	BRN1	1x840 (840 SF)
Shed	SHD1	1x144 (144 S.F.)
1 Story Barn	BRN1	1x3840 (3840 SF)
Shed	SHD1	1x308 (308 S.F.)
FR/SHED		30 SF

Exhibit C

Construction Drawings

PART 1 - GENERAL

1.1 GENERAL CONDITIONS:

- A. CONTRACTOR SHALL INSPECT THE EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
 - B. THE CONTRACTOR SHALL OBTAIN PERMITS, LICENSES, MAKE ALL DEPOSITS, AND PAY ALL FEES REQUIRED FOR THE CONSTRUCTION PERFORMANCE FOR THE WORK UNDER THIS SECTION.
 - C. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL SYSTEMS AND COMPONENTS COVERED UNDER THIS SECTION. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS. DRAWING SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.
- 1.2 LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES.
- A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, AND ALL APPLICABLE LOCAL LAWS, REGULATIONS, ORDINANCES, STATUTES AND CODES. CONDUIT BENDS SHALL BE THE RADIUS BEND FOR THE TRADE SIZE OF CONDUIT IN COMPLIANCE WITH THE LATEST EDITIONS OF NEC.

1.3 REFERENCES:

- A. THE PUBLICATIONS LISTED BELOW ARE PART OF THIS SPECIFICATION. EACH PUBLICATION SHALL BE THE LATEST REVISION AND ADDENDUM IN EFFECT ON THE DATE. THIS SPECIFICATION IS ISSUED FOR CONSTRUCTION UNLESS OTHERWISE NOTED. EXCEPT AS MODIFIED BY THE REQUIREMENT SPECIFIED HEREIN OR THE DETAILS OF THE DRAWINGS, WORK INCLUDED IN THIS SPECIFICATION SHALL CONFORM TO THE APPLICABLE PROVISION OF THESE PUBLICATIONS.

1. ANSI/IEEE (AMERICAN NATIONAL STANDARDS INSTITUTE)
2. ASTM (AMERICAN SOCIETY FOR TESTING AND MATERIALS)
3. ICEA (INSULATED CABLE ENGINEERS ASSOCIATION)
4. NEMA (NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION)
5. NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)
6. OSHA (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)
7. UL (UNDERWRITERS LABORATORIES INC.)
8. AT&T GROUNDING AND BONDING STANDARDS TP-76416

1.4 SCOPE OF WORK

- A. WORK UNDER THIS SECTION SHALL CONSIST OF FURNISHING ALL LABOR, MATERIAL, AND ASSOCIATED SERVICES REQUIRED TO COMPLETE REQUIRED CONSTRUCTION AND BE OPERATIONAL.
- B. ALL ELECTRICAL EQUIPMENT UNDER THIS CONTRACT SHALL BE PROPERLY TESTED, ADJUSTED, AND ALIGNED BY THE CONTRACTOR.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATING, DRAINING, TRENCHES, BACKFILLING, AND REMOVAL OF EXCESS DIRT.
- D. THE CONTRACTOR SHALL FURNISH TO THE OWNER WITH CERTIFICATES OF A FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES HAVING JURISDICTION.
- E. THE CONTRACTOR SHALL PREPARE A COMPLETE SET OF AS-BUILT DRAWINGS, DOCUMENT ALL WIRING EQUIPMENT CONDITIONS, AND CHANGES WHILE COMPLETING THIS CONTRACT. THE AS-BUILT DRAWINGS SHALL BE SUBMITTED AT COMPLETION OF THE PROJECT.

PART 2 - PRODUCTS

2.1 GENERAL:

- A. ALL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW, AND FREE FROM DEFECTS.
- B. ALL ITEMS OF MATERIALS AND EQUIPMENT SHALL BE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED.
- C. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- D. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 10,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PER THE GOVERNING JURISDICTION.

2.2 MATERIALS AND EQUIPMENT:

- A. CONDUIT:
 1. RIGID METAL CONDUIT (RMC) SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE INCLUDING ENDS AND THREADS AND ENAMELED OR LACQUERED INSIDE IN ADDITION TO GALVANIZING.
 2. LIQUIDTIGHT FLEXIBLE METAL CONDUIT SHALL BE UL LISTED.
 3. CONDUIT CLAMPS, STRAPS AND SUPPORTS SHALL BE STEEL OR MALLEABLE IRON. ALL FITTINGS SHALL BE COMPRESSION AND CONCRETE TIGHT TYPE. GROUNDING BUSHINGS WITH INSULATED THROATS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.
 4. NONMETALLIC CONDUIT AND FITTINGS SHALL BE SCHEDULE 40 PVC. INSTALL USING SOLVENT-CEMENT-TYPE JOINTS AS RECOMMENDED BY THE MANUFACTURER.
- B. CONDUCTORS AND CABLE:
 1. CONDUCTORS AND CABLE SHALL BE FLAME-RETARDANT, MOISTURE AND HEAT RESISTANT THERMOPLASTIC, SINGLE CONDUCTOR, COPPER, TYPE THHN/THWN-2, 600 VOLT, SIZE AS INDICATED, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR USED.
 2. #10 AWG AND SMALLER CONDUCTOR SHALL BE SOLID OR STRANDED AND #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED.
 3. SOLDERLESS, COMPRESSION-TYPE CONNECTORS SHALL BE USED FOR TERMINATION OF ALL STRANDED CONDUCTORS.
 4. STRAIN-RELIEF SUPPORTS GRIPS SHALL BE HUBBELL KELLEMS OR APPROVED EQUAL. CABLES SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC AND CABLE MANUFACTURER'S RECOMMENDATIONS.
 5. ALL CONDUCTORS SHALL BE TAGGED AT BOTH ENDS OF THE CONDUCTOR, AT ALL PULL BOXES, J-BOXES, EQUIPMENT AND CABINETS AND SHALL BE IDENTIFIED WITH APPROVED PLASTIC TAGS (ACTION CRAFT, BRADY, OR APPROVED EQUAL).
- C. DISCONNECT SWITCHES:
 1. DISCONNECT SWITCHES SHALL BE HEAVY DUTY, DEAD-FRONT, QUICK-MAKE, QUICK-BREAK, EXTERNALLY OPERABLE, HANDLE LOCKABLE AND INTERLOCK WITH COVER IN CLOSED POSITION, RATING AS INDICATED, UL LABELED FURNISHED IN NEMA 3R ENCLOSURE, SQUARE-D OR ENGINEER APPROVED EQUAL.
- D. CHEMICAL ELECTROLYTIC GROUNDING SYSTEM:
 1. INSTALL CHEMICAL GROUNDING AS REQUIRED. THE SYSTEM SHALL BE ELECTROLYTIC MAINTENANCE FREE ELECTRODE CONSISTING OF RODS WITH A MINIMUM #2 AWG CU EXOTHERMICALLY WELDED PIGTAIL, PROTECTIVE BOXES, AND BACKFILL MATERIAL. MANUFACTURER SHALL BE LYNCOLE XIT GROUNDING ROD TYPES K2-(*)CS OR K2L-(*)CS (*) LENGTH AS REQUIRED.
 2. GROUND ACCESS BOX SHALL BE A POLYPLASTIC BOX FOR NON-TRAFFIC APPLICATIONS, INCLUDING BOLT DOWN FLUSH COVER WITH "BREATHER" HOLES, XIT MODEL #XB-22. ALL DISCONNECT SWITCHES AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS ID

NUMBERING, AND THE ELECTRICAL POWER SOURCE.

3. BACKFILL MATERIAL SHALL BE LYNCONITE AND LYNCOLE GROUNDING GRAVEL.

E. SYSTEM GROUNDING:

1. ALL GROUNDING COMPONENTS SHALL BE TINNED AND GROUNDING CONDUCTOR SHALL BE #2 AWG BARE, SOLID, TINNED, COPPER. ABOVE GRADE GROUNDING CONDUCTORS SHALL BE INSULATED WHERE NOTED.
 2. GROUNDING BUSES SHALL BE BARE, TINNED, ANNEALED COPPER BARS OF RECTANGULAR CROSS SECTION. STANDARD BUS BARS MGB, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THEY SHALL NOT BE FABRICATED OR MODIFIED IN THE FIELD. ALL GROUNDING BUSES SHALL BE IDENTIFIED WITH MINIMUM 3/4" LETTERS BY WAY OF STENCILING OR DESIGNATION PLATE.
 3. CONNECTORS SHALL BE HIGH-CONDUCTIVITY, HEAVY DUTY, LISTED AND LABELED AS GROUNDING CONNECTORS FOR THE MATERIALS USED. USE TWO-HOLE COMPRESSION LUGS WITH HEAT SHRINK FOR MECHANICAL CONNECTIONS. INTERIOR CONNECTIONS USE TWO-HOLE COMPRESSION LUGS WITH INSPECTION WINDOW AND CLEAR HEAT SHRINK.
 4. EXOTHERMIC WELDED CONNECTIONS SHALL BE PROVIDED IN KIT FORM AND SELECTED FOR THE SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND OTHER ITEMS TO BE CONNECTED.
 5. GROUND RODS SHALL BE COPPER-CLAD STEEL WITH HIGH-STRENGTH STEEL CORE AND ELECTROLYTIC-GRADE COPPER OUTER SHEATH, MOLTEN WELDED TO CORE, 5/8"x10'-0". ALL GROUNDING RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES.
 6. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS IN COMPLIANCE WITH THE AT&T SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULLBOXES, DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
- F. OTHER MATERIALS:
6. THE CONTRACTOR SHALL PROVIDE OTHER MATERIALS, THOUGH NOT SPECIFICALLY DESCRIBED, WHICH ARE REQUIRED FOR A COMPLETELY OPERATIONAL SYSTEM AND PROPER INSTALLATION OF THE WORK.
 7. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
- G. PANELS AND LOAD CENTERS:
1. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

PART 3 - EXECUTION

3.1 GENERAL:

- A. ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 - B. EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT OR WATER, AND AGAINST CHEMICAL OR MECHANICAL INJURY DURING INSTALLATION AND CONSTRUCTION PERIODS.
- 3.2 LABOR AND WORKMANSHIP:
- A. ALL LABOR FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL SYSTEM SHALL BE INSTALLED BY EXPERIENCED WIREMEN, IN A NEAT AND WORKMAN-LIKE MANNER.
 - B. ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED, ALIGNED AND TESTED BY THE CONTRACTOR AS REQUIRED TO PRODUCE THE INTENDED PERFORMANCE.
 - C. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EXPOSED EQUIPMENT, REMOVE ALL LABELS AND ANY DEBRIS, CRATING OR CARTONS AND LEAVE THE INSTALLATION FINISHED AND READY FOR OPERATION.

3.3 COORDINATION:

- A. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ELECTRICAL ITEMS WITH THE OWNER-FURNISHED EQUIPMENT DELIVERY SCHEDULE TO PREVENT UNNECESSARY DELAYS IN THE TOTAL WORK.

3.4 INSTALLATION:

- A. CONDUIT:
 1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH TRADE SIZE.
 2. PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS, RMC OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
 3. INSTALL SCHEDULE 40 PVC CONDUIT WITH A MINIMUM COVER OF 24" UNDER ROADWAYS, PARKING LOTS, STREETS, AND ALLEYS. CONDUIT SHALL HAVE A MINIMUM COVER OF 18" IN ALL OTHER NON-TRAFFIC APPLICATIONS (REFER TO 2017 NEC, TABLE 300.5).
 4. USE GALVANIZED FLEXIBLE STEEL CONDUIT WHERE DIRECT CONNECTION TO EQUIPMENT WITH MOVEMENT, VIBRATION, OR FOR EASE OF MAINTENANCE. USE LIQUID TIGHT, FLEXIBLE METAL CONDUIT FOR OUTDOOR APPLICATIONS. INSTALL GALVANIZED FLEXIBLE STEEL CONDUIT AT ALL POINTS OF CONNECTION TO EQUIPMENT MOUNTED ON SUPPORT TO ALLOW FOR EXPANSION AND CONTRACTION.
 5. A RUN OF CONDUIT BETWEEN BOXES OR EQUIPMENT SHALL NOT CONTAIN MORE THAN THE EQUIVALENT OF THREE QUARTER-BENDS. CONDUIT BEND SHALL BE MADE WITH THE UL LISTED BENDER OR FACTORY 90 DEGREE ELBOWS MAY BE USED.
 6. FIELD FABRICATED CONDUITS SHALL BE CUT SQUARE WITH A CONDUIT CUTTING TOOL AND REAMED TO PROVIDE A SMOOTH INSIDE SURFACE.
 7. PROVIDE INSULATED GROUNDING BUSHING FOR ALL CONDUITS.
 8. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL CONDUITS DURING CONSTRUCTION. TEMPORARY OPENINGS IN THE CONDUIT SYSTEM SHALL BE PLUGGED OR CAPPED TO PREVENT ENTRANCE OF MOISTURE OR FOREIGN MATTER. CONTRACTOR SHALL REPLACE ANY CONDUITS CONTAINING FOREIGN MATERIALS THAT CANNOT BE REMOVED.
 9. ALL CONDUITS SHALL BE SWABBED CLEAN BY PULLING AN APPROPRIATE SIZE MANDREL THROUGH THE CONDUIT BEFORE INSTALLATION OF CONDUCTORS OR CABLES. CONDUIT SHALL BE FREE OF DIRT AND DEBRIS.
 10. INSTALL PULL STRINGS IN ALL CLEAN EMPTY CONDUITS. IDENTIFY PULL STRINGS AT EACH END.
 11. INSTALL 2" HIGHLY VISIBLE AND DETECTABLE TAPE 12" ABOVE ALL UNDERGROUND CONDUITS AND CONDUCTORS.
 12. CONDUITS SHALL BE INSTALLED IN SUCH A MANNER AS TO INSURE AGAINST COLLECTION OF TRAPPED CONDENSATION.
 13. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS TO ALLOW FOR RACEWAYS AND CABLES TO BE ROUTED THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE EFFECTIVELY SEALED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FIRE STOPS AT FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE, AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

B. CONDUCTORS AND CABLE:

1. ALL POWER WIRING SHALL BE COLOR CODED AS FOLLOWS:

DESCRIPTION	208/240/120 VOLT SYSTEMS
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUNDING	GREEN
2. SPLICES SHALL BE MADE ONLY AT OUTLETS, JUNCTION BOXES, OR ACCESSIBLE RACEWAY CONDUITS APPROVED FOR THIS PURPOSE.

3. PULLING LUBRICANTS SHALL BE UL APPROVED. CONTRACTOR SHALL USE NYLON OR HEMP ROPE FOR PULLING CONDUCTOR OR CABLES INTO THE CONDUIT.
 4. CABLES SHALL BE NEATLY TRAINED, WITHOUT INTERLACING, AND BE OF SUFFICIENT LENGTH IN ALL BOXES & EQUIPMENT TO PERMIT MAKING A NEAT ARRANGEMENT. CABLES SHALL BE SECURED IN A MANNER TO AVOID TENSION ON CONDUCTORS OR TERMINALS. CONDUCTORS SHALL BE PROTECTED FROM MECHANICAL INJURY AND MOISTURE. SHARP BENDS OVER CONDUIT BUSHINGS IS PROHIBITED. DAMAGED CABLES SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- C. DISCONNECT SWITCHES:
1. INSTALL DISCONNECT SWITCHES LEVEL AND PLUMB. CONNECT TO WIRING SYSTEM AND GROUNDING SYSTEM AS INDICATED.
- D. GROUNDING:
1. ALL METALLIC PARTS OF ELECTRICAL EQUIPMENT WHICH DO NOT CARRY CURRENT SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING MANUFACTURER, AT&T GROUNDING AND BONDING STANDARDS TP-76416, ND-00135, AND THE NATIONAL ELECTRICAL CODE.
 2. PROVIDE ELECTRICAL GROUNDING AND BONDING SYSTEM INDICATED WITH ASSEMBLY OF MATERIALS, INCLUDING GROUNDING ELECTRODES, BONDING JUMPERS AND ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
 3. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUNDING CONDUCTORS SHALL NOT BE LOOPED OR SHARPLY BENT. ROUTE GROUNDING CONNECTIONS AND CONDUCTORS TO GROUND IN THE SHORTEST AND STRAIGHTEST PATHS POSSIBLE TO MINIMIZE TRANSIENT VOLTAGE RISES.
 4. BUILDINGS AND/OR NEW TOWERS GREATER THAN 75 FEET IN HEIGHT AND WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM. THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 AWG COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). SEE STANDARD 6.3.2.2.
 5. TIGHTEN GROUNDING AND BONDING CONNECTORS, INCLUDING SCREWS AND BOLTS, IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED TORQUE TIGHTENING VALUES FOR CONNECTORS AND BOLTS. WHERE MANUFACTURER'S TORQUING REQUIREMENTS ARE NOT AVAILABLE, TIGHTEN CONNECTIONS TO COMPLY WITH TIGHTENING TORQUE VALUES SPECIFIED IN UL TO ASSURE PERMANENT AND EFFECTIVE GROUNDING.
 6. CONTRACTOR SHALL VERIFY THE LOCATIONS OF GROUNDING TIE-IN-POINTS TO THE EXISTING GROUNDING SYSTEM. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE MADE BY THE EXOTHERMIC WELD PROCESS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 7. ALL GROUNDING CONNECTIONS SHALL BE INSPECTED FOR TIGHTNESS. EXOTHERMIC WELDED CONNECTIONS SHALL BE APPROVED BY THE INSPECTOR HAVING JURISDICTION BEFORE BEING PERMANENTLY CONCEALED.
 8. APPLY CORROSION-RESISTANT FINISH TO FIELD CONNECTIONS AND PLACES WHERE FACTORY APPLIED PROTECTIVE COATINGS HAVE BEEN DESTROYED. USE KOPR-SHIELD ANTI-OXIDATION COMPOUND ON ALL COMPRESSION GROUNDING CONNECTIONS.
 9. A SEPARATE, CONTINUOUS, INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.
 10. BOND ALL INSULATED GROUNDING BUSHINGS WITH A BARE #6 AWG GROUNDING CONDUCTOR TO A GROUND BUS.
 11. DIRECT BURIED GROUNDING CONDUCTORS SHALL BE INSTALLED AT A NOMINAL DEPTH OF 36" MINIMUM BELOW GRADE, OR 6" BELOW THE FROST LINE, USE THE GREATER OF THE TWO DISTANCES.
 12. ALL GROUNDING CONDUCTORS EMBEDDED IN OR PENETRATING CONCRETE SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT.
 13. THE INSTALLATION OF CHEMICAL ELECTROLYTIC GROUNDING SYSTEM IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. REMOVE SEALING TAPE FROM LEACHING AND BREATHER HOLES. INSTALL PROTECTIVE BOX FLUSH WITH GRADE.
 14. DRIVE GROUND RODS UNTIL TOPS ARE A MINIMUM DISTANCE OF 36" DEPTH OR 6" BELOW FROST LINE, USING THE GREATER OF THE TWO DISTANCES.
 15. IF COAX ON THE ICE BRIDGE IS MORE THAN 6 FT. FROM THE GROUNDING BAR AT THE BASE OF THE TOWER, A SECOND GROUNDING BAR WILL BE NEEDED AT THE END OF THE ICE BRIDGE, TO GROUND THE COAX CABLE GROUNDING KITS AND IN-LINE ARRESTORS.
 16. CONTRACTOR SHALL REPAIR, AND/OR REPLACE, EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.

3.5 ACCEPTANCE TESTING:

- A. CERTIFIED PERSONNEL USING CERTIFIED EQUIPMENT SHALL PERFORM REQUIRED TESTS AND SUBMIT WRITTEN TEST REPORTS UPON COMPLETION.
- B. WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, THE NON-COMPLYING ITEMS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS PROMPTLY AFTER RECEIPT OF NOTICE FOR NON-COMPLIANCE.
- C. TEST PROCEDURES:
 1. ALL FEEDERS SHALL HAVE INSULATION TESTED AFTER INSTALLATION, BEFORE CONNECTION TO DEVICES. THE CONDUCTORS SHALL TEST FREE FROM SHORT CIRCUITS AND GROUNDS. TESTING SHALL BE FOR ONE MINUTE USING 1000V DC. PROVIDE WRITTEN DOCUMENTATION FOR ALL TEST RESULTS.
 2. PRIOR TO ENERGIZING CIRCUITRY, TEST WIRING DEVICES FOR ELECTRICAL CONTINUITY AND PROPER POLARITY CONNECTIONS.
 3. MEASURE AND RECORD VOLTAGES BETWEEN PHASES AND BETWEEN PHASE CONDUCTORS AND NEUTRALS. SUBMIT A REPORT OF MAXIMUM AND MINIMUM VOLTAGES.
 4. PERFORM GROUNDING TEST TO MEASURE GROUNDING RESISTANCE OF GROUNDING SYSTEM USING THE IEEE STANDARD 3-POINT "FALL-OF-POTENTIAL" METHOD. PROVIDE PLOTTED TEST VALUES AND LOCATION SKETCH. NOTIFY THE ENGINEER IMMEDIATELY IF MEASURED VALUE IS OVER 5 OHMS.



5841 BRIDGE STREET
EAST SYRACUSE, NY 13057



3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065



120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116



PROJECT NO: ERCC0004

DRAWN BY: JB

CHECKED BY: CAT

SUBMITTALS		
NO.	DATE	DESCRIPTION
2	08/01/19	ISSUED FOR CONSTRUCTION
1	07/23/19	ISSUED FOR CONSTRUCTION
0	03/20/19	ISSUED FOR PERMITTING

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FA# 10090919
SITE# CTL05276
EAST HARTFORD SOUTH
1455 FORBES STREET
EAST HARTFORD, CT 06118

GENERAL NOTES

GN-1

ANTENNA MOUNTING

- DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSITIA-222 OR APPLICABLE LOCAL CODES.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
- DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
- ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
- PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
- JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
- CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
- TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
 - RF CONNECTION BOTH SIDES OF THE CONNECTOR.
 - GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
 - ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
- ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
- ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
- ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 - 29.8 NM).
- ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).

FIBER & POWER CABLE MOUNTING

- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION: WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

- TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
- CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.
- ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".
- ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" O.C.
- CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
- CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.
- CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.

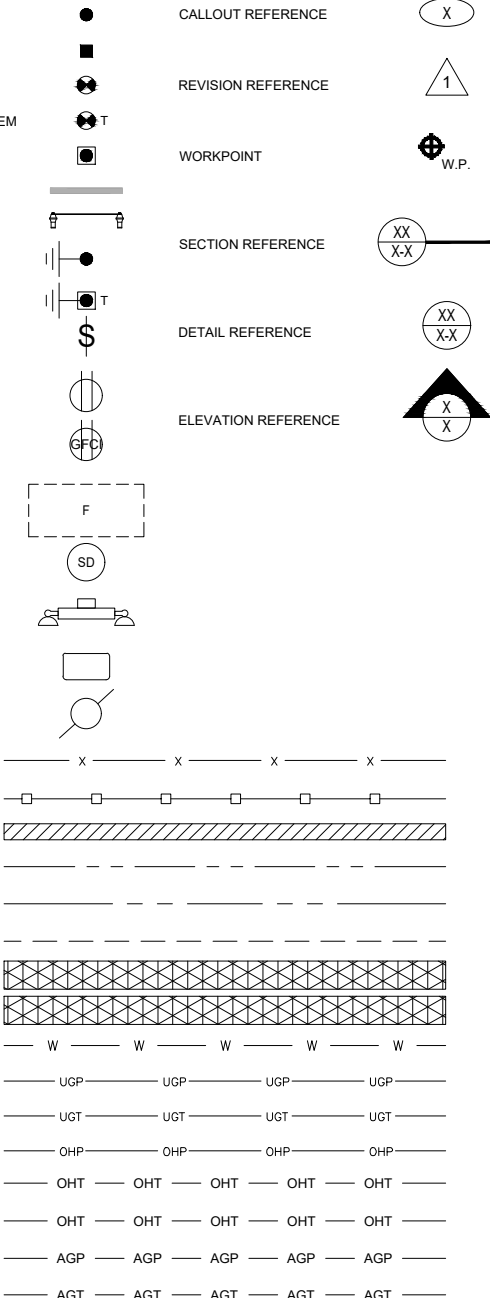
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
 - TEMPERATURE SHALL BE ABOVE 50° F.
 - PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
 - FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
 - DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
- ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
 - GROUNDING AT THE ANTENNA LEVEL.
 - GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.
 - GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
 - GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND
- BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.
- ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A 12'-0" T-BOOM SECTOR ANTENNA MOUNT, IF APPLICABLE, INCLUDING ALL HARDWARE.

GROUNDING NOTES

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND AT&T GROUNDING AND BONDING REQUIREMENTS (ATT-TP-76416) AND MANUFACTURER'S SPECIFICATIONS.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
- ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUNDING KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
 - GROUNDING AT THE ANTENNA LEVEL.
 - GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200', ADDITIONAL CABLE GROUNDING REQUIRED.
 - GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
 - GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUNDING BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUNDING BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUNDING BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.

AB	ANCHOR BOLT	COL	COLUMN	FIN	FINISH(ED)	MAS	MASONRY	QTY	QUANTITY	TOF	TOP OF FOUNDATION
ABV	ABOVE	COMM	COMMON	FLR	FLOOR	MAX	MAXIMUM	RAD	RADIUS	TOP	TOP OF PLATE (PARAPET)
AC	ALTERNATING CURRENT	CONC	CONCRETE	FDN	FOUNDATION	MB	MACHINE BOLT	RECT	RECTIFIER	TOS	TOP OF STEEL
ADDL	ADDITIONAL	CONSTR	CONSTRUCTION	FOC	FACE OF CONCRETE	MECH	MECHANICAL	REF	REFERENCE	TOW	TOP OF WALL
AFB	ABOVE FINISHED FLOOR	DBL	DOUBLE	FOM	FACE OF MASONRY	MFR	MANUFACTURER	REINF	REINFORCEMENT	TVSS	TRANSIENT VOLTAGE SUPPRESSION SYSTEM
AFG	ABOVE FINISHED GRADE	DC	DIRECT CURRENT	FOS	FACE OF STUD	MGB	MASTER GROUND BAR	REQ'D	REQUIRED	TYP	TYPICAL
AIC	AMPERAGE INTERRUPTION CAPACITY	DEPT	DEPARTMENT	FOW	FACE OF WALL	MIN	MINIMUM	RET	REMOTE ELECTRIC TILT	UG	UNDERGROUND
ALUM	ALUMINUM	DF	DOUGLAS FIR	FS	FINISH SURFACE	MISC	MISCELLANEOUS	RMC	RIGID METALLIC CONDUIT	UL	UNDERWRITERS LABORATORY
ALT	ALTERNATE	DIA	DIAMETER	FT	FOOT	MTL	METAL	RRH	REMOTE RADIO HEAD	UNO	UNLESS NOTED OTHERWISE
ANT	ANTENNA	DIAG	DIAGONAL	FTG	FOOTING	MTS	MANUAL TRANSFER SWITCH	RRU	REMOTE RADIO UNIT	UMTS	UNIVERSAL MOBILE
APPROX	APPROXIMATE	DIM	DIMENSION	GA	GAUGE	MW	MICROWAVE	RWY	RACEWAY	SCH	SCHEDULE
ARCH	ARCHITECTURAL	DWG	DRAWING	GEN	GENERATOR	NEW	NEW	SH	SHEET	UPS	UNINTERRUPTIBLE POWER SYSTEM
ATS	AUTOMATIC TRANSFER SWITCH	DWL	DOWEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NEC	NATIONAL ELECTRIC CODE	SIAD	SMART INTEGRATED DEVICE	VIF	VERIFIED IN FIELD
AWG	AMERICAN WIRE GAUGE	(E)	EXISTING	GLB	GLUE LAMINATED BEAM	NO.(#)	NUMBER	SIM	SIMILAR	W	WIDE
BATT	BATTERY	EA	EACH	GLV	GALVANIZED	NTS	NOT TO SCALE	SS	STAINLESS STEEL	WI	WITH
BLDG	BUILDING	EC	ELECTRICAL CONDUCTOR	GPS	GLOBAL POSITIONING SYSTEM	OC	ON CENTER	STD	STANDARD	WD	WOOD
BLK	BLOCK	EL	ELEVATION	GND	GROUND	OPNG	OPENING	STL	STEEL	W.P.	WORK POINT
BLKG	BLOCKING	ELEC	ELECTRICAL	GSM	GLOBAL SYSTEM FOR MOBILE	(P)	PROPOSED	STRUC	STRUCTURAL	WP	WEATHERPROOF
BM	BEAM	EMT	ELECTRICAL METALLIC TUBING	HDR	HEADER	PIC	PRECAST CONCRETE	TEMP	TEMPORARY	WT	WEIGHT
BTC	BARE TINNED COPPER CONDUCTOR	ENG	ENGINEER	HGR	HANGER	PCS	PERSONAL COMMUNICATION SERVICES	THK	THICKNESS		
BOF	BOTTOM OF FOOTING	EQ	EQUAL	HVAC	HEAT/VENTILATION/AIR CONDITIONING	PCU	PRIMARY CONTROL UNIT	TMA	TOWER MOUNTED AMPLIFIER		
CAB	CABINET	EXP	EXPANSION	HT	HEIGHT	PRC	PRIMARY RADIO CABINET	TN	TOE NAIL		
CANT	CANTILEVERED	EXT	EXTERIOR	IGR	INTERIOR GROUND RING	PP	POLARIZING PRESERVING	TOA	TOP OF ANTENNA		
CEC	CALIFORNIA ELECTRIC CODE	FAB	FABRICATION	IN	INCH	PSF	POUNDS PER SQUARE FOOT	TOC	TOP OF CURB		
CHG	CHARGING	FF	FINISH FLOOR	INT	INTERIOR	PSI	POUNDS PER SQUARE INCH				
CLG	CEILING	FG	FINISH GRADE	LB(S)	POUND(S)	PT	PRESSURE TREATED				
CLR	CLEAR	FIF	FACILITY INTERFACE FRAME	LF	LINEAR FEET	PWR	POWER CABINET				

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
- EXOTHERMIC WITH INSPECTION SLEEVE
- GROUNDING BAR
- SHELTER GROUNDING BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- SINGLE POLE SWITCH
- DUPLEX RECEPTACLE
- DUPLEX GFCI RECEPTACLE
- FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
- EXISTING SMOKE DETECTION (DC)
- EXISTING EMERGENCY LIGHTING (DC)
- SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED-1-25A400/51K-SR4-120-PE-DOBTXD
- EXISTING UTILITY POLE
- EXISTING CHAIN LINK FENCE
- EXISTING WOOD/WROUGHT IRON FENCE
- EXISTING WALL STRUCTURE
- LEASE AREA
- PROPERTY LINE (PL)
- SETBACKS
- PROPOSED/EXISTING ICE BRIDGE
- PROPOSED/EXISTING CABLE TRAY
- EXISTING WATER LINE
- PROPOSED UNDERGROUND POWER
- PROPOSED UNDERGROUND TELCO
- PROPOSED OVERHEAD POWER
- PROPOSED OVERHEAD TELCO
- PROPOSED OVERHEAD UTILITIES
- PROPOSED ABOVE GROUND POWER
- PROPOSED ABOVE GROUND TELCO



at&t
5841 BRIDGE STREET
EAST SYRACUSE, NY 13057

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

JACOBS
JACOBS ENGINEERING GROUP, INC.
120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116



PROJECT NO: ERCC0004
DRAWN BY: JB
CHECKED BY: CAT

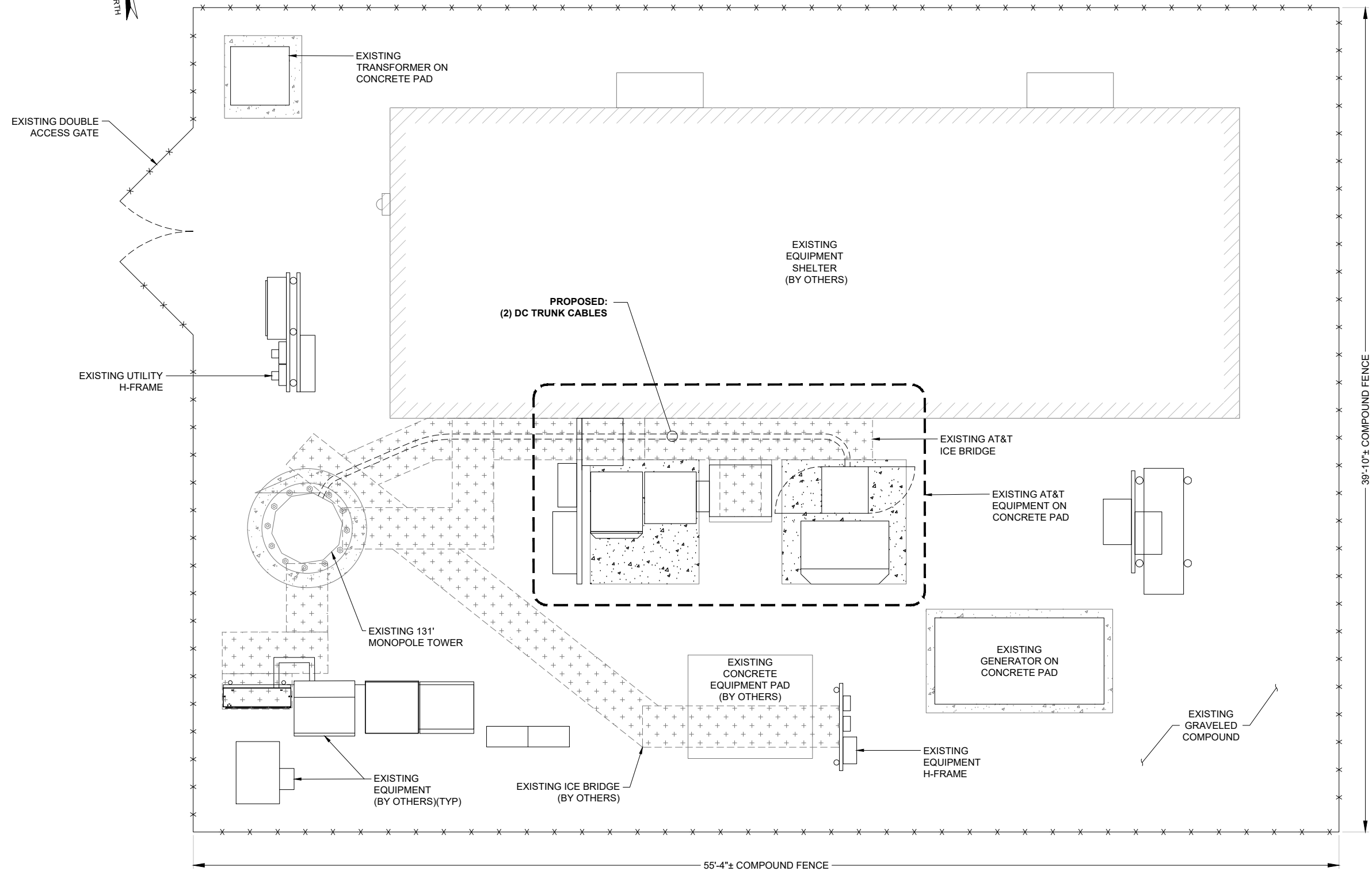
SUBMITTALS		
NO.	DATE	DESCRIPTION
2	08/01/19	ISSUED FOR CONSTRUCTION
1	07/23/19	ISSUED FOR CONSTRUCTION
0	03/20/19	ISSUED FOR PERMITTING

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FA# 10090919
SITE# CTL05276
EAST HARTFORD SOUTH
1455 FORBES STREET
EAST HARTFORD, CT 06118

GENERAL NOTES II

GN-2



NOTES:

1. PLAN BASED ON CONSTRUCTION DRAWINGS ISSUED BY CENTEK ENGINEERING ON 12/14/17. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.

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EAST SYRACUSE, NY 13057

3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065

JACOBS ENGINEERING GROUP, INC.
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BOSTON, MA 02116

PROJECT NO:	ERCC0004
DRAWN BY:	JB
CHECKED BY:	CAT

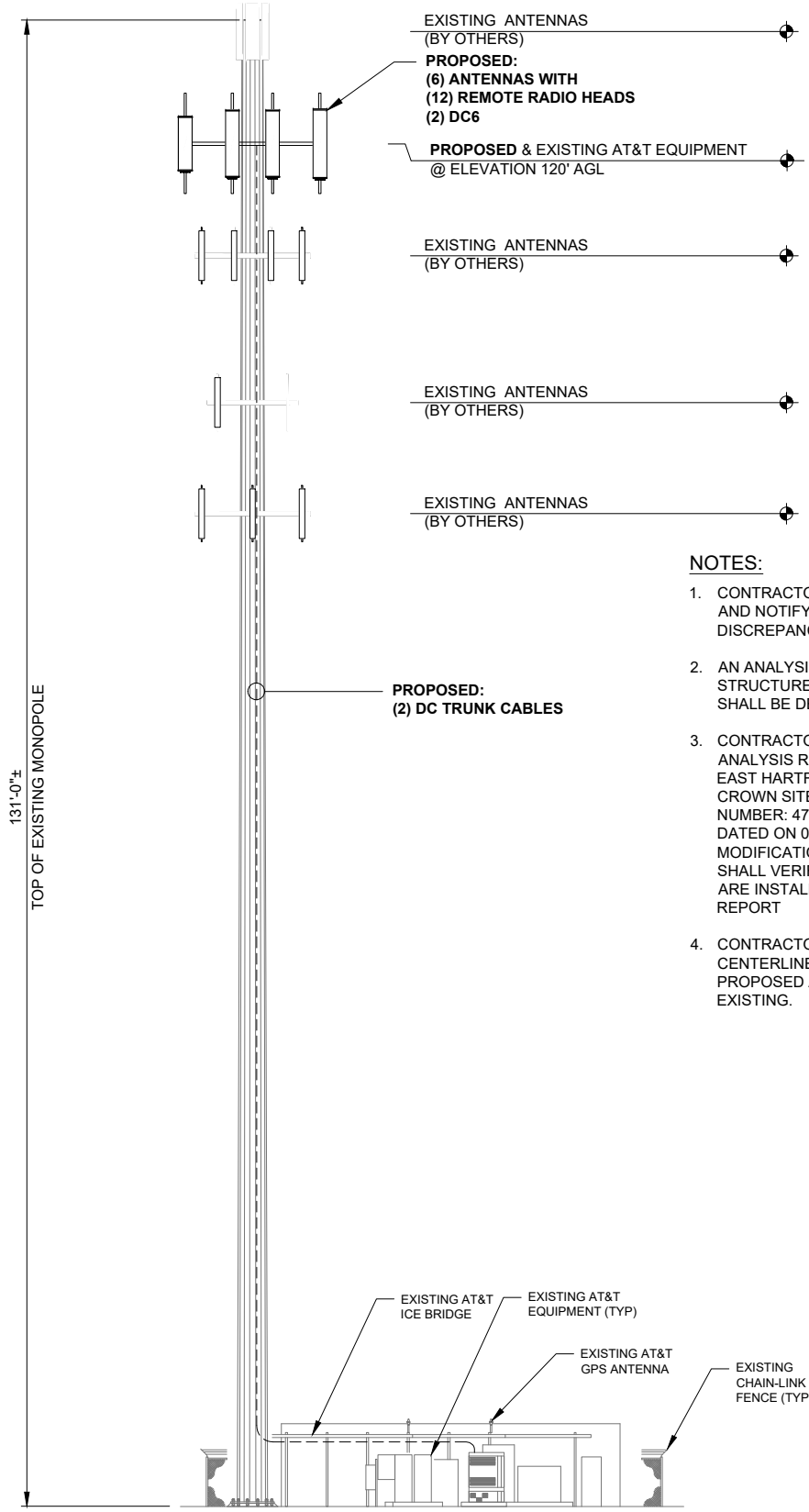
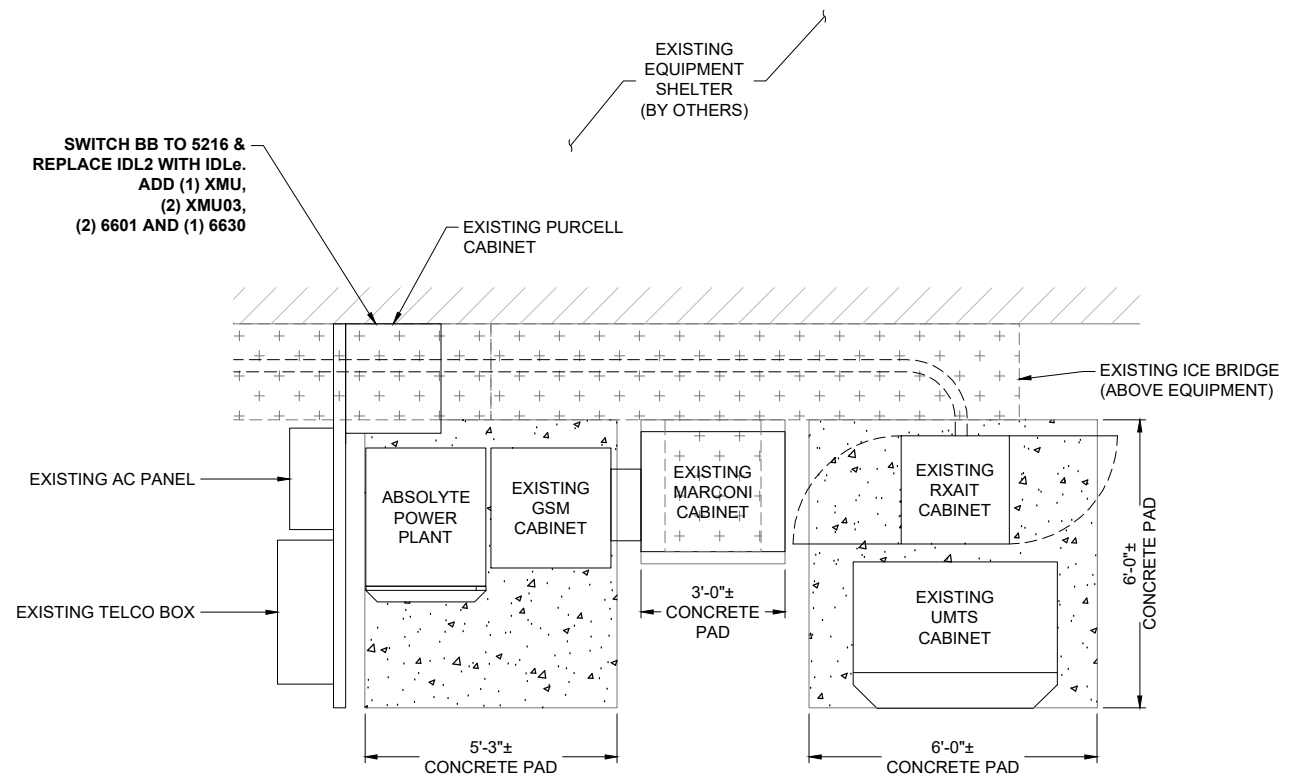
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FA# 10090919
SITE# CTL05276
EAST HARTFORD SOUTH
1455 FORBES STREET
EAST HARTFORD, CT 06118

SITE PLAN

C-1



NOTES:

1. CONTRACTOR TO VERIFY FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEER W/ ANY DISCREPANCIES PRIOR TO THE INSTALLATION.
2. AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS REPORT; SITE NUMBER: CTL05276; SITE NAME: EAST HARTFORD SOUTH; CROWN BU NUMBER: 806376; CROWN SITE NAME: HRT 100 943239; CROWN ORDER NUMBER: 471133; ISSUED BY PAUL J. FORD & COMPANY DATED ON 06/27/19. PER THIS ANALYSIS NO MODIFICATIONS ARE REQUIRED. THE CONTRACTOR SHALL VERIFY ALL EXISTING MEMBERS AND HARDWARE ARE INSTALLED PROPERLY AS DESCRIBED IN THIS REPORT
4. CONTRACTOR SHALL VERIFY THE EXISTING ANTENNA CENTERLINE HEIGHT ABOVE GROUND LEVEL. PROPOSED ANTENNA CENTERLINE SHALL MATCH EXISTING.

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PROJECT NO:	ERCC0004
DRAWN BY:	JB
CHECKED BY:	CAT

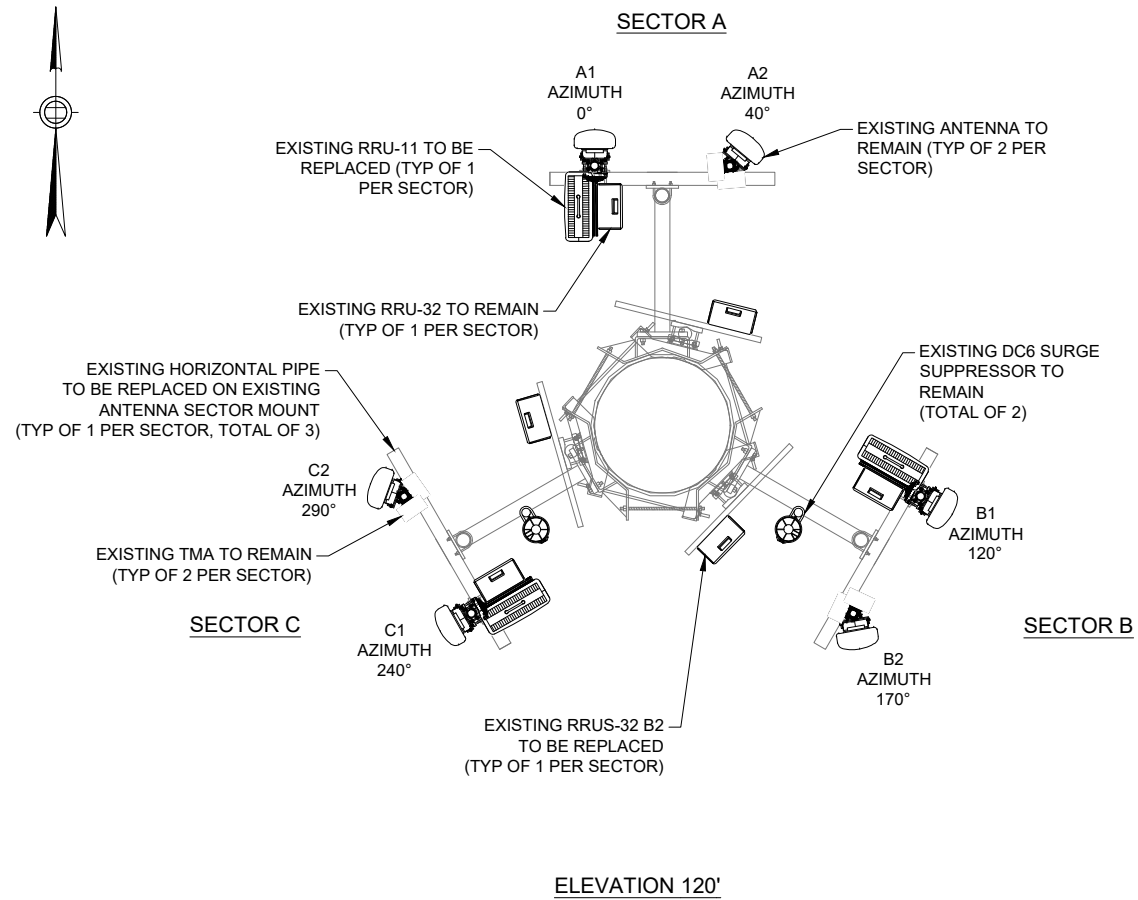
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FA# 10090919
SITE# CTL05276
EAST HARTFORD SOUTH
1455 FORBES STREET
EAST HARTFORD, CT 06118

EQUIPMENT LAYOUT & PROPOSED TOWER ELEVATION

C-2



NOTES:

1. CONTRACTOR SHALL REFER TO THE MOUNT ANALYSIS REPORT; SITE NUMBER: CTL05276; SITE NAME: EAST HARTFORD SOUTH; FA LOCATION: 10090919; CROWN BU NUMBER: 806376; CROWN SITE NAME: HRT 100 943239; CROWN ORDER NUMBER: 471133; ISSUED BY INFINIGY ENGINEERING, PLLC. DATED ON 12/27/2018. THE MOUNT MODIFICATIONS MUST BE PERFORMED PRIOR TO THE INSTALLATION OF THE EQUIPMENT SHOWN ON THE DRAWINGS. PER RECOMMENDATION IN REPORT. THE SECTOR FRAME HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING. ADD 84" LONG MOUNT PIPE, STD 2.4" O.D. SCH. 40 PIPE ATTACHED TO EXISTING HORIZONTAL.
2. THE CONTRACTOR SHALL VERIFY ALL EXISTING MEMBERS AND HARDWARE ARE INSTALLED PROPERLY AS DESCRIBED IN THIS REPORT.
3. CONTRACTOR TO VERIFY FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEER W/ ANY DISCREPANCIES PRIOR TO THE INSTALLATION.
4. CONTRACTOR SHALL NOT EXCEED MOUNTING MORE THAN (2) RRHS PER ANTENNA MOUNTING PIPE - RELOCATE TO AN ADJACENT ANTENNA MOUNTING PIPE AS NEEDED.



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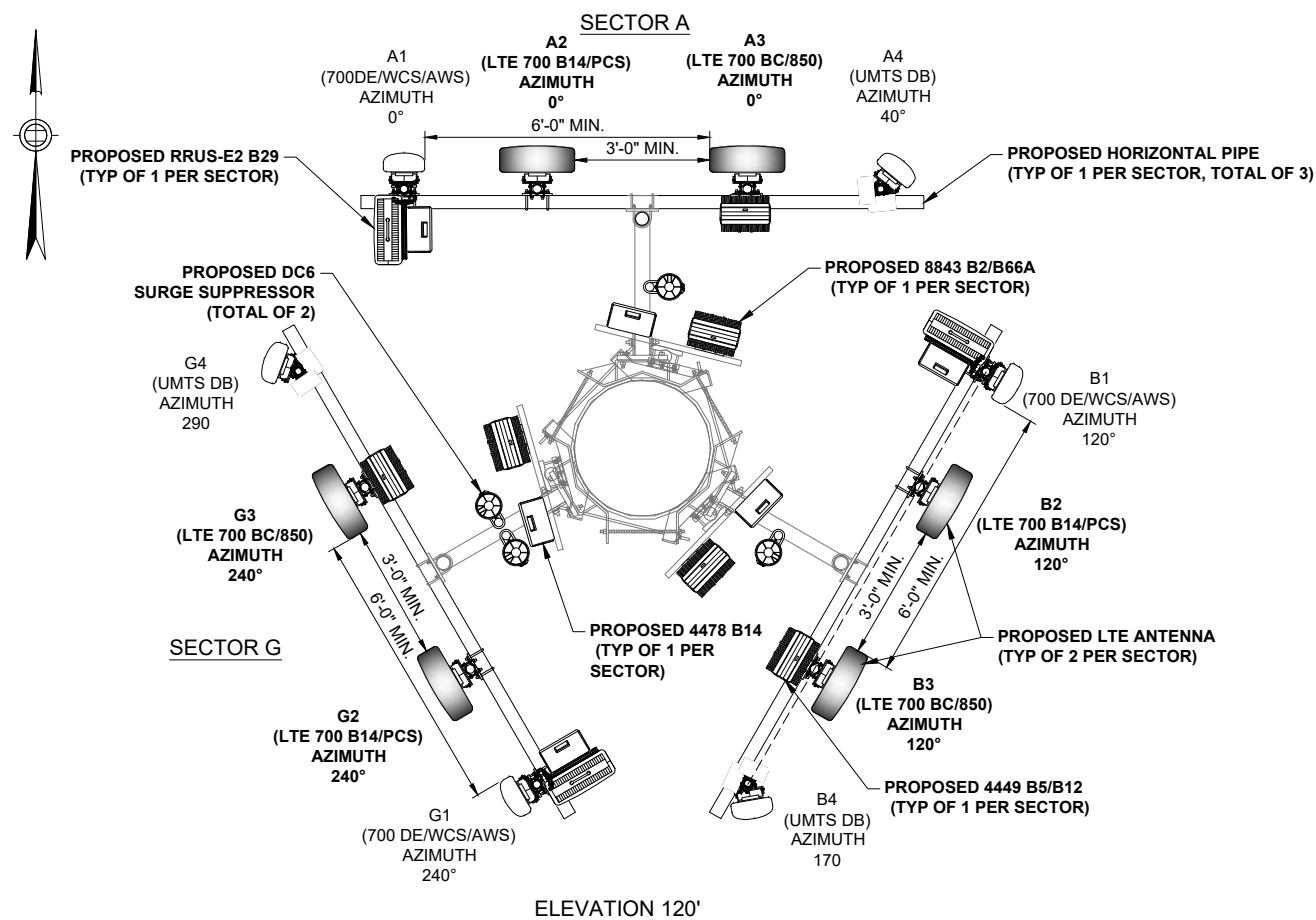


120 ST. JAMES AVENUE, 5TH FLOOR
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1 EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



DO NOT INSTALL PROPOSED SQUID OR SURGE SUPPRESSOR ON TOWER LEG

1 PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.

PROJECT NO: ERCC0004

DRAWN BY: JB

CHECKED BY: CAT

SUBMITTALS		
NO.	DATE	DESCRIPTION
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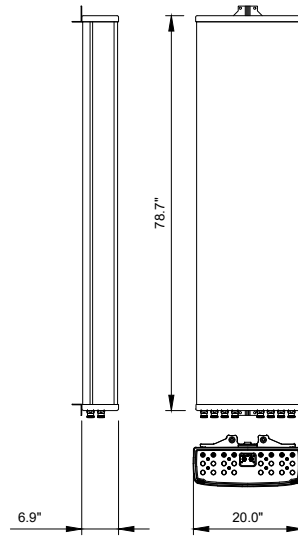
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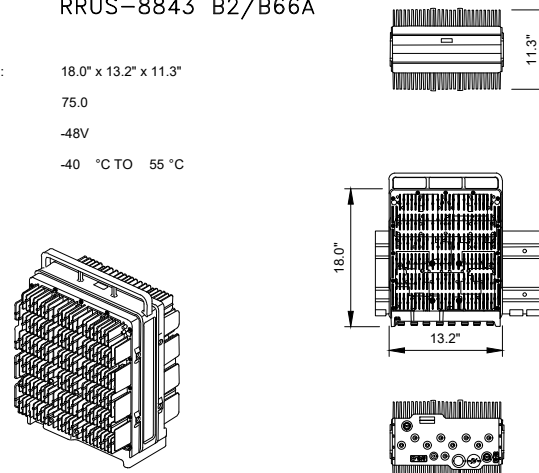
EXISTING & PROPOSED ANTENNA LAYOUT

C-3

MANUFACTURER: KATHREIN
 MODEL NO.: 80010965
 RADOME MATERIAL: FIBERGLASS, UV RESISTANT
 COLOR: LIGHT GRAY
 DIMENSIONS (LxWxD): 78.7" x 20.0" x 6.9"
 1999mm x 508mm x 175mm
 WEIGHT (lbs): 97.6
 CONNECTOR: 8 x 4.3-10 FEMALE
 FRONT WIND LOAD: 254 LBF @ 93 MPH
 1130 N @ 150 KM/H
 SIDE WIND LOAD: 256 LBF @ 93 MPH
 1140 N @ 150 KM/H
 WIND SPEED MAX.: >150 MPH (>241 KM/H)

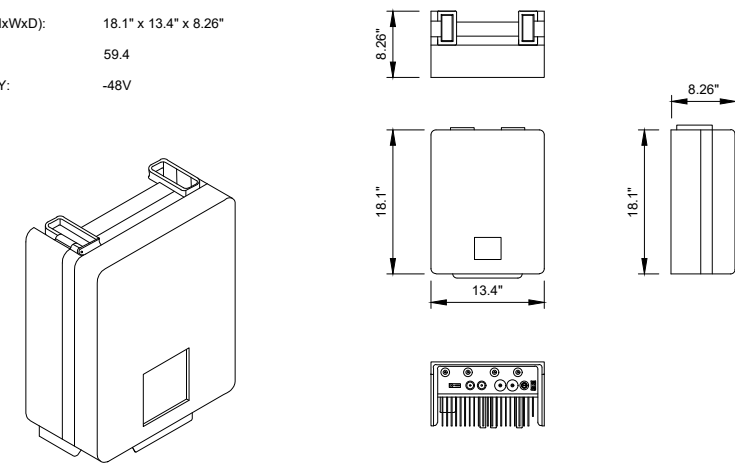


MANUFACTURER: ERICSSON
 MODEL NO.: RRUS-8843 B2/B66A
 DIMENSIONS (HxWxD): 18.0" x 13.2" x 11.3"
 WEIGHT (lbs): 75.0
 POWER SUPPLY: -48V
 TEMPERATURE: -40 °C TO 55 °C



MANUFACTURER: ERICSSON
 MODEL NO.: RRUS-4478 B14
 TECHNOLOGY: LTE 700
 DIMENSIONS (HxWxD): 18.1" x 13.4" x 8.26"
 WEIGHT (lbs): 59.4
 POWER SUPPLY: -48V

NOTE:
 PENDING FINAL PRODUCT SPECIFICATION



1 ANTENNA SPECIFICATIONS

SCALE: N.T.S.

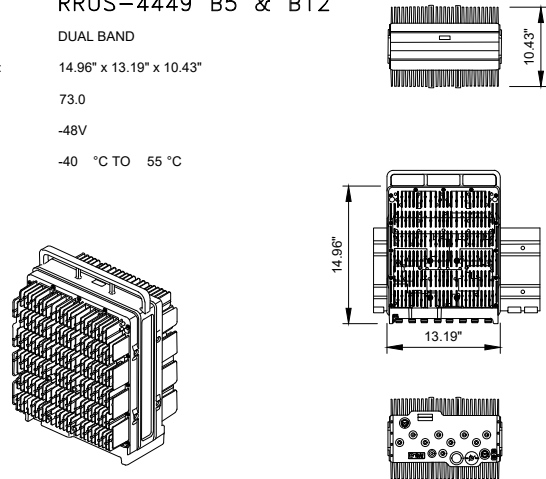
2 RRUS SPECIFICATIONS

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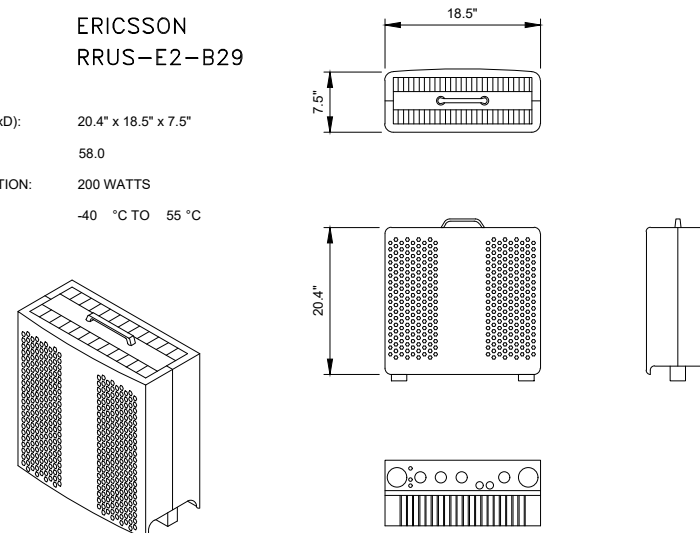
3 RRUS SPECIFICATIONS

SCALE: N.T.S.

MANUFACTURER: ERICSSON
 MODEL NO.: RRUS-4449 B5 & B12
 TECHNOLOGY: DUAL BAND
 DIMENSIONS (HxWxD): 14.96" x 13.19" x 10.43"
 WEIGHT (lbs): 73.0
 POWER SUPPLY: -48V
 TEMPERATURE: -40 °C TO 55 °C

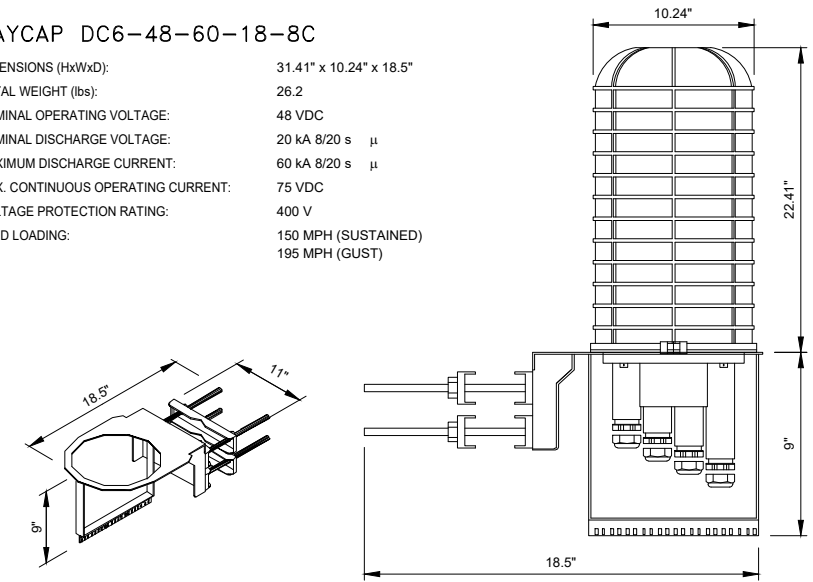


MANUFACTURER: ERICSSON
 MODEL NO.: RRUS-E2-B29
 DIMENSIONS (HxWxD): 20.4" x 18.5" x 7.5"
 WEIGHT (lbs): 58.0
 POWER CONSUMPTION: 200 WATTS
 TEMPERATURE: -40 °C TO 55 °C



RAYCAP DC6-48-60-18-8C

DIMENSIONS (HxWxD): 31.41" x 10.24" x 18.5"
 TOTAL WEIGHT (lbs): 26.2
 NOMINAL OPERATING VOLTAGE: 48 VDC
 NOMINAL DISCHARGE VOLTAGE: 20 kA 8/20 s μ
 MAXIMUM DISCHARGE CURRENT: 60 kA 8/20 s μ
 MAX. CONTINUOUS OPERATING CURRENT: 75 VDC
 VOLTAGE PROTECTION RATING: 400 V
 WIND LOADING: 150 MPH (SUSTAINED)
 195 MPH (GUST)



4 RRUS SPECIFICATIONS

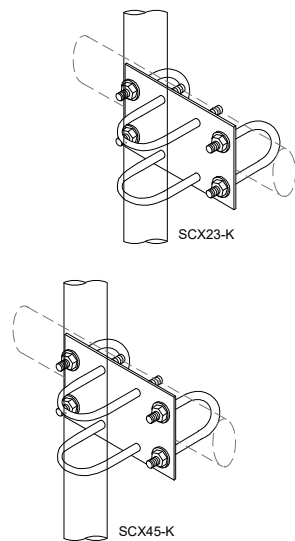
SCALE: N.T.S.

5 RRUS SPECIFICATIONS

SCALE: N.T.S.

6 DC SURGE PROTECTION SPECIFICATIONS

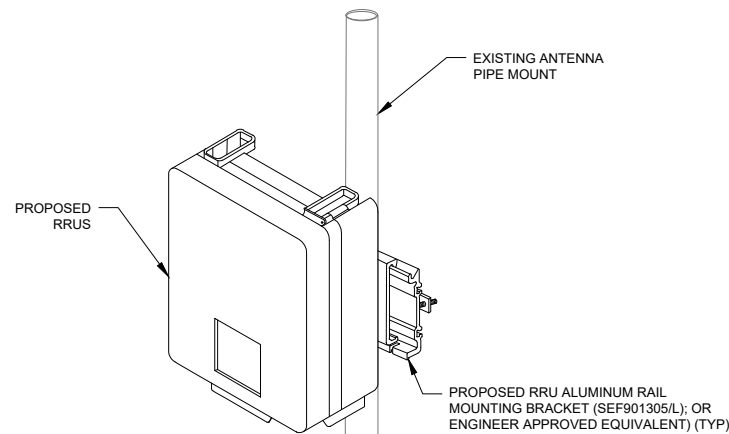
SCALE: N.T.S.



- HEAVY DUTY CROSSOVER PLATE KITS ARE USED TO ATTACH PIPES IN 90° FASHION
- U-BOLTS AND HARDWARE INCLUDED
- HOT-DIP GALVANIZED

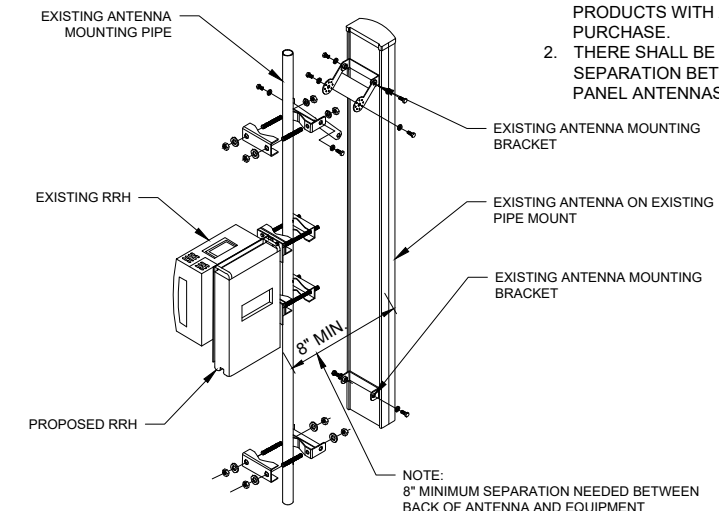
PART #	SMALLER PIPE SIZE	LARGER PIPE SIZE
SCX1-K	2-3/8"	2-3/8"
SCX2-K	2-3/8"	2-7/8"
2CX23-K	2-7/8"	2-7/8"
SCX3-K	3-1/2"	3-1/2"
SCX43-K	2-3/8"	3-1/2"
SCX4-K	2-3/8"	4-1/2"
SCX45-K	2-7/8"	3-1/2"
SCX6-K	2-7/8"	4-1/2"
SCX7-K	3-1/2"	4-1/2"

NOTE
 ANTENNA NOT SHOWN FOR CLARITY.



NOTES:

1. MOUNTING OPTIONS ARE INCLUDED PRODUCTS WITH ANTENNA PURCHASE.
2. THERE SHALL BE A MINIMUM 3'-0" SEPARATION BETWEEN ALL LTE PANEL ANTENNAS.



7 DC6 MOUNTING DETAIL

SCALE: N.T.S.

8 RRU MOUNTING DETAIL

SCALE: N.T.S.

9 ANTENNA MOUNTING DETAIL

SCALE: N.T.S.



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 EAST SYRACUSE, NY 13057



3 CORPORATE PARK DRIVE
 SUITE 101
 CLIFTON PARK, NY 12065



120 ST. JAMES AVENUE, 5TH FLOOR
 BOSTON, MA 02116



PROJECT NO: ERCC0004

DRAWN BY: JB

CHECKED BY: CAT

SUBMITTALS		
2	08/01/19	ISSUED FOR CONSTRUCTION
1	07/23/19	ISSUED FOR CONSTRUCTION
0	03/20/19	ISSUED FOR PERMITTING

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FA# 10090919
 SITE# CTL05276
 EAST HARTFORD SOUTH
 1455 FORBES STREET
 EAST HARTFORD, CT 06118

EQUIPMENT
 DETAILS

C-4



5841 BRIDGE STREET
EAST SYRACUSE, NY 13057



3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065



120 ST. JAMES AVENUE, 5TH FLOOR
BOSTON, MA 02116



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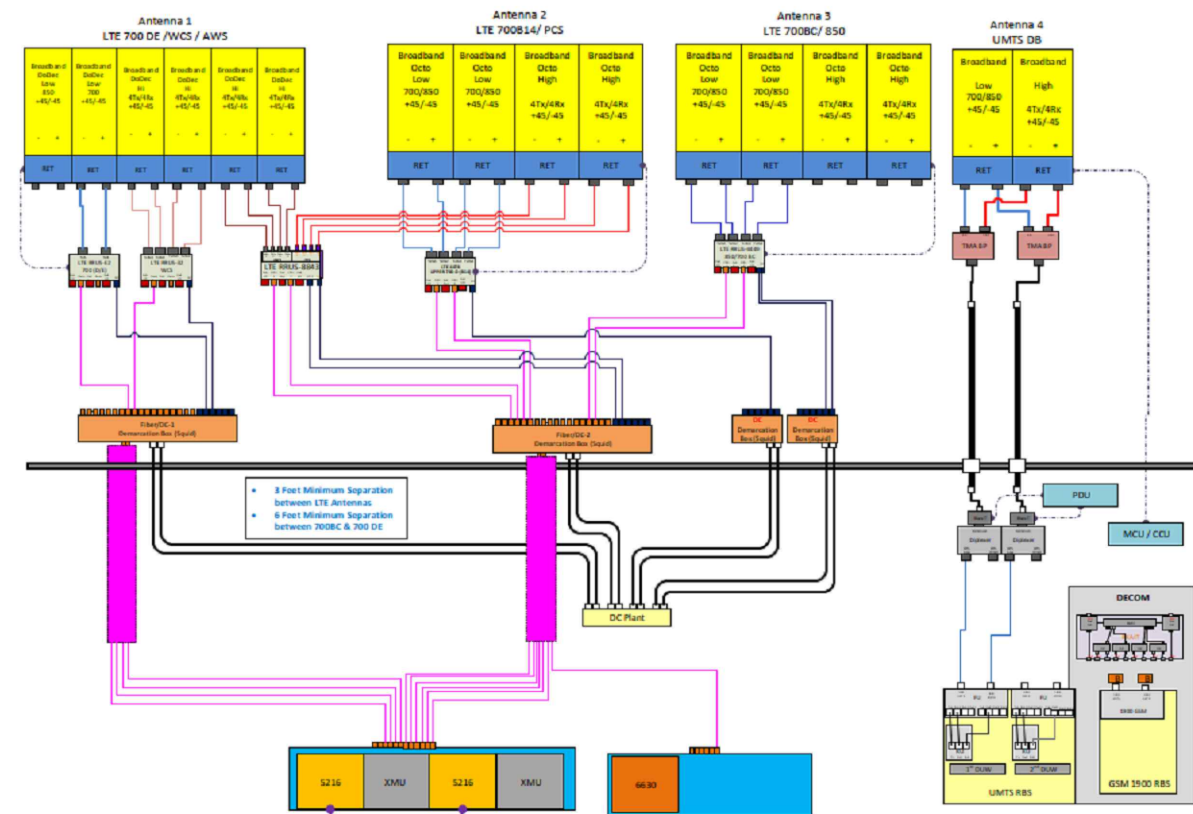
ANTENNA CHART &
RF EQUIPMENT
SCHEMATIC

RF-1

ANTENNA NUMBER	ANTENNA MODEL	ANTENNA BAND	AZIMUTH	ANTENNA CENTERLINE FROM GROUND	TMA's	RRH's	FEEDER	RAYCAP
A1	800-10798 (78.5"x14.8"x6.7")	700DE/ WCS/ AWS	0°	120'	-	(1) RRUS-E2 B29 (700 DE) (1) 8843 B2/B66A (AWS/PCS) (1) RRUS-32 (WCS)	(1) FIBER (3) DC (LENGTH @ 170')	(3) RAYCAP DC6-48-60-18-8F
A2	800-10965 (78.7"x20"x6.9")	LTE 700B14/ PCS	0°	120'	-	(1) B14 4478 (700)	(1) FIBER (3) DC (LENGTH @ 170')	
A3	800-10965 (78.7"x20"x6.9")	LTE 700BC/ 850	0°	120'	-	(1) 4449 B5/B12 (850/700)	(2) DC (LENGTH @ 170')	
A4	800-10121 (54.5"x10.3"x5.9")	UMTS DB	40°	120'	(2) LGP 21401	-	(2) 1-1/4" EXISTING (LENGTH @ 170')	
B1	800-10798 (78.5"x14.8"x6.7")	700DE/ WCS/ AWS	120°	120'	-	(1) RRUS-E2 B29 (700 DE) (1) 8843 B2/B66A (AWS/PCS) (1) RRUS-32 (WCS)	-	(1) RAYCAP DC6-48-60-18-8F
B2	800-10965 (78.7"x20"x6.9")	LTE 700B14/ PCS	120°	120'	-	(1) B14 4478 (700)	-	
B3	800-10965 (78.7"x20"x6.9")	LTE 700BC/ 850	120°	120'	-	(1) 4449 B5/B12 (850/700)	-	
B4	800-10121 (54.5"x10.3"x5.9")	UMTS DB	170°	120'	(2) LGP 21401	-	(2) 1-1/4" EXISTING (LENGTH @ 170')	
G1	800-10798 (78.5"x14.8"x6.7")	700DE/ WCS/ AWS	240°	120'	-	(1) RRUS-E2 B29 (700 DE) (1) 8843 B2/B66A (AWS/PCS) (1) RRUS-32 (WCS)	-	(1) RAYCAP DC6-48-60-18-8F
G2	800-10965 (78.7"x20"x6.9")	LTE 700B14/ PCS	240°	120'	-	(1) B14 4478 (700)	-	
G3	800-10965 (78.7"x20"x6.9")	LTE 700BC/ 850	240°	120'	-	(1) 4449 B5/B12 (850/700)	-	
G4	800-10121 (54.5"x10.3"x5.9")	UMTS DB	290°	120'	(2) LGP 21401	-	(2) 1-1/4" EXISTING (LENGTH @ 170')	

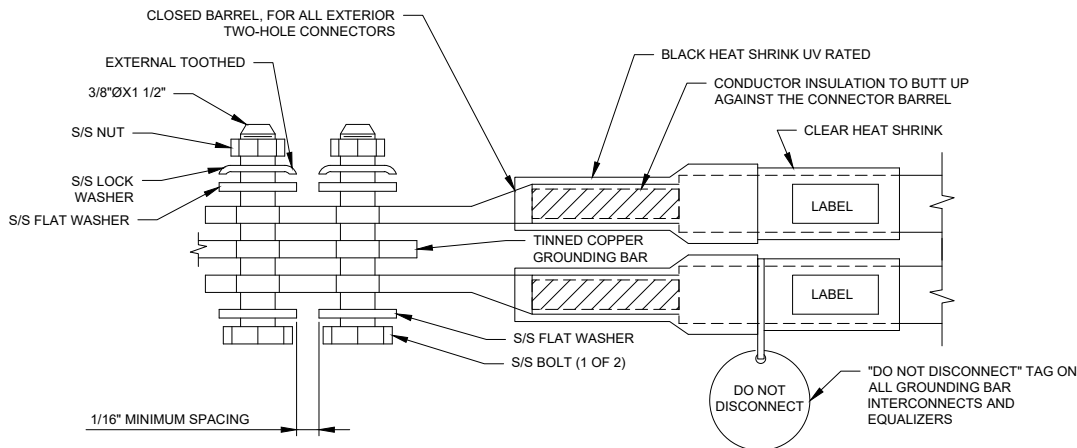
*EQUIPMENT LISTED IN BOLD, DELINEATES THAT THE EQUIPMENT IS PROPOSED

Diagram - Sector: A, Diagram File Name: FN_NR_CTL05276_A_B_C_LTE-TC_R1-2.vid, Abol Site Name: CTL05276, Location Name: EAST HARTFORD SOUTH, Market: CONNECTICUT, Market Cluster: NEW ENGLAND



NOTES:

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUNDING BAR. ROUTE CONDUCTORS TO BURIED GROUNDING RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL GROUNDING BARS SHALL BE STAMPED IN TO THE METAL "IF STOLEN DO NOT RECYCLE." THE CONTRACTOR SHALL USE PERMANENT MARKER TO DRAW THE LINES BETWEEN EACH SECTION AND LABEL EACH SECTION ("P", "A", "N", "T") WITH 1" HIGH LETTERS.
3. ALL HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. FOR GROUND BOND TO STEEL ONLY: INSERT A CADMIUM FLAT WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
5. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BUS.
6. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUNDING BAR AND BOLTED ON THE BACK SIDE. INSTALL BLACK HEAT-SHRINKING TUBE, 600 VOLT INSULATION, ON ALL GROUNDING TERMINATIONS. THE INTENT IS TO WEATHERPROOF THE COMPRESSION CONNECTION.
7. SUPPLIED AND INSTALLED BY CONTRACTOR.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



1 EXTERIOR TWO HOLE LUG DETAIL

SCALE: NONE

GENERAL NOTES:

1. CONTRACTOR SHALL HAVE A COMPLETE UNDERSTANDING OF THE CONTENTS OF AT&T STANDARD TP-76416.
2. ALL INSTALLATIONS SHALL BE FIELD VERIFIED.
3. ALL GROUND CONNECTIONS FOR ALL RELOCATED EQUIPMENT SHALL BE RE-ESTABLISHED BY THE CONTRACTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS AS REQUIRED.

GROUNDING NOTES:

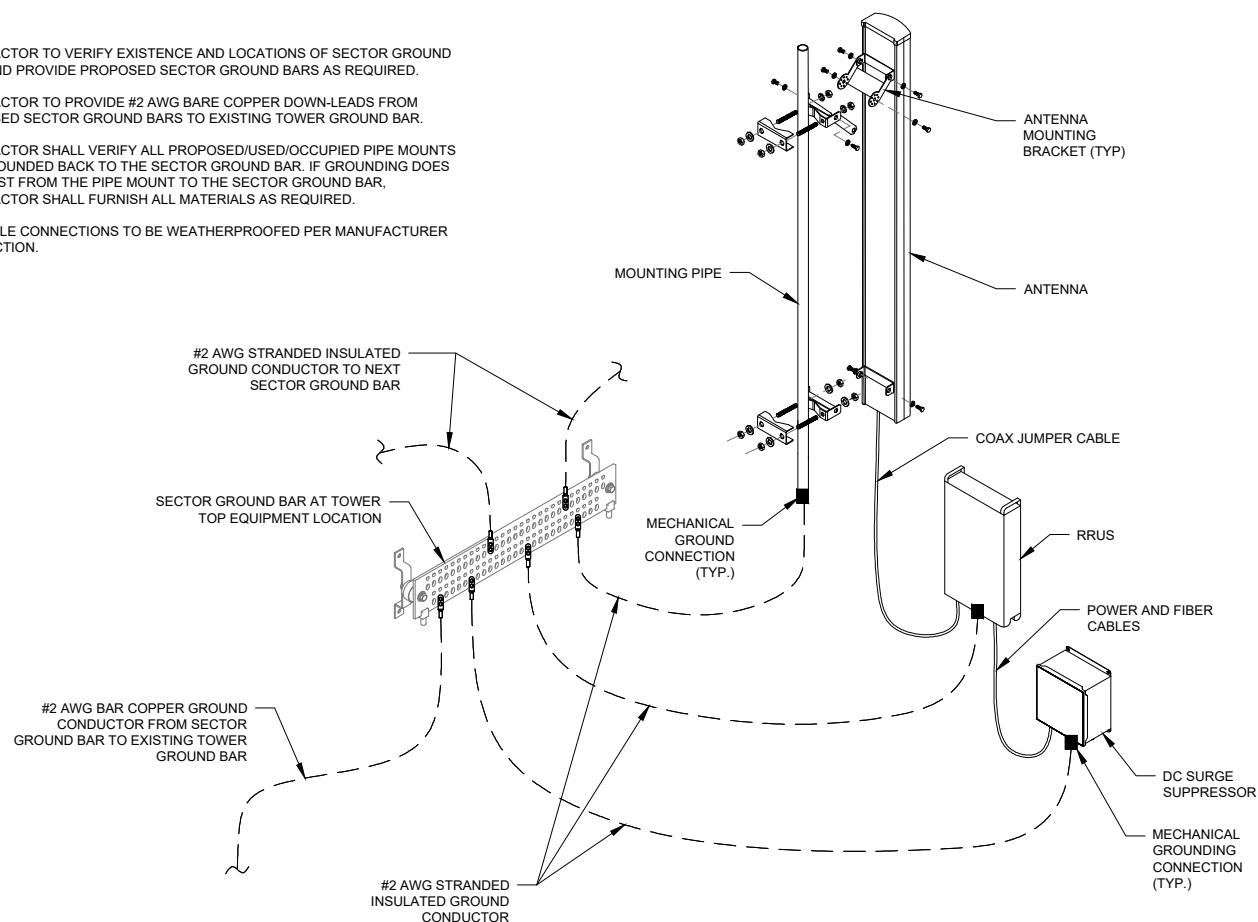
1. TOWER GROUNDING BAR: EXTEND (2) #2 AWG TINNED CU WIRE FROM BURIED GROUND RING UP TO THE TOWER GROUND BAR AND MAKE A MECHANICAL CONNECTION. SECURE GROUND BAR DIRECTLY TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
2. ANTENNA GROUNDING BAR: ANDREW CORPORATION PART #UGBKIT-0424-T MOUNT GROUND BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
3. GROUNDING BAR: LOCATED CLOSE TO GRADE LOCK BOX TESSCO PART #351546: INSTALL PER MANUFACTURER GUIDELINES.
4. EXOTHERMIC OR COMPRESSION CONNECTION FOR PIPE MOUNT TO ANTENNA ROUTE CONDUCTOR TO NEAREST GROUNDING BAR SO THE GROUNDING CONDUCTORS PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND. USE #2 AWG SOLID TINNED COPPER CONDUCTOR. GROUNDING CONNECTION SHALL BE LOCATED AT THE TOP 2" OF PIPE.
5. ALL GROUNDING CONDUCTORS SHALL BE #2 AWG COPPER TINNED UNLESS NOTED OTHERWISE.
6. ALL GROUNDING CONDUCTORS SHALL PROVIDE A STRAIGHT DOWNWARD PATH TO GROUND WITH GRADUAL BEND AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
7. KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL COMPRESSION GROUNDING CONNECTIONS.
8. ALL EXOTHERMIC CONNECTIONS SHALL BE INSTALLED UTILIZING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR APPLICATION.
9. ALL BOLTED GROUNDING CONNECTIONS SHALL BE INSTALLED WITH AN EXTERNAL TOOTHED LOCK WASHER. GROUNDING BUS BARS MAY HAVE PRE-PUNCHED HOLES OR TAPPED HOLES. ALL HARDWARE SHALL BE SECURITY TORQUE HARDWARE 3/8" STAINLESS STEEL.
10. EXTERNAL GROUNDING CONDUCTOR SHALL NOT BE INSTALLED OR ROUTED THROUGH HOLES IN ANY METAL OBJECTS, CONDUITS, OR SUPPORTS TO PRECLUDE ESTABLISHING A MAGNETIC CHOKE POINT.
11. PLASTIC CLIPS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
12. IF COAX ON ICE BRIDGE IS MORE THAT 6' FROM THE GROUND BAR AT THE BASE OF THE TOWER, A SECOND GROUND BAR WILL BE NEEDED AT THE END OF THE ICE BRIDGE RUN TO GROUND THE COAX GROUND KIT AND THE IN-LINE SURGE ARRESTORS (SURGE ARRESTORS INSTALLED BY LUCENT ONLY HAVE 6' GROUND TAILS).
13. CONTRACTOR SHALL REPAIR/PLACE EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.
14. DO NOT ALLOW THE COPPER CONDUCTOR TO TOUCH THE GALVANIZED GUY WIRE AT THE CONNECTION POINT OR AT ANY OTHER POINT. NO EXOTHERMICALLY WELDED CONNECTION SHALL BE MADE TO THE GUY WIRE.
15. CONTRACTOR SHALL VERIFY EXISTING SECTOR GROUNDING CONDITION AND GROUND THE PROPOSED EQUIPMENT IN THE SAME MANNER. A PROPOSED SECTOR GROUND BAR SHALL BE INSTALLED IF REQUIRED.

2 GROUNDING BAR DETAIL

SCALE: NONE

NOTES:

1. CONTRACTOR TO VERIFY EXISTENCE AND LOCATIONS OF SECTOR GROUND BARS AND PROVIDE PROPOSED SECTOR GROUND BARS AS REQUIRED.
2. CONTRACTOR TO PROVIDE #2 AWG BARE COPPER DOWN-LEADS FROM PROPOSED SECTOR GROUND BARS TO EXISTING TOWER GROUND BAR.
3. CONTRACTOR SHALL VERIFY ALL PROPOSED/USED/OCCUPIED PIPE MOUNTS ARE GROUNDED BACK TO THE SECTOR GROUND BAR. IF GROUNDING DOES NOT EXIST FROM THE PIPE MOUNT TO THE SECTOR GROUND BAR, CONTRACTOR SHALL FURNISH ALL MATERIALS AS REQUIRED.
4. ALL CABLE CONNECTIONS TO BE WEATHERPROOFED PER MANUFACTURER INSTRUCTION.



3 TYPICAL ANTENNA GROUNDING SCHEMATIC

SCALE: NONE



5841 BRIDGE STREET
EAST SYRACUSE, NY 13057



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1455 FORBES STREET
EAST HARTFORD, CT 06118

GROUNDING DETAILS

G-1

Exhibit D

Structural Analysis Report

Date: **June 27, 2019**

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: **AT&T Mobility Co-Locate**
Carrier Site Number: 10090919
Carrier Site Name: EAST HARTFORD SOUTH

Crown Castle Designation: **Crown Castle BU Number:** 806376
Crown Castle Site Name: HRT 100 943239
Crown Castle JDE Job Number: 548094
Crown Castle Work Order Number: 1760900
Crown Castle Order Number: 471133 Rev. 0

Engineering Firm Designation: **Paul J Ford and Company Project Number:** 37519-0733.003.7805

Site Data: **1455 FORBES STREET, EAST HARTFORD, Hartford County, CT**
Latitude 41° 43' 53.3", Longitude -72° 36' 28"
131 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.

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

LC7: Proposed Equipment Configuration

Sufficient Capacity (90.9%)

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

Respectfully submitted by:

Jared Forbes, E.I.
Structural Designer
jforbes@pauljford.com

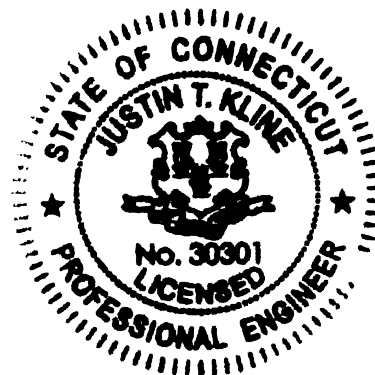


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- 3.2) Assumptions

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1) INTRODUCTION

This tower is a 131 ft Monopole tower designed by VALMONT in January of 1991.

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

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
121.0	121.0	1	tower mounts	Side Arm Mount [SO 102-3]	6 2 8 4	1-1/4 3/8 3/4 2" Conduit
		1	tower mounts	T-Arm Mount [TA 601-3]		
	120.0	3	ericsson	RRUS 32		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		3	ericsson	RRUS E2 B29		
		3	kathrein	800 10121 w/ Mount Pipe		
		3	kathrein	80010798 w/ Mount Pipe		
		6	kathrein	80010965 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		4	raycap	DC6-48-60-18-8F		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
109.0	109.0	3	alcatel lucent	B25 RRH4X30	14	1-5/8
		3	alcatel lucent	B66A RRH4X45		
		6	andrew	SBNHH-1D65B w/ Mount Pipe		
		3	antel	BXA-70063/6CFx4 w/ Mount Pipe		
		3	antel	BXA-80063/4CF w/ Mount Pipe		
		2	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	alcatel lucent	B13 RRH 4X30		
		6	rfs celwave	FD9R6004/2C-3L		
		1	tower mounts	Platform Mount (LP 101-1)		
99.0	99.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz w/Mount Pipe		
		1	tower mounts	Side Arm Mount [SO 101-3]		
97.0	103.0	1	andrew	VHLP2-18	4 3 3 2	1-1/4 5/16 1/2 2" Conduit
		1	andrew	VHLP2.5-18		
		2	dragonwave	HORIZON COMPACT		
	98.0	3	alcatel lucent	TD-RRH8x20-25		
		3	argus technologies	LLPX310R-V1 w/ Mount Pipe		
		3	rfs celwave	APXVSP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		3	samsung telecommunications	RRH-2WB		
		3	samsung telecommunications	RRH-2WB		
97.0	1	motorola	TIMING 2000			
	1	tower mounts	Platform Mount (LP 101-1)			
87.0	87.0	3	ericsson	AIR -32 B2A/B66AA w/ Mount Pipe	11 1 1 1 1	1-1/4 1-5/8 7/8 1-3/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 602-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Welti, 11/11/91	262381	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Valmont, 10613-91 & 10614-91, 11/30/91	262389	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Valmont, 1/22/91	262386	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37512-1659, 6/22/2012	3249954	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37513-0342, 1/30/2013	3448150	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 127151, 2/26/2013	3675451	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37513-0342, 5/20/2013	3842355	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25676, 6/4/2014	5099148	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37515-1502.004.7700, 5/12/2015	5681337	CCISITES
4-POST-MODIFICATION INSPECTION	ETS, 150936, 10/2/15	5921968	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2016777.806376.03, 10/21/2016	6515906	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25677.73390, 08/24/2017	7030743	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TEP, 25677.216769, 2/7/2019	8204667	CCISITES
4-POST-MODIFICATION INSPECTION	ETS, 185924, 05/22/2019	8418504	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

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

3.2) Assumptions

- 1) Tower and structures were 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.
- 5) The existing base plate grout was not considered in this analysis.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
131 - 126	Pole	TP11.715x10.525x0.1875	Pole	0.5%	Pass
126 - 121	Pole	TP12.906x11.715x0.1875	Pole	1.7%	Pass
121 - 116	Pole	TP14.096x12.906x0.1875	Pole	20.5%	Pass
116 - 111	Pole	TP15.287x14.096x0.1875	Pole	36.9%	Pass
111 - 110	Pole	TP15.525x15.287x0.1875	Pole	39.7%	Pass
110 - 105	Pole	TP16.776x15.525x0.25	Pole	47.6%	Pass
105 - 100	Pole	TP18.027x16.776x0.25	Pole	60.6%	Pass
100 - 95	Pole	TP19.277x18.027x0.25	Pole	74.2%	Pass
95 - 90	Pole	TP20.528x19.277x0.25	Pole	86.6%	Pass
90 - 89.75	Pole + Reinf.	TP20.591x20.528x0.5	Reinf. 11 Tension Rupture	77.8%	Pass
89.75 - 84.75	Pole + Reinf.	TP21.841x20.591x0.4813	Reinf. 11 Tension Rupture	90.4%	Pass
84.75 - 84.58	Pole + Reinf.	TP21.884x21.841x0.475	Reinf. 11 Tension Rupture	90.9%	Pass
84.58 - 84.33	Pole + Reinf.	TP21.946x21.884x0.6375	Reinf. 11 Tension Rupture	70.4%	Pass
84.33 - 83.42	Pole + Reinf.	TP22.174x21.946x0.625	Reinf. 11 Tension Rupture	72.3%	Pass
83.42 - 83.17	Pole + Reinf.	TP22.237x22.174x0.95	Reinf. 17 Tension Rupture	50.7%	Pass
83.17 - 83	Pole + Reinf.	TP22.279x22.237x0.95	Reinf. 17 Tension Rupture	51.0%	Pass
83 - 82.75	Pole + Reinf.	TP22.342x22.279x0.7	Reinf. 17 Tension Rupture	67.8%	Pass
82.75 - 77.75	Pole + Reinf.	TP23.592x22.342x0.6625	Reinf. 17 Tension Rupture	76.7%	Pass
77.75 - 74	Pole + Reinf.	TP25.531x23.592x0.65	Reinf. 17 Tension Rupture	82.7%	Pass
74 - 69	Pole + Reinf.	TP25.281x24.03x0.7	Reinf. 17 Tension Rupture	84.0%	Pass
69 - 67.08	Pole + Reinf.	TP25.761x25.281x0.6875	Reinf. 17 Tension Rupture	86.3%	Pass
67.08 - 66.83	Pole + Reinf.	TP25.824x25.761x0.6875	Reinf. 17 Tension Rupture	86.6%	Pass
66.83 - 64.08	Pole + Reinf.	TP26.512x25.824x0.675	Reinf. 17 Tension Rupture	89.7%	Pass
64.08 - 63.83	Pole + Reinf.	TP26.574x26.512x0.7375	Reinf. 17 Tension Rupture	86.1%	Pass
63.83 - 62.44	Pole + Reinf.	TP26.922x26.574x0.7375	Reinf. 17 Tension Rupture	87.5%	Pass
62.44 - 62.19	Pole + Reinf.	TP26.984x26.922x0.8625	Reinf. 17 Tension Rupture	72.5%	Pass
62.19 - 57.19	Pole + Reinf.	TP28.235x26.984x0.8375	Reinf. 17 Tension Rupture	76.8%	Pass
57.19 - 53.5	Pole + Reinf.	TP29.158x28.235x0.8125	Reinf. 17 Tension Rupture	79.7%	Pass
53.5 - 53.25	Pole + Reinf.	TP29.22x29.158x0.8375	Reinf. 9 Tension Rupture	79.0%	Pass
53.25 - 52.58	Pole + Reinf.	TP29.388x29.22x0.825	Reinf. 9 Tension Rupture	79.5%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
52.58 - 52.33	Pole + Reinf.	TP29.45x29.388x0.8375	Reinf. 9 Tension Rupture	78.6%	Pass
52.33 - 47.33	Pole + Reinf.	TP30.701x29.45x0.8125	Reinf. 9 Tension Rupture	82.2%	Pass
47.33 - 44.58	Pole + Reinf.	TP31.389x30.701x0.8	Reinf. 9 Tension Rupture	84.0%	Pass
44.58 - 44.33	Pole + Reinf.	TP31.451x31.389x0.8	Reinf. 9 Tension Rupture	84.2%	Pass
44.33 - 39.33	Pole + Reinf.	TP32.702x31.451x0.775	Reinf. 9 Tension Rupture	87.3%	Pass
39.33 - 39	Pole + Reinf.	TP34.015x32.702x0.775	Reinf. 9 Tension Rupture	87.5%	Pass
39 - 33.08	Pole + Reinf.	TP33.638x32.159x0.8188	Reinf. 16 Tension Rupture	77.3%	Pass
33.08 - 28.08	Pole + Reinf.	TP34.887x33.638x0.8063	Reinf. 16 Tension Rupture	79.5%	Pass
28.08 - 26.85	Pole + Reinf.	TP35.194x34.887x0.7938	Reinf. 16 Tension Rupture	80.0%	Pass
26.85 - 26.6	Pole + Reinf.	TP35.256x35.194x0.8688	Reinf. 6 Tension Rupture	77.1%	Pass
26.6 - 21.6	Pole + Reinf.	TP36.505x35.256x0.8563	Reinf. 6 Tension Rupture	79.1%	Pass
21.6 - 18	Pole + Reinf.	TP37.404x36.505x0.8438	Reinf. 6 Tension Rupture	80.4%	Pass
18 - 17.75	Pole + Reinf.	TP37.467x37.404x0.9938	Reinf. 16 Tension Rupture	66.3%	Pass
17.75 - 17.5	Pole + Reinf.	TP37.529x37.467x0.9938	Reinf. 16 Tension Rupture	66.4%	Pass
17.5 - 17.25	Pole + Reinf.	TP37.592x37.529x0.9938	Reinf. 15 Tension Rupture	66.5%	Pass
17.25 - 17.08	Pole + Reinf.	TP37.634x37.592x0.9938	Reinf. 15 Tension Rupture	66.5%	Pass
17.08 - 16.83	Pole + Reinf.	TP37.697x37.634x0.8938	Reinf. 15 Tension Rupture	72.7%	Pass
16.83 - 13	Pole + Reinf.	TP38.653x37.697x0.8813	Reinf. 15 Tension Rupture	74.0%	Pass
13 - 12.75	Pole + Reinf.	TP38.716x38.653x1.0438	Reinf. 15 Tension Rupture	62.6%	Pass
12.75 - 11.85	Pole + Reinf.	TP38.94x38.716x1.0438	Reinf. 15 Tension Rupture	62.9%	Pass
11.85 - 11.6	Pole + Reinf.	TP39.003x38.94x0.8188	Reinf. 15 Tension Rupture	80.9%	Pass
11.6 - 6.5	Pole + Reinf.	TP40.277x39.003x0.7938	Reinf. 15 Tension Rupture	82.6%	Pass
6.5 - 6.25	Pole + Reinf.	TP40.339x40.277x0.9188	Reinf. 15 Tension Rupture	76.7%	Pass
6.25 - 4	Pole + Reinf.	TP40.901x40.339x0.9188	Reinf. 15 Tension Rupture	77.4%	Pass
4 - 3.75	Pole + Reinf.	TP40.963x40.901x1.0938	Reinf. 12 Connection	69.0%	Pass
3.75 - 0	Pole + Reinf.	TP41.9x40.963x1.0688	Reinf. 12 Connection	70.0%	Pass
				Summary	
			Pole	86.6%	Pass
			Reinforcement	90.9%	Pass
			Overall	90.9%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	110	37.0	Pass
1	Flange Plate		23.7	Pass
1	Anchor Rods	0	87.6	Pass
1	Base Plate	0	56.6	Pass
1	Base Foundation Structural Steel	0	65.3	Pass
1	Base Foundation Soil Interaction	0	72.6	Pass

Structure Rating (max from all components) =	90.9%
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Notes:

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

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- 1) Tower is located in Hartford County, Connecticut.
- 2) Tower base elevation above sea level: 41.0000 ft.
- 3) Basic wind speed of 125 mph.
- 4) Risk Category II.
- 5) Exposure Category C.
- 6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7) Topographic Category: 1.
- 8) Crest Height: 0.0000 ft.
- 9) Nominal ice thickness of 2.0000 in.
- 10) Ice thickness is considered to increase with height.
- 11) Ice density of 56.00 pcf.
- 12) A wind speed of 50 mph is used in combination with ice.
- 13) Temperature drop of 50 °F.
- 14) Deflections calculated using a wind speed of 60 mph.
- 15) TIA-222-H Annex S.
- 16) A non-linear (P-delta) analysis was used.
- 17) Pressures are calculated at each section.
- 18) Stress ratio used in pole design is 1.05.
- 19) Tower analysis based on target reliabilities in accordance with Annex S.
- 20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- 21) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	131.0000- 126.0000	5.0000	0.00	12	10.5250	11.7155	0.1875	0.7500	A572-65 (65 ksi)
L2	126.0000- 121.0000	5.0000	0.00	12	11.7155	12.9060	0.1875	0.7500	A572-65 (65 ksi)
L3	121.0000- 116.0000	5.0000	0.00	12	12.9060	14.0964	0.1875	0.7500	A572-65 (65 ksi)
L4	116.0000- 111.0000	5.0000	0.00	12	14.0964	15.2869	0.1875	0.7500	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L5	111.0000- 110.0000	1.0000	0.00	12	15.2869	15.5250	0.1875	0.7500	A572-65 (65 ksi)
L6	110.0000- 105.0000	5.0000	0.00	12	15.5250	16.7757	0.2500	1.0000	A572-65 (65 ksi)
L7	105.0000- 100.0000	5.0000	0.00	12	16.7757	18.0265	0.2500	1.0000	A572-65 (65 ksi)
L8	100.0000- 95.0000	5.0000	0.00	12	18.0265	19.2772	0.2500	1.0000	A572-65 (65 ksi)
L9	95.0000- 90.0000	5.0000	0.00	12	19.2772	20.5280	0.2500	1.0000	A572-65 (65 ksi)
L10	90.0000- 89.7500	0.2500	0.00	12	20.5280	20.5905	0.5000	2.0000	A572-65 (65 ksi)
L11	89.7500- 84.7500	5.0000	0.00	12	20.5905	21.8413	0.4813	1.9250	A572-65 (65 ksi)
L12	84.7500- 84.5800	0.1700	0.00	12	21.8413	21.8838	0.4750	1.9000	A572-65 (65 ksi)
L13	84.5800- 84.3300	0.2500	0.00	12	21.8838	21.9464	0.6375	2.5500	A572-65 (65 ksi)
L14	84.3300- 83.4200	0.9100	0.00	12	21.9464	22.1740	0.6250	2.5000	A572-65 (65 ksi)
L15	83.4200- 83.1700	0.2500	0.00	12	22.1740	22.2365	0.9500	3.8000	A572-65 (65 ksi)
L16	83.1700- 83.0000	0.1700	0.00	12	22.2365	22.2791	0.9500	3.8000	A572-65 (65 ksi)
L17	83.0000- 82.7500	0.2500	0.00	12	22.2791	22.3416	0.7000	2.8000	A572-65 (65 ksi)
L18	82.7500- 77.7500	5.0000	0.00	12	22.3416	23.5923	0.6625	2.6500	A572-65 (65 ksi)
L19	77.7500- 70.0000	7.7500	4.00	12	23.5923	25.5310	0.6500	2.6000	A572-65 (65 ksi)
L20	70.0000- 69.0000	5.0000	0.00	12	24.0304	25.2810	0.7000	2.8000	A572-65 (65 ksi)
L21	69.0000- 67.0800	1.9200	0.00	12	25.2810	25.7612	0.6875	2.7500	A572-65 (65 ksi)
L22	67.0800- 66.8300	0.2500	0.00	12	25.7612	25.8237	0.6875	2.7500	A572-65 (65 ksi)
L23	66.8300- 64.0800	2.7500	0.00	12	25.8237	26.5115	0.6750	2.7000	A572-65 (65 ksi)
L24	64.0800- 63.8300	0.2500	0.00	12	26.5115	26.5741	0.7375	2.9500	A572-65 (65 ksi)
L25	63.8300- 62.4400	1.3900	0.00	12	26.5741	26.9217	0.7375	2.9500	A572-65 (65 ksi)
L26	62.4400- 62.1900	0.2500	0.00	12	26.9217	26.9843	0.8625	3.4500	A572-65 (65 ksi)
L27	62.1900- 57.1900	5.0000	0.00	12	26.9843	28.2348	0.8375	3.3500	A572-65 (65 ksi)
L28	57.1900- 53.5000	3.6900	0.00	12	28.2348	29.1578	0.8125	3.2500	A572-65 (65 ksi)
L29	53.5000- 53.2500	0.2500	0.00	12	29.1578	29.2203	0.8375	3.3500	A572-65 (65 ksi)
L30	53.2500- 52.5800	0.6700	0.00	12	29.2203	29.3879	0.8250	3.3000	A572-65 (65 ksi)
L31	52.5800- 52.3300	0.2500	0.00	12	29.3879	29.4504	0.8375	3.3500	A572-65 (65 ksi)
L32	52.3300- 47.3300	5.0000	0.00	12	29.4504	30.7010	0.8125	3.2500	A572-65 (65 ksi)
L33	47.3300- 44.5800	2.7500	0.00	12	30.7010	31.3888	0.8000	3.2000	A572-65 (65 ksi)
L34	44.5800- 44.3300	0.2500	0.00	12	31.3888	31.4513	0.8000	3.2000	A572-65 (65 ksi)
L35	44.3300- 39.3300	5.0000	0.00	12	31.4513	32.7019	0.7750	3.1000	A572-65 (65 ksi)
L36	39.3300- 34.0800	5.2500	4.92	12	32.7019	34.0150	0.7750	3.1000	A572-65 (65 ksi)
L37	34.0800- 33.0800	5.9200	0.00	12	32.1594	33.6380	0.8188	3.2752	A572-65 (65 ksi)
L38	33.0800- 28.0800	5.0000	0.00	12	33.6380	34.8868	0.8063	3.2252	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L39	28.0800- 26.8500	1.2300	0.00	12	34.8868	35.1940	0.7938	3.1752	A572-65 (65 ksi)
L40	26.8500- 26.6000	0.2500	0.00	12	35.1940	35.2564	0.8688	3.4752	A572-65 (65 ksi)
L41	26.6000- 21.6000	5.0000	0.00	12	35.2564	36.5052	0.8563	3.4252	A572-65 (65 ksi)
L42	21.6000- 18.0000	3.6000	0.00	12	36.5052	37.4044	0.8438	3.3752	A572-65 (65 ksi)
L43	18.0000- 17.7500	0.2500	0.00	12	37.4044	37.4668	0.9938	3.9752	A572-65 (65 ksi)
L44	17.7500- 17.5000	0.2500	0.00	12	37.4668	37.5292	0.9938	3.9752	A572-65 (65 ksi)
L45	17.5000- 17.2500	0.2500	0.00	12	37.5292	37.5917	0.9938	3.9752	A572-65 (65 ksi)
L46	17.2500- 17.0800	0.1700	0.00	12	37.5917	37.6341	0.9938	3.9752	A572-65 (65 ksi)
L47	17.0800- 16.8300	0.2500	0.00	12	37.6341	37.6966	0.8938	3.5752	A572-65 (65 ksi)
L48	16.8300- 13.0000	3.8300	0.00	12	37.6966	38.6531	0.8813	3.5252	A572-65 (65 ksi)
L49	13.0000- 12.7500	0.2500	0.00	12	38.6531	38.7156	1.0438	4.1752	A572-65 (65 ksi)
L50	12.7500- 11.8500	0.9000	0.00	12	38.7156	38.9404	1.0438	4.1752	A572-65 (65 ksi)
L51	11.8500- 11.6000	0.2500	0.00	12	38.9404	39.0028	0.8188	3.2752	A572-65 (65 ksi)
L52	11.6000- 6.5000	5.1000	0.00	12	39.0028	40.2766	0.7938	3.1752	A572-65 (65 ksi)
L53	6.5000-6.2500	0.2500	0.00	12	40.2766	40.3390	0.9188	3.6752	A572-65 (65 ksi)
L54	6.2500-4.0000	2.2500	0.00	12	40.3390	40.9010	0.9188	3.6752	A572-65 (65 ksi)
L55	4.0000-3.7500	0.2500	0.00	12	40.9010	40.9634	1.0938	4.3752	A572-65 (65 ksi)
L56	3.7500-0.0000	3.7500		12	40.9634	41.9000	1.0688	4.2752	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	10.8301	6.2413	85.1314	3.7008	5.4520	15.6148	172.4993	3.0718	2.3182	12.364
	12.0626	6.9600	118.0599	4.1270	6.0686	19.4542	239.2213	3.4255	2.6372	14.065
L2	12.0626	6.9600	118.0599	4.1270	6.0686	19.4542	239.2213	3.4255	2.6372	14.065
	13.2951	7.6788	158.5426	4.5532	6.6853	23.7152	321.2502	3.7793	2.9563	15.767
L3	13.2951	7.6788	158.5426	4.5532	6.6853	23.7152	321.2502	3.7793	2.9563	15.767
	14.5276	8.3975	207.3596	4.9794	7.3019	28.3978	420.1667	4.1330	3.2753	17.468
L4	14.5276	8.3975	207.3596	4.9794	7.3019	28.3978	420.1667	4.1330	3.2753	17.468
	15.7600	9.1163	265.2910	5.4056	7.9186	33.5022	537.5516	4.4867	3.5944	19.17
L5	15.7600	9.1163	265.2910	5.4056	7.9186	33.5022	537.5516	4.4867	3.5944	19.17
	16.0065	9.2600	278.0397	5.4908	8.0419	34.5737	563.3838	4.5575	3.6582	19.51
L6	15.9845	12.2964	366.2060	5.4684	8.0419	45.5370	742.0327	6.0519	3.4907	13.963
	17.2793	13.3032	463.7302	5.9162	8.6898	53.3646	939.6431	6.5474	3.8259	15.304
L7	17.2793	13.3032	463.7302	5.9162	8.6898	53.3646	939.6431	6.5474	3.8259	15.304
	18.5742	14.3101	577.1924	6.3640	9.3377	61.8129	1169.5483	7.0430	4.1611	16.644
L8	18.5742	14.3101	577.1924	6.3640	9.3377	61.8129	1169.5483	7.0430	4.1611	16.644
	19.8691	15.3169	707.7989	6.8118	9.9856	70.8819	1434.1925	7.5385	4.4963	17.985
L9	19.8691	15.3169	707.7989	6.8118	9.9856	70.8819	1434.1925	7.5385	4.4963	17.985
	21.1640	16.3238	856.7561	7.2595	10.6335	80.5714	1736.0201	8.0341	4.8315	19.326
L10	21.0758	32.2451	1650.9145	7.1700	10.6335	155.2559	3345.2003	15.8700	4.1615	8.323
	21.1405	32.3458	1666.4278	7.1924	10.6659	156.2389	3376.6345	15.9196	4.1783	8.357
L11	21.1471	31.1619	1608.4317	7.1991	10.6659	150.8013	3259.1186	15.3369	4.2285	8.787
	22.4420	33.1000	1927.6075	7.6469	11.3138	170.3769	3905.8553	16.2908	4.5637	9.483
L12	22.4442	32.6797	1904.2442	7.6491	11.3138	168.3118	3858.5150	16.0840	4.5805	9.643
	22.4882	32.7448	1915.6369	7.6644	11.3358	168.9898	3881.5997	16.1160	4.5919	9.667
L13	22.4309	43.6134	2512.8857	7.6062	11.3358	221.6767	5091.7877	21.4652	4.1564	6.52
	22.4956	43.7417	2535.1408	7.6286	11.3682	223.0026	5136.8825	21.5284	4.1731	6.546

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L14	22.5001	42.9092	2489.8086	7.6330	11.3682	219.0150	5045.0273	21.1186	4.2066	6.731
	22.7357	43.3673	2570.4101	7.7145	11.4861	223.7839	5208.3477	21.3441	4.2676	6.828
L15	22.6211	64.9242	3732.8999	7.5982	11.4861	324.9921	7563.8672	31.9537	3.3966	3.575
	22.6858	65.1155	3765.9947	7.6206	11.5185	326.9513	7630.9263	32.0479	3.4134	3.593
L16	22.6858	65.1155	3765.9947	7.6206	11.5185	326.9513	7630.9263	32.0479	3.4134	3.593
	22.7298	65.2456	3788.6105	7.6358	11.5405	328.2869	7676.7521	32.1119	3.4248	3.605
L17	22.8180	48.6392	2890.9250	7.7253	11.5405	250.5015	5857.7978	23.9387	4.0948	5.85
	22.8828	48.7801	2916.1322	7.7477	11.5729	251.9785	5908.8744	24.0081	4.1115	5.874
L18	22.8960	46.2469	2774.2826	7.7611	11.5729	239.7215	5621.4487	22.7613	4.2120	6.358
	24.1909	48.9151	3282.6958	8.2089	12.2208	268.6148	6651.6316	24.0745	4.5472	6.864
L19	24.1953	48.0183	3226.0283	8.2134	12.2208	263.9778	6536.8079	23.6332	4.5807	7.047
	26.2023	52.0759	4114.8942	8.9074	13.2251	311.1438	8337.8912	25.6302	5.1003	7.847
L20	25.6669	52.5867	3653.4773	8.3523	12.4477	293.5051	7402.9356	25.8816	4.5641	6.52
	25.9259	55.4055	4273.0428	8.8000	13.0955	326.2974	8658.3431	27.2689	4.8993	6.999
L21	25.9303	54.4438	4203.1441	8.8045	13.0955	320.9598	8516.7095	26.7956	4.9328	7.175
	26.4274	55.5069	4454.1995	8.9764	13.3443	333.7904	9025.4158	27.3188	5.0615	7.362
L22	26.4274	55.5069	4454.1995	8.9764	13.3443	333.7904	9025.4158	27.3188	5.0615	7.362
	26.4922	55.6453	4487.6063	8.9988	13.3767	335.4796	9093.1071	27.3869	5.0783	7.387
L23	26.4966	54.6608	4412.5900	9.0032	13.3767	329.8716	8941.1036	26.9024	5.1118	7.573
	27.2087	56.1557	4784.6350	9.2495	13.7330	348.4047	9694.9676	27.6381	5.2961	7.846
L24	27.1866	61.2069	5189.8105	9.2271	13.7330	377.9086	10515.963	30.1242	5.1286	6.954
	27.2513	61.3554	5227.6742	9.2495	13.7654	379.7700	10592.685	30.1973	5.1454	6.977
L25	27.2513	61.3554	5227.6742	9.2495	13.7654	379.7700	10592.685	30.1973	5.1454	6.977
	27.6113	62.1810	5441.5594	9.3740	13.9455	390.2030	11026.074	30.6036	5.2385	7.103
L26	27.5672	72.3730	6273.1514	9.3292	13.9455	449.8348	12711.105	35.6198	4.9035	5.685
	27.6319	72.5467	6318.4168	9.3516	13.9778	452.0308	12802.825	35.7053	4.9203	5.705
L27	27.6407	70.5113	6152.9066	9.3605	13.9778	440.1899	12467.456	34.7035	4.9873	5.955
	28.9354	73.8838	7078.6705	9.8082	14.6256	483.9903	14343.305	36.3633	5.3224	6.355
L28	28.9442	71.7437	6886.1834	9.8172	14.6256	470.8294	13953.274	35.3101	5.3894	6.633
	29.8997	74.1583	7605.1298	10.1476	15.1037	503.5269	15410.054	36.4985	5.6368	6.938
L29	29.8909	76.3727	7818.4101	10.1387	15.1037	517.6480	15842.218	37.5883	5.5698	6.65
	29.9556	76.5413	7870.3118	10.1610	15.1361	519.9692	15947.385	37.6713	5.5865	6.67
L30	29.9600	75.4321	7763.0922	10.1655	15.1361	512.8855	15730.129	37.1254	5.6200	6.812
	30.1335	75.8773	7901.3485	10.2255	15.2229	519.0430	16010.274	37.3445	5.6649	6.867
L31	30.1291	76.9932	8010.5397	10.2210	15.2229	526.2159	16231.525	37.8937	5.6314	6.724
	30.1939	77.1618	8063.2873	10.2434	15.2553	528.5563	16338.406	37.9767	5.6482	6.744
L32	30.2027	74.9239	7843.1146	10.2524	15.2553	514.1237	15892.276	36.8753	5.7152	7.034
	31.4974	78.1957	8916.1298	10.7001	15.9031	560.6534	18066.496	38.4856	6.0504	7.447
L33	31.5018	77.0249	8789.9778	10.7045	15.9031	552.7209	17810.878	37.9093	6.0839	7.605
	32.2139	78.7967	9410.6302	10.9508	16.2594	578.7811	19068.488	38.7814	6.2682	7.835
L34	32.2139	78.7967	9410.6302	10.9508	16.2594	578.7811	19068.488	38.7814	6.2682	7.835
	32.2786	78.9578	9468.4591	10.9732	16.2918	581.1800	19185.665	38.8606	6.2850	7.856
L35	32.2874	76.5528	9195.0322	10.9821	16.2918	564.3969	18631.628	37.6769	6.3520	8.196
	33.5821	79.6736	10366.056	11.4298	16.9396	611.9429	21004.441	39.2129	6.6871	8.629
L36	33.5821	79.6736	10366.056	11.4298	16.9396	611.9429	21004.441	39.2129	6.6871	8.629

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I _t /Q in ²	w in	w/t
	34.9415	82.9504	11698.402	11.8999	17.6198	663.9362	23704.135	40.8257	7.0390	9.083
L37	34.2772	82.6307	10359.599	11.2199	16.6586	621.8774	20991.356	40.6683	6.4243	7.846
	34.5358	86.5290	11896.074	11.7493	17.4245	682.7217	24104.672	42.5869	6.8206	8.33
L38	34.5402	85.2405	11727.856	11.7537	17.4245	673.0676	23763.816	41.9528	6.8541	8.501
	35.8330	88.4827	13117.650	12.2008	18.0714	725.8807	26579.915	43.5485	7.1888	8.916
L39	35.8374	87.1429	12928.503	12.2053	18.0714	715.4141	26196.653	42.8891	7.2223	9.098
	36.1555	87.9281	13281.147	12.3153	18.2305	728.5130	26911.205	43.2756	7.3046	9.202
L40	36.1290	96.0260	14441.112	12.2884	18.2305	792.1407	29261.608	47.2611	7.1036	8.176
	36.1937	96.2006	14520.063	12.3108	18.2628	795.0609	29421.585	47.3470	7.1203	8.196
L41	36.1981	94.8510	14326.765	12.3152	18.2628	784.4766	29029.911	46.6828	7.1538	8.354
	37.4909	98.2943	15944.358	12.7623	18.9097	843.1838	32307.593	48.3775	7.4885	8.745
L42	37.4953	96.8934	15728.141	12.7668	18.9097	831.7496	31869.478	47.6880	7.5220	8.914
	38.4262	99.3363	16948.046	13.0887	19.3755	874.7173	34341.336	48.8903	7.7630	9.2
L43	38.3733	116.5151	19716.175	13.0350	19.3755	1017.5851	39950.316	57.3452	7.3610	7.407
	38.4379	116.7149	19817.781	13.0573	19.4078	1021.1246	40156.198	57.4435	7.3777	7.424
L44	38.4379	116.7149	19817.781	13.0573	19.4078	1021.1246	40156.198	57.4435	7.3777	7.424
	38.5025	116.9147	19919.736	13.0797	19.4401	1024.6703	40362.786	57.5419	7.3945	7.441
L45	38.5025	116.9147	19919.736	13.0797	19.4401	1024.6703	40362.786	57.5419	7.3945	7.441
	38.5672	117.1145	20022.040	13.1020	19.4725	1028.2221	40570.081	57.6402	7.4112	7.457
L46	38.5672	117.1145	20022.040	13.1020	19.4725	1028.2221	40570.081	57.6402	7.4112	7.457
	38.6111	117.2504	20091.806	13.1172	19.4945	1030.6408	40711.447	57.7071	7.4226	7.469
L47	38.6464	105.7400	18218.447	13.1530	19.4945	934.5439	36915.514	52.0420	7.6906	8.604
	38.7111	105.9197	18311.491	13.1754	19.5268	937.7609	37104.046	52.1305	7.7073	8.623
L48	38.7155	104.4739	18073.804	13.1799	19.5268	925.5886	36622.428	51.4189	7.7408	8.783
	39.7058	107.1884	19519.566	13.5223	20.0223	974.8899	39551.933	52.7549	7.9972	9.074
L49	39.6485	126.4064	22821.616	13.4641	20.0223	1139.8083	46242.782	62.2134	7.5617	7.244
	39.7131	126.6162	22935.471	13.4865	20.0547	1143.6473	46473.483	62.3167	7.5784	7.26
L50	39.7131	126.6162	22935.471	13.4865	20.0547	1143.6473	46473.483	62.3167	7.5784	7.26
	39.9458	127.3717	23348.484	13.5670	20.1711	1157.5211	47310.359	62.6885	7.6386	7.318
L51	40.0252	100.5089	18643.689	13.6475	20.1711	924.2768	37777.169	49.4674	8.2416	10.066
	40.0898	100.6735	18735.449	13.6699	20.2035	927.3390	37963.100	49.5484	8.2584	10.086
L52	40.0987	97.6636	18199.109	13.6788	20.2035	900.7920	36876.328	48.0671	8.3254	10.488
	41.4174	100.9194	20080.560	14.1348	20.8633	962.4841	40688.659	49.6695	8.6667	10.918
L53	41.3733	116.4414	23022.598	14.0901	20.8633	1103.4993	46650.025	57.3089	8.3317	9.068
	41.4379	116.6261	23132.345	14.1124	20.8956	1107.0434	46872.403	57.3998	8.3485	9.086

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L54	41.4379	116.6261	23132.345	14.1124	20.8956	1107.0434	46872.403	57.3998	8.3485	9.086
	42.0197	118.2887	24135.806	14.3136	21.1867	1139.1960	48905.687	58.2181	8.4991	9.25
L55	41.9579	140.2023	28357.214	14.2510	21.1867	1338.4441	57459.404	69.0033	8.0301	7.341
	42.0226	140.4222	28490.863	14.2733	21.2190	1342.7024	57730.212	69.1115	8.0468	7.357
L56	42.0314	137.2987	27892.076	14.2823	21.2190	1314.4831	56516.908	67.5743	8.1138	7.592
	43.0010	140.5220	29902.995	14.6176	21.7042	1377.7516	60591.576	69.1607	8.3648	7.826

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 131.0000-126.0000				1	1	1			
L2 126.0000-121.0000				1	1	1			
L3 121.0000-116.0000				1	1	1			
L4 116.0000-111.0000				1	1	1			
L5 111.0000-110.0000				1	1	1			
L6 110.0000-105.0000				1	1	1			
L7 105.0000-100.0000				1	1	1			
L8 100.0000-95.0000				1	1	1			
L9 95.0000-90.0000				1	1	1			
L10 90.0000-89.7500				1	1	0.924185			
L11 89.7500-84.7500				1	1	0.933544			
L12 84.7500-84.5800				1	1	0.944718			
L13 84.5800-84.3300				1	1	0.914408			
L14 84.3300-83.4200				1	1	0.926528			
L15 83.4200-83.1700				1	1	0.877374			
L16 83.1700-83.0000				1	1	0.876149			
L17 83.0000-82.7500				1	1	0.895771			
L18 82.7500-77.7500				1	1	0.913883			
L19 77.7500-70.0000				1	1	0.90949			
L20 70.0000-69.0000				1	1	0.921147			
L21 69.0000-67.0800				1	1	0.92817			
L22 67.0800-66.8300				1	1	0.926992			
L23 66.8300-64.0800				1	1	0.930891			
L24 64.0800-63.8300				1	1	0.999923			
L25 63.8300-62.4400				1	1	0.992273			

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L26 62.4400-62.1900				1	1	0.91348			
L27 62.1900-57.1900				1	1	0.91398			
L28 57.1900-53.5000				1	1	0.92312			
L29 53.5000-53.2500				1	1	0.934453			
L30 53.2500-52.5800				1	1	0.944853			
L31 52.5800-52.3300				1	1	0.944539			
L32 52.3300-47.3300				1	1	0.948144			
L33 47.3300-44.5800				1	1	0.949695			
L34 44.5800-44.3300				1	1	0.948555			
L35 44.3300-39.3300				1	1	0.955828			
L36 39.3300-34.0800				1	1	0.954403			
L37 34.0800-33.0800				1	1	0.946762			
L38 33.0800-28.0800				1	1	0.941482			
L39 28.0800-26.8500				1	1	0.951287			
L40 26.8500-26.6000				1	1	0.995121			
L41 26.6000-21.6000				1	1	0.987989			
L42 21.6000-18.0000				1	1	0.987645			
L43 18.0000-17.7500				1	1	0.947359			
L44 17.7500-17.5000				1	1	0.946332			
L45 17.5000-17.2500				1	1	0.945307			
L46 17.2500-17.0800				1	1	0.944613			
L47 17.0800-16.8300				1	1	0.961223			
L48 16.8300-13.0000				1	1	0.959725			
L49 13.0000-12.7500				1	1	0.955378			
L50 12.7500-11.8500				1	1	0.951665			
L51 11.8500-11.6000				1	1	1.02568			
L52 11.6000-6.5000				1	1	1.03715			
L53 6.5000-6.2500				1	1	0.967831			
L54 6.2500-4.0000				1	1	0.959487			
L55 4.0000-3.7500				1	1	0.867579			
L56 3.7500-0.0000				1	1	0.874341			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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

2" (Nominal) Conduit	B	No	Surface Ar (CaAa)	121.0000 - 0.0000	4	4	-0.005 0.182	2.3750		0.72
LDF6-50A(1-1/4")	B	No	Surface Ar (CaAa)	121.0000 - 0.0000	6	3	0.186 0.279	1.5500		0.66

2" (Nominal) Conduit	A	No	Surface Ar (CaAa)	97.0000 - 0.0000	2	2	-0.287 -0.182	2.3750		0.72

LCF114-50J(1-1/4)	B	No	Surface Ar (CaAa)	87.0000 - 0.0000	11	5	-0.340 -0.104	1.5800		0.70
MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	B	No	Surface Ar (CaAa)	87.0000 - 0.0000	1	1	-0.364 -0.364	1.6250		1.07
MLC Hybrid 6/6(7/8")	B	No	Surface Ar (CaAa)	87.0000 - 0.0000	1	1	-0.364 -0.364	1.0800		1.82
HCS 6X12 6AWG(1-3/8")	B	No	Surface Ar (CaAa)	87.0000 - 0.0000	1	1	-0.364 -0.364	1.3800		1.70

4x0.75	B	No	Surface Af (CaAa)	44.0000 - 14.0000	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4x0.75	A	No	Surface Af (CaAa)	44.0000 - 14.0000	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4x0.75	C	No	Surface Af (CaAa)	44.0000 - 14.0000	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4x0.75	A	No	Surface Af (CaAa)	70.0000 - 40.0000	1	1	-0.250 -0.250	4.0000	9.5000	0.00
4x0.75	C	No	Surface Af (CaAa)	70.0000 - 40.0000	1	1	-0.250 -0.250	4.0000	9.5000	0.00
4x0.75	B	No	Surface Af (CaAa)	70.0000 - 40.0000	1	1	-0.250 -0.250	4.0000	9.5000	0.00
4x0.75	B	No	Surface Af (CaAa)	86.5000 - 66.5000	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4x0.75	A	No	Surface Af (CaAa)	86.5000 - 66.5000	1	1	-0.500 -0.500	4.0000	9.5000	0.00
4x0.75	C	No	Surface Af (CaAa)	86.5000 - 66.5000	1	1	-0.500 -0.500	4.0000	9.5000	0.00
*										
6x1	B	No	Surface Af (CaAa)	15.5000 - 0.5000	1	1	-0.500 -0.500	6.0000	14.0000	0.00
6x1	A	No	Surface Af (CaAa)	15.5000 - 0.5000	1	1	-0.500 -0.500	6.0000	14.0000	0.00
6x1	C	No	Surface Af (CaAa)	15.5000 - 0.5000	1	1	-0.500 -0.500	6.0000	14.0000	0.00
6x1	A	No	Surface Af (CaAa)	43.0000 - 8.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
6x1	C	No	Surface Af (CaAa)	56.0000 - 21.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
6x1	B	No	Surface Af (CaAa)	56.0000 - 21.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
6x1	C	No	Surface Af (CaAa)	56.0000 - 21.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
6x1	B	No	Surface Af (CaAa)	56.0000 - 21.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
4.5x1	A	No	Surface Af (CaAa)	63.0000 - 43.0000	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5x1	C	No	Surface Af (CaAa)	66.0000 - 56.0000	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5x1	B	No	Surface Af (CaAa)	66.0000 - 56.0000	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5x1	A	No	Surface Af (CaAa)	91.5000 - 81.5000	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5x1	C	No	Surface Af (CaAa)	91.5000 - 81.5000	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5x1	B	No	Surface Af (CaAa)	91.5000 - 81.5000	1	1	0.000 0.000	4.5000	11.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
*										
6.5x1.25	A	No	Surface Af (CaAa)	20.7500 - 0.0000	1	1	-0.250 -0.250	6.5000	15.5000	0.00
6.5x1.25	C	No	Surface Af (CaAa)	20.7500 - 0.0000	1	1	0.000 0.000	6.5000	15.5000	0.00
6.5x1.25	B	No	Surface Af (CaAa)	20.7500 - 0.0000	1	1	0.000 0.000	6.5000	15.5000	0.00
6.5x1.25	C	No	Surface Af (CaAa)	9.2500 - 0.0000	1	1	-0.250 -0.250	6.5000	15.5000	0.00
*										
6x1	A	No	Surface Af (CaAa)	20.0000 - 0.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
6x1	C	No	Surface Af (CaAa)	20.0000 - 0.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
6x1	B	No	Surface Af (CaAa)	20.0000 - 0.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
6x1	A	No	Surface Af (CaAa)	55.0000 - 20.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
6x1	C	No	Surface Af (CaAa)	55.0000 - 20.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
6x1	B	No	Surface Af (CaAa)	55.0000 - 20.0000	1	1	0.250 0.250	6.0000	14.0000	0.00
4.5x1.25	A	No	Surface Af (CaAa)	85.0000 - 55.0000	1	1	0.250 0.250	4.5000	11.5000	0.00
4.5x1.25	C	No	Surface Af (CaAa)	85.0000 - 55.0000	1	1	0.250 0.250	4.5000	11.5000	0.00
4.5x1.25	B	No	Surface Af (CaAa)	85.0000 - 55.0000	1	1	0.250 0.250	4.5000	11.5000	0.00
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{A,A} ft ² /ft	Weight plf

FB-L98B-002-75000(3/8")	C	No	No	Inside Pole	121.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.06 0.06 0.06 0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	121.0000 - 0.0000	8	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.59 0.59 0.59 0.59

HJ7-50A(1-5/8")	C	No	No	Inside Pole	109.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.04 1.04 1.04 1.04
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	109.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.30 1.30 1.30 1.30
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	109.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.30 1.30 1.30 1.30
ATCB-B01-005(5/16)	C	No	No	Inside Pole	97.0000 - 0.0000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.07 0.07 0.07 0.07
FSJ4-50B(1/2")	C	No	No	Inside Pole	97.0000 - 0.0000	3	No Ice 1/2" Ice	0.0000 0.0000	0.14 0.14

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _{AA} ft ² /ft	Weight plf	
HB114-1-08U4-M5J(1 1/4")	C	No	No	Inside Pole	97.0000 - 0.0000	4	1" Ice	0.0000	0.14
							2" Ice	0.0000	0.14
							No Ice	0.0000	1.08
							1/2" Ice	0.0000	1.08
							1" Ice	0.0000	1.08
							2" Ice	0.0000	1.08

*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	131.0000-126.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	126.0000-121.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L3	121.0000-116.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.075	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.02
L4	116.0000-111.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.075	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.02
L5	111.0000-110.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.415	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L6	110.0000-105.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.075	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.08
L7	105.0000-100.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.075	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.10
L8	100.0000-95.0000	A	0.000	0.000	0.950	0.000	0.00
		B	0.000	0.000	7.075	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.11
L9	95.0000-90.0000	A	0.000	0.000	3.500	0.000	0.01
		B	0.000	0.000	8.200	0.000	0.03
		C	0.000	0.000	1.125	0.000	0.12
L10	90.0000-89.7500	A	0.000	0.000	0.306	0.000	0.00
		B	0.000	0.000	0.541	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.01
L11	89.7500-84.7500	A	0.000	0.000	7.479	0.000	0.01
		B	0.000	0.000	14.876	0.000	0.06
		C	0.000	0.000	5.104	0.000	0.12
L12	84.7500-84.5800	A	0.000	0.000	0.449	0.000	0.00
		B	0.000	0.000	0.813	0.000	0.00
		C	0.000	0.000	0.368	0.000	0.00
L13	84.5800-84.3300	A	0.000	0.000	0.660	0.000	0.00
		B	0.000	0.000	1.195	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.01
L14	84.3300-83.4200	A	0.000	0.000	2.404	0.000	0.00
		B	0.000	0.000	4.350	0.000	0.02
		C	0.000	0.000	1.972	0.000	0.02
L15	83.4200-83.1700	A	0.000	0.000	0.660	0.000	0.00
		B	0.000	0.000	1.195	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.01
L16	83.1700-83.0000	A	0.000	0.000	0.449	0.000	0.00
		B	0.000	0.000	0.813	0.000	0.00
		C	0.000	0.000	0.368	0.000	0.00
L17	83.0000-82.7500	A	0.000	0.000	0.660	0.000	0.00
		B	0.000	0.000	1.195	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.01
L18	82.7500-77.7500	A	0.000	0.000	10.396	0.000	0.01

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B	0.000	0.000	21.088	0.000	0.10
		C	0.000	0.000	8.021	0.000	0.12
L19	77.7500-70.0000	A	0.000	0.000	14.660	0.000	0.01
		B	0.000	0.000	31.234	0.000	0.15
		C	0.000	0.000	10.979	0.000	0.19
L20	70.0000-69.0000	A	0.000	0.000	2.558	0.000	0.00
		B	0.000	0.000	4.697	0.000	0.02
		C	0.000	0.000	2.083	0.000	0.02
L21	69.0000-67.0800	A	0.000	0.000	4.912	0.000	0.00
		B	0.000	0.000	9.018	0.000	0.04
		C	0.000	0.000	4.000	0.000	0.05
L22	67.0800-66.8300	A	0.000	0.000	0.640	0.000	0.00
		B	0.000	0.000	1.174	0.000	0.00
		C	0.000	0.000	0.521	0.000	0.01
L23	66.8300-64.0800	A	0.000	0.000	5.422	0.000	0.00
		B	0.000	0.000	12.743	0.000	0.05
		C	0.000	0.000	5.556	0.000	0.07
L24	64.0800-63.8300	A	0.000	0.000	0.473	0.000	0.00
		B	0.000	0.000	1.195	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.01
L25	63.8300-62.4400	A	0.000	0.000	3.049	0.000	0.00
		B	0.000	0.000	6.644	0.000	0.03
		C	0.000	0.000	3.012	0.000	0.03
L26	62.4400-62.1900	A	0.000	0.000	0.660	0.000	0.00
		B	0.000	0.000	1.195	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.01
L27	62.1900-57.1900	A	0.000	0.000	13.208	0.000	0.01
		B	0.000	0.000	23.901	0.000	0.10
		C	0.000	0.000	10.833	0.000	0.12
L28	57.1900-53.5000	A	0.000	0.000	10.123	0.000	0.01
		B	0.000	0.000	21.139	0.000	0.07
		C	0.000	0.000	11.495	0.000	0.09
L29	53.5000-53.2500	A	0.000	0.000	0.723	0.000	0.00
		B	0.000	0.000	1.570	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.01
L30	53.2500-52.5800	A	0.000	0.000	1.937	0.000	0.00
		B	0.000	0.000	4.208	0.000	0.01
		C	0.000	0.000	2.457	0.000	0.02
L31	52.5800-52.3300	A	0.000	0.000	0.723	0.000	0.00
		B	0.000	0.000	1.570	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.01
L32	52.3300-47.3300	A	0.000	0.000	14.458	0.000	0.01
		B	0.000	0.000	31.401	0.000	0.10
		C	0.000	0.000	18.333	0.000	0.12
L33	47.3300-44.5800	A	0.000	0.000	7.952	0.000	0.00
		B	0.000	0.000	17.270	0.000	0.05
		C	0.000	0.000	10.083	0.000	0.07
L34	44.5800-44.3300	A	0.000	0.000	0.723	0.000	0.00
		B	0.000	0.000	1.570	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.01
L35	44.3300-39.3300	A	0.000	0.000	18.043	0.000	0.01
		B	0.000	0.000	34.068	0.000	0.10
		C	0.000	0.000	21.000	0.000	0.12
L36	39.3300-34.0800	A	0.000	0.000	16.494	0.000	0.01
		B	0.000	0.000	32.971	0.000	0.10
		C	0.000	0.000	19.250	0.000	0.13
L37	34.0800-33.0800	A	0.000	0.000	3.142	0.000	0.00
		B	0.000	0.000	6.280	0.000	0.02
		C	0.000	0.000	3.667	0.000	0.02
L38	33.0800-28.0800	A	0.000	0.000	15.708	0.000	0.01
		B	0.000	0.000	31.401	0.000	0.10
		C	0.000	0.000	18.333	0.000	0.12
L39	28.0800-26.8500	A	0.000	0.000	3.864	0.000	0.00
		B	0.000	0.000	7.725	0.000	0.02
		C	0.000	0.000	4.510	0.000	0.03
L40	26.8500-26.6000	A	0.000	0.000	0.785	0.000	0.00
		B	0.000	0.000	1.570	0.000	0.00
		C	0.000	0.000	0.917	0.000	0.01
L41	26.6000-21.6000	A	0.000	0.000	15.708	0.000	0.01

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
		B	0.000	0.000	31.401	0.000	0.10
		C	0.000	0.000	18.333	0.000	0.12
L42	21.6000-18.0000	A	0.000	0.000	14.289	0.000	0.01
		B	0.000	0.000	19.588	0.000	0.07
		C	0.000	0.000	10.179	0.000	0.09
L43	18.0000-17.7500	A	0.000	0.000	1.056	0.000	0.00
		B	0.000	0.000	1.341	0.000	0.00
		C	0.000	0.000	0.688	0.000	0.01
L44	17.7500-17.5000	A	0.000	0.000	1.056	0.000	0.00
		B	0.000	0.000	1.341	0.000	0.00
		C	0.000	0.000	0.688	0.000	0.01
L45	17.5000-17.2500	A	0.000	0.000	1.056	0.000	0.00
		B	0.000	0.000	1.341	0.000	0.00
		C	0.000	0.000	0.688	0.000	0.01
L46	17.2500-17.0800	A	0.000	0.000	0.718	0.000	0.00
		B	0.000	0.000	0.912	0.000	0.00
		C	0.000	0.000	0.468	0.000	0.00
L47	17.0800-16.8300	A	0.000	0.000	1.056	0.000	0.00
		B	0.000	0.000	1.341	0.000	0.00
		C	0.000	0.000	0.688	0.000	0.01
L48	16.8300-13.0000	A	0.000	0.000	18.015	0.000	0.01
		B	0.000	0.000	22.376	0.000	0.07
		C	0.000	0.000	12.366	0.000	0.10
L49	13.0000-12.7500	A	0.000	0.000	1.140	0.000	0.00
		B	0.000	0.000	1.424	0.000	0.00
		C	0.000	0.000	0.771	0.000	0.01
L50	12.7500-11.8500	A	0.000	0.000	4.103	0.000	0.00
		B	0.000	0.000	5.127	0.000	0.02
		C	0.000	0.000	2.775	0.000	0.02
L51	11.8500-11.6000	A	0.000	0.000	1.140	0.000	0.00
		B	0.000	0.000	1.424	0.000	0.00
		C	0.000	0.000	0.771	0.000	0.01
L52	11.6000-6.5000	A	0.000	0.000	21.747	0.000	0.01
		B	0.000	0.000	29.054	0.000	0.10
		C	0.000	0.000	18.296	0.000	0.13
L53	6.5000-6.2500	A	0.000	0.000	0.890	0.000	0.00
		B	0.000	0.000	1.424	0.000	0.00
		C	0.000	0.000	1.005	0.000	0.01
L54	6.2500-4.0000	A	0.000	0.000	8.006	0.000	0.00
		B	0.000	0.000	12.818	0.000	0.04
		C	0.000	0.000	9.041	0.000	0.06
L55	4.0000-3.7500	A	0.000	0.000	0.890	0.000	0.00
		B	0.000	0.000	1.424	0.000	0.00
		C	0.000	0.000	1.005	0.000	0.01
L56	3.7500-0.0000	A	0.000	0.000	12.844	0.000	0.01
		B	0.000	0.000	20.863	0.000	0.07
		C	0.000	0.000	14.568	0.000	0.09

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	131.0000-126.0000	A	1.947	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	126.0000-121.0000	A	1.940	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	121.0000-116.0000	A	1.932	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	13.673	0.000	0.23
		C		0.000	0.000	0.000	0.000	0.02
L4	116.0000-111.0000	A	1.923	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	13.652	0.000	0.23
		C		0.000	0.000	0.000	0.000	0.02
L5	111.0000-110.0000	A	1.918	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.728	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L6	110.0000-105.0000	A	1.913	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	13.626	0.000	0.22
		C		0.000	0.000	0.000	0.000	0.08
L7	105.0000-100.0000	A	1.904	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	13.604	0.000	0.22
		C		0.000	0.000	0.000	0.000	0.10
L8	100.0000-95.0000	A	1.894	0.000	0.000	2.135	0.000	0.03
		B		0.000	0.000	13.580	0.000	0.22
		C		0.000	0.000	0.000	0.000	0.11
L9	95.0000-90.0000	A	1.885	0.000	0.000	6.761	0.000	0.10
		B		0.000	0.000	14.992	0.000	0.24
		C		0.000	0.000	1.437	0.000	0.14
L10	90.0000-89.7500	A	1.879	0.000	0.000	0.505	0.000	0.01
		B		0.000	0.000	0.916	0.000	0.01
		C		0.000	0.000	0.239	0.000	0.01
L11	89.7500-84.7500	A	1.874	0.000	0.000	12.199	0.000	0.17
		B		0.000	0.000	27.140	0.000	0.44
		C		0.000	0.000	6.888	0.000	0.21
L12	84.7500-84.5800	A	1.868	0.000	0.000	0.711	0.000	0.01
		B		0.000	0.000	1.497	0.000	0.02
		C		0.000	0.000	0.530	0.000	0.01
L13	84.5800-84.3300	A	1.867	0.000	0.000	1.045	0.000	0.01
		B		0.000	0.000	2.201	0.000	0.04
		C		0.000	0.000	0.780	0.000	0.02
L14	84.3300-83.4200	A	1.866	0.000	0.000	3.803	0.000	0.05
		B		0.000	0.000	8.011	0.000	0.13
		C		0.000	0.000	2.839	0.000	0.06
L15	83.4200-83.1700	A	1.865	0.000	0.000	1.045	0.000	0.01
		B		0.000	0.000	2.200	0.000	0.03
		C		0.000	0.000	0.780	0.000	0.02
L16	83.1700-83.0000	A	1.864	0.000	0.000	0.710	0.000	0.01
		B		0.000	0.000	1.496	0.000	0.02
		C		0.000	0.000	0.530	0.000	0.01
L17	83.0000-82.7500	A	1.864	0.000	0.000	1.044	0.000	0.01
		B		0.000	0.000	2.200	0.000	0.03
		C		0.000	0.000	0.780	0.000	0.02
L18	82.7500-77.7500	A	1.858	0.000	0.000	17.285	0.000	0.22
		B		0.000	0.000	40.358	0.000	0.65
		C		0.000	0.000	11.993	0.000	0.27
L19	77.7500-70.0000	A	1.843	0.000	0.000	24.863	0.000	0.31
		B		0.000	0.000	60.495	0.000	0.97
		C		0.000	0.000	16.691	0.000	0.39
L20	70.0000-69.0000	A	1.831	0.000	0.000	4.243	0.000	0.05
		B		0.000	0.000	8.841	0.000	0.14
		C		0.000	0.000	3.189	0.000	0.06
L21	69.0000-67.0800	A	1.828	0.000	0.000	8.123	0.000	0.10
		B		0.000	0.000	16.919	0.000	0.26
		C		0.000	0.000	6.105	0.000	0.12
L22	67.0800-66.8300	A	1.825	0.000	0.000	1.057	0.000	0.01
		B		0.000	0.000	2.202	0.000	0.03
		C		0.000	0.000	0.795	0.000	0.02
L23	66.8300-64.0800	A	1.820	0.000	0.000	9.123	0.000	0.11
		B		0.000	0.000	23.527	0.000	0.37
		C		0.000	0.000	8.065	0.000	0.16
L24	64.0800-63.8300	A	1.816	0.000	0.000	0.798	0.000	0.01
		B		0.000	0.000	2.178	0.000	0.03
		C		0.000	0.000	0.774	0.000	0.02
L25	63.8300-62.4400	A	1.814	0.000	0.000	5.057	0.000	0.06
		B		0.000	0.000	12.102	0.000	0.19
		C		0.000	0.000	4.299	0.000	0.09
L26	62.4400-62.1900	A	1.812	0.000	0.000	1.075	0.000	0.01
		B		0.000	0.000	2.176	0.000	0.03
		C		0.000	0.000	0.773	0.000	0.02
L27	62.1900-57.1900	A	1.804	0.000	0.000	21.468	0.000	0.26
		B		0.000	0.000	43.439	0.000	0.67
		C		0.000	0.000	15.440	0.000	0.31
L28	57.1900-53.5000	A	1.790	0.000	0.000	16.176	0.000	0.19
		B		0.000	0.000	36.759	0.000	0.54
		C		0.000	0.000	16.164	0.000	0.27

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L29	53.5000-53.2500	A	1.784	0.000	0.000	1.132	0.000	0.01
		B		0.000	0.000	2.667	0.000	0.04
		C		0.000	0.000	1.273	0.000	0.02
L30	53.2500-52.5800	A	1.782	0.000	0.000	3.032	0.000	0.03
		B		0.000	0.000	7.144	0.000	0.10
		C		0.000	0.000	3.412	0.000	0.05
L31	52.5800-52.3300	A	1.781	0.000	0.000	1.131	0.000	0.01
		B		0.000	0.000	2.665	0.000	0.04
		C		0.000	0.000	1.273	0.000	0.02
L32	52.3300-47.3300	A	1.771	0.000	0.000	22.581	0.000	0.26
		B		0.000	0.000	53.200	0.000	0.75
		C		0.000	0.000	25.419	0.000	0.39
L33	47.3300-44.5800	A	1.757	0.000	0.000	12.386	0.000	0.14
		B		0.000	0.000	29.176	0.000	0.41
		C		0.000	0.000	13.949	0.000	0.22
L34	44.5800-44.3300	A	1.751	0.000	0.000	1.125	0.000	0.01
		B		0.000	0.000	2.649	0.000	0.04
		C		0.000	0.000	1.267	0.000	0.02
L35	44.3300-39.3300	A	1.741	0.000	0.000	27.427	0.000	0.30
		B		0.000	0.000	56.929	0.000	0.78
		C		0.000	0.000	29.355	0.000	0.43
L36	39.3300-34.0800	A	1.718	0.000	0.000	24.784	0.000	0.27
		B		0.000	0.000	55.258	0.000	0.76
		C		0.000	0.000	26.466	0.000	0.40
L37	34.0800-33.0800	A	1.703	0.000	0.000	4.721	0.000	0.05
		B		0.000	0.000	10.525	0.000	0.15
		C		0.000	0.000	5.041	0.000	0.08
L38	33.0800-28.0800	A	1.687	0.000	0.000	23.472	0.000	0.25
		B		0.000	0.000	52.293	0.000	0.71
		C		0.000	0.000	25.081	0.000	0.38
L39	28.0800-26.8500	A	1.669	0.000	0.000	5.755	0.000	0.06
		B		0.000	0.000	12.816	0.000	0.17
		C		0.000	0.000	6.152	0.000	0.09
L40	26.8500-26.6000	A	1.665	0.000	0.000	1.169	0.000	0.01
		B		0.000	0.000	2.603	0.000	0.04
		C		0.000	0.000	1.250	0.000	0.02
L41	26.6000-21.6000	A	1.647	0.000	0.000	23.303	0.000	0.25
		B		0.000	0.000	51.866	0.000	0.69
		C		0.000	0.000	24.923	0.000	0.37
L42	21.6000-18.0000	A	1.615	0.000	0.000	20.548	0.000	0.21
		B		0.000	0.000	33.025	0.000	0.45
		C		0.000	0.000	13.781	0.000	0.22
L43	18.0000-17.7500	A	1.599	0.000	0.000	1.506	0.000	0.02
		B		0.000	0.000	2.258	0.000	0.03
		C		0.000	0.000	0.927	0.000	0.02
L44	17.7500-17.5000	A	1.597	0.000	0.000	1.505	0.000	0.02
		B		0.000	0.000	2.257	0.000	0.03
		C		0.000	0.000	0.927	0.000	0.02
L45	17.5000-17.2500	A	1.594	0.000	0.000	1.504	0.000	0.02
		B		0.000	0.000	2.256	0.000	0.03
		C		0.000	0.000	0.927	0.000	0.02
L46	17.2500-17.0800	A	1.592	0.000	0.000	1.023	0.000	0.01
		B		0.000	0.000	1.533	0.000	0.02
		C		0.000	0.000	0.630	0.000	0.01
L47	17.0800-16.8300	A	1.590	0.000	0.000	1.503	0.000	0.02
		B		0.000	0.000	2.254	0.000	0.03
		C		0.000	0.000	0.926	0.000	0.02
L48	16.8300-13.0000	A	1.570	0.000	0.000	25.067	0.000	0.25
		B		0.000	0.000	36.496	0.000	0.48
		C		0.000	0.000	16.257	0.000	0.25
L49	13.0000-12.7500	A	1.547	0.000	0.000	1.557	0.000	0.02
		B		0.000	0.000	2.298	0.000	0.03
		C		0.000	0.000	0.985	0.000	0.02
L50	12.7500-11.8500	A	1.540	0.000	0.000	5.600	0.000	0.05
		B		0.000	0.000	8.261	0.000	0.11
		C		0.000	0.000	3.542	0.000	0.06
L51	11.8500-11.6000	A	1.533	0.000	0.000	1.554	0.000	0.02
		B		0.000	0.000	2.291	0.000	0.03
		C		0.000	0.000	0.983	0.000	0.02

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L52	11.6000-6.5000	A	1.493	0.000	0.000	29.557	0.000	0.28
		B		0.000	0.000	46.373	0.000	0.60
		C		0.000	0.000	22.961	0.000	0.34
L53	6.5000-6.2500	A	1.442	0.000	0.000	1.210	0.000	0.01
		B		0.000	0.000	2.249	0.000	0.03
		C		0.000	0.000	1.244	0.000	0.02
L54	6.2500-4.0000	A	1.411	0.000	0.000	10.838	0.000	0.10
		B		0.000	0.000	20.116	0.000	0.25
		C		0.000	0.000	11.153	0.000	0.16
L55	4.0000-3.7500	A	1.372	0.000	0.000	1.197	0.000	0.01
		B		0.000	0.000	2.217	0.000	0.03
		C		0.000	0.000	1.233	0.000	0.02
L56	3.7500-0.0000	A	1.276	0.000	0.000	17.079	0.000	0.14
		B		0.000	0.000	31.982	0.000	0.37
		C		0.000	0.000	17.676	0.000	0.23

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	131.0000-126.0000	0.0000	0.0000	0.0000	0.0000
L2	126.0000-121.0000	0.0000	0.0000	0.0000	0.0000
L3	121.0000-116.0000	3.9096	-0.9434	3.5746	-0.7927
L4	116.0000-111.0000	4.0216	-0.9714	3.7606	-0.8351
L5	111.0000-110.0000	4.0844	-0.9870	3.8685	-0.8596
L6	110.0000-105.0000	4.1496	-1.0032	3.9795	-0.8849
L7	105.0000-100.0000	4.2474	-1.0276	4.1576	-0.9255
L8	100.0000-95.0000	3.5278	-1.0123	3.2506	-0.8866
L9	95.0000-90.0000	2.1743	-0.8416	1.9064	-0.7523
L10	90.0000-89.7500	1.6501	-0.6389	1.6019	-0.6325
L11	89.7500-84.7500	1.7742	-1.2923	1.7781	-1.5374
L12	84.7500-84.5800	1.4743	-1.4362	1.5782	-1.8499
L13	84.5800-84.3300	1.4775	-1.4392	1.5815	-1.8538
L14	84.3300-83.4200	1.4842	-1.4458	1.5897	-1.8634
L15	83.4200-83.1700	1.4923	-1.4537	1.5986	-1.8738
L16	83.1700-83.0000	1.4948	-1.4561	1.6016	-1.8773
L17	83.0000-82.7500	1.4962	-1.4575	1.6039	-1.8800
L18	82.7500-77.7500	1.7864	-1.7402	1.8287	-2.1434
L19	77.7500-70.0000	1.9782	-1.9271	2.0019	-2.3458
L20	70.0000-69.0000	1.6614	-1.6185	1.7440	-2.0442
L21	69.0000-67.0800	1.6778	-1.6346	1.7640	-2.0658
L22	67.0800-66.8300	1.6901	-1.6465	1.7788	-2.0829
L23	66.8300-64.0800	2.3662	-1.4737	2.3057	-2.0439
L24	64.0800-63.8300	2.5711	-1.3284	2.4685	-1.9523
L25	63.8300-62.4400	2.2197	-1.4753	2.1819	-2.0673
L26	62.4400-62.1900	1.7230	-1.6787	1.7702	-2.2255
L27	62.1900-57.1900	1.7515	-1.7064	1.8038	-2.2668
L28	57.1900-53.5000	2.3597	-1.7391	2.3314	-2.2472
L29	53.5000-53.2500	2.5501	-1.7204	2.5207	-2.2145
L30	53.2500-52.5800	2.5577	-1.7255	2.5289	-2.2214
L31	52.5800-52.3300	2.5653	-1.7306	2.5371	-2.2284
L32	52.3300-47.3300	2.6083	-1.7593	2.5838	-2.2676
L33	47.3300-44.5800	2.6712	-1.8013	2.6524	-2.3250
L34	44.5800-44.3300	2.6954	-1.8174	2.6788	-2.3470
L35	44.3300-39.3300	2.3012	-1.7291	2.3758	-2.2080
L36	39.3300-34.0800	2.5394	-1.9835	2.6389	-2.5021
L37	34.0800-33.0800	2.5484	-1.9905	2.6490	-2.5118
L38	33.0800-28.0800	2.5906	-2.0235	2.6971	-2.5519
L39	28.0800-26.8500	2.6341	-2.0573	2.7467	-2.5957
L40	26.8500-26.6000	2.6447	-2.0657	2.7587	-2.6062

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L41	26.6000-21.6000	2.6810	-2.0939	2.8002	-2.6423
L42	21.6000-18.0000	0.9813	-1.3357	1.4001	-2.0699
L43	18.0000-17.7500	0.5883	-1.0526	1.0740	-1.8407
L44	17.7500-17.5000	0.5889	-1.0537	1.0751	-1.8424
L45	17.5000-17.2500	0.5895	-1.0549	1.0763	-1.8442
L46	17.2500-17.0800	0.5900	-1.0558	1.0773	-1.8457
L47	17.0800-16.8300	0.5903	-1.0566	1.0781	-1.8469
L48	16.8300-13.0000	0.5424	-0.9717	1.0146	-1.7364
L49	13.0000-12.7500	0.5621	-1.0077	1.0587	-1.8097
L50	12.7500-11.8500	0.5634	-1.0102	1.0610	-1.8127
L51	11.8500-11.6000	0.5644	-1.0122	1.0629	-1.8152
L52	11.6000-6.5000	1.3704	-0.4855	1.7275	-1.3773
L53	6.5000-6.2500	2.5447	0.2105	2.7399	-0.7957
L54	6.2500-4.0000	2.5590	0.2123	2.7555	-0.7883
L55	4.0000-3.7500	2.5741	0.2143	2.7713	-0.7778
L56	3.7500-0.0000	2.6625	0.2227	2.8532	-0.7618

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L3	34	2" (Nominal) Conduit	116.00 - 121.00	1.0000	1.0000
L3	35	LDF6-50A(1-1/4")	116.00 - 121.00	1.0000	1.0000
L4	34	2" (Nominal) Conduit	111.00 - 116.00	1.0000	1.0000
L4	35	LDF6-50A(1-1/4")	111.00 - 116.00	1.0000	1.0000
L5	34	2" (Nominal) Conduit	110.00 - 111.00	1.0000	1.0000
L5	35	LDF6-50A(1-1/4")	110.00 - 111.00	1.0000	1.0000
L6	34	2" (Nominal) Conduit	105.00 - 110.00	1.0000	1.0000
L6	35	LDF6-50A(1-1/4")	105.00 - 110.00	1.0000	1.0000
L7	34	2" (Nominal) Conduit	100.00 - 105.00	1.0000	1.0000
L7	35	LDF6-50A(1-1/4")	100.00 - 105.00	1.0000	1.0000
L8	34	2" (Nominal) Conduit	95.00 - 100.00	1.0000	1.0000
L8	35	LDF6-50A(1-1/4")	95.00 - 100.00	1.0000	1.0000
L8	43	2" (Nominal) Conduit	95.00 - 97.00	1.0000	1.0000
L9	34	2" (Nominal) Conduit	90.00 - 95.00	1.0000	1.0000
L9	35	LDF6-50A(1-1/4")	90.00 - 95.00	1.0000	1.0000
L9	43	2" (Nominal) Conduit	90.00 - 95.00	1.0000	1.0000
L9	76	4.5x1	90.00 - 91.50	1.0000	1.0000
L9	77	4.5x1	90.00 - 91.50	1.0000	1.0000
L9	78	4.5x1	90.00 - 91.50	1.0000	1.0000
L10	34	2" (Nominal) Conduit	89.75 - 90.00	1.0000	1.0000
L10	35	LDF6-50A(1-1/4")	89.75 - 90.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L10	43	2" (Nominal) Conduit	89.75 - 90.00	1.0000	1.0000
L10	76	4.5x1	89.75 - 90.00	1.0000	1.0000
L10	77	4.5x1	89.75 - 90.00	1.0000	1.0000
L10	78	4.5x1	89.75 - 90.00	1.0000	1.0000
L11	34	2" (Nominal) Conduit	84.75 - 89.75	1.0000	1.0000
L11	35	LDF6-50A(1-1/4")	84.75 - 89.75	1.0000	1.0000
L11	43	2" (Nominal) Conduit	84.75 - 89.75	1.0000	1.0000
L11	48	LCF114-50J(1-1/4)	84.75 - 87.00	1.0000	1.0000
L11	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	84.75 - 87.00	1.0000	1.0000
L11	50	MLC Hybrid 6/6(7/8")	84.75 - 87.00	1.0000	1.0000
L11	51	HCS 6X12 6AWG(1-3/8")	84.75 - 87.00	1.0000	1.0000
L11	61	4x0.75	84.75 - 86.50	1.0000	1.0000
L11	62	4x0.75	84.75 - 86.50	1.0000	1.0000
L11	63	4x0.75	84.75 - 86.50	1.0000	1.0000
L11	76	4.5x1	84.75 - 89.75	1.0000	1.0000
L11	77	4.5x1	84.75 - 89.75	1.0000	1.0000
L11	78	4.5x1	84.75 - 89.75	1.0000	1.0000
L11	91	4.5x1.25	84.75 - 85.00	1.0000	1.0000
L11	92	4.5x1.25	84.75 - 85.00	1.0000	1.0000
L11	93	4.5x1.25	84.75 - 85.00	1.0000	1.0000
L12	34	2" (Nominal) Conduit	84.58 - 84.75	1.0000	1.0000
L12	35	LDF6-50A(1-1/4")	84.58 - 84.75	1.0000	1.0000
L12	43	2" (Nominal) Conduit	84.58 - 84.75	1.0000	1.0000
L12	48	LCF114-50J(1-1/4)	84.58 - 84.75	1.0000	1.0000
L12	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	84.58 - 84.75	1.0000	1.0000
L12	50	MLC Hybrid 6/6(7/8")	84.58 - 84.75	1.0000	1.0000
L12	51	HCS 6X12 6AWG(1-3/8")	84.58 - 84.75	1.0000	1.0000
L12	61	4x0.75	84.58 - 84.75	1.0000	1.0000
L12	62	4x0.75	84.58 - 84.75	1.0000	1.0000
L12	63	4x0.75	84.58 - 84.75	1.0000	1.0000
L12	76	4.5x1	84.58 - 84.75	1.0000	1.0000
L12	77	4.5x1	84.58 - 84.75	1.0000	1.0000
L12	78	4.5x1	84.58 - 84.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L12	91	4.5x1.25	84.58 - 84.75	1.0000	1.0000
L12	92	4.5x1.25	84.58 - 84.75	1.0000	1.0000
L12	93	4.5x1.25	84.58 - 84.75	1.0000	1.0000
L13	34	2" (Nominal) Conduit	84.33 - 84.58	1.0000	1.0000
L13	35	LDF6-50A(1-1/4")	84.33 - 84.58	1.0000	1.0000
L13	43	2" (Nominal) Conduit	84.33 - 84.58	1.0000	1.0000
L13	48	LCF114-50J(1-1/4)	84.33 - 84.58	1.0000	1.0000
L13	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	84.33 - 84.58	1.0000	1.0000
L13	50	MLC Hybrid 6/6(7/8")	84.33 - 84.58	1.0000	1.0000
L13	51	HCS 6X12 6AWG(1-3/8")	84.33 - 84.58	1.0000	1.0000
L13	61	4x0.75	84.33 - 84.58	1.0000	1.0000
L13	62	4x0.75	84.33 - 84.58	1.0000	1.0000
L13	63	4x0.75	84.33 - 84.58	1.0000	1.0000
L13	76	4.5x1	84.33 - 84.58	1.0000	1.0000
L13	77	4.5x1	84.33 - 84.58	1.0000	1.0000
L13	78	4.5x1	84.33 - 84.58	1.0000	1.0000
L13	91	4.5x1.25	84.33 - 84.58	1.0000	1.0000
L13	92	4.5x1.25	84.33 - 84.58	1.0000	1.0000
L13	93	4.5x1.25	84.33 - 84.58	1.0000	1.0000
L14	34	2" (Nominal) Conduit	83.42 - 84.33	1.0000	1.0000
L14	35	LDF6-50A(1-1/4")	83.42 - 84.33	1.0000	1.0000
L14	43	2" (Nominal) Conduit	83.42 - 84.33	1.0000	1.0000
L14	48	LCF114-50J(1-1/4)	83.42 - 84.33	1.0000	1.0000
L14	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	83.42 - 84.33	1.0000	1.0000
L14	50	MLC Hybrid 6/6(7/8")	83.42 - 84.33	1.0000	1.0000
L14	51	HCS 6X12 6AWG(1-3/8")	83.42 - 84.33	1.0000	1.0000
L14	61	4x0.75	83.42 - 84.33	1.0000	1.0000
L14	62	4x0.75	83.42 - 84.33	1.0000	1.0000
L14	63	4x0.75	83.42 - 84.33	1.0000	1.0000
L14	76	4.5x1	83.42 - 84.33	1.0000	1.0000
L14	77	4.5x1	83.42 - 84.33	1.0000	1.0000
L14	78	4.5x1	83.42 - 84.33	1.0000	1.0000
L14	91	4.5x1.25	83.42 - 84.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L14	92	4.5x1.25	83.42 - 84.33	1.0000	1.0000
L14	93	4.5x1.25	83.42 - 84.33	1.0000	1.0000
L15	34	2" (Nominal) Conduit	83.17 - 83.42	1.0000	1.0000
L15	35	LDF6-50A(1-1/4")	83.17 - 83.42	1.0000	1.0000
L15	43	2" (Nominal) Conduit	83.17 - 83.42	1.0000	1.0000
L15	48	LCF114-50J(1-1/4)	83.17 - 83.42	1.0000	1.0000
L15	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	83.17 - 83.42	1.0000	1.0000
L15	50	MLC Hybrid 6/6(7/8")	83.17 - 83.42	1.0000	1.0000
L15	51	HCS 6X12 6AWG(1-3/8")	83.17 - 83.42	1.0000	1.0000
L15	61	4x0.75	83.17 - 83.42	1.0000	1.0000
L15	62	4x0.75	83.17 - 83.42	1.0000	1.0000
L15	63	4x0.75	83.17 - 83.42	1.0000	1.0000
L15	76	4.5x1	83.17 - 83.42	1.0000	1.0000
L15	77	4.5x1	83.17 - 83.42	1.0000	1.0000
L15	78	4.5x1	83.17 - 83.42	1.0000	1.0000
L15	91	4.5x1.25	83.17 - 83.42	1.0000	1.0000
L15	92	4.5x1.25	83.17 - 83.42	1.0000	1.0000
L15	93	4.5x1.25	83.17 - 83.42	1.0000	1.0000
L16	34	2" (Nominal) Conduit	83.00 - 83.17	1.0000	1.0000
L16	35	LDF6-50A(1-1/4")	83.00 - 83.17	1.0000	1.0000
L16	43	2" (Nominal) Conduit	83.00 - 83.17	1.0000	1.0000
L16	48	LCF114-50J(1-1/4)	83.00 - 83.17	1.0000	1.0000
L16	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	83.00 - 83.17	1.0000	1.0000
L16	50	MLC Hybrid 6/6(7/8")	83.00 - 83.17	1.0000	1.0000
L16	51	HCS 6X12 6AWG(1-3/8")	83.00 - 83.17	1.0000	1.0000
L16	61	4x0.75	83.00 - 83.17	1.0000	1.0000
L16	62	4x0.75	83.00 - 83.17	1.0000	1.0000
L16	63	4x0.75	83.00 - 83.17	1.0000	1.0000
L16	76	4.5x1	83.00 - 83.17	1.0000	1.0000
L16	77	4.5x1	83.00 - 83.17	1.0000	1.0000
L16	78	4.5x1	83.00 - 83.17	1.0000	1.0000
L16	91	4.5x1.25	83.00 - 83.17	1.0000	1.0000
L16	92	4.5x1.25	83.00 - 83.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L16	93	4.5x1.25	83.00 - 83.17	1.0000	1.0000
L17	34	2" (Nominal) Conduit	82.75 - 83.00	1.0000	1.0000
L17	35	LDF6-50A(1-1/4")	82.75 - 83.00	1.0000	1.0000
L17	43	2" (Nominal) Conduit	82.75 - 83.00	1.0000	1.0000
L17	48	LCF114-50J(1-1/4)	82.75 - 83.00	1.0000	1.0000
L17	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	82.75 - 83.00	1.0000	1.0000
L17	50	MLC Hybrid 6/6(7/8")	82.75 - 83.00	1.0000	1.0000
L17	51	HCS 6X12 6AWG(1-3/8")	82.75 - 83.00	1.0000	1.0000
L17	61	4x0.75	82.75 - 83.00	1.0000	1.0000
L17	62	4x0.75	82.75 - 83.00	1.0000	1.0000
L17	63	4x0.75	82.75 - 83.00	1.0000	1.0000
L17	76	4.5x1	82.75 - 83.00	1.0000	1.0000
L17	77	4.5x1	82.75 - 83.00	1.0000	1.0000
L17	78	4.5x1	82.75 - 83.00	1.0000	1.0000
L17	91	4.5x1.25	82.75 - 83.00	1.0000	1.0000
L17	92	4.5x1.25	82.75 - 83.00	1.0000	1.0000
L17	93	4.5x1.25	82.75 - 83.00	1.0000	1.0000
L18	34	2" (Nominal) Conduit	77.75 - 82.75	1.0000	1.0000
L18	35	LDF6-50A(1-1/4")	77.75 - 82.75	1.0000	1.0000
L18	43	2" (Nominal) Conduit	77.75 - 82.75	1.0000	1.0000
L18	48	LCF114-50J(1-1/4)	77.75 - 82.75	1.0000	1.0000
L18	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	77.75 - 82.75	1.0000	1.0000
L18	50	MLC Hybrid 6/6(7/8")	77.75 - 82.75	1.0000	1.0000
L18	51	HCS 6X12 6AWG(1-3/8")	77.75 - 82.75	1.0000	1.0000
L18	61	4x0.75	77.75 - 82.75	1.0000	1.0000
L18	62	4x0.75	77.75 - 82.75	1.0000	1.0000
L18	63	4x0.75	77.75 - 82.75	1.0000	1.0000
L18	76	4.5x1	81.50 - 82.75	1.0000	1.0000
L18	77	4.5x1	81.50 - 82.75	1.0000	1.0000
L18	78	4.5x1	81.50 - 82.75	1.0000	1.0000
L18	91	4.5x1.25	77.75 - 82.75	1.0000	1.0000
L18	92	4.5x1.25	77.75 - 82.75	1.0000	1.0000
L18	93	4.5x1.25	77.75 - 82.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L19	34	2" (Nominal) Conduit	70.00 - 77.75	1.0000	1.0000
L19	35	LDF6-50A(1-1/4")	70.00 - 77.75	1.0000	1.0000
L19	43	2" (Nominal) Conduit	70.00 - 77.75	1.0000	1.0000
L19	48	LCF114-50J(1-1/4)	70.00 - 77.75	1.0000	1.0000
L19	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	70.00 - 77.75	1.0000	1.0000
L19	50	MLC Hybrid 6/6(7/8")	70.00 - 77.75	1.0000	1.0000
L19	51	HCS 6X12 6AWG(1-3/8")	70.00 - 77.75	1.0000	1.0000
L19	61	4x0.75	70.00 - 77.75	1.0000	1.0000
L19	62	4x0.75	70.00 - 77.75	1.0000	1.0000
L19	63	4x0.75	70.00 - 77.75	1.0000	1.0000
L19	91	4.5x1.25	70.00 - 77.75	1.0000	1.0000
L19	92	4.5x1.25	70.00 - 77.75	1.0000	1.0000
L19	93	4.5x1.25	70.00 - 77.75	1.0000	1.0000
L19	58	4x0.75	70.00 - 70.00	1.0000	1.0000
L19	59	4x0.75	70.00 - 70.00	1.0000	1.0000
L19	60	4x0.75	70.00 - 70.00	1.0000	1.0000
L21	34	2" (Nominal) Conduit	67.08 - 69.00	1.0000	1.0000
L21	35	LDF6-50A(1-1/4")	67.08 - 69.00	1.0000	1.0000
L21	43	2" (Nominal) Conduit	67.08 - 69.00	1.0000	1.0000
L21	48	LCF114-50J(1-1/4)	67.08 - 69.00	1.0000	1.0000
L21	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	67.08 - 69.00	1.0000	1.0000
L21	50	MLC Hybrid 6/6(7/8")	67.08 - 69.00	1.0000	1.0000
L21	51	HCS 6X12 6AWG(1-3/8")	67.08 - 69.00	1.0000	1.0000
L21	58	4x0.75	67.08 - 69.00	1.0000	1.0000
L21	59	4x0.75	67.08 - 69.00	1.0000	1.0000
L21	60	4x0.75	67.08 - 69.00	1.0000	1.0000
L21	61	4x0.75	67.08 - 69.00	1.0000	1.0000
L21	62	4x0.75	67.08 - 69.00	1.0000	1.0000
L21	63	4x0.75	67.08 - 69.00	1.0000	1.0000
L21	91	4.5x1.25	67.08 - 69.00	1.0000	1.0000
L21	92	4.5x1.25	67.08 - 69.00	1.0000	1.0000
L21	93	4.5x1.25	67.08 - 69.00	1.0000	1.0000
L22	34	2" (Nominal) Conduit	66.83 - 67.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L22	35	LDF6-50A(1-1/4")	66.83 - 67.08	1.0000	1.0000
L22	43	2" (Nominal) Conduit	66.83 - 67.08	1.0000	1.0000
L22	48	LCF114-50J(1-1/4)	66.83 - 67.08	1.0000	1.0000
L22	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	66.83 - 67.08	1.0000	1.0000
L22	50	MLC Hybrid 6/6(7/8")	66.83 - 67.08	1.0000	1.0000
L22	51	HCS 6X12 6AWG(1-3/8")	66.83 - 67.08	1.0000	1.0000
L22	58	4x0.75	66.83 - 67.08	1.0000	1.0000
L22	59	4x0.75	66.83 - 67.08	1.0000	1.0000
L22	60	4x0.75	66.83 - 67.08	1.0000	1.0000
L22	61	4x0.75	66.83 - 67.08	1.0000	1.0000
L22	62	4x0.75	66.83 - 67.08	1.0000	1.0000
L22	63	4x0.75	66.83 - 67.08	1.0000	1.0000
L22	91	4.5x1.25	66.83 - 67.08	1.0000	1.0000
L22	92	4.5x1.25	66.83 - 67.08	1.0000	1.0000
L22	93	4.5x1.25	66.83 - 67.08	1.0000	1.0000
L23	34	2" (Nominal) Conduit	64.08 - 66.83	1.0000	1.0000
L23	35	LDF6-50A(1-1/4")	64.08 - 66.83	1.0000	1.0000
L23	43	2" (Nominal) Conduit	64.08 - 66.83	1.0000	1.0000
L23	48	LCF114-50J(1-1/4)	64.08 - 66.83	1.0000	1.0000
L23	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	64.08 - 66.83	1.0000	1.0000
L23	50	MLC Hybrid 6/6(7/8")	64.08 - 66.83	1.0000	1.0000
L23	51	HCS 6X12 6AWG(1-3/8")	64.08 - 66.83	1.0000	1.0000
L23	58	4x0.75	64.08 - 66.83	1.0000	1.0000
L23	59	4x0.75	64.08 - 66.83	1.0000	1.0000
L23	60	4x0.75	64.08 - 66.83	1.0000	1.0000
L23	61	4x0.75	66.50 - 66.83	1.0000	1.0000
L23	62	4x0.75	66.50 - 66.83	1.0000	1.0000
L23	63	4x0.75	66.50 - 66.83	1.0000	1.0000
L23	74	4.5x1	64.08 - 66.00	1.0000	1.0000
L23	75	4.5x1	64.08 - 66.00	1.0000	1.0000
L23	91	4.5x1.25	64.08 - 66.83	1.0000	1.0000
L23	92	4.5x1.25	64.08 - 66.83	1.0000	1.0000
L23	93	4.5x1.25	64.08 - 66.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L24	34	2" (Nominal) Conduit	63.83 - 64.08	1.0000	1.0000
L24	35	LDF6-50A(1-1/4")	63.83 - 64.08	1.0000	1.0000
L24	43	2" (Nominal) Conduit	63.83 - 64.08	1.0000	1.0000
L24	48	LCF114-50J(1-1/4)	63.83 - 64.08	1.0000	1.0000
L24	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	63.83 - 64.08	1.0000	1.0000
L24	50	MLC Hybrid 6/6(7/8")	63.83 - 64.08	1.0000	1.0000
L24	51	HCS 6X12 6AWG(1-3/8")	63.83 - 64.08	1.0000	1.0000
L24	58	4x0.75	63.83 - 64.08	1.0000	1.0000
L24	59	4x0.75	63.83 - 64.08	1.0000	1.0000
L24	60	4x0.75	63.83 - 64.08	1.0000	1.0000
L24	74	4.5x1	63.83 - 64.08	1.0000	1.0000
L24	75	4.5x1	63.83 - 64.08	1.0000	1.0000
L24	91	4.5x1.25	63.83 - 64.08	1.0000	1.0000
L24	92	4.5x1.25	63.83 - 64.08	1.0000	1.0000
L24	93	4.5x1.25	63.83 - 64.08	1.0000	1.0000
L25	34	2" (Nominal) Conduit	62.44 - 63.83	1.0000	1.0000
L25	35	LDF6-50A(1-1/4")	62.44 - 63.83	1.0000	1.0000
L25	43	2" (Nominal) Conduit	62.44 - 63.83	1.0000	1.0000
L25	48	LCF114-50J(1-1/4)	62.44 - 63.83	1.0000	1.0000
L25	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	62.44 - 63.83	1.0000	1.0000
L25	50	MLC Hybrid 6/6(7/8")	62.44 - 63.83	1.0000	1.0000
L25	51	HCS 6X12 6AWG(1-3/8")	62.44 - 63.83	1.0000	1.0000
L25	58	4x0.75	62.44 - 63.83	1.0000	1.0000
L25	59	4x0.75	62.44 - 63.83	1.0000	1.0000
L25	60	4x0.75	62.44 - 63.83	1.0000	1.0000
L25	73	4.5x1	62.44 - 63.00	1.0000	1.0000
L25	74	4.5x1	62.44 - 63.83	1.0000	1.0000
L25	75	4.5x1	62.44 - 63.83	1.0000	1.0000
L25	91	4.5x1.25	62.44 - 63.83	1.0000	1.0000
L25	92	4.5x1.25	62.44 - 63.83	1.0000	1.0000
L25	93	4.5x1.25	62.44 - 63.83	1.0000	1.0000
L26	34	2" (Nominal) Conduit	62.19 - 62.44	1.0000	1.0000
L26	35	LDF6-50A(1-1/4")	62.19 - 62.44	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L26	43	2" (Nominal) Conduit	62.19 - 62.44	1.0000	1.0000
L26	48	LCF114-50J(1-1/4)	62.19 - 62.44	1.0000	1.0000
L26	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	62.19 - 62.44	1.0000	1.0000
L26	50	MLC Hybrid 6/6(7/8")	62.19 - 62.44	1.0000	1.0000
L26	51	HCS 6X12 6AWG(1-3/8")	62.19 - 62.44	1.0000	1.0000
L26	58	4x0.75	62.19 - 62.44	1.0000	1.0000
L26	59	4x0.75	62.19 - 62.44	1.0000	1.0000
L26	60	4x0.75	62.19 - 62.44	1.0000	1.0000
L26	73	4.5x1	62.19 - 62.44	1.0000	1.0000
L26	74	4.5x1	62.19 - 62.44	1.0000	1.0000
L26	75	4.5x1	62.19 - 62.44	1.0000	1.0000
L26	91	4.5x1.25	62.19 - 62.44	1.0000	1.0000
L26	92	4.5x1.25	62.19 - 62.44	1.0000	1.0000
L26	93	4.5x1.25	62.19 - 62.44	1.0000	1.0000
L27	34	2" (Nominal) Conduit	57.19 - 62.19	1.0000	1.0000
L27	35	LDF6-50A(1-1/4")	57.19 - 62.19	1.0000	1.0000
L27	43	2" (Nominal) Conduit	57.19 - 62.19	1.0000	1.0000
L27	48	LCF114-50J(1-1/4)	57.19 - 62.19	1.0000	1.0000
L27	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	57.19 - 62.19	1.0000	1.0000
L27	50	MLC Hybrid 6/6(7/8")	57.19 - 62.19	1.0000	1.0000
L27	51	HCS 6X12 6AWG(1-3/8")	57.19 - 62.19	1.0000	1.0000
L27	58	4x0.75	57.19 - 62.19	1.0000	1.0000
L27	59	4x0.75	57.19 - 62.19	1.0000	1.0000
L27	60	4x0.75	57.19 - 62.19	1.0000	1.0000
L27	73	4.5x1	57.19 - 62.19	1.0000	1.0000
L27	74	4.5x1	57.19 - 62.19	1.0000	1.0000
L27	75	4.5x1	57.19 - 62.19	1.0000	1.0000
L27	91	4.5x1.25	57.19 - 62.19	1.0000	1.0000
L27	92	4.5x1.25	57.19 - 62.19	1.0000	1.0000
L27	93	4.5x1.25	57.19 - 62.19	1.0000	1.0000
L28	34	2" (Nominal) Conduit	53.50 - 57.19	1.0000	1.0000
L28	35	LDF6-50A(1-1/4")	53.50 - 57.19	1.0000	1.0000
L28	43	2" (Nominal) Conduit	53.50 - 57.19	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L28	48	LCF114-50J(1-1/4)	53.50 - 57.19	1.0000	1.0000
L28	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	53.50 - 57.19	1.0000	1.0000
L28	50	MLC Hybrid 6/6(7/8")	53.50 - 57.19	1.0000	1.0000
L28	51	HCS 6X12 6AWG(1-3/8")	53.50 - 57.19	1.0000	1.0000
L28	58	4x0.75	53.50 - 57.19	1.0000	1.0000
L28	59	4x0.75	53.50 - 57.19	1.0000	1.0000
L28	60	4x0.75	53.50 - 57.19	1.0000	1.0000
L28	69	6x1	53.50 - 56.00	1.0000	1.0000
L28	70	6x1	53.50 - 56.00	1.0000	1.0000
L28	71	6x1	53.50 - 56.00	1.0000	1.0000
L28	72	6x1	53.50 - 56.00	1.0000	1.0000
L28	73	4.5x1	53.50 - 57.19	1.0000	1.0000
L28	74	4.5x1	56.00 - 57.19	1.0000	1.0000
L28	75	4.5x1	56.00 - 57.19	1.0000	1.0000
L28	88	6x1	53.50 - 55.00	1.0000	1.0000
L28	89	6x1	53.50 - 55.00	1.0000	1.0000
L28	90	6x1	53.50 - 55.00	1.0000	1.0000
L28	91	4.5x1.25	55.00 - 57.19	1.0000	1.0000
L28	92	4.5x1.25	55.00 - 57.19	1.0000	1.0000
L28	93	4.5x1.25	55.00 - 57.19	1.0000	1.0000
L29	34	2" (Nominal) Conduit	53.25 - 53.50	1.0000	1.0000
L29	35	LDF6-50A(1-1/4")	53.25 - 53.50	1.0000	1.0000
L29	43	2" (Nominal) Conduit	53.25 - 53.50	1.0000	1.0000
L29	48	LCF114-50J(1-1/4)	53.25 - 53.50	1.0000	1.0000
L29	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	53.25 - 53.50	1.0000	1.0000
L29	50	MLC Hybrid 6/6(7/8")	53.25 - 53.50	1.0000	1.0000
L29	51	HCS 6X12 6AWG(1-3/8")	53.25 - 53.50	1.0000	1.0000
L29	58	4x0.75	53.25 - 53.50	1.0000	1.0000
L29	59	4x0.75	53.25 - 53.50	1.0000	1.0000
L29	60	4x0.75	53.25 - 53.50	1.0000	1.0000
L29	69	6x1	53.25 - 53.50	1.0000	1.0000
L29	70	6x1	53.25 - 53.50	1.0000	1.0000
L29	71	6x1	53.25 - 53.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L29	72	6x1	53.25 - 53.50	1.0000	1.0000
L29	73	4.5x1	53.25 - 53.50	1.0000	1.0000
L29	88	6x1	53.25 - 53.50	1.0000	1.0000
L29	89	6x1	53.25 - 53.50	1.0000	1.0000
L29	90	6x1	53.25 - 53.50	1.0000	1.0000
L30	34	2" (Nominal) Conduit	52.58 - 53.25	1.0000	1.0000
L30	35	LDF6-50A(1-1/4")	52.58 - 53.25	1.0000	1.0000
L30	43	2" (Nominal) Conduit	52.58 - 53.25	1.0000	1.0000
L30	48	LCF114-50J(1-1/4)	52.58 - 53.25	1.0000	1.0000
L30	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	52.58 - 53.25	1.0000	1.0000
L30	50	MLC Hybrid 6/6(7/8")	52.58 - 53.25	1.0000	1.0000
L30	51	HCS 6X12 6AWG(1-3/8")	52.58 - 53.25	1.0000	1.0000
L30	58	4x0.75	52.58 - 53.25	1.0000	1.0000
L30	59	4x0.75	52.58 - 53.25	1.0000	1.0000
L30	60	4x0.75	52.58 - 53.25	1.0000	1.0000
L30	69	6x1	52.58 - 53.25	1.0000	1.0000
L30	70	6x1	52.58 - 53.25	1.0000	1.0000
L30	71	6x1	52.58 - 53.25	1.0000	1.0000
L30	72	6x1	52.58 - 53.25	1.0000	1.0000
L30	73	4.5x1	52.58 - 53.25	1.0000	1.0000
L30	88	6x1	52.58 - 53.25	1.0000	1.0000
L30	89	6x1	52.58 - 53.25	1.0000	1.0000
L30	90	6x1	52.58 - 53.25	1.0000	1.0000
L31	34	2" (Nominal) Conduit	52.33 - 52.58	1.0000	1.0000
L31	35	LDF6-50A(1-1/4")	52.33 - 52.58	1.0000	1.0000
L31	43	2" (Nominal) Conduit	52.33 - 52.58	1.0000	1.0000
L31	48	LCF114-50J(1-1/4)	52.33 - 52.58	1.0000	1.0000
L31	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	52.33 - 52.58	1.0000	1.0000
L31	50	MLC Hybrid 6/6(7/8")	52.33 - 52.58	1.0000	1.0000
L31	51	HCS 6X12 6AWG(1-3/8")	52.33 - 52.58	1.0000	1.0000
L31	58	4x0.75	52.33 - 52.58	1.0000	1.0000
L31	59	4x0.75	52.33 - 52.58	1.0000	1.0000
L31	60	4x0.75	52.33 - 52.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L31	69	6x1	52.33 - 52.58	1.0000	1.0000
L31	70	6x1	52.33 - 52.58	1.0000	1.0000
L31	71	6x1	52.33 - 52.58	1.0000	1.0000
L31	72	6x1	52.33 - 52.58	1.0000	1.0000
L31	73	4.5x1	52.33 - 52.58	1.0000	1.0000
L31	88	6x1	52.33 - 52.58	1.0000	1.0000
L31	89	6x1	52.33 - 52.58	1.0000	1.0000
L31	90	6x1	52.33 - 52.58	1.0000	1.0000
L32	34	2" (Nominal) Conduit	47.33 - 52.33	1.0000	1.0000
L32	35	LDF6-50A(1-1/4")	47.33 - 52.33	1.0000	1.0000
L32	43	2" (Nominal) Conduit	47.33 - 52.33	1.0000	1.0000
L32	48	LCF114-50J(1-1/4)	47.33 - 52.33	1.0000	1.0000
L32	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	47.33 - 52.33	1.0000	1.0000
L32	50	MLC Hybrid 6/6(7/8")	47.33 - 52.33	1.0000	1.0000
L32	51	HCS 6X12 6AWG(1-3/8")	47.33 - 52.33	1.0000	1.0000
L32	58	4x0.75	47.33 - 52.33	1.0000	1.0000
L32	59	4x0.75	47.33 - 52.33	1.0000	1.0000
L32	60	4x0.75	47.33 - 52.33	1.0000	1.0000
L32	69	6x1	47.33 - 52.33	1.0000	1.0000
L32	70	6x1	47.33 - 52.33	1.0000	1.0000
L32	71	6x1	47.33 - 52.33	1.0000	1.0000
L32	72	6x1	47.33 - 52.33	1.0000	1.0000
L32	73	4.5x1	47.33 - 52.33	1.0000	1.0000
L32	88	6x1	47.33 - 52.33	1.0000	1.0000
L32	89	6x1	47.33 - 52.33	1.0000	1.0000
L32	90	6x1	47.33 - 52.33	1.0000	1.0000
L33	34	2" (Nominal) Conduit	44.58 - 47.33	1.0000	1.0000
L33	35	LDF6-50A(1-1/4")	44.58 - 47.33	1.0000	1.0000
L33	43	2" (Nominal) Conduit	44.58 - 47.33	1.0000	1.0000
L33	48	LCF114-50J(1-1/4)	44.58 - 47.33	1.0000	1.0000
L33	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	44.58 - 47.33	1.0000	1.0000
L33	50	MLC Hybrid 6/6(7/8")	44.58 - 47.33	1.0000	1.0000
L33	51	HCS 6X12 6AWG(1-3/8")	44.58 - 47.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L33	58	4x0.75	44.58 - 47.33	1.0000	1.0000
L33	59	4x0.75	44.58 - 47.33	1.0000	1.0000
L33	60	4x0.75	44.58 - 47.33	1.0000	1.0000
L33	69	6x1	44.58 - 47.33	1.0000	1.0000
L33	70	6x1	44.58 - 47.33	1.0000	1.0000
L33	71	6x1	44.58 - 47.33	1.0000	1.0000
L33	72	6x1	44.58 - 47.33	1.0000	1.0000
L33	73	4.5x1	44.58 - 47.33	1.0000	1.0000
L33	88	6x1	44.58 - 47.33	1.0000	1.0000
L33	89	6x1	44.58 - 47.33	1.0000	1.0000
L33	90	6x1	44.58 - 47.33	1.0000	1.0000
L34	34	2" (Nominal) Conduit	44.33 - 44.58	1.0000	1.0000
L34	35	LDF6-50A(1-1/4")	44.33 - 44.58	1.0000	1.0000
L34	43	2" (Nominal) Conduit	44.33 - 44.58	1.0000	1.0000
L34	48	LCF114-50J(1-1/4)	44.33 - 44.58	1.0000	1.0000
L34	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	44.33 - 44.58	1.0000	1.0000
L34	50	MLC Hybrid 6/6(7/8")	44.33 - 44.58	1.0000	1.0000
L34	51	HCS 6X12 6AWG(1-3/8")	44.33 - 44.58	1.0000	1.0000
L34	58	4x0.75	44.33 - 44.58	1.0000	1.0000
L34	59	4x0.75	44.33 - 44.58	1.0000	1.0000
L34	60	4x0.75	44.33 - 44.58	1.0000	1.0000
L34	69	6x1	44.33 - 44.58	1.0000	1.0000
L34	70	6x1	44.33 - 44.58	1.0000	1.0000
L34	71	6x1	44.33 - 44.58	1.0000	1.0000
L34	72	6x1	44.33 - 44.58	1.0000	1.0000
L34	73	4.5x1	44.33 - 44.58	1.0000	1.0000
L34	88	6x1	44.33 - 44.58	1.0000	1.0000
L34	89	6x1	44.33 - 44.58	1.0000	1.0000
L34	90	6x1	44.33 - 44.58	1.0000	1.0000
L35	34	2" (Nominal) Conduit	39.33 - 44.33	1.0000	1.0000
L35	35	LDF6-50A(1-1/4")	39.33 - 44.33	1.0000	1.0000
L35	43	2" (Nominal) Conduit	39.33 - 44.33	1.0000	1.0000
L35	48	LCF114-50J(1-1/4)	39.33 - 44.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L35	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	39.33 - 44.33	1.0000	1.0000
L35	50	MLC Hybrid 6/6(7/8")	39.33 - 44.33	1.0000	1.0000
L35	51	HCS 6X12 6AWG(1-3/8")	39.33 - 44.33	1.0000	1.0000
L35	55	4x0.75	39.33 - 44.00	1.0000	1.0000
L35	56	4x0.75	39.33 - 44.00	1.0000	1.0000
L35	57	4x0.75	39.33 - 44.00	1.0000	1.0000
L35	58	4x0.75	40.00 - 44.33	1.0000	1.0000
L35	59	4x0.75	40.00 - 44.33	1.0000	1.0000
L35	60	4x0.75	40.00 - 44.33	1.0000	1.0000
L35	68	6x1	39.33 - 43.00	1.0000	1.0000
L35	69	6x1	39.33 - 44.33	1.0000	1.0000
L35	70	6x1	39.33 - 44.33	1.0000	1.0000
L35	71	6x1	39.33 - 44.33	1.0000	1.0000
L35	72	6x1	39.33 - 44.33	1.0000	1.0000
L35	73	4.5x1	43.00 - 44.33	1.0000	1.0000
L35	88	6x1	39.33 - 44.33	1.0000	1.0000
L35	89	6x1	39.33 - 44.33	1.0000	1.0000
L35	90	6x1	39.33 - 44.33	1.0000	1.0000
L36	34	2" (Nominal) Conduit	34.08 - 39.33	1.0000	1.0000
L36	35	LDF6-50A(1-1/4")	34.08 - 39.33	1.0000	1.0000
L36	43	2" (Nominal) Conduit	34.08 - 39.33	1.0000	1.0000
L36	48	LCF114-50J(1-1/4)	34.08 - 39.33	1.0000	1.0000
L36	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	34.08 - 39.33	1.0000	1.0000
L36	50	MLC Hybrid 6/6(7/8")	34.08 - 39.33	1.0000	1.0000
L36	51	HCS 6X12 6AWG(1-3/8")	34.08 - 39.33	1.0000	1.0000
L36	55	4x0.75	34.08 - 39.33	1.0000	1.0000
L36	56	4x0.75	34.08 - 39.33	1.0000	1.0000
L36	57	4x0.75	34.08 - 39.33	1.0000	1.0000
L36	68	6x1	34.08 - 39.33	1.0000	1.0000
L36	69	6x1	34.08 - 39.33	1.0000	1.0000
L36	70	6x1	34.08 - 39.33	1.0000	1.0000
L36	71	6x1	34.08 - 39.33	1.0000	1.0000
L36	72	6x1	34.08 - 39.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L36	88	6x1	34.08 - 39.33	1.0000	1.0000
L36	89	6x1	34.08 - 39.33	1.0000	1.0000
L36	90	6x1	34.08 - 39.33	1.0000	1.0000
L38	34	2" (Nominal) Conduit	28.08 - 33.08	1.0000	1.0000
L38	35	LDF6-50A(1-1/4")	28.08 - 33.08	1.0000	1.0000
L38	43	2" (Nominal) Conduit	28.08 - 33.08	1.0000	1.0000
L38	48	LCF114-50J(1-1/4)	28.08 - 33.08	1.0000	1.0000
L38	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	28.08 - 33.08	1.0000	1.0000
L38	50	MLC Hybrid 6/6(7/8")	28.08 - 33.08	1.0000	1.0000
L38	51	HCS 6X12 6AWG(1-3/8")	28.08 - 33.08	1.0000	1.0000
L38	55	4x0.75	28.08 - 33.08	1.0000	1.0000
L38	56	4x0.75	28.08 - 33.08	1.0000	1.0000
L38	57	4x0.75	28.08 - 33.08	1.0000	1.0000
L38	68	6x1	28.08 - 33.08	1.0000	1.0000
L38	69	6x1	28.08 - 33.08	1.0000	1.0000
L38	70	6x1	28.08 - 33.08	1.0000	1.0000
L38	71	6x1	28.08 - 33.08	1.0000	1.0000
L38	72	6x1	28.08 - 33.08	1.0000	1.0000
L38	88	6x1	28.08 - 33.08	1.0000	1.0000
L38	89	6x1	28.08 - 33.08	1.0000	1.0000
L38	90	6x1	28.08 - 33.08	1.0000	1.0000
L39	34	2" (Nominal) Conduit	26.85 - 28.08	1.0000	1.0000
L39	35	LDF6-50A(1-1/4")	26.85 - 28.08	1.0000	1.0000
L39	43	2" (Nominal) Conduit	26.85 - 28.08	1.0000	1.0000
L39	48	LCF114-50J(1-1/4)	26.85 - 28.08	1.0000	1.0000
L39	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	26.85 - 28.08	1.0000	1.0000
L39	50	MLC Hybrid 6/6(7/8")	26.85 - 28.08	1.0000	1.0000
L39	51	HCS 6X12 6AWG(1-3/8")	26.85 - 28.08	1.0000	1.0000
L39	55	4x0.75	26.85 - 28.08	1.0000	1.0000
L39	56	4x0.75	26.85 - 28.08	1.0000	1.0000
L39	57	4x0.75	26.85 - 28.08	1.0000	1.0000
L39	68	6x1	26.85 - 28.08	1.0000	1.0000
L39	69	6x1	26.85 - 28.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L39	70	6x1	26.85 - 28.08	1.0000	1.0000
L39	71	6x1	26.85 - 28.08	1.0000	1.0000
L39	72	6x1	26.85 - 28.08	1.0000	1.0000
L39	88	6x1	26.85 - 28.08	1.0000	1.0000
L39	89	6x1	26.85 - 28.08	1.0000	1.0000
L39	90	6x1	26.85 - 28.08	1.0000	1.0000
L40	34	2" (Nominal) Conduit	26.60 - 26.85	1.0000	1.0000
L40	35	LDF6-50A(1-1/4")	26.60 - 26.85	1.0000	1.0000
L40	43	2" (Nominal) Conduit	26.60 - 26.85	1.0000	1.0000
L40	48	LCF114-50J(1-1/4)	26.60 - 26.85	1.0000	1.0000
L40	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	26.60 - 26.85	1.0000	1.0000
L40	50	MLC Hybrid 6/6(7/8")	26.60 - 26.85	1.0000	1.0000
L40	51	HCS 6X12 6AWG(1-3/8")	26.60 - 26.85	1.0000	1.0000
L40	55	4x0.75	26.60 - 26.85	1.0000	1.0000
L40	56	4x0.75	26.60 - 26.85	1.0000	1.0000
L40	57	4x0.75	26.60 - 26.85	1.0000	1.0000
L40	68	6x1	26.60 - 26.85	1.0000	1.0000
L40	69	6x1	26.60 - 26.85	1.0000	1.0000
L40	70	6x1	26.60 - 26.85	1.0000	1.0000
L40	71	6x1	26.60 - 26.85	1.0000	1.0000
L40	72	6x1	26.60 - 26.85	1.0000	1.0000
L40	88	6x1	26.60 - 26.85	1.0000	1.0000
L40	89	6x1	26.60 - 26.85	1.0000	1.0000
L40	90	6x1	26.60 - 26.85	1.0000	1.0000
L41	34	2" (Nominal) Conduit	21.60 - 26.60	1.0000	1.0000
L41	35	LDF6-50A(1-1/4")	21.60 - 26.60	1.0000	1.0000
L41	43	2" (Nominal) Conduit	21.60 - 26.60	1.0000	1.0000
L41	48	LCF114-50J(1-1/4)	21.60 - 26.60	1.0000	1.0000
L41	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	21.60 - 26.60	1.0000	1.0000
L41	50	MLC Hybrid 6/6(7/8")	21.60 - 26.60	1.0000	1.0000
L41	51	HCS 6X12 6AWG(1-3/8")	21.60 - 26.60	1.0000	1.0000
L41	55	4x0.75	21.60 - 26.60	1.0000	1.0000
L41	56	4x0.75	21.60 - 26.60	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	57	4x0.75	21.60 - 26.60	1.0000	1.0000
L41	68	6x1	21.60 - 26.60	1.0000	1.0000
L41	69	6x1	21.60 - 26.60	1.0000	1.0000
L41	70	6x1	21.60 - 26.60	1.0000	1.0000
L41	71	6x1	21.60 - 26.60	1.0000	1.0000
L41	72	6x1	21.60 - 26.60	1.0000	1.0000
L41	88	6x1	21.60 - 26.60	1.0000	1.0000
L41	89	6x1	21.60 - 26.60	1.0000	1.0000
L41	90	6x1	21.60 - 26.60	1.0000	1.0000
L42	34	2" (Nominal) Conduit	18.00 - 21.60	1.0000	1.0000
L42	35	LDF6-50A(1-1/4")	18.00 - 21.60	1.0000	1.0000
L42	43	2" (Nominal) Conduit	18.00 - 21.60	1.0000	1.0000
L42	48	LCF114-50J(1-1/4)	18.00 - 21.60	1.0000	1.0000
L42	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	18.00 - 21.60	1.0000	1.0000
L42	50	MLC Hybrid 6/6(7/8")	18.00 - 21.60	1.0000	1.0000
L42	51	HCS 6X12 6AWG(1-3/8")	18.00 - 21.60	1.0000	1.0000
L42	55	4x0.75	18.00 - 21.60	1.0000	1.0000
L42	56	4x0.75	18.00 - 21.60	1.0000	1.0000
L42	57	4x0.75	18.00 - 21.60	1.0000	1.0000
L42	68	6x1	18.00 - 21.60	1.0000	1.0000
L42	69	6x1	21.00 - 21.60	1.0000	1.0000
L42	70	6x1	21.00 - 21.60	1.0000	1.0000
L42	71	6x1	21.00 - 21.60	1.0000	1.0000
L42	72	6x1	21.00 - 21.60	1.0000	1.0000
L42	80	6.5x1.25	18.00 - 20.75	1.0000	1.0000
L42	81	6.5x1.25	18.00 - 20.75	1.0000	1.0000
L42	82	6.5x1.25	18.00 - 20.75	1.0000	1.0000
L42	85	6x1	18.00 - 20.00	1.0000	1.0000
L42	86	6x1	18.00 - 20.00	1.0000	1.0000
L42	87	6x1	18.00 - 20.00	1.0000	1.0000
L42	88	6x1	20.00 - 21.60	1.0000	1.0000
L42	89	6x1	20.00 - 21.60	1.0000	1.0000
L42	90	6x1	20.00 - 21.60	1.0000	1.0000
L43	34	2" (Nominal) Conduit	17.75 - 18.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L43	35	LDF6-50A(1-1/4")	17.75 - 18.00	1.0000	1.0000
L43	43	2" (Nominal) Conduit	17.75 - 18.00	1.0000	1.0000
L43	48	LCF114-50J(1-1/4)	17.75 - 18.00	1.0000	1.0000
L43	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	17.75 - 18.00	1.0000	1.0000
L43	50	MLC Hybrid 6/6(7/8")	17.75 - 18.00	1.0000	1.0000
L43	51	HCS 6X12 6AWG(1-3/8")	17.75 - 18.00	1.0000	1.0000
L43	55	4x0.75	17.75 - 18.00	1.0000	1.0000
L43	56	4x0.75	17.75 - 18.00	1.0000	1.0000
L43	57	4x0.75	17.75 - 18.00	1.0000	1.0000
L43	68	6x1	17.75 - 18.00	1.0000	1.0000
L43	80	6.5x1.25	17.75 - 18.00	1.0000	1.0000
L43	81	6.5x1.25	17.75 - 18.00	1.0000	1.0000
L43	82	6.5x1.25	17.75 - 18.00	1.0000	1.0000
L43	85	6x1	17.75 - 18.00	1.0000	1.0000
L43	86	6x1	17.75 - 18.00	1.0000	1.0000
L43	87	6x1	17.75 - 18.00	1.0000	1.0000
L44	34	2" (Nominal) Conduit	17.50 - 17.75	1.0000	1.0000
L44	35	LDF6-50A(1-1/4")	17.50 - 17.75	1.0000	1.0000
L44	43	2" (Nominal) Conduit	17.50 - 17.75	1.0000	1.0000
L44	48	LCF114-50J(1-1/4)	17.50 - 17.75	1.0000	1.0000
L44	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	17.50 - 17.75	1.0000	1.0000
L44	50	MLC Hybrid 6/6(7/8")	17.50 - 17.75	1.0000	1.0000
L44	51	HCS 6X12 6AWG(1-3/8")	17.50 - 17.75	1.0000	1.0000
L44	55	4x0.75	17.50 - 17.75	1.0000	1.0000
L44	56	4x0.75	17.50 - 17.75	1.0000	1.0000
L44	57	4x0.75	17.50 - 17.75	1.0000	1.0000
L44	68	6x1	17.50 - 17.75	1.0000	1.0000
L44	80	6.5x1.25	17.50 - 17.75	1.0000	1.0000
L44	81	6.5x1.25	17.50 - 17.75	1.0000	1.0000
L44	82	6.5x1.25	17.50 - 17.75	1.0000	1.0000
L44	85	6x1	17.50 - 17.75	1.0000	1.0000
L44	86	6x1	17.50 - 17.75	1.0000	1.0000
L44	87	6x1	17.50 - 17.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	34	2" (Nominal) Conduit	17.25 - 17.50	1.0000	1.0000
L45	35	LDF6-50A(1-1/4")	17.25 - 17.50	1.0000	1.0000
L45	43	2" (Nominal) Conduit	17.25 - 17.50	1.0000	1.0000
L45	48	LCF114-50J(1-1/4)	17.25 - 17.50	1.0000	1.0000
L45	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	17.25 - 17.50	1.0000	1.0000
L45	50	MLC Hybrid 6/6(7/8")	17.25 - 17.50	1.0000	1.0000
L45	51	HCS 6X12 6AWG(1-3/8")	17.25 - 17.50	1.0000	1.0000
L45	55	4x0.75	17.25 - 17.50	1.0000	1.0000
L45	56	4x0.75	17.25 - 17.50	1.0000	1.0000
L45	57	4x0.75	17.25 - 17.50	1.0000	1.0000
L45	68	6x1	17.25 - 17.50	1.0000	1.0000
L45	80	6.5x1.25	17.25 - 17.50	1.0000	1.0000
L45	81	6.5x1.25	17.25 - 17.50	1.0000	1.0000
L45	82	6.5x1.25	17.25 - 17.50	1.0000	1.0000
L45	85	6x1	17.25 - 17.50	1.0000	1.0000
L45	86	6x1	17.25 - 17.50	1.0000	1.0000
L45	87	6x1	17.25 - 17.50	1.0000	1.0000
L46	34	2" (Nominal) Conduit	17.08 - 17.25	1.0000	1.0000
L46	35	LDF6-50A(1-1/4")	17.08 - 17.25	1.0000	1.0000
L46	43	2" (Nominal) Conduit	17.08 - 17.25	1.0000	1.0000
L46	48	LCF114-50J(1-1/4)	17.08 - 17.25	1.0000	1.0000
L46	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	17.08 - 17.25	1.0000	1.0000
L46	50	MLC Hybrid 6/6(7/8")	17.08 - 17.25	1.0000	1.0000
L46	51	HCS 6X12 6AWG(1-3/8")	17.08 - 17.25	1.0000	1.0000
L46	55	4x0.75	17.08 - 17.25	1.0000	1.0000
L46	56	4x0.75	17.08 - 17.25	1.0000	1.0000
L46	57	4x0.75	17.08 - 17.25	1.0000	1.0000
L46	68	6x1	17.08 - 17.25	1.0000	1.0000
L46	80	6.5x1.25	17.08 - 17.25	1.0000	1.0000
L46	81	6.5x1.25	17.08 - 17.25	1.0000	1.0000
L46	82	6.5x1.25	17.08 - 17.25	1.0000	1.0000
L46	85	6x1	17.08 - 17.25	1.0000	1.0000
L46	86	6x1	17.08 - 17.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L46	87	6x1	17.08 - 17.25	1.0000	1.0000
L47	34	2" (Nominal) Conduit	16.83 - 17.08	1.0000	1.0000
L47	35	LDF6-50A(1-1/4")	16.83 - 17.08	1.0000	1.0000
L47	43	2" (Nominal) Conduit	16.83 - 17.08	1.0000	1.0000
L47	48	LCF114-50J(1-1/4)	16.83 - 17.08	1.0000	1.0000
L47	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	16.83 - 17.08	1.0000	1.0000
L47	50	MLC Hybrid 6/6(7/8")	16.83 - 17.08	1.0000	1.0000
L47	51	HCS 6X12 6AWG(1-3/8")	16.83 - 17.08	1.0000	1.0000
L47	55	4x0.75	16.83 - 17.08	1.0000	1.0000
L47	56	4x0.75	16.83 - 17.08	1.0000	1.0000
L47	57	4x0.75	16.83 - 17.08	1.0000	1.0000
L47	68	6x1	16.83 - 17.08	1.0000	1.0000
L47	80	6.5x1.25	16.83 - 17.08	1.0000	1.0000
L47	81	6.5x1.25	16.83 - 17.08	1.0000	1.0000
L47	82	6.5x1.25	16.83 - 17.08	1.0000	1.0000
L47	85	6x1	16.83 - 17.08	1.0000	1.0000
L47	86	6x1	16.83 - 17.08	1.0000	1.0000
L47	87	6x1	16.83 - 17.08	1.0000	1.0000
L48	34	2" (Nominal) Conduit	13.00 - 16.83	1.0000	1.0000
L48	35	LDF6-50A(1-1/4")	13.00 - 16.83	1.0000	1.0000
L48	43	2" (Nominal) Conduit	13.00 - 16.83	1.0000	1.0000
L48	48	LCF114-50J(1-1/4)	13.00 - 16.83	1.0000	1.0000
L48	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	13.00 - 16.83	1.0000	1.0000
L48	50	MLC Hybrid 6/6(7/8")	13.00 - 16.83	1.0000	1.0000
L48	51	HCS 6X12 6AWG(1-3/8")	13.00 - 16.83	1.0000	1.0000
L48	55	4x0.75	14.00 - 16.83	1.0000	1.0000
L48	56	4x0.75	14.00 - 16.83	1.0000	1.0000
L48	57	4x0.75	14.00 - 16.83	1.0000	1.0000
L48	65	6x1	13.00 - 15.50	1.0000	1.0000
L48	66	6x1	13.00 - 15.50	1.0000	1.0000
L48	67	6x1	13.00 - 15.50	1.0000	1.0000
L48	68	6x1	13.00 - 16.83	1.0000	1.0000
L48	80	6.5x1.25	13.00 - 16.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L48	81	6.5x1.25	13.00 - 16.83	1.0000	1.0000
L48	82	6.5x1.25	13.00 - 16.83	1.0000	1.0000
L48	85	6x1	13.00 - 16.83	1.0000	1.0000
L48	86	6x1	13.00 - 16.83	1.0000	1.0000
L48	87	6x1	13.00 - 16.83	1.0000	1.0000
L49	34	2" (Nominal) Conduit	12.75 - 13.00	1.0000	1.0000
L49	35	LDF6-50A(1-1/4")	12.75 - 13.00	1.0000	1.0000
L49	43	2" (Nominal) Conduit	12.75 - 13.00	1.0000	1.0000
L49	48	LCF114-50J(1-1/4)	12.75 - 13.00	1.0000	1.0000
L49	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	12.75 - 13.00	1.0000	1.0000
L49	50	MLC Hybrid 6/6(7/8")	12.75 - 13.00	1.0000	1.0000
L49	51	HCS 6X12 6AWG(1-3/8")	12.75 - 13.00	1.0000	1.0000
L49	65	6x1	12.75 - 13.00	1.0000	1.0000
L49	66	6x1	12.75 - 13.00	1.0000	1.0000
L49	67	6x1	12.75 - 13.00	1.0000	1.0000
L49	68	6x1	12.75 - 13.00	1.0000	1.0000
L49	80	6.5x1.25	12.75 - 13.00	1.0000	1.0000
L49	81	6.5x1.25	12.75 - 13.00	1.0000	1.0000
L49	82	6.5x1.25	12.75 - 13.00	1.0000	1.0000
L49	85	6x1	12.75 - 13.00	1.0000	1.0000
L49	86	6x1	12.75 - 13.00	1.0000	1.0000
L49	87	6x1	12.75 - 13.00	1.0000	1.0000
L50	34	2" (Nominal) Conduit	11.85 - 12.75	1.0000	1.0000
L50	35	LDF6-50A(1-1/4")	11.85 - 12.75	1.0000	1.0000
L50	43	2" (Nominal) Conduit	11.85 - 12.75	1.0000	1.0000
L50	48	LCF114-50J(1-1/4)	11.85 - 12.75	1.0000	1.0000
L50	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	11.85 - 12.75	1.0000	1.0000
L50	50	MLC Hybrid 6/6(7/8")	11.85 - 12.75	1.0000	1.0000
L50	51	HCS 6X12 6AWG(1-3/8")	11.85 - 12.75	1.0000	1.0000
L50	65	6x1	11.85 - 12.75	1.0000	1.0000
L50	66	6x1	11.85 - 12.75	1.0000	1.0000
L50	67	6x1	11.85 - 12.75	1.0000	1.0000
L50	68	6x1	11.85 - 12.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L50	80	6.5x1.25	11.85 - 12.75	1.0000	1.0000
L50	81	6.5x1.25	11.85 - 12.75	1.0000	1.0000
L50	82	6.5x1.25	11.85 - 12.75	1.0000	1.0000
L50	85	6x1	11.85 - 12.75	1.0000	1.0000
L50	86	6x1	11.85 - 12.75	1.0000	1.0000
L50	87	6x1	11.85 - 12.75	1.0000	1.0000
L51	34	2" (Nominal) Conduit	11.60 - 11.85	1.0000	1.0000
L51	35	LDF6-50A(1-1/4")	11.60 - 11.85	1.0000	1.0000
L51	43	2" (Nominal) Conduit	11.60 - 11.85	1.0000	1.0000
L51	48	LCF114-50J(1-1/4")	11.60 - 11.85	1.0000	1.0000
L51	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	11.60 - 11.85	1.0000	1.0000
L51	50	MLC Hybrid 6/6(7/8")	11.60 - 11.85	1.0000	1.0000
L51	51	HCS 6X12 6AWG(1-3/8")	11.60 - 11.85	1.0000	1.0000
L51	65	6x1	11.60 - 11.85	1.0000	1.0000
L51	66	6x1	11.60 - 11.85	1.0000	1.0000
L51	67	6x1	11.60 - 11.85	1.0000	1.0000
L51	68	6x1	11.60 - 11.85	1.0000	1.0000
L51	80	6.5x1.25	11.60 - 11.85	1.0000	1.0000
L51	81	6.5x1.25	11.60 - 11.85	1.0000	1.0000
L51	82	6.5x1.25	11.60 - 11.85	1.0000	1.0000
L51	85	6x1	11.60 - 11.85	1.0000	1.0000
L51	86	6x1	11.60 - 11.85	1.0000	1.0000
L51	87	6x1	11.60 - 11.85	1.0000	1.0000
L52	34	2" (Nominal) Conduit	6.50 - 11.60	1.0000	1.0000
L52	35	LDF6-50A(1-1/4")	6.50 - 11.60	1.0000	1.0000
L52	43	2" (Nominal) Conduit	6.50 - 11.60	1.0000	1.0000
L52	48	LCF114-50J(1-1/4")	6.50 - 11.60	1.0000	1.0000
L52	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	6.50 - 11.60	1.0000	1.0000
L52	50	MLC Hybrid 6/6(7/8")	6.50 - 11.60	1.0000	1.0000
L52	51	HCS 6X12 6AWG(1-3/8")	6.50 - 11.60	1.0000	1.0000
L52	65	6x1	6.50 - 11.60	1.0000	1.0000
L52	66	6x1	6.50 - 11.60	1.0000	1.0000
L52	67	6x1	6.50 - 11.60	1.0000	1.0000
L52	68	6x1	8.00 - 11.60	1.0000	1.0000
L52	80	6.5x1.25	6.50 - 11.60	1.0000	1.0000
L52	81	6.5x1.25	6.50 - 11.60	1.0000	1.0000
L52	82	6.5x1.25	6.50 - 11.60	1.0000	1.0000
L52	83	6.5x1.25	6.50 - 9.25	1.0000	1.0000
L52	85	6x1	6.50 - 11.60	1.0000	1.0000
L52	86	6x1	6.50 - 11.60	1.0000	1.0000
L52	87	6x1	6.50 - 11.60	1.0000	1.0000
L53	34	2" (Nominal) Conduit	6.25 - 6.50	1.0000	1.0000
L53	35	LDF6-50A(1-1/4")	6.25 - 6.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L53	43	2" (Nominal) Conduit	6.25 - 6.50	1.0000	1.0000
L53	48	LCF114-50J(1-1/4)	6.25 - 6.50	1.0000	1.0000
L53	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	6.25 - 6.50	1.0000	1.0000
L53	50	MLC Hybrid 6/6(7/8")	6.25 - 6.50	1.0000	1.0000
L53	51	HCS 6X12 6AWG(1-3/8")	6.25 - 6.50	1.0000	1.0000
L53	65	6x1	6.25 - 6.50	1.0000	1.0000
L53	66	6x1	6.25 - 6.50	1.0000	1.0000
L53	67	6x1	6.25 - 6.50	1.0000	1.0000
L53	80	6.5x1.25	6.25 - 6.50	1.0000	1.0000
L53	81	6.5x1.25	6.25 - 6.50	1.0000	1.0000
L53	82	6.5x1.25	6.25 - 6.50	1.0000	1.0000
L53	83	6.5x1.25	6.25 - 6.50	1.0000	1.0000
L53	85	6x1	6.25 - 6.50	1.0000	1.0000
L53	86	6x1	6.25 - 6.50	1.0000	1.0000
L53	87	6x1	6.25 - 6.50	1.0000	1.0000
L54	34	2" (Nominal) Conduit	4.00 - 6.25	1.0000	1.0000
L54	35	LDF6-50A(1-1/4")	4.00 - 6.25	1.0000	1.0000
L54	43	2" (Nominal) Conduit	4.00 - 6.25	1.0000	1.0000
L54	48	LCF114-50J(1-1/4)	4.00 - 6.25	1.0000	1.0000
L54	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	4.00 - 6.25	1.0000	1.0000
L54	50	MLC Hybrid 6/6(7/8")	4.00 - 6.25	1.0000	1.0000
L54	51	HCS 6X12 6AWG(1-3/8")	4.00 - 6.25	1.0000	1.0000
L54	65	6x1	4.00 - 6.25	1.0000	1.0000
L54	66	6x1	4.00 - 6.25	1.0000	1.0000
L54	67	6x1	4.00 - 6.25	1.0000	1.0000
L54	80	6.5x1.25	4.00 - 6.25	1.0000	1.0000
L54	81	6.5x1.25	4.00 - 6.25	1.0000	1.0000
L54	82	6.5x1.25	4.00 - 6.25	1.0000	1.0000
L54	83	6.5x1.25	4.00 - 6.25	1.0000	1.0000
L54	85	6x1	4.00 - 6.25	1.0000	1.0000
L54	86	6x1	4.00 - 6.25	1.0000	1.0000
L54	87	6x1	4.00 - 6.25	1.0000	1.0000
L55	34	2" (Nominal) Conduit	3.75 - 4.00	1.0000	1.0000
L55	35	LDF6-50A(1-1/4")	3.75 - 4.00	1.0000	1.0000
L55	43	2" (Nominal) Conduit	3.75 - 4.00	1.0000	1.0000
L55	48	LCF114-50J(1-1/4)	3.75 - 4.00	1.0000	1.0000
L55	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	3.75 - 4.00	1.0000	1.0000
L55	50	MLC Hybrid 6/6(7/8")	3.75 - 4.00	1.0000	1.0000
L55	51	HCS 6X12 6AWG(1-3/8")	3.75 - 4.00	1.0000	1.0000
L55	65	6x1	3.75 - 4.00	1.0000	1.0000
L55	66	6x1	3.75 - 4.00	1.0000	1.0000
L55	67	6x1	3.75 - 4.00	1.0000	1.0000
L55	80	6.5x1.25	3.75 - 4.00	1.0000	1.0000
L55	81	6.5x1.25	3.75 - 4.00	1.0000	1.0000
L55	82	6.5x1.25	3.75 - 4.00	1.0000	1.0000
L55	83	6.5x1.25	3.75 - 4.00	1.0000	1.0000
L55	85	6x1	3.75 - 4.00	1.0000	1.0000
L55	86	6x1	3.75 - 4.00	1.0000	1.0000
L55	87	6x1	3.75 - 4.00	1.0000	1.0000
L56	34	2" (Nominal) Conduit	0.00 - 3.75	1.0000	1.0000
L56	35	LDF6-50A(1-1/4")	0.00 - 3.75	1.0000	1.0000
L56	43	2" (Nominal) Conduit	0.00 - 3.75	1.0000	1.0000
L56	48	LCF114-50J(1-1/4)	0.00 - 3.75	1.0000	1.0000
L56	49	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	0.00 - 3.75	1.0000	1.0000
L56	50	MLC Hybrid 6/6(7/8")	0.00 - 3.75	1.0000	1.0000
L56	51	HCS 6X12 6AWG(1-3/8")	0.00 - 3.75	1.0000	1.0000
L56	65	6x1	0.50 - 3.75	1.0000	1.0000
L56	66	6x1	0.50 - 3.75	1.0000	1.0000
L56	67	6x1	0.50 - 3.75	1.0000	1.0000
L56	80	6.5x1.25	0.00 - 3.75	1.0000	1.0000
L56	81	6.5x1.25	0.00 - 3.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L56	82	6.5x1.25	0.00 - 3.75	1.0000	1.0000
L56	83	6.5x1.25	0.00 - 3.75	1.0000	1.0000
L56	85	6x1	0.00 - 3.75	1.0000	1.0000
L56	86	6x1	0.00 - 3.75	1.0000	1.0000
L56	87	6x1	0.00 - 3.75	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
80010798 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	10.9246	7.4788	0.11
						1/2" Ice	11.5345	8.7492	0.19
						Ice	12.1217	9.8028	0.28
						1" Ice	13.2939	11.7587	0.49
						2" Ice			
80010798 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	10.9246	7.4788	0.11
						1/2" Ice	11.5345	8.7492	0.19
						Ice	12.1217	9.8028	0.28
						1" Ice	13.2939	11.7587	0.49
						2" Ice			
80010798 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	10.9246	7.4788	0.11
						1/2" Ice	11.5345	8.7492	0.19
						Ice	12.1217	9.8028	0.28
						1" Ice	13.2939	11.7587	0.49
						2" Ice			
(2) 80010965 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	14.0513	7.6284	0.13
						1/2" Ice	14.6885	8.9027	0.22
						Ice	15.3033	9.9625	0.33
						1" Ice	16.5301	11.9248	0.57
						2" Ice			
(2) 80010965 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	14.0513	7.6284	0.13
						1/2" Ice	14.6885	8.9027	0.22
						Ice	15.3033	9.9625	0.33
						1" Ice	16.5301	11.9248	0.57
						2" Ice			
(2) 80010965 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	14.0513	7.6284	0.13
						1/2" Ice	14.6885	8.9027	0.22
						Ice	15.3033	9.9625	0.33
						1" Ice	16.5301	11.9248	0.57
						2" Ice			
800 10121 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	3.6000	2.9500	0.07
						1/2" Ice	4.0000	3.3400	0.11
						Ice	4.4200	3.7400	0.17
						1" Ice	5.2900	4.5900	0.30
						2" Ice			
800 10121 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	3.6000	2.9500	0.07
						1/2" Ice	4.0000	3.3400	0.11
						Ice	4.4200	3.7400	0.17
						1" Ice	5.2900	4.5900	0.30
						2" Ice			
800 10121 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	3.6000	2.9500	0.07
						1/2" Ice	4.0000	3.3400	0.11
						Ice	4.4200	3.7400	0.17
						1" Ice	5.2900	4.5900	0.30
						2" Ice			
(4) DC6-48-60-18-8F	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000	No Ice	1.2117	1.2117	0.03
						1/2" Ice	1.8924	1.8924	0.05
						Ice	2.1051	2.1051	0.08
						1" Ice	2.5703	2.5703	0.14
						2" Ice			
(2) RRUS 32	A	From Leg	4.0000	0.00	121.0000	No Ice	2.8571	1.7766	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.00			1/2"	3.0830	1.9677	0.08
			-1.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
RRUS 32	B	From Leg	4.0000	0.00	121.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			-1.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
(2) RRUS 4478 B14	A	From Leg	4.0000	0.00	121.0000	No Ice	2.0212	1.2459	0.06
			0.00			1/2"	2.1999	1.3960	0.08
			-1.00			Ice	2.3860	1.5536	0.10
						1" Ice	2.7804	1.8909	0.15
						2" Ice			
RRUS 4478 B14	B	From Leg	4.0000	0.00	121.0000	No Ice	2.0212	1.2459	0.06
			0.00			1/2"	2.1999	1.3960	0.08
			-1.00			Ice	2.3860	1.5536	0.10
						1" Ice	2.7804	1.8909	0.15
						2" Ice			
RRUS E2 B29	A	From Leg	4.0000	0.00	121.0000	No Ice	3.1450	1.2854	0.06
			0.00			1/2"	3.3648	1.4379	0.08
			-1.00			Ice	3.5920	1.5998	0.11
						1" Ice	4.0687	1.9543	0.17
						2" Ice			
RRUS E2 B29	B	From Leg	4.0000	0.00	121.0000	No Ice	3.1450	1.2854	0.06
			0.00			1/2"	3.3648	1.4379	0.08
			-1.00			Ice	3.5920	1.5998	0.11
						1" Ice	4.0687	1.9543	0.17
						2" Ice			
RRUS E2 B29	C	From Leg	4.0000	0.00	121.0000	No Ice	3.1450	1.2854	0.06
			0.00			1/2"	3.3648	1.4379	0.08
			-1.00			Ice	3.5920	1.5998	0.11
						1" Ice	4.0687	1.9543	0.17
						2" Ice			
(2) LGP21401	A	From Leg	4.0000	0.00	121.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2"	1.2388	0.4422	0.02
			-1.00			Ice	1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) LGP21401	B	From Leg	4.0000	0.00	121.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2"	1.2388	0.4422	0.02
			-1.00			Ice	1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) LGP21401	C	From Leg	4.0000	0.00	121.0000	No Ice	1.1040	0.3471	0.01
			0.00			1/2"	1.2388	0.4422	0.02
			-1.00			Ice	1.3810	0.5444	0.03
						1" Ice	1.6877	0.7696	0.05
						2" Ice			
(2) RRUS 4449 B5/B12	B	From Leg	4.0000	0.00	121.0000	No Ice	1.9675	1.4081	0.07
			0.00			1/2"	2.1439	1.5637	0.09
			-1.00			Ice	2.3278	1.7267	0.11
						1" Ice	2.7177	2.0749	0.16
						2" Ice			
RRUS 4449 B5/B12	C	From Leg	4.0000	0.00	121.0000	No Ice	1.9675	1.4081	0.07
			0.00			1/2"	2.1439	1.5637	0.09
			-1.00			Ice	2.3278	1.7267	0.11
						1" Ice	2.7177	2.0749	0.16
						2" Ice			
RRUS 8843 B2/B66A	B	From Leg	4.0000	0.00	121.0000	No Ice	1.6390	1.3534	0.07
			0.00			1/2"	1.7988	1.5005	0.09
			-1.00			Ice	1.9660	1.6549	0.11
						1" Ice	2.3227	1.9860	0.16
						2" Ice			
(2) RRUS 8843 B2/B66A	C	From Leg	4.0000	0.00	121.0000	No Ice	1.6390	1.3534	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.00			1/2"	1.7988	1.5005	0.09
			-1.00			Ice	1.9660	1.6549	0.11
						1" Ice	2.3227	1.9860	0.16
						2" Ice			
T-Arm Mount [TA 601-3]	C	None		0.00	121.0000	No Ice	10.9000	10.9000	0.73
						1/2"	14.6500	14.6500	0.93
						Ice	18.4000	18.4000	1.13
						1" Ice	25.9000	25.9000	1.52
						2" Ice			
Side Arm Mount [SO 102-3]	C	None		0.00	121.0000	No Ice	3.0000	3.0000	0.08
						1/2"	3.4800	3.4800	0.11
						Ice	3.9600	3.9600	0.14
						1" Ice	4.9200	4.9200	0.20
						2" Ice			

(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.0900	3.3000	0.07
						1/2"	4.4900	3.6800	0.13
						Ice	4.8900	4.0700	0.20
						1" Ice	5.7200	4.8700	0.39
						2" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.0900	3.3000	0.07
						1/2"	4.4900	3.6800	0.13
						Ice	4.8900	4.0700	0.20
						1" Ice	5.7200	4.8700	0.39
						2" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.0900	3.3000	0.07
						1/2"	4.4900	3.6800	0.13
						Ice	4.8900	4.0700	0.20
						1" Ice	5.7200	4.8700	0.39
						2" Ice			
BXA-70063/6CFx4 w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	7.8065	5.3981	0.04
						1/2"	8.3569	6.5465	0.10
						Ice	8.8720	7.4089	0.17
						1" Ice	9.9271	9.1837	0.33
						2" Ice			
BXA-70063/6CFx4 w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	7.8065	5.3981	0.04
						1/2"	8.3569	6.5465	0.10
						Ice	8.8720	7.4089	0.17
						1" Ice	9.9271	9.1837	0.33
						2" Ice			
BXA-70063/6CFx4 w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	7.8065	5.3981	0.04
						1/2"	8.3569	6.5465	0.10
						Ice	8.8720	7.4089	0.17
						1" Ice	9.9271	9.1837	0.33
						2" Ice			
BXA-80063/4CF w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.9453	3.4238	0.03
						1/2"	5.3243	4.0221	0.07
						Ice	5.7120	4.6369	0.12
						1" Ice	6.5142	5.9160	0.23
						2" Ice			
BXA-80063/4CF w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.9453	3.4238	0.03
						1/2"	5.3243	4.0221	0.07
						Ice	5.7120	4.6369	0.12
						1" Ice	6.5142	5.9160	0.23
						2" Ice			
BXA-80063/4CF w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.9453	3.4238	0.03
						1/2"	5.3243	4.0221	0.07
						Ice	5.7120	4.6369	0.12
						1" Ice	6.5142	5.9160	0.23
						2" Ice			
(2) FD9R6004/2C-3L	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	0.3142	0.0762	0.00
						1/2"	0.3862	0.1189	0.01
						Ice	0.4656	0.1685	0.01
						1" Ice	0.6468	0.2940	0.02
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
(2) FD9R6004/2C-3L	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	0.3142	0.0762	0.00
						1/2" Ice	0.3862	0.1189	0.01
						Ice	0.4656	0.1685	0.01
						1" Ice	0.6468	0.2940	0.02
						2" Ice			
(2) FD9R6004/2C-3L	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	0.3142	0.0762	0.00
						1/2" Ice	0.3862	0.1189	0.01
						Ice	0.4656	0.1685	0.01
						1" Ice	0.6468	0.2940	0.02
						2" Ice			
DB-T1-6Z-8AB-0Z	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.8000	2.0000	0.04
						1/2" Ice	5.0704	2.1926	0.08
						Ice	5.3481	2.3926	0.12
						1" Ice	5.9259	2.8148	0.21
						2" Ice			
DB-T1-6Z-8AB-0Z	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	4.8000	2.0000	0.04
						1/2" Ice	5.0704	2.1926	0.08
						Ice	5.3481	2.3926	0.12
						1" Ice	5.9259	2.8148	0.21
						2" Ice			
B66A RRH4X45	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.5800	1.6296	0.07
						1/2" Ice	2.7937	1.8106	0.09
						Ice	3.0148	1.9986	0.11
						1" Ice	3.4793	2.3955	0.17
						2" Ice			
B66A RRH4X45	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.5800	1.6296	0.07
						1/2" Ice	2.7937	1.8106	0.09
						Ice	3.0148	1.9986	0.11
						1" Ice	3.4793	2.3955	0.17
						2" Ice			
B66A RRH4X45	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.5800	1.6296	0.07
						1/2" Ice	2.7937	1.8106	0.09
						Ice	3.0148	1.9986	0.11
						1" Ice	3.4793	2.3955	0.17
						2" Ice			
B13 RRH 4X30	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.0552	1.3201	0.06
						1/2" Ice	2.2405	1.4754	0.07
						Ice	2.4333	1.6376	0.09
						1" Ice	2.8411	1.9966	0.14
						2" Ice			
B13 RRH 4X30	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.0552	1.3201	0.06
						1/2" Ice	2.2405	1.4754	0.07
						Ice	2.4333	1.6376	0.09
						1" Ice	2.8411	1.9966	0.14
						2" Ice			
B13 RRH 4X30	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.0552	1.3201	0.06
						1/2" Ice	2.2405	1.4754	0.07
						Ice	2.4333	1.6376	0.09
						1" Ice	2.8411	1.9966	0.14
						2" Ice			
B25 RRH4X30	A	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.2000	1.7417	0.06
						1/2" Ice	2.3926	1.9204	0.08
						Ice	2.5926	2.1065	0.10
						1" Ice	3.0148	2.5009	0.16
						2" Ice			
B25 RRH4X30	B	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.2000	1.7417	0.06
						1/2" Ice	2.3926	1.9204	0.08
						Ice	2.5926	2.1065	0.10
						1" Ice	3.0148	2.5009	0.16
						2" Ice			
B25 RRH4X30	C	From Leg	4.0000 0.00 2.00	0.00	109.0000	No Ice	2.2000	1.7417	0.06
						1/2" Ice	2.3926	1.9204	0.08
						Ice	2.5926	2.1065	0.10
						1" Ice	3.0148	2.5009	0.16
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
Platform Mount (LP 101-1)	C	None		0.00	109.0000	No Ice	36.2100	36.2100	1.50
						1/2"	42.8200	42.8200	2.30
						Ice	49.4300	49.4300	3.10
						1" Ice	62.6500	62.6500	4.70
						2" Ice			

800MHz 2X50W RRH W/FILTER	A	From Leg	4.0000 0.00 0.00	0.00	99.0000	No Ice	2.0583	1.9317	0.06
						1/2"	2.2398	2.1087	0.09
						Ice	2.4287	2.2931	0.11
						1" Ice	2.8287	2.6843	0.17
						2" Ice			
800MHz 2X50W RRH W/FILTER	B	From Leg	4.0000 0.00 0.00	0.00	99.0000	No Ice	2.0583	1.9317	0.06
						1/2"	2.2398	2.1087	0.09
						Ice	2.4287	2.2931	0.11
						1" Ice	2.8287	2.6843	0.17
						2" Ice			
800MHz 2X50W RRH W/FILTER	C	From Leg	4.0000 0.00 0.00	0.00	99.0000	No Ice	2.0583	1.9317	0.06
						1/2"	2.2398	2.1087	0.09
						Ice	2.4287	2.2931	0.11
						1" Ice	2.8287	2.6843	0.17
						2" Ice			
PCS 1900MHz 4x45W-65MHz w/Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	99.0000	No Ice	2.7348	3.1038	0.07
						1/2"	3.0564	3.5513	0.11
						Ice	3.3899	4.0155	0.15
						1" Ice	4.0923	4.9937	0.24
						2" Ice			
PCS 1900MHz 4x45W-65MHz w/Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	99.0000	No Ice	2.7348	3.1038	0.07
						1/2"	3.0564	3.5513	0.11
						Ice	3.3899	4.0155	0.15
						1" Ice	4.0923	4.9937	0.24
						2" Ice			
PCS 1900MHz 4x45W-65MHz w/Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	99.0000	No Ice	2.7348	3.1038	0.07
						1/2"	3.0564	3.5513	0.11
						Ice	3.3899	4.0155	0.15
						1" Ice	4.0923	4.9937	0.24
						2" Ice			
Side Arm Mount [SO 101-3]	C	None		0.00	99.0000	No Ice	7.5000	7.5000	0.25
						1/2"	8.9000	8.9000	0.33
						Ice	10.3000	10.3000	0.41
						1" Ice	13.1000	13.1000	0.58
						2" Ice			
Clearwire TIMING 2000	A	From Face	4.0000 0.00 0.00	0.00	97.0000	No Ice	0.1079	0.1079	0.00
						1/2"	0.1518	0.1518	0.00
						Ice	0.2031	0.2031	0.01
						1" Ice	0.3280	0.3280	0.01
						2" Ice			
LLPX310R-V1 w/ Mount Pipe	A	From Face	4.0000 0.00 1.00	0.00	97.0000	No Ice	4.5378	2.9834	0.05
						1/2"	4.8914	3.5263	0.08
						Ice	5.2539	4.0859	0.13
						1" Ice	6.0062	5.2357	0.23
						2" Ice			
LLPX310R-V1 w/ Mount Pipe	B	From Face	4.0000 0.00 1.00	0.00	97.0000	No Ice	4.5378	2.9834	0.05
						1/2"	4.8914	3.5263	0.08
						Ice	5.2539	4.0859	0.13
						1" Ice	6.0062	5.2357	0.23
						2" Ice			
LLPX310R-V1 w/ Mount Pipe	C	From Face	4.0000 0.00 1.00	0.00	97.0000	No Ice	4.5378	2.9834	0.05
						1/2"	4.8914	3.5263	0.08
						Ice	5.2539	4.0859	0.13
						1" Ice	6.0062	5.2357	0.23
						2" Ice			
RRH-2WB	A	From Face	4.0000 0.00 1.00	0.00	97.0000	No Ice	2.3047	0.7831	0.04
						1/2"	2.4961	0.9170	0.06
						Ice	2.6949	1.0579	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
						1" Ice	3.1147	1.3607	0.12
						2" Ice			
RRH-2WB	B	From Face	4.0000	0.00	97.0000	No Ice	2.3047	0.7831	0.04
			0.00			1/2"	2.4961	0.9170	0.06
			1.00			Ice	2.6949	1.0579	0.08
						1" Ice	3.1147	1.3607	0.12
						2" Ice			
RRH-2WB	C	From Face	4.0000	0.00	97.0000	No Ice	2.3047	0.7831	0.04
			0.00			1/2"	2.4961	0.9170	0.06
			1.00			Ice	2.6949	1.0579	0.08
						1" Ice	3.1147	1.3607	0.12
						2" Ice			
HORIZON COMPACT	B	From Face	4.0000	0.00	97.0000	No Ice	0.7208	0.3681	0.01
			0.00			1/2"	0.8278	0.4499	0.02
			6.00			Ice	0.9422	0.5391	0.03
						1" Ice	1.1933	0.7396	0.05
						2" Ice			
HORIZON COMPACT	C	From Face	4.0000	0.00	97.0000	No Ice	0.7208	0.3681	0.01
			0.00			1/2"	0.8278	0.4499	0.02
			6.00			Ice	0.9422	0.5391	0.03
						1" Ice	1.1933	0.7396	0.05
						2" Ice			
Sprint									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Face	4.0000	0.00	97.0000	No Ice	4.6000	4.0100	0.10
			0.00			1/2"	5.0500	4.4500	0.16
			1.00			Ice	5.5000	4.8900	0.23
						1" Ice	6.4400	5.8200	0.42
						2" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	B	From Face	4.0000	0.00	97.0000	No Ice	4.6000	4.0100	0.10
			0.00			1/2"	5.0500	4.4500	0.16
			1.00			Ice	5.5000	4.8900	0.23
						1" Ice	6.4400	5.8200	0.42
						2" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	C	From Face	4.0000	0.00	97.0000	No Ice	4.6000	4.0100	0.10
			0.00			1/2"	5.0500	4.4500	0.16
			1.00			Ice	5.5000	4.8900	0.23
						1" Ice	6.4400	5.8200	0.42
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Face	4.0000	0.00	97.0000	No Ice	4.0900	2.8600	0.08
			0.00			1/2"	4.4800	3.2300	0.13
			1.00			Ice	4.8800	3.6100	0.19
						1" Ice	5.7100	4.4000	0.33
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Face	4.0000	0.00	97.0000	No Ice	4.0900	2.8600	0.08
			0.00			1/2"	4.4800	3.2300	0.13
			1.00			Ice	4.8800	3.6100	0.19
						1" Ice	5.7100	4.4000	0.33
						2" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Face	4.0000	0.00	97.0000	No Ice	4.0900	2.8600	0.08
			0.00			1/2"	4.4800	3.2300	0.13
			1.00			Ice	4.8800	3.6100	0.19
						1" Ice	5.7100	4.4000	0.33
						2" Ice			
TD-RRH8x20-25	A	From Face	4.0000	0.00	97.0000	No Ice	4.0455	1.5345	0.07
			0.00			1/2"	4.2975	1.7142	0.10
			1.00			Ice	4.5570	1.9008	0.13
						1" Ice	5.0981	2.2951	0.20
						2" Ice			
TD-RRH8x20-25	B	From Face	4.0000	0.00	97.0000	No Ice	4.0455	1.5345	0.07
			0.00			1/2"	4.2975	1.7142	0.10
			1.00			Ice	4.5570	1.9008	0.13
						1" Ice	5.0981	2.2951	0.20
						2" Ice			
TD-RRH8x20-25	C	From Face	4.0000	0.00	97.0000	No Ice	4.0455	1.5345	0.07
			0.00				4.2975	1.7142	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			1.00				1/2" Ice 5.0981	1.9008 2.2951	0.13 0.20
Platform Mount (LP 101-1)	C	None		0.00	97.0000		1" Ice 36.2100	36.2100	1.50
							2" Ice 42.8200	42.8200	2.30
							No Ice 49.4300	49.4300	3.10
							1" Ice 62.6500	62.6500	4.70
							2" Ice		

ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Face	4.0000 0.00 0.00	0.00	87.0000		No Ice 6.3292	5.6424	0.11
							1/2" Ice 7.2137	6.4259 7.1313	0.17 0.23
							1" Ice 8.1168	8.5907	0.38
							2" Ice		
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Face	4.0000 0.00 0.00	0.00	87.0000		No Ice 6.3292	5.6424	0.11
							1/2" Ice 7.2137	6.4259 7.1313	0.17 0.23
							1" Ice 8.1168	8.5907	0.38
							2" Ice		
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Face	4.0000 0.00 0.00	0.00	87.0000		No Ice 6.3292	5.6424	0.11
							1/2" Ice 7.2137	6.4259 7.1313	0.17 0.23
							1" Ice 8.1168	8.5907	0.38
							2" Ice		
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	87.0000		No Ice 14.6900	6.8700	0.19
							1/2" Ice 16.2300	7.5500 8.2500	0.31 0.46
							1" Ice 17.8200	9.6700	0.79
							2" Ice		
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	87.0000		No Ice 14.6900	6.8700	0.19
							1/2" Ice 16.2300	7.5500 8.2500	0.31 0.46
							1" Ice 17.8200	9.6700	0.79
							2" Ice		
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	87.0000		No Ice 14.6900	6.8700	0.19
							1/2" Ice 16.2300	7.5500 8.2500	0.31 0.46
							1" Ice 17.8200	9.6700	0.79
							2" Ice		
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	87.0000		No Ice 6.7474	6.0700	0.15
							1/2" Ice 7.6475	6.8671 7.5828	0.21 0.28
							1" Ice 8.5651	9.0629	0.44
							2" Ice		
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	87.0000		No Ice 6.7474	6.0700	0.15
							1/2" Ice 7.6475	6.8671 7.5828	0.21 0.28
							1" Ice 8.5651	9.0629	0.44
							2" Ice		
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	87.0000		No Ice 6.7474	6.0700	0.15
							1/2" Ice 7.6475	6.8671 7.5828	0.21 0.28
							1" Ice 8.5651	9.0629	0.44
							2" Ice		
KRY 112 144/1	A	From Face	4.0000 0.00 0.00	0.00	87.0000		No Ice 0.3500	0.1750	0.01
							1/2" Ice 0.5093	0.2343 0.3009	0.01 0.02
							1" Ice 0.6981	0.4565	0.03
							2" Ice		
KRY 112 144/1	B	From Face	4.0000 0.00 0.00	0.00	87.0000		No Ice 0.3500	0.1750	0.01
							1/2" Ice 0.5093	0.2343 0.3009	0.01 0.02
							1" Ice 0.6981	0.4565	0.03
							2" Ice		

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
KRY 112 144/1	C	From Face	4.0000 0.00 0.00	0.00	87.0000	No Ice	0.3500	0.1750	0.01
						1/2" Ice	0.4259	0.2343	0.01
						Ice	0.5093	0.3009	0.02
						1" Ice	0.6981	0.4565	0.03
						2" Ice			
RADIO 4449 B12/B71	A	From Leg	4.0000 0.00 0.00	0.00	87.0000	No Ice	1.6500	1.1625	0.07
						1/2" Ice	1.8104	1.3012	0.09
						Ice	1.9781	1.4473	0.11
						1" Ice	2.3359	1.7618	0.16
						2" Ice			
RADIO 4449 B12/B71	B	From Leg	4.0000 0.00 0.00	0.00	87.0000	No Ice	1.6500	1.1625	0.07
						1/2" Ice	1.8104	1.3012	0.09
						Ice	1.9781	1.4473	0.11
						1" Ice	2.3359	1.7618	0.16
						2" Ice			
RADIO 4449 B12/B71	C	From Leg	4.0000 0.00 0.00	0.00	87.0000	No Ice	1.6500	1.1625	0.07
						1/2" Ice	1.8104	1.3012	0.09
						Ice	1.9781	1.4473	0.11
						1" Ice	2.3359	1.7618	0.16
						2" Ice			
T-Arm Mount [TA 602-3]	C	None		0.00	87.0000	No Ice	11.5900	11.5900	0.77
						1/2" Ice	15.4400	15.4400	0.99
						Ice	19.2900	19.2900	1.21
						1" Ice	26.9900	26.9900	1.64
						2" 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 ²	Weight K	
VHLP2.5-18	B	Paraboloid w/Shroud (HP)	From Leg	1.0000 0.00 6.00	0.00		97.0000	2.9167	No Ice	6.6800	0.05
									1/2" Ice	7.0700	0.08
									1" Ice	7.4600	0.12
									2" Ice	8.2300	0.19
									No Ice	3.7200	0.03
VHLP2-18	C	Paraboloid w/o Radome	From Leg	1.0000 0.00 6.00	0.00		97.0000	2.1750	1/2" Ice	4.0100	0.05
									1" Ice	4.3000	0.07
									2" Ice	4.8800	0.11
									No Ice	3.7200	0.03
									No Ice	3.7200	0.03

Tower Pressures - No Ice

$$G_H = 1.100$$

Section Elevation ft	z ft	K _z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
L1 131.0000-126.0000	128.4554	1.334	48.091	4.769	A	0.000	4.769	4.769	100.00	0.000	0.000
					B	0.000	4.769	4.769	100.00	0.000	0.000
					C	0.000	4.769	4.769	100.00	0.000	0.000
L2 126.0000-121.0000	123.4597	1.323	47.691	5.283	A	0.000	5.283	5.283	100.00	0.000	0.000
					B	0.000	5.283	5.283	100.00	0.000	0.000
					C	0.000	5.283	5.283	100.00	0.000	0.000
L3 121.0000-116.0000	118.4633	1.312	47.278	5.796	A	0.000	5.796	5.796	100.00	0.000	0.000
					B	0.000	5.796	5.796	100.00	7.075	0.000
					C	0.000	5.796	5.796	100.00	0.000	0.000
L4 116.0000-111.0000	113.4662	1.3	46.851	6.310	A	0.000	6.310	6.310	100.00	0.000	0.000
					B	0.000	6.310	6.310	100.00	7.075	0.000

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L5 111.0000- 110.0000	110.4987	1.293	46.59 0	1.324	C	0.000	6.310	1.324	100.00	0.000	0.000
					A	0.000	1.324		100.00	0.000	0.000
					B	0.000	1.324		100.00	1.415	0.000
L6 110.0000- 105.0000	107.4677	1.285	46.31 8	6.930	C	0.000	1.324	6.930	100.00	0.000	0.000
					A	0.000	6.930		100.00	0.000	0.000
					B	0.000	6.930		100.00	7.075	0.000
L7 105.0000- 100.0000	102.4701	1.272	45.85 6	7.469	C	0.000	6.930	7.469	100.00	0.000	0.000
					A	0.000	7.469		100.00	0.000	0.000
					B	0.000	7.469		100.00	7.075	0.000
L8 100.0000- 95.0000	97.4721	1.259	45.37 6	8.009	C	0.000	7.469	8.009	100.00	0.000	0.000
					A	0.000	8.009		100.00	0.950	0.000
					B	0.000	8.009		100.00	7.075	0.000
L9 95.0000- 90.0000	92.4738	1.245	44.87 6	8.549	C	0.000	8.009	8.549	100.00	0.000	0.000
					A	0.000	8.549		100.00	3.500	0.000
					B	0.000	8.549		100.00	8.200	0.000
L10 90.0000- 89.7500	89.8749	1.237	44.60 7	0.440	C	0.000	8.549	0.440	100.00	0.000	0.000
					A	0.000	0.440		100.00	0.306	0.000
					B	0.000	0.440		100.00	0.541	0.000
L11 89.7500- 84.7500	87.2254	1.23	44.32 7	9.081	C	0.000	0.440	9.081	100.00	0.188	0.000
					A	0.000	9.081		100.00	7.479	0.000
					B	0.000	9.081		100.00	14.876	0.000
L12 84.7500- 84.5800	84.6650	1.222	44.05 0	0.318	C	0.000	9.081	0.318	100.00	5.104	0.000
					A	0.000	0.318		100.00	0.449	0.000
					B	0.000	0.318		100.00	0.813	0.000
L13 84.5800- 84.3300	84.4549	1.221	44.02 7	0.468	C	0.000	0.318	0.468	100.00	0.368	0.000
					A	0.000	0.468		100.00	0.660	0.000
					B	0.000	0.468		100.00	1.195	0.000
L14 84.3300- 83.4200	83.8742	1.22	43.96 3	1.715	C	0.000	0.468	1.715	100.00	0.542	0.000
					A	0.000	1.715		100.00	2.404	0.000
					B	0.000	1.715		100.00	4.350	0.000
L15 83.4200- 83.1700	83.2949	1.218	43.89 9	0.472	C	0.000	1.715	0.472	100.00	1.972	0.000
					A	0.000	0.472		100.00	0.660	0.000
					B	0.000	0.472		100.00	1.195	0.000
L16 83.1700- 83.0000	83.0850	1.217	43.87 6	0.322	C	0.000	0.472	0.322	100.00	0.542	0.000
					A	0.000	0.322		100.00	0.449	0.000
					B	0.000	0.322		100.00	0.813	0.000
L17 83.0000- 82.7500	82.8749	1.217	43.85 2	0.476	C	0.000	0.322	0.476	100.00	0.368	0.000
					A	0.000	0.476		100.00	0.660	0.000
					B	0.000	0.476		100.00	1.195	0.000
L18 82.7500- 77.7500	80.2273	1.208	43.55 3	9.810	C	0.000	0.476	9.810	100.00	0.542	0.000
					A	0.000	9.810		100.00	10.396	0.000
					B	0.000	9.810		100.00	21.088	0.000
L19 77.7500- 70.0000	73.8240	1.187	42.79 7	16.274	C	0.000	9.810	16.274	100.00	8.021	0.000
					A	0.000	16.274		100.00	14.660	0.000
					B	0.000	16.274		100.00	31.234	0.000
L20 70.0000- 69.0000	69.4992	1.172	42.25 7	2.150	C	0.000	16.274	2.150	100.00	10.979	0.000
					A	0.000	2.150		100.00	2.558	0.000
					B	0.000	2.150		100.00	4.697	0.000
L21 69.0000- 67.0800	68.0370	1.167	42.06 8	4.189	C	0.000	2.150	4.189	100.00	2.083	0.000
					A	0.000	4.189		100.00	4.912	0.000
					B	0.000	4.189		100.00	9.018	0.000
L22 67.0800- 66.8300	66.9549	1.163	41.92 6	0.551	C	0.000	4.189	0.551	100.00	4.000	0.000
					A	0.000	0.551		100.00	0.640	0.000
					B	0.000	0.551		100.00	1.174	0.000
L23 66.8300- 64.0800	65.4490	1.158	41.72 6	6.154	C	0.000	0.551	6.154	100.00	0.521	0.000
					A	0.000	6.154		100.00	5.422	0.000
					B	0.000	6.154		100.00	12.743	0.000
L24 64.0800- 63.8300	63.9550	1.152	41.52 4	0.567	C	0.000	6.154	0.567	100.00	5.556	0.000
					A	0.000	0.567		100.00	0.473	0.000
					B	0.000	0.567		100.00	1.195	0.000
L25 63.8300- 62.4400	63.1335	1.149	41.41 1	3.177	C	0.000	0.567	3.177	100.00	0.542	0.000
					A	0.000	3.177		100.00	3.049	0.000
					B	0.000	3.177		100.00	6.644	0.000
L26 62.4400- 62.1900	62.3150	1.146	41.29 7	0.575	C	0.000	3.177	0.575	100.00	3.012	0.000
					A	0.000	0.575		100.00	0.660	0.000
					B	0.000	0.575		100.00	1.195	0.000
					C	0.000	0.575		100.00	0.542	0.000

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L27 62.1900- 57.1900	59.6711	1.135	40.92 2	11.787	A	0.000	11.787	11.787	100.00	13.208	0.000
					B	0.000	11.787	100.00	23.901	0.000	
					C	0.000	11.787	100.00	10.833	0.000	
L28 57.1900- 53.5000	55.3351	1.117	40.27 7	9.047	A	0.000	9.047	9.047	100.00	10.123	0.000
					B	0.000	9.047	100.00	21.139	0.000	
					C	0.000	9.047	100.00	11.495	0.000	
L29 53.5000- 53.2500	53.3750	1.109	39.97 3	0.623	A	0.000	0.623	0.623	100.00	0.723	0.000
					B	0.000	0.623	100.00	1.570	0.000	
					C	0.000	0.623	100.00	0.917	0.000	
L30 53.2500- 52.5800	52.9147	1.107	39.90 0	1.678	A	0.000	1.678	1.678	100.00	1.937	0.000
					B	0.000	1.678	100.00	4.208	0.000	
					C	0.000	1.678	100.00	2.457	0.000	
L31 52.5800- 52.3300	52.4550	1.105	39.82 7	0.628	A	0.000	0.628	0.628	100.00	0.723	0.000
					B	0.000	0.628	100.00	1.570	0.000	
					C	0.000	0.628	100.00	0.917	0.000	
L32 52.3300- 47.3300	49.8127	1.093	39.39 6	12.854	A	0.000	12.854	12.854	100.00	14.458	0.000
					B	0.000	12.854	100.00	31.401	0.000	
					C	0.000	12.854	100.00	18.333	0.000	
L33 47.3300- 44.5800	45.9499	1.074	38.73 2	7.301	A	0.000	7.301	7.301	100.00	7.952	0.000
					B	0.000	7.301	100.00	17.270	0.000	
					C	0.000	7.301	100.00	10.083	0.000	
L34 44.5800- 44.3300	44.4550	1.067	38.46 3	0.672	A	0.000	0.672	0.672	100.00	0.723	0.000
					B	0.000	0.672	100.00	1.570	0.000	
					C	0.000	0.672	100.00	0.917	0.000	
L35 44.3300- 39.3300	41.8138	1.053	37.97 0	13.723	A	0.000	13.723	13.723	100.00	18.043	0.000
					B	0.000	13.723	100.00	34.068	0.000	
					C	0.000	13.723	100.00	21.000	0.000	
L36 39.3300- 34.0800	36.6878	1.025	36.93 9	14.990	A	0.000	14.990	14.990	100.00	16.494	0.000
					B	0.000	14.990	100.00	32.971	0.000	
					C	0.000	14.990	100.00	19.250	0.000	
L37 34.0800- 33.0800	33.5794	1.006	36.25 7	2.867	A	0.000	2.867	2.867	100.00	3.142	0.000
					B	0.000	2.867	100.00	6.280	0.000	
					C	0.000	2.867	100.00	3.667	0.000	
L38 33.0800- 28.0800	30.5648	0.986	35.54 6	14.661	A	0.000	14.661	14.661	100.00	15.708	0.000
					B	0.000	14.661	100.00	31.401	0.000	
					C	0.000	14.661	100.00	18.333	0.000	
L39 28.0800- 26.8500	27.4641	0.964	34.75 4	3.690	A	0.000	3.690	3.690	100.00	3.864	0.000
					B	0.000	3.690	100.00	7.725	0.000	
					C	0.000	3.690	100.00	4.510	0.000	
L40 26.8500- 26.6000	26.7250	0.959	34.55 5	0.753	A	0.000	0.753	0.753	100.00	0.785	0.000
					B	0.000	0.753	100.00	1.570	0.000	
					C	0.000	0.753	100.00	0.917	0.000	
L41 26.6000- 21.6000	24.0855	0.938	33.80 7	15.352	A	0.000	15.352	15.352	100.00	15.708	0.000
					B	0.000	15.352	100.00	31.401	0.000	
					C	0.000	15.352	100.00	18.333	0.000	
L42 21.6000- 18.0000	19.7927	0.9	32.43 9	11.388	A	0.000	11.388	11.388	100.00	14.289	0.000
					B	0.000	11.388	100.00	19.588	0.000	
					C	0.000	11.388	100.00	10.179	0.000	
L43 18.0000- 17.7500	17.8750	0.881	31.75 0	0.800	A	0.000	0.800	0.800	100.00	1.056	0.000
					B	0.000	0.800	100.00	1.341	0.000	
					C	0.000	0.800	100.00	0.688	0.000	
L44 17.7500- 17.5000	17.6250	0.878	31.65 6	0.801	A	0.000	0.801	0.801	100.00	1.056	0.000
					B	0.000	0.801	100.00	1.341	0.000	
					C	0.000	0.801	100.00	0.688	0.000	
L45 17.5000- 17.2500	17.3750	0.876	31.56 1	0.803	A	0.000	0.803	0.803	100.00	1.056	0.000
					B	0.000	0.803	100.00	1.341	0.000	
					C	0.000	0.803	100.00	0.688	0.000	
L46 17.2500- 17.0800	17.1650	0.873	31.48 0	0.547	A	0.000	0.547	0.547	100.00	0.718	0.000
					B	0.000	0.547	100.00	0.912	0.000	
					C	0.000	0.547	100.00	0.468	0.000	
L47 17.0800- 16.8300	16.9550	0.871	31.39 9	0.806	A	0.000	0.806	0.806	100.00	1.056	0.000
					B	0.000	0.806	100.00	1.341	0.000	
					C	0.000	0.806	100.00	0.688	0.000	
L48 16.8300- 13.0000	14.9070	0.85	30.63 9	12.515	A	0.000	12.515	12.515	100.00	18.015	0.000
					B	0.000	12.515	100.00	22.376	0.000	
					C	0.000	12.515	100.00	12.366	0.000	
L49 13.0000- 12.7500	12.8750	0.85	30.63 9	0.827	A	0.000	0.827	0.827	100.00	1.140	0.000
					B	0.000	0.827	100.00	1.424	0.000	

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L50 12.7500-11.8500	12.2996	0.85	30.639	2.987	C	0.000	0.827	2.987	100.00	0.771	0.000
					A	0.000	2.987		100.00	4.103	0.000
					B	0.000	2.987		100.00	5.127	0.000
L51 11.8500-11.6000	11.7250	0.85	30.639	0.835	C	0.000	2.987	0.835	100.00	2.775	0.000
					A	0.000	0.835		100.00	1.140	0.000
					B	0.000	0.835		100.00	1.424	0.000
L52 11.6000-6.5000	9.0363	0.85	30.639	17.322	C	0.000	0.835	17.322	100.00	0.771	0.000
					A	0.000	17.322		100.00	21.747	0.000
					B	0.000	17.322		100.00	29.054	0.000
L53 6.5000-6.2500	6.3750	0.85	30.639	0.863	C	0.000	17.322	0.863	100.00	18.296	0.000
					A	0.000	0.863		100.00	0.890	0.000
					B	0.000	0.863		100.00	1.424	0.000
L54 6.2500-4.0000	5.1224	0.85	30.639	7.824	C	0.000	0.863	7.824	100.00	1.005	0.000
					A	0.000	7.824		100.00	8.006	0.000
					B	0.000	7.824		100.00	12.818	0.000
L55 4.0000-3.7500	3.8750	0.85	30.639	0.875	C	0.000	7.824	0.875	100.00	9.041	0.000
					A	0.000	0.875		100.00	0.890	0.000
					B	0.000	0.875		100.00	1.424	0.000
L56 3.7500-0.0000	1.8679	0.85	30.639	13.286	C	0.000	0.875	13.286	100.00	1.005	0.000
					A	0.000	13.286		100.00	12.844	0.000
					B	0.000	13.286		100.00	20.863	0.000
					C	0.000	13.286		100.00	14.568	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L1 131.0000-126.0000	128.4554	1.334	7.695	1.9475	6.392	A	0.000	6.392	6.392	100.00	0.000	0.000
						B	0.000	6.392		100.00	0.000	0.000
						C	0.000	6.392		100.00	0.000	0.000
L2 126.0000-121.0000	123.4597	1.323	7.631	1.9398	6.899	A	0.000	6.899	6.899	100.00	0.000	0.000
						B	0.000	6.899		100.00	0.000	0.000
						C	0.000	6.899		100.00	0.000	0.000
L3 121.0000-116.0000	118.4633	1.312	7.564	1.9318	7.406	A	0.000	7.406	7.406	100.00	0.000	0.000
						B	0.000	7.406		100.00	13.673	0.000
						C	0.000	7.406		100.00	0.000	0.000
L4 116.0000-111.0000	113.4662	1.3	7.496	1.9235	7.913	A	0.000	7.913	7.913	100.00	0.000	0.000
						B	0.000	7.913		100.00	13.652	0.000
						C	0.000	7.913		100.00	0.000	0.000
L5 111.0000-110.0000	110.4987	1.293	7.454	1.9184	1.643	A	0.000	1.643	1.643	100.00	0.000	0.000
						B	0.000	1.643		100.00	2.728	0.000
						C	0.000	1.643		100.00	0.000	0.000
L6 110.0000-105.0000	107.4677	1.285	7.411	1.9130	8.524	A	0.000	8.524	8.524	100.00	0.000	0.000
						B	0.000	8.524		100.00	13.626	0.000
						C	0.000	8.524		100.00	0.000	0.000
L7 105.0000-100.0000	102.4701	1.272	7.337	1.9040	9.056	A	0.000	9.056	9.056	100.00	0.000	0.000
						B	0.000	9.056		100.00	13.604	0.000
						C	0.000	9.056		100.00	0.000	0.000
L8 100.0000-95.0000	97.4721	1.259	7.260	1.8945	9.588	A	0.000	9.588	9.588	100.00	2.135	0.000
						B	0.000	9.588		100.00	13.580	0.000
						C	0.000	9.588		100.00	0.000	0.000
L9 95.0000-90.0000	92.4738	1.245	7.180	1.8845	10.119	A	0.000	10.119	10.119	100.00	6.761	0.000
						B	0.000	10.119		100.00	14.992	0.000
						C	0.000	10.119		100.00	1.437	0.000
L10 90.0000-89.7500	89.8749	1.237	7.137	1.8791	0.518	A	0.000	0.518	0.518	100.00	0.505	0.000
						B	0.000	0.518		100.00	0.916	0.000
						C	0.000	0.518		100.00	0.239	0.000
L11 89.7500-84.7500	87.2254	1.23	7.092	1.8735	10.642	A	0.000	10.642	10.642	100.00	12.199	0.000
						B	0.000	10.642		100.00	27.140	0.000
						C	0.000	10.642		100.00	6.888	0.000
L12 84.7500-84.5800	84.6650	1.222	7.048	1.8680	0.371	A	0.000	0.371	0.371	100.00	0.711	0.000
						B	0.000	0.371		100.00	1.497	0.000
						C	0.000	0.371		100.00	0.530	0.000

Section Elevation ft	z ft	K _z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L13 84.5800- 84.3300	84.4549	1.221	7.044	1.8675	0.546	A	0.000	0.546	0.546	100.00	1.045	0.000
						B	0.000	0.546	0.546	100.00	2.201	0.000
						C	0.000	0.546	0.546	100.00	0.780	0.000
L14 84.3300- 83.4200	83.8742	1.22	7.034	1.8662	1.998	A	0.000	1.998	1.998	100.00	3.803	0.000
						B	0.000	1.998	1.998	100.00	8.011	0.000
						C	0.000	1.998	1.998	100.00	2.839	0.000
L15 83.4200- 83.1700	83.2949	1.218	7.024	1.8649	0.550	A	0.000	0.550	0.550	100.00	1.045	0.000
						B	0.000	0.550	0.550	100.00	2.200	0.000
						C	0.000	0.550	0.550	100.00	0.780	0.000
L16 83.1700- 83.0000	83.0850	1.217	7.020	1.8644	0.375	A	0.000	0.375	0.375	100.00	0.710	0.000
						B	0.000	0.375	0.375	100.00	1.496	0.000
						C	0.000	0.375	0.375	100.00	0.530	0.000
L17 83.0000- 82.7500	82.8749	1.217	7.016	1.8640	0.554	A	0.000	0.554	0.554	100.00	1.044	0.000
						B	0.000	0.554	0.554	100.00	2.200	0.000
						C	0.000	0.554	0.554	100.00	0.780	0.000
L18 82.7500- 77.7500	80.2273	1.208	6.969	1.8579	11.358	A	0.000	11.358	11.358	100.00	17.285	0.000
						B	0.000	11.358	11.358	100.00	40.358	0.000
						C	0.000	11.358	11.358	100.00	11.993	0.000
L19 77.7500- 70.0000	73.8240	1.187	6.848	1.8425	18.654	A	0.000	18.654	18.654	100.00	24.863	0.000
						B	0.000	18.654	18.654	100.00	60.495	0.000
						C	0.000	18.654	18.654	100.00	16.691	0.000
L20 70.0000- 69.0000	69.4992	1.172	6.761	1.8315	2.457	A	0.000	2.457	2.457	100.00	4.243	0.000
						B	0.000	2.457	2.457	100.00	8.841	0.000
						C	0.000	2.457	2.457	100.00	3.189	0.000
L21 69.0000- 67.0800	68.0370	1.167	6.731	1.8276	4.773	A	0.000	4.773	4.773	100.00	8.123	0.000
						B	0.000	4.773	4.773	100.00	16.919	0.000
						C	0.000	4.773	4.773	100.00	6.105	0.000
L22 67.0800- 66.8300	66.9549	1.163	6.708	1.8246	0.627	A	0.000	0.627	0.627	100.00	1.057	0.000
						B	0.000	0.627	0.627	100.00	2.202	0.000
						C	0.000	0.627	0.627	100.00	0.795	0.000
L23 66.8300- 64.0800	65.4490	1.158	6.676	1.8205	6.988	A	0.000	6.988	6.988	100.00	9.123	0.000
						B	0.000	6.988	6.988	100.00	23.527	0.000
						C	0.000	6.988	6.988	100.00	8.065	0.000
L24 64.0800- 63.8300	63.9550	1.152	6.644	1.8163	0.643	A	0.000	0.643	0.643	100.00	0.798	0.000
						B	0.000	0.643	0.643	100.00	2.178	0.000
						C	0.000	0.643	0.643	100.00	0.774	0.000
L25 63.8300- 62.4400	63.1335	1.149	6.626	1.8139	3.598	A	0.000	3.598	3.598	100.00	5.057	0.000
						B	0.000	3.598	3.598	100.00	12.102	0.000
						C	0.000	3.598	3.598	100.00	4.299	0.000
L26 62.4400- 62.1900	62.3150	1.146	6.608	1.8116	0.650	A	0.000	0.650	0.650	100.00	1.075	0.000
						B	0.000	0.650	0.650	100.00	2.176	0.000
						C	0.000	0.650	0.650	100.00	0.773	0.000
L27 62.1900- 57.1900	59.6711	1.135	6.548	1.8037	13.290	A	0.000	13.290	13.290	100.00	21.468	0.000
						B	0.000	13.290	13.290	100.00	43.439	0.000
						C	0.000	13.290	13.290	100.00	15.440	0.000
L28 57.1900- 53.5000	55.3351	1.117	6.444	1.7902	10.148	A	0.000	10.148	10.148	100.00	16.176	0.000
						B	0.000	10.148	10.148	100.00	36.759	0.000
						C	0.000	10.148	10.148	100.00	16.164	0.000
L29 53.5000- 53.2500	53.3750	1.109	6.396	1.7837	0.698	A	0.000	0.698	0.698	100.00	1.132	0.000
						B	0.000	0.698	0.698	100.00	2.667	0.000
						C	0.000	0.698	0.698	100.00	1.273	0.000
L30 53.2500- 52.5800	52.9147	1.107	6.384	1.7822	1.877	A	0.000	1.877	1.877	100.00	3.032	0.000
						B	0.000	1.877	1.877	100.00	7.144	0.000
						C	0.000	1.877	1.877	100.00	3.412	0.000
L31 52.5800- 52.3300	52.4550	1.105	6.372	1.7806	0.703	A	0.000	0.703	0.703	100.00	1.131	0.000
						B	0.000	0.703	0.703	100.00	2.665	0.000
						C	0.000	0.703	0.703	100.00	1.273	0.000
L32 52.3300- 47.3300	49.8127	1.093	6.303	1.7715	14.330	A	0.000	14.330	14.330	100.00	22.581	0.000
						B	0.000	14.330	14.330	100.00	53.200	0.000
						C	0.000	14.330	14.330	100.00	25.419	0.000
L33 47.3300- 44.5800	45.9499	1.074	6.197	1.7572	8.106	A	0.000	8.106	8.106	100.00	12.386	0.000
						B	0.000	8.106	8.106	100.00	29.176	0.000
						C	0.000	8.106	8.106	100.00	13.949	0.000
L34 44.5800- 44.3300	44.4550	1.067	6.154	1.7514	0.745	A	0.000	0.745	0.745	100.00	1.125	0.000
						B	0.000	0.745	0.745	100.00	2.649	0.000
						C	0.000	0.745	0.745	100.00	1.267	0.000
L35 44.3300- 39.3300	41.8138	1.053	6.075	1.7407	15.173	A	0.000	15.173	15.173	100.00	27.427	0.000
						B	0.000	15.173	15.173	100.00	56.929	0.000
						B	0.000	15.173	15.173	100.00	56.929	0.000

Section Elevation ft	z ft	K _Z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L36 39.3300- 34.0800	36.6878	1.025	5.910	1.7181	16.493	C	0.000	15.173	16.493	100.00	29.355	0.000
						A	0.000	16.493		100.00	24.784	0.000
						B	0.000	16.493		100.00	55.258	0.000
L37 34.0800- 33.0800	33.5794	1.006	5.801	1.7030	3.154	C	0.000	16.493	3.154	100.00	26.466	0.000
						A	0.000	3.154		100.00	4.721	0.000
						B	0.000	3.154		100.00	10.525	0.000
L38 33.0800- 28.0800	30.5648	0.986	5.687	1.6870	16.067	C	0.000	3.154	16.067	100.00	5.041	0.000
						A	0.000	16.067		100.00	23.472	0.000
						B	0.000	16.067		100.00	52.293	0.000
L39 28.0800- 26.8500	27.4641	0.964	5.561	1.6691	4.032	C	0.000	16.067	4.032	100.00	25.081	0.000
						A	0.000	4.032		100.00	5.755	0.000
						B	0.000	4.032		100.00	12.816	0.000
L40 26.8500- 26.6000	26.7250	0.959	5.529	1.6645	0.823	C	0.000	4.032	0.823	100.00	6.152	0.000
						A	0.000	0.823		100.00	1.169	0.000
						B	0.000	0.823		100.00	2.603	0.000
L41 26.6000- 21.6000	24.0855	0.938	5.409	1.6473	16.725	C	0.000	0.823	16.725	100.00	1.250	0.000
						A	0.000	16.725		100.00	23.303	0.000
						B	0.000	16.725		100.00	51.866	0.000
L42 21.6000- 18.0000	19.7927	0.9	5.190	1.6153	12.357	C	0.000	16.725	12.357	100.00	24.923	0.000
						A	0.000	12.357		100.00	20.548	0.000
						B	0.000	12.357		100.00	33.025	0.000
L43 18.0000- 17.7500	17.8750	0.881	5.080	1.5989	0.867	C	0.000	12.357	0.867	100.00	13.781	0.000
						A	0.000	0.867		100.00	1.506	0.000
						B	0.000	0.867		100.00	2.258	0.000
L44 17.7500- 17.5000	17.6250	0.878	5.065	1.5967	0.868	C	0.000	0.867	0.868	100.00	0.927	0.000
						A	0.000	0.868		100.00	1.505	0.000
						B	0.000	0.868		100.00	2.257	0.000
L45 17.5000- 17.2500	17.3750	0.876	5.050	1.5944	0.869	C	0.000	0.868	0.869	100.00	0.927	0.000
						A	0.000	0.869		100.00	1.504	0.000
						B	0.000	0.869		100.00	2.256	0.000
L46 17.2500- 17.0800	17.1650	0.873	5.037	1.5924	0.592	C	0.000	0.869	0.592	100.00	0.927	0.000
						A	0.000	0.592		100.00	1.023	0.000
						B	0.000	0.592		100.00	1.533	0.000
L47 17.0800- 16.8300	16.9550	0.871	5.024	1.5905	0.872	C	0.000	0.592	0.872	100.00	0.630	0.000
						A	0.000	0.872		100.00	1.503	0.000
						B	0.000	0.872		100.00	2.254	0.000
L48 16.8300- 13.0000	14.9070	0.85	4.902	1.5701	13.517	C	0.000	0.872	13.517	100.00	0.926	0.000
						A	0.000	13.517		100.00	25.067	0.000
						B	0.000	13.517		100.00	36.496	0.000
L49 13.0000- 12.7500	12.8750	0.85	4.902	1.5473	0.891	C	0.000	13.517	0.891	100.00	16.257	0.000
						A	0.000	0.891		100.00	1.557	0.000
						B	0.000	0.891		100.00	2.298	0.000
L50 12.7500- 11.8500	12.2996	0.85	4.902	1.5402	3.218	C	0.000	0.891	3.218	100.00	0.985	0.000
						A	0.000	3.218		100.00	5.600	0.000
						B	0.000	3.218		100.00	8.261	0.000
L51 11.8500- 11.6000	11.7250	0.85	4.902	1.5329	0.898	C	0.000	3.218	0.898	100.00	3.542	0.000
						A	0.000	0.898		100.00	1.554	0.000
						B	0.000	0.898		100.00	2.291	0.000
L52 11.6000- 6.5000	9.0363	0.85	4.902	1.4935	18.592	C	0.000	0.898	18.592	100.00	0.983	0.000
						A	0.000	18.592		100.00	29.557	0.000
						B	0.000	18.592		100.00	46.373	0.000
L53 6.5000- 6.2500	6.3750	0.85	4.902	1.4423	0.923	C	0.000	18.592	0.923	100.00	22.961	0.000
						A	0.000	0.923		100.00	1.210	0.000
						B	0.000	0.923		100.00	2.249	0.000
L54 6.2500- 4.0000	5.1224	0.85	4.902	1.4111	8.353	C	0.000	0.923	8.353	100.00	1.244	0.000
						A	0.000	8.353		100.00	10.838	0.000
						B	0.000	8.353		100.00	20.116	0.000
L55 4.0000- 3.7500	3.8750	0.85	4.902	1.3722	0.932	C	0.000	8.353	0.932	100.00	11.153	0.000
						A	0.000	0.932		100.00	1.197	0.000
						B	0.000	0.932		100.00	2.217	0.000
L56 3.7500- 0.0000	1.8679	0.85	4.902	1.2757	14.084	C	0.000	0.932	14.084	100.00	1.233	0.000
						A	0.000	14.084		100.00	17.079	0.000
						B	0.000	14.084		100.00	31.982	0.000
						C	0.000	14.084		100.00	17.676	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft ²	F a c e	A_F ft ²	A_R ft ²	A_{leg} ft ²	Leg %	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²
L1 131.0000- 126.0000	128.4554	1.334	10.43 6	4.769	A	0.000	4.769	4.769	100.00	0.000	0.000
					B	0.000	4.769	100.00	0.000	0.000	
					C	0.000	4.769	100.00	0.000	0.000	
L2 126.0000- 121.0000	123.4597	1.323	10.34 9	5.283	A	0.000	5.283	5.283	100.00	0.000	0.000
					B	0.000	5.283	100.00	0.000	0.000	
					C	0.000	5.283	100.00	0.000	0.000	
L3 121.0000- 116.0000	118.4633	1.312	10.25 9	5.796	A	0.000	5.796	5.796	100.00	0.000	0.000
					B	0.000	5.796	100.00	7.075	0.000	
					C	0.000	5.796	100.00	0.000	0.000	
L4 116.0000- 111.0000	113.4662	1.3	10.16 6	6.310	A	0.000	6.310	6.310	100.00	0.000	0.000
					B	0.000	6.310	100.00	7.075	0.000	
					C	0.000	6.310	100.00	0.000	0.000	
L5 111.0000- 110.0000	110.4987	1.293	10.11 0	1.324	A	0.000	1.324	1.324	100.00	0.000	0.000
					B	0.000	1.324	100.00	1.415	0.000	
					C	0.000	1.324	100.00	0.000	0.000	
L6 110.0000- 105.0000	107.4677	1.285	10.05 1	6.930	A	0.000	6.930	6.930	100.00	0.000	0.000
					B	0.000	6.930	100.00	7.075	0.000	
					C	0.000	6.930	100.00	0.000	0.000	
L7 105.0000- 100.0000	102.4701	1.272	9.951	7.469	A	0.000	7.469	7.469	100.00	0.000	0.000
					B	0.000	7.469	100.00	7.075	0.000	
					C	0.000	7.469	100.00	0.000	0.000	
L8 100.0000- 95.0000	97.4721	1.259	9.846	8.009	A	0.000	8.009	8.009	100.00	0.950	0.000
					B	0.000	8.009	100.00	7.075	0.000	
					C	0.000	8.009	100.00	0.000	0.000	
L9 95.0000- 90.0000	92.4738	1.245	9.738	8.549	A	0.000	8.549	8.549	100.00	3.500	0.000
					B	0.000	8.549	100.00	8.200	0.000	
					C	0.000	8.549	100.00	1.125	0.000	
L10 90.0000- 89.7500	89.8749	1.237	9.680	0.440	A	0.000	0.440	0.440	100.00	0.306	0.000
					B	0.000	0.440	100.00	0.541	0.000	
					C	0.000	0.440	100.00	0.188	0.000	
L11 89.7500- 84.7500	87.2254	1.23	9.619	9.081	A	0.000	9.081	9.081	100.00	7.479	0.000
					B	0.000	9.081	100.00	14.876	0.000	
					C	0.000	9.081	100.00	5.104	0.000	
L12 84.7500- 84.5800	84.6650	1.222	9.559	0.318	A	0.000	0.318	0.318	100.00	0.449	0.000
					B	0.000	0.318	100.00	0.813	0.000	
					C	0.000	0.318	100.00	0.368	0.000	
L13 84.5800- 84.3300	84.4549	1.221	9.554	0.468	A	0.000	0.468	0.468	100.00	0.660	0.000
					B	0.000	0.468	100.00	1.195	0.000	
					C	0.000	0.468	100.00	0.542	0.000	
L14 84.3300- 83.4200	83.8742	1.22	9.540	1.715	A	0.000	1.715	1.715	100.00	2.404	0.000
					B	0.000	1.715	100.00	4.350	0.000	
					C	0.000	1.715	100.00	1.972	0.000	
L15 83.4200- 83.1700	83.2949	1.218	9.526	0.472	A	0.000	0.472	0.472	100.00	0.660	0.000
					B	0.000	0.472	100.00	1.195	0.000	
					C	0.000	0.472	100.00	0.542	0.000	
L16 83.1700- 83.0000	83.0850	1.217	9.521	0.322	A	0.000	0.322	0.322	100.00	0.449	0.000
					B	0.000	0.322	100.00	0.813	0.000	
					C	0.000	0.322	100.00	0.368	0.000	
L17 83.0000- 82.7500	82.8749	1.217	9.516	0.476	A	0.000	0.476	0.476	100.00	0.660	0.000
					B	0.000	0.476	100.00	1.195	0.000	
					C	0.000	0.476	100.00	0.542	0.000	
L18 82.7500- 77.7500	80.2273	1.208	9.451	9.810	A	0.000	9.810	9.810	100.00	10.396	0.000
					B	0.000	9.810	100.00	21.088	0.000	
					C	0.000	9.810	100.00	8.021	0.000	
L19 77.7500- 70.0000	73.8240	1.187	9.287	16.274	A	0.000	16.274	16.274	100.00	14.660	0.000
					B	0.000	16.274	100.00	31.234	0.000	
					C	0.000	16.274	100.00	10.979	0.000	
L20 70.0000- 69.0000	69.4992	1.172	9.170	2.150	A	0.000	2.150	2.150	100.00	2.558	0.000
					B	0.000	2.150	100.00	4.697	0.000	
					C	0.000	2.150	100.00	2.083	0.000	
L21 69.0000- 67.0800	68.0370	1.167	9.129	4.189	A	0.000	4.189	4.189	100.00	4.912	0.000
					B	0.000	4.189	100.00	9.018	0.000	
					C	0.000	4.189	100.00	4.000	0.000	
L22 67.0800- 66.8300	66.9549	1.163	9.098	0.551	A	0.000	0.551	0.551	100.00	0.640	0.000
					B	0.000	0.551	100.00	1.174	0.000	
					C	0.000	0.551	100.00	0.521	0.000	

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L23 66.8300- 64.0800	65.4490	1.158	9.054	6.154	A	0.000	6.154	6.154	100.00	5.422	0.000
					B	0.000	6.154	100.00	12.743	0.000	
					C	0.000	6.154	100.00	5.556	0.000	
L24 64.0800- 63.8300	63.9550	1.152	9.011	0.567	A	0.000	0.567	0.567	100.00	0.473	0.000
					B	0.000	0.567	100.00	1.195	0.000	
					C	0.000	0.567	100.00	0.542	0.000	
L25 63.8300- 62.4400	63.1335	1.149	8.986	3.177	A	0.000	3.177	3.177	100.00	3.049	0.000
					B	0.000	3.177	100.00	6.644	0.000	
					C	0.000	3.177	100.00	3.012	0.000	
L26 62.4400- 62.1900	62.3150	1.146	8.961	0.575	A	0.000	0.575	0.575	100.00	0.660	0.000
					B	0.000	0.575	100.00	1.195	0.000	
					C	0.000	0.575	100.00	0.542	0.000	
L27 62.1900- 57.1900	59.6711	1.135	8.880	11.787	A	0.000	11.787	11.787	100.00	13.208	0.000
					B	0.000	11.787	100.00	23.901	0.000	
					C	0.000	11.787	100.00	10.833	0.000	
L28 57.1900- 53.5000	55.3351	1.117	8.740	9.047	A	0.000	9.047	9.047	100.00	10.123	0.000
					B	0.000	9.047	100.00	21.139	0.000	
					C	0.000	9.047	100.00	11.495	0.000	
L29 53.5000- 53.2500	53.3750	1.109	8.674	0.623	A	0.000	0.623	0.623	100.00	0.723	0.000
					B	0.000	0.623	100.00	1.570	0.000	
					C	0.000	0.623	100.00	0.917	0.000	
L30 53.2500- 52.5800	52.9147	1.107	8.658	1.678	A	0.000	1.678	1.678	100.00	1.937	0.000
					B	0.000	1.678	100.00	4.208	0.000	
					C	0.000	1.678	100.00	2.457	0.000	
L31 52.5800- 52.3300	52.4550	1.105	8.642	0.628	A	0.000	0.628	0.628	100.00	0.723	0.000
					B	0.000	0.628	100.00	1.570	0.000	
					C	0.000	0.628	100.00	0.917	0.000	
L32 52.3300- 47.3300	49.8127	1.093	8.549	12.854	A	0.000	12.854	12.854	100.00	14.458	0.000
					B	0.000	12.854	100.00	31.401	0.000	
					C	0.000	12.854	100.00	18.333	0.000	
L33 47.3300- 44.5800	45.9499	1.074	8.405	7.301	A	0.000	7.301	7.301	100.00	7.952	0.000
					B	0.000	7.301	100.00	17.270	0.000	
					C	0.000	7.301	100.00	10.083	0.000	
L34 44.5800- 44.3300	44.4550	1.067	8.346	0.672	A	0.000	0.672	0.672	100.00	0.723	0.000
					B	0.000	0.672	100.00	1.570	0.000	
					C	0.000	0.672	100.00	0.917	0.000	
L35 44.3300- 39.3300	41.8138	1.053	8.239	13.723	A	0.000	13.723	13.723	100.00	18.043	0.000
					B	0.000	13.723	100.00	34.068	0.000	
					C	0.000	13.723	100.00	21.000	0.000	
L36 39.3300- 34.0800	36.6878	1.025	8.016	14.990	A	0.000	14.990	14.990	100.00	16.494	0.000
					B	0.000	14.990	100.00	32.971	0.000	
					C	0.000	14.990	100.00	19.250	0.000	
L37 34.0800- 33.0800	33.5794	1.006	7.868	2.867	A	0.000	2.867	2.867	100.00	3.142	0.000
					B	0.000	2.867	100.00	6.280	0.000	
					C	0.000	2.867	100.00	3.667	0.000	
L38 33.0800- 28.0800	30.5648	0.986	7.713	14.661	A	0.000	14.661	14.661	100.00	15.708	0.000
					B	0.000	14.661	100.00	31.401	0.000	
					C	0.000	14.661	100.00	18.333	0.000	
L39 28.0800- 26.8500	27.4641	0.964	7.542	3.690	A	0.000	3.690	3.690	100.00	3.864	0.000
					B	0.000	3.690	100.00	7.725	0.000	
					C	0.000	3.690	100.00	4.510	0.000	
L40 26.8500- 26.6000	26.7250	0.959	7.498	0.753	A	0.000	0.753	0.753	100.00	0.785	0.000
					B	0.000	0.753	100.00	1.570	0.000	
					C	0.000	0.753	100.00	0.917	0.000	
L41 26.6000- 21.6000	24.0855	0.938	7.336	15.352	A	0.000	15.352	15.352	100.00	15.708	0.000
					B	0.000	15.352	100.00	31.401	0.000	
					C	0.000	15.352	100.00	18.333	0.000	
L42 21.6000- 18.0000	19.7927	0.9	7.039	11.388	A	0.000	11.388	11.388	100.00	14.289	0.000
					B	0.000	11.388	100.00	19.588	0.000	
					C	0.000	11.388	100.00	10.179	0.000	
L43 18.0000- 17.7500	17.8750	0.881	6.890	0.800	A	0.000	0.800	0.800	100.00	1.056	0.000
					B	0.000	0.800	100.00	1.341	0.000	
					C	0.000	0.800	100.00	0.688	0.000	
L44 17.7500- 17.5000	17.6250	0.878	6.869	0.801	A	0.000	0.801	0.801	100.00	1.056	0.000
					B	0.000	0.801	100.00	1.341	0.000	
					C	0.000	0.801	100.00	0.688	0.000	
L45 17.5000- 17.2500	17.3750	0.876	6.849	0.803	A	0.000	0.803	0.803	100.00	1.056	0.000
					B	0.000	0.803	100.00	1.341	0.000	
					C	0.000	0.803	100.00	0.688	0.000	

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
L46 17.2500- 17.0800	17.1650	0.873	6.831	0.547	C	0.000	0.803	0.547	100.00	0.688	0.000
					A	0.000	0.547		100.00	0.718	0.000
					B	0.000	0.547		100.00	0.912	0.000
L47 17.0800- 16.8300	16.9550	0.871	6.813	0.806	C	0.000	0.547	0.806	100.00	0.468	0.000
					A	0.000	0.806		100.00	1.056	0.000
					B	0.000	0.806		100.00	1.341	0.000
L48 16.8300- 13.0000	14.9070	0.85	6.649	12.515	C	0.000	0.806	12.515	100.00	0.688	0.000
					A	0.000	12.515		100.00	18.015	0.000
					B	0.000	12.515		100.00	22.376	0.000
L49 13.0000- 12.7500	12.8750	0.85	6.649	0.827	C	0.000	12.515	0.827	100.00	12.366	0.000
					A	0.000	0.827		100.00	1.140	0.000
					B	0.000	0.827		100.00	1.424	0.000
L50 12.7500- 11.8500	12.2996	0.85	6.649	2.987	C	0.000	0.827	2.987	100.00	0.771	0.000
					A	0.000	2.987		100.00	4.103	0.000
					B	0.000	2.987		100.00	5.127	0.000
L51 11.8500- 11.6000	11.7250	0.85	6.649	0.835	C	0.000	2.987	0.835	100.00	2.775	0.000
					A	0.000	0.835		100.00	1.140	0.000
					B	0.000	0.835		100.00	1.424	0.000
L52 11.6000- 6.5000	9.0363	0.85	6.649	17.322	C	0.000	0.835	17.322	100.00	0.771	0.000
					A	0.000	17.322		100.00	21.747	0.000
					B	0.000	17.322		100.00	29.054	0.000
L53 6.5000- 6.2500	6.3750	0.85	6.649	0.863	C	0.000	17.322	0.863	100.00	18.296	0.000
					A	0.000	0.863		100.00	0.890	0.000
					B	0.000	0.863		100.00	1.424	0.000
L54 6.2500- 4.0000	5.1224	0.85	6.649	7.824	C	0.000	0.863	7.824	100.00	1.005	0.000
					A	0.000	7.824		100.00	8.006	0.000
					B	0.000	7.824		100.00	12.818	0.000
L55 4.0000- 3.7500	3.8750	0.85	6.649	0.875	C	0.000	7.824	0.875	100.00	9.041	0.000
					A	0.000	0.875		100.00	0.890	0.000
					B	0.000	0.875		100.00	1.424	0.000
L56 3.7500- 0.0000	1.8679	0.85	6.649	13.286	C	0.000	0.875	13.286	100.00	1.005	0.000
					A	0.000	13.286		100.00	12.844	0.000
					B	0.000	13.286		100.00	20.863	0.000
					C	0.000	13.286		100.00	14.568	0.000

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
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	131 - 126	Pole	Max Tension	42	0.00	-0.00	-0.00
			Max. Compression	26	-0.29	-0.00	0.00
			Max. Mx	8	-0.10	-0.62	0.00
			Max. My	2	-0.10	-0.00	0.63
			Max. Vy	8	0.25	-0.62	0.00
			Max. Vx	2	-0.26	-0.00	0.63
			Max. Torque	20			0.00
L2	126 - 121	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-0.62	-0.00	0.00
			Max. Mx	8	-0.22	-2.59	0.00
			Max. My	2	-0.22	-0.00	2.59
			Max. Vy	8	0.53	-2.59	0.00
			Max. Vx	2	-0.54	-0.00	2.59
			Max. Torque	12			-0.00
L3	121 - 116	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-12.43	-1.52	2.62
			Max. Mx	8	-3.52	-35.61	0.24
			Max. My	2	-3.41	-0.37	36.53
			Max. Vy	8	7.80	-35.61	0.24
			Max. Vx	2	-8.14	-0.37	36.53
			Max. Torque	10			1.20
L4	116 - 111	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.07	-1.74	2.79
			Max. Mx	8	-3.77	-75.42	0.07
			Max. My	2	-3.63	-0.21	78.64
			Max. Vy	8	8.12	-75.42	0.07
			Max. Vx	2	-8.71	-0.21	78.64
			Max. Torque	12			1.20
L5	111 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.20	-1.78	2.82
			Max. Mx	8	-3.82	-83.57	0.04
			Max. My	2	-3.68	-0.17	87.41
			Max. Vy	8	8.18	-83.57	0.04
			Max. Vx	2	-8.82	-0.17	87.41
			Max. Torque	12			1.22
L6	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.84	-2.91	3.50
			Max. Mx	8	-7.01	-153.79	-0.33
			Max. My	2	-6.79	0.12	161.81
			Max. Vy	8	13.96	-153.79	-0.33
			Max. Vx	2	-14.94	0.12	161.81
			Max. Torque	12			1.22

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L7	105 - 100	Pole	Max. Torque	12			1.72
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.01	-3.29	3.43
			Max. Mx	8	-7.58	-226.17	-0.70
			Max. My	2	-7.35	0.42	239.31
			Max. Vy	8	14.87	-226.17	-0.70
			Max. Vx	2	-16.01	0.42	239.31
L8	100 - 95	Pole	Max. Torque	12			1.82
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.69	-3.69	3.55
			Max. Mx	8	-11.53	-315.69	-0.88
			Max. My	2	-11.25	0.58	335.30
			Max. Vy	8	20.25	-315.69	-0.88
			Max. Vx	2	-21.72	0.58	335.30
L9	95 - 90	Pole	Max. Torque	12			1.93
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.79	-3.91	3.78
			Max. Mx	8	-12.25	-417.66	-1.07
			Max. My	2	-11.98	0.81	445.44
			Max. Vy	8	20.56	-417.66	-1.07
			Max. Vx	2	-22.36	0.81	445.44
L10	90 - 89.75	Pole	Max. Torque	12			1.99
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.86	-3.93	3.80
			Max. Mx	8	-12.32	-422.80	-1.07
			Max. My	2	-12.05	0.82	451.03
			Max. Vy	8	20.57	-422.80	-1.07
			Max. Vx	2	-22.39	0.82	451.03
L11	89.75 - 84.75	Pole	Max. Torque	12			1.99
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.79	-4.27	4.09
			Max. Mx	8	-15.82	-535.23	-1.24
			Max. My	2	-15.53	1.01	573.17
			Max. Vy	8	24.76	-535.23	-1.24
			Max. Vx	2	-26.83	1.01	573.17
L12	84.75 - 84.58	Pole	Max. Torque	12			2.05
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.87	-4.28	4.11
			Max. Mx	8	-15.87	-539.45	-1.24
			Max. My	2	-15.58	1.02	577.73
			Max. Vy	8	24.78	-539.45	-1.24
			Max. Vx	2	-26.86	1.02	577.73
L13	84.58 - 84.33	Pole	Max. Torque	12			2.05
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.99	-4.31	4.13
			Max. Mx	8	-15.92	-545.65	-1.25
			Max. My	2	-15.64	1.03	584.45
			Max. Vy	8	24.82	-545.65	-1.25
			Max. Vx	2	-26.90	1.03	584.45
L14	84.33 - 83.42	Pole	Max. Torque	12			2.05
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.43	-4.40	4.20
			Max. Mx	8	-16.13	-568.32	-1.28
			Max. My	2	-15.84	1.05	609.02
			Max. Vy	8	24.98	-568.32	-1.28
			Max. Vx	2	-27.07	1.05	609.02
L15	83.42 - 83.17	Pole	Max. Torque	12			2.07
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.57	-4.43	4.22
			Max. Mx	8	-16.21	-574.57	-1.28
			Max. My	2	-15.93	1.06	615.79
			Max. Vy	8	25.02	-574.57	-1.28
			Max. Vx	2	-27.11	1.06	615.79
			Max. Torque	12			2.07

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L16	83.17 - 83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.66	-4.44	4.23
			Max. Mx	8	-16.26	-578.83	-1.29
			Max. My	2	-15.98	1.06	620.40
			Max. Vy	8	25.05	-578.83	-1.29
			Max. Vx	2	-27.14	1.06	620.40
			Max. Torque	12			2.07
L17	83 - 82.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.79	-4.47	4.25
			Max. Mx	8	-16.32	-585.11	-1.29
			Max. My	2	-16.04	1.07	627.20
			Max. Vy	8	25.10	-585.11	-1.29
			Max. Vx	2	-27.19	1.07	627.20
			Max. Torque	12			2.08
L18	82.75 - 77.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.14	-4.98	4.65
			Max. Mx	8	-17.55	-712.69	-1.44
			Max. My	2	-17.28	1.22	765.39
			Max. Vy	8	25.92	-712.69	-1.44
			Max. Vx	2	-28.08	1.22	765.39
			Max. Torque	12			2.16
L19	77.75 - 70	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.89	-5.37	4.96
			Max. Mx	8	-18.50	-811.03	-1.54
			Max. My	2	-18.24	1.33	871.91
			Max. Vy	8	26.51	-811.03	-1.54
			Max. Vx	2	-28.73	1.33	871.91
			Max. Torque	12			2.22
L20	70 - 69	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.38	-5.90	5.37
			Max. Mx	8	-20.59	-945.95	-1.68
			Max. My	2	-20.33	1.48	1018.07
			Max. Vy	8	27.42	-945.95	-1.68
			Max. Vx	2	-29.72	1.48	1018.07
			Max. Torque	12			2.31
L21	69 - 67.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.39	-6.10	5.53
			Max. Mx	8	-21.12	-998.93	-1.73
			Max. My	2	-20.86	1.54	1075.47
			Max. Vy	8	27.75	-998.93	-1.73
			Max. Vx	2	-30.08	1.54	1075.47
			Max. Torque	12			2.33
L22	67.08 - 66.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.52	-6.13	5.55
			Max. Mx	8	-21.21	-1005.87	-1.74
			Max. My	2	-20.97	1.54	1082.99
			Max. Vy	8	27.78	-1005.87	-1.74
			Max. Vx	2	-30.11	1.54	1082.99
			Max. Torque	12			2.34
L23	66.83 - 64.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.95	-6.45	5.77
			Max. Mx	8	-21.99	-1082.91	-1.81
			Max. My	2	-21.75	1.62	1166.50
			Max. Vy	8	28.23	-1082.91	-1.81
			Max. Vx	2	-30.61	1.62	1166.50
			Max. Torque	12			2.38
L24	64.08 - 63.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.09	-6.48	5.79
			Max. Mx	8	-22.08	-1089.97	-1.82
			Max. My	2	-21.85	1.63	1174.16
			Max. Vy	8	28.26	-1089.97	-1.82
			Max. Vx	2	-30.64	1.63	1174.16
			Max. Torque	12			2.39
L25	63.83 - 62.44	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L26	62.44 - 62.19	Pole	Max. Compression	26	-59.87	-6.64	5.90
			Max. Mx	8	-22.52	-1129.44	-1.85
			Max. My	2	-22.29	1.67	1216.94
			Max. Vy	8	28.50	-1129.44	-1.85
			Max. Vx	2	-30.91	1.67	1216.94
			Max. Torque	12			2.41
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.02	-6.67	5.92
L27	62.19 - 57.19	Pole	Max. Mx	8	-22.62	-1136.57	-1.86
			Max. My	2	-22.39	1.67	1224.68
			Max. Vy	8	28.53	-1136.57	-1.86
			Max. Vx	2	-30.94	1.67	1224.68
			Max. Torque	12			2.42
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.98	-7.22	6.35
			L28	57.19 - 53.5	Pole	Max. Mx	8
Max. My	2	-24.10				1.81	1381.76
Max. Vy	8	29.41				-1281.51	-1.99
Max. Vx	2	-31.88				1.81	1381.76
Max. Torque	12						2.49
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-65.28				-7.69	6.66
L29	53.5 - 53.25	Pole				Max. Mx	8
			Max. My	2	-25.40	1.91	1500.71
			Max. Vy	8	30.06	-1391.28	-2.08
			Max. Vx	2	-32.59	1.91	1500.71
			Max. Torque	12			2.55
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.45	-7.73	6.68
			L30	53.25 - 52.58	Pole	Max. Mx	8
Max. My	2	-25.51				1.92	1508.86
Max. Vy	8	30.10				-1398.81	-2.09
Max. Vx	2	-32.63				1.92	1508.86
Max. Torque	12						2.56
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-65.88				-7.82	6.74
L31	52.58 - 52.33	Pole				Max. Mx	8
			Max. My	2	-25.75	1.94	1530.77
			Max. Vy	8	30.22	-1419.02	-2.11
			Max. Vx	2	-32.76	1.94	1530.77
			Max. Torque	12			2.57
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.05	-7.85	6.76
			L32	52.33 - 47.33	Pole	Max. Mx	8
Max. My	2	-25.85				1.94	1538.97
Max. Vy	8	30.26				-1426.59	-2.11
Max. Vx	2	-32.81				1.94	1538.97
Max. Torque	12						2.57
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-69.33				-8.54	7.19
L33	47.33 - 44.58	Pole				Max. Mx	8
			Max. My	2	-27.71	2.07	1705.48
			Max. Vy	20	-31.19	1573.72	14.53
			Max. Vx	2	-33.79	2.07	1705.48
			Max. Torque	12			2.66
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.15	-8.92	7.42
						Max. Mx	8
Max. My	2	-28.75				2.14	1799.13
Max. Vy	20	-31.72				1660.11	15.17
Max. Vx	2	-34.32				2.14	1799.13
Max. Torque	12						2.71

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	44.58 - 44.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.32	-8.96	7.45
			Max. Mx	8	-29.04	-1674.53	-2.31
			Max. My	2	-28.86	2.15	1807.71
			Max. Vy	20	-31.76	1668.03	15.23
			Max. Vx	2	-34.35	2.15	1807.71
L35	44.33 - 39.33	Pole	Max. Torque	12			2.72
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.77	-9.65	7.89
			Max. Mx	8	-30.94	-1835.31	-2.43
			Max. My	2	-30.78	2.27	1982.02
			Max. Vy	20	-32.73	1829.07	16.40
L36	39.33 - 34.08	Pole	Max. Vx	2	-35.36	2.27	1982.02
			Max. Torque	12			2.80
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.99	-9.70	7.92
			Max. Mx	8	-31.07	-1846.09	-2.44
			Max. My	2	-30.92	2.28	1993.70
L37	34.08 - 33.08	Pole	Max. Vy	20	-32.79	1839.87	16.48
			Max. Vx	2	-35.41	2.28	1993.70
			Max. Torque	12			2.81
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.98	-10.53	8.45
			Max. Mx	8	-34.95	-2043.02	-2.57
L38	33.08 - 28.08	Pole	Max. My	2	-34.81	2.41	2207.08
			Max. Vy	20	-34.00	2037.38	17.87
			Max. Vx	2	-36.64	2.41	2207.08
			Max. Torque	12			2.92
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.41	-11.24	8.90
L39	28.08 - 26.85	Pole	Max. Mx	8	-37.02	-2214.29	-2.69
			Max. My	2	-36.90	2.53	2392.55
			Max. Vy	20	-34.88	2209.35	19.04
			Max. Vx	2	-37.54	2.53	2392.55
			Max. Torque	12			3.02
			Max Tension	1	0.00	0.00	0.00
L40	26.85 - 26.6	Pole	Max. Compression	26	-85.26	-11.41	9.01
			Max. Mx	8	-37.53	-2257.08	-2.71
			Max. My	2	-37.42	2.56	2438.86
			Max. Vy	20	-35.10	2252.33	19.33
			Max. Vx	2	-37.76	2.56	2438.86
			Max. Torque	12			3.04
L41	26.6 - 21.6	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.45	-11.45	9.03
			Max. Mx	8	-37.66	-2265.81	-2.72
			Max. My	2	-37.55	2.56	2448.31
			Max. Vy	20	-35.13	2261.10	19.39
			Max. Vx	14	37.79	-18.40	-2438.41
L42	21.6 - 18	Pole	Max. Torque	12			3.05
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.14	-12.13	9.47
			Max. Mx	8	-40.00	-2442.09	-2.83
			Max. My	2	-39.90	2.67	2639.52
			Max. Vy	20	-35.83	2438.30	20.56
L42	21.6 - 18	Pole	Max. Vx	14	38.69	-19.50	-2629.44
			Max. Torque	12			3.14
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.76	-12.49	9.79
			Max. Mx	8	-41.71	-2571.06	-2.90
			Max. My	2	-41.63	2.74	2779.84
L42	21.6 - 18	Pole	Max. Vy	20	-36.28	2567.92	21.40
			Max. Vx	14	39.30	-20.29	-2769.68
			Max. Torque	12			3.17

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L43	18 - 17.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.95	-12.51	9.81
			Max. Mx	8	-41.85	-2580.08	-2.91
			Max. My	2	-41.77	2.75	2789.66
			Max. Vy	20	-36.29	2576.98	21.46
			Max. Vx	14	39.33	-20.34	-2779.50
			Max. Torque	12			3.17
L44	17.75 - 17.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.15	-12.54	9.83
			Max. Mx	8	-41.98	-2589.11	-2.91
			Max. My	2	-41.91	2.75	2799.50
			Max. Vy	20	-36.32	2586.05	21.52
			Max. Vx	14	39.37	-20.40	-2789.33
			Max. Torque	12			3.17
L45	17.5 - 17.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.34	-12.56	9.85
			Max. Mx	8	-42.11	-2598.15	-2.92
			Max. My	2	-42.04	2.76	2809.35
			Max. Vy	20	-36.35	2595.12	21.58
			Max. Vx	14	39.41	-20.45	-2799.17
			Max. Torque	12			3.17
L46	17.25 - 17.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.48	-12.58	9.87
			Max. Mx	8	-42.20	-2604.30	-2.92
			Max. My	2	-42.13	2.76	2816.05
			Max. Vy	20	-36.37	2601.30	21.62
			Max. Vx	14	39.44	-20.49	-2805.87
			Max. Torque	12			3.17
L47	17.08 - 16.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.66	-12.60	9.89
			Max. Mx	8	-42.33	-2613.35	-2.93
			Max. My	2	-42.25	2.77	2825.91
			Max. Vy	20	-36.40	2610.39	21.68
			Max. Vx	14	39.48	-20.54	-2815.72
			Max. Torque	12			3.17
L48	16.83 - 13	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.56	-12.95	10.23
			Max. Mx	8	-44.20	-2753.28	-3.01
			Max. My	2	-44.14	2.84	2978.31
			Max. Vy	20	-37.00	2750.78	22.57
			Max. Vx	14	40.13	-21.38	-2968.04
			Max. Torque	12			3.19
L49	13 - 12.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.77	-12.97	10.25
			Max. Mx	8	-44.36	-2762.50	-3.01
			Max. My	2	-44.30	2.85	2988.34
			Max. Vy	20	-37.02	2760.02	22.63
			Max. Vx	14	40.15	-21.44	-2978.07
			Max. Torque	12			3.20
L50	12.75 - 11.85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.51	-13.05	10.33
			Max. Mx	8	-44.86	-2795.75	-3.03
			Max. My	2	-44.81	2.86	3024.54
			Max. Vy	20	-37.14	2793.36	22.84
			Max. Vx	14	40.31	-21.64	-3014.25
			Max. Torque	12			3.20
L51	11.85 - 11.6	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.70	-13.08	10.35
			Max. Mx	8	-45.00	-2805.00	-3.03
			Max. My	2	-44.94	2.87	3034.63
			Max. Vy	20	-37.16	2802.63	22.90
			Max. Vx	14	40.35	-21.69	-3024.33
			Max. Torque	12			3.20
L52	11.6 - 6.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.50	-13.60	10.72
			Max. Mx	8	-47.55	-2995.56	-3.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L53	6.5 - 6.25	Pole	Max. My	2	-47.52	2.96	3242.53
			Max. Vy	20	-37.78	2993.49	24.08
			Max. Vx	2	-41.19	2.96	3242.53
			Max. Torque	12			3.24
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.69	-13.63	10.74
			Max. Mx	8	-47.69	-3004.99	-3.14
			Max. My	2	-47.67	2.97	3252.83
			Max. Vy	20	-37.80	3002.93	24.14
			Max. Vx	2	-41.21	2.97	3252.83
L54	6.25 - 4	Pole	Max. Torque	12			3.24
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.42	-13.89	10.86
			Max. Mx	8	-48.89	-3090.19	-3.18
			Max. My	2	-48.88	3.01	3346.04
			Max. Vy	20	-38.10	3088.22	24.66
			Max. Vx	2	-41.62	3.01	3346.04
			Max. Torque	12			3.27
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.61	-13.92	10.88
L55	4 - 3.75	Pole	Max. Mx	8	-49.05	-3099.69	-3.18
			Max. My	2	-49.03	3.01	3356.45
			Max. Vy	20	-38.12	3097.74	24.72
			Max. Vx	2	-41.65	3.01	3356.45
			Max. Torque	12			3.27
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.51	-14.32	11.08
			Max. Mx	8	-51.18	-3243.29	-3.25
			Max. My	2	-51.18	3.08	3513.97
			Max. Vy	20	-38.64	3241.49	25.59
L56	3.75 - 0	Pole	Max. Vx	2	-42.33	3.08	3513.97
			Max. Torque	12			3.32
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.51	-14.32	11.08
			Max. Mx	8	-51.18	-3243.29	-3.25
			Max. My	2	-51.18	3.08	3513.97

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	105.51	0.00	-0.00
	Max. H _x	21	38.39	38.62	0.21
	Max. H _z	2	51.19	0.05	42.32
	Max. M _x	2	3513.97	0.05	42.32
	Max. M _z	8	3243.29	-38.51	-0.04
	Max. Torsion	12	3.32	-21.24	-36.59
	Min. Vert	3	38.39	0.05	42.32
	Min. H _x	9	38.39	-38.51	-0.04
	Min. H _z	15	38.39	-0.18	-42.23
	Min. M _x	14	-3502.86	-0.18	-42.23
	Min. M _z	20	-3241.49	38.62	0.21
	Min. Torsion	24	-3.25	21.53	37.04

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	42.66	-0.00	0.00	-1.79	-2.77	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	51.19	-0.05	-42.32	-3513.97	3.08	2.80
0.9 Dead+1.0 Wind 0 deg - No Ice	38.39	-0.05	-42.32	-3484.90	3.90	2.77
1.2 Dead+1.0 Wind 30 deg - No Ice	51.19	18.17	-31.30	-2689.56	-1564.77	0.71

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 30 deg - No Ice	38.39	18.17	-31.30	-2666.72	-1550.96	0.69
1.2 Dead+1.0 Wind 60 deg - No Ice	51.19	31.32	-17.94	-1542.76	-2696.88	-0.21
0.9 Dead+1.0 Wind 60 deg - No Ice	38.39	31.32	-17.94	-1529.42	-2673.66	-0.21
1.2 Dead+1.0 Wind 90 deg - No Ice	51.19	38.51	0.04	3.25	-3243.29	-1.50
0.9 Dead+1.0 Wind 90 deg - No Ice	38.39	38.51	0.04	3.77	-3216.00	-1.48
1.2 Dead+1.0 Wind 120 deg - No Ice	51.19	34.87	19.96	1637.03	-2871.94	-2.55
0.9 Dead+1.0 Wind 120 deg - No Ice	38.39	34.87	19.96	1624.34	-2847.83	-2.52
1.2 Dead+1.0 Wind 150 deg - No Ice	51.19	21.24	36.59	3017.36	-1758.16	-3.32
0.9 Dead+1.0 Wind 150 deg - No Ice	38.39	21.24	36.59	2993.52	-1743.07	-3.29
1.2 Dead+1.0 Wind 180 deg - No Ice	51.19	0.18	42.23	3502.86	-24.23	-2.79
0.9 Dead+1.0 Wind 180 deg - No Ice	38.39	0.18	42.23	3475.05	-23.15	-2.76
1.2 Dead+1.0 Wind 210 deg - No Ice	51.19	-18.05	31.52	2701.05	1540.53	-0.52
0.9 Dead+1.0 Wind 210 deg - No Ice	38.39	-18.05	31.52	2679.27	1528.68	-0.51
1.2 Dead+1.0 Wind 240 deg - No Ice	51.19	-31.34	17.86	1529.53	2691.87	0.35
0.9 Dead+1.0 Wind 240 deg - No Ice	38.39	-31.34	17.86	1517.43	2670.45	0.35
1.2 Dead+1.0 Wind 270 deg - No Ice	51.19	-38.62	-0.21	-25.59	3241.49	1.38
0.9 Dead+1.0 Wind 270 deg - No Ice	38.39	-38.62	-0.21	-24.80	3215.99	1.37
1.2 Dead+1.0 Wind 300 deg - No Ice	51.19	-35.17	-20.38	-1671.10	2870.68	2.40
0.9 Dead+1.0 Wind 300 deg - No Ice	38.39	-35.17	-20.38	-1657.05	2848.40	2.38
1.2 Dead+1.0 Wind 330 deg - No Ice	51.19	-21.53	-37.04	-3043.57	1767.46	3.25
0.9 Dead+1.0 Wind 330 deg - No Ice	38.39	-21.53	-37.04	-3018.44	1754.05	3.22
1.2 Dead+1.0 Ice+1.0 Temp	105.51	-0.00	0.00	-11.08	-14.32	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	105.51	-0.01	-9.59	-878.10	-13.57	0.73
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	105.51	3.96	-6.81	-665.40	-394.63	0.11
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	105.51	6.83	-3.91	-387.23	-671.05	-0.18
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	105.51	8.84	0.00	-10.39	-827.93	-0.63
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	105.51	8.12	4.65	402.04	-737.17	-0.96
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	105.51	4.84	8.35	737.69	-449.12	-1.02
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	105.51	0.03	9.57	854.22	-18.51	-0.73
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	105.51	-3.93	6.85	646.14	361.83	-0.07
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	105.51	-6.83	3.90	362.99	642.40	0.21
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	105.51	-8.86	-0.04	-15.80	799.84	0.61
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	105.51	-8.17	-4.73	-430.43	708.86	0.93
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	105.51	-4.90	-8.43	-764.16	423.47	1.01
Dead+Wind 0 deg - Service	42.66	-0.01	-9.19	-761.32	-1.48	0.61
Dead+Wind 30 deg - Service	42.66	3.95	-6.79	-582.95	-340.49	0.15

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 60 deg - Service	42.66	6.80	-3.90	-334.98	-585.28	-0.05
Dead+Wind 90 deg - Service	42.66	8.36	0.01	-0.68	-703.35	-0.33
Dead+Wind 120 deg - Service	42.66	7.57	4.33	352.63	-623.20	-0.56
Dead+Wind 150 deg - Service	42.66	4.61	7.94	651.20	-382.38	-0.72
Dead+Wind 180 deg - Service	42.66	0.04	9.17	756.15	-7.37	-0.61
Dead+Wind 210 deg - Service	42.66	-3.92	6.84	582.66	330.98	-0.11
Dead+Wind 240 deg - Service	42.66	-6.80	3.88	329.35	579.92	0.08
Dead+Wind 270 deg - Service	42.66	-8.38	-0.05	-6.91	698.69	0.30
Dead+Wind 300 deg - Service	42.66	-7.64	-4.42	-362.77	618.66	0.52
Dead+Wind 330 deg - Service	42.66	-4.67	-8.04	-659.64	380.12	0.71

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	-42.66	0.00	0.00	42.66	-0.00	0.001%
2	-0.05	-51.19	-42.32	0.05	51.19	42.32	0.000%
3	-0.05	-38.39	-42.32	0.05	38.39	42.32	0.000%
4	18.17	-51.19	-31.30	-18.17	51.19	31.30	0.000%
5	18.17	-38.39	-31.30	-18.17	38.39	31.30	0.000%
6	31.32	-51.19	-17.94	-31.32	51.19	17.94	0.000%
7	31.32	-38.39	-17.94	-31.32	38.39	17.94	0.000%
8	38.51	-51.19	0.04	-38.51	51.19	-0.04	0.000%
9	38.51	-38.39	0.04	-38.51	38.39	-0.04	0.000%
10	34.87	-51.19	19.96	-34.87	51.19	-19.96	0.000%
11	34.87	-38.39	19.96	-34.87	38.39	-19.96	0.000%
12	21.24	-51.19	36.59	-21.24	51.19	-36.59	0.000%
13	21.24	-38.39	36.59	-21.24	38.39	-36.59	0.000%
14	0.18	-51.19	42.23	-0.18	51.19	-42.23	0.000%
15	0.18	-38.39	42.23	-0.18	38.39	-42.23	0.000%
16	-18.05	-51.19	31.52	18.05	51.19	-31.52	0.000%
17	-18.05	-38.39	31.52	18.05	38.39	-31.52	0.000%
18	-31.34	-51.19	17.86	31.34	51.19	-17.86	0.000%
19	-31.34	-38.39	17.86	31.34	38.39	-17.86	0.000%
20	-38.62	-51.19	-0.21	38.62	51.19	0.21	0.000%
21	-38.62	-38.39	-0.21	38.62	38.39	0.21	0.000%
22	-35.17	-51.19	-20.38	35.17	51.19	20.38	0.000%
23	-35.17	-38.39	-20.38	35.17	38.39	20.38	0.000%
24	-21.53	-51.19	-37.04	21.53	51.19	37.04	0.000%
25	-21.53	-38.39	-37.04	21.53	38.39	37.04	0.000%
26	0.00	-105.51	0.00	0.00	105.51	-0.00	0.000%
27	-0.01	-105.51	-9.59	0.01	105.51	9.59	0.000%
28	3.96	-105.51	-6.81	-3.96	105.51	6.81	0.000%
29	6.83	-105.51	-3.91	-6.83	105.51	3.91	0.000%
30	8.84	-105.51	0.00	-8.84	105.51	-0.00	0.000%
31	8.12	-105.51	4.65	-8.12	105.51	-4.65	0.000%
32	4.84	-105.51	8.35	-4.84	105.51	-8.35	0.000%
33	0.03	-105.51	9.57	-0.03	105.51	-9.57	0.000%
34	-3.93	-105.51	6.85	3.93	105.51	-6.85	0.000%
35	-6.83	-105.51	3.90	6.83	105.51	-3.90	0.000%
36	-8.86	-105.51	-0.04	8.86	105.51	0.04	0.000%
37	-8.17	-105.51	-4.73	8.17	105.51	4.73	0.000%
38	-4.90	-105.51	-8.43	4.90	105.51	8.43	0.000%
39	-0.01	-42.66	-9.19	0.01	42.66	9.19	0.002%
40	3.95	-42.66	-6.79	-3.95	42.66	6.79	0.000%
41	6.80	-42.66	-3.90	-6.80	42.66	3.90	0.000%
42	8.36	-42.66	0.01	-8.36	42.66	-0.01	0.003%
43	7.57	-42.66	4.33	-7.57	42.66	-4.33	0.000%
44	4.61	-42.66	7.94	-4.61	42.66	-7.94	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
45	0.04	-42.66	9.17	-0.04	42.66	-9.17	0.002%
46	-3.92	-42.66	6.84	3.92	42.66	-6.84	0.000%
47	-6.80	-42.66	3.88	6.80	42.66	-3.88	0.000%
48	-8.38	-42.66	-0.05	8.38	42.66	0.05	0.003%
49	-7.64	-42.66	-4.42	7.64	42.66	4.42	0.000%
50	-4.67	-42.66	-8.04	4.67	42.66	8.04	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000942
2	Yes	19	0.00000001	0.00008509
3	Yes	18	0.00000001	0.00013693
4	Yes	22	0.00000001	0.00010086
5	Yes	22	0.00000001	0.00007114
6	Yes	22	0.00000001	0.00009903
7	Yes	22	0.00000001	0.00006987
8	Yes	18	0.00000001	0.00010115
9	Yes	18	0.00000001	0.00007530
10	Yes	22	0.00000001	0.00010106
11	Yes	22	0.00000001	0.00007057
12	Yes	22	0.00000001	0.00012399
13	Yes	22	0.00000001	0.00008598
14	Yes	19	0.00000001	0.00011277
15	Yes	19	0.00000001	0.00008233
16	Yes	22	0.00000001	0.00009651
17	Yes	22	0.00000001	0.00006821
18	Yes	22	0.00000001	0.00009625
19	Yes	22	0.00000001	0.00006806
20	Yes	18	0.00000001	0.00014964
21	Yes	18	0.00000001	0.00011170
22	Yes	22	0.00000001	0.00010856
23	Yes	22	0.00000001	0.00007588
24	Yes	22	0.00000001	0.00011586
25	Yes	22	0.00000001	0.00008012
26	Yes	15	0.00000001	0.00012358
27	Yes	20	0.00000001	0.00014993
28	Yes	21	0.00000001	0.00008178
29	Yes	21	0.00000001	0.00008171
30	Yes	20	0.00000001	0.00014188
31	Yes	21	0.00000001	0.00008266
32	Yes	21	0.00000001	0.00008906
33	Yes	20	0.00000001	0.00014319
34	Yes	20	0.00000001	0.00014884
35	Yes	20	0.00000001	0.00014849
36	Yes	20	0.00000001	0.00013490
37	Yes	21	0.00000001	0.00008367
38	Yes	21	0.00000001	0.00008776
39	Yes	15	0.00000001	0.00012683
40	Yes	17	0.00000001	0.00008258
41	Yes	17	0.00000001	0.00007897
42	Yes	14	0.00013259	0.00014891
43	Yes	17	0.00000001	0.00007593
44	Yes	17	0.00000001	0.00011608
45	Yes	15	0.00000001	0.00013227
46	Yes	17	0.00000001	0.00007226
47	Yes	17	0.00000001	0.00007245
48	Yes	14	0.00013252	0.00014944
49	Yes	17	0.00000001	0.00009521
50	Yes	17	0.00000001	0.00008949

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	131 - 126	21.40	39	1.66	0.01
L2	126 - 121	19.66	39	1.66	0.01
L3	121 - 116	17.92	39	1.66	0.01
L4	116 - 111	16.19	39	1.63	0.01
L5	111 - 110	14.52	39	1.55	0.01
L6	110 - 105	14.20	39	1.53	0.01
L7	105 - 100	12.64	39	1.44	0.01
L8	100 - 95	11.19	39	1.32	0.00
L9	95 - 90	9.88	39	1.18	0.00
L10	90 - 89.75	8.72	39	1.03	0.00
L11	89.75 - 84.75	8.66	39	1.03	0.00
L12	84.75 - 84.58	7.64	39	0.94	0.00
L13	84.58 - 84.33	7.60	39	0.93	0.00
L14	84.33 - 83.42	7.55	39	0.93	0.00
L15	83.42 - 83.17	7.38	39	0.92	0.00
L16	83.17 - 83	7.33	39	0.91	0.00
L17	83 - 82.75	7.30	39	0.91	0.00
L18	82.75 - 77.75	7.25	39	0.91	0.00
L19	77.75 - 70	6.33	39	0.84	0.00
L20	74 - 69	5.70	39	0.78	0.00
L21	69 - 67.08	4.89	39	0.74	0.00
L22	67.08 - 66.83	4.60	39	0.71	0.00
L23	66.83 - 64.08	4.57	39	0.71	0.00
L24	64.08 - 63.83	4.17	39	0.67	0.00
L25	63.83 - 62.44	4.13	39	0.66	0.00
L26	62.44 - 62.19	3.94	39	0.64	0.00
L27	62.19 - 57.19	3.91	39	0.64	0.00
L28	57.19 - 53.5	3.27	39	0.58	0.00
L29	53.5 - 53.25	2.84	39	0.54	0.00
L30	53.25 - 52.58	2.81	39	0.53	0.00
L31	52.58 - 52.33	2.74	39	0.52	0.00
L32	52.33 - 47.33	2.71	39	0.52	0.00
L33	47.33 - 44.58	2.20	39	0.46	0.00
L34	44.58 - 44.33	1.94	39	0.43	0.00
L35	44.33 - 39.33	1.92	39	0.43	0.00
L36	39.33 - 34.08	1.50	39	0.37	0.00
L37	39 - 33.08	1.48	39	0.36	0.00
L38	33.08 - 28.08	1.05	39	0.32	0.00
L39	28.08 - 26.85	0.74	39	0.27	0.00
L40	26.85 - 26.6	0.67	39	0.25	0.00
L41	26.6 - 21.6	0.66	39	0.25	0.00
L42	21.6 - 18	0.43	39	0.20	0.00
L43	18 - 17.75	0.29	39	0.16	0.00
L44	17.75 - 17.5	0.28	39	0.16	0.00
L45	17.5 - 17.25	0.27	39	0.16	0.00
L46	17.25 - 17.08	0.27	39	0.15	0.00
L47	17.08 - 16.83	0.26	39	0.15	0.00
L48	16.83 - 13	0.25	39	0.15	0.00
L49	13 - 12.75	0.15	39	0.11	0.00
L50	12.75 - 11.85	0.14	39	0.11	0.00
L51	11.85 - 11.6	0.12	39	0.10	0.00
L52	11.6 - 6.5	0.11	39	0.10	0.00
L53	6.5 - 6.25	0.03	39	0.05	0.00
L54	6.25 - 4	0.03	39	0.05	0.00
L55	4 - 3.75	0.01	39	0.03	0.00
L56	3.75 - 0	0.01	39	0.03	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
121.0000	80010798 w/ Mount Pipe	39	17.92	1.66	0.01	22968
109.0000	(2) SBNHH-1D65B w/ Mount Pipe	39	13.88	1.52	0.01	3170
103.0000	VHLP2.5-18	39	12.05	1.40	0.01	2460

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
99.0000	800MHZ 2X50W RRH W/FILTER	39	10.92	1.30	0.00	2172
97.0000	TIMING 2000	39	10.39	1.24	0.00	2057
87.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	8.09	0.98	0.00	3119

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	131 - 126	98.47	2	7.64	0.05
L2	126 - 121	90.50	2	7.63	0.05
L3	121 - 116	82.54	2	7.62	0.05
L4	116 - 111	74.63	2	7.49	0.04
L5	111 - 110	66.96	2	7.15	0.03
L6	110 - 105	65.48	2	7.07	0.03
L7	105 - 100	58.31	2	6.64	0.03
L8	100 - 95	51.64	2	6.10	0.02
L9	95 - 90	45.59	2	5.47	0.02
L10	90 - 89.75	40.24	2	4.76	0.01
L11	89.75 - 84.75	39.99	2	4.74	0.01
L12	84.75 - 84.58	35.25	2	4.33	0.01
L13	84.58 - 84.33	35.09	2	4.31	0.01
L14	84.33 - 83.42	34.87	2	4.30	0.01
L15	83.42 - 83.17	34.06	2	4.24	0.01
L16	83.17 - 83	33.83	2	4.22	0.01
L17	83 - 82.75	33.68	2	4.22	0.01
L18	82.75 - 77.75	33.46	2	4.20	0.01
L19	77.75 - 70	29.24	2	3.87	0.01
L20	74 - 69	26.30	2	3.62	0.01
L21	69 - 67.08	22.60	2	3.42	0.01
L22	67.08 - 66.83	21.25	2	3.29	0.01
L23	66.83 - 64.08	21.08	2	3.27	0.01
L24	64.08 - 63.83	19.25	2	3.08	0.01
L25	63.83 - 62.44	19.09	2	3.06	0.01
L26	62.44 - 62.19	18.21	2	2.98	0.01
L27	62.19 - 57.19	18.06	2	2.96	0.01
L28	57.19 - 53.5	15.10	2	2.68	0.00
L29	53.5 - 53.25	13.11	2	2.47	0.00
L30	53.25 - 52.58	12.98	2	2.46	0.00
L31	52.58 - 52.33	12.64	2	2.42	0.00
L32	52.33 - 47.33	12.51	2	2.41	0.00
L33	47.33 - 44.58	10.14	2	2.13	0.00
L34	44.58 - 44.33	8.95	2	1.98	0.00
L35	44.33 - 39.33	8.85	2	1.97	0.00
L36	39.33 - 34.08	6.93	2	1.69	0.00
L37	39 - 33.08	6.81	2	1.68	0.00
L38	33.08 - 28.08	4.84	2	1.49	0.00
L39	28.08 - 26.85	3.42	24	1.23	0.00
L40	26.85 - 26.6	3.11	24	1.16	0.00
L41	26.6 - 21.6	3.05	24	1.15	0.00
L42	21.6 - 18	1.97	24	0.91	0.00
L43	18 - 17.75	1.34	24	0.74	0.00
L44	17.75 - 17.5	1.31	24	0.73	0.00
L45	17.5 - 17.25	1.27	24	0.72	0.00
L46	17.25 - 17.08	1.23	24	0.71	0.00
L47	17.08 - 16.83	1.20	24	0.71	0.00
L48	16.83 - 13	1.17	24	0.69	0.00
L49	13 - 12.75	0.68	24	0.53	0.00
L50	12.75 - 11.85	0.65	24	0.52	0.00
L51	11.85 - 11.6	0.56	24	0.48	0.00
L52	11.6 - 6.5	0.53	24	0.47	0.00
L53	6.5 - 6.25	0.15	24	0.23	0.00
L54	6.25 - 4	0.14	24	0.22	0.00
L55	4 - 3.75	0.06	24	0.14	0.00
L56	3.75 - 0	0.05	24	0.13	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
121.0000	80010798 w/ Mount Pipe	2	82.54	7.62	0.05	6158
109.0000	(2) SBNHH-1D65B w/ Mount Pipe	2	64.01	6.98	0.03	718
103.0000	VHLP2.5-18	2	55.57	6.44	0.03	551
99.0000	800MHz 2X50W RRH W/FILTER	2	50.38	5.98	0.02	483
97.0000	TIMING 2000	2	47.93	5.74	0.02	456
87.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	37.33	4.52	0.01	685

Compression Checks Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K
L1	131 - 126 (1)	TP11.7155x10.525x0.1875	5.0000	0.0000	0.0	6.9600	-0.10
L2	126 - 121 (2)	TP12.906x11.7155x0.1875	5.0000	0.0000	0.0	7.6788	-0.22
L3	121 - 116 (3)	TP14.0964x12.906x0.1875	5.0000	0.0000	0.0	8.3975	-3.41
L4	116 - 111 (4)	TP15.2869x14.0964x0.1875	5.0000	0.0000	0.0	9.1163	-3.63
L5	111 - 110 (5)	TP15.525x15.2869x0.1875	1.0000	0.0000	0.0	9.2600	-3.68
L6	110 - 105 (6)	TP16.7758x15.525x0.25	5.0000	0.0000	0.0	13.3032	-6.79
L7	105 - 100 (7)	TP18.0265x16.7758x0.25	5.0000	0.0000	0.0	14.3101	-7.35
L8	100 - 95 (8)	TP19.2773x18.0265x0.25	5.0000	0.0000	0.0	15.3169	-11.25
L9	95 - 90 (9)	TP20.528x19.2773x0.25	5.0000	0.0000	0.0	16.3238	-11.98
L10	90 - 89.75 (10)	TP20.5905x20.528x0.5	0.2500	0.0000	0.0	32.3458	-12.05
L11	89.75 - 84.75 (11)	TP21.8413x20.5905x0.4813	5.0000	0.0000	0.0	33.1000	-15.53
L12	84.75 - 84.58 (12)	TP21.8838x21.8413x0.475	0.1700	0.0000	0.0	32.7448	-15.58
L13	84.58 - 84.33 (13)	TP21.9464x21.8838x0.6375	0.2500	0.0000	0.0	43.7417	-15.64
L14	84.33 - 83.42 (14)	TP22.174x21.9464x0.625	0.9100	0.0000	0.0	43.3673	-15.84
L15	83.42 - 83.17 (15)	TP22.2365x22.174x0.95	0.2500	0.0000	0.0	65.1155	-15.93
L16	83.17 - 83 (16)	TP22.2791x22.2365x0.95	0.1700	0.0000	0.0	65.2456	-15.98
L17	83 - 82.75 (17)	TP22.3416x22.2791x0.7	0.2500	0.0000	0.0	48.7801	-16.04
L18	82.75 - 77.75 (18)	TP23.5923x22.3416x0.6625	5.0000	0.0000	0.0	48.9151	-17.28
L19	77.75 - 70 (19)	TP25.531x23.5923x0.65	7.7500	0.0000	0.0	49.9817	-18.24
L20	70 - 69 (20)	TP25.281x24.0304x0.7	5.0000	0.0000	0.0	55.4055	-20.33
L21	69 - 67.08 (21)	TP25.7612x25.281x0.6875	1.9200	0.0000	0.0	55.5069	-20.86
L22	67.08 - 66.83 (22)	TP25.8237x25.7612x0.6875	0.2500	0.0000	0.0	55.6453	-20.97
L23	66.83 - 64.08 (23)	TP26.5115x25.8237x0.675	2.7500	0.0000	0.0	56.1557	-21.75
L24	64.08 - 63.83 (24)	TP26.5741x26.5115x0.7375	0.2500	0.0000	0.0	61.3554	-21.85
L25	63.83 - 62.44 (25)	TP26.9217x26.5741x0.7375	1.3900	0.0000	0.0	62.1810	-22.29
L26	62.44 - 62.19 (26)	TP26.9843x26.9217x0.8625	0.2500	0.0000	0.0	72.5467	-22.39
L27	62.19 - 57.19 (27)	TP28.2348x26.9843x0.8375	5.0000	0.0000	0.0	73.8838	-24.10
L28	57.19 - 53.5 (28)	TP29.1578x28.2348x0.8125	3.6900	0.0000	0.0	74.1583	-25.40
L29	53.5 - 53.25 (29)	TP29.2203x29.1578x0.8375	0.2500	0.0000	0.0	76.5413	-25.51
L30	53.25 - 52.58 (30)	TP29.3879x29.2203x0.825	0.6700	0.0000	0.0	75.8773	-25.75
L31	52.58 - 52.33 (31)	TP29.4504x29.3879x0.8375	0.2500	0.0000	0.0	77.1618	-25.85
L32	52.33 - 47.33 (32)	TP30.701x29.4504x0.8125	5.0000	0.0000	0.0	78.1957	-27.71
L33	47.33 - 44.58 (33)	TP31.3888x30.701x0.8	2.7500	0.0000	0.0	78.7967	-28.75
L34	44.58 - 44.33 (34)	TP31.4513x31.3888x0.8	0.2500	0.0000	0.0	78.9578	-28.86
L35	44.33 - 39.33 (35)	TP32.7019x31.4513x0.775	5.0000	0.0000	0.0	79.6736	-30.78
L36	39.33 - 34.08 (36)	TP34.015x32.7019x0.775	5.2500	0.0000	0.0	79.8795	-30.92
L37	34.08 - 33.08 (37)	TP33.638x32.1594x0.8188	5.9200	0.0000	0.0	86.5290	-34.81
L38	33.08 - 28.08 (38)	TP34.8868x33.638x0.8063	5.0000	0.0000	0.0	88.4827	-36.90
L39	28.08 - 26.85 (39)	TP35.194x34.8868x0.7938	1.2300	0.0000	0.0	87.9281	-37.42
L40	26.85 - 26.6 (40)	TP35.2564x35.194x0.8688	0.2500	0.0000	0.0	96.2006	-37.55
L41	26.6 - 21.6 (41)	TP36.5052x35.2564x0.8563	5.0000	0.0000	0.0	98.2943	-39.90
L42	21.6 - 18 (42)	TP37.4044x36.5052x0.8438	3.6000	0.0000	0.0	99.3363	-41.63
L43	18 - 17.75 (43)	TP37.4668x37.4044x0.9938	0.2500	0.0000	0.0	116.7150	-41.77
L44	17.75 - 17.5 (44)	TP37.5292x37.4668x0.9938	0.2500	0.0000	0.0	116.9150	-41.91
L45	17.5 - 17.25 (45)	TP37.5917x37.5292x0.9938	0.2500	0.0000	0.0	117.1150	-42.04
L46	17.25 - 17.08 (46)	TP37.6341x37.5917x0.9938	0.1700	0.0000	0.0	117.2500	-42.13
L47	17.08 - 16.83 (47)	TP37.6966x37.6341x0.8938	0.2500	0.0000	0.0	105.9200	-42.25
L48	16.83 - 13 (48)	TP38.6531x37.6966x0.8813	3.8300	0.0000	0.0	107.1880	-44.14

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K
L49	13 - 12.75 (49)	TP38.7156x38.6531x1.0438	0.2500	0.0000	0.0	126.6160	-44.30
L50	12.75 - 11.85 (50)	TP38.9404x38.7156x1.0438	0.9000	0.0000	0.0	127.3720	-44.81
L51	11.85 - 11.6 (51)	TP39.0028x38.9404x0.8188	0.2500	0.0000	0.0	100.6740	-44.94
L52	11.6 - 6.5 (52)	TP40.2766x39.0028x0.7938	5.1000	0.0000	0.0	100.9190	-47.51
L53	6.5 - 6.25 (53)	TP40.339x40.2766x0.9188	0.2500	0.0000	0.0	116.6260	-47.66
L54	6.25 - 4 (54)	TP40.901x40.339x0.9188	2.2500	0.0000	0.0	118.2890	-48.87
L55	4 - 3.75 (55)	TP40.9634x40.901x1.0938	0.2500	0.0000	0.0	140.2020	-48.89
L56	3.75 - 0 (56)	TP41.9x40.9634x1.0688	3.7500	0.0000	0.0	137.2990	-49.05

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft
L1	131 - 126 (1)	TP11.7155x10.525x0.1875	0.63
L2	126 - 121 (2)	TP12.906x11.7155x0.1875	2.59
L3	121 - 116 (3)	TP14.0964x12.906x0.1875	36.53
L4	116 - 111 (4)	TP15.2869x14.0964x0.1875	78.64
L5	111 - 110 (5)	TP15.525x15.2869x0.1875	87.41
L6	110 - 105 (6)	TP16.7758x15.525x0.25	161.81
L7	105 - 100 (7)	TP18.0265x16.7758x0.25	239.31
L8	100 - 95 (8)	TP19.2773x18.0265x0.25	335.30
L9	95 - 90 (9)	TP20.528x19.2773x0.25	445.44
L10	90 - 89.75 (10)	TP20.5905x20.528x0.5	451.03
L11	89.75 - 84.75 (11)	TP21.8413x20.5905x0.4813	573.17
L12	84.75 - 84.58 (12)	TP21.8838x21.8413x0.475	577.73
L13	84.58 - 84.33 (13)	TP21.9464x21.8838x0.6375	584.46
L14	84.33 - 83.42 (14)	TP22.174x21.9464x0.625	609.02
L15	83.42 - 83.17 (15)	TP22.2365x22.174x0.95	615.79
L16	83.17 - 83 (16)	TP22.2791x22.2365x0.95	620.41
L17	83 - 82.75 (17)	TP22.3416x22.2791x0.7	627.20
L18	82.75 - 77.75 (18)	TP23.5923x22.3416x0.6625	765.39
L19	77.75 - 70 (19)	TP25.531x23.5923x0.65	871.91
L20	70 - 69 (20)	TP25.281x24.0304x0.7	1018.07
L21	69 - 67.08 (21)	TP25.7612x25.281x0.6875	1075.47
L22	67.08 - 66.83 (22)	TP25.8237x25.7612x0.6875	1082.99
L23	66.83 - 64.08 (23)	TP26.5115x25.8237x0.675	1166.50
L24	64.08 - 63.83 (24)	TP26.5741x26.5115x0.7375	1174.16
L25	63.83 - 62.44 (25)	TP26.9217x26.5741x0.7375	1216.95
L26	62.44 - 62.19 (26)	TP26.9843x26.9217x0.8625	1224.68
L27	62.19 - 57.19 (27)	TP28.2348x26.9843x0.8375	1381.77
L28	57.19 - 53.5 (28)	TP29.1578x28.2348x0.8125	1500.71
L29	53.5 - 53.25 (29)	TP29.2203x29.1578x0.8375	1508.86
L30	53.25 - 52.58 (30)	TP29.3879x29.2203x0.825	1530.78
L31	52.58 - 52.33 (31)	TP29.4504x29.3879x0.8375	1538.97
L32	52.33 - 47.33 (32)	TP30.701x29.4504x0.8125	1705.48
L33	47.33 - 44.58 (33)	TP31.3888x30.701x0.8	1799.13
L34	44.58 - 44.33 (34)	TP31.4513x31.3888x0.8	1807.72
L35	44.33 - 39.33 (35)	TP32.7019x31.4513x0.775	1982.02
L36	39.33 - 34.08 (36)	TP34.015x32.7019x0.775	1993.70
L37	34.08 - 33.08 (37)	TP33.638x32.1594x0.8188	2207.08
L38	33.08 - 28.08 (38)	TP34.8868x33.638x0.8063	2392.55
L39	28.08 - 26.85 (39)	TP35.194x34.8868x0.7938	2438.87
L40	26.85 - 26.6 (40)	TP35.2564x35.194x0.8688	2448.31
L41	26.6 - 21.6 (41)	TP36.5052x35.2564x0.8563	2639.52
L42	21.6 - 18 (42)	TP37.4044x36.5052x0.8438	2779.84
L43	18 - 17.75 (43)	TP37.4668x37.4044x0.9938	2789.67
L44	17.75 - 17.5 (44)	TP37.5292x37.4668x0.9938	2799.50
L45	17.5 - 17.25 (45)	TP37.5917x37.5292x0.9938	2809.35
L46	17.25 - 17.08 (46)	TP37.6341x37.5917x0.9938	2816.05
L47	17.08 - 16.83 (47)	TP37.6966x37.6341x0.8938	2825.91
L48	16.83 - 13 (48)	TP38.6531x37.6966x0.8813	2978.31
L49	13 - 12.75 (49)	TP38.7156x38.6531x1.0438	2988.34
L50	12.75 - 11.85 (50)	TP38.9404x38.7156x1.0438	3024.53
L51	11.85 - 11.6 (51)	TP39.0028x38.9404x0.8188	3034.72
L52	11.6 - 6.5 (52)	TP40.2766x39.0028x0.7938	3244.93
L53	6.5 - 6.25 (53)	TP40.339x40.2766x0.9188	3255.36
L54	6.25 - 4 (54)	TP40.901x40.339x0.9188	3349.64
L55	4 - 3.75 (55)	TP40.9634x40.901x1.0938	3349.64

Section No.	Elevation ft	Size	M _{ux} kip-ft
L56	3.75 - 0 (56)	TP41.9x40.9634x1.0688	3360.18

Pole Shear Design Data

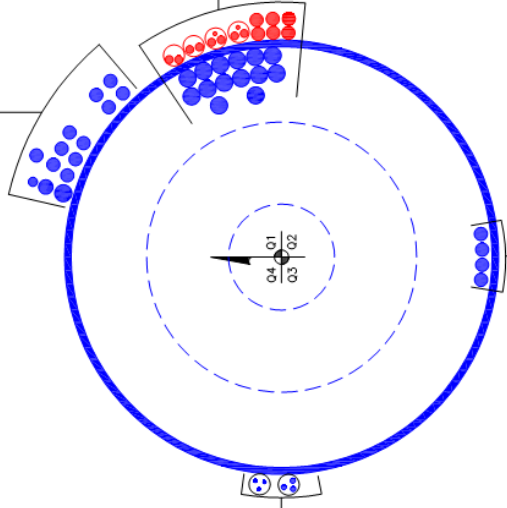
Section No.	Elevation ft	Size	Actual V _u / K
L1	131 - 126 (1)	TP11.7155x10.525x0.1875	0.26
L2	126 - 121 (2)	TP12.906x11.7155x0.1875	0.54
L3	121 - 116 (3)	TP14.0964x12.906x0.1875	8.14
L4	116 - 111 (4)	TP15.2869x14.0964x0.1875	8.71
L5	111 - 110 (5)	TP15.525x15.2869x0.1875	8.82
L6	110 - 105 (6)	TP16.7758x15.525x0.25	14.94
L7	105 - 100 (7)	TP18.0265x16.7758x0.25	16.01
L8	100 - 95 (8)	TP19.2773x18.0265x0.25	21.72
L9	95 - 90 (9)	TP20.528x19.2773x0.25	22.36
L10	90 - 89.75 (10)	TP20.5905x20.528x0.5	22.39
L11	89.75 - 84.75 (11)	TP21.8413x20.5905x0.4813	26.83
L12	84.75 - 84.58 (12)	TP21.8838x21.8413x0.475	26.86
L13	84.58 - 84.33 (13)	TP21.9464x21.8838x0.6375	26.90
L14	84.33 - 83.42 (14)	TP22.174x21.9464x0.625	27.07
L15	83.42 - 83.17 (15)	TP22.2365x22.174x0.95	27.11
L16	83.17 - 83 (16)	TP22.2791x22.2365x0.95	27.14
L17	83 - 82.75 (17)	TP22.3416x22.2791x0.7	27.19
L18	82.75 - 77.75 (18)	TP23.5923x22.3416x0.6625	28.08
L19	77.75 - 70 (19)	TP25.531x23.5923x0.65	28.73
L20	70 - 69 (20)	TP25.281x24.0304x0.7	29.72
L21	69 - 67.08 (21)	TP25.7612x25.281x0.6875	30.08
L22	67.08 - 66.83 (22)	TP25.8237x25.7612x0.6875	30.11
L23	66.83 - 64.08 (23)	TP26.5115x25.8237x0.675	30.61
L24	64.08 - 63.83 (24)	TP26.5741x26.5115x0.7375	30.64
L25	63.83 - 62.44 (25)	TP26.9217x26.5741x0.7375	30.91
L26	62.44 - 62.19 (26)	TP26.9843x26.9217x0.8625	30.94
L27	62.19 - 57.19 (27)	TP28.2348x26.9843x0.8375	31.88
L28	57.19 - 53.5 (28)	TP29.1578x28.2348x0.8125	32.59
L29	53.5 - 53.25 (29)	TP29.2203x29.1578x0.8375	32.63
L30	53.25 - 52.58 (30)	TP29.3879x29.2203x0.825	32.76
L31	52.58 - 52.33 (31)	TP29.4504x29.3879x0.8375	32.81
L32	52.33 - 47.33 (32)	TP30.701x29.4504x0.8125	33.79
L33	47.33 - 44.58 (33)	TP31.3888x30.701x0.8	34.32
L34	44.58 - 44.33 (34)	TP31.4513x31.3888x0.8	34.35
L35	44.33 - 39.33 (35)	TP32.7019x31.4513x0.775	35.36
L36	39.33 - 34.08 (36)	TP34.015x32.7019x0.775	35.41
L37	34.08 - 33.08 (37)	TP33.638x32.1594x0.8188	36.64
L38	33.08 - 28.08 (38)	TP34.8868x33.638x0.8063	37.54
L39	28.08 - 26.85 (39)	TP35.194x34.8868x0.7938	37.76
L40	26.85 - 26.6 (40)	TP35.2564x35.194x0.8688	37.79
L41	26.6 - 21.6 (41)	TP36.5052x35.2564x0.8563	38.68
L42	21.6 - 18 (42)	TP37.4044x36.5052x0.8438	39.28
L43	18 - 17.75 (43)	TP37.4668x37.4044x0.9938	39.30
L44	17.75 - 17.5 (44)	TP37.5292x37.4668x0.9938	39.35
L45	17.5 - 17.25 (45)	TP37.5917x37.5292x0.9938	39.39
L46	17.25 - 17.08 (46)	TP37.6341x37.5917x0.9938	39.42
L47	17.08 - 16.83 (47)	TP37.6966x37.6341x0.8938	39.46
L48	16.83 - 13 (48)	TP38.6531x37.6966x0.8813	40.11
L49	13 - 12.75 (49)	TP38.7156x38.6531x1.0438	40.13
L50	12.75 - 11.85 (50)	TP38.9404x38.7156x1.0438	40.75
L51	11.85 - 11.6 (51)	TP39.0028x38.9404x0.8188	40.78
L52	11.6 - 6.5 (52)	TP40.2766x39.0028x0.7938	41.67
L53	6.5 - 6.25 (53)	TP40.339x40.2766x0.9188	41.70
L54	6.25 - 4 (54)	TP40.901x40.339x0.9188	42.12
L55	4 - 3.75 (55)	TP40.9634x40.901x1.0938	42.16
L56	3.75 - 0 (56)	TP41.9x40.9634x1.0688	42.40

APPENDIX B
BASE LEVEL DRAWING

(OTHER CONSIDERED EQUIPMENT)
(14) 1-5/8" TO 109 FT LEVEL

(PROPOSED EQUIPMENT CONFIGURATION--IN CONDUIT)
(2) 3/8" TO 121 FT LEVEL
(8) 3/4" TO 121 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(6) 1-1/4" TO 121 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 87 FT LEVEL
(11) 1-1/4" TO 87 FT LEVEL
(1) 1-3/8" TO 87 FT LEVEL
(1) 1-5/8" TO 87 FT LEVEL



(OTHER CONSIDERED EQUIPMENT)
(4) 1-1/4" TO 97 FT LEVEL

(OTHER CONSIDERED EQUIPMENT--IN-(2) 2 IN CONDUIT)
(3) 5/16" TO 97 FT LEVEL
(3) 1/2" TO 97 FT LEVEL

BUSINESS UNIT: 806376 TOWER ID: C_BASELEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	131	21	0	12	10.525	15.525	0.1875	Auto	A572-65
2	110	40	4	12	15.53	25.531	0.25	Auto	A572-65
3	74	39.92	4.92	12	24.03	34.015	0.3125	Auto	A572-65
4	39	39	0	12	32.16	41.9	0.3438	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	0	plate	100FP-040100	3			o					o			o	
2	17.08	44.58	plate	100FP-040075	3	o			o					o			
3	44.58	67.08	plate	100FP-040075	3				o				o				o
4	67.08	84.58	plate	100FP-040075	3	o				o				o			
5	4	13	plate	CCI-AFP-060100	3	o				o				o			
6	11.85	39	plate	CCI-AFP-060100	1			o									
7	18	53.5	plate	CCI-AFP-060100	2							o					o
8	11.85	26.85	plate	CCI-AFP-060100	2								o				o
9	39	62.44	plate	CCI-AFP-045100	1			o									
10	53.5	64.08	plate	CCI-AFP-045100	2							o					o
11	83	90	plate	CCI-SFP-045100	3			o				o					o
12	0	4	plate	FP 1.25 x 7_1	3				c				c				c
13	0	18	plate	CCI-WSFP-065125	3				o				o				o
14	0	6.5	plate	CCI-WSFP-065125	1								o				
15	0	17.5	plate	J-060100; (1) (1.1875)	3		o				o				o		
16	17.5	52.58	plate	J-060100; (1) (1.1875)	3		o				o				o		
17	52.58	83.42	plate	4.5 x 1.25; (1) (1.1875)	3		o				o				o		
18																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L _u (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	4	1	4	0.5	20.000	20.000	20.000	2.750	1.1875	A514-GR100
2	4	0.75	3	0.375	17.000	17.000	15.000	2.063	1.1875	A514-GR100
3	4	0.75	3	0.375	17.000	17.000	15.000	2.063	1.1875	A514-GR100
4	4	0.75	3	0.375	17.000	17.000	15.000	2.063	1.1875	A514-GR100
5	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
6	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
7	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
8	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
9	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
10	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
11	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
12	1.25	7	8.75	3.5	n/a	n/a	0.000	8.750	0.0000	A572-65
13	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
14	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
15	6	1	6	0.5	n/a	30.000	16.000	4.750	1.1875	A572-65
16	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
17	4.5	1.25	5.625	0.625	21.000	21.000	24.000	4.063	1.1875	A572-65

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	131 - 126	5		12	10.525	11.715	0.1875	A572-65	1.000
2	126 - 121	5		12	11.715	12.906	0.1875	A572-65	1.000
3	121 - 116	5		12	12.906	14.096	0.1875	A572-65	1.000
4	116 - 111	5		12	14.096	15.287	0.1875	A572-65	1.000
5	111 - 110	1	0	12	15.287	15.525	0.1875	A572-65	1.000
6	110 - 105	5		12	15.525	16.776	0.25	A572-65	1.000
7	105 - 100	5		12	16.776	18.027	0.25	A572-65	1.000
8	100 - 95	5		12	18.027	19.277	0.25	A572-65	1.000
9	95 - 90	5		12	19.277	20.528	0.25	A572-65	1.000
10	90 - 89.75	0.25		12	20.528	20.591	0.5	A572-65	0.924
11	89.75 - 84.75	5		12	20.591	21.841	0.48125	A572-65	0.934
12	84.75 - 84.58	0.17		12	21.841	21.884	0.475	A572-65	0.945
13	84.58 - 84.33	0.25		12	21.884	21.946	0.6375	A572-65	0.914
14	84.33 - 83.42	0.91		12	21.946	22.174	0.625	A572-65	0.927
15	83.42 - 83.17	0.25		12	22.174	22.237	0.95	A572-65	0.877
16	83.17 - 83	0.17		12	22.237	22.279	0.95	A572-65	0.876
17	83 - 82.75	0.25		12	22.279	22.342	0.7	A572-65	0.896
18	82.75 - 77.75	5		12	22.342	23.592	0.6625	A572-65	0.914
19	77.75 - 74	7.75	4	12	23.592	25.531	0.65	A572-65	0.909
20	74 - 69	5		12	24.030	25.281	0.7	A572-65	0.921
21	69 - 67.08	1.92		12	25.281	25.761	0.6875	A572-65	0.928
22	67.08 - 66.83	0.25		12	25.761	25.824	0.6875	A572-65	0.927
23	66.83 - 64.08	2.75		12	25.824	26.512	0.675	A572-65	0.931
24	64.08 - 63.83	0.25		12	26.512	26.574	0.7375	A572-65	1.000
25	63.83 - 62.44	1.39		12	26.574	26.922	0.7375	A572-65	0.992
26	62.44 - 62.19	0.25		12	26.922	26.984	0.8625	A572-65	0.913
27	62.19 - 57.19	5		12	26.984	28.235	0.8375	A572-65	0.914
28	57.19 - 53.5	3.69		12	28.235	29.158	0.8125	A572-65	0.923
29	53.5 - 53.25	0.25		12	29.158	29.220	0.8375	A572-65	0.934
30	53.25 - 52.58	0.67		12	29.220	29.388	0.825	A572-65	0.945
31	52.58 - 52.33	0.25		12	29.388	29.450	0.8375	A572-65	0.945
32	52.33 - 47.33	5		12	29.450	30.701	0.8125	A572-65	0.948
33	47.33 - 44.58	2.75		12	30.701	31.389	0.8	A572-65	0.950
34	44.58 - 44.33	0.25		12	31.389	31.451	0.8	A572-65	0.949
35	44.33 - 39.33	5		12	31.451	32.702	0.775	A572-65	0.956
36	39.33 - 39	5.25	4.92	12	32.702	34.015	0.775	A572-65	0.954
37	39 - 33.08	5.92		12	32.159	33.638	0.8188	A572-65	0.947
38	33.08 - 28.08	5		12	33.638	34.887	0.8063	A572-65	0.941
39	28.08 - 26.85	1.23		12	34.887	35.194	0.7938	A572-65	0.951
40	26.85 - 26.6	0.25		12	35.194	35.256	0.8688	A572-65	0.995
41	26.6 - 21.6	5		12	35.256	36.505	0.8563	A572-65	0.988
42	21.6 - 18	3.6		12	36.505	37.404	0.8438	A572-65	0.988
43	18 - 17.75	0.25		12	37.404	37.467	0.9938	A572-65	0.947
44	17.75 - 17.5	0.25		12	37.467	37.529	0.9938	A572-65	0.946
45	17.5 - 17.25	0.25		12	37.529	37.592	0.9938	A572-65	0.945
46	17.25 - 17.08	0.17		12	37.592	37.634	0.9938	A572-65	0.945
47	17.08 - 16.83	0.25		12	37.634	37.697	0.8938	A572-65	0.961
48	16.83 - 13	3.83		12	37.697	38.653	0.8813	A572-65	0.960
49	13 - 12.75	0.25		12	38.653	38.716	1.0438	A572-65	0.955
50	12.75 - 11.85	0.9		12	38.716	38.940	1.0438	A572-65	0.952
51	11.85 - 11.6	0.25		12	38.940	39.003	0.8188	A572-65	1.026
52	11.6 - 6.5	5.1		12	39.003	40.277	0.7938	A572-65	1.037
53	6.5 - 6.25	0.25		12	40.277	40.339	0.9188	A572-65	0.968
54	6.25 - 4	2.25		12	40.339	40.901	0.9188	A572-65	0.959
55	4 - 3.75	0.25		12	40.901	40.963	1.0938	A572-65	0.868
56	3.75 - 0	3.75		12	40.963	41.900	1.0688	A572-65	0.874

TNX Section Forces

Increment (ft):		TNX Output			
5					
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)	
1	131 - 126	0.10	0.63	0.26	
2	126 - 121	0.22	2.59	0.54	
3	121 - 116	3.41	36.53	8.14	
4	116 - 111	3.63	78.64	8.71	
5	111 - 110	3.68	87.41	8.82	
6	110 - 105	6.79	161.81	14.94	
7	105 - 100	7.35	239.31	16.01	
8	100 - 95	11.25	335.30	21.72	
9	95 - 90	11.98	445.44	22.36	
10	90 - 89.75	12.05	451.03	22.39	
11	89.75 - 84.75	15.53	573.17	26.83	
12	84.75 - 84.58	15.58	577.73	26.86	
13	84.58 - 84.33	15.64	584.45	26.90	
14	84.33 - 83.42	15.84	609.02	27.07	
15	83.42 - 83.17	15.93	615.79	27.11	
16	83.17 - 83	15.98	620.41	27.14	
17	83 - 82.75	16.04	627.20	27.19	
18	82.75 - 77.75	17.28	765.39	28.08	
19	77.75 - 74	18.24	871.91	28.73	
20	74 - 69	20.33	1018.07	29.72	
21	69 - 67.08	20.86	1075.47	30.08	
22	67.08 - 66.83	20.97	1083.00	30.11	
23	66.83 - 64.08	21.75	1166.50	30.61	
24	64.08 - 63.83	21.85	1174.16	30.64	
25	63.83 - 62.44	22.29	1216.95	30.91	
26	62.44 - 62.19	22.39	1224.68	30.94	
27	62.19 - 57.19	24.10	1381.76	31.88	
28	57.19 - 53.5	25.40	1500.71	32.59	
29	53.5 - 53.25	25.51	1508.86	32.63	
30	53.25 - 52.58	25.75	1530.77	32.76	
31	52.58 - 52.33	25.85	1538.97	32.81	
32	52.33 - 47.33	27.71	1705.48	33.79	
33	47.33 - 44.58	28.75	1799.13	34.32	
34	44.58 - 44.33	28.86	1807.71	34.35	
35	44.33 - 39.33	30.78	1982.02	35.36	
36	39.33 - 39	30.92	1993.70	35.41	
37	39 - 33.08	34.81	2207.08	36.64	
38	33.08 - 28.08	36.90	2392.55	37.54	
39	28.08 - 26.85	37.42	2438.87	37.76	
40	26.85 - 26.6	37.55	2448.31	37.79	
41	26.6 - 21.6	39.90	2639.52	38.68	
42	21.6 - 18	41.63	2779.84	39.28	
43	18 - 17.75	41.77	2789.66	39.30	
44	17.75 - 17.5	41.91	2799.50	39.35	
45	17.5 - 17.25	42.04	2809.35	39.39	
46	17.25 - 17.08	42.13	2816.05	39.42	
47	17.08 - 16.83	42.25	2825.91	39.46	
48	16.83 - 13	44.14	2978.31	40.11	
49	13 - 12.75	44.30	2988.34	40.13	
50	12.75 - 11.85	44.81	3024.55	40.29	
51	11.85 - 11.6	44.94	3034.73	40.78	
52	11.6 - 6.5	47.51	3244.94	41.67	
53	6.5 - 6.25	47.66	3255.36	41.70	
54	6.25 - 4	48.87	3349.64	42.12	
55	4 - 3.75	49.03	3360.17	42.16	
56	3.75 - 0	51.18	3519.55	42.86	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
131 - 126	Pole	TP11.715x10.525x0.1875	Pole	0.5%	Pass
126 - 121	Pole	TP12.906x11.715x0.1875	Pole	1.7%	Pass
121 - 116	Pole	TP14.096x12.906x0.1875	Pole	20.5%	Pass
116 - 111	Pole	TP15.287x14.096x0.1875	Pole	36.9%	Pass
111 - 110	Pole	TP15.525x15.287x0.1875	Pole	39.7%	Pass
110 - 105	Pole	TP16.776x15.525x0.25	Pole	47.6%	Pass
105 - 100	Pole	TP18.027x16.776x0.25	Pole	60.6%	Pass
100 - 95	Pole	TP19.277x18.027x0.25	Pole	74.2%	Pass
95 - 90	Pole	TP20.528x19.277x0.25	Pole	86.6%	Pass
90 - 89.75	Pole + Reinf.	TP20.591x20.528x0.5	Reinf. 11 Tension Rupture	77.8%	Pass
89.75 - 84.75	Pole + Reinf.	TP21.841x20.591x0.4813	Reinf. 11 Tension Rupture	90.4%	Pass
84.75 - 84.58	Pole + Reinf.	TP21.884x21.841x0.475	Reinf. 11 Tension Rupture	90.9%	Pass
84.58 - 84.33	Pole + Reinf.	TP21.946x21.884x0.6375	Reinf. 11 Tension Rupture	70.4%	Pass
84.33 - 83.42	Pole + Reinf.	TP22.174x21.946x0.625	Reinf. 11 Tension Rupture	72.3%	Pass
83.42 - 83.17	Pole + Reinf.	TP22.237x22.174x0.95	Reinf. 17 Tension Rupture	50.7%	Pass
83.17 - 83	Pole + Reinf.	TP22.279x22.237x0.95	Reinf. 17 Tension Rupture	51.0%	Pass
83 - 82.75	Pole + Reinf.	TP22.342x22.279x0.7	Reinf. 17 Tension Rupture	67.8%	Pass
82.75 - 77.75	Pole + Reinf.	TP23.592x22.342x0.6625	Reinf. 17 Tension Rupture	76.7%	Pass
77.75 - 74	Pole + Reinf.	TP25.531x23.592x0.65	Reinf. 17 Tension Rupture	82.7%	Pass
74 - 69	Pole + Reinf.	TP25.281x24.03x0.7	Reinf. 17 Tension Rupture	84.0%	Pass
69 - 67.08	Pole + Reinf.	TP25.761x25.281x0.6875	Reinf. 17 Tension Rupture	86.3%	Pass
67.08 - 66.83	Pole + Reinf.	TP25.824x25.761x0.6875	Reinf. 17 Tension Rupture	86.6%	Pass
66.83 - 64.08	Pole + Reinf.	TP26.512x25.824x0.675	Reinf. 17 Tension Rupture	89.7%	Pass
64.08 - 63.83	Pole + Reinf.	TP26.574x26.512x0.7375	Reinf. 17 Tension Rupture	86.1%	Pass
63.83 - 62.44	Pole + Reinf.	TP26.922x26.574x0.7375	Reinf. 17 Tension Rupture	87.5%	Pass
62.44 - 62.19	Pole + Reinf.	TP26.984x26.922x0.8625	Reinf. 17 Tension Rupture	72.5%	Pass
62.19 - 57.19	Pole + Reinf.	TP28.235x26.984x0.8375	Reinf. 17 Tension Rupture	76.8%	Pass
57.19 - 53.5	Pole + Reinf.	TP29.158x28.235x0.8125	Reinf. 17 Tension Rupture	79.7%	Pass
53.5 - 53.25	Pole + Reinf.	TP29.22x29.158x0.8375	Reinf. 9 Tension Rupture	79.0%	Pass
53.25 - 52.58	Pole + Reinf.	TP29.388x29.22x0.825	Reinf. 9 Tension Rupture	79.5%	Pass
52.58 - 52.33	Pole + Reinf.	TP29.45x29.388x0.8375	Reinf. 9 Tension Rupture	78.6%	Pass
52.33 - 47.33	Pole + Reinf.	TP30.701x29.45x0.8125	Reinf. 9 Tension Rupture	82.2%	Pass
47.33 - 44.58	Pole + Reinf.	TP31.389x30.701x0.8	Reinf. 9 Tension Rupture	84.0%	Pass
44.58 - 44.33	Pole + Reinf.	TP31.451x31.389x0.8	Reinf. 9 Tension Rupture	84.2%	Pass
44.33 - 39.33	Pole + Reinf.	TP32.702x31.451x0.775	Reinf. 9 Tension Rupture	87.3%	Pass
39.33 - 39	Pole + Reinf.	TP34.015x32.702x0.775	Reinf. 9 Tension Rupture	87.5%	Pass
39 - 33.08	Pole + Reinf.	TP33.638x32.159x0.8188	Reinf. 16 Tension Rupture	77.3%	Pass
33.08 - 28.08	Pole + Reinf.	TP34.887x33.638x0.8063	Reinf. 16 Tension Rupture	79.5%	Pass
28.08 - 26.85	Pole + Reinf.	TP35.194x34.887x0.7938	Reinf. 16 Tension Rupture	80.0%	Pass
26.85 - 26.6	Pole + Reinf.	TP35.256x35.194x0.8688	Reinf. 6 Tension Rupture	77.1%	Pass
26.6 - 21.6	Pole + Reinf.	TP36.505x35.256x0.8563	Reinf. 6 Tension Rupture	79.1%	Pass
21.6 - 18	Pole + Reinf.	TP37.404x36.505x0.8438	Reinf. 6 Tension Rupture	80.4%	Pass
18 - 17.75	Pole + Reinf.	TP37.467x37.404x0.9938	Reinf. 16 Tension Rupture	66.3%	Pass
17.75 - 17.5	Pole + Reinf.	TP37.529x37.467x0.9938	Reinf. 16 Tension Rupture	66.4%	Pass
17.5 - 17.25	Pole + Reinf.	TP37.592x37.529x0.9938	Reinf. 15 Tension Rupture	66.5%	Pass
17.25 - 17.08	Pole + Reinf.	TP37.634x37.592x0.9938	Reinf. 15 Tension Rupture	66.5%	Pass
17.08 - 16.83	Pole + Reinf.	TP37.697x37.634x0.8938	Reinf. 15 Tension Rupture	72.7%	Pass
16.83 - 13	Pole + Reinf.	TP38.653x37.697x0.8813	Reinf. 15 Tension Rupture	74.0%	Pass
13 - 12.75	Pole + Reinf.	TP38.716x38.653x1.0438	Reinf. 15 Tension Rupture	62.6%	Pass
12.75 - 11.85	Pole + Reinf.	TP38.94x38.716x1.0438	Reinf. 15 Tension Rupture	62.9%	Pass
11.85 - 11.6	Pole + Reinf.	TP39.003x38.94x0.8188	Reinf. 15 Tension Rupture	80.9%	Pass
11.6 - 6.5	Pole + Reinf.	TP40.277x39.003x0.7938	Reinf. 15 Tension Rupture	82.6%	Pass
6.5 - 6.25	Pole + Reinf.	TP40.339x40.277x0.9188	Reinf. 15 Tension Rupture	76.7%	Pass
6.25 - 4	Pole + Reinf.	TP40.901x40.339x0.9188	Reinf. 15 Tension Rupture	77.4%	Pass
4 - 3.75	Pole + Reinf.	TP40.963x40.901x1.0938	Reinf. 12 Connection	69.0%	Pass
3.75 - 0	Pole + Reinf.	TP41.9x40.963x1.0688	Reinf. 12 Connection	70.0%	Pass
				Summary	
			Pole	86.6%	Pass
			Reinforcement	90.9%	Pass
			Overall	90.9%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*																		
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	
131 - 126	118	n/a	118	6.95	n/a	6.95	0.5%																		
126 - 121	159	n/a	159	7.67	n/a	7.67	1.7%																		
121 - 116	208	n/a	208	8.39	n/a	8.39	20.5%																		
116 - 111	266	n/a	266	9.10	n/a	9.10	36.9%																		
111 - 110	278	n/a	278	9.25	n/a	9.25	39.7%																		
110 - 105	464	n/a	464	13.28	n/a	13.28	47.6%																		
105 - 100	578	n/a	578	14.29	n/a	14.29	60.6%																		
100 - 95	709	n/a	709	15.30	n/a	15.30	74.2%																		
95 - 90	858	n/a	858	16.30	n/a	16.30	86.6%																		
90 - 89.75	866	799	1664	16.35	13.50	29.85	43.9%																		
89.75 - 84.75	1036	892	1928	17.36	13.50	30.86	52.0%																		
84.75 - 84.58	1042	896	1937	17.39	13.50	30.89	52.3%																		
84.58 - 84.33	1051	1486	2537	17.44	22.50	39.94	40.5%																		
84.33 - 83.42	1084	1516	2600	17.62	22.50	40.12	41.8%																		
83.42 - 83.17	1094	2703	3796	17.67	39.38	57.05	29.1%																		
83.17 - 83	1100	2712	3812	17.71	39.38	57.08	29.2%																		
83 - 82.75	1109	1795	2905	17.76	25.88	43.63	38.9%																		
82.75 - 77.75	1309	1990	3299	18.76	25.88	44.64	44.9%																		
77.75 - 74	1473	2142	3615	19.52	25.88	45.39	49.2%																		
74 - 69	2002	2269	4271	25.09	25.88	50.96	47.4%																		
69 - 67.08	2120	2351	4471	25.57	25.88	51.45	48.7%																		
67.08 - 66.83	2135	2362	4498	25.63	25.88	51.51	48.9%																		
66.83 - 64.08	2313	2483	4796	26.33	25.88	52.20	51.0%																		
64.08 - 63.83	2353	2954	5307	26.39	34.88	61.26	51.2%																		
63.83 - 62.44	2448	3028	5476	26.74	34.88	61.61	52.3%																		
62.44 - 62.19	2440	3902	6342	26.80	39.38	66.18	41.5%																		
62.19 - 57.19	2800	4255	7055	28.06	39.38	67.43	44.6%																		
57.19 - 53.5	3087	4525	7612	28.98	39.38	68.36	46.9%																		
53.5 - 53.25	3110	4720	7830	29.05	42.38	71.42	46.9%																		
53.25 - 52.58	3164	4772	7936	29.22	42.38	71.59	47.3%																		
52.58 - 52.33	3185	4902	8087	29.28	43.50	72.78	46.8%																		
52.33 - 47.33	3612	5309	8921	30.53	43.50	74.03	49.7%																		
47.33 - 44.58	3863	5540	9403	31.23	43.50	74.73	51.3%																		
44.58 - 44.33	3886	5561	9447	31.29	43.50	74.79	51.5%																		
44.33 - 39.33	4374	5994	10367	32.55	43.50	76.05	54.3%																		
39.33 - 39	4407	6023	10430	32.63	43.50	76.13	54.4%																		
39 - 33.08	5222	6791	12013	36.81	45.00	81.81	51.3%																		
33.08 - 28.08	5832	7286	13118	38.19	45.00	83.19	53.5%																		
28.08 - 26.85	5989	7410	13399	38.53	45.00	83.53	54.1%																		
26.85 - 26.6	6062	8655	14717	38.59	57.00	95.59	53.3%																		
26.6 - 21.6	6735	9258	15992	39.97	57.00	96.97	55.5%																		
21.6 - 18	7249	9704	16953	40.97	57.00	97.97	57.1%																		
18 - 17.75	7240	12565	19804	41.04	69.38	110.41	46.1%																		
17.75 - 17.5	7276	12605	19881	41.11	69.38	110.48	46.2%																		
17.5 - 17.25	7313	12646	19958	41.18	69.38	110.55	46.3%																		
17.25 - 17.08	7338	12673	20011	41.22	69.38	110.60	46.3%																		
17.08 - 16.83	7375	11044	18419	41.29	60.38	101.67	50.7%																		
16.83 - 13	7956	11591	19547	42.35	60.38	102.72	52.2%																		
13 - 12.75	7995	15204	23199	42.42	78.38	120.79	44.2%																		
12.75 - 11.85	8136	15375	23511	42.67	78.38	121.04	44.5%																		
11.85 - 11.6	8189	10557	18746	42.74	60.38	103.11	57.3%																		
11.6 - 6.5	9025	11232	20257	44.14	60.38	104.52	59.4%																		
6.5 - 6.25	9238	14174	23411	44.21	68.50	112.71	55.3%																		
6.25 - 4	9630	14560	24190	44.83	68.50	113.33	56.2%																		
4 - 3.75	9629	18810	28440	44.90	76.75	121.65	48.9%																		
3.75 - 0	10308	19609	29918	45.94	76.75	122.69	50.3%																		

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

Monopole Flange Plate Connection

Elevation = 110 ft.



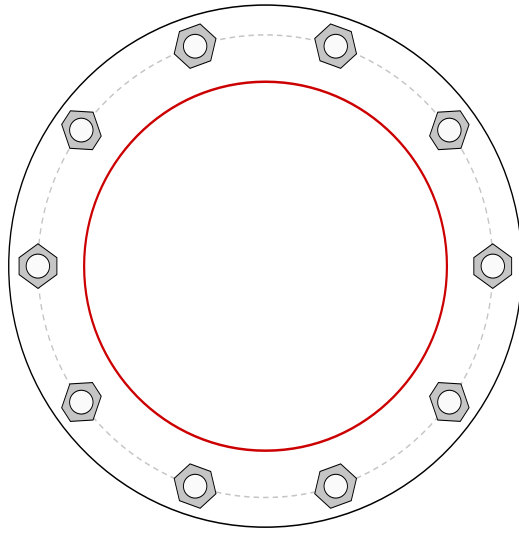
BU #	806376
Site Name	HRT 100 943239
Order #	

Applied Loads	
Moment (kip-ft)	87.41
Axial Force (kips)	3.68
Shear Force (kips)	8.82

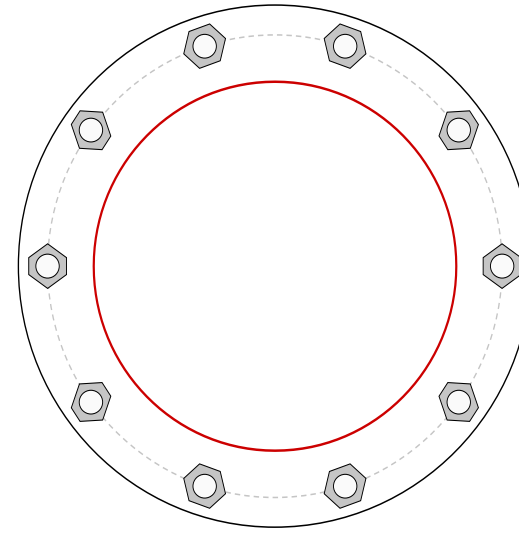
TIA-222 Revision	H
------------------	---

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(10) 1" ϕ bolts (A325 X; Fy=92 ksi, Fu=120 ksi) on 19.45" BC

Top Plate Data

21.95" OD x 1.375" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Plate Data

21.95" OD x 1.375" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

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

Analysis Results

Bolt Capacity

Max Load (kips)	21.18
Allowable (kips)	54.53
Stress Rating:	37.0% Pass

Top Plate Capacity

Max Stress (ksi):	11.20	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	23.7%	Pass
Tension Side Stress Rating:	12.3%	Pass

Bottom Plate Capacity

Max Stress (ksi):	11.20	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	23.7%	Pass
Tension Side Stress Rating:	12.3%	Pass

Monopole Base Plate Connection

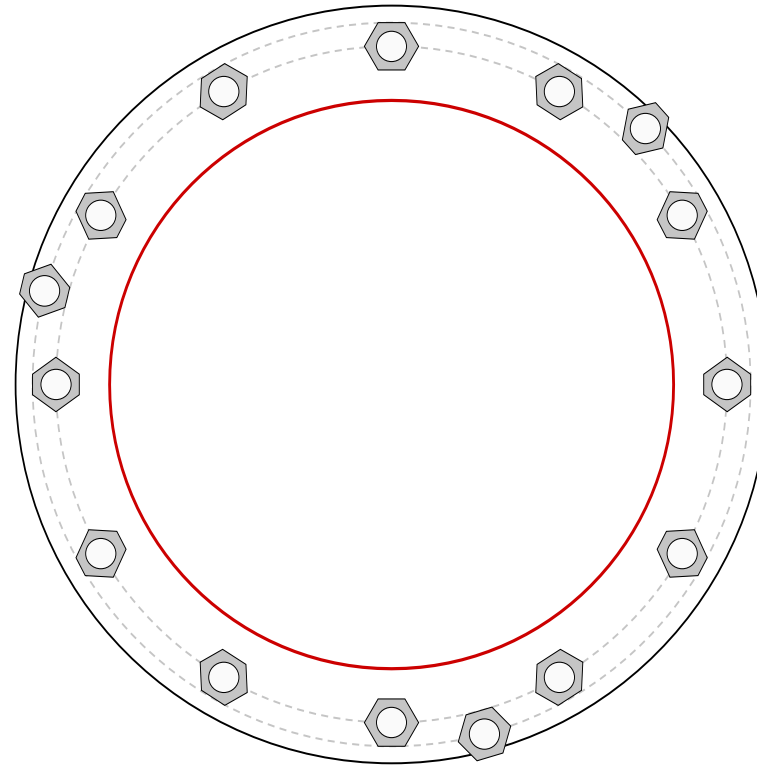


Site Info	
BU #	806376
Site Name	HRT 100 943239
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.25

Applied Loads	
Moment (kip-ft)	3519.55
Axial Force (kips)	51.18
Shear Force (kips)	42.86

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results																												
Anchor Rod Data <hr/> GROUP 1: (12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 49.88" BC GROUP 2: (3) 2-1/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 53.38" BC <hr/> Base Plate Data <hr/> 55.88" OD x 2.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi) <hr/> Stiffener Data <hr/> N/A <hr/> Pole Data <hr/> 41.9" x 0.3438" 12-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)	Anchor Rod Summary (units of kips, kip-in) <hr/> GROUP 1: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">$P_{u_c} = 223.51$</td> <td style="width: 33%;">$\phi P_{n_c} = 243.75$</td> <td style="width: 33%;">Stress Rating</td> </tr> <tr> <td>$V_u = 3.57$</td> <td>$\phi V_n = 73.13$</td> <td>87.6%</td> </tr> <tr> <td>$M_u = n/a$</td> <td>$\phi M_n = n/a$</td> <td>Pass</td> </tr> </table> GROUP 2: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">$P_{u_c} = 234.62$</td> <td style="width: 33%;">$\phi P_{n_c} = 341.25$</td> <td style="width: 33%;">Stress Rating</td> </tr> <tr> <td>$V_u = 0$</td> <td>$\phi V_n = 102.38$</td> <td>65.5%</td> </tr> <tr> <td>$M_u = n/a$</td> <td>$\phi M_n = n/a$</td> <td>Pass</td> </tr> </table> Base Plate Summary <hr/> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Max Stress (ksi):</td> <td style="width: 33%;">32.09</td> <td style="width: 33%;">(Flexural)</td> </tr> <tr> <td>Allowable Stress (ksi):</td> <td>54</td> <td></td> </tr> <tr> <td>Stress Rating:</td> <td>56.6%</td> <td>Pass</td> </tr> </table>		$P_{u_c} = 223.51$	$\phi P_{n_c} = 243.75$	Stress Rating	$V_u = 3.57$	$\phi V_n = 73.13$	87.6%	$M_u = n/a$	$\phi M_n = n/a$	Pass	$P_{u_c} = 234.62$	$\phi P_{n_c} = 341.25$	Stress Rating	$V_u = 0$	$\phi V_n = 102.38$	65.5%	$M_u = n/a$	$\phi M_n = n/a$	Pass	Max Stress (ksi):	32.09	(Flexural)	Allowable Stress (ksi):	54		Stress Rating:	56.6%	Pass
$P_{u_c} = 223.51$	$\phi P_{n_c} = 243.75$	Stress Rating																											
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Max Stress (ksi):	32.09	(Flexural)																											
Allowable Stress (ksi):	54																												
Stress Rating:	56.6%	Pass																											

Pier and Pad Foundation



BU #: 806376
 Site Name: hrt 100 943239
 App. Number:

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	51	kips
Base Shear, V_{u_comp} :	43	kips
Moment, M_u :	3520	ft-kips
Tower Height, H :	131	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	286.54	43.00	14.3%	Pass
<i>Bearing Pressure (ksf)</i>	7.50	3.41	45.4%	Pass
<i>Overtuning (kip*ft)</i>	5363.43	3896.25	72.6%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	5767.57	3756.50	62.0%	Pass
<i>Pier Compression (kip)</i>	13497.04	78.99	0.6%	Pass
<i>Pad Flexure (kip*ft)</i>	2592.84	1776.84	65.3%	Pass
<i>Pad Shear - 1-way (kips)</i>	674.44	297.96	42.1%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3397.26	2253.90	63.2%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, d_{pier} :	6	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, S_c :	10	
Pier Rebar Quantity, mc :	36	
Pier Tie/Spiral Size, S_t :	4	
Pier Tie/Spiral Quantity, mt :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	72.6%
Structural Rating*:	65.3%

Pad Properties		
Depth, D :	8	ft
Pad Width, W :	22	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom), S_p :	10	
Pad Rebar Quantity (Bottom), mp :	15	
Pad Clear Cover, cc_{pad} :	3	in

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

Soil Properties		
Total Soil Unit Weight, γ :	115	pcf
Ultimate Gross Bearing, Q_{ult} :	10.000	ksf
Cohesion, C_u :		ksf
Friction Angle, ϕ :	33	degrees
SPT Blow Count, N_{blows} :	33	
Base Friction, μ :		
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	16	ft

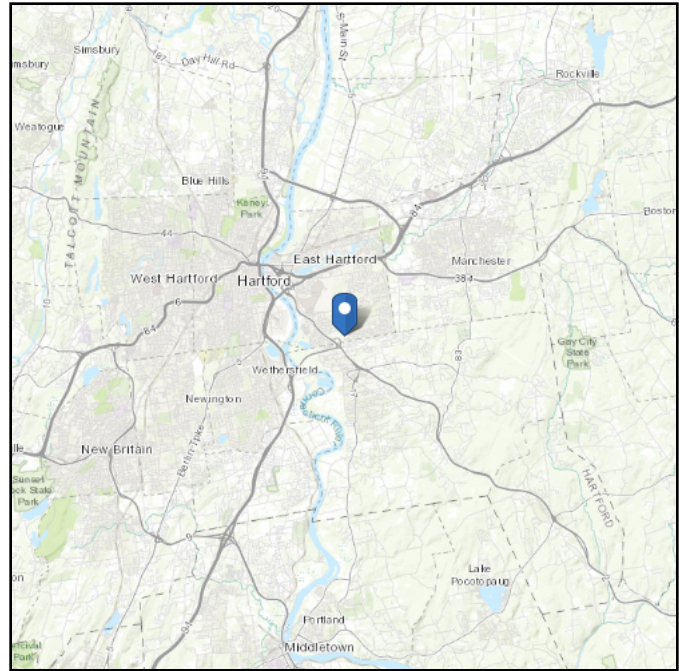
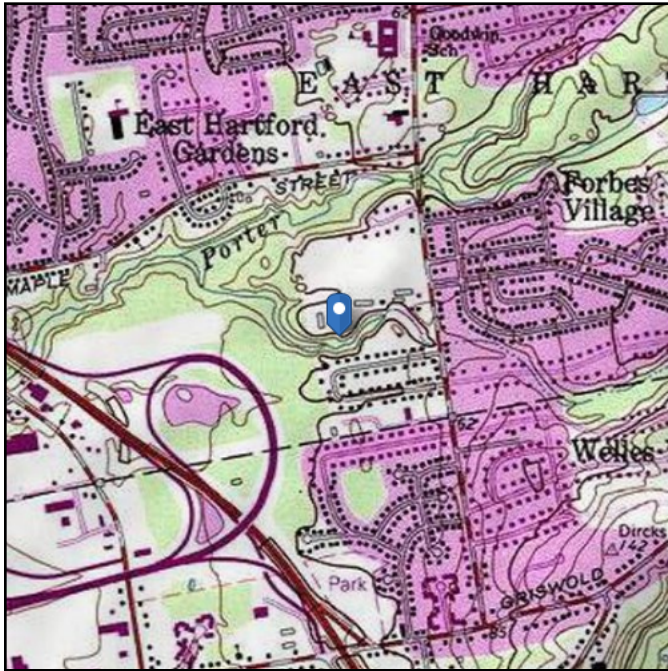
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ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 41.23 ft (NAVD 88)
Latitude: 41.731472
Longitude: -72.607778



Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	93 Vmph
100-year MRI	101 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: Thu Jun 27 2019

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).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

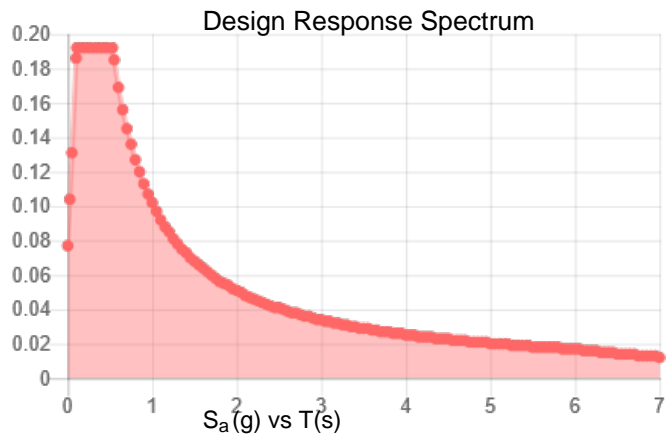
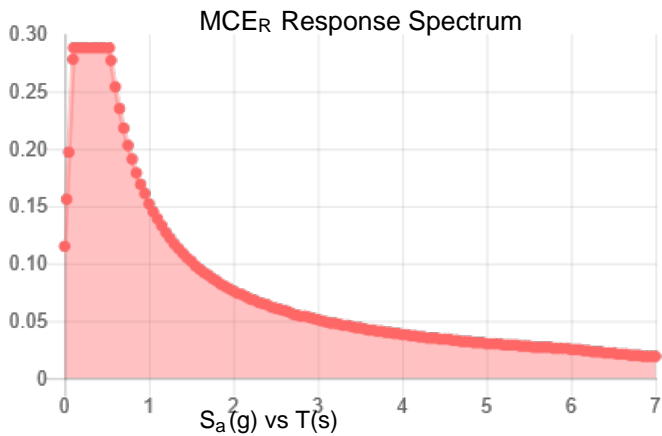
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.18	S_{DS} :	0.192
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.288	PGA _M :	0.145
S_{M1} :	0.152	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Jun 27 2019

Date Source:

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

Ice

Results:

Ice Thickness: 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: Thu Jun 27 2019

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

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

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

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

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

Exhibit E

Mount Analysis

Date: **December 27, 2018**

Charles McGuirt
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 Analysis Report**

Carrier Designation: **AT&T Update**
Carrier Site Number: 10090919
Carrier Site Name: East Hartford South

Crown Castle Designation: **Crown Castle BU Number:** 806376
Crown Castle Site Name: HRT 100 943239
Crown Castle JDE Job Number: 548094
Crown Castle Order Number: 471133 Rev. 0

Engineering Firm Designation: **Infinigy Report Designation:** 600-003

Site Data: **1455 Forbes Street, East Hartford, CT, 06118**
Latitude 41°43'53.30" Longitude -72°36'28.00"

Structure Information: **Tower Height & Type:** **130 ft Monopole**
Mount Elevation: **121 ft**
Mount Type: **10 ft T-Arm**

Dear Charles McGuirt,

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

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

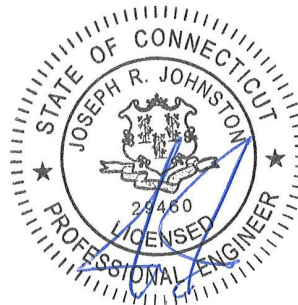
T-Arm

Sufficient

The analysis has been performed in accordance with the 2015 International Building Code/ 2018 Connecticut Building Code and TIA-222-H Standard based upon an ultimate 3-second gust wind speed of 125 mph. Exposure Category B with Risk Category II used in this analysis.

Mount analysis prepared by: Ishan Patel, E.I.T
Respectfully Submitted by:

Joe Johnston, P.E.
VP Structural Engineering



12/27/2018

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3) ANALYSIS PROCEDURE

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3.2) Assumptions

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Table 4 - Tieback End Reactions

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6) APPENDIX B

Software Input Calculations

7) APPENDIX C

Software Analysis Output

8) APPENDIX D

Additional Calculations

1) INTRODUCTION

This mount is a existing 10 ft T-Arm based on the CD's dated December 14, 2017. This Mount is installed at 121 ft. elevation on 3 sectors of the 135 ft. monopole.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Ice Thickness:	1.7 in
Wind Speed with Ice:	50 mph
Man Live Load at End-Points:	250 lb

Table 1 - Final Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Mount type
121.0	121.0	3	Kathrein 800 10121	T-Arm
		3	Kathrein 800 10798	
		6	Kathrein 800 10965	
		3	Ericsson RRUS 32	
		3	Ericsson RRUS 4449 B5/B12	
		3	Ericsson RRUS 4478 B14	
		3	Ericsson RRUS 8843 B2/B66A	
		3	Ericsson RRUS E2 B29	
		6	P/Wave LGP21401	
		4	Raycap DC6-48-60-18-8F	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T	471133, Rev. 0	CCI Sites
Construction Drawings	Centek	CD's	CCI Sites

3.1) Analysis Method

RISA-3D (Version 17.0.2), 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.

3.2) Assumptions

- 1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
- 2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 4) Steel grades have been assumed as follows, unless noted otherwise:

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

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (T-Arm, Alpha Sector)

Notes	Component	Centerline (ft)	% Capacity	Pass / Fail
1,2	MountPipe	121.0	67.3%	Pass
	Horizontal		79.4%	
	Stand-off		72.4%	
	Bolts		30.6%	
Structure Rating (max from all components) =				79.4%

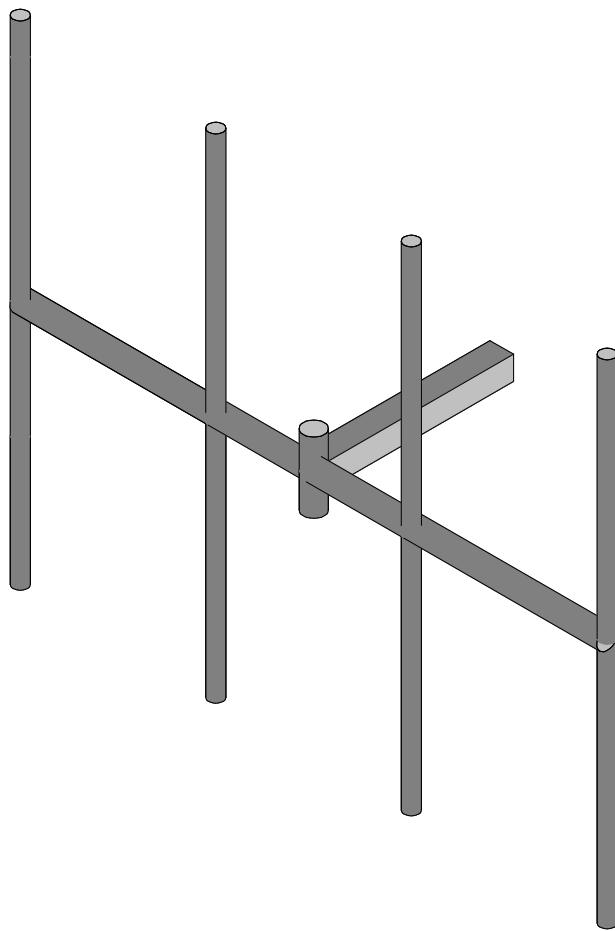
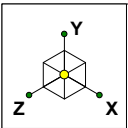
Notes:

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

4.1) Recommendations

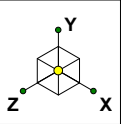
The Sector Frame Mount has sufficient capacity to support the proposed loading. Add 84" long Mount Pipe, STD 2.4" O.D. Sch. 40 Pipe attached to the existing horizontal.

APPENDIX A
WIRE FRAME AND RENDERED MODELS

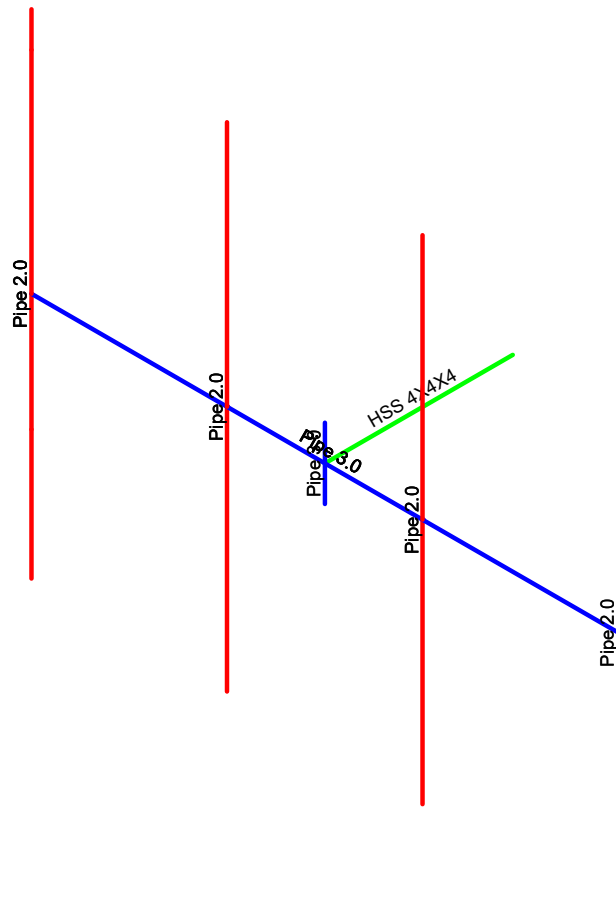


Envelope Only Solution

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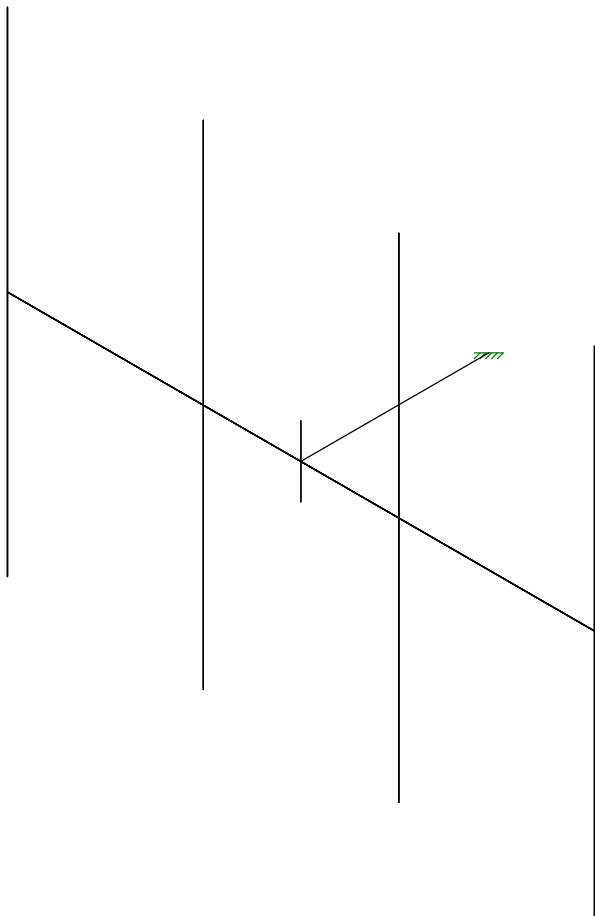
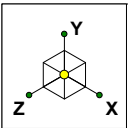


Section Sets	
■	Pipe 3.0
■	HSS 4X4X4
■	Pipe 2.0



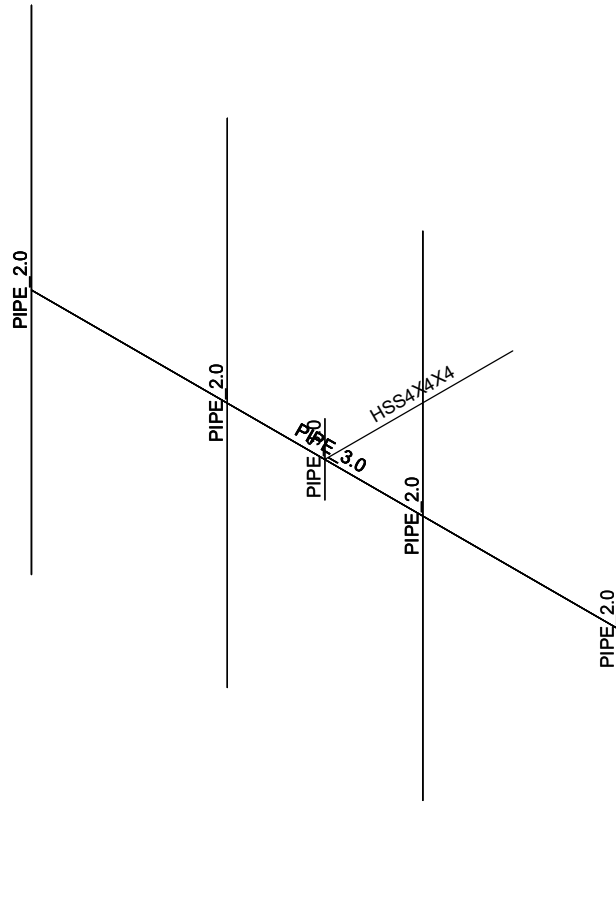
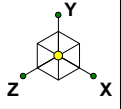
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Envelope Only Solution

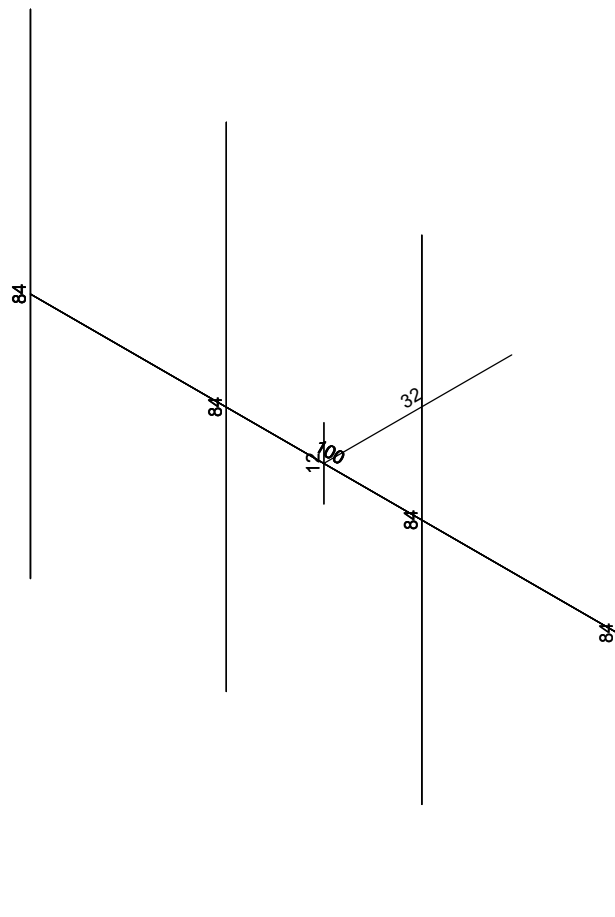
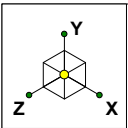
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IP
600-003

806376

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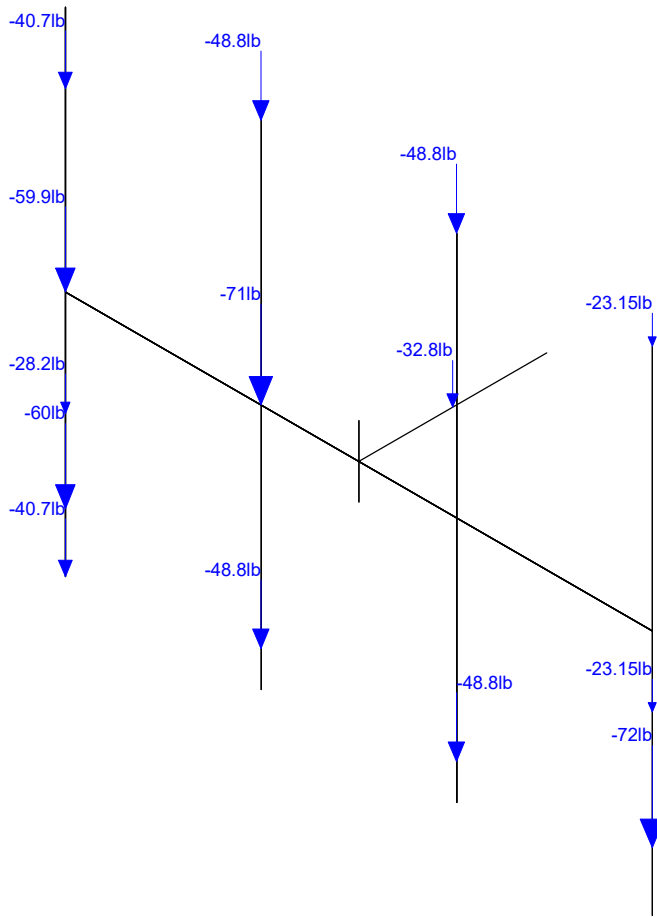
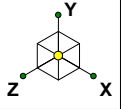
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806376.r3d



Member Length (in) Displayed
Envelope Only Solution

Infinigy Engineering, PLLC.	806376	Existing Configuration
IP		Dec 27, 2018 at 5:04 PM
600-003		806376.r3d



Loads: BLC 1, Self Weight
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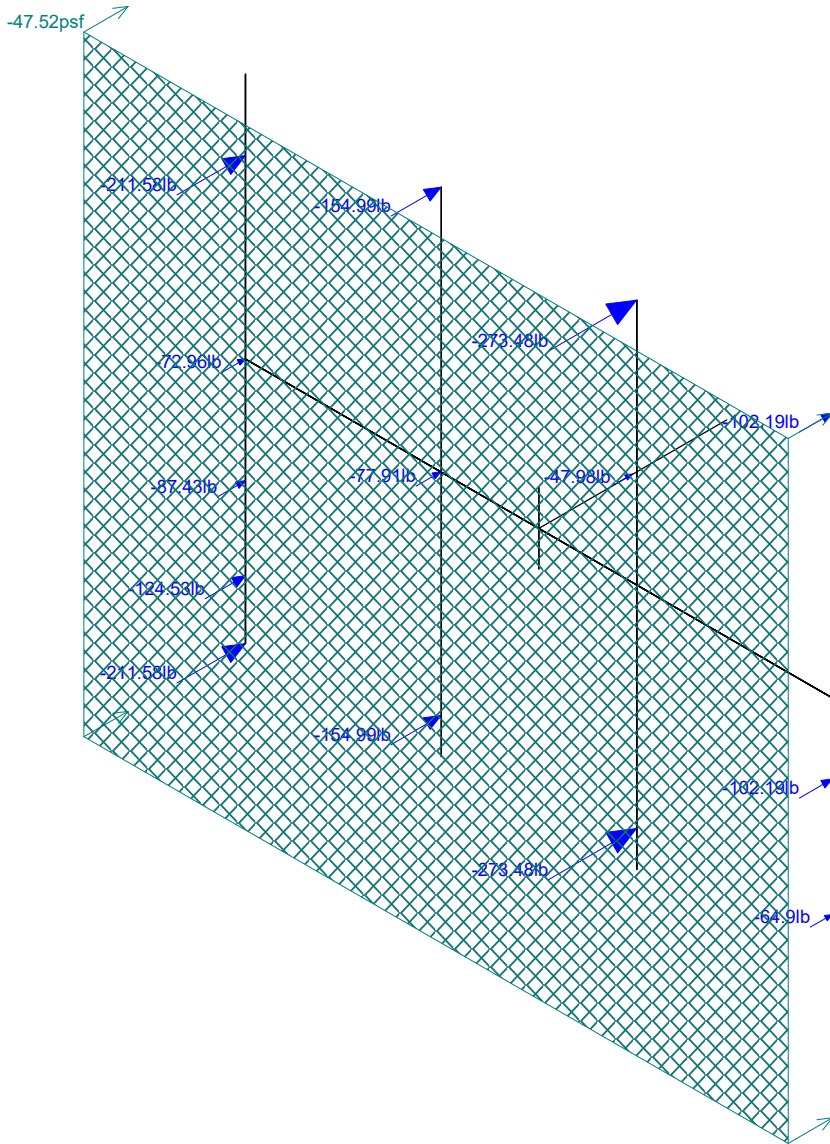
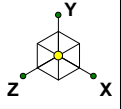
Infinigy Engineering, PLLC.
IP
600-003

806376

Existing Configuration

Dec 27, 2018 at 5:05 PM

806376.r3d



Loads: BLC 2, Wind Load AZI 000
Envelope Only Solution

Infinigy Engineering, PLLC.

IP

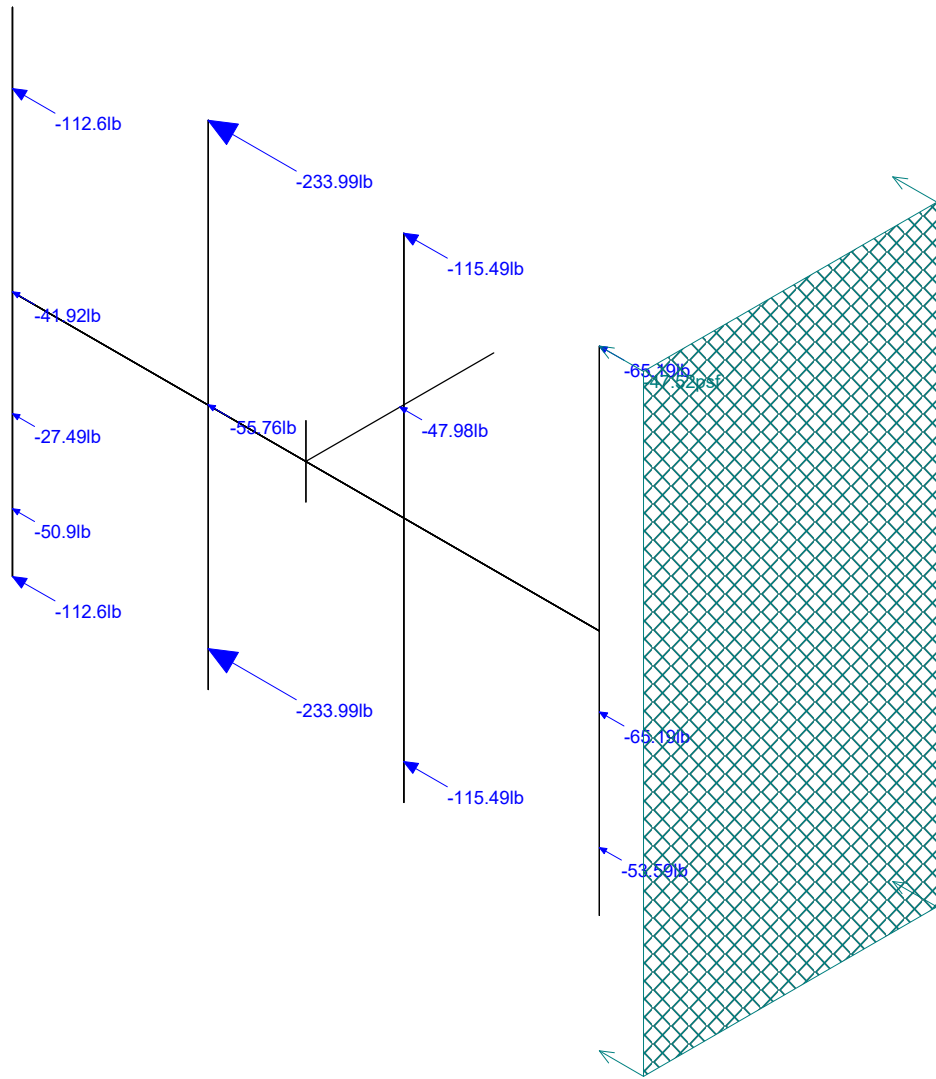
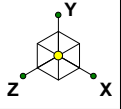
600-003

806376

Existing Configuration

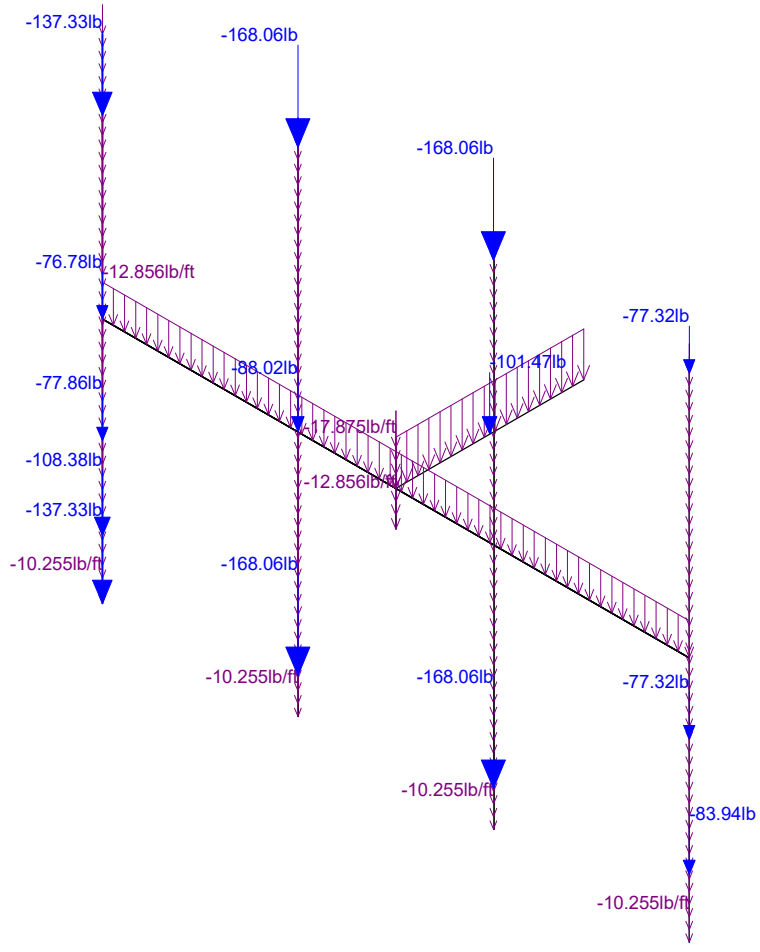
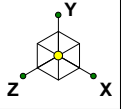
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806376.r3d



Loads: BLC 3, Wind Load AZI 090
Envelope Only Solution

Infinigy Engineering, PLLC.	806376	Existing Configuration
IP		Dec 27, 2018 at 5:05 PM
600-003		806376.r3d



Loads: BLC 4, Ice Weight
Envelope Only Solution

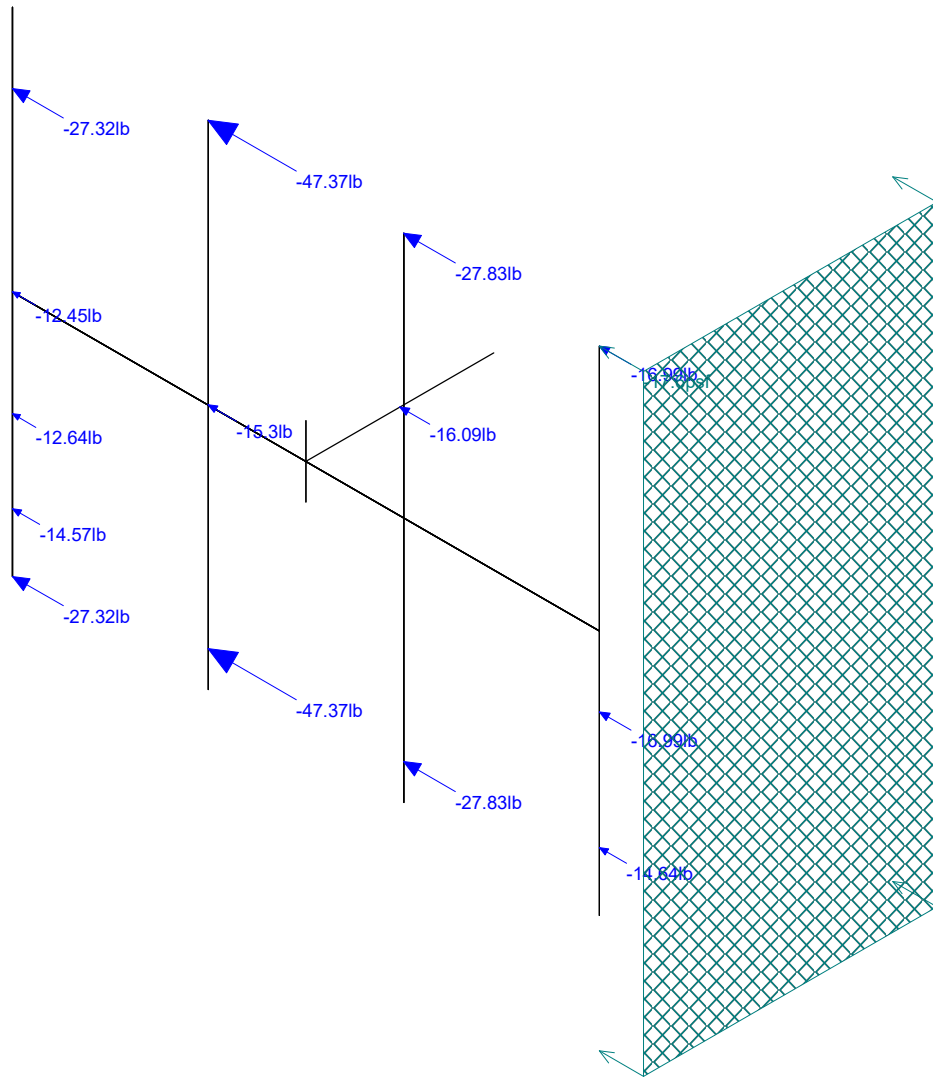
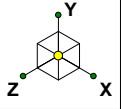
Infinigy Engineering, PLLC.
IP
600-003

806376

Existing Configuration

Dec 27, 2018 at 5:05 PM

806376.r3d



Loads: BLC 6, Wind + Ice Load AZI 090
Envelope Only Solution

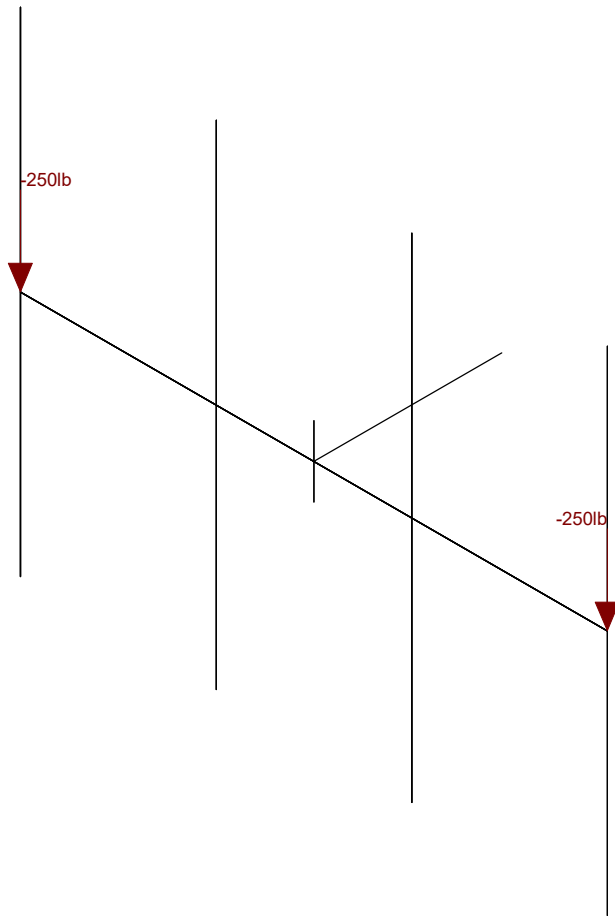
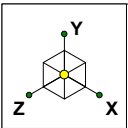
Infinigy Engineering, PLLC.
IP
600-003

806376

Existing Configuration

Dec 27, 2018 at 5:05 PM

806376.r3d



Loads: BLC 7, Service Live 1
Envelope Only Solution

Infinigy Engineering, PLLC.	806376	Existing Configuration
IP		Dec 27, 2018 at 5:05 PM
600-003		806376.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS

Site Name: 806376
 Client: CCI
 Carrier: AT&T
 Engineer: IP
 Date: 12/27/2018



INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:

Adopted Building Code: 2015 IBC
 Structure Load Standard: TIA-222-H
 Antenna Load Standard: TIA-222-H
 Structure Risk Category: II
 Structure Type: Mount - Sector
 Number of Sectors: 3
 Structure Shape 1: Round

Rooftop Inputs:

Rooftop Wind Speed-Up?: No

Wind Loading Inputs:

Design Wind Velocity: 125 mph (ultimate 3-second gust)
 Wind Centerline 1 (z₁): 121.0 ft
 Side Face Angle (θ): 60 degrees
 Exposure Category: B
 Topographic Category: 1

Wind with No Ice		
q _z (psf)	G _h	F _{ST} (psf)
39.60	1.00	47.52

Wind with Ice		
q _z (psf)	G _h	F _{ST} (psf)
6.34	1.00	17.60

Ice Loading Inputs:

Is Ice Loading Needed?: Yes
 Ice Wind Velocity: 50 mph (ultimate 3-second gust)
 Base Ice Thickness: 1.70 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)
Kathrein 800 10121	121.0	3	1.00	Flat	Flat	39.60	5.16	204.38	130.38	148.88	185.88
Kathrein 800 10798	121.0	3	1.00	Flat	Flat	39.60	10.69	423.17	225.21	274.70	373.68
Kathrein 800 10965	121.0	6	1.00	Flat	Flat	39.60	13.81	546.97	230.97	309.97	467.97
Ericsson RRUS 32	121.0	3	1.00	Flat	Flat	39.60	2.74	108.60	66.05	76.69	97.96
Ericsson RRUS 4449 B5/B12	121.0	3	1.00	Flat	Flat	39.60	1.97	77.91	55.76	61.29	72.37
Ericsson RRUS 4478 B14	121.0	3	1.00	Flat	Flat	39.60	1.84	72.96	41.92	49.68	65.20
Ericsson RRUS 8843 B2/B66A	121.0	3	1.00	Flat	Flat	39.60	1.64	64.90	53.59	56.42	62.07
Ericsson RRUS E2 B29	121.0	3	1.00	Flat	Flat	39.60	3.15	124.53	50.90	69.30	106.12
P/Wave LGP21401	121.0	6	1.00	Flat	Flat	39.60	1.10	43.71	13.74	21.24	36.22
Raycap DC6-48-60-18-8F	121.0	4	1.00	Round	Round	39.60	1.21	47.98	47.98	47.98	47.98

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	P1	P5		90	Pipe 3.0	Beam	None	A53 Gr. B	Typical
2	M2	N3	N4			HSS 4X4X4	Beam	None	A53 Gr. B	Typical
3	MP4	N7	N5			Pipe 2.0	Beam	None	A53 Gr. B	Typical
4	MP1	N8	N6			Pipe 2.0	Beam	None	A53 Gr. B	Typical
5	M8	N16	N15			Pipe 3.0	Beam	None	A53 Gr. B	Typical
6	MP2	N18	N17			Pipe 2.0	Beam	None	A53 Gr. B	Typical
7	MP3	N20	N19			Pipe 2.0	Beam	None	A53 Gr. B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	Hot Rolled Steel				
2	A53 Gr. B	HSS4X4X4	1	32	0
3	A53 Gr. B	PIPE 2.0	4	336	0
4	A53 Gr. B	PIPE 3.0	2	112	0
5	Total HR Steel		7	480	.2

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(...
1	Self Weight	DL		-1			14		
2	Wind Load AZI 000	WLZ					14	1	
3	Wind Load AZI 090	WLX					14	1	
4	Ice Weight	OL1					14	7	
5	Wind + Ice Load AZI 000	OL2					14	1	
6	Wind + Ice Load AZI 090	OL3					14	1	
7	Service Live 1	LL				2			
8	BLC 2 Transient Area Loads	None						6	
9	BLC 3 Transient Area Loads	None						6	
10	BLC 5 Transient Area Loads	None						6	
11	BLC 6 Transient Area Loads	None						6	

Load Combinations

	Description	Solve	PDelta	S...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4D	Yes	Y		DL	1.4												
2	1.2D + 1W AZI 000	Yes	Y		DL	1.2	WLZ	1										
3	1.2D + 1W AZI 030	Yes	Y		DL	1.2	WLZ	.866	WLX	.5								
4	1.2D + 1W AZI 060	Yes	Y		DL	1.2	WLZ	.5	WLX	.866								
5	1.2D + 1W AZI 090	Yes	Y		DL	1.2			WLX	1								
6	1.2D + 1W AZI 120	Yes	Y		DL	1.2	WLZ	-.5	WLX	.866								
7	1.2D + 1W AZI 150	Yes	Y		DL	1.2	WLZ	-.866	WLX	.5								
8	1.2D + 1W AZI 180	Yes	Y		DL	1.2	WLZ	-1										
9	1.2D + 1W AZI 210	Yes	Y		DL	1.2	WLZ	-.866	WLX	-.5								
10	1.2D + 1W AZI 240	Yes	Y		DL	1.2	WLZ	-.5	WLX	-.866								
11	1.2D + 1W AZI 270	Yes	Y		DL	1.2			WLX	-1								
12	1.2D + 1W AZI 300	Yes	Y		DL	1.2	WLZ	.5	WLX	-.866								
13	1.2D + 1W AZI 330	Yes	Y		DL	1.2	WLZ	.866	WLX	-.5								
14	0.9D + 1W AZI 000	Yes	Y		DL	.9	WLZ	1										
15	0.9D + 1W AZI 030	Yes	Y		DL	.9	WLZ	.866	WLX	.5								
16	0.9D + 1W AZI 060	Yes	Y		DL	.9	WLZ	.5	WLX	.866								
17	0.9D + 1W AZI 090	Yes	Y		DL	.9			WLX	1								
18	0.9D + 1W AZI 120	Yes	Y		DL	.9	WLZ	-.5	WLX	.866								
19	0.9D + 1W AZI 150	Yes	Y		DL	.9	WLZ	-.866	WLX	.5								

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	Pipe 3.0	PIPE 3.0	Beam	None	A53 Gr. B	Typical	2.07	2.85	2.85	5.69
2	HSS 4X4X4	HSS4X4X4	Beam	None	A53 Gr. B	Typical	3.37	7.8	7.8	12.8
3	Pipe 2.0	PIPE_2.0	Beam	None	A53 Gr. B	Typical	1.02	.627	.627	1.25

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	MP4						Yes				None
4	MP1						Yes				None
5	M8						Yes				None
6	MP2						Yes				None
7	MP3						Yes				None

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1/E...Density[k/ft...	Yield[psi]	Ry	Fu[psi]	Rt	
1	A36 Gr.36	29000	11154	.3	.65	.49	36000	1.5	58000	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
3	A992	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42000	1.4	58000	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46000	1.4	58000	1.3
6	A53 Gr. B	29000	11154	.3	.65	.49	35000	1.5	58000	1.2

Joint Loads and Enforced Displacements (BLC 7 : Service Live 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
1	P1	L	Y	-250
2	P5	L	Y	-250

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[^l b,k-ft]	Location[in,%]
1	MP1	Y	-23.15	30
2	MP4	Y	-40.7	0
3	MP2	Y	-48.8	6
4	MP3	Y	-71	42
5	MP4	Y	-59.9	42
6	MP1	Y	-72	10
7	MP4	Y	-60	10
8	MP4	Y	-28.2	24
9	M2	Y	-32.8	16
10	MP1	Y	-23.15	84
11	MP4	Y	-40.7	72
12	MP2	Y	-48.8	84
13	MP3	Y	-48.8	6
14	MP3	Y	-48.8	84

Member Point Loads (BLC 2 : Wind Load AZI 000)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP1	Z	-102.19	30
2	MP4	Z	-211.58	0
3	MP2	Z	-273.48	6
4	MP3	Z	-77.91	42
5	MP4	Z	-72.96	42
6	MP1	Z	-64.9	10
7	MP4	Z	-124.53	10
8	MP4	Z	-87.43	24
9	M2	Z	-47.98	16
10	MP1	Z	-102.19	84
11	MP4	Z	-211.58	72
12	MP2	Z	-273.48	84
13	MP3	Z	-154.99	6
14	MP3	Z	-154.99	84

Member Point Loads (BLC 3 : Wind Load AZI 090)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP1	X	-65.19	30
2	MP4	X	-112.6	0
3	MP2	X	-115.49	6
4	MP3	X	-55.76	42
5	MP4	X	-41.92	42
6	MP1	X	-53.59	10
7	MP4	X	-50.9	10
8	MP4	X	-27.49	24
9	M2	X	-47.98	16
10	MP1	X	-65.19	84
11	MP4	X	-112.6	72
12	MP2	X	-115.49	84
13	MP3	X	-233.99	6
14	MP3	X	-233.99	84

Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP1	Y	-77.32	30
2	MP4	Y	-137.33	0
3	MP2	Y	-168.06	6
4	MP3	Y	-88.02	42
5	MP4	Y	-76.78	42
6	MP1	Y	-83.94	10
7	MP4	Y	-108.38	10
8	MP4	Y	-77.86	24
9	M2	Y	-101.47	16
10	MP1	Y	-77.32	84
11	MP4	Y	-137.33	72
12	MP2	Y	-168.06	84
13	MP3	Y	-168.06	6
14	MP3	Y	-168.06	84

Member Point Loads (BLC 5 : Wind + Ice Load AZI 000)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in.%]
1	MP1	Z	-23.15	30
2	MP4	Z	-43.47	0
3	MP2	Z	-53.88	6
4	MP3	Z	-19.61	42

Member Point Loads (BLC 5 : Wind + Ice Load AZI 000) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in, %]
5	MP4	Z	-18.58	42
6	MP1	Z	-16.92	10
7	MP4	Z	-28.67	10
8	MP4	Z	-25.22	24
9	M2	Z	-27.58	16
10	MP1	Z	-23.15	84
11	MP4	Z	-43.47	72
12	MP2	Z	-53.88	84
13	MP3	Z	-34.34	6
14	MP3	Z	-34.34	84

Member Point Loads (BLC 6 : Wind + Ice Load AZI 090)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[in, %]
1	MP1	X	-16.99	30
2	MP4	X	-27.32	0
3	MP2	X	-27.83	6
4	MP3	X	-15.3	42
5	MP4	X	-12.45	42
6	MP1	X	-14.64	10
7	MP4	X	-14.57	10
8	MP4	X	-12.64	24
9	M2	X	-16.09	16
10	MP1	X	-16.99	84
11	MP4	X	-27.32	72
12	MP2	X	-27.83	84
13	MP3	X	-47.37	6
14	MP3	X	-47.37	84

Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Y	-12.856	-12.856	0	%100
2	M2	Y	-17.875	-17.875	0	%100
3	MP4	Y	-10.255	-10.255	0	%100
4	MP1	Y	-10.255	-10.255	0	%100
5	M8	Y	-12.856	-12.856	0	%100
6	MP2	Y	-10.255	-10.255	0	%100
7	MP3	Y	-10.255	-10.255	0	%100

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Z	-13.86	-13.86	0	100
2	MP4	Z	-9.405	-9.405	0	84
3	MP1	Z	-9.405	-9.405	0	84
4	M8	Z	-13.86	-13.86	0	12
5	MP2	Z	-9.405	-9.405	0	84
6	MP3	Z	-9.405	-9.405	0	84

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M2	X	-15.84	-15.84	0	32
2	MP4	X	-9.405	-9.405	0	84
3	MP1	X	-9.405	-9.405	0	84
4	M8	X	-13.86	-13.86	0	12
5	MP2	X	-9.405	-9.405	0	84

Member Distributed Loads (BLC 9 : BLC 3 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
6	MP3	X	-9.405	-9.405	0	84

Member Distributed Loads (BLC 10 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Z	-5.133	-5.133	0	100
2	MP4	Z	-3.483	-3.483	0	84
3	MP1	Z	-3.483	-3.483	0	84
4	M8	Z	-5.133	-5.133	0	12
5	MP2	Z	-3.483	-3.483	0	84
6	MP3	Z	-3.483	-3.483	0	84

Member Distributed Loads (BLC 11 : BLC 6 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M2	X	-5.867	-5.867	0	32
2	MP4	X	-3.483	-3.483	0	84
3	MP1	X	-3.483	-3.483	0	84
4	M8	X	-5.133	-5.133	0	12
5	MP2	X	-3.483	-3.483	0	84
6	MP3	X	-3.483	-3.483	0	84

APPENDIX D
ADDITIONAL CALCUATIONS

Date: 12/27/2018
 Client: Crown Castle
 Carrier: AT&T
 Engineer: IP
 Site: 806376
 Job #: 600-003

Code: LRFD
 Axial: 3101.14 lbs
 Shear: 2352.88 lbs

Bolt Capacity (1/2" A307 Bolt)				
	Ult Load / Bolt	Factored Load ($\phi=0.75$)	# of Bolts	Factor Joint Capacity
Axial (lb)	8226.7	6170.0	2	12340
Shear(lb)	5133.3	3850.0	2	7700

Interaction Check	
$T / \phi T_n$	25.1%
$V / \phi V_n$	30.6%
≤ 1.0	15.7%
	OK

Exhibit F

Power Density/RF Emissions Report



RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of AT&T Mobility, LLC

Crown Castle Site Name: HRT 100 943239

Crown Castle Site ID: 806376

AT&T Mobility, LLC FA #: 10090919

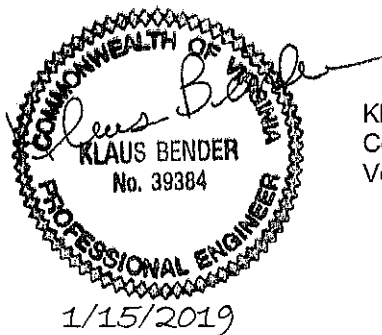
1455 FORBES STREET

EAST HARTFORD, CT

1/14/2019

Report Status:

AT&T Mobility, LLC Is Compliant



Klaus Bender, P.E.
Commonwealth of Virginia PE#: 0402039384
Velocitel LLC (License #: 0404007330)

Prepared By:

Sitesafe, LLC

8618 Westwood Center Drive,
Suite 315

Vienna, VA 22182

Voice 703-276-1100
Fax 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
EAST HARTFORD, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, LLC in Vienna, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle (See attached Site Summary and Carrier documents), and that AT&T Mobility, LLC's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "HRT 100 943239" ("the site"); and

That AT&T Mobility, LLC proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by AT&T Mobility, LLC and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for

licensees of AT&T Mobility, LLC's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is no more than 2.851% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 11.763% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that AT&T Mobility, LLC's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

**Crown Castle
HRT 100 943239
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.292 %
AT&T Mobility, LLC	0.258 %
AT&T Mobility, LLC	0.478 %
AT&T Mobility, LLC (Proposed)	0.548 %
AT&T Mobility, LLC (Proposed)	0.445 %
AT&T Mobility, LLC (Proposed)	0.435 %
AT&T Mobility, LLC (Proposed)	0.395 %
Clearwire	0.266 %
Sprint	1.269 %
Sprint	0.241 %
Sprint	0.87 %
T-Mobile	0.504 %
T-Mobile	0.477 %
T-Mobile	1.291 %
T-Mobile	0.599 %
Verizon Wireless	0.852 %
Verizon Wireless	0.863 %
Verizon Wireless	0.786 %
Verizon Wireless	0.894 %
Composite Site MPE:	11.763 %

AT&T Mobility, LLC
HRT 100 943239
Carrier Summary

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.65483 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.29203 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10121	120	0	1043	0.730332	0.128882	1.113719	0.196539
Kathrein-Scala	800-10121	120	170	1043	0.730332	0.128882	1.113719	0.196539
Kathrein-Scala	800-10121	120	290	1043	0.730332	0.128882	1.113719	0.196539

AT&T Mobility, LLC
HRT 100 943239
Carrier Summary

Frequency: 2300 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 2.58349 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.25835 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10798	120	0	2099	1.306648	0.130665	2.486729	0.248673
Kathrein-Scala	800-10798	120	120	2099	1.325432	0.132543	2.486729	0.248673
Kathrein-Scala	800-10798	120	240	2099	1.306648	0.130665	2.486729	0.248673

AT&T Mobility, LLC
HRT 100 943239
Carrier Summary

Frequency: 737 MHz
Maximum Permissible Exposure (MPE): 491.33 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 2.34918 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.47812 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10798	120	0	2905	1.441142	0.293312	2.264105	0.460808
Kathrein-Scala	800-10798	120	120	2905	1.449984	0.295112	2.264105	0.460808
Kathrein-Scala	800-10798	120	240	2905	1.441142	0.293312	2.264105	0.460808

AT&T Mobility, LLC (Proposed)
HRT 100 943239
Carrier Summary

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 5.48003 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.548 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10965	120	0	7114	2.196683	0.219668	5.203312	0.520331
Kathrein-Scala	800-10965	120	120	7114	2.143588	0.214359	5.203312	0.520331
Kathrein-Scala	800-10965	120	240	7114	2.196682	0.219668	5.203312	0.520331

AT&T Mobility, LLC (Proposed)
HRT 100 943239
Carrier Summary

Frequency: 763 MHz
Maximum Permissible Exposure (MPE): 508.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 2.26518 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.44532 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10965	120	0	2959	1.654654	0.325292	2.102334	0.413303
Kathrein-Scala	800-10965	120	120	2959	1.66311	0.326955	2.102333	0.413303
Kathrein-Scala	800-10965	120	240	2959	1.654654	0.325292	2.102334	0.413303

AT&T Mobility, LLC (Proposed)
HRT 100 943239
Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.354 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.4354 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10965	120	0	6168	1.892827	0.189283	4.036313	0.403631
Kathrein-Scala	800-10965	120	120	6168	1.892827	0.189283	4.036314	0.403631
Kathrein-Scala	800-10965	120	240	6168	1.902985	0.190298	4.036314	0.403631

AT&T Mobility, LLC (Proposed)
HRT 100 943239
Carrier Summary

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 2.23958 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.39522 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Kathrein-Scala	800-10965	120	0	3607	1.593314	0.281173	1.631204	0.28786
Kathrein-Scala	800-10965	120	120	3607	1.599621	0.282286	1.631204	0.28786
Kathrein-Scala	800-10965	120	240	3607	1.593314	0.281173	1.631205	0.28786

**Clearwire
HRT 100 943239
Carrier Summary**

Frequency: 2500 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 2.65565 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.26557 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ARGUS	LLPX310R	98	30	1542	1.311891	0.131189	2.384394	0.238439
ARGUS	LLPX310R	98	130	1542	1.321787	0.132179	2.384394	0.238439
ARGUS	LLPX310R	98	280	1542	1.321787	0.132179	2.384394	0.238439

Sprint
HRT 100 943239
Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 12.68527 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.26853 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSPP18-C-A20-0ET	98	50	3804	1.475413	0.147541	3.732758	0.373276
RFS	APXVSPP18-C-A20-0ET	98	50	3804	1.475413	0.147541	3.732758	0.373276
RFS	APXVSPP18-C-A20-0ET	98	130	3804	1.475413	0.147541	3.732758	0.373276
RFS	APXVSPP18-C-A20-0ET	98	130	3804	1.475413	0.147541	3.732758	0.373276
RFS	APXVSPP18-C-A20-0ET	98	300	3804	1.475413	0.147541	3.732758	0.373276
RFS	APXVSPP18-C-A20-0ET	98	300	3804	1.475413	0.147541	3.732758	0.373276

Sprint
HRT 100 943239
Carrier Summary

Frequency: 862 MHz
Maximum Permissible Exposure (MPE): 574.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.38233 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.24054 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVSP18-C-A20-0ET	98	50	1084	0.848773	0.147698	0.870331	0.15145
RFS	APXVSP18-C-A20-0ET	98	130	1084	0.846085	0.14723	0.870331	0.15145
RFS	APXVSP18-C-A20-0ET	98	300	1084	0.846085	0.147231	0.870331	0.15145

Sprint
HRT 100 943239
Carrier Summary

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 8.69796 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.8698 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVTM14-C-I20	98	50	6168	2.317708	0.231771	4.628222	0.462822
RFS	APXVTM14-C-I20	98	130	6168	2.317708	0.231771	4.628222	0.462822
RFS	APXVTM14-C-I20	98	300	6168	2.317708	0.231771	4.628222	0.462822

**T-Mobile
HRT 100 943239
Carrier Summary**

Frequency: 700 MHz
 Maximum Permissible Exposure (MPE): 466.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 2.35217 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.50404 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVAARR24_43-U-NA20	87	60	1307	1.092799	0.234171	1.241593	0.266056
RFS	APXVAARR24_43-U-NA20	87	190	1307	1.092799	0.234171	1.241593	0.266056
RFS	APXVAARR24_43-U-NA20	87	280	1307	1.092799	0.234171	1.241593	0.266056

T-Mobile
HRT 100 943239
Carrier Summary

Frequency: 600 MHz
Maximum Permissible Exposure (MPE): 400 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.90674 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.47668 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVAARR24_43-U-NA20	87	60	1251	1.075726	0.268931	1.125002	0.281251
RFS	APXVAARR24_43-U-NA20	87	190	1251	1.075725	0.268931	1.125002	0.281251
RFS	APXVAARR24_43-U-NA20	87	280	1251	1.075725	0.268931	1.125002	0.281251

**T-Mobile
HRT 100 943239
Carrier Summary**

Frequency: 2100 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 12.90776 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 1.29078 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 21 B2A B4P	87	60	2061	1.390512	0.139051	1.608106	0.160811
Ericsson	AIR 32 B2A-B66AA	87	60	2313	6.800309	0.680031	6.800309	0.680031
Ericsson	AIR 21 B2A B4P	87	190	2061	1.390512	0.139051	1.608106	0.160811
Ericsson	AIR 32 B2A-B66AA	87	190	2313	6.800309	0.680031	6.800309	0.680031
Ericsson	AIR 21 B2A B4P	87	280	2061	1.390512	0.139051	1.608106	0.160811
Ericsson	AIR 32 B2A-B66AA	87	280	2313	6.800309	0.680031	6.800309	0.680031

**T-Mobile
HRT 100 943239
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 5.99311 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.59931 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 21 B2A B4P	87	60	2061	1.390512	0.139051	1.608106	0.160811
Ericsson	AIR 32 B2A-B66AA	87	60	2313	1.469165	0.146916	1.804321	0.180432
Ericsson	AIR 21 B2A B4P	87	190	2061	1.390512	0.139051	1.608106	0.160811
Ericsson	AIR 32 B2A-B66AA	87	190	2313	1.469165	0.146917	1.804321	0.180432
Ericsson	AIR 21 B2A B4P	87	280	2061	1.390512	0.139051	1.608106	0.160811
Ericsson	AIR 32 B2A-B66AA	87	280	2313	1.469165	0.146917	1.804321	0.180432

**Verizon Wireless
HRT 100 943239
Carrier Summary**

Frequency: 850 MHz
 Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 4.82851 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.85209 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-80063-4CF	111	30	3192	3.631378	0.640831	4.760076	0.840013
Antel	BXA-80063-4CF	111	150	3192	3.635267	0.641518	4.760076	0.840013
Antel	BXA-80063-4CF	111	270	3192	3.631378	0.640831	4.760076	0.840013

**Verizon Wireless
HRT 100 943239
Carrier Summary**

Frequency: 1900 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 8.63378 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.86338 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW	SBNHH-1D65B	111	30	4583	6.638691	0.663869	8.535441	0.853544
ANDREW	SBNHH-1D65B	111	150	4583	6.544841	0.654484	8.535441	0.853544
ANDREW	SBNHH-1D65B	111	270	4583	6.63869	0.663869	8.53544	0.853544

**Verizon Wireless
HRT 100 943239
Carrier Summary**

Frequency: 751 MHz
 Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 3.93639 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.78623 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Antel	BXA-70063-4CF	111	30	2134	3.789225	0.756836	3.914881	0.781934
Antel	BXA-70063-4CF	111	150	2134	3.794057	0.757801	3.914882	0.781934
Antel	BXA-70063-4CF	111	270	2134	3.794056	0.757801	3.914881	0.781934

**Verizon Wireless
HRT 100 943239
Carrier Summary**

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 8.93523 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.89352 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ANDREW	SBNHH-1D65B	111	30	7732	5.545239	0.554524	8.541931	0.854193
ANDREW	SBNHH-1D65B	111	150	7732	5.550501	0.55505	8.541931	0.854193
ANDREW	SBNHH-1D65B	111	270	7732	5.545239	0.554524	8.541931	0.854193