



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

July 24, 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: 828054
AT&T Site ID: 10035346
300 Governors Highway, South Windsor, CT 06074
Latitude: 41° 50' 0.40"/ Longitude: -72° 36' 11.00"

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 156-foot level of the existing 165-foot monopole at 300 Governors Highway in South Windsor, Connecticut. The tower is owned by Crown Castle. The property is owned by Electron Technologies. AT&T now intends to replace (3) antennas, add (3) remote radio heads, and add (1) mount platform reinforcement kit.

The facility was approved by the Town of South Windsor Planning and Zoning Commission in Application No. 99-51P on September 21, 1999. 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 Andrew Paterna, Mayor, Michele R. Lipe, Director of Planning for the Town of South Windsor, 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.

The Foundation for a Wireless World.

CrownCastle.com

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T 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:

Exhibit-A: Compound Plan and Elevation Depicting the Planned Changes
Exhibit-B: Structural Modification Report
Exhibit-C: General Power Density Table Report (RF Emissions Analysis Report)

cc: The Honorable Andrew Paterna, Mayor
Town of South Windsor
1540 Sullivan Avenue
South Windsor, CT 06074
860-644-2511

Michele R. Lipe, AICP
Planning Director
1540 Sullivan Avenue
South Windsor, CT 06074
860-644-2511 ext. 329

Electron Technologies
300 Governors Highway
South Windsor, CT 06074

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

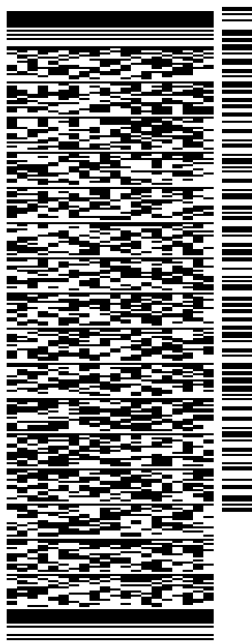
SHIP DATE: 24JUL19
ACTWGT: 4.00 LB
CAD: 104924194INNET4160

BILL SENDER

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

NEW BRITAIN CT 06051

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

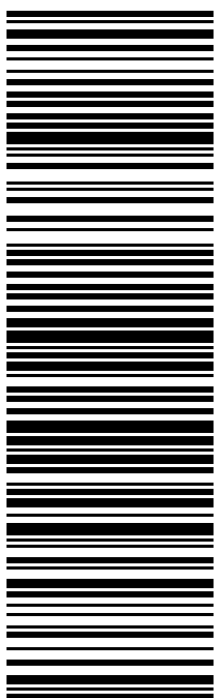


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TRK# THU - 25 JUL 10:30A
0201 7758 2197 4909 PRIORITY OVERNIGHT

EB BDLA 06051
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ANNE MARIE ZSAMBRA
CROMM CASTLE
3 CORPORATE PARK DRIVE
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UNITED STATES US

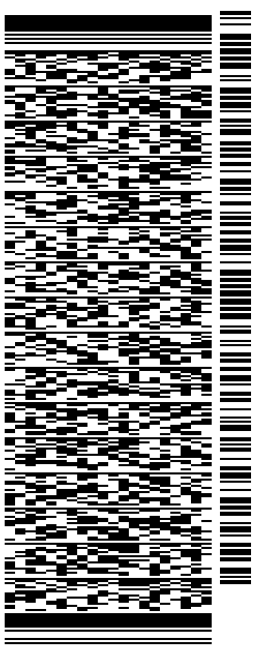
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ACTWGT: 2.00 LB
CAD: 104924194INNET4160

BILL SENDER

TO **ANDREW PATERNA, MAYOR**

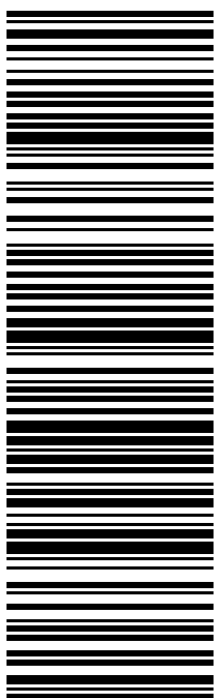
TOWN OF SOUTH WINDSOR
1540 SULLIVAN AVENUE
SOUTH WINDSOR CT 06074
(860) 644-2511 REF: 1734.7890
INV/ PO: DEPT:

567J2/A6F9/05A2



TRK# 7758 2199 6638 THU - 25 JUL 10:30A
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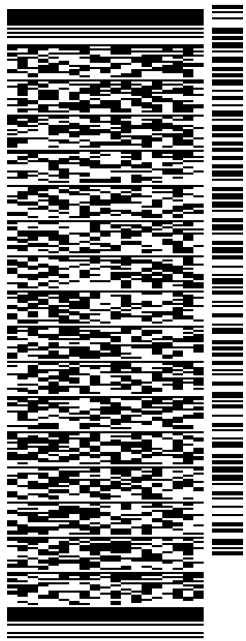
BILL SENDER

TO MICHELE R LIPE, AICP

1540 SULLIVAN AVENUE

SOUTH WINDSOR CT 06074

(860) 644-2511 REF: 1734.7890
INV/ PO: DEPT:

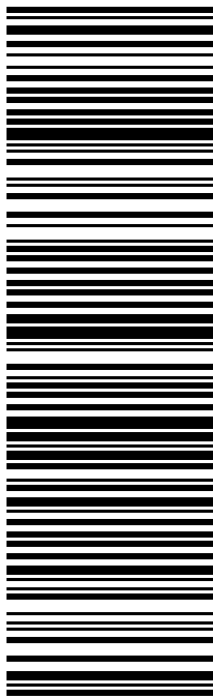


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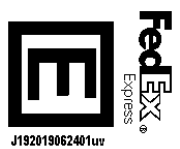
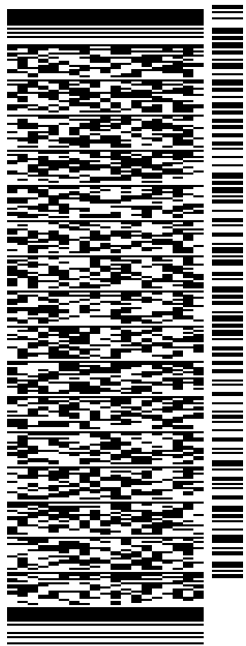
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BILL SENDER

TO ELECTRON TECHNOLOGIES

300 GOVERNORS HIGHWAY

SOUTH WINDSOR CT 06074

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



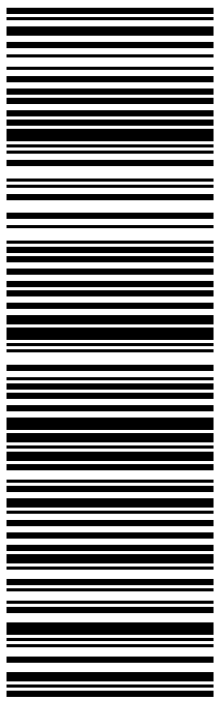
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Exhibit A

Original Facility Approval



Town of South Windsor

1540 SULLIVAN AVENUE • SOUTH WINDSOR, CT 06074-2786

AREA CODE 860/644-2511

FAX 860/644-3781

CERTIFIED MAIL

September 21, 1999

Mr. Thomas M. Gilligan
Omnipoint Communications, Inc.
100 Filley Street
Bloomfield, CT 06002

Dear Mr. Gilligan:

Re: Appl 99-51P, Omnipoint Communications Services

We are pleased to advise you that the Planning & Zoning Commission voted on September 14, 1999 to approve with modifications the above referenced application for a request for a Special Exception to Section XVI for the construction of a 175 ft. multi-carrier telecommunications monopole on property located at 300 Governor's Highway, I zone as shown on plans prepared by Arcnet, Job No. A 99506823A, dated 5/9/99, as revised. This approval is subject to the following modifications:

1. Prior to commencement of any site work, a meeting must be held with Town Staff.
2. No building permit will be issued until the final mylars have been filed in the Town Clerk's office.
3. An as-built plan is required prior to issuance of a Certificate of Occupancy per Section 8.1.10 of the Zoning Regulations.
4. All plans used in the field by the developer must bear the stamp and authorized signature of the Town of South Windsor.
5. Special Exception approval is granted for five years and must be renewed prior to September 14, 2004. The attached Special Exception form must be completed and filed in the Town Clerk's office. The special exception will take effect upon filing.

Black and white transparent mylars of Sheet S-1 with the above modifications, together with three blueprint copies of the entire set of plans must be submitted to this Commission within 30 days to be stamped and signed.

After the mylars have been signed by the Commission, they will be returned to you for filing in the Office of the Town Clerk. After filing these plans, a copy of the receipt must be submitted to the Planning Department.

Sincerely,

Sue W. Larsen Idw

Sue W. Larsen, Chairperson
Planning and Zoning Commission

SL/dlw

Attachment

cc: Town Engineer
Chief Building Official
Assessor
Superintendent of Pollution Control
Fire Marshal

Exhibit B

Property Card

300 GOVERNORS HIGHWAY

Location 300 GOVERNORS HIGHWAY

Mblu 71/ 22/ / /

Acct# 36900300

Owner ELECTRON TECHNOLOGIES
CORPORATIO

Assessment \$776,200

Appraisal \$1,108,900

PID 2698

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$628,200	\$480,700	\$1,108,900

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$439,700	\$336,500	\$776,200

Owner of Record

Owner	ELECTRON TECHNOLOGIES CORPORATIO	Sale Price	\$800,000
Co-Owner	P.O.BOX 316	Certificate	
Address	300 GOVERNORS HIGHWAY SOUTH WINDSOR, CT 06074	Book & Page	540/ 418
		Sale Date	10/04/1988
		Instrument	00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
ELECTRON TECHNOLOGIES CORPORATIO	\$800,000		540/ 418	00	10/04/1988

Building Information

Building 1 : Section 1

Year Built: 1965
Living Area: 22,060
Replacement Cost: \$960,272
Building Percent 63
Good:
Replacement Cost
Less Depreciation: \$605,000

Building Photo

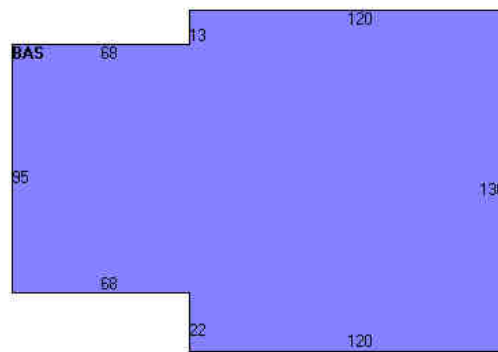
Building Attributes	
Field	Description
STYLE	Light Industrial

MODEL	Comm/Ind
Grade	C
Stories:	1.00
Occupancy	1
Exterior Wall 1	Precast Panel
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minimum
Interior Wall 2	Drywall
Interior Floor 1	Concrete
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Hot Air
% Central Air	100
Foundation	Poured Conc
Bldg Use	Industrial
Total Rooms	0
Total Bedrms	0
Total Fixtures	12
% Wet Sprinkler	
% Dry Sprinkler	
1st Floor Use	
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
% Finished	25
Class	C
Wall Height	16



(http://images.vgsi.com/photos/SouthWindsorCTPhotos/\00\00\19\99.JPG)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	22,060	22,060
		22,060	22,060

Extra Features

Extra Features		Legend
No Data for Extra Features		

Land

Land Use

Use Code	301
Description	Industrial
Zone	I
Neighborhood	C400
Alt Land Appr Category	No

Land Line Valuation

Size (Acres)	6.03
Frontage	0
Depth	0
Assessed Value	\$336,500
Appraised Value	\$480,700

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving	AS	Asphalt	36700 S.F.	\$19,300	1
FN1	Fence			1080 L.F.	\$3,200	1
LT1	Lights			1 UNITS	\$700	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$628,200	\$480,700	\$1,108,900
2017	\$628,200	\$480,700	\$1,108,900
2016	\$666,600	\$318,700	\$985,300

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$439,700	\$336,500	\$776,200
2017	\$439,700	\$336,500	\$776,200
2016	\$466,600	\$223,100	\$689,700

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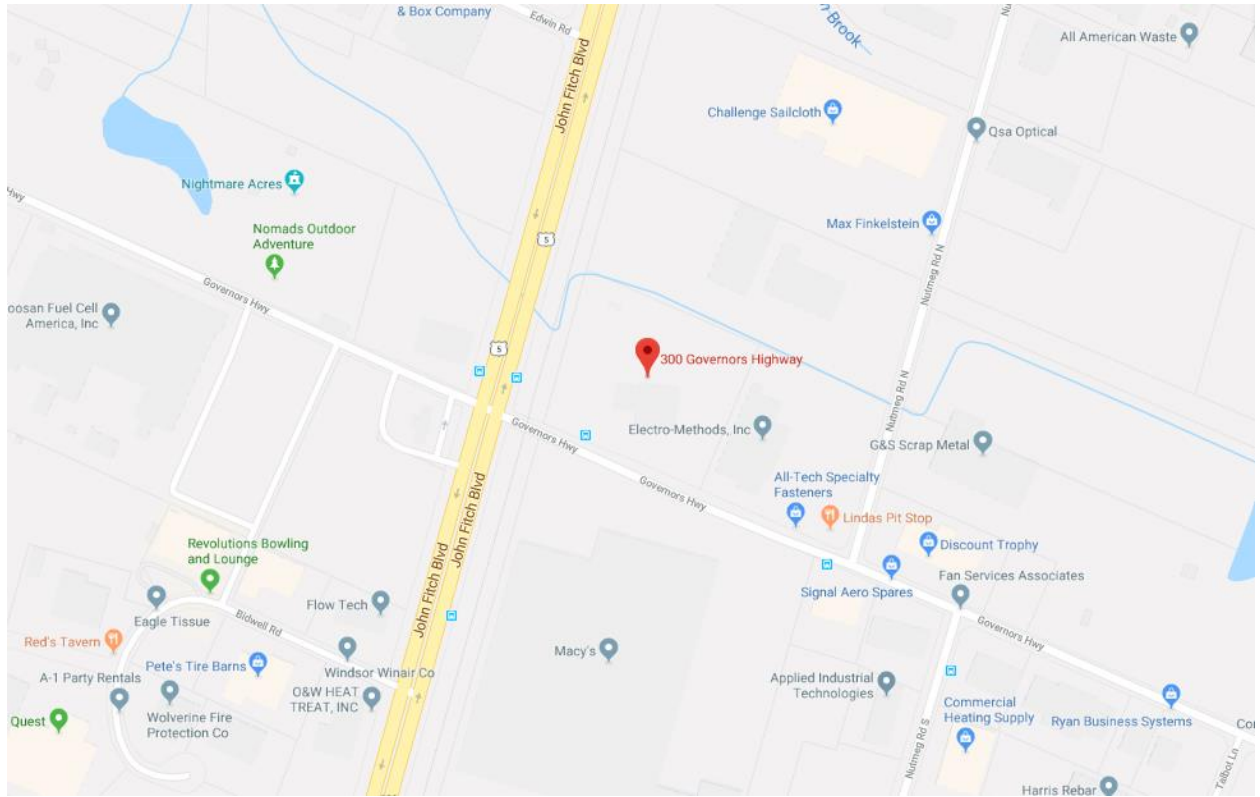


Exhibit C

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:

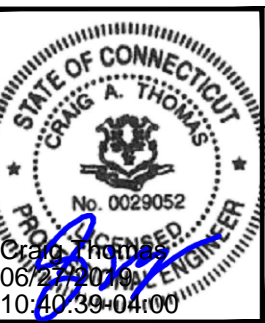
- A. CONDUIT:
 1. ALL ELECTRICAL WIRING SHALL BE INSTALLED IN CONDUIT AS SPECIFIED. NO CONDUIT OR TUBING OF LESS THAN 3/4 INCH TRADE SIZE.
 2. PROVIDE RIGID PVC SCHEDULE 80 CONDUITS FOR ALL RISERS, RMC OTHERWISE NOTED. EMT MAY BE INSTALLED FOR EXTERIOR CONDUITS WHERE NOT SUBJECT TO PHYSICAL DAMAGE.
 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.



PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: CAT

SUBMITTALS		
NO.	DATE	REVISION
4	06/27/19	REVISED PER COMMENTS
3	05/21/19	REMOVED TMA'S
2	04/29/19	REVISED PER COMMENTS
1	03/21/19	ISSUED FOR CONSTRUCTION
0	03/11/19	ISSUED FOR PERMITTING

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FA# 10035346
 SITE# CTV1135
 SOUTH WINDSOR WEST
 300 GOVERNORS HIGHWAY
 SOUTH WINDSOR, CT 06074

GENERAL NOTES I

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

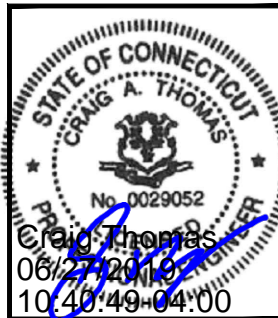
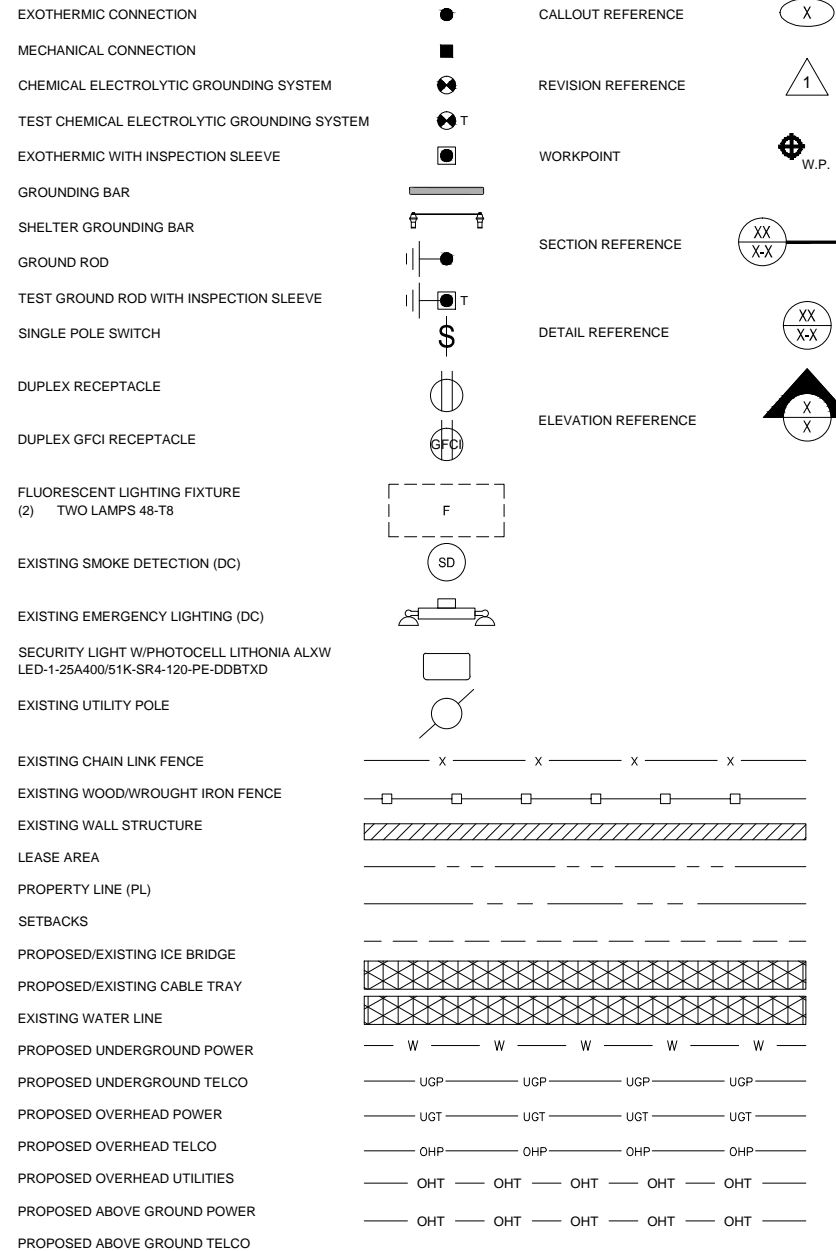
- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMA'S, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.

- 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	FINISHED	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
AFF	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	RET	REMOTE ELECTRIC TILT
AIC	AMPERAGE INTERRUPTION CAPACITY	DEPT	DEPARTMENT	FOW	FACE OF WALL	MIN	MINIMUM	RMC	RIGID METALLIC CONDUIT	UG	UNDERGROUND
ALUM	ALUMINUM	DF	DOUGLAS FIR	FS	FINISH SURFACE	MISC	MISCELLANEOUS	RRH	REMOTE RADIO HEAD	UL	UNDERWRITERS LABORATORY
ALT	ALTERNATE	DIA	DIAMETER	FT	FOOT	MTL	METAL	RRU	REMOTE RADIO UNIT	UNO	UNLESS NOTED OTHERWISE
ANT	ANTENNA	DIAG	DIAGONAL	FTG	FOOTING	MTS	MANUAL TRANSFER SWITCH	RWY	RACEWAY	UMTS	UNIVERSAL MOBILE
APPROX	APPROXIMATE	DIM	DIMENSION	GA	GAUGE	MW	MICROWAVE	SCH	SCHEDULE	SHT	SHEET
ARCH	ARCHITECTURAL	DWG	DRAWING	GEN	GENERATOR	NEW	NEW	SIAD	SMART INTEGRATED DEVICE	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
ATS	AUTOMATIC TRANSFER SWITCH	DWL	DOWEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NEC	NATIONAL ELECTRIC CODE	SIM	SIMILAR	VIF	VERIFIED IN FIELD
AWG	AMERICAN WIRE GAUGE	(E)	EXISTING	GLB	GLUE LAMINATED BEAM	NO.(#)	NUMBER	SO	SQUARE	W	WIDE
BATT	BATTERY	EA	EACH	GLV	GALVANIZED	NTS	NOT TO SCALE	SS	STAINLESS STEEL	WD	WOOD
BLDG	BUILDING	EC	ELECTRICAL CONDUCTOR	GPS	GLOBAL POSITIONING SYSTEM	OC	ON CENTER	STD	STANDARD	W.P.	WORK POINT
BLK	BLOCK	EL	ELEVATION	GND	GROUND	OPNG	OPENING	STL	STEEL	WP	WEATHERPROOF
BLKG	BLOCKING	ELEC	ELECTRICAL	GSM	GLOBAL SYSTEM FOR MOBILE	(P)	PROPOSED	STRUCT	STRUCTURAL	WT	WEIGHT
BM	BEAM	EMT	ELECTRICAL METALLIC TUBING	HDR	HEADER	PIC	PRECAST CONCRETE	TEMP	TEMPORARY		
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				



PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: CAT

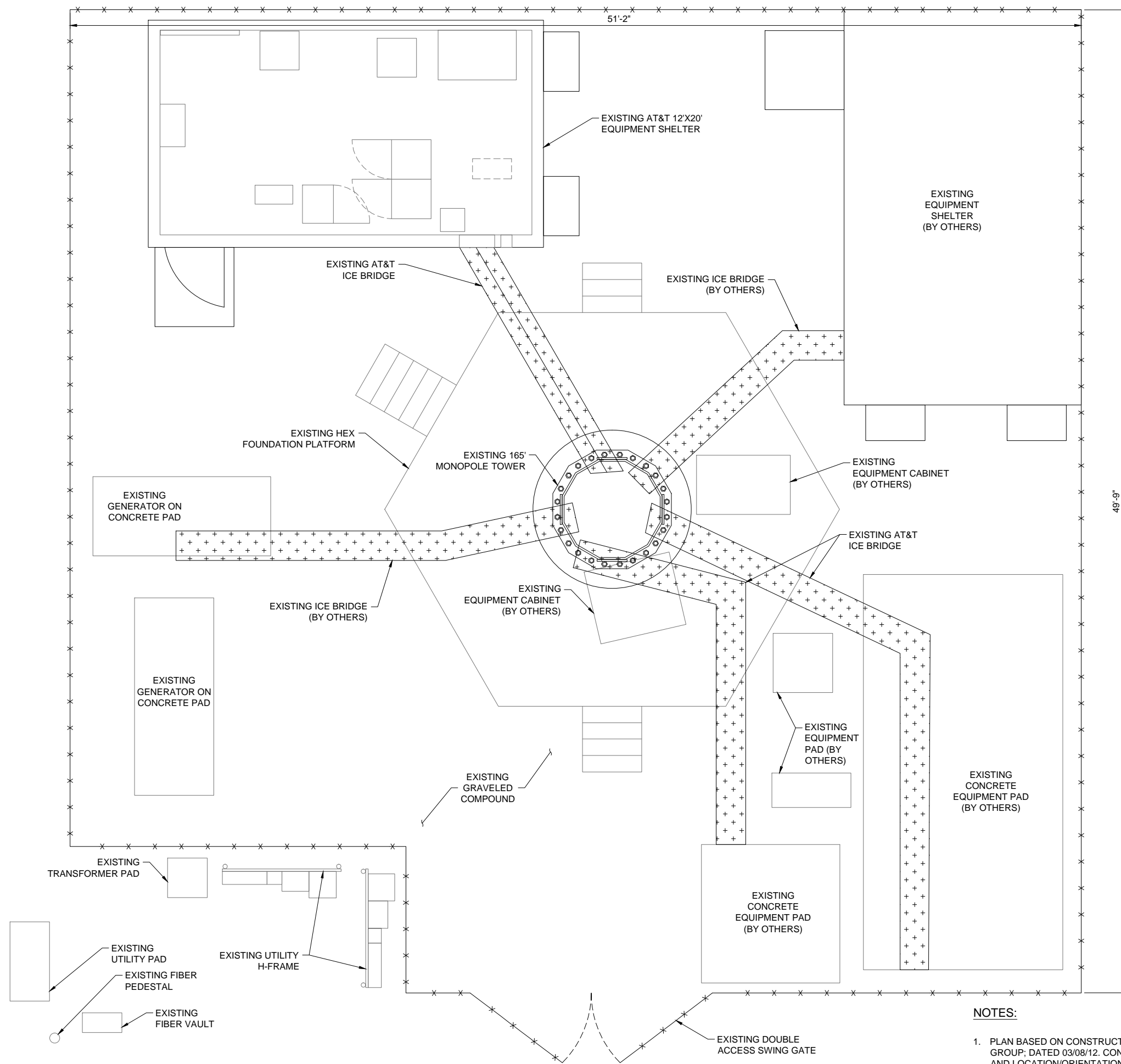
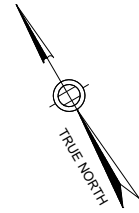
SUBMITTALS		
NO.	DATE	REVISION
4	06/27/19	REVISED PER COMMENTS
3	05/21/19	REMOVED TMA'S
2	04/29/19	REVISED PER COMMENTS
1	03/21/19	ISSUED FOR CONSTRUCTION
0	03/11/19	ISSUED FOR PERMITTING

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FA# 10035346
SITE# CTV1135
SOUTH WINDSOR WEST
300 GOVERNORS HIGHWAY
SOUTH WINDSOR, CT 06074

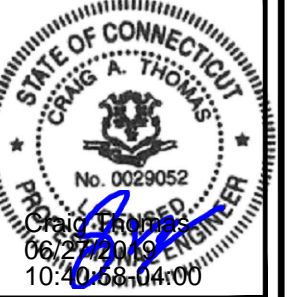
GENERAL NOTES II

GN-2



NOTES:

1. PLAN BASED ON CONSTRUCTION DRAWINGS ISSUED BY HUDSON DESIGN GROUP; DATED 03/08/12. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.



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

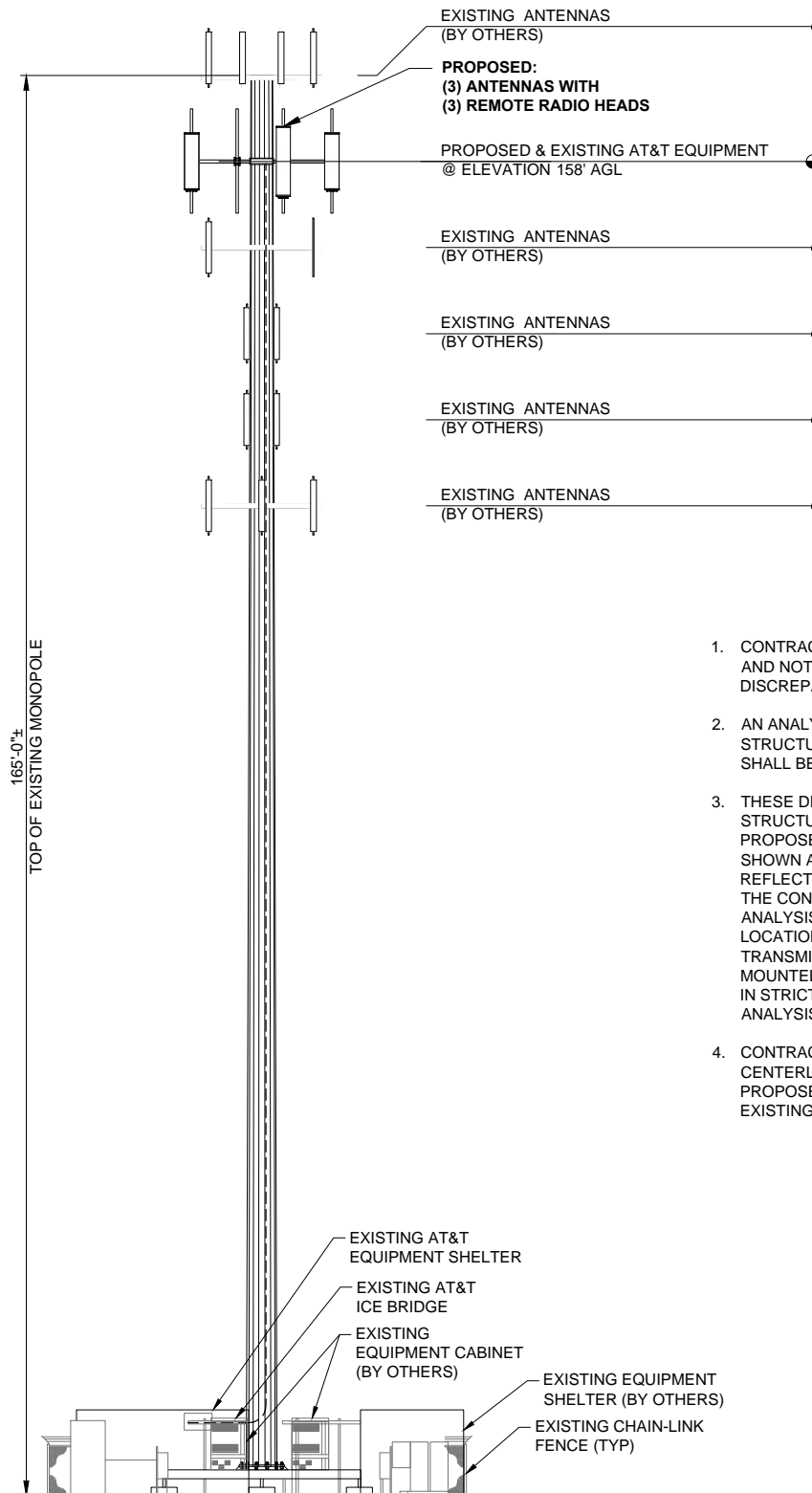
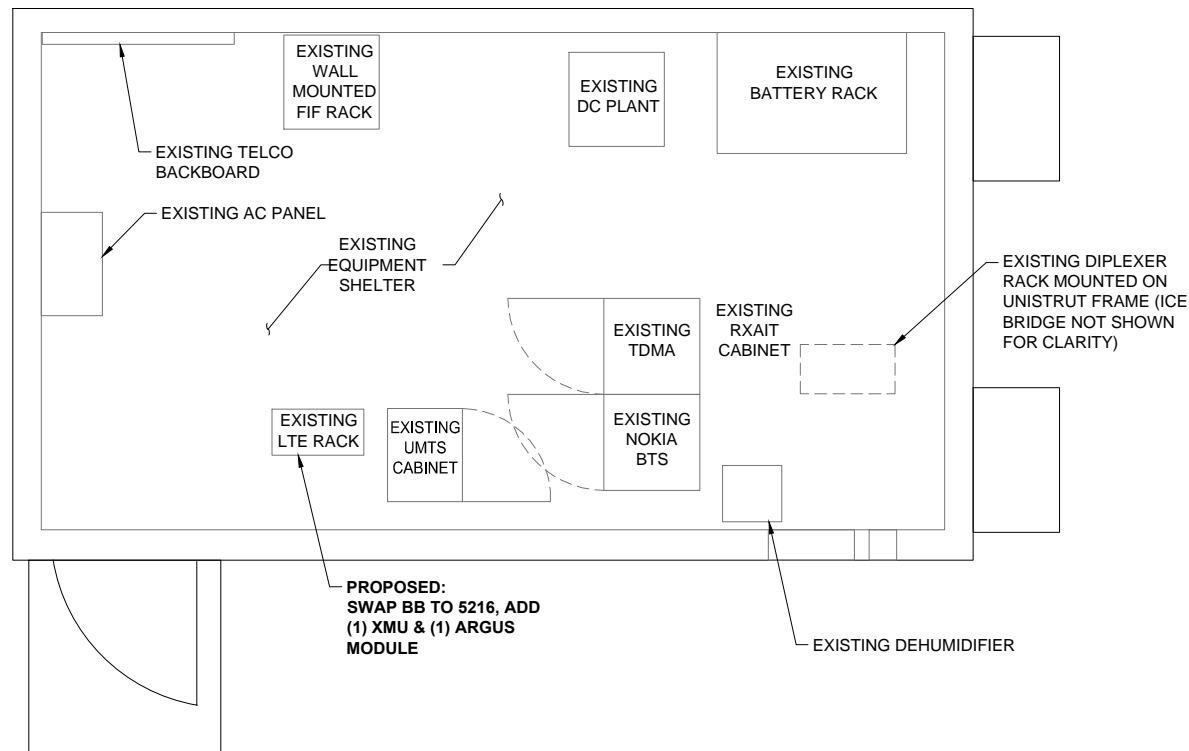
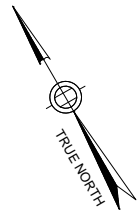
SUBMITTALS		
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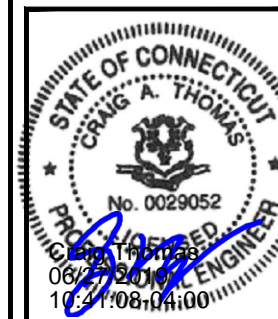
FA# 10035346
 SITE# CTV1135
 SOUTH WINDSOR WEST
 300 GOVERNORS HIGHWAY
 SOUTH WINDSOR, CT 06074

SITE PLAN

C-1



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. THESE DRAWINGS ARE NOT INTENDED TO REFLECT THE STRUCTURAL INTEGRITY OF THE TOWER. THE PROPOSED ANTENNAS AND TRANSMISSION LINES SHOWN ARE REPRESENTATIVE IN NATURE AND DO NOT REFLECT THE ACTUAL CONFIGURATIONS REQUIRED. THE CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS OF THIS TOWER SITE FOR THE APPROVED LOCATION AND CONFIGURATION OF ALL ANTENNAS AND TRANSMISSION LINES. ALL ANTENNAS MUST BE MOUNTED AND THE TRANSMISSION LINES CONFIGURED IN STRICT ACCORDANCE WITH THE STRUCTURAL ANALYSIS.
4. CONTRACTOR SHALL VERIFY THE EXISTING ANTENNA CENTERLINE HEIGHT ABOVE GROUND LEVEL. PROPOSED ANTENNA CENTERLINE SHALL MATCH EXISTING.



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

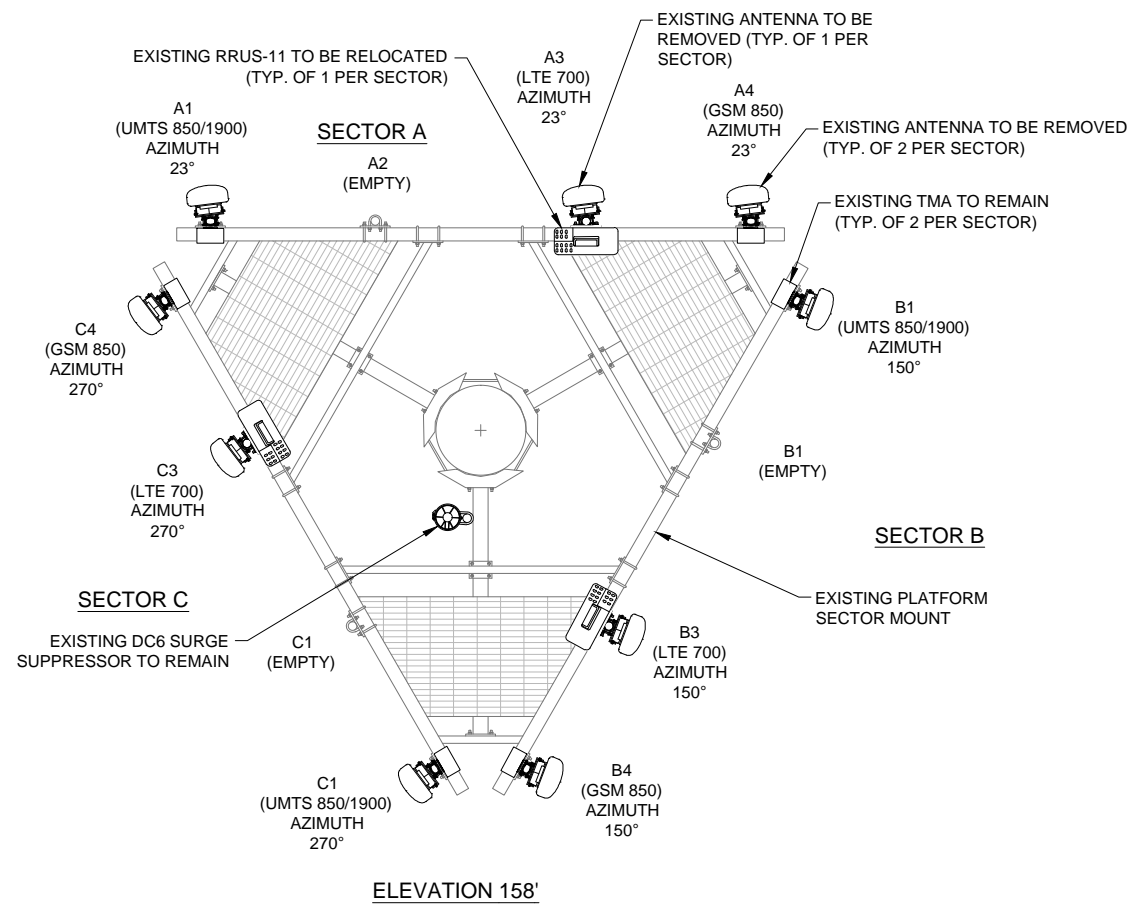
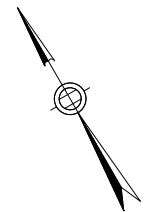
SUBMITTALS		
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FA# 10035346
 SITE# CTV1135
 SOUTH WINDSOR WEST
 300 GOVERNORS HIGHWAY
 SOUTH WINDSOR, CT 06074

EQUIPMENT LAYOUT & PROPOSED TOWER ELEVATION

C-2

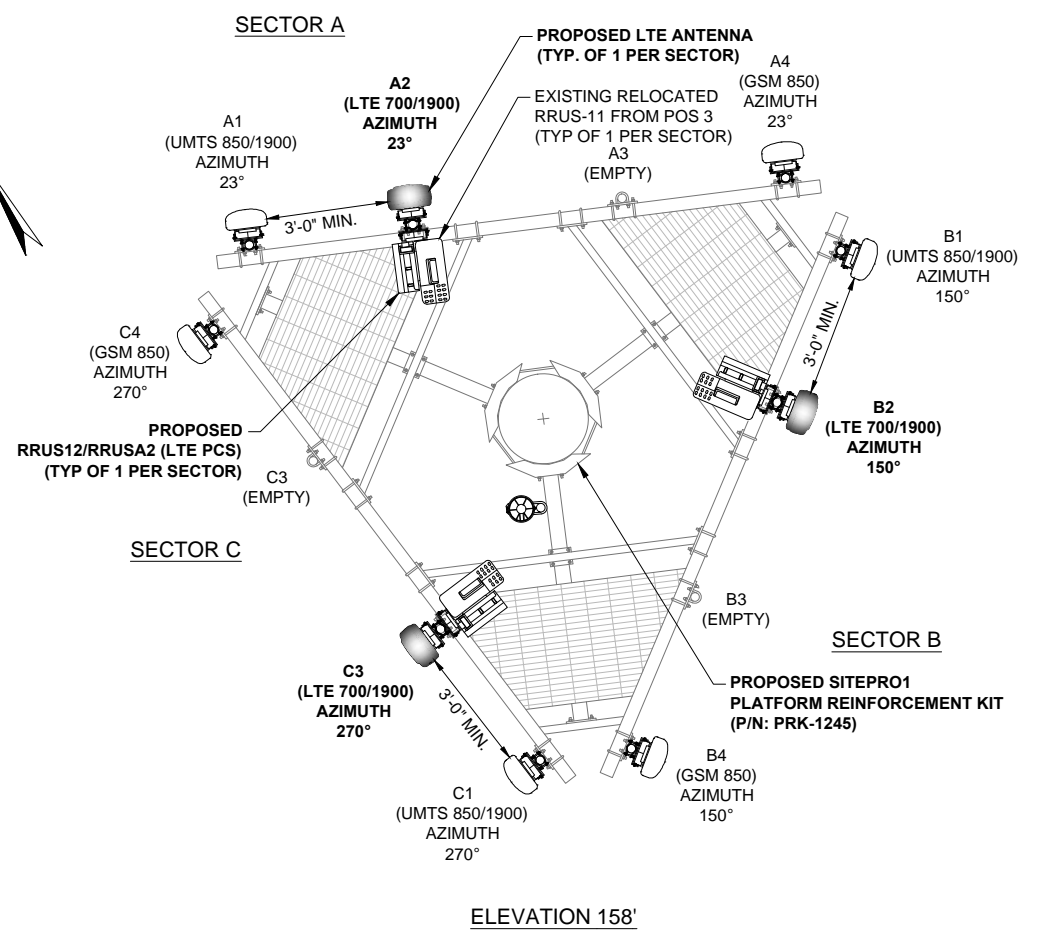
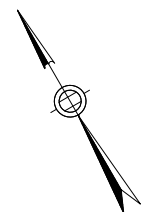


STRUCTURAL NOTE:

1. CONTRACTOR SHALL REFER TO THE TOWER EQUIPMENT INSTALLATION MOUNT MODIFICATION REPORT; SITE NUMBER: CTV1135; SITE NAME: SOUTH WINDSOR WEST; FA LOCATION:10035346; CROWN BU NUMBER: 828054; CROWN ORDER NUMBER: CROWN ORDER; ISSUED BY INFINGY ENGINEERING, PLLC. ON 02/11/19. THE MOUNT MODIFICATIONS MUST BE PERFORMED PRIOR TO THE INSTALLATION OF THE EQUIPMENT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING MEMBERS AND HARDWARE ARE INSTALLED PROPERLY AS DESCRIBED IN THIS REPORT.
2. CONTRACTOR TO VERIFY FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEER W/ ANY DISCREPANCIES PRIOR TO THE INSTALLATION.
3. CONTRACTOR SHALL NOT EXCEED MOUNTING MORE THAN (2) RRHS PER ANTENNA MOUNTING PIPE - RELOCATE TO AN ADJACENT ANTENNA MOUNTING PIPE AS NEEDED.
4. CONTRACTOR TO VERIFY FINAL RF CONFIGURATION AND NOTIFY CARRIER AND ENGINEER W/ ANY DISCREPANCIES PRIOR TO THE INSTALLATION.

1 EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



NOTES:

1. THE CONTRACTOR SHALL ROTATE EACH SECTOR MOUNT 7° TO THE WEST TO ACCOMMODATE THE AZIMUTH OF THE PROPOSED LTE ANTENNAS.

2 PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.



PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: CAT

SUBMITTALS		
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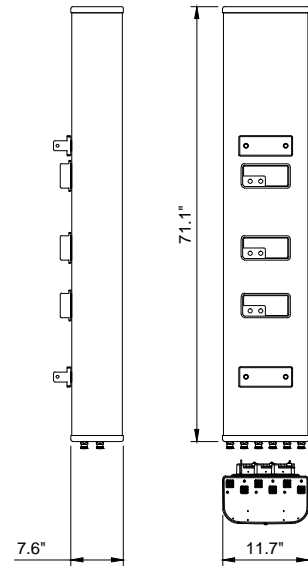
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FA# 10035346
SITE# CTV1135
SOUTH WINDSOR WEST
300 GOVERNORS HIGHWAY
SOUTH WINDSOR, CT 06074

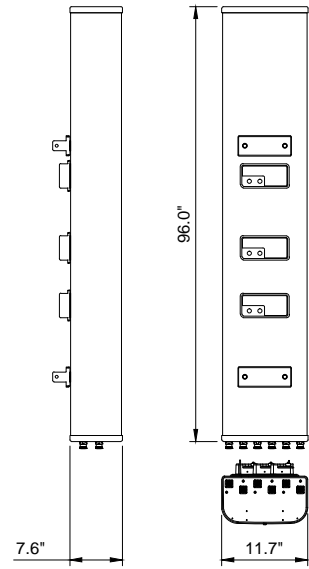
EXISTING & PROPOSED ANTENNA LAYOUT

C-3

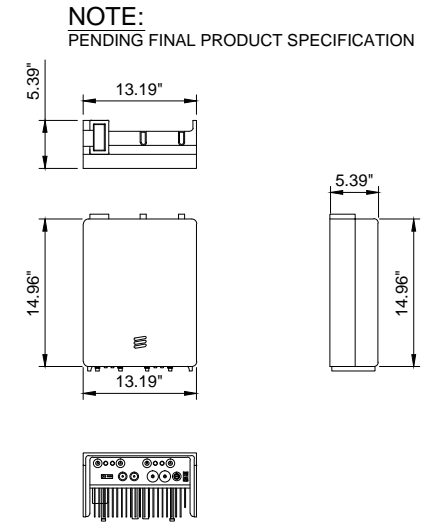
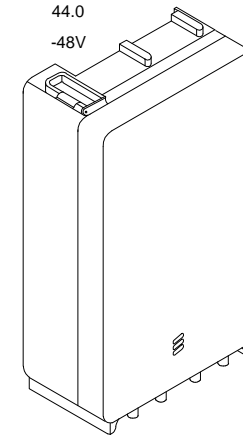
MANUFACTURER: CCI
 MODEL NO.: HPA65R-BU6A
 COLOR: LIGHT GRAY
 DIMENSIONS (LxWxD): 71.1" x 11.7" x 7.6"
 1807mm x 297mm x 193mm
 WEIGHT (lbs): 41.9
 CONNECTOR: 6 x 4.3-10 FEMALE
 FRONT WIND LOAD: 201 LBS @ 100 MPH
 894 N @ 161 KPH
 SIDE WIND LOAD: 142 LBS @ 100 MPH
 633 N @ 161 KPH
 WIND SPEED MAX.: >150 MPH (>241 KPH)



MANUFACTURER: CCI
 MODEL NO.: HPA65R-BU8A
 COLOR: LIGHT GRAY
 DIMENSIONS (LxWxD): 96.0" x 11.7" x 7.6"
 2438mm x 297mm x 193mm
 WEIGHT (lbs): 54.0
 CONNECTOR: 6 x 4.3-10 FEMALE
 FRONT WIND LOAD: 287 LBS @ 100 MPH
 1278 N @ 161 KPH
 SIDE WIND LOAD: 206 LBS @ 100 MPH
 916 N @ 161 KPH
 WIND SPEED MAX.: >150 MPH (>241 KPH)



MANUFACTURER: ERICSSON
 MODEL NO.: RRUS-4415 B25
 TECHNOLOGY: LTE 1900
 DIMENSIONS (HxWxD): 14.96" x 13.19" x 5.39"
 WEIGHT (lbs): 44.0
 POWER SUPPLY: -48V



1 ANTENNA SPECIFICATIONS

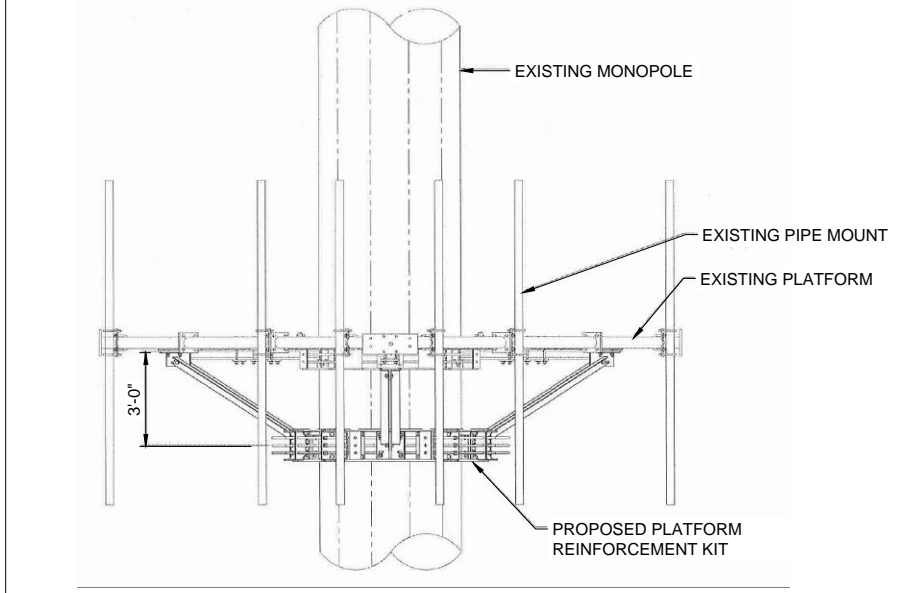
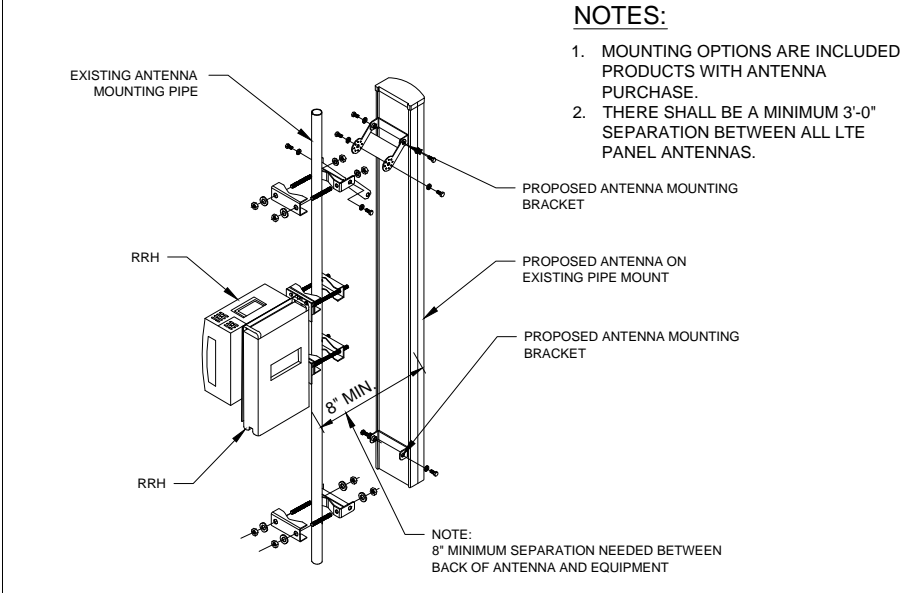
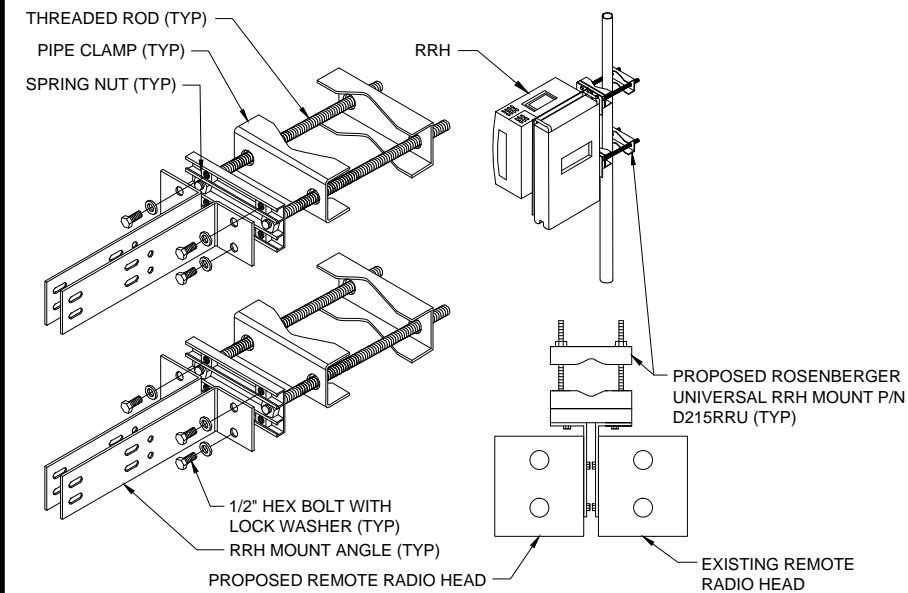
SCALE: N.T.S.

2 ANTENNA SPECIFICATIONS

SCALE: N.T.S.

3 RRUS SPECIFICATIONS

SCALE: N.T.S.



4 BACK TO BACK RRH MOUNTING KIT

SCALE: N.T.S.

5 ANTENNA MOUNTING DETAIL

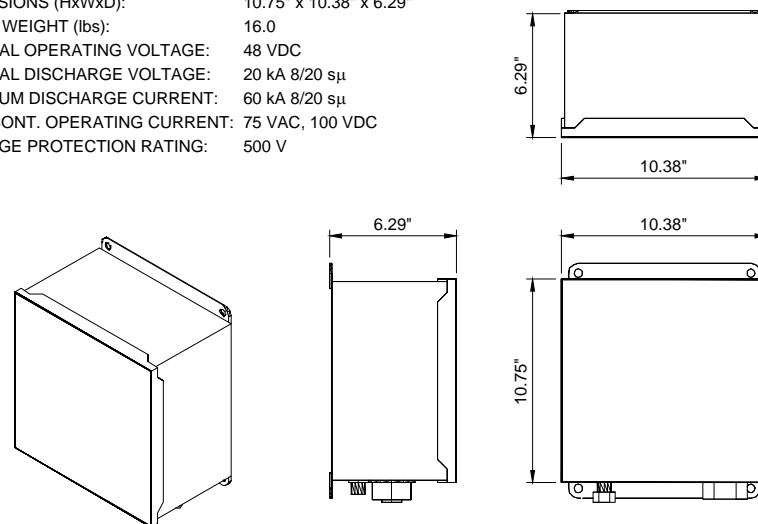
SCALE: N.T.S.

6 SITEPRO1 REINFORCEMENT KIT PRK-1245

SCALE: N.T.S.

RAYCAP DC2-48-60-0-9E

DIMENSIONS (HxWxD): 10.75" x 10.38" x 6.29"
 TOTAL WEIGHT (lbs): 16.0
 NOMINAL OPERATING VOLTAGE: 48 VDC
 NOMINAL DISCHARGE VOLTAGE: 20 kA 8/20 sμ
 MAXIMUM DISCHARGE CURRENT: 60 kA 8/20 sμ
 MAX. CONT. OPERATING CURRENT: 75 VAC, 100 VDC
 VOLTAGE PROTECTION RATING: 500 V



DC2 SURGE SUPPRESSOR SPECIFICATIONS



PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: CAT

SUBMITTALS		
4	06/27/19	REVISED PER COMMENTS
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FA# 10035346
 SITE# CTV1135
 SOUTH WINDSOR WEST
 300 GOVERNORS HIGHWAY
 SOUTH WINDSOR, CT 06074

EQUIPMENT
 DETAILS

C-4

DETAIL NOT USED

DETAIL NOT USED

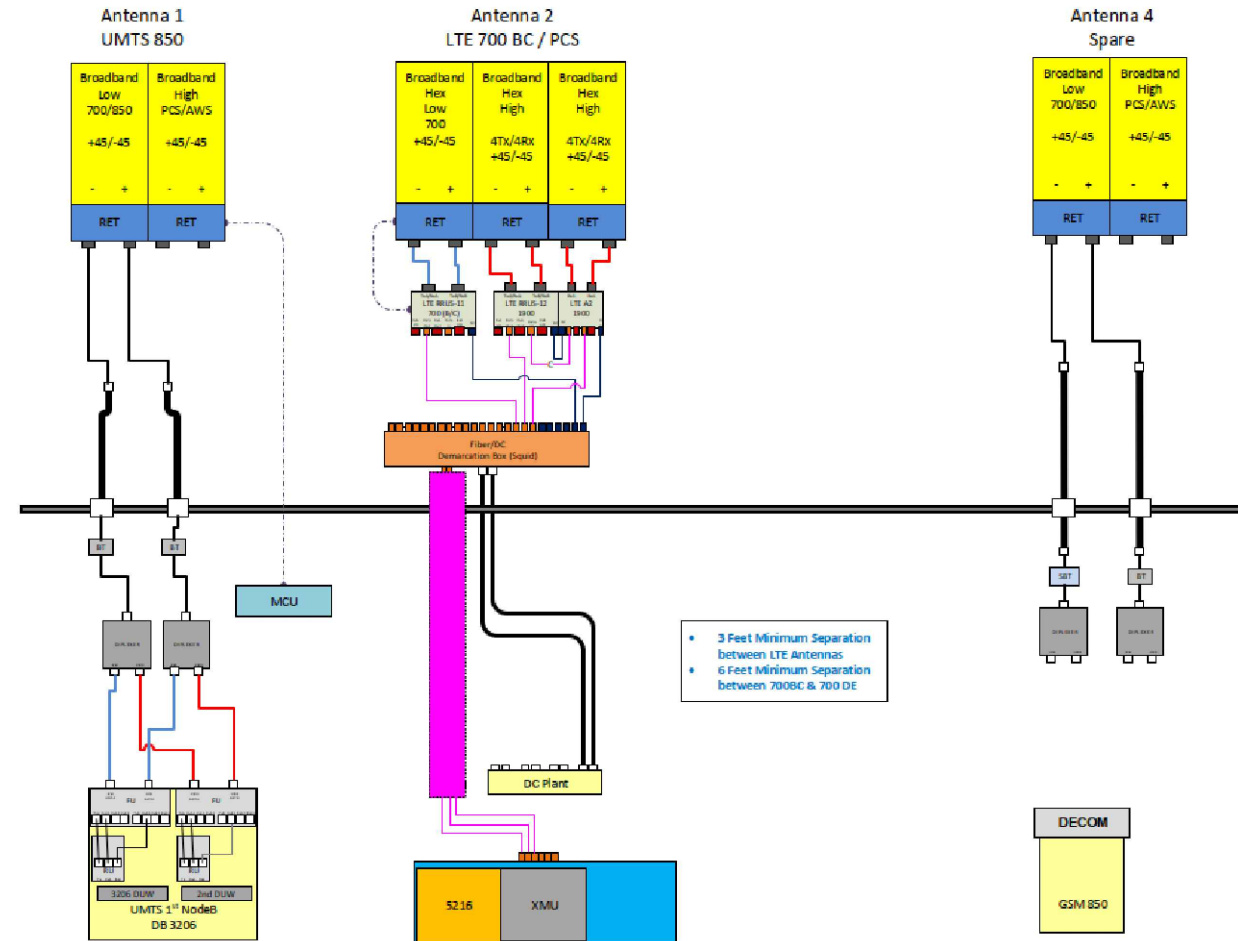
ANTENNA NUMBER	ANTENNA MODEL	ANTENNA BAND	AZIMUTH	ANTENNA CENTERLINE FROM GROUND	TMA's	RRH's	FEEDER	RAYCAP
A1	7770 (55"x11"x5")	UMTS	23°	158'	-	-	(2) 1-5/8" EXISTING (LENGTH @ 180')	
A2	HPA65R-BU8A (96"x11.7"x7.6")	LTE	23°	158'	-	(1) RRUS12/RRUSA2 (LTE PCS) (1) RRUS-11 (700)	(1) FIBER (LENGTH @ 180')	
A3	-	-	-	-	-	-	-	
A4	7770 (55"x11"x5")	UMTS	23°	158'	-	-	(2) 1-5/8" EXISTING (LENGTH @ 180')	
B1	7770 (55"x11"x5")	UMTS	150°	158'	-	-	(2) 1-5/8" EXISTING (LENGTH @ 180')	
B2	HPA65R-BU8A (96"x11.7"x7.6")	LTE	150°	158'	-	(1) RRUS12/RRUSA2 (LTE PCS) (1) RRUS-11 (700)	-	
B3	-	UMTS	150°	158'	-	-	-	
B4	7770 (55"x11"x5")	UMTS	150°	158'	-	-	(2) 1-5/8" EXISTING (LENGTH @ 180')	
C1	7770 (55"x11"x5")	UMTS	270°	158'	-	-	(2) 1-5/8" EXISTING (LENGTH @ 180')	
C2	HPA65R-BU6A (71.2"x11.7"x8.4")	LTE	270°	158'	-	(1) RRUS12/RRUSA2 (LTE PCS) (1) RRUS-11 (700)	-	
C3	-	UMTS	270°	158'	-	-	-	
C4	7770 (55"x11"x5")	UMTS	270°	158'	-	-	(2) 1-5/8" EXISTING (LENGTH @ 180')	

(1) RAYCAP
DC6-48-60-18-8C

NOTES:

- EQUIPMENT LISTED IN **BOLD**, DELINEATES THAT THE EQUIPMENT IS PROPOSED
- * DENOTES THAT EQUIPMENT IS TO BE GROUND MOUNTED

Diagram - Sector A Diagram File Name - CT1135_ABC_LTE2C_BrStd_Rev4.vsd
 Moll Site Name - CTV1135 Location Name - SOUTH WINDSOR WEST Market - CONNECTICUT Market Cluster - NEW ENGLAND
 Comments: Important Note: For detailed radio to antenna wiring refer to the latest field notice - Antenna - Radio Connection Drawings Playbook v6.0 - Ericsson



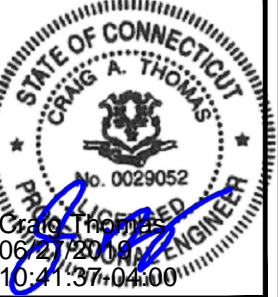
5841 BRIDGE STREET
EAST SYRACUSE, NY 13057



3 CORPORATE PARK DRIVE
SUITE 101
CLIFTON PARK, NY 12065



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



PROJECT NO: ERCC004

DRAWN BY: JT

CHECKED BY: CAT

SUBMITTALS		
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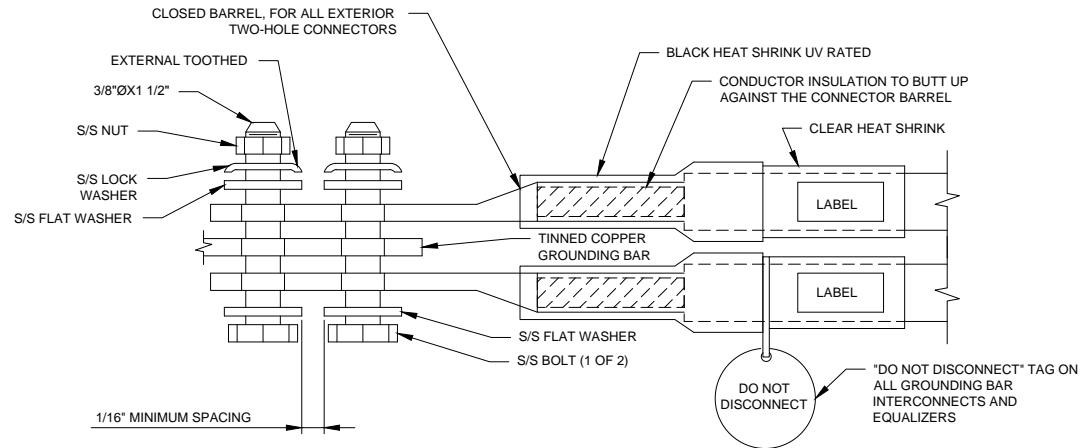
FA# 10035346
SITE# CTV1135
SOUTH WINDSOR WEST
300 GOVERNORS HIGHWAY
SOUTH WINDSOR, CT 06074

ANTENNA CHART &
RF EQUIPMENT
SCHEMATIC

RF-1

NOTES:

- 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.
- 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", "I") WITH 1" HIGH LETTERS.
- 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.
- 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.
- DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUNDING CONDUCTOR DOWN TO GROUNDING BUS.
- 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.
- SUPPLIED AND INSTALLED BY CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUNDING BAR AS REQUIRED, PROVIDING 50% SPARE CONNECTION POINTS.
- ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).



1 EXTERIOR TWO HOLE LUG DETAIL

SCALE: NONE

GENERAL NOTES:

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

GROUNDING NOTES:

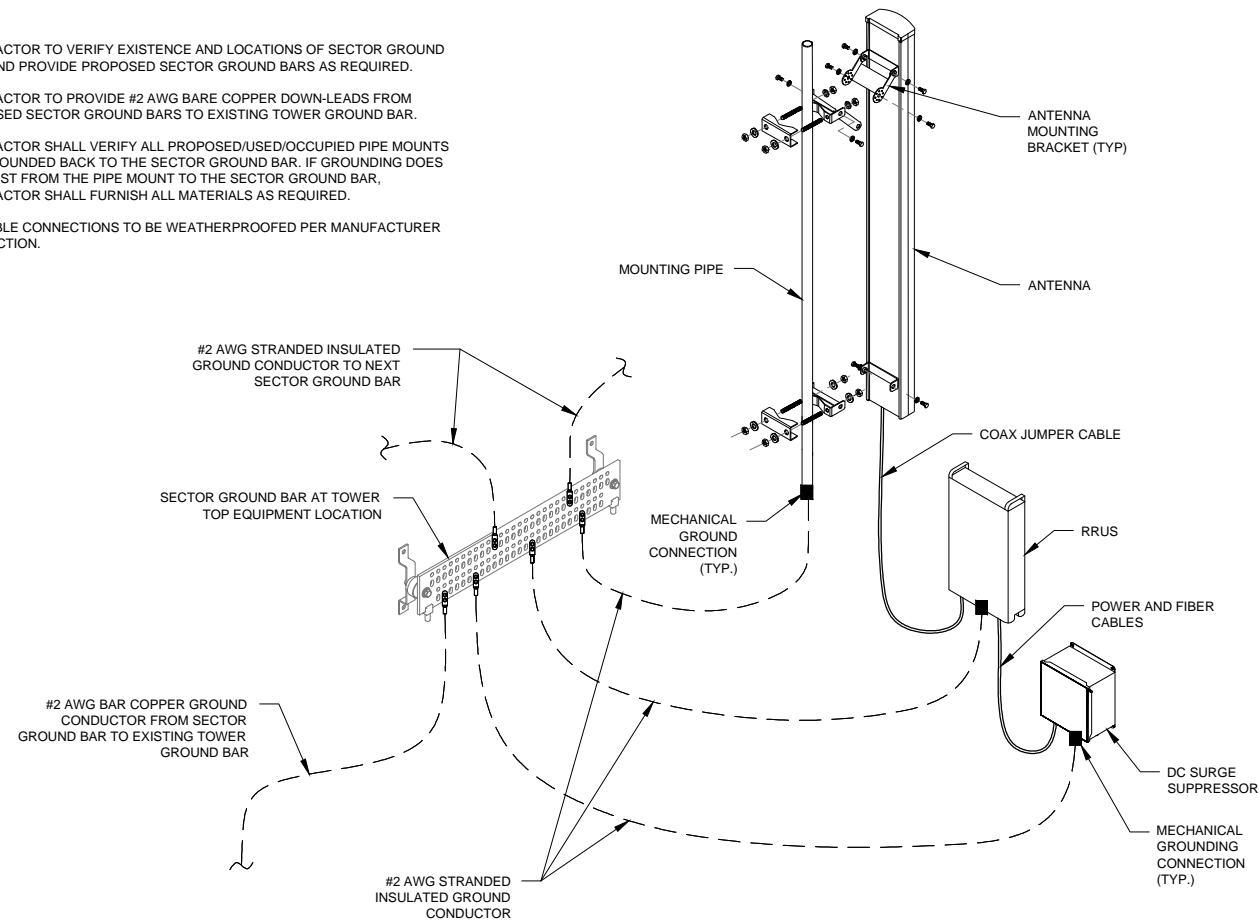
- TOWER GROUNDING BAR: EXTEND (2) #2 AWG TINNED CU WIRE FROM BURIED GROUND RING UP TO THE TOWER GROUND BAR AND MAKE A MECHANICAL CONNECTION. SECURE GROUND BAR DIRECTLY TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
- ANTENNA GROUNDING BAR: ANDREW CORPORATION PART #UGBKIT-0424-T MOUNT GROUND BAR DIRECTLY TO TOWER. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
- GROUNDING BAR: LOCATED CLOSE TO GRADE LOCK BOX TESSCO PART #351546: INSTALL PER MANUFACTURER GUIDELINES.
- 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.
- ALL GROUNDING CONDUCTORS SHALL BE #2 AWG COPPER TINNED UNLESS NOTED OTHERWISE.
- 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.
- KOPR-SHIELD ANTI-OXIDATION COMPOUND SHALL BE USED ON ALL COMPRESSION GROUNDING CONNECTIONS.
- ALL EXOTHERMIC CONNECTIONS SHALL BE INSTALLED UTILIZING THE PROPER CONNECTION/MOLD AND MATERIALS FOR THE PARTICULAR APPLICATION.
- 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.
- 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.
- PLASTIC CLIPS SHALL BE USED TO FASTEN AND SUPPORT GROUNDING CONDUCTORS. FERROUS METAL CLIPS WHICH COMPLETELY SURROUND THE GROUNDING CONDUCTOR SHALL NOT BE USED.
- 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).
- CONTRACTOR SHALL REPAIR/PLACE EXISTING GROUNDING SYSTEM COMPONENTS DAMAGED DURING CONSTRUCTION AT THE CONTRACTORS EXPENSE.
- 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.
- 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

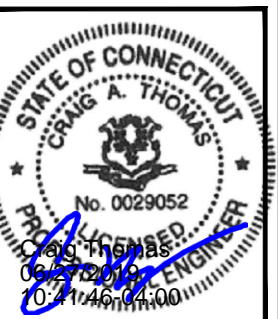
NOTES:

- CONTRACTOR TO VERIFY EXISTENCE AND LOCATIONS OF SECTOR GROUND BARS AND PROVIDE PROPOSED SECTOR GROUND BARS AS REQUIRED.
- CONTRACTOR TO PROVIDE #2 AWG BARE COPPER DOWN-LEADS FROM PROPOSED SECTOR GROUND BARS TO EXISTING TOWER GROUND BAR.
- 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.
- ALL CABLE CONNECTIONS TO BE WEATHERPROOFED PER MANUFACTURER INSTRUCTION.



3 TYPICAL ANTENNA GROUNDING SCHEMATIC

SCALE: NONE



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

SUBMITTALS		
4	06/27/19	REVISED PER COMMENTS
3	05/21/19	REMOVED TMA'S
2	04/29/19	REVISED PER COMMENTS
1	03/21/19	ISSUED FOR CONSTRUCTION
0	03/11/19	ISSUED FOR PERMITTING

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FA# 10035346
SITE# CTV1135
SOUTH WINDSOR WEST
300 GOVERNORS HIGHWAY
SOUTH WINDSOR, CT 06074

GROUNDING DETAILS

G-1

Exhibit D

Structural Analysis Report

Date: **July 16, 2019**

Amanda D Brown
Crown Castle
3530 Toringdon Way
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: 10035346
Carrier Site Name: SOUTH WINDSOR WEST

Crown Castle Designation: **Crown Castle BU Number:** 828054
Crown Castle Site Name: South Windsor/Rt 5
Crown Castle JDE Job Number: 570586
Crown Castle Work Order Number: 1738912
Crown Castle Order Number: 489825 Rev. 0

Engineering Firm Designation: **Paul J. Ford and Company Project Number:** 37519-0238.003.7805

Site Data: **300 Governors Highway, South Windsor, Hartford County, CT**
Latitude 41° 50' 0.4", Longitude -72° 36' 11"
169 Foot - Monopole Tower

Dear Amanda D Brown,

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 (97.7%)

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code per section 1609.3 and Appendix N. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:



Grant J. Austin
Structural Designer
gaustin@pauljford.com

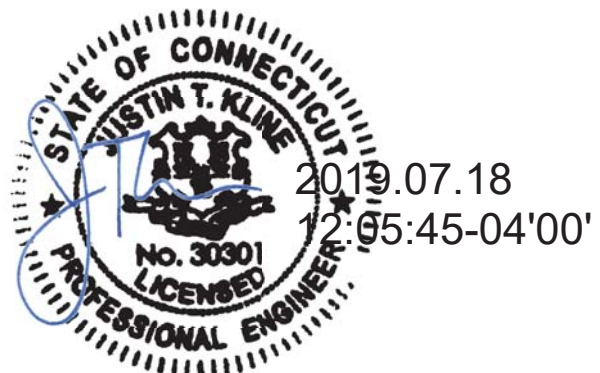


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1) INTRODUCTION

This tower is a 169 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in January of 2000.

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)	
156.0	158.0	1	cci antennas	HPA-65R-BUU-H6 w/ MP	12 2 1	1-5/8 7/8 17/64	
		2	cci antennas	HPA-65R-BUU-H8 w/ MP			
		3	ericsson	RRUS12/RRUS A2			
		6	powerwave tech.	7770.00 w/ MP			
	156.0	156.0	6	communication components inc.			DTMABP7819VG12A
			3	ericsson			RRUS 11
			1	raycap			DC6-48-60-18-8F
			1	tower mounts			Platform Mount [LP 714-1]
			1	site pro 1			PRK-1245

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)
165.0	167.0	3	ericsson	ERICSSON AIR 21 B2A B4P w/ MP	11 2	1-5/8 1-3/8
		1	ericsson	KRY 112 144/1		
	166.0	3	ericsson	AIR 32 B2A/B66AA w/ MP		
		2	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ MP		
	165.0	1	tower mounts	Platform Mount [LP 601-1]		
148.0	148.0	3	alcatel lucent	800MHZ RRH	3 1	1-1/4 1-1/2
		3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		3	alcatel lucent	RRH2X50-800		
		3	commscope	NNVV-65B-R4 w/ MP		
		3	nokia	AAHC w/ MP		
		1	tower mounts	T-Arm Mount [TA 702-3]		
138.0	138.0	3	rfs celwave	APXV18-206517-A w/ MP	6	1-5/8
		1	tower mounts	Pipe Mount [PM 601-3]		
124.0	128.0	2	andrew	VHLP800-11	3 6 1 2	1/4 1/2 5/16 2" Conduit
		3	argus tech.	LLPX310R w/ MP		
		2	dragonwave	HORIZON DUO		
		3	samsung telecom.	WIMAX DAP HEAD		
	124.0	1	tower mounts	Side Arm Mount [SO 701-3]		
118.0	119.0	1	sigfox	CAVITY FILTER	1	1/2
		1	sigfox	CXL 900-3LW		
		1	sigfox	LNA		
	118.0	1	tower mounts	Side Arm Mount [SO 304-1]		
111.0	111.0	3	alcatel lucent	B4 RRH2X60-4R	2 18	1-1/4 1-5/8
		6	andrew	HBXX-6517DS-A2M w/ MP		
		6	andrew	LNX-6514DS-A1M w/ MP		
		2	raycap	RRFDC-3315-PF-48		
		1	tower mounts	Platform Mount [LP 303-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FPA, 99A076AR1, 01/11/2000	3436696	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	EEL, 6255 REV 1, 03/10/2000	3436661	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEL, 99-1371 REV 1, 01/31/2000	3436681	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Centek Engineering, 10003.CO4, 06/11/2010	3487016	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 103179, 12/03/2010	3773025	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2012712.97, 06/29/2012	3793344	CCISITES
4-POST-MODIFICATION INSPECTION	ETS, 03/13/2013	3773024	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37513-1535.003.7700 R1, 12/30/2014	5431037	CCISITES
4-POST-MODIFICATION INSPECTION	FDH Velocitel, 15BZLZ1500, 12/03/2015	6000997	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37516-2594.003.7700, 11/17/2016	6563357	CCISITES
4-POST-MODIFICATION INSPECTION	CCI, 1352522, 05/16/2017	6861018	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 modified in conformance with the referenced modification drawings.
- 5) At the time of analysis, base plate grout was not installed, and it has not been considered in this analysis.
- 6) It is assumed that all base pole reactions are taken by the micropiles.

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
169 - 164	Pole	TP16.455x15.5x0.25	Pole	3.7%	Pass
164 - 159	Pole	TP17.409x16.455x0.25	Pole	11.9%	Pass
159 - 154	Pole	TP18.364x17.409x0.25	Pole	24.2%	Pass
154 - 149	Pole	TP19.318x18.364x0.25	Pole	37.5%	Pass
149 - 144	Pole	TP20.273x19.318x0.25	Pole	51.4%	Pass
144 - 139	Pole	TP21.228x20.273x0.25	Pole	63.5%	Pass
139 - 136.66	Pole	TP22.31x21.228x0.25	Pole	68.7%	Pass
136.66 - 131.66	Pole	TP22.115x21.174x0.3125	Pole	66.7%	Pass
131.66 - 126.66	Pole	TP23.055x22.115x0.3125	Pole	74.0%	Pass
126.66 - 121.66	Pole	TP23.996x23.055x0.3125	Pole	81.1%	Pass
121.66 - 116.66	Pole	TP24.937x23.996x0.3125	Pole	87.1%	Pass
116.66 - 111.66	Pole	TP25.877x24.937x0.3125	Pole	92.2%	Pass
111.66 - 111	Pole	TP26.001x25.877x0.3125	Pole	92.8%	Pass
111 - 110.75	Pole + Reinf.	TP26.048x26.001x0.575	Reinf. 6 Tension Rupture	83.5%	Pass
110.75 - 105.75	Pole + Reinf.	TP26.989x26.048x0.5625	Reinf. 6 Tension Rupture	90.8%	Pass
105.75 - 101.5	Pole + Reinf.	TP27.788x26.989x0.55	Reinf. 6 Tension Rupture	96.5%	Pass
101.5 - 101.25	Pole + Reinf.	TP27.835x27.788x0.9875	Reinf. 12 Tension Rupture	65.8%	Pass
101.25 - 101	Pole + Reinf.	TP27.882x27.835x0.9875	Reinf. 12 Tension Rupture	66.1%	Pass
101 - 100.75	Pole + Reinf.	TP27.93x27.882x0.725	Reinf. 12 Tension Rupture	87.9%	Pass
100.75 - 95.75	Pole + Reinf.	TP28.87x27.93x0.7125	Reinf. 12 Tension Rupture	93.8%	Pass
95.75 - 92.16	Pole + Reinf.	TP30.36x28.87x0.7	Reinf. 12 Tension Rupture	97.7%	Pass
92.16 - 86.83	Pole + Reinf.	TP29.924x28.92x0.9375	Reinf. 12 Tension Rupture	80.5%	Pass
86.83 - 81.83	Pole + Reinf.	TP30.865x29.924x0.925	Reinf. 12 Tension Rupture	84.6%	Pass
81.83 - 81.5	Pole + Reinf.	TP30.927x30.865x0.925	Reinf. 12 Tension Rupture	84.9%	Pass
81.5 - 81.25	Pole + Reinf.	TP30.974x30.927x0.95	Reinf. 11 Tension Rupture	72.1%	Pass
81.25 - 76.25	Pole + Reinf.	TP31.915x30.974x0.925	Reinf. 11 Tension Rupture	75.4%	Pass
76.25 - 71.25	Pole + Reinf.	TP32.856x31.915x0.9	Reinf. 11 Tension Rupture	78.7%	Pass
71.25 - 66.25	Pole + Reinf.	TP33.797x32.856x0.875	Reinf. 11 Tension Rupture	82.0%	Pass
66.25 - 61.25	Pole + Reinf.	TP34.738x33.797x0.8625	Reinf. 11 Tension Rupture	85.3%	Pass
61.25 - 56.25	Pole + Reinf.	TP35.679x34.738x0.85	Reinf. 11 Tension Rupture	88.4%	Pass
56.25 - 51.25	Pole + Reinf.	TP36.619x35.679x0.825	Reinf. 11 Tension Rupture	91.5%	Pass
51.25 - 48.66	Pole + Reinf.	TP38.11x36.619x0.825	Reinf. 11 Tension Rupture	93.0%	Pass
48.66 - 42.33	Pole + Reinf.	TP37.546x36.357x1.0375	Reinf. 11 Tension Rupture	79.6%	Pass
42.33 - 37.4	Pole + Reinf.	TP38.473x37.546x1.025	Reinf. 11 Tension Rupture	82.0%	Pass
37.4 - 37.15	Pole + Reinf.	TP38.52x38.473x1.025	Reinf. 7 Tension Rupture	82.1%	Pass
37.15 - 32.15	Pole + Reinf.	TP39.459x38.52x1	Reinf. 7 Tension Rupture	84.4%	Pass
32.15 - 27.15	Pole + Reinf.	TP40.399x39.459x0.975	Reinf. 7 Tension Rupture	86.7%	Pass
27.15 - 22.15	Pole + Reinf.	TP41.338x40.399x0.9625	Reinf. 7 Tension Rupture	88.9%	Pass
22.15 - 19.5	Pole + Reinf.	TP41.836x41.338x0.95	Reinf. 7 Tension Rupture	90.0%	Pass
19.5 - 19.25	Pole + Reinf.	TP41.883x41.836x1.025	Reinf. 7 Tension Rupture	84.2%	Pass
19.25 - 14.25	Pole + Reinf.	TP42.822x41.883x1	Reinf. 7 Tension Rupture	86.2%	Pass
14.25 - 9.25	Pole + Reinf.	TP43.762x42.822x1	Reinf. 7 Tension Rupture	88.1%	Pass
9.25 - 9	Pole + Reinf.	TP43.809x43.762x1	Reinf. 7 Tension Rupture	88.2%	Pass
9 - 8.75	Pole + Reinf.	TP43.856x43.809x1.025	Reinf. 7 Tension Rupture	85.0%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
8.75 - 7	Pole + Reinf.	TP44.185x43.856x1.025	Reinf. 7 Tension Rupture	85.7%	Pass
7 - 6.75	Pole + Reinf.	TP44.232x44.185x0.975	Reinf. 7 Tension Rupture	89.1%	Pass
6.75 - 5	Pole + Reinf.	TP44.561x44.232x0.975	Reinf. 7 Tension Rupture	89.7%	Pass
5 - 4.75	Pole + Reinf.	TP44.607x44.561x1.45	Reinf. 3 Connection	70.8%	Pass
4.75 - 3	Pole + Reinf.	TP44.936x44.607x1.425	Reinf. 3 Connection	71.4%	Pass
3 - 2.75	Pole + Reinf.	TP44.983x44.936x1.45	Reinf. 7 Tension Rupture	63.0%	Pass
2.75 - 2.25	Pole + Reinf.	TP45.077x44.983x1.45	Reinf. 7 Tension Rupture	63.2%	Pass
2.25 - 2	Pole + Reinf.	TP45.124x45.077x1.2	Reinf. 8 Tension Rupture	75.8%	Pass
2 - 0	Pole + Reinf.	TP45.5x45.124x1.175	Reinf. 8 Tension Rupture	76.5%	Pass
				Summary	
			Pole	92.8%	Pass
			Reinforcement	97.7%	Pass
			Overall	97.7%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	74.1	Pass
1	Base Foundation	0	89.3	Pass

Structure Rating (max from all components) =	97.7%
---	--------------

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 base elevation above sea level: 70.11 ft.
- 2) Basic wind speed of 125 mph.
- 3) Risk Category II.
- 4) Exposure Category C.
- 5) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 6) Topographic Category: 1.
- 7) Crest Height: 0.00 ft.
- 8) Nominal ice thickness of 2.0000 in.
- 9) Ice thickness is considered to increase with height.
- 10) Ice density of 56 pcf.
- 11) A wind speed of 50 mph is used in combination with ice.
- 12) Temperature drop of 50 °F.
- 13) Deflections calculated using a wind speed of 60 mph.
- 14) TIA-222-H Annex S.
- 15) A non-linear (P-delta) analysis was used.
- 16) Pressures are calculated at each section.
- 17) Stress ratio used in pole design is 1.05.
- 18) Tower analysis based on target reliabilities in accordance with Annex S.
- 19) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- 20) 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
--	---	---

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	169.00-164.00	5.00	0.00	18	15.5000	16.4546	0.2500	1.0000	A572-65 (65 ksi)
L2	164.00-159.00	5.00	0.00	18	16.4546	17.4092	0.2500	1.0000	A572-65 (65 ksi)
L3	159.00-154.00	5.00	0.00	18	17.4092	18.3638	0.2500	1.0000	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
L4	154.00-149.00	5.00	0.00	18	18.3638	19.3183	0.2500	1.0000	A572-65 (65 ksi)
L5	149.00-144.00	5.00	0.00	18	19.3183	20.2729	0.2500	1.0000	A572-65 (65 ksi)
L6	144.00-139.00	5.00	0.00	18	20.2729	21.2275	0.2500	1.0000	A572-65 (65 ksi)
L7	139.00-133.33	5.67	3.33	18	21.2275	22.3100	0.2500	1.0000	A572-65 (65 ksi)
L8	133.33-131.66	5.00	0.00	18	21.1742	22.1148	0.3125	1.2500	A572-65 (65 ksi)
L9	131.66-126.66	5.00	0.00	18	22.1148	23.0554	0.3125	1.2500	A572-65 (65 ksi)
L10	126.66-121.66	5.00	0.00	18	23.0554	23.9960	0.3125	1.2500	A572-65 (65 ksi)
L11	121.66-116.66	5.00	0.00	18	23.9960	24.9366	0.3125	1.2500	A572-65 (65 ksi)
L12	116.66-111.66	5.00	0.00	18	24.9366	25.8772	0.3125	1.2500	A572-65 (65 ksi)
L13	111.66-111.00	0.66	0.00	18	25.8772	26.0013	0.3125	1.2500	A572-65 (65 ksi)
L14	111.00-110.75	0.25	0.00	18	26.0013	26.0484	0.5750	2.3000	A572-65 (65 ksi)
L15	110.75-105.75	5.00	0.00	18	26.0484	26.9889	0.5625	2.2500	A572-65 (65 ksi)
L16	105.75-101.50	4.25	0.00	18	26.9889	27.7884	0.5500	2.2000	A572-65 (65 ksi)
L17	101.50-101.25	0.25	0.00	18	27.7884	27.8355	0.9875	3.9500	A572-65 (65 ksi)
L18	101.25-101.00	0.25	0.00	18	27.8355	27.8825	0.9875	3.9500	A572-65 (65 ksi)
L19	101.00-100.75	0.25	0.00	18	27.8825	27.9295	0.7250	2.9000	A572-65 (65 ksi)
L20	100.75-95.75	5.00	0.00	18	27.9295	28.8701	0.7125	2.8500	A572-65 (65 ksi)
L21	95.75-87.83	7.92	4.33	18	28.8701	30.3600	0.7000	2.8000	A572-65 (65 ksi)
L22	87.83-86.83	5.33	0.00	18	28.9205	29.9235	0.9375	3.7500	A572-65 (65 ksi)
L23	86.83-81.83	5.00	0.00	18	29.9235	30.8645	0.9250	3.7000	A572-65 (65 ksi)
L24	81.83-81.50	0.33	0.00	18	30.8645	30.9266	0.9250	3.7000	A572-65 (65 ksi)
L25	81.50-81.25	0.25	0.00	18	30.9266	30.9737	0.9500	3.8000	A572-65 (65 ksi)
L26	81.25-76.25	5.00	0.00	18	30.9737	31.9146	0.9250	3.7000	A572-65 (65 ksi)
L27	76.25-71.25	5.00	0.00	18	31.9146	32.8556	0.9000	3.6000	A572-65 (65 ksi)
L28	71.25-66.25	5.00	0.00	18	32.8556	33.7966	0.8750	3.5000	A572-65 (65 ksi)
L29	66.25-61.25	5.00	0.00	18	33.7966	34.7376	0.8625	3.4500	A572-65 (65 ksi)
L30	61.25-56.25	5.00	0.00	18	34.7376	35.6785	0.8500	3.4000	A572-65 (65 ksi)
L31	56.25-51.25	5.00	0.00	18	35.6785	36.6195	0.8250	3.3000	A572-65 (65 ksi)
L32	51.25-43.33	7.92	5.33	18	36.6195	38.1100	0.8250	3.3000	A572-65 (65 ksi)
L33	43.33-42.33	6.33	0.00	18	36.3569	37.5463	1.0375	4.1500	A572-65 (65 ksi)
L34	42.33-37.40	4.93	0.00	18	37.5463	38.4726	1.0250	4.1000	A572-65 (65 ksi)
L35	37.40-37.15	0.25	0.00	18	38.4726	38.5196	1.0250	4.1000	A572-65 (65 ksi)
L36	37.15-32.15	5.00	0.00	18	38.5196	39.4591	1.0000	4.0000	A572-65 (65 ksi)
L37	32.15-27.15	5.00	0.00	18	39.4591	40.3986	0.9750	3.9000	A572-65 (65 ksi)
L38	27.15-22.15	5.00	0.00	18	40.3986	41.3381	0.9625	3.8500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L39	22.15-19.50	2.65	0.00	18	41.3381	41.8360	0.9500	3.8000	(65 ksi) A572-65
L40	19.50-19.25	0.25	0.00	18	41.8360	41.8830	1.0250	4.1000	(65 ksi) A572-65
L41	19.25-14.25	5.00	0.00	18	41.8830	42.8225	1.0000	4.0000	(65 ksi) A572-65
L42	14.25-9.25	5.00	0.00	18	42.8225	43.7620	1.0000	4.0000	(65 ksi) A572-65
L43	9.25-9.00	0.25	0.00	18	43.7620	43.8089	1.0000	4.0000	(65 ksi) A572-65
L44	9.00-8.75	0.25	0.00	18	43.8089	43.8559	1.0250	4.1000	(65 ksi) A572-65
L45	8.75-7.00	1.75	0.00	18	43.8559	44.1847	1.0250	4.1000	(65 ksi) A572-65
L46	7.00-6.75	0.25	0.00	18	44.1847	44.2317	0.9750	3.9000	(65 ksi) A572-65
L47	6.75-5.00	1.75	0.00	18	44.2317	44.5605	0.9750	3.9000	(65 ksi) A572-65
L48	5.00-4.75	0.25	0.00	18	44.5605	44.6075	1.4500	5.8000	(65 ksi) A572-65
L49	4.75-3.00	1.75	0.00	18	44.6075	44.9363	1.4250	5.7000	(65 ksi) A572-65
L50	3.00-2.75	0.25	0.00	18	44.9363	44.9833	1.4500	5.8000	(65 ksi) A572-65
L51	2.75-2.25	0.50	0.00	18	44.9833	45.0772	1.4500	5.8000	(65 ksi) A572-65
L52	2.25-2.00	0.25	0.00	18	45.0772	45.1242	1.2000	4.8000	(65 ksi) A572-65
L53	2.00-0.00	2.00		18	45.1242	45.5000	1.1750	4.7000	(65 ksi) A572-65

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	15.7005	12.1009	355.5445	5.4138	7.8740	45.1542	711.5567	6.0516	2.2880	9.152
	16.6699	12.8583	426.5776	5.7526	8.3589	51.0326	853.7164	6.4304	2.4560	9.824
L2	16.6699	12.8583	426.5776	5.7526	8.3589	51.0326	853.7164	6.4304	2.4560	9.824
	17.6392	13.6158	506.4925	6.0915	8.8439	57.2705	1013.6514	6.8092	2.6240	10.496
L3	17.6392	13.6158	506.4925	6.0915	8.8439	57.2705	1013.6514	6.8092	2.6240	10.496
	18.6085	14.3733	595.8124	6.4304	9.3288	63.8682	1192.4089	7.1880	2.7920	11.168
L4	18.6085	14.3733	595.8124	6.4304	9.3288	63.8682	1192.4089	7.1880	2.7920	11.168
	19.5778	15.1307	695.0606	6.7693	9.8137	70.8254	1391.0358	7.5668	2.9600	11.84
L5	19.5778	15.1307	695.0606	6.7693	9.8137	70.8254	1391.0358	7.5668	2.9600	11.84
	20.5471	15.8882	804.7602	7.1081	10.2986	78.1424	1610.5794	7.9456	3.1280	12.512
L6	20.5471	15.8882	804.7602	7.1081	10.2986	78.1424	1610.5794	7.9456	3.1280	12.512
	21.5164	16.6456	925.4345	7.4470	10.7836	85.8189	1852.0868	8.3244	3.2960	13.184
L7	21.5164	16.6456	925.4345	7.4470	10.7836	85.8189	1852.0868	8.3244	3.2960	13.184
	22.6156	17.5046	1076.2196	7.8313	11.3335	94.9593	2153.8554	8.7540	3.4866	13.946
L8	22.6156	17.5046	1076.2196	7.8313	11.3335	94.9593	2153.8554	8.7540	3.4866	13.946
	22.0888	20.6922	1137.7489	7.4059	10.7565	105.7730	2276.9949	10.3481	3.1767	10.165
L8	22.4078	21.6252	1298.6833	7.7398	11.2343	115.5995	2599.0754	10.8146	3.3422	10.695
L9	22.4078	21.6252	1298.6833	7.7398	11.2343	115.5995	2599.0754	10.8146	3.3422	10.695
	23.3629	22.5581	1474.1202	8.0737	11.7122	125.8625	2950.1801	11.2812	3.5078	11.225
L10	23.3629	22.5581	1474.1202	8.0737	11.7122	125.8625	2950.1801	11.2812	3.5078	11.225
	24.3180	23.4911	1664.6854	8.4076	12.1900	136.5619	3331.5612	11.7478	3.6733	11.755
L11	24.3180	23.4911	1664.6854	8.4076	12.1900	136.5619	3331.5612	11.7478	3.6733	11.755
	25.2731	24.4240	1871.0044	8.7416	12.6678	147.6978	3744.4707	12.2143	3.8388	12.284
L12	25.2731	24.4240	1871.0044	8.7416	12.6678	147.6978	3744.4707	12.2143	3.8388	12.284
	26.2282	25.3570	2093.7030	9.0755	13.1456	159.2702	4190.1609	12.6809	4.0044	12.814
L13	26.2282	25.3570	2093.7030	9.0755	13.1456	159.2702	4190.1609	12.6809	4.0044	12.814
	26.3542	25.4801	2124.3562	9.1195	13.2087	160.8304	4251.5076	12.7425	4.0262	12.884
L14	26.3137	46.4043	3790.2095	9.0263	13.2087	286.9485	7585.4063	23.2066	3.5642	6.199
	26.3615	46.4902	3811.2799	9.0430	13.2326	288.0227	7627.5747	23.2495	3.5725	6.213
L15	26.3634	45.5018	3733.9174	9.0475	13.2326	282.1764	7472.7479	22.7552	3.5945	6.39
	27.3185	47.1811	4162.7761	9.3814	13.7104	303.6222	8331.0298	23.5950	3.7601	6.685
L16	27.3204	46.1545	4076.0486	9.3858	13.7104	297.2965	8157.4605	23.0816	3.7821	6.876

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L17	28.1323	47.5501	4457.1145	9.6696	14.1165	315.7373	8920.0938	23.7796	3.9228	7.132
	28.0648	84.0029	7623.0995	9.5143	14.1165	540.0124	15256.229	42.0094	3.1528	3.193
L18	28.1125	84.1503	7663.3002	9.5310	14.1404	541.9429	15336.683	42.0831	3.1610	3.201
	28.1125	84.1503	7663.3002	9.5310	14.1404	541.9429	15336.683	42.0831	3.1610	3.201
L19	28.1603	84.2977	7703.6419	9.5477	14.1643	543.8770	15417.420	42.1568	3.1693	3.209
	28.2008	62.4935	5823.0659	9.6409	14.1643	411.1083	11653.794	31.2527	3.6313	5.009
L20	28.2485	62.6017	5853.3701	9.6576	14.1882	412.5520	11714.442	31.3068	3.6396	5.02
	28.2505	61.5506	5760.3830	9.6620	14.1882	405.9981	11528.345	30.7812	3.6616	5.139
L21	29.2056	63.6777	6378.4737	9.9960	14.6660	434.9152	12765.340	31.8449	3.8271	5.371
	29.2075	62.5884	6274.9201	10.0004	14.6660	427.8544	12558.096	31.3001	3.8491	5.499
L22	30.7204	65.8986	7324.1268	10.5293	15.4229	474.8871	14657.890	32.9556	4.1114	5.873
	30.0494	83.2668	8237.5165	9.9339	14.6916	560.6960	16485.872	41.6413	3.4400	3.669
L23	30.2405	86.2516	9155.4967	10.2900	15.2012	602.2896	18323.040	43.1340	3.6165	3.858
	30.2425	85.1382	9045.1152	10.2945	15.2012	595.0282	18102.132	42.5772	3.6385	3.934
L24	31.1979	87.9009	9954.5110	10.6285	15.6792	634.8877	19922.120	43.9588	3.8042	4.113
	31.1979	87.9009	9954.5110	10.6285	15.6792	634.8877	19922.120	43.9588	3.8042	4.113
L25	31.2610	88.0832	10016.586	10.6506	15.7107	637.5639	20046.352	44.0500	3.8151	4.124
	31.2571	90.3885	10261.609	10.6417	15.7107	653.1598	20536.721	45.2028	3.7711	3.97
L26	31.3049	90.5303	10310.002	10.6584	15.7346	655.2433	20633.571	45.2738	3.7794	3.978
	31.3088	88.2214	10063.784	10.6673	15.7346	639.5951	20140.811	44.1191	3.8234	4.133
L27	32.2643	90.9840	11039.141	11.0013	16.2126	680.8976	22092.809	45.5006	3.9890	4.312
	32.2681	88.5964	10766.802	11.0102	16.2126	664.0996	21547.771	44.3066	4.0330	4.481
L28	33.2236	91.2844	11776.818	11.3442	16.6906	705.5939	23569.133	45.6509	4.1986	4.665
	33.2275	88.8181	11476.578	11.3531	16.6906	687.6054	22968.257	44.4175	4.2426	4.849
L29	34.1830	91.4315	12519.712	11.6872	17.1687	729.2189	25055.898	45.7244	4.4082	5.038
	34.1849	90.1595	12354.921	11.6916	17.1687	719.6206	24726.100	45.0883	4.4302	5.136
L30	35.1404	92.7355	13444.459	12.0256	17.6467	761.8692	26906.610	46.3766	4.5958	5.328
	35.1423	91.4252	13264.285	12.0301	17.6467	751.6591	26546.024	45.7213	4.6178	5.433
L31	36.0978	93.9639	14400.200	12.3641	18.1247	794.5074	28819.348	46.9909	4.7834	5.628
	36.1017	91.2657	14006.784	12.3730	18.1247	772.8013	28031.998	45.6415	4.8274	5.851
L32	37.0571	93.7297	15172.150	12.7070	18.6027	815.5884	30364.265	46.8737	4.9930	6.052
	37.0571	93.7297	15172.150	12.7070	18.6027	815.5884	30364.265	46.8737	4.9930	6.052
L33	38.5706	97.6326	17147.498	13.2362	19.3599	885.7234	34317.559	48.8256	5.2554	6.37
	37.7747	116.3077	18330.455	12.5384	18.4693	992.4815	36685.030	58.1649	4.5728	4.408
	37.9655	120.2244	20245.362	12.9606	19.0735	1061.4379	40517.365	60.1236	4.7822	4.609

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L34	37.9674	118.8166	20021.994 4	12.9651	19.0735	1049.7269	40070.334 3	59.4196	4.8042	4.687
	38.9080	121.8303	21584.488 6	13.2939	19.5441	1104.3990	43197.378 6	60.9267	4.9672	4.846
L35	38.9080	121.8303	21584.488 6	13.2939	19.5441	1104.3990	43197.378 6	60.9267	4.9672	4.846
	38.9557	121.9831	21665.817 2	13.3106	19.5680	1107.2084	43360.142 9	61.0032	4.9755	4.854
L36	38.9596	119.0873	21179.691 7	13.3195	19.5680	1082.3655	42387.252 2	59.5550	5.0195	5.019
	39.9136	122.0692	22810.872 4	13.6530	20.0452	1137.9704	45651.759 9	61.0462	5.1848	5.185
L37	39.9174	119.0948	22284.000 7	13.6619	20.0452	1111.6862	44597.323 2	59.5587	5.2288	5.363
	40.8714	122.0022	23956.178 0	13.9954	20.5225	1167.3137	47943.878 2	61.0127	5.3942	5.532
L38	40.8733	120.4763	23671.549 8	13.9998	20.5225	1153.4447	47374.247 3	60.2496	5.4162	5.627
	41.8273	123.3464	25403.955 2	14.3333	20.9997	1209.7269	50841.337 5	61.6849	5.5815	5.799
L39	41.8292	121.7822	25097.329 1	14.3378	20.9997	1195.1255	50227.682 0	60.9027	5.6035	5.898
	42.3348	123.2836	26037.063 3	14.5145	21.2527	1225.1185	52108.386 8	61.6535	5.6911	5.991
L40	42.3233	132.7725	27938.307 6	14.4879	21.2527	1314.5775	55913.377 2	66.3989	5.5591	5.424
	42.3710	132.9253	28034.891 4	14.5046	21.2766	1317.6425	56106.671 9	66.4753	5.5674	5.432
L41	42.3748	129.7626	27401.350 7	14.5135	21.2766	1287.8661	54838.756 9	64.8936	5.6114	5.611
	43.3288	132.7445	29334.132 5	14.8470	21.7538	1348.4594	58706.863 6	66.3849	5.7768	5.777
L42	43.3288	132.7445	29334.132 5	14.8470	21.7538	1348.4594	58706.863 6	66.3849	5.7768	5.777
	44.2828	135.7264	31355.729 2	15.1805	22.2311	1410.4462	62752.717 0	67.8761	5.9421	5.942
L43	44.2828	135.7264	31355.729 2	15.1805	22.2311	1410.4462	62752.717 0	67.8761	5.9421	5.942
	44.3305	135.8755	31459.176 2	15.1972	22.2549	1413.5821	62959.747 1	67.9507	5.9504	5.95
L44	44.3266	139.1911	32189.195 1	15.1883	22.2549	1446.3847	64420.745 6	69.6088	5.9064	5.762
	44.3743	139.3439	32295.337 2	15.2050	22.2788	1449.5997	64633.169 5	69.6852	5.9146	5.77
L45	44.3743	139.3439	32295.337 2	15.2050	22.2788	1449.5997	64633.169 5	69.6852	5.9146	5.77
	44.7082	140.4137	33044.872 6	15.3217	22.4458	1472.2049	66133.226 5	70.2202	5.9725	5.827
L46	44.7159	133.7190	31542.298 2	15.3395	22.4458	1405.2627	63126.100 5	66.8722	6.0605	6.216
	44.7636	133.8643	31645.281 2	15.3561	22.4697	1408.3535	63332.202 0	66.9449	6.0688	6.224
L47	44.7636	133.8643	31645.281 2	15.3561	22.4697	1408.3535	63332.202 0	66.9449	6.0688	6.224
	45.0975	134.8819	32372.445 2	15.4729	22.6367	1430.0842	64787.486 9	67.4538	6.1267	6.284
L48	45.0242	198.4075	46586.703 2	15.3042	22.6367	2058.0128	93234.706 4	99.2226	5.2907	3.649
	45.0719	198.6237	46739.155 3	15.3209	22.6606	2062.5732	93539.811 2	99.3307	5.2989	3.654
L49	45.0758	195.3122	46013.177 9	15.3298	22.6606	2030.5362	92086.901 2	97.6747	5.3429	3.749
	45.4097	196.7995	47072.326 8	15.4465	22.8276	2062.0755	94206.592 5	98.4184	5.4008	3.79
L50	45.4058	200.1370	47815.642 9	15.4376	22.8276	2094.6376	95694.202 9	100.0875	5.3568	3.694
	45.4535	200.3532	47970.763 0	15.4543	22.8515	2099.2384	96004.647 2	100.1957	5.3651	3.7
L51	45.4535	200.3532	47970.763 0	15.4543	22.8515	2099.2384	96004.647 2	100.1957	5.3651	3.7

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
	45.5489	200.7856	48282.0089	15.4877	22.8992	2108.4552	96627.5486	100.4119	5.3816	3.711
L52	45.5875	167.1196	40648.3821	15.5764	22.8992	1775.0979	81350.2505	83.5757	5.8216	4.851
	45.6352	167.2985	40779.0746	15.5931	22.9231	1778.9514	81611.8073	83.6652	5.8299	4.858
L53	45.6391	163.9064	39997.7285	15.6020	22.9231	1744.8659	80048.0869	81.9688	5.8739	4.999
	46.0206	165.3079	41032.5467	15.7354	23.1140	1775.2248	82119.0850	82.6696	5.9400	5.055

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L1 169.00-164.00				1	1	1			
L2 164.00-159.00				1	1	1			
L3 159.00-154.00				1	1	1			
L4 154.00-149.00				1	1	1			
L5 149.00-144.00				1	1	1			
L6 144.00-139.00				1	1	1			
L7 139.00-133.33				1	1	1			
L8 133.33-131.66				1	1	1			
L9 131.66-126.66				1	1	1			
L10 126.66-121.66				1	1	1			
L11 121.66-116.66				1	1	1			
L12 116.66-111.66				1	1	1			
L13 111.66-111.00				1	1	1			
L14 111.00-110.75				1	1	0.936271			
L15 110.75-105.75				1	1	0.942334			
L16 105.75-101.50				1	1	0.951697			
L17 101.50-101.25				1	1	0.894841			
L18 101.25-101.00				1	1	0.893829			
L19 101.00-100.75				1	1	0.916808			
L20 100.75-95.75				1	1	0.915966			
L21 95.75-87.83				1	1	0.920543			
L22 87.83-86.83				1	1	0.912119			
L23 86.83-81.83				1	1	0.907746			
L24 81.83-81.50				1	1	0.906706			
L25 81.50-81.25				1	1	0.899386			
L26 81.25-76.25				1	1	0.907211			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L27 76.25-71.25				1	1	0.916495			
L28 71.25-66.25				1	1	0.92727			
L29 66.25-61.25				1	1	0.926308			
L30 61.25-56.25				1	1	0.926118			
L31 56.25-51.25				1	1	0.940381			
L32 51.25-43.33				1	1	0.933854			
L33 43.33-42.33				1	1	0.941952			
L34 42.33-37.40				1	1	0.938586			
L35 37.40-37.15				1	1	0.937868			
L36 37.15-32.15				1	1	0.946368			
L37 32.15-27.15				1	1	0.956053			
L38 27.15-22.15				1	1	0.9547			
L39 22.15-19.50				1	1	0.959994			
L40 19.50-19.25				1	1	0.954729			
L41 19.25-14.25				1	1	0.964453			
L42 14.25-9.25				1	1	0.951503			
L43 9.25-9.00				1	1	0.95087			
L44 9.00-8.75				1	1	0.963488			
L45 8.75-7.00				1	1	0.958934			
L46 7.00-6.75				1	1	0.968915			
L47 6.75-5.00				1	1	0.964507			
L48 5.00-4.75				1	1	0.856655			
L49 4.75-3.00				1	1	0.866584			
L50 3.00-2.75				1	1	0.876449			
L51 2.75-2.25				1	1	0.875119			
L52 2.25-2.00				1	1	0.856349			
L53 2.00-0.00				1	1	0.869367			

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
*****Surface ArAr*****										
LDF7-50A(1-5/8)	C	No	Surface Ar (CaAa)	165.00 - 0.00	13	7	0.221 - 0.420	1.9800		0.82

LDF7-50A(1-5/8)	B	No	Surface Ar (CaAa)	138.00 - 0.00	6	6	0.170 - 0.373	1.9800		0.82

LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	124.00 - 0.00	2	1	-0.447 - 0.447	0.6250		0.15
2" (Nominal) Conduit	C	No	Surface Ar (CaAa)	124.00 - 0.00	1	1	-0.478 - 0.478	2.3750		0.72
2" (Nominal) Conduit	C	No	Surface Ar (CaAa)	124.00 - 0.00	1	1	-0.413 - 0.413	2.3750		0.72

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
EC4-50(1/2)	B	No	Surface Ar (CaAa)	118.00 - 0.00	1	1	0.411 0.411	0.6300		0.16

LDF6-50A(1-1/4)	A	No	Surface Ar (CaAa)	111.00 - 0.00	2	2	-0.177 -0.114	1.5500		0.60
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	111.00 - 0.00	18	9	-0.117 0.137	1.9800		0.82

CCI-065125	A	No	Surface Af (CaAa)	22.25 - 0.00	1	1	0.333 0.333	0.1000	2.7000	0.00
CCI-065125	A	No	Surface Af (CaAa)	22.25 - 0.00	1	1	-0.333 -0.333	0.1000	2.7000	0.00
CCI-065125	C	No	Surface Af (CaAa)	22.25 - 0.00	1	1	-0.167 -0.167	0.1000	2.7000	0.00
CCI-065125	B	No	Surface Af (CaAa)	22.25 - 0.00	1	1	0.167 0.167	0.1000	2.7000	0.00
CCI-060100	A	No	Surface Af (CaAa)	47.33 - 22.25	1	1	0.333 0.333	0.1000	2.2000	0.00
CCI-060100	A	No	Surface Af (CaAa)	47.33 - 22.25	1	1	-0.333 -0.333	0.1000	2.2000	0.00
CCI-060100	C	No	Surface Af (CaAa)	47.33 - 22.25	1	1	-0.167 -0.167	0.1000	2.2000	0.00
CCI-060100	B	No	Surface Af (CaAa)	47.33 - 22.25	1	1	0.167 0.167	0.1000	2.2000	0.00
CCI-045100	A	No	Surface Af (CaAa)	90.00 - 80.00	1	1	0.167 0.167	0.1000	2.2000	0.00
CCI-045100	C	No	Surface Af (CaAa)	90.00 - 80.00	1	1	0.167 0.167	0.1000	2.2000	0.00
CCI-045100	B	No	Surface Af (CaAa)	90.00 - 80.00	1	1	0.167 0.167	0.1000	2.2000	0.00
CCI-060100	A	No	Surface Af (CaAa)	108.25 - 98.25	1	1	0.167 0.167	1.6730	5.3460	0.00
CCI-060100	C	No	Surface Af (CaAa)	108.25 - 98.25	1	1	0.167 0.167	1.6730	5.3460	0.00
CCI-060100	B	No	Surface Af (CaAa)	108.25 - 98.25	1	1	0.167 0.167	1.6730	5.3460	0.00

FP 6 x1.25	B	No	Surface Af (CaAa)	53.01 - 0.00	1	1	-0.500 -0.500	0.1000	2.7000	0.00
FP 6 x1.25	A	No	Surface Af (CaAa)	53.01 - 0.00	1	1	0.000 0.000	0.1000	2.7000	0.00
FP 6 x1.25	A	No	Surface Af (CaAa)	53.01 - 0.00	1	1	-0.500 -0.500	0.1000	2.7000	0.00
FP 6 x1.25	C	No	Surface Af (CaAa)	53.01 - 0.00	1	1	0.000 0.000	0.1000	2.7000	0.00
FP 6 x1.25	C	No	Surface Af (CaAa)	53.01 - 0.00	1	1	-0.500 -0.500	0.1000	2.7000	0.00
FP 6 x1.25	B	No	Surface Af (CaAa)	53.01 - 0.00	1	1	0.000 0.000	0.1000	2.7000	0.00
FP 6 x1.25	B	No	Surface Af (CaAa)	81.80 - 53.01	1	1	-0.500 -0.500	0.8880	4.2770	0.00
FP 6 x1.25	A	No	Surface Af (CaAa)	81.80 - 53.01	1	1	0.000 0.000	0.8880	4.2770	0.00
FP 6 x1.25	A	No	Surface Af (CaAa)	81.80 - 53.01	1	1	-0.500 -0.500	0.8880	4.2770	0.00
FP 6 x1.25	C	No	Surface Af (CaAa)	81.80 - 53.01	1	1	0.000 0.000	0.8880	4.2770	0.00
FP 6 x1.25	C	No	Surface Af (CaAa)	81.80 - 53.01	1	1	-0.500 -0.500	0.8880	4.2770	0.00
FP 6 x1.25	B	No	Surface Af (CaAa)	81.80 - 53.01	1	1	0.000 0.000	0.8880	4.2770	0.00

FP 4 x 1.25	B	No	Surface Af (CaAa)	104.00 - 81.80	1	1	-0.500 -0.500	0.1000	2.7000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
FP 4 x 1.25	A	No	Surface Af (CaAa)	104.00 - 81.80	1	1	0.000 0.000	0.1000	2.7000	0.00
FP 4 x 1.25	A	No	Surface Af (CaAa)	104.00 - 81.80	1	1	-0.500 -0.500	0.1000	2.7000	0.00
FP 4 x 1.25	C	No	Surface Af (CaAa)	104.00 - 81.80	1	1	0.000 0.000	0.1000	2.7000	0.00
FP 4 x 1.25	C	No	Surface Af (CaAa)	104.00 - 81.80	1	1	-0.500 -0.500	0.1000	2.7000	0.00
FP 4 x 1.25	B	No	Surface Af (CaAa)	104.00 - 81.80	1	1	0.000 0.000	0.1000	2.7000	0.00

Feed Line/Linear Appurtenances - Entered As Area

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

LDF7-50A(1-5/8)	C	No	No	Inside Pole	156.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
A-DQZNB2Yn1750 N(17/64")	C	No	No	Inside Pole	156.00 - 0.00	1	No Ice	0.00	0.03
							1/2" Ice	0.00	0.03
							1" Ice	0.00	0.03
							2" Ice	0.00	0.03

HB114-1-08U4-M5F(1-1/4)	C	No	No	Inside Pole	148.00 - 0.00	3	No Ice	0.00	1.08
							1/2" Ice	0.00	1.08
							1" Ice	0.00	1.08
							2" Ice	0.00	1.08
MLC6C-06C-008R-008R(1-1/2)	C	No	No	Inside Pole	148.00 - 0.00	1	No Ice	0.00	1.52
							1/2" Ice	0.00	1.52
							1" Ice	0.00	1.52
							2" Ice	0.00	1.52

LDF1-50A(1/4)	C	No	No	Inside Pole	124.00 - 0.00	3	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
LDF4-50A(1/2)	C	No	No	Inside Pole	124.00 - 0.00	4	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
9207(5/16)	C	No	No	Inside Pole	124.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06

Feed Line/Linear Appurtenances Section Areas

Tower Section	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
L1	169.00-164.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.386	0.000	0.01
L2	164.00-159.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.930	0.000	0.05
L3	159.00-154.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.930	0.000	0.07

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
L4	154.00-149.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.930	0.000	0.10
L5	149.00-144.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.930	0.000	0.12
L6	144.00-139.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.930	0.000	0.13
L7	139.00-133.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.548	0.000	0.02
		C	0.000	0.000	7.859	0.000	0.14
L8	133.33-131.66	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.984	0.000	0.01
		C	0.000	0.000	2.315	0.000	0.04
L9	131.66-126.66	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.940	0.000	0.02
		C	0.000	0.000	6.930	0.000	0.13
L10	126.66-121.66	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.940	0.000	0.02
		C	0.000	0.000	8.188	0.000	0.13
L11	121.66-116.66	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.024	0.000	0.02
		C	0.000	0.000	9.617	0.000	0.14
L12	116.66-111.66	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.255	0.000	0.03
		C	0.000	0.000	9.617	0.000	0.14
L13	111.66-111.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.826	0.000	0.00
		C	0.000	0.000	1.270	0.000	0.02
L14	111.00-110.75	A	0.000	0.000	0.523	0.000	0.00
		B	0.000	0.000	0.313	0.000	0.00
		C	0.000	0.000	0.481	0.000	0.01
L15	110.75-105.75	A	0.000	0.000	11.157	0.000	0.08
		B	0.000	0.000	6.952	0.000	0.03
		C	0.000	0.000	10.315	0.000	0.14
L16	105.75-101.50	A	0.000	0.000	10.159	0.000	0.07
		B	0.000	0.000	6.585	0.000	0.02
		C	0.000	0.000	9.443	0.000	0.12
L17	101.50-101.25	A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.391	0.000	0.00
		C	0.000	0.000	0.559	0.000	0.01
L18	101.25-101.00	A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.391	0.000	0.00
		C	0.000	0.000	0.559	0.000	0.01
L19	101.00-100.75	A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.391	0.000	0.00
		C	0.000	0.000	0.559	0.000	0.01
L20	100.75-95.75	A	0.000	0.000	11.324	0.000	0.08
		B	0.000	0.000	7.119	0.000	0.03
		C	0.000	0.000	10.481	0.000	0.14
L21	95.75-87.83	A	0.000	0.000	16.869	0.000	0.13
		B	0.000	0.000	10.208	0.000	0.04
		C	0.000	0.000	15.534	0.000	0.22
L22	87.83-86.83	A	0.000	0.000	2.142	0.000	0.02
		B	0.000	0.000	1.301	0.000	0.01
		C	0.000	0.000	1.974	0.000	0.03
L23	86.83-81.83	A	0.000	0.000	10.710	0.000	0.08
		B	0.000	0.000	6.505	0.000	0.03
		C	0.000	0.000	9.867	0.000	0.14
L24	81.83-81.50	A	0.000	0.000	0.786	0.000	0.01
		B	0.000	0.000	0.508	0.000	0.00
		C	0.000	0.000	0.730	0.000	0.01
L25	81.50-81.25	A	0.000	0.000	0.601	0.000	0.00
		B	0.000	0.000	0.391	0.000	0.00
		C	0.000	0.000	0.559	0.000	0.01
L26	81.25-76.25	A	0.000	0.000	11.961	0.000	0.08
		B	0.000	0.000	7.756	0.000	0.03
		C	0.000	0.000	11.118	0.000	0.14

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
L27	76.25-71.25	A	0.000	0.000	11.940	0.000	0.08
		B	0.000	0.000	7.735	0.000	0.03
		C	0.000	0.000	11.098	0.000	0.14
L28	71.25-66.25	A	0.000	0.000	11.940	0.000	0.08
		B	0.000	0.000	7.735	0.000	0.03
		C	0.000	0.000	11.098	0.000	0.14
L29	66.25-61.25	A	0.000	0.000	11.940	0.000	0.08
		B	0.000	0.000	7.735	0.000	0.03
		C	0.000	0.000	11.098	0.000	0.14
L30	61.25-56.25	A	0.000	0.000	11.940	0.000	0.08
		B	0.000	0.000	7.735	0.000	0.03
		C	0.000	0.000	11.098	0.000	0.14
L31	56.25-51.25	A	0.000	0.000	11.477	0.000	0.08
		B	0.000	0.000	7.272	0.000	0.03
		C	0.000	0.000	10.635	0.000	0.14
L32	51.25-43.33	A	0.000	0.000	16.966	0.000	0.13
		B	0.000	0.000	10.239	0.000	0.04
		C	0.000	0.000	15.565	0.000	0.22
L33	43.33-42.33	A	0.000	0.000	2.159	0.000	0.02
		B	0.000	0.000	1.301	0.000	0.01
		C	0.000	0.000	1.974	0.000	0.03
L34	42.33-37.40	A	0.000	0.000	10.642	0.000	0.08
		B	0.000	0.000	6.414	0.000	0.03
		C	0.000	0.000	9.729	0.000	0.14
L35	37.40-37.15	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L36	37.15-32.15	A	0.000	0.000	10.793	0.000	0.08
		B	0.000	0.000	6.505	0.000	0.03
		C	0.000	0.000	9.867	0.000	0.14
L37	32.15-27.15	A	0.000	0.000	10.793	0.000	0.08
		B	0.000	0.000	6.505	0.000	0.03
		C	0.000	0.000	9.867	0.000	0.14
L38	27.15-22.15	A	0.000	0.000	10.793	0.000	0.08
		B	0.000	0.000	6.505	0.000	0.03
		C	0.000	0.000	9.867	0.000	0.14
L39	22.15-19.50	A	0.000	0.000	5.720	0.000	0.04
		B	0.000	0.000	3.448	0.000	0.01
		C	0.000	0.000	5.230	0.000	0.07
L40	19.50-19.25	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L41	19.25-14.25	A	0.000	0.000	10.793	0.000	0.08
		B	0.000	0.000	6.505	0.000	0.03
		C	0.000	0.000	9.867	0.000	0.14
L42	14.25-9.25	A	0.000	0.000	10.793	0.000	0.08
		B	0.000	0.000	6.505	0.000	0.03
		C	0.000	0.000	9.867	0.000	0.14
L43	9.25-9.00	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L44	9.00-8.75	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L45	8.75-7.00	A	0.000	0.000	3.778	0.000	0.03
		B	0.000	0.000	2.277	0.000	0.01
		C	0.000	0.000	3.454	0.000	0.05
L46	7.00-6.75	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L47	6.75-5.00	A	0.000	0.000	3.778	0.000	0.03
		B	0.000	0.000	2.277	0.000	0.01
		C	0.000	0.000	3.454	0.000	0.05
L48	5.00-4.75	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L49	4.75-3.00	A	0.000	0.000	3.778	0.000	0.03
		B	0.000	0.000	2.277	0.000	0.01
		C	0.000	0.000	3.454	0.000	0.05

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
L50	3.00-2.75	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L51	2.75-2.25	A	0.000	0.000	1.079	0.000	0.01
		B	0.000	0.000	0.650	0.000	0.00
		C	0.000	0.000	0.987	0.000	0.01
L52	2.25-2.00	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.325	0.000	0.00
		C	0.000	0.000	0.493	0.000	0.01
L53	2.00-0.00	A	0.000	0.000	4.317	0.000	0.03
		B	0.000	0.000	2.602	0.000	0.01
		C	0.000	0.000	3.947	0.000	0.06

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Sectio 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	169.00-164.00	A	1.999	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	2.232	0.000	0.05
L2	164.00-159.00	A	1.993	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	11.153	0.000	0.23
L3	159.00-154.00	A	1.986	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	11.145	0.000	0.24
L4	154.00-149.00	A	1.980	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	11.137	0.000	0.27
L5	149.00-144.00	A	1.973	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	11.129	0.000	0.29
L6	144.00-139.00	A	1.966	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	11.120	0.000	0.30
L7	139.00-133.33	A	1.959	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.222	0.000	0.15
		C		0.000	0.000	12.600	0.000	0.33
L8	133.33-131.66	A	1.954	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	3.298	0.000	0.05
		C		0.000	0.000	3.711	0.000	0.10
L9	131.66-126.66	A	1.949	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.861	0.000	0.15
		C		0.000	0.000	11.098	0.000	0.29
L10	126.66-121.66	A	1.941	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.851	0.000	0.15
		C		0.000	0.000	15.071	0.000	0.38
L11	121.66-116.66	A	1.933	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	10.444	0.000	0.16
		C		0.000	0.000	19.565	0.000	0.47
L12	116.66-111.66	A	1.925	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.070	0.000	0.18
		C		0.000	0.000	19.530	0.000	0.47
L13	111.66-111.00	A	1.920	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	1.592	0.000	0.02
		C		0.000	0.000	2.575	0.000	0.06
L14	111.00-110.75	A	1.919	0.000	0.000	0.894	0.000	0.02
		B		0.000	0.000	0.603	0.000	0.01
		C		0.000	0.000	0.975	0.000	0.02
L15	110.75-105.75	A	1.914	0.000	0.000	19.452	0.000	0.36
		B		0.000	0.000	13.638	0.000	0.21
		C		0.000	0.000	21.077	0.000	0.49
L16	105.75-101.50	A	1.906	0.000	0.000	19.853	0.000	0.36
		B		0.000	0.000	14.914	0.000	0.23
		C		0.000	0.000	21.223	0.000	0.47
L17	101.50-101.25	A	1.902	0.000	0.000	1.249	0.000	0.02

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
		B		0.000	0.000	0.958	0.000	0.02
		C		0.000	0.000	1.329	0.000	0.03
L18	101.25-101.00	A	1.901	0.000	0.000	1.249	0.000	0.02
		B		0.000	0.000	0.958	0.000	0.02
		C		0.000	0.000	1.329	0.000	0.03
L19	101.00-100.75	A	1.901	0.000	0.000	1.248	0.000	0.02
		B		0.000	0.000	0.958	0.000	0.02
		C		0.000	0.000	1.329	0.000	0.03
L20	100.75-95.75	A	1.896	0.000	0.000	23.358	0.000	0.43
		B		0.000	0.000	17.549	0.000	0.28
		C		0.000	0.000	24.951	0.000	0.56
L21	95.75-87.83	A	1.883	0.000	0.000	35.251	0.000	0.66
		B		0.000	0.000	26.054	0.000	0.41
		C		0.000	0.000	37.738	0.000	0.85
L22	87.83-86.83	A	1.874	0.000	0.000	4.736	0.000	0.09
		B		0.000	0.000	3.575	0.000	0.06
		C		0.000	0.000	5.050	0.000	0.11
L23	86.83-81.83	A	1.867	0.000	0.000	23.595	0.000	0.44
		B		0.000	0.000	17.793	0.000	0.28
		C		0.000	0.000	25.137	0.000	0.56
L24	81.83-81.50	A	1.861	0.000	0.000	1.634	0.000	0.03
		B		0.000	0.000	1.251	0.000	0.02
		C		0.000	0.000	1.735	0.000	0.04
L25	81.50-81.25	A	1.861	0.000	0.000	1.244	0.000	0.02
		B		0.000	0.000	0.954	0.000	0.01
		C		0.000	0.000	1.320	0.000	0.03
L26	81.25-76.25	A	1.854	0.000	0.000	23.384	0.000	0.42
		B		0.000	0.000	17.586	0.000	0.27
		C		0.000	0.000	24.905	0.000	0.54
L27	76.25-71.25	A	1.842	0.000	0.000	22.845	0.000	0.41
		B		0.000	0.000	17.050	0.000	0.26
		C		0.000	0.000	24.345	0.000	0.53
L28	71.25-66.25	A	1.829	0.000	0.000	22.787	0.000	0.41
		B		0.000	0.000	16.995	0.000	0.25
		C		0.000	0.000	24.264	0.000	0.53
L29	66.25-61.25	A	1.816	0.000	0.000	22.726	0.000	0.40
		B		0.000	0.000	16.937	0.000	0.25
		C		0.000	0.000	24.178	0.000	0.52
L30	61.25-56.25	A	1.801	0.000	0.000	22.659	0.000	0.40
		B		0.000	0.000	16.874	0.000	0.25
		C		0.000	0.000	24.086	0.000	0.52
L31	56.25-51.25	A	1.785	0.000	0.000	22.124	0.000	0.39
		B		0.000	0.000	16.343	0.000	0.24
		C		0.000	0.000	23.523	0.000	0.51
L32	51.25-43.33	A	1.762	0.000	0.000	36.491	0.000	0.65
		B		0.000	0.000	25.865	0.000	0.39
		C		0.000	0.000	37.166	0.000	0.81
L33	43.33-42.33	A	1.745	0.000	0.000	4.973	0.000	0.09
		B		0.000	0.000	3.448	0.000	0.05
		C		0.000	0.000	4.875	0.000	0.11
L34	42.33-37.40	A	1.732	0.000	0.000	24.324	0.000	0.43
		B		0.000	0.000	16.846	0.000	0.25
		C		0.000	0.000	23.822	0.000	0.51
L35	37.40-37.15	A	1.721	0.000	0.000	1.230	0.000	0.02
		B		0.000	0.000	0.851	0.000	0.01
		C		0.000	0.000	1.204	0.000	0.03
L36	37.15-32.15	A	1.708	0.000	0.000	24.512	0.000	0.43
		B		0.000	0.000	16.958	0.000	0.25
		C		0.000	0.000	23.985	0.000	0.51
L37	32.15-27.15	A	1.682	0.000	0.000	24.340	0.000	0.42
		B		0.000	0.000	16.820	0.000	0.25
		C		0.000	0.000	23.793	0.000	0.50
L38	27.15-22.15	A	1.651	0.000	0.000	24.140	0.000	0.41
		B		0.000	0.000	16.658	0.000	0.24
		C		0.000	0.000	23.570	0.000	0.49
L39	22.15-19.50	A	1.623	0.000	0.000	12.699	0.000	0.22
		B		0.000	0.000	8.752	0.000	0.13
		C		0.000	0.000	12.386	0.000	0.26
L40	19.50-19.25	A	1.612	0.000	0.000	1.194	0.000	0.02

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A _R	A _F	C _A A _A In Face	C _A A _A Out Face	Weight
n	ft		in	ft ²	ft ²	ft ²	ft ²	K
		B		0.000	0.000	0.823	0.000	0.01
		C		0.000	0.000	1.164	0.000	0.02
L41	19.25-14.25	A	1.588	0.000	0.000	23.733	0.000	0.40
		B		0.000	0.000	16.329	0.000	0.23
		C		0.000	0.000	23.116	0.000	0.48
L42	14.25-9.25	A	1.533	0.000	0.000	23.373	0.000	0.39
		B		0.000	0.000	16.039	0.000	0.22
		C		0.000	0.000	22.715	0.000	0.46
L43	9.25-9.00	A	1.495	0.000	0.000	1.156	0.000	0.02
		B		0.000	0.000	0.792	0.000	0.01
		C		0.000	0.000	1.122	0.000	0.02
L44	9.00-8.75	A	1.491	0.000	0.000	1.155	0.000	0.02
		B		0.000	0.000	0.791	0.000	0.01
		C		0.000	0.000	1.120	0.000	0.02
L45	8.75-7.00	A	1.473	0.000	0.000	8.044	0.000	0.13
		B		0.000	0.000	5.503	0.000	0.07
		C		0.000	0.000	7.798	0.000	0.16
L46	7.00-6.75	A	1.453	0.000	0.000	1.143	0.000	0.02
		B		0.000	0.000	0.781	0.000	0.01
		C		0.000	0.000	1.107	0.000	0.02
L47	6.75-5.00	A	1.431	0.000	0.000	7.947	0.000	0.13
		B		0.000	0.000	5.425	0.000	0.07
		C		0.000	0.000	7.690	0.000	0.15
L48	5.00-4.75	A	1.404	0.000	0.000	1.127	0.000	0.02
		B		0.000	0.000	0.768	0.000	0.01
		C		0.000	0.000	1.089	0.000	0.02
L49	4.75-3.00	A	1.372	0.000	0.000	7.815	0.000	0.12
		B		0.000	0.000	5.318	0.000	0.07
		C		0.000	0.000	7.542	0.000	0.15
L50	3.00-2.75	A	1.332	0.000	0.000	1.103	0.000	0.02
		B		0.000	0.000	0.749	0.000	0.01
		C		0.000	0.000	1.063	0.000	0.02
L51	2.75-2.25	A	1.313	0.000	0.000	2.195	0.000	0.03
		B		0.000	0.000	1.489	0.000	0.02
		C		0.000	0.000	2.112	0.000	0.04
L52	2.25-2.00	A	1.292	0.000	0.000	1.090	0.000	0.02
		B		0.000	0.000	0.739	0.000	0.01
		C		0.000	0.000	1.048	0.000	0.02
L53	2.00-0.00	A	1.198	0.000	0.000	8.479	0.000	0.12
		B		0.000	0.000	5.712	0.000	0.07
		C		0.000	0.000	8.115	0.000	0.15

Feed Line Center of Pressure

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L1	169.00-164.00	-1.3865	1.7490	-1.0779	1.3596
L2	164.00-159.00	-3.7020	4.6697	-2.8437	3.5871
L3	159.00-154.00	-3.7794	4.7674	-2.9185	3.6815
L4	154.00-149.00	-3.8532	4.8605	-2.9905	3.7723
L5	149.00-144.00	-3.9237	4.9495	-3.0599	3.8598
L6	144.00-139.00	-3.9911	5.0345	-3.1267	3.9441
L7	139.00-133.33	0.1557	3.9103	0.2069	2.9867
L8	133.33-131.66	0.7758	3.7459	0.6903	2.8506
L9	131.66-126.66	0.7940	3.7994	0.7071	2.8985
L10	126.66-121.66	1.3863	4.1039	1.5649	3.3745
L11	121.66-116.66	2.0308	4.4154	2.5135	3.8455
L12	116.66-111.66	2.1818	4.5052	2.8753	3.9496
L13	111.66-111.00	2.2123	4.5566	2.9173	4.0028
L14	111.00-110.75	-2.0811	0.8949	-0.9431	1.2493
L15	110.75-105.75	-1.9944	0.8592	-0.9001	1.1940
L16	105.75-101.50	-1.9174	0.8287	-0.8064	1.0718
L17	101.50-101.25	-1.9247	0.8331	-0.7757	1.0317
L18	101.25-101.00	-1.9263	0.8339	-0.7766	1.0330
L19	101.00-100.75	-1.9271	0.8344	-0.7774	1.0341
L20	100.75-95.75	-2.0378	0.8838	-0.8261	1.0996

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L21	95.75-87.83	-2.1795	0.9491	-0.8800	1.1722
L22	87.83-86.83	-2.1783	0.9492	-0.8451	1.1273
L23	86.83-81.83	-2.1972	0.9590	-0.8612	1.1422
L24	81.83-81.50	-2.0424	0.8928	-0.8413	1.1153
L25	81.50-81.25	-2.0286	0.8869	-0.8395	1.1128
L26	81.25-76.25	-2.0525	0.8986	-0.8879	1.1762
L27	76.25-71.25	-2.2537	0.9893	-0.9222	1.2194
L28	71.25-66.25	-2.2975	1.0110	-0.9436	1.2443
L29	66.25-61.25	-2.3409	1.0325	-0.9654	1.2688
L30	61.25-56.25	-2.3839	1.0538	-0.9879	1.2927
L31	56.25-51.25	-2.5048	1.1096	-1.0258	1.3351
L32	51.25-43.33	-2.6463	1.1971	-0.8428	1.4646
L33	43.33-42.33	-2.3723	1.0923	-0.6265	1.5222
L34	42.33-37.40	-2.3876	1.1007	-0.6501	1.5338
L35	37.40-37.15	-2.4008	1.1079	-0.6617	1.5464
L36	37.15-32.15	-2.6501	1.2242	-0.6741	1.5588
L37	32.15-27.15	-2.6919	1.2458	-0.7001	1.5816
L38	27.15-22.15	-2.7328	1.2670	-0.7299	1.6028
L39	22.15-19.50	-2.7400	1.2720	-0.7563	1.6177
L40	19.50-19.25	-2.7520	1.2782	-0.7674	1.6230
L41	19.25-14.25	-2.7732	1.2892	-0.7896	1.6318
L42	14.25-9.25	-2.8133	1.3099	-0.8416	1.6452
L43	9.25-9.00	-2.8343	1.3208	-0.8772	1.6495
L44	9.00-8.75	-2.8363	1.3218	-0.8811	1.6498
L45	8.75-7.00	-2.8443	1.3259	-0.8976	1.6505
L46	7.00-6.75	-2.8521	1.3300	-0.9161	1.6505
L47	6.75-5.00	-2.8600	1.3341	-0.9373	1.6497
L48	5.00-4.75	-2.8689	1.3386	-0.9624	1.6484
L49	4.75-3.00	-2.8768	1.3427	-0.9924	1.6448
L50	3.00-2.75	-2.8847	1.3468	-1.0306	1.6387
L51	2.75-2.25	-2.8876	1.3483	-1.0482	1.6354
L52	2.25-2.00	-2.8900	1.3496	-1.0683	1.6309
L53	2.00-0.00	-2.8988	1.3541	-1.1603	1.6087

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	52	LDF7-50A(1-5/8)	164.00 - 165.00	1.0000	1.0000
L2	52	LDF7-50A(1-5/8)	159.00 - 164.00	1.0000	1.0000
L3	52	LDF7-50A(1-5/8)	154.00 - 159.00	1.0000	1.0000
L4	52	LDF7-50A(1-5/8)	149.00 - 154.00	1.0000	1.0000
L5	52	LDF7-50A(1-5/8)	144.00 - 149.00	1.0000	1.0000
L6	52	LDF7-50A(1-5/8)	139.00 - 144.00	1.0000	1.0000
L7	52	LDF7-50A(1-5/8)	133.33 - 139.00	1.0000	1.0000
L7	55	LDF7-50A(1-5/8)	133.33 - 138.00	1.0000	1.0000
L9	52	LDF7-50A(1-5/8)	126.66 - 131.66	1.0000	1.0000
L9	55	LDF7-50A(1-5/8)	126.66 - 131.66	1.0000	1.0000
L10	52	LDF7-50A(1-5/8)	121.66 - 126.66	1.0000	1.0000
L10	55	LDF7-50A(1-5/8)	121.66 - 126.66	1.0000	1.0000
L10	57	LDF4-50A(1/2)	121.66 - 124.00	1.0000	1.0000
L10	58	2" (Nominal) Conduit	121.66 - 124.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L10	59	2" (Nominal) Conduit	121.66 - 124.00	1.0000	1.0000
L11	52	LDF7-50A(1-5/8)	116.66 - 121.66	1.0000	1.0000
L11	55	LDF7-50A(1-5/8)	116.66 - 121.66	1.0000	1.0000
L11	57	LDF4-50A(1/2)	116.66 - 121.66	1.0000	1.0000
L11	58	2" (Nominal) Conduit	116.66 - 121.66	1.0000	1.0000
L11	59	2" (Nominal) Conduit	116.66 - 121.66	1.0000	1.0000
L11	61	EC4-50(1/2)	116.66 - 118.00	1.0000	1.0000
L12	52	LDF7-50A(1-5/8)	111.66 - 116.66	1.0000	1.0000
L12	55	LDF7-50A(1-5/8)	111.66 - 116.66	1.0000	1.0000
L12	57	LDF4-50A(1/2)	111.66 - 116.66	1.0000	1.0000
L12	58	2" (Nominal) Conduit	111.66 - 116.66	1.0000	1.0000
L12	59	2" (Nominal) Conduit	111.66 - 116.66	1.0000	1.0000
L12	61	EC4-50(1/2)	111.66 - 116.66	1.0000	1.0000
L13	52	LDF7-50A(1-5/8)	111.00 - 111.66	1.0000	1.0000
L13	55	LDF7-50A(1-5/8)	111.00 - 111.66	1.0000	1.0000
L13	57	LDF4-50A(1/2)	111.00 - 111.66	1.0000	1.0000
L13	58	2" (Nominal) Conduit	111.00 - 111.66	1.0000	1.0000
L13	59	2" (Nominal) Conduit	111.00 - 111.66	1.0000	1.0000
L13	61	EC4-50(1/2)	111.00 - 111.66	1.0000	1.0000
L14	52	LDF7-50A(1-5/8)	110.75 - 111.00	1.0000	1.0000
L14	55	LDF7-50A(1-5/8)	110.75 - 111.00	1.0000	1.0000
L14	57	LDF4-50A(1/2)	110.75 - 111.00	1.0000	1.0000
L14	58	2" (Nominal) Conduit	110.75 - 111.00	1.0000	1.0000
L14	59	2" (Nominal) Conduit	110.75 - 111.00	1.0000	1.0000
L14	61	EC4-50(1/2)	110.75 - 111.00	1.0000	1.0000
L14	63	LDF6-50A(1-1/4)	110.75 - 111.00	1.0000	1.0000
L14	64	LDF7-50A(1-5/8)	110.75 - 111.00	1.0000	1.0000
L15	52	LDF7-50A(1-5/8)	105.75 - 110.75	1.0000	1.0000
L15	55	LDF7-50A(1-5/8)	105.75 - 110.75	1.0000	1.0000
L15	57	LDF4-50A(1/2)	105.75 - 110.75	1.0000	1.0000
L15	58	2" (Nominal) Conduit	105.75 - 110.75	1.0000	1.0000
L15	59	2" (Nominal) Conduit	105.75 - 110.75	1.0000	1.0000
L15	61	EC4-50(1/2)	105.75 - 110.75	1.0000	1.0000
L15	63	LDF6-50A(1-1/4)	105.75 - 110.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L15	64	LDF7-50A(1-5/8)	105.75 - 110.75	1.0000	1.0000
L15	105	CCI-060100	105.75 - 108.25	1.0000	1.0000
L15	106	CCI-060100	105.75 - 108.25	1.0000	1.0000
L15	107	CCI-060100	105.75 - 108.25	1.0000	1.0000
L16	52	LDF7-50A(1-5/8)	101.50 - 105.75	1.0000	1.0000
L16	55	LDF7-50A(1-5/8)	101.50 - 105.75	1.0000	1.0000
L16	57	LDF4-50A(1/2)	101.50 - 105.75	1.0000	1.0000
L16	58	2" (Nominal) Conduit	101.50 - 105.75	1.0000	1.0000
L16	59	2" (Nominal) Conduit	101.50 - 105.75	1.0000	1.0000
L16	61	EC4-50(1/2)	101.50 - 105.75	1.0000	1.0000
L16	63	LDF6-50A(1-1/4)	101.50 - 105.75	1.0000	1.0000
L16	64	LDF7-50A(1-5/8)	101.50 - 105.75	1.0000	1.0000
L16	105	CCI-060100	101.50 - 105.75	1.0000	1.0000
L16	106	CCI-060100	101.50 - 105.75	1.0000	1.0000
L16	107	CCI-060100	101.50 - 105.75	1.0000	1.0000
L16	123	FP 4 x 1.25	101.50 - 104.00	1.0000	1.0000
L16	124	FP 4 x 1.25	101.50 - 104.00	1.0000	1.0000
L16	125	FP 4 x 1.25	101.50 - 104.00	1.0000	1.0000
L16	126	FP 4 x 1.25	101.50 - 104.00	1.0000	1.0000
L16	127	FP 4 x 1.25	101.50 - 104.00	1.0000	1.0000
L16	128	FP 4 x 1.25	101.50 - 104.00	1.0000	1.0000
L17	52	LDF7-50A(1-5/8)	101.25 - 101.50	1.0000	1.0000
L17	55	LDF7-50A(1-5/8)	101.25 - 101.50	1.0000	1.0000
L17	57	LDF4-50A(1/2)	101.25 - 101.50	1.0000	1.0000
L17	58	2" (Nominal) Conduit	101.25 - 101.50	1.0000	1.0000
L17	59	2" (Nominal) Conduit	101.25 - 101.50	1.0000	1.0000
L17	61	EC4-50(1/2)	101.25 - 101.50	1.0000	1.0000
L17	63	LDF6-50A(1-1/4)	101.25 - 101.50	1.0000	1.0000
L17	64	LDF7-50A(1-5/8)	101.25 - 101.50	1.0000	1.0000
L17	105	CCI-060100	101.25 - 101.50	1.0000	1.0000
L17	106	CCI-060100	101.25 - 101.50	1.0000	1.0000
L17	107	CCI-060100	101.25 - 101.50	1.0000	1.0000
L17	123	FP 4 x 1.25	101.25 - 101.50	1.0000	1.0000
L17	124	FP 4 x 1.25	101.25 - 101.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L17	125	FP 4 x 1.25	101.25 - 101.50	1.0000	1.0000
L17	126	FP 4 x 1.25	101.25 - 101.50	1.0000	1.0000
L17	127	FP 4 x 1.25	101.25 - 101.50	1.0000	1.0000
L17	128	FP 4 x 1.25	101.25 - 101.50	1.0000	1.0000
L18	52	LDF7-50A(1-5/8)	101.00 - 101.25	1.0000	1.0000
L18	55	LDF7-50A(1-5/8)	101.00 - 101.25	1.0000	1.0000
L18	57	LDF4-50A(1/2)	101.00 - 101.25	1.0000	1.0000
L18	58	2" (Nominal) Conduit	101.00 - 101.25	1.0000	1.0000
L18	59	2" (Nominal) Conduit	101.00 - 101.25	1.0000	1.0000
L18	61	EC4-50(1/2)	101.00 - 101.25	1.0000	1.0000
L18	63	LDF6-50A(1-1/4)	101.00 - 101.25	1.0000	1.0000
L18	64	LDF7-50A(1-5/8)	101.00 - 101.25	1.0000	1.0000
L18	105	CCI-060100	101.00 - 101.25	1.0000	1.0000
L18	106	CCI-060100	101.00 - 101.25	1.0000	1.0000
L18	107	CCI-060100	101.00 - 101.25	1.0000	1.0000
L18	123	FP 4 x 1.25	101.00 - 101.25	1.0000	1.0000
L18	124	FP 4 x 1.25	101.00 - 101.25	1.0000	1.0000
L18	125	FP 4 x 1.25	101.00 - 101.25	1.0000	1.0000
L18	126	FP 4 x 1.25	101.00 - 101.25	1.0000	1.0000
L18	127	FP 4 x 1.25	101.00 - 101.25	1.0000	1.0000
L18	128	FP 4 x 1.25	101.00 - 101.25	1.0000	1.0000
L19	52	LDF7-50A(1-5/8)	100.75 - 101.00	1.0000	1.0000
L19	55	LDF7-50A(1-5/8)	100.75 - 101.00	1.0000	1.0000
L19	57	LDF4-50A(1/2)	100.75 - 101.00	1.0000	1.0000
L19	58	2" (Nominal) Conduit	100.75 - 101.00	1.0000	1.0000
L19	59	2" (Nominal) Conduit	100.75 - 101.00	1.0000	1.0000
L19	61	EC4-50(1/2)	100.75 - 101.00	1.0000	1.0000
L19	63	LDF6-50A(1-1/4)	100.75 - 101.00	1.0000	1.0000
L19	64	LDF7-50A(1-5/8)	100.75 - 101.00	1.0000	1.0000
L19	105	CCI-060100	100.75 - 101.00	1.0000	1.0000
L19	106	CCI-060100	100.75 - 101.00	1.0000	1.0000
L19	107	CCI-060100	100.75 - 101.00	1.0000	1.0000
L19	123	FP 4 x 1.25	100.75 - 101.00	1.0000	1.0000
L19	124	FP 4 x 1.25	100.75 - 101.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L19	125	FP 4 x 1.25	100.75 - 101.00	1.0000	1.0000
L19	126	FP 4 x 1.25	100.75 - 101.00	1.0000	1.0000
L19	127	FP 4 x 1.25	100.75 - 101.00	1.0000	1.0000
L19	128	FP 4 x 1.25	100.75 - 101.00	1.0000	1.0000
L20	52	LDF7-50A(1-5/8)	95.75 - 100.75	1.0000	1.0000
L20	55	LDF7-50A(1-5/8)	95.75 - 100.75	1.0000	1.0000
L20	57	LDF4-50A(1/2)	95.75 - 100.75	1.0000	1.0000
L20	58	2" (Nominal) Conduit	95.75 - 100.75	1.0000	1.0000
L20	59	2" (Nominal) Conduit	95.75 - 100.75	1.0000	1.0000
L20	61	EC4-50(1/2)	95.75 - 100.75	1.0000	1.0000
L20	63	LDF6-50A(1-1/4)	95.75 - 100.75	1.0000	1.0000
L20	64	LDF7-50A(1-5/8)	95.75 - 100.75	1.0000	1.0000
L20	105	CCI-060100	98.25 - 100.75	1.0000	1.0000
L20	106	CCI-060100	98.25 - 100.75	1.0000	1.0000
L20	107	CCI-060100	98.25 - 100.75	1.0000	1.0000
L20	123	FP 4 x 1.25	95.75 - 100.75	1.0000	1.0000
L20	124	FP 4 x 1.25	95.75 - 100.75	1.0000	1.0000
L20	125	FP 4 x 1.25	95.75 - 100.75	1.0000	1.0000
L20	126	FP 4 x 1.25	95.75 - 100.75	1.0000	1.0000
L20	127	FP 4 x 1.25	95.75 - 100.75	1.0000	1.0000
L20	128	FP 4 x 1.25	95.75 - 100.75	1.0000	1.0000
L21	52	LDF7-50A(1-5/8)	87.83 - 95.75	1.0000	1.0000
L21	55	LDF7-50A(1-5/8)	87.83 - 95.75	1.0000	1.0000
L21	57	LDF4-50A(1/2)	87.83 - 95.75	1.0000	1.0000
L21	58	2" (Nominal) Conduit	87.83 - 95.75	1.0000	1.0000
L21	59	2" (Nominal) Conduit	87.83 - 95.75	1.0000	1.0000
L21	61	EC4-50(1/2)	87.83 - 95.75	1.0000	1.0000
L21	63	LDF6-50A(1-1/4)	87.83 - 95.75	1.0000	1.0000
L21	64	LDF7-50A(1-5/8)	87.83 - 95.75	1.0000	1.0000
L21	102	CCI-045100	87.83 - 90.00	1.0000	1.0000
L21	103	CCI-045100	87.83 - 90.00	1.0000	1.0000
L21	104	CCI-045100	87.83 - 90.00	1.0000	1.0000
L21	123	FP 4 x 1.25	87.83 - 95.75	1.0000	1.0000
L21	124	FP 4 x 1.25	87.83 - 95.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L21	125	FP 4 x 1.25	87.83 - 95.75	1.0000	1.0000
L21	126	FP 4 x 1.25	87.83 - 95.75	1.0000	1.0000
L21	127	FP 4 x 1.25	87.83 - 95.75	1.0000	1.0000
L21	128	FP 4 x 1.25	87.83 - 95.75	1.0000	1.0000
L23	52	LDF7-50A(1-5/8)	81.83 - 86.83	1.0000	1.0000
L23	55	LDF7-50A(1-5/8)	81.83 - 86.83	1.0000	1.0000
L23	57	LDF4-50A(1/2)	81.83 - 86.83	1.0000	1.0000
L23	58	2" (Nominal) Conduit	81.83 - 86.83	1.0000	1.0000
L23	59	2" (Nominal) Conduit	81.83 - 86.83	1.0000	1.0000
L23	61	EC4-50(1/2)	81.83 - 86.83	1.0000	1.0000
L23	63	LDF6-50A(1-1/4)	81.83 - 86.83	1.0000	1.0000
L23	64	LDF7-50A(1-5/8)	81.83 - 86.83	1.0000	1.0000
L23	102	CCI-045100	81.83 - 86.83	1.0000	1.0000
L23	103	CCI-045100	81.83 - 86.83	1.0000	1.0000
L23	104	CCI-045100	81.83 - 86.83	1.0000	1.0000
L23	123	FP 4 x 1.25	81.83 - 86.83	1.0000	1.0000
L23	124	FP 4 x 1.25	81.83 - 86.83	1.0000	1.0000
L23	125	FP 4 x 1.25	81.83 - 86.83	1.0000	1.0000
L23	126	FP 4 x 1.25	81.83 - 86.83	1.0000	1.0000
L23	127	FP 4 x 1.25	81.83 - 86.83	1.0000	1.0000
L23	128	FP 4 x 1.25	81.83 - 86.83	1.0000	1.0000
L24	52	LDF7-50A(1-5/8)	81.50 - 81.83	1.0000	1.0000
L24	55	LDF7-50A(1-5/8)	81.50 - 81.83	1.0000	1.0000
L24	57	LDF4-50A(1/2)	81.50 - 81.83	1.0000	1.0000
L24	58	2" (Nominal) Conduit	81.50 - 81.83	1.0000	1.0000
L24	59	2" (Nominal) Conduit	81.50 - 81.83	1.0000	1.0000
L24	61	EC4-50(1/2)	81.50 - 81.83	1.0000	1.0000
L24	63	LDF6-50A(1-1/4)	81.50 - 81.83	1.0000	1.0000
L24	64	LDF7-50A(1-5/8)	81.50 - 81.83	1.0000	1.0000
L24	102	CCI-045100	81.50 - 81.83	1.0000	1.0000
L24	103	CCI-045100	81.50 - 81.83	1.0000	1.0000
L24	104	CCI-045100	81.50 - 81.83	1.0000	1.0000
L24	115	FP 6 x1.25	81.50 - 81.80	1.0000	1.0000
L24	116	FP 6 x1.25	81.50 - 81.80	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L24	117	FP 6 x1.25	81.50 - 81.80	1.0000	1.0000
L24	118	FP 6 x1.25	81.50 - 81.80	1.0000	1.0000
L24	119	FP 6 x1.25	81.50 - 81.80	1.0000	1.0000
L24	120	FP 6 x1.25	81.50 - 81.80	1.0000	1.0000
L24	123	FP 4 x 1.25	81.80 - 81.83	1.0000	1.0000
L24	124	FP 4 x 1.25	81.80 - 81.83	1.0000	1.0000
L24	125	FP 4 x 1.25	81.80 - 81.83	1.0000	1.0000
L24	126	FP 4 x 1.25	81.80 - 81.83	1.0000	1.0000
L24	127	FP 4 x 1.25	81.80 - 81.83	1.0000	1.0000
L24	128	FP 4 x 1.25	81.80 - 81.83	1.0000	1.0000
L25	52	LDF7-50A(1-5/8)	81.25 - 81.50	1.0000	1.0000
L25	55	LDF7-50A(1-5/8)	81.25 - 81.50	1.0000	1.0000
L25	57	LDF4-50A(1/2)	81.25 - 81.50	1.0000	1.0000
L25	58	2" (Nominal) Conduit	81.25 - 81.50	1.0000	1.0000
L25	59	2" (Nominal) Conduit	81.25 - 81.50	1.0000	1.0000
L25	61	EC4-50(1/2)	81.25 - 81.50	1.0000	1.0000
L25	63	LDF6-50A(1-1/4)	81.25 - 81.50	1.0000	1.0000
L25	64	LDF7-50A(1-5/8)	81.25 - 81.50	1.0000	1.0000
L25	102	CCI-045100	81.25 - 81.50	1.0000	1.0000
L25	103	CCI-045100	81.25 - 81.50	1.0000	1.0000
L25	104	CCI-045100	81.25 - 81.50	1.0000	1.0000
L25	115	FP 6 x1.25	81.25 - 81.50	1.0000	1.0000
L25	116	FP 6 x1.25	81.25 - 81.50	1.0000	1.0000
L25	117	FP 6 x1.25	81.25 - 81.50	1.0000	1.0000
L25	118	FP 6 x1.25	81.25 - 81.50	1.0000	1.0000
L25	119	FP 6 x1.25	81.25 - 81.50	1.0000	1.0000
L25	120	FP 6 x1.25	81.25 - 81.50	1.0000	1.0000
L26	52	LDF7-50A(1-5/8)	76.25 - 81.25	1.0000	1.0000
L26	55	LDF7-50A(1-5/8)	76.25 - 81.25	1.0000	1.0000
L26	57	LDF4-50A(1/2)	76.25 - 81.25	1.0000	1.0000
L26	58	2" (Nominal) Conduit	76.25 - 81.25	1.0000	1.0000
L26	59	2" (Nominal) Conduit	76.25 - 81.25	1.0000	1.0000
L26	61	EC4-50(1/2)	76.25 - 81.25	1.0000	1.0000
L26	63	LDF6-50A(1-1/4)	76.25 - 81.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L26	64	LDF7-50A(1-5/8)	76.25 - 81.25	1.0000	1.0000
L26	102	CCI-045100	80.00 - 81.25	1.0000	1.0000
L26	103	CCI-045100	80.00 - 81.25	1.0000	1.0000
L26	104	CCI-045100	80.00 - 81.25	1.0000	1.0000
L26	115	FP 6 x1.25	76.25 - 81.25	1.0000	1.0000
L26	116	FP 6 x1.25	76.25 - 81.25	1.0000	1.0000
L26	117	FP 6 x1.25	76.25 - 81.25	1.0000	1.0000
L26	118	FP 6 x1.25	76.25 - 81.25	1.0000	1.0000
L26	119	FP 6 x1.25	76.25 - 81.25	1.0000	1.0000
L26	120	FP 6 x1.25	76.25 - 81.25	1.0000	1.0000
L27	52	LDF7-50A(1-5/8)	71.25 - 76.25	1.0000	1.0000
L27	55	LDF7-50A(1-5/8)	71.25 - 76.25	1.0000	1.0000
L27	57	LDF4-50A(1/2)	71.25 - 76.25	1.0000	1.0000
L27	58	2" (Nominal) Conduit	71.25 - 76.25	1.0000	1.0000
L27	59	2" (Nominal) Conduit	71.25 - 76.25	1.0000	1.0000
L27	61	EC4-50(1/2)	71.25 - 76.25	1.0000	1.0000
L27	63	LDF6-50A(1-1/4)	71.25 - 76.25	1.0000	1.0000
L27	64	LDF7-50A(1-5/8)	71.25 - 76.25	1.0000	1.0000
L27	115	FP 6 x1.25	71.25 - 76.25	1.0000	1.0000
L27	116	FP 6 x1.25	71.25 - 76.25	1.0000	1.0000
L27	117	FP 6 x1.25	71.25 - 76.25	1.0000	1.0000
L27	118	FP 6 x1.25	71.25 - 76.25	1.0000	1.0000
L27	119	FP 6 x1.25	71.25 - 76.25	1.0000	1.0000
L27	120	FP 6 x1.25	71.25 - 76.25	1.0000	1.0000
L28	52	LDF7-50A(1-5/8)	66.25 - 71.25	1.0000	1.0000
L28	55	LDF7-50A(1-5/8)	66.25 - 71.25	1.0000	1.0000
L28	57	LDF4-50A(1/2)	66.25 - 71.25	1.0000	1.0000
L28	58	2" (Nominal) Conduit	66.25 - 71.25	1.0000	1.0000
L28	59	2" (Nominal) Conduit	66.25 - 71.25	1.0000	1.0000
L28	61	EC4-50(1/2)	66.25 - 71.25	1.0000	1.0000
L28	63	LDF6-50A(1-1/4)	66.25 - 71.25	1.0000	1.0000
L28	64	LDF7-50A(1-5/8)	66.25 - 71.25	1.0000	1.0000
L28	115	FP 6 x1.25	66.25 - 71.25	1.0000	1.0000
L28	116	FP 6 x1.25	66.25 - 71.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L28	117	FP 6 x1.25	66.25 - 71.25	1.0000	1.0000
L28	118	FP 6 x1.25	66.25 - 71.25	1.0000	1.0000
L28	119	FP 6 x1.25	66.25 - 71.25	1.0000	1.0000
L28	120	FP 6 x1.25	66.25 - 71.25	1.0000	1.0000
L29	52	LDF7-50A(1-5/8)	61.25 - 66.25	1.0000	1.0000
L29	55	LDF7-50A(1-5/8)	61.25 - 66.25	1.0000	1.0000
L29	57	LDF4-50A(1/2)	61.25 - 66.25	1.0000	1.0000
L29	58	2" (Nominal) Conduit	61.25 - 66.25	1.0000	1.0000
L29	59	2" (Nominal) Conduit	61.25 - 66.25	1.0000	1.0000
L29	61	EC4-50(1/2)	61.25 - 66.25	1.0000	1.0000
L29	63	LDF6-50A(1-1/4)	61.25 - 66.25	1.0000	1.0000
L29	64	LDF7-50A(1-5/8)	61.25 - 66.25	1.0000	1.0000
L29	115	FP 6 x1.25	61.25 - 66.25	1.0000	1.0000
L29	116	FP 6 x1.25	61.25 - 66.25	1.0000	1.0000
L29	117	FP 6 x1.25	61.25 - 66.25	1.0000	1.0000
L29	118	FP 6 x1.25	61.25 - 66.25	1.0000	1.0000
L29	119	FP 6 x1.25	61.25 - 66.25	1.0000	1.0000
L29	120	FP 6 x1.25	61.25 - 66.25	1.0000	1.0000
L30	52	LDF7-50A(1-5/8)	56.25 - 61.25	1.0000	1.0000
L30	55	LDF7-50A(1-5/8)	56.25 - 61.25	1.0000	1.0000
L30	57	LDF4-50A(1/2)	56.25 - 61.25	1.0000	1.0000
L30	58	2" (Nominal) Conduit	56.25 - 61.25	1.0000	1.0000
L30	59	2" (Nominal) Conduit	56.25 - 61.25	1.0000	1.0000
L30	61	EC4-50(1/2)	56.25 - 61.25	1.0000	1.0000
L30	63	LDF6-50A(1-1/4)	56.25 - 61.25	1.0000	1.0000
L30	64	LDF7-50A(1-5/8)	56.25 - 61.25	1.0000	1.0000
L30	115	FP 6 x1.25	56.25 - 61.25	1.0000	1.0000
L30	116	FP 6 x1.25	56.25 - 61.25	1.0000	1.0000
L30	117	FP 6 x1.25	56.25 - 61.25	1.0000	1.0000
L30	118	FP 6 x1.25	56.25 - 61.25	1.0000	1.0000
L30	119	FP 6 x1.25	56.25 - 61.25	1.0000	1.0000
L30	120	FP 6 x1.25	56.25 - 61.25	1.0000	1.0000
L31	52	LDF7-50A(1-5/8)	51.25 - 56.25	1.0000	1.0000
L31	55	LDF7-50A(1-5/8)	51.25 - 56.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L31	57	LDF4-50A(1/2)	51.25 - 56.25	1.0000	1.0000
L31	58	2" (Nominal) Conduit	51.25 - 56.25	1.0000	1.0000
L31	59	2" (Nominal) Conduit	51.25 - 56.25	1.0000	1.0000
L31	61	EC4-50(1/2)	51.25 - 56.25	1.0000	1.0000
L31	63	LDF6-50A(1-1/4)	51.25 - 56.25	1.0000	1.0000
L31	64	LDF7-50A(1-5/8)	51.25 - 56.25	1.0000	1.0000
L31	109	FP 6 x1.25	51.25 - 53.01	1.0000	1.0000
L31	110	FP 6 x1.25	51.25 - 53.01	1.0000	1.0000
L31	111	FP 6 x1.25	51.25 - 53.01	1.0000	1.0000
L31	112	FP 6 x1.25	51.25 - 53.01	1.0000	1.0000
L31	113	FP 6 x1.25	51.25 - 53.01	1.0000	1.0000
L31	114	FP 6 x1.25	51.25 - 53.01	1.0000	1.0000
L31	115	FP 6 x1.25	53.01 - 56.25	1.0000	1.0000
L31	116	FP 6 x1.25	53.01 - 56.25	1.0000	1.0000
L31	117	FP 6 x1.25	53.01 - 56.25	1.0000	1.0000
L31	118	FP 6 x1.25	53.01 - 56.25	1.0000	1.0000
L31	119	FP 6 x1.25	53.01 - 56.25	1.0000	1.0000
L31	120	FP 6 x1.25	53.01 - 56.25	1.0000	1.0000
L32	52	LDF7-50A(1-5/8)	43.33 - 51.25	1.0000	1.0000
L32	55	LDF7-50A(1-5/8)	43.33 - 51.25	1.0000	1.0000
L32	57	LDF4-50A(1/2)	43.33 - 51.25	1.0000	1.0000
L32	58	2" (Nominal) Conduit	43.33 - 51.25	1.0000	1.0000
L32	59	2" (Nominal) Conduit	43.33 - 51.25	1.0000	1.0000
L32	61	EC4-50(1/2)	43.33 - 51.25	1.0000	1.0000
L32	63	LDF6-50A(1-1/4)	43.33 - 51.25	1.0000	1.0000
L32	64	LDF7-50A(1-5/8)	43.33 - 51.25	1.0000	1.0000
L32	98	CCI-060100	43.33 - 47.33	1.0000	1.0000
L32	99	CCI-060100	43.33 - 47.33	1.0000	1.0000
L32	100	CCI-060100	43.33 - 47.33	1.0000	1.0000
L32	101	CCI-060100	43.33 - 47.33	1.0000	1.0000
L32	109	FP 6 x1.25	43.33 - 51.25	1.0000	1.0000
L32	110	FP 6 x1.25	43.33 - 51.25	1.0000	1.0000
L32	111	FP 6 x1.25	43.33 - 51.25	1.0000	1.0000
L32	112	FP 6 x1.25	43.33 - 51.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L32	113	FP 6 x1.25	43.33 - 51.25	1.0000	1.0000
L32	114	FP 6 x1.25	43.33 - 51.25	1.0000	1.0000
L34	52	LDF7-50A(1-5/8)	37.40 - 42.33	1.0000	1.0000
L34	55	LDF7-50A(1-5/8)	37.40 - 42.33	1.0000	1.0000
L34	57	LDF4-50A(1/2)	37.40 - 42.33	1.0000	1.0000
L34	58	2" (Nominal) Conduit	37.40 - 42.33	1.0000	1.0000
L34	59	2" (Nominal) Conduit	37.40 - 42.33	1.0000	1.0000
L34	61	EC4-50(1/2)	37.40 - 42.33	1.0000	1.0000
L34	63	LDF6-50A(1-1/4)	37.40 - 42.33	1.0000	1.0000
L34	64	LDF7-50A(1-5/8)	37.40 - 42.33	1.0000	1.0000
L34	98	CCI-060100	37.40 - 42.33	1.0000	1.0000
L34	99	CCI-060100	37.40 - 42.33	1.0000	1.0000
L34	100	CCI-060100	37.40 - 42.33	1.0000	1.0000
L34	101	CCI-060100	37.40 - 42.33	1.0000	1.0000
L34	109	FP 6 x1.25	37.40 - 42.33	1.0000	1.0000
L34	110	FP 6 x1.25	37.40 - 42.33	1.0000	1.0000
L34	111	FP 6 x1.25	37.40 - 42.33	1.0000	1.0000
L34	112	FP 6 x1.25	37.40 - 42.33	1.0000	1.0000
L34	113	FP 6 x1.25	37.40 - 42.33	1.0000	1.0000
L34	114	FP 6 x1.25	37.40 - 42.33	1.0000	1.0000
L35	52	LDF7-50A(1-5/8)	37.15 - 37.40	1.0000	1.0000
L35	55	LDF7-50A(1-5/8)	37.15 - 37.40	1.0000	1.0000
L35	57	LDF4-50A(1/2)	37.15 - 37.40	1.0000	1.0000
L35	58	2" (Nominal) Conduit	37.15 - 37.40	1.0000	1.0000
L35	59	2" (Nominal) Conduit	37.15 - 37.40	1.0000	1.0000
L35	61	EC4-50(1/2)	37.15 - 37.40	1.0000	1.0000
L35	63	LDF6-50A(1-1/4)	37.15 - 37.40	1.0000	1.0000
L35	64	LDF7-50A(1-5/8)	37.15 - 37.40	1.0000	1.0000
L35	98	CCI-060100	37.15 - 37.40	1.0000	1.0000
L35	99	CCI-060100	37.15 - 37.40	1.0000	1.0000
L35	100	CCI-060100	37.15 - 37.40	1.0000	1.0000
L35	101	CCI-060100	37.15 - 37.40	1.0000	1.0000
L35	109	FP 6 x1.25	37.15 - 37.40	1.0000	1.0000
L35	110	FP 6 x1.25	37.15 - 37.40	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L35	111	FP 6 x1.25	37.15 - 37.40	1.0000	1.0000
L35	112	FP 6 x1.25	37.15 - 37.40	1.0000	1.0000
L35	113	FP 6 x1.25	37.15 - 37.40	1.0000	1.0000
L35	114	FP 6 x1.25	37.15 - 37.40	1.0000	1.0000
L36	52	LDF7-50A(1-5/8)	32.15 - 37.15	1.0000	1.0000
L36	55	LDF7-50A(1-5/8)	32.15 - 37.15	1.0000	1.0000
L36	57	LDF4-50A(1/2)	32.15 - 37.15	1.0000	1.0000
L36	58	2" (Nominal) Conduit	32.15 - 37.15	1.0000	1.0000
L36	59	2" (Nominal) Conduit	32.15 - 37.15	1.0000	1.0000
L36	61	EC4-50(1/2)	32.15 - 37.15	1.0000	1.0000
L36	63	LDF6-50A(1-1/4)	32.15 - 37.15	1.0000	1.0000
L36	64	LDF7-50A(1-5/8)	32.15 - 37.15	1.0000	1.0000
L36	98	CCI-060100	32.15 - 37.15	1.0000	1.0000
L36	99	CCI-060100	32.15 - 37.15	1.0000	1.0000
L36	100	CCI-060100	32.15 - 37.15	1.0000	1.0000
L36	101	CCI-060100	32.15 - 37.15	1.0000	1.0000
L36	109	FP 6 x1.25	32.15 - 37.15	1.0000	1.0000
L36	110	FP 6 x1.25	32.15 - 37.15	1.0000	1.0000
L36	111	FP 6 x1.25	32.15 - 37.15	1.0000	1.0000
L36	112	FP 6 x1.25	32.15 - 37.15	1.0000	1.0000
L36	113	FP 6 x1.25	32.15 - 37.15	1.0000	1.0000
L36	114	FP 6 x1.25	32.15 - 37.15	1.0000	1.0000
L37	52	LDF7-50A(1-5/8)	27.15 - 32.15	1.0000	1.0000
L37	55	LDF7-50A(1-5/8)	27.15 - 32.15	1.0000	1.0000
L37	57	LDF4-50A(1/2)	27.15 - 32.15	1.0000	1.0000
L37	58	2" (Nominal) Conduit	27.15 - 32.15	1.0000	1.0000
L37	59	2" (Nominal) Conduit	27.15 - 32.15	1.0000	1.0000
L37	61	EC4-50(1/2)	27.15 - 32.15	1.0000	1.0000
L37	63	LDF6-50A(1-1/4)	27.15 - 32.15	1.0000	1.0000
L37	64	LDF7-50A(1-5/8)	27.15 - 32.15	1.0000	1.0000
L37	98	CCI-060100	27.15 - 32.15	1.0000	1.0000
L37	99	CCI-060100	27.15 - 32.15	1.0000	1.0000
L37	100	CCI-060100	27.15 - 32.15	1.0000	1.0000
L37	101	CCI-060100	27.15 - 32.15	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L37	109	FP 6 x1.25	27.15 - 32.15	1.0000	1.0000
L37	110	FP 6 x1.25	27.15 - 32.15	1.0000	1.0000
L37	111	FP 6 x1.25	27.15 - 32.15	1.0000	1.0000
L37	112	FP 6 x1.25	27.15 - 32.15	1.0000	1.0000
L37	113	FP 6 x1.25	27.15 - 32.15	1.0000	1.0000
L37	114	FP 6 x1.25	27.15 - 32.15	1.0000	1.0000
L38	52	LDF7-50A(1-5/8)	22.15 - 27.15	1.0000	1.0000
L38	55	LDF7-50A(1-5/8)	22.15 - 27.15	1.0000	1.0000
L38	57	LDF4-50A(1/2)	22.15 - 27.15	1.0000	1.0000
L38	58	2" (Nominal) Conduit	22.15 - 27.15	1.0000	1.0000
L38	59	2" (Nominal) Conduit	22.15 - 27.15	1.0000	1.0000
L38	61	EC4-50(1/2)	22.15 - 27.15	1.0000	1.0000
L38	63	LDF6-50A(1-1/4)	22.15 - 27.15	1.0000	1.0000
L38	64	LDF7-50A(1-5/8)	22.15 - 27.15	1.0000	1.0000
L38	94	CCI-065125	22.15 - 22.25	1.0000	1.0000
L38	95	CCI-065125	22.15 - 22.25	1.0000	1.0000
L38	96	CCI-065125	22.15 - 22.25	1.0000	1.0000
L38	97	CCI-065125	22.15 - 22.25	1.0000	1.0000
L38	98	CCI-060100	22.25 - 27.15	1.0000	1.0000
L38	99	CCI-060100	22.25 - 27.15	1.0000	1.0000
L38	100	CCI-060100	22.25 - 27.15	1.0000	1.0000
L38	101	CCI-060100	22.25 - 27.15	1.0000	1.0000
L38	109	FP 6 x1.25	22.15 - 27.15	1.0000	1.0000
L38	110	FP 6 x1.25	22.15 - 27.15	1.0000	1.0000
L38	111	FP 6 x1.25	22.15 - 27.15	1.0000	1.0000
L38	112	FP 6 x1.25	22.15 - 27.15	1.0000	1.0000
L38	113	FP 6 x1.25	22.15 - 27.15	1.0000	1.0000
L38	114	FP 6 x1.25	22.15 - 27.15	1.0000	1.0000
L39	52	LDF7-50A(1-5/8)	19.50 - 22.15	1.0000	1.0000
L39	55	LDF7-50A(1-5/8)	19.50 - 22.15	1.0000	1.0000
L39	57	LDF4-50A(1/2)	19.50 - 22.15	1.0000	1.0000
L39	58	2" (Nominal) Conduit	19.50 - 22.15	1.0000	1.0000
L39	59	2" (Nominal) Conduit	19.50 - 22.15	1.0000	1.0000
L39	61	EC4-50(1/2)	19.50 - 22.15	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L39	63	LDF6-50A(1-1/4)	19.50 - 22.15	1.0000	1.0000
L39	64	LDF7-50A(1-5/8)	19.50 - 22.15	1.0000	1.0000
L39	94	CCI-065125	19.50 - 22.15	1.0000	1.0000
L39	95	CCI-065125	19.50 - 22.15	1.0000	1.0000
L39	96	CCI-065125	19.50 - 22.15	1.0000	1.0000
L39	97	CCI-065125	19.50 - 22.15	1.0000	1.0000
L39	109	FP 6 x1.25	19.50 - 22.15	1.0000	1.0000
L39	110	FP 6 x1.25	19.50 - 22.15	1.0000	1.0000
L39	111	FP 6 x1.25	19.50 - 22.15	1.0000	1.0000
L39	112	FP 6 x1.25	19.50 - 22.15	1.0000	1.0000
L39	113	FP 6 x1.25	19.50 - 22.15	1.0000	1.0000
L39	114	FP 6 x1.25	19.50 - 22.15	1.0000	1.0000
L40	52	LDF7-50A(1-5/8)	19.25 - 19.50	1.0000	1.0000
L40	55	LDF7-50A(1-5/8)	19.25 - 19.50	1.0000	1.0000
L40	57	LDF4-50A(1/2)	19.25 - 19.50	1.0000	1.0000
L40	58	2" (Nominal) Conduit	19.25 - 19.50	1.0000	1.0000
L40	59	2" (Nominal) Conduit	19.25 - 19.50	1.0000	1.0000
L40	61	EC4-50(1/2)	19.25 - 19.50	1.0000	1.0000
L40	63	LDF6-50A(1-1/4)	19.25 - 19.50	1.0000	1.0000
L40	64	LDF7-50A(1-5/8)	19.25 - 19.50	1.0000	1.0000
L40	94	CCI-065125	19.25 - 19.50	1.0000	1.0000
L40	95	CCI-065125	19.25 - 19.50	1.0000	1.0000
L40	96	CCI-065125	19.25 - 19.50	1.0000	1.0000
L40	97	CCI-065125	19.25 - 19.50	1.0000	1.0000
L40	109	FP 6 x1.25	19.25 - 19.50	1.0000	1.0000
L40	110	FP 6 x1.25	19.25 - 19.50	1.0000	1.0000
L40	111	FP 6 x1.25	19.25 - 19.50	1.0000	1.0000
L40	112	FP 6 x1.25	19.25 - 19.50	1.0000	1.0000
L40	113	FP 6 x1.25	19.25 - 19.50	1.0000	1.0000
L40	114	FP 6 x1.25	19.25 - 19.50	1.0000	1.0000
L41	52	LDF7-50A(1-5/8)	14.25 - 19.25	1.0000	1.0000
L41	55	LDF7-50A(1-5/8)	14.25 - 19.25	1.0000	1.0000
L41	57	LDF4-50A(1/2)	14.25 - 19.25	1.0000	1.0000
L41	58	2" (Nominal) Conduit	14.25 - 19.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	59	2" (Nominal) Conduit	14.25 - 19.25	1.0000	1.0000
L41	61	EC4-50(1/2)	14.25 - 19.25	1.0000	1.0000
L41	63	LDF6-50A(1-1/4)	14.25 - 19.25	1.0000	1.0000
L41	64	LDF7-50A(1-5/8)	14.25 - 19.25	1.0000	1.0000
L41	94	CCI-065125	14.25 - 19.25	1.0000	1.0000
L41	95	CCI-065125	14.25 - 19.25	1.0000	1.0000
L41	96	CCI-065125	14.25 - 19.25	1.0000	1.0000
L41	97	CCI-065125	14.25 - 19.25	1.0000	1.0000
L41	109	FP 6 x1.25	14.25 - 19.25	1.0000	1.0000
L41	110	FP 6 x1.25	14.25 - 19.25	1.0000	1.0000
L41	111	FP 6 x1.25	14.25 - 19.25	1.0000	1.0000
L41	112	FP 6 x1.25	14.25 - 19.25	1.0000	1.0000
L41	113	FP 6 x1.25	14.25 - 19.25	1.0000	1.0000
L41	114	FP 6 x1.25	14.25 - 19.25	1.0000	1.0000
L42	52	LDF7-50A(1-5/8)	9.25 - 14.25	1.0000	1.0000
L42	55	LDF7-50A(1-5/8)	9.25 - 14.25	1.0000	1.0000
L42	57	LDF4-50A(1/2)	9.25 - 14.25	1.0000	1.0000
L42	58	2" (Nominal) Conduit	9.25 - 14.25	1.0000	1.0000
L42	59	2" (Nominal) Conduit	9.25 - 14.25	1.0000	1.0000
L42	61	EC4-50(1/2)	9.25 - 14.25	1.0000	1.0000
L42	63	LDF6-50A(1-1/4)	9.25 - 14.25	1.0000	1.0000
L42	64	LDF7-50A(1-5/8)	9.25 - 14.25	1.0000	1.0000
L42	94	CCI-065125	9.25 - 14.25	1.0000	1.0000
L42	95	CCI-065125	9.25 - 14.25	1.0000	1.0000
L42	96	CCI-065125	9.25 - 14.25	1.0000	1.0000
L42	97	CCI-065125	9.25 - 14.25	1.0000	1.0000
L42	109	FP 6 x1.25	9.25 - 14.25	1.0000	1.0000
L42	110	FP 6 x1.25	9.25 - 14.25	1.0000	1.0000
L42	111	FP 6 x1.25	9.25 - 14.25	1.0000	1.0000
L42	112	FP 6 x1.25	9.25 - 14.25	1.0000	1.0000
L42	113	FP 6 x1.25	9.25 - 14.25	1.0000	1.0000
L42	114	FP 6 x1.25	9.25 - 14.25	1.0000	1.0000
L43	52	LDF7-50A(1-5/8)	9.00 - 9.25	1.0000	1.0000
L43	55	LDF7-50A(1-5/8)	9.00 - 9.25	1.0000	1.0000
L43	57	LDF4-50A(1/2)	9.00 - 9.25	1.0000	1.0000
L43	58	2" (Nominal) Conduit	9.00 - 9.25	1.0000	1.0000
L43	59	2" (Nominal) Conduit	9.00 - 9.25	1.0000	1.0000
L43	61	EC4-50(1/2)	9.00 - 9.25	1.0000	1.0000
L43	63	LDF6-50A(1-1/4)	9.00 - 9.25	1.0000	1.0000
L43	64	LDF7-50A(1-5/8)	9.00 - 9.25	1.0000	1.0000
L43	94	CCI-065125	9.00 - 9.25	1.0000	1.0000
L43	95	CCI-065125	9.00 - 9.25	1.0000	1.0000
L43	96	CCI-065125	9.00 - 9.25	1.0000	1.0000
L43	97	CCI-065125	9.00 - 9.25	1.0000	1.0000
L43	109	FP 6 x1.25	9.00 - 9.25	1.0000	1.0000
L43	110	FP 6 x1.25	9.00 - 9.25	1.0000	1.0000
L43	111	FP 6 x1.25	9.00 - 9.25	1.0000	1.0000
L43	112	FP 6 x1.25	9.00 - 9.25	1.0000	1.0000
L43	113	FP 6 x1.25	9.00 - 9.25	1.0000	1.0000
L43	114	FP 6 x1.25	9.00 - 9.25	1.0000	1.0000
L44	52	LDF7-50A(1-5/8)	8.75 - 9.00	1.0000	1.0000
L44	55	LDF7-50A(1-5/8)	8.75 - 9.00	1.0000	1.0000
L44	57	LDF4-50A(1/2)	8.75 - 9.00	1.0000	1.0000
L44	58	2" (Nominal) Conduit	8.75 - 9.00	1.0000	1.0000
L44	59	2" (Nominal) Conduit	8.75 - 9.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L44	61	EC4-50(1/2)	8.75 - 9.00	1.0000	1.0000
L44	63	LDF6-50A(1-1/4)	8.75 - 9.00	1.0000	1.0000
L44	64	LDF7-50A(1-5/8)	8.75 - 9.00	1.0000	1.0000
L44	94	CCI-065125	8.75 - 9.00	1.0000	1.0000
L44	95	CCI-065125	8.75 - 9.00	1.0000	1.0000
L44	96	CCI-065125	8.75 - 9.00	1.0000	1.0000
L44	97	CCI-065125	8.75 - 9.00	1.0000	1.0000
L44	109	FP 6 x1.25	8.75 - 9.00	1.0000	1.0000
L44	110	FP 6 x1.25	8.75 - 9.00	1.0000	1.0000
L44	111	FP 6 x1.25	8.75 - 9.00	1.0000	1.0000
L44	112	FP 6 x1.25	8.75 - 9.00	1.0000	1.0000
L44	113	FP 6 x1.25	8.75 - 9.00	1.0000	1.0000
L44	114	FP 6 x1.25	8.75 - 9.00	1.0000	1.0000
L45	52	LDF7-50A(1-5/8)	7.00 - 8.75	1.0000	1.0000
L45	55	LDF7-50A(1-5/8)	7.00 - 8.75	1.0000	1.0000
L45	57	LDF4-50A(1/2)	7.00 - 8.75	1.0000	1.0000
L45	58	2" (Nominal) Conduit	7.00 - 8.75	1.0000	1.0000
L45	59	2" (Nominal) Conduit	7.00 - 8.75	1.0000	1.0000
L45	61	EC4-50(1/2)	7.00 - 8.75	1.0000	1.0000
L45	63	LDF6-50A(1-1/4)	7.00 - 8.75	1.0000	1.0000
L45	64	LDF7-50A(1-5/8)	7.00 - 8.75	1.0000	1.0000
L45	94	CCI-065125	7.00 - 8.75	1.0000	1.0000
L45	95	CCI-065125	7.00 - 8.75	1.0000	1.0000
L45	96	CCI-065125	7.00 - 8.75	1.0000	1.0000
L45	97	CCI-065125	7.00 - 8.75	1.0000	1.0000
L45	109	FP 6 x1.25	7.00 - 8.75	1.0000	1.0000
L45	110	FP 6 x1.25	7.00 - 8.75	1.0000	1.0000
L45	111	FP 6 x1.25	7.00 - 8.75	1.0000	1.0000
L45	112	FP 6 x1.25	7.00 - 8.75	1.0000	1.0000
L45	113	FP 6 x1.25	7.00 - 8.75	1.0000	1.0000
L45	114	FP 6 x1.25	7.00 - 8.75	1.0000	1.0000
L46	52	LDF7-50A(1-5/8)	6.75 - 7.00	1.0000	1.0000
L46	55	LDF7-50A(1-5/8)	6.75 - 7.00	1.0000	1.0000
L46	57	LDF4-50A(1/2)	6.75 - 7.00	1.0000	1.0000
L46	58	2" (Nominal) Conduit	6.75 - 7.00	1.0000	1.0000
L46	59	2" (Nominal) Conduit	6.75 - 7.00	1.0000	1.0000
L46	61	EC4-50(1/2)	6.75 - 7.00	1.0000	1.0000
L46	63	LDF6-50A(1-1/4)	6.75 - 7.00	1.0000	1.0000
L46	64	LDF7-50A(1-5/8)	6.75 - 7.00	1.0000	1.0000
L46	94	CCI-065125	6.75 - 7.00	1.0000	1.0000
L46	95	CCI-065125	6.75 - 7.00	1.0000	1.0000
L46	96	CCI-065125	6.75 - 7.00	1.0000	1.0000
L46	97	CCI-065125	6.75 - 7.00	1.0000	1.0000
L46	109	FP 6 x1.25	6.75 - 7.00	1.0000	1.0000
L46	110	FP 6 x1.25	6.75 - 7.00	1.0000	1.0000
L46	111	FP 6 x1.25	6.75 - 7.00	1.0000	1.0000
L46	112	FP 6 x1.25	6.75 - 7.00	1.0000	1.0000
L46	113	FP 6 x1.25	6.75 - 7.00	1.0000	1.0000
L46	114	FP 6 x1.25	6.75 - 7.00	1.0000	1.0000
L47	52	LDF7-50A(1-5/8)	5.00 - 6.75	1.0000	1.0000
L47	55	LDF7-50A(1-5/8)	5.00 - 6.75	1.0000	1.0000
L47	57	LDF4-50A(1/2)	5.00 - 6.75	1.0000	1.0000
L47	58	2" (Nominal) Conduit	5.00 - 6.75	1.0000	1.0000
L47	59	2" (Nominal) Conduit	5.00 - 6.75	1.0000	1.0000
L47	61	EC4-50(1/2)	5.00 - 6.75	1.0000	1.0000
L47	63	LDF6-50A(1-1/4)	5.00 - 6.75	1.0000	1.0000
L47	64	LDF7-50A(1-5/8)	5.00 - 6.75	1.0000	1.0000
L47	94	CCI-065125	5.00 - 6.75	1.0000	1.0000
L47	95	CCI-065125	5.00 - 6.75	1.0000	1.0000
L47	96	CCI-065125	5.00 - 6.75	1.0000	1.0000
L47	97	CCI-065125	5.00 - 6.75	1.0000	1.0000
L47	109	FP 6 x1.25	5.00 - 6.75	1.0000	1.0000
L47	110	FP 6 x1.25	5.00 - 6.75	1.0000	1.0000
L47	111	FP 6 x1.25	5.00 - 6.75	1.0000	1.0000
L47	112	FP 6 x1.25	5.00 - 6.75	1.0000	1.0000
L47	113	FP 6 x1.25	5.00 - 6.75	1.0000	1.0000
L47	114	FP 6 x1.25	5.00 - 6.75	1.0000	1.0000
L48	52	LDF7-50A(1-5/8)	4.75 - 5.00	1.0000	1.0000
L48	55	LDF7-50A(1-5/8)	4.75 - 5.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L48	57	LDF4-50A(1/2)	4.75 - 5.00	1.0000	1.0000
L48	58	2" (Nominal) Conduit	4.75 - 5.00	1.0000	1.0000
L48	59	2" (Nominal) Conduit	4.75 - 5.00	1.0000	1.0000
L48	61	EC4-50(1/2)	4.75 - 5.00	1.0000	1.0000
L48	63	LDF6-50A(1-1/4)	4.75 - 5.00	1.0000	1.0000
L48	64	LDF7-50A(1-5/8)	4.75 - 5.00	1.0000	1.0000
L48	94	CCI-065125	4.75 - 5.00	1.0000	1.0000
L48	95	CCI-065125	4.75 - 5.00	1.0000	1.0000
L48	96	CCI-065125	4.75 - 5.00	1.0000	1.0000
L48	97	CCI-065125	4.75 - 5.00	1.0000	1.0000
L48	109	FP 6 x1.25	4.75 - 5.00	1.0000	1.0000
L48	110	FP 6 x1.25	4.75 - 5.00	1.0000	1.0000
L48	111	FP 6 x1.25	4.75 - 5.00	1.0000	1.0000
L48	112	FP 6 x1.25	4.75 - 5.00	1.0000	1.0000
L48	113	FP 6 x1.25	4.75 - 5.00	1.0000	1.0000
L48	114	FP 6 x1.25	4.75 - 5.00	1.0000	1.0000
L49	52	LDF7-50A(1-5/8)	3.00 - 4.75	1.0000	1.0000
L49	55	LDF7-50A(1-5/8)	3.00 - 4.75	1.0000	1.0000
L49	57	LDF4-50A(1/2)	3.00 - 4.75	1.0000	1.0000
L49	58	2" (Nominal) Conduit	3.00 - 4.75	1.0000	1.0000
L49	59	2" (Nominal) Conduit	3.00 - 4.75	1.0000	1.0000
L49	61	EC4-50(1/2)	3.00 - 4.75	1.0000	1.0000
L49	63	LDF6-50A(1-1/4)	3.00 - 4.75	1.0000	1.0000
L49	64	LDF7-50A(1-5/8)	3.00 - 4.75	1.0000	1.0000
L49	94	CCI-065125	3.00 - 4.75	1.0000	1.0000
L49	95	CCI-065125	3.00 - 4.75	1.0000	1.0000
L49	96	CCI-065125	3.00 - 4.75	1.0000	1.0000
L49	97	CCI-065125	3.00 - 4.75	1.0000	1.0000
L49	109	FP 6 x1.25	3.00 - 4.75	1.0000	1.0000
L49	110	FP 6 x1.25	3.00 - 4.75	1.0000	1.0000
L49	111	FP 6 x1.25	3.00 - 4.75	1.0000	1.0000
L49	112	FP 6 x1.25	3.00 - 4.75	1.0000	1.0000
L49	113	FP 6 x1.25	3.00 - 4.75	1.0000	1.0000
L49	114	FP 6 x1.25	3.00 - 4.75	1.0000	1.0000
L50	52	LDF7-50A(1-5/8)	2.75 - 3.00	1.0000	1.0000
L50	55	LDF7-50A(1-5/8)	2.75 - 3.00	1.0000	1.0000
L50	57	LDF4-50A(1/2)	2.75 - 3.00	1.0000	1.0000
L50	58	2" (Nominal) Conduit	2.75 - 3.00	1.0000	1.0000
L50	59	2" (Nominal) Conduit	2.75 - 3.00	1.0000	1.0000
L50	61	EC4-50(1/2)	2.75 - 3.00	1.0000	1.0000
L50	63	LDF6-50A(1-1/4)	2.75 - 3.00	1.0000	1.0000
L50	64	LDF7-50A(1-5/8)	2.75 - 3.00	1.0000	1.0000
L50	94	CCI-065125	2.75 - 3.00	1.0000	1.0000
L50	95	CCI-065125	2.75 - 3.00	1.0000	1.0000
L50	96	CCI-065125	2.75 - 3.00	1.0000	1.0000
L50	97	CCI-065125	2.75 - 3.00	1.0000	1.0000
L50	109	FP 6 x1.25	2.75 - 3.00	1.0000	1.0000
L50	110	FP 6 x1.25	2.75 - 3.00	1.0000	1.0000
L50	111	FP 6 x1.25	2.75 - 3.00	1.0000	1.0000
L50	112	FP 6 x1.25	2.75 - 3.00	1.0000	1.0000
L50	113	FP 6 x1.25	2.75 - 3.00	1.0000	1.0000
L50	114	FP 6 x1.25	2.75 - 3.00	1.0000	1.0000
L51	52	LDF7-50A(1-5/8)	2.25 - 2.75	1.0000	1.0000
L51	55	LDF7-50A(1-5/8)	2.25 - 2.75	1.0000	1.0000
L51	57	LDF4-50A(1/2)	2.25 - 2.75	1.0000	1.0000
L51	58	2" (Nominal) Conduit	2.25 - 2.75	1.0000	1.0000
L51	59	2" (Nominal) Conduit	2.25 - 2.75	1.0000	1.0000
L51	61	EC4-50(1/2)	2.25 - 2.75	1.0000	1.0000
L51	63	LDF6-50A(1-1/4)	2.25 - 2.75	1.0000	1.0000
L51	64	LDF7-50A(1-5/8)	2.25 - 2.75	1.0000	1.0000
L51	94	CCI-065125	2.25 - 2.75	1.0000	1.0000
L51	95	CCI-065125	2.25 - 2.75	1.0000	1.0000
L51	96	CCI-065125	2.25 - 2.75	1.0000	1.0000
L51	97	CCI-065125	2.25 - 2.75	1.0000	1.0000
L51	109	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000
L51	110	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000
L51	111	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000
L51	112	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000
L51	113	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000
L51	114	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L51	114	FP 6 x1.25	2.25 - 2.75	1.0000	1.0000
L52	52	LDF7-50A(1-5/8)	2.00 - 2.25	1.0000	1.0000
L52	55	LDF7-50A(1-5/8)	2.00 - 2.25	1.0000	1.0000
L52	57	LDF4-50A(1/2)	2.00 - 2.25	1.0000	1.0000
L52	58	2" (Nominal) Conduit	2.00 - 2.25	1.0000	1.0000
L52	59	2" (Nominal) Conduit	2.00 - 2.25	1.0000	1.0000
L52	61	EC4-50(1/2)	2.00 - 2.25	1.0000	1.0000
L52	63	LDF6-50A(1-1/4)	2.00 - 2.25	1.0000	1.0000
L52	64	LDF7-50A(1-5/8)	2.00 - 2.25	1.0000	1.0000
L52	94	CCI-065125	2.00 - 2.25	1.0000	1.0000
L52	95	CCI-065125	2.00 - 2.25	1.0000	1.0000
L52	96	CCI-065125	2.00 - 2.25	1.0000	1.0000
L52	97	CCI-065125	2.00 - 2.25	1.0000	1.0000
L52	109	FP 6 x1.25	2.00 - 2.25	1.0000	1.0000
L52	110	FP 6 x1.25	2.00 - 2.25	1.0000	1.0000
L52	111	FP 6 x1.25	2.00 - 2.25	1.0000	1.0000
L52	112	FP 6 x1.25	2.00 - 2.25	1.0000	1.0000
L52	113	FP 6 x1.25	2.00 - 2.25	1.0000	1.0000
L52	114	FP 6 x1.25	2.00 - 2.25	1.0000	1.0000
L53	52	LDF7-50A(1-5/8)	0.00 - 2.00	1.0000	1.0000
L53	55	LDF7-50A(1-5/8)	0.00 - 2.00	1.0000	1.0000
L53	57	LDF4-50A(1/2)	0.00 - 2.00	1.0000	1.0000
L53	58	2" (Nominal) Conduit	0.00 - 2.00	1.0000	1.0000
L53	59	2" (Nominal) Conduit	0.00 - 2.00	1.0000	1.0000
L53	61	EC4-50(1/2)	0.00 - 2.00	1.0000	1.0000
L53	63	LDF6-50A(1-1/4)	0.00 - 2.00	1.0000	1.0000
L53	64	LDF7-50A(1-5/8)	0.00 - 2.00	1.0000	1.0000
L53	94	CCI-065125	0.00 - 2.00	1.0000	1.0000
L53	95	CCI-065125	0.00 - 2.00	1.0000	1.0000
L53	96	CCI-065125	0.00 - 2.00	1.0000	1.0000
L53	97	CCI-065125	0.00 - 2.00	1.0000	1.0000
L53	109	FP 6 x1.25	0.00 - 2.00	1.0000	1.0000
L53	110	FP 6 x1.25	0.00 - 2.00	1.0000	1.0000
L53	111	FP 6 x1.25	0.00 - 2.00	1.0000	1.0000
L53	112	FP 6 x1.25	0.00 - 2.00	1.0000	1.0000
L53	113	FP 6 x1.25	0.00 - 2.00	1.0000	1.0000
L53	114	FP 6 x1.25	0.00 - 2.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	165.00	No Ice	6.33	5.64	0.11
						1/2" Ice	6.78	6.43	0.17
						Ice	7.21	7.13	0.23
						1" Ice	8.12	8.59	0.38
						2" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	165.00	No Ice	6.33	5.64	0.11
						1/2" Ice	6.78	6.43	0.17
						Ice	7.21	7.13	0.23
						1" Ice	8.12	8.59	0.38
						2" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	165.00	No Ice	6.33	5.64	0.11
						1/2" Ice	6.78	6.43	0.17
						Ice	7.21	7.13	0.23
						1" Ice	8.12	8.59	0.38
						2" Ice			
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	165.00	No Ice	6.75	6.07	0.15
						1/2" Ice	7.20	6.87	0.21
						Ice	7.65	7.58	0.28
						1" Ice	8.57	9.06	0.44
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight	
			Horz Lateral	Vert						ft
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	165.00	No Ice	6.75	6.07	0.15
							1/2"	7.20	6.87	0.21
							Ice	7.65	7.58	0.28
							1" Ice	8.57	9.06	0.44
							2" Ice			
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	165.00	No Ice	6.75	6.07	0.15
							1/2"	7.20	6.87	0.21
							Ice	7.65	7.58	0.28
							1" Ice	8.57	9.06	0.44
							2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	165.00	No Ice	14.69	6.87	0.19
							1/2"	15.46	7.55	0.31
							Ice	16.23	8.25	0.46
							1" Ice	17.82	9.67	0.79
							2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	165.00	No Ice	14.69	6.87	0.19
							1/2"	15.46	7.55	0.31
							Ice	16.23	8.25	0.46
							1" Ice	17.82	9.67	0.79
							2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	165.00	No Ice	14.69	6.87	0.19
							1/2"	15.46	7.55	0.31
							Ice	16.23	8.25	0.46
							1" Ice	17.82	9.67	0.79
							2" Ice			
KRY 112 144/1	A	From Leg	4.00	0.00	0.0000	165.00	No Ice	0.35	0.17	0.01
							1/2"	0.43	0.23	0.01
							Ice	0.51	0.30	0.02
							1" Ice	0.70	0.46	0.03
							2" Ice			
KRY 112 144/1	A	From Leg	4.00	0.00	0.0000	165.00	No Ice	0.35	0.17	0.01
							1/2"	0.43	0.23	0.01
							Ice	0.51	0.30	0.02
							1" Ice	0.70	0.46	0.03
							2" Ice			
KRY 112 144/1	B	From Leg	4.00	0.00	0.0000	165.00	No Ice	0.35	0.17	0.01
							1/2"	0.43	0.23	0.01
							Ice	0.51	0.30	0.02
							1" Ice	0.70	0.46	0.03
							2" Ice			
RADIO 4449 B12/B71	B	From Leg	4.00	0.00	0.0000	165.00	No Ice	1.65	1.16	0.07
							1/2"	1.81	1.30	0.09
							Ice	1.98	1.45	0.11
							1" Ice	2.34	1.76	0.16
							2" Ice			
(2) RADIO 4449 B12/B71	C	From Leg	4.00	0.00	0.0000	165.00	No Ice	1.65	1.16	0.07
							1/2"	1.81	1.30	0.09
							Ice	1.98	1.45	0.11
							1" Ice	2.34	1.76	0.16
							2" Ice			
8-ft Ladder	C	None			0.0000	165.00	No Ice	7.07	7.07	0.04
							1/2"	9.73	9.73	0.07
							Ice	11.19	11.19	0.08
							1" Ice	13.98	13.98	0.11
							2" Ice			
Platform Mount [LP 601-1]	C	None			0.0000	165.00	No Ice	28.47	28.47	1.12
							1/2"	33.59	33.59	1.51
							Ice	38.71	38.71	1.91
							1" Ice	48.95	48.95	2.69
							2" Ice			

(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	156.00	No Ice	5.75	4.25	0.06
							1/2"	6.18	5.01	0.10
							Ice	6.61	5.71	0.16
							1" Ice	7.49	7.16	0.29
							2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	156.00	2" Ice			
							No Ice	5.75	4.25	0.06
							1/2"	6.18	5.01	0.10
							Ice	6.61	5.71	0.16
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	156.00	1" Ice	7.49	7.16	0.29
							2" Ice			
							No Ice	5.75	4.25	0.06
							1/2"	6.18	5.01	0.10
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	156.00	Ice	6.61	5.71	0.16
							1" Ice	7.49	7.16	0.29
							2" Ice			
							No Ice	12.25	8.33	0.10
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	156.00	1/2"	13.19	9.23	0.19
							Ice	14.16	10.15	0.30
							1" Ice	16.14	12.05	0.54
							2" Ice			
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	156.00	No Ice	9.22	6.25	0.07
							1/2"	9.98	6.96	0.14
							Ice	10.76	7.70	0.22
							1" Ice	12.36	9.22	0.42
(2) DTMABP7819VG12A	A	From Leg	4.00	0.00	0.0000	156.00	2" Ice			
							No Ice	0.98	0.34	0.02
							1/2"	1.10	0.42	0.03
							Ice	1.23	0.51	0.04
(2) DTMABP7819VG12A	B	From Leg	4.00	0.00	0.0000	156.00	1" Ice	1.52	0.71	0.06
							2" Ice			
							No Ice	0.98	0.34	0.02
							1/2"	1.10	0.42	0.03
(2) DTMABP7819VG12A	C	From Leg	4.00	0.00	0.0000	156.00	Ice	1.23	0.51	0.04
							1" Ice	1.52	0.71	0.06
							2" Ice			
							No Ice	0.98	0.34	0.02
RRUS 11	A	From Leg	4.00	0.00	0.0000	156.00	1/2"	3.00	1.34	0.07
							Ice	3.21	1.50	0.10
							1" Ice	3.67	1.84	0.15
							2" Ice			
RRUS 11	B	From Leg	4.00	0.00	0.0000	156.00	No Ice	2.79	1.19	0.05
							1/2"	3.00	1.34	0.07
							Ice	3.21	1.50	0.10
							1" Ice	3.67	1.84	0.15
RRUS 11	C	From Leg	4.00	0.00	0.0000	156.00	2" Ice			
							No Ice	2.79	1.19	0.05
							1/2"	3.00	1.34	0.07
							Ice	3.21	1.50	0.10
DC6-48-60-18-8F	B	From Leg	4.00	0.00	0.0000	156.00	1" Ice	3.67	1.84	0.15
							2" Ice			
							No Ice	1.21	1.21	0.03
							1/2"	1.89	1.89	0.05
RRUS12/RRUS A2	A	From Leg	4.00	0.00	0.0000	156.00	Ice	2.11	2.11	0.08
							1" Ice	2.57	2.57	0.14
							2" Ice			
							No Ice	3.14	1.84	0.07
							1/2"	3.36	2.01	0.10
							Ice	3.59	2.20	0.13
							1" Ice	4.07	2.59	0.20
							2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A		Weight	
			Horz	Lateral			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	K	
RRUS12/RRUS A2	B	From Leg	4.00	0.00	0.0000	156.00	2" Ice			
							No Ice	3.14	1.84	0.07
							1/2"	3.36	2.01	0.10
							Ice	3.59	2.20	0.13
							1" Ice	4.07	2.59	0.20
RRUS12/RRUS A2	C	From Leg	4.00	0.00	0.0000	156.00	2" Ice			
							No Ice	3.14	1.84	0.07
							1/2"	3.36	2.01	0.10
							Ice	3.59	2.20	0.13
							1" Ice	4.07	2.59	0.20
Platform Mount [LP 714-1]	C	None			0.0000	156.00	2" Ice			
							No Ice	37.47	37.47	1.60
							1/2"	44.23	44.23	2.04
							Ice	50.99	50.99	2.48
							1" Ice	64.51	64.51	3.36
Miscellaneous [NA 509-3]	C	None			0.0000	156.00	2" Ice			
							No Ice	11.84	11.84	0.28
							1/2"	16.96	16.96	0.30
							Ice	22.08	22.08	0.32
							1" Ice	32.32	32.32	0.36
*** NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	12.51	7.41	0.10
							1/2"	13.11	8.60	0.19
							Ice	13.67	9.50	0.29
							1" Ice	14.82	11.33	0.52
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	12.51	7.41	0.10
							1/2"	13.11	8.60	0.19
							Ice	13.67	9.50	0.29
							1" Ice	14.82	11.33	0.52
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	12.51	7.41	0.10
							1/2"	13.11	8.60	0.19
							Ice	13.67	9.50	0.29
							1" Ice	14.82	11.33	0.52
AAHC w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	4.41	2.69	0.12
							1/2"	4.73	3.08	0.16
							Ice	5.06	3.49	0.20
							1" Ice	5.74	4.36	0.31
AAHC w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	4.41	2.69	0.12
							1/2"	4.73	3.08	0.16
							Ice	5.06	3.49	0.20
							1" Ice	5.74	4.36	0.31
AAHC w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	4.41	2.69	0.12
							1/2"	4.73	3.08	0.16
							Ice	5.06	3.49	0.20
							1" Ice	5.74	4.36	0.31
800MHZ RRH	A	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	2.13	1.77	0.05
							1/2"	2.32	1.95	0.07
							Ice	2.51	2.13	0.10
							1" Ice	2.92	2.51	0.16
800MHZ RRH	B	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	2.13	1.77	0.05
							1/2"	2.32	1.95	0.07
							Ice	2.51	2.13	0.10
							1" Ice	2.92	2.51	0.16
800MHZ RRH	C	From Leg	4.00	0.00	0.0000	148.00	2" Ice			
							No Ice	2.13	1.77	0.05
							1/2"	2.32	1.95	0.07
							Ice	2.51	2.13	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" Ice	2.92	2.51	0.16
						2" Ice			
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice	2.32	2.24	0.06
						1/2" Ice	2.53	2.44	0.08
						Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice	2.32	2.24	0.06
						1/2" Ice	2.53	2.44	0.08
						Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice	2.32	2.24	0.06
						1/2" Ice	2.53	2.44	0.08
						Ice	2.74	2.65	0.11
						1" Ice	3.19	3.09	0.17
						2" Ice			
RRH2X50-800	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice	1.70	1.28	0.05
						1/2" Ice	1.86	1.43	0.07
						Ice	2.03	1.58	0.09
						1" Ice	2.40	1.91	0.14
						2" Ice			
RRH2X50-800	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice	1.70	1.28	0.05
						1/2" Ice	1.86	1.43	0.07
						Ice	2.03	1.58	0.09
						1" Ice	2.40	1.91	0.14
						2" Ice			
RRH2X50-800	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice	1.70	1.28	0.05
						1/2" Ice	1.86	1.43	0.07
						Ice	2.03	1.58	0.09
						1" Ice	2.40	1.91	0.14
						2" Ice			
T-Arm Mount [TA 702-3]	C	None		0.0000	148.00	No Ice	5.64	5.64	0.34
						1/2" Ice	6.55	6.55	0.43
						Ice	7.46	7.46	0.52
						1" Ice	9.28	9.28	0.70
						2" Ice			

APXV18-206517-A w/ Mount Pipe	A	From Leg	1.00 0.00 0.00	0.0000	138.00	No Ice	5.40	4.70	0.05
						1/2" Ice	5.96	5.86	0.10
						Ice	6.48	6.73	0.15
						1" Ice	7.55	8.51	0.28
						2" Ice			
APXV18-206517-A w/ Mount Pipe	B	From Leg	1.00 0.00 0.00	0.0000	138.00	No Ice	5.40	4.70	0.05
						1/2" Ice	5.96	5.86	0.10
						Ice	6.48	6.73	0.15
						1" Ice	7.55	8.51	0.28
						2" Ice			
APXV18-206517-A w/ Mount Pipe	C	From Leg	1.00 0.00 0.00	0.0000	138.00	No Ice	5.40	4.70	0.05
						1/2" Ice	5.96	5.86	0.10
						Ice	6.48	6.73	0.15
						1" Ice	7.55	8.51	0.28
						2" Ice			
Pipe Mount [PM 601-3]	C	None		0.0000	138.00	No Ice	4.39	4.39	0.20
						1/2" Ice	5.48	5.48	0.24
						Ice	6.57	6.57	0.28
						1" Ice	8.75	8.75	0.36
						2" Ice			

LLPX310R w/ Mount Pipe	A	From Leg	3.00 0.00 4.00	0.0000	124.00	No Ice	4.46	2.85	0.04
						1/2" Ice	4.79	3.37	0.08
						Ice	5.12	3.91	0.12
						1" Ice	5.82	5.01	0.22
						2" Ice			
LLPX310R w/ Mount Pipe	B	From Leg	3.00	0.0000	124.00	No Ice	4.46	2.85	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.00			1/2"	4.79	3.37	0.08
			4.00			Ice	5.12	3.91	0.12
						1" Ice	5.82	5.01	0.22
						2" Ice			
LLPX310R w/ Mount Pipe	C	From Leg	3.00	0.0000	124.00	No Ice	4.46	2.85	0.04
			0.00			1/2"	4.79	3.37	0.08
			4.00			Ice	5.12	3.91	0.12
						1" Ice	5.82	5.01	0.22
						2" Ice			
WIMAX DAP HEAD	A	From Leg	3.00	0.0000	124.00	No Ice	1.55	0.68	0.03
			0.00			1/2"	1.70	0.80	0.04
			4.00			Ice	1.87	0.92	0.06
						1" Ice	2.22	1.19	0.09
						2" Ice			
WIMAX DAP HEAD	B	From Leg	3.00	0.0000	124.00	No Ice	1.55	0.68	0.03
			0.00			1/2"	1.70	0.80	0.04
			4.00			Ice	1.87	0.92	0.06
						1" Ice	2.22	1.19	0.09
						2" Ice			
WIMAX DAP HEAD	C	From Leg	3.00	0.0000	124.00	No Ice	1.55	0.68	0.03
			0.00			1/2"	1.70	0.80	0.04
			4.00			Ice	1.87	0.92	0.06
						1" Ice	2.22	1.19	0.09
						2" Ice			
HORIZON DUO	A	From Leg	3.00	0.0000	124.00	No Ice	0.47	0.29	0.01
			0.00			1/2"	0.56	0.37	0.01
			4.00			Ice	0.65	0.44	0.02
						1" Ice	0.86	0.62	0.04
						2" Ice			
HORIZON DUO	C	From Leg	3.00	0.0000	124.00	No Ice	0.47	0.29	0.01
			0.00			1/2"	0.56	0.37	0.01
			4.00			Ice	0.65	0.44	0.02
						1" Ice	0.86	0.62	0.04
						2" Ice			
2.375" OD x 5' Mount Pipe	A	From Leg	3.00	0.0000	124.00	No Ice	1.19	1.19	0.02
			0.00			1/2"	1.50	1.50	0.03
			0.00			Ice	1.81	1.81	0.04
						1" Ice	2.46	2.46	0.08
						2" Ice			
2.375" OD x 5' Mount Pipe	B	From Leg	3.00	0.0000	124.00	No Ice	1.19	1.19	0.02
			0.00			1/2"	1.50	1.50	0.03
			0.00			Ice	1.81	1.81	0.04
						1" Ice	2.46	2.46	0.08
						2" Ice			
2.375" OD x 5' Mount Pipe	C	From Leg	3.00	0.0000	124.00	No Ice	1.19	1.19	0.02
			0.00			1/2"	1.50	1.50	0.03
			0.00			Ice	1.81	1.81	0.04
						1" Ice	2.46	2.46	0.08
						2" Ice			
Side Arm Mount [SO 701-3]	C	None		0.0000	124.00	No Ice	2.83	2.83	0.20
						1/2"	3.92	3.92	0.24
						Ice	5.01	5.01	0.28
						1" Ice	7.19	7.19	0.36
						2" Ice			

CXL 900-3LW	B	From Leg	2.00	60.0000	118.00	No Ice	0.14	0.14	0.00
			0.00			1/2"	0.33	0.33	0.00
			1.00			Ice	0.48	0.48	0.01
						1" Ice	0.81	0.81	0.02
						2" Ice			
LNA	B	From Leg	2.00	60.0000	118.00	No Ice	0.14	0.05	0.00
			0.00			1/2"	0.19	0.09	0.00
			1.00			Ice	0.25	0.13	0.00
						1" Ice	0.39	0.24	0.01
						2" Ice			

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight
			Horz	Lateral	Vert					
			ft	ft	ft	°	ft	ft ²	ft ²	K
CAVITY FILTER	B	From Leg	2.00	60.0000	118.00		No Ice	0.19	0.08	0.00
			0.00				1/2"	0.25	0.12	0.00
			1.00				Ice	0.32	0.17	0.01
							1" Ice	0.47	0.29	0.02
Side Arm Mount [SO 304-1]	C	From Leg	0.00	60.0000	118.00		No Ice	0.63	0.94	0.02
			0.00				1/2"	1.00	1.45	0.03
			0.00				Ice	1.37	1.96	0.04
							1" Ice	2.11	2.98	0.06
						2" Ice				
*** (2) HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	4.00	0.0000	111.00		No Ice	7.97	5.99	0.08
			0.00				1/2"	8.73	6.72	0.14
			0.00				Ice	9.51	7.47	0.21
							1" Ice	11.11	9.02	0.40
						2" Ice				
(2) HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	4.00	0.0000	111.00		No Ice	7.97	5.99	0.08
			0.00				1/2"	8.73	6.72	0.14
			0.00				Ice	9.51	7.47	0.21
							1" Ice	11.11	9.02	0.40
						2" Ice				
(2) HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	4.00	0.0000	111.00		No Ice	7.97	5.99	0.08
			0.00				1/2"	8.73	6.72	0.14
			0.00				Ice	9.51	7.47	0.21
							1" Ice	11.11	9.02	0.40
						2" Ice				
(2) LNX-6514DS-A1M w/ Mount Pipe	A	From Leg	4.00	0.0000	111.00		No Ice	8.41	7.08	0.06
			0.00				1/2"	8.97	8.27	0.13
			0.00				Ice	9.50	9.18	0.21
							1" Ice	10.59	11.02	0.39
						2" Ice				
(2) LNX-6514DS-A1M w/ Mount Pipe	B	From Leg	4.00	0.0000	111.00		No Ice	8.41	7.08	0.06
			0.00				1/2"	8.97	8.27	0.13
			0.00				Ice	9.50	9.18	0.21
							1" Ice	10.59	11.02	0.39
						2" Ice				
(2) LNX-6514DS-A1M w/ Mount Pipe	C	From Leg	4.00	0.0000	111.00		No Ice	8.41	7.08	0.06
			0.00				1/2"	8.97	8.27	0.13
			0.00				Ice	9.50	9.18	0.21
							1" Ice	10.59	11.02	0.39
						2" Ice				
B4 RRH2X60-4R	A	From Leg	4.00	0.0000	111.00		No Ice	3.36	2.00	0.06
			0.00				1/2"	3.61	2.24	0.08
			0.00				Ice	3.88	2.48	0.11
							1" Ice	4.42	2.97	0.18
						2" Ice				
B4 RRH2X60-4R	B	From Leg	4.00	0.0000	111.00		No Ice	3.36	2.00	0.06
			0.00				1/2"	3.61	2.24	0.08
			0.00				Ice	3.88	2.48	0.11
							1" Ice	4.42	2.97	0.18
						2" Ice				
B4 RRH2X60-4R	C	From Leg	4.00	0.0000	111.00		No Ice	3.36	2.00	0.06
			0.00				1/2"	3.61	2.24	0.08
			0.00				Ice	3.88	2.48	0.11
							1" Ice	4.42	2.97	0.18
						2" Ice				
(2) RRFDC-3315-PF-48	B	From Leg	4.00	0.0000	111.00		No Ice	3.36	2.19	0.03
			0.00				1/2"	3.60	2.39	0.06
			0.00				Ice	3.84	2.61	0.09
							1" Ice	4.34	3.05	0.17
						2" Ice				
Platform Mount [LP 303-1]	C	None		0.0000	111.00		No Ice	14.66	14.66	1.25
							1/2"	18.87	18.87	1.48
							Ice	23.08	23.08	1.71
							1" Ice	31.50	31.50	2.18

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
					2" Ice			

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K	
VHLP800-11	A	Paraboloid w/o Radome	From Leg	3.00	0.0000		124.00	2.80	No Ice	6.16	0.02
				0.00					1/2" Ice	6.53	0.06
				4.00					1" Ice	6.90	0.09
									2" Ice	7.64	0.17
VHLP800-11	C	Paraboloid w/o Radome	From Leg	3.00	0.0000		124.00	2.80	No Ice	6.16	0.02
				0.00					1/2" Ice	6.53	0.06
				4.00					1" Ice	6.90	0.09
									2" Ice	7.64	0.17

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 _A A _A In Face ft ²	C _A A _A Out Face ft ²
L1 169.00-164.00	166.48	1.409	51	6.744	A	0.000	6.744	6.744	100.00	0.000	0.000
					B	0.000	6.744	100.00	0.000	0.000	
					C	0.000	6.744	100.00	1.386	0.000	
L2 164.00-159.00	161.48	1.4	50	7.148	A	0.000	7.148	7.148	100.00	0.000	0.000
					B	0.000	7.148	100.00	0.000	0.000	
					C	0.000	7.148	100.00	6.930	0.000	
L3 159.00-154.00	156.48	1.391	50	7.552	A	0.000	7.552	7.552	100.00	0.000	0.000
					B	0.000	7.552	100.00	0.000	0.000	
					C	0.000	7.552	100.00	6.930	0.000	
L4 154.00-149.00	151.48	1.381	50	7.955	A	0.000	7.955	7.955	100.00	0.000	0.000
					B	0.000	7.955	100.00	0.000	0.000	
					C	0.000	7.955	100.00	6.930	0.000	
L5 149.00-144.00	146.48	1.372	49	8.359	A	0.000	8.359	8.359	100.00	0.000	0.000
					B	0.000	8.359	100.00	0.000	0.000	
					C	0.000	8.359	100.00	6.930	0.000	
L6 144.00-139.00	141.48	1.362	49	8.763	A	0.000	8.763	8.763	100.00	0.000	0.000
					B	0.000	8.763	100.00	0.000	0.000	
					C	0.000	8.763	100.00	6.930	0.000	
L7 139.00-133.33	136.14	1.351	49	10.426	A	0.000	10.426	10.426	100.00	0.000	0.000
					B	0.000	10.426	100.00	5.548	0.000	
					C	0.000	10.426	100.00	7.859	0.000	
L8 133.33-131.66	132.49	1.343	48	3.096	A	0.000	3.096	3.096	100.00	0.000	0.000
					B	0.000	3.096	100.00	1.984	0.000	
					C	0.000	3.096	100.00	2.315	0.000	
L9 131.66-126.66	129.14	1.336	48	9.536	A	0.000	9.536	9.536	100.00	0.000	0.000
					B	0.000	9.536	100.00	5.940	0.000	
					C	0.000	9.536	100.00	6.930	0.000	
L10 126.66-121.66	124.14	1.325	48	9.934	A	0.000	9.934	9.934	100.00	0.000	0.000
					B	0.000	9.934	100.00	5.940	0.000	
					C	0.000	9.934	100.00	8.188	0.000	
L11 121.66-116.66	119.14	1.313	47	10.331	A	0.000	10.331	10.331	100.00	0.000	0.000
					B	0.000	10.331	100.00	6.024	0.000	
					C	0.000	10.331	100.00	9.617	0.000	
L12 116.66-111.66	114.14	1.301	47	10.729	A	0.000	10.729	10.729	100.00	0.000	0.000
					B	0.000	10.729	100.00	6.255	0.000	
					C	0.000	10.729	100.00	9.617	0.000	
L13 111.66-111.00	111.33	1.295	47	1.446	A	0.000	1.446	1.446	100.00	0.000	0.000
					B	0.000	1.446	100.00	0.826	0.000	
					C	0.000	1.446	100.00	1.270	0.000	
L14 111.00-110.75	110.87	1.293	47	0.549	A	0.000	0.549	0.549	100.00	0.523	0.000
					B	0.000	0.549	100.00	0.313	0.000	
					C	0.000	0.549	100.00	0.481	0.000	
L15 110.75-105.75	108.24	1.287	46	11.184	A	0.000	11.184	11.184	100.00	11.157	0.000
					B	0.000	11.184	100.00	6.952	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
L16 105.75- 101.50	103.61	1.275	46	9.820	C	0.000	11.184	9.820	100.00	10.315	0.000
					A	0.000	9.820		100.00	10.159	0.000
					B	0.000	9.820		100.00	6.585	0.000
L17 101.50- 101.25	101.37	1.269	46	0.585	C	0.000	9.820	0.585	100.00	9.443	0.000
					A	0.000	0.585		100.00	0.601	0.000
					B	0.000	0.585		100.00	0.391	0.000
L18 101.25- 101.00	101.12	1.269	46	0.586	C	0.000	0.586	0.586	100.00	0.601	0.000
					A	0.000	0.586		100.00	0.391	0.000
					B	0.000	0.586		100.00	0.559	0.000
L19 101.00- 100.75	100.87	1.268	46	0.588	C	0.000	0.588	0.588	100.00	0.601	0.000
					A	0.000	0.588		100.00	0.601	0.000
					B	0.000	0.588		100.00	0.391	0.000
L20 100.75- 95.75	98.24	1.261	45	11.970	C	0.000	0.588	11.970	100.00	0.559	0.000
					A	0.000	11.970		100.00	11.324	0.000
					B	0.000	11.970		100.00	7.119	0.000
L21 95.75- 87.83	91.76	1.243	45	19.776	C	0.000	11.970	19.776	100.00	10.481	0.000
					A	0.000	19.776		100.00	16.869	0.000
					B	0.000	19.776		100.00	10.208	0.000
L22 87.83- 86.83	87.33	1.23	44	2.512	C	0.000	19.776	2.512	100.00	15.534	0.000
					A	0.000	2.512		100.00	2.142	0.000
					B	0.000	2.512		100.00	1.301	0.000
L23 86.83- 81.83	84.32	1.221	44	12.800	C	0.000	2.512	12.800	100.00	1.974	0.000
					A	0.000	12.800		100.00	10.710	0.000
					B	0.000	12.800		100.00	6.505	0.000
L24 81.83- 81.50	81.66	1.213	44	0.859	C	0.000	12.800	0.859	100.00	9.867	0.000
					A	0.000	0.859		100.00	0.786	0.000
					B	0.000	0.859		100.00	0.508	0.000
L25 81.50- 81.25	81.37	1.212	44	0.652	C	0.000	0.859	0.652	100.00	0.730	0.000
					A	0.000	0.652		100.00	0.601	0.000
					B	0.000	0.652		100.00	0.391	0.000
L26 81.25- 76.25	78.74	1.204	43	13.244	C	0.000	0.652	13.244	100.00	0.559	0.000
					A	0.000	13.244		100.00	11.961	0.000
					B	0.000	13.244		100.00	7.756	0.000
L27 76.25- 71.25	73.74	1.187	43	13.644	C	0.000	13.244	13.644	100.00	11.118	0.000
					A	0.000	13.644		100.00	11.940	0.000
					B	0.000	13.644		100.00	7.735	0.000
L28 71.25- 66.25	68.74	1.17	42	14.044	C	0.000	13.644	14.044	100.00	11.098	0.000
					A	0.000	14.044		100.00	11.940	0.000
					B	0.000	14.044		100.00	7.735	0.000
L29 66.25- 61.25	63.74	1.151	41	14.443	C	0.000	14.044	14.443	100.00	11.098	0.000
					A	0.000	14.443		100.00	11.940	0.000
					B	0.000	14.443		100.00	7.735	0.000
L30 61.25- 56.25	58.74	1.132	41	14.842	C	0.000	14.443	14.842	100.00	11.098	0.000
					A	0.000	14.842		100.00	11.940	0.000
					B	0.000	14.842		100.00	7.735	0.000
L31 56.25- 51.25	53.74	1.111	40	15.241	C	0.000	14.842	15.241	100.00	11.098	0.000
					A	0.000	15.241		100.00	11.477	0.000
					B	0.000	15.241		100.00	7.272	0.000
L32 51.25- 43.33	47.26	1.081	39	24.957	C	0.000	15.241	24.957	100.00	10.635	0.000
					A	0.000	24.957		100.00	16.966	0.000
					B	0.000	24.957		100.00	10.239	0.000
L33 43.33- 42.33	42.83	1.059	38	3.156	C	0.000	24.957	3.156	100.00	15.565	0.000
					A	0.000	3.156		100.00	2.159	0.000
					B	0.000	3.156		100.00	1.301	0.000
L34 42.33- 37.40	39.85	1.043	38	15.791	C	0.000	3.156	15.791	100.00	1.974	0.000
					A	0.000	15.791		100.00	10.642	0.000
					B	0.000	15.791		100.00	6.414	0.000
L35 37.40- 37.15	37.27	1.028	37	0.811	C	0.000	15.791	0.811	100.00	9.729	0.000
					A	0.000	0.811		100.00	0.540	0.000
					B	0.000	0.811		100.00	0.325	0.000
L36 37.15- 32.15	34.64	1.012	36	16.432	C	0.000	0.811	16.432	100.00	0.493	0.000
					A	0.000	16.432		100.00	10.793	0.000
					B	0.000	16.432		100.00	6.505	0.000
L37 32.15- 27.15	29.64	0.98	35	16.831	C	0.000	16.432	16.831	100.00	9.867	0.000
					A	0.000	16.831		100.00	10.793	0.000
					B	0.000	16.831		100.00	6.505	0.000
					C	0.000	16.831		100.00	9.867	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
L38 27.15-22.15	24.64	0.942	34	17.229	A	0.000	17.229	17.229	100.00	10.793	0.000
					B	0.000	17.229		100.00	6.505	0.000
					C	0.000	17.229		100.00	9.867	0.000
L39 22.15-19.50	20.82	0.91	33	9.293	A	0.000	9.293	9.293	100.00	5.720	0.000
					B	0.000	9.293		100.00	3.448	0.000
					C	0.000	9.293		100.00	5.230	0.000
L40 19.50-19.25	19.37	0.896	32	0.882	A	0.000	0.882	0.882	100.00	0.540	0.000
					B	0.000	0.882		100.00	0.325	0.000
					C	0.000	0.882		100.00	0.493	0.000
L41 19.25-14.25	16.74	0.869	31	17.855	A	0.000	17.855	17.855	100.00	10.793	0.000
					B	0.000	17.855		100.00	6.505	0.000
					C	0.000	17.855		100.00	9.867	0.000
L42 14.25-9.25	11.74	0.85	31	18.252	A	0.000	18.252	18.252	100.00	10.793	0.000
					B	0.000	18.252		100.00	6.505	0.000
					C	0.000	18.252		100.00	9.867	0.000
L43 9.25-9.00	9.12	0.85	31	0.923	A	0.000	0.923	0.923	100.00	0.540	0.000
					B	0.000	0.923		100.00	0.325	0.000
					C	0.000	0.923		100.00	0.493	0.000
L44 9.00-8.75	8.87	0.85	31	0.924	A	0.000	0.924	0.924	100.00	0.540	0.000
					B	0.000	0.924		100.00	0.325	0.000
					C	0.000	0.924		100.00	0.493	0.000
L45 8.75-7.00	7.87	0.85	31	6.496	A	0.000	6.496	6.496	100.00	3.778	0.000
					B	0.000	6.496		100.00	2.277	0.000
					C	0.000	6.496		100.00	3.454	0.000
L46 7.00-6.75	6.87	0.85	31	0.932	A	0.000	0.932	0.932	100.00	0.540	0.000
					B	0.000	0.932		100.00	0.325	0.000
					C	0.000	0.932		100.00	0.493	0.000
L47 6.75-5.00	5.87	0.85	31	6.552	A	0.000	6.552	6.552	100.00	3.778	0.000
					B	0.000	6.552		100.00	2.277	0.000
					C	0.000	6.552		100.00	3.454	0.000
L48 5.00-4.75	4.87	0.85	31	0.939	A	0.000	0.939	0.939	100.00	0.540	0.000
					B	0.000	0.939		100.00	0.325	0.000
					C	0.000	0.939		100.00	0.493	0.000
L49 4.75-3.00	3.87	0.85	31	6.598	A	0.000	6.598	6.598	100.00	3.778	0.000
					B	0.000	6.598		100.00	2.277	0.000
					C	0.000	6.598		100.00	3.454	0.000
L50 3.00-2.75	2.87	0.85	31	0.946	A	0.000	0.946	0.946	100.00	0.540	0.000
					B	0.000	0.946		100.00	0.325	0.000
					C	0.000	0.946		100.00	0.493	0.000
L51 2.75-2.25	2.50	0.85	31	1.896	A	0.000	1.896	1.896	100.00	1.079	0.000
					B	0.000	1.896		100.00	0.650	0.000
					C	0.000	1.896		100.00	0.987	0.000
L52 2.25-2.00	2.12	0.85	31	0.950	A	0.000	0.950	0.950	100.00	0.540	0.000
					B	0.000	0.950		100.00	0.325	0.000
					C	0.000	0.950		100.00	0.493	0.000
L53 2.00-0.00	1.00	0.85	31	7.638	A	0.000	7.638	7.638	100.00	4.317	0.000
					B	0.000	7.638		100.00	2.602	0.000
					C	0.000	7.638		100.00	3.947	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 169.00-164.00	166.48	1.409	8	1.9986	8.409	A	0.000	8.409	8.409	100.00	0.000	0.000
						B	0.000	8.409		100.00	0.000	0.000
						C	0.000	8.409		100.00	2.232	0.000
L2 164.00-159.00	161.48	1.4	8	1.9925	8.808	A	0.000	8.808	8.808	100.00	0.000	0.000
						B	0.000	8.808		100.00	0.000	0.000
						C	0.000	8.808		100.00	11.153	0.000
L3 159.00-154.00	156.48	1.391	8	1.9863	9.207	A	0.000	9.207	9.207	100.00	0.000	0.000
						B	0.000	9.207		100.00	0.000	0.000
						C	0.000	9.207		100.00	11.145	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
L4 154.00- 149.00	151.48	1.381	8	1.9799	9.605	A	0.000	9.605	9.605	100.00	0.000	0.000
						B	0.000	9.605		100.00	0.000	0.000
						C	0.000	9.605		100.00	11.137	0.000
L5 149.00- 144.00	146.48	1.372	8	1.9732	10.004	A	0.000	10.004	10.004	100.00	0.000	0.000
						B	0.000	10.004		100.00	0.000	0.000
						C	0.000	10.004		100.00	11.129	0.000
L6 144.00- 139.00	141.48	1.362	8	1.9664	10.402	A	0.000	10.402	10.402	100.00	0.000	0.000
						B	0.000	10.402		100.00	0.000	0.000
						C	0.000	10.402		100.00	11.120	0.000
L7 139.00- 133.33	136.14	1.351	8	1.9588	12.277	A	0.000	12.277	12.277	100.00	0.000	0.000
						B	0.000	12.277		100.00	9.222	0.000
						C	0.000	12.277		100.00	12.600	0.000
L8 133.33- 131.66	132.49	1.343	8	1.9535	3.641	A	0.000	3.641	3.641	100.00	0.000	0.000
						B	0.000	3.641		100.00	3.298	0.000
						C	0.000	3.641		100.00	3.711	0.000
L9 131.66- 126.66	129.14	1.336	8	1.9485	11.159	A	0.000	11.159	11.159	100.00	0.000	0.000
						B	0.000	11.159		100.00	9.861	0.000
						C	0.000	11.159		100.00	11.098	0.000
L10 126.66- 121.66	124.14	1.325	8	1.9408	11.551	A	0.000	11.551	11.551	100.00	0.000	0.000
						B	0.000	11.551		100.00	9.851	0.000
						C	0.000	11.551		100.00	15.071	0.000
L11 121.66- 116.66	119.14	1.313	8	1.9329	11.942	A	0.000	11.942	11.942	100.00	0.000	0.000
						B	0.000	11.942		100.00	10.444	0.000
						C	0.000	11.942		100.00	19.565	0.000
L12 116.66- 111.66	114.14	1.301	7	1.9246	12.333	A	0.000	12.333	12.333	100.00	0.000	0.000
						B	0.000	12.333		100.00	12.070	0.000
						C	0.000	12.333		100.00	19.530	0.000
L13 111.66- 111.00	111.33	1.295	7	1.9198	1.657	A	0.000	1.657	1.657	100.00	0.000	0.000
						B	0.000	1.657		100.00	1.592	0.000
						C	0.000	1.657		100.00	2.575	0.000
L14 111.00- 110.75	110.87	1.293	7	1.9190	0.629	A	0.000	0.629	0.629	100.00	0.894	0.000
						B	0.000	0.629		100.00	0.603	0.000
						C	0.000	0.629		100.00	0.975	0.000
L15 110.75- 105.75	108.24	1.287	7	1.9144	12.779	A	0.000	12.779	12.779	100.00	19.452	0.000
						B	0.000	12.779		100.00	13.638	0.000
						C	0.000	12.779		100.00	21.077	0.000
L16 105.75- 101.50	103.61	1.275	7	1.9061	11.170	A	0.000	11.170	11.170	100.00	19.853	0.000
						B	0.000	11.170		100.00	14.914	0.000
						C	0.000	11.170		100.00	21.223	0.000
L17 101.50- 101.25	101.37	1.269	7	1.9019	0.664	A	0.000	0.664	0.664	100.00	1.249	0.000
						B	0.000	0.664		100.00	0.958	0.000
						C	0.000	0.664		100.00	1.329	0.000
L18 101.25- 101.00	101.12	1.269	7	1.9014	0.665	A	0.000	0.665	0.665	100.00	1.249	0.000
						B	0.000	0.665		100.00	0.958	0.000
						C	0.000	0.665		100.00	1.329	0.000
L19 101.00- 100.75	100.87	1.268	7	1.9010	0.667	A	0.000	0.667	0.667	100.00	1.248	0.000
						B	0.000	0.667		100.00	0.958	0.000
						C	0.000	0.667		100.00	1.329	0.000
L20 100.75- 95.75	98.24	1.261	7	1.8959	13.550	A	0.000	13.550	13.550	100.00	23.358	0.000
						B	0.000	13.550		100.00	17.549	0.000
						C	0.000	13.550		100.00	24.951	0.000
L21 95.75- 87.83	91.76	1.243	7	1.8830	22.262	A	0.000	22.262	22.262	100.00	35.251	0.000
						B	0.000	22.262		100.00	26.054	0.000
						C	0.000	22.262		100.00	37.738	0.000
L22 87.83- 86.83	87.33	1.23	7	1.8738	2.826	A	0.000	2.826	2.826	100.00	4.736	0.000
						B	0.000	2.826		100.00	3.575	0.000
						C	0.000	2.826		100.00	5.050	0.000
L23 86.83- 81.83	84.32	1.221	7	1.8672	14.356	A	0.000	14.356	14.356	100.00	23.595	0.000
						B	0.000	14.356		100.00	17.793	0.000
						C	0.000	14.356		100.00	25.137	0.000
L24 81.83- 81.50	81.66	1.213	7	1.8612	0.961	A	0.000	0.961	0.961	100.00	1.634	0.000
						B	0.000	0.961		100.00	1.251	0.000
						C	0.000	0.961		100.00	1.735	0.000
L25 81.50- 81.25	81.37	1.212	7	1.8606	0.729	A	0.000	0.729	0.729	100.00	1.244	0.000
						B	0.000	0.729		100.00	0.954	0.000
						C	0.000	0.729		100.00	1.320	0.000
L26 81.25- 76.25	78.74	1.204	7	1.8545	14.790	A	0.000	14.790	14.790	100.00	23.384	0.000
						B	0.000	14.790		100.00	17.586	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
L27 76.25-71.25	73.74	1.187	7	1.8423	15.179	C	0.000	14.790	15.179	100.00	24.905	0.000
						A	0.000	15.179		100.00	22.845	0.000
						B	0.000	15.179		100.00	17.050	0.000
L28 71.25-66.25	68.74	1.17	7	1.8294	15.568	C	0.000	15.179	15.568	100.00	24.345	0.000
						A	0.000	15.568		100.00	22.787	0.000
						B	0.000	15.568		100.00	16.995	0.000
L29 66.25-61.25	63.74	1.151	7	1.8157	15.956	C	0.000	15.568	15.956	100.00	24.264	0.000
						A	0.000	15.956		100.00	22.726	0.000
						B	0.000	15.956		100.00	16.937	0.000
L30 61.25-56.25	58.74	1.132	7	1.8009	16.342	C	0.000	15.956	16.342	100.00	24.178	0.000
						A	0.000	16.342		100.00	22.659	0.000
						B	0.000	16.342		100.00	16.874	0.000
L31 56.25-51.25	53.74	1.111	6	1.7850	16.729	C	0.000	16.342	16.729	100.00	24.086	0.000
						A	0.000	16.729		100.00	22.124	0.000
						B	0.000	16.729		100.00	16.343	0.000
L32 51.25-43.33	47.26	1.081	6	1.7622	27.283	C	0.000	16.729	27.283	100.00	23.523	0.000
						A	0.000	27.283		100.00	36.491	0.000
						B	0.000	27.283		100.00	25.865	0.000
L33 43.33-42.33	42.83	1.059	6	1.7449	3.450	C	0.000	27.283	3.450	100.00	37.166	0.000
						A	0.000	3.450		100.00	4.973	0.000
						B	0.000	3.450		100.00	3.448	0.000
L34 42.33-37.40	39.85	1.043	6	1.7324	17.215	C	0.000	3.450	17.215	100.00	4.875	0.000
						A	0.000	17.215		100.00	24.324	0.000
						B	0.000	17.215		100.00	16.846	0.000
L35 37.40-37.15	37.27	1.028	6	1.7208	0.883	C	0.000	17.215	0.883	100.00	23.822	0.000
						A	0.000	0.883		100.00	1.230	0.000
						B	0.000	0.883		100.00	0.851	0.000
L36 37.15-32.15	34.64	1.012	6	1.7083	17.855	C	0.000	0.883	17.855	100.00	1.204	0.000
						A	0.000	17.855		100.00	24.512	0.000
						B	0.000	17.855		100.00	16.958	0.000
L37 32.15-27.15	29.64	0.98	6	1.6818	18.233	C	0.000	17.855	18.233	100.00	23.985	0.000
						A	0.000	18.233		100.00	24.340	0.000
						B	0.000	18.233		100.00	16.820	0.000
L38 27.15-22.15	24.64	0.942	5	1.6511	18.605	C	0.000	18.233	18.605	100.00	23.793	0.000
						A	0.000	18.605		100.00	24.140	0.000
						B	0.000	18.605		100.00	16.658	0.000
L39 22.15-19.50	20.82	0.91	5	1.6235	10.010	C	0.000	18.605	10.010	100.00	23.570	0.000
						A	0.000	10.010		100.00	12.699	0.000
						B	0.000	10.010		100.00	8.752	0.000
L40 19.50-19.25	19.37	0.896	5	1.6118	0.949	C	0.000	10.010	0.949	100.00	12.386	0.000
						A	0.000	0.949		100.00	1.194	0.000
						B	0.000	0.949		100.00	0.823	0.000
L41 19.25-14.25	16.74	0.869	5	1.5885	19.179	C	0.000	0.949	19.179	100.00	1.164	0.000
						A	0.000	19.179		100.00	23.733	0.000
						B	0.000	19.179		100.00	16.329	0.000
L42 14.25-9.25	11.74	0.85	5	1.5331	19.530	C	0.000	19.179	19.530	100.00	23.116	0.000
						A	0.000	19.530		100.00	23.373	0.000
						B	0.000	19.530		100.00	16.039	0.000
L43 9.25-9.00	9.12	0.85	5	1.4949	0.985	C	0.000	19.530	0.985	100.00	22.715	0.000
						A	0.000	0.985		100.00	1.156	0.000
						B	0.000	0.985		100.00	0.792	0.000
L44 9.00-8.75	8.87	0.85	5	1.4908	0.986	C	0.000	0.985	0.986	100.00	1.122	0.000
						A	0.000	0.986		100.00	1.155	0.000
						B	0.000	0.986		100.00	0.791	0.000
L45 8.75-7.00	7.87	0.85	5	1.4730	6.925	C	0.000	0.986	6.925	100.00	1.120	0.000
						A	0.000	6.925		100.00	8.044	0.000
						B	0.000	6.925		100.00	5.503	0.000
L46 7.00-6.75	6.87	0.85	5	1.4532	0.993	C	0.000	6.925	0.993	100.00	7.798	0.000
						A	0.000	0.993		100.00	1.143	0.000
						B	0.000	0.993		100.00	0.781	0.000
L47 6.75-5.00	5.87	0.85	5	1.4305	6.970	C	0.000	0.993	6.970	100.00	1.107	0.000
						A	0.000	6.970		100.00	7.947	0.000
						B	0.000	6.970		100.00	5.425	0.000
L48 5.00-4.75	4.87	0.85	5	1.4041	0.997	C	0.000	6.970	0.997	100.00	7.690	0.000
						A	0.000	0.997		100.00	1.127	0.000
						B	0.000	0.997		100.00	0.768	0.000
L49 4.75-3.00	3.87	0.85	5	1.3722	6.998	C	0.000	0.997	6.998	100.00	1.089	0.000
						A	0.000	6.998		100.00	7.815	0.000
						B	0.000	6.998		100.00	7.815	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
L50 3.00-2.75	2.87	0.85	5	1.3319	1.002	B	0.000	6.998	1.002	100.00	5.318	0.000
						C	0.000	6.998		100.00	7.542	0.000
						A	0.000	1.002		100.00	1.103	0.000
L51 2.75-2.25	2.50	0.85	5	1.3134	2.005	B	0.000	1.002	2.005	100.00	0.749	0.000
						C	0.000	1.002		100.00	1.063	0.000
						A	0.000	2.005		100.00	2.195	0.000
L52 2.25-2.00	2.12	0.85	5	1.2922	1.004	B	0.000	2.005	1.004	100.00	1.489	0.000
						C	0.000	2.005		100.00	2.112	0.000
						A	0.000	2.005		100.00	2.112	0.000
L53 2.00-0.00	1.00	0.85	5	1.1982	8.038	B	0.000	1.004	8.038	100.00	1.090	0.000
						C	0.000	1.004		100.00	0.739	0.000
						A	0.000	1.004		100.00	1.048	0.000
						B	0.000	8.038		100.00	8.479	0.000
						C	0.000	8.038		100.00	5.712	0.000
						C	0.000	8.038		100.00	8.115	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 169.00-164.00	166.48	1.409	11	6.744	A	0.000	6.744	6.744	100.00	0.000	0.000
					B	0.000	6.744		100.00	0.000	0.000
					C	0.000	6.744		100.00	1.386	0.000
L2 164.00-159.00	161.48	1.4	11	7.148	A	0.000	7.148	7.148	100.00	0.000	0.000
					B	0.000	7.148		100.00	0.000	0.000
					C	0.000	7.148		100.00	6.930	0.000
L3 159.00-154.00	156.48	1.391	11	7.552	A	0.000	7.552	7.552	100.00	0.000	0.000
					B	0.000	7.552		100.00	0.000	0.000
					C	0.000	7.552		100.00	6.930	0.000
L4 154.00-149.00	151.48	1.381	11	7.955	A	0.000	7.955	7.955	100.00	0.000	0.000
					B	0.000	7.955		100.00	0.000	0.000
					C	0.000	7.955		100.00	6.930	0.000
L5 149.00-144.00	146.48	1.372	11	8.359	A	0.000	8.359	8.359	100.00	0.000	0.000
					B	0.000	8.359		100.00	0.000	0.000
					C	0.000	8.359		100.00	6.930	0.000
L6 144.00-139.00	141.48	1.362	11	8.763	A	0.000	8.763	8.763	100.00	0.000	0.000
					B	0.000	8.763		100.00	0.000	0.000
					C	0.000	8.763		100.00	6.930	0.000
L7 139.00-133.33	136.14	1.351	11	10.426	A	0.000	10.426	10.426	100.00	0.000	0.000
					B	0.000	10.426		100.00	5.548	0.000
					C	0.000	10.426		100.00	7.859	0.000
L8 133.33-131.66	132.49	1.343	10	3.096	A	0.000	3.096	3.096	100.00	0.000	0.000
					B	0.000	3.096		100.00	1.984	0.000
					C	0.000	3.096		100.00	2.315	0.000
L9 131.66-126.66	129.14	1.336	10	9.536	A	0.000	9.536	9.536	100.00	0.000	0.000
					B	0.000	9.536		100.00	5.940	0.000
					C	0.000	9.536		100.00	6.930	0.000
L10 126.66-121.66	124.14	1.325	10	9.934	A	0.000	9.934	9.934	100.00	0.000	0.000
					B	0.000	9.934		100.00	5.940	0.000
					C	0.000	9.934		100.00	8.188	0.000
L11 121.66-116.66	119.14	1.313	10	10.331	A	0.000	10.331	10.331	100.00	0.000	0.000
					B	0.000	10.331		100.00	6.024	0.000
					C	0.000	10.331		100.00	9.617	0.000
L12 116.66-111.66	114.14	1.301	10	10.729	A	0.000	10.729	10.729	100.00	0.000	0.000
					B	0.000	10.729		100.00	6.255	0.000
					C	0.000	10.729		100.00	9.617	0.000
L13 111.66-111.00	111.33	1.295	10	1.446	A	0.000	1.446	1.446	100.00	0.000	0.000
					B	0.000	1.446		100.00	0.826	0.000
					C	0.000	1.446		100.00	1.270	0.000
L14 111.00-110.75	110.87	1.293	10	0.549	A	0.000	0.549	0.549	100.00	0.523	0.000
					B	0.000	0.549		100.00	0.313	0.000
					C	0.000	0.549		100.00	0.481	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
L15 110.75-105.75	108.24	1.287	10	11.184	A	0.000	11.184	11.184	100.00	11.157	0.000
					B	0.000	11.184		100.00	6.952	0.000
					C	0.000	11.184		100.00	10.315	0.000
L16 105.75-101.50	103.61	1.275	10	9.820	A	0.000	9.820	9.820	100.00	10.159	0.000
					B	0.000	9.820		100.00	6.585	0.000
					C	0.000	9.820		100.00	9.443	0.000
L17 101.50-101.25	101.37	1.269	10	0.585	A	0.000	0.585	0.585	100.00	0.601	0.000
					B	0.000	0.585		100.00	0.391	0.000
					C	0.000	0.585		100.00	0.559	0.000
L18 101.25-101.00	101.12	1.269	10	0.586	A	0.000	0.586	0.586	100.00	0.601	0.000
					B	0.000	0.586		100.00	0.391	0.000
					C	0.000	0.586		100.00	0.559	0.000
L19 101.00-100.75	100.87	1.268	10	0.588	A	0.000	0.588	0.588	100.00	0.601	0.000
					B	0.000	0.588		100.00	0.391	0.000
					C	0.000	0.588		100.00	0.559	0.000
L20 100.75-95.75	98.24	1.261	10	11.970	A	0.000	11.970	11.970	100.00	11.324	0.000
					B	0.000	11.970		100.00	7.119	0.000
					C	0.000	11.970		100.00	10.481	0.000
L21 95.75-87.83	91.76	1.243	10	19.776	A	0.000	19.776	19.776	100.00	16.869	0.000
					B	0.000	19.776		100.00	10.208	0.000
					C	0.000	19.776		100.00	15.534	0.000
L22 87.83-86.83	87.33	1.23	10	2.512	A	0.000	2.512	2.512	100.00	2.142	0.000
					B	0.000	2.512		100.00	1.301	0.000
					C	0.000	2.512		100.00	1.974	0.000
L23 86.83-81.83	84.32	1.221	10	12.800	A	0.000	12.800	12.800	100.00	10.710	0.000
					B	0.000	12.800		100.00	6.505	0.000
					C	0.000	12.800		100.00	9.867	0.000
L24 81.83-81.50	81.66	1.213	9	0.859	A	0.000	0.859	0.859	100.00	0.786	0.000
					B	0.000	0.859		100.00	0.508	0.000
					C	0.000	0.859		100.00	0.730	0.000
L25 81.50-81.25	81.37	1.212	9	0.652	A	0.000	0.652	0.652	100.00	0.601	0.000
					B	0.000	0.652		100.00	0.391	0.000
					C	0.000	0.652		100.00	0.559	0.000
L26 81.25-76.25	78.74	1.204	9	13.244	A	0.000	13.244	13.244	100.00	11.961	0.000
					B	0.000	13.244		100.00	7.756	0.000
					C	0.000	13.244		100.00	11.118	0.000
L27 76.25-71.25	73.74	1.187	9	13.644	A	0.000	13.644	13.644	100.00	11.940	0.000
					B	0.000	13.644		100.00	7.735	0.000
					C	0.000	13.644		100.00	11.098	0.000
L28 71.25-66.25	68.74	1.17	9	14.044	A	0.000	14.044	14.044	100.00	11.940	0.000
					B	0.000	14.044		100.00	7.735	0.000
					C	0.000	14.044		100.00	11.098	0.000
L29 66.25-61.25	63.74	1.151	9	14.443	A	0.000	14.443	14.443	100.00	11.940	0.000
					B	0.000	14.443		100.00	7.735	0.000
					C	0.000	14.443		100.00	11.098	0.000
L30 61.25-56.25	58.74	1.132	9	14.842	A	0.000	14.842	14.842	100.00	11.940	0.000
					B	0.000	14.842		100.00	7.735	0.000
					C	0.000	14.842		100.00	11.098	0.000
L31 56.25-51.25	53.74	1.111	9	15.241	A	0.000	15.241	15.241	100.00	11.477	0.000
					B	0.000	15.241		100.00	7.272	0.000
					C	0.000	15.241		100.00	10.635	0.000
L32 51.25-43.33	47.26	1.081	8	24.957	A	0.000	24.957	24.957	100.00	16.966	0.000
					B	0.000	24.957		100.00	10.239	0.000
					C	0.000	24.957		100.00	15.565	0.000
L33 43.33-42.33	42.83	1.059	8	3.156	A	0.000	3.156	3.156	100.00	2.159	0.000
					B	0.000	3.156		100.00	1.301	0.000
					C	0.000	3.156		100.00	1.974	0.000
L34 42.33-37.40	39.85	1.043	8	15.791	A	0.000	15.791	15.791	100.00	10.642	0.000
					B	0.000	15.791		100.00	6.414	0.000
					C	0.000	15.791		100.00	9.729	0.000
L35 37.40-37.15	37.27	1.028	8	0.811	A	0.000	0.811	0.811	100.00	0.540	0.000
					B	0.000	0.811		100.00	0.325	0.000
					C	0.000	0.811		100.00	0.493	0.000
L36 37.15-32.15	34.64	1.012	8	16.432	A	0.000	16.432	16.432	100.00	10.793	0.000
					B	0.000	16.432		100.00	6.505	0.000
					C	0.000	16.432		100.00	9.867	0.000
L37 32.15-27.15	29.64	0.98	8	16.831	A	0.000	16.831	16.831	100.00	10.793	0.000
					B	0.000	16.831		100.00	6.505	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
L38 27.15-22.15	24.64	0.942	7	17.229	C	0.000	16.831	17.229	100.00	9.867	0.000
					A	0.000	17.229		100.00	10.793	0.000
					B	0.000	17.229		100.00	6.505	0.000
L39 22.15-19.50	20.82	0.91	7	9.293	C	0.000	17.229	9.293	100.00	9.867	0.000
					A	0.000	9.293		100.00	5.720	0.000
					B	0.000	9.293		100.00	3.448	0.000
L40 19.50-19.25	19.37	0.896	7	0.882	C	0.000	0.882	0.882	100.00	5.230	0.000
					A	0.000	0.882		100.00	0.540	0.000
					B	0.000	0.882		100.00	0.325	0.000
L41 19.25-14.25	16.74	0.869	7	17.855	C	0.000	0.882	17.855	100.00	0.493	0.000
					A	0.000	17.855		100.00	10.793	0.000
					B	0.000	17.855		100.00	6.505	0.000
L42 14.25-9.25	11.74	0.85	7	18.252	C	0.000	17.855	18.252	100.00	9.867	0.000
					A	0.000	18.252		100.00	10.793	0.000
					B	0.000	18.252		100.00	6.505	0.000
L43 9.25-9.00	9.12	0.85	7	0.923	C	0.000	18.252	0.923	100.00	9.867	0.000
					A	0.000	0.923		100.00	0.540	0.000
					B	0.000	0.923		100.00	0.325	0.000
L44 9.00-8.75	8.87	0.85	7	0.924	C	0.000	0.923	0.924	100.00	0.493	0.000
					A	0.000	0.924		100.00	0.540	0.000
					B	0.000	0.924		100.00	0.325	0.000
L45 8.75-7.00	7.87	0.85	7	6.496	C	0.000	0.924	6.496	100.00	0.493	0.000
					A	0.000	6.496		100.00	3.778	0.000
					B	0.000	6.496		100.00	2.277	0.000
L46 7.00-6.75	6.87	0.85	7	0.932	C	0.000	6.496	0.932	100.00	3.454	0.000
					A	0.000	0.932		100.00	0.540	0.000
					B	0.000	0.932		100.00	0.325	0.000
L47 6.75-5.00	5.87	0.85	7	6.552	C	0.000	0.932	6.552	100.00	0.493	0.000
					A	0.000	6.552		100.00	3.778	0.000
					B	0.000	6.552		100.00	2.277	0.000
L48 5.00-4.75	4.87	0.85	7	0.939	C	0.000	6.552	0.939	100.00	3.454	0.000
					A	0.000	0.939		100.00	0.540	0.000
					B	0.000	0.939		100.00	0.325	0.000
L49 4.75-3.00	3.87	0.85	7	6.598	C	0.000	0.939	6.598	100.00	0.493	0.000
					A	0.000	6.598		100.00	3.778	0.000
					B	0.000	6.598		100.00	2.277	0.000
L50 3.00-2.75	2.87	0.85	7	0.946	C	0.000	6.598	0.946	100.00	3.454	0.000
					A	0.000	0.946		100.00	0.540	0.000
					B	0.000	0.946		100.00	0.325	0.000
L51 2.75-2.25	2.50	0.85	7	1.896	C	0.000	0.946	1.896	100.00	0.493	0.000
					A	0.000	1.896		100.00	1.079	0.000
					B	0.000	1.896		100.00	0.650	0.000
L52 2.25-2.00	2.12	0.85	7	0.950	C	0.000	1.896	0.950	100.00	0.987	0.000
					A	0.000	0.950		100.00	0.540	0.000
					B	0.000	0.950		100.00	0.325	0.000
L53 2.00-0.00	1.00	0.85	7	7.638	C	0.000	0.950	7.638	100.00	0.493	0.000
					A	0.000	7.638		100.00	4.317	0.000
					B	0.000	7.638		100.00	2.602	0.000
					C	0.000	7.638		100.00	3.947	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

Comb. No.	Description
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	169 - 164	Pole	Max Tension	14	0.00	0.00	0.00
			Max. Compression	26	-9.26	0.55	-1.00
			Max. Mx	20	-2.59	11.00	-0.47
			Max. My	14	-2.56	0.27	-11.20
			Max. Vy	8	6.10	-10.42	-0.45
			Max. Vx	14	6.09	0.27	-11.20
			Max. Torque	22			0.45
L2	164 - 159	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-10.00	0.54	-1.24
			Max. Mx	20	-2.88	42.35	-0.57
			Max. My	14	-2.85	0.30	-42.53
			Max. Vy	8	6.45	-41.77	-0.46
			Max. Vx	14	6.43	0.30	-42.53
			Max. Torque	22			0.57
L3	159 - 154	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.87	-0.59	-1.55
			Max. Mx	8	-5.82	-94.18	-0.57
			Max. My	14	-5.77	0.05	-94.69
			Max. Vy	8	13.41	-94.18	-0.57
			Max. Vx	14	13.41	0.05	-94.69
			Max. Torque	22			0.64
L4	154 - 149	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-20.72	-0.60	-1.84
			Max. Mx	8	-6.25	-162.08	-0.67

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L5	149 - 144	Pole	Max. My	14	-6.20	-0.01	-162.68
			Max. Vy	8	13.76	-162.08	-0.67
			Max. Vx	14	13.77	-0.01	-162.68
			Max. Torque	16			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.46	-0.62	-2.16
			Max. Mx	8	-8.09	-243.97	-0.77
			Max. My	14	-8.01	-0.07	-244.69
			Max. Vy	8	17.17	-243.97	-0.77
			Max. Vx	14	17.18	-0.07	-244.69
L6	144 - 139	Pole	Max. Torque	16			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.39	-0.63	-2.48
			Max. Mx	8	-8.65	-330.64	-0.87
			Max. My	14	-8.58	-0.13	-331.50
			Max. Vy	8	17.51	-330.64	-0.87
			Max. Vx	14	17.53	-0.13	-331.50
			Max. Torque	16			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.15	-0.69	-2.60
L7	139 - 133.33	Pole	Max. Mx	8	-9.23	-373.05	-0.91
			Max. My	14	-9.16	-0.16	-373.97
			Max. Vy	8	18.61	-373.05	-0.91
			Max. Vx	14	18.63	-0.16	-373.97
			Max. Torque	16			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.76	-0.83	-2.85
			Max. Mx	8	-10.13	-467.15	-1.00
			Max. My	14	-10.05	-0.24	-468.20
			Max. Vy	8	19.03	-467.15	-1.00
L8	133.33 - 131.66	Pole	Max. Vx	2	-19.05	-0.04	466.41
			Max. Torque	16			0.50
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.33	-0.40	-2.76
			Max. Mx	8	-10.87	-563.76	-0.76
			Max. My	14	-10.77	-0.26	-565.20
			Max. Vy	8	19.92	-563.76	-0.76
			Max. Vx	14	20.10	-0.26	-565.20
			Max. Torque	12			-0.63
			Max Tension	1	0.00	0.00	0.00
L9	131.66 - 126.66	Pole	Max. Compression	26	-35.34	-0.43	-3.03
			Max. Mx	8	-12.14	-668.99	0.51
			Max. My	14	-12.04	-0.03	-671.44
			Max. Vy	8	21.25	-668.99	0.51
			Max. Vx	14	21.45	-0.03	-671.44
			Max. Torque	12			-0.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.91	-0.66	-3.57
			Max. Mx	8	-13.03	-776.14	1.75
			Max. My	14	-12.92	0.19	-779.68
L10	126.66 - 121.66	Pole	Max. Vy	8	21.64	-776.14	1.75
			Max. Vx	14	21.86	0.19	-779.68
			Max. Torque	12			-0.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.43	-0.85	-4.00
			Max. Mx	8	-13.92	-885.14	3.03
			Max. My	14	-13.81	0.43	-889.82
			Max. Vy	8	21.97	-885.14	3.03
			Max. Vx	14	22.19	0.43	-889.82
			Max. Torque	12			-0.64
L11	121.66 - 116.66	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.63	-0.88	-4.05
			Max. Mx	8	-14.05	-899.65	3.20
			Max. My	14	-13.94	0.46	-904.48
			Max. Vy	8	21.97	-885.14	3.03
			Max. Vx	14	22.19	0.43	-889.82
			Max. Torque	12			-0.64
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.63	-0.88	-4.05
			Max. Mx	8	-14.05	-899.65	3.20
L12	116.66 - 111.66	Pole	Max. My	14	-13.94	0.46	-904.48
			Max. Vy	8	21.97	-885.14	3.03
			Max. Vx	14	22.19	0.43	-889.82
			Max. Torque	12			-0.64
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.63	-0.88	-4.05
			Max. Mx	8	-14.05	-899.65	3.20
			Max. My	14	-13.94	0.46	-904.48
			Max. Vy	8	21.97	-885.14	3.03
			Max. Vx	14	22.19	0.43	-889.82
L13	111.66 - 111	Pole	Max. Torque	12			-0.64
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.63	-0.88	-4.05
			Max. Mx	8	-14.05	-899.65	3.20
			Max. My	14	-13.94	0.46	-904.48
			Max. Vy	8	21.97	-885.14	3.03
			Max. Vx	14	22.19	0.43	-889.82
			Max. Torque	12			-0.64
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.63	-0.88	-4.05

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	111 - 110.75	Pole	Max. Vy	8	22.01	-899.65	3.20
			Max. Vx	14	22.24	0.46	-904.48
			Max. Torque	12			-0.64
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.74	-2.35	-4.92
			Max. Mx	8	-16.43	-906.77	3.12
			Max. My	14	-16.31	0.22	-911.51
			Max. Vy	8	27.22	-906.77	3.12
L15	110.75 - 105.75	Pole	Max. Vx	14	27.44	0.22	-911.51
			Max. Torque	16			1.17
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.07	-2.16	-5.14
			Max. Mx	8	-17.73	-1043.75	4.26
			Max. My	14	-17.57	0.35	-1050.84
			Max. Vy	8	27.63	-1043.75	4.26
			Max. Vx	14	28.33	0.35	-1050.84
L16	105.75 - 101.5	Pole	Max. Torque	16			1.17
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.25	-2.00	-5.33
			Max. Mx	8	-18.87	-1161.88	5.22
			Max. My	14	-18.67	0.46	-1172.86
			Max. Vy	8	28.01	-1161.88	5.22
			Max. Vx	14	29.12	0.46	-1172.86
			Max. Torque	16			1.11
L17	101.5 - 101.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.41	-1.99	-5.35
			Max. Mx	8	-18.98	-1168.88	5.29
			Max. My	14	-18.78	0.47	-1180.15
			Max. Vy	8	28.04	-1168.88	5.29
			Max. Vx	14	29.19	0.47	-1180.15
			Max. Torque	16			1.05
			Max Tension	1	0.00	0.00	0.00
L18	101.25 - 101	Pole	Max. Compression	26	-51.57	-1.98	-5.36
			Max. Mx	8	-19.08	-1175.89	5.34
			Max. My	14	-18.88	0.47	-1187.44
			Max. Vy	8	28.07	-1175.89	5.34
			Max. Vx	14	29.24	0.47	-1187.44
			Max. Torque	16			1.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.72	-1.97	-5.37
L19	101 - 100.75	Pole	Max. Mx	8	-19.15	-1182.90	5.40
			Max. My	14	-18.95	0.48	-1194.75
			Max. Vy	8	28.10	-1182.90	5.40
			Max. Vx	14	29.29	0.48	-1194.75
			Max. Torque	16			1.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.56	-1.77	-5.59
			Max. Mx	8	-20.71	-1324.56	6.53
L20	100.75 - 95.75	Pole	Max. My	14	-20.48	0.61	-1343.38
			Max. Vy	8	28.62	-1324.56	6.53
			Max. Vx	14	30.21	0.61	-1343.38
			Max. Torque	16			1.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.58	-1.62	-5.75
			Max. Mx	8	-21.85	-1427.85	7.35
			Max. My	14	-21.61	0.71	-1453.00
L21	95.75 - 87.83	Pole	Max. Vy	8	28.98	-1427.85	7.35
			Max. Vx	14	30.88	0.71	-1453.00
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.39	-1.39	-5.99
			Max. Mx	8	-24.95	-1584.05	8.57
			Max. My	14	-24.68	0.86	-1620.67
			L22	87.83 - 86.83	Pole	Max. My	14

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	86.83 - 81.83	Pole	Max. Vy	8	29.66	-1584.05	8.57
			Max. Vx	14	32.04	0.86	-1620.67
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.69	-1.17	-6.22
			Max. Mx	8	-26.94	-1733.53	9.71
			Max. My	14	-26.65	0.99	-1783.26
			Max. Vy	8	30.19	-1733.53	9.71
			Max. Vx	14	33.02	0.99	-1783.26
			Max. Torque	18			1.03
L24	81.83 - 81.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.92	-1.16	-6.24
			Max. Mx	8	-27.09	-1743.49	9.79
			Max. My	14	-26.79	1.00	-1794.16
			Max. Vy	8	30.22	-1743.49	9.79
			Max. Vx	14	33.10	1.00	-1794.16
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.09	-1.15	-6.26
			Max. Mx	8	-27.19	-1751.04	9.85
L25	81.5 - 81.25	Pole	Max. My	14	-26.90	1.01	-1802.44
			Max. Vy	8	30.25	-1751.04	9.85
			Max. Vx	14	33.17	1.01	-1802.44
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.40	-0.92	-6.48
			Max. Mx	8	-29.23	-1903.38	10.99
			Max. My	14	-28.92	1.15	-1970.41
			Max. Vy	8	30.75	-1903.38	10.99
			Max. Vx	14	34.09	1.15	-1970.41
L26	81.25 - 76.25	Pole	Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.72	-0.70	-6.70
			Max. Mx	8	-31.31	-2058.22	12.13
			Max. My	14	-31.02	1.30	-2142.23
			Max. Vy	8	31.25	-2058.22	12.13
			Max. Vx	14	34.67	1.30	-2142.23
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.06	-0.46	-6.93
L27	76.25 - 71.25	Pole	Max. Mx	8	-33.42	-2215.48	13.27
			Max. My	14	-33.14	1.45	-2316.90
			Max. Vy	8	31.72	-2215.48	13.27
			Max. Vx	14	35.23	1.45	-2316.90
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.42	-0.22	-7.16
			Max. Mx	8	-35.56	-2375.07	14.41
			Max. My	14	-35.30	1.60	-2494.32
			Max. Vy	8	32.18	-2375.07	14.41
L28	71.25 - 66.25	Pole	Max. Vx	14	35.77	1.60	-2494.32
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.79	0.02	-7.37
			Max. Mx	8	-37.72	-2536.91	15.55
			Max. My	14	-37.48	1.75	-2674.41
			Max. Vy	8	32.63	-2536.91	15.55
			Max. Vx	14	36.30	1.75	-2674.41
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
L29	66.25 - 61.25	Pole	Max. Compression	26	-85.18	0.26	-7.56
			Max. Mx	8	-39.92	-2700.92	16.69
			Max. My	14	-37.48	1.75	-2674.41
			Max. Vy	8	32.63	-2536.91	15.55
			Max. Vx	14	36.30	1.75	-2674.41
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.79	0.02	-7.37
			Max. Mx	8	-37.72	-2536.91	15.55
			Max. My	14	-37.48	1.75	-2674.41
L30	61.25 - 56.25	Pole	Max. Vy	8	32.63	-2536.91	15.55
			Max. Vx	14	36.30	1.75	-2674.41
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.18	0.26	-7.56
			Max. Mx	8	-39.92	-2700.92	16.69
			Max. My	14	-37.48	1.75	-2674.41
			Max. Vy	8	32.63	-2536.91	15.55
			Max. Vx	14	36.30	1.75	-2674.41
			Max. Torque	18			1.03
L31	56.25 - 51.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.18	0.26	-7.56
			Max. Mx	8	-39.92	-2700.92	16.69

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft			
L32	51.25 - 43.33	Pole	Max. My	14	-39.70	1.91	-2857.05			
			Max. Vy	8	33.05	-2700.92	16.69			
			Max. Vx	16	37.23	1505.48	-2649.69			
			Max. Torque	18			1.03			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-86.97	0.40	-7.66			
			Max. Mx	8	-41.07	-2786.68	17.27			
			Max. My	14	-40.86	1.99	-2952.65			
			Max. Vy	8	33.26	-2786.68	17.27			
			Max. Vx	16	37.73	1560.75	-2746.72			
L33	43.33 - 42.33	Pole	Max. Torque	18			1.03			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-94.35	0.73	-7.89			
			Max. Mx	8	-46.35	-2999.23	18.70			
			Max. My	14	-46.16	2.19	-3189.85			
			Max. Vy	8	33.95	-2999.23	18.70			
			Max. Vx	16	39.11	1699.30	-2989.89			
			Max. Torque	18			1.03			
			Max Tension	1	0.00	0.00	0.00			
			L34	42.33 - 37.4	Pole	Max. Compression	26	-98.28	0.99	-8.07
Max. Mx	8	-49.02				-3167.37	19.82			
Max. My	14	-48.83				2.35	-3379.10			
Max. Vy	8	34.35				-3167.37	19.82			
Max. Vx	16	40.03				1810.45	-3184.88			
Max. Torque	18						1.03			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-98.48				1.00	-8.09			
Max. Mx	8	-49.17				-3175.95	19.87			
L35	37.4 - 37.15	Pole				Max. My	14	-48.99	2.36	-3388.82
			Max. Vy	8	34.36	-3175.95	19.87			
			Max. Vx	16	40.06	1816.15	-3194.89			
			Max. Torque	18			1.03			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-102.48	1.28	-8.26			
			Max. Mx	8	-51.90	-3348.49	21.00			
			Max. My	14	-51.73	2.52	-3584.41			
			Max. Vy	8	34.74	-3348.49	21.00			
			L36	37.15 - 32.15	Pole	Max. Vx	16	40.97	1931.64	-3397.42
Max. Torque	18						1.03			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-106.48				1.55	-8.44			
Max. Mx	8	-54.67				-3522.83	22.12			
Max. My	14	-54.52				2.68	-3782.38			
Max. Vy	8	35.08				-3522.83	22.12			
Max. Vx	16	41.83				2049.66	-3604.33			
Max. Torque	18						1.03			
L37	32.15 - 27.15	Pole				Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.49	1.83	-8.62			
			Max. Mx	8	-57.46	-3698.82	23.24			
			Max. My	14	-57.34	2.85	-3982.54			
			Max. Vy	8	35.40	-3698.82	23.24			
			Max. Vx	16	42.65	2170.12	-3815.44			
			Max. Torque	18			1.03			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-112.62	1.98	-8.71			
			L38	27.15 - 22.15	Pole	Max. Mx	8	-58.95	-3792.73	23.83
Max. My	14	-58.84				2.93	-4089.47			
Max. Vy	8	35.56				-3792.73	23.83			
Max. Vx	16	43.07				2234.90	-3928.95			
Max. Torque	18						1.03			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-112.83				2.00	-8.73			
Max. Mx	8	-59.11				-3801.61	23.88			
Max. My	14	-59.01				2.94	-4099.59			
L39	22.15 - 19.5	Pole				Max. My	14	-59.01	2.94	-4099.59
			Max. Vy	8	35.56	-3792.73	23.83			
			Max. Vx	16	43.07	2234.90	-3928.95			
			Max. Torque	18			1.03			
			Max Tension	1	0.00	0.00	0.00			
			Max. Compression	26	-112.83	2.00	-8.73			
			Max. Mx	8	-59.11	-3801.61	23.88			
			Max. My	14	-59.01	2.94	-4099.59			
			L40	19.5 - 19.25	Pole	Max. My	14	-59.01	2.94	-4099.59
						Max. Vy	8	35.56	-3792.73	23.83
Max. Vx	16	43.07				2234.90	-3928.95			
Max. Torque	18						1.03			
Max Tension	1	0.00				0.00	0.00			
Max. Compression	26	-112.83				2.00	-8.73			
Max. Mx	8	-59.11				-3801.61	23.88			
Max. My	14	-59.01				2.94	-4099.59			

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L41	19.25 - 14.25	Pole	Max. Vy	8	35.56	-3801.61	23.88
			Max. Vx	16	43.08	2241.05	-3939.72
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-117.00	2.28	-8.90
L42	14.25 - 9.25	Pole	Max. Mx	8	-62.10	-3979.93	24.99
			Max. My	14	-62.02	3.11	-4302.94
			Max. Vy	8	35.85	-3979.93	24.99
			Max. Vx	16	43.84	2365.07	-4156.97
			Max. Torque	18			1.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-121.15	2.56	-9.07
			Max. Mx	8	-65.11	-4159.59	26.09
			Max. My	14	-65.07	3.28	-4508.15
			Max. Vy	8	36.10	-4159.59	26.09
L43	9.25 - 9	Pole	Max. Vx	16	44.56	2491.22	-4377.89
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-121.36	2.58	-9.08
			Max. Mx	8	-65.28	-4168.60	26.14
			Max. My	14	-65.23	3.29	-4518.46
			Max. Vy	8	36.11	-4168.60	26.14
			Max. Vx	16	44.58	2497.58	-4389.03
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
L44	9 - 8.75	Pole	Max. Compression	26	-121.57	2.59	-9.09
			Max. Mx	8	-65.43	-4177.62	26.20
			Max. My	14	-65.39	3.30	-4528.77
			Max. Vy	8	36.12	-4177.62	26.20
			Max. Vx	16	44.62	2503.95	-4400.18
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-123.05	2.69	-9.15
			Max. Mx	8	-66.52	-4240.85	26.58
			Max. My	14	-66.48	3.35	-4601.08
L45	8.75 - 7	Pole	Max. Vy	8	36.24	-4240.85	26.58
			Max. Vx	16	44.90	2548.67	-4478.49
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-123.26	2.70	-9.16
			Max. Mx	8	-66.69	-4249.90	26.64
			Max. My	14	-66.65	3.36	-4611.43
			Max. Vy	8	36.22	-4249.90	26.64
			Max. Vx	16	44.91	2555.08	-4489.71
			Max. Torque	18			1.02
L46	7 - 6.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-124.70	2.80	-9.21
			Max. Mx	8	-67.74	-4313.31	27.02
			Max. My	14	-67.71	3.42	-4683.98
			Max. Vy	8	36.34	-4313.31	27.02
			Max. Vx	16	45.19	2600.09	-4568.51
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-124.94	2.82	-9.22
			Max. Mx	8	-67.95	-4322.38	27.07
L47	6.75 - 5	Pole	Max. My	14	-67.93	3.43	-4694.37
			Max. Vy	8	36.32	-4322.38	27.07
			Max. Vx	16	45.19	2606.54	-4579.81
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-126.64	2.91	-9.27
			Max. Mx	8	-69.28	-4385.99	27.45
			Max. My	14	-69.26	3.49	-4767.20
			Max. Vy	8	36.45	-4385.99	27.45
			Max. Vx	16	45.49	2651.86	-4659.14
L48	5 - 4.75	Pole	Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-126.89	2.93	-9.28
			Max. Mx	8	-69.28	-4385.99	27.45
L49	4.75 - 3	Pole	Max. My	14	-69.26	3.49	-4767.20
			Max. Vy	8	36.45	-4385.99	27.45
			Max. Vx	16	45.49	2651.86	-4659.14
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-126.89	2.93	-9.28
			Max. Mx	8	-69.28	-4385.99	27.45
			Max. My	14	-69.26	3.49	-4767.20
			Max. Vy	8	36.45	-4385.99	27.45
			Max. Vx	16	45.49	2651.86	-4659.14
L50	3 - 2.75	Pole	Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-126.89	2.93	-9.28
			Max. Mx	8	-69.28	-4385.99	27.45

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L51	2.75 - 2.25	Pole	Max. Mx	8	-69.49	-4395.09	27.51
			Max. My	14	-69.48	3.50	-4777.62
			Max. Vy	8	36.45	-4395.09	27.51
			Max. Vx	16	45.51	2658.35	-4670.51
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-127.39	2.95	-9.29
			Max. Mx	8	-69.89	-4413.30	27.62
			Max. My	14	-69.87	3.52	-4798.48
			Max. Vy	8	36.48	-4413.30	27.62
L52	2.25 - 2	Pole	Max. Vx	16	45.59	2671.36	-4693.28
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-127.60	2.97	-9.30
			Max. Mx	8	-70.05	-4422.42	27.67
			Max. My	14	-70.04	3.53	-4808.92
			Max. Vy	8	36.49	-4422.42	27.67
			Max. Vx	16	45.62	2677.88	-4704.68
			Max. Torque	18			1.02
			Max Tension	1	0.00	0.00	0.00
L53	2 - 0	Pole	Max. Compression	26	-129.26	3.07	-9.35
			Max. Mx	8	-71.37	-4495.45	28.11
			Max. My	14	-71.37	3.59	-4892.61
			Max. Vy	8	36.62	-4495.45	28.11
			Max. Vx	16	45.94	2730.18	-4796.23
			Max. Torque	18			1.02

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	129.26	0.00	0.00
	Max. H _x	21	53.54	36.45	0.03
	Max. H _z	4	71.38	-26.64	45.67
	Max. M _x	2	4886.07	-0.38	41.89
	Max. M _z	8	4495.45	-36.60	0.22
	Max. Torsion	18	1.02	32.74	-19.36
	Min. Vert	15	53.54	0.01	-41.92
	Min. H _x	9	53.54	-36.60	0.22
	Min. H _z	16	71.38	26.21	-45.92
	Min. M _x	14	-4892.61	0.01	-41.91
	Min. M _z	20	-4478.88	36.45	0.03
	Min. Torsion	12	-0.77	-21.56	-37.81

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overtuning Moment, M _x kip-ft	Overtuning Moment, M _z kip-ft	Torque kip-ft
Dead Only	59.49	0.00	-0.00	1.43	1.46	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	71.38	0.38	-41.89	-4886.07	-49.51	0.48
0.9 Dead+1.0 Wind 0 deg - No Ice	53.54	0.38	-41.89	-4827.15	-49.38	0.47
1.2 Dead+1.0 Wind 30 deg - No Ice	71.38	26.64	-45.67	-4759.62	-2783.50	-0.64
0.9 Dead+1.0 Wind 30 deg - No Ice	53.54	26.64	-45.67	-4705.16	-2751.82	-0.66
1.2 Dead+1.0 Wind 60 deg - No Ice	71.38	32.95	-19.05	-2301.24	-3980.82	0.56
0.9 Dead+1.0 Wind 60 deg - No Ice	53.54	32.95	-19.05	-2273.07	-3931.69	0.54

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
1.2 Dead+1.0 Wind 90 deg - No Ice	71.38	36.60	-0.22	-28.11	-4495.45	0.15
0.9 Dead+1.0 Wind 90 deg - No Ice	53.54	36.60	-0.22	-28.27	-4439.58	0.13
1.2 Dead+1.0 Wind 120 deg - No Ice	71.38	33.12	19.13	2384.96	-4122.86	0.43
0.9 Dead+1.0 Wind 120 deg - No Ice	53.54	33.12	19.13	2354.44	-4071.37	0.41
1.2 Dead+1.0 Wind 150 deg - No Ice	71.38	21.56	37.81	4461.97	-2536.90	0.77
0.9 Dead+1.0 Wind 150 deg - No Ice	53.54	21.56	37.81	4407.29	-2506.50	0.76
1.2 Dead+1.0 Wind 180 deg - No Ice	71.38	-0.01	41.91	4892.61	3.59	-0.03
0.9 Dead+1.0 Wind 180 deg - No Ice	53.54	-0.01	41.92	4833.03	3.11	-0.02
1.2 Dead+1.0 Wind 210 deg - No Ice	71.38	-26.21	45.92	4796.23	2730.18	0.63
0.9 Dead+1.0 Wind 210 deg - No Ice	53.54	-26.21	45.92	4740.40	2698.23	0.65
1.2 Dead+1.0 Wind 240 deg - No Ice	71.38	-32.74	19.36	2346.04	3956.40	-1.02
0.9 Dead+1.0 Wind 240 deg - No Ice	53.54	-32.74	19.36	2316.39	3906.67	-1.00
1.2 Dead+1.0 Wind 270 deg - No Ice	71.38	-36.45	-0.03	-1.99	4478.88	-0.80
0.9 Dead+1.0 Wind 270 deg - No Ice	53.54	-36.45	-0.03	-2.45	4422.32	-0.78
1.2 Dead+1.0 Wind 300 deg - No Ice	71.38	-32.88	-19.00	-2363.46	4095.77	-0.42
0.9 Dead+1.0 Wind 300 deg - No Ice	53.54	-32.88	-19.00	-2334.15	4043.70	-0.40
1.2 Dead+1.0 Wind 330 deg - No Ice	71.38	-21.71	-37.56	-4423.83	2559.78	-0.12
0.9 Dead+1.0 Wind 330 deg - No Ice	53.54	-21.71	-37.56	-4370.54	2528.24	-0.11
1.2 Dead+1.0 Ice+1.0 Temp	129.26	-0.00	-0.00	9.35	3.07	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	129.26	0.08	-11.44	-1445.77	-7.97	0.25
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	129.26	6.99	-12.02	-1366.74	-799.33	0.46
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	129.26	8.88	-5.14	-666.73	-1166.76	0.32
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	129.26	10.08	-0.05	3.08	-1327.36	0.17
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	129.26	8.84	5.11	686.04	-1167.98	0.12
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	129.26	5.56	9.72	1258.83	-710.23	0.10
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	129.26	-0.00	11.44	1465.92	3.78	-0.15
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	129.26	-6.91	12.06	1393.02	793.58	-0.46
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	129.26	-8.84	5.20	694.74	1167.09	-0.42
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	129.26	-10.05	-0.00	9.15	1329.33	-0.30
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	129.26	-8.80	-5.08	-662.92	1167.73	-0.12
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	129.26	-5.59	-9.67	-1232.21	720.53	0.03
Dead+Wind 0 deg - Service	59.49	0.08	-9.09	-1052.91	-9.58	0.11
Dead+Wind 30 deg - Service	59.49	5.78	-9.91	-1026.25	-599.74	-0.14
Dead+Wind 60 deg - Service	59.49	7.15	-4.13	-495.23	-857.57	0.12
Dead+Wind 90 deg - Service	59.49	7.94	-0.05	-4.91	-968.43	0.03
Dead+Wind 120 deg - Service	59.49	7.19	4.15	515.72	-888.42	0.09
Dead+Wind 150 deg - Service	59.49	4.68	8.21	964.10	-546.38	0.17

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 180 deg - Service	59.49	-0.00	9.10	1056.85	1.88	-0.00
Dead+Wind 210 deg - Service	59.49	-5.69	9.96	1036.47	590.44	0.14
Dead+Wind 240 deg - Service	59.49	-7.10	4.20	507.21	854.51	-0.23
Dead+Wind 270 deg - Service	59.49	-7.91	-0.01	0.73	967.05	-0.17
Dead+Wind 300 deg - Service	59.49	-7.14	-4.12	-508.75	884.75	-0.09
Dead+Wind 330 deg - Service	59.49	-4.71	-8.15	-953.53	553.52	-0.02

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	-59.49	0.00	-0.00	59.49	0.00	0.001%
2	0.38	-71.38	-41.89	-0.38	71.38	41.89	0.001%
3	0.38	-53.54	-41.89	-0.38	53.54	41.89	0.001%
4	26.64	-71.38	-45.67	-26.64	71.38	45.67	0.000%
5	26.64	-53.54	-45.67	-26.64	53.54	45.67	0.000%
6	32.95	-71.38	-19.05	-32.95	71.38	19.05	0.000%
7	32.95	-53.54	-19.05	-32.95	53.54	19.05	0.000%
8	36.60	-71.38	-0.22	-36.60	71.38	0.22	0.003%
9	36.60	-53.54	-0.22	-36.60	53.54	0.22	0.002%
10	33.12	-71.38	19.13	-33.12	71.38	-19.13	0.000%
11	33.12	-53.54	19.13	-33.12	53.54	-19.13	0.000%
12	21.56	-71.38	37.81	-21.56	71.38	-37.81	0.000%
13	21.56	-53.54	37.81	-21.56	53.54	-37.81	0.000%
14	-0.01	-71.38	41.92	0.01	71.38	-41.91	0.009%
15	-0.01	-53.54	41.92	0.01	53.54	-41.92	0.007%
16	-26.21	-71.38	45.92	26.21	71.38	-45.92	0.000%
17	-26.21	-53.54	45.92	26.21	53.54	-45.92	0.000%
18	-32.74	-71.38	19.36	32.74	71.38	-19.36	0.000%
19	-32.74	-53.54	19.36	32.74	53.54	-19.36	0.000%
20	-36.45	-71.38	-0.03	36.45	71.38	0.03	0.003%
21	-36.45	-53.54	-0.03	36.45	53.54	0.03	0.002%
22	-32.88	-71.38	-19.00	32.88	71.38	19.00	0.000%
23	-32.88	-53.54	-19.00	32.88	53.54	19.00	0.000%
24	-21.71	-71.38	-37.56	21.71	71.38	37.56	0.000%
25	-21.71	-53.54	-37.56	21.71	53.54	37.56	0.000%
26	0.00	-129.26	0.00	0.00	129.26	0.00	0.000%
27	0.08	-129.26	-11.44	-0.08	129.26	11.44	0.000%
28	6.99	-129.26	-12.02	-6.99	129.26	12.02	0.000%
29	8.88	-129.26	-5.14	-8.88	129.26	5.14	0.000%
30	10.08	-129.26	-0.05	-10.08	129.26	0.05	0.000%
31	8.84	-129.26	5.11	-8.84	129.26	-5.11	0.000%
32	5.56	-129.26	9.72	-5.56	129.26	-9.72	0.000%
33	-0.00	-129.26	11.44	0.00	129.26	-11.44	0.000%
34	-6.91	-129.26	12.06	6.91	129.26	-12.06	0.000%
35	-8.84	-129.26	5.20	8.84	129.26	-5.20	0.000%
36	-10.05	-129.26	-0.00	10.05	129.26	0.00	0.000%
37	-8.80	-129.26	-5.08	8.80	129.26	5.08	0.000%
38	-5.59	-129.26	-9.67	5.59	129.26	9.67	0.000%
39	0.08	-59.49	-9.09	-0.08	59.49	9.09	0.002%
40	5.78	-59.49	-9.91	-5.78	59.49	9.91	0.000%
41	7.15	-59.49	-4.13	-7.15	59.49	4.13	0.001%
42	7.94	-59.49	-0.05	-7.94	59.49	0.05	0.002%
43	7.19	-59.49	4.15	-7.19	59.49	-4.15	0.001%
44	4.68	-59.49	8.21	-4.68	59.49	-8.21	0.001%
45	-0.00	-59.49	9.10	0.00	59.49	-9.10	0.002%
46	-5.69	-59.49	9.96	5.69	59.49	-9.96	0.000%
47	-7.10	-59.49	4.20	7.10	59.49	-4.20	0.001%
48	-7.91	-59.49	-0.01	7.91	59.49	0.01	0.002%
49	-7.14	-59.49	-4.12	7.14	59.49	4.12	0.001%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
50	-4.71	-59.49	-8.15	4.71	59.49	8.15	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000367
2	Yes	22	0.00000001	0.00010738
3	Yes	21	0.00000001	0.00014205
4	Yes	28	0.00000001	0.00000000
5	Yes	27	0.00000001	0.00000000
6	Yes	27	0.00000001	0.00014970
7	Yes	27	0.00000001	0.00000000
8	Yes	20	0.00003225	0.00010991
9	Yes	20	0.00002094	0.00008684
10	Yes	28	0.00000001	0.00000000
11	Yes	27	0.00000001	0.00000000
12	Yes	28	0.00000001	0.00000000
13	Yes	27	0.00000001	0.00000000
14	Yes	18	0.00009999	0.00013004
15	Yes	18	0.00006669	0.00008781
16	Yes	28	0.00000001	0.00000000
17	Yes	27	0.00000001	0.00000000
18	Yes	28	0.00000001	0.00000000
19	Yes	27	0.00000001	0.00000000
20	Yes	20	0.00003227	0.00012199
21	Yes	20	0.00002095	0.00008974
22	Yes	28	0.00000001	0.00000000
23	Yes	27	0.00000001	0.00000000
24	Yes	28	0.00000001	0.00000000
25	Yes	27	0.00000001	0.00000000
26	Yes	15	0.00000001	0.00011301
27	Yes	25	0.00000001	0.00010057
28	Yes	26	0.00000001	0.00010085
29	Yes	25	0.00000001	0.00014259
30	Yes	25	0.00000001	0.00009710
31	Yes	25	0.00000001	0.00014940
32	Yes	26	0.00000001	0.00009416
33	Yes	25	0.00000001	0.00010274
34	Yes	26	0.00000001	0.00010117
35	Yes	25	0.00000001	0.00014847
36	Yes	25	0.00000001	0.00009670
37	Yes	25	0.00000001	0.00014313
38	Yes	26	0.00000001	0.00009158
39	Yes	18	0.00008651	0.00004105
40	Yes	21	0.00000001	0.00009091
41	Yes	20	0.00000001	0.00011688
42	Yes	18	0.00008702	0.00003103
43	Yes	20	0.00000001	0.00014112
44	Yes	20	0.00000001	0.00014829
45	Yes	18	0.00008657	0.00003254
46	Yes	21	0.00000001	0.00008871
47	Yes	20	0.00000001	0.00012666
48	Yes	18	0.00008701	0.00003778
49	Yes	20	0.00000001	0.00013321
50	Yes	20	0.00000001	0.00014913

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	169 - 164	35.598	46	2.2035	0.0021
L2	164 - 159	33.323	46	2.2021	0.0021
L3	159 - 154	31.058	46	2.1840	0.0018
L4	154 - 149	28.821	46	2.1468	0.0017

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L5	149 - 144	26.636	46	2.0825	0.0015
L6	144 - 139	24.527	46	1.9952	0.0012
L7	139 - 133.33	22.516	46	1.8874	0.0010
L8	136.66 - 131.66	21.613	46	1.8315	0.0009
L9	131.66 - 126.66	19.746	46	1.7536	0.0009
L10	126.66 - 121.66	17.984	46	1.6328	0.0008
L11	121.66 - 116.66	16.345	46	1.5051	0.0007
L12	116.66 - 111.66	14.837	46	1.3766	0.0006
L13	111.66 - 111	13.464	46	1.2461	0.0005
L14	111 - 110.75	13.293	46	1.2288	0.0005
L15	110.75 - 105.75	13.229	46	1.2251	0.0005
L16	105.75 - 101.5	11.986	46	1.1477	0.0004
L17	101.5 - 101.25	10.995	46	1.0784	0.0003
L18	101.25 - 101	10.939	46	1.0760	0.0003
L19	101 - 100.75	10.883	46	1.0736	0.0003
L20	100.75 - 95.75	10.827	46	1.0704	0.0003
L21	95.75 - 87.83	9.740	46	1.0047	0.0003
L22	92.16 - 86.83	9.003	46	0.9561	0.0003
L23	86.83 - 81.83	7.954	46	0.9183	0.0003
L24	81.83 - 81.5	7.023	46	0.8614	0.0003
L25	81.5 - 81.25	6.963	46	0.8576	0.0003
L26	81.25 - 76.25	6.918	46	0.8548	0.0003
L27	76.25 - 71.25	6.053	46	0.7978	0.0002
L28	71.25 - 66.25	5.248	46	0.7394	0.0002
L29	66.25 - 61.25	4.505	46	0.6796	0.0002
L30	61.25 - 56.25	3.825	46	0.6194	0.0002
L31	56.25 - 51.25	3.208	46	0.5587	0.0001
L32	51.25 - 43.33	2.656	46	0.4967	0.0001
L33	48.66 - 42.33	2.395	46	0.4648	0.0001
L34	42.33 - 37.4	1.803	46	0.4243	0.0001
L35	37.4 - 37.15	1.392	46	0.3726	0.0001
L36	37.15 - 32.15	1.372	46	0.3700	0.0001
L37	32.15 - 27.15	1.012	46	0.3170	0.0001
L38	27.15 - 22.15	0.709	46	0.2635	0.0001
L39	22.15 - 19.5	0.461	46	0.2100	0.0000
L40	19.5 - 19.25	0.352	46	0.1817	0.0000
L41	19.25 - 14.25	0.343	46	0.1792	0.0000
L42	14.25 - 9.25	0.181	46	0.1287	0.0000
L43	9.25 - 9	0.073	46	0.0790	0.0000
L44	9 - 8.75	0.069	46	0.0765	0.0000
L45	8.75 - 7	0.065	46	0.0741	0.0000
L46	7 - 6.75	0.041	46	0.0575	0.0000
L47	6.75 - 5	0.038	46	0.0550	0.0000
L48	5 - 4.75	0.021	46	0.0377	0.0000
L49	4.75 - 3	0.019	46	0.0359	0.0000
L50	3 - 2.75	0.008	46	0.0238	0.0000
L51	2.75 - 2.25	0.007	46	0.0221	0.0000
L52	2.25 - 2	0.004	46	0.0186	0.0000
L53	2 - 0	0.003	46	0.0166	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
165.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	46	33.778	2.2034	0.0024	30989
156.00	(2) 7770.00 w/ Mount Pipe	46	29.711	2.1646	0.0021	7032
148.00	NNVV-65B-R4 w/ Mount Pipe	46	26.207	2.0666	0.0017	3577
138.00	APXV18-206517-A w/ Mount Pipe	46	22.127	1.8625	0.0012	2901
128.00	VHLP800-11	46	18.444	1.6682	0.0010	2352
124.00	LLPX310R w/ Mount Pipe	46	17.096	1.5647	0.0009	2217
118.00	CXL 900-3LW	46	15.228	1.4105	0.0008	2124
111.00	(2) HBXX-6517DS-A2M w/ Mount Pipe	46	13.293	1.2288	0.0008	2618

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	169 - 164	163.905	16	10.1704	0.0100
L2	164 - 159	153.494	16	10.1645	0.0101
L3	159 - 154	143.123	16	10.0836	0.0107
L4	154 - 149	132.875	16	9.9152	0.0105
L5	149 - 144	122.856	16	9.6215	0.0091
L6	144 - 139	113.178	16	9.2214	0.0077
L7	139 - 133.33	103.941	16	8.7262	0.0063
L8	136.66 - 131.66	99.794	16	8.4690	0.0057
L9	131.66 - 126.66	91.206	16	8.1103	0.0049
L10	126.66 - 121.66	83.095	16	7.5534	0.0044
L11	121.66 - 116.66	75.548	16	6.9642	0.0033
L12	116.66 - 111.66	68.595	16	6.3713	0.0028
L13	111.66 - 111	62.258	16	5.7680	0.0025
L14	111 - 110.75	61.468	16	5.6880	0.0024
L15	110.75 - 105.75	61.172	16	5.6709	0.0024
L16	105.75 - 101.5	55.435	16	5.3130	0.0019
L17	101.5 - 101.25	50.858	16	4.9927	0.0016
L18	101.25 - 101	50.598	16	4.9816	0.0016
L19	101 - 100.75	50.338	16	4.9705	0.0015
L20	100.75 - 95.75	50.078	16	4.9557	0.0015
L21	95.75 - 87.83	45.057	16	4.6520	0.0014
L22	92.16 - 86.83	41.650	16	4.4270	0.0013
L23	86.83 - 81.83	36.803	16	4.2519	0.0012
L24	81.83 - 81.5	32.494	16	3.9885	0.0012
L25	81.5 - 81.25	32.220	16	3.9712	0.0011
L26	81.25 - 76.25	32.012	16	3.9583	0.0011
L27	76.25 - 71.25	28.011	16	3.6943	0.0010
L28	71.25 - 66.25	24.288	16	3.4238	0.0010
L29	66.25 - 61.25	20.851	16	3.1471	0.0009
L30	61.25 - 56.25	17.704	16	2.8680	0.0007
L31	56.25 - 51.25	14.850	16	2.5868	0.0006
L32	51.25 - 43.33	12.292	16	2.2999	0.0006
L33	48.66 - 42.33	11.085	16	2.1522	0.0005
L34	42.33 - 37.4	8.344	16	1.9643	0.0004
L35	37.4 - 37.15	6.440	16	1.7248	0.0004
L36	37.15 - 32.15	6.350	16	1.7128	0.0004
L37	32.15 - 27.15	4.686	16	1.4675	0.0003
L38	27.15 - 22.15	3.279	16	1.2197	0.0003
L39	22.15 - 19.5	2.132	16	0.9722	0.0002
L40	19.5 - 19.25	1.629	16	0.8408	0.0002
L41	19.25 - 14.25	1.585	16	0.8293	0.0002
L42	14.25 - 9.25	0.839	16	0.5957	0.0001
L43	9.25 - 9	0.336	16	0.3655	0.0001
L44	9 - 8.75	0.317	16	0.3541	0.0001
L45	8.75 - 7	0.299	16	0.3430	0.0001
L46	7 - 6.75	0.188	16	0.2660	0.0000
L47	6.75 - 5	0.174	16	0.2544	0.0000
L48	5 - 4.75	0.095	16	0.1743	0.0000
L49	4.75 - 3	0.086	16	0.1662	0.0000
L50	3 - 2.75	0.036	16	0.1100	0.0000
L51	2.75 - 2.25	0.030	16	0.1021	0.0000
L52	2.25 - 2	0.020	16	0.0862	0.0000
L53	2 - 0	0.016	16	0.0768	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
165.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	16	155.575	10.1702	0.0139	7813
156.00	(2) 7770.00 w/ Mount Pipe	16	136.953	9.9958	0.0124	1656

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.00	NNVV-65B-R4 w/ Mount Pipe	16	120.890	9.5489	0.0101	826
138.00	APXV18-206517-A w/ Mount Pipe	16	102.157	8.6115	0.0073	661
128.00	VHLP800-11	16	85.216	7.7170	0.0054	529
124.00	LLPX310R w/ Mount Pipe	16	79.008	7.2397	0.0047	497
118.00	CXL 900-3LW	16	70.399	6.5276	0.0041	472
111.00	(2) HBXX-6517DS-A2M w/ Mount Pipe	16	61.468	5.6880	0.0036	578

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K
L1	169 - 164 (1)	TP16.4546x15.5x0.25	5.00	0.00	0.0	12.858 3	-2.53
L2	164 - 159 (2)	TP17.4092x16.4546x0.25	5.00	0.00	0.0	13.615 8	-2.74
L3	159 - 154 (3)	TP18.3638x17.4092x0.25	5.00	0.00	0.0	14.373 3	-5.54
L4	154 - 149 (4)	TP19.3183x18.3638x0.25	5.00	0.00	0.0	15.130 7	-5.95
L5	149 - 144 (5)	TP20.2729x19.3183x0.25	5.00	0.00	0.0	15.888 2	-7.74
L6	144 - 139 (6)	TP21.2275x20.2729x0.25	5.00	0.00	0.0	16.645 6	-8.31
L7	139 - 133.33 (7)	TP22.31x21.2275x0.25	5.67	0.00	0.0	17.000 1	-8.88
L8	133.33 - 131.66 (8)	TP22.1148x21.1742x0.31 25	5.00	0.00	0.0	21.625 2	-9.77
L9	131.66 - 126.66 (9)	TP23.0554x22.1148x0.31 25	5.00	0.00	0.0	22.558 1	-10.51
L10	126.66 - 121.66 (10)	TP23.996x23.0554x0.312 5	5.00	0.00	0.0	23.491 1	-11.79
L11	121.66 - 116.66 (11)	TP24.9366x23.996x0.312 5	5.00	0.00	0.0	24.424 0	-12.70
L12	116.66 - 111.66 (12)	TP25.8772x24.9366x0.31 25	5.00	0.00	0.0	25.357 0	-13.62
L13	111.66 - 111 (13)	TP26.0013x25.8772x0.31 25	0.66	0.00	0.0	25.480 1	-13.75
L14	111 - 110.75 (14)	TP26.0484x26.0013x0.57 5	0.25	0.00	0.0	46.490 2	-16.11
L15	110.75 - 105.75 (15)	TP26.9889x26.0484x0.56 25	5.00	0.00	0.0	47.181 1	-17.42
L16	105.75 - 101.5 (16)	TP27.7884x26.9889x0.55 1	4.25	0.00	0.0	47.550 1	-18.57
L17	101.5 - 101.25 (17)	TP27.8355x27.7884x0.98 75	0.25	0.00	0.0	84.150 3	-18.68
L18	101.25 - 101 (18)	TP27.8825x27.8355x0.98 75	0.25	0.00	0.0	84.297 7	-18.78
L19	101 - 100.75 (19)	TP27.9295x27.8825x0.72 5	0.25	0.00	0.0	62.601 7	-18.86
L20	100.75 - 95.75 (20)	TP28.8701x27.9295x0.71 25	5.00	0.00	0.0	63.677 7	-20.43
L21	95.75 - 87.83 (21)	TP30.36x28.8701x0.7	7.92	0.00	0.0	64.088 8	-21.59
L22	87.83 - 86.83 (22)	TP29.9235x28.9205x0.93 75	5.33	0.00	0.0	86.251 6	-24.49
L23	86.83 - 81.83 (23)	TP30.8645x29.9235x0.92 5	5.00	0.00	0.0	87.900 9	-26.47
L24	81.83 - 81.5 (24)	TP30.9266x30.8645x0.92 5	0.33	0.00	0.0	88.083 2	-26.62
L25	81.5 - 81.25 (25)	TP30.9737x30.9266x0.95	0.25	0.00	0.0	90.530 3	-26.72

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K
L26	81.25 - 76.25 (26)	TP31.9146x30.9737x0.92 5	5.00	0.00	0.0	90.984 0	-28.75
L27	76.25 - 71.25 (27)	TP32.8556x31.9146x0.9	5.00	0.00	0.0	91.284 4	-30.83
L28	71.25 - 66.25 (28)	TP33.7966x32.8556x0.87 5	5.00	0.00	0.0	91.431 4	-32.77
L29	66.25 - 61.25 (29)	TP34.7376x33.7966x0.86 25	5.00	0.00	0.0	92.735 5	-34.92
L30	61.25 - 56.25 (30)	TP35.6785x34.7376x0.85	5.00	0.00	0.0	93.963 9	-37.10
L31	56.25 - 51.25 (31)	TP36.6195x35.6785x0.82 5	5.00	0.00	0.0	93.729 7	-39.33
L32	51.25 - 43.33 (32)	TP38.11x36.6195x0.825	7.92	0.00	0.0	95.006 0	-40.49
L33	43.33 - 42.33 (33)	TP37.5463x36.3569x1.03 75	6.33	0.00	0.0	120.22 40	-45.79
L34	42.33 - 37.4 (34)	TP38.4726x37.5463x1.02 5	4.93	0.00	0.0	121.83 00	-48.50
L35	37.4 - 37.15 (35)	TP38.5196x38.4726x1.02 5	0.25	0.00	0.0	121.98 30	-48.66
L36	37.15 - 32.15 (36)	TP39.4591x38.5196x1	5.00	0.00	0.0	122.06 90	-51.44
L37	32.15 - 27.15 (37)	TP40.3986x39.4591x0.97 5	5.00	0.00	0.0	122.00 20	-54.26
L38	27.15 - 22.15 (38)	TP41.3381x40.3986x0.96 25	5.00	0.00	0.0	123.34 60	-57.12
L39	22.15 - 19.5 (39)	TP41.836x41.3381x0.95	2.65	0.00	0.0	123.28 40	-58.64
L40	19.5 - 19.25 (40)	TP41.883x41.836x1.025	0.25	0.00	0.0	132.92 50	-58.82
L41	19.25 - 14.25 (41)	TP42.8225x41.883x1	5.00	0.00	0.0	132.74 50	-61.87
L42	14.25 - 9.25 (42)	TP43.762x42.8225x1	5.00	0.00	0.0	135.72 60	-64.97
L43	9.25 - 9 (43)	TP43.8089x43.762x1	0.25	0.00	0.0	135.87 60	-65.14
L44	9 - 8.75 (44)	TP43.8559x43.8089x1.02 5	0.25	0.00	0.0	139.34 40	-65.30
L45	8.75 - 7 (45)	TP44.1847x43.8559x1.02 5	1.75	0.00	0.0	140.41 40	-66.40
L46	7 - 6.75 (46)	TP44.2317x44.1847x0.97 5	0.25	0.00	0.0	133.86 40	-66.59
L47	6.75 - 5 (47)	TP44.5605x44.2317x0.97 5	1.75	0.00	0.0	134.88 20	-67.66
L48	5 - 4.75 (48)	TP44.6075x44.5605x1.45	0.25	0.00	0.0	198.62 40	-67.88
L49	4.75 - 3 (49)	TP44.9363x44.6075x1.42 5	1.75	0.00	0.0	196.79 90	-69.23
L50	3 - 2.75 (50)	TP44.9833x44.9363x1.45	0.25	0.00	0.0	200.35 30	-69.45
L51	2.75 - 2.25 (51)	TP45.0772x44.9833x1.45	0.50	0.00	0.0	200.78 60	-69.85
L52	2.25 - 2 (52)	TP45.1242x45.0772x1.2	0.25	0.00	0.0	167.29 90	-70.02
L53	2 - 0 (53)	TP45.5x45.1242x1.175	2.00	0.00	0.0	165.30 80	-71.36

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	M _{uy} kip-ft
L1	169 - 164 (1)	TP16.4546x15.5x0.25	11.32	0.00
L2	164 - 159 (2)	TP17.4092x16.4546x0.25	43.22	0.00
L3	159 - 154 (3)	TP18.3638x17.4092x0.25	98.07	0.00
L4	154 - 149 (4)	TP19.3183x18.3638x0.25	170.20	0.00

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L5	149 - 144 (5)	TP20.2729x19.3183x0.25	257.61	0.00
L6	144 - 139 (6)	TP21.2275x20.2729x0.25	350.30	0.00
L7	139 - 133.33 (7)	TP22.31x21.2275x0.25	395.68	0.00
L8	133.33 - 131.66 (8)	TP22.1148x21.1742x0.3125	496.47	0.00
L9	131.66 - 126.66 (9)	TP23.0554x22.1148x0.3125	600.35	0.00
L10	126.66 - 121.66 (10)	TP23.996x23.0554x0.3125	713.71	0.00
L11	121.66 - 116.66 (11)	TP24.9366x23.996x0.3125	829.40	0.00
L12	116.66 - 111.66 (12)	TP25.8772x24.9366x0.3125	947.25	0.00
L13	111.66 - 111 (13)	TP26.0013x25.8772x0.3125	962.96	0.00
L14	111 - 110.75 (14)	TP26.0484x26.0013x0.575	970.58	0.00
L15	110.75 - 105.75 (15)	TP26.9889x26.0484x0.5625	1117.00	0.00
L16	105.75 - 101.5 (16)	TP27.7884x26.9889x0.55	1243.42	0.00
L17	101.5 - 101.25 (17)	TP27.8355x27.7884x0.9875	1250.92	0.00
L18	101.25 - 101 (18)	TP27.8825x27.8355x0.9875	1258.42	0.00
L19	101 - 100.75 (19)	TP27.9295x27.8825x0.725	1265.93	0.00
L20	100.75 - 95.75 (20)	TP28.8701x27.9295x0.7125	1417.43	0.00
L21	95.75 - 87.83 (21)	TP30.36x28.8701x0.7	1527.75	0.00
L22	87.83 - 86.83 (22)	TP29.9235x28.9205x0.9375	1697.96	0.00
L23	86.83 - 81.83 (23)	TP30.8645x29.9235x0.925	1866.36	0.00
L24	81.83 - 81.5 (24)	TP30.9266x30.8645x0.925	1877.65	0.00
L25	81.5 - 81.25 (25)	TP30.9737x30.9266x0.95	1886.22	0.00
L26	81.25 - 76.25 (26)	TP31.9146x30.9737x0.925	2060.15	0.00
L27	76.25 - 71.25 (27)	TP32.8556x31.9146x0.9	2238.98	0.00
L28	71.25 - 66.25 (28)	TP33.7966x32.8556x0.875	2430.65	0.00
L29	66.25 - 61.25 (29)	TP34.7376x33.7966x0.8625	2630.51	0.00
L30	61.25 - 56.25 (30)	TP35.6785x34.7376x0.85	2836.17	0.00
L31	56.25 - 51.25 (31)	TP36.6195x35.6785x0.825	3047.52	0.00
L32	51.25 - 43.33 (32)	TP38.11x36.6195x0.825	3159.18	0.00
L33	43.33 - 42.33 (33)	TP37.5463x36.3569x1.0375	3439.06	0.00
L34	42.33 - 37.4 (34)	TP38.4726x37.5463x1.025	3663.49	0.00
L35	37.4 - 37.15 (35)	TP38.5196x38.4726x1.025	3675.02	0.00
L36	37.15 - 32.15 (36)	TP39.4591x38.5196x1	3908.15	0.00
L37	32.15 - 27.15 (37)	TP40.3986x39.4591x0.975	4146.37	0.00
L38	27.15 - 22.15 (38)	TP41.3381x40.3986x0.9625	4389.42	0.00
L39	22.15 - 19.5 (39)	TP41.836x41.3381x0.95	4520.12	0.00

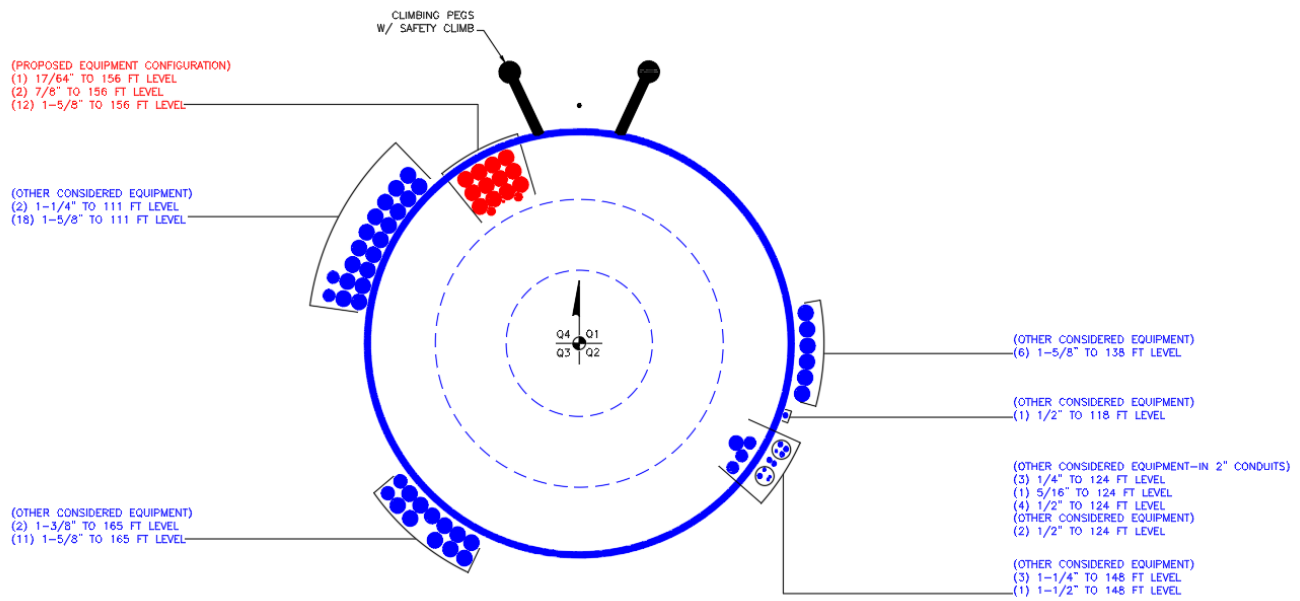
Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L40	19.5 - 19.25 (40)	TP41.883x41.836x1.025	4532.51	0.00
L41	19.25 - 14.25 (41)	TP42.8225x41.883x1	4782.68	0.00
L42	14.25 - 9.25 (42)	TP43.762x42.8225x1	5037.07	0.00
L43	9.25 - 9 (43)	TP43.8089x43.762x1	5049.90	0.00
L44	9 - 8.75 (44)	TP43.8559x43.8089x1.025	5062.74	0.00
L45	8.75 - 7 (45)	TP44.1847x43.8559x1.025	5152.92	0.00
L46	7 - 6.75 (46)	TP44.2317x44.1847x0.975	5165.84	0.00
L47	6.75 - 5 (47)	TP44.5605x44.2317x0.975	5256.59	0.00
L48	5 - 4.75 (48)	TP44.6075x44.5605x1.45	5269.60	0.00
L49	4.75 - 3 (49)	TP44.9363x44.6075x1.425	5360.96	0.00
L50	3 - 2.75 (50)	TP44.9833x44.9363x1.45	5374.06	0.00
L51	2.75 - 2.25 (51)	TP45.0772x44.9833x1.45	5400.28	0.00
L52	2.25 - 2 (52)	TP45.1242x45.0772x1.2	5413.42	0.00
L53	2 - 0 (53)	TP45.5x45.1242x1.175	5518.85	0.00

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	169 - 164 (1)	TP16.4546x15.5x0.25	6.12	0.01
L2	164 - 159 (2)	TP17.4092x16.4546x0.25	6.76	0.49
L3	159 - 154 (3)	TP18.3638x17.4092x0.25	14.10	0.03
L4	154 - 149 (4)	TP19.3183x18.3638x0.25	14.80	0.42
L5	149 - 144 (5)	TP20.2729x19.3183x0.25	18.32	0.42
L6	144 - 139 (6)	TP21.2275x20.2729x0.25	18.76	0.42
L7	139 - 133.33 (7)	TP22.31x21.2275x0.25	19.90	0.42
L8	133.33 - 131.66 (8)	TP22.1148x21.1742x0.3125	20.40	0.42
L9	131.66 - 126.66 (9)	TP23.0554x22.1148x0.3125	21.50	0.42
L10	126.66 - 121.66 (10)	TP23.996x23.0554x0.3125	22.92	0.42
L11	121.66 - 116.66 (11)	TP24.9366x23.996x0.3125	23.38	0.43
L12	116.66 - 111.66 (12)	TP25.8772x24.9366x0.3125	23.77	0.43
L13	111.66 - 111 (13)	TP26.0013x25.8772x0.3125	23.82	0.43
L14	111 - 110.75 (14)	TP26.0484x26.0013x0.575	29.07	0.43
L15	110.75 - 105.75 (15)	TP26.9889x26.0484x0.5625	29.56	0.43
L16	105.75 - 101.5 (16)	TP27.7884x26.9889x0.55	29.98	0.43
L17	101.5 - 101.25 (17)	TP27.8355x27.7884x0.9875	30.03	0.43
L18	101.25 - 101 (18)	TP27.8825x27.8355x0.9875	30.06	0.43
L19	101 - 100.75 (19)	TP27.9295x27.8825x0.725	30.08	0.43
L20	100.75 - 95.75 (20)	TP28.8701x27.9295x0.7125	30.58	0.43
L21	95.75 - 87.83 (21)	TP30.36x28.8701x0.7	30.93	0.43

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L22	87.83 - 86.83 (22)	TP29.9235x28.9205x0.93 75	33.20	0.42
L23	86.83 - 81.83 (23)	TP30.8645x29.9235x0.92 5	34.20	0.50
L24	81.83 - 81.5 (24)	TP30.9266x30.8645x0.92 5	34.26	0.50
L25	81.5 - 81.25 (25)	TP30.9737x30.9266x0.95	34.32	0.51
L26	81.25 - 76.25 (26)	TP31.9146x30.9737x0.92 5	35.30	0.57
L27	76.25 - 71.25 (27)	TP32.8556x31.9146x0.9	36.28	0.64
L28	71.25 - 66.25 (28)	TP33.7966x32.8556x0.87 5	39.39	0.48
L29	66.25 - 61.25 (29)	TP34.7376x33.7966x0.86 25	40.56	0.40
L30	61.25 - 56.25 (30)	TP35.6785x34.7376x0.85	41.71	0.32
L31	56.25 - 51.25 (31)	TP36.6195x35.6785x0.82 5	42.84	0.24
L32	51.25 - 43.33 (32)	TP38.11x36.6195x0.825	43.41	0.20
L33	43.33 - 42.33 (33)	TP37.5463x36.3569x1.03 75	45.00	0.08
L34	42.33 - 37.4 (34)	TP38.4726x37.5463x1.02 5	46.07	0.02
L35	37.4 - 37.15 (35)	TP38.5196x38.4726x1.02 5	46.11	0.02
L36	37.15 - 32.15 (36)	TP39.4591x38.5196x1	47.15	0.11
L37	32.15 - 27.15 (37)	TP40.3986x39.4591x0.97 5	48.15	0.19
L38	27.15 - 22.15 (38)	TP41.3381x40.3986x0.96 25	49.09	0.28
L39	22.15 - 19.5 (39)	TP41.836x41.3381x0.95	49.58	0.32
L40	19.5 - 19.25 (40)	TP41.883x41.836x1.025	49.60	0.32
L41	19.25 - 14.25 (41)	TP42.8225x41.883x1	50.47	0.40
L42	14.25 - 9.25 (42)	TP43.762x42.8225x1	51.31	0.48
L43	9.25 - 9 (43)	TP43.8089x43.762x1	51.33	0.48
L44	9 - 8.75 (44)	TP43.8559x43.8089x1.02 5	51.37	0.49
L45	8.75 - 7 (45)	TP44.1847x43.8559x1.02 5	51.70	0.52
L46	7 - 6.75 (46)	TP44.2317x44.1847x0.97 5	51.71	0.52
L47	6.75 - 5 (47)	TP44.5605x44.2317x0.97 5	52.03	0.55
L48	5 - 4.75 (48)	TP44.6075x44.5605x1.45	52.04	0.55
L49	4.75 - 3 (49)	TP44.9363x44.6075x1.42 5	52.38	0.58
L50	3 - 2.75 (50)	TP44.9833x44.9363x1.45	52.40	0.58
L51	2.75 - 2.25 (51)	TP45.0772x44.9833x1.45	52.49	0.59
L52	2.25 - 2 (52)	TP45.1242x45.0772x1.2	52.53	0.60
L53	2 - 0 (53)	TP45.5x45.1242x1.175	52.90	0.63

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 828054 TOWER ID: C_BASELEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Site BU: 828054
Work Order: _____



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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	169	35.67	3.33	18	15.5	22.31	0.25	Auto	A572-65
2	136.66	48.83	4.33	18	21.17	30.36	0.3125	Auto	A572-65
3	92.16	48.83	5.33	18	28.92	38.11	0.375	Auto	A572-65
4	48.66	48.66	0	18	36.36	45.5	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	2.25	19.5	plate	I-065125; (1) (1.1875)	4		o				o					o				o			
2	19.5	44.58	plate	I-060100; (1) (1.1875)	4		o				o					o				o			
3	3	5	plate	FP 1.25 x 8 1	4		o				o					o				o			
4	81.5	88.5	plate	I-045100; (1) (1.1875)	3			o						o						o			
5	0	3	plate	FP 1.25 x 6 1	6	o			o			o			o				o		o		
6	101	111	plate	I-060100; (1) (1.1875)	3			o						o						o			
7	0	37.4	plate	6 x 1.25; (1) (1.1875)	4	o						o			o						o		
8	0	7	plate	6 x 1.25; (1) (1.1875)	2				o										o				
9	9	37.4	plate	6 x 1.25; (1) (1.1875)	2				o										o				
10	7	9	plate	FP 4 x 1.25 1	4			o		o								o		o			
11	37.4	81.5	plate	6 x 1.25; (1) (1.1875)	6	o			o			o			o				o		o		
12	81.5	101.5	plate	4 x 1.25; (1) (1.1875)	6	o			o			o			o				o		o		
13																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L _v (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	6.5	1.25	8.125	0.625	n/a	33.000	19.000	6.563	1.1875	A572-65
2	6	1	6	0.5	33.000	33.000	16.000	4.750	1.1875	A572-65
3	1.25	8	10	4	n/a	n/a	0.000	10.000	0.0000	A572-65
4	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
5	1.25	6	7.5	3	n/a	n/a	0.000	7.500	0.0000	A572-65
6	6	1	6	0.5	33.000	33.000	16.000	4.750	1.1875	A572-65
7	6	1.25	7.5	0.625	36.000	36.000	12.000	5.938	1.1875	A572-65
8	6	1.25	7.5	0.625	36.000	36.000	12.000	5.938	1.1875	A572-65
9	6	1.25	7.5	0.625	36.000	36.000	12.000	5.938	1.1875	A572-65
10	4	1.25	5	0.625	n/a	n/a	12.000	5.000	0.0000	A572-65
11	6	1.25	7.5	0.625	36.000	36.000	12.000	5.938	1.1875	A572-65
12	4	1.25	5	0.625	30.000	30.000	18.000	3.438	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	169 - 164	5		18	15.500	16.455	0.25	A572-65	1.000
2	164 - 159	5		18	16.455	17.409	0.25	A572-65	1.000
3	159 - 154	5		18	17.409	18.364	0.25	A572-65	1.000
4	154 - 149	5		18	18.364	19.318	0.25	A572-65	1.000
5	149 - 144	5		18	19.318	20.273	0.25	A572-65	1.000
6	144 - 139	5		18	20.273	21.228	0.25	A572-65	1.000
7	139 - 136.66	5.67	3.33	18	21.228	22.310	0.25	A572-65	1.000
8	136.66 - 131.66	5		18	21.174	22.115	0.3125	A572-65	1.000
9	131.66 - 126.66	5		18	22.115	23.055	0.3125	A572-65	1.000
10	126.66 - 121.66	5		18	23.055	23.996	0.3125	A572-65	1.000
11	121.66 - 116.66	5		18	23.996	24.937	0.3125	A572-65	1.000
12	116.66 - 111.66	5		18	24.937	25.877	0.3125	A572-65	1.000
13	111.66 - 111	0.66		18	25.877	26.001	0.3125	A572-65	1.000
14	111 - 110.75	0.25		18	26.001	26.048	0.575	A572-65	0.936
15	110.75 - 105.75	5		18	26.048	26.989	0.5625	A572-65	0.942
16	105.75 - 101.5	4.25		18	26.989	27.788	0.55	A572-65	0.952
17	101.5 - 101.25	0.25		18	27.788	27.835	0.9875	A572-65	0.895
18	101.25 - 101	0.25		18	27.835	27.882	0.9875	A572-65	0.894
19	101 - 100.75	0.25		18	27.882	27.930	0.725	A572-65	0.917
20	100.75 - 95.75	5		18	27.930	28.870	0.7125	A572-65	0.916
21	95.75 - 92.16	7.92	4.33	18	28.870	30.360	0.7	A572-65	0.921
22	92.16 - 86.83	5.33		18	28.920	29.924	0.9375	A572-65	0.912
23	86.83 - 81.83	5		18	29.924	30.865	0.925	A572-65	0.908
24	81.83 - 81.5	0.33		18	30.865	30.927	0.925	A572-65	0.907
25	81.5 - 81.25	0.25		18	30.927	30.974	0.95	A572-65	0.899
26	81.25 - 76.25	5		18	30.974	31.915	0.925	A572-65	0.907
27	76.25 - 71.25	5		18	31.915	32.856	0.9	A572-65	0.916
28	71.25 - 66.25	5		18	32.856	33.797	0.875	A572-65	0.927
29	66.25 - 61.25	5		18	33.797	34.738	0.8625	A572-65	0.926
30	61.25 - 56.25	5		18	34.738	35.679	0.85	A572-65	0.926
31	56.25 - 51.25	5		18	35.679	36.619	0.825	A572-65	0.940
32	51.25 - 48.66	7.92	5.33	18	36.619	38.110	0.825	A572-65	0.934
33	48.66 - 42.33	6.33		18	36.357	37.546	1.0375	A572-65	0.942
34	42.33 - 37.4	4.93		18	37.546	38.473	1.025	A572-65	0.939
35	37.4 - 37.15	0.25		18	38.473	38.520	1.025	A572-65	0.938
36	37.15 - 32.15	5		18	38.520	39.459	1	A572-65	0.946
37	32.15 - 27.15	5		18	39.459	40.399	0.975	A572-65	0.956
38	27.15 - 22.15	5		18	40.399	41.338	0.9625	A572-65	0.955
39	22.15 - 19.5	2.65		18	41.338	41.836	0.95	A572-65	0.960
40	19.5 - 19.25	0.25		18	41.836	41.883	1.025	A572-65	0.955
41	19.25 - 14.25	5		18	41.883	42.822	1	A572-65	0.964
42	14.25 - 9.25	5		18	42.822	43.762	1	A572-65	0.952
43	9.25 - 9	0.25		18	43.762	43.809	1	A572-65	0.951
44	9 - 8.75	0.25		18	43.809	43.856	1.025	A572-65	0.963
45	8.75 - 7	1.75		18	43.856	44.185	1.025	A572-65	0.959
46	7 - 6.75	0.25		18	44.185	44.232	0.975	A572-65	0.969
47	6.75 - 5	1.75		18	44.232	44.561	0.975	A572-65	0.965
48	5 - 4.75	0.25		18	44.561	44.607	1.45	A572-65	0.857
49	4.75 - 3	1.75		18	44.607	44.936	1.425	A572-65	0.867
50	3 - 2.75	0.25		18	44.936	44.983	1.45	A572-65	0.876
51	2.75 - 2.25	0.5		18	44.983	45.077	1.45	A572-65	0.875
52	2.25 - 2	0.25		18	45.077	45.124	1.2	A572-65	0.856
53	2 - 0	2		18	45.124	45.500	1.175	A572-65	0.869

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	169 - 164		2.53	11.32	6.12
2	164 - 159		2.74	43.22	6.76
3	159 - 154		5.54	98.07	14.10
4	154 - 149		5.95	170.20	14.80
5	149 - 144		7.74	257.61	18.32
6	144 - 139		8.31	350.30	18.76
7	139 - 136.66		8.88	395.68	19.90
8	136.66 - 131.66		9.77	496.47	20.40
9	131.66 - 126.66		10.51	600.35	21.50
10	126.66 - 121.66		11.79	713.71	22.92
11	121.66 - 116.66		12.70	829.40	23.38
12	116.66 - 111.66		13.62	947.25	23.77
13	111.66 - 111		13.75	962.96	23.82
14	111 - 110.75		16.11	970.58	29.07
15	110.75 - 105.75		17.42	1117.00	29.56
16	105.75 - 101.5		18.57	1243.42	29.98
17	101.5 - 101.25		18.68	1250.91	30.03
18	101.25 - 101		18.78	1258.41	30.06
19	101 - 100.75		18.86	1265.92	30.08
20	100.75 - 95.75		20.43	1417.42	30.58
21	95.75 - 92.16		21.59	1527.75	30.93
22	92.16 - 86.83		24.49	1697.96	33.20
23	86.83 - 81.83		26.47	1866.36	34.20
24	81.83 - 81.5		26.62	1877.65	34.26
25	81.5 - 81.25		26.72	1886.22	34.32
26	81.25 - 76.25		28.75	2060.15	35.30
27	76.25 - 71.25		30.83	2238.98	36.28
28	71.25 - 66.25		32.77	2430.65	39.39
29	66.25 - 61.25		34.92	2630.50	40.56
30	61.25 - 56.25		37.10	2836.16	41.71
31	56.25 - 51.25		39.33	3047.51	42.84
32	51.25 - 48.66		40.49	3159.18	43.41
33	48.66 - 42.33		45.79	3439.06	45.00
34	42.33 - 37.4		48.50	3663.50	46.07
35	37.4 - 37.15		48.66	3675.02	46.11
36	37.15 - 32.15		51.44	3908.15	47.15
37	32.15 - 27.15		54.26	4146.37	48.15
38	27.15 - 22.15		57.12	4389.42	49.09
39	22.15 - 19.5		58.64	4520.12	49.58
40	19.5 - 19.25		58.82	4532.51	49.60
41	19.25 - 14.25		61.87	4782.68	50.47
42	14.25 - 9.25		64.97	5037.07	51.31
43	9.25 - 9		65.14	5049.90	51.33
44	9 - 8.75		65.30	5062.74	51.37
45	8.75 - 7		66.40	5152.91	51.70
46	7 - 6.75		66.59	5165.84	51.71
47	6.75 - 5		67.65	5256.59	52.03
48	5 - 4.75		67.88	5269.60	52.04
49	4.75 - 3		69.23	5360.96	52.38
50	3 - 2.75		69.45	5374.06	52.40
51	2.75 - 2.25		69.85	5400.28	52.49
52	2.25 - 2		70.02	5413.41	52.53
53	2 - 0		71.37	5518.85	52.90

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
169 - 164	Pole	TP16.455x15.5x0.25	Pole	3.7%	Pass
164 - 159	Pole	TP17.409x16.455x0.25	Pole	11.9%	Pass
159 - 154	Pole	TP18.364x17.409x0.25	Pole	24.2%	Pass
154 - 149	Pole	TP19.318x18.364x0.25	Pole	37.5%	Pass
149 - 144	Pole	TP20.273x19.318x0.25	Pole	51.4%	Pass
144 - 139	Pole	TP21.228x20.273x0.25	Pole	63.5%	Pass
139 - 136.66	Pole	TP22.31x21.228x0.25	Pole	68.7%	Pass
136.66 - 131.66	Pole	TP22.115x21.174x0.3125	Pole	66.7%	Pass
131.66 - 126.66	Pole	TP23.055x22.115x0.3125	Pole	74.0%	Pass
126.66 - 121.66	Pole	TP23.996x23.055x0.3125	Pole	81.1%	Pass
121.66 - 116.66	Pole	TP24.937x23.996x0.3125	Pole	87.1%	Pass
116.66 - 111.66	Pole	TP25.877x24.937x0.3125	Pole	92.2%	Pass
111.66 - 111	Pole	TP26.001x25.877x0.3125	Pole	92.8%	Pass
111 - 110.75	Pole + Reinf.	TP26.048x26.001x0.575	Reinf. 6 Tension Rupture	83.5%	Pass
110.75 - 105.75	Pole + Reinf.	TP26.989x26.048x0.5625	Reinf. 6 Tension Rupture	90.8%	Pass
105.75 - 101.5	Pole + Reinf.	TP27.788x26.989x0.55	Reinf. 6 Tension Rupture	96.5%	Pass
101.5 - 101.25	Pole + Reinf.	TP27.835x27.788x0.9875	Reinf. 12 Tension Rupture	65.8%	Pass
101.25 - 101	Pole + Reinf.	TP27.882x27.835x0.9875	Reinf. 12 Tension Rupture	66.1%	Pass
101 - 100.75	Pole + Reinf.	TP27.93x27.882x0.725	Reinf. 12 Tension Rupture	87.9%	Pass
100.75 - 95.75	Pole + Reinf.	TP28.87x27.93x0.7125	Reinf. 12 Tension Rupture	93.8%	Pass
95.75 - 92.16	Pole + Reinf.	TP30.36x28.87x0.7	Reinf. 12 Tension Rupture	97.7%	Pass
92.16 - 86.83	Pole + Reinf.	TP29.924x28.92x0.9375	Reinf. 12 Tension Rupture	80.5%	Pass
86.83 - 81.83	Pole + Reinf.	TP30.865x29.924x0.925	Reinf. 12 Tension Rupture	84.6%	Pass
81.83 - 81.5	Pole + Reinf.	TP30.927x30.865x0.925	Reinf. 12 Tension Rupture	84.9%	Pass
81.5 - 81.25	Pole + Reinf.	TP30.974x30.927x0.95	Reinf. 11 Tension Rupture	72.1%	Pass
81.25 - 76.25	Pole + Reinf.	TP31.915x30.974x0.925	Reinf. 11 Tension Rupture	75.4%	Pass
76.25 - 71.25	Pole + Reinf.	TP32.856x31.915x0.9	Reinf. 11 Tension Rupture	78.7%	Pass
71.25 - 66.25	Pole + Reinf.	TP33.797x32.856x0.875	Reinf. 11 Tension Rupture	82.0%	Pass
66.25 - 61.25	Pole + Reinf.	TP34.738x33.797x0.8625	Reinf. 11 Tension Rupture	85.3%	Pass
61.25 - 56.25	Pole + Reinf.	TP35.679x34.738x0.85	Reinf. 11 Tension Rupture	88.4%	Pass
56.25 - 51.25	Pole + Reinf.	TP36.619x35.679x0.825	Reinf. 11 Tension Rupture	91.5%	Pass
51.25 - 48.66	Pole + Reinf.	TP38.11x36.619x0.825	Reinf. 11 Tension Rupture	93.0%	Pass
48.66 - 42.33	Pole + Reinf.	TP37.546x36.357x1.0375	Reinf. 11 Tension Rupture	79.6%	Pass
42.33 - 37.4	Pole + Reinf.	TP38.473x37.546x1.025	Reinf. 11 Tension Rupture	82.0%	Pass
37.4 - 37.15	Pole + Reinf.	TP38.52x38.473x1.025	Reinf. 7 Tension Rupture	82.1%	Pass
37.15 - 32.15	Pole + Reinf.	TP39.459x38.52x1	Reinf. 7 Tension Rupture	84.4%	Pass
32.15 - 27.15	Pole + Reinf.	TP40.399x39.459x0.975	Reinf. 7 Tension Rupture	86.7%	Pass
27.15 - 22.15	Pole + Reinf.	TP41.338x40.399x0.9625	Reinf. 7 Tension Rupture	88.9%	Pass
22.15 - 19.5	Pole + Reinf.	TP41.836x41.338x0.95	Reinf. 7 Tension Rupture	90.0%	Pass
19.5 - 19.25	Pole + Reinf.	TP41.883x41.836x1.025	Reinf. 7 Tension Rupture	84.2%	Pass
19.25 - 14.25	Pole + Reinf.	TP42.822x41.883x1	Reinf. 7 Tension Rupture	86.2%	Pass
14.25 - 9.25	Pole + Reinf.	TP43.762x42.822x1	Reinf. 7 Tension Rupture	88.1%	Pass
9.25 - 9	Pole + Reinf.	TP43.809x43.762x1	Reinf. 7 Tension Rupture	88.2%	Pass
9 - 8.75	Pole + Reinf.	TP43.856x43.809x1.025	Reinf. 7 Tension Rupture	85.0%	Pass
8.75 - 7	Pole + Reinf.	TP44.185x43.856x1.025	Reinf. 7 Tension Rupture	85.7%	Pass
7 - 6.75	Pole + Reinf.	TP44.232x44.185x0.975	Reinf. 7 Tension Rupture	89.1%	Pass
6.75 - 5	Pole + Reinf.	TP44.561x44.232x0.975	Reinf. 7 Tension Rupture	89.7%	Pass
5 - 4.75	Pole + Reinf.	TP44.607x44.561x1.45	Reinf. 3 Connection	70.8%	Pass
4.75 - 3	Pole + Reinf.	TP44.936x44.607x1.425	Reinf. 3 Connection	71.4%	Pass
3 - 2.75	Pole + Reinf.	TP44.983x44.936x1.45	Reinf. 7 Tension Rupture	63.0%	Pass
2.75 - 2.25	Pole + Reinf.	TP45.077x44.983x1.45	Reinf. 7 Tension Rupture	63.2%	Pass
2.25 - 2	Pole + Reinf.	TP45.124x45.077x1.2	Reinf. 8 Tension Rupture	75.8%	Pass
2 - 0	Pole + Reinf.	TP45.5x45.124x1.175	Reinf. 8 Tension Rupture	76.5%	Pass
				Summary	
			Pole	92.8%	Pass
			Reinforcement	97.7%	Pass
			Overall	97.7%	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
169 - 164	426	n/a	426	12.86	n/a	12.86	3.7%												
164 - 159	506	n/a	506	13.62	n/a	13.62	11.9%												
159 - 154	596	n/a	596	14.37	n/a	14.37	24.2%												
154 - 149	695	n/a	695	15.13	n/a	15.13	37.5%												
149 - 144	804	n/a	804	15.89	n/a	15.89	51.4%												
144 - 139	925	n/a	925	16.65	n/a	16.65	63.5%												
139 - 136.66	985	n/a	985	17.00	n/a	17.00	68.7%												
136.66 - 131.66	1298	n/a	1298	21.62	n/a	21.62	66.7%												
131.66 - 126.66	1474	n/a	1474	22.56	n/a	22.56	74.0%												
126.66 - 121.66	1664	n/a	1664	23.49	n/a	23.49	81.1%												
121.66 - 116.66	1870	n/a	1870	24.42	n/a	24.42	87.1%												
116.66 - 111.66	2093	n/a	2093	25.36	n/a	25.36	92.2%												
111.66 - 111	2124	n/a	2124	25.48	n/a	25.48	92.8%												
111 - 110.75	2135	1674	3809	25.53	18.00	43.53	51.6%					83.5%							
110.75 - 105.75	2378	1790	4168	26.46	18.00	44.46	56.2%					90.8%							
105.75 - 101.5	2598	1892	4491	27.25	18.00	45.25	59.8%					96.5%							
101.5 - 101.25	2612	5093	7705	27.30	48.00	75.30	35.2%					56.7%							65.8%
101.25 - 101	2625	5109	7734	27.35	48.00	75.35	35.3%					57.0%							66.1%
101 - 100.75	2639	3215	5853	27.39	30.00	57.39	47.0%												88.0%
100.75 - 95.75	2918	3424	6342	28.32	30.00	58.32	50.2%												93.8%
95.75 - 92.16	3129	3578	6707	28.99	30.00	58.99	52.3%												97.7%
92.16 - 86.83	3878	5292	9170	35.17	43.50	78.67	43.1%				76.0%								80.5%
86.83 - 81.83	4261	5615	9876	36.29	43.50	79.79	45.4%				80.0%								84.6%
81.83 - 81.5	4287	5636	9923	36.36	43.50	79.86	45.6%				80.2%								84.9%
81.5 - 81.25	4307	5911	10218	36.42	45.00	81.42	44.5%												72.1%
81.25 - 76.25	4716	6257	10974	37.54	45.00	82.54	46.6%												75.4%
76.25 - 71.25	5151	6613	11765	38.66	45.00	83.66	48.7%												78.7%
71.25 - 66.25	5612	6979	12591	39.78	45.00	84.78	50.8%												82.0%
66.25 - 61.25	6099	7355	13455	40.90	45.00	85.90	52.9%												85.3%
61.25 - 56.25	6614	7741	14356	42.02	45.00	87.02	54.9%												88.4%
56.25 - 51.25	7157	8137	15295	43.14	45.00	88.14	57.1%												91.5%
51.25 - 48.66	7450	8346	15796	43.72	45.00	88.72	58.2%												93.0%
48.66 - 42.33	7721	12538	20258	44.24	69.00	113.24	50.8%		77.2%										79.6%
42.33 - 37.4	8312	13139	21452	45.34	69.00	114.34	52.7%		79.6%										82.0%
37.4 - 37.15	8343	13170	21513	45.40	69.00	114.40	52.8%		79.7%					82.1%		77.7%			
37.15 - 32.15	8975	13796	22771	46.52	69.00	115.52	54.7%		82.0%					84.4%		79.9%			
32.15 - 27.15	9638	14436	24074	47.64	69.00	116.64	56.5%		84.2%					86.7%		82.1%			
27.15 - 22.15	10332	15091	25423	48.75	69.00	117.75	58.4%		86.4%					88.9%		84.2%			
22.15 - 19.5	10714	15444	26158	49.35	69.00	118.35	59.3%		87.5%					90.0%		85.3%			
19.5 - 19.25	10750	17315	28066	49.40	77.50	126.90	55.5%	80.2%						84.2%		78.6%			
19.25 - 14.25	11497	18072	29569	50.52	77.50	128.02	57.3%	82.1%						86.2%		80.5%			
14.25 - 9.25	12277	18845	31122	51.64	77.50	129.14	59.0%	84.0%						88.1%		82.3%			
9.25 - 9	12317	18884	31201	51.70	77.50	129.20	59.0%	84.0%						88.2%		82.4%			
9 - 8.75	12357	20125	32482	51.75	82.50	134.25	56.9%	81.0%						85.0%			69.8%		
8.75 - 7	12640	20418	33058	52.14	82.50	134.64	57.5%	81.6%						85.7%			70.3%		
7 - 6.75	12680	19237	31918	52.20	77.50	129.70	59.8%	84.9%						89.1%	83.2%				
6.75 - 5	12968	19515	32482	52.59	77.50	130.09	60.4%	85.5%						89.7%	83.9%				
5 - 4.75	13009	33772	46781	52.65	117.50	170.15	42.3%	60.7%		70.8%				65.1%	57.3%				
4.75 - 3	13301	34230	47531	53.04	117.50	170.54	42.8%	61.2%		71.4%				65.7%	57.8%				
3 - 2.75	13343	34565	47909	53.09	122.50	175.59	42.6%	60.6%				56.5%		63.0%	60.2%				
2.75 - 2.25	13428	34700	48127	53.20	122.50	175.70	42.8%	60.7%				56.6%		63.2%	60.3%				
2.25 - 2	13470	26940	40410	53.26	90.00	143.26	50.6%					68.0%		75.8%	75.8%				
2 - 0	13812	27354	41166	53.71	90.00	143.71	51.2%					68.6%		76.5%	76.5%				

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

v4.5.7 - Effective 2-28-19

Asymmetric Anchor Rod Analysis

Moment = **3658** k-ft
 Axial = **47.1** kips (+Comp, -Tension)
 Shear = **53.0** kips
 Anchor Qty = **12**

TIA Ref. = **H**
 ASIF = **N/A**
 Max Ratio = **100.0%**
 Location = **Base Plate**

η = **N/A** for Base Plates, Rev. G Sect. 4.9.9
 Threads = **N/A** for Flange Plates, Rev. G & H
 Grout = **0.00** psi, for Base Plates, Rev. H Sect 4.9.9 (Note)

Use An? **No** for Anchors or Bolts

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

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Type	Area Override, in ²	lar, in	Area, in ²	Max Net Comp, kips	Max Net Tension, kips	Tension Override, kips	Comp Override, kips	Tension Cap, kips	Comp Cap, kips	Capacity Ratio
1	2.250	A354 Gr BC	109	125	6.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
2	2.250	A354 Gr BC	109	125	53.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
3	2.250	A354 Gr BC	109	125	66.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
4	2.250	A354 Gr BC	109	125	113.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
5	2.250	A354 Gr BC	109	125	126.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
6	2.250	A354 Gr BC	109	125	173.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
7	2.250	A354 Gr BC	109	125	186.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
8	2.250	A354 Gr BC	109	125	233.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
9	2.250	A354 Gr BC	109	125	246.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
10	2.250	A354 Gr BC	109	125	293.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
11	2.250	A354 Gr BC	109	125	306.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
12	2.250	A354 Gr BC	109	125	353.5	54.00	Original	0.00		3.98	274.68	266.83	0.00	0.00	304.47	354.00	74.1%
										47.71							

Applied Reactions for RISA 3D	
TNX Moment =	5519 k-ft
TNX Axial =	71 kips
TNX Shear =	53 kips
Total Unfactored Axial =	59.17 kips
Side Bending Moment =	5519 k-ft
Corner Bending Moment (Mx) =	3902.5 k-ft
Corner Bending Moment (Mz) =	3902.5 k-ft

Micropile Spring Constant	Helical Anchor Spring Constant
Number of Piles = 6	Number of Piles = 6
B.C. = 117.5 in	B.C. = 300 in
Ag = 4.03 in ²	Ag = 8.28 in ²
E = 29000 ksi	E = 29000 ksi
Lu = 10 ft	Lu = 65 ft
k = An ² E / Lu = 973.92 k/in	k = An ² E / Lu = 307.85 k/in

Micropile Capacity	Helical Anchor Capacity
Max Tension from RISA = 121.798 kips	Max Tension from RISA = 93.793 kips
Anchor Type = Micropile	Anchors per = 2
Ultimate Load, Pu' = 418 kips	Helical Anchor Type = RD4500.337
An = [redacted] in ²	Design Torque = 21000 ft-lbs
Capacity (Kips) = 0.8 * Pu = 334.4	Ultimate Capacity = 140 kips
Ratio = 121.798 / 334.4 = 36.4%	Installed Torque = 15000 ft-lbs
	Installed Capacity = 100 kips
	Total Capacity = 105 kips
	Ratio = 93.793 / 105 = 89.3%

Load Distribution

Micropile Effective Moment = 42934 k-in 33.7%

Anchor Effective Moment = 84414 k-in 66.3%

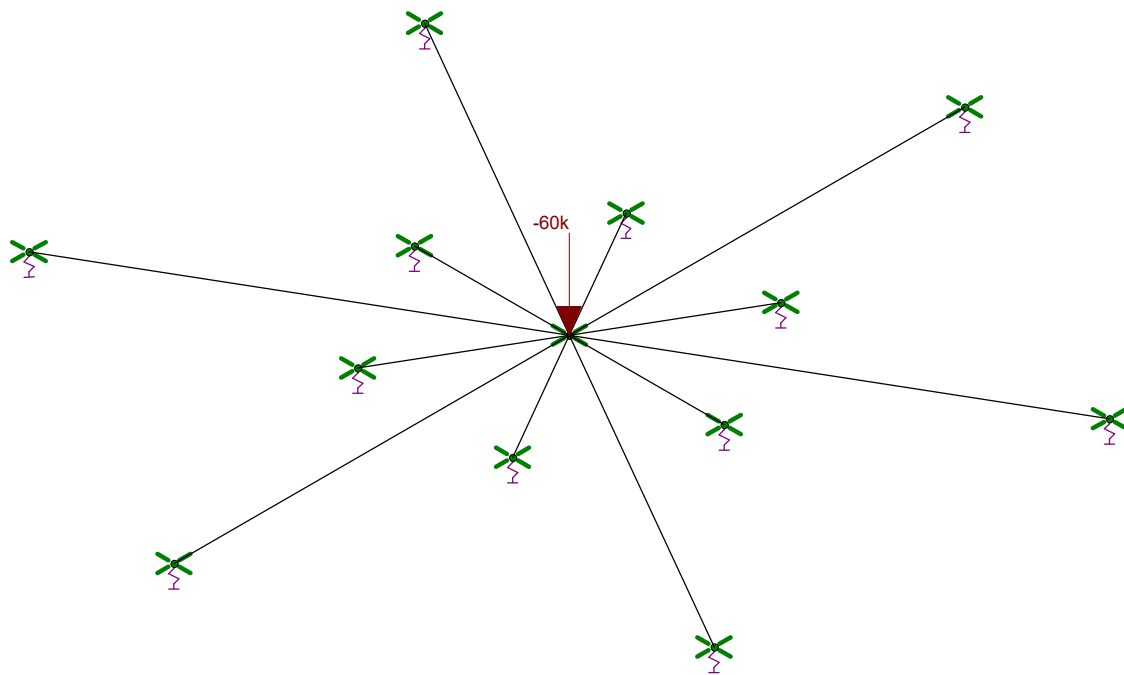
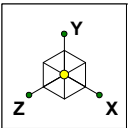
Total Effective Moment = 127347 k-in

Reaction for Helical Load transfer at Base plate:

Moment = 3658.3 k-ft

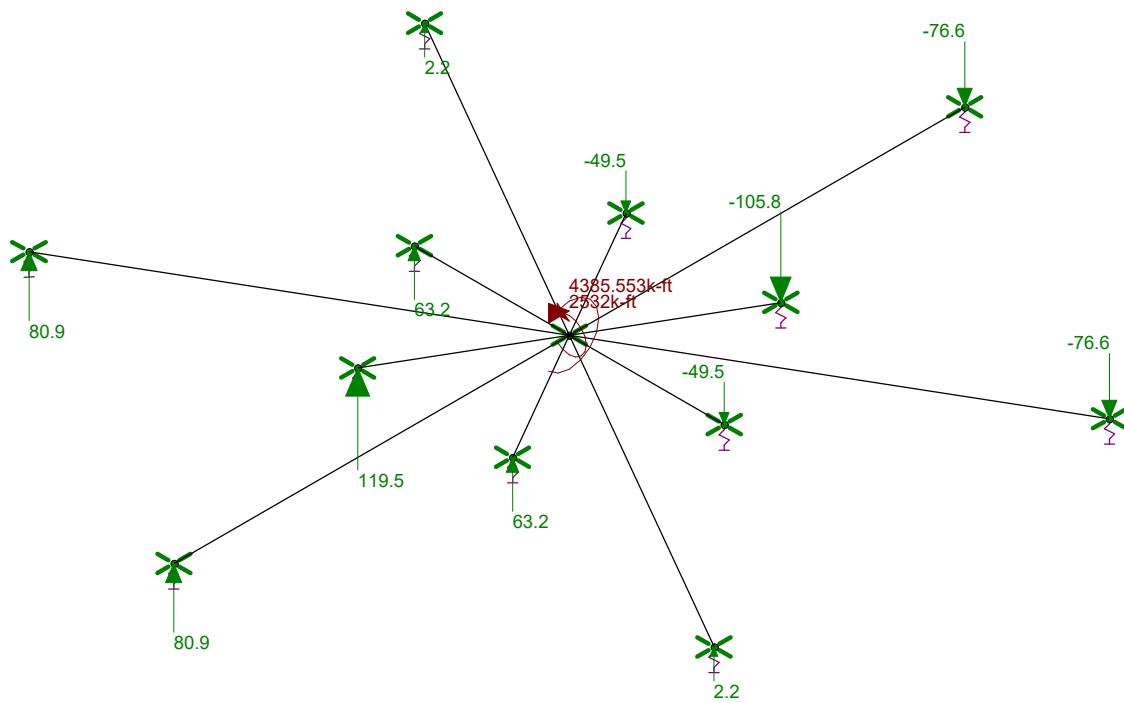
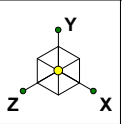
Axial = 47.1 kips

Shear = 53.0 kips



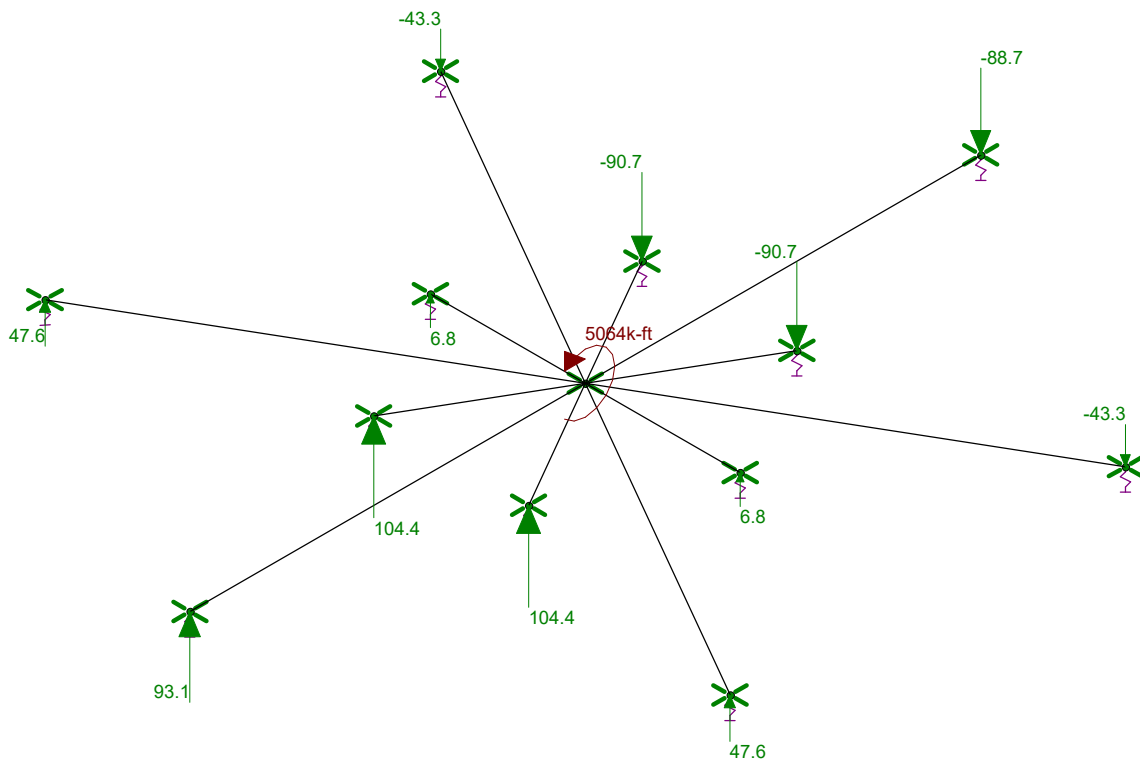
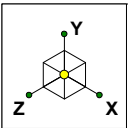
Loads: BLC 1, Dead
Envelope Only Solution

Paul J. Ford and Company	BU 828054 / South Windsor- Rt 5	SK - 2
KAT/GP		Apr 23, 2019 at 2:22 PM
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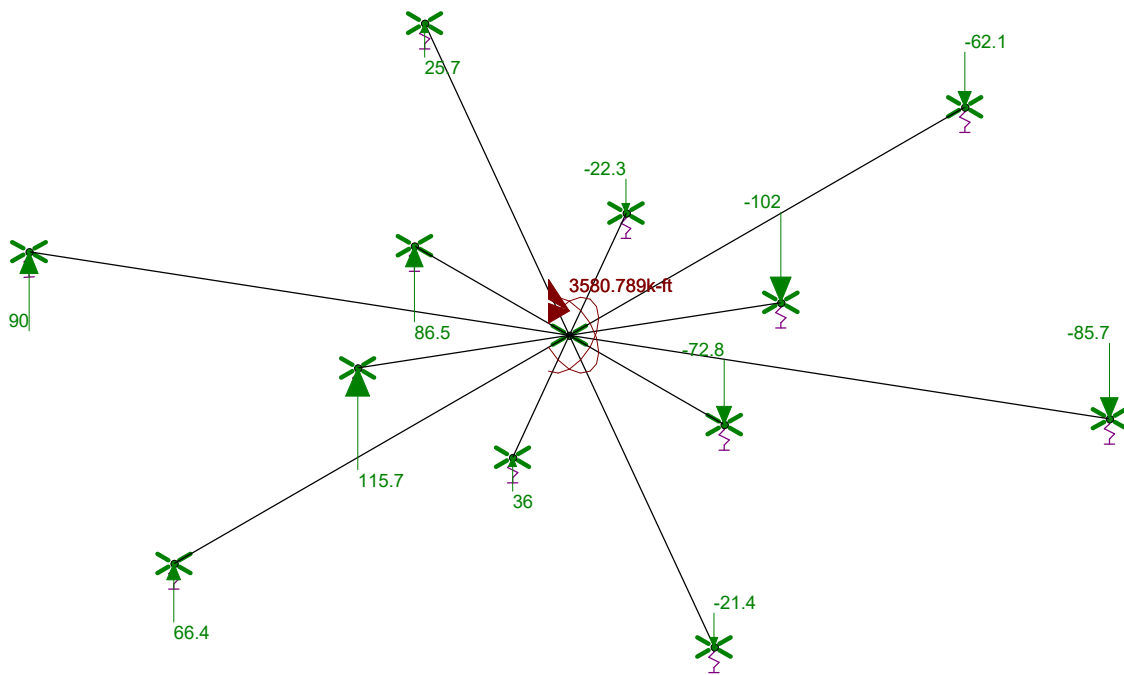
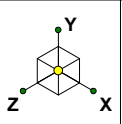
Loads: BLC 3, Wind 30
 Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company	BU 828054 / South Windsor- Rt 5	SK - 9
KAT/GP		Apr 23, 2019 at 2:33 PM
37519-0238.002.7805		37519-0238.001.7805_Composite ...



Loads: BLC 2, Wind 0
 Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company	BU 828054 / South Windsor- Rt 5	SK - 8
KAT/GP		Apr 23, 2019 at 2:33 PM
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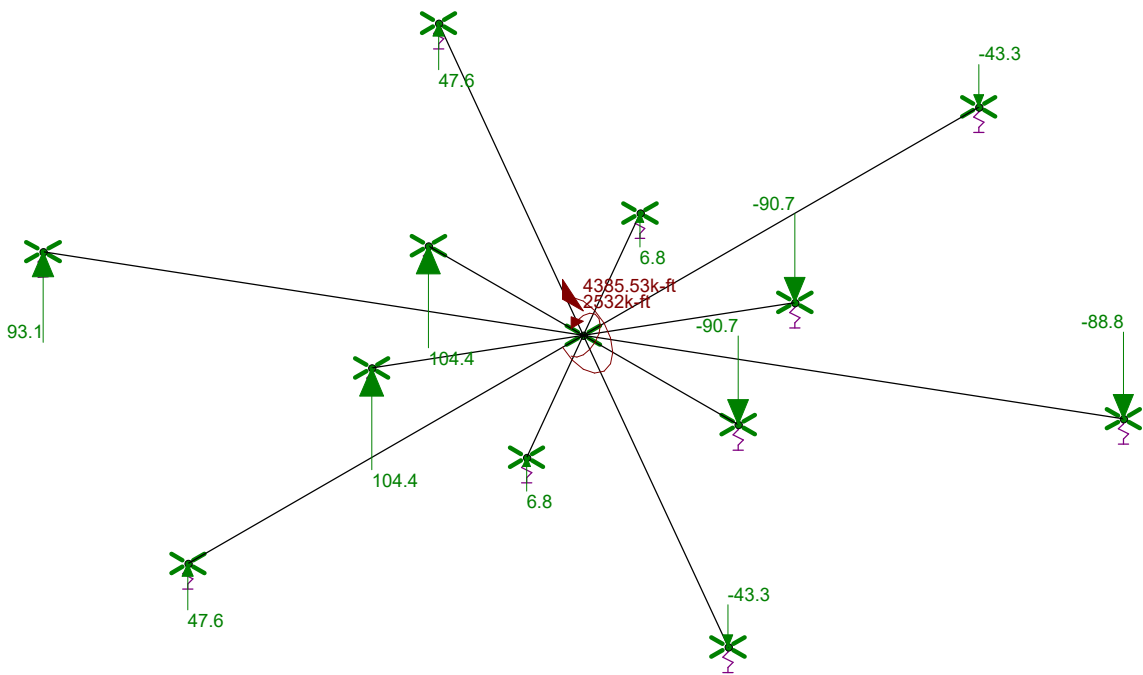
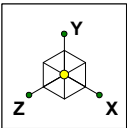


Loads: BLC 4, Wind 45
 Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company
 KAT/GP
 37519-0238.002.7805

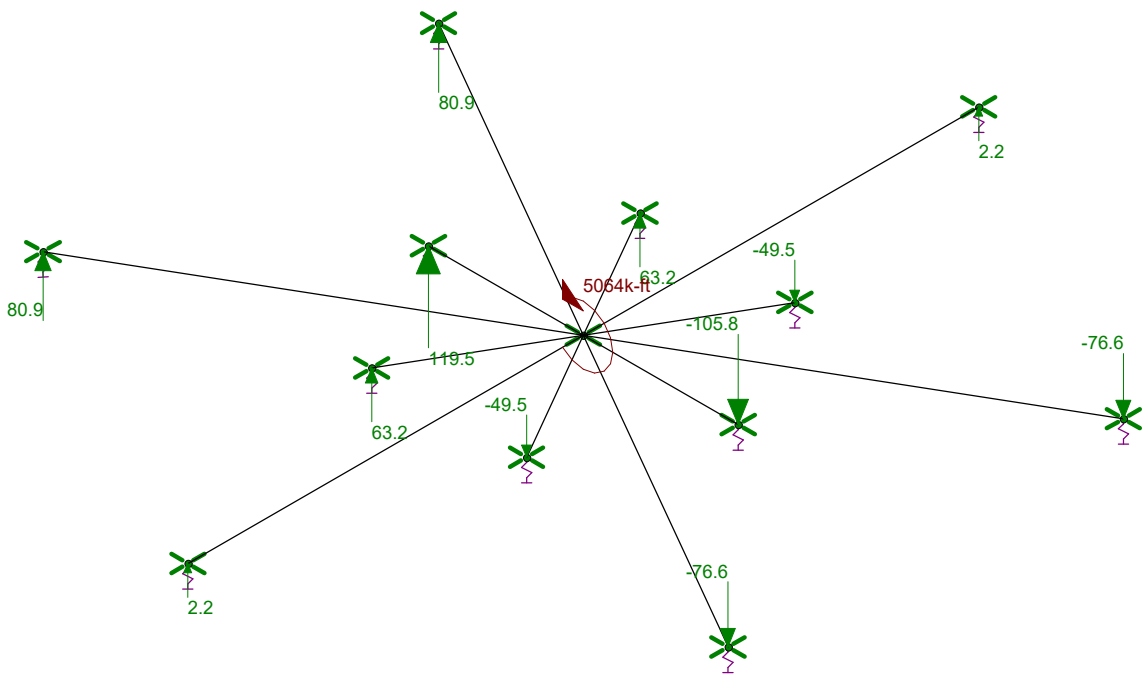
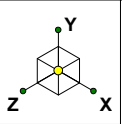
BU 828054 / South Windsor- Rt 5

SK - 10
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Loads: BLC 5, Wind 60
 Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company	BU 828054 / South Windsor- Rt 5	SK - 11
KAT/GP		Apr 23, 2019 at 2:34 PM
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Loads: BLC 6, Wind 90
 Y-direction Reaction Units are k and k-ft

Paul J. Ford and Company	BU 828054 / South Windsor- Rt 5	SK - 12
KAT/GP		Apr 23, 2019 at 2:35 PM
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Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1/E...)	Density[k/ft...]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3

General Material Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1/E5 F)	Density[k/ft^3]
1	gen Conc3NW	3155	1372	.15	.6	.145
2	gen Conc4NW	3644	1584	.15	.6	.145
3	gen Conc3LW	2085	906	.15	.6	.11
4	gen Conc4LW	2408	1047	.15	.6	.11
5	gen Alum	10600	4077	.3	1.29	.173
6	gen Steel	29000	11154	.3	.65	.49
7	RIGID	1e+6		.3	0	0

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HR1A	W10x33	Beam	None	A36 Gr.36	Typical	9.71	36.6	171 .583

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	CENTER	0	0	0	0	
2	N2	0	0	12.49995	0	
3	N4	10.824885	0	6.249975	0	
4	N6	10.824885	0	-6.249975	0	
5	N8	-0.	0	-12.49995	0	
6	N10	-10.824885	0	-6.249975	0	
7	N12	-10.824885	0	6.249975	0	
8	N8A	4.895638	0	0	0	
9	N10A	2.447819	0	-4.239899	0	
10	N12A	-2.447819	0	-4.239899	0	
11	N14	-4.895638	0	0.	0	
12	N16	-2.447819	0	4.239899	0	
13	N18	2.447819	0	4.239899	0	

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	N14	Reaction	S973.92	Reaction			
2	N16	Reaction	S973.92	Reaction			
3	N18	Reaction	S973.92	Reaction			
4	N8A	Reaction	S973.92	Reaction			
5	N10A	Reaction	S973.92	Reaction			
6	N12A	Reaction	S973.92	Reaction			
7	N10	Reaction	S307.85	Reaction			
8	N8	Reaction	S307.85	Reaction			
9	N6	Reaction	S307.85	Reaction			
10	N4	Reaction	S307.85	Reaction			
11	N2	Reaction	S307.85	Reaction			
12	N12	Reaction	S307.85	Reaction			



Joint Boundary Conditions (Continued)

	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]
13	CENTER	Reaction		Reaction			

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	CENTER	N2			RIGID	None	None	RIGID	Typical
2	M2	CENTER	N4			RIGID	None	None	RIGID	Typical
3	M3	CENTER	N6			RIGID	None	None	RIGID	Typical
4	M4	CENTER	N8			RIGID	None	None	RIGID	Typical
5	M5	CENTER	N10			RIGID	None	None	RIGID	Typical
6	M6	CENTER	N12			RIGID	None	None	RIGID	Typical
7	M7	CENTER	N8A			RIGID	None	None	RIGID	Typical
8	M8	CENTER	N10A			RIGID	None	None	RIGID	Typical
9	M9	CENTER	N12A			RIGID	None	None	RIGID	Typical
10	M10	CENTER	N14			RIGID	None	None	RIGID	Typical
11	M11	CENTER	N16			RIGID	None	None	RIGID	Typical
12	M12	CENTER	N18			RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	DistributedArea(Me...Surface(...
1	Dead	None		-1		1		
2	Wind 0	None				1		
3	Wind 30	None				2		
4	Wind 45	None				2		
5	Wind 60	None				2		
6	Wind 90	None				1		

Load Combinations

	Description	S... P...	S... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...
1	1.2 Dead + Wind 0	Yes Y		1 1.2 2 1										
2	0.9 Dead + Wind 0	Yes Y		1 .9 2 1										
3	1.2 Dead + Wind 30	Yes Y		1 1.2 3 1										
4	0.9 Dead + Wind 30	Yes Y		1 .9 3 1										
5	1.2 Dead + Wind 45	Yes Y		1 1.2 4 1										
6	0.9 Dead + Wind 45	Yes Y		1 .9 4 1										
7	1.2 Dead + Wind 60	Yes Y		1 1.2 5 1										
8	0.9 Dead + Wind 60	Yes Y		1 .9 5 1										
9	1.2 Dead + Wind 90	Yes Y		1 1.2 6 1										
10	0.9 Dead + Wind 90	Yes Y		1 .9 6 1										
11	1.2 Dead + Wind 180	Yes Y		1 1.2 2 -1										
12	0.9 Dead + Wind 180	Yes Y		1 .9 2 -1										
13	1.2 Dead + Wind 210	Yes Y		1 1.2 3 -1										
14	0.9 Dead + Wind 210	Yes Y		1 .9 3 -1										
15	1.2 Dead + Wind 225	Yes Y		1 1.2 4 -1										
16	0.9 Dead + Wind 225	Yes Y		1 .9 4 -1										
17	1.2 Dead + Wind 240	Yes Y		1 1.2 5 -1										
18	0.9 Dead + Wind 240	Yes Y		1 .9 5 -1										
19	1.2 Dead + Wind 270	Yes Y		1 1.2 6 -1										
20	0.9 Dead + Wind 270	Yes Y		1 .9 6 -1										



Company : Paul J. Ford and Company
 Designer : KAT/GP
 Job Number : 37519-0238.002.7805
 Model Name : BU 828054 / South Windsor- Rt 5

Apr 23, 2019
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 Checked By: _____

Envelope Joint Reactions

Joint	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
No Data to Print ...												

Envelope Member Section Forces

Member	Sec	Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome... LC
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Envelope AISC ASD Steel Code Checks

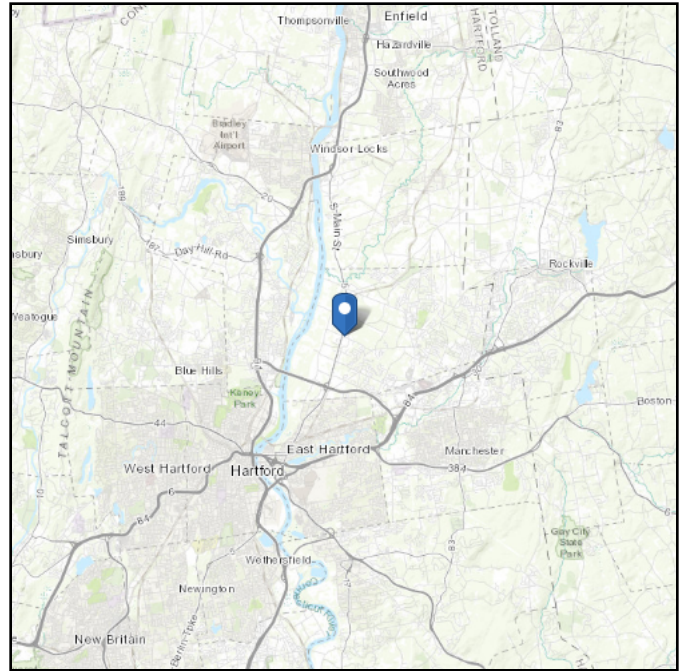
Member	Shape	Code C...	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	Fa [ksi]	Ft [ksi]	Fb y-y [...]	Fb z-z [...]	Cb	Cmy	Cmz	ASD Eqn
No Data to Print ...																

ASCE 7 Hazards Report

Address:
300 Governors Hwy
South Windsor, Connecticut
06074

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

Elevation: 70.11 ft (NAVD 88)
Latitude: 41.832274
Longitude: -72.603035



Wind

Results:

Wind Speed:	122 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	100 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: Wed Jan 16 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.

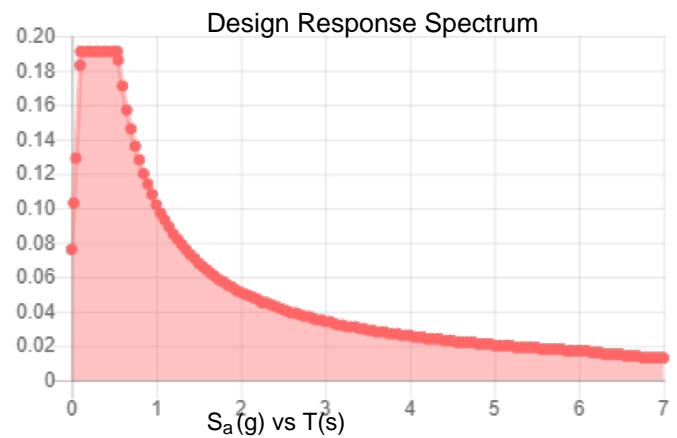
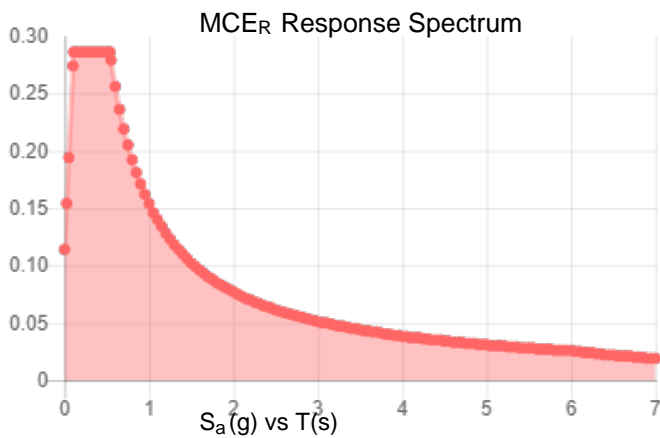
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.179	S_{DS} :	0.191
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.089
S_{MS} :	0.286	PGA _M :	0.143
S_{M1} :	0.154	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Wed Jan 16 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: Wed Jan 16 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: February 11, 2019

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 Modification Report

Carrier Designation: AT&T Equipment Change-Out
Carrier Site Number: 10035346
Carrier Site Name: South Windsor West

Crown Castle Designation: Crown Castle BU Number: 828054
Crown Castle Site Name: South Windsor/Rt 5
Crown Castle JDE Job Number: 553222
Crown Castle Order Number: 475138 Rev.0

Engineering Firm Designation: Infinigy Report Designation: 1039-A0002-B

Site Data: 300 Governors Highway, South Windsor, Hartford County, CT, 06074
Latitude 41°50'0.40" Longitude 72°36'11.00"

Structure Information: Tower Height & Type: 165.0 ft Monopole
Mount Elevation: 156.0 ft
Mount Type: 14.0 ft Platform

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:

Platform

Sufficient

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph from the 2015 IBC/2018 Connecticut State Building Code. Exposure Category C and Risk Category II were used in this analysis.

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

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

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



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9) APPENDIX E

Mount Modification Design Drawings

1) INTRODUCTION

This mount is a existing 14.0 ft Platform mapped in TIA Inspection, dated March 27 2018. This mount is installed at the 156.0 ft elevation on 3 sector(s) of the 165.0 ft Monopole.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC/2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.7 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount/Modification Detail	
156.0	162.0	4	CCI	DTMABP7819VG12A	Platform w/Site Pro 1 PRK-1245	
		6	Powerwave	7770		
	158.0	1	CCI	HPA-65R-BUU-H6		
		2	CCI	HPA-65R-BUU-H8		
		3	Ericsson	RRUS-12 w/A2		
	156.0	156.0	2	CCI		DTMABP7819VG12A
			3	Ericsson		RRUS-11
		156.0	1	Raycap		DC6-48-60-18-8F

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T	475138, Rev. 0	CCI Sites
Structural Analysis	Paul J. Ford & Co.	01-17-19	CCI Sites
Mount Photos	TIA Inspection	03-27-18	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.

Infinigy Wind Load Calculator (Version 3.0.2), a tool internally developed by Infinigy Engineering, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. In addition, Infinigy Bolt Calculator (Version 1.0.0) was used to calculate member stresses for round structural members for various loading cases, when applicable. Selected output from the analysis is included in Appendix B "Software Input Calculations".

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

3.2) Assumptions

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

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3(a) - Mount Component Stresses vs. Capacity (Platform)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Stand-off	M23	156.0	46.0	Pass
	Horizontal	M1		42.3	Pass
	Mount Pipe	MP2		43.2	Pass
	Bolts	--		31.7	Pass

Structure Rating (max from all components) =	46.0%
---	--------------

Notes:

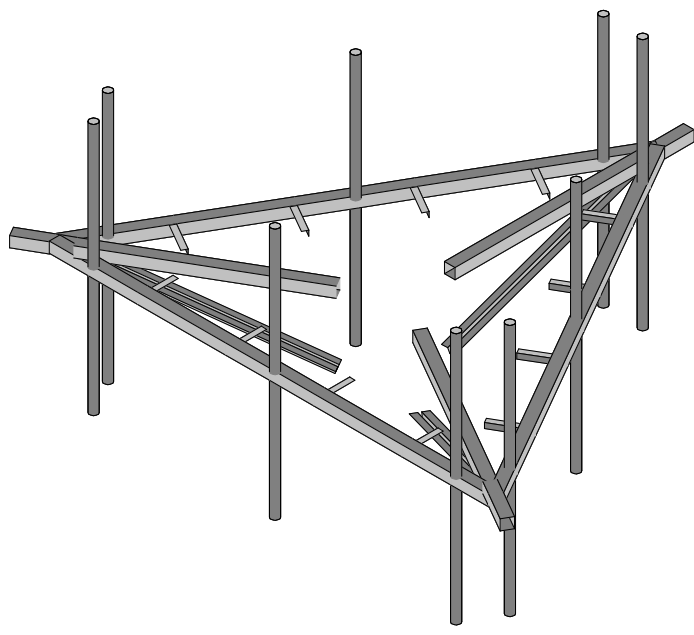
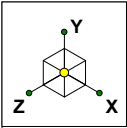
- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) All sectors are typical

4.1) Recommendations

The Mount Platform has sufficient capacity to support the proposed loading after the following modifications are installed:

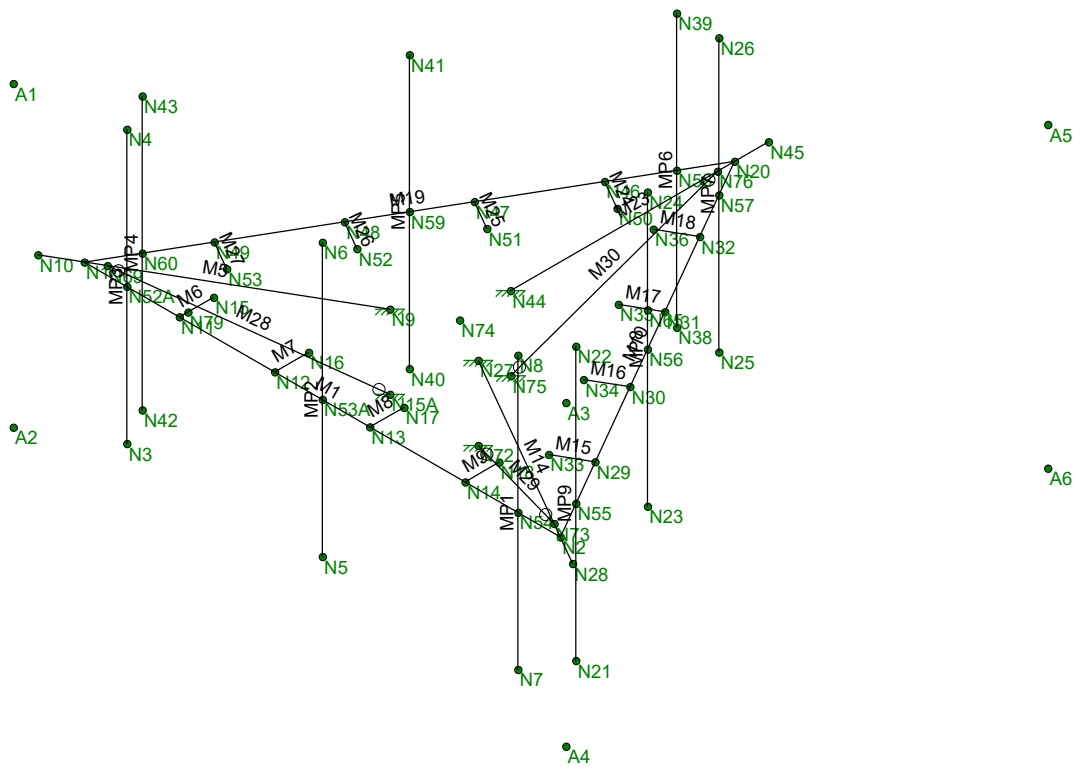
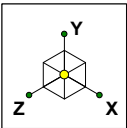
- Install (1) Site Pro 1 PRK-1245 reinforcement kit per manufactures specifications.

**APPENDIX A
WIRE FRAME AND RENDERED MODELS**

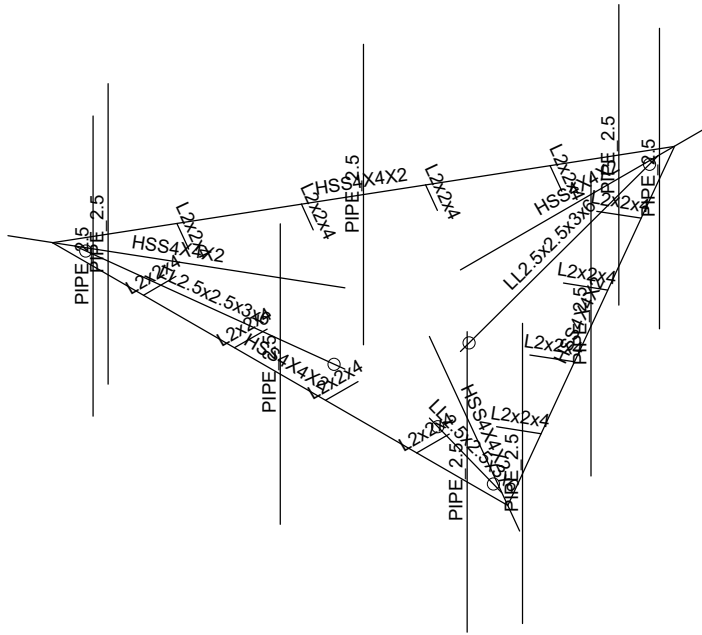
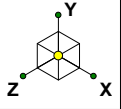


Envelope Only Solution

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Infinigy Engineering, PLLC.	828054	Wireframe
IP		Feb 6, 2019 at 12:17 PM
1039-A0002-B		828054_Proposed.r3d



Infinigy Engineering, PLLC.

IP

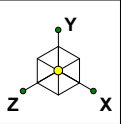
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828054

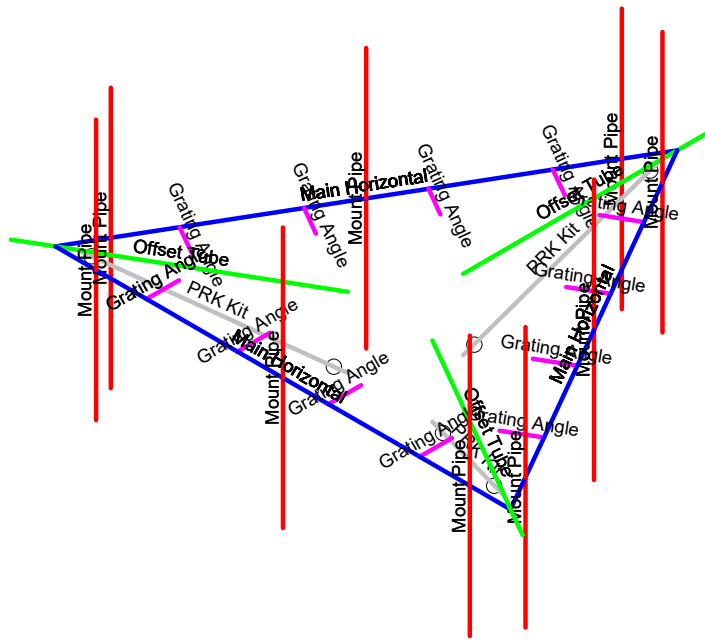
Member Shapes

Feb 5, 2019 at 2:56 PM

828054_Proposed.r3d



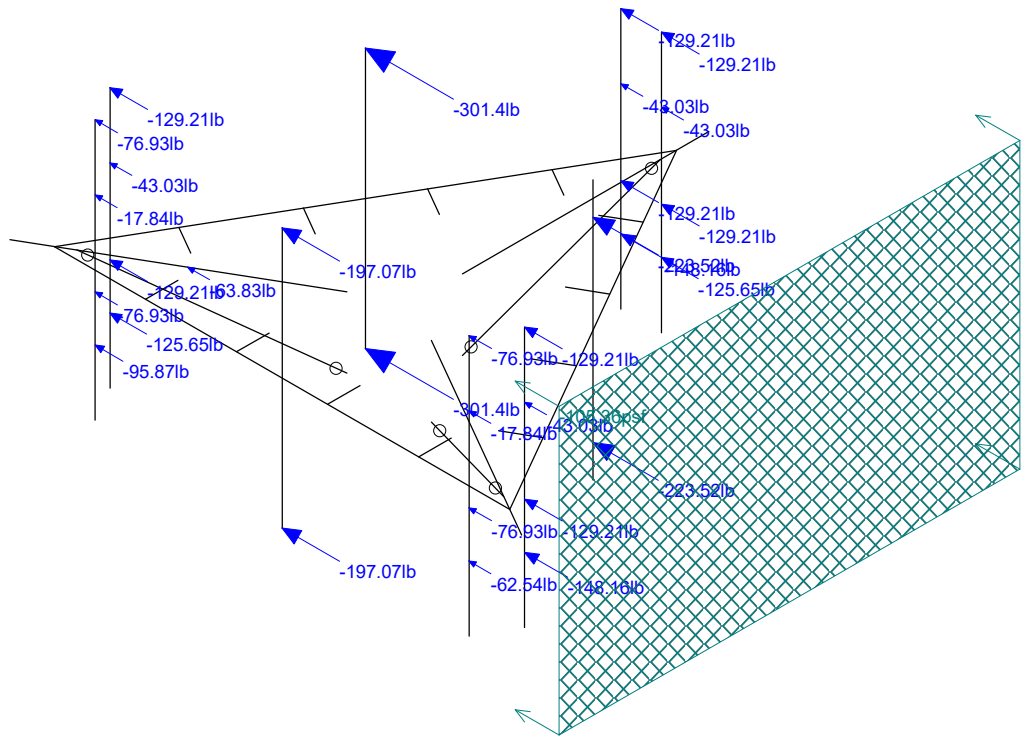
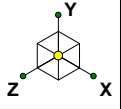
Section Sets	
█	Main Horizontal
█	Offset Tube
█	Mount Pipe
█	PRK Kit
█	Grating Angle



Infinigy Engineering, PLLC.
 IP
 1039-A0002-B

828054

Section Sets
 Feb 5, 2019 at 2:56 PM
 828054_Proposed.r3d



Loads: BLC 3, Wind Load AZI 090

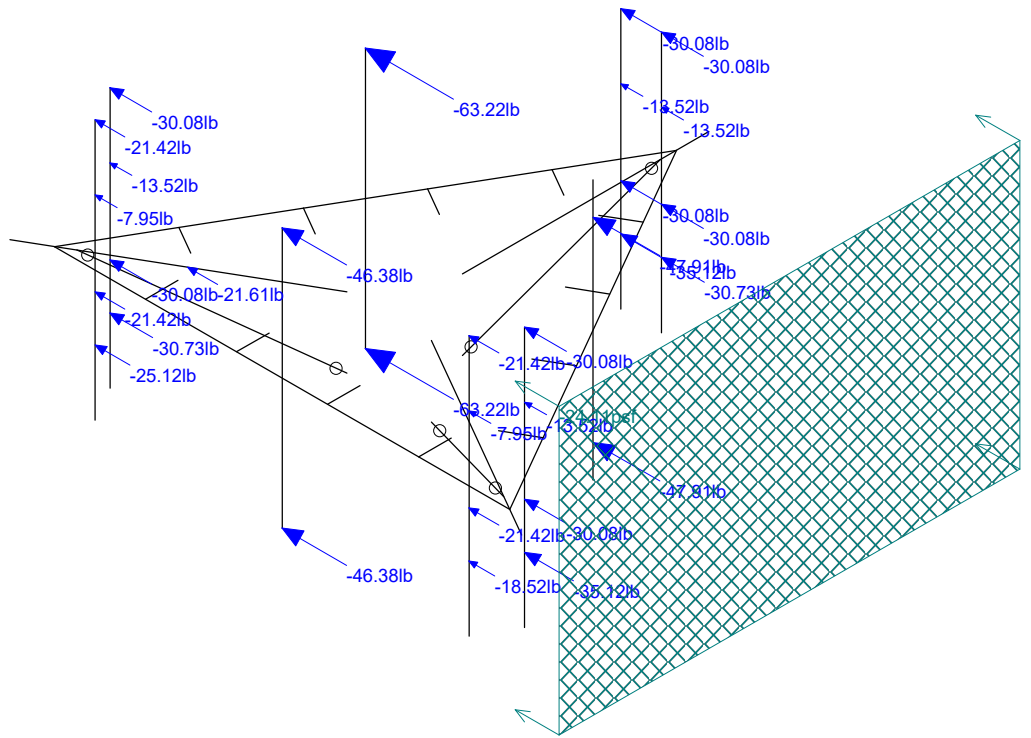
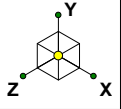
Infinigy Engineering, PLLC.
 IP
 1039-A0002-B

828054

Wind Load 90

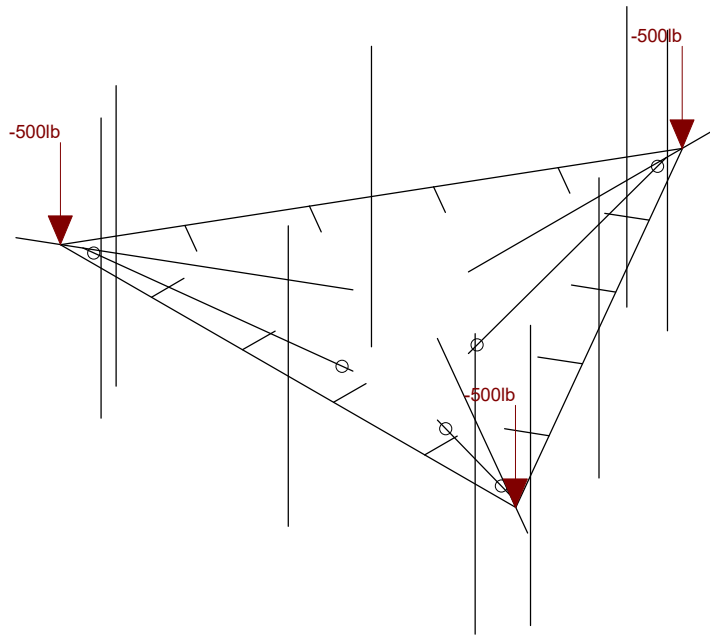
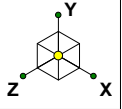
Feb 5, 2019 at 2:57 PM

828054_Proposed.r3d



Loads: BLC 6, Wind + Ice Load AZI 090

Infinigy Engineering, PLLC.	828054	Wind + Ice Load 90
IP		Feb 5, 2019 at 2:57 PM
1039-A0002-B		828054_Proposed.r3d



Loads: BLC 7, Service Live 1

Infinigy Engineering, PLLC.
IP
1039-A0002-B

828054

Service Load

Feb 5, 2019 at 2:58 PM

828054_Proposed.r3d

APPENDIX B
SOFTWARE INPUT CALCULATIONS

Site Name: South Windsor
 Client: Crown Castle
 Carrier: AT&T
 Engineer: IP
 Date: 2/5/2019



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 - Platform
 Number of Sectors: 3
 Structure Shape 1: Flat

Rooftop Inputs:

Rooftop Wind Speed-Up?: No

Wind Loading Inputs:

Design Wind Velocity: 125 mph (ultimate 3-second gust)
 Wind Centerline 1 (z₁): 156.0 ft
 Side Face Angle (θ): 60 degrees
 Exposure Category: C
 Topographic Category: 1

Wind with No Ice		
q _z (psf)	Gh	F _{ST} (psf)
52.68	1.00	105.36

Wind with Ice		
q _z (psf)	Gh	F _{ST} (psf)
8.43	1.00	24.11

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)
CCI HPA-65R-BUU-H6	156.0	1	1.00	Flat	Flat	52.68	9.49	499.72	289.01	341.69	447.04
CCI HPA-65R-BUU-H8	156.0	2	1.00	Flat	Flat	52.68	12.76	672.34	394.15	463.70	602.80
Powerwave 7770	156.0	3	1.00	Flat	Flat	52.68	5.57	293.28	153.86	188.72	258.43
Powerwave 7770	156.0	3	1.00	Flat	Flat	52.68	5.57	293.28	153.86	188.72	258.43
Ericsson RRUS-11	156.0	3	1.00	Flat	Flat	52.68	2.78	146.69	62.54	83.58	125.65
Ericsson RRUS 12 w/ A2	156.0	3	1.00	Flat	Flat	52.68	3.14	165.60	95.87	113.30	148.16
CCI DTMABP7819VG12A	156.0	3	1.00	Flat	Flat	52.68	0.98	51.43	17.84	26.24	43.03
CCI DTMABP7819VG12A	156.0	3	1.00	Flat	Flat	52.68	0.98	51.43	17.84	26.24	43.03
Raycap DC6-48-60-18-8F	156.0	1	1.00	Round	Round	52.68	1.21	63.83	63.83	63.83	63.83

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	N1	N2			Main Horizontal	Beam	Tube	A500 Gr.46	Typical
2	MP3	N3	N4			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
3	MP2	N5	N6			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
4	MP1	N7	N8			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
5	M5	N10	N9			Offset Tube	Beam	Tube	A500 Gr.46	Typical
6	M6	N11	N15		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N12	N16		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N13	N17		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N14	N18		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N2	N20			Main Horizontal	Beam	Tube	A500 Gr.46	Typical
11	MP9	N21	N22			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
12	MP8	N23	N24			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
13	MP7	N25	N26			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
14	M14	N28	N27			Offset Tube	Beam	Tube	A500 Gr.46	Typical
15	M15	N29	N33		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
16	M16	N30	N34		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N31	N35		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
18	M18	N32	N36		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N20	N1			Main Horizontal	Beam	Tube	A500 Gr.46	Typical
20	MP6	N38	N39			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
21	MP5	N40	N41			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
22	MP4	N42	N43			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
23	M23	N45	N44			Offset Tube	Beam	Tube	A500 Gr.46	Typical
24	M24	N46	N50		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
25	M25	N47	N51		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
26	M26	N48	N52		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
27	M27	N49	N53		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N69	N15A			PRK Kit	Beam	Double Angle (...)	A36 Gr.36	Typical
29	M29	N73	N72			PRK Kit	Beam	Double Angle (...)	A36 Gr.36	Typical
30	M30	N76	N75			PRK Kit	Beam	Double Angle (...)	A36 Gr.36	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	Hot Rolled Steel				
2	A36 Gr.36	L2x2x4	12	144	38.5
3	A36 Gr.36	LL2.5x2.5x3x6	3	232.5	118.7
4	A500 Gr.46	HSS4X4X2	6	777	390
5	A53 Gr. B	PIPE 2.5	9	864	394.5
6	Total HR Steel		30	2017.5	941.6

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...)	Surface(...)
1	Self Weight	DL		-1			31		3
2	Wind Load AZI 000	WLZ					31		1
3	Wind Load AZI 090	WLX					31		1
4	Ice Weight	OL1					31	30	3
5	Wind + Ice Load AZI 000	OL2					31		1
6	Wind + Ice Load AZI 090	OL3					31		1
7	Service Live 1	LL				3			
8	BLC 1 Transient Area Loads	None						60	
9		None						1	
10		None						1	
11		None						1	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me... Surface(...
12	BLC 2 Transient Area Loads	None						25
13	BLC 3 Transient Area Loads	None						29
14	BLC 4 Transient Area Loads	None						60
15	BLC 5 Transient Area Loads	None						25
16	BLC 6 Transient Area Loads	None						29

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								
20	0.9D + 1W AZI 180	Yes	Y		DL	.9	WLZ	-1										
21	0.9D + 1W AZI 210	Yes	Y		DL	.9	WLZ	-.866	WLX	-.5								
22	0.9D + 1W AZI 240	Yes	Y		DL	.9	WLZ	-.5	WLX	-.866								
23	0.9D + 1W AZI 270	Yes	Y		DL	.9			WLX	-1								
24	0.9D + 1W AZI 300	Yes	Y		DL	.9	WLZ	.5	WLX	-.866								
25	0.9D + 1W AZI 330	Yes	Y		DL	.9	WLZ	.866	WLX	-.5								
26	1.2D + 1.0Di	Yes	Y		DL	1.2	OL1	1										
27	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	1								
28	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	.5						
29	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	.866						
30	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1			OL3	1						
31	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	.866						
32	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	.5						
33	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	-1								
34	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	-.5						
35	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	-.8...						
36	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1			OL3	-1						
37	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	-.8...						
38	1.2D + 1.0Di + 1.0Wi AZI ...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	-.5						
39	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	.058								
40	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	.05	WLX	.029						
41	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	.029	WLX	.05						
42	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5			WLX	.058						
43	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	-.029	WLX	.05						
44	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	-.05	WLX	.029						
45	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	-.058								
46	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	-.05	WLX	-.0...						
47	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	-.029	WLX	-.05						

Load Combinations (Continued)

	Description	Solve	PDelta	S...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC
48	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5				WLX	-0.0		
49	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	.029		WLX	-0.05		
50	1.2D + 1.5L + 1.0WL (30 ...	Yes	Y		DL	1.2	LL	1.5	WLZ	.05		WLX	-0.0		

Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
1	N9	max	4489.249	6	725.109	30	2100.384	24	-14.304	15	1534.721	14	-179.861	22
2		min	-3193.548	24	162.042	22	-2871.034	7	-801.546	34	-1549.902	20	-1327.377	29
3	N27	max	3175.24	16	631.49	36	2076.836	16	1.556	25	1208.592	21	1160.771	37
4		min	-4361.289	10	145.504	19	-2780.443	10	-735.179	32	-1192.092	15	151.829	18
5	N44	max	967.672	5	633.144	27	5036.911	2	1344.267	27	2578.759	23	189.292	23
6		min	-966.339	11	139.231	20	-3657.546	20	223.578	20	-2582.916	17	-216.909	5
7	N15A	max	-1029.007	25	2127.494	31	2894.276	30	.89	3	.373	9	.524	9
8		min	-5004.683	31	421.687	24	583.391	23	-.908	9	-.366	3	-.514	3
9	N72	max	4772.038	35	2032.107	35	2759.91	36	.909	25	.374	25	.525	25
10		min	978.495	16	400.02	16	551.945	17	-.942	7	-.387	7	-.544	7
11	N75	max	66.668	17	2030.313	27	-1147.938	20	0	50	.249	5	.624	23
12		min	-66.673	23	409.928	20	-5508.399	27	0	1	-.222	23	-.7	5
13	Totals:	max	7471.11	17	8114.431	38	7568.817	14						
14		min	-7471.11	11	1926.586	14	-7568.817	8						

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

Member	Shape	Code Check	Loc[in]	LC	Shear	Loc[...]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn	
1	M23	HSS4X4X2	.460	14.368	5	.125	16.7...	y	30	58567.2...	73278	8240.413	8240.413	2...	H1-1b
2	MP2	PIPE 2.5	.432	48	2	.029	48		2	30038.4...	50715	3596.25	3596.25	1...	H1-1b
3	M5	HSS4X4X2	.427	14.368	28	.121	16.7...	y	34	58567.2...	73278	8240.413	8240.413	2...	H1-1b
4	M1	HSS4X4X2	.423	0	7	.110	168	z	2	34141.6...	73278	8240.413	8240.413	1...	H1-1b
5	M14	HSS4X4X2	.418	14.368	27	.123	16.7...	y	32	58567.2...	73278	8240.413	8240.413	2...	H1-1b
6	MP5	PIPE 2.5	.393	48	11	.026	48		11	30038.4...	50715	3596.25	3596.25	1...	H1-1b
7	M19	HSS4X4X2	.378	84	4	.092	168	z	11	34141.7...	73278	8240.413	8240.413	1...	H1-1b
8	M10	HSS4X4X2	.340	167.999	13	.091	167...	z	6	34141.9...	73278	8240.413	8240.413	1...	H1-1b
9	MP3	PIPE 2.5	.250	48	2	.027	48		2	30038.4...	50715	3596.25	3596.25	1.4	H1-1b
10	MP1	PIPE 2.5	.249	48	2	.026	48		2	30038.4...	50715	3596.25	3596.25	1...	H1-1b
11	MP8	PIPE 2.5	.243	48	5	.021	48		5	30038.4...	50715	3596.25	3596.25	1...	H1-1b
12	MP9	PIPE 2.5	.226	48	5	.025	48		5	30038.4...	50715	3596.25	3596.25	1...	H1-1b
13	MP6	PIPE 2.5	.226	48	5	.025	48		5	30038.4...	50715	3596.25	3596.25	1...	H1-1b
14	MP4	PIPE 2.5	.225	48	11	.023	48		11	30038.4...	50715	3596.25	3596.25	1...	H1-1b
15	MP7	PIPE 2.5	.225	48	11	.023	48		11	30038.4...	50715	3596.25	3596.25	1...	H1-1b
16	M28	LL2.5x2.5x3x6	.180	77.492	31	.008	0	z	9	34265.4...	58320	4643.061	2533.256	1...	H1-1b*
17	M29	LL2.5x2.5x3x6	.171	77.492	35	.009	0	z	7	34265.4...	58320	4643.061	2533.256	1...	H1-1b*
18	M30	LL2.5x2.5x3x6	.171	77.492	27	.007	0	z	5	34265.4...	58320	4643.061	2533.256	1	H1-1b*
19	M8	L2x2x4	.032	0	36	.004	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
20	M7	L2x2x4	.032	0	36	.004	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
21	M16	L2x2x4	.031	0	27	.004	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
22	M17	L2x2x4	.031	0	27	.004	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
23	M26	L2x2x4	.031	0	33	.004	0	z	29	29075.8...	30585.6	690.934	1576.849	2...	H2-1
24	M25	L2x2x4	.031	0	33	.004	0	z	28	29075.9...	30585.6	690.934	1576.849	2...	H2-1
25	M9	L2x2x4	.022	0	36	.003	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
26	M6	L2x2x4	.022	0	36	.003	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
27	M15	L2x2x4	.022	0	27	.003	0	z	38	29075.9...	30585.6	690.934	1576.849	2...	H2-1
28	M18	L2x2x4	.022	0	27	.003	0	z	38	29075.99	30585.6	690.934	1576.849	2...	H2-1
29	M24	L2x2x4	.022	0	33	.003	0	z	28	29075.9...	30585.6	690.934	1576.849	2...	H2-1
30	M27	L2x2x4	.022	0	33	.003	0	z	29	29075.8...	30585.6	690.934	1576.849	2...	H2-1

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	Main Horizontal	HSS4X4X2	Beam	Tube	A500 Gr.46	Typical	1.77	4.4	4.4	6.91
2	Offset Tube	HSS4X4X2	Beam	Tube	A500 Gr.46	Typical	1.77	4.4	4.4	6.91
3	Mount Pipe	PIPE 2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
4	PRK Kit	LL2.5x2.5x3x6	Beam	Double Angle (3/4 Gap)	A36 Gr.36	Typical	1.8	3.09	1.07	.023
5	Grating Angle	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021

Joint Boundary Conditions

	Joint Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N27	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N44	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N15A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N72	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N75	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	MP3						Yes				None
3	MP2						Yes				None
4	MP1						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	MP9						Yes				None
12	MP8						Yes				None
13	MP7						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	M18						Yes				None
19	M19						Yes				None
20	MP6						Yes				None
21	MP5						Yes				None
22	MP4						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28	BenPIN	BenPIN				Yes	Default			None
29	M29	BenPIN	BenPIN				Yes	Default			None
30	M30	BenPIN	BenPIN				Yes	Default			None

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm (1/E...)	Density[lb/f...	Yield[psi]	Ry	Fu[psi]	Rt
1	A36 Gr.36	2.9e+7	1.115e+7	.3	.65	490	36000	1.5	58000	1.2
2	A572 Gr.50	2.9e+7	1.115e+7	.3	.65	490	50000	1.1	58000	1.2
3	A992	2.9e+7	1.115e+7	.3	.65	490	50000	1.1	58000	1.2
4	A500 Gr.42	2.9e+7	1.115e+7	.3	.65	490	42000	1.3	58000	1.1
5	A500 Gr.46	2.9e+7	1.115e+7	.3	.65	490	46000	1.2	58000	1.1
6	A53 Gr. B	2.9e+7	1.115e+7	.3	.65	490	35000	1.5	58000	1.2

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N1	L	Y	-500
2	N2	L	Y	-500
3	N20	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP2	Y	-36.5	0
2	MP1	Y	-17.5	41
3	MP3	Y	-17.5	41
4	MP1	Y	-50.71	24
5	MP3	Y	-80	24
6	MP1	Y	-19.18	72
7	MP3	Y	-19.18	72
8	M5	Y	-32.8	48
9	MP2	Y	-36.5	96
10	MP1	Y	-17.5	96
11	MP3	Y	-17.5	96
12	MP5	Y	-36.5	0
13	MP4	Y	-17.5	41
14	MP6	Y	-17.5	41
15	MP4	Y	-50.71	24
16	MP6	Y	-80	24
17	MP4	Y	-19.18	72
18	MP6	Y	-19.18	72
19	MP5	Y	-36.5	96
20	MP4	Y	-17.5	96
21	MP6	Y	-17.5	96
22	MP8	Y	-25.5	12
23	MP7	Y	-17.5	41
24	MP9	Y	-17.5	41
25	MP7	Y	-50.71	24
26	MP9	Y	-80	24
27	MP7	Y	-19.18	72
28	MP9	Y	-19.18	72
29	MP8	Y	-25.5	84
30	MP7	Y	-17.5	96
31	MP9	Y	-17.5	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP2	Z	-336.17	0
2	MP1	Z	-146.64	41
3	MP3	Z	-146.64	41
4	MP1	Z	-146.69	24

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	MP3	Z	-165.6	24
6	MP1	Z	-51.43	72
7	MP3	Z	-51.43	72
8	M5	Z	-63.83	48
9	MP2	Z	-336.17	96
10	MP1	Z	-146.64	96
11	MP3	Z	-146.64	96
12	MP5	Z	-231.85	0
13	MP4	Z	-94.36	41
14	MP6	Z	-94.36	41
15	MP4	Z	-83.58	24
16	MP6	Z	-113.3	24
17	MP4	Z	-26.24	72
18	MP6	Z	-26.24	72
19	MP5	Z	-231.85	96
20	MP4	Z	-94.36	96
21	MP6	Z	-94.36	96
22	MP8	Z	-170.84	12
23	MP7	Z	-94.36	41
24	MP9	Z	-94.36	41
25	MP7	Z	-83.58	24
26	MP9	Z	-113.3	24
27	MP7	Z	-26.24	72
28	MP9	Z	-26.24	72
29	MP8	Z	-170.84	84
30	MP7	Z	-94.36	96
31	MP9	Z	-94.36	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-197.07	0
2	MP1	X	-76.93	41
3	MP3	X	-76.93	41
4	MP1	X	-62.54	24
5	MP3	X	-95.87	24
6	MP1	X	-17.84	72
7	MP3	X	-17.84	72
8	M5	X	-63.83	48
9	MP2	X	-197.07	96
10	MP1	X	-76.93	96
11	MP3	X	-76.93	96
12	MP5	X	-301.4	0
13	MP4	X	-129.21	41
14	MP6	X	-129.21	41
15	MP4	X	-125.65	24
16	MP6	X	-148.16	24
17	MP4	X	-43.03	72
18	MP6	X	-43.03	72
19	MP5	X	-301.4	96
20	MP4	X	-129.21	96
21	MP6	X	-129.21	96
22	MP8	X	-223.52	12
23	MP7	X	-129.21	41
24	MP9	X	-129.21	41
25	MP7	X	-125.65	24
26	MP9	X	-148.16	24

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
27	MP7	X	-43.03	72
28	MP9	X	-43.03	72
29	MP8	X	-223.52	84
30	MP7	X	-129.21	96
31	MP9	X	-129.21	96

Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP2	Y	-166.63	0
2	MP1	Y	-79.6	41
3	MP3	Y	-79.6	41
4	MP1	Y	-101.27	24
5	MP3	Y	-129.54	24
6	MP1	Y	-40.64	72
7	MP3	Y	-40.64	72
8	M5	Y	-104.7	48
9	MP2	Y	-166.63	96
10	MP1	Y	-79.6	96
11	MP3	Y	-79.6	96
12	MP5	Y	-166.63	0
13	MP4	Y	-79.6	41
14	MP6	Y	-79.6	41
15	MP4	Y	-101.27	24
16	MP6	Y	-129.54	24
17	MP4	Y	-40.64	72
18	MP6	Y	-40.64	72
19	MP5	Y	-166.63	96
20	MP4	Y	-79.6	96
21	MP6	Y	-79.6	96
22	MP8	Y	-132.76	12
23	MP7	Y	-79.6	41
24	MP9	Y	-79.6	41
25	MP7	Y	-101.27	24
26	MP9	Y	-129.54	24
27	MP7	Y	-40.64	72
28	MP9	Y	-40.64	72
29	MP8	Y	-132.76	84
30	MP7	Y	-79.6	96
31	MP9	Y	-79.6	96

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP2	Z	-68.84	0
2	MP1	Z	-32.97	41
3	MP3	Z	-32.97	41
4	MP1	Z	-34.8	24
5	MP3	Z	-38.45	24
6	MP1	Z	-15.38	72
7	MP3	Z	-15.38	72
8	M5	Z	-37.04	48
9	MP2	Z	-68.84	96
10	MP1	Z	-32.97	96
11	MP3	Z	-32.97	96
12	MP5	Z	-51.99	0
13	MP4	Z	-24.31	41
14	MP6	Z	-24.31	41

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP4	Z	-22.59	24
16	MP6	Z	-28.45	24
17	MP4	Z	-9.81	72
18	MP6	Z	-9.81	72
19	MP5	Z	-51.99	96
20	MP4	Z	-24.31	96
21	MP6	Z	-24.31	96
22	MP8	Z	-39.28	12
23	MP7	Z	-24.31	41
24	MP9	Z	-24.31	41
25	MP7	Z	-22.59	24
26	MP9	Z	-28.45	24
27	MP7	Z	-9.81	72
28	MP9	Z	-9.81	72
29	MP8	Z	-39.28	84
30	MP7	Z	-24.31	96
31	MP9	Z	-24.31	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-46.38	0
2	MP1	X	-21.42	41
3	MP3	X	-21.42	41
4	MP1	X	-18.52	24
5	MP3	X	-25.12	24
6	MP1	X	-7.95	72
7	MP3	X	-7.95	72
8	M5	X	-21.61	48
9	MP2	X	-46.38	96
10	MP1	X	-21.42	96
11	MP3	X	-21.42	96
12	MP5	X	-63.22	0
13	MP4	X	-30.08	41
14	MP6	X	-30.08	41
15	MP4	X	-30.73	24
16	MP6	X	-35.12	24
17	MP4	X	-13.52	72
18	MP6	X	-13.52	72
19	MP5	X	-63.22	96
20	MP4	X	-30.08	96
21	MP6	X	-30.08	96
22	MP8	X	-47.91	12
23	MP7	X	-30.08	41
24	MP9	X	-30.08	41
25	MP7	X	-30.73	24
26	MP9	X	-35.12	24
27	MP7	X	-13.52	72
28	MP9	X	-13.52	72
29	MP8	X	-47.91	84
30	MP7	X	-30.08	96
31	MP9	X	-30.08	96

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	-18.489	-18.489	0	%100
2	MP3	Y	-11.853	-11.853	0	%100
3	MP2	Y	-11.853	-11.853	0	%100
4	MP1	Y	-11.853	-11.853	0	%100
5	M5	Y	-18.489	-18.489	0	%100
6	M6	Y	-12.311	-12.311	0	%100
7	M7	Y	-12.311	-12.311	0	%100
8	M8	Y	-12.311	-12.311	0	%100
9	M9	Y	-12.311	-12.311	0	%100
10	M10	Y	-18.489	-18.489	0	%100
11	MP9	Y	-11.853	-11.853	0	%100
12	MP8	Y	-11.853	-11.853	0	%100
13	MP7	Y	-11.853	-11.853	0	%100
14	M14	Y	-18.489	-18.489	0	%100
15	M15	Y	-12.311	-12.311	0	%100
16	M16	Y	-12.311	-12.311	0	%100
17	M17	Y	-12.311	-12.311	0	%100
18	M18	Y	-12.311	-12.311	0	%100
19	M19	Y	-18.489	-18.489	0	%100
20	MP6	Y	-11.853	-11.853	0	%100
21	MP5	Y	-11.853	-11.853	0	%100
22	MP4	Y	-11.853	-11.853	0	%100
23	M23	Y	-18.489	-18.489	0	%100
24	M24	Y	-12.311	-12.311	0	%100
25	M25	Y	-12.311	-12.311	0	%100
26	M26	Y	-12.311	-12.311	0	%100
27	M27	Y	-12.311	-12.311	0	%100
28	M28	Y	-13.856	-13.856	0	%100
29	M29	Y	-13.856	-13.856	0	%100
30	M30	Y	-13.856	-13.856	0	%100

Member Distributed Loads (BLC 8 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/f...	Start Location[in.%]	End Location[in.%]
1	M1	Y	-2.656	-7.656	39.2	44.8
2	M1	Y	-7.656	-10.156	44.8	50.4
3	M1	Y	-10.156	-7.656	50.4	56
4	M1	Y	-7.656	-2.656	56	61.6
5	M1	Y	-2.656	-.156	61.6	67.2
6	M1	Y	-.156	-2.656	67.2	72.8
7	M1	Y	-2.656	-7.656	72.8	78.4
8	M1	Y	-7.656	-10.156	78.4	84
9	M1	Y	-10.156	-7.656	84	89.6
10	M1	Y	-7.656	-2.656	89.6	95.2
11	M1	Y	-2.656	-.156	95.2	100.8
12	M1	Y	-.156	-2.656	100.8	106.4
13	M1	Y	-2.656	-7.656	106.4	112
14	M1	Y	-7.656	-10.156	112	117.6
15	M1	Y	-10.156	-7.656	117.6	123.2
16	M1	Y	-7.656	-2.656	123.2	128.8
17	M6	Y	-7	-7	0	12
18	M7	Y	-14	-14	0	12
19	M8	Y	-14	-14	0	12
20	M9	Y	-7	-7	1.776e-15	12
21	M19	Y	-2.656	-7.656	39.2	44.8
22	M19	Y	-7.656	-10.156	44.8	50.4

Member Distributed Loads (BLC 8 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
23	M19	Y	-10.156	-7.656	50.4	56
24	M19	Y	-7.656	-2.656	56	61.6
25	M19	Y	-2.656	-.156	61.6	67.2
26	M19	Y	-.156	-2.656	67.2	72.8
27	M19	Y	-2.656	-7.656	72.8	78.4
28	M19	Y	-7.656	-10.157	78.4	84
29	M19	Y	-10.157	-7.656	84	89.6
30	M19	Y	-7.656	-2.656	89.6	95.2
31	M19	Y	-2.656	-.156	95.2	100.8
32	M19	Y	-.156	-2.656	100.8	106.4
33	M19	Y	-2.656	-7.657	106.4	112
34	M19	Y	-7.657	-10.157	112	117.6
35	M19	Y	-10.157	-7.657	117.6	123.2
36	M19	Y	-7.657	-2.656	123.2	128.8
37	M24	Y	-7	-7	0	12
38	M25	Y	-14	-14	0	12
39	M26	Y	-14	-14	0	12
40	M27	Y	-7	-7	8.26e-6	12
41	M10	Y	-2.656	-7.656	39.2	44.8
42	M10	Y	-7.656	-10.156	44.8	50.4
43	M10	Y	-10.156	-7.656	50.4	56
44	M10	Y	-7.656	-2.656	56	61.6
45	M10	Y	-2.656	-.156	61.6	67.2
46	M10	Y	-.156	-2.656	67.2	72.8
47	M10	Y	-2.656	-7.656	72.8	78.4
48	M10	Y	-7.656	-10.156	78.4	84
49	M10	Y	-10.156	-7.656	84	89.6
50	M10	Y	-7.656	-2.656	89.6	95.2
51	M10	Y	-2.656	-.156	95.2	100.8
52	M10	Y	-.156	-2.656	100.8	106.4
53	M10	Y	-2.656	-7.656	106.4	112
54	M10	Y	-7.656	-10.156	112	117.6
55	M10	Y	-10.156	-7.656	117.6	123.2
56	M10	Y	-7.656	-2.656	123.2	128.8
57	M15	Y	-7	-7	0	12
58	M16	Y	-14	-14	0	12
59	M17	Y	-14	-14	0	12
60	M18	Y	-7	-7	3.883e-7	12

Member Distributed Loads (BLC 9 :)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Y	0	0	0	0

Member Distributed Loads (BLC 10 :)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Y	0	0	0	0

Member Distributed Loads (BLC 11 :)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Y	0	0	0	0

Member Distributed Loads (BLC 12 : 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	-35.12	-35.12	0	168
2	MP3	Z	-25.243	-25.243	0	96

Member Distributed Loads (BLC 12 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
3	MP2	Z	-25.243	-25.243	0	96
4	MP1	Z	-25.243	-25.243	0	96
5	M5	Z	-30.415	-30.415	0	91
6	M10	Z	-17.56	-17.56	0	167.999
7	MP9	Z	-25.243	-25.243	0	96
8	MP8	Z	-25.243	-25.243	0	96
9	MP7	Z	-25.243	-25.243	0	96
10	M14	Z	-30.415	-30.415	0	91
11	M15	Z	-15.207	-15.207	0	12
12	M16	Z	-15.207	-15.207	0	12
13	M17	Z	-15.207	-15.207	0	12
14	M18	Z	-15.207	-15.207	0	12
15	M19	Z	-17.56	-17.56	0	168
16	MP6	Z	-25.243	-25.243	0	96
17	MP5	Z	-25.243	-25.243	0	96
18	MP4	Z	-25.243	-25.243	0	96
19	M24	Z	-15.207	-15.207	0	12
20	M25	Z	-15.207	-15.207	0	12
21	M26	Z	-15.207	-15.207	0	12
22	M27	Z	-15.207	-15.207	0	12
23	M28	Z	-22.692	-22.692	0	77.492
24	M29	Z	-22.692	-22.692	0	77.492
25	M30	Z	-14.729	-14.729	0	77.492

Member Distributed Loads (BLC 13 : 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	MP3	X	-25.243	-25.243	0	96
2	MP2	X	-25.243	-25.243	0	96
3	MP1	X	-25.243	-25.243	0	96
4	M5	X	-17.56	-17.56	0	91
5	M6	X	-17.56	-17.56	0	12
6	M7	X	-17.56	-17.56	0	12
7	M8	X	-17.56	-17.56	0	12
8	M9	X	-17.56	-17.56	0	12
9	M10	X	-30.415	-30.415	0	167.999
10	MP9	X	-25.243	-25.243	0	96
11	MP8	X	-25.243	-25.243	0	96
12	MP7	X	-25.243	-25.243	0	96
13	M14	X	-17.56	-17.56	0	91
14	M15	X	-8.78	-8.78	0	12
15	M16	X	-8.78	-8.78	0	12
16	M17	X	-8.78	-8.78	0	12
17	M18	X	-8.78	-8.78	0	12
18	M19	X	-30.415	-30.415	0	168
19	MP6	X	-25.243	-25.243	0	96
20	MP5	X	-25.243	-25.243	0	96
21	MP4	X	-25.243	-25.243	0	96
22	M23	X	-35.12	-35.12	0	91
23	M24	X	-8.78	-8.78	0	12
24	M25	X	-8.78	-8.78	0	12
25	M26	X	-8.78	-8.78	0	12
26	M27	X	-8.78	-8.78	0	12
27	M28	X	-17.353	-17.353	0	77.492
28	M29	X	-17.353	-17.353	0	77.492
29	M30	X	-21.95	-21.95	0	77.492

Member Distributed Loads (BLC 14 : BLC 4 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
1	M1	Y	-1.588	-4.578	39.2	44.8
2	M1	Y	-4.578	-6.073	44.8	50.4
3	M1	Y	-6.073	-4.578	50.4	56
4	M1	Y	-4.578	-1.588	56	61.6
5	M1	Y	-1.588	-.093	61.6	67.2
6	M1	Y	-.093	-1.588	67.2	72.8
7	M1	Y	-1.588	-4.578	72.8	78.4
8	M1	Y	-4.578	-6.073	78.4	84
9	M1	Y	-6.073	-4.578	84	89.6
10	M1	Y	-4.578	-1.588	89.6	95.2
11	M1	Y	-1.588	-.093	95.2	100.8
12	M1	Y	-.093	-1.588	100.8	106.4
13	M1	Y	-1.588	-4.578	106.4	112
14	M1	Y	-4.578	-6.073	112	117.6
15	M1	Y	-6.073	-4.578	117.6	123.2
16	M1	Y	-4.578	-1.588	123.2	128.8
17	M6	Y	-4.186	-4.186	0	12
18	M7	Y	-8.372	-8.372	0	12
19	M8	Y	-8.372	-8.372	0	12
20	M9	Y	-4.186	-4.186	1.776e-15	12
21	M19	Y	-1.588	-4.578	39.2	44.8
22	M19	Y	-4.578	-6.074	44.8	50.4
23	M19	Y	-6.074	-4.579	50.4	56
24	M19	Y	-4.579	-1.588	56	61.6
25	M19	Y	-1.588	-.093	61.6	67.2
26	M19	Y	-.093	-1.588	67.2	72.8
27	M19	Y	-1.588	-4.579	72.8	78.4
28	M19	Y	-4.579	-6.074	78.4	84
29	M19	Y	-6.074	-4.579	84	89.6
30	M19	Y	-4.579	-1.588	89.6	95.2
31	M19	Y	-1.588	-.093	95.2	100.8
32	M19	Y	-.093	-1.588	100.8	106.4
33	M19	Y	-1.588	-4.579	106.4	112
34	M19	Y	-4.579	-6.074	112	117.6
35	M19	Y	-6.074	-4.579	117.6	123.2
36	M19	Y	-4.579	-1.589	123.2	128.8
37	M24	Y	-4.186	-4.186	0	12
38	M25	Y	-8.372	-8.372	0	12
39	M26	Y	-8.372	-8.372	0	12
40	M27	Y	-4.186	-4.186	8.26e-6	12
41	M10	Y	-1.588	-4.578	39.2	44.8
42	M10	Y	-4.578	-6.073	44.8	50.4
43	M10	Y	-6.073	-4.578	50.4	56
44	M10	Y	-4.578	-1.588	56	61.6
45	M10	Y	-1.588	-.093	61.6	67.2
46	M10	Y	-.093	-1.588	67.2	72.8
47	M10	Y	-1.588	-4.578	72.8	78.4
48	M10	Y	-4.578	-6.073	78.4	84
49	M10	Y	-6.073	-4.578	84	89.6
50	M10	Y	-4.578	-1.588	89.6	95.2
51	M10	Y	-1.588	-.093	95.2	100.8
52	M10	Y	-.093	-1.588	100.8	106.4
53	M10	Y	-1.588	-4.578	106.4	112
54	M10	Y	-4.578	-6.073	112	117.6
55	M10	Y	-6.073	-4.578	117.6	123.2
56	M10	Y	-4.578	-1.588	123.2	128.8
57	M15	Y	-4.186	-4.186	0	12

Member Distributed Loads (BLC 14 : BLC 4 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
58	M16	Y	-8.372	-8.372	0	12
59	M17	Y	-8.372	-8.372	0	12
60	M18	Y	-4.186	-4.186	3.883e-7	12

Member Distributed Loads (BLC 15 : 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	-8.037	-8.037	0	168
2	MP3	Z	-5.776	-5.776	0	96
3	MP2	Z	-5.776	-5.776	0	96
4	MP1	Z	-5.776	-5.776	0	96
5	M5	Z	-6.96	-6.96	0	91
6	M10	Z	-4.018	-4.018	0	167.999
7	MP9	Z	-5.776	-5.776	0	96
8	MP8	Z	-5.776	-5.776	0	96
9	MP7	Z	-5.776	-5.776	0	96
10	M14	Z	-6.96	-6.96	0	91
11	M15	Z	-3.48	-3.48	0	12
12	M16	Z	-3.48	-3.48	0	12
13	M17	Z	-3.48	-3.48	0	12
14	M18	Z	-3.48	-3.48	0	12
15	M19	Z	-4.018	-4.018	0	168
16	MP6	Z	-5.776	-5.776	0	96
17	MP5	Z	-5.776	-5.776	0	96
18	MP4	Z	-5.776	-5.776	0	96
19	M24	Z	-3.48	-3.48	0	12
20	M25	Z	-3.48	-3.48	0	12
21	M26	Z	-3.48	-3.48	0	12
22	M27	Z	-3.48	-3.48	0	12
23	M28	Z	-5.193	-5.193	0	77.492
24	M29	Z	-5.193	-5.193	0	77.492
25	M30	Z	-3.371	-3.371	0	77.492

Member Distributed Loads (BLC 16 : 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	MP3	X	-5.776	-5.776	0	96
2	MP2	X	-5.776	-5.776	0	96
3	MP1	X	-5.776	-5.776	0	96
4	M5	X	-4.018	-4.018	0	91
5	M6	X	-4.018	-4.018	0	12
6	M7	X	-4.018	-4.018	0	12
7	M8	X	-4.018	-4.018	0	12
8	M9	X	-4.018	-4.018	0	12
9	M10	X	-6.96	-6.96	0	167.999
10	MP9	X	-5.776	-5.776	0	96
11	MP8	X	-5.776	-5.776	0	96
12	MP7	X	-5.776	-5.776	0	96
13	M14	X	-4.018	-4.018	0	91
14	M15	X	-2.009	-2.009	0	12
15	M16	X	-2.009	-2.009	0	12
16	M17	X	-2.009	-2.009	0	12
17	M18	X	-2.009	-2.009	0	12
18	M19	X	-6.96	-6.96	0	168
19	MP6	X	-5.776	-5.776	0	96
20	MP5	X	-5.776	-5.776	0	96
21	MP4	X	-5.776	-5.776	0	96
22	M23	X	-8.037	-8.037	0	91

Member Distributed Loads (BLC 16 : BLC 6 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F.psf]	End Magnitude[lb/f...	Start Location[in, %]	End Location[in, %]
23	M24	X	-2.009	-2.009	0	12
24	M25	X	-2.009	-2.009	0	12
25	M26	X	-2.009	-2.009	0	12
26	M27	X	-2.009	-2.009	0	12
27	M28	X	-3.971	-3.971	0	77.492
28	M29	X	-3.971	-3.971	0	77.492
29	M30	X	-5.023	-5.023	0	77.492

APPENDIX D
ADDITIONAL CALCUATIONS

Date: 2/6/2019
 Client: Crown
 Carrier: T-Mobile
 Engineer: IP
 Site: 828054
 Job #: 1039-A0002-B

Code: LRFD
 Axial: 2127.00 lbs
 Shear: 5036.00 lbs

Bolt Capacity (Assume 1/2" A325 Threaded Rods)				
	Ult Load / Bolt	Factored Load ($\phi=0.75$)	# of Bolts	Factor Joint Capacity
Axial (lb)	17026.7	12770.0	2	25540
Shear(lb)	10600.0	7950.0	2	15900

Interaction Check	
$T / \phi T_n$	8.3%
$V / \phi V_n$	31.7%
≤ 1.0	10.7%
	OK

APPENDIX E

MOD Modifications Design Drawings

GENERAL NOTES:

- THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE LATEST VERSION OF APPLICABLE LOCAL/STATE/COUNTY/CITY BUILDING CODES, AS WELL AS ANSI/TIA-222 STANDARD, AWWA-D100 STANDARD, NDS, NEC, MSJC, AND/OR THE LATEST VERSION OF THE INTERNATIONAL BUILDING CODE, UNLESS NOTED OTHERWISE IN THE CORRESPONDING STRUCTURAL REPORT.
- ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
- ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN SIMILAR CONSTRUCTION.
- ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. IF OBSTRUCTIONS ARE FOUND, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD PRIOR TO CONTINUING WORK.
- ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND/OR CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE DURING CONSTRUCTION. TIA-1019-A-2011 IS AN APPROPRIATE REFERENCE FOR THOSE DESIGNS MEETING TIA STANDARDS. THE ENGINEER OF RECORD MAY PROVIDE FORMAL RIGGING PLANS AT THE REQUEST AND EXPENSE OF THE CONTRACTOR.
- INSTALLATION SHALL NOT INTERFERE NOR DENY ADEQUATE ACCESS TO OR FROM ANY EXISTING OR PROPOSED OPERATIONAL AND SAFETY EQUIPMENT.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION NOTES:

- STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
- ALL FIELD CUT SURFACES, FIELD DRILLED HOLES, AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS' RECOMMENDATIONS.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
- ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
- ALL STEEL MEMBERS AND CONNECTIONS SHALL MEET THE FOLLOWING GRADES:
 - ANGLES, CHANNELS, PLATES AND BARS TO BE A36. $F_y=36$ KSI, U.N.O.
 - W SHAPES TO BE A992. $F_y=50$ KSI, U.N.O.
 - RECTANGULAR HSS TO BE A500, GRADE B. $F_y=46$ KSI, U.N.O.
 - ROUND HSS TO BE A500, GRADE B. $F_y=42$ KSI, U.N.O.
 - STEEL PIPE TO BE A53, GRADE B. $F_y=35$ KSI, U.N.O.
 - BOLTS TO BE A325-X. $F_u=120$ KSI, U.N.O.
 - U-BOLTS AND LAG SCREWS TO BE A307 GR A. $F_u=60$ KSI, U.N.O.
- ALL WELDING SHALL BE DONE USING E70XX ELECTRODES, U.N.O.
- ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
- ALL HILTI ANCHORS TO BE CARBON STEEL, U.N.O.
 - MECHANICAL ANCHORS: KWIK BOLT-TZ, U.N.O.
 - CMU BLOCK ANCHORS: ADHESIVE - HY120, U.N.O.
 - CONCRETE ANCHORS: ADHESIVE - HY150, U.N.O.
 - CONCRETE REBAR: ADHESIVE - RE500, U.N.O.
- ALL STUDS TO BE NELSON CAPACITOR DISCHARGE 1/4"-20 LOW CARBON STEEL COPPER-FLASH AT 55 KSI ULT/50 KSI YIELD, U.N.O.
- BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
- MINIMUM EDGE DISTANCES SHALL CONFORM TO AISC TABLE J3.4.

CONCRETE CONSTRUCTION NOTES:

- CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WASTE AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.
- EXISTING CONCRETE SURFACES THAT ARE TO BE IN CONTACT WITH NEW PROPOSED CONCRETE SHOULD BE WIRE BRUSHED CLEAN AND TREATED WITH APPROPRIATE MECHANICAL SCRATCH COAT AND REPAIR MATERIALS OR APPROPRIATE CHEMICAL METHODS SUCH AS THE APPLICATION OF A BONDING AGENT, EX. SAKRETE OR EQUIVALENT, TO ENSURE A QUALITY BOND BETWEEN EXISTING AND PROPOSED CONCRETE SURFACES.

FIBER REINFORCED POLYMER (FRP) NOTES:

- FRP PLATES, SHAPES, BOLTS AND NUTS (STUD/NUT ASSEMBLIES) SHALL CONFORM TO ASTM D638, 695, 790. PLATES AND SHAPES TO BE $F_y = 5.35$ KSI LW (SAFETY FACTOR OF 8), .945 KSI CW (SAFETY FACTOR OF 8) MIN.
- IF FIELD FABRICATION IS REQUIRED, ALL CUT EDGES AND DRILLED HOLES TO BE SEALED USING VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
- ALL FASTENERS TO BE 1/2" DIA FRP THREADED ROD WITH FIBER REINFORCED THERMOPLASTIC NUT, SPACED AT 12 INCHES ON CENTER MAXIMUM, U.N.O., FOR PANELS AND AS DESIGNED FOR STRUCTURAL MEMBERS.
- THE COLOR AND SURFACE PATTERN OF EXPOSED FRP PANELS SHALL MATCH THE EXTERIOR OF THE EXISTING BUILDING, U.N.O.
- STUD/NUT ASSEMBLIES SHOULD BE LUBRICATED FOR INSTALLATION
- ENSURE BEARING SURFACES OF THE NUTS ARE PARALLEL TO THE SURFACES BEING FASTENED.
- TORQUE BOLTS ACCORDING TO THE FOLLOWING TABLE:

INSTALLATION TORQUE TABLE		
SIZE	ULTIMATE TORQUE STRENGTH	RECOMMENDED MAXIMUM INSTALLATION TORQUE
3/8-16 UNC	8 FT-LBS	4 FT-LBS
1/2-13 UNC	18 FT-LBS	8 FT-LBS
5/8-11 UNC	35 FT-LBS	16 FT-LBS
3/4-10 UNC	50 FT-LBS	24 FT-LBS
1-8 UNC	110 FT-LBS	50 FT-LBS

- WHEN TIGHTENING FRP STUD/NUT ASSEMBLIES, WRENCHES MUST MAKE FULL CONTACT WITH ALL NUT EDGES. A STANDARD SIX POINT SOCKET IS RECOMMENDED.
- STUD/NUT ASSEMBLIES SHOULD BE BONDED BY APPLYING BONDING AGENT TO ENTIRE NUT AND EXPOSED STUD.
- ALL FRP MATERIALS TO BE PROVIDED BY FIBERGRATE COMPOSITE STRUCTURES, DALLAS TX, OR APPROVED EQUAL.
- ALL FRP SHAPES TO BE DYNAFORM PULTRUDED STRUCTURAL SHAPES.
- ALL FRP PLATES TO BE FIBERPLATE MOLDED FRP PLATE.
- ALL FRP PANELS TO BE FIBERPLATE CLADDING PANEL.
- EACH FRP PANEL TO BE IDENTIFIED WITH LARR#25536 AND FIBERGRATE COMPOSITE STRUCTURAL LABEL.
- FRP MATERIAL TO BE CLASSIFIED AS CC1 OR BETTER, AND HAVE MAXIMUM FLAME SPREAD OF 50.
- ALL DESIGN AND CONSTRUCTION TO BE COMPLETED IN ACCORDANCE WITH LOS ANGELES RESEARCH REPORT RR25536, DATED FEBRUARY 1, 2016.
- SPECIAL INSPECTIONS MUST BE PROVIDED FOR ALL FRP INSTALLMENTS. SEE SPECIAL INSPECTION SECTION, THIS SHEET.

RATIO OF EDGE DISTANCE TO FRP FASTENER DIAMETER		
	RANGE	RECOMMENDED
EDGE DISTANCE - CL* BOLT TO END	2.0-4.0	3.0
EDGE DISTANCE - CL* BOLT TO SIDE	1.5-3.5	2.5
BOLT PITCH - CL* TO CL*	4.0-5.0	5.0

WOOD CONSTRUCTION NOTES:

- ALL EXISTING WOOD SHAPES ARE ASSUMED TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN.
- ALL PROPOSED WOOD SHAPES ARE TO BE DOUGLAS FIR-LARCH WITH A REFERENCE DESIGN BENDING VALUE OF 1000 PSI MIN. U.N.O.
- ALL EXISTING AND PROPOSED GLUED LAMINATED TIMBERS ARE TO BE 24F-1.8C DOUGLAS FIR BALANCED WITH A REFERENCE DESIGN BENDING VALUE OF 2400 PSI MIN. U.N.O.

MASONRY CONSTRUCTION NOTES:

- ALL BRICK TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
 - FOR INTERIOR/ABOVE GRADE APPLICATIONS TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 100 PSI SHALL BE USED. FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 133 PSI.
 - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
- ALL CMU TO BE 1500 PSI MIN. REINFORCING BAR (IF APPLICABLE) TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. ALL MORTAR TO BE 2000 PSI MIN.
 - FOR INTERIOR/ABOVE GRADE APPLICATIONS, TYPE N MORTAR HAVING MINIMUM MODULUS OF RUPTURE OF 64 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 158 PSI FOR FULLY GROUTED BLOCKS.
 - FOR EXTERIOR/BELOW GRADE APPLICATIONS TYPE M OR S MORTAR HAVING A MINIMUM MODULUS OF RUPTURE OF 84 PSI SHALL BE USED FOR UNGROUTED BLOCKS, AND 163 PSI FOR FULLY GROUTED BLOCKS.
 - BRICK AND MORTAR INSTALLATION TO CONFORM TO MSJC BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.

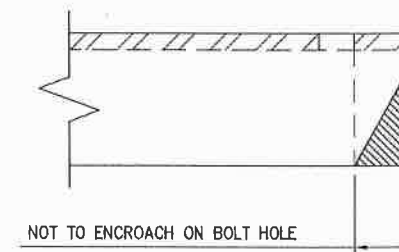
TOWER PLUMB & TENSION NOTES:

- PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
- RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
- PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS FOR LATTICED STRUCTURES.
- THE TWIST BETWEEN ANY TWO ELEVATIONS THROUGHOUT THE HEIGHT OF A LATTICE STRUCTURE SHALL NOT EXCEED 0.5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE LATTICE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.

SPECIAL INSPECTIONS NOTES:

- A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER AND APPROVED BY THE JURISDICTION, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH THE THE GOVERNING BUILDING CODE, APPLICABLE SECTION(S) AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELDS ONLY).
 - HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 AND/OR A490 BOLTS) TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD.
 - MECHANICAL AND EPOXIED ANCHORAGES.
 - FIBER REINFORCED POLYMER.
 - THE SPECIAL INSPECTOR MUST VERIFY THAT THE FRP MATERIAL SPECIFIED ON THE APPROVED DESIGN DOCUMENTS IS BEING INSTALLED.
 - THE SPECIAL INSPECTOR MUST VERIFY THAT ALL CUT EDGES AND DRILLED HOLES ARE PROPERLY SEALED USING A VINYL ESTER SEALING KIT SUPPLIED BY THE MANUFACTURER.
 - THE SPECIAL INSPECTOR MUST VERIFY THAT THE STRUCTURE IS BUILT IN ACCORDANCE WITH THE APPROVED DESIGN DOCUMENTS.
- THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT THE SPECIAL INSPECTIONS.

MAXIMUM ALLOWABLE ANGLE CLIP



INFINIGY
 1033 Waterville Shaker Rd
 Albany, NY 12205
 Office # (518) 860-0790
 Fax # (518) 860-0793



ISSUED FOR REVIEW TAG 02/07/19
 No. Submittal / Revision Appl. Date
 Drawn: TAG Date: 02/07/19
 Designed: IP Date: 02/07/19
 Checked: AE Date: 02/07/19

Project Number:
 1039-A0002-B

Project Title:
 BU# 828054

SOUTH WINDSOR/RT 5

300 GOVERNORS HIGHWAY
 SOUTH WINDSOR, CT 06074

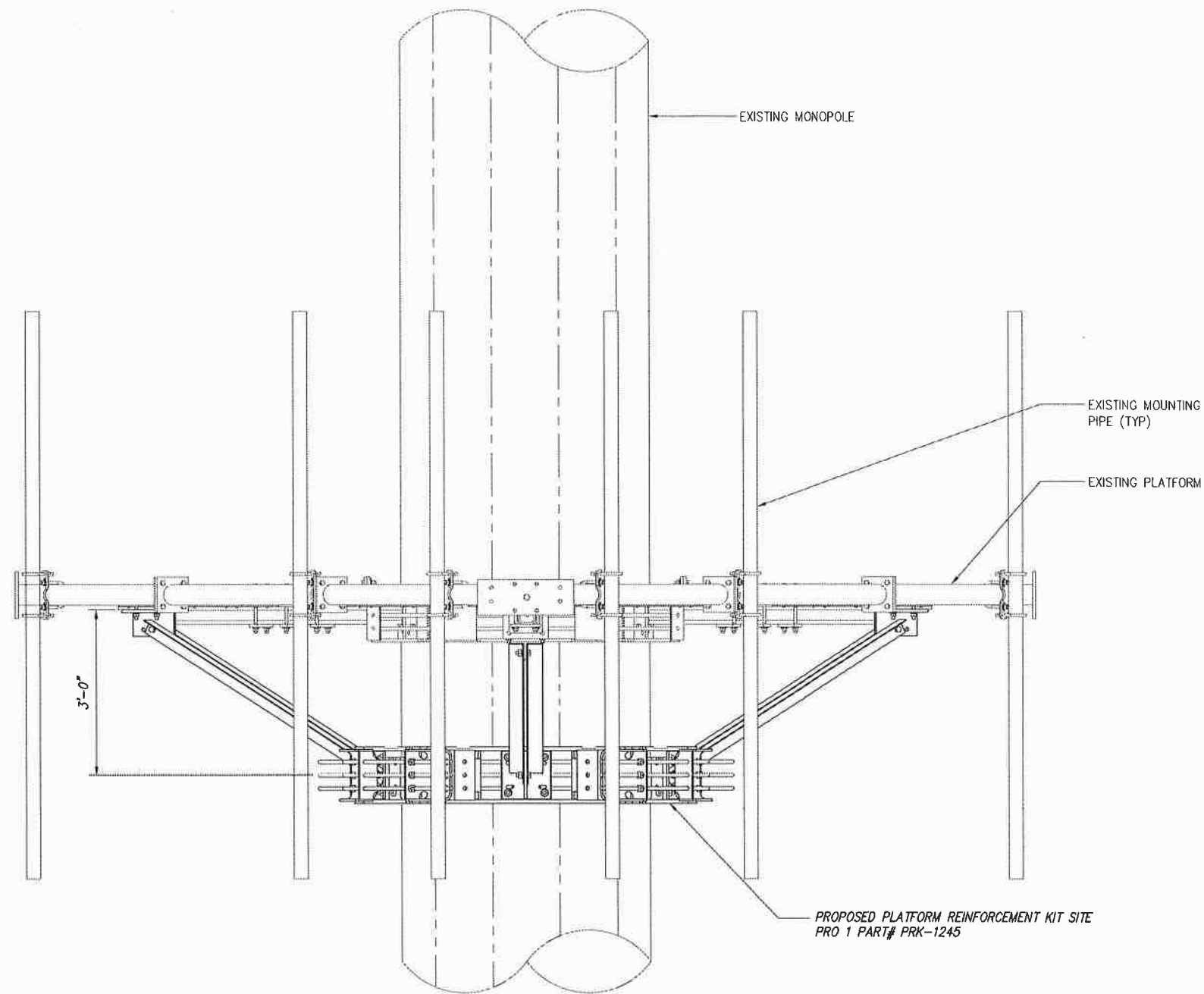
Prepared For:

CROWN CASTLE
 9 Corporate Park, Suite 101
 Clifton Park, NY 12065
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 02/07/19

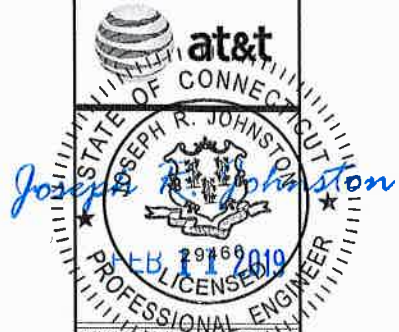
Drawing Title:
GENERAL NOTES

Drawing Number:
S1



INFINIGY

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Designed: IF Date: 02/07/19
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Project Number:
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Project Title:
BU# 828054

SOUTH WINDSOR/RT 5

300 GOVERNORS HIGHWAY
SOUTH WINDSOR, CT 06074

Prepared For:



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Drawing Scale:

AS NOTED

Date:

02/07/19

Drawing Title

**MOUNT
DETAILS**

Drawing Number

S2

Exhibit F

Power Density/RF Emissions Report



RF EMISSIONS COMPLIANCE REPORT

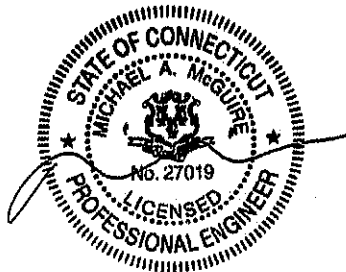
Crown Castle on behalf of AT&T Mobility, LLC

**Site Name: South Windsor/Rt 5
Crown Castle Site BU: 475138
AT&T Mobility, LLC Site FA #: 10035346**

**300 Governors Highway
South Windsor, CT
2/25/2019**

Report Status:

AT&T Mobility, LLC Is Compliant



sealed 26feb2019 mike@h2dc.com
H2DC PLLC CT CoA#: 0001714

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
South Windsor, CT

My signature on the cover of this document indicates:

That I, Michael A McGuire, am currently and actively licensed to provide (in this state/jurisdiction as indicated within the professional electrical engineering seal on the cover of this document) professional electrical engineering services, as an employee of Hurricane Hill Development Company, PLLC, a duly authorized/registered engineering firm (in this state, as applicable) on behalf of SiteSafe, LLC; 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 "South Windsor/Rt 5" ("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. A list of microwave antennas is included; 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 1.796% 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 5.182% 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
South Windsor/Rt 5
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.134 %
AT&T Mobility, LLC (Proposed)	0.456 %
AT&T Mobility, LLC (Proposed)	0.456 %
AT&T Mobility, LLC (Proposed)	0.456 %
AT&T Mobility, LLC (Proposed)	0.294 %
Clearwire	0.151 %
MetroPCS (Decommissioned)	0 %
Sigfox	0.001 %
Sprint	0.097 %
Sprint	0.139 %
Sprint	0.139 %
Sprint	0.095 %
Sprint	0.096 %
T-Mobile	0.128 %
T-Mobile	0.121 %
T-Mobile	0.27 %
T-Mobile	0.152 %
Verizon Wireless	0.662 %
Verizon Wireless	0.453 %
Verizon Wireless	0.422 %
Verizon Wireless	0.457 %
 Composite Site MPE:	 5.182 %

**AT&T Mobility, LLC
South Windsor/Rt 5
Carrier Summary**

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.76021 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.13415 %

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
Powerwave	7770	158	23	547	0.207799	0.03667	0.323756	0.057133
Powerwave	7770	158	23	547	0.207799	0.03667	0.323756	0.057133
Powerwave	7770	158	141	547	0.207799	0.03667	0.323756	0.057133
Powerwave	7770	158	141	547	0.207799	0.03667	0.323756	0.057133
Powerwave	7770	158	263	547	0.207799	0.03667	0.323756	0.057133
Powerwave	7770	158	263	547	0.207799	0.03667	0.323756	0.057133

**AT&T Mobility, LLC (Proposed)
South Windsor/Rt 5
Carrier Summary**

Frequency: 2300 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.56204 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.4562 %

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
CCI Antennas	HPA-65R-BUU-H8	158	23	3350	2.102109	0.210211	2.750118	0.275012
CCI Antennas	HPA-65R-BUU-H8	158	141	3350	2.110976	0.211098	2.750118	0.275012
CCI Antennas	HPA-65R-BUU-H6	158	263	4530	3.714383	0.371438	4.528647	0.452865

**AT&T Mobility, LLC (Proposed)
South Windsor/Rt 5
Carrier Summary**

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.5613 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.45613 %

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
CCI Antennas	HPA-65R-BUU-H8	158	23	5360	2.792975	0.279297	3.933331	0.393333
CCI Antennas	HPA-65R-BUU-H8	158	141	5360	2.816298	0.28163	3.933331	0.393333
CCI Antennas	HPA-65R-BUU-H6	158	263	4530	3.714383	0.371438	4.528647	0.452865

**AT&T Mobility, LLC (Proposed)
South Windsor/Rt 5
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.56217 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.45622 %

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
CCI Antennas	HPA-65R-BUU-H8	158	23	4777	3.25546	0.325546	4.175179	0.417518
CCI Antennas	HPA-65R-BUU-H8	158	141	4777	3.231258	0.323126	4.175179	0.417518
CCI Antennas	HPA-65R-BUU-H6	158	263	4530	3.714383	0.371438	4.528647	0.452865

**AT&T Mobility, LLC (Proposed)
South Windsor/Rt 5
Carrier Summary**

Frequency: 737 MHz
Maximum Permissible Exposure (MPE): 491.33 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.44607 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.29432 %

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
CCI Antennas	HPA-65R-BUU-H8	158	23	3382	0.87424	0.177932	0.896504	0.182464
CCI Antennas	HPA-65R-BUU-H8	158	141	3382	0.87424	0.177932	0.896504	0.182464
CCI Antennas	HPA-65R-BUU-H6	158	263	2350	0.924214	0.188103	1.417686	0.288539

**Clearwire
South Windsor/Rt 5
Carrier Summary**

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.51267 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.15127 %

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	128	20	1542	0.746975	0.074698	1.3546	0.13546
ARGUS	LLPX310R	128	160	1542	0.752709	0.075271	1.3546	0.13546
ARGUS	LLPX310R	128	280	1542	0.746975	0.074698	1.3546	0.13546

**MetroPCS (Decommissioned)
South Windsor/Rt 5
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0 %

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	APXV18-206517S	138	20	0	0	0	0	0
RFS	APXV18-206517S	138	160	0	0	0	0	0
RFS	APXV18-206517S	138	280	0	0	0	0	0

**Sigfox
South Windsor/Rt 5
Carrier Summary**

Frequency: 905.2 MHz
Maximum Permissible Exposure (MPE): 603.47 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.00402 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.00067 %

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
Procom	CXL 900-3LW	119	0	1.22	0.004017	0.000666	0.004017	0.000666

**Sprint
South Windsor/Rt 5
Carrier Summary**

Frequency: 2500 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.96881 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.09688 %

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
Nokia	AAHC	148	120	2542	0.766033	0.076603	0.959245	0.095925
Nokia	AAHC	148	230	2542	0.766033	0.076603	0.959246	0.095925
Nokia	AAHC	148	355	2542	0.766033	0.076603	0.959245	0.095925

**Sprint
South Windsor/Rt 5
Carrier Summary**

Frequency: 1990 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.39054 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.13905 %

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
Commscope	NNVV-65B-R4	148	120	2781	1.042949	0.104295	1.363407	0.136341
Commscope	NNVV-65B-R4	148	230	2781	1.042949	0.104295	1.363407	0.136341
Commscope	NNVV-65B-R4	148	355	2781	1.042949	0.104295	1.363407	0.136341

**Sprint
South Windsor/Rt 5
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 1.39054 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.13905 %

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
Commscope	NNVV-65B-R4	148	120	2781	1.042949	0.104295	1.363407	0.136341
Commscope	NNVV-65B-R4	148	230	2781	1.042949	0.104295	1.363407	0.136341
Commscope	NNVV-65B-R4	148	355	2781	1.042949	0.104295	1.363407	0.136341

**Sprint
South Windsor/Rt 5
Carrier Summary**

Frequency: 869 MHz
Maximum Permissible Exposure (MPE): 579.33 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.55315 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.09548 %

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
Commscope	NNVV-65B-R4	148	120	782	0.382179	0.065969	0.541481	0.093466
Commscope	NNVV-65B-R4	148	230	782	0.382038	0.065944	0.541481	0.093466
Commscope	NNVV-65B-R4	148	355	782	0.382038	0.065944	0.541481	0.093466

**Sprint
South Windsor/Rt 5
Carrier Summary**

Frequency: 862 MHz
Maximum Permissible Exposure (MPE): 574.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.55315 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.09626 %

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
Commscope	NNVV-65B-R4	148	120	782	0.382179	0.066504	0.541481	0.094225
Commscope	NNVV-65B-R4	148	230	782	0.382038	0.06648	0.541481	0.094225
Commscope	NNVV-65B-R4	148	355	782	0.382038	0.06648	0.541481	0.094225

**T-Mobile
South Windsor/Rt 5
Carrier Summary**

Frequency: 700 MHz
Maximum Permissible Exposure (MPE): 466.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.59812 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.12817 %

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	166	0	1307	0.301579	0.064624	0.315964	0.067707
RFS	APXVAARR24_43-U-NA20	166	120	1307	0.301465	0.0646	0.315964	0.067707
RFS	APXVAARR24_43-U-NA20	166	210	1307	0.301465	0.0646	0.315964	0.067707

**T-Mobile
South Windsor/Rt 5
Carrier Summary**

Frequency: 600 MHz
Maximum Permissible Exposure (MPE): 400 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 0.48545 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.12136 %

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	166	0	1251	0.311086	0.077772	0.319775	0.079944
RFS	APXVAARR24_43-U-NA20	166	120	1251	0.311793	0.077948	0.319775	0.079944
RFS	APXVAARR24_43-U-NA20	166	210	1251	0.311793	0.077948	0.319775	0.079944

**T-Mobile
South Windsor/Rt 5
Carrier Summary**

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 2.70307 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.27031 %

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 32 B2A-B66AA	166	0	2313	1.732463	0.173246	1.732463	0.173246
Ericsson	AIR 32 B2A-B66AA	166	120	2313	1.732463	0.173246	1.732463	0.173246
Ericsson	AIR 32 B2A-B66AA	166	210	2313	1.732463	0.173246	1.732463	0.173246

**T-Mobile
South Windsor/Rt 5
Carrier Summary**

Frequency: 1900 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 1.51886 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.15189 %

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	167	0	2061	0.35372	0.035372	0.404222	0.040422
Ericsson	AIR 32 B2A-B66AA	166	0	2313	0.401882	0.040188	0.459284	0.045928
Ericsson	AIR 21 B2A B4P	167	120	2061	0.353856	0.035386	0.404222	0.040422
Ericsson	AIR 32 B2A-B66AA	166	120	2313	0.402033	0.040203	0.459284	0.045928
Ericsson	AIR 21 B2A B4P	167	210	2061	0.353856	0.035386	0.404222	0.040422
Ericsson	AIR 32 B2A-B66AA	166	210	2313	0.402033	0.040203	0.459284	0.045928

**Verizon Wireless
South Windsor/Rt 5
Carrier Summary**

Frequency: 850 MHz
Maximum Permissible Exposure (MPE): 566.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 3.74906 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.6616 %

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	LNX-6514DS-VTM	111	0	3784	2.421901	0.427394	3.702842	0.653443
ANDREW	LNX-6514DS-VTM	111	120	3784	2.421901	0.427394	3.702841	0.653443
ANDREW	LNX-6514DS-VTM	111	240	3784	2.418614	0.426814	3.702842	0.653443

**Verizon Wireless
South Windsor/Rt 5
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 4.53339 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.45334 %

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	HBXX-6517DS-VTM	111	0	5130	2.191781	0.219178	4.178708	0.417871
ANDREW	HBXX-6517DS-VTM	111	120	5130	2.179248	0.217925	4.178708	0.417871
ANDREW	HBXX-6517DS-VTM	111	240	5130	2.191781	0.219178	4.178708	0.417871

**Verizon Wireless
South Windsor/Rt 5
Carrier Summary**

Frequency: 751 MHz
Maximum Permissible Exposure (MPE): 500.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 2.11215 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 0.42187 %

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	LNX-6514DS-VTM	111	0	1885	1.393626	0.278354	2.092008	0.417844
ANDREW	LNX-6514DS-VTM	111	120	1885	1.393626	0.278354	2.092008	0.417844
ANDREW	LNX-6514DS-VTM	111	240	1885	1.393271	0.278283	2.092008	0.417844

**Verizon Wireless
South Windsor/Rt 5
Carrier Summary**

Frequency: 2100 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 4.57337 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.45734 %

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	HBXX-6517DS-VTM	111	0	5621	2.12918	0.212918	4.178784	0.417878
ANDREW	HBXX-6517DS-VTM	111	120	5621	2.119891	0.211989	4.178784	0.417878
ANDREW	HBXX-6517DS-VTM	111	240	5621	2.129181	0.212918	4.178784	0.417878

**South Windsor/Rt 5
Composite Microwave Antenna Summary**

Carrier	Antenna Make/Model	Height (feet)
Clearwire	Andrew VHLP800-11	128
Clearwire	Andrew VHLP800-11	128