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

August 19, 2019

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

RE: **Notice of Exempt Modification for AT&T:**
876361 – AT&T Site ID: CTL05662
20 Great Oak Road, Oxford, CT 06478
Latitude: 41° 25′ 34.91″ / Longitude: -73° 8′ 39.33″

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 127-foot mount on the existing 150-foot Monopole Tower, located at 20 Great Oak Road in Oxford, CT. The tower is owned by Crown Castle and the property is owned by STC Five LLC (A subsidiary of Sprint. Crown as attorney-in-fact.). AT&T now intends to replace six (6) existing antennas with six (6) new antennas. The new antennas will be installed at the 127-ft level of the tower. AT&T has also proposed removing three (3) TMAs, removing and replacing three (3) RRUS, and adding three (3) RRUs. AT&T is also proposing tower mount modifications as shown on the enclosed mount analysis.

The facility was approved by the Connecticut Siting Council on September 5, 2002.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to George R. Temple, First Selectman for the Town of Oxford, Steven S. Macary, Town Zoning Enforcement Officer, and Crown Castle as the tower owner and representative for STC Five LLC.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

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

Sincerely,

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

Attachments
cc:

George Temple, First Selectman
Town of Oxford
Town Hall – Selectman's Office
486 Oxford Road
Oxford, CT 06478
203.888.2543 ext. 3034

Steven S. Macary, ZEO
Town of Oxford
Planning & Zoning Department
486 Oxford Road
Oxford, CT 06478
203.828.6503

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

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Exhibit A

Property Card

Town of Oxford
Property Listing Report

Parcel ID 21/61/1A/CELL

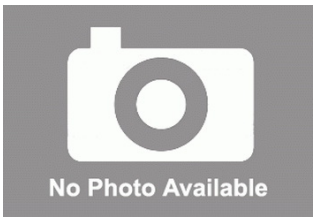
Account O041290C

Property Information

Owner	STC FIVE LLC
Address	20 GREAT OAK RD
Mailing Address	4017 WASHINGTON RD MCMURRAY , PA 15317
Land Use	- Cell Tower
Land Class	I

Census Tract	
Neighborhood	090
Zoning	
Acreage	0
Utilities	
Lot Setting/ Desc	/

Photo



PARCEL VALUATIONS (Assessed value = 70% of Appraised Value)

	Appraised	Assessed
Buildings	0	0
Outbuildings	607400	425200
Improvements	607400	425200
Extras	0	0
Land	0	0
Total	607400	425200
Previous		

Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Total Rooms	
Bedrooms	
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

EXTERIOR WALLS:	
Primary	
Secondary	
INTERIOR WALLS:	
Primary	
Secondary	
FLOORS:	
Primary	
Secondary	
HEATING/AC:	
Heating Type	
Heating Fuel	
AC Type	

BUILDING AREA:	
Effective Building Area	
Gross Building Area	
Total Living Area	

SALES HISTORY:	
Sale Date	10/1/2010
Sale Price	0
Book/ Page	000/ 000

Report Created On 8/19/2019

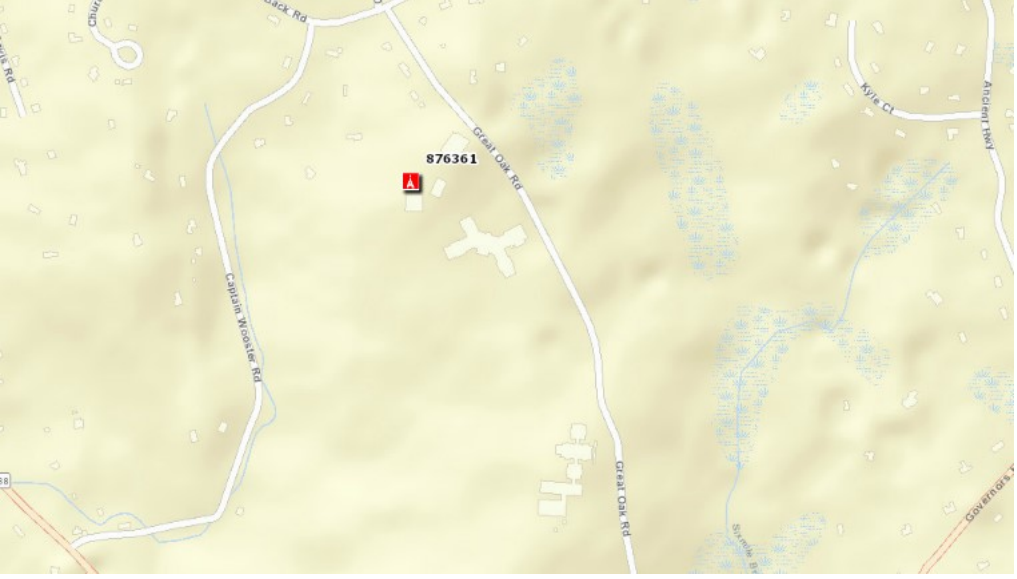

876361
Great Oak Rd
Captain Wooster Rd
Great Oak Rd
Kyle Ct
Ancient Hwy

Exhibit B

Construction Drawings

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE INSTALLED ON & REMOVED FROM EXISTING TOWER:

- REMOVE (6) EXISTING ANTENNAS, (3) RRH's AND (3) TMA's

- INSTALL AT&T ANTENNA (800-10966) (2 AT SECTORS ALPHA AND GAMMA, TOTAL OF 4).
- INSTALL AT&T ANTENNA (800-10965) (2 AT BETA SECTOR, TOTAL OF 2)
- INSTALL AT&T 8843 B2/B66A (1900) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL AT&T 4449 B5/B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- INSTALL SURGE ARRESTOR (DC6-48-60-18-C-EV) (TOTAL OF 1).
- INSTALL (2) DC TRUNK CABLES & (1) FIBER TRUNK CABLE.

ITEMS TO BE MOUNTED ON THE GROUND:

- SWAP DUS WITH 6630
- ADD 6630

ITEMS TO REMAIN:

- (3) ANTENNAS, (3) TWIN TMA's, (1) SURGE SUPPRESSOR, (12) COAX CABLES, (1) FIBER TRUNK CABLE & (2) DC TRUNK CABLES.

SITE ADDRESS:	20 GREAT OAK RD OXFORD, CT 06478
LATITUDE (NAD 83):	N 41° 25' 34.91"
LONGITUDE (NAD 83):	W 73° 8' 39.33"
LANDLORD:	CROWN CASTLE INTERNATIONAL 500 W. CUMMINGS PARK, STE 3600 WOBURN, MA 01801
TYPE OF SITE:	MONOPOLE/OUTDOOR
TOWER HEIGHT:	150'
RAD CENTER:	128'
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES I
GN-2	GENERAL NOTES II
C-1	SITE PLAN
C-2	EQUIPMENT LAYOUT & PROPOSED TOWER ELEVATION
C-3	EXISTING & PROPOSED ANTENNA LAYOUT
C-4	EQUIPMENT DETAILS
C-5	EQUIPMENT DETAILS
RF-1	ANTENNA CHART & RF EQUIPMENT SCHEMATIC
G-1	GROUNDING DETAILS

CROWN CASTLE SITE ID #: 876361
CROWN CASTLE SITE NAME:
SEYMOUR 2/ OXFORD TOWN GARAGE

ENGINEERING

2018 CONNECTICUT STATE BUILDING CODE
2018 AMENDMENT WITH 2015 INTERNATIONAL BUILDING CODE
2009 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2017 NATIONAL ELECTRICAL CODE (NFPA 70 2017)
ANSI/TIA-222-G

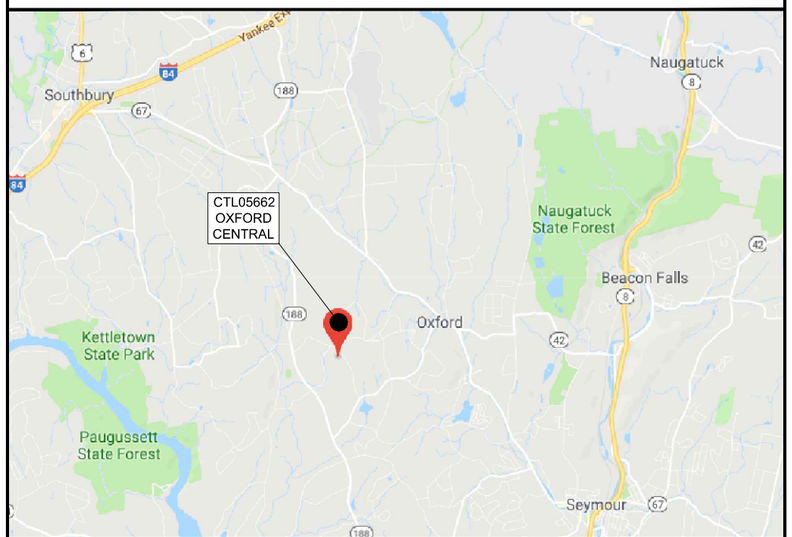
SITE NUMBER: CTL05662

FA LOCATION CODE: 10071200
SITE NAME: OXFORD CENTRAL
CROWN SITE NAME: SEYMOUR 2/OXFORD TOWN GARAGE
PROJECT: LTE 2C/LTE 3C/4TX4RX SOFTWARE RETROFIT/LET 4C
PACE ID: MRCTB037976, MRCTB037945, MRCTB038101, MRCTB038099
BU#: 876361

NOTE:

ALL CONSTRUCTION ACTIVITIES ARE TO BE COMPLETED DIRECTLY THROUGH CROWN. CONTRACTOR MUST HAVE CONSTRUCTION PO AND NTP FROM CROWN DIRECT IN ORDER TO BEGIN. PRE-APPROVAL TO ENTER THE PROPERTY MUST BE OBTAINED. FOR ACCESS AUTHORIZATION, PLEASE CONTACT CROWN.

VICINITY MAP



DIRECTIONS: MERGE ONTO I-87 S TAKE I-90 E TO US-20 E/HWY 20 E IN LEE. TAKE EXIT 2 FROM I-90 E MERGE ONTO I-87 S USE THE RIGHT 2 LANES TO TAKE EXIT 6 W-7 E FOR NY-7 E TOWARD TROY/COHOES CONTINUE ONTO NY-7 E TAKE THE INTERSTATE 787 EXIT TOWARD NY-787/ALBANY/COHOES/NEW YORK THRUWAY KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-787 S/ALBANY/WATERVLIET AND MERGE ONTO I-787 S USE THE RIGHT 2 LANES TO TAKE EXIT 5 TO MERGE ONTO I-90 E TOWARD BOSTON PARTIAL TOLL ROAD TAKE THE EXIT ON THE LEFT TO STAY ON I-90 E TOWARD TACONIC PKWY/BOSTON TOLL ROAD ENTERING MASSACHUSETTS, TAKE EXIT 2 FOR US-20 E TOLL ROAD FOLLOW US-20 E/HWY 20 E AND MA-8 S TO CT-8 S IN WINCHESTER USE ANY LANE TO TURN LEFT ONTO US-20 E/HWY 20 E TURN RIGHT ONTO MA-8 S CONTINUE STRAIGHT ONTO MA-57 E/MA-8 S CONTINUE TO FOLLOW MA-8 S ENTERING CONNECTICUT. CONTINUE ONTO CT-8 S TURN LEFT ONTO S MAIN ST FOLLOW CT-8 S AND I-84 TO CT-188 S IN SOUTHBURY. TAKE EXIT 16 FROM I-84 TURN RIGHT ONTO CT-8 S (SIGNS FOR TORRINGTON/WATERBURY) CONTINUE ONTO CT-8 S/US-6 W CONTINUE ONTO CT-8 S TAKE EXIT 33 FOR I-84 W TOWARD DANBURY MERGE ONTO I-84 TAKE EXIT 16 FOR CT-188 TOWARD SOUTHBURY CONTINUE ON CT-188 S. DRIVE TO GREAT OAK RD IN OXFORD TURN LEFT ONTO CT-188 S TURN LEFT ONTO CT-188 S/CT-67 S TURN RIGHT ONTO CT-188 S TURN LEFT ONTO HOGS BACK RD TURN RIGHT ONTO GREAT OAK RD KEEP RIGHT TO STAY ON GREAT OAK RD DESTINATION WILL BE ON THE RIGHT

GENERAL NOTES

1. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

2. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

UNDERGROUND SERVICE ALERT

STATE LAW REQUIRES
TWO WORKING DAYS NOTICE PRIOR TO ANY
EARTH MOVING ACTIVITIES BY CALLING
DIAL 811

at&t
5841 BRIDGE STREET
EAST SYRACUSE, NY 13057

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

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

COMMONWEALTH OF MASSACHUSETTS
DANIEL J CORNING
CIVIL
No. 53767
REGISTERED PROFESSIONAL ENGINEER

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

SUBMITTALS

1	08/16/19	ISSUED FOR CONSTRUCTION
0	07/12/19	ISSUED FOR PERMITTING

FA# 10071200
SITE# CTL05662
OXFORD CENTRAL

20 GREAT OAK RD
OXFORD, CT 06478

TITLE SHEET

T-1

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.

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

COMMONWEALTH OF MASSACHUSETTS
DANIEL J CORNING
CIVIL
No. 53767
REGISTERED PROFESSIONAL ENGINEER

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

SUBMITTALS

1	08/16/19	ISSUED FOR CONSTRUCTION
0	07/12/19	ISSUED FOR PERMITTING

FA# 10071200
SITE# CTL05662
OXFORD CENTRAL

20 GREAT OAK RD
OXFORD, CT 06478

GENERAL NOTES

GN-1

ANTENNA MOUNTING

1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
2. 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.
3. 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.
4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
6. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
7. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
8. 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.
9. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
10. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
11. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

12. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
13. 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.
    A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
    B. 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.
    C. ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
14. ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
15. ALL GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
16. ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 - 29.8 NM).
17. ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM).

FIBER & POWER CABLE MOUNTING

18. 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.
19. 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.
20. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

21. 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.
22. CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
23. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 LATEST VERSION.
24. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".
25. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" O.C.
26. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
27. CONTRACTOR SHALL WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS.
28. 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.
29. 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.
30. 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

31. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
32. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
33. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
34. 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.
35. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
    A. TEMPERATURE SHALL BE ABOVE 50° F.
    B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
    C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
    D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS.
36. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
    A. GROUNDING AT THE ANTENNA LEVEL.
    B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.
    C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
    D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
    E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
37. ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND
38. BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
39. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.
40. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.
41. ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A 12'-0" T-BOOM SECTOR ANTENNA MOUNT, IF APPLICABLE, INCLUDING ALL HARDWARE.

GROUNDING NOTES

42. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
43. 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.
44. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.
45. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUNDING KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
    A. GROUNDING AT THE ANTENNA LEVEL.
    B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200', ADDITIONAL CABLE GROUNDING REQUIRED.
    C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
    D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
    E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
46. 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.

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

CALLOUT REFERENCE — X
REVISION REFERENCE — 1
WORKPOINT — W.P.
SECTION REFERENCE — XX / X-X
DETAIL REFERENCE — XX / X-X
ELEVATION REFERENCE — X / X

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

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

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

COMMONWEALTH OF MASSACHUSETTS
DANIEL J CORNING
CIVIL
No. 53767
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO: ERCC0004

DRAWN BY: JT

CHECKED BY: DC

SUBMITTALS

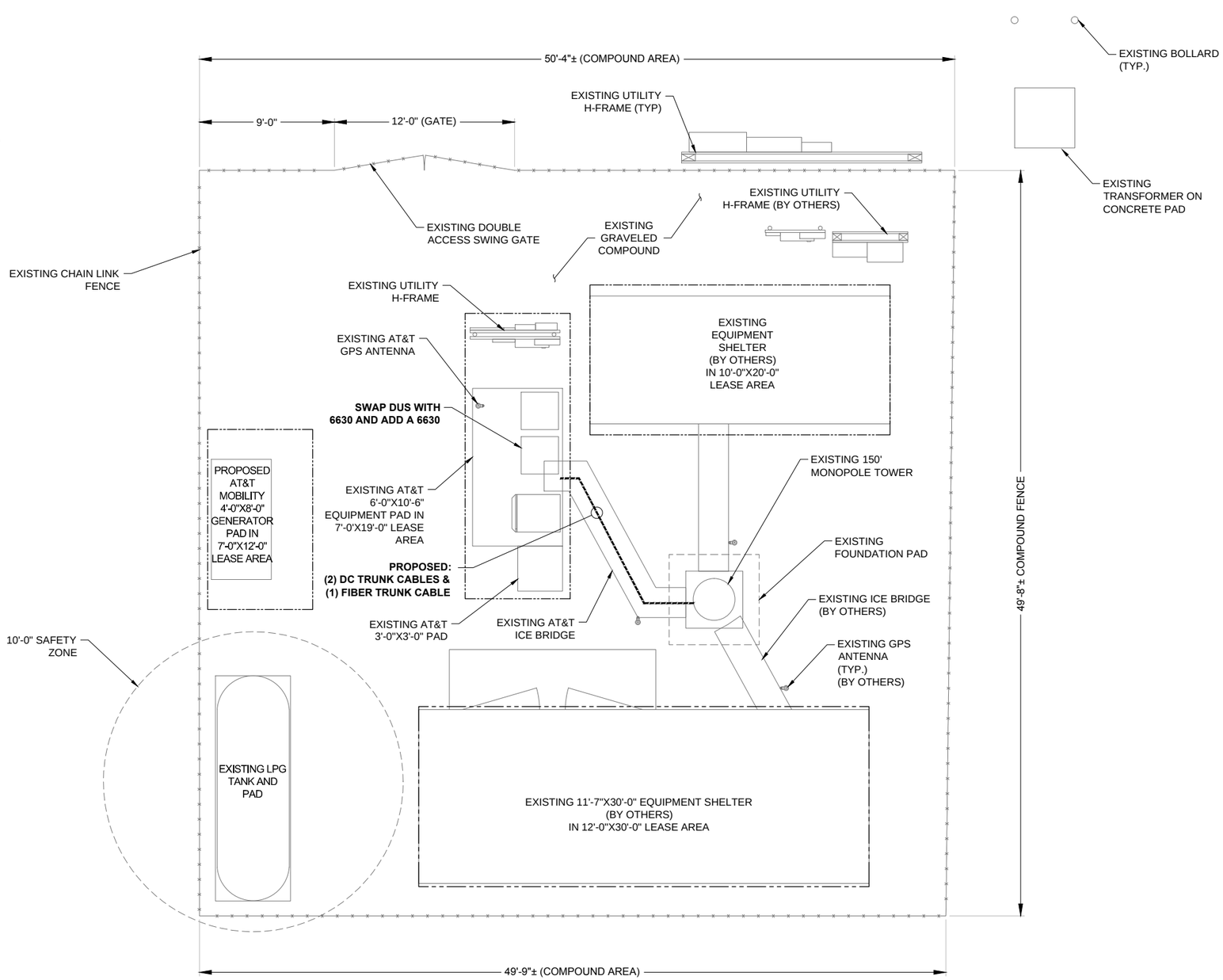
1	08/16/19	ISSUED FOR CONSTRUCTION
0	07/12/19	ISSUED FOR PERMITTING

FA# 10071200
SITE# CTL05662
OXFORD CENTRAL

20 GREAT OAK RD
OXFORD, CT 06478

GENERAL NOTES II

GN-2



NOTES:

1. PLAN BASED ON CONSTRUCTION DRAWINGS ISSUED BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS, P.C. ON 11/04/14. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND LOCATION/ORIENTATION OF EXISTING EQUIPMENT.

1 SITE PLAN

SCALE: 1/4" = 1'-0"

at&t
5841 BRIDGE STREET
EAST SYRACUSE, NY 13057

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3 CORPORATE PARK DRIVE
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CLIFTON PARK, NY 12065

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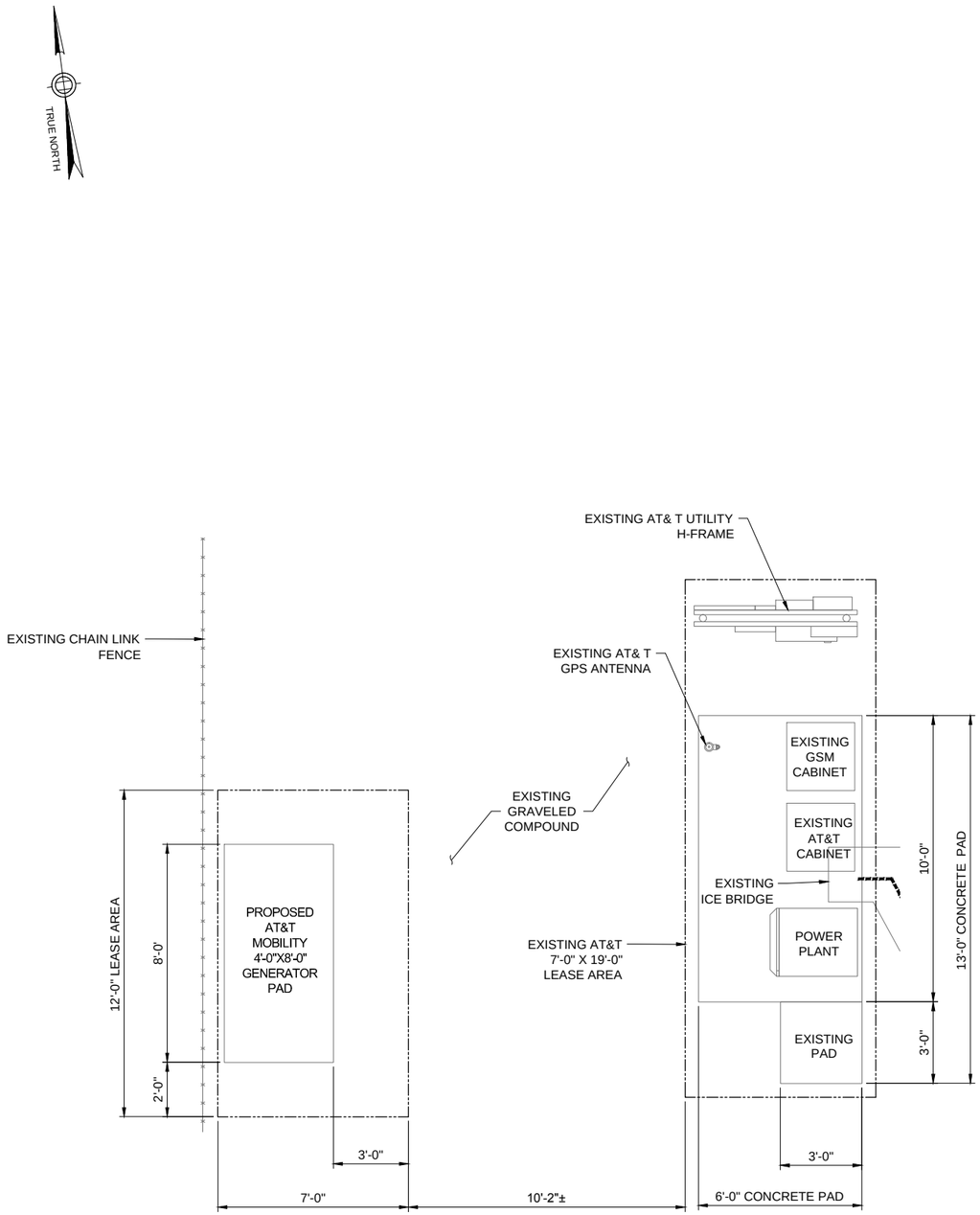
SITE PLAN

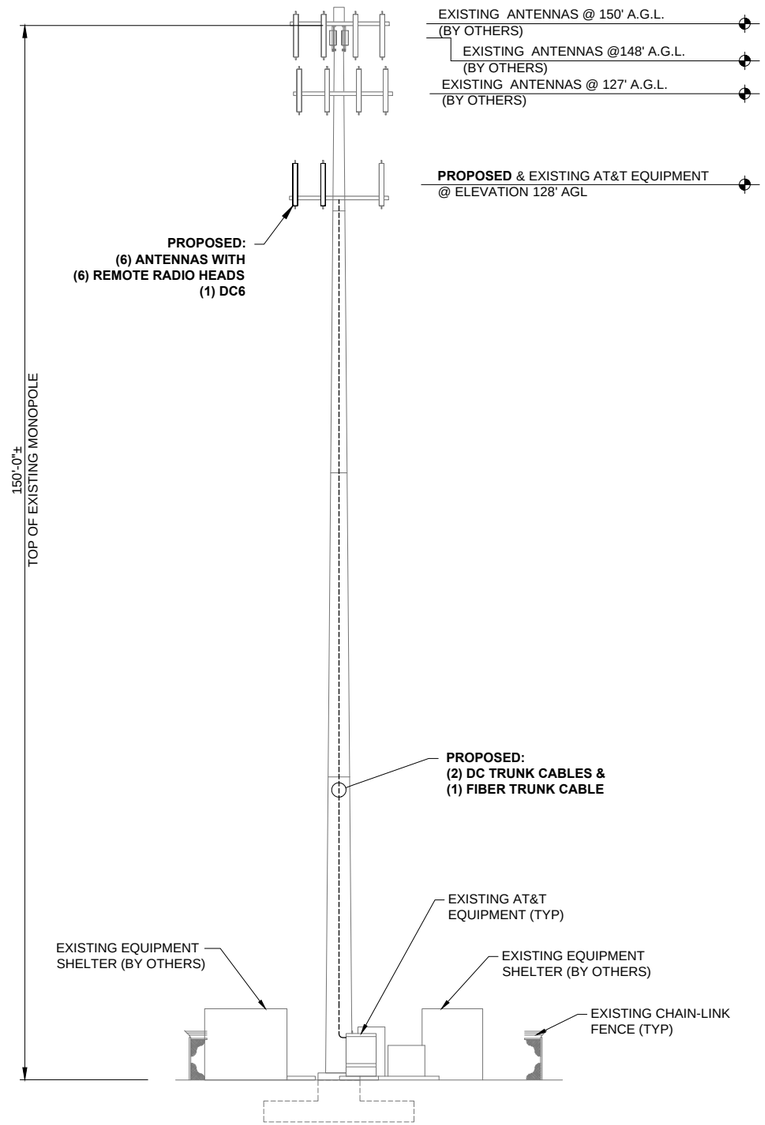
C-1



1 EQUIPMENT LAYOUT SCALE: 3/8" = 1'-0"

NOTES:

1. CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS REPORT; SITE NUMBER: CTL05662; SITE NAME: OXFORD CENTRAL; CROWN BU NUMBER: 876361; CROWN SITE NAME: SEYMOUR 2/OXFORD TOWN GARAGE; CROWN ORDER NUMBER: 486191; ISSUED BY PAUL J. FORD & COMPANY. DATED ON 06/21/19. PER THIS ANALYSIS NO MODIFICATIONS ARE REQUIRED. THE CONTRACTOR SHALL VERIFY ALL EXISTING MEMBERS AND HARDWARE ARE INSTALLED PROPERLY AS DESCRIBED IN THIS REPORT.



2 TOWER ELEVATION SCALE: 3/32" = 1'-0"

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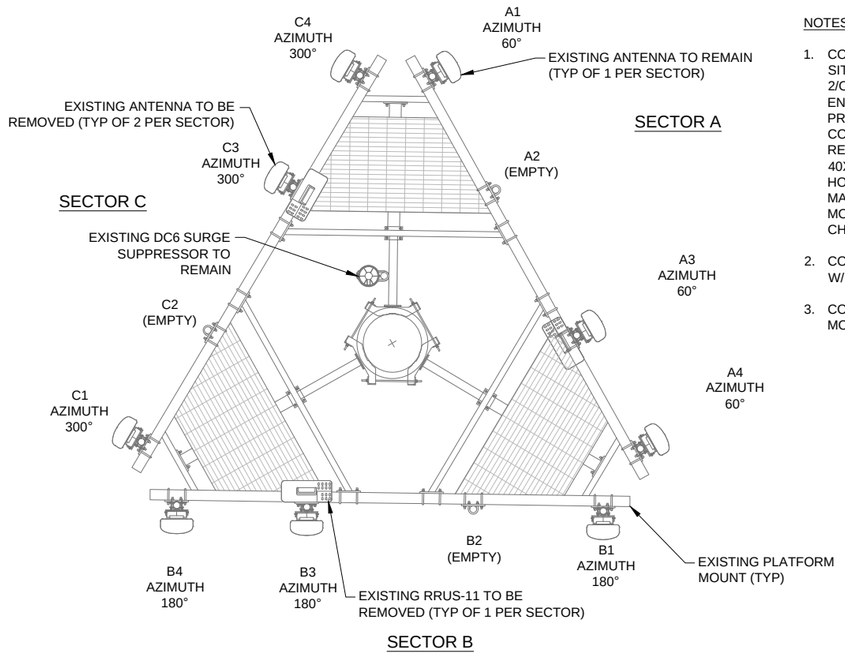
EQUIPMENT LAYOUT & PROPOSED TOWER ELEVATION

C-2



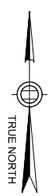
ELEVATION 128'

NOTES:

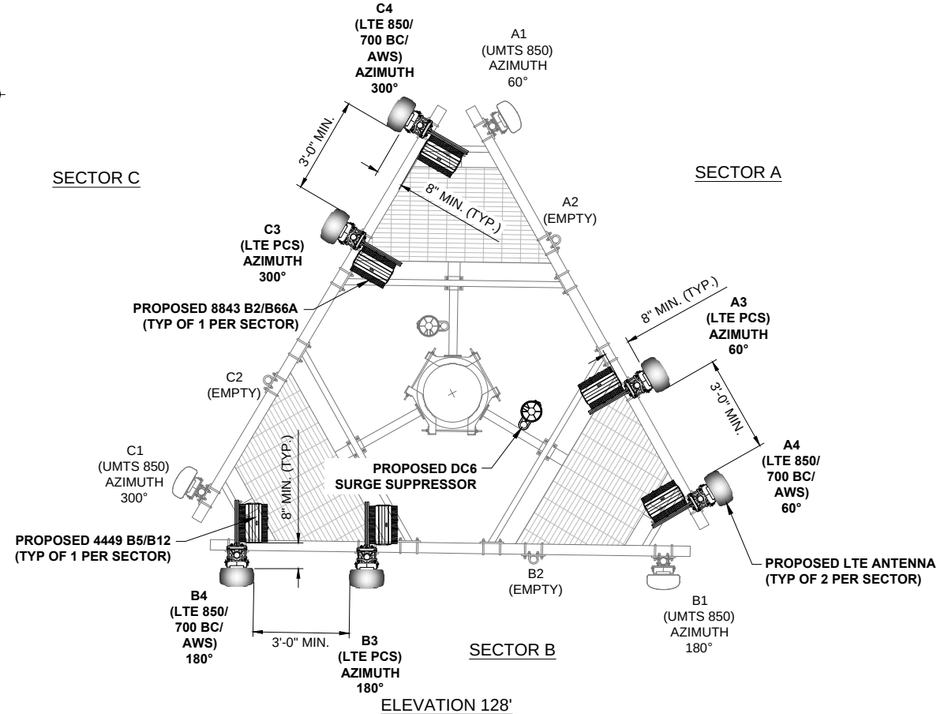
1. CONTRACTOR SHALL REFER TO THE MOUNT ANALYSIS REPORT; SITE NUMBER: CTL05662; SITE NAME: OXFORD CENTRAL; CROWN BU NUMBER: 876361; CROWN SITE NAME: SEYMOUR 2/OXFORD TOWN GARAGE; CROWN ORDER NUMBER: 486191; ISSUED BY INFINIGY ENGINEERING, PLLC, DATED ON 06/12/19. THE MOUNT MODIFICATIONS MUST BE PERFORMED PRIOR TO THE INSTALLATION OF THE EQUIPMENT SHOWN ON THE DRAWINGS. CONTRACTOR SHALL REFER TO THE MOUNT ANALYSIS REPORT PAGE 4 SECTION 4.1 RECOMMENDATIONS WHICH STATES: PIPE MOUNTS ARE TO BE REPLACED WITH NEW 2.5 CH 40X8' LONG PIPES (GRADE A53-B). NEW PIPE MOUNTS TO BE ATTACHED TO EXISTING MOUNT HORIZONTALS USING NEW SITE PRO 1 SCX2-K CROSSOVER PLATE KITS. CONTRACTOR TO MATCH EXISTING VERTICAL OFFSETS AS NOTED IN THE MAPPING REPORT. NO STRUCTURAL MODIFICATIONS ARE REQUIRED AT THIS TIME, PROVIDED THAT THE ABOVE-LISTED CHANGES ARE IMPLEMENTED.
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.

1 EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



DO NOT INSTALL PROPOSED SQUID OR SURGE SUPPRESSOR ON TOWER SHAFT



ELEVATION 128'

2 PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.

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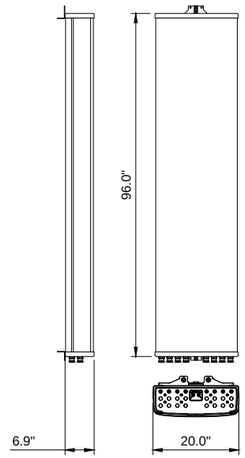
20 GREAT OAK RD
OXFORD, CT 06478

EXISTING & PROPOSED ANTENNA LAYOUT

C-3

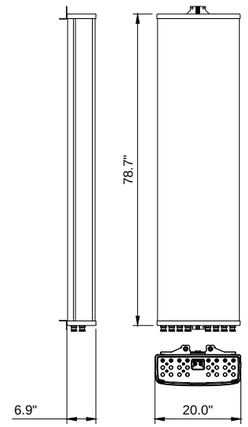
MANUFACTURER:	KATHREIN
MODEL NO.:	80010966
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
COLOR:	LIGHT GRAY
DIMENSIONS (LxWxD):	96.0" x 20.0" x 6.9" 2438mm x 508mm x 175mm
WEIGHT (lbs):	114.6
CONNECTOR:	8 x 4.3-10 FEMALE
FRONT WIND LOAD:	315 LBF @ 93 MPH 1400 N @ 150 KM/H
SIDE WIND LOAD:	316 LBF @ 93 MPH 1405 N @ 150 KM/H
WIND SPEED MAX.:	>150 MPH (>241 KM/H)



1 ANTENNA SPECIFICATIONS

SCALE: N.T.S.

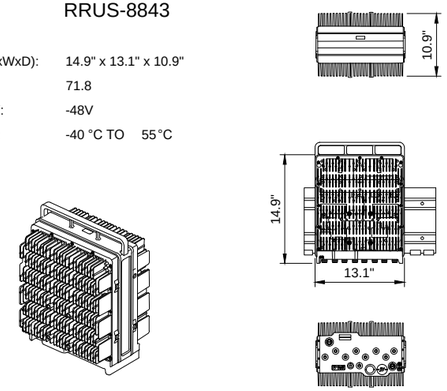
MANUFACTURER:	KATHREIN
MODEL NO.:	80010965
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
COLOR:	LIGHT GRAY
DIMENSIONS (LxWxD):	78.7" x 20.0" x 6.9" 1999mm x 508mm x 175mm
WEIGHT (lbs):	97.6
CONNECTOR:	8 x 4.3-10 FEMALE
FRONT WIND LOAD:	254 LBF @ 93 MPH 1130 N @ 150 KM/H
SIDE WIND LOAD:	256 LBF @ 93 MPH 1140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



2 ANTENNA SPECIFICATIONS

SCALE: N.T.S.

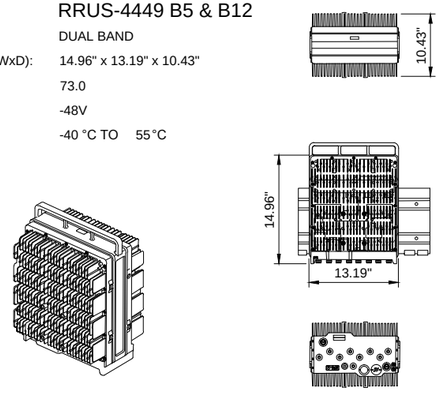
MANUFACTURER:	ERICSSON
MODEL NO.:	RRUS-8843
DIMENSIONS (HxWxD):	14.9" x 13.1" x 10.9"
WEIGHT (lbs):	71.8
POWER SUPPLY:	-48V
TEMPERATURE:	-40 °C TO 55 °C



3 RRUS SPECIFICATIONS

SCALE: N.T.S.

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

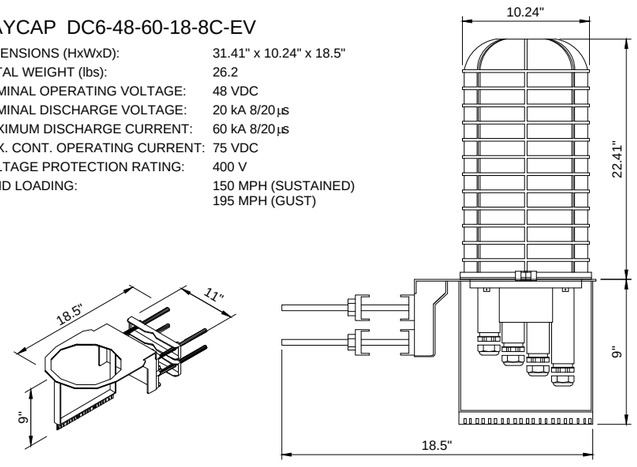


4 RRUS SPECIFICATIONS

SCALE: N.T.S.

RAYCAP DC6-48-60-18-8C-EV

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



5 DC SURGE PROTECTION SPECIFICATIONS

SCALE: N.T.S.

PART #	PIPE SIZE	STAND-OFF ARM
BBPM-K1	2-3/8"	3-1/2" - 4-1/2"
BBPM-K2	2-7/8"	3-1/2" - 4-1/2"
BBPM-K3	2-3/8"	3-1/2" - 6"
BBPM-U	2-3/8" - 4-1/2"	2-3/8" - 4-1/2"

6 DC6 MOUNTING DETAIL

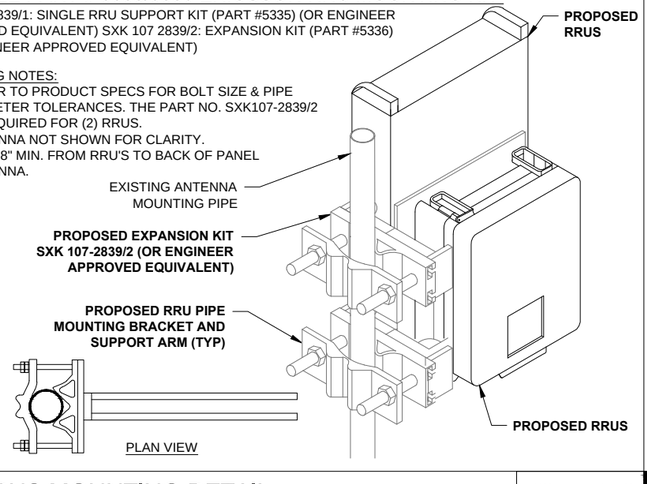
SCALE: N.T.S.

CUE DEE PART # 5335/5336 ERICSSON RRU MOUNTING KIT

SXK 107 2839/1: SINGLE RRU SUPPORT KIT (PART #5335) (OR ENGINEER APPROVED EQUIVALENT) SXK 107 2839/2: EXPANSION KIT (PART #5336) (OR ENGINEER APPROVED EQUIVALENT)

MOUNTING NOTES:

1. REFER TO PRODUCT SPECS FOR BOLT SIZE & PIPE DIAMETER TOLERANCES. THE PART NO. SXK107-2839/2 IS REQUIRED FOR (2) RRUS.
2. ANTENNA NOT SHOWN FOR CLARITY.
3. KEEP 8" MIN. FROM RRU'S TO BACK OF PANEL ANTENNA.



7 RRUS MOUNTING DETAIL

SCALE: N.T.S.

8 DETAIL NOT USED

SCALE: N.T.S.

9 DETAIL NOT USED

SCALE: N.T.S.

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SITE# CTL05662
OXFORD CENTRAL

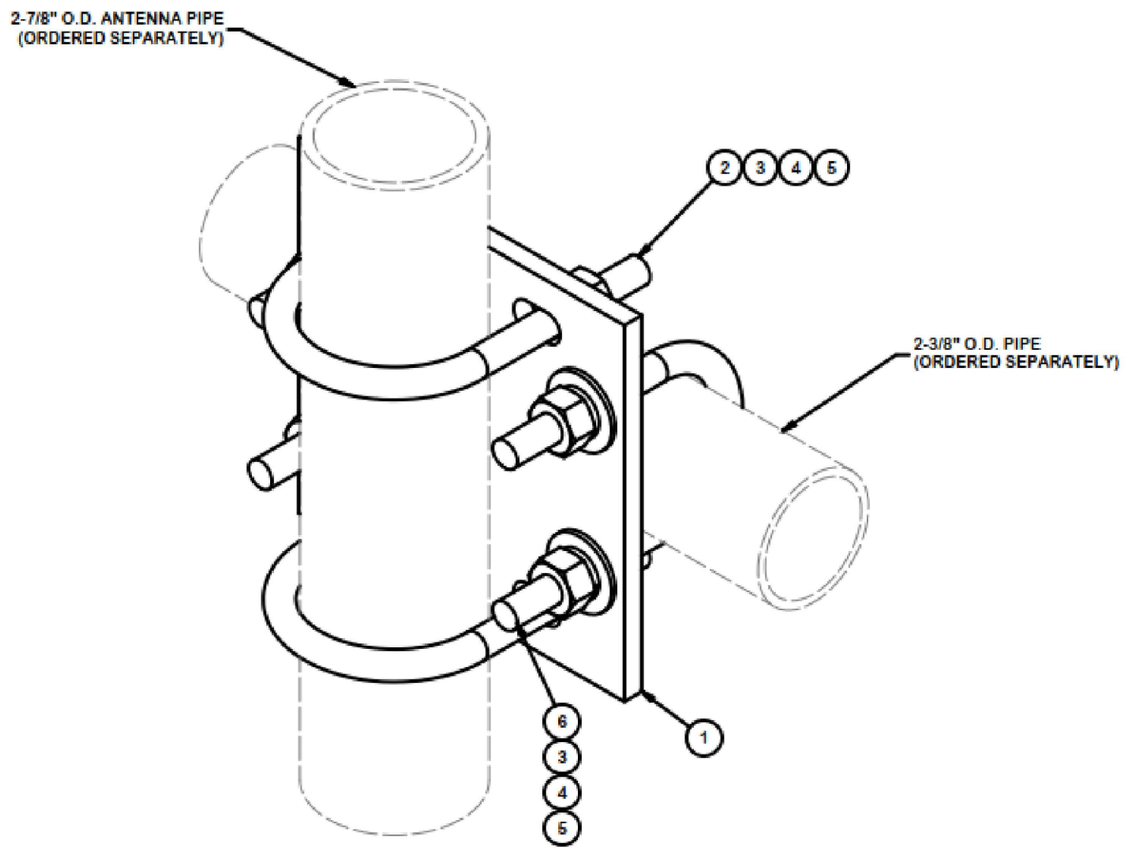
20 GREAT OAK RD
OXFORD, CT 06478

EQUIPMENT DETAILS

C-4

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX2	CROSSOVER PLATE	7 in	4.80	4.80
2	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.66	1.31
3	8	G12FW	1/2" HDG USS FLATWASHER		0.03	0.27
4	8	G12LW	1/2" HDG LOCKWASHER		0.01	0.11
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
6	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.63	1.25
					TOTAL WT. #	8.39



TOLERANCE NOTES

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

DESCRIPTION: CROSSOVER PLATE KIT

SUB PRO 1 — valmont

Engineering Support Team: 1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 6/30/2011		SCX2-K	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
		SHOP	BMC 7/1/2011	SCX2-K

1 CROSSOVER PLATE KIT

SCALE: N.T.S.

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DETAILS

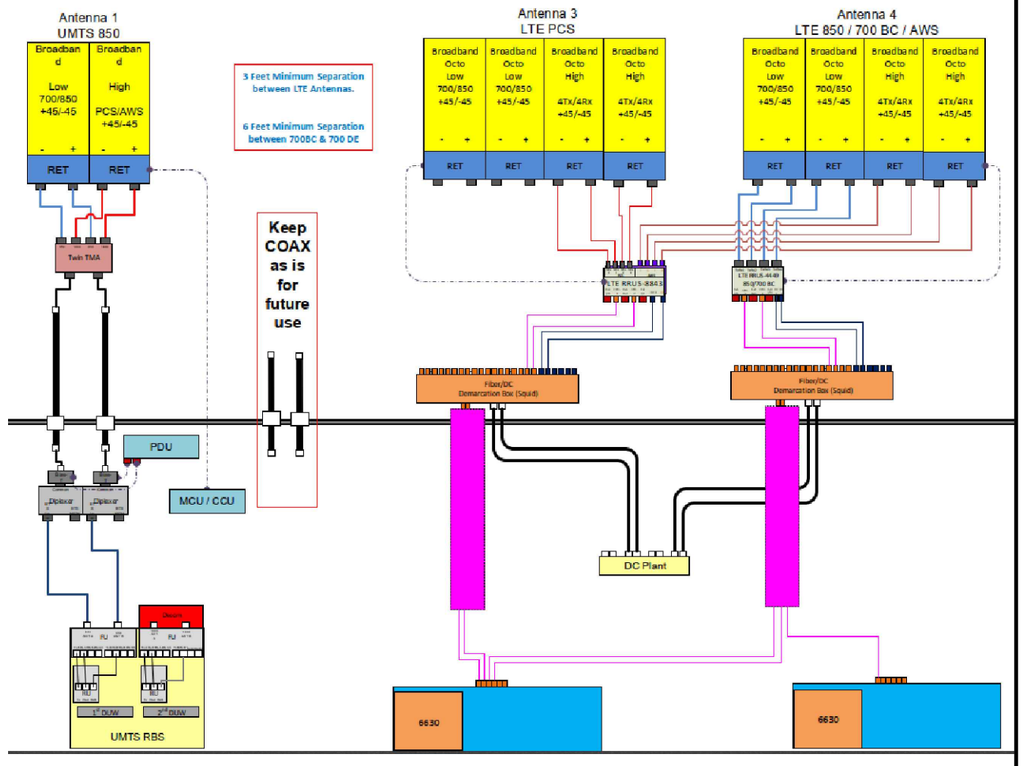
C-5

ANTENNA NUMBER	ANTENNA MODEL	ANTENNA BAND	AZIMUTH	ANTENNA CENTERLINE FROM GROUND	TMA's	RRH's	FEEDER	RAYCAP
A1	SBNH-1D6565C (96.4"x11.9"x7.1")	UMTS 850	60°	128'	(1) TWIN DTMABP7819VG12A	-	(4) 1-1/4" EXISTING COAX (LENGTH @ 178') (1) 3/8" EXISTING FIBER (LENGTH @ 178')	**(1) RAYCAP DC6-48-60-18-8C-EV**
A2	-	-	-	-	-	-	-	
A3	**800-10966 (96"x20"x6.9")**	**LTE PCS**	**60°**	**128'**	**-**	**(1) 8843 B2/B66A**	**(1) PROPOSED 3/8" FIBER (LENGTH @ 178')**	(1) RAYCAP DC6-48-60-18-8F
A3	**800-10966 (96"x20"x6.9")**	**LTE 850 / 700 BC / AWS**	**60°**	**128'**	**-**	**(1) 4449 B5/B12**	**(2) PROPOSED 3/4" DC TRUNK (LENGTH @ 178')**	
B1	AM-X-CD-16-65-00T-RET (72"x11.8"x5.9")	UMTS 850	180°	128'	(1) TWIN DTMABP7819VG12A	-	(4) 1-1/4" EXISTING COAX (LENGTH @ 178')	
B2	-	-	-	-	-	-	-	
B3	**800-10965 (78.7"x20"x6.9")**	**LTE PCS**	**180°**	**128'**	**-**	**(1) 8843 B2/B66A**	**-**	
B4	**800-10965 (78.7"x20"x6.9")**	**LTE 850 / 700 BC / AWS**	**180°**	**128'**	**-**	**(1) 4449 B5/B12**	(2) EXISTING DC TRUNK (LENGTH @ 178')	
C1	SBNH-1D6565C (96.4"x11.9"x7.1")	UMTS 850	300°	128'	(1) TWIN DTMABP7819VG12A	-	(4) 1-1/4" EXISTING COAX (LENGTH @ 178')	
C2	-	-	-	-	-	-	-	
G3	**800-10964 (59"x20"x6.9")**	**LTE PCS**	**300°**	**128'**	**-**	**(1) 8843 B2/B66A**	**-**	
G4	**800-10964 (59"x20"x6.9")**	**LTE 850 / 700 BC / AWS**	**300°**	**128'**	**-**	**(1) 4449 B5/B12**	**-**	

NOTES:

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

1 ANTENNA INFORMATION CHART — SCALE: NONE



2 RF EQUIPMENT SCHEMATIC — SCALE: NONE

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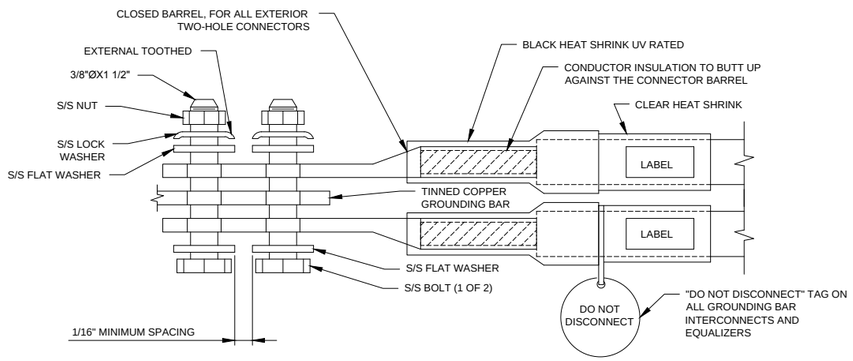
ANTENNA CHART & RF EQUIPMENT SCHEMATIC

RF-1

NOTES:

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



1 EXTERIOR TWO HOLE LUG DETAIL — SCALE: NONE

GENERAL NOTES:

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

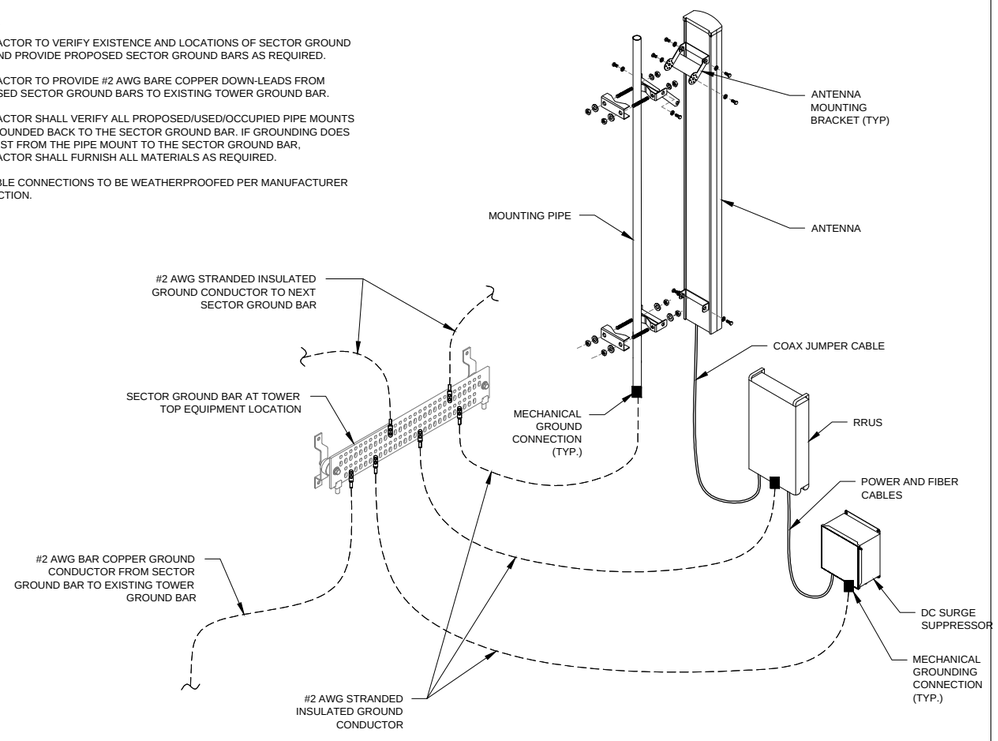
GROUNDING NOTES:

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

2 GROUNDING NOTES — SCALE: NONE

NOTES:

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



3 TYPICAL ANTENNA GROUNDING SCHEMATIC — SCALE: NONE

4 DETAIL NOT USED — SCALE: NONE

at&t
5841 BRIDGE STREET
EAST SYRACUSE, NY 13057

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

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

COMMONWEALTH OF MASSACHUSETTS
DANIEL J CORNING
CIVIL
No. 53767
REGISTERED PROFESSIONAL ENGINEER

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

SUBMITTALS

1	08/16/19	ISSUED FOR CONSTRUCTION
0	07/12/19	ISSUED FOR PERMITTING

FA# 10071200
SITE# CTL05662
OXFORD CENTRAL

20 GREAT OAK RD
OXFORD, CT 06478

GROUNDING DETAILS

G-1

Exhibit C

Structural Analysis Report

PAUL J. FORD & COMPANY

Date: **June 21, 2019**

Darcy Tarr
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL05662
	Carrier Site Name:	OXFORD CENTRAL
Crown Castle Designation:	**Crown Castle BU Number:**	876361
	Crown Castle Site Name:	SEYMOUR 2 / OXFORD TOWN GARAGE
	Crown Castle JDE Job Number:	565561
	Crown Castle Work Order Number:	1758707
	Crown Castle Order Number:	486191 Rev. 0
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37519-1214.002.7805
Site Data:	**20 Great Oak Rd., OXFORD, New Haven County, CT** **Latitude *41° 25' 34.91"*, Longitude *-73° 8' 39.33"*** **150 Foot - Monopole Tower**	

Dear Darcy Tarr,

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

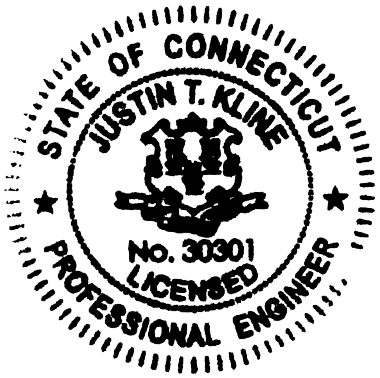
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity-92.3%**

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

Respectfully submitted by:

Gowtham Penumatsa
Structural Designer
gpenumatsa@pauljford.com



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1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in October of 1999.

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

2) ANALYSIS CRITERIA

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

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
127.0	128.0	3	andrew	SBNH-1D6565C	12 2 4 1	1-1/4 3/8 3/4 2” Cond
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 8843 B2/B66A		
		2	kathrein	80010965		
		4	kathrein	80010966		
		1	raycap	DC6-48-60-18-8C-EV		
	127.0	3	communication components inc.	DTMABP7819VG12A		
		1	raycap	DC6-48-60-18-8F		
		1	tower mounts	Mount Modifications (add 8’ mount pipes)		
		1	tower mounts	Platform Mount [LP 305-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	150.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	4	1-1/4
		6	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		3	alcatel lucent	TD-RRH8X20-25		
		3	commscope	NNVV-65B-R4		
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVTM14-ALU-I20		
		1	tower mounts	Miscellaneous [NA 507-3]		
		1	tower mounts	Platform Mount [LP 601-1]		
148.0	150.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	-	-
		3	alcatel lucent	800MHZ RRH		
	148.0	3	alcatel lucent	1900MHz RRH (65MHz)		
		1	tower mounts	Pipe Mount [PM 601-3]		
140.0	141.0	3	antel	BXA-171063-12BF w/ Mount Pipe	18	1-5/8
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe		
		6	antel	LPA-80063-6CF-EDIN-2 w/ Mount Pipe		
	140.0	1	tower mounts	Platform Mount [LP 601-1]		
85.0	86.0	1	lucent	KS24019-L112A	1	1/2
		1	lucent	KS24019-L112D		
	85.0	1	tower mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, 09/22/1999	1532984	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	EEI, 5723, 06/23/2000	1447042	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEI, 5723, 10/01/1999	1446979	CCISITES
4-CLOSE OUT PACKAGE	Global Signal, 3017680,	2034078	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37512-1818, 06/28/2012	3354881	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 126580, 03/14/2013	3680653	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 126580, 04/10/2013	3772404	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) The existing base plate grout was considered in this analysis. Grout must be maintained and inspected periodically and must be replaced if damaged or cracked. Refer to Crown Castle document ENG-PRC-10012, Base Plate Grout Repair.
6) The micro piles detailed in Doc# 3354881 were found to be ineffective, and therefore were not considered in this analysis.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP16.065x15x0.1875	Pole	12.5%	Pass
145 - 140	Pole	TP17.129x16.065x0.1875	Pole	22.7%	Pass
140 - 135	Pole	TP18.194x17.129x0.1875	Pole	40.1%	Pass
135 - 130	Pole	TP19.259x18.194x0.1875	Pole	53.9%	Pass
130 - 126.59	Pole	TP20.66x19.259x0.1875	Pole	64.0%	Pass
126.59 - 121.59	Pole	TP20.677x19.61x0.25	Pole	60.9%	Pass
121.59 - 116.59	Pole	TP21.744x20.677x0.25	Pole	70.7%	Pass
116.59 - 115.75	Pole	TP21.923x21.744x0.25	Pole	72.1%	Pass
115.75 - 115.5	Pole + Reinf.	TP21.976x21.923x0.5625	Reinf. 6 Tension Rupture	50.9%	Pass
115.5 - 110.5	Pole + Reinf.	TP23.043x21.976x0.5438	Reinf. 6 Tension Rupture	57.9%	Pass
110.5 - 105.5	Pole + Reinf.	TP24.11x23.043x0.525	Reinf. 6 Tension Rupture	64.2%	Pass
105.5 - 100.5	Pole + Reinf.	TP25.177x24.11x0.5125	Reinf. 6 Tension Rupture	69.9%	Pass
100.5 - 95.5	Pole + Reinf.	TP26.244x25.177x0.5	Reinf. 6 Tension Rupture	75.1%	Pass
95.5 - 90.5	Pole + Reinf.	TP27.311x26.244x0.4875	Reinf. 6 Tension Rupture	79.7%	Pass
90.5 - 90.04	Pole + Reinf.	TP28.28x27.311x0.4875	Reinf. 6 Tension Rupture	80.1%	Pass
90.04 - 84.96	Pole + Reinf.	TP27.993x26.909x0.675	Reinf. 5 Tension Rupture	62.2%	Pass
84.96 - 79.96	Pole + Reinf.	TP29.06x27.993x0.6625	Reinf. 5 Tension Rupture	65.2%	Pass
79.96 - 74.96	Pole + Reinf.	TP30.126x29.06x0.6375	Reinf. 5 Tension Rupture	67.9%	Pass
74.96 - 69.96	Pole + Reinf.	TP31.193x30.126x0.625	Reinf. 5 Tension Rupture	70.5%	Pass
69.96 - 64.96	Pole + Reinf.	TP32.26x31.193x0.6125	Reinf. 5 Tension Rupture	72.9%	Pass
64.96 - 60.5	Pole + Reinf.	TP33.211x32.26x0.6	Reinf. 5 Tension Rupture	74.8%	Pass
60.5 - 60.25	Pole + Reinf.	TP33.264x33.211x0.6	Reinf. 4 Tension Rupture	74.9%	Pass
60.25 - 55.25	Pole + Reinf.	TP34.331x33.264x0.5875	Reinf. 4 Tension Rupture	77.0%	Pass
55.25 - 50.25	Pole + Reinf.	TP35.398x34.331x0.5875	Reinf. 4 Tension Rupture	78.8%	Pass
50.25 - 47.58	Pole + Reinf.	TP37.07x35.398x0.575	Reinf. 4 Tension Rupture	79.8%	Pass
47.58 - 41.41	Pole + Reinf.	TP36.659x35.342x0.6375	Reinf. 4 Tension Rupture	75.8%	Pass
41.41 - 36.41	Pole + Reinf.	TP37.727x36.659x0.625	Reinf. 4 Tension Rupture	77.1%	Pass
36.41 - 31.41	Pole + Reinf.	TP38.794x37.727x0.625	Reinf. 4 Tension Rupture	78.3%	Pass
31.41 - 30.5	Pole + Reinf.	TP38.989x38.794x0.6125	Reinf. 4 Tension Rupture	78.5%	Pass
30.5 - 30.25	Pole + Reinf.	TP39.042x38.989x0.6125	Reinf. 1 Tension Rupture	78.6%	Pass
30.25 - 25.25	Pole + Reinf.	TP40.109x39.042x0.6125	Reinf. 1 Tension Rupture	79.6%	Pass
25.25 - 20.25	Pole + Reinf.	TP41.177x40.109x0.6	Reinf. 1 Tension Rupture	80.6%	Pass
20.25 - 18	Pole + Reinf.	TP41.657x41.177x0.6	Reinf. 1 Tension Rupture	81.0%	Pass
18 - 17.75	Pole + Reinf.	TP41.711x41.657x0.5563	Reinf. 1 Tension Rupture	83.3%	Pass
17.75 - 12.75	Pole + Reinf.	TP42.778x41.711x0.55	Reinf. 1 Tension Rupture	84.1%	Pass
12.75 - 7.75	Pole + Reinf.	TP43.845x42.778x0.55	Reinf. 1 Tension Rupture	84.9%	Pass
7.75 - 2.75	Pole + Reinf.	TP44.913x43.845x0.5375	Reinf. 1 Tension Rupture	85.5%	Pass
2.75 - 2.5	Pole + Reinf.	TP44.966x44.913x0.5375	Reinf. 1 Tension Rupture	85.6%	Pass
2.5 - 2.25	Pole + Reinf.	TP45.02x44.966x0.5125	Reinf. 7 Tension Yield	84.3%	Pass
2.25 - 0	Pole + Reinf.	TP45.5x45.02x0.5125	Reinf. 7 Tension Yield	84.5%	Pass
				Summary	
			Pole	72.1%	Pass
			Reinforcement	85.6%	Pass
			Overall	85.6%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	80.4	Pass
1	Base Plate	0	76.1	Pass
1	Base Foundation Structural Steel	0	82.9	Pass
1	Base Foundation Soil Interaction	0	92.3	Pass

Structure Rating (max from all components) =	92.3%

Notes:

- All structural ratings are per TIA-222-H Section 15.5

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

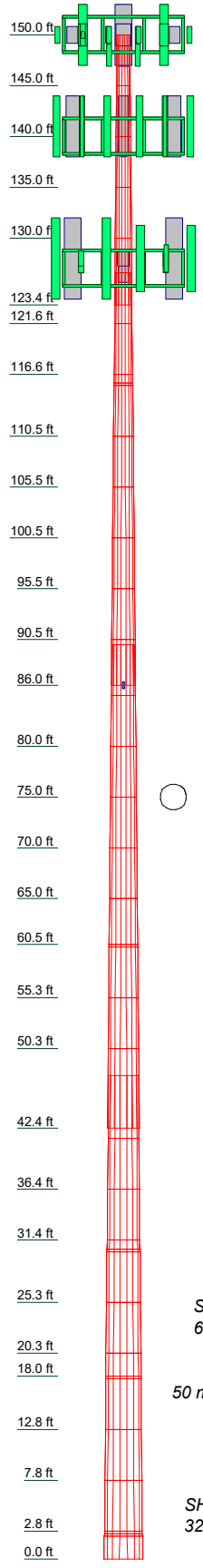
4.1) Recommendations

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

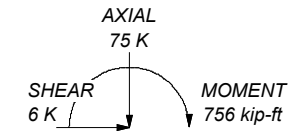
APPENDIX A

TNXTOWER OUTPUT

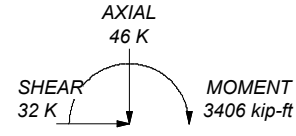
Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Length (ft)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	6.17	6.17	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.83
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.1875	0.1875	0.1875	0.1875	0.1875	0.2500	0.2500	0.2500	0.2500	0.5469	0.5250	0.5125	0.5000	0.4875	0.4875	0.6750	0.6625	0.6500	0.6250	0.6125	0.6000	0.5875	0.5875	0.5875	0.5750	0.6375	0.6250	0.6250	0.6250	0.6125	0.6125	0.6000	0.6000	0.5625	0.5500	0.5500	0.5375	0.5375	0.5250	0.5250
Socket Length (ft)					3.17										4.08										5.17																
Top Dia (in)	15.0000	16.0647	17.1294	18.1941	19.2588	20.6600	21.9245	22.9892	23.0434	23.0434	23.1104	24.1104	25.1773	26.2443	26.3112	27.3780	27.9923	29.0597	30.1263	31.1929	32.2595	33.3262	34.3309	34.3309	35.3975	36.4642	36.6539	37.7206	38.7873	39.0439	40.1094	41.1768	41.7406	42.7780	42.7780	43.8454	43.8454	44.9129	45.4767	45.4767
Bot Dia (in)	16.0647	17.1294	18.1941	19.2588	20.6600	21.9245	22.9892	23.0434	23.0434	23.1104	24.1104	25.1773	26.2443	27.3112	27.9923	29.0597	30.1263	31.1929	32.2595	33.3262	34.3309	34.3309	35.3975	36.4642	37.7206	37.7206	38.7873	39.0439	40.1094	41.1768	41.7406	42.7780	42.7780	43.8454	43.8454	44.9129	45.4767	45.4767	46.5434	46.5434
Grade	A572-65																																							
Weight (K)	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.0	0.0	0.6	0.6	0.6	0.6	0.6	0.6	0.9	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.6	1.4	1.2	1.2	1.2	0.0	1.2	1.2	0.6	0.0	1.3	1.3	0.0	0.1	0.1	26.1



ALL REACTIONS ARE FACTORED



TORQUE 0 kip-ft
50 mph WIND - 1.5000 in ICE



TORQUE 0 kip-ft
REACTIONS - 125 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TIA-222-H Annex S

PJFLogo

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

Job:	***150 ft Monopole / Seymour 2 / Oxford Town Garage***		
Project:	***PJF 37519-1214.002.7805 / BU# 876361***		
Client: Crown Castle	Drawn by: gpenumatsa	App'd:	
Code: TIA-222-H	Date: 06/21/19	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1) Tower is located in New Haven County, Connecticut.
2) Tower base elevation above sea level: 734.00 ft.
3) Basic wind speed of 125 mph.
4) Risk Category II.
5) Exposure Category B.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.00 ft.
9) Nominal ice thickness of 1.5000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TIA-222-H Annex S.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.05.
19) Tower analysis based on target reliabilities in accordance with Annex S.
20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
21) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-145.00	5.00	0.00	18	15.0000	16.0647	0.1875	0.7500	A572-65 (65 ksi)
L2	145.00-140.00	5.00	0.00	18	16.0647	17.1294	0.1875	0.7500	A572-65 (65 ksi)
L3	140.00-135.00	5.00	0.00	18	17.1294	18.1941	0.1875	0.7500	A572-65 (65 ksi)
L4	135.00-130.00	5.00	0.00	18	18.1941	19.2588	0.1875	0.7500	A572-65 (65 ksi)
L5	130.00-123.42	6.58	3.17	18	19.2588	20.6600	0.1875	0.7500	A572-65 (65 ksi)
L6	123.42-121.59	5.00	0.00	18	19.6100	20.6769	0.2500	1.0000	A572-65 (65 ksi)
L7	121.59-116.59	5.00	0.00	18	20.6769	21.7439	0.2500	1.0000	A572-65 (65 ksi)
L8	116.59-115.75	0.84	0.00	18	21.7439	21.9231	0.2500	1.0000	A572-65 (65 ksi)
L9	115.75-115.50	0.25	0.00	18	21.9231	21.9765	0.5625	2.2500	A572-65 (65 ksi)
L10	115.50-110.50	5.00	0.00	18	21.9765	23.0434	0.5437	2.1750	A572-65 (65 ksi)
L11	110.50-105.50	5.00	0.00	18	23.0434	24.1104	0.5250	2.1000	A572-65 (65 ksi)
L12	105.50-100.50	5.00	0.00	18	24.1104	25.1773	0.5125	2.0500	A572-65 (65 ksi)
L13	100.50-95.50	5.00	0.00	18	25.1773	26.2443	0.5000	2.0000	A572-65 (65 ksi)
L14	95.50-90.50	5.00	0.00	18	26.2443	27.3112	0.4875	1.9500	A572-65 (65 ksi)
L15	90.50-85.96	4.54	4.08	18	27.3112	28.2800	0.4875	1.9500	A572-65 (65 ksi)
L16	85.96-84.96	5.08	0.00	18	26.9094	27.9931	0.6750	2.7000	A572-65 (65 ksi)
L17	84.96-79.96	5.00	0.00	18	27.9931	29.0597	0.6625	2.6500	A572-65 (65 ksi)
L18	79.96-74.96	5.00	0.00	18	29.0597	30.1263	0.6375	2.5500	A572-65 (65 ksi)
L19	74.96-69.96	5.00	0.00	18	30.1263	31.1929	0.6250	2.5000	A572-65 (65 ksi)
L20	69.96-64.96	5.00	0.00	18	31.1929	32.2595	0.6125	2.4500	A572-65 (65 ksi)
L21	64.96-60.50	4.46	0.00	18	32.2595	33.2110	0.6000	2.4000	A572-65 (65 ksi)
L22	60.50-60.25	0.25	0.00	18	33.2110	33.2643	0.6000	2.4000	A572-65 (65 ksi)
L23	60.25-55.25	5.00	0.00	18	33.2643	34.3309	0.5875	2.3500	A572-65 (65 ksi)
L24	55.25-50.25	5.00	0.00	18	34.3309	35.3975	0.5875	2.3500	A572-65 (65 ksi)
L25	50.25-42.41	7.84	5.17	18	35.3975	37.0700	0.5750	2.3000	A572-65 (65 ksi)
L26	42.41-41.41	6.17	0.00	18	35.3421	36.6594	0.6375	2.5500	A572-65 (65 ksi)
L27	41.41-36.41	5.00	0.00	18	36.6594	37.7268	0.6250	2.5000	A572-65 (65 ksi)
L28	36.41-31.41	5.00	0.00	18	37.7268	38.7943	0.6250	2.5000	A572-65 (65 ksi)
L29	31.41-30.50	0.91	0.00	18	38.7943	38.9885	0.6125	2.4500	A572-65 (65 ksi)
L30	30.50-30.25	0.25	0.00	18	38.9885	39.0419	0.6125	2.4500	A572-65 (65 ksi)
L31	30.25-25.25	5.00	0.00	18	39.0419	40.1094	0.6125	2.4500	A572-65 (65 ksi)
L32	25.25-20.25	5.00	0.00	18	40.1094	41.1768	0.6000	2.4000	A572-65 (65 ksi)
L33	20.25-18.00	2.25	0.00	18	41.1768	41.6572	0.6000	2.4000	A572-65 (65 ksi)
L34	18.00-17.75	0.25	0.00	18	41.6572	41.7105	0.5563	2.2250	A572-65 (65 ksi)
L35	17.75-12.75	5.00	0.00	18	41.7105	42.7780	0.5500	2.2000	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L36	12.75-7.75	5.00	0.00	18	42.7780	43.8454	0.5500	2.2000	(65 ksi) A572-65 (65 ksi)
L37	7.75-2.75	5.00	0.00	18	43.8454	44.9129	0.5375	2.1500	A572-65 (65 ksi)
L38	2.75-2.50	0.25	0.00	18	44.9129	44.9663	0.5375	2.1500	A572-65 (65 ksi)
L39	2.50-2.25	0.25	0.00	18	44.9663	45.0196	0.5125	2.0500	A572-65 (65 ksi)
L40	2.25-0.00	2.25		18	45.0196	45.5000	0.5125	2.0500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	15.2025	8.8153	244.3603	5.2584	7.6200	32.0683	489.0422	4.4085	2.3100	12.32
	16.2836	9.4489	300.9319	5.6364	8.1609	36.8750	602.2598	4.7254	2.4974	13.319
L2	16.2836	9.4489	300.9319	5.6364	8.1609	36.8750	602.2598	4.7254	2.4974	13.319
	17.3647	10.0826	365.6231	6.0144	8.7017	42.0172	731.7272	5.0422	2.6848	14.319
L3	17.3647	10.0826	365.6231	6.0144	8.7017	42.0172	731.7272	5.0422	2.6848	14.319
	18.4459	10.7162	438.9783	6.3924	9.2426	47.4950	878.5342	5.3591	2.8722	15.318
L4	18.4459	10.7162	438.9783	6.3924	9.2426	47.4950	878.5342	5.3591	2.8722	15.318
	19.5270	11.3498	521.5421	6.7703	9.7835	53.3084	1043.7704	5.6760	3.0596	16.318
L5	19.5270	11.3498	521.5421	6.7703	9.7835	53.3084	1043.7704	5.6760	3.0596	16.318
	20.9498	12.1837	645.1464	7.2677	10.4953	61.4701	1291.1417	6.0930	3.3062	17.633
L6	20.5608	15.3621	727.4425	6.8728	9.9619	73.0227	1455.8422	7.6825	3.0114	12.045
	20.9573	16.2088	854.4629	7.2516	10.5039	81.3474	1710.0501	8.1059	3.1991	12.797
L7	20.9573	16.2088	854.4629	7.2516	10.5039	81.3474	1710.0501	8.1059	3.1991	12.797
	22.0407	17.0554	995.4703	7.6303	11.0459	90.1214	1992.2505	8.5293	3.3869	13.548
L8	22.0407	17.0554	995.4703	7.6303	11.0459	90.1214	1992.2505	8.5293	3.3869	13.548
	22.2228	17.1976	1020.5837	7.6940	11.1369	91.6395	2042.5102	8.6004	3.4185	13.674
L9	22.1745	38.1367	2198.4085	7.5830	11.1369	197.3978	4399.7096	19.0720	2.8685	5.1
	22.2287	38.2320	2214.9210	7.6020	11.1640	198.3977	4432.7564	19.1196	2.8779	5.116
L10	22.2316	36.9899	2146.7194	7.6086	11.1640	192.2887	4296.2635	18.4985	2.9109	5.353
	23.3150	38.8313	2483.5437	7.9874	11.7061	212.1589	4970.3553	19.4194	3.0986	5.699
L11	23.3179	37.5236	2403.9041	7.9940	11.7061	205.3556	4810.9713	18.7653	3.1316	5.965
	24.4013	39.3015	2762.0493	8.3728	12.2481	225.5090	5527.7329	19.6545	3.3194	6.323
L12	24.4032	38.3861	2700.5755	8.3772	12.2481	220.4900	5404.7044	19.1967	3.3414	6.52
	25.4867	40.1216	3083.6971	8.7560	12.7901	241.1008	6171.4518	20.0646	3.5292	6.886
L13	25.4886	39.1629	3013.0613	8.7604	12.7901	235.5781	6030.0873	19.5852	3.5512	7.102
	26.5720	40.8561	3421.0207	9.1392	13.3321	256.6006	6846.5428	20.4320	3.7390	7.478
L14	26.5739	39.8541	3340.3561	9.1437	13.3321	250.5502	6685.1075	19.9308	3.7610	7.715
	27.6573	41.5050	3772.9022	9.5224	13.8741	271.9386	7550.7689	20.7564	3.9488	8.1
L15	27.6573	41.5050	3772.9022	9.5224	13.8741	271.9386	7550.7689	20.7564	3.9488	8.1
	28.6411	43.0040	4196.6412	9.8663	14.3662	292.1183	8398.8044	21.5061	4.1193	8.45
L16	28.1041	56.2058	4887.1993	9.3132	13.6700	357.5138	9780.8293	28.1083	3.5480	5.256
	28.3208	58.5276	5518.2014	9.6979	14.2205	388.0463	11043.663 7	29.2693	3.7388	5.539
L17	28.3227	57.4700	5423.4505	9.7023	14.2205	381.3833	10854.037 3	28.7405	3.7608	5.677
	29.4058	59.7129	6083.5317	10.0810	14.7623	412.0987	12175.068 3	29.8621	3.9485	5.96
L18	29.4096	57.5101	5869.4391	10.0899	14.7623	397.5961	11746.601 3	28.7605	3.9925	6.263
	30.4927	59.6684	6555.3485	10.4685	15.3042	428.3377	13119.322 7	29.8399	4.1802	6.557
L19	30.4946	58.5232	6434.9885	10.4730	15.3042	420.4732	12878.444 3	29.2672	4.2022	6.724
	31.5777	60.6391	7158.4998	10.8516	15.8460	451.7543	14326.418 9	30.3253	4.3900	7.024
L20	31.5796	59.4506	7023.9395	10.8560	15.8460	443.2625	14057.121 4	29.7310	4.4120	7.203
	32.6627	61.5242	7784.8411	11.2347	16.3878	475.0375	15579.925 7	30.7680	4.5997	7.51

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
L21	32.6646	60.2924	7635.0067	11.2391	16.3878	465.8945	15280.0597	30.1519	4.6217	7.703
	33.6307	62.1043	8344.2365	11.5769	16.8712	494.5855	16699.4525	31.0581	4.7891	7.982
L22	33.6307	62.1043	8344.2365	11.5769	16.8712	494.5855	16699.4525	31.0581	4.7891	7.982
	33.6849	62.2059	8385.2412	11.5958	16.8983	496.2191	16781.5160	31.1089	4.7985	7.998
L23	33.6868	60.9332	8219.9784	11.6003	16.8983	486.4393	16450.7728	30.4724	4.8205	8.205
	34.7699	62.9222	9051.4769	11.9789	17.4401	519.0035	18114.8639	31.4671	5.0082	8.525
L24	34.7699	62.9222	9051.4769	11.9789	17.4401	519.0035	18114.8639	31.4671	5.0082	8.525
	35.8530	64.9111	9937.2394	12.3576	17.9819	552.6230	19887.5546	32.4617	5.1960	8.844
L25	35.8549	63.5529	9736.2900	12.3620	17.9819	541.4480	19485.3912	31.7825	5.2180	9.075
	37.5532	66.6052	11207.5922	12.9557	18.8316	595.1494	22429.9317	33.3089	5.5123	9.587
L26	36.9098	70.2222	10685.2877	12.3201	17.9538	595.1549	21384.6353	35.1178	5.0982	7.997
	37.1265	72.8875	11948.7550	12.7878	18.6230	641.6145	23913.2324	36.4507	5.3300	8.361
L27	37.1285	71.4831	11726.6650	12.7922	18.6230	629.6889	23468.7603	35.7484	5.3520	8.563
	38.2124	73.6007	12799.9861	13.1711	19.1652	667.8759	25616.8148	36.8073	5.5399	8.864
L28	38.2124	73.6007	12799.9861	13.1711	19.1652	667.8759	25616.8148	36.8073	5.5399	8.864
	39.2963	75.7183	13936.8796	13.5501	19.7075	707.1872	27892.0976	37.8663	5.7278	9.164
L29	39.2982	74.2282	13671.5650	13.5545	19.7075	693.7246	27361.1194	37.1212	5.7498	9.387
	39.4955	74.6059	13881.3197	13.6235	19.8062	700.8582	27780.9049	37.3100	5.7840	9.443
L30	39.4955	74.6059	13881.3197	13.6235	19.8062	700.8582	27780.9049	37.3100	5.7840	9.443
	39.5497	74.7097	13939.3180	13.6424	19.8333	702.8243	27896.9777	37.3619	5.7934	9.459
L31	39.5497	74.7097	13939.3180	13.6424	19.8333	702.8243	27896.9777	37.3619	5.7934	9.459
	40.6336	76.7849	15133.4588	14.0214	20.3756	742.7262	30286.8306	38.3997	5.9812	9.765
L32	40.6356	75.2416	14838.6923	14.0258	20.3756	728.2595	29696.9097	37.6280	6.0032	10.005
	41.7195	77.2745	16074.2032	14.4048	20.9178	768.4454	32169.5573	38.6446	6.1911	10.319
L33	41.7195	77.2745	16074.2032	14.4048	20.9178	768.4454	32169.5573	38.6446	6.1911	10.319
	42.2072	78.1893	16651.8539	14.5753	21.1618	786.8811	33325.6187	39.1021	6.2757	10.459
L34	42.2140	72.5652	15487.0593	14.5908	21.1618	731.8389	30994.4969	36.2895	6.3527	11.421
	42.2682	72.6594	15547.4711	14.6098	21.1890	733.7536	31115.3999	36.3366	6.3621	11.437
L35	42.2691	71.8540	15379.7853	14.6120	21.1890	725.8397	30779.8078	35.9338	6.3731	11.587
	43.3531	73.7174	16607.6589	14.9909	21.7312	764.2304	33237.1705	36.8657	6.5609	11.929
L36	43.3531	73.7174	16607.6589	14.9909	21.7312	764.2304	33237.1705	36.8657	6.5609	11.929
	44.4370	75.5809	17899.2056	15.3699	22.2735	803.6104	35821.9633	37.7976	6.7488	12.271
L37	44.4389	73.8844	17507.5607	15.3743	22.2735	786.0269	35038.1583	36.9492	6.7708	12.597
	45.5228	75.7055	18834.3095	15.7533	22.8158	825.4958	37693.4017	37.8600	6.9587	12.946
L38	45.5228	75.7055	18834.3095	15.7533	22.8158	825.4958	37693.4017	37.8600	6.9587	12.946

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
	45.5770	75.7966	18902.3504	15.7722	22.8429	827.4947	37829.5730	37.9055	6.9681	12.964
L39	45.5809	72.3118	18053.6132	15.7811	22.8429	790.3392	36130.9819	36.1628	7.0121	13.682
	45.6351	72.3987	18118.7186	15.8000	22.8700	792.2490	36261.2784	36.2062	7.0215	13.7
L40	45.6351	72.3987	18118.7186	15.8000	22.8700	792.2490	36261.2784	36.2062	7.0215	13.7
	46.1228	73.1800	18711.7248	15.9706	23.1140	809.5407	37448.0710	36.5970	7.1060	13.865

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 150.00-145.00				1	1	1			
L2 145.00-140.00				1	1	1			
L3 140.00-135.00				1	1	1			
L4 135.00-130.00				1	1	1			
L5 130.00-123.42				1	1	1			
L6 123.42-121.59				1	1	1			
L7 121.59-116.59				1	1	1			
L8 116.59-115.75				1	1	1			
L9 115.75-115.50				1	1	0.894293			
L10 115.50-110.50				1	1	0.902292			
L11 110.50-105.50				1	1	0.91304			
L12 105.50-100.50				1	1	0.915477			
L13 100.50-95.50				1	1	0.919741			
L14 95.50-90.50				1	1	0.92576			
L15 90.50-85.96				1	1	0.924255			
L16 85.96-84.96				1	1	0.903276			
L17 84.96-79.96				1	1	0.903064			
L18 79.96-74.96				1	1	0.921468			
L19 74.96-69.96				1	1	0.924163			
L20 69.96-64.96				1	1	0.928064			
L21 64.96-60.50				1	1	0.93459			
L22 60.50-60.25				1	1	0.933914			
L23 60.25-55.25				1	1	0.940096			
L24 55.25-50.25				1	1	0.927589			
L25 50.25-42.41				1	1	0.940913			
L26 42.41-41.41				1	1	0.941154			
L27 41.41-				1	1	0.949297			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	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
36.41									
L28 36.41-31.41				1	1	0.939528			
L29 31.41-30.50				1	1	0.956636			
L30 30.50-30.25				1	1	0.956158			
L31 30.25-25.25				1	1	0.946863			
L32 25.25-20.25				1	1	0.957305			
L33 20.25-18.00				1	1	0.953417			
L34 18.00-17.75				1	1	1.02685			
L35 17.75-12.75				1	1	1.02935			
L36 12.75-7.75				1	1	1.02078			
L37 7.75-2.75				1	1	1.03588			
L38 2.75-2.50				1	1	1.03548			
L39 2.50-2.25				1	1	1.02533			
L40 2.25-0.00				1	1	1.0222			

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 klf
****										
HB114-1-0813U4-M5J(1-1/4)	A	No	Surface Af (CaAa)	150.00 - 0.00	4	4	0.183 0.325	1.5400	4.8381	0.00
LDF7-50A(1-5/8)	C	No	Surface Af (CaAa)	140.00 - 0.00	6	6	0.058 0.308	1.9800	6.2203	0.00
***										
LDF4-50A(1/2)	B	No	Surface Ar (CaAa)	85.00 - 0.00	2	2	-0.408 -0.367	0.6250		0.00
***										
MP3-06 (L)	B	No	Surface Af (CaAa)	90.50 - 0.00	1	1	-0.042 -0.042	6.8900	19.0000	0.00
MP3-06 (L)	C	No	Surface Af (CaAa)	90.50 - 0.00	1	1	-0.042 -0.042	6.8900	19.0000	0.00
MP3-06 (L)	A	No	Surface Af (CaAa)	90.50 - 15.50	1	1	-0.042 -0.042	6.8900	19.0000	0.00
MP3-06 (L)	A	No	Surface Af (CaAa)	20.50 - 15.50	1	1	-0.042 -0.042	6.8900	19.0000	0.00
**										
MP3-05 (L)	B	No	Surface Af (CaAa)	118.00 - 88.00	1	1	-0.208 -0.208	5.3300	14.8400	0.00
MP3-05 (L)	A	No	Surface Af (CaAa)	118.00 - 88.00	1	1	-0.208 -0.208	5.3300	14.8400	0.00
MP3-05 (L)	C	No	Surface Af (CaAa)	118.00 - 88.00	1	1	-0.208 -0.208	5.3300	14.8400	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_AA_A ft^2/ft	Weight klf

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
**********									
**********									
**********									
**********									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	140.00 - 0.00	12	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
***									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	127.00 - 0.00	12	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	127.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	127.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	127.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	127.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
2" (Nominal) Conduit	C	No	No	Inside Pole	127.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-145.00	A	0.000	0.000	5.133	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	145.00-140.00	A	0.000	0.000	5.133	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L3	140.00-135.00	A	0.000	0.000	5.133	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	9.900	0.000	0.07
L4	135.00-130.00	A	0.000	0.000	5.133	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	9.900	0.000	0.07
L5	130.00-123.42	A	0.000	0.000	6.755	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	13.028	0.000	0.13
L6	123.42-121.59	A	0.000	0.000	1.879	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.623	0.000	0.05
L7	121.59-116.59	A	0.000	0.000	6.386	0.000	0.02
		B	0.000	0.000	1.253	0.000	0.00
		C	0.000	0.000	11.153	0.000	0.13
L8	116.59-115.75	A	0.000	0.000	1.609	0.000	0.00
		B	0.000	0.000	0.746	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	2.409	0.000	0.02
L9	115.75-115.50	A	0.000	0.000	0.479	0.000	0.00
		B	0.000	0.000	0.222	0.000	0.00
		C	0.000	0.000	0.717	0.000	0.01
L10	115.50-110.50	A	0.000	0.000	9.575	0.000	0.02
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	14.342	0.000	0.13
L11	110.50-105.50	A	0.000	0.000	9.575	0.000	0.02
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	14.342	0.000	0.13
L12	105.50-100.50	A	0.000	0.000	9.575	0.000	0.02
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	14.342	0.000	0.13
L13	100.50-95.50	A	0.000	0.000	9.575	0.000	0.02
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	14.342	0.000	0.13
L14	95.50-90.50	A	0.000	0.000	9.575	0.000	0.02
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	14.342	0.000	0.13
L15	90.50-85.96	A	0.000	0.000	12.095	0.000	0.02
		B	0.000	0.000	7.434	0.000	0.00
		C	0.000	0.000	16.423	0.000	0.11
L16	85.96-84.96	A	0.000	0.000	2.175	0.000	0.00
		B	0.000	0.000	1.153	0.000	0.00
		C	0.000	0.000	3.128	0.000	0.03
L17	84.96-79.96	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L18	79.96-74.96	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L19	74.96-69.96	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L20	69.96-64.96	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L21	64.96-60.50	A	0.000	0.000	9.700	0.000	0.02
		B	0.000	0.000	5.679	0.000	0.00
		C	0.000	0.000	13.952	0.000	0.11
L22	60.50-60.25	A	0.000	0.000	0.544	0.000	0.00
		B	0.000	0.000	0.318	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.01
L23	60.25-55.25	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L24	55.25-50.25	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L25	50.25-42.41	A	0.000	0.000	17.052	0.000	0.04
		B	0.000	0.000	9.983	0.000	0.00
		C	0.000	0.000	24.526	0.000	0.20
L26	42.41-41.41	A	0.000	0.000	2.175	0.000	0.00
		B	0.000	0.000	1.273	0.000	0.00
		C	0.000	0.000	3.128	0.000	0.03
L27	41.41-36.41	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L28	36.41-31.41	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L29	31.41-30.50	A	0.000	0.000	1.979	0.000	0.00
		B	0.000	0.000	1.159	0.000	0.00
		C	0.000	0.000	2.847	0.000	0.02
L30	30.50-30.25	A	0.000	0.000	0.544	0.000	0.00
		B	0.000	0.000	0.318	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.01
L31	30.25-25.25	A	0.000	0.000	10.875	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	15.642	0.000	0.13
L32	25.25-20.25	A	0.000	0.000	11.081	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L33	20.25-18.00	A	0.000	0.000	6.752	0.000	0.01
		B	0.000	0.000	2.865	0.000	0.00
		C	0.000	0.000	7.039	0.000	0.06
L34	18.00-17.75	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	0.318	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.01
L35	17.75-12.75	A	0.000	0.000	9.575	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L36	12.75-7.75	A	0.000	0.000	5.133	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L37	7.75-2.75	A	0.000	0.000	5.133	0.000	0.02
		B	0.000	0.000	6.367	0.000	0.00
		C	0.000	0.000	15.642	0.000	0.13
L38	2.75-2.50	A	0.000	0.000	0.257	0.000	0.00
		B	0.000	0.000	0.318	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.01
L39	2.50-2.25	A	0.000	0.000	0.257	0.000	0.00
		B	0.000	0.000	0.318	0.000	0.00
		C	0.000	0.000	0.782	0.000	0.01
L40	2.25-0.00	A	0.000	0.000	2.310	0.000	0.01
		B	0.000	0.000	2.865	0.000	0.00
		C	0.000	0.000	7.039	0.000	0.06

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-145.00	A	1.481	0.000	0.000	0.000	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	145.00-140.00	A	1.476	0.000	0.000	0.000	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	140.00-135.00	A	1.471	0.000	0.000	0.000	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.16
L4	135.00-130.00	A	1.465	0.000	0.000	0.000	0.000	0.08
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.16
L5	130.00-123.42	A	1.459	0.000	0.000	0.000	0.000	0.10
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.25
L6	123.42-121.59	A	1.454	0.000	0.000	0.000	0.000	0.03
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.08
L7	121.59-116.59	A	1.450	0.000	0.000	1.661	0.000	0.10
		B		0.000	0.000	1.661	0.000	0.02
		C		0.000	0.000	1.661	0.000	0.23
L8	116.59-115.75	A	1.446	0.000	0.000	0.989	0.000	0.02
		B		0.000	0.000	0.989	0.000	0.01
		C		0.000	0.000	0.989	0.000	0.05
L9	115.75-115.50	A	1.445	0.000	0.000	0.294	0.000	0.01
		B		0.000	0.000	0.294	0.000	0.00
		C		0.000	0.000	0.294	0.000	0.01
L10	115.50-110.50	A	1.442	0.000	0.000	5.884	0.000	0.14
		B		0.000	0.000	5.884	0.000	0.06
		C		0.000	0.000	5.884	0.000	0.27
L11	110.50-105.50	A	1.435	0.000	0.000	5.877	0.000	0.14
		B		0.000	0.000	5.877	0.000	0.06

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	5.877	0.000	0.27
L12	105.50-100.50	A	1.429	0.000	0.000	5.870	0.000	0.13
		B		0.000	0.000	5.870	0.000	0.06
		C		0.000	0.000	5.870	0.000	0.27
L13	100.50-95.50	A	1.422	0.000	0.000	5.863	0.000	0.13
		B		0.000	0.000	5.863	0.000	0.06
		C		0.000	0.000	5.863	0.000	0.27
L14	95.50-90.50	A	1.414	0.000	0.000	5.856	0.000	0.13
		B		0.000	0.000	5.856	0.000	0.06
		C		0.000	0.000	5.856	0.000	0.27
L15	90.50-85.96	A	1.407	0.000	0.000	9.415	0.000	0.16
		B		0.000	0.000	9.415	0.000	0.09
		C		0.000	0.000	9.415	0.000	0.28
L16	85.96-84.96	A	1.402	0.000	0.000	1.430	0.000	0.03
		B		0.000	0.000	1.450	0.000	0.01
		C		0.000	0.000	1.430	0.000	0.06
L17	84.96-79.96	A	1.397	0.000	0.000	7.139	0.000	0.14
		B		0.000	0.000	9.667	0.000	0.09
		C		0.000	0.000	7.139	0.000	0.28
L18	79.96-74.96	A	1.389	0.000	0.000	7.130	0.000	0.14
		B		0.000	0.000	9.647	0.000	0.09
		C		0.000	0.000	7.130	0.000	0.28
L19	74.96-69.96	A	1.379	0.000	0.000	7.121	0.000	0.14
		B		0.000	0.000	9.626	0.000	0.09
		C		0.000	0.000	7.121	0.000	0.27
L20	69.96-64.96	A	1.369	0.000	0.000	7.111	0.000	0.14
		B		0.000	0.000	9.604	0.000	0.09
		C		0.000	0.000	7.111	0.000	0.27
L21	64.96-60.50	A	1.360	0.000	0.000	6.334	0.000	0.12
		B		0.000	0.000	8.547	0.000	0.08
		C		0.000	0.000	6.334	0.000	0.24
L22	60.50-60.25	A	1.354	0.000	0.000	0.355	0.000	0.01
		B		0.000	0.000	0.479	0.000	0.00
		C		0.000	0.000	0.355	0.000	0.01
L23	60.25-55.25	A	1.348	0.000	0.000	7.090	0.000	0.14
		B		0.000	0.000	9.557	0.000	0.08
		C		0.000	0.000	7.090	0.000	0.27
L24	55.25-50.25	A	1.336	0.000	0.000	7.078	0.000	0.14
		B		0.000	0.000	9.529	0.000	0.08
		C		0.000	0.000	7.078	0.000	0.27
L25	50.25-42.41	A	1.319	0.000	0.000	11.071	0.000	0.21
		B		0.000	0.000	14.881	0.000	0.13
		C		0.000	0.000	11.071	0.000	0.42
L26	42.41-41.41	A	1.306	0.000	0.000	1.412	0.000	0.03
		B		0.000	0.000	1.898	0.000	0.02
		C		0.000	0.000	1.412	0.000	0.05
L27	41.41-36.41	A	1.296	0.000	0.000	7.038	0.000	0.13
		B		0.000	0.000	9.439	0.000	0.08
		C		0.000	0.000	7.038	0.000	0.26
L28	36.41-31.41	A	1.278	0.000	0.000	7.020	0.000	0.13
		B		0.000	0.000	9.399	0.000	0.08
		C		0.000	0.000	7.020	0.000	0.26
L29	31.41-30.50	A	1.267	0.000	0.000	1.276	0.000	0.02
		B		0.000	0.000	1.706	0.000	0.01
		C		0.000	0.000	1.276	0.000	0.05
L30	30.50-30.25	A	1.264	0.000	0.000	0.350	0.000	0.01
		B		0.000	0.000	0.468	0.000	0.00
		C		0.000	0.000	0.350	0.000	0.01
L31	30.25-25.25	A	1.253	0.000	0.000	6.995	0.000	0.13
		B		0.000	0.000	9.342	0.000	0.08
		C		0.000	0.000	6.995	0.000	0.26
L32	25.25-20.25	A	1.228	0.000	0.000	7.210	0.000	0.13
		B		0.000	0.000	9.287	0.000	0.08
		C		0.000	0.000	6.970	0.000	0.26
L33	20.25-18.00	A	1.207	0.000	0.000	5.284	0.000	0.08
		B		0.000	0.000	4.158	0.000	0.03
		C		0.000	0.000	3.127	0.000	0.11
L34	18.00-17.75	A	1.199	0.000	0.000	0.586	0.000	0.01
		B		0.000	0.000	0.461	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.347	0.000	0.01
L35	17.75-12.75	A	1.180	0.000	0.000	5.265	0.000	0.12
		B		0.000	0.000	9.178	0.000	0.07
		C		0.000	0.000	6.922	0.000	0.25
L36	12.75-7.75	A	1.134	0.000	0.000	0.000	0.000	0.06
		B		0.000	0.000	9.075	0.000	0.07
		C		0.000	0.000	6.876	0.000	0.24
L37	7.75-2.75	A	1.061	0.000	0.000	0.000	0.000	0.06
		B		0.000	0.000	8.909	0.000	0.06
		C		0.000	0.000	6.802	0.000	0.24
L38	2.75-2.50	A	0.990	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.438	0.000	0.00
		C		0.000	0.000	0.337	0.000	0.01
L39	2.50-2.25	A	0.980	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.436	0.000	0.00
		C		0.000	0.000	0.336	0.000	0.01
L40	2.25-0.00	A	0.909	0.000	0.000	0.000	0.000	0.02
		B		0.000	0.000	3.856	0.000	0.02
		C		0.000	0.000	2.993	0.000	0.10

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.00-145.00	-0.3131	-4.7007	0.0000	0.0000
L2	145.00-140.00	-0.3164	-4.8487	0.0000	0.0000
L3	140.00-135.00	-2.6871	0.8496	0.0000	0.0000
L4	135.00-130.00	-2.7856	0.8756	0.0000	0.0000
L5	130.00-123.42	-2.8950	0.9044	0.0000	0.0000
L6	123.42-121.59	-2.9403	0.9164	0.0000	0.0000
L7	121.59-116.59	-2.6145	0.8123	0.0000	0.0000
L8	116.59-115.75	-2.0093	0.6227	0.0000	0.0000
L9	115.75-115.50	-2.0180	0.6251	0.0000	0.0000
L10	115.50-110.50	-2.0542	0.6349	0.0000	0.0000
L11	110.50-105.50	-2.1220	0.6534	0.0000	0.0000
L12	105.50-100.50	-2.1883	0.6714	0.0000	0.0000
L13	100.50-95.50	-2.2529	0.6890	0.0000	0.0000
L14	95.50-90.50	-2.3161	0.7062	0.0000	0.0000
L15	90.50-85.96	-1.8703	0.5688	0.0000	0.0000
L16	85.96-84.96	-2.1744	0.6544	0.0063	-0.0261
L17	84.96-79.96	-2.1406	0.4834	0.1460	-0.6082
L18	79.96-74.96	-2.1956	0.4940	0.1496	-0.6233
L19	74.96-69.96	-2.2495	0.5045	0.1531	-0.6379
L20	69.96-64.96	-2.3023	0.5148	0.1565	-0.6519
L21	64.96-60.50	-2.3513	0.5243	0.1596	-0.6647
L22	60.50-60.25	-2.3754	0.5290	0.1611	-0.6708
L23	60.25-55.25	-2.4019	0.5341	0.1627	-0.6775
L24	55.25-50.25	-2.4518	0.5438	0.1656	-0.6898
L25	50.25-42.41	-2.5144	0.5560	0.1691	-0.7045
L26	42.41-41.41	-2.5290	0.5588	0.1702	-0.7089
L27	41.41-36.41	-2.5575	0.5643	0.1708	-0.7116
L28	36.41-31.41	-2.6045	0.5735	0.1731	-0.7210
L29	31.41-30.50	-2.6318	0.5788	0.1743	-0.7260
L30	30.50-30.25	-2.6371	0.5798	0.1745	-0.7269
L31	30.25-25.25	-2.6611	0.5845	0.1755	-0.7309
L32	25.25-20.25	-2.7727	0.5623	0.0983	-0.7635
L33	20.25-18.00	-3.9809	0.0221	-1.2918	-1.2333
L34	18.00-17.75	-3.9969	0.0221	-1.2981	-1.2364
L35	17.75-12.75	-2.3249	0.8122	0.7602	-0.5461
L36	12.75-7.75	-0.6885	1.5982	2.8204	0.1499
L37	7.75-2.75	-0.7002	1.6183	2.8535	0.1773
L38	2.75-2.50	-0.7063	1.6288	2.8669	0.2042
L39	2.50-2.25	-0.7068	1.6297	2.8677	0.2080
L40	2.25-0.00	-0.7097	1.6346	2.8698	0.2353

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	21	HB114-1-0813U4-M5J(1-1/4)	145.00 - 150.00	1.0000	1.0000
L2	21	HB114-1-0813U4-M5J(1-1/4)	140.00 - 145.00	1.0000	1.0000
L3	21	HB114-1-0813U4-M5J(1-1/4)	135.00 - 140.00	1.0000	1.0000
L3	23	LDF7-50A(1-5/8)	135.00 - 140.00	1.0000	1.0000
L4	21	HB114-1-0813U4-M5J(1-1/4)	130.00 - 135.00	1.0000	1.0000
L4	23	LDF7-50A(1-5/8)	130.00 - 135.00	1.0000	1.0000
L5	21	HB114-1-0813U4-M5J(1-1/4)	123.42 - 130.00	1.0000	1.0000
L5	23	LDF7-50A(1-5/8)	123.42 - 130.00	1.0000	1.0000
L7	21	HB114-1-0813U4-M5J(1-1/4)	116.59 - 121.59	1.0000	1.0000
L7	23	LDF7-50A(1-5/8)	116.59 - 121.59	1.0000	1.0000
L7	39	MP3-05 (L)	116.59 - 118.00	1.0000	1.0000
L7	40	MP3-05 (L)	116.59 - 118.00	1.0000	1.0000
L7	41	MP3-05 (L)	116.59 - 118.00	1.0000	1.0000
L8	21	HB114-1-0813U4-M5J(1-1/4)	115.75 - 116.59	1.0000	1.0000
L8	23	LDF7-50A(1-5/8)	115.75 - 116.59	1.0000	1.0000
L8	39	MP3-05 (L)	115.75 - 116.59	1.0000	1.0000
L8	40	MP3-05 (L)	115.75 - 116.59	1.0000	1.0000
L8	41	MP3-05 (L)	115.75 - 116.59	1.0000	1.0000
L9	21	HB114-1-0813U4-M5J(1-1/4)	115.50 - 115.75	1.0000	1.0000
L9	23	LDF7-50A(1-5/8)	115.50 - 115.75	1.0000	1.0000
L9	39	MP3-05 (L)	115.50 - 115.75	1.0000	1.0000
L9	40	MP3-05 (L)	115.50 - 115.75	1.0000	1.0000
L9	41	MP3-05 (L)	115.50 - 115.75	1.0000	1.0000
L10	21	HB114-1-0813U4-M5J(1-1/4)	110.50 - 115.50	1.0000	1.0000
L10	23	LDF7-50A(1-5/8)	110.50 - 115.50	1.0000	1.0000
L10	39	MP3-05 (L)	110.50 - 115.50	1.0000	1.0000
L10	40	MP3-05 (L)	110.50 - 115.50	1.0000	1.0000
L10	41	MP3-05 (L)	110.50 - 115.50	1.0000	1.0000
L11	21	HB114-1-0813U4-M5J(1-	105.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		1/4)	110.50		
L11	23	LDF7-50A(1-5/8)	105.50 - 110.50	1.0000	1.0000
L11	39	MP3-05 (L)	105.50 - 110.50	1.0000	1.0000
L11	40	MP3-05 (L)	105.50 - 110.50	1.0000	1.0000
L11	41	MP3-05 (L)	105.50 - 110.50	1.0000	1.0000
L12	21	HB114-1-0813U4-M5J(1-1/4)	100.50 - 105.50	1.0000	1.0000
L12	23	LDF7-50A(1-5/8)	100.50 - 105.50	1.0000	1.0000
L12	39	MP3-05 (L)	100.50 - 105.50	1.0000	1.0000
L12	40	MP3-05 (L)	100.50 - 105.50	1.0000	1.0000
L12	41	MP3-05 (L)	100.50 - 105.50	1.0000	1.0000
L13	21	HB114-1-0813U4-M5J(1-1/4)	95.50 - 100.50	1.0000	1.0000
L13	23	LDF7-50A(1-5/8)	95.50 - 100.50	1.0000	1.0000
L13	39	MP3-05 (L)	95.50 - 100.50	1.0000	1.0000
L13	40	MP3-05 (L)	95.50 - 100.50	1.0000	1.0000
L13	41	MP3-05 (L)	95.50 - 100.50	1.0000	1.0000
L14	21	HB114-1-0813U4-M5J(1-1/4)	90.50 - 95.50	1.0000	1.0000
L14	23	LDF7-50A(1-5/8)	90.50 - 95.50	1.0000	1.0000
L14	39	MP3-05 (L)	90.50 - 95.50	1.0000	1.0000
L14	40	MP3-05 (L)	90.50 - 95.50	1.0000	1.0000
L14	41	MP3-05 (L)	90.50 - 95.50	1.0000	1.0000
L15	21	HB114-1-0813U4-M5J(1-1/4)	85.96 - 90.50	1.0000	1.0000
L15	23	LDF7-50A(1-5/8)	85.96 - 90.50	1.0000	1.0000
L15	34	MP3-06 (L)	85.96 - 90.50	1.0000	1.0000
L15	35	MP3-06 (L)	85.96 - 90.50	1.0000	1.0000
L15	36	MP3-06 (L)	85.96 - 90.50	1.0000	1.0000
L15	39	MP3-05 (L)	88.00 - 90.50	1.0000	1.0000
L15	40	MP3-05 (L)	88.00 - 90.50	1.0000	1.0000
L15	41	MP3-05 (L)	88.00 - 90.50	1.0000	1.0000
L15	32	LDF4-50A(1/2)	85.96 - 85.00	1.0000	1.0000
L17	21	HB114-1-0813U4-M5J(1-1/4)	79.96 - 84.96	1.0000	1.0000
L17	23	LDF7-50A(1-5/8)	79.96 - 84.96	1.0000	1.0000
L17	32	LDF4-50A(1/2)	79.96 - 84.96	1.0000	1.0000
L17	34	MP3-06 (L)	79.96 - 84.96	1.0000	1.0000
L17	35	MP3-06 (L)	79.96 - 84.96	1.0000	1.0000
L17	36	MP3-06 (L)	79.96 - 84.96	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L18	21	HB114-1-0813U4-M5J(1-1/4)	74.96 - 79.96	1.0000	1.0000
L18	23	LDF7-50A(1-5/8)	74.96 - 79.96	1.0000	1.0000
L18	32	LDF4-50A(1/2)	74.96 - 79.96	1.0000	1.0000
L18	34	MP3-06 (L)	74.96 - 79.96	1.0000	1.0000
L18	35	MP3-06 (L)	74.96 - 79.96	1.0000	1.0000
L18	36	MP3-06 (L)	74.96 - 79.96	1.0000	1.0000
L19	21	HB114-1-0813U4-M5J(1-1/4)	69.96 - 74.96	1.0000	1.0000
L19	23	LDF7-50A(1-5/8)	69.96 - 74.96	1.0000	1.0000
L19	32	LDF4-50A(1/2)	69.96 - 74.96	1.0000	1.0000
L19	34	MP3-06 (L)	69.96 - 74.96	1.0000	1.0000
L19	35	MP3-06 (L)	69.96 - 74.96	1.0000	1.0000
L19	36	MP3-06 (L)	69.96 - 74.96	1.0000	1.0000
L20	21	HB114-1-0813U4-M5J(1-1/4)	64.96 - 69.96	1.0000	1.0000
L20	23	LDF7-50A(1-5/8)	64.96 - 69.96	1.0000	1.0000
L20	32	LDF4-50A(1/2)	64.96 - 69.96	1.0000	1.0000
L20	34	MP3-06 (L)	64.96 - 69.96	1.0000	1.0000
L20	35	MP3-06 (L)	64.96 - 69.96	1.0000	1.0000
L20	36	MP3-06 (L)	64.96 - 69.96	1.0000	1.0000
L21	21	HB114-1-0813U4-M5J(1-1/4)	60.50 - 64.96	1.0000	1.0000
L21	23	LDF7-50A(1-5/8)	60.50 - 64.96	1.0000	1.0000
L21	32	LDF4-50A(1/2)	60.50 - 64.96	1.0000	1.0000
L21	34	MP3-06 (L)	60.50 - 64.96	1.0000	1.0000
L21	35	MP3-06 (L)	60.50 - 64.96	1.0000	1.0000
L21	36	MP3-06 (L)	60.50 - 64.96	1.0000	1.0000
L22	21	HB114-1-0813U4-M5J(1-1/4)	60.25 - 60.50	1.0000	1.0000
L22	23	LDF7-50A(1-5/8)	60.25 - 60.50	1.0000	1.0000
L22	32	LDF4-50A(1/2)	60.25 - 60.50	1.0000	1.0000
L22	34	MP3-06 (L)	60.25 - 60.50	1.0000	1.0000
L22	35	MP3-06 (L)	60.25 - 60.50	1.0000	1.0000
L22	36	MP3-06 (L)	60.25 - 60.50	1.0000	1.0000
L23	21	HB114-1-0813U4-M5J(1-1/4)	55.25 - 60.25	1.0000	1.0000
L23	23	LDF7-50A(1-5/8)	55.25 - 60.25	1.0000	1.0000
L23	32	LDF4-50A(1/2)	55.25 - 60.25	1.0000	1.0000
L23	34	MP3-06 (L)	55.25 - 60.25	1.0000	1.0000
L23	35	MP3-06 (L)	55.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	36	MP3-06 (L)	60.25 - 55.25	1.0000	1.0000
L24	21	HB114-1-0813U4-M5J(1-1/4)	60.25 - 50.25	1.0000	1.0000
L24	23	LDF7-50A(1-5/8)	55.25 - 50.25	1.0000	1.0000
L24	32	LDF4-50A(1/2)	55.25 - 50.25	1.0000	1.0000
L24	34	MP3-06 (L)	55.25 - 50.25	1.0000	1.0000
L24	35	MP3-06 (L)	55.25 - 50.25	1.0000	1.0000
L24	36	MP3-06 (L)	55.25 - 50.25	1.0000	1.0000
L25	21	HB114-1-0813U4-M5J(1-1/4)	55.25 - 42.41	1.0000	1.0000
L25	23	LDF7-50A(1-5/8)	50.25 - 42.41	1.0000	1.0000
L25	32	LDF4-50A(1/2)	50.25 - 42.41	1.0000	1.0000
L25	34	MP3-06 (L)	50.25 - 42.41	1.0000	1.0000
L25	35	MP3-06 (L)	50.25 - 42.41	1.0000	1.0000
L25	36	MP3-06 (L)	50.25 - 42.41	1.0000	1.0000
L27	21	HB114-1-0813U4-M5J(1-1/4)	50.25 - 36.41	1.0000	1.0000
L27	23	LDF7-50A(1-5/8)	41.41 - 36.41	1.0000	1.0000
L27	32	LDF4-50A(1/2)	41.41 - 36.41	1.0000	1.0000
L27	34	MP3-06 (L)	41.41 - 36.41	1.0000	1.0000
L27	35	MP3-06 (L)	41.41 - 36.41	1.0000	1.0000
L27	36	MP3-06 (L)	41.41 - 36.41	1.0000	1.0000
L28	21	HB114-1-0813U4-M5J(1-1/4)	41.41 - 31.41	1.0000	1.0000
L28	23	LDF7-50A(1-5/8)	36.41 - 31.41	1.0000	1.0000
L28	32	LDF4-50A(1/2)	36.41 - 31.41	1.0000	1.0000
L28	34	MP3-06 (L)	36.41 - 31.41	1.0000	1.0000
L28	35	MP3-06 (L)	36.41 - 31.41	1.0000	1.0000
L28	36	MP3-06 (L)	36.41 - 31.41	1.0000	1.0000
L29	21	HB114-1-0813U4-M5J(1-1/4)	36.41 - 30.50	1.0000	1.0000
L29	23	LDF7-50A(1-5/8)	31.41 - 30.50	1.0000	1.0000
L29	32	LDF4-50A(1/2)	31.41 - 30.50	1.0000	1.0000
L29	34	MP3-06 (L)	31.41 - 30.50	1.0000	1.0000
L29	35	MP3-06 (L)	31.41 - 30.50	1.0000	1.0000
L29	36	MP3-06 (L)	31.41 - 30.50	1.0000	1.0000
L30	21	HB114-1-0813U4-M5J(1-1/4)	31.41 - 30.25	1.0000	1.0000
L30	23	LDF7-50A(1-5/8)	30.50 - 30.25	1.0000	1.0000
L30	32	LDF4-50A(1/2)	30.50 - 30.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	34	MP3-06 (L)	30.25 - 30.50	1.0000	1.0000
L30	35	MP3-06 (L)	30.25 - 30.50	1.0000	1.0000
L30	36	MP3-06 (L)	30.25 - 30.50	1.0000	1.0000
L31	21	HB114-1-0813U4-M5J(1-1/4)	25.25 - 30.25	1.0000	1.0000
L31	23	LDF7-50A(1-5/8)	25.25 - 30.25	1.0000	1.0000
L31	32	LDF4-50A(1/2)	25.25 - 30.25	1.0000	1.0000
L31	34	MP3-06 (L)	25.25 - 30.25	1.0000	1.0000
L31	35	MP3-06 (L)	25.25 - 30.25	1.0000	1.0000
L31	36	MP3-06 (L)	25.25 - 30.25	1.0000	1.0000
L32	21	HB114-1-0813U4-M5J(1-1/4)	20.25 - 25.25	1.0000	1.0000
L32	23	LDF7-50A(1-5/8)	20.25 - 25.25	1.0000	1.0000
L32	32	LDF4-50A(1/2)	20.25 - 25.25	1.0000	1.0000
L32	34	MP3-06 (L)	20.25 - 25.25	1.0000	1.0000
L32	35	MP3-06 (L)	20.25 - 25.25	1.0000	1.0000
L32	36	MP3-06 (L)	20.25 - 25.25	1.0000	1.0000
L32	37	MP3-06 (L)	20.25 - 20.50	1.0000	1.0000
L33	21	HB114-1-0813U4-M5J(1-1/4)	18.00 - 20.25	1.0000	1.0000
L33	23	LDF7-50A(1-5/8)	18.00 - 20.25	1.0000	1.0000
L33	32	LDF4-50A(1/2)	18.00 - 20.25	1.0000	1.0000
L33	34	MP3-06 (L)	18.00 - 20.25	1.0000	1.0000
L33	35	MP3-06 (L)	18.00 - 20.25	1.0000	1.0000
L33	36	MP3-06 (L)	18.00 - 20.25	1.0000	1.0000
L33	37	MP3-06 (L)	18.00 - 20.25	1.0000	1.0000
L34	21	HB114-1-0813U4-M5J(1-1/4)	17.75 - 18.00	1.0000	1.0000
L34	23	LDF7-50A(1-5/8)	17.75 - 18.00	1.0000	1.0000
L34	32	LDF4-50A(1/2)	17.75 - 18.00	1.0000	1.0000
L34	34	MP3-06 (L)	17.75 - 18.00	1.0000	1.0000
L34	35	MP3-06 (L)	17.75 - 18.00	1.0000	1.0000
L34	36	MP3-06 (L)	17.75 - 18.00	1.0000	1.0000
L34	37	MP3-06 (L)	17.75 - 18.00	1.0000	1.0000
L35	21	HB114-1-0813U4-M5J(1-1/4)	12.75 - 17.75	1.0000	1.0000
L35	23	LDF7-50A(1-5/8)	12.75 - 17.75	1.0000	1.0000
L35	32	LDF4-50A(1/2)	12.75 - 17.75	1.0000	1.0000
L35	34	MP3-06 (L)	12.75 - 17.75	1.0000	1.0000
L35	35	MP3-06 (L)	12.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			17.75		
L35	36	MP3-06 (L)	15.50 - 17.75	1.0000	1.0000
L35	37	MP3-06 (L)	15.50 - 17.75	1.0000	1.0000
L36	21	HB114-1-0813U4-M5J(1-1/4)	7.75 - 12.75	1.0000	1.0000
L36	23	LDF7-50A(1-5/8)	7.75 - 12.75	1.0000	1.0000
L36	32	LDF4-50A(1/2)	7.75 - 12.75	1.0000	1.0000
L36	34	MP3-06 (L)	7.75 - 12.75	1.0000	1.0000
L36	35	MP3-06 (L)	7.75 - 12.75	1.0000	1.0000
L37	21	HB114-1-0813U4-M5J(1-1/4)	2.75 - 7.75	1.0000	1.0000
L37	23	LDF7-50A(1-5/8)	2.75 - 7.75	1.0000	1.0000
L37	32	LDF4-50A(1/2)	2.75 - 7.75	1.0000	1.0000
L37	34	MP3-06 (L)	2.75 - 7.75	1.0000	1.0000
L37	35	MP3-06 (L)	2.75 - 7.75	1.0000	1.0000
L38	21	HB114-1-0813U4-M5J(1-1/4)	2.50 - 2.75	1.0000	1.0000
L38	23	LDF7-50A(1-5/8)	2.50 - 2.75	1.0000	1.0000
L38	32	LDF4-50A(1/2)	2.50 - 2.75	1.0000	1.0000
L38	34	MP3-06 (L)	2.50 - 2.75	1.0000	1.0000
L38	35	MP3-06 (L)	2.50 - 2.75	1.0000	1.0000
L39	21	HB114-1-0813U4-M5J(1-1/4)	2.25 - 2.50	1.0000	1.0000
L39	23	LDF7-50A(1-5/8)	2.25 - 2.50	1.0000	1.0000
L39	32	LDF4-50A(1/2)	2.25 - 2.50	1.0000	1.0000
L39	34	MP3-06 (L)	2.25 - 2.50	1.0000	1.0000
L39	35	MP3-06 (L)	2.25 - 2.50	1.0000	1.0000
L40	21	HB114-1-0813U4-M5J(1-1/4)	0.00 - 2.25	1.0000	1.0000
L40	23	LDF7-50A(1-5/8)	0.00 - 2.25	1.0000	1.0000
L40	32	LDF4-50A(1/2)	0.00 - 2.25	1.0000	1.0000
L40	34	MP3-06 (L)	0.00 - 2.25	1.0000	1.0000
L40	35	MP3-06 (L)	0.00 - 2.25	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
**********									
1900MHz RRH (65MHz)	A	From Leg	1.00 0.00 0.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
1900MHz RRH (65MHz)	B	From Leg	1.00 0.00 0.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
1900MHz RRH (65MHz)	C	From Leg	1.00 0.00 0.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
800 EXTERNAL NOTCH	A	From Leg	1.00	0.00	148.00	No Ice	0.66	0.32	0.01

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* ft ft ft	*Azimuth Adjustment* °	*Placement* ft		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* K
FILTER			0.00 2.00			1/2" Ice 1" Ice 2" Ice	0.76 0.87 1.11	0.40 0.48 0.67	0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	1.00 0.00 2.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	1.00 0.00 2.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800MHZ RRH	A	From Leg	1.00 0.00 2.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
800MHZ RRH	B	From Leg	1.00 0.00 2.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
800MHZ RRH	C	From Leg	1.00 0.00 2.00	0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
Pipe Mount [PM 601-3]	C	None		0.00	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.39 5.48 6.57 8.75	4.39 5.48 6.57 8.75	0.20 0.24 0.28 0.36
**********									
(2) LPA-80063-6CF-EDIN-2 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.97 10.54 11.08 12.17	10.25 11.42 12.31 14.13	0.05 0.15 0.25 0.48
(2) LPA-80063-6CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.97 10.54 11.08 12.17	10.25 11.42 12.31 14.13	0.05 0.15 0.25 0.48
(2) LPA-80063-6CF-EDIN-2 w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.97 10.54 11.08 12.17	10.25 11.42 12.31 14.13	0.05 0.15 0.25 0.48
BXA-70063-6CF-2 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.81 8.36 8.87 9.93	5.80 6.95 7.82 9.60	0.04 0.10 0.17 0.34
BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.81 8.36 8.87 9.93	5.80 6.95 7.82 9.60	0.04 0.10 0.17 0.34
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.81 8.36 8.87 9.93	5.80 6.95 7.82 9.60	0.04 0.10 0.17 0.34

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
BXA-171063-12BF w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.97 5.52 6.04 7.09	5.23 6.39 7.26 9.05	0.04 0.09 0.14 0.27
BXA-171063-12BF w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.97 5.52 6.04 7.09	5.23 6.39 7.26 9.05	0.04 0.09 0.14 0.27
BXA-171063-12BF w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.97 5.52 6.04 7.09	5.23 6.39 7.26 9.05	0.04 0.09 0.14 0.27
Platform Mount [LP 601-1]	C	None		0.00	140.00	No Ice 1/2" Ice 1" Ice 2" Ice	28.47 33.59 38.71 48.95	28.47 33.59 38.71 48.95	1.12 1.51 1.91 2.69
***									
(3) ACU-A20-N	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	0.00 0.00 0.00 0.01
(3) ACU-A20-N	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	0.00 0.00 0.00 0.01
(3) ACU-A20-N	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.07 0.10 0.15 0.26	0.12 0.16 0.21 0.34	0.00 0.00 0.00 0.01
APXVTM14-ALU-I20	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.12 4.52 4.93 5.80	2.06 2.42 2.80 3.60	0.06 0.10 0.14 0.25
APXVTM14-ALU-I20	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.12 4.52 4.93 5.80	2.06 2.42 2.80 3.60	0.06 0.10 0.14 0.25
APXVTM14-ALU-I20	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.12 4.52 4.93 5.80	2.06 2.42 2.80 3.60	0.06 0.10 0.14 0.25
NNVV-65B-R4	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.27 12.77 13.27 14.29	5.75 6.21 6.67 7.62	0.08 0.15 0.23 0.41
NNVV-65B-R4	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.27 12.77 13.27 14.29	5.75 6.21 6.67 7.62	0.08 0.15 0.23 0.41
NNVV-65B-R4	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice	12.27 12.77 13.27 14.29	5.75 6.21 6.67 7.62	0.08 0.15 0.23 0.41

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
TD-RRH8X20-25	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.05 4.30 4.56 5.10	1.53 1.71 1.90 2.30	0.07 0.10 0.13 0.20
TD-RRH8X20-25	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.05 4.30 4.56 5.10	1.53 1.71 1.90 2.30	0.07 0.10 0.13 0.20
TD-RRH8X20-25	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.05 4.30 4.56 5.10	1.53 1.71 1.90 2.30	0.07 0.10 0.13 0.20
(2) 800MHZ RRH	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
(2) 800MHZ RRH	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
(2) 800MHZ RRH	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.32 2.53 2.74 3.19	2.24 2.44 2.65 3.09	0.06 0.08 0.11 0.17
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00 0.00	0.00	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
Platform Mount [LP 601-1]	C	None		0.00	150.00	No Ice 1/2" Ice 1" Ice	28.47 33.59 38.71 48.95	28.47 33.59 38.71 48.95	1.12 1.51 1.91 2.69

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
Miscellaneous [NA 507-3]	C	None		0.00	150.00	No Ice	18.50	18.50	0.51
						1/2" Ice	26.40	26.40	0.70
						1" Ice	34.30	34.30	0.90
						2" Ice	50.10	50.10	1.29
*** **********									
DC6-48-60-18-8F	A	From Leg	4.00 0.00 0.00	0.00	127.00	No Ice	1.21	1.21	0.03
						1/2" Ice	1.89	1.89	0.05
						1" Ice	2.11	2.11	0.08
						2" Ice	2.57	2.57	0.14
SBNH-1D6565C	A	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	5.67	3.40	0.05
						1/2" Ice	6.20	3.91	0.12
						1" Ice	6.74	4.43	0.19
						2" Ice	7.86	5.49	0.36
SBNH-1D6565C	B	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	5.67	3.40	0.05
						1/2" Ice	6.20	3.91	0.12
						1" Ice	6.74	4.43	0.19
						2" Ice	7.86	5.49	0.36
SBNH-1D6565C	C	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	5.67	3.40	0.05
						1/2" Ice	6.20	3.91	0.12
						1" Ice	6.74	4.43	0.19
						2" Ice	7.86	5.49	0.36
DTMABP7819VG12A	C	From Leg	4.00 0.00 0.00	0.00	127.00	No Ice	0.98	0.34	0.02
						1/2" Ice	1.10	0.42	0.03
						1" Ice	1.23	0.51	0.04
						2" Ice	1.52	0.71	0.06
DTMABP7819VG12A	B	From Leg	4.00 0.00 0.00	0.00	127.00	No Ice	0.98	0.34	0.02
						1/2" Ice	1.10	0.42	0.03
						1" Ice	1.23	0.51	0.04
						2" Ice	1.52	0.71	0.06
DTMABP7819VG12A	C	From Leg	4.00 0.00 0.00	0.00	127.00	No Ice	0.98	0.34	0.02
						1/2" Ice	1.10	0.42	0.03
						1" Ice	1.23	0.51	0.04
						2" Ice	1.52	0.71	0.06
(2) 80010966	A	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	17.36	7.50	0.11
						1/2" Ice	17.99	8.09	0.21
						1" Ice	18.63	8.69	0.31
						2" Ice	19.92	9.90	0.53
(2) 80010965	B	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	13.81	5.83	0.10
						1/2" Ice	14.35	6.32	0.17
						1" Ice	14.89	6.82	0.26
						2" Ice	15.99	7.84	0.45
(2) 80010966	C	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	17.36	7.50	0.11
						1/2" Ice	17.99	8.09	0.21
						1" Ice	18.63	8.69	0.31
						2" Ice	19.92	9.90	0.53
RRUS 8843 B2/B66A	A	From Leg	4.00 0.00 1.00	0.00	127.00	No Ice	1.64	1.35	0.07
						1/2" Ice	1.80	1.50	0.09
						1" Ice	1.97	1.65	0.11
						2" Ice	2.32	1.99	0.16
RRUS 8843 B2/B66A	B	From Leg	4.00 0.00	0.00	127.00	No Ice	1.64	1.35	0.07
						1/2" Ice	1.80	1.50	0.09

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
			1.00			1" Ice	1.97	1.65	0.11
						2" Ice	2.32	1.99	0.16
RRUS 8843 B2/B66A	C	From Leg	4.00	0.00	127.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			1.00			1" Ice	1.97	1.65	0.11
						2" Ice	2.32	1.99	0.16
RRUS 4449 B5/B12	A	From Leg	4.00	0.00	127.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			1.00			1" Ice	2.33	1.73	0.11
						2" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	B	From Leg	4.00	0.00	127.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			1.00			1" Ice	2.33	1.73	0.11
						2" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	C	From Leg	4.00	0.00	127.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			1.00			1" Ice	2.33	1.73	0.11
						2" Ice	2.72	2.07	0.16
DC6-48-60-18-8C-EV	B	From Leg	4.00	0.00	127.00	No Ice	2.74	2.74	0.03
			0.00			1/2" Ice	2.96	2.96	0.05
			1.00			1" Ice	3.20	3.20	0.08
						2" Ice	3.68	3.68	0.15
Platform Mount [LP 305-1]	C	None		0.00	127.00	No Ice	18.01	18.01	1.12
						1/2" Ice	23.33	23.33	1.35
						1" Ice	28.65	28.65	1.58
						2" Ice	39.29	39.29	2.05
(3) 8'x2 1/2" Pipe Mount	C	None		0.00	127.00	No Ice	2.30	2.30	0.04
						1/2" Ice	3.13	3.13	0.06
						1" Ice	3.62	3.62	0.08
						2" Ice	4.62	4.62	0.14
(3) 8'x2 1/2" Pipe Mount	C	None		0.00	127.00	No Ice	2.30	2.30	0.04
						1/2" Ice	3.13	3.13	0.06
						1" Ice	3.62	3.62	0.08
						2" Ice	4.62	4.62	0.14
(3) 8'x2 1/2" Pipe Mount	C	None		0.00	127.00	No Ice	2.30	2.30	0.04
						1/2" Ice	3.13	3.13	0.06
						1" Ice	3.62	3.62	0.08
						2" Ice	4.62	4.62	0.14
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KS24019-L112D	A	From Leg	3.00	0.00	85.00	No Ice	0.14	0.14	0.01
			0.00			1/2" Ice	0.20	0.20	0.01
			1.00			1" Ice	0.26	0.26	0.01
						2" Ice	0.41	0.41	0.02
KS24019-L112A	A	From Leg	3.00	0.00	85.00	No Ice	0.14	0.14	0.01
			0.00			1/2" Ice	0.20	0.20	0.01
			1.00			1" Ice	0.26	0.26	0.01
						2" Ice	0.41	0.41	0.02
Side Arm Mount [SO 701-1]	A	None		0.00	85.00	No Ice	0.85	1.67	0.07
						1/2" Ice	1.14	2.34	0.08
						1" Ice	1.43	3.01	0.09
						2" Ice	2.01	4.35	0.12
***									

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.00-145.00	147.47	1.104	0.04	6.560	A	0.000	6.560	6.560	100.00	5.133	0.000
					B	0.000	6.560		100.00	0.000	0.000
					C	0.000	6.560		100.00	0.000	0.000
L2 145.00-140.00	142.47	1.093	0.04	7.010	A	0.000	7.010	7.010	100.00	5.133	0.000
					B	0.000	7.010		100.00	0.000	0.000
					C	0.000	7.010		100.00	0.000	0.000
L3 140.00-135.00	137.47	1.082	0.04	7.461	A	0.000	7.461	7.461	100.00	5.133	0.000
					B	0.000	7.461		100.00	0.000	0.000
					C	0.000	7.461		100.00	9.900	0.000
L4 135.00-130.00	132.48	1.071	0.04	7.911	A	0.000	7.911	7.911	100.00	5.133	0.000
					B	0.000	7.911		100.00	0.000	0.000
					C	0.000	7.911		100.00	9.900	0.000
L5 130.00-123.42	126.67	1.057	0.04	11.097	A	0.000	11.097	11.097	100.00	6.755	0.000
					B	0.000	11.097		100.00	0.000	0.000
					C	0.000	11.097		100.00	13.028	0.000
L6 123.42-121.59	122.50	1.047	0.04	3.166	A	0.000	3.166	3.166	100.00	1.879	0.000
					B	0.000	3.166		100.00	0.000	0.000
					C	0.000	3.166		100.00	3.623	0.000
L7 121.59-116.59	119.07	1.039	0.04	8.958	A	0.000	8.958	8.958	100.00	6.386	0.000
					B	0.000	8.958		100.00	1.253	0.000
					C	0.000	8.958		100.00	11.153	0.000
L8 116.59-115.75	116.17	1.031	0.04	1.549	A	0.000	1.549	1.549	100.00	1.609	0.000
					B	0.000	1.549		100.00	0.746	0.000
					C	0.000	1.549		100.00	2.409	0.000
L9 115.75-115.50	115.62	1.03	0.04	0.463	A	0.000	0.463	0.463	100.00	0.479	0.000
					B	0.000	0.463		100.00	0.222	0.000
					C	0.000	0.463		100.00	0.717	0.000
L10 115.50-110.50	112.98	1.023	0.04	9.489	A	0.000	9.489	9.489	100.00	9.575	0.000
					B	0.000	9.489		100.00	4.442	0.000
					C	0.000	9.489		100.00	14.342	0.000
L11 110.50-105.50	107.98	1.01	0.04	9.942	A	0.000	9.942	9.942	100.00	9.575	0.000
					B	0.000	9.942		100.00	4.442	0.000
					C	0.000	9.942		100.00	14.342	0.000
L12 105.50-100.50	102.98	0.997	0.04	10.394	A	0.000	10.394	10.394	100.00	9.575	0.000
					B	0.000	10.394		100.00	4.442	0.000
					C	0.000	10.394		100.00	14.342	0.000
L13 100.50-95.50	97.98	0.982	0.03	10.846	A	0.000	10.846	10.846	100.00	9.575	0.000
					B	0.000	10.846		100.00	4.442	0.000
					C	0.000	10.846		100.00	14.342	0.000
L14 95.50-90.50	92.98	0.968	0.03	11.298	A	0.000	11.298	11.298	100.00	9.575	0.000
					B	0.000	11.298		100.00	4.442	0.000
					C	0.000	11.298		100.00	14.342	0.000
L15 90.50-85.96	88.22	0.953	0.03	10.650	A	0.000	10.650	10.650	100.00	12.095	0.000
					B	0.000	10.650		100.00	7.434	0.000
					C	0.000	10.650		100.00	16.423	0.000
L16 85.96-84.96	85.46	0.945	0.03	2.351	A	0.000	2.351	2.351	100.00	2.175	0.000
					B	0.000	2.351		100.00	1.153	0.000
					C	0.000	2.351		100.00	3.128	0.000
L17 84.96-79.96	82.44	0.935	0.03	12.027	A	0.000	12.027	12.027	100.00	10.875	0.000
					B	0.000	12.027		100.00	6.367	0.000
					C	0.000	12.027		100.00	15.642	0.000
L18 79.96-74.96	77.44	0.919	0.03	12.480	A	0.000	12.480	12.480	100.00	10.875	0.000
					B	0.000	12.480		100.00	6.367	0.000
					C	0.000	12.480		100.00	15.642	0.000
L19 74.96-69.96	72.45	0.901	0.03	12.932	A	0.000	12.932	12.932	100.00	10.875	0.000
					B	0.000	12.932		100.00	6.367	0.000
					C	0.000	12.932		100.00	15.642	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		ksf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L20 69.96-64.96	67.45	0.883	0.03	13.384	A	0.000	13.384	13.384	100.00	10.875	0.000
					B	0.000	13.384		100.00	6.367	0.000
					C	0.000	13.384		100.00	15.642	0.000
L21 64.96-60.50	62.72	0.865	0.03	12.320	A	0.000	12.320	12.320	100.00	9.700	0.000
					B	0.000	12.320		100.00	5.679	0.000
					C	0.000	12.320		100.00	13.952	0.000
L22 60.50-60.25	60.37	0.856	0.03	0.701	A	0.000	0.701	0.701	100.00	0.544	0.000
					B	0.000	0.701		100.00	0.318	0.000
					C	0.000	0.701		100.00	0.782	0.000
L23 60.25-55.25	57.74	0.845	0.03	14.262	A	0.000	14.262	14.262	100.00	10.875	0.000
					B	0.000	14.262		100.00	6.367	0.000
					C	0.000	14.262		100.00	15.642	0.000
L24 55.25-50.25	52.74	0.823	0.03	14.713	A	0.000	14.713	14.713	100.00	10.875	0.000
					B	0.000	14.713		100.00	6.367	0.000
					C	0.000	14.713		100.00	15.642	0.000
L25 50.25-42.41	46.30	0.793	0.03	23.980	A	0.000	23.980	23.980	100.00	17.052	0.000
					B	0.000	23.980		100.00	9.983	0.000
					C	0.000	23.980		100.00	24.526	0.000
L26 42.41-41.41	41.91	0.771	0.03	3.085	A	0.000	3.085	3.085	100.00	2.175	0.000
					B	0.000	3.085		100.00	1.273	0.000
					C	0.000	3.085		100.00	3.128	0.000
L27 41.41-36.41	38.90	0.755	0.03	15.696	A	0.000	15.696	15.696	100.00	10.875	0.000
					B	0.000	15.696		100.00	6.367	0.000
					C	0.000	15.696		100.00	15.642	0.000
L28 36.41-31.41	33.90	0.725	0.03	16.148	A	0.000	16.148	16.148	100.00	10.875	0.000
					B	0.000	16.148		100.00	6.367	0.000
					C	0.000	16.148		100.00	15.642	0.000
L29 31.41-30.50	30.95	0.707	0.02	2.988	A	0.000	2.988	2.988	100.00	1.979	0.000
					B	0.000	2.988		100.00	1.159	0.000
					C	0.000	2.988		100.00	2.847	0.000
L30 30.50-30.25	30.37	0.703	0.02	0.823	A	0.000	0.823	0.823	100.00	0.544	0.000
					B	0.000	0.823		100.00	0.318	0.000
					C	0.000	0.823		100.00	0.782	0.000
L31 30.25-25.25	27.74	0.7	0.02	16.705	A	0.000	16.705	16.705	100.00	10.875	0.000
					B	0.000	16.705		100.00	6.367	0.000
					C	0.000	16.705		100.00	15.642	0.000
L32 25.25-20.25	22.74	0.7	0.02	17.157	A	0.000	17.157	17.157	100.00	11.081	0.000
					B	0.000	17.157		100.00	6.367	0.000
					C	0.000	17.157		100.00	15.642	0.000
L33 20.25-18.00	19.12	0.7	0.02	7.868	A	0.000	7.868	7.868	100.00	6.752	0.000
					B	0.000	7.868		100.00	2.865	0.000
					C	0.000	7.868		100.00	7.039	0.000
L34 18.00-17.75	17.87	0.7	0.02	0.880	A	0.000	0.880	0.880	100.00	0.750	0.000
					B	0.000	0.880		100.00	0.318	0.000
					C	0.000	0.880		100.00	0.782	0.000
L35 17.75-12.75	15.24	0.7	0.02	17.838	A	0.000	17.838	17.838	100.00	9.575	0.000
					B	0.000	17.838		100.00	6.367	0.000
					C	0.000	17.838		100.00	15.642	0.000
L36 12.75-7.75	10.24	0.7	0.02	18.290	A	0.000	18.290	18.290	100.00	5.133	0.000
					B	0.000	18.290		100.00	6.367	0.000
					C	0.000	18.290		100.00	15.642	0.000
L37 7.75-2.75	5.24	0.7	0.02	18.742	A	0.000	18.742	18.742	100.00	5.133	0.000
					B	0.000	18.742		100.00	6.367	0.000
					C	0.000	18.742		100.00	15.642	0.000
L38 2.75-2.50	2.62	0.7	0.02	0.949	A	0.000	0.949	0.949	100.00	0.257	0.000
					B	0.000	0.949		100.00	0.318	0.000
					C	0.000	0.949		100.00	0.782	0.000
L39 2.50-2.25	2.37	0.7	0.02	0.950	A	0.000	0.950	0.950	100.00	0.257	0.000
					B	0.000	0.950		100.00	0.318	0.000
					C	0.000	0.950		100.00	0.782	0.000
L40 2.25-0.00	1.12	0.7	0.02	8.602	A	0.000	8.602	8.602	100.00	2.310	0.000
					B	0.000	8.602		100.00	2.865	0.000
					C	0.000	8.602		100.00	7.039	0.000

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.00-145.00	147.47	1.104	0.01	1.4809	7.794	A	0.000	7.794	7.794	100.00	0.000	0.000
						B	0.000	7.794		100.00	0.000	0.000
						C	0.000	7.794		100.00	0.000	0.000
L2 145.00-140.00	142.47	1.093	0.01	1.4758	8.240	A	0.000	8.240	8.240	100.00	0.000	0.000
						B	0.000	8.240		100.00	0.000	0.000
						C	0.000	8.240		100.00	0.000	0.000
L3 140.00-135.00	137.47	1.082	0.01	1.4706	8.686	A	0.000	8.686	8.686	100.00	0.000	0.000
						B	0.000	8.686		100.00	0.000	0.000
						C	0.000	8.686		100.00	0.000	0.000
L4 135.00-130.00	132.48	1.071	0.01	1.4651	9.132	A	0.000	9.132	9.132	100.00	0.000	0.000
						B	0.000	9.132		100.00	0.000	0.000
						C	0.000	9.132		100.00	0.000	0.000
L5 130.00-123.42	126.67	1.057	0.01	1.4586	12.697	A	0.000	12.697	12.697	100.00	0.000	0.000
						B	0.000	12.697		100.00	0.000	0.000
						C	0.000	12.697		100.00	0.000	0.000
L6 123.42-121.59	122.50	1.047	0.01	1.4537	3.611	A	0.000	3.611	3.611	100.00	0.000	0.000
						B	0.000	3.611		100.00	0.000	0.000
						C	0.000	3.611		100.00	0.000	0.000
L7 121.59-116.59	119.07	1.039	0.01	1.4496	10.166	A	0.000	10.166	10.166	100.00	1.661	0.000
						B	0.000	10.166		100.00	1.661	0.000
						C	0.000	10.166		100.00	1.661	0.000
L8 116.59-115.75	116.17	1.031	0.01	1.4460	1.752	A	0.000	1.752	1.752	100.00	0.989	0.000
						B	0.000	1.752		100.00	0.989	0.000
						C	0.000	1.752		100.00	0.989	0.000
L9 115.75-115.50	115.62	1.03	0.01	1.4453	0.523	A	0.000	0.523	0.523	100.00	0.294	0.000
						B	0.000	0.523		100.00	0.294	0.000
						C	0.000	0.523		100.00	0.294	0.000
L10 115.50-110.50	112.98	1.023	0.01	1.4420	10.691	A	0.000	10.691	10.691	100.00	5.884	0.000
						B	0.000	10.691		100.00	5.884	0.000
						C	0.000	10.691		100.00	5.884	0.000
L11 110.50-105.50	107.98	1.01	0.01	1.4355	11.138	A	0.000	11.138	11.138	100.00	5.877	0.000
						B	0.000	11.138		100.00	5.877	0.000
						C	0.000	11.138		100.00	5.877	0.000
L12 105.50-100.50	102.98	0.997	0.01	1.4287	11.584	A	0.000	11.584	11.584	100.00	5.870	0.000
						B	0.000	11.584		100.00	5.870	0.000
						C	0.000	11.584		100.00	5.870	0.000
L13 100.50-95.50	97.98	0.982	0.01	1.4216	12.031	A	0.000	12.031	12.031	100.00	5.863	0.000
						B	0.000	12.031		100.00	5.863	0.000
						C	0.000	12.031		100.00	5.863	0.000
L14 95.50-90.50	92.98	0.968	0.01	1.4142	12.477	A	0.000	12.477	12.477	100.00	5.856	0.000
						B	0.000	12.477		100.00	5.856	0.000
						C	0.000	12.477		100.00	5.856	0.000
L15 90.50-85.96	88.22	0.953	0.01	1.4067	11.714	A	0.000	11.714	11.714	100.00	9.415	0.000
						B	0.000	11.714		100.00	9.415	0.000
						C	0.000	11.714		100.00	9.415	0.000
L16 85.96-84.96	85.46	0.945	0.01	1.4023	2.585	A	0.000	2.585	2.585	100.00	1.430	0.000
						B	0.000	2.585		100.00	1.450	0.000
						C	0.000	2.585		100.00	1.430	0.000
L17 84.96-79.96	82.44	0.935	0.01	1.3973	13.191	A	0.000	13.191	13.191	100.00	7.139	0.000
						B	0.000	13.191		100.00	9.667	0.000
						C	0.000	13.191		100.00	7.139	0.000
L18 79.96-74.96	77.44	0.919	0.01	1.3885	13.637	A	0.000	13.637	13.637	100.00	7.130	0.000
						B	0.000	13.637		100.00	9.647	0.000
						C	0.000	13.637		100.00	7.130	0.000
L19 74.96-69.96	72.45	0.901	0.01	1.3793	14.081	A	0.000	14.081	14.081	100.00	7.121	0.000
						B	0.000	14.081		100.00	9.626	0.000
						C	0.000	14.081		100.00	7.121	0.000
L20 69.96-64.96	67.45	0.883	0.00	1.3695	14.525	A	0.000	14.525	14.525	100.00	7.111	0.000
						B	0.000	14.525		100.00	9.604	0.000
						C	0.000	14.525		100.00	7.111	0.000
L21 64.96-60.50	62.72	0.865	0.00	1.3596	13.330	A	0.000	13.330	13.330	100.00	6.334	0.000
						B	0.000	13.330		100.00	8.547	0.000
						C	0.000	13.330		100.00	6.334	0.000
L22 60.50-60.25	60.37	0.856	0.00	1.3544	0.758	A	0.000	0.758	0.758	100.00	0.355	0.000
						B	0.000	0.758		100.00	0.479	0.000

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		ksf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
						C	0.000	0.758		100.00	0.355	0.000
L23 60.25-55.25	57.74	0.845	0.00	1.3484	15.385	A	0.000	15.385	15.385	100.00	7.090	0.000
						B	0.000	15.385		100.00	9.557	0.000
						C	0.000	15.385		100.00	7.090	0.000
L24 55.25-50.25	52.74	0.823	0.00	1.3362	15.827	A	0.000	15.827	15.827	100.00	7.078	0.000
						B	0.000	15.827		100.00	9.529	0.000
						C	0.000	15.827		100.00	7.078	0.000
L25 50.25-42.41	46.30	0.793	0.00	1.3189	25.703	A	0.000	25.703	25.703	100.00	11.071	0.000
						B	0.000	25.703		100.00	14.881	0.000
						C	0.000	25.703		100.00	11.071	0.000
L26 42.41-41.41	41.91	0.771	0.00	1.3058	3.305	A	0.000	3.305	3.305	100.00	1.412	0.000
						B	0.000	3.305		100.00	1.898	0.000
						C	0.000	3.305		100.00	1.412	0.000
L27 41.41-36.41	38.90	0.755	0.00	1.2961	16.776	A	0.000	16.776	16.776	100.00	7.038	0.000
						B	0.000	16.776		100.00	9.439	0.000
						C	0.000	16.776		100.00	7.038	0.000
L28 36.41-31.41	33.90	0.725	0.00	1.2784	17.213	A	0.000	17.213	17.213	100.00	7.020	0.000
						B	0.000	17.213		100.00	9.399	0.000
						C	0.000	17.213		100.00	7.020	0.000
L29 31.41-30.50	30.95	0.707	0.00	1.2669	3.180	A	0.000	3.180	3.180	100.00	1.276	0.000
						B	0.000	3.180		100.00	1.706	0.000
						C	0.000	3.180		100.00	1.276	0.000
L30 30.50-30.25	30.37	0.703	0.00	1.2645	0.876	A	0.000	0.876	0.876	100.00	0.350	0.000
						B	0.000	0.876		100.00	0.468	0.000
						C	0.000	0.876		100.00	0.350	0.000
L31 30.25-25.25	27.74	0.7	0.00	1.2530	17.749	A	0.000	17.749	17.749	100.00	6.995	0.000
						B	0.000	17.749		100.00	9.342	0.000
						C	0.000	17.749		100.00	6.995	0.000
L32 25.25-20.25	22.74	0.7	0.00	1.2284	18.181	A	0.000	18.181	18.181	100.00	7.210	0.000
						B	0.000	18.181		100.00	9.287	0.000
						C	0.000	18.181		100.00	6.970	0.000
L33 20.25-18.00	19.12	0.7	0.00	1.2073	8.321	A	0.000	8.321	8.321	100.00	5.284	0.000
						B	0.000	8.321		100.00	4.158	0.000
						C	0.000	8.321		100.00	3.127	0.000
L34 18.00-17.75	17.87	0.7	0.00	1.1992	0.930	A	0.000	0.930	0.930	100.00	0.586	0.000
						B	0.000	0.930		100.00	0.461	0.000
						C	0.000	0.930		100.00	0.347	0.000
L35 17.75-12.75	15.24	0.7	0.00	1.1802	18.821	A	0.000	18.821	18.821	100.00	5.265	0.000
						B	0.000	18.821		100.00	9.178	0.000
						C	0.000	18.821		100.00	6.922	0.000
L36 12.75-7.75	10.24	0.7	0.00	1.1342	19.235	A	0.000	19.235	19.235	100.00	0.000	0.000
						B	0.000	19.235		100.00	9.075	0.000
						C	0.000	19.235		100.00	6.876	0.000
L37 7.75-2.75	5.24	0.7	0.00	1.0607	19.626	A	0.000	19.626	19.626	100.00	0.000	0.000
						B	0.000	19.626		100.00	8.909	0.000
						C	0.000	19.626		100.00	6.802	0.000
L38 2.75-2.50	2.62	0.7	0.00	0.9899	0.990	A	0.000	0.990	0.990	100.00	0.000	0.000
						B	0.000	0.990		100.00	0.438	0.000
						C	0.000	0.990		100.00	0.337	0.000
L39 2.50-2.25	2.37	0.7	0.00	0.9800	0.991	A	0.000	0.991	0.991	100.00	0.000	0.000
						B	0.000	0.991		100.00	0.436	0.000
						C	0.000	0.991		100.00	0.336	0.000
L40 2.25-0.00	1.12	0.7	0.00	0.9093	8.943	A	0.000	8.943	8.943	100.00	0.000	0.000
						B	0.000	8.943		100.00	3.856	0.000
						C	0.000	8.943		100.00	2.993	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		ksf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
L1 150.00-145.00	147.47	1.104	0.01	6.560	A	0.000	6.560	6.560	100.00	5.133	0.000
					B	0.000	6.560		100.00	0.000	0.000
					C	0.000	6.560		100.00	0.000	0.000
L2 145.00-140.00	142.47	1.093	0.01	7.010	A	0.000	7.010	7.010	100.00	5.133	0.000
					B	0.000	7.010		100.00	0.000	0.000
					C	0.000	7.010		100.00	0.000	0.000
L3 140.00-135.00	137.47	1.082	0.01	7.461	A	0.000	7.461	7.461	100.00	5.133	0.000
					B	0.000	7.461		100.00	0.000	0.000
					C	0.000	7.461		100.00	9.900	0.000
L4 135.00-130.00	132.48	1.071	0.01	7.911	A	0.000	7.911	7.911	100.00	5.133	0.000
					B	0.000	7.911		100.00	0.000	0.000
					C	0.000	7.911		100.00	9.900	0.000
L5 130.00-123.42	126.67	1.057	0.01	11.097	A	0.000	11.097	11.097	100.00	6.755	0.000
					B	0.000	11.097		100.00	0.000	0.000
					C	0.000	11.097		100.00	13.028	0.000
L6 123.42-121.59	122.50	1.047	0.01	3.166	A	0.000	3.166	3.166	100.00	1.879	0.000
					B	0.000	3.166		100.00	0.000	0.000
					C	0.000	3.166		100.00	3.623	0.000
L7 121.59-116.59	119.07	1.039	0.01	8.958	A	0.000	8.958	8.958	100.00	6.386	0.000
					B	0.000	8.958		100.00	1.253	0.000
					C	0.000	8.958		100.00	11.153	0.000
L8 116.59-115.75	116.17	1.031	0.01	1.549	A	0.000	1.549	1.549	100.00	1.609	0.000
					B	0.000	1.549		100.00	0.746	0.000
					C	0.000	1.549		100.00	2.409	0.000
L9 115.75-115.50	115.62	1.03	0.01	0.463	A	0.000	0.463	0.463	100.00	0.479	0.000
					B	0.000	0.463		100.00	0.222	0.000
					C	0.000	0.463		100.00	0.717	0.000
L10 115.50-110.50	112.98	1.023	0.01	9.489	A	0.000	9.489	9.489	100.00	9.575	0.000
					B	0.000	9.489		100.00	4.442	0.000
					C	0.000	9.489		100.00	14.342	0.000
L11 110.50-105.50	107.98	1.01	0.01	9.942	A	0.000	9.942	9.942	100.00	9.575	0.000
					B	0.000	9.942		100.00	4.442	0.000
					C	0.000	9.942		100.00	14.342	0.000
L12 105.50-100.50	102.98	0.997	0.01	10.394	A	0.000	10.394	10.394	100.00	9.575	0.000
					B	0.000	10.394		100.00	4.442	0.000
					C	0.000	10.394		100.00	14.342	0.000
L13 100.50-95.50	97.98	0.982	0.01	10.846	A	0.000	10.846	10.846	100.00	9.575	0.000
					B	0.000	10.846		100.00	4.442	0.000
					C	0.000	10.846		100.00	14.342	0.000
L14 95.50-90.50	92.98	0.968	0.01	11.298	A	0.000	11.298	11.298	100.00	9.575	0.000
					B	0.000	11.298		100.00	4.442	0.000
					C	0.000	11.298		100.00	14.342	0.000
L15 90.50-85.96	88.22	0.953	0.01	10.650	A	0.000	10.650	10.650	100.00	12.095	0.000
					B	0.000	10.650		100.00	7.434	0.000
					C	0.000	10.650		100.00	16.423	0.000
L16 85.96-84.96	85.46	0.945	0.01	2.351	A	0.000	2.351	2.351	100.00	2.175	0.000
					B	0.000	2.351		100.00	1.153	0.000
					C	0.000	2.351		100.00	3.128	0.000
L17 84.96-79.96	82.44	0.935	0.01	12.027	A	0.000	12.027	12.027	100.00	10.875	0.000
					B	0.000	12.027		100.00	6.367	0.000
					C	0.000	12.027		100.00	15.642	0.000
L18 79.96-74.96	77.44	0.919	0.01	12.480	A	0.000	12.480	12.480	100.00	10.875	0.000
					B	0.000	12.480		100.00	6.367	0.000
					C	0.000	12.480		100.00	15.642	0.000
L19 74.96-69.96	72.45	0.901	0.01	12.932	A	0.000	12.932	12.932	100.00	10.875	0.000
					B	0.000	12.932		100.00	6.367	0.000
					C	0.000	12.932		100.00	15.642	0.000
L20 69.96-64.96	67.45	0.883	0.01	13.384	A	0.000	13.384	13.384	100.00	10.875	0.000
					B	0.000	13.384		100.00	6.367	0.000
					C	0.000	13.384		100.00	15.642	0.000
L21 64.96-60.50	62.72	0.865	0.01	12.320	A	0.000	12.320	12.320	100.00	9.700	0.000
					B	0.000	12.320		100.00	5.679	0.000
					C	0.000	12.320		100.00	13.952	0.000
L22 60.50-60.25	60.37	0.856	0.01	0.701	A	0.000	0.701	0.701	100.00	0.544	0.000
					B	0.000	0.701		100.00	0.318	0.000
					C	0.000	0.701		100.00	0.782	0.000
L23 60.25-55.25	57.74	0.845	0.01	14.262	A	0.000	14.262	14.262	100.00	10.875	0.000
					B	0.000	14.262		100.00	6.367	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	14.262		100.00	15.642	0.000
L24 55.25-50.25	52.74	0.823	0.01	14.713	A	0.000	14.713	14.713	100.00	10.875	0.000
					B	0.000	14.713		100.00	6.367	0.000
					C	0.000	14.713		100.00	15.642	0.000
L25 50.25-42.41	46.30	0.793	0.01	23.980	A	0.000	23.980	23.980	100.00	17.052	0.000
					B	0.000	23.980		100.00	9.983	0.000
					C	0.000	23.980		100.00	24.526	0.000
L26 42.41-41.41	41.91	0.771	0.01	3.085	A	0.000	3.085	3.085	100.00	2.175	0.000
					B	0.000	3.085		100.00	1.273	0.000
					C	0.000	3.085		100.00	3.128	0.000
L27 41.41-36.41	38.90	0.755	0.01	15.696	A	0.000	15.696	15.696	100.00	10.875	0.000
					B	0.000	15.696		100.00	6.367	0.000
					C	0.000	15.696		100.00	15.642	0.000
L28 36.41-31.41	33.90	0.725	0.01	16.148	A	0.000	16.148	16.148	100.00	10.875	0.000
					B	0.000	16.148		100.00	6.367	0.000
					C	0.000	16.148		100.00	15.642	0.000
L29 31.41-30.50	30.95	0.707	0.01	2.988	A	0.000	2.988	2.988	100.00	1.979	0.000
					B	0.000	2.988		100.00	1.159	0.000
					C	0.000	2.988		100.00	2.847	0.000
L30 30.50-30.25	30.37	0.703	0.01	0.823	A	0.000	0.823	0.823	100.00	0.544	0.000
					B	0.000	0.823		100.00	0.318	0.000
					C	0.000	0.823		100.00	0.782	0.000
L31 30.25-25.25	27.74	0.7	0.01	16.705	A	0.000	16.705	16.705	100.00	10.875	0.000
					B	0.000	16.705		100.00	6.367	0.000
					C	0.000	16.705		100.00	15.642	0.000
L32 25.25-20.25	22.74	0.7	0.01	17.157	A	0.000	17.157	17.157	100.00	11.081	0.000
					B	0.000	17.157		100.00	6.367	0.000
					C	0.000	17.157		100.00	15.642	0.000
L33 20.25-18.00	19.12	0.7	0.01	7.868	A	0.000	7.868	7.868	100.00	6.752	0.000
					B	0.000	7.868		100.00	2.865	0.000
					C	0.000	7.868		100.00	7.039	0.000
L34 18.00-17.75	17.87	0.7	0.01	0.880	A	0.000	0.880	0.880	100.00	0.750	0.000
					B	0.000	0.880		100.00	0.318	0.000
					C	0.000	0.880		100.00	0.782	0.000
L35 17.75-12.75	15.24	0.7	0.01	17.838	A	0.000	17.838	17.838	100.00	9.575	0.000
					B	0.000	17.838		100.00	6.367	0.000
					C	0.000	17.838		100.00	15.642	0.000
L36 12.75-7.75	10.24	0.7	0.01	18.290	A	0.000	18.290	18.290	100.00	5.133	0.000
					B	0.000	18.290		100.00	6.367	0.000
					C	0.000	18.290		100.00	15.642	0.000
L37 7.75-2.75	5.24	0.7	0.01	18.742	A	0.000	18.742	18.742	100.00	5.133	0.000
					B	0.000	18.742		100.00	6.367	0.000
					C	0.000	18.742		100.00	15.642	0.000
L38 2.75-2.50	2.62	0.7	0.01	0.949	A	0.000	0.949	0.949	100.00	0.257	0.000
					B	0.000	0.949		100.00	0.318	0.000
					C	0.000	0.949		100.00	0.782	0.000
L39 2.50-2.25	2.37	0.7	0.01	0.950	A	0.000	0.950	0.950	100.00	0.257	0.000
					B	0.000	0.950		100.00	0.318	0.000
					C	0.000	0.950		100.00	0.782	0.000
L40 2.25-0.00	1.12	0.7	0.01	8.602	A	0.000	8.602	8.602	100.00	2.310	0.000
					B	0.000	8.602		100.00	2.865	0.000
					C	0.000	8.602		100.00	7.039	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

Comb. No.	Description
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	150 - 145	Pole	Max Tension	26	0.00	-0.00	0.00
			Max. Compression	26	-9.04	0.05	0.05
			Max. Mx	8	-3.32	-28.86	0.02
			Max. My	14	-3.33	0.02	-28.82
			Max. Vy	8	6.17	-28.86	0.02
			Max. Vx	14	6.16	0.02	-28.82
			Max. Torque	14			0.00
L2	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-9.49	0.09	0.11
			Max. Mx	8	-3.51	-60.67	0.05
			Max. My	14	-3.52	0.04	-60.58
			Max. Vy	8	6.56	-60.67	0.05
			Max. Vx	14	6.56	0.04	-60.58
			Max. Torque	14			0.00
L3	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.25	0.18	0.08
			Max. Mx	8	-5.15	-121.37	0.06
			Max. My	14	-5.19	0.08	-121.06
			Max. Vy	8	11.74	-121.37	0.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	11.65	0.08	-121.06
			Max. Torque	14			0.00
L4	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.92	0.27	0.04
			Max. Mx	8	-5.52	-181.23	0.07
			Max. My	14	-5.56	0.11	-180.32
			Max. Vy	8	12.23	-181.23	0.07
			Max. Vx	14	12.06	0.11	-180.32
			Max. Torque	14			0.00
L5	130 - 123.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.05	0.62	0.23
			Max. Mx	8	-8.57	-228.53	0.11
			Max. My	14	-8.63	0.25	-227.14
			Max. Vy	8	17.58	-228.53	0.11
			Max. Vx	14	17.39	0.25	-227.14
			Max. Torque	19			-0.20
L6	123.42 - 121.59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.15	0.72	0.20
			Max. Mx	8	-9.24	-317.74	0.43
			Max. My	14	-9.31	0.61	-315.22
			Max. Vy	8	18.12	-317.74	0.43
			Max. Vx	14	17.85	0.61	-315.22
			Max. Torque	19			-0.20
L7	121.59 - 116.59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.06	0.82	0.16
			Max. Mx	8	-9.88	-409.46	0.76
			Max. My	14	-9.96	0.96	-405.46
			Max. Vy	8	18.60	-409.46	0.76
			Max. Vx	14	18.27	0.96	-405.46
			Max. Torque	19			-0.20
L8	116.59 - 115.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.24	0.84	0.15
			Max. Mx	8	-10.00	-425.11	0.81
			Max. My	14	-10.07	1.03	-420.83
			Max. Vy	8	18.69	-425.11	0.81
			Max. Vx	14	18.35	1.03	-420.83
			Max. Torque	19			-0.20
L9	115.75 - 115.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.31	0.85	0.15
			Max. Mx	8	-10.06	-429.78	0.84
			Max. My	14	-10.13	1.05	-425.42
			Max. Vy	8	18.72	-429.78	0.84
			Max. Vx	14	18.38	1.05	-425.42
			Max. Torque	19			-0.20
L10	115.5 - 110.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.72	0.95	0.11
			Max. Mx	8	-10.96	-524.79	1.16
			Max. My	14	-11.04	1.40	-518.65
			Max. Vy	8	19.31	-524.79	1.16
			Max. Vx	14	18.93	1.40	-518.65
			Max. Torque	19			-0.20
L11	110.5 - 105.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.15	1.06	0.06
			Max. Mx	8	-11.90	-622.80	1.48
			Max. My	14	-11.98	1.76	-614.69
			Max. Vy	8	19.92	-622.80	1.48
			Max. Vx	14	19.50	1.76	-614.69
			Max. Torque	19			-0.20
L12	105.5 - 100.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.60	1.17	0.02
			Max. Mx	8	-12.87	-723.83	1.81
			Max. My	14	-12.95	2.13	-713.55

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	20.52	-723.83	1.81
			Max. Vx	14	20.06	2.13	-713.55
			Max. Torque	19			-0.20
L13	100.5 - 95.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.08	1.29	-0.03
			Max. Mx	8	-13.87	-827.88	2.14
			Max. My	14	-13.94	2.49	-815.22
			Max. Vy	8	21.13	-827.88	2.14
			Max. Vx	14	20.63	2.49	-815.22
			Max. Torque	19			-0.20
L14	95.5 - 90.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.58	1.39	-0.08
			Max. Mx	8	-14.89	-934.93	2.46
			Max. My	14	-14.97	2.85	-919.71
			Max. Vy	8	21.73	-934.93	2.46
			Max. Vx	14	21.19	2.85	-919.71
			Max. Torque	19			-0.20
L15	90.5 - 85.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.73	1.40	-0.08
			Max. Mx	8	-14.99	-944.93	2.50
			Max. My	14	-15.07	2.89	-929.46
			Max. Vy	8	21.78	-944.93	2.50
			Max. Vx	14	21.24	2.89	-929.46
			Max. Torque	19			-0.20
L16	85.96 - 84.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.66	1.50	-0.02
			Max. Mx	8	-17.00	-1057.48	2.87
			Max. My	14	-17.07	3.26	-1039.21
			Max. Vy	8	22.61	-1057.48	2.87
			Max. Vx	14	22.05	3.26	-1039.21
			Max. Torque	18			-0.23
L17	84.96 - 79.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.54	1.58	-0.05
			Max. Mx	8	-18.32	-1172.05	3.20
			Max. My	14	-18.39	3.63	-1150.95
			Max. Vy	8	23.25	-1172.05	3.20
			Max. Vx	14	22.66	3.63	-1150.95
			Max. Torque	18			-0.23
L18	79.96 - 74.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.44	1.67	-0.09
			Max. Mx	8	-19.67	-1289.78	3.53
			Max. My	14	-19.74	3.99	-1265.71
			Max. Vy	8	23.88	-1289.78	3.53
			Max. Vx	14	23.26	3.99	-1265.71
			Max. Torque	18			-0.23
L19	74.96 - 69.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.37	1.76	-0.12
			Max. Mx	8	-21.05	-1410.65	3.86
			Max. My	14	-21.12	4.36	-1383.47
			Max. Vy	8	24.51	-1410.65	3.86
			Max. Vx	14	23.86	4.36	-1383.47
			Max. Torque	18			-0.23
L20	69.96 - 64.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.33	1.85	-0.16
			Max. Mx	8	-22.46	-1534.63	4.19
			Max. My	14	-22.53	4.73	-1504.20
			Max. Vy	8	25.12	-1534.63	4.19
			Max. Vx	14	24.45	4.73	-1504.20
			Max. Torque	18			-0.23
L21	64.96 - 60.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.09	1.93	-0.20
			Max. Mx	8	-23.74	-1647.81	4.48
			Max. My	14	-23.80	5.06	-1614.37
			Max. Vy	8	25.67	-1647.81	4.48

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	24.98	5.06	-1614.37
			Max. Torque	18			-0.23
L22	60.5 - 60.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.19	1.94	-0.20
			Max. Mx	8	-23.82	-1654.22	4.50
			Max. My	14	-23.89	5.08	-1620.62
			Max. Vy	8	25.71	-1654.22	4.50
			Max. Vx	14	25.02	5.08	-1620.62
			Max. Torque	18			-0.23
L23	60.25 - 55.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.20	2.03	-0.24
			Max. Mx	8	-25.28	-1784.10	4.82
			Max. My	14	-25.34	5.45	-1747.00
			Max. Vy	8	26.30	-1784.10	4.82
			Max. Vx	14	25.58	5.45	-1747.00
			Max. Torque	18			-0.23
L24	55.25 - 50.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.23	2.13	-0.28
			Max. Mx	8	-26.77	-1916.94	5.14
			Max. My	14	-26.82	5.82	-1876.23
			Max. Vy	8	26.88	-1916.94	5.14
			Max. Vx	14	26.14	5.82	-1876.23
			Max. Torque	18			-0.23
L25	50.25 - 42.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.32	2.18	-0.30
			Max. Mx	8	-27.57	-1989.06	5.32
			Max. My	14	-27.63	6.02	-1946.37
			Max. Vy	8	27.19	-1989.06	5.32
			Max. Vx	14	26.43	6.02	-1946.37
			Max. Torque	18			-0.23
L26	42.41 - 41.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.65	2.31	-0.35
			Max. Mx	8	-30.86	-2159.27	5.72
			Max. My	14	-30.91	6.47	-2111.89
			Max. Vy	8	28.01	-2159.27	5.72
			Max. Vx	14	27.23	6.47	-2111.89
			Max. Torque	18			-0.23
L27	41.41 - 36.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.87	2.41	-0.40
			Max. Mx	8	-32.55	-2300.56	6.04
			Max. My	14	-32.60	6.85	-2249.24
			Max. Vy	8	28.55	-2300.56	6.04
			Max. Vx	14	27.75	6.85	-2249.24
			Max. Torque	18			-0.23
L28	36.41 - 31.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.11	2.51	-0.44
			Max. Mx	8	-34.27	-2444.50	6.36
			Max. My	14	-34.31	7.22	-2389.15
			Max. Vy	8	29.07	-2444.50	6.36
			Max. Vx	14	28.25	7.22	-2389.15
			Max. Torque	18			-0.23
L29	31.41 - 30.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.52	2.53	-0.45
			Max. Mx	8	-34.59	-2470.98	6.42
			Max. My	14	-34.63	7.28	-2414.88
			Max. Vy	8	29.16	-2470.98	6.42
			Max. Vx	14	28.33	7.28	-2414.88
			Max. Torque	18			-0.23
L30	30.5 - 30.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.64	2.54	-0.45
			Max. Mx	8	-34.69	-2478.27	6.44
			Max. My	14	-34.73	7.30	-2421.97
			Max. Vy	8	29.20	-2478.27	6.44

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	28.37	7.30	-2421.97
			Max. Torque	18			-0.23
L31	30.25 - 25.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.91	2.64	-0.49
			Max. Mx	8	-36.44	-2625.33	6.76
			Max. My	14	-36.47	7.67	-2564.88
			Max. Vy	8	29.69	-2625.33	6.76
			Max. Vx	14	28.84	7.67	-2564.88
			Max. Torque	18			-0.23
L32	25.25 - 20.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.21	2.75	-0.54
			Max. Mx	8	-38.22	-2774.90	7.08
			Max. My	14	-38.25	8.04	-2710.21
			Max. Vy	8	30.19	-2774.90	7.08
			Max. Vx	14	29.32	8.04	-2710.21
			Max. Torque	18			-0.23
L33	20.25 - 18	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.27	2.84	-0.54
			Max. Mx	8	-39.04	-2843.04	7.22
			Max. My	14	-39.06	8.21	-2776.41
			Max. Vy	8	30.43	-2843.04	7.22
			Max. Vx	14	29.56	8.21	-2776.41
			Max. Torque	18			-0.23
L34	18 - 17.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.39	2.86	-0.54
			Max. Mx	8	-39.14	-2850.65	7.24
			Max. My	14	-39.17	8.23	-2783.80
			Max. Vy	8	30.46	-2850.65	7.24
			Max. Vx	14	29.59	8.23	-2783.80
			Max. Torque	18			-0.23
L35	17.75 - 12.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.70	2.95	-0.58
			Max. Mx	8	-40.97	-3004.01	7.55
			Max. My	14	-40.99	8.60	-2932.78
			Max. Vy	8	30.95	-3004.01	7.55
			Max. Vx	14	30.05	8.60	-2932.78
			Max. Torque	18			-0.23
L36	12.75 - 7.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.98	2.97	-0.67
			Max. Mx	8	-42.84	-3159.74	7.87
			Max. My	14	-42.85	8.96	-3084.06
			Max. Vy	8	31.41	-3159.74	7.87
			Max. Vx	14	30.50	8.96	-3084.06
			Max. Torque	18			-0.23
L37	7.75 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.24	3.00	-0.75
			Max. Mx	8	-44.74	-3317.79	8.18
			Max. My	14	-44.75	9.33	-3237.56
			Max. Vy	8	31.87	-3317.79	8.18
			Max. Vx	14	30.94	9.33	-3237.56
			Max. Torque	18			-0.23
L38	2.75 - 2.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.36	3.00	-0.76
			Max. Mx	8	-44.85	-3325.75	8.19
			Max. My	14	-44.85	9.35	-3245.30
			Max. Vy	8	31.88	-3325.75	8.19
			Max. Vx	14	30.95	9.35	-3245.30
			Max. Torque	18			-0.23
L39	2.5 - 2.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.47	3.00	-0.76
			Max. Mx	8	-44.94	-3333.72	8.21
			Max. My	14	-44.94	9.37	-3253.04
			Max. Vy	8	31.90	-3333.72	8.21
			Max. Vx	14	30.98	9.37	-3253.04
			Max. Torque	18			-0.23
L40	2.25 - 0	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-75.43	3.01	-0.79
			Max. Mx	8	-45.76	-3405.69	8.35
			Max. My	14	-45.76	9.53	-3322.94
			Max. Vy	8	32.12	-3405.69	8.35
			Max. Vx	14	31.19	9.53	-3322.94
			Max. Torque	18			-0.23

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	75.43	-0.00	0.00
	Max. H_x	20	45.77	29.33	-0.06
	Max. H_z	2	45.77	-0.06	30.97
	Max. M_x	2	3292.77	-0.06	30.97
	Max. M_z	8	3405.69	-32.10	0.06
	Max. Torsion	6	0.23	-27.80	16.10
	Min. Vert	3	34.33	-0.06	30.97
	Min. H_x	9	34.33	-32.10	0.06
	Min. H_z	15	34.33	0.06	-31.17
	Min. M_x	14	-3322.94	0.06	-31.16
	Min. M_z	20	-3115.21	29.33	-0.06
	Min. Torsion	18	-0.23	25.22	-14.61

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	38.14	-0.00	0.00	0.03	0.91	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	45.77	0.06	-30.97	-3292.77	-7.23	-0.13
0.9 Dead+1.0 Wind 0 deg - No Ice	34.33	0.06	-30.97	-3252.25	-7.42	-0.13
1.2 Dead+1.0 Wind 30 deg - No Ice	45.77	15.88	-27.48	-2898.03	-1674.83	-0.20
0.9 Dead+1.0 Wind 30 deg - No Ice	34.33	15.88	-27.48	-2862.63	-1654.65	-0.20
1.2 Dead+1.0 Wind 60 deg - No Ice	45.77	27.80	-16.10	-1693.17	-2919.61	-0.23
0.9 Dead+1.0 Wind 60 deg - No Ice	34.33	27.80	-16.10	-1672.53	-2884.30	-0.23
1.2 Dead+1.0 Wind 90 deg - No Ice	45.77	32.10	-0.06	-8.35	-3405.69	-0.19
0.9 Dead+1.0 Wind 90 deg - No Ice	34.33	32.10	-0.06	-8.25	-3364.42	-0.19
1.2 Dead+1.0 Wind 120 deg - No Ice	45.77	26.76	15.43	1652.53	-2865.87	-0.11
0.9 Dead+1.0 Wind 120 deg - No Ice	34.33	26.76	15.43	1632.16	-2830.85	-0.10
1.2 Dead+1.0 Wind 150 deg - No Ice	45.77	15.51	26.96	2873.97	-1651.22	0.01
0.9 Dead+1.0 Wind 150 deg - No Ice	34.33	15.51	26.96	2838.64	-1631.21	0.01
1.2 Dead+1.0 Wind 180 deg - No Ice	45.77	-0.06	31.16	3322.94	9.53	0.12
0.9 Dead+1.0 Wind 180 deg - No Ice	34.33	-0.06	31.17	3282.23	9.13	0.12
1.2 Dead+1.0 Wind 210 deg - No Ice	45.77	-15.26	26.39	2838.97	1642.99	0.20

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
0.9 Dead+1.0 Wind 210 deg - No Ice	34.33	-15.26	26.39	2803.88	1622.40	0.20
1.2 Dead+1.0 Wind 240 deg - No Ice	45.77	-25.22	14.61	1564.47	2698.88	0.23
0.9 Dead+1.0 Wind 240 deg - No Ice	34.33	-25.22	14.61	1545.14	2665.26	0.23
1.2 Dead+1.0 Wind 270 deg - No Ice	45.77	-29.33	0.06	8.42	3115.21	0.20
0.9 Dead+1.0 Wind 270 deg - No Ice	34.33	-29.32	0.06	8.30	3076.45	0.20
1.2 Dead+1.0 Wind 300 deg - No Ice	45.77	-26.95	-15.54	-1641.28	2848.81	0.11
0.9 Dead+1.0 Wind 300 deg - No Ice	34.33	-26.95	-15.54	-1621.19	2813.63	0.10
1.2 Dead+1.0 Wind 330 deg - No Ice	45.77	-15.42	-26.79	-2847.83	1638.46	-0.01
0.9 Dead+1.0 Wind 330 deg - No Ice	34.33	-15.42	-26.79	-2812.87	1618.07	-0.01
1.2 Dead+1.0 Ice+1.0 Temp	75.43	0.00	-0.00	0.79	3.01	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	75.43	0.01	-6.24	-743.28	1.94	-0.02
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	75.43	3.19	-5.52	-651.96	-374.06	-0.04
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	75.43	5.58	-3.23	-379.73	-653.83	-0.06
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	75.43	6.40	-0.01	-0.62	-754.67	-0.05
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	75.43	5.36	3.09	370.30	-637.51	-0.04
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	75.43	3.10	5.39	642.63	-366.03	-0.01
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	75.43	-0.01	6.23	742.74	4.84	0.02
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	75.43	-3.06	5.29	636.19	370.78	0.04
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	75.43	-5.21	3.02	364.77	631.82	0.06
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	75.43	-6.08	0.01	2.29	732.75	0.05
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	75.43	-5.43	-3.13	-370.22	647.04	0.04
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	75.43	-3.11	-5.40	-642.88	373.93	0.01
Dead+Wind 0 deg - Service	38.14	0.01	-6.72	-710.14	-0.85	-0.03
Dead+Wind 30 deg - Service	38.14	3.45	-5.96	-625.05	-360.54	-0.04
Dead+Wind 60 deg - Service	38.14	6.03	-3.49	-365.19	-629.04	-0.05
Dead+Wind 90 deg - Service	38.14	6.97	-0.01	-1.78	-733.92	-0.04
Dead+Wind 120 deg - Service	38.14	5.81	3.35	356.44	-617.41	-0.02
Dead+Wind 150 deg - Service	38.14	3.37	5.85	619.89	-355.44	0.00
Dead+Wind 180 deg - Service	38.14	-0.01	6.76	716.72	2.76	0.03
Dead+Wind 210 deg - Service	38.14	-3.31	5.73	612.31	355.06	0.04
Dead+Wind 240 deg - Service	38.14	-5.47	3.17	337.34	582.63	0.05
Dead+Wind 270 deg - Service	38.14	-6.36	0.01	1.83	672.42	0.04
Dead+Wind 300 deg - Service	38.14	-5.85	-3.37	-353.96	615.12	0.02
Dead+Wind 330 deg - Service	38.14	-3.35	-5.81	-614.18	354.08	-0.00

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-38.14	0.00	0.00	38.14	0.00	0.000%
2	0.06	-45.77	-30.98	-0.06	45.77	30.97	0.006%
3	0.06	-34.33	-30.98	-0.06	34.33	30.97	0.009%
4	15.88	-45.77	-27.48	-15.88	45.77	27.48	0.000%
5	15.88	-34.33	-27.48	-15.88	34.33	27.48	0.000%
6	27.80	-45.77	-16.10	-27.80	45.77	16.10	0.000%
7	27.80	-34.33	-16.10	-27.80	34.33	16.10	0.000%
8	32.10	-45.77	-0.06	-32.10	45.77	0.06	0.006%
9	32.10	-34.33	-0.06	-32.10	34.33	0.06	0.005%
10	26.76	-45.77	15.43	-26.76	45.77	-15.43	0.000%
11	26.76	-34.33	15.43	-26.76	34.33	-15.43	0.000%
12	15.51	-45.77	26.96	-15.51	45.77	-26.96	0.000%
13	15.51	-34.33	26.96	-15.51	34.33	-26.96	0.000%
14	-0.06	-45.77	31.17	0.06	45.77	-31.16	0.006%
15	-0.06	-34.33	31.17	0.06	34.33	-31.17	0.005%
16	-15.26	-45.77	26.39	15.26	45.77	-26.39	0.000%
17	-15.26	-34.33	26.39	15.26	34.33	-26.39	0.000%
18	-25.22	-45.77	14.61	25.22	45.77	-14.61	0.000%
19	-25.22	-34.33	14.61	25.22	34.33	-14.61	0.000%
20	-29.33	-45.77	0.06	29.33	45.77	-0.06	0.006%
21	-29.33	-34.33	0.06	29.32	34.33	-0.06	0.009%
22	-26.95	-45.77	-15.54	26.95	45.77	15.54	0.000%
23	-26.95	-34.33	-15.54	26.95	34.33	15.54	0.000%
24	-15.42	-45.77	-26.79	15.42	45.77	26.79	0.000%
25	-15.42	-34.33	-26.79	15.42	34.33	26.79	0.000%
26	0.00	-75.43	0.00	-0.00	75.43	0.00	0.002%
27	0.01	-75.43	-6.24	-0.01	75.43	6.24	0.000%
28	3.19	-75.43	-5.52	-3.19	75.43	5.52	0.000%
29	5.58	-75.43	-3.23	-5.58	75.43	3.23	0.000%
30	6.40	-75.43	-0.01	-6.40	75.43	0.01	0.000%
31	5.36	-75.43	3.09	-5.36	75.43	-3.09	0.000%
32	3.10	-75.43	5.39	-3.10	75.43	-5.39	0.000%
33	-0.01	-75.43	6.23	0.01	75.43	-6.23	0.000%
34	-3.06	-75.43	5.29	3.06	75.43	-5.29	0.000%
35	-5.21	-75.43	3.02	5.21	75.43	-3.02	0.000%
36	-6.08	-75.43	0.01	6.08	75.43	-0.01	0.000%
37	-5.43	-75.43	-3.13	5.43	75.43	3.13	0.000%
38	-3.11	-75.43	-5.40	3.11	75.43	5.40	0.000%
39	0.01	-38.14	-6.72	-0.01	38.14	6.72	0.003%
40	3.45	-38.14	-5.96	-3.45	38.14	5.96	0.001%
41	6.03	-38.14	-3.49	-6.03	38.14	3.49	0.001%
42	6.97	-38.14	-0.01	-6.97	38.14	0.01	0.003%
43	5.81	-38.14	3.35	-5.81	38.14	-3.35	0.001%
44	3.37	-38.14	5.85	-3.37	38.14	-5.85	0.001%
45	-0.01	-38.14	6.76	0.01	38.14	-6.76	0.003%
46	-3.31	-38.14	5.73	3.31	38.14	-5.73	0.001%
47	-5.47	-38.14	3.17	5.47	38.14	-3.17	0.002%
48	-6.36	-38.14	0.01	6.36	38.14	-0.01	0.003%
49	-5.85	-38.14	-3.37	5.85	38.14	3.37	0.001%
50	-3.35	-38.14	-5.81	3.35	38.14	5.81	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	18	0.00006042	0.00008981
3	Yes	17	0.00007463	0.00011159
4	Yes	25	0.00000001	0.00014978
5	Yes	25	0.00000001	0.00010293
6	Yes	26	0.00000001	0.00008036
7	Yes	25	0.00000001	0.00010474
8	Yes	18	0.00006005	0.00014708
9	Yes	18	0.00003989	0.00010841
10	Yes	26	0.00000001	0.00007906

11	Yes	25	0.00000001	0.00010338
12	Yes	25	0.00000001	0.00014950
13	Yes	25	0.00000001	0.00010292
14	Yes	18	0.00006029	0.00014115
15	Yes	18	0.00004006	0.00010255
16	Yes	25	0.00000001	0.00014968
17	Yes	25	0.00000001	0.00010320
18	Yes	25	0.00000001	0.00013247
19	Yes	25	0.00000001	0.00009208
20	Yes	18	0.00006099	0.00008615
21	Yes	17	0.00007533	0.00010650
22	Yes	25	0.00000001	0.00014546
23	Yes	25	0.00000001	0.00010025
24	Yes	25	0.00000001	0.00014617
25	Yes	25	0.00000001	0.00010075
26	Yes	8	0.00000001	0.00003188
27	Yes	22	0.00000001	0.00012747
28	Yes	23	0.00000001	0.00008852
29	Yes	23	0.00000001	0.00008926
30	Yes	22	0.00000001	0.00012857
31	Yes	23	0.00000001	0.00008707
32	Yes	23	0.00000001	0.00008697
33	Yes	22	0.00000001	0.00012716
34	Yes	23	0.00000001	0.00008761
35	Yes	23	0.00000001	0.00008656
36	Yes	22	0.00000001	0.00012629
37	Yes	23	0.00000001	0.00008812
38	Yes	23	0.00000001	0.00008827
39	Yes	17	0.00009395	0.00003957
40	Yes	19	0.00000001	0.00008607
41	Yes	19	0.00000001	0.00008957
42	Yes	17	0.00009389	0.00004120
43	Yes	19	0.00000001	0.00008629
44	Yes	19	0.00000001	0.00008617
45	Yes	17	0.00009398	0.00004035
46	Yes	19	0.00000001	0.00008703
47	Yes	18	0.00000001	0.00013141
48	Yes	17	0.00009411	0.00003780
49	Yes	19	0.00000001	0.00008404
50	Yes	19	0.00000001	0.00008425

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	27.53	42	1.86	0.00
L2	145 - 140	25.59	42	1.85	0.00
L3	140 - 135	23.67	42	1.81	0.00
L4	135 - 130	21.81	42	1.74	0.00
L5	130 - 123.42	20.04	42	1.64	0.00
L6	126.59 - 121.59	18.89	42	1.56	0.00
L7	121.59 - 116.59	17.29	42	1.49	0.00
L8	116.59 - 115.75	15.79	42	1.37	0.00
L9	115.75 - 115.5	15.55	42	1.35	0.00
L10	115.5 - 110.5	15.48	42	1.34	0.00
L11	110.5 - 105.5	14.11	42	1.28	0.00
L12	105.5 - 100.5	12.80	42	1.21	0.00
L13	100.5 - 95.5	11.57	42	1.14	0.00
L14	95.5 - 90.5	10.41	42	1.07	0.00
L15	90.5 - 85.96	9.34	42	0.99	0.00
L16	90.04 - 84.96	9.24	42	0.98	0.00
L17	84.96 - 79.96	8.21	42	0.95	0.00
L18	79.96 - 74.96	7.25	42	0.89	0.00
L19	74.96 - 69.96	6.36	42	0.83	0.00
L20	69.96 - 64.96	5.53	42	0.76	0.00
L21	64.96 - 60.5	4.76	42	0.70	0.00
L22	60.5 - 60.25	4.12	42	0.65	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L23	60.25 - 55.25	4.09	42	0.65	0.00
L24	55.25 - 50.25	3.45	42	0.59	0.00
L25	50.25 - 42.41	2.86	42	0.53	0.00
L26	47.58 - 41.41	2.58	42	0.49	0.00
L27	41.41 - 36.41	1.97	42	0.45	0.00
L28	36.41 - 31.41	1.52	42	0.40	0.00
L29	31.41 - 30.5	1.13	42	0.34	0.00
L30	30.5 - 30.25	1.07	42	0.33	0.00
L31	30.25 - 25.25	1.05	42	0.33	0.00
L32	25.25 - 20.25	0.73	42	0.28	0.00
L33	20.25 - 18	0.47	42	0.22	0.00
L34	18 - 17.75	0.37	42	0.20	0.00
L35	17.75 - 12.75	0.36	42	0.20	0.00
L36	12.75 - 7.75	0.19	42	0.14	0.00
L37	7.75 - 2.75	0.07	42	0.09	0.00
L38	2.75 - 2.5	0.01	42	0.03	0.00
L39	2.5 - 2.25	0.01	42	0.03	0.00
L40	2.25 - 0	0.01	42	0.03	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	(3) ACU-A20-N	42	27.53	1.86	0.00	10043
148.00	1900MHz RRH (65MHz)	42	26.75	1.86	0.00	10043
140.00	(2) LPA-80063-6CF-EDIN-2 w/ Mount Pipe	42	23.67	1.81	0.00	5260
127.00	DC6-48-60-18-8F	42	19.03	1.57	0.00	3239
85.00	KS24019-L112D	42	8.22	0.95	0.00	5629

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	127.64	8	8.66	0.00
L2	145 - 140	118.64	8	8.59	0.00
L3	140 - 135	109.77	8	8.40	0.00
L4	135 - 130	101.16	8	8.07	0.00
L5	130 - 123.42	92.96	8	7.62	0.00
L6	126.59 - 121.59	87.66	8	7.27	0.00
L7	121.59 - 116.59	80.22	8	6.91	0.00
L8	116.59 - 115.75	73.28	8	6.35	0.00
L9	115.75 - 115.5	72.18	8	6.26	0.00
L10	115.5 - 110.5	71.85	8	6.24	0.00
L11	110.5 - 105.5	65.48	8	5.95	0.00
L12	105.5 - 100.5	59.42	8	5.63	0.00
L13	100.5 - 95.5	53.71	8	5.30	0.00
L14	95.5 - 90.5	48.34	8	4.96	0.00
L15	90.5 - 85.96	43.34	8	4.60	0.00
L16	90.04 - 84.96	42.90	8	4.57	0.00
L17	84.96 - 79.96	38.13	8	4.39	0.00
L18	79.96 - 74.96	33.68	8	4.12	0.00
L19	74.96 - 69.96	29.52	8	3.83	0.00
L20	69.96 - 64.96	25.65	8	3.55	0.00
L21	64.96 - 60.5	22.08	8	3.27	0.00
L22	60.5 - 60.25	19.15	8	3.02	0.00
L23	60.25 - 55.25	18.99	8	3.00	0.00
L24	55.25 - 50.25	16.00	8	2.72	0.00
L25	50.25 - 42.41	13.30	8	2.44	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L26	47.58 - 41.41	11.98	8	2.29	0.00
L27	41.41 - 36.41	9.12	8	2.10	0.00
L28	36.41 - 31.41	7.06	8	1.84	0.00
L29	31.41 - 30.5	5.26	8	1.59	0.00
L30	30.5 - 30.25	4.96	8	1.55	0.00
L31	30.25 - 25.25	4.88	8	1.53	0.00
L32	25.25 - 20.25	3.41	8	1.28	0.00
L33	20.25 - 18	2.20	8	1.03	0.00
L34	18 - 17.75	1.74	8	0.92	0.00
L35	17.75 - 12.75	1.69	8	0.91	0.00
L36	12.75 - 7.75	0.87	8	0.65	0.00
L37	7.75 - 2.75	0.32	8	0.40	0.00
L38	2.75 - 2.5	0.04	8	0.14	0.00
L39	2.5 - 2.25	0.03	8	0.13	0.00
L40	2.25 - 0	0.03	8	0.12	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	(3) ACU-A20-N	8	127.64	8.66	0.00	2253
148.00	1900MHz RRH (65MHz)	8	124.03	8.64	0.00	2253
140.00	(2) LPA-80063-6CF-EDIN-2 w/ Mount Pipe	8	109.77	8.40	0.00	1179
127.00	DC6-48-60-18-8F	8	88.28	7.31	0.00	720
85.00	KS24019-L112D	8	38.16	4.39	0.00	1225

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	150 - 145 (1)	TP16.0647x15x0.1875	5.00	0.00	0.0	9.4489	-3.32
L2	145 - 140 (2)	TP17.1294x16.0647x0.1875	5.00	0.00	0.0	10.0826	-3.51
L3	140 - 135 (3)	TP18.1941x17.1294x0.1875	5.00	0.00	0.0	10.7162	-5.15
L4	135 - 130 (4)	TP19.2588x18.1941x0.1875	5.00	0.00	0.0	11.3498	-5.52
L5	130 - 123.42 (5)	TP20.66x19.2588x0.1875	6.58	0.00	0.0	11.7820	-8.57
L6	123.42 - 121.59 (6)	TP20.6769x19.61x0.25	5.00	0.00	0.0	16.2088	-9.24
L7	121.59 - 116.59 (7)	TP21.7439x20.6769x0.25	5.00	0.00	0.0	17.0554	-9.88
L8	116.59 - 115.75 (8)	TP21.9231x21.7439x0.25	0.84	0.00	0.0	17.1976	-10.00
L9	115.75 - 115.5 (9)	TP21.9765x21.9231x0.5625	0.25	0.00	0.0	38.2320	-10.06
L10	115.5 - 110.5 (10)	TP23.0434x21.9765x0.5438	5.00	0.00	0.0	38.8313	-10.96
L11	110.5 - 105.5 (11)	TP24.1104x23.0434x0.525	5.00	0.00	0.0	39.3015	-11.90
L12	105.5 - 100.5 (12)	TP25.1773x24.1104x0.5125	5.00	0.00	0.0	40.1216	-12.87
L13	100.5 - 95.5	TP26.2443x25.1773x0.5	5.00	0.00	0.0	40.856	-13.87

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
	(13)					1	
L14	95.5 - 90.5	TP27.3112x26.2443x0.48	5.00	0.00	0.0	41.505	-14.89
	(14)	75				0	
L15	90.5 - 85.96	TP28.28x27.3112x0.4875	4.54	0.00	0.0	41.656	-14.99
	(15)					9	
L16	85.96 - 84.96	TP27.9931x26.9094x0.67	5.08	0.00	0.0	58.527	-17.00
	(16)	5				6	
L17	84.96 - 79.96	TP29.0597x27.9931x0.66	5.00	0.00	0.0	59.712	-18.32
	(17)	25				9	
L18	79.96 - 74.96	TP30.1263x29.0597x0.63	5.00	0.00	0.0	59.668	-19.67
	(18)	75				4	
L19	74.96 - 69.96	TP31.1929x30.1263x0.62	5.00	0.00	0.0	60.639	-21.05
	(19)	5				1	
L20	69.96 - 64.96	TP32.2595x31.1929x0.61	5.00	0.00	0.0	61.524	-22.46
	(20)	25				2	
L21	64.96 - 60.5	TP33.211x32.2595x0.6	4.46	0.00	0.0	62.104	-23.74
	(21)					3	
L22	60.5 - 60.25	TP33.2643x33.211x0.6	0.25	0.00	0.0	62.205	-23.82
	(22)					9	
L23	60.25 - 55.25	TP34.3309x33.2643x0.58	5.00	0.00	0.0	62.922	-25.28
	(23)	75				2	
L24	55.25 - 50.25	TP35.3975x34.3309x0.58	5.00	0.00	0.0	64.911	-26.77
	(24)	75				1	
L25	50.25 - 42.41	TP37.07x35.3975x0.575	7.84	0.00	0.0	64.592	-27.57
	(25)					4	
L26	42.41 - 41.41	TP36.6594x35.3421x0.63	6.17	0.00	0.0	72.887	-30.86
	(26)	75				5	
L27	41.41 - 36.41	TP37.7268x36.6594x0.62	5.00	0.00	0.0	73.600	-32.55
	(27)	5				7	
L28	36.41 - 31.41	TP38.7943x37.7268x0.62	5.00	0.00	0.0	75.718	-34.27
	(28)	5				3	
L29	31.41 - 30.5	TP38.9885x38.7943x0.61	0.91	0.00	0.0	74.605	-34.59
	(29)	25				9	
L30	30.5 - 30.25	TP39.0419x38.9885x0.61	0.25	0.00	0.0	74.709	-34.69
	(30)	25				6	
L31	30.25 - 25.25	TP40.1094x39.0419x0.61	5.00	0.00	0.0	76.784	-36.44
	(31)	25				9	
L32	25.25 - 20.25	TP41.1768x40.1094x0.6	5.00	0.00	0.0	77.274	-38.22
	(32)					5	
L33	20.25 - 18	TP41.6572x41.1768x0.6	2.25	0.00	0.0	78.189	-39.04
	(33)					3	
L34	18 - 17.75	TP41.7105x41.6572x0.55	0.25	0.00	0.0	72.659	-39.14
	(34)	63				4	
L35	17.75 - 12.75	TP42.778x41.7105x0.55	5.00	0.00	0.0	73.717	-40.97
	(35)					4	
L36	12.75 - 7.75	TP43.8454x42.778x0.55	5.00	0.00	0.0	75.580	-42.84
	(36)					9	
L37	7.75 - 2.75	TP44.9129x43.8454x0.53	5.00	0.00	0.0	74.977	-44.00
	(37)	75				1	
L38	2.75 - 2.5 (38)	TP44.9663x44.9129x0.53	0.25	0.00	0.0	75.705	-44.76
		75				5	
L39	2.5 - 2.25 (39)	TP45.0196x44.9663x0.51	0.25	0.00	0.0	72.311	-44.85
		25				8	
L40	2.25 - 0 (40)	TP45.5x45.0196x0.5125	2.25	0.00	0.0	72.398	-44.96
						7	

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft
L1	150 - 145 (1)	TP16.0647x15x0.1875	28.86
L2	145 - 140 (2)	TP17.1294x16.0647x0.18	60.67
		75	
L3	140 - 135 (3)	TP18.1941x17.1294x0.18	121.37

Section No.	Elevation ft	Size	M_{ux} kip-ft
		75	
L4	135 - 130 (4)	TP19.2588x18.1941x0.18 75	181.23
L5	130 - 123.42 (5)	TP20.66x19.2588x0.1875	228.53
L6	123.42 - 121.59 (6)	TP20.6769x19.61x0.25	317.74
L7	121.59 - 116.59 (7)	TP21.7439x20.6769x0.25	409.46
L8	116.59 - 115.75 (8)	TP21.9231x21.7439x0.25	425.11
L9	115.75 - 115.5 (9)	TP21.9765x21.9231x0.56 25	429.78
L10	115.5 - 110.5 (10)	TP23.0434x21.9765x0.54 38	524.79
L11	110.5 - 105.5 (11)	TP24.1104x23.0434x0.52 5	622.80
L12	105.5 - 100.5 (12)	TP25.1773x24.1104x0.51 25	723.83
L13	100.5 - 95.5 (13)	TP26.2443x25.1773x0.5	827.88
L14	95.5 - 90.5 (14)	TP27.3112x26.2443x0.48 75	934.93
L15	90.5 - 85.96 (15)	TP28.28x27.3112x0.4875	944.93
L16	85.96 - 84.96 (16)	TP27.9931x26.9094x0.67 5	1057.48
L17	84.96 - 79.96 (17)	TP29.0597x27.9931x0.66 25	1172.05
L18	79.96 - 74.96 (18)	TP30.1263x29.0597x0.63 75	1289.78
L19	74.96 - 69.96 (19)	TP31.1929x30.1263x0.62 5	1410.66
L20	69.96 - 64.96 (20)	TP32.2595x31.1929x0.61 25	1534.63
L21	64.96 - 60.5 (21)	TP33.211x32.2595x0.6	1647.81
L22	60.5 - 60.25 (22)	TP33.2643x33.211x0.6	1654.23
L23	60.25 - 55.25 (23)	TP34.3309x33.2643x0.58 75	1784.11
L24	55.25 - 50.25 (24)	TP35.3975x34.3309x0.58 75	1916.94
L25	50.25 - 42.41 (25)	TP37.07x35.3975x0.575	1989.07
L26	42.41 - 41.41 (26)	TP36.6594x35.3421x0.63 75	2159.28
L27	41.41 - 36.41 (27)	TP37.7268x36.6594x0.62 5	2300.57
L28	36.41 - 31.41 (28)	TP38.7943x37.7268x0.62 5	2444.51
L29	31.41 - 30.5 (29)	TP38.9885x38.7943x0.61 25	2470.98
L30	30.5 - 30.25 (30)	TP39.0419x38.9885x0.61 25	2478.28
L31	30.25 - 25.25 (31)	TP40.1094x39.0419x0.61 25	2625.34
L32	25.25 - 20.25 (32)	TP41.1768x40.1094x0.6	2774.91
L33	20.25 - 18 (33)	TP41.6572x41.1768x0.6	2843.05
L34	18 - 17.75 (34)	TP41.7105x41.6572x0.55 63	2850.66
L35	17.75 - 12.75 (35)	TP42.778x41.7105x0.55	3004.02
L36	12.75 - 7.75 (36)	TP43.8454x42.778x0.55	3159.75
L37	7.75 - 2.75 (37)	TP44.9129x43.8454x0.53 75	3254.30

Section No.	Elevation ft	Size	M_{ux} kip-ft
L38	2.75 - 2.5 (38)	TP44.9663x44.9129x0.5375	3317.80
L39	2.5 - 2.25 (39)	TP45.0196x44.9663x0.5125	3325.76
L40	2.25 - 0 (40)	TP45.5x45.0196x0.5125	3333.73

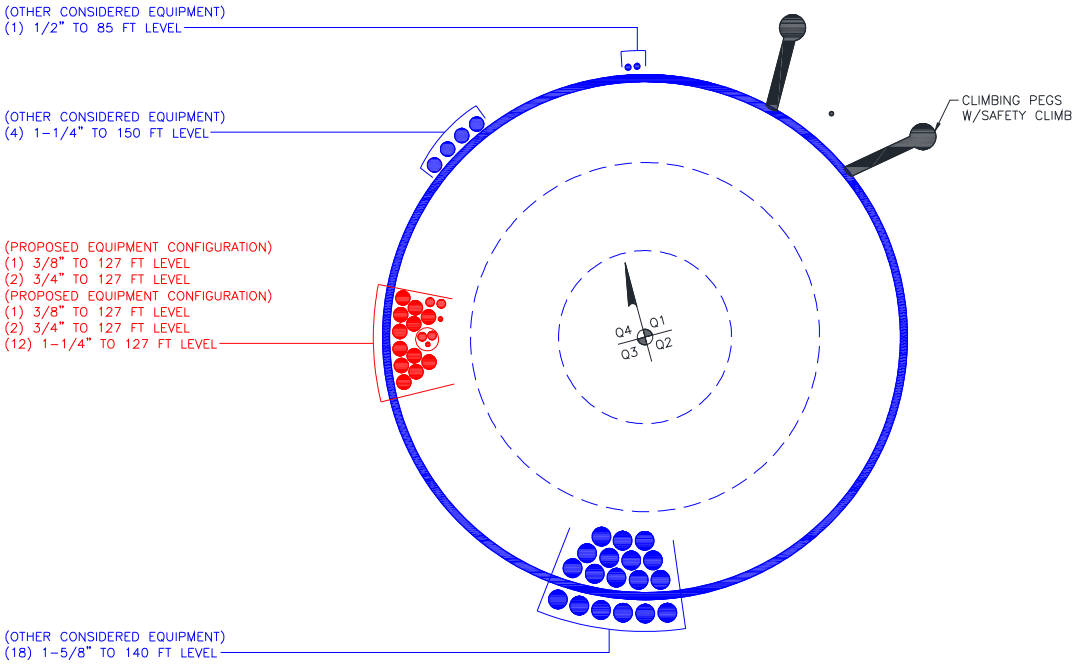
Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K
L1	150 - 145 (1)	TP16.0647x15x0.1875	6.17
L2	145 - 140 (2)	TP17.1294x16.0647x0.1875	6.56
L3	140 - 135 (3)	TP18.1941x17.1294x0.1875	11.74
L4	135 - 130 (4)	TP19.2588x18.1941x0.1875	12.23
L5	130 - 123.42 (5)	TP20.66x19.2588x0.1875	17.58
L6	123.42 - 121.59 (6)	TP20.6769x19.61x0.25	18.12
L7	121.59 - 116.59 (7)	TP21.7439x20.6769x0.25	18.60
L8	116.59 - 115.75 (8)	TP21.9231x21.7439x0.25	18.69
L9	115.75 - 115.5 (9)	TP21.9765x21.9231x0.5625	18.72
L10	115.5 - 110.5 (10)	TP23.0434x21.9765x0.5438	19.31
L11	110.5 - 105.5 (11)	TP24.1104x23.0434x0.525	19.92
L12	105.5 - 100.5 (12)	TP25.1773x24.1104x0.5125	20.52
L13	100.5 - 95.5 (13)	TP26.2443x25.1773x0.5	21.13
L14	95.5 - 90.5 (14)	TP27.3112x26.2443x0.4875	21.73
L15	90.5 - 85.96 (15)	TP28.28x27.3112x0.4875	21.78
L16	85.96 - 84.96 (16)	TP27.9931x26.9094x0.675	22.61
L17	84.96 - 79.96 (17)	TP29.0597x27.9931x0.6625	23.25
L18	79.96 - 74.96 (18)	TP30.1263x29.0597x0.6375	23.88
L19	74.96 - 69.96 (19)	TP31.1929x30.1263x0.625	24.51
L20	69.96 - 64.96 (20)	TP32.2595x31.1929x0.6125	25.13
L21	64.96 - 60.5 (21)	TP33.211x32.2595x0.6	25.67
L22	60.5 - 60.25 (22)	TP33.2643x33.211x0.6	25.71
L23	60.25 - 55.25 (23)	TP34.3309x33.2643x0.5875	26.30
L24	55.25 - 50.25 (24)	TP35.3975x34.3309x0.5875	26.88
L25	50.25 - 42.41 (25)	TP37.07x35.3975x0.575	27.19
L26	42.41 - 41.41 (26)	TP36.6594x35.3421x0.6375	28.01
L27	41.41 - 36.41 (27)	TP37.7268x36.6594x0.625	28.55
L28	36.41 - 31.41	TP38.7943x37.7268x0.62	29.07

Section No.	Elevation ft	Size	Actual V_u K
	(28)	5	
L29	31.41 - 30.5	TP38.9885x38.7943x0.61	29.16
	(29)	25	
L30	30.5 - 30.25	TP39.0419x38.9885x0.61	29.20
	(30)	25	
L31	30.25 - 25.25	TP40.1094x39.0419x0.61	29.69
	(31)	25	
L32	25.25 - 20.25	TP41.1768x40.1094x0.6	30.19
	(32)		
L33	20.25 - 18	TP41.6572x41.1768x0.6	30.43
	(33)		
L34	18 - 17.75	TP41.7105x41.6572x0.55	30.46
	(34)	63	
L35	17.75 - 12.75	TP42.778x41.7105x0.55	30.95
	(35)		
L36	12.75 - 7.75	TP43.8454x42.778x0.55	31.41
	(36)		
L37	7.75 - 2.75	TP44.9129x43.8454x0.53	31.78
	(37)	75	
L38	2.75 - 2.5 (38)	TP44.9663x44.9129x0.53	31.88
		75	
L39	2.5 - 2.25 (39)	TP45.0196x44.9663x0.51	31.91
		25	
L40	2.25 - 0 (40)	TP45.5x45.0196x0.5125	32.02

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 85 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(4) 1-1/4" TO 150 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 3/8" TO 127 FT LEVEL
(2) 3/4" TO 127 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 3/8" TO 127 FT LEVEL
(2) 3/4" TO 127 FT LEVEL
(12) 1-1/4" TO 127 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(18) 1-5/8" TO 140 FT LEVEL
CLIMBING PEGS
W/SAFETY CLIMB
Q1
Q2
Q3
Q4

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876361

Work Order:

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	150	26.58	3.17	18	15	20.66	0.1875	Auto	A572-65
2	126.59	40.63	4.08	18	19.61	28.28	0.25	Auto	A572-65
3	90.04	47.63	5.17	18	26.91	37.07	0.3125	Auto	A572-65
4	47.58	47.58	0	18	35.34	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	2.5	30.5	channel	MP3-06 (1.1875")	2	o												o					
2	18	30.5	channel	MP3-06 (1.1875")	1							o											
3	2.5	18	channel	MP3-06 (1.1875")	1						o												
4	30.5	60.5	channel	MP3-06 (1.1875")	3	o						o						o					
5	60.5	89.25	channel	MP3-06 (1.1875")	3	o						o						o					
6	89.25	115.75	channel	MP3-05 (1.1875")	3		o						o						o				
7	0	2.5	plate	FP 1.25 x 2.8125_1	6	o	o				o	o						o	o				
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
2	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
3	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
4	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
5	6.89	2.61	8.47	0.93	41.000	41.000	24.000	7.670	1.1875	A572-65
6	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
7	1.25	2.8125	3.515625	1.40625	n/a	n/a	0.000	3.516	0.0000	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	150 - 145	5		18	15.000	16.065	0.1875	A572-65	1.000
2	145 - 140	5		18	16.065	17.129	0.1875	A572-65	1.000
3	140 - 135	5		18	17.129	18.194	0.1875	A572-65	1.000
4	135 - 130	5		18	18.194	19.259	0.1875	A572-65	1.000
5	130 - 126.59	6.58	3.17	18	19.259	20.660	0.1875	A572-65	1.000
6	126.59 - 121.59	5		18	19.610	20.677	0.25	A572-65	1.000
7	121.59 - 116.59	5		18	20.677	21.744	0.25	A572-65	1.000
8	116.59 - 115.75	0.84		18	21.744	21.923	0.25	A572-65	1.000
9	115.75 - 115.5	0.25		18	21.923	21.976	0.5625	A572-65	0.894
10	115.5 - 110.5	5		18	21.976	23.043	0.54375	A572-65	0.902
11	110.5 - 105.5	5		18	23.043	24.110	0.525	A572-65	0.913
12	105.5 - 100.5	5		18	24.110	25.177	0.5125	A572-65	0.915
13	100.5 - 95.5	5		18	25.177	26.244	0.5	A572-65	0.920
14	95.5 - 90.5	5		18	26.244	27.311	0.4875	A572-65	0.926
15	90.5 - 90.04	4.54	4.08	18	27.311	28.280	0.4875	A572-65	0.924
16	90.04 - 84.96	5.08		18	26.909	27.993	0.675	A572-65	0.903
17	84.96 - 79.96	5		18	27.993	29.060	0.6625	A572-65	0.903
18	79.96 - 74.96	5		18	29.060	30.126	0.6375	A572-65	0.921
19	74.96 - 69.96	5		18	30.126	31.193	0.625	A572-65	0.924
20	69.96 - 64.96	5		18	31.193	32.260	0.6125	A572-65	0.928
21	64.96 - 60.5	4.46		18	32.260	33.211	0.6	A572-65	0.935
22	60.5 - 60.25	0.25		18	33.211	33.264	0.6	A572-65	0.934
23	60.25 - 55.25	5		18	33.264	34.331	0.5875	A572-65	0.940
24	55.25 - 50.25	5		18	34.331	35.398	0.5875	A572-65	0.928
25	50.25 - 47.58	7.84	5.17	18	35.398	37.070	0.575	A572-65	0.941
26	47.58 - 41.41	6.17		18	35.342	36.659	0.6375	A572-65	0.941
27	41.41 - 36.41	5		18	36.659	37.727	0.625	A572-65	0.949
28	36.41 - 31.41	5		18	37.727	38.794	0.625	A572-65	0.940
29	31.41 - 30.5	0.91		18	38.794	38.989	0.6125	A572-65	0.957
30	30.5 - 30.25	0.25		18	38.989	39.042	0.6125	A572-65	0.956
31	30.25 - 25.25	5		18	39.042	40.109	0.6125	A572-65	0.947
32	25.25 - 20.25	5		18	40.109	41.177	0.6	A572-65	0.957
33	20.25 - 18	2.25		18	41.177	41.657	0.6	A572-65	0.953
34	18 - 17.75	0.25		18	41.657	41.711	0.55625	A572-65	1.027
35	17.75 - 12.75	5		18	41.711	42.778	0.55	A572-65	1.029
36	12.75 - 7.75	5		18	42.778	43.845	0.55	A572-65	1.021
37	7.75 - 2.75	5		18	43.845	44.913	0.5375	A572-65	1.036
38	2.75 - 2.5	0.25		18	44.913	44.966	0.5375	A572-65	1.035
39	2.5 - 2.25	0.25		18	44.966	45.020	0.5125	A572-65	1.025
40	2.25 - 0	2.25		18	45.020	45.500	0.5125	A572-65	1.022

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	150 - 145	3.32	28.86	6.17
2	145 - 140	3.51	60.67	6.56
3	140 - 135	5.15	121.37	11.74
4	135 - 130	5.52	181.23	12.23
5	130 - 126.59	8.57	228.53	17.58
6	126.59 - 121.59	9.24	317.74	18.12
7	121.59 - 116.59	9.88	409.46	18.60
8	116.59 - 115.75	10.00	425.11	18.69
9	115.75 - 115.5	10.06	429.78	18.72
10	115.5 - 110.5	10.96	524.79	19.31
11	110.5 - 105.5	11.90	622.80	19.92
12	105.5 - 100.5	12.87	723.83	20.52
13	100.5 - 95.5	13.87	827.88	21.13
14	95.5 - 90.5	14.89	934.93	21.73
15	90.5 - 90.04	14.99	944.93	21.78
16	90.04 - 84.96	17.00	1057.49	22.61
17	84.96 - 79.96	18.32	1172.05	23.25
18	79.96 - 74.96	19.67	1289.79	23.88
19	74.96 - 69.96	21.05	1410.66	24.51
20	69.96 - 64.96	22.46	1534.64	25.13
21	64.96 - 60.5	23.74	1647.81	25.67
22	60.5 - 60.25	23.82	1654.23	25.71
23	60.25 - 55.25	25.28	1784.11	26.30
24	55.25 - 50.25	26.77	1916.94	26.88
25	50.25 - 47.58	27.57	1989.06	27.19
26	47.58 - 41.41	30.86	2159.28	28.01
27	41.41 - 36.41	32.55	2300.57	28.55
28	36.41 - 31.41	34.27	2444.51	29.07
29	31.41 - 30.5	34.59	2470.98	29.16
30	30.5 - 30.25	34.69	2478.27	29.20
31	30.25 - 25.25	36.44	2625.34	29.69
32	25.25 - 20.25	38.22	2774.91	30.19
33	20.25 - 18	39.04	2843.05	30.43
34	18 - 17.75	39.14	2850.66	30.46
35	17.75 - 12.75	40.97	3004.02	30.95
36	12.75 - 7.75	42.84	3159.75	31.41
37	7.75 - 2.75	44.74	3317.80	31.87
38	2.75 - 2.5	44.85	3325.76	31.88
39	2.5 - 2.25	44.94	3333.73	31.91
40	2.25 - 0	45.76	3405.70	32.12

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP16.065x15x0.1875	Pole	12.5%	Pass
145 - 140	Pole	TP17.129x16.065x0.1875	Pole	22.7%	Pass
140 - 135	Pole	TP18.194x17.129x0.1875	Pole	40.1%	Pass
135 - 130	Pole	TP19.259x18.194x0.1875	Pole	53.9%	Pass
130 - 126.59	Pole	TP20.66x19.259x0.1875	Pole	64.0%	Pass
126.59 - 121.59	Pole	TP20.677x19.61x0.25	Pole	60.9%	Pass
121.59 - 116.59	Pole	TP21.744x20.677x0.25	Pole	70.7%	Pass
116.59 - 115.75	Pole	TP21.923x21.744x0.25	Pole	72.1%	Pass
115.75 - 115.5	Pole + Reinf.	TP21.976x21.923x0.5625	Reinf. 6 Tension Rupture	50.9%	Pass
115.5 - 110.5	Pole + Reinf.	TP23.043x21.976x0.5438	Reinf. 6 Tension Rupture	57.9%	Pass
110.5 - 105.5	Pole + Reinf.	TP24.11x23.043x0.525	Reinf. 6 Tension Rupture	64.2%	Pass
105.5 - 100.5	Pole + Reinf.	TP25.177x24.11x0.5125	Reinf. 6 Tension Rupture	69.9%	Pass
100.5 - 95.5	Pole + Reinf.	TP26.244x25.177x0.5	Reinf. 6 Tension Rupture	75.1%	Pass
95.5 - 90.5	Pole + Reinf.	TP27.311x26.244x0.4875	Reinf. 6 Tension Rupture	79.7%	Pass
90.5 - 90.04	Pole + Reinf.	TP28.28x27.311x0.4875	Reinf. 6 Tension Rupture	80.1%	Pass
90.04 - 84.96	Pole + Reinf.	TP27.993x26.909x0.675	Reinf. 5 Tension Rupture	62.2%	Pass
84.96 - 79.96	Pole + Reinf.	TP29.06x27.993x0.6625	Reinf. 5 Tension Rupture	65.2%	Pass
79.96 - 74.96	Pole + Reinf.	TP30.126x29.06x0.6375	Reinf. 5 Tension Rupture	67.9%	Pass
74.96 - 69.96	Pole + Reinf.	TP31.193x30.126x0.625	Reinf. 5 Tension Rupture	70.5%	Pass
69.96 - 64.96	Pole + Reinf.	TP32.26x31.193x0.6125	Reinf. 5 Tension Rupture	72.9%	Pass
64.96 - 60.5	Pole + Reinf.	TP33.211x32.26x0.6	Reinf. 5 Tension Rupture	74.8%	Pass
60.5 - 60.25	Pole + Reinf.	TP33.264x33.211x0.6	Reinf. 4 Tension Rupture	74.9%	Pass
60.25 - 55.25	Pole + Reinf.	TP34.331x33.264x0.5875	Reinf. 4 Tension Rupture	77.0%	Pass
55.25 - 50.25	Pole + Reinf.	TP35.398x34.331x0.5875	Reinf. 4 Tension Rupture	78.8%	Pass
50.25 - 47.58	Pole + Reinf.	TP37.07x35.398x0.575	Reinf. 4 Tension Rupture	79.8%	Pass
47.58 - 41.41	Pole + Reinf.	TP36.659x35.342x0.6375	Reinf. 4 Tension Rupture	75.8%	Pass
41.41 - 36.41	Pole + Reinf.	TP37.727x36.659x0.625	Reinf. 4 Tension Rupture	77.1%	Pass
36.41 - 31.41	Pole + Reinf.	TP38.794x37.727x0.625	Reinf. 4 Tension Rupture	78.3%	Pass
31.41 - 30.5	Pole + Reinf.	TP38.989x38.794x0.6125	Reinf. 4 Tension Rupture	78.5%	Pass
30.5 - 30.25	Pole + Reinf.	TP39.042x38.989x0.6125	Reinf. 1 Tension Rupture	78.6%	Pass
30.25 - 25.25	Pole + Reinf.	TP40.109x39.042x0.6125	Reinf. 1 Tension Rupture	79.6%	Pass
25.25 - 20.25	Pole + Reinf.	TP41.177x40.109x0.6	Reinf. 1 Tension Rupture	80.6%	Pass
20.25 - 18	Pole + Reinf.	TP41.657x41.177x0.6	Reinf. 1 Tension Rupture	81.0%	Pass
18 - 17.75	Pole + Reinf.	TP41.711x41.657x0.5563	Reinf. 1 Tension Rupture	83.3%	Pass
17.75 - 12.75	Pole + Reinf.	TP42.778x41.711x0.55	Reinf. 1 Tension Rupture	84.1%	Pass
12.75 - 7.75	Pole + Reinf.	TP43.845x42.778x0.55	Reinf. 1 Tension Rupture	84.9%	Pass
7.75 - 2.75	Pole + Reinf.	TP44.913x43.845x0.5375	Reinf. 1 Tension Rupture	85.5%	Pass
2.75 - 2.5	Pole + Reinf.	TP44.966x44.913x0.5375	Reinf. 1 Tension Rupture	85.6%	Pass
2.5 - 2.25	Pole + Reinf.	TP45.02x44.966x0.5125	Reinf. 7 Tension Yield	84.3%	Pass
2.25 - 0	Pole + Reinf.	TP45.5x45.02x0.5125	Reinf. 7 Tension Yield	84.5%	Pass
				Summary	
			Pole	72.1%	Pass
			Reinforcement	85.6%	Pass
			Overall	85.6%	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
150 - 145	301	n/a	301	9.45	n/a	9.45	12.5%							
145 - 140	365	n/a	365	10.08	n/a	10.08	22.7%							
140 - 135	439	n/a	439	10.72	n/a	10.72	40.1%							
135 - 130	521	n/a	521	11.35	n/a	11.35	53.9%							
130 - 126.59	583	n/a	583	11.78	n/a	11.78	64.0%							
126.59 - 121.59	854	n/a	854	16.21	n/a	16.21	60.9%							
121.59 - 116.59	995	n/a	995	17.05	n/a	17.05	70.7%							
116.59 - 115.75	1020	n/a	1020	17.20	n/a	17.20	72.1%							
115.75 - 115.5	1028	1187	2214	17.24	16.95	34.19	33.3%						50.9%	
115.5 - 110.5	1187	1295	2482	18.09	16.95	35.04	38.0%						57.9%	
110.5 - 105.5	1361	1409	2770	18.93	16.95	35.88	42.3%						64.2%	
105.5 - 100.5	1552	1528	3080	19.78	16.95	36.73	46.6%						69.9%	
100.5 - 95.5	1760	1651	3411	20.63	16.95	37.58	50.7%						75.1%	
95.5 - 90.5	1986	1779	3765	21.47	16.95	38.42	54.6%						79.7%	
90.5 - 90.04	2008	1791	3799	21.55	16.95	38.50	54.9%						80.1%	
90.04 - 84.96	2657	2856	5513	27.45	25.41	52.86	41.8%					62.2%		
84.96 - 79.96	2976	3062	6038	28.51	25.41	53.92	43.9%					65.2%		
79.96 - 74.96	3320	3275	6595	29.57	25.41	54.98	45.9%					67.9%		
74.96 - 69.96	3689	3496	7185	30.63	25.41	56.04	48.1%					70.5%		
69.96 - 64.96	4084	3723	7808	31.69	25.41	57.10	50.3%					72.9%		
64.96 - 60.5	4460	3932	8393	32.63	25.41	58.04	52.1%					74.8%		
60.5 - 60.25	4482	3944	8426	32.68	25.41	58.09	52.2%				74.9%			
60.25 - 55.25	4932	4186	9117	33.74	25.41	59.15	54.2%				77.0%			
55.25 - 50.25	5410	4435	9845	34.80	25.41	60.21	56.1%				78.8%			
50.25 - 47.58	5678	4570	10248	35.36	25.41	60.77	57.1%				79.8%			
47.58 - 41.41	7181	4738	11919	43.19	25.41	68.60	52.0%				75.8%			
41.41 - 36.41	7834	5003	12837	44.46	25.41	69.87	53.3%				77.1%			
36.41 - 31.41	8525	5275	13800	45.73	25.41	71.14	54.6%				78.3%			
31.41 - 30.5	8655	5326	13980	45.96	25.41	71.37	54.8%				78.5%			
30.5 - 30.25	8690	5339	14030	46.02	25.41	71.43	54.9%	78.6%	78.6%					
30.25 - 25.25	9430	5620	15051	47.29	25.41	72.70	56.1%	79.6%	79.6%					
25.25 - 20.25	10211	5909	16119	48.56	25.41	73.97	57.3%	80.6%	80.6%					
20.25 - 18	10576	6041	16616	49.13	25.41	74.54	57.8%	81.0%	81.0%					
18 - 17.75	10647	4930	15577	49.20	25.41	74.61	64.8%	83.3%		79.8%				
17.75 - 12.75	11492	5175	16666	50.47	25.41	75.88	65.9%	84.1%		80.7%				
12.75 - 7.75	12380	5425	17805	51.74	25.41	77.15	67.0%	84.9%		81.4%				
7.75 - 2.75	13314	5681	18995	53.01	25.41	78.42	68.0%	85.5%		82.1%				
2.75 - 2.5	13362	5694	19055	53.07	25.41	78.48	68.1%	85.6%		82.2%				
2.5 - 2.25	13397	4774	18171	53.14	21.09	74.23	71.5%							84.3%
2.25 - 0	13834	4870	18705	53.71	21.09	74.80	71.9%							84.5%

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

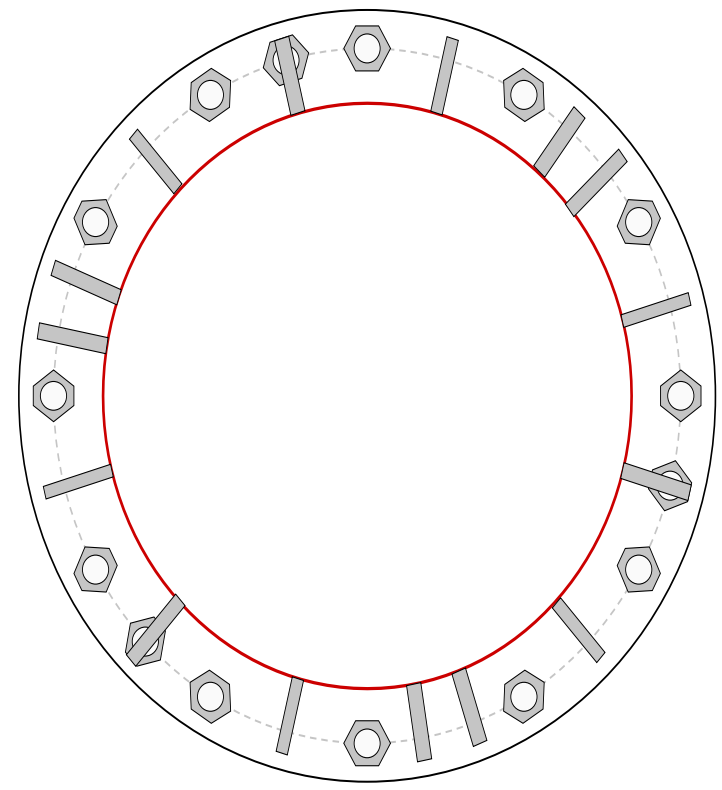
Monopole Base Plate Connection

Site Info	
BU #	876361
Site Name	Seymour
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	2.25

Applied Loads	
Moment (kip-ft)	3405.70
Axial Force (kips)	45.76
Shear Force (kips)	32.12

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54" BC
GROUP 2: (3) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 54" BC

Base Plate Data

60" OD x 1.75" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

Group 1: (6) 18"H x 6"W x 1"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.49" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.375" fillet

Group 2: (6) 51"H x 6"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.624" groove, 45° dbl bevel, 0.625" fillet
vert. weld: 0.375" fillet

Group 3: (3) 30"H x 6"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.624" groove, 45° dbl bevel, 0.625" fillet
vert. weld: 0.375" fillet

Pole Data

45.5" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:		
Pu_c = 205.49	ϕPn_c = 243.75	**Stress Rating**
Vu = 2.68	ϕVn = 73.13	**80.4%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 201.68	ϕPn_c = 341.25	**Stress Rating**
Vu = 0	ϕVn = 102.38	**56.3%**
Mu = 0	ϕMn = 132.58	**Pass**

Base Plate Summary

Max Stress (ksi):	43.16	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**76.1%**	**Pass**

Stiffener Summary

Horizontal Weld:	**51.6%**	**Pass**
Vertical Weld:	**33.4%**	**Pass**
Plate Flexure+Shear:	**7.4%**	**Pass**
Plate Tension+Shear:	**33.4%**	**Pass**
Plate Compression:	**35.0%**	**Pass**

Pole Summary

Punching Shear:	**10.3%**	**Pass**

Pier and Pad Foundation

BU # :	876361
Site Name:	Seymour
App. Number:	

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	45.76	kips
Base Shear, Vu_comp:	32.12	kips
Moment, M_u:	3405.7	ft-kips
Tower Height, **H**:	150	ft
BP Dist. Above Fdn, bp_{dist}:	1	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	6	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	30	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	6	ft
Pad Width, **W**:	21.5	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom), **Sp**:	8	
Pad Rebar Quantity (Bottom), **mp**:	20	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	120	pcf
Ultimate Gross Bearing, Qult:	12.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:	60	
Base Friction, μ:		
Neglected Depth, **N**:	3.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	n/a	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	181.85	32.12	**16.8%**	**Pass**
Bearing Pressure (ksf)	9.00	5.12	**56.9%**	**Pass**
*Overturning (kip*ft)*	3936.64	3633.22	**92.3%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	3245.25	3534.18		
Pier Compression (kip)	17184.96	71.68	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	2188.42	2025.29	**88.1%**	**Pass**
Pad Shear - 1-way (kips)	667.70	298.75	**42.6%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	2983.48	2120.51	**67.7%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Soil Rating*:	**92.3%**
Structural Rating*:	

See Next Page for Steel Calculations

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

Job Number: 37519-1214.002.7805
Site Number: 876361
Site Name:
By: GP
Date: 6/21/2019

Version 1.4, Effective 5/16/19

DRILLED PIER STEEL ANALYSIS - STEEL CALCULATIONS - TIA-222-H

BASED ON ACI 318-14, SECTION 10 (ASSUMING TIE REINFORCEMENT)

Factored Internal Loads from Analysis

Reference Standard =	TIA-222-H	
ACI Code =	ACI 318-14	
Maximum Ratio =	100.0%	
Axial Load, Pu =	45.8	kips, (+Comp, -Tension)
Moment, Mu =	3405.7	k-ft (Must be Positive)
Depth to Analysis Section =		ft, from Grade

Factored Internal Loads

Load Factor =	1.0	
Axial Load, Pu = ΦPn =	45.8	kips
Moment, Mu =	3405.7	k-ft

Drilled Pier Geometry and Concrete Specifications

Diameter =	72	in
fc' =	3	ksi
εc =	0.003	in/in
β1 =	0.85	
Ag =	4071.5	in^2
Height Above Grade =	1	ft
Depth Below Grade =	4	ft

Nominal Axial Load and Moment

ΦPn(max) =	6293.2	kips
ΦPn(min) =	-1616.7	kips
ΦPn =	45.8	kips
Φ =	0.900	
ΦMn (Resultant) =	3913.1	k-ft
at θ =	11.39	degrees
NA Depth =	13.83	in

Rebar Size and Specifications

	Existing	Bar Circle 2	Bar Circle 3	Bar Circle 4	
Bar Size =	#8				
Override Bar Diameter =		2.2500			in
Bar Diameter =	1.0000	2.2500	0.0000	0.0000	in
Bar Area =	0.7900	3.9761	0.0000	0.0000	in^2
Effective Bar Area =	0.7900	2.0795	0.0000	0.0000	in^2
Number Bars =	30	3			
Spacing =	Symmetric	Asymmetric			
fy =	60	60			ksi
Es =	29000	29000	29000	29000	ksi
εy =	0.00207	0.00207	0.00000	0.00000	in/in
Tie Size =	#4				
Clear Cover to Ties =	3				in
Bar Circle =	64	54			in
Adjust =	288.0000	105.0000			
% of Area Effective =	100.0%	52.3%	100.0%	100.0%	
Include in Calcs =	Yes	Yes	Yes	Yes	
Bar Circle Valid =	Yes	Yes	No	No	

AXIAL RATIO* = 0.7% OK

MOMENT RATIO* = 82.9% OK

*Rating per TIA-222-H Section 15.5

Minimum Required Steel

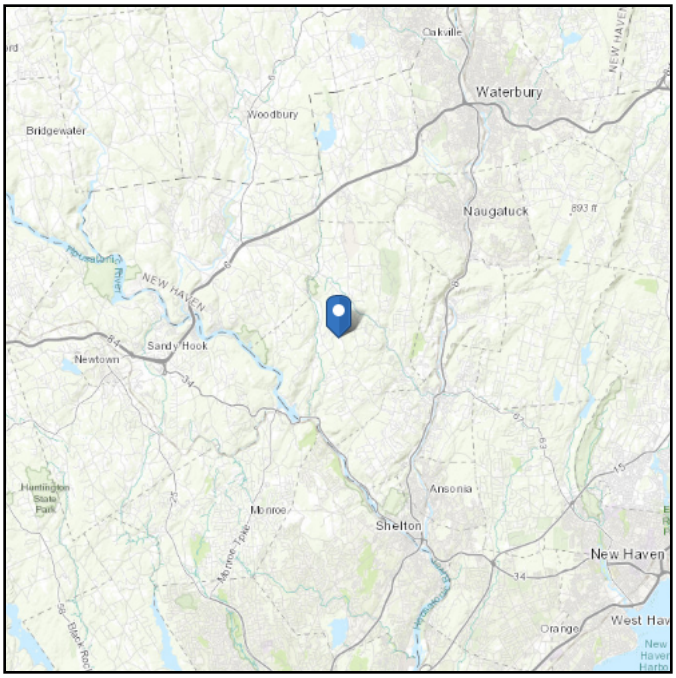
Seismic Design Category =	D		
As(min) =	20.36	sq in	TIA-222-H, 9.4.1
As =	35.63	sq in	
Stl Area Reduction Factor =	1.00		

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 734.07 ft (NAVD 88)
Latitude: 41.426364
Longitude: -73.144258



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	98 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Thu Apr 04 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.

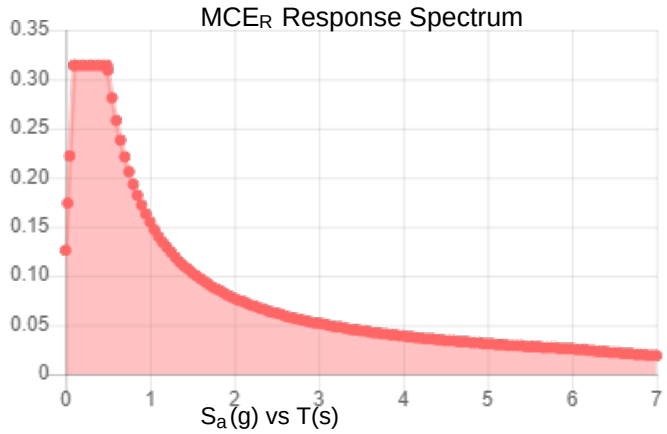
Seismic

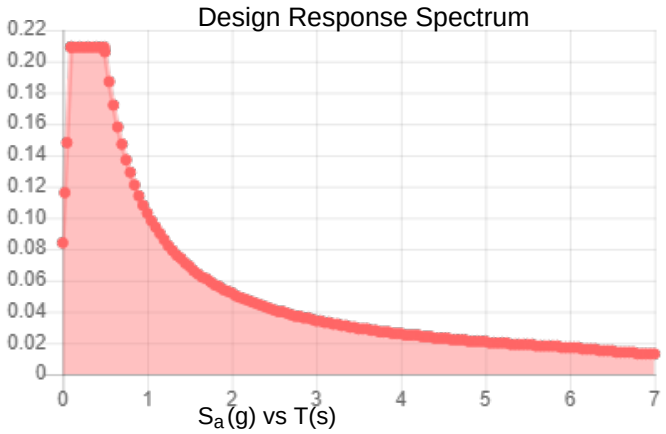
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.196	S_{DS} :	0.209
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.104
S_{MS} :	0.314	PGA_M :	0.165
S_{M1} :	0.155	F_{PGA} :	1.592
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Apr 04 2019

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Apr 04 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.

Exhibit D

Mount Analysis

Date: **June 12, 2019**

Kevin Morrow
Crown Castle
3530 Toringdon Way, Suite 300
Charlottle, NC 28277
704-405-6619

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

Subject:	**Mount Analysis Report**	
Carrier Designation:	**AT&T Equipment Change-Out**	
	Carrier Site Number:	CTL05662
	Carrier Site Name:	OXFORD CENTRAL
Crown Castle Designation:	**Crown Castle BU Number:**	876361
	Crown Castle Site Name:	SEYMOUR 2 / OXFORD TOWN GARAGE
	Crown Castle JDE Job Number:	565561
	Crown Castle Order Number:	486191 Rev. 0
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-A0002-B	
Site Data:	**20 Great Oak Rd., Oxford, New Haven, CT, 06478** **Latitude 41°25'34.91" Longitude -73°8'39.33"**	
Structure Information:	**Tower Height & Type:**	**150 ft Monopole**
	Mount Elevation:	**127.0 ft**
	Mount Type:	**12.5 ft Low Profile Platform**

Dear Kevin Morrow,

Infinigy Engineering, PLLC 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:

Low Profile Platform **Sufficient – 85.6%**
***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 121 mph as required by the 2018 Connecticut State Building Code and Appendix N. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Luis A. Mendoza, P.E.

Respectfully Submitted by:
Joe Johnston, P.E.
VP Structural Engineering/Principal
518-690-0790
jjohnston@infinigy.com
CT PE License No. 29460

06/12/19

TABLE OF CONTENTS

1) INTRODUCTION

This is a 12.5 ft Low Profile Platform mapped by Infinigy Engineering.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	121 mph
Exposure Category:	B
Topographic Factor at Base:	1.000
Topographic Factor at Mount:	1.000
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at End-Points:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
127.0	128.0	3	ANDREW	SBNH-1D6565C	**12.5 ft Low Profile Platform**
		4	KATHREIN	80010966	
		2	KATHREIN	80010965	
		3	ERICSSON	RRUS 4449 B5/B12	
		3	ERICSSON	RRUS 8843 B2/B66A	
		1	RAYCAP	DC6-48-60-18-8C-EV	
	127.0	1	RAYCAP	DC6-48-60-18-8F	
		3	COMMUNICATION COMPONENTS INC.	DTMABP7819VG12A	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	AT&T Application	486191 Rev. 0	CCI Sites
Mount Mapping Report	Infinigy Engineering	Doc ID. 8422112	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 Mount Analysis Tool 4.0.2, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP2	127.0	76.9	Pass
	Horizontal(s)	M10		57.5	Pass
	Corner Plate(s)	M25		85.6	Pass
	Standoff(s)	M35		71.0	Pass
	Mount Connection(s)	--		59.9	Pass

Structure Rating (max from all components) =	85.6%

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

4.1) Recommendations

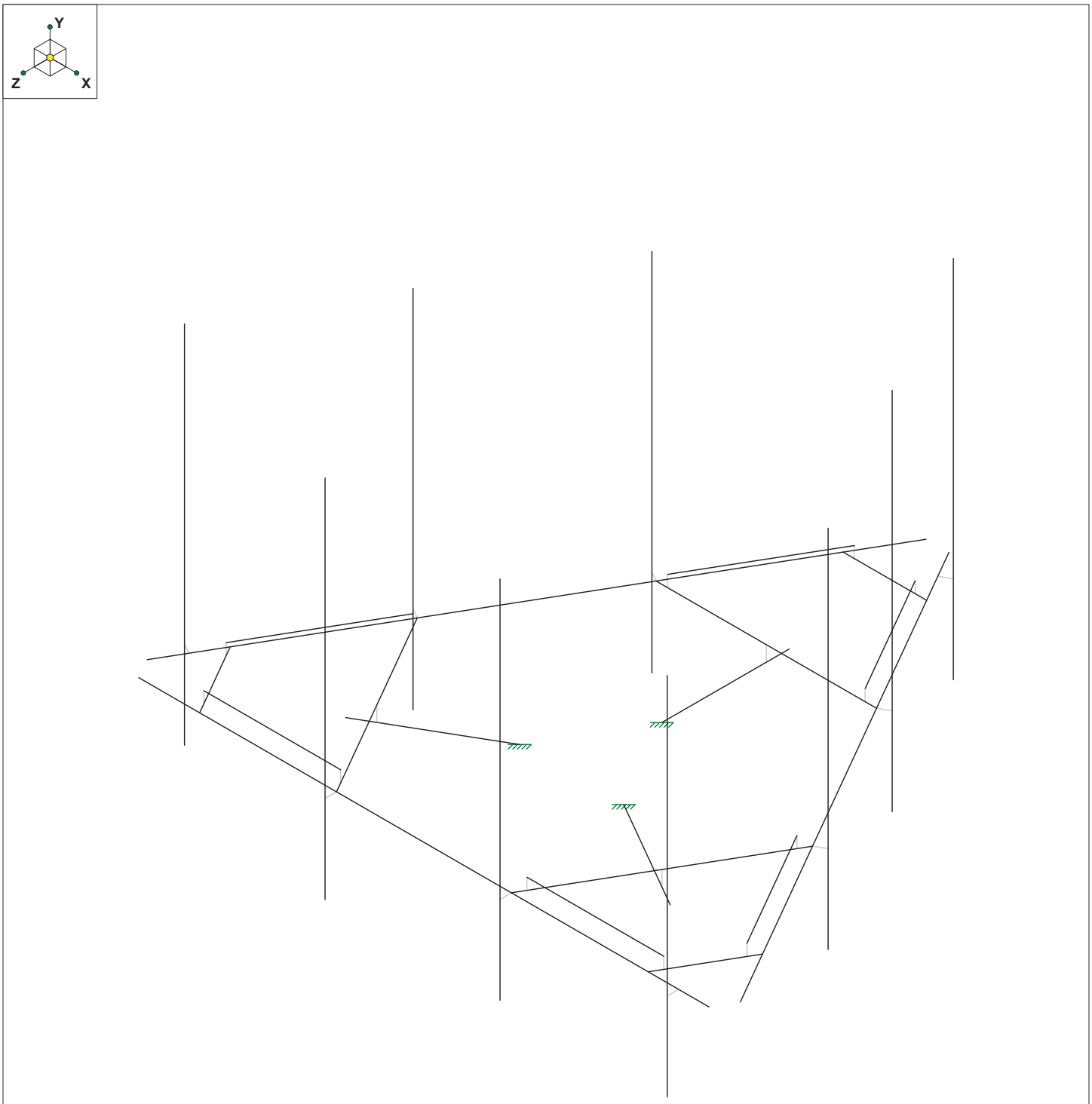
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the loading modification listed below must be completed.

1. Pipe mounts are to be replaced with new 2.5 sch 40 x 8’ long pipes (grade A53-B). New pipe mounts to be attached to existing mount horizontals using new SitePro1 SCX2-K crossover plate kits. Contractor to match existing vertical offsets as noted in the mapping report.

No structural modifications are required at this time, provided that the above-listed changes are implemented.

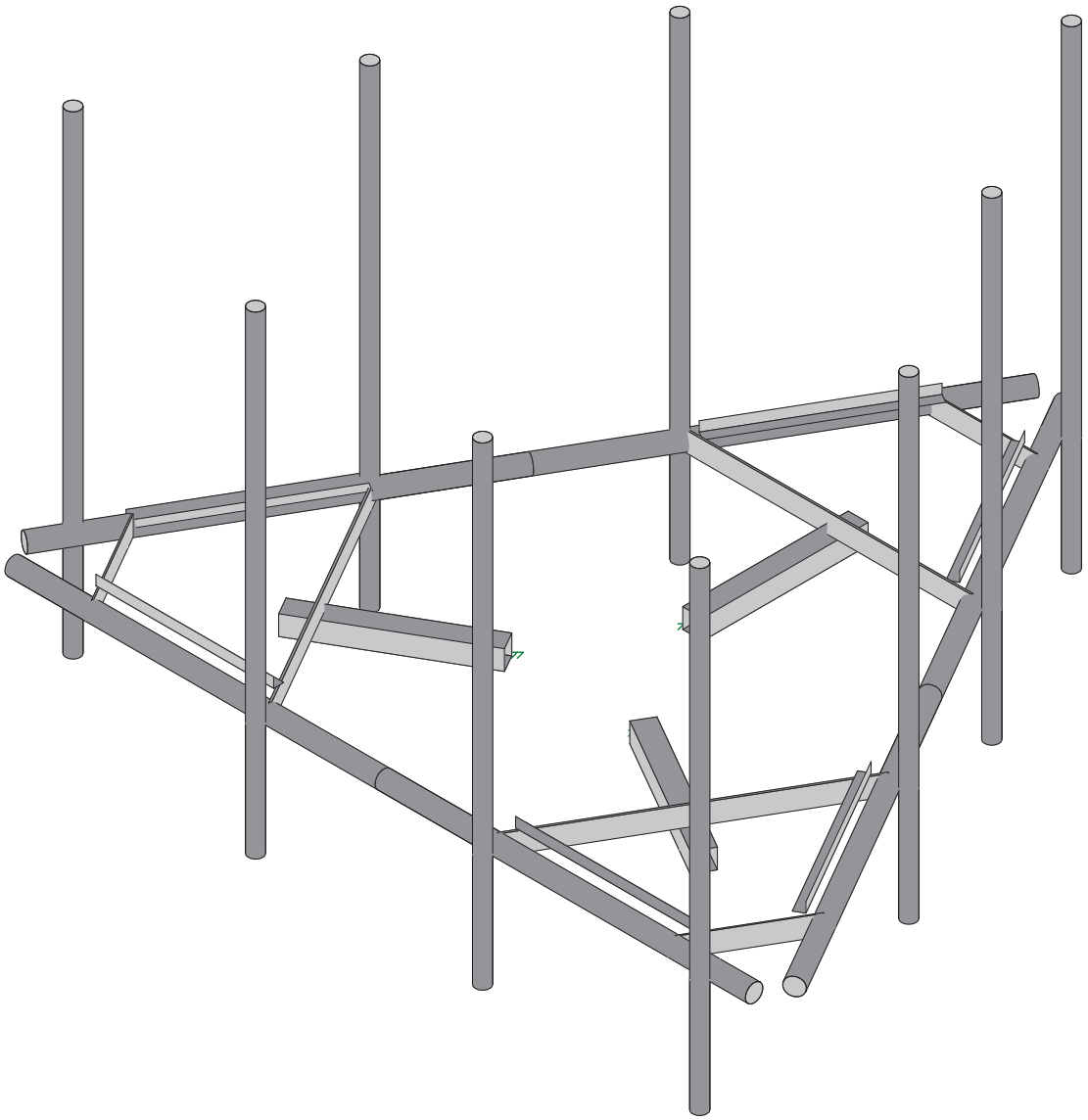
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:19 PM
1039-A0002-B		876361.r3d



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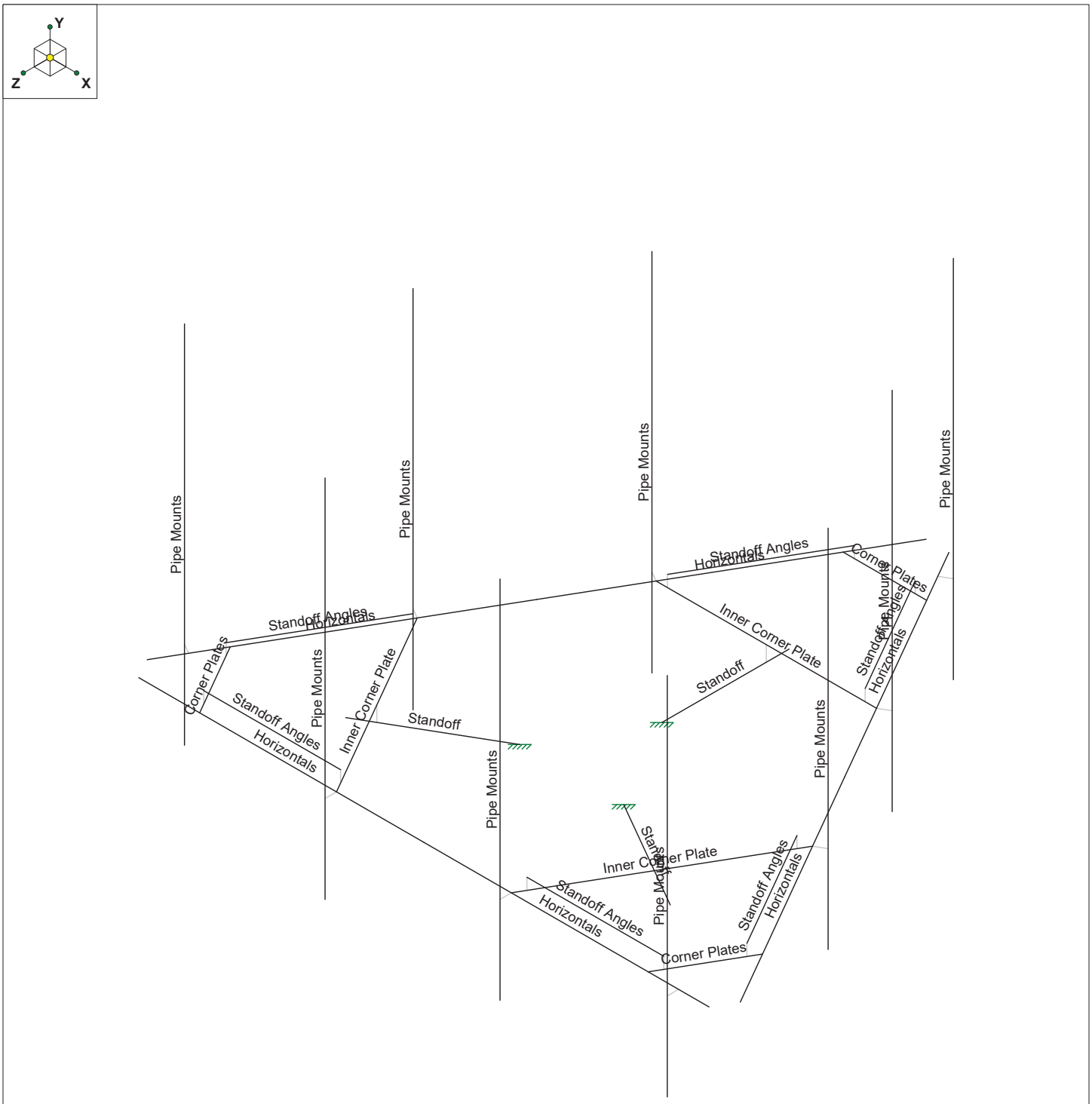

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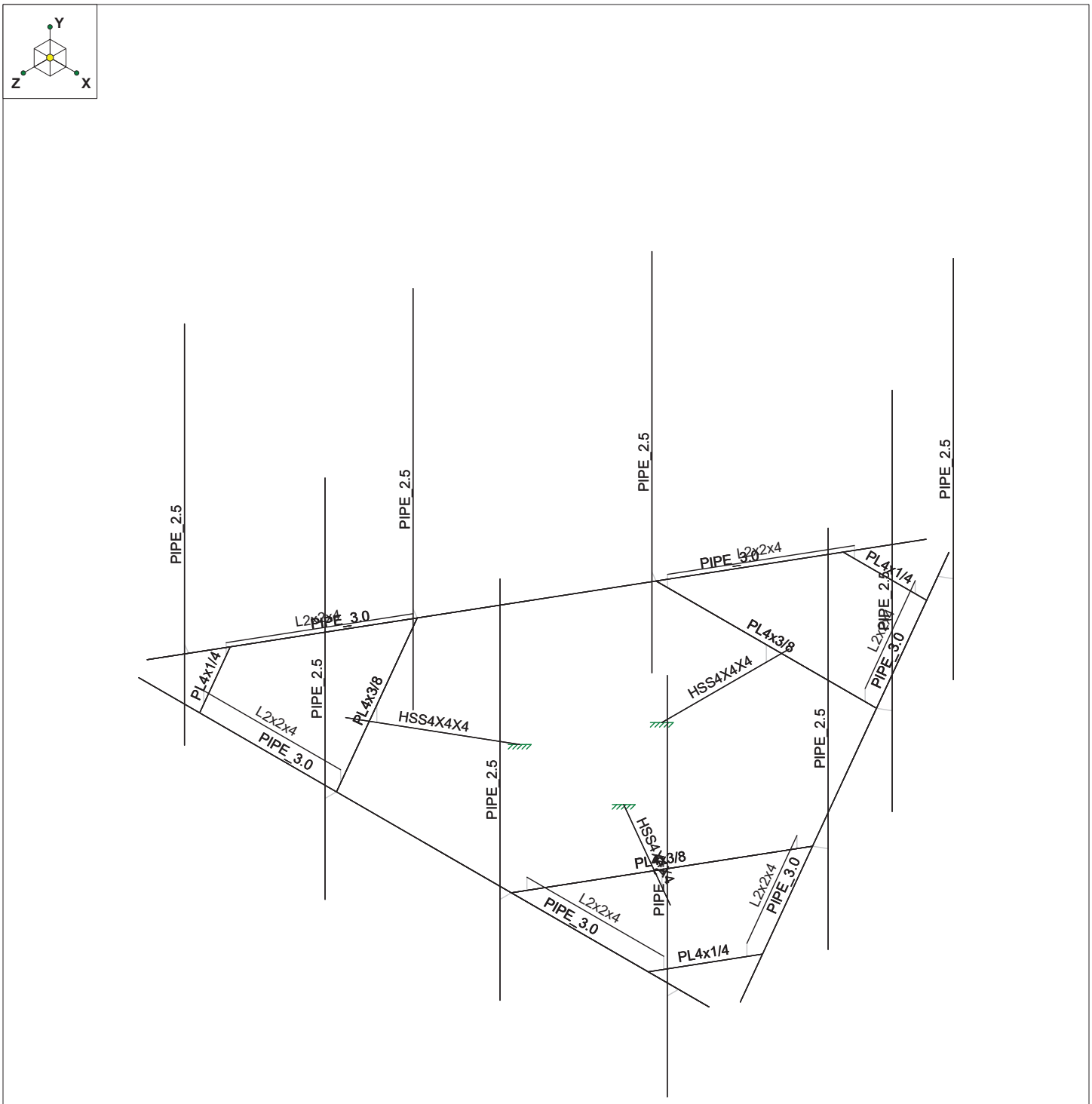

Envelope Only Solution

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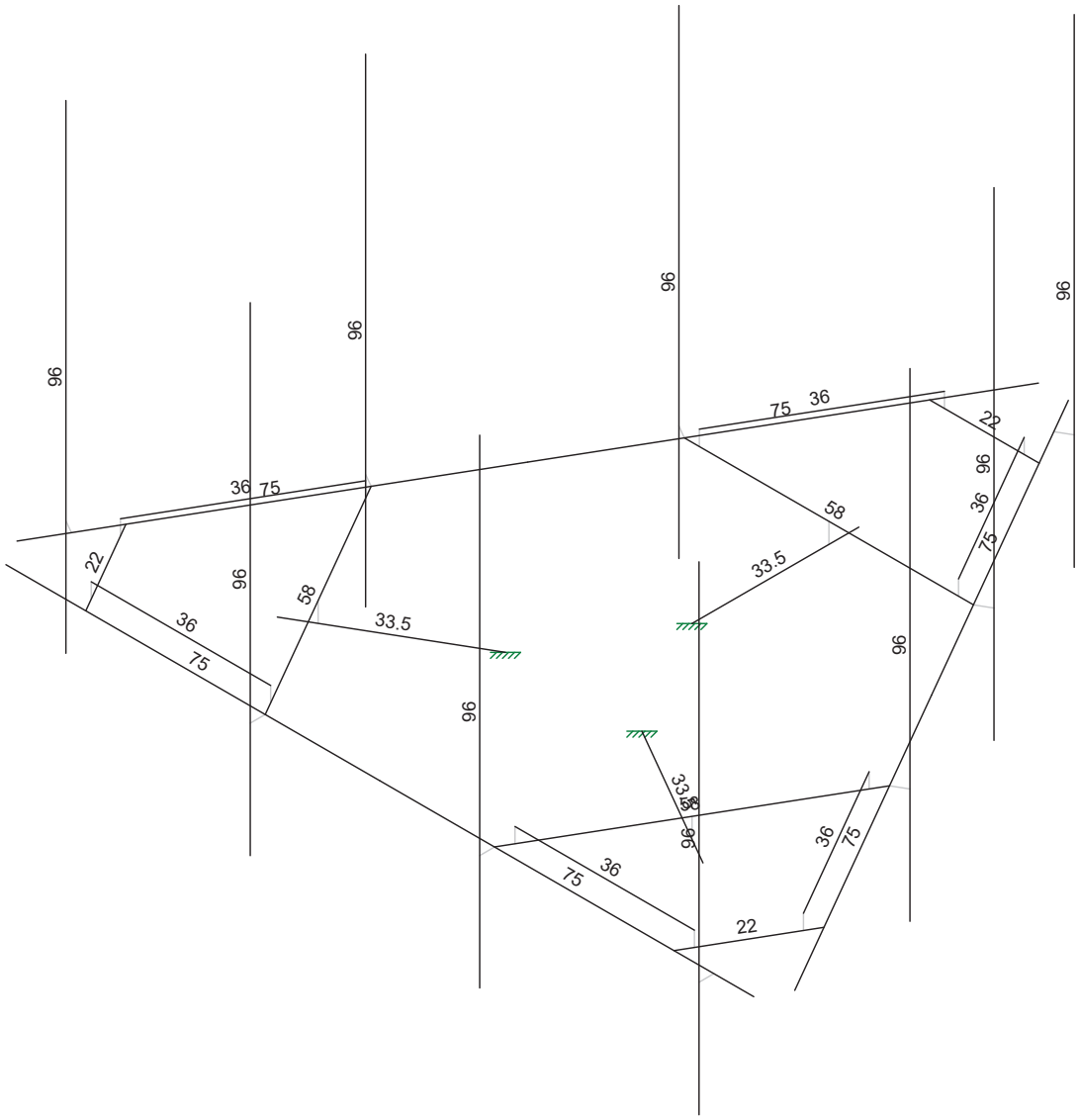

Member Length (in) Displayed
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Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:20 PM
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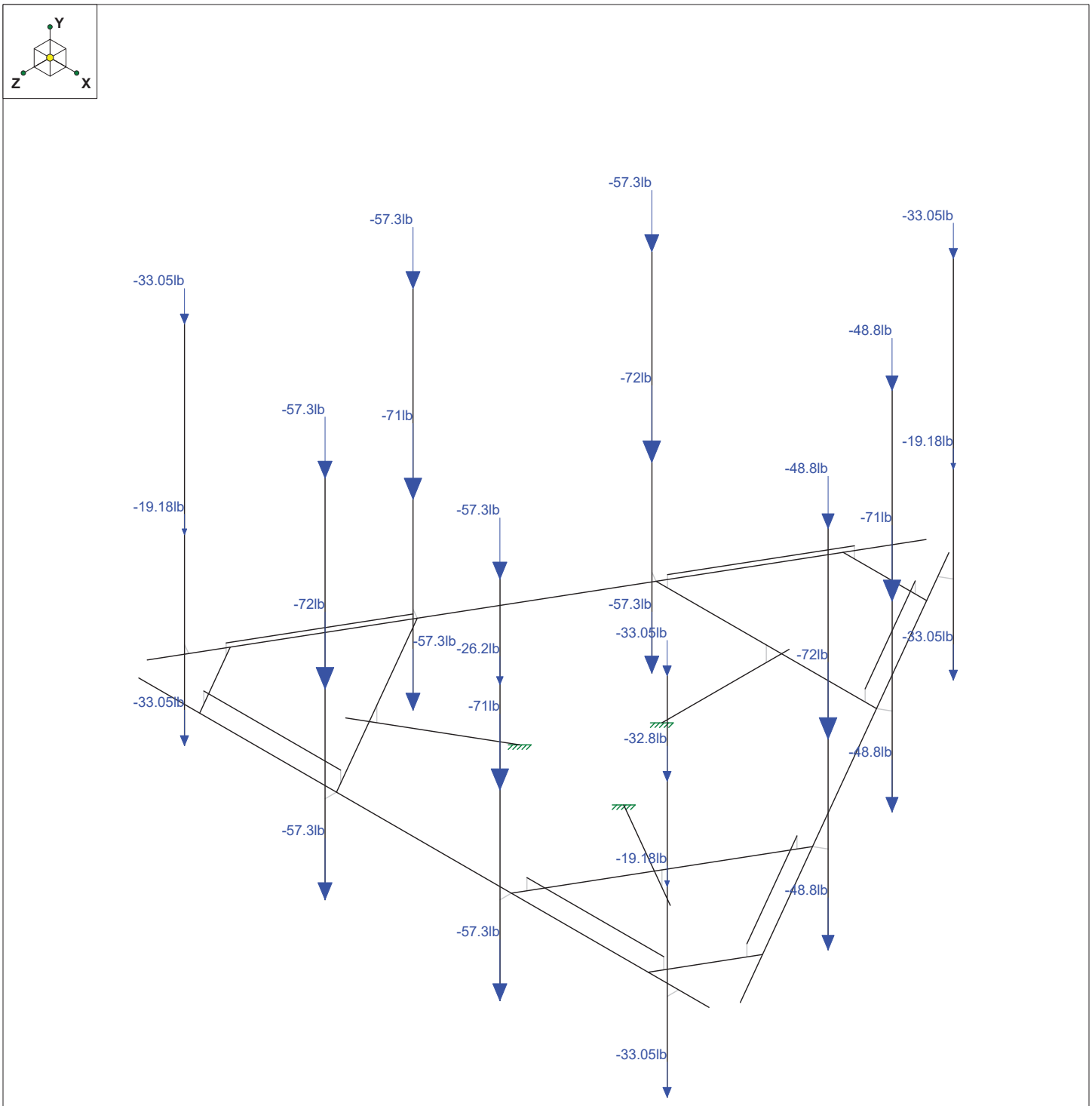

Loads: BLC 1, Self Weight
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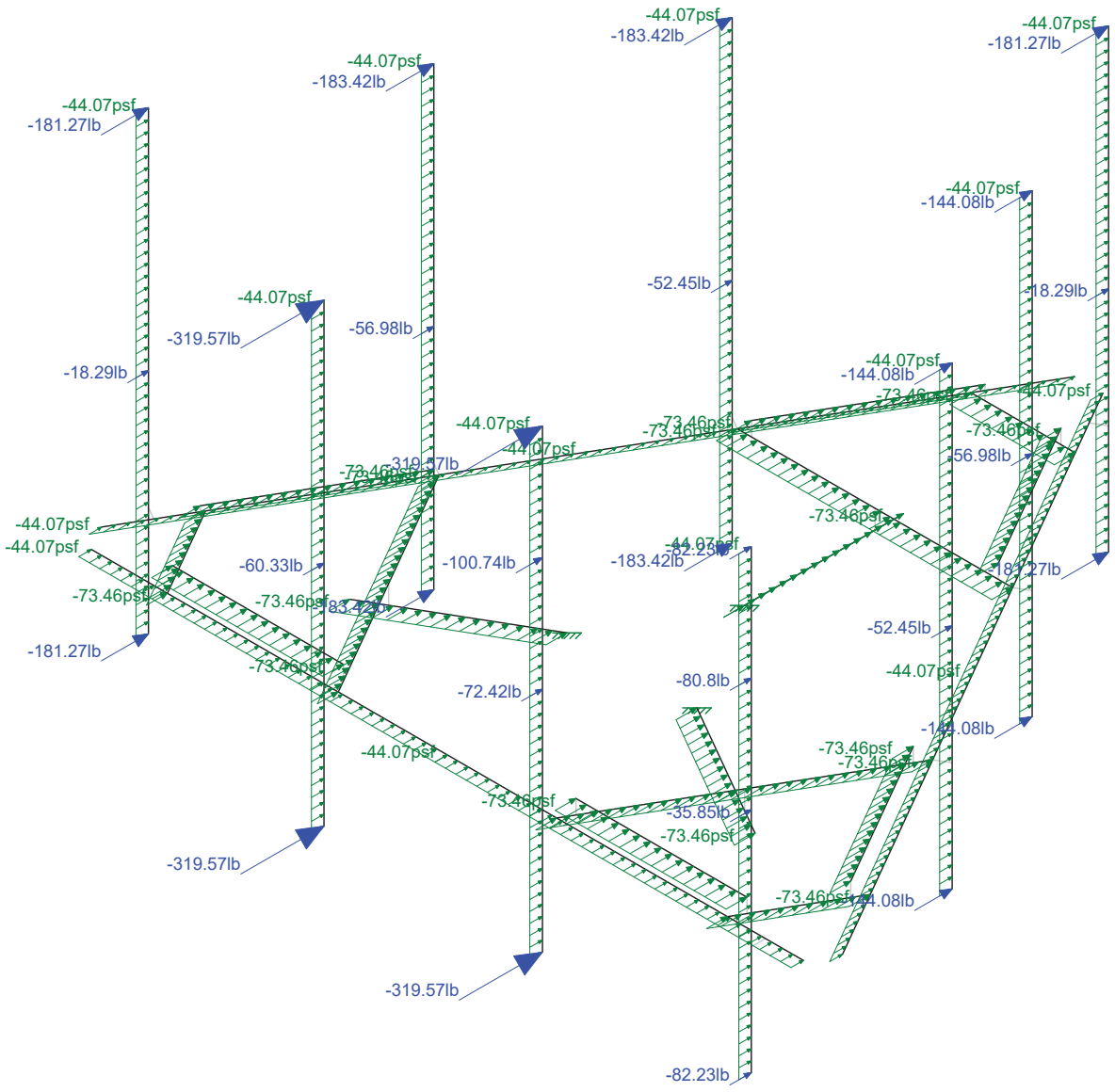
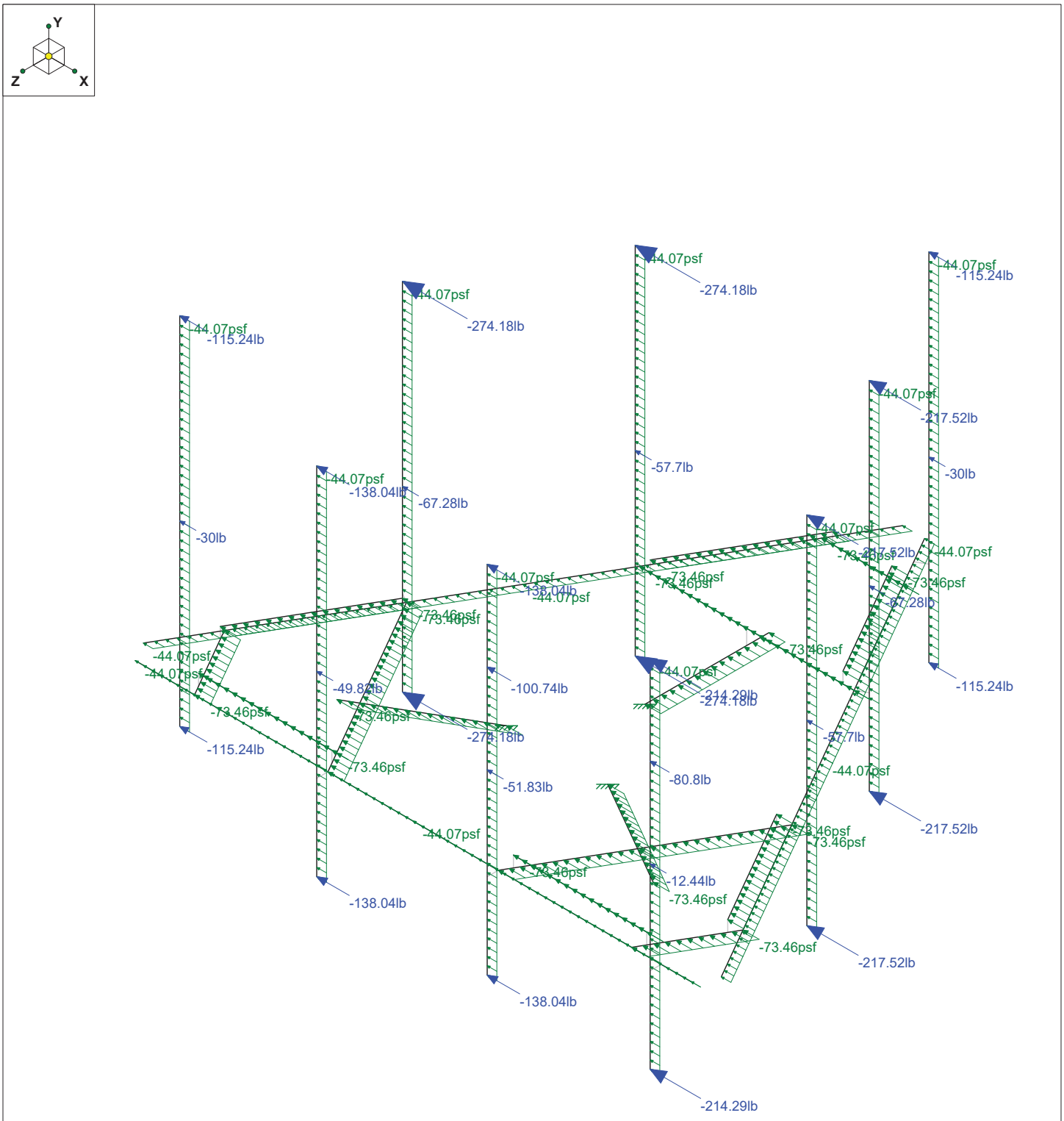
Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:21 PM
1039-A0002-B		876361.r3d



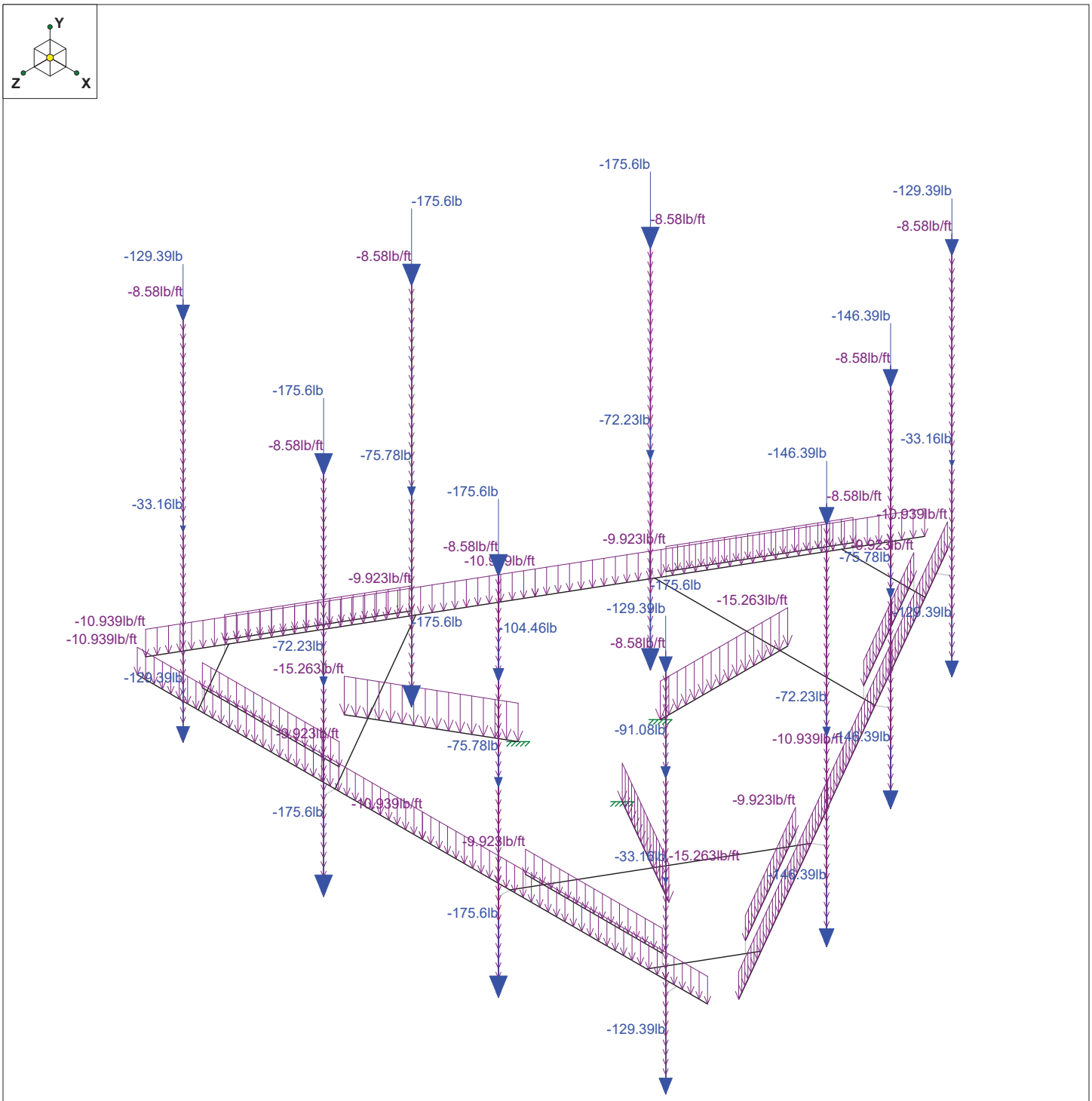
Loads: BLC 2, Wind Load AZI 000
Envelope Only Solution

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:21 PM
1039-A0002-B		876361.r3d



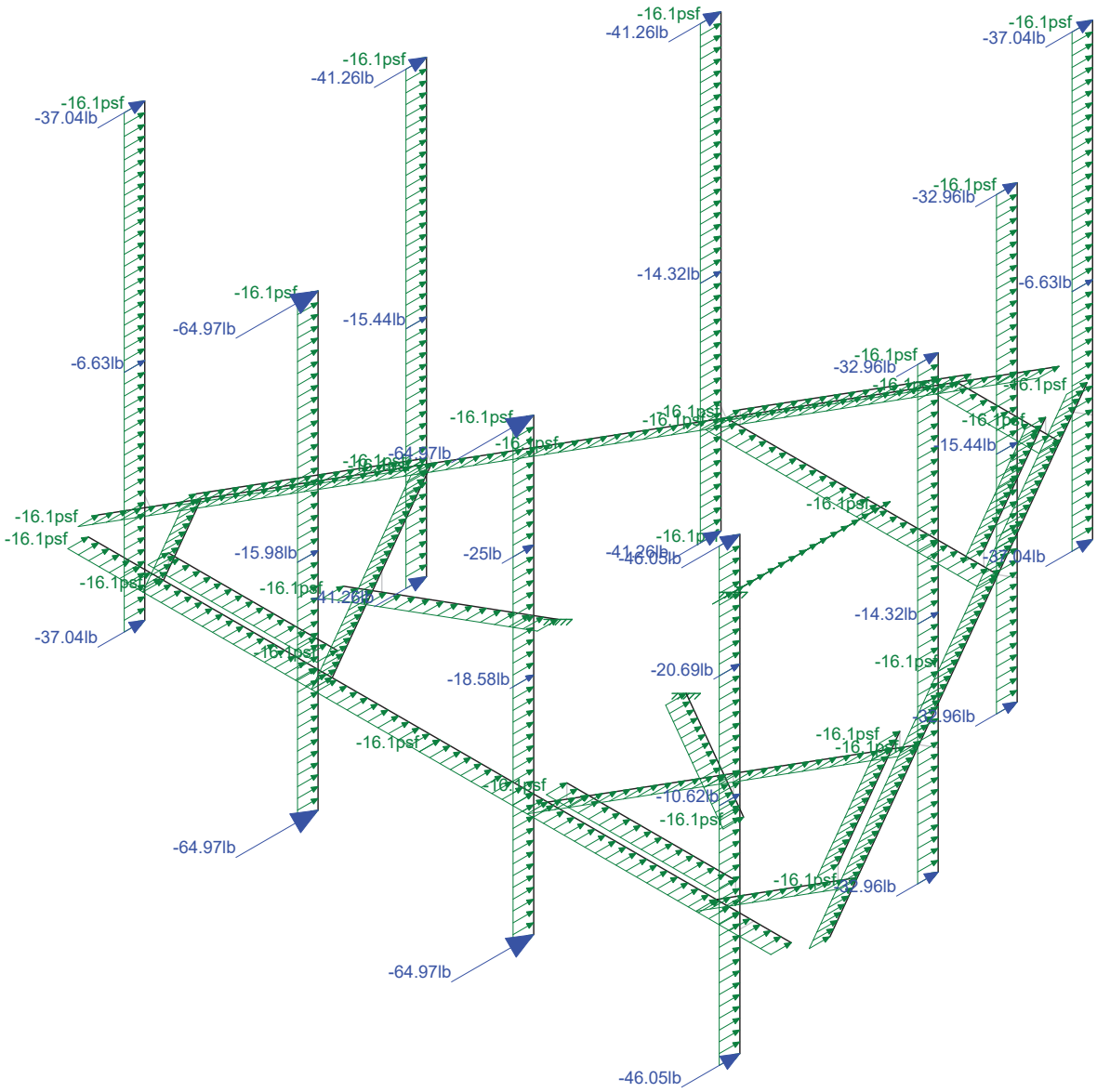
Loads: BLC 3, Wind Load AZI 090
Envelope Only Solution

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:21 PM
1039-A0002-B		876361.r3d



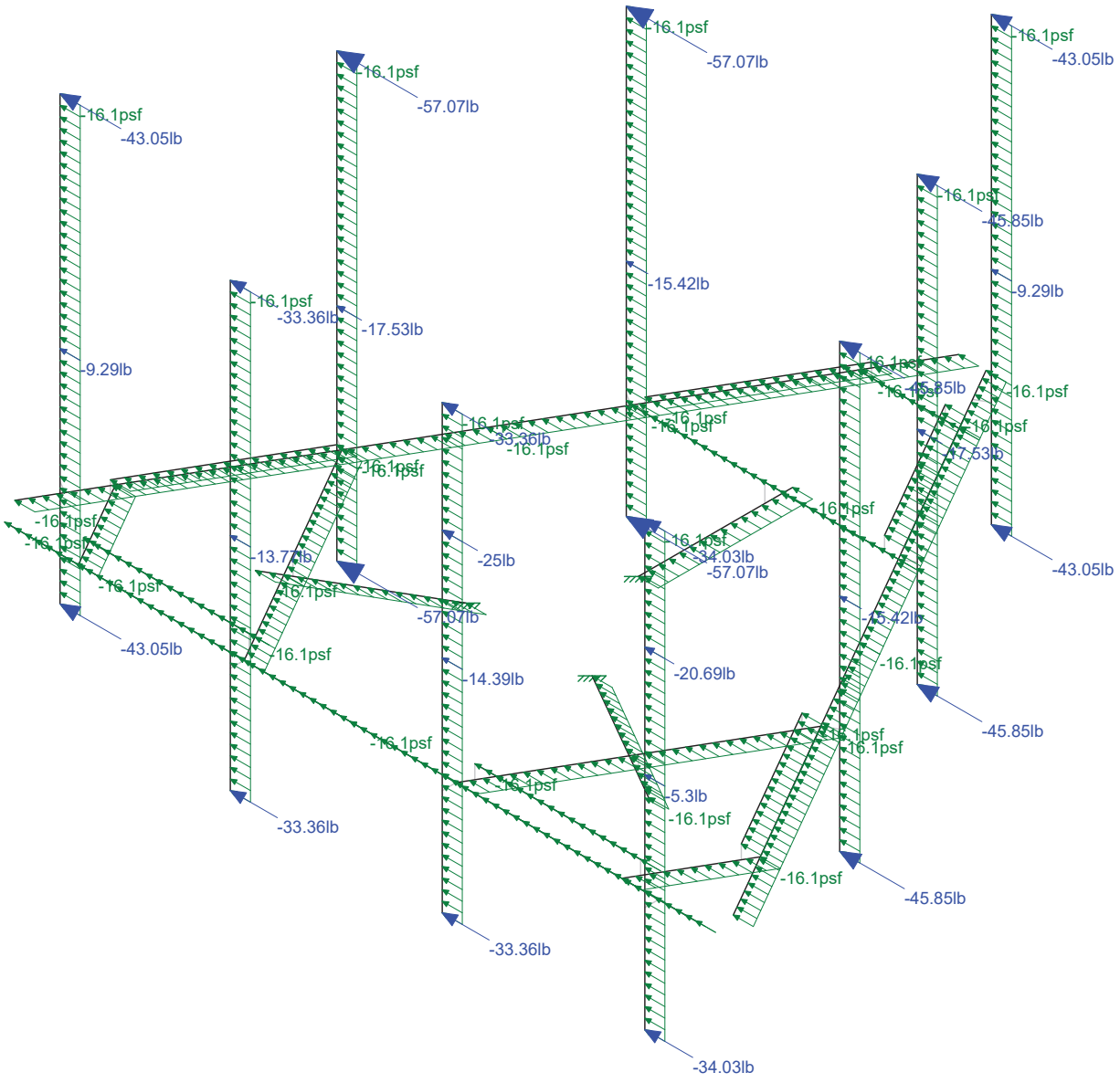
Loads: BLC 4, Ice Weight
Envelope Only Solution

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:21 PM
1039-A0002-B		876361.r3d



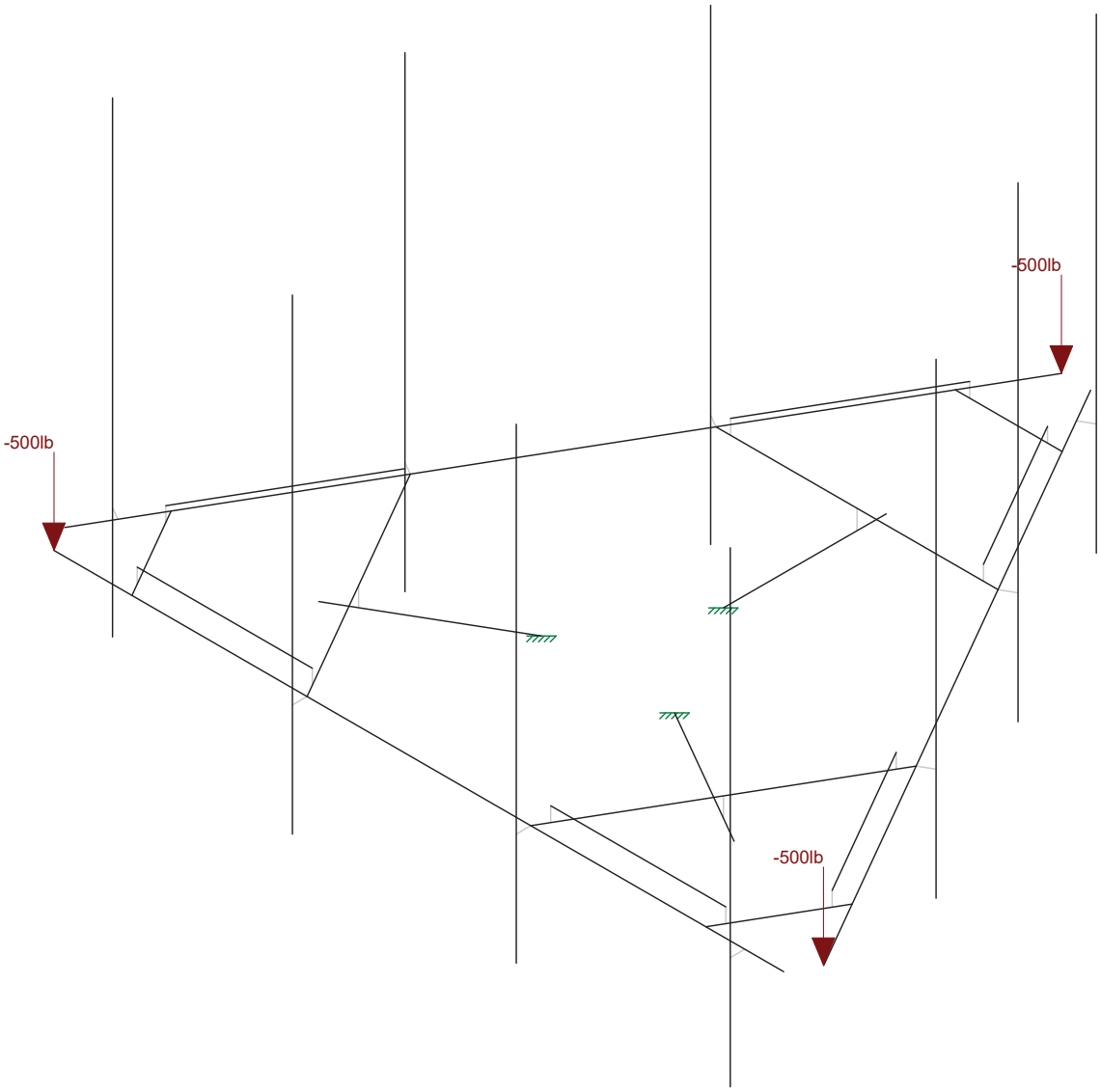
Loads: BLC 5, Wind + Ice Load AZI 000
Envelope Only Solution

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:22 PM
1039-A0002-B		876361.r3d



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

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:22 PM
1039-A0002-B		876361.r3d



Loads: BLC 7, Service Live 1

Infinigy Engineering	876361	(E) Mount
Luis A. Mendoza, P.E.		June 12, 2019 at 4:24 PM
1039-A0002-B		876361.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Site Name:	876361
Client:	Crown
Carrier:	T-Mobile
Engineer:	LM
Date:	6/12/2019

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

INFINIGY WIND LOAD CALCULATOR 4.0.4

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
Main Structure Shape:	Flat

Rooftop Inputs:

Rooftop Wind Speed-Up?:	No

Wind Loading Inputs:

Design Wind Velocity:	121	mph (ultimate 3-second gust)
Wind Centerline 1 (z_1):	127.0	ft
Side Face Angle (θ):	60	degrees
Exposure Category:	B	
Topographic Category:	1	

Wind with No Ice		
q_z (psf)	Gh	F_{ST} (psf)
36.73	1.00	**73.46**

Wind with Ice		
q_z (psf)	Gh	F_{ST} (psf)
6.27	1.00	**16.10**

Ice Loading Inputs:

Is Ice Loading Needed?:	Yes	
Ice Wind Velocity:	50	mph (ultimate 3-second gust)
Base Ice Thickness:	1.50	in

Appurtenances	Elevation (ft)	Total Quantity	Ka	Front Shape	Side Shape	q_z (psf)	EPA (ft^2)	Fz (lbs)	Fx (lbs)	Fz(60) (lbs)	Fx(30) (lbs)
ANDREW SBNH-1D6565C	128.0	3	1.00	Flat	Flat	36.81	4.47	164.45	428.58	362.55	230.48
KATHREIN 80010966	128.0	2	1.00	Flat	Flat	36.81	17.36	639.13	276.08	366.84	548.37
KATHREIN 80010966	128.0	2	1.00	Flat	Flat	36.81	17.36	639.13	276.08	366.84	548.37
KATHREIN 80010965	128.0	1	1.00	Flat	Flat	36.81	13.81	508.49	214.72	288.16	435.05
KATHREIN 80010965	128.0	1	1.00	Flat	Flat	36.81	13.81	508.49	214.72	288.16	435.05
ATION COMPONENTS INC. DTMABI	127.0	3	1.00	Flat	Flat	36.73	0.98	35.85	12.44	18.29	30.00
ERICSSON RRUS 4449 B5/B12	128.0	3	1.00	Flat	Flat	36.81	1.97	72.42	51.83	56.98	67.28
ERICSSON RRUS 8843 B2/B66A	128.0	3	1.00	Flat	Flat	36.81	1.64	60.33	49.82	52.45	57.70
RAYCAP TME-DC6-48-60-0-8F	127.0	1	1.00	Flat	Flat	36.73	2.20	80.80	80.80	80.80	80.80
RAYCAP TME-DC6-48-60-0-8C	128.0	1	1.00	Flat	Flat	36.81	2.74	100.74	100.74	100.74	100.74

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm (\1E...	Density[lb/i...	Yield[psi]	Ry	Fu[psi]	Rt
1	A992	2.9e+7	1.115e+7	.3	.65	.284	50000	1.1	65000	1.1
2	A36 Gr.36	2.9e+7	1.115e+7	.3	.65	.284	36000	1.5	58000	1.2
3	A572 Gr.50	2.9e+7	1.115e+7	.3	.65	.284	50000	1.1	65000	1.1
4	A500 Gr.B RND	2.9e+7	1.115e+7	.3	.65	.305	42000	1.4	58000	1.3
5	A500 Gr.B Rect	2.9e+7	1.115e+7	.3	.65	.305	46000	1.4	58000	1.3
6	A53 Gr.B	2.9e+7	1.115e+7	.3	.65	.284	35000	1.6	60000	1.2
7	A1085	2.9e+7	1.115e+7	.3	.65	.284	50000	1.4	65000	1.3
8	A913 Gr.65	2.9e+7	1.115e+7	.3	.65	.284	65000	1.1	80000	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Horizontals	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Pipe Mounts	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	Corner Plates	PL4x1/4	HBrace	BAR	A36 Gr.36	Typical	1	.005	1.333	.02
4	Standoff	HSS4X4X4	Beam	Tube	A500 Gr.B R...	Typical	3.37	7.8	7.8	12.8
5	Standoff An...	L2x2x4	HBrace	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
6	Inner Corner...	PL4x3/8	HBrace	BAR	A36 Gr.36	Typical	1.5	.018	2	.066

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	150	0	-0.	0	
3	N4	142	0	-0.	0	
4	N5	75	0	-0.	0	
5	N6	98	0	-0.	0	
6	N7	52	0	-0.	0	
7	N8	142	0	3.	0	
8	N9	98	0	3	0	
9	N10	52	0	3	0	
10	N11	142	-23	3.	0	
11	N12	98	-23	3	0	
12	N13	52	-23	3	0	
13	N14	142	73	3.	0	
14	N15	98	73	3	0	
15	N16	52	73	3	0	
16	N19	78	0	-135.099963	0	
17	N20	153	0	-5.196152	0	
18	N23	115.5	0	-70.148058	0	
19	N25	82	0	-128.17176	0	
20	N28	84.598076	0	-129.67176	0	
21	N31	84.598076	-23	-129.67176	0	
22	N34	84.598076	73	-129.67176	0	
23	N36	-3	0	-5.196152	0	
24	N37	72	0	-135.099963	0	
25	N40	34.5	0	-70.148058	0	
26	N42	1	0	-12.124356	0	
27	N45	-1.598076	0	-13.624356	0	
28	N48	-1.598076	-23	-13.624356	0	
29	N51	-1.598076	73	-13.624356	0	
30	N39	23	0	-50.229473	0	
31	N40A	20.401924	0	-51.729473	0	
32	N41	20.401924	-23	-51.729473	0	
33	N42A	20.401924	73	-51.729473	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
34	N43	46	0	-90.066642	0	
35	N44	43.401924	0	-91.566642	0	
36	N45A	43.401924	-23	-91.566642	0	
37	N46	43.401924	73	-91.566642	0	
38	N38	104	0	-90.066642	0	
39	N39A	106.598076	0	-91.566642	0	
40	N40B	106.598076	-23	-91.566642	0	
41	N41A	106.598076	73	-91.566642	0	
42	N42B	127	0	-50.229473	0	
43	N43A	129.598076	0	-51.729473	0	
44	N44A	129.598076	-23	-51.729473	0	
45	N45B	129.598076	73	-51.729473	0	
46	N46A	16	0	-0.	0	
47	N47	5	0	-19.052559	0	
48	N48A	86	0	-121.243557	0	
49	N49	134	0	-0.	0	
50	N50	145	0	-19.052559	0	
51	N51A	64	0	-121.243557	0	
52	N52	37.5	0	-25.114737	0	
53	N53	75	0	-90.066642	0	
54	N54	112.5	0	-25.114737	0	
55	N61	37.5	-4	-25.114737	0	
56	N62	75	-4	-90.066642	0	
57	N63	112.5	-4	-25.114737	0	
58	N64	32.303848	-4	-22.114737	0	
59	N65	61.315699	-4	-38.864737	0	
60	N66	75	-4	-96.066642	0	
61	N67	75	-4	-62.566642	0	
62	N68	117.696152	-4	-22.114737	0	
63	N69	88.684301	-4	-38.864737	0	
64	N64A	50.5	0	-2.598076	0	
65	N65A	101	0	-90.066642	0	
66	N66A	99.5	0	-2.598076	0	
67	N67A	24.5	0	-47.631397	0	
68	N68A	49	0	-90.066642	0	
69	N69A	125.5	0	-47.631397	0	
70	N70	14.5	0	-2.598076	0	
71	N71	67	0	-121.243557	0	
72	N72	143.5	0	-16.454483	0	
73	N73	6.5	0	-16.454483	0	
74	N74	83	0	-121.243557	0	
75	N75	135.5	0	-2.598076	0	
76	N76	50.5	3	-2.598076	0	
77	N77	101	3	-90.066642	0	
78	N78	99.5	3	-2.598076	0	
79	N79	24.5	3	-47.631397	0	
80	N80	49	3	-90.066642	0	
81	N81	125.5	3	-47.631397	0	
82	N82	14.5	3	-2.598076	0	
83	N83	67	3	-121.243557	0	
84	N84	143.5	3	-16.454483	0	
85	N85	6.5	3	-16.454483	0	
86	N86	83	3	-121.243557	0	
87	N87	135.5	3	-2.598076	0	

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	N65	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N67	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N69	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N5			Horizontals	Beam	Pipe	A53 Gr.B	Typical
2	M2	N5	N2			Horizontals	Beam	Pipe	A53 Gr.B	Typical
3	M3	N10	N7			RIGID	None	None	RIGID	Typical
4	M4	N9	N6			RIGID	None	None	RIGID	Typical
5	M5	N8	N4			RIGID	None	None	RIGID	Typical
6	MP1	N14	N11			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
7	MP2	N15	N12			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
8	MP3	N16	N13			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
9	M9	N19	N23			Horizontals	Beam	Pipe	A53 Gr.B	Typical
10	M10	N23	N20			Horizontals	Beam	Pipe	A53 Gr.B	Typical
11	M11	N28	N25			RIGID	None	None	RIGID	Typical
12	MP4	N34	N31			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
13	M17	N36	N40			Horizontals	Beam	Pipe	A53 Gr.B	Typical
14	M18	N40	N37			Horizontals	Beam	Pipe	A53 Gr.B	Typical
15	M19	N45	N42			RIGID	None	None	RIGID	Typical
16	MP7	N51	N48			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
17	M21	N40A	N39			RIGID	None	None	RIGID	Typical
18	MP8	N42A	N41			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
19	M23	N44	N43			RIGID	None	None	RIGID	Typical
20	MP9	N46	N45A			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
21	M21A	N39A	N38			RIGID	None	None	RIGID	Typical
22	MP5	N41A	N40B			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
23	M23A	N43A	N42B			RIGID	None	None	RIGID	Typical
24	MP6	N45B	N44A			Pipe Mounts	Column	Pipe	A53 Gr.B	Typical
25	M25	N46A	N47			Corner Plates	HBrace	BAR	A36 Gr.36	Typical
26	M26	N51A	N48A			Corner Plates	HBrace	BAR	A36 Gr.36	Typical
27	M27	N50	N49			Corner Plates	HBrace	BAR	A36 Gr.36	Typical
28	M28	N39	N7			Inner Corner P...	HBrace	BAR	A36 Gr.36	Typical
29	M29	N43	N38			Inner Corner P...	HBrace	BAR	A36 Gr.36	Typical
30	M30	N42B	N6			Inner Corner P...	HBrace	BAR	A36 Gr.36	Typical
31	M34	N64	N65			Standoff	Beam	Tube	A500 Gr.B...	Typical
32	M35	N68	N69			Standoff	Beam	Tube	A500 Gr.B...	Typical
33	M36	N66	N67			Standoff	Beam	Tube	A500 Gr.B...	Typical
34	M34A	N52	N61			RIGID	None	None	RIGID	Typical
35	M35A	N53	N62			RIGID	None	None	RIGID	Typical
36	M36A	N54	N63			RIGID	None	None	RIGID	Typical
37	M37	N82	N70			RIGID	None	None	RIGID	Typical
38	M38	N85	N73			RIGID	None	None	RIGID	Typical
39	M39	N79	N67A			RIGID	None	None	RIGID	Typical
40	M40	N76	N64A			RIGID	None	None	RIGID	Typical
41	M41	N80	N68A			RIGID	None	None	RIGID	Typical
42	M42	N83	N71			RIGID	None	None	RIGID	Typical
43	M43	N86	N74			RIGID	None	None	RIGID	Typical
44	M44	N77	N65A			RIGID	None	None	RIGID	Typical
45	M45	N81	N69A			RIGID	None	None	RIGID	Typical
46	M46	N84	N72			RIGID	None	None	RIGID	Typical
47	M47	N87	N75			RIGID	None	None	RIGID	Typical
48	M48	N78	N66A			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
49	M49	N76	N82			Standoff Angles	HBrace	Single Angle	A36 Gr.36	Typical
50	M50	N79	N85		270	Standoff Angles	HBrace	Single Angle	A36 Gr.36	Typical
51	M51	N80	N83			Standoff Angles	HBrace	Single Angle	A36 Gr.36	Typical
52	M52	N86	N77			Standoff Angles	HBrace	Single Angle	A36 Gr.36	Typical
53	M53	N81	N84			Standoff Angles	HBrace	Single Angle	A36 Gr.36	Typical
54	M54	N78	N87		270	Standoff Angles	HBrace	Single Angle	A36 Gr.36	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Horizontals	75			Lbyy						Lateral
2	M2	Horizontals	75			Lbyy						Lateral
3	MP1	Pipe Mounts	96									Lateral
4	MP2	Pipe Mounts	96									Lateral
5	MP3	Pipe Mounts	96									Lateral
6	M9	Horizontals	75			Lbyy						Lateral
7	M10	Horizontals	75			Lbyy						Lateral
8	MP4	Pipe Mounts	96									Lateral
9	M17	Horizontals	75			Lbyy						Lateral
10	M18	Horizontals	75			Lbyy						Lateral
11	MP7	Pipe Mounts	96									Lateral
12	MP8	Pipe Mounts	96									Lateral
13	MP9	Pipe Mounts	96									Lateral
14	MP5	Pipe Mounts	96									Lateral
15	MP6	Pipe Mounts	96									Lateral
16	M25	Corner Plates	22									Lateral
17	M26	Corner Plates	22									Lateral
18	M27	Corner Plates	22									Lateral
19	M28	Inner Corne...	58									Lateral
20	M29	Inner Corne...	58									Lateral
21	M30	Inner Corne...	58									Lateral
22	M34	Standoff	33.5			Lbyy						Lateral
23	M35	Standoff	33.5			Lbyy						Lateral
24	M36	Standoff	33.5			Lbyy						Lateral
25	M49	Standoff An...	36									Lateral
26	M50	Standoff An...	36									Lateral
27	M51	Standoff An...	36									Lateral
28	M52	Standoff An...	36									Lateral
29	M53	Standoff An...	36									Lateral
30	M54	Standoff An...	36									Lateral

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-44.07	-44.07	0	0
2	M2	SZ	-44.07	-44.07	0	0
3	MP1	SZ	-44.07	-44.07	0	0
4	MP2	SZ	-44.07	-44.07	0	0
5	MP3	SZ	-44.07	-44.07	0	0
6	M9	SZ	-44.07	-44.07	0	0
7	M10	SZ	-44.07	-44.07	0	0
8	MP4	SZ	-44.07	-44.07	0	0
9	M17	SZ	-44.07	-44.07	0	0
10	M18	SZ	-44.07	-44.07	0	0
11	MP7	SZ	-44.07	-44.07	0	0
12	MP8	SZ	-44.07	-44.07	0	0

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
13	MP9	SZ	-44.07	-44.07	0	0
14	MP5	SZ	-44.07	-44.07	0	0
15	MP6	SZ	-44.07	-44.07	0	0
16	M25	SZ	-73.46	-73.46	0	0
17	M26	SZ	-73.46	-73.46	0	0
18	M27	SZ	-73.46	-73.46	0	0
19	M28	SZ	-73.46	-73.46	0	0
20	M29	SZ	-73.46	-73.46	0	0
21	M30	SZ	-73.46	-73.46	0	0
22	M34	SZ	-73.46	-73.46	0	0
23	M35	SZ	-73.46	-73.46	0	0
24	M36	SZ	-73.46	-73.46	0	0
25	M49	SZ	-73.46	-73.46	0	0
26	M50	SZ	-73.46	-73.46	0	0
27	M51	SZ	-73.46	-73.46	0	0
28	M52	SZ	-73.46	-73.46	0	0
29	M53	SZ	-73.46	-73.46	0	0
30	M54	SZ	-73.46	-73.46	0	0

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-44.07	-44.07	0	0
2	M2	SX	-44.07	-44.07	0	0
3	MP1	SX	-44.07	-44.07	0	0
4	MP2	SX	-44.07	-44.07	0	0
5	MP3	SX	-44.07	-44.07	0	0
6	M9	SX	-44.07	-44.07	0	0
7	M10	SX	-44.07	-44.07	0	0
8	MP4	SX	-44.07	-44.07	0	0
9	M17	SX	-44.07	-44.07	0	0
10	M18	SX	-44.07	-44.07	0	0
11	MP7	SX	-44.07	-44.07	0	0
12	MP8	SX	-44.07	-44.07	0	0
13	MP9	SX	-44.07	-44.07	0	0
14	MP5	SX	-44.07	-44.07	0	0
15	MP6	SX	-44.07	-44.07	0	0
16	M25	SX	-73.46	-73.46	0	0
17	M26	SX	-73.46	-73.46	0	0
18	M27	SX	-73.46	-73.46	0	0
19	M28	SX	-73.46	-73.46	0	0
20	M29	SX	-73.46	-73.46	0	0
21	M30	SX	-73.46	-73.46	0	0
22	M34	SX	-73.46	-73.46	0	0
23	M35	SX	-73.46	-73.46	0	0
24	M36	SX	-73.46	-73.46	0	0
25	M49	SX	-73.46	-73.46	0	0
26	M50	SX	-73.46	-73.46	0	0
27	M51	SX	-73.46	-73.46	0	0
28	M52	SX	-73.46	-73.46	0	0
29	M53	SX	-73.46	-73.46	0	0
30	M54	SX	-73.46	-73.46	0	0

Member Distributed Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-10.939	-10.939	0	%100
2	M2	Y	-10.939	-10.939	0	%100

Member Distributed Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
3	M3	Y	-4.583	-4.583	0	%100
4	M4	Y	-4.583	-4.583	0	%100
5	M5	Y	-4.583	-4.583	0	%100
6	MP1	Y	-8.58	-8.58	0	%100
7	MP2	Y	-8.58	-8.58	0	%100
8	MP3	Y	-8.58	-8.58	0	%100
9	M9	Y	-10.939	-10.939	0	%100
10	M10	Y	-10.939	-10.939	0	%100
11	M11	Y	-4.583	-4.583	0	%100
12	MP4	Y	-8.58	-8.58	0	%100
13	M17	Y	-10.939	-10.939	0	%100
14	M18	Y	-10.939	-10.939	0	%100
15	M19	Y	-4.583	-4.583	0	%100
16	MP7	Y	-8.58	-8.58	0	%100
17	M21	Y	-4.583	-4.583	0	%100
18	MP8	Y	-8.58	-8.58	0	%100
19	M23	Y	-4.583	-4.583	0	%100
20	MP9	Y	-8.58	-8.58	0	%100
21	M21A	Y	-4.583	-4.583	0	%100
22	MP5	Y	-8.58	-8.58	0	%100
23	M23A	Y	-4.583	-4.583	0	%100
24	MP6	Y	-8.58	-8.58	0	%100
25	M25	Y	0	0	0	%100
26	M26	Y	0	0	0	%100
27	M27	Y	0	0	0	%100
28	M28	Y	0	0	0	%100
29	M29	Y	0	0	0	%100
30	M30	Y	0	0	0	%100
31	M34	Y	-15.263	-15.263	0	%100
32	M35	Y	-15.263	-15.263	0	%100
33	M36	Y	-15.263	-15.263	0	%100
34	M34A	Y	-4.583	-4.583	0	%100
35	M35A	Y	-4.583	-4.583	0	%100
36	M36A	Y	-4.583	-4.583	0	%100
37	M37	Y	-4.583	-4.583	0	%100
38	M38	Y	-4.583	-4.583	0	%100
39	M39	Y	-4.583	-4.583	0	%100
40	M40	Y	-4.583	-4.583	0	%100
41	M41	Y	-4.583	-4.583	0	%100
42	M42	Y	-4.583	-4.583	0	%100
43	M43	Y	-4.583	-4.583	0	%100
44	M44	Y	-4.583	-4.583	0	%100
45	M45	Y	-4.583	-4.583	0	%100
46	M46	Y	-4.583	-4.583	0	%100
47	M47	Y	-4.583	-4.583	0	%100
48	M48	Y	-4.583	-4.583	0	%100
49	M49	Y	-9.923	-9.923	0	%100
50	M50	Y	-9.923	-9.923	0	%100
51	M51	Y	-9.923	-9.923	0	%100
52	M52	Y	-9.923	-9.923	0	%100
53	M53	Y	-9.923	-9.923	0	%100
54	M54	Y	-9.923	-9.923	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-16.1	-16.1	0	0

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb..	Start Location[in,%]	End Location[in,%]
2	M2	SZ	-16.1	-16.1	0	0
3	MP1	SZ	-16.1	-16.1	0	0
4	MP2	SZ	-16.1	-16.1	0	0
5	MP3	SZ	-16.1	-16.1	0	0
6	M9	SZ	-16.1	-16.1	0	0
7	M10	SZ	-16.1	-16.1	0	0
8	MP4	SZ	-16.1	-16.1	0	0
9	M17	SZ	-16.1	-16.1	0	0
10	M18	SZ	-16.1	-16.1	0	0
11	MP7	SZ	-16.1	-16.1	0	0
12	MP8	SZ	-16.1	-16.1	0	0
13	MP9	SZ	-16.1	-16.1	0	0
14	MP5	SZ	-16.1	-16.1	0	0
15	MP6	SZ	-16.1	-16.1	0	0
16	M25	SZ	-16.1	-16.1	0	0
17	M26	SZ	-16.1	-16.1	0	0
18	M27	SZ	-16.1	-16.1	0	0
19	M28	SZ	-16.1	-16.1	0	0
20	M29	SZ	-16.1	-16.1	0	0
21	M30	SZ	-16.1	-16.1	0	0
22	M34	SZ	-16.1	-16.1	0	0
23	M35	SZ	-16.1	-16.1	0	0
24	M36	SZ	-16.1	-16.1	0	0
25	M49	SZ	-16.1	-16.1	0	0
26	M50	SZ	-16.1	-16.1	0	0
27	M51	SZ	-16.1	-16.1	0	0
28	M52	SZ	-16.1	-16.1	0	0
29	M53	SZ	-16.1	-16.1	0	0
30	M54	SZ	-16.1	-16.1	0	0

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb..	Start Location[in,%]	End Location[in,%]
1	M1	SX	-16.1	-16.1	0	0
2	M2	SX	-16.1	-16.1	0	0
3	MP1	SX	-16.1	-16.1	0	0
4	MP2	SX	-16.1	-16.1	0	0
5	MP3	SX	-16.1	-16.1	0	0
6	M9	SX	-16.1	-16.1	0	0
7	M10	SX	-16.1	-16.1	0	0
8	MP4	SX	-16.1	-16.1	0	0
9	M17	SX	-16.1	-16.1	0	0
10	M18	SX	-16.1	-16.1	0	0
11	MP7	SX	-16.1	-16.1	0	0
12	MP8	SX	-16.1	-16.1	0	0
13	MP9	SX	-16.1	-16.1	0	0
14	MP5	SX	-16.1	-16.1	0	0
15	MP6	SX	-16.1	-16.1	0	0
16	M25	SX	-16.1	-16.1	0	0
17	M26	SX	-16.1	-16.1	0	0
18	M27	SX	-16.1	-16.1	0	0
19	M28	SX	-16.1	-16.1	0	0
20	M29	SX	-16.1	-16.1	0	0
21	M30	SX	-16.1	-16.1	0	0
22	M34	SX	-16.1	-16.1	0	0
23	M35	SX	-16.1	-16.1	0	0
24	M36	SX	-16.1	-16.1	0	0

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

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb...	Start Location[in,%]	End Location[in,%]
25	M49	SX	-16.1	-16.1	0	0
26	M50	SX	-16.1	-16.1	0	0
27	M51	SX	-16.1	-16.1	0	0
28	M52	SX	-16.1	-16.1	0	0
29	M53	SX	-16.1	-16.1	0	0
30	M54	SX	-16.1	-16.1	0	0

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-33.05	0
2	MP2	Y	-57.3	0
3	MP3	Y	-57.3	0
4	MP1	Y	-19.18	%50
5	MP2	Y	-71	%50
6	MP3	Y	-72	%50
7	MP1	Y	-32.8	%25
8	MP2	Y	-26.2	%25
9	MP1	Y	-33.05	96
10	MP2	Y	-57.3	96
11	MP3	Y	-57.3	96
12	MP4	Y	-33.05	0
13	MP5	Y	-48.8	0
14	MP6	Y	-48.8	0
15	MP4	Y	-19.18	%50
16	MP5	Y	-71	%50
17	MP6	Y	-72	%50
18	MP4	Y	-33.05	96
19	MP5	Y	-48.8	96
20	MP6	Y	-48.8	96
21	MP7	Y	-33.05	0
22	MP8	Y	-57.3	0
23	MP9	Y	-57.3	0
24	MP7	Y	-19.18	%50
25	MP8	Y	-71	%50
26	MP9	Y	-72	%50
27	MP7	Y	-33.05	96
28	MP8	Y	-57.3	96
29	MP9	Y	-57.3	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-82.23	0
2	MP2	Z	-319.57	0
3	MP3	Z	-319.57	0
4	MP1	Z	-35.85	%50
5	MP2	Z	-72.42	%50
6	MP3	Z	-60.33	%50
7	MP1	Z	-80.8	%25
8	MP2	Z	-100.74	%25
9	MP1	Z	-82.23	96
10	MP2	Z	-319.57	96
11	MP3	Z	-319.57	96
12	MP4	Z	-181.27	0
13	MP5	Z	-144.08	0
14	MP6	Z	-144.08	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP4	Z	-18.29	%50
16	MP5	Z	-56.98	%50
17	MP6	Z	-52.45	%50
18	MP4	Z	-181.27	96
19	MP5	Z	-144.08	96
20	MP6	Z	-144.08	96
21	MP7	Z	-181.27	0
22	MP8	Z	-183.42	0
23	MP9	Z	-183.42	0
24	MP7	Z	-18.29	%50
25	MP8	Z	-56.98	%50
26	MP9	Z	-52.45	%50
27	MP7	Z	-181.27	96
28	MP8	Z	-183.42	96
29	MP9	Z	-183.42	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-214.29	0
2	MP2	X	-138.04	0
3	MP3	X	-138.04	0
4	MP1	X	-12.44	%50
5	MP2	X	-51.83	%50
6	MP3	X	-49.82	%50
7	MP1	X	-80.8	%25
8	MP2	X	-100.74	%25
9	MP1	X	-214.29	96
10	MP2	X	-138.04	96
11	MP3	X	-138.04	96
12	MP4	X	-115.24	0
13	MP5	X	-217.52	0
14	MP6	X	-217.52	0
15	MP4	X	-30	%50
16	MP5	X	-67.28	%50
17	MP6	X	-57.7	%50
18	MP4	X	-115.24	96
19	MP5	X	-217.52	96
20	MP6	X	-217.52	96
21	MP7	X	-115.24	0
22	MP8	X	-274.18	0
23	MP9	X	-274.18	0
24	MP7	X	-30	%50
25	MP8	X	-67.28	%50
26	MP9	X	-57.7	%50
27	MP7	X	-115.24	96
28	MP8	X	-274.18	96
29	MP9	X	-274.18	96

Member Point Loads (BLC 4 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-129.39	0
2	MP2	Y	-175.6	0
3	MP3	Y	-175.6	0
4	MP1	Y	-33.16	%50
5	MP2	Y	-75.78	%50
6	MP3	Y	-72.23	%50

Member Point Loads (BLC 4 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP1	Y	-91.08	%25
8	MP2	Y	-104.46	%25
9	MP1	Y	-129.39	96
10	MP2	Y	-175.6	96
11	MP3	Y	-175.6	96
12	MP4	Y	-129.39	0
13	MP5	Y	-146.39	0
14	MP6	Y	-146.39	0
15	MP4	Y	-33.16	%50
16	MP5	Y	-75.78	%50
17	MP6	Y	-72.23	%50
18	MP4	Y	-129.39	96
19	MP5	Y	-146.39	96
20	MP6	Y	-146.39	96
21	MP7	Y	-129.39	0
22	MP8	Y	-175.6	0
23	MP9	Y	-175.6	0
24	MP7	Y	-33.16	%50
25	MP8	Y	-75.78	%50
26	MP9	Y	-72.23	%50
27	MP7	Y	-129.39	96
28	MP8	Y	-175.6	96
29	MP9	Y	-175.6	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-46.05	0
2	MP2	Z	-64.97	0
3	MP3	Z	-64.97	0
4	MP1	Z	-10.62	%50
5	MP2	Z	-18.58	%50
6	MP3	Z	-15.98	%50
7	MP1	Z	-20.69	%25
8	MP2	Z	-25	%25
9	MP1	Z	-46.05	96
10	MP2	Z	-64.97	96
11	MP3	Z	-64.97	96
12	MP4	Z	-37.04	0
13	MP5	Z	-32.96	0
14	MP6	Z	-32.96	0
15	MP4	Z	-6.63	%50
16	MP5	Z	-15.44	%50
17	MP6	Z	-14.32	%50
18	MP4	Z	-37.04	96
19	MP5	Z	-32.96	96
20	MP6	Z	-32.96	96
21	MP7	Z	-37.04	0
22	MP8	Z	-41.26	0
23	MP9	Z	-41.26	0
24	MP7	Z	-6.63	%50
25	MP8	Z	-15.44	%50
26	MP9	Z	-14.32	%50
27	MP7	Z	-37.04	96
28	MP8	Z	-41.26	96
29	MP9	Z	-41.26	96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-34.03	0
2	MP2	X	-33.36	0
3	MP3	X	-33.36	0
4	MP1	X	-5.3	%50
5	MP2	X	-14.39	%50
6	MP3	X	-13.77	%50
7	MP1	X	-20.69	%25
8	MP2	X	-25	%25
9	MP1	X	-34.03	96
10	MP2	X	-33.36	96
11	MP3	X	-33.36	96
12	MP4	X	-43.05	0
13	MP5	X	-45.85	0
14	MP6	X	-45.85	0
15	MP4	X	-9.29	%50
16	MP5	X	-17.53	%50
17	MP6	X	-15.42	%50
18	MP4	X	-43.05	96
19	MP5	X	-45.85	96
20	MP6	X	-45.85	96
21	MP7	X	-43.05	0
22	MP8	X	-57.07	0
23	MP9	X	-57.07	0
24	MP7	X	-9.29	%50
25	MP8	X	-17.53	%50
26	MP9	X	-15.42	%50
27	MP7	X	-43.05	96
28	MP8	X	-57.07	96
29	MP9	X	-57.07	96

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^...
1	N1	L	Y	-500
2	N20	L	Y	-500
3	N37	L	Y	-500

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL		-1			29			
2	Wind Load AZI 000	WLZ					29	30		
3	Wind Load AZI 090	WLX					29	30		
4	Ice Weight	OL1					29	54		
5	Wind + Ice Load AZI ...	OL2					29	30		
6	Wind + Ice Load AZI ...	OL3					29	30		
7	Service Live 1	LL				3				

Load Combinations

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Y...	Y		DL	1.4																		
2	1.2D + 1W AZI 000	Y...	Y		DL	1.2	W...	1																
3	1.2D + 1W AZI 030	Y...	Y		DL	1.2	W...	.866	WLX	.5														
4	1.2D + 1W AZI 060	Y...	Y		DL	1.2	W...	.5	WLX	.866														

Load Combinations (Continued)

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
5	1.2D + 1W AZI 090	Y...	Y		DL	1.2			WLX	1														
6	1.2D + 1W AZI 120	Y...	Y		DL	1.2	W...	-.5	WLX	.866														
7	1.2D + 1W AZI 150	Y...	Y		DL	1.2	W...	-.8...	WLX	.5														
8	1.2D + 1W AZI 180	Y...	Y		DL	1.2	W...	-1																
9	1.2D + 1W AZI 210	Y...	Y		DL	1.2	W...	-.8...	WLX	-.5														
10	1.2D + 1W AZI 240	Y...	Y		DL	1.2	W...	-.5	WLX	-.8...														
11	1.2D + 1W AZI 270	Y...	Y		DL	1.2			WLX	-1														
12	1.2D + 1W AZI 300	Y...	Y		DL	1.2	W...	.5	WLX	-.8...														
13	1.2D + 1W AZI 330	Y...	Y		DL	1.2	W...	.866	WLX	-.5														
14	0.9D + 1W AZI 000	Y...	Y		DL	.9	W...	1																
15	0.9D + 1W AZI 030	Y...	Y		DL	.9	W...	.866	WLX	.5														
16	0.9D + 1W AZI 060	Y...	Y		DL	.9	W...	.5	WLX	.866														
17	0.9D + 1W AZI 090	Y...	Y		DL	.9			WLX	1														
18	0.9D + 1W AZI 120	Y...	Y		DL	.9	W...	-.5	WLX	.866														
19	0.9D + 1W AZI 150	Y...	Y		DL	.9	W...	-.8...	WLX	.5														
20	0.9D + 1W AZI 180	Y...	Y		DL	.9	W...	-1																
21	0.9D + 1W AZI 210	Y...	Y		DL	.9	W...	-.8...	WLX	-.5														
22	0.9D + 1W AZI 240	Y...	Y		DL	.9	W...	-.5	WLX	-.8...														
23	0.9D + 1W AZI 270	Y...	Y		DL	.9			WLX	-1														
24	0.9D + 1W AZI 300	Y...	Y		DL	.9	W...	.5	WLX	-.8...														
25	0.9D + 1W AZI 330	Y...	Y		DL	.9	W...	.866	WLX	-.5														
26	1.2D + 1.0Di	Y...	Y		DL	1.2	O...	1																
27	1.2D + 1.0Di + 1.0Wi AZI 000	Y...	Y		DL	1.2	O...	1	OL2	1														
28	1.2D + 1.0Di + 1.0Wi AZI 030	Y...	Y		DL	1.2	O...	1	OL2	.866	O...	.5												
29	1.2D + 1.0Di + 1.0Wi AZI 060	Y...	Y		DL	1.2	O...	1	OL2	.5	O...	.866												
30	1.2D + 1.0Di + 1.0Wi AZI 090	Y...	Y		DL	1.2	O...	1			O...	1												
31	1.2D + 1.0Di + 1.0Wi AZI 120	Y...	Y		DL	1.2	O...	1	OL2	-.5	O...	.866												
32	1.2D + 1.0Di + 1.0Wi AZI 150	Y...	Y		DL	1.2	O...	1	OL2	-.8...	O...	.5												
33	1.2D + 1.0Di + 1.0Wi AZI 180	Y...	Y		DL	1.2	O...	1	OL2	-1														
34	1.2D + 1.0Di + 1.0Wi AZI 210	Y...	Y		DL	1.2	O...	1	OL2	-.8...	O...	-.5												
35	1.2D + 1.0Di + 1.0Wi AZI 240	Y...	Y		DL	1.2	O...	1	OL2	-.5	O...	-.8...												
36	1.2D + 1.0Di + 1.0Wi AZI 270	Y...	Y		DL	1.2	O...	1			O...	-1												
37	1.2D + 1.0Di + 1.0Wi AZI 300	Y...	Y		DL	1.2	O...	1	OL2	.5	O...	-.8...												
38	1.2D + 1.0Di + 1.0Wi AZI 330	Y...	Y		DL	1.2	O...	1	OL2	.866	O...	-.5												
39	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	.061														
40	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	.053	W...	.031												
41	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	.031	W...	.053												
42	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5			W...	.061												
43	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	-.0...	W...	.053												
44	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	-.0...	W...	.031												
45	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	-.0...														
46	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	-.0...	W...	-.0...												
47	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	-.0...	W...	-.0...												
48	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5			W...	-.0...												
49	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	.031	W...	-.0...												
50	1.2D + 1.5L + 1.0WL (30 mph) ...	Y...	Y		DL	1.2	LL	1.5	WLZ	.053	W...	-.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	N65	max	1784.026	15	2932.787	31	3071.031	3	2250.841	14	8101.88	15	1967.363	23
2		min	-1833.265	9	-868.402	24	-3045.081	21	-4032.422	8	-8105.742	21	-5855.306	30
3	N67	max	3469.56	17	2740.418	27	235.297	14	6280.354	27	7917.415	23	2290.153	11
4		min	-3461.822	23	-859.099	20	-341.699	8	-2132.378	20	-7936.333	17	-2328.96	5
5	N69	max	1693.043	7	3167.508	35	2982.679	13	2001.136	14	7743.878	19	6144.769	36
6		min	-1657.688	25	-839.118	16	-2945.29	19	-4307.548	33	-7779.608	25	-2158.005	17

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
7	Totals:	max	5599.239	5	7640.771	33	5756.794	2						
8		min	-5599.24	23	2078.677	14	-5756.794	20						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation ...	LC	Y Rotation ...	LC	Z Rotation [...	LC
1	N1	max	.439	23	.469	25	.131	7	2.682e-02	8	4.173e-03	23	2.008e-02	43
2		min	-.45	5	-1.056	44	-.126	14	-2.245e-02	14	-4.048e-03	5	-5.237e-03	24
3	N2	max	.439	23	.629	16	.333	9	3.694e-02	8	2.191e-03	13	1.33e-02	17
4		min	-.45	5	-1.205	34	-.343	3	-2.831e-02	14	-2.278e-03	19	-2.105e-02	11
5	N4	max	.439	23	.539	15	.326	9	3.694e-02	8	2.19e-03	13	1.33e-02	17
6		min	-.45	5	-1.067	34	-.334	15	-2.831e-02	14	-2.277e-03	19	-2.105e-02	11
7	N5	max	.439	23	.312	14	.163	8	3.134e-02	8	8.741e-03	17	5.842e-04	16
8		min	-.449	5	-.456	8	-.164	14	-2.302e-02	14	-8.508e-03	23	-1.502e-03	34
9	N6	max	.439	23	.336	14	.257	9	3.308e-02	8	5.303e-03	16	5.452e-03	16
10		min	-.45	5	-.532	8	-.259	15	-2.39e-02	14	-5.072e-03	10	-9.273e-03	10
11	N7	max	.438	23	.333	14	.212	6	2.96e-02	8	3.229e-03	5	8.946e-03	44
12		min	-.449	5	-.502	8	-.209	24	-2.213e-02	14	-3.079e-03	22	-2.914e-03	25
13	N8	max	.443	23	.613	15	.326	9	3.694e-02	8	2.19e-03	13	1.33e-02	17
14		min	-.454	5	-1.143	34	-.334	15	-2.831e-02	14	-2.277e-03	19	-2.105e-02	11
15	N9	max	.423	23	.408	14	.257	9	3.308e-02	8	5.303e-03	16	5.452e-03	16
16		min	-.434	5	-.631	8	-.259	15	-2.39e-02	14	-5.072e-03	10	-9.273e-03	10
17	N10	max	.429	23	.4	14	.212	6	2.96e-02	8	3.229e-03	5	8.946e-03	44
18		min	-.44	5	-.591	8	-.209	24	-2.213e-02	14	-3.079e-03	22	-2.914e-03	25
19	N11	max	.014	23	.613	15	.398	25	3.623e-02	8	2.19e-03	13	1.156e-02	17
20		min	-.386	42	-1.143	34	-.596	7	-2.761e-02	14	-2.277e-03	19	-1.93e-02	11
21	N12	max	.266	23	.408	14	.307	14	3.05e-02	8	5.303e-03	16	4.464e-03	16
22		min	-.364	5	-.631	8	-.519	8	-2.133e-02	14	-5.072e-03	10	-8.907e-03	47
23	N13	max	.437	10	.4	14	.369	15	2.701e-02	8	3.229e-03	5	8.906e-03	44
24		min	-.385	16	-.591	8	-.542	9	-1.956e-02	14	-3.079e-03	22	-2.344e-03	25
25	N14	max	3.084	11	.613	15	3.574	8	4.869e-02	8	2.19e-03	13	3.512e-02	17
26		min	-2.524	17	-1.144	34	-2.937	14	-3.994e-02	14	-2.277e-03	19	-4.298e-02	11
27	N15	max	1.897	11	.408	14	4.223	8	6.5e-02	8	5.303e-03	16	2.124e-02	17
28		min	-1.623	17	-.631	8	-3.542	14	-5.558e-02	14	-5.072e-03	10	-2.517e-02	11
29	N16	max	1.204	23	.4	14	3.68	8	5.767e-02	8	3.229e-03	5	1.746e-02	5
30		min	-1.411	5	-.591	8	-3.127	14	-5.002e-02	14	-3.079e-03	22	-1.474e-02	23
31	N19	max	.186	24	.432	20	.526	8	1.356e-02	19	1.384e-03	6	1.992e-02	17
32		min	-.183	6	-.977	27	-.514	14	-2.3e-02	13	-1.464e-03	24	-2.225e-02	11
33	N20	max	.28	22	.485	17	.374	9	1.734e-02	8	4.013e-03	15	1.691e-02	18
34		min	-.267	16	-1.083	47	-.371	15	-1.291e-02	14	-3.927e-03	9	-2.361e-02	12
35	N23	max	.267	22	.258	18	.391	8	8.38e-03	18	8.731e-03	21	1.542e-02	18
36		min	-.265	4	-.376	12	-.387	14	-1.199e-02	12	-8.543e-03	15	-2.151e-02	12
37	N25	max	.176	24	.372	19	.524	9	1.356e-02	19	1.383e-03	6	1.992e-02	17
38		min	-.174	6	-.855	38	-.512	14	-2.3e-02	13	-1.463e-03	24	-2.225e-02	11
39	N28	max	.179	24	.428	19	.524	9	1.356e-02	19	1.383e-03	6	1.992e-02	17
40		min	-.176	6	-.909	38	-.51	14	-2.3e-02	13	-1.463e-03	24	-2.225e-02	11
41	N31	max	.285	17	.428	19	.486	10	1.228e-02	19	1.383e-03	6	1.896e-02	17
42		min	-.335	11	-.909	38	-.259	16	-2.171e-02	13	-1.463e-03	24	-2.129e-02	11
43	N34	max	2.351	11	.428	19	2.201	20	2.826e-02	20	1.383e-03	6	3.114e-02	17
44		min	-2.174	17	-.909	38	-2.889	2	-3.787e-02	2	-1.463e-03	24	-3.352e-02	11
45	N36	max	.506	12	.466	24	.314	7	1.904e-02	9	2.367e-03	9	2.863e-02	4
46		min	-.489	18	-1.028	31	-.316	25	-1.639e-02	14	-2.415e-03	15	-1.926e-02	22
47	N37	max	.208	12	.369	21	.429	19	8.565e-03	21	4.131e-03	20	1.86e-02	5
48		min	-.203	6	-1.043	40	-.441	25	-2.45e-02	40	-4.027e-03	13	-1.781e-02	23
49	N40	max	.285	24	.265	22	.412	7	8.852e-03	22	9.052e-03	24	2.217e-02	4
50		min	-.284	6	-.396	4	-.421	25	-1.241e-02	4	-8.84e-03	18	-1.563e-02	22

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation ...	LC	Y Rotation ...	LC	Z Rotation [...	LC
51	N42	max	.506	24	.395	24	.309	7	1.904e-02	9	2.367e-03	9	2.863e-02	4
52		min	-.491	18	-.899	30	-.311	25	-1.639e-02	14	-2.414e-03	15	-1.926e-02	22
53	N45	max	.506	24	.439	23	.312	7	1.904e-02	9	2.367e-03	9	2.863e-02	4
54		min	-.491	18	-.956	30	-.314	25	-1.639e-02	14	-2.414e-03	15	-1.926e-02	22
55	N48	max	.516	2	.438	23	.187	16	1.775e-02	9	2.367e-03	9	2.778e-02	4
56		min	-.287	20	-.956	30	-.252	10	-1.506e-02	15	-2.414e-03	15	-1.843e-02	22
57	N51	max	2.37	23	.438	23	2.492	8	3.523e-02	8	2.367e-03	9	3.924e-02	5
58		min	-3.053	5	-.956	30	-2.315	14	-3.273e-02	14	-2.414e-03	15	-2.973e-02	23
59	N39	max	.447	24	.279	22	.322	7	8.814e-03	21	5.545e-03	24	2.501e-02	4
60		min	-.441	6	-.449	4	-.328	25	-9.96e-03	3	-5.309e-03	6	-1.656e-02	22
61	N40A	max	.439	24	.334	22	.309	7	8.814e-03	21	5.545e-03	24	2.501e-02	4
62		min	-.433	6	-.528	4	-.314	25	-9.96e-03	3	-5.309e-03	6	-1.656e-02	22
63	N41	max	.478	2	.334	22	.316	6	7.651e-03	22	5.545e-03	24	2.308e-02	4
64		min	-.273	20	-.528	4	-.29	24	-8.73e-03	4	-5.309e-03	6	-1.464e-02	22
65	N42A	max	2.747	23	.334	22	1.617	20	2.359e-02	20	5.545e-03	24	4.889e-02	5
66		min	-3.377	5	-.528	4	-1.718	2	-2.494e-02	2	-5.309e-03	6	-4.017e-02	23
67	N43	max	.161	11	.272	22	.491	19	9.371e-03	22	3.826e-03	12	1.933e-02	4
68		min	-.161	5	-.433	4	-.502	25	-1.531e-02	4	-3.781e-03	18	-1.465e-02	22
69	N44	max	.156	23	.324	22	.483	19	9.371e-03	22	3.826e-03	12	1.933e-02	4
70		min	-.156	5	-.506	4	-.493	25	-1.531e-02	4	-3.781e-03	18	-1.465e-02	22
71	N45A	max	.28	4	.324	22	.607	6	8.619e-03	22	3.826e-03	12	1.741e-02	4
72		min	-.172	22	-.506	4	-.475	24	-1.47e-02	41	-3.781e-03	18	-1.273e-02	22
73	N46	max	2.328	23	.324	22	1.651	20	2.362e-02	21	3.826e-03	12	4.245e-02	5
74		min	-2.685	5	-.507	4	-2.104	2	-2.967e-02	3	-3.781e-03	18	-3.753e-02	23
75	N38	max	.16	11	.261	18	.483	9	9.556e-03	19	5.705e-03	21	1.47e-02	18
76		min	-.161	5	-.418	12	-.473	15	-1.626e-02	13	-5.532e-03	15	-1.949e-02	12
77	N39A	max	.157	11	.313	18	.468	9	9.556e-03	19	5.705e-03	21	1.47e-02	18
78		min	-.157	5	-.493	12	-.459	15	-1.626e-02	13	-5.532e-03	15	-1.949e-02	12
79	N40B	max	.175	19	.313	18	.504	10	8.576e-03	18	5.705e-03	21	1.317e-02	18
80		min	-.29	13	-.493	12	-.341	16	-1.523e-02	12	-5.532e-03	15	-1.795e-02	12
81	N41A	max	2.433	11	.312	18	1.633	20	2.149e-02	19	5.705e-03	21	3.253e-02	17
82		min	-2.075	17	-.493	12	-2.128	2	-2.83e-02	13	-5.532e-03	15	-3.748e-02	11
83	N42B	max	.375	22	.284	18	.319	8	8.079e-03	19	3.186e-03	9	1.631e-02	18
84		min	-.371	16	-.439	12	-.316	14	-8.544e-03	13	-3.008e-03	15	-2.381e-02	12
85	N43A	max	.371	22	.337	18	.311	8	8.079e-03	19	3.186e-03	9	1.631e-02	18
86		min	-.367	16	-.513	12	-.308	14	-8.544e-03	13	-3.008e-03	15	-2.381e-02	12
87	N44A	max	.358	20	.337	18	.245	10	7.049e-03	19	3.186e-03	9	1.478e-02	18
88		min	-.535	13	-.513	12	-.228	16	-7.513e-03	13	-3.008e-03	15	-2.227e-02	12
89	N45B	max	2.904	11	.337	18	1.482	20	2.034e-02	20	3.186e-03	9	3.473e-02	17
90		min	-2.354	17	-.513	12	-1.525	2	-2.098e-02	2	-3.008e-03	15	-4.235e-02	11
91	N46A	max	.439	23	.413	25	.161	7	2.682e-02	8	4.173e-03	23	1.862e-02	43
92		min	-.45	5	-.754	7	-.157	25	-2.245e-02	14	-4.048e-03	5	-5.243e-03	24
93	N47	max	.505	24	.351	23	.304	7	1.774e-02	9	2.096e-03	9	2.757e-02	4
94		min	-.492	18	-.78	30	-.307	25	-1.513e-02	15	-2.143e-03	15	-1.837e-02	22
95	N48A	max	.166	24	.336	19	.523	9	1.238e-02	19	1.252e-03	7	1.884e-02	17
96		min	-.164	6	-.739	38	-.51	15	-2.164e-02	13	-1.293e-03	24	-2.115e-02	11
97	N49	max	.439	23	.481	15	.318	9	3.544e-02	8	1.919e-03	13	1.129e-02	17
98		min	-.45	5	-.93	34	-.325	15	-2.695e-02	14	-2.005e-03	19	-1.886e-02	11
99	N50	max	.328	10	.41	17	.343	8	1.734e-02	8	4.015e-03	15	1.691e-02	18
100		min	-.318	16	-.772	36	-.339	15	-1.291e-02	14	-3.928e-03	9	-2.361e-02	12
101	N51A	max	.166	24	.327	21	.462	19	8.57e-03	21	4.134e-03	20	1.861e-02	5
102		min	-.164	6	-.732	40	-.473	25	-2.324e-02	40	-4.025e-03	13	-1.781e-02	23
103	N52	max	.078	21	.039	24	.147	9	6.598e-03	8	7.387e-03	21	5.598e-03	29
104		min	-.089	3	-.117	31	-.14	15	-5.024e-03	14	-7.385e-03	15	-2.756e-03	22
105	N53	max	.159	11	.038	20	.008	20	2.075e-03	20	7.261e-03	17	5.383e-03	5
106		min	-.16	5	-.11	27	-.023	27	-5.775e-03	27	-7.244e-03	23	-5.293e-03	11
107	N54	max	.087	13	.038	16	.143	7	6.655e-03	8	7.089e-03	25	3.096e-03	18

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation ...	LC	Y Rotation ...	LC	Z Rotation [...	LC
108		min	-.075	19	-.127	35	-.135	25	-4.604e-03	14	-7.055e-03	19	-5.935e-03	12
109	N61	max	.07	21	.039	24	.122	21	6.598e-03	8	7.387e-03	21	5.598e-03	29
110		min	-.07	15	-.117	31	-.122	15	-5.024e-03	14	-7.385e-03	15	-2.756e-03	22
111	N62	max	.138	23	.038	20	0	8	2.075e-03	20	7.261e-03	17	5.383e-03	5
112		min	-.138	17	-.11	27	0	14	-5.775e-03	27	-7.244e-03	23	-5.293e-03	11
113	N63	max	.068	25	.038	16	.117	19	6.655e-03	8	7.089e-03	25	3.096e-03	18
114		min	-.067	19	-.127	35	-.117	25	-4.604e-03	14	-7.055e-03	19	-5.935e-03	12
115	N64	max	.093	21	.051	24	.16	21	6.598e-03	8	7.387e-03	21	5.598e-03	29
116		min	-.093	15	-.154	31	-.16	15	-5.024e-03	14	-7.385e-03	15	-2.756e-03	22
117	N65	max	0	50	0	50	0	50	0	50	0	50	0	50
118		min	0	1	0	1	0	1	0	1	0	1	0	1
119	N66	max	.181	23	.051	20	0	8	2.075e-03	20	7.262e-03	17	5.383e-03	5
120		min	-.182	17	-.144	27	0	14	-5.776e-03	27	-7.244e-03	23	-5.293e-03	11
121	N67	max	0	50	0	50	0	50	0	50	0	50	0	50
122		min	0	1	0	1	0	1	0	1	0	1	0	1
123	N68	max	.089	25	.05	16	.153	19	6.655e-03	8	7.089e-03	25	3.096e-03	18
124		min	-.088	19	-.167	35	-.154	25	-4.604e-03	14	-7.055e-03	19	-5.936e-03	12
125	N69	max	0	50	0	50	0	50	0	50	0	50	0	50
126		min	0	1	0	1	0	1	0	1	0	1	0	1
127	N64A	max	.437	23	.281	14	.211	6	2.846e-02	8	3.856e-03	23	1.308e-02	43
128		min	-.448	5	-.434	8	-.208	24	-1.99e-02	14	-4.092e-03	5	-3.618e-03	24
129	N65A	max	.16	11	.219	18	.491	9	8.952e-03	19	8.835e-04	30	1.324e-02	18
130		min	-.161	5	-.362	12	-.481	15	-1.853e-02	38	-4.211e-04	23	-1.805e-02	12
131	N66A	max	.444	23	.281	14	.26	9	3.108e-02	8	1.364e-03	12	6.317e-03	16
132		min	-.455	5	-.458	8	-.262	15	-2.079e-02	14	-1.198e-03	18	-1.294e-02	47
133	N67A	max	.453	24	.234	22	.325	7	9.53e-03	9	1.694e-03	8	2.429e-02	5
134		min	-.447	18	-.389	4	-.331	25	-9.705e-03	3	-1.469e-03	14	-1.393e-02	23
135	N68A	max	.161	11	.23	22	.49	7	8.943e-03	21	3.91e-03	20	1.81e-02	4
136		min	-.161	5	-.377	4	-.501	25	-1.93e-02	40	-4.097e-03	2	-1.333e-02	22
137	N69A	max	.373	22	.242	18	.319	8	8.61e-03	7	3.916e-03	15	1.484e-02	17
138		min	-.369	16	-.385	12	-.316	14	-7.898e-03	25	-4.228e-03	9	-2.46e-02	11
139	N70	max	.431	11	.377	25	.159	7	2.627e-02	9	1.746e-03	22	1.485e-02	43
140		min	-.44	17	-.732	44	-.155	13	-2.275e-02	15	-2.464e-03	4	-5.05e-03	24
141	N71	max	.166	24	.299	21	.453	7	8.513e-03	22	1.713e-03	19	1.866e-02	5
142		min	-.164	6	-.721	40	-.463	25	-1.901e-02	41	-2.359e-03	13	-1.842e-02	11
143	N72	max	.319	22	.381	17	.337	8	1.747e-02	8	2.002e-03	14	1.752e-02	18
144		min	-.311	4	-.773	36	-.334	14	-1.33e-02	14	-2.82e-03	8	-2.252e-02	12
145	N73	max	.506	12	.321	24	.301	19	1.689e-02	9	2.877e-03	10	2.587e-02	4
146		min	-.491	18	-.755	31	-.305	13	-1.482e-02	15	-2.34e-03	16	-1.831e-02	22
147	N74	max	.166	24	.298	19	.523	9	1.017e-02	19	2.487e-03	7	1.885e-02	17
148		min	-.164	6	-.716	38	-.509	14	-1.781e-02	13	-1.94e-03	25	-2.088e-02	11
149	N75	max	.435	23	.431	15	.318	21	3.336e-02	8	2.483e-03	2	8.353e-03	17
150		min	-.448	5	-.891	34	-.327	3	-2.601e-02	14	-1.977e-03	20	-1.474e-02	48
151	N76	max	.445	23	.281	14	.274	7	2.846e-02	8	3.856e-03	23	1.308e-02	43
152		min	-.47	5	-.434	8	-.25	25	-1.99e-02	14	-4.092e-03	5	-3.618e-03	24
153	N77	max	.208	11	.219	18	.506	20	8.952e-03	19	8.835e-04	30	1.324e-02	18
154		min	-.194	17	-.362	12	-.525	2	-1.853e-02	38	-4.211e-04	23	-1.805e-02	12
155	N78	max	.478	11	.281	14	.35	9	3.108e-02	8	1.364e-03	12	6.317e-03	16
156		min	-.472	17	-.458	8	-.321	15	-2.079e-02	14	-1.198e-03	18	-1.294e-02	47
157	N79	max	.483	24	.234	22	.337	19	9.53e-03	9	1.694e-03	8	2.429e-02	5
158		min	-.508	6	-.389	4	-.344	13	-9.705e-03	3	-1.469e-03	14	-1.393e-02	23
159	N80	max	.196	23	.23	22	.493	19	8.943e-03	21	3.91e-03	20	1.81e-02	4
160		min	-.211	5	-.377	4	-.529	13	-1.93e-02	40	-4.097e-03	2	-1.333e-02	22
161	N81	max	.434	10	.242	18	.342	8	8.61e-03	7	3.916e-03	15	1.484e-02	17
162		min	-.4	16	-.385	12	-.337	14	-7.898e-03	25	-4.228e-03	9	-2.46e-02	11
163	N82	max	.445	23	.377	25	.215	7	2.627e-02	9	1.746e-03	22	1.485e-02	43
164		min	-.47	5	-.732	44	-.203	25	-2.275e-02	15	-2.464e-03	4	-5.05e-03	24

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation ...	LC	Y Rotation ...	LC	Z Rotation [...	LC
165	N83	max	.213	12	.299	21	.453	19	8.513e-03	22	1.713e-03	19	1.866e-02	5
166		min	-.213	6	-.721	40	-.481	13	-1.901e-02	41	-2.359e-03	13	-1.842e-02	11
167	N84	max	.351	10	.381	17	.389	8	1.747e-02	8	2.002e-03	14	1.752e-02	18
168		min	-.328	16	-.773	36	-.374	14	-1.33e-02	14	-2.82e-03	8	-2.252e-02	12
169	N85	max	.531	24	.321	24	.335	7	1.689e-02	9	2.877e-03	10	2.587e-02	4
170		min	-.539	6	-.755	31	-.334	14	-1.482e-02	15	-2.34e-03	16	-1.831e-02	22
171	N86	max	.227	12	.298	19	.544	20	1.017e-02	19	2.487e-03	7	1.885e-02	17
172		min	-.219	18	-.716	38	-.555	2	-1.781e-02	13	-1.94e-03	25	-2.088e-02	11
173	N87	max	.478	11	.431	15	.406	9	3.336e-02	8	2.483e-03	2	8.353e-03	17
174		min	-.472	17	-.891	34	-.391	15	-2.601e-02	14	-1.977e-03	20	-1.474e-02	48

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
1	M1	1	max	0	50	0	38	0	50	0	50	0	50	0	50
2			min	0	1	-750	39	0	1	0	1	0	1	0	1
3		2	max	406.824	11	138.048	22	735.599	11	587.004	23	163.99	23	1027.526	42
4			min	-343.097	17	-361.544	29	-740.06	17	-1043.742	5	-174.001	5	-357.122	23
5		3	max	406.824	11	128.143	22	735.599	11	587.004	23	1312.819	23	1594.101	42
6			min	-343.097	17	-391.843	29	-740.06	17	-1043.742	5	-1329.319	5	-540.004	23
7		4	max	743.25	15	910.836	5	1128.369	17	309.562	15	1994.526	11	2196.359	43
8			min	-773.311	9	-890.135	23	-1118.271	23	-561.256	34	-2002.575	17	-958.774	24
9		5	max	743.25	15	897.629	5	1128.369	17	309.562	15	247.463	11	2115.274	46
10			min	-773.311	9	-903.251	11	-1118.271	23	-561.256	34	-245.763	16	-576.955	15
11	M2	1	max	743.25	15	897.675	5	1128.62	17	309.562	15	247.463	11	2115.274	46
12			min	-773.311	9	-904.412	11	-1117.931	23	-561.256	34	-245.763	16	-576.955	15
13		2	max	743.25	15	887.222	17	1128.62	17	309.562	15	1523.969	17	2421.763	10
14			min	-773.311	9	-917.619	11	-1117.931	23	-561.256	34	-1499.645	23	-1630.676	16
15		3	max	842.322	4	565.046	40	510.62	23	509.418	13	1089.379	17	1606.931	11
16			min	-767.353	22	-214.871	21	-517.557	5	-419.599	19	-1084.514	11	-989.899	17
17		4	max	842.322	4	551.839	40	519.541	22	509.418	13	353.294	18	1704.755	11
18			min	-767.353	22	-224.776	21	-526.226	4	-419.599	19	-359.908	12	-1343.222	17
19		5	max	0	50	0	50	0	50	0	50	0	50	0	50
20			min	0	1	0	1	0	1	0	1	0	1	0	1
21	M3	1	max	783.943	14	-185.15	20	410.364	23	863.093	11	0	4	1668.225	8
22			min	-783.943	8	-769.825	27	-410.369	17	-865.122	5	-.001	17	-1662.574	2
23		2	max	783.943	14	-185.15	20	410.364	23	863.093	11	25.648	11	1684.057	8
24			min	-783.943	8	-770.111	27	-410.369	17	-865.122	5	-25.649	17	-1646.326	2
25		3	max	783.943	14	-185.15	20	410.364	23	863.093	11	51.295	23	1699.89	8
26			min	-783.943	8	-770.398	27	-410.369	17	-865.122	5	-51.297	17	-1631.949	14
27		4	max	783.943	14	-185.15	20	410.364	23	863.093	11	76.943	23	1715.722	8
28			min	-783.943	8	-770.684	27	-410.369	17	-865.122	5	-76.945	17	-1620.072	14
29		5	max	783.943	14	-185.15	20	410.364	23	863.093	11	102.591	23	1731.554	8
30			min	-783.943	8	-770.971	27	-410.369	17	-865.122	5	-102.593	17	-1608.195	14
31	M4	1	max	896.759	14	-201.762	20	513.113	11	1287.47	11	0	11	2114.531	8
32			min	-896.767	8	-908.785	27	-513.12	5	-1284.139	5	0	21	-2106.604	2
33		2	max	896.759	14	-201.762	20	513.113	11	1287.47	11	32.07	11	2131.849	8
34			min	-896.767	8	-909.072	27	-513.12	5	-1284.139	5	-32.07	5	-2088.7	2
35		3	max	896.759	14	-201.762	20	513.113	11	1287.47	11	64.14	11	2149.166	8
36			min	-896.767	8	-909.358	27	-513.12	5	-1284.139	5	-64.14	5	-2071.976	14
37		4	max	896.759	14	-201.762	20	513.113	11	1287.47	11	96.209	11	2166.484	8
38			min	-896.767	8	-909.645	27	-513.12	5	-1284.139	5	-96.21	5	-2058.937	14
39		5	max	896.759	14	-201.762	20	513.113	11	1287.47	11	128.279	11	2183.801	8
40			min	-896.767	8	-909.931	27	-513.12	5	-1284.139	5	-128.28	5	-2045.898	14
41	M5	1	max	365.585	14	-132.76	20	606.282	23	1442.946	11	0	10	945.06	8
42			min	-365.57	8	-647.138	38	-606.286	5	-1438.802	5	0	12	-940.472	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
43		2	max	365.585	14	-132.76	20	606.282	23	1442.946	11	37.893	11	956.359	8
44			min	-365.57	8	-647.425	38	-606.286	5	-1438.802	5	-37.893	5	-928.948	2
45		3	max	365.585	14	-132.76	20	606.282	23	1442.946	11	75.785	23	967.657	8
46			min	-365.57	8	-647.711	38	-606.286	5	-1438.802	5	-75.786	5	-919.636	14
47		4	max	365.585	14	-132.76	20	606.282	23	1442.946	11	113.678	23	978.955	8
48			min	-365.57	8	-647.997	38	-606.286	5	-1438.802	5	-113.679	5	-911.176	14
49		5	max	365.585	14	-132.76	20	606.282	23	1442.946	11	151.57	23	990.254	8
50			min	-365.57	8	-648.284	38	-606.286	5	-1438.802	5	-151.572	5	-902.716	14
51	MP1	1	max	169.05	38	216.767	5	85.452	2	0	50	0	50	0	50
52			min	29.745	14	-217.577	11	-86.348	8	0	1	0	1	0	1
53		2	max	272.619	38	283.265	5	151.949	2	0	50	193.286	2	457.537	11
54			min	56.186	14	-284.075	11	-152.845	8	0	1	-195.078	8	-455.918	5
55		3	max	367.032	38	341.335	5	212.905	2	0	50	588.122	2	1116.463	11
56			min	81.116	14	-342.145	11	-213.801	8	0	1	-591.706	8	-1113.225	5
57		4	max	446.591	38	373.358	5	265.452	2	0	50	1097.666	2	1843.599	11
58			min	106.111	14	-374.168	11	-266.348	8	0	1	-1103.042	8	-1838.741	5
59		5	max	-29.745	25	215.203	11	83.905	8	0	50	0	50	0	50
60			min	-169.05	26	-214.795	5	-83.454	2	0	1	0	1	0	1
61	MP2	1	max	244.36	38	140.358	5	326.122	2	0	50	0	50	0	50
62			min	51.57	14	-141.01	11	-327.673	8	0	1	0	1	0	1
63		2	max	350.996	38	218.055	5	403.819	2	0	50	674.939	2	304.714	11
64			min	74.675	14	-218.707	11	-405.37	8	0	1	-678.039	8	-303.411	5
65		3	max	460.724	38	289.722	5	478.025	2	0	50	1590.936	2	850.345	11
66			min	102.751	14	-290.374	11	-479.575	8	0	1	-1597.136	8	-847.739	5
67		4	max	632.165	38	356.279	5	562.633	2	0	50	2694.591	2	1542.736	11
68			min	168.634	14	-356.931	11	-564.183	8	0	1	-2703.892	8	-1538.827	5
69		5	max	-51.57	25	138.599	11	321.921	8	0	50	0	50	0	50
70			min	-244.36	26	-138.269	5	-321.136	2	0	1	0	1	0	1
71	MP3	1	max	244.36	38	139.797	5	324.856	2	0	50	0	50	0	50
72			min	51.57	14	-139.391	11	-325.985	8	0	1	0	1	0	1
73		2	max	274.668	38	160.913	5	345.972	2	0	50	670.833	2	299.904	11
74			min	61.431	14	-160.508	11	-347.102	8	0	1	-673.093	8	-300.715	5
75		3	max	324.534	38	188.172	5	374.527	2	0	50	1384.305	2	642.375	11
76			min	79.282	14	-187.767	11	-375.657	8	0	1	-1388.825	8	-643.997	5
77		4	max	493.915	38	252.967	5	448.536	2	0	50	2259.85	2	1126.042	11
78			min	145.954	14	-252.561	11	-449.666	8	0	1	-2266.629	8	-1128.476	5
79		5	max	-51.57	25	138.084	23	321.659	8	0	50	0	50	0	50
80			min	-244.36	26	-138.299	5	-321.021	2	0	1	0	1	0	1
81	M9	1	max	0	50	.04	3	.002	8	0	50	0	50	0	50
82			min	0	1	-.01	35	-.002	23	0	1	0	1	0	1
83		2	max	739.944	8	119.339	25	487.343	15	638.452	5	295.661	5	1292.171	3
84			min	-673.963	14	-540.008	44	-487.802	9	-504.537	23	-288.312	23	-959.215	21
85		3	max	748.641	8	109.433	25	490.526	15	638.452	5	970.203	3	1395.338	40
86			min	-682.66	14	-553.215	44	-490.986	9	-504.537	23	-962.851	21	-766.986	21
87		4	max	578.316	18	886.519	3	1074.727	21	195.801	46	1367.733	15	2090.424	39
88			min	-597.154	12	-885.538	9	-1071.154	15	-270.324	3	-1373.765	9	-1072.501	20
89		5	max	575.133	18	874.606	15	1071.544	21	195.801	46	303.283	21	2111.524	49
90			min	-593.971	12	-898.746	9	-1067.97	15	-270.324	3	-303.94	3	-296.698	18
91	M10	1	max	575.133	18	874.467	15	1071.551	21	195.801	46	303.283	21	2111.524	49
92			min	-593.971	12	-898.543	9	-1068.057	15	-270.324	3	-303.94	3	-296.698	18
93		2	max	571.95	18	864.562	15	1068.368	21	195.801	46	1975.094	21	2260.347	47
94			min	-590.788	12	-911.75	9	-1064.874	15	-270.324	3	-1969.921	3	-1271.051	16
95		3	max	389.924	3	501.449	34	716.016	3	790.261	15	1299.05	9	1665.638	46
96			min	-308.103	21	-161.754	15	-718.293	21	-1259.345	9	-1284.503	15	-742.548	15
97		4	max	378.045	3	471.149	34	719.199	3	790.261	15	175.31	9	1047.543	46
98			min	-296.224	21	-171.659	15	-721.476	21	-1259.345	9	-163.818	15	-482.069	15
99		5	max	0	50	750.006	41	.02	15	0	50	0	50	0	50

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
100			min	0	1	-.076	9	0	31	0	1	0	1	0	1
101	M11	1	max	375.038	6	-105.791	24	435.214	15	916.682	3	0	7	795.03	12
102			min	-375.035	24	-516.124	32	-435.186	21	-913.909	9	0	10	-792.439	6
103		2	max	375.038	6	-105.791	24	435.214	15	916.682	3	27.201	15	804.038	12
104			min	-375.035	24	-516.411	32	-435.186	21	-913.909	9	-27.199	9	-783.255	6
105		3	max	375.038	6	-105.791	24	435.214	15	916.682	3	54.402	15	813.047	12
106			min	-375.035	24	-516.697	32	-435.186	21	-913.909	9	-54.398	9	-776.397	18
107		4	max	375.038	6	-105.791	24	435.214	15	916.682	3	81.603	15	822.055	12
108			min	-375.035	24	-516.984	32	-435.186	21	-913.909	9	-81.597	21	-769.656	18
109		5	max	375.038	6	-105.791	24	435.214	15	916.682	3	108.804	15	831.064	12
110			min	-375.035	24	-517.27	32	-435.186	21	-913.909	9	-108.796	21	-762.914	18
111	MP4	1	max	169.05	38	117.188	5	183.59	2	0	50	0	50	0	50
112			min	29.745	14	-117.374	11	-182.813	8	0	1	0	1	0	1
113		2	max	199.358	38	138.305	5	204.707	2	0	50	388.302	2	255.87	11
114			min	39.606	14	-138.491	11	-203.93	8	0	1	-386.749	8	-255.499	5
115		3	max	236.592	38	163.121	5	228.079	2	0	50	818.955	2	554.171	11
116			min	51.596	14	-163.306	11	-227.302	8	0	1	-815.849	8	-553.428	5
117		4	max	316.151	38	210.539	5	265.231	2	0	50	1328.177	2	954.3	11
118			min	76.591	14	-210.725	11	-264.454	8	0	1	-1323.517	8	-953.186	5
119		5	max	-29.745	25	116.232	11	181.71	8	0	50	0	50	0	50
120			min	-169.05	26	-116.113	5	-182.21	2	0	1	0	1	0	1
121	M17	1	max	0	50	.044	7	.002	11	0	50	0	50	0	50
122			min	0	1	-.009	37	-.004	8	0	1	0	1	0	1
123		2	max	715.067	12	153.26	16	564.325	18	853.886	8	362.146	8	1352.982	7
124			min	-642.533	18	-538.665	47	-567.295	12	-694.703	14	-356.134	14	-1006.132	25
125		3	max	726.947	12	143.355	16	553.791	18	853.886	8	1124.72	7	1440.627	8
126			min	-654.412	18	-551.872	47	-556.761	12	-694.703	14	-1127.405	25	-856.264	14
127		4	max	591.834	23	911.41	7	1167.907	25	196.34	23	1576.875	19	2090.733	43
128			min	-627.839	5	-874.782	25	-1154.108	19	-290.484	5	-1595.509	13	-1331.441	24
129		5	max	600.531	23	898.203	7	1171.091	25	196.34	23	231.955	25	2056.149	42
130			min	-636.535	5	-884.687	25	-1157.291	19	-290.484	5	-229.345	7	-255.707	23
131	M18	1	max	600.531	23	897.596	7	1171.045	25	196.34	23	231.955	25	2056.149	42
132			min	-636.535	5	-884.607	25	-1157.415	19	-290.484	5	-229.345	7	-255.707	23
133		2	max	609.227	23	884.389	7	1174.228	25	196.34	23	2064.2	25	2152.77	39
134			min	-645.232	5	-897.537	13	-1160.599	19	-290.484	5	-2039.963	7	-985.337	20
135		3	max	440.828	7	365.402	49	742.726	7	538.633	19	1351.049	13	1570.234	50
136			min	-380.843	25	-89.511	18	-753.426	25	-955.858	13	-1323.742	19	-463.824	19
137		4	max	428.949	7	352.195	49	739.542	7	538.633	19	177.256	13	1010.517	50
138			min	-368.963	25	-99.416	18	-750.243	25	-955.858	13	-166.214	19	-323.821	19
139		5	max	0	50	750.006	43	.02	13	0	50	0	50	0	50
140			min	0	1	-.055	13	-.001	22	0	1	0	1	0	1
141	M19	1	max	375.045	10	-105.184	16	435.286	7	917.179	7	0	25	795.603	4
142			min	-375.033	16	-516.145	36	-435.152	25	-914.43	13	-.001	12	-792.955	10
143		2	max	375.045	10	-105.184	16	435.286	7	917.179	7	27.205	7	804.571	4
144			min	-375.033	16	-516.431	36	-435.152	25	-914.43	13	-27.198	13	-783.806	10
145		3	max	375.045	10	-105.184	16	435.286	7	917.179	7	54.41	7	813.539	4
146			min	-375.033	16	-516.718	36	-435.152	25	-914.43	13	-54.394	13	-776.859	22
147		4	max	375.045	10	-105.184	16	435.286	7	917.179	7	81.616	7	822.507	4
148			min	-375.033	16	-517.004	36	-435.152	25	-914.43	13	-81.591	13	-770.153	22
149		5	max	375.045	10	-105.184	16	435.286	7	917.179	7	108.821	7	831.474	4
150			min	-375.033	16	-517.291	36	-435.152	25	-914.43	13	-108.787	25	-763.447	22
151	MP7	1	max	169.05	38	117.78	5	183.205	2	0	50	0	50	0	50
152			min	29.745	14	-117.012	11	-183.403	8	0	1	0	1	0	1
153		2	max	199.358	38	138.897	5	204.322	2	0	50	387.532	2	255.147	11
154			min	39.606	14	-138.129	11	-204.519	8	0	1	-387.927	8	-256.682	5
155		3	max	236.592	38	163.712	5	227.693	2	0	50	817.414	2	552.725	11
156			min	51.596	14	-162.945	11	-227.891	8	0	1	-818.205	8	-555.794	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
157		4	max	316.151	38	211.13	5	264.845	2	0	50	1325.865	2	952.131	11
158			min	76.591	14	-210.363	11	-265.043	8	0	1	-1327.052	8	-956.735	5
159		5	max	-29.745	25	116	11	182.089	8	0	50	0	50	0	50
160			min	-169.05	26	-116.493	5	-181.962	2	0	1	0	1	0	1
161	M21	1	max	652.134	10	-190.092	16	556.651	7	1173.642	7	0	19	1388.427	4
162			min	-652.133	4	-772.15	35	-555.785	25	-1171.182	13	-.001	12	-1382.516	10
163		2	max	652.134	10	-190.092	16	556.651	7	1173.642	7	34.791	7	1404.559	4
164			min	-652.133	4	-772.436	35	-555.785	25	-1171.182	13	-34.737	13	-1366.021	10
165		3	max	652.134	10	-190.092	16	556.651	7	1173.642	7	69.582	7	1420.69	4
166			min	-652.133	4	-772.722	35	-555.785	25	-1171.182	13	-69.473	13	-1352.747	22
167		4	max	652.134	10	-190.092	16	556.651	7	1173.642	7	104.373	7	1436.821	4
168			min	-652.133	4	-773.009	35	-555.785	25	-1171.182	13	-104.209	13	-1340.598	22
169		5	max	652.134	10	-190.092	16	556.651	7	1173.642	7	139.163	7	1452.952	4
170			min	-652.133	4	-773.295	35	-555.785	25	-1171.182	13	-138.946	25	-1328.448	22
171	MP8	1	max	244.36	38	279.572	5	185.99	2	0	50	0	50	0	50
172			min	51.57	14	-278.284	11	-185.801	8	0	1	0	1	0	1
173		2	max	274.668	38	300.689	5	207.107	2	0	50	393.103	2	577.691	11
174			min	61.431	14	-299.401	11	-206.918	8	0	1	-392.724	8	-580.266	5
175		3	max	324.824	38	330.1	5	235.249	2	0	50	828.822	2	1198.068	11
176			min	79.171	14	-328.813	11	-235.06	8	0	1	-828.064	8	-1203.218	5
177		4	max	496.265	38	410.202	5	306.321	2	0	50	1419.959	2	1994.322	11
178			min	145.054	14	-408.915	11	-306.132	8	0	1	-1418.822	8	-2002.048	5
179		5	max	-51.57	25	275.169	11	183.835	8	0	50	0	50	0	50
180			min	-244.36	26	-275.9	5	-183.942	2	0	1	0	1	0	1
181	M23	1	max	643.822	22	-192.402	16	550.708	7	1158.128	7	0	5	1369.868	4
182			min	-643.825	4	-769.605	36	-550.164	13	-1160.225	13	0	9	-1364.551	10
183		2	max	643.822	22	-192.402	16	550.708	7	1158.128	7	34.419	7	1386.168	4
184			min	-643.825	4	-769.891	36	-550.164	13	-1160.225	13	-34.385	13	-1347.928	10
185		3	max	643.822	22	-192.402	16	550.708	7	1158.128	7	68.838	7	1402.468	4
186			min	-643.825	4	-770.177	36	-550.164	13	-1160.225	13	-68.77	13	-1334.661	22
187		4	max	643.822	22	-192.402	16	550.708	7	1158.128	7	103.258	7	1418.768	4
188			min	-643.825	4	-770.464	36	-550.164	13	-1160.225	13	-103.156	13	-1322.398	22
189		5	max	643.822	22	-192.402	16	550.708	7	1158.128	7	137.677	7	1435.068	4
190			min	-643.825	4	-770.75	36	-550.164	13	-1160.225	13	-137.541	13	-1310.136	22
191	MP9	1	max	244.36	38	278.751	5	186.468	2	0	50	0	50	0	50
192			min	51.57	14	-278.028	11	-185.553	8	0	1	0	1	0	1
193		2	max	274.668	38	299.868	5	207.585	2	0	50	394.057	2	577.178	11
194			min	61.431	14	-299.145	11	-206.669	8	0	1	-392.227	8	-578.624	5
195		3	max	324.534	38	328.098	5	235.168	2	0	50	830.7	2	1196.977	11
196			min	79.282	14	-327.375	11	-234.253	8	0	1	-827.039	8	-1199.868	5
197		4	max	493.915	38	399.801	5	302.268	2	0	50	1413.762	2	1973.624	11
198			min	145.954	14	-399.079	11	-301.353	8	0	1	-1408.272	8	-1977.961	5
199		5	max	-51.57	25	275.02	11	183.691	8	0	50	0	50	0	50
200			min	-244.36	26	-275.428	5	-184.208	2	0	1	0	1	0	1
201	M21A	1	max	547.478	18	-178.278	24	468.524	3	988.223	3	0	14	1165.188	12
202			min	-547.482	24	-693.11	30	-469.285	21	-985.853	9	-.001	13	-1159.933	6
203		2	max	547.478	18	-178.278	24	468.524	3	988.223	3	29.283	3	1180.272	12
204			min	-547.482	24	-693.396	30	-469.285	21	-985.853	9	-29.331	21	-1144.558	6
205		3	max	547.478	18	-178.278	24	468.524	3	988.223	3	58.565	3	1195.355	12
206			min	-547.482	24	-693.683	30	-469.285	21	-985.853	9	-58.661	21	-1132.836	18
207		4	max	547.478	18	-178.278	24	468.524	3	988.223	3	87.848	3	1210.439	12
208			min	-547.482	24	-693.969	30	-469.285	21	-985.853	9	-87.991	21	-1121.479	18
209		5	max	547.478	18	-178.278	24	468.524	3	988.223	3	117.131	3	1225.523	12
210			min	-547.482	24	-694.256	30	-469.285	21	-985.853	9	-117.322	21	-1110.123	18
211	MP5	1	max	204.95	38	220.626	5	146.854	2	0	50	0	50	0	50
212			min	43.92	14	-221.297	11	-145.909	8	0	1	0	1	0	1
213		2	max	235.258	38	241.743	5	167.971	2	0	50	314.83	2	463.715	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
214			min	53.781	14	-242.413	11	-167.026	8	0	1	-312.94	8	-462.374	5
215		3	max	285.414	38	271.155	5	196.113	2	0	50	672.276	2	970.117	11
216			min	71.521	14	-271.825	11	-195.168	8	0	1	-668.497	8	-967.434	5
217		4	max	456.855	38	351.257	5	267.185	2	0	50	1185.141	2	1652.396	11
218			min	137.404	14	-351.927	11	-266.24	8	0	1	-1179.471	8	-1648.372	5
219		5	max	-43.92	25	218.585	11	144.393	8	0	50	0	50	0	50
220			min	-204.95	26	-218.229	5	-144.895	2	0	1	0	1	0	1
221	M23A	1	max	539.177	18	-179.483	24	462.901	3	974.212	3	.001	3	1147.738	12
222			min	-539.167	24	-690.55	30	-463.313	21	-976.61	9	0	21	-1143.008	6
223		2	max	539.177	18	-179.483	24	462.901	3	974.212	3	28.932	3	1162.921	12
224			min	-539.167	24	-690.836	30	-463.313	21	-976.61	9	-28.958	21	-1127.569	6
225		3	max	539.177	18	-179.483	24	462.901	3	974.212	3	57.864	3	1178.104	12
226			min	-539.167	24	-691.122	30	-463.313	21	-976.61	9	-57.915	21	-1115.658	18
227		4	max	539.177	18	-179.483	24	462.901	3	974.212	3	86.795	3	1193.287	12
228			min	-539.167	24	-691.409	30	-463.313	21	-976.61	9	-86.872	21	-1104.251	18
229		5	max	539.177	18	-179.483	24	462.901	3	974.212	3	115.726	3	1208.47	12
230			min	-539.167	24	-691.695	30	-463.313	21	-976.61	9	-115.829	21	-1092.844	18
231	MP6	1	max	204.95	38	220.862	5	146.109	2	0	50	0	50	0	50
232			min	43.92	14	-221.908	11	-146.031	8	0	1	0	1	0	1
233		2	max	235.258	38	241.979	5	167.226	2	0	50	313.34	2	464.938	11
234			min	53.781	14	-243.025	11	-167.148	8	0	1	-313.184	8	-462.846	5
235		3	max	285.124	38	270.209	5	194.809	2	0	50	669.264	2	972.496	11
236			min	71.632	14	-271.255	11	-194.731	8	0	1	-668.954	8	-968.312	5
237		4	max	454.505	38	341.912	5	261.909	2	0	50	1171.609	2	1636.903	11
238			min	138.304	14	-342.958	11	-261.832	8	0	1	-1171.143	8	-1630.627	5
239		5	max	-43.92	25	218.904	11	144.455	8	0	50	0	50	0	50
240			min	-204.95	26	-218.35	5	-144.496	2	0	1	0	1	0	1
241	M25	1	max	839.809	11	330.315	29	27.919	22	3.965	24	24.699	39	1198.024	5
242			min	-812.958	17	-434.906	47	-175.227	41	-26.848	43	-.461	19	-675.677	23
243		2	max	853.499	23	339.822	29	107.419	20	22.743	3	48.898	14	1095.153	6
244			min	-862.052	5	-398.509	47	-108.787	14	-21.034	21	-49.012	8	-620.216	23
245		3	max	848.639	23	337.95	29	104.613	20	22.743	3	1.128	17	994.133	6
246			min	-857.192	5	-400.38	47	-105.981	14	-21.034	21	-1.894	11	-572.88	24
247		4	max	843.78	23	336.079	29	101.807	20	22.743	3	46.973	20	893.972	6
248			min	-852.332	5	-402.252	47	-103.175	14	-21.034	21	-48.341	2	-536.656	24
249		5	max	866.215	11	344.085	29	173.402	44	25.155	7	25.467	45	786.08	6
250			min	-829.867	17	-368.143	47	-95.788	25	-15.724	25	-10.273	14	-501.321	24
251	M26	1	max	845.605	7	303.856	37	28.947	18	2.936	19	24.595	47	1097.485	13
252			min	-826.044	25	-434.929	43	-173.273	48	-26.383	39	-4.505	16	-620.264	19
253		2	max	828.345	19	310.532	38	147.459	16	19.713	11	66.057	22	1003.451	13
254			min	-841.886	13	-398.677	43	-149.066	22	-17.932	17	-66.005	4	-573.222	19
255		3	max	828.345	19	308.66	38	141.848	16	19.713	11	1.482	14	891.702	13
256			min	-841.886	13	-400.549	43	-143.455	22	-17.932	17	-2.213	8	-517.899	19
257		4	max	828.345	19	306.789	38	136.236	16	19.713	11	64.09	16	795.12	2
258			min	-841.886	13	-402.42	43	-137.843	22	-17.932	17	-65.539	10	-475.226	20
259		5	max	807.751	7	316.916	38	172.604	40	27.68	2	25.301	40	694.311	2
260			min	-779.028	25	-369.278	44	-104.239	21	-18.246	20	-11.14	21	-443.465	20
261	M27	1	max	808.102	3	439.263	34	57.373	15	7.023	15	25.981	44	1444.583	9
262			min	-770.171	21	-409.182	40	-184.817	45	-27.603	46	-2.989	25	-908.461	15
263		2	max	831.598	15	457.368	34	99.186	24	23.866	8	42.214	18	1302.833	9
264			min	-836.758	9	-371.963	40	-97.488	18	-21.174	14	-43.793	12	-834.056	15
265		3	max	829.82	15	455.497	34	93.299	24	23.866	8	.778	22	1128.59	9
266			min	-834.979	9	-373.835	40	-91.601	18	-21.174	14	-1.649	29	-739.342	15
267		4	max	828.041	15	453.625	34	87.413	24	23.866	8	41.837	24	955.205	9
268			min	-833.2	9	-375.706	40	-85.715	18	-21.174	14	-41.838	6	-643.985	15
269		5	max	821.577	3	467.425	34	176.17	48	33.29	10	25.653	48	776.424	9
270			min	-779.765	21	-341.507	40	-114.156	17	-22.897	16	-10.402	17	-551.884	15

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
271	M34	1	max	0	50	.019	6	.009	23	0	50	0	50	0	50
272			min	0	1	-.004	38	-.017	14	0	1	0	1	0	1
273		2	max	347.426	12	892.149	24	3513.793	21	2618.928	9	707.17	21	651.122	31
274			min	-243.178	18	-2869.606	31	-3511.39	15	-2623.399	3	-708.339	15	-314.585	24
275		3	max	357.535	12	884.402	24	3527.029	21	2618.928	9	3164.124	21	2661.19	31
276			min	-253.286	18	-2890.588	31	-3524.626	15	-2623.399	3	-3163.616	15	-934.527	24
277		4	max	367.643	12	876.655	24	3540.265	21	2618.928	9	5630.315	21	4685.9	31
278			min	-263.395	18	-2911.569	31	-3537.862	15	-2623.399	3	-5628.13	15	-1549.063	24
279		5	max	377.752	12	868.909	24	3553.501	21	2618.928	9	8105.742	21	6725.253	31
280			min	-273.503	18	-2932.55	31	-3551.098	15	-2623.399	3	-8101.88	15	-2158.193	24
281	M35	1	max	0	50	.02	10	.017	14	0	50	0	50	0	50
282			min	0	1	-.004	28	-.009	17	0	1	0	1	0	1
283		2	max	343.66	4	862.847	16	3371.865	25	2612.441	25	678.197	25	706.118	35
284			min	-241.876	22	-3104.321	35	-3356.86	19	-2780.309	7	-673.883	19	-318.283	16
285		3	max	353.768	4	855.1	16	3385.101	25	2612.441	25	3036.097	25	2879.997	35
286			min	-251.984	22	-3125.302	35	-3370.096	19	-2780.309	7	-3021.311	19	-917.775	16
287		4	max	363.876	4	847.353	16	3398.337	25	2612.441	25	5403.234	25	5068.519	35
288			min	-262.093	22	-3146.283	35	-3383.332	19	-2780.309	7	-5377.976	19	-1511.86	16
289		5	max	373.985	4	839.606	16	3411.573	25	2612.441	25	7779.608	25	7271.683	35
290			min	-272.201	22	-3167.265	35	-3396.568	19	-2780.309	7	-7743.878	19	-2100.539	16
291	M36	1	max	0	50	0	50	0	50	0	50	0	50	0	50
292			min	0	1	0	1	0	1	0	1	0	1	0	1
293		2	max	341.699	8	882.813	20	3418.635	17	2328.96	5	724.895	17	608.916	27
294			min	-235.297	14	-2677.275	27	-3410.531	23	-2290.153	11	-722.946	23	-308.319	20
295		3	max	341.699	8	875.066	20	3435.725	17	2328.96	5	3116.782	17	2484.753	27
296			min	-235.297	14	-2698.256	27	-3427.62	23	-2290.153	11	-3109.176	23	-921.745	20
297		4	max	341.699	8	867.319	20	3452.814	17	2328.96	5	5520.594	17	4375.232	27
298			min	-235.297	14	-2719.238	27	-3444.71	23	-2290.153	11	-5507.332	23	-1529.764	20
299		5	max	341.699	8	859.572	20	3469.904	17	2328.96	5	7936.333	17	6280.354	27
300			min	-235.297	14	-2740.219	27	-3461.799	23	-2290.153	11	-7917.415	23	-2132.378	20
301	M34A	1	max	2847.339	31	1769.729	3	3023.537	3	43.993	12	1259.244	3	703.161	9
302			min	-899.389	24	-1817.401	9	-2998.5	9	-39.975	19	-1268.847	9	-730.175	3
303		2	max	2847.721	31	1769.729	3	3023.537	3	43.993	12	1511.205	3	854.612	9
304			min	-899.389	24	-1817.401	9	-2998.5	9	-39.975	19	-1518.722	9	-877.653	3
305		3	max	2848.103	31	1769.729	3	3023.537	3	43.993	12	1763.166	3	1006.062	9
306			min	-899.389	24	-1817.401	9	-2998.5	9	-39.975	19	-1768.598	9	-1025.13	3
307		4	max	2848.484	31	1769.729	3	3023.537	3	43.993	12	2015.128	3	1157.512	9
308			min	-899.389	24	-1817.401	9	-2998.5	9	-39.975	19	-2018.473	9	-1172.608	3
309		5	max	2848.866	31	1769.729	3	3023.537	3	43.993	12	2267.089	3	1308.962	9
310			min	-899.389	24	-1817.401	9	-2998.5	9	-39.975	19	-2268.348	9	-1320.085	3
311	M35A	1	max	2654.964	27	3405.702	5	246.1	2	56.064	10	69.771	39	1157.633	11
312			min	-890.087	20	-3397.56	11	-340.578	8	-55.318	16	-22.047	20	-1193.726	5
313		2	max	2655.345	27	3405.702	5	246.1	2	56.064	10	70.663	39	1440.763	11
314			min	-890.087	20	-3397.56	11	-340.578	8	-55.318	16	-50.227	20	-1477.534	5
315		3	max	2655.727	27	3405.702	5	246.1	2	56.064	10	88.081	2	1723.893	11
316			min	-890.087	20	-3397.56	11	-340.578	8	-55.318	16	-78.407	20	-1761.343	5
317		4	max	2656.109	27	3405.702	5	246.1	2	56.064	10	108.59	2	2007.023	11
318			min	-890.087	20	-3397.56	11	-340.578	8	-55.318	16	-106.586	20	-2045.151	5
319		5	max	2656.491	27	3405.702	5	246.1	2	56.064	10	129.098	2	2290.153	11
320			min	-890.087	20	-3397.56	11	-340.578	8	-55.318	16	-134.766	20	-2328.96	5
321	M36A	1	max	3082.057	35	1677.321	7	2935.563	13	31.828	4	1287.491	25	752.852	25
322			min	-870.104	16	-1644.078	13	-2898.798	7	-28.225	23	-1450.877	7	-814.898	7
323		2	max	3082.439	35	1677.321	7	2935.563	13	31.828	4	1532.002	25	889.854	25
324			min	-870.104	16	-1644.078	13	-2898.798	7	-28.225	23	-1692.443	7	-954.675	7
325		3	max	3082.821	35	1677.321	7	2935.563	13	31.828	4	1776.513	25	1026.856	25
326			min	-870.104	16	-1644.078	13	-2898.798	7	-28.225	23	-1934.01	7	-1094.452	7
327		4	max	3083.203	35	1677.321	7	2935.563	13	31.828	4	2021.024	25	1163.859	25

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
328			min	-870.104	16	-1644.078	13	-2898.798	7	-28.225	23	-2175.576	7	-1234.228	7
329		5	max	3083.585	35	1677.321	7	2935.563	13	31.828	4	2265.535	25	1300.861	25
330			min	-870.104	16	-1644.078	13	-2898.798	7	-28.225	23	-2417.143	7	-1374.005	7
331	M37	1	max	13.031	24	117.581	25	38.113	14	69.598	20	3.505	23	40.329	14
332			min	-39.52	43	-212.267	44	-42.576	8	-75.457	2	-6.527	30	-44.606	8
333		2	max	13.031	24	117.581	25	38.113	14	69.598	20	3.489	24	35.13	3
334			min	-39.52	43	-212.267	44	-42.576	8	-75.457	2	-7.397	31	-33.991	8
335		3	max	13.031	24	117.581	25	38.113	14	69.598	20	4.606	25	33.594	3
336			min	-39.52	43	-212.267	44	-42.576	8	-75.457	2	-8.452	31	-27.581	21
337		4	max	13.031	24	117.581	25	38.113	14	69.598	20	6.454	25	32.586	4
338			min	-39.52	43	-212.267	44	-42.576	8	-75.457	2	-10.233	7	-22.527	22
339		5	max	13.031	24	117.581	25	38.113	14	69.598	20	8.301	25	35.752	4
340			min	-39.52	43	-212.267	44	-42.576	8	-75.457	2	-12.328	7	-22.021	22
341	M38	1	max	9.052	14	36.417	25	175.512	40	86.688	8	31.308	20	11.784	21
342			min	-36.713	45	-94.416	43	3.261	21	-83.444	14	-36.524	3	-17.019	3
343		2	max	9.052	14	36.417	25	175.512	40	86.688	8	31.557	20	14.187	20
344			min	-36.713	45	-94.416	43	3.261	21	-83.444	14	-32.429	3	-16.701	2
345		3	max	9.052	14	36.417	25	175.512	40	86.688	8	32.341	8	16.9	20
346			min	-36.713	45	-94.416	43	3.261	21	-83.444	14	-28.702	15	-17.788	2
347		4	max	9.052	14	36.417	25	175.512	40	86.688	8	33.225	8	19.821	8
348			min	-36.713	45	-94.416	43	3.261	21	-83.444	14	-25.815	14	-19.015	14
349		5	max	9.052	14	36.417	25	175.512	40	86.688	8	34.11	8	22.854	8
350			min	-36.713	45	-94.416	43	3.261	21	-83.444	14	-22.951	14	-20.385	14
351	M39	1	max	56.037	33	96.529	43	-12.438	24	76.203	17	46.387	14	21.824	14
352			min	-.381	14	-62.749	24	-174.729	42	-98.476	11	-90.089	45	-46.991	45
353		2	max	56.324	33	96.529	43	-12.438	24	76.203	17	44.678	14	23.187	14
354			min	-.381	14	-62.749	24	-174.729	42	-98.476	11	-100.94	45	-52.867	45
355		3	max	56.61	33	96.529	43	-12.438	24	76.203	17	42.97	14	24.549	14
356			min	-.381	14	-62.749	24	-174.729	42	-98.476	11	-111.791	45	-58.744	45
357		4	max	56.897	33	96.529	43	-12.438	24	76.203	17	41.261	14	25.912	14
358			min	-.381	14	-62.749	24	-174.729	42	-98.476	11	-122.641	45	-64.621	45
359		5	max	57.183	33	96.529	43	-12.438	24	76.203	17	39.552	14	28.408	25
360			min	-.381	14	-62.749	24	-174.729	42	-98.476	11	-133.492	45	-70.564	44
361	M40	1	max	58.25	31	212.349	44	11.974	32	37.377	49	6.527	30	23.45	22
362			min	-4.379	24	-117.606	25	-5.198	16	-12.984	18	-3.505	23	-103.341	41
363		2	max	58.536	31	212.349	44	11.974	32	37.377	49	7.195	30	26.756	23
364			min	-4.379	24	-117.606	25	-5.198	16	-12.984	18	-2.942	23	-116.275	42
365		3	max	58.823	31	212.349	44	11.974	32	37.377	49	7.863	30	30.76	23
366			min	-4.379	24	-117.606	25	-5.198	16	-12.984	18	-2.38	23	-129.301	42
367		4	max	59.109	31	212.349	44	11.974	32	37.377	49	8.567	31	34.763	23
368			min	-4.379	24	-117.606	25	-5.198	16	-12.984	18	-1.817	23	-142.327	42
369		5	max	59.396	31	212.349	44	11.974	32	37.377	49	9.308	31	38.766	23
370			min	-4.379	24	-117.606	25	-5.198	16	-12.984	18	-1.255	23	-155.361	43
371	M41	1	max	54.679	28	80.086	22	179.081	40	48.704	6	87.471	49	52.819	49
372			min	-2.457	21	-121.524	4	-106.926	21	-23.223	24	-15.862	18	-12.26	18
373		2	max	54.966	28	80.086	22	179.081	40	48.704	6	98.237	50	59.407	50
374			min	-2.457	21	-121.524	4	-106.926	21	-23.223	24	-16.831	19	-12.14	19
375		3	max	55.252	28	80.086	22	179.081	40	48.704	6	109.13	50	66.032	50
376			min	-2.457	21	-121.524	4	-106.926	21	-23.223	24	-19.354	19	-12.394	19
377		4	max	55.539	28	80.086	22	179.081	40	48.704	6	120.022	50	72.767	39
378			min	-2.457	21	-121.524	4	-106.926	21	-23.223	24	-21.877	19	-14.597	20
379		5	max	55.825	28	80.086	22	179.081	40	48.704	6	131.088	39	79.571	39
380			min	-2.457	21	-121.524	4	-106.926	21	-23.223	24	-26.762	20	-17.592	20
381	M42	1	max	11.139	21	149.307	4	90.947	21	95.894	16	43.686	4	24.703	17
382			min	-38.971	40	-107.767	22	-177.873	40	-101.396	10	-38.769	22	-26.039	11
383		2	max	11.139	21	149.307	4	90.947	21	95.894	16	34.603	5	17.019	17
384			min	-38.971	40	-107.767	22	-177.873	40	-101.396	10	-34.721	23	-20.632	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
385		3	max	11.139	21	149.307	4	90.947	21	95.894	16	28.308	17	9.835	18
386			min	-38.971	40	-107.767	22	-177.873	40	-101.396	10	-31.615	11	-15.994	12
387		4	max	11.139	21	149.307	4	90.947	21	95.894	16	22.227	17	6.386	19
388			min	-38.971	40	-107.767	22	-177.873	40	-101.396	10	-28.669	11	-17.01	38
389		5	max	11.139	21	149.307	4	90.947	21	95.894	16	18.771	18	7.924	20
390			min	-38.971	40	-107.767	22	-177.873	40	-101.396	10	-27.703	12	-21.667	27
391	M43	1	max	5.737	20	72.958	17	70.928	19	109.282	4	41.373	11	24.579	17
392			min	-36.438	39	-112.65	11	-171.118	50	-106.143	22	-34.531	17	-26.707	11
393		2	max	5.737	20	72.958	17	70.928	19	109.282	4	35.135	11	20.106	5
394			min	-36.438	39	-112.65	11	-171.118	50	-106.143	22	-32.073	17	-19.689	23
395		3	max	5.737	20	72.958	17	70.928	19	109.282	4	29.4	22	15.918	5
396			min	-36.438	39	-112.65	11	-171.118	50	-106.143	22	-30.54	4	-12.988	23
397		4	max	5.737	20	72.958	17	70.928	19	109.282	4	26.972	22	13.625	42
398			min	-36.438	39	-112.65	11	-171.118	50	-106.143	22	-31.189	4	-6.288	23
399		5	max	5.737	20	72.958	17	70.928	19	109.282	4	24.544	22	19.8	41
400			min	-36.438	39	-112.65	11	-171.118	50	-106.143	22	-31.837	4	.135	22
401	M44	1	max	55.244	28	107.294	48	172.377	50	66.172	14	84.693	41	20.877	22
402			min	2.983	20	-41.082	17	-86.925	19	-91.183	8	-30.152	22	-53.701	41
403		2	max	55.53	28	107.294	48	172.377	50	66.172	14	94.994	41	16.759	22
404			min	2.983	20	-41.082	17	-86.925	19	-91.183	8	-28.297	22	-59.993	41
405		3	max	55.817	28	107.294	48	172.377	50	66.172	14	105.323	40	12.641	22
406			min	2.983	20	-41.082	17	-86.925	19	-91.183	8	-26.957	21	-66.284	41
407		4	max	56.103	28	107.294	48	172.377	50	66.172	14	115.841	40	8.524	22
408			min	2.983	20	-41.082	17	-86.925	19	-91.183	8	-28.91	21	-72.576	41
409		5	max	56.39	28	107.294	48	172.377	50	66.172	14	126.36	40	4.857	21
410			min	2.983	20	-41.082	17	-86.925	19	-91.183	8	-30.864	21	-78.89	40
411	M45	1	max	64.185	35	78.043	16	112.048	16	48.632	32	33.526	15	51.908	46
412			min	-6.416	16	-118.094	10	-195.419	47	-10.927	22	-101.461	34	-13.96	15
413		2	max	64.472	35	78.043	16	112.048	16	48.632	32	38.585	15	58.51	46
414			min	-6.416	16	-118.094	10	-195.419	47	-10.927	22	-113.516	34	-18.001	15
415		3	max	64.758	35	78.043	16	112.048	16	48.632	32	43.644	15	65.113	46
416			min	-6.416	16	-118.094	10	-195.419	47	-10.927	22	-125.571	34	-22.042	15
417		4	max	65.045	35	78.043	16	112.048	16	48.632	32	48.702	15	71.715	46
418			min	-6.416	16	-118.094	10	-195.419	47	-10.927	22	-137.625	34	-26.082	15
419		5	max	65.331	35	78.043	16	112.048	16	48.632	32	53.761	15	78.318	46
420			min	-6.416	16	-118.094	10	-195.419	47	-10.927	22	-149.68	34	-30.123	15
421	M46	1	max	15.091	16	104.603	47	195.238	48	61.967	24	33.123	19	22.063	12
422			min	-41.534	47	-50.475	16	-104.003	17	-66.87	6	-36.433	12	-16.293	18
423		2	max	15.091	16	104.603	47	195.238	48	61.967	24	32.603	7	18.907	12
424			min	-41.534	47	-50.475	16	-104.003	17	-66.87	6	-29.995	25	-15.821	18
425		3	max	15.091	16	104.603	47	195.238	48	61.967	24	32.57	8	16.567	13
426			min	-41.534	47	-50.475	16	-104.003	17	-66.87	6	-24.944	25	-16.227	19
427		4	max	15.091	16	104.603	47	195.238	48	61.967	24	36.883	8	16.083	25
428			min	-41.534	47	-50.475	16	-104.003	17	-66.87	6	-24.419	14	-18.123	7
429		5	max	15.091	16	104.603	47	195.238	48	61.967	24	43.774	33	16.313	14
430			min	-41.534	47	-50.475	16	-104.003	17	-66.87	6	-24.862	15	-20.386	8
431	M47	1	max	11.658	17	203.487	46	37.644	23	80.302	12	3.036	18	38.77	7
432			min	-38.025	48	-55.009	16	-45.856	5	-74.529	18	-4.479	12	-30.621	25
433		2	max	11.658	17	203.487	46	37.644	23	80.302	12	.829	19	34.633	7
434			min	-38.025	48	-55.009	16	-45.856	5	-74.529	18	-4.45	39	-31.199	25
435		3	max	11.658	17	203.487	46	37.644	23	80.302	12	1.326	22	30.771	18
436			min	-38.025	48	-55.009	16	-45.856	5	-74.529	18	-4.976	41	-32.608	12
437		4	max	11.658	17	203.487	46	37.644	23	80.302	12	3.466	23	30.522	18
438			min	-38.025	48	-55.009	16	-45.856	5	-74.529	18	-6.44	5	-36.417	12
439		5	max	11.658	17	203.487	46	37.644	23	80.302	12	5.819	23	30.272	18
440			min	-38.025	48	-55.009	16	-45.856	5	-74.529	18	-9.306	5	-40.226	12
441	M48	1	max	60.462	36	55.059	16	54.768	4	67.058	21	4.479	12	104.12	37

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb...	LC	y-y Mome...	LC	z-z Mom...	LC
442			min	-2.991	17	-203.571	46	-46.66	22	-88.884	3	-3.036	18	-47.226	18
443		2	max	60.749	36	55.059	16	54.768	4	67.058	21	4.991	2	115.805	49
444			min	-2.991	17	-203.571	46	-46.66	22	-88.884	3	-3.116	20	-46.979	18
445		3	max	61.035	36	55.059	16	54.768	4	67.058	21	7.416	3	128.286	49
446			min	-2.991	17	-203.571	46	-46.66	22	-88.884	3	-5.014	21	-46.732	18
447		4	max	61.322	36	55.059	16	54.768	4	67.058	21	10.487	3	140.812	48
448			min	-2.991	17	-203.571	46	-46.66	22	-88.884	3	-7.694	21	-47.935	17
449		5	max	61.608	36	55.059	16	54.768	4	67.058	21	13.558	3	153.443	48
450			min	-2.991	17	-203.571	46	-46.66	22	-88.884	3	-10.374	21	-50.24	17

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

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc.....	...	...	phi*Pnc [lb]	phi*Pnt [lb]	phi*M...	phi*M...	...	Eqn
1	M25	PL4x1/4	.856	3.2...	24	.239	2.9...	y	43	2333.805	32400	170.1	2019....	...	H1-1a
2	M26	PL4x1/4	.832	3.2...	3	.236	2.9...	y	39	2333.805	32400	170.1	2074....	...	H1-1b
3	M27	PL4x1/4	.793	3.2...	16	.285	19....	y	10	2333.805	32400	170.1	2201....	...	H1-1a
4	MP2	PIPE_2.5	.769	73	8	.037	73		8	30038.461	50715	3596.25	3596.25	...	H1-1b
5	M35	HSS4X4...	.710	33.5	7	.292	33.5	z	7	135040.87	139518	16180.5	16180.5	...	H3-6
6	M34	HSS4X4...	.684	33.5	8	.285	33.5	z	3	135040.87	139518	16180.5	16180.5	...	H1-1b
7	M36	HSS4X4...	.658	33.5	12	.261	33.5	z	5	135040.87	139518	16180.5	16180.5	...	H1-1b
8	MP3	PIPE_2.5	.644	73	8	.030	73		8	30038.461	50715	3596.25	3596.25	...	H1-1b
9	M10	PIPE_3.0	.575	23....	9	.288	23....		9	52901.431	65205	5748.75	5748.75	...	H3-6
10	MP8	PIPE_2.5	.569	73	5	.027	73		5	30038.461	50715	3596.25	3596.25	...	H1-1b
11	MP9	PIPE_2.5	.563	73	5	.026	73		5	30038.461	50715	3596.25	3596.25	...	H1-1b
12	M2	PIPE_3.0	.557	22....	10	.216	59....		8	52901.431	65205	5748.75	5748.75	...	H1-1b
13	M18	PIPE_3.0	.538	22....	13	.228	23....		13	52901.431	65205	5748.75	5748.75	...	H1-1b
14	M17	PIPE_3.0	.531	52....	7	.188	51....		8	52901.431	65205	5748.75	5748.75	...	H1-1b
15	MP1	PIPE_2.5	.524	73	11	.025	73		11	30038.461	50715	3596.25	3596.25	...	H1-1b
16	M1	PIPE_3.0	.515	52....	5	.245	51....		5	52901.431	65205	5748.75	5748.75	...	H1-1b
17	MP5	PIPE_2.5	.471	73	11	.023	73		11	30038.461	50715	3596.25	3596.25	...	H1-1b
18	MP6	PIPE_2.5	.466	73	11	.023	73		11	30038.461	50715	3596.25	3596.25	...	H1-1b
19	M9	PIPE_3.0	.464	52....	3	.184	15....		12	52901.431	65205	5748.75	5748.75	...	H1-1b
20	MP4	PIPE_2.5	.377	73	2	.017	73		2	30038.461	50715	3596.25	3596.25	...	H1-1b
21	MP7	PIPE_2.5	.377	73	8	.017	73		8	30038.461	50715	3596.25	3596.25	...	H1-1b

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		24	75	0
3	Total General		24	75	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2x2x4	6	216	57.8
7	A36 Gr.36	PL4x1/4	3	66	18.7
8	A36 Gr.36	PL4x3/8	3	174	74
9	A500 Gr.B Rect	HSS4X4X4	3	100.5	103.3
10	A53 Gr.B	PIPE_2.5	9	864	394.5
11	A53 Gr.B	PIPE_3.0	6	450	264.1
12	Total HR Steel		30	1870.5	912.4

APPENDIX D

ADDITIONAL CALCUATIONS

Site Name:	bur 2/Oxford Town Garage
Client:	Crown Castle
Carrier:	AT&T
Engineer:	LM
Date:	6/12/2019
Job #:	1039-A002
	127 ft RAD

Code:	LRFD
Bolt Diameter	0.625
Bolt Grade:	A325
Threads Excluded?:	N
Axial (lbs):	12182.13
Shear (lbs):	2760.03

Bolt Info:

Yield Strength (F_{yb})	92.0 ksi
Ultimate Strength (F_{ub})	120.0 ksi
Threads/in (n)	11
Gross Area (A_{gb})	0.307 in²
Net Area (A_{nb})	0.226 in²

Bolt Capacity (5/8" A325 Bolt), Total of (4) per Connection				
	Ult Load / Bolt	Factored Load (ϕ=0.75)	# of Bolts	Factor Joint Capacity
Axial (lb)	27120.2	20340.1	1	20340
Shear(lb)	16567.0	12425.2	1	12425

Interaction Check	
T /ϕT_n	59.9%
V /ϕVn	22.2%
≤1.0	40.8%
	OK

Exhibit E

Power Density/RF Emissions Report

RF EMISSIONS COMPLIANCE REPORT

Crown Castle on Behalf of AT&T Mobility, LLC

Site: SEYMOUR 2 / OXFORD TOWN GARAGE
Crown Castle ID: 876361
App ID: 486191
20 Great Oak Rd
OXFORD, CT
5/14/2019

Report Status:

AT&T Mobility, LLC Is Compliant

Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Pennsylvania License Number PE076436
Expires September 30, 2019

Signed 14 May 2019

Prepared By:

Site Safe, 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
AT&T Mobility, LLC
OXFORD, CT

My signature on the cover of this document indicates:

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

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

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

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

That the technical information serving as the basis for this report was supplied by AT&T Mobility, LLC (see attached Site Summary and Carrier documents), and that AT&T Mobility, LLC's installation involves communications equipment, antennas and associated technical equipment at a location referred to as "SEYMOUR 2 / OXFORD TOWN GARAGE" ("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 has been assumed; 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 energy 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 limits set forth in the FCC rules for licensees of AT&T Mobility, LLC's operating frequencies as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility, LLC operation is no more than 2.127% of the maximum permissible exposure limits in any accessible area on the ground; and

That it is understood per FCC Guidelines and OET 65 Appendix A, that regardless of the existent radio frequency environment, only those licensees whose contributions exceed 5% 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 3.929% 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; and

In summary, it is stated here that the proposed operation at the site will 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(b), 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 this 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.

AT&T Mobility, LLC
SEYMOUR 2 / OXFORD TOWN GARAGE
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.227 %
AT&T Mobility, LLC (Proposed)	0.606 %
AT&T Mobility, LLC	0.323 %
AT&T Mobility, LLC (Proposed)	0.458 %
AT&T Mobility, LLC (Proposed)	0.513 %
Sprint	0.41 %
Sprint	0.162 %
Verizon Wireless	0.35 %
Verizon Wireless	0.493 %
Verizon Wireless	0.386 %
Composite Site MPE:	3.929 %

AT&T Mobility, LLC
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	869	MHz
Maximum Permissible Exposure (MPE):	579.33	µW/cm^2
Maximum power density at ground level:	1.31246	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.22655	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNH-1D6565C	128	60	1077	0.867815	0.149795	1.267499	0.218786
ANDREW	SBNH-1D6565C	128	180	1077	0.876126	0.15123	1.267499	0.218786
ANDREW	SBNH-1D6565C	128	300	1077	0.876126	0.15123	1.267499	0.218786

AT&T Mobility, LLC (Proposed)
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	2345	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	6.06103	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.6061	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10966	128	60	4046	2.215779	0.221578	3.731338	0.373134
Kathrein-Scala	800-10965	128	180	3954	1.287475	0.128747	2.373544	0.237354
Kathrein-Scala	800-10966	128	300	6473	3.510229	0.351023	5.970139	0.597014

AT&T Mobility, LLC (Proposed)
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	2110	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.22663	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.32266	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	SBNH-1D6565C	128	60	6168	1.387148	0.138715	3.104218	0.310422
ANDREW	SBNH-1D6565C	128	180	6168	1.387148	0.138715	3.104217	0.310422
ANDREW	SBNH-1D6565C	128	300	6168	1.387148	0.138715	3.104217	0.310422

AT&T Mobility, LLC (Proposed)
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	1930	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.58262	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.45826	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10966	128	60	6168	2.216296	0.22163	4.048066	0.404807
Kathrein-Scala	800-10965	128	180	6168	1.619094	0.161909	3.516203	0.35162
Kathrein-Scala	800-10966	128	300	6168	2.216861	0.221686	4.048066	0.404807

AT&T Mobility, LLC (Proposed)
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	734	MHz
Maximum Permissible Exposure (MPE):	489.33	µW/cm^2
Maximum power density at ground level:	2.51244	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.51344	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10966	128	60	3623	1.68388	0.344117	2.251448	0.460105
Kathrein-Scala	800-10965	128	180	2959	1.441288	0.294541	1.835168	0.375034
Kathrein-Scala	800-10966	128	300	3623	1.691668	0.345709	2.251448	0.460105

Sprint
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.09873	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.40987	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	150	310	3804	0.812518	0.081252	1.511773	0.151177
RFS	APXVSPP18-C-A20	150	70	3804	0.812518	0.081252	1.511773	0.151177
RFS	APXVSPP18-C-A20	150	220	3804	0.812518	0.081252	1.511773	0.151177
RFS	APXVSPP18-C-A20	150	310	3804	0.812518	0.081252	1.511773	0.151177
RFS	APXVSPP18-C-A20	150	70	3804	0.812518	0.081252	1.511773	0.151177
RFS	APXVSPP18-C-A20	150	220	3804	0.812518	0.081252	1.511773	0.151177

Sprint
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0.93304	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.16236	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	150	310	2168	0.689686	0.120015	0.704734	0.122633
RFS	APXVSPP18-C-A20	150	70	2168	0.689686	0.120015	0.704734	0.122633
RFS	APXVSPP18-C-A20	150	220	2168	0.689686	0.120015	0.704734	0.122633

Verizon Wireless
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.49741	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.34974	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Antel	BXA-171063-12CF	141	60	7147	1.372512	0.137251	3.265475	0.326547
Antel	BXA-171063-12CF	141	180	7147	1.371525	0.137152	3.265475	0.326547
Antel	BXA-171063-12CF	141	300	7147	1.371525	0.137152	3.265474	0.326547

Verizon Wireless
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	µW/cm^2
Maximum power density at ground level:	2.46846	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.49303	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Antel	BXA-70063-6CF	141	30	4019	1.677768	0.335107	2.003125	0.400092
Antel	BXA-70063-6CF	141	120	4019	1.677768	0.335107	2.003125	0.400092
Antel	BXA-70063-6CF	141	240	4019	1.680479	0.335648	2.003125	0.400092

Verizon Wireless
SEYMOUR 2 / OXFORD TOWN GARAGE
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	2.19016	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.3865	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Antel	LPA-80063-6CF	141	30	2255	0.779943	0.137637	0.796558	0.140569
Antel	LPA-80063-6CF	141	120	2255	0.779943	0.137637	0.796558	0.140569
Antel	LPA-80063-6CF	141	240	2255	0.779943	0.137637	0.796558	0.140569
Antel	LPA-80063-6CF	141	30	2255	0.779943	0.137637	0.796558	0.140569
Antel	LPA-80063-6CF	141	120	2255	0.779943	0.137637	0.796558	0.140569
Antel	LPA-80063-6CF	141	240	2255	0.779943	0.137637	0.796558	0.140569