Robinson+Cole

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Also admitted in Massachusetts and New York

June 26, 2024

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification**
107-109 Andrews Road, Wolcott, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above-referenced property address (the "Property"). The facility consists of antennas on an existing tower and associated equipment on the ground, near the base of the tower. The tower was approved by the Siting Council ("Council") in March of 1981 (Petition No. 67). Cellco's shared use of the tower was approved by the Council in December of 2019 (PE1133-VER-20191104). A copy of the Council's Petition No. 67 Decision and Order and Cellco's shared use approval are included in Attachment 1.

Cellco now intends to modify its facility by removing four (4) antennas and four (4) remote radio heads ("RRHs") and installing six (6) new antennas and four (4) new RRHs on new antenna mounts. A set of project plans showing Cellco's proposed facility modifications and the specifications for Cellco's new antennas and RRHs are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 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 Wolcott's Chief Elected Officials and Land Use Officer. A copy of this letter is also being sent to the owner of the Property.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's new antennas and RRHs will be installed at the same height on the tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

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

4. The installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Included in Attachment 3 is a Calculated Radio Frequency Emissions Report demonstrating that the proposed modified facility will comply with the FCC safety standards. The modified facility will be capable of providing Cellco's 5G wireless service.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. According to the attached Structural Analysis Report ("SA") and Antenna Mount Analysis Report ("MA"), the existing tower, tower foundation and new antenna mounts, with certain modifications, can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 6.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Thomas G. Dunn, Mayor
David Kalinowski, Zoning Enforcement Officer
Southern New England Telephone Co., Property Owner
Aleksey Tyurin

ATTACHMENT 1

STATE OF CONNECTICUT

DEPARTMENT OF BUSINESS REGULATION

POWER FACILITY EVALUATION COUNCIL

Petition No. 67
Wolcott, Connecticut
March 26, 1981

Mr. Doocy, Mr. Clapp, Mr. Wood, and Mr. Reid met Mr. Kischell and Mr. Bailey of the Southern New England Telephone Company to review the first half of Petition No. 67. Telecommunication facilities were viewed in Wolcott, Waterbury, and Meriden. The second half of Petition No. 67 involves facilities in Shelton, Norwalk, and Bridgeport. These were reviewed on March 31, 1981.

The first half of this petition involves the following changes at the Barry Avenue site in Wolcott: (a) replacing an existing 90 foot tall triangular lattice steel tower with an 80 foot tall square lattice steel tower; (b) replacing two microwave dishes and two reflectors with four new microwave dishes; (c) adding a 12' x 16' concrete radio building and a new fuel storage tank at the base of the tower and extending the fence to encompass the new facilities. Additional changes include: (d) adding two microwave antennae to the Waterbury East Tower in Waterbury and another concrete radio building; and (e) adding one microwave antenna to the West Peak tower in Meriden.

The Wolcott site is in a single family dwelling residential area near the top of Clinton Hill. The tower is visible from several locations within the area. The tower base and radio building are partially screened by vegetation from the nearest residence and are not visible from other residences. The new tower will be located several feet northeast of the existing tower at approximately the same ground elevation. The proposed tower will be 80 feet tall and more narrow than the existing tower; it will be square instead of triangular. The new microwave antennae are to be mounted on a platform at the top of the tower.

The soil appears shallow but stable, and a few bedrock outcrops appear on the site. The proposed tower will require new foundations which will be set in soil or bedrock. If the soil is too shallow or the bedrock unsuitable, some blasting may be necessary.

A new concrete building will be constructed at the base of the tower and will accomodate the generator used for emergency power. The existing fence will be extended to enclose this facility.

The existing tower will remain in place for approximately six months or until the new facility is operating properly. Then the existing tower will be dismantled and removed.

According to the SNETCO representatives, this proposal has been approved by the Wolcott Planning and Zoning Commission.

The Waterbury East tower is located adjacent to a water tower and several other cable TV or telecommunication towers on top of Long Hill in Waterbury. The site is surrounded by single and multiple family dwellings, commercial, and industrial properties. Both the telecommunication tower and the water tower are visible

from many viewpoints in the Waterbury area. Two microwave antennae are to be mounted at the 80 foot level to the existing 90 foot tower. Once the new facilities are operating, two narrow 80 foot tall towers presently on the site can be removed. These two towers now support reflectors which relay signals from the Waterbury central office to Wolcott. A new radio building will be constructed at the base of the tower and the existing fence will be extended to surround this new building. The radio building will house an emergency generator, the new radio equipment, and future radio equipment when existing facilities are replaced. An existing building presently storing a temporary generator may be removed after the new building is constructed. According to SNETCO representatives, this proposal has received planning and zoning approval.

The Meriden tower is adjacent to West Peak State Park and several telecommunication towers on the top of West Peak. The existing telecommunication facilities on West Peak are relatively well screened from most locations within the state park, but they are a prominent feature on the ridge top as seen from viewpoints in the Meriden area and can be seen up to many miles away on clear days.

The telephone company's tower presently supports seven microwave antennae. SNETCO proposes to add one microwave dish to the existing tower at the 90 foot level to complete a route from Meriden to the Wolcott Tower. The existing North Branform to Wolcott route will be eliminated, and an antenna at the North Branford tower may be removed when the Meriden to Wolcott route is in service. No additional buildings are proposed at this site.

Duncan C. Reid
Environmentalist
March 30, 1981

STATE OF CONNECTICUT

DEPARTMENT OF BUSINESS REGULATION

POWER FACILITY EVALUATION COUNCIL

Petition No. 67
Norwalk, Connecticut
March 31, 1981

Commissioner Boucher, Mr. Clapp, Christopher Wood and Duncan Reid met Mr. Bailey and Mr. Kischell of the Southern New England Telephone Company to review the second part of Petition No. 67 which involved facilities in Norwalk, Bridgeport, and Shelton. The first part of this petition involves facilities located in Wolcott, Waterbury, and Meriden which were visited on Thursday, March 26th.

In Norwalk one dish is to be mounted on an existing 350 foot tower located at a telephone company service center immediately north of Route 1. The dish will be directed toward the existing tower in Bridgeport. The general area around the Norwalk site appears to be commercial, residential, and industrial. The tower is visible from many locations in the area.

The Bridgeport tower (40 feet tall) is located on top of the Central Office Building in downtown Bridgeport. One dish will be mounted at approximately the 30 foot level and directed tower the new dish in Norwalk. The location of the tower on top of the office building diminishes its visual impact.

The 181 foot tower in Shelton is located in a rural residential area. One 5 foot dish will be removed and a 12 foot dish mounted in the same location and directed toward an existing facility in Derby. A new and large dish is required in Shelton to prevent interference with transmissions from Shelton to New Haven. This tower is visible from selected locations within the immediate area and from some distant viewpoints.

No additional radio buildings, generators, or fuel tanks, are planned for the facilities in Norwalk, Bridgeport, and Shelton.

Duncan C. Reid
Environmentalist
March 31, 1981

Phone 566-5612
State Office Building — Hartford, Connecticut 06115

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 24, 2019

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

RE: **PE1133-VER-20191104** – Cellco Partnership d/b/a Verizon Wireless sub-petition for a declaratory ruling for approval of an eligible facility request for modifications to an existing telecommunications facility located off Andrews Road, Wolcott, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby approves your Eligible Facilities Request (EFR) to install antennas and associated equipment at the above-referenced facility pursuant to the Federal Communications Commission Wireless Infrastructure Report and Order, with the following conditions:

1. Approval of any minor changes be delegated to Council staff;
2. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
3. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;
4. The validity of this action shall expire one year from the date of this letter; and
5. The Petitioner may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the EFR dated November 1, 2019 and additional information received December 2, 2019. Any minor changes to the eligible facility request require advance notification and approval

Thank you for your attention and cooperation.

Sincerely,

Melanie Bachman
Executive Director

MAB/IN/emr

c: The Honorable Thomas G. Dunn, Mayor, Town of Wolcott
David Kalinowski, Zoning Inspector, Town of Wolcott

S:\PETITIONS\1101-1200\1133\3_Subpoenas_B-Town\Wolcott\AndrewsRd\DCLTR_TELCOM-PE1133-VER-20191104-Andrews.docx

ATTACHMENT 2

VICINITY MAP

SCALE: N.T.S.

APPROXIMATE COORDINATES:	LATITUDE:	N 41° 37' 03.70" N 41.617694°
	LONGITUDE:	W 73° 00' 16.10" W 73.004472°

NOTE:

AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY TEP NORTHEAST
DATED: MAY 20, 2024

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING IS BASED UPON THE LATEST MOUNT ANALYSIS
BY COLLIERS ENGINEERING & DESIGN.

NOTE:

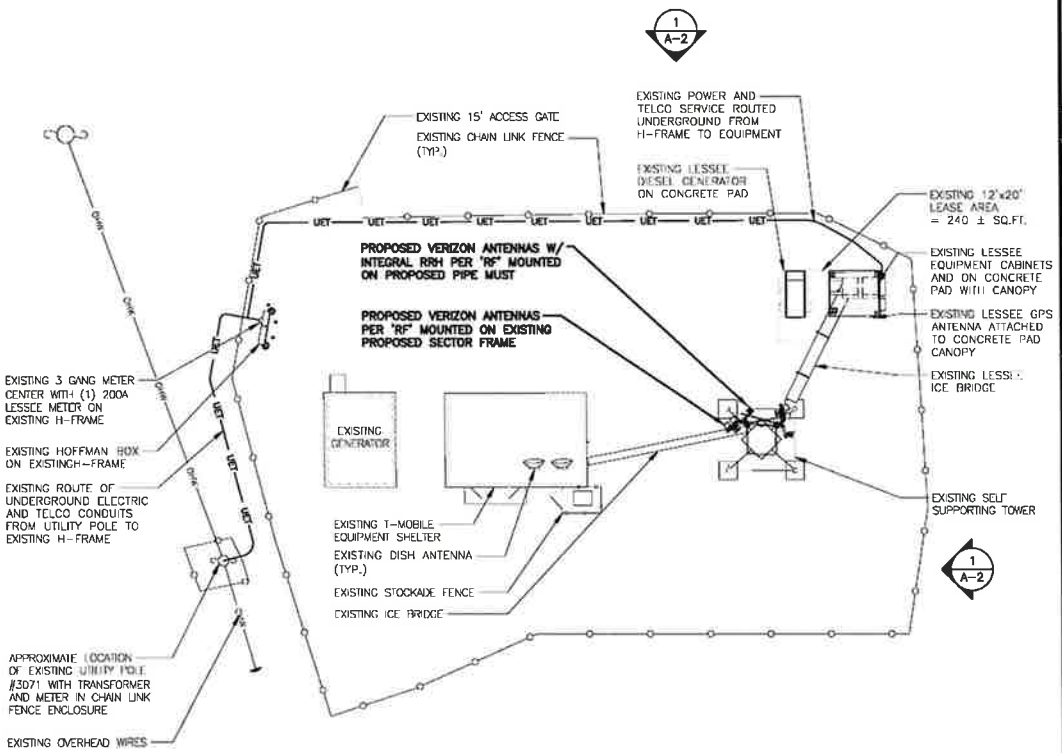
EQUIPMENT SHALL BE INSTALLED PER ELECTRICAL CODE (2023 NATIONAL ELECTRIC CODE 110.26). ANY DEVIATIONS GC MUST NOTIFY ENGINEER OF RECORD.

NOTE:

TEP NORTHEAST ASSUMES THE PROPOSED WORK SCOPE OF PREVIOUS CONSTRUCTION DRAWINGS WITH ISSUING DATE PRIOR TO THE ISSUING DATE OF THIS CONSTRUCTION DRAWING SET HAVE NOT BEEN COMPLETED PRIOR TO THE COMMENCEMENT OF PROPOSED SCOPE FOR THIS CONSTRUCTION DRAWING SUBMITTAL.

NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

- TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.



22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

SCOPE

1. ALL EXISTING ANTENNAS TO BE REMOVED PER 'RF', INSTALL (4) PROPOSED ANTENNAS PER 'RF'. INSTALL (2) PROPOSED ANTENNA WITH INTEGRAL RRHS PER 'RF'
2. ALL EXISTING RRH'S TO BE REMOVED PER 'RF', INSTALL (4) PROPOSED RRH'S PER 'RF'.
3. ALL EXISTING OVP TO REMAIN PER 'RF'.
4. ALL EXISTING COAX CABLES TO REMAIN PER 'RF', ALL EXISTING HYBRID CABLES TO REMAIN PER 'RF', ALL EXISTING HYBRID JUMPER CABLES TO REMAIN PER 'RF',
5. ALL REPLACEMENT ANTENNAS TO MATCH EXISTING CONDITION & HEIGHTS TO REMAIN PER 'RF'.
6. RECONFIGURE/RELOCATE EXISTING ANTENNA MOUNTS AS NECESSARY TO ACCOMMODATE HORIZONTAL SEPARATION, PROPOSED AZIMUTHS, AND ANTENNAS CONFIGURATION.

NEW ANTENNA CONFIGURATION

NOTE TO GENERAL CONTRACTOR:

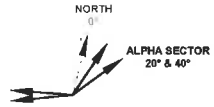
'RF' DESIGN AND EQUIPMENT IS BASED UPON RFDS ISSUED BY VZW DATED:
JANUARY 26, 2024 REVISION.

THE CONTRACTOR OF RECORD SHALL CONTACT VZW PRIOR TO ANY AND ALL ORDERING/PURCHASING/INSTALLATION OF EQUIPMENT TO VERIFY THAT THE 'RF' LISTED IN THE DRAWING SET IS CURRENT AND UP TO DATE.

NOTES

1. NORTH SHOWN AS APPROXIMATE.
2. SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. ANTENNAS WILL BE CAMOUFLAGED WITH 3M WRAP OR SHERWIN-WILLIAMS PRO INDUSTRIAL DTM ACRYLIC PAINT, AS NEEDED, PER VERIZON WIRELESS AND BUILDING OWNER'S APPROVAL.
4. PRIOR TO COMMENCEMENT OF ANY WORK, PROPOSED ANTENNA INSTALLATION IS PURSUANT TO FINDINGS DICTATED IN STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO VERIFY CAPACITY OF EXISTING STRUCTURE TO ENSURE STRUCTURAL INTEGRITY FOLLOWING INSTALLATION OF PROPOSED ANTENNAS, COAX CABLES AND REQUIRED HARDWARE. COPY OF STRUCTURAL ANALYSIS TO BE SENT TO DESIGN ENGINEER.
5. CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA MOUNT LOCATION AND ANTENNAS TO BE INSTALLED.
6. CONTRACTOR SHALL NOTIFY ENGINEERS IF FIELD CONDITIONS DIFFER FROM DESIGN.
7. RAD CENTERS MEASURED IN THE FIELD WITH LASER BY TEP NORTHEAST. RAD CENTERS MAY NOT MATCH RF ANTENNA DESIGN SHEET.

ANTENNA ORIENTATION



PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

TEP NORTHEAST

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	05/28/24	ISSUED FOR CONSTRUCTION	ASD

SITE NAME:
WOLCOTT NW CT

SITE ADDRESS:
107 ANDREWS RD
WOLCOTT, CT 06716

SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1

NOTE:

AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY TEP NORTHEAST
DATED: MAY 20, 2024

NOTE:

PROPOSED MT8413-77A ANTENNA SIZE AND WEIGHT ARE NOT TO EXCEED:

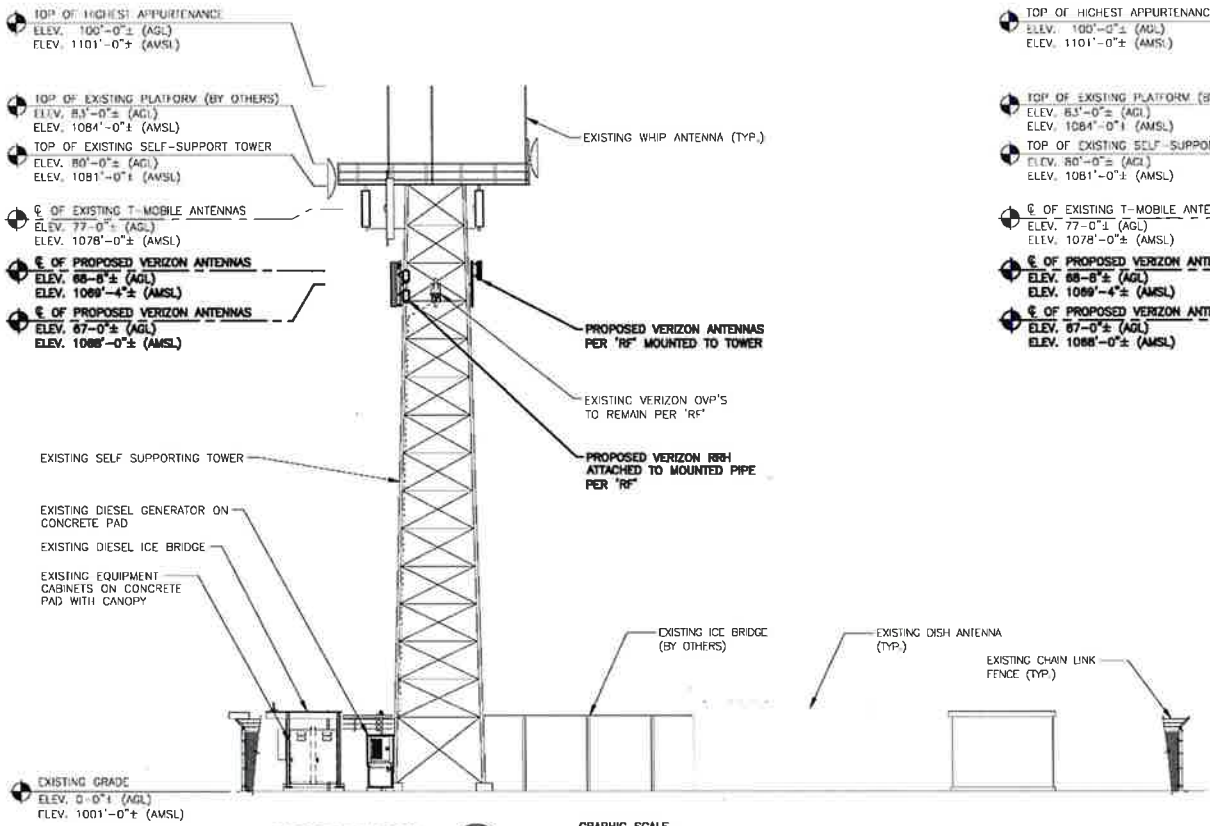
DIMENSIONS H28.90"xW15.75"xD5.51"
WEIGHT (INCLUDING INTEGRATED RRH) 57.3 LBS

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING IS BASED UPON THE LATEST MOUNT ANALYSIS
BY COLLIERS ENGINEERING & DESIGN.

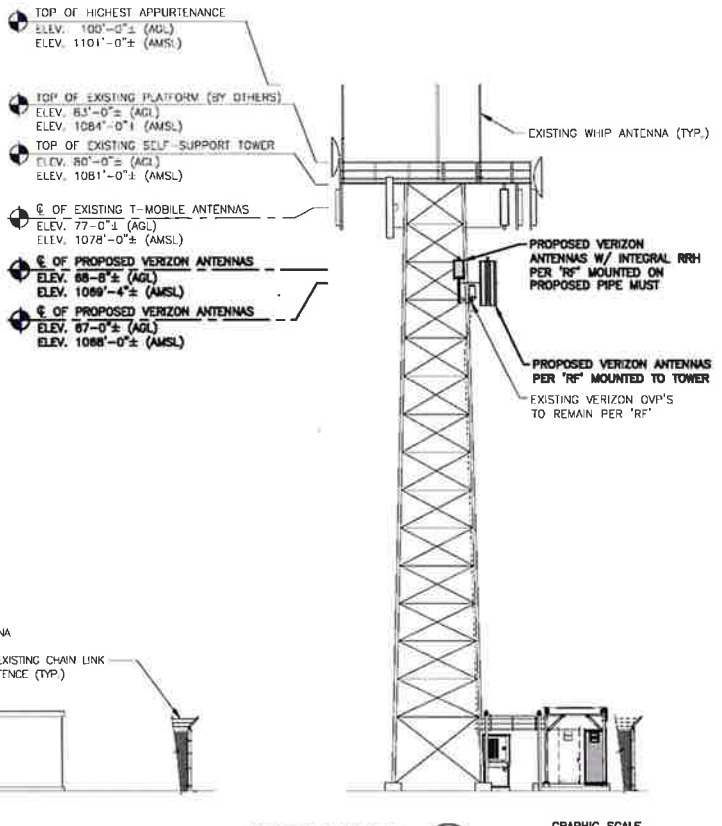
NOTE:

TEP NORTHEAST ASSUMES THE PROPOSED WORK SCOPE OF PREVIOUS CONSTRUCTION DRAWINGS WITH ISSUING DATE PRIOR TO THE ISSUING DATE OF THIS CONSTRUCTION DRAWING SET HAVE NOT BEEN COMPLETED PRIOR TO THE COMMENCEMENT OF PROPOSED SCOPE FOR THIS CONSTRUCTION DRAWING SUBMITTAL.



WEST ELEVATION (1 / A-2)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

GRAPHIC SCALE
0 4 8 16 24 FEET



NORTH ELEVATION (2 / A-2)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

GRAPHIC SCALE
0 4 8 16 24 FEET

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizon

TEP NORTHEAST

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREON.

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	05/29/24	ISSUED FOR CONSTRUCTION	AGD

SITE NAME:
WOLCOTT NW CT

SITE ADDRESS:
107 ANDREWS RD
WOLCOTT, CT 06716

SHEET TITLE
ELEVATION

SHEET NUMBER
A-2

NOTE:

AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY TEP NORTHEAST
DATED: MAY 20, 2024

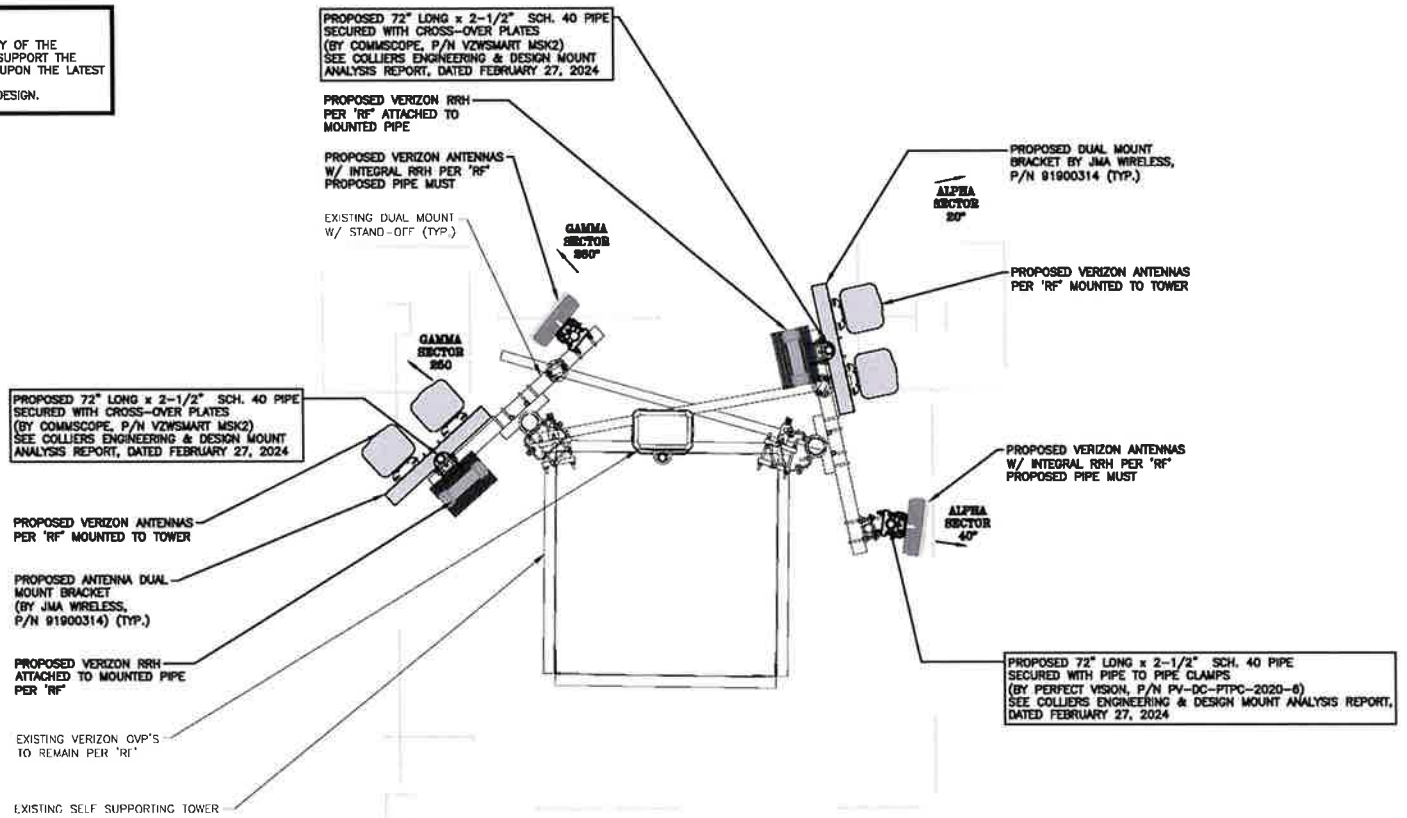
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING IS BASED UPON THE LATEST MOUNT ANALYSIS
BY COLLIERS ENGINEERING & DESIGN.

NOTE:

PROPOSED MT6413-77A ANTENNA SIZE AND WEIGHT ARE NOT TO EXCEED:

DIMENSIONS H28.90"xW15.75"xD5.51"
WEIGHT (INCLUDING INTEGRATED RRH) 57.3 LBS



ANTENNA PLAN (1 / A-3)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

GRAPHIC SCALE
0 8" 1'-4" 2'-8" 4'-0"

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizon

TEP NORTHEAST

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED
PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE UNLESS NOTED.

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	09/19/24	ISSUED FOR CONSTRUCTION	ASD

SITE NAME:
WOLCOTT NW CT

SITE ADDRESS:
107 ANDREWS RD
WOLCOTT, CT 06716

SHEET TITLE
ANTENNA PLAN

SHEET NUMBER
A-3

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

TEP NORTHEAST

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED
PROFESSIONAL ENGINEER

CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE UNLESS NOTED.

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	05/29/24	ISSUED FOR CONSTRUCTION	JKD

SITE NAME:
WOLCOTT NW CT

SITE ADDRESS:
107 ANDREWS RD
WOLCOTT, CT 06716

SHEET TITLE
STRUCTURAL NOTES & SPECIAL INSPECTIONS

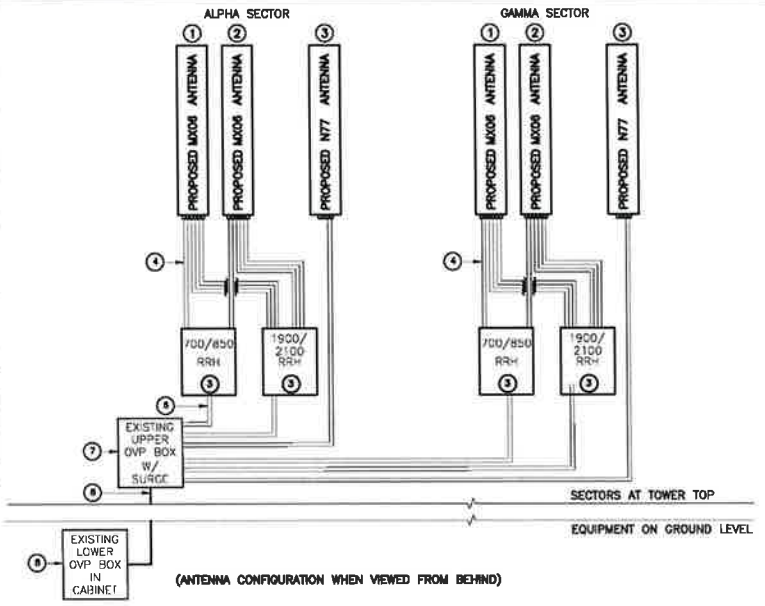
SHEET NUMBER
SN-1

BILL OF MATERIALS

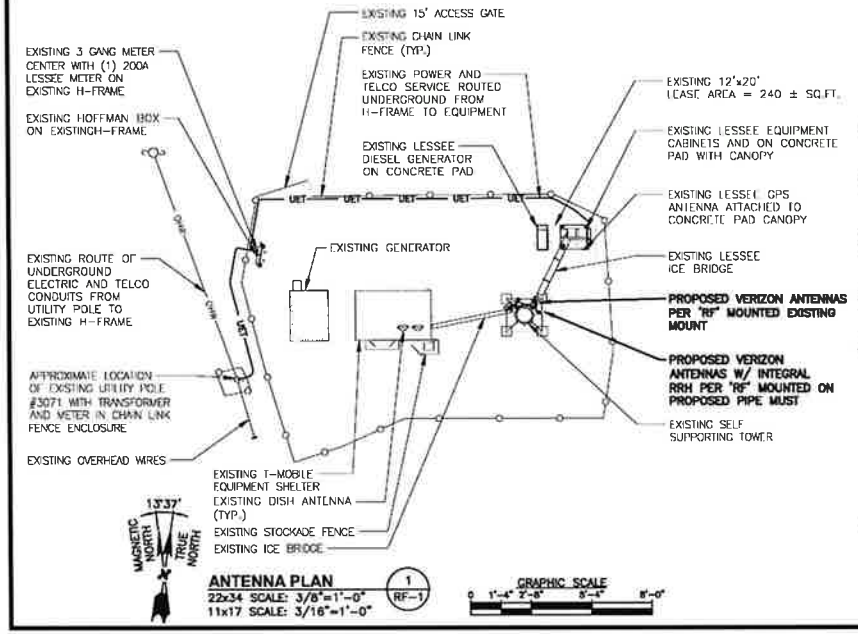
SITE NAME: WOLCOTT NW CT

ITEM	DESCRIPTION	QTY	LENGTH	COMMENTS
①	**PROPOSED MX06FIT665-02 ANTENNA**	**2**		**MOUNTED TO EXISTING SECTOR FRAME**
②	**PROPOSED MX06FIT665-02 ANTENNA**	**2**		**MOUNTED TO EXISTING SECTOR FRAME**
③	**PROPOSED MT6413-77A ANTENNA WITH INTEGRAL RRH**	**2**		**MOUNTED TO EXISTING SECTOR FRAME**
④	EXISTING 1/2" TOP COAX JUMPER	24	6 FT.	ROUTE FROM RRH TO ANTENNA SECTOR
⑤	**PROPOSED RF4461D-13A RRH**	**2**		**SAMSUNG RF4461D-13A MOUNTED ON EXISTING PIPE MAST**
⑤	**PROPOSED B2/B66A RRH ORAN**	**2**		**SAMSUNG RF4439d-25A MOUNTED ON EXISTING PIPE MAST**
⑥	EXISTING SAMSUNG POWER JUMPERS	2	15 FT.	ROUTE FROM OVP TO RRH
⑥	EXISTING SAMSUNG FIBER JUMPERS	2	15 FT.	ROUTE FROM OVP TO RRH
⑥	**PROPOSED SAMSUNG POWER JUMPERS**	**2**		**ROUTE FROM OVP TO RRH**
⑥	**PROPOSED SAMSUNG FIBER JUMPERS**	**2**		**ROUTE FROM OVP TO RRH**
⑦	EXISTING UPPER OVP BOX	1		MOUNTED TO PIPE MAST
⑧	EXISTING HYBRID MAIN CABLE	1		ROUTE FROM EQUIPMENT AT GROUND LEVEL TO OVP AT ANTENNA LEVEL
⑨	EXISTING LOWER OVP	1		RACK MOUNTED INSIDE CABINET

THE ABOVE RF-BOM SHEET IS BASED ON INFORMATION LISTED ON ANTENNA RECOMMENDATION SHEET DATED 01/26/24

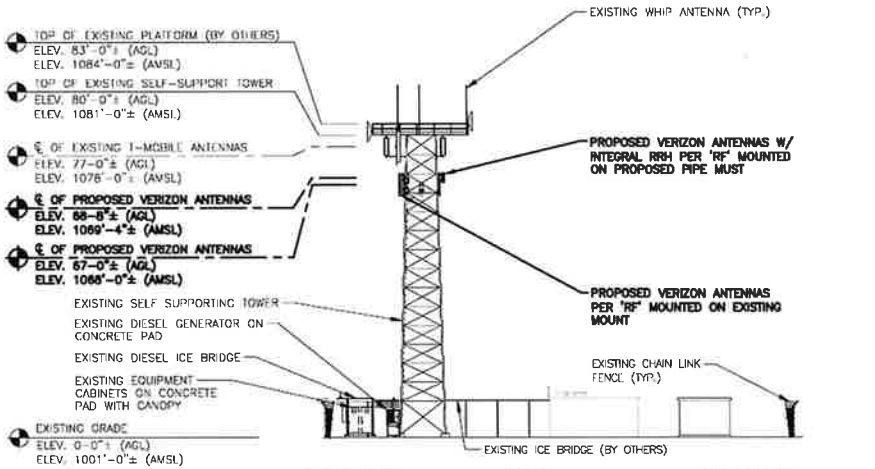


(ANTENNA CONFIGURATION WHEN VIEWED FROM BEHIND)



ANTENNA PLAN (1 / RF-1)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

GRAPHIC SCALE 0 1'-4" 2'-8" 5'-4" 8'-0"



ELEVATION (2 / RF-1)
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0"

GRAPHIC SCALE 0 8 16 32 48 FEET

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

TEP NORTHEAST

45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	05/23/24	BILL OF MATERIAL	ASD

SITE NAME:
WOLCOTT NW CT

SITE ADDRESS:
107 ANDREWS RD
WOLCOTT, CT 06716

SHEET TITLE
RF PLUMBING DIAGRAM & BILL OF MATERIAL

SHEET NUMBER
RF-1

C-band 64T64R

SAMSUNG

Gen 2

Gen 2 : Higher conducted power radio with reduced size/volume/weight vs Gen 1 and also SOC embedded for flexibility to support new features

※ Preliminary Design: External appearance and mechanical design can be subject to change

Gen 2. 64T64R C-band MMU Dimensions	
Size (WxHxD)	**400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)**
Weight	**26kg (57.3 lb)**

Item	Gen 2 64T64R (MT6413-77A)
Air Technology	NR n77/TDD
Frequency	3700 – 3980 MHz
IBW	200 MHz
OBW	200 MHz
Carrier Bandwidth	20(HW ready)/40/60/80/100 MHz
# of Carriers	2 carriers
Layer	DL : 16L, UL : 16RX (8L)
RF Chain	64T64R
Antenna Configuration	4V16H with 192 AE
EIRP	80.5 dBm @320W (55 dBm + 25.5 dBi)
Conductive Power	320W
Spectrum Analyzer	TX/RX support
RX Sensitivity	Typical -97.8dBm @(1Rx, 18.36MHz with 30kHz,51RBs)
Modulation	DL 256QAM support, (DL 1024QAM with 1~2dB power back-off)
Function Split	DL/UL option 7-2x
Input Power	-48 VDC (-38 VDC to -57 VDC)
Power Consumption	1,287W (100% load, room temp.)
Size (WHD)	**400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)**
Volume	**41.1L**
Weight	**26kg (57.3 lb)**
Operating Temperature	-40℃ - 55℃ (w/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 38.104 FCC 47 CFR 27.53 : < -13dBm/MHz < -40 dBm/MHz @ above 4 GHz <-50 dBm /MHz @ 4,040 ~ 4,050 MHz, <-60 dBm /MHz @ above 4,050 MHz
Optic Interface	15km, 4 ports (25Gbps x 4), SFP28, single mode, Bi-di (Option: Duplex)
Mounting Options	Pole, wall
NB-IoT	Not support
External Alarm	4RX
Fronthaul Interface	eCPRI

Product Specifications

MX06FIT665-02

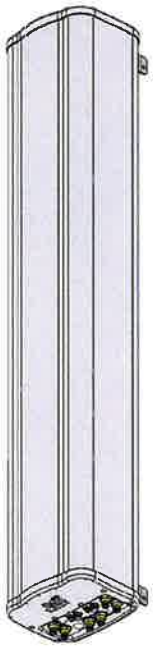
NWAV™ X-Pol Antenna | Hex-Port | 6 ft | 65°

JMA WIRELESS

X-Pol, Hex-Port 6 ft 65º Form In Tighter with Smart Bias T

(2) 698–894 MHz & (4) 1695–2180 MHz

- Excellent Passive Intermodulation (PIM) performance reduces harmful interference
- Fully integrated (iRETs) with *independent* RET control for low and high bands for ease of network optimization
- *SON-Ready* array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM Air interface technologies
- Integrated Smart BIAS-Ts reduces leasing costs
- Optimized width for reduced wind loading



nwav technology

Electrical Specification (Minimum/ Maximum)	Ports 1,2		Ports 3,4,5,6		
Frequency bands, MHz	698–798	824–894	1695–1880	1850–1990	1920–2180
Polarization	± 45º		± 45º		
Average gain over all tilts, dBi	14.4	14.8	17.8	18.1	18.2
Horizontal beamwidth (HBW), degrees[1]	66.0	57.0	63.0	63.0	58.0
Front-to-back ratio, co-polar power @180º± 30º, dB	>22	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>17.0	>15.6	>23	>18	>18
Sector power ratio, percent[1]	<5.0	<3.0	<4.6	<3.8	<5.0
Vertical beamwidth, (VBW), degrees[1]	13.5	12.0	6.0	5.5	5.4
Electrical downtilt (EDT) range, degrees	2-14	2-14	0-9		
First upper side lobe (USLS) suppression, dB[1]	≤ -17.0	≤ -16.0	≤ -17.0	≤ -16.0	≤ -16.0
Minimum cross-polar isolation, port-to-port, dB	25	25	25	25	25
Maximum VSWR/ return loss, dB	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0
Maximum passive Intermodulation (PIM), 2x 20W carrier, dBc	-153	-153	-153		
Maximum input power per any port, watts	300		250		
Total composite power all ports, watts	1500				

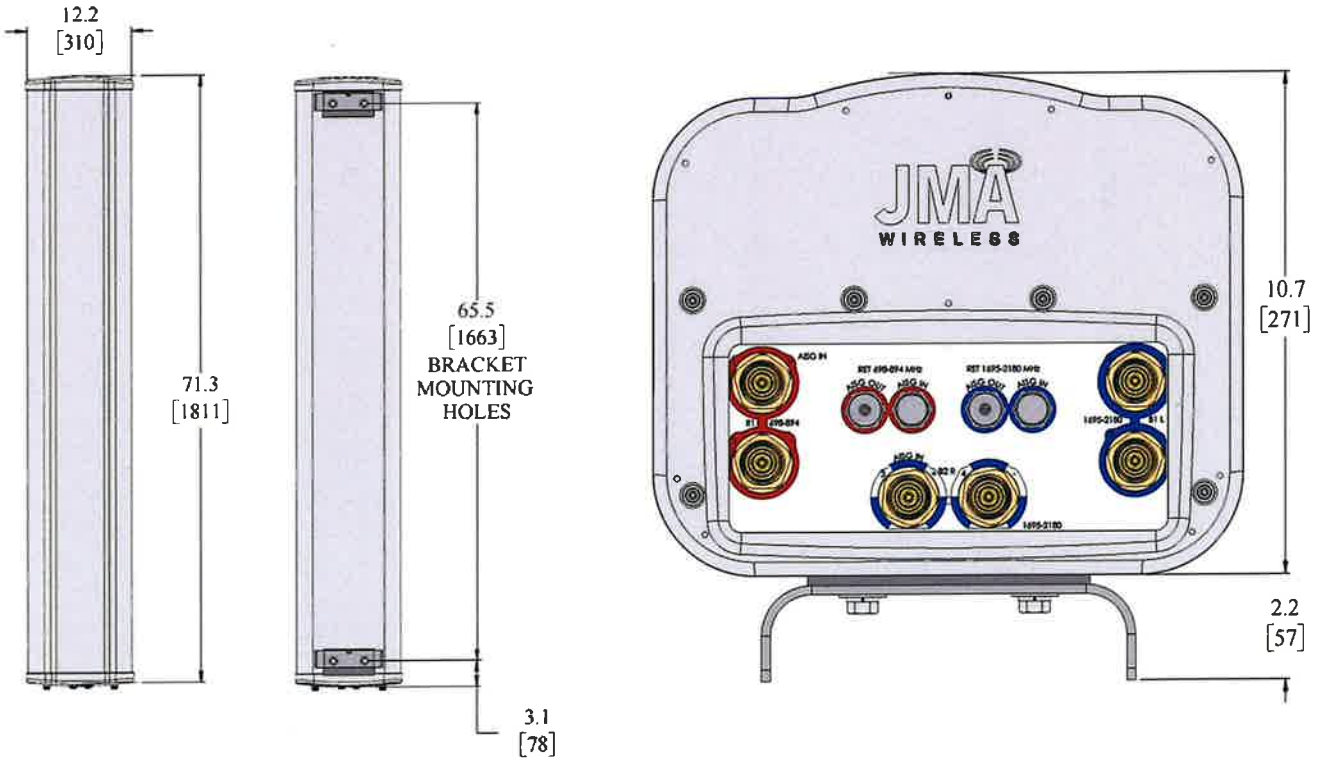
[1] Typical value over frequency and tilt

Product Specifications

MX06FIT665-02

NWAV™ X-Pol Antenna | Hex-Port | 6 ft | 65°

Mechanical Specifications	
Dimensions height/ width/ depth, inches (mm)	71.3/ 12.2/ 10.7 (1811/ 310/ 271)
Shipping dimensions length/ width/ height, inches (mm)	82/ 20/ 15 (2083/ 508/ 381)
No. of RF input ports, connector type & location	6 x 4.3-10 female, bottom
RF connector torque	96 in- lb (10.85 N-M or 8 ft-lbs)
Net antenna weight, lb (kg)	51 (23.18)
Shipping weight, lb (kg)	91 (41.36)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.18)
Range of mechanical up/ down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral & rear wind loading @ 150 km/h, lbf (N)	87 (386), 68 (301), 109 (485)
Equivalent flat plate @100 mph and Cd=2, sq. ft.	1.42



Ordering Information	
Antenna Model	**Description**
MX06FIT665-02	6F X- Pol HEX FIT 65° 2-14°/ 0-9° RET, 4.3-10 & SBT
Optional Accessories	
992100-CA030-SC	Optional AISG jumper cable, M/F, 3.0 meters
PCU-1000	Primary control unit, USB

MX06FIT665-02

NWAV™ X-Pol Antenna | Hex-Port | 6 ft | 65°

Remote Electrical Tilt (RET 1000) Information	
RET location	Integrated into antenna
RET interface connector type	8 Pin AISG connector per IEC 60130-9
RET interface connector quantity	2 pairs of AISG male/ female connectors
RET interface connector location	Bottom of the antenna
Total No. of internal RETs low bands	1
Total No. of internal RETs high bands	1
RET input operating voltage, vdc	10-30
RET max. power consumption, idle state, W	≤ 2.0
RET max. power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0/ 3GPP

RET & RF Connector Topology

Each RET device can be controlled either via the designated external AISG connector or RF port as shown below

RET Device	Band	RF Port
1	698-894	1-2

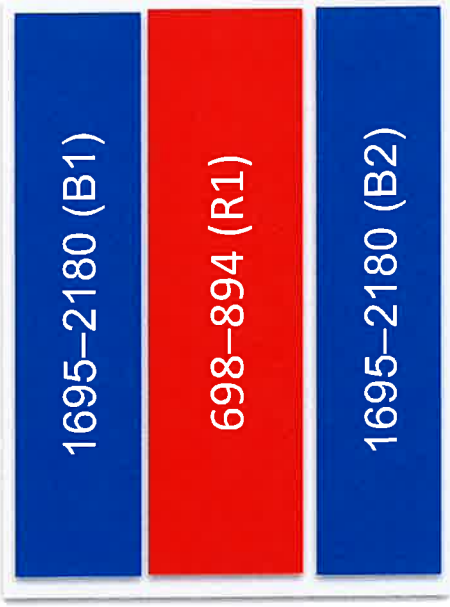
RET Device	Band	RF Port
2	1695–2180	3-6

Array Topology

3 sets of radiating arrays

R1 – 698–894MHz
B1 – 1695–2180MHz
B2 – 1695–2180MHz

Band	RF Port
1695–2180	3-4
698–894	1-2
1695–2180	5-6



700/850 4T4R Macro 320W ORU - New Filter (RF4461d-13A)

SAMSUNG

Specifications

Item	Specification	
Air Interface	LTE, NR(HW resource ready)	
Band	Band13 (700MHz)	Band5 (850MHz)
Frequency	DL: 746~756MHz	DL: 869~894MHz
	UL: 777~787MHz	UL: 824~849MHz
IBW	10MHz	25MHz
OBW	10MHz	25MHz
Carrier Bandwidth	LTE/NR 5*/10MHz	LTE 5/10MHz NR 5/10/15/20MHz
# of carriers	2C*	3C
Total # of carriers	4C + B13 (SDL) 1C	
RF Chain	4T4R/2T4R/2T2R/1T2R 2T2R+2T2R bi-sector	
RF Output Power	Total : 320W	
	4 x 40W or 2 x 60W	4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support	
RX Sensitivity	Typ. -104.5dBm @1Rx (25RBs 5MHz)	
Modulation	256QAM support, (1024QAM with 1~2dB power back-off)	
Input Power	-48VDC (-38VDC to -57VDC)	
Power Consumption	1,165 Watt @ 100% RF load, room temperature	
Size (WHD)	380 x 380 x 260 mm (14.96 x 14.96 x 10.23 inch)	
Volume	37.5 L	
Weight (W/o Solar Shield & finger guard)	35.9 kg (79.1 lb)	
Operating Temperature	-40℃ (-40°F) ~ 55℃ (131°F) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104	3GPP 36.104
	FCC 47 CFR 27.53 c), f)	FCC 47 CFR 22.917
	-	-69 dBm/100 kHz per path @ 896 ~901MHz
CPRI Cascade	Not supported	
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP+, single mode, Duplex (Option: Bi-di)	
RET & TMA Interface	AISG 3.0	
Bias-T	4 ports (2 ports per band)	
Mounting Options	Pole, wall	
NB-IoT	2GB+2IB or 4IB	2SA+2GB or 2GB+2IB or 4GB
PIM Cancellation	Support	
# of antenna port	4	
External Alarm	4	
Fronthaul Interface	Opt. 8 CPRI / Opt. 7-2x selectable (not simultaneous support)	
CPRI compression	Not Support	

* 5MHz supporting in B13(700MHz) depends on 3GPP std. and UE capability. External filters in interferer and victim sides for Mexican boarder to support 5MHz service need to be considered
** Finger guard is not needed.

SAMSUNG

AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code	RF4439d-25A

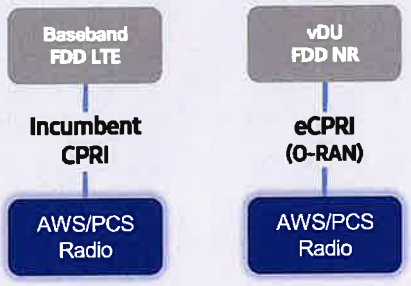
Homepage
samsungnetworks.com

Youtube
www.youtube.com/samsung5g

Points of Differentiation

Continuous Migration

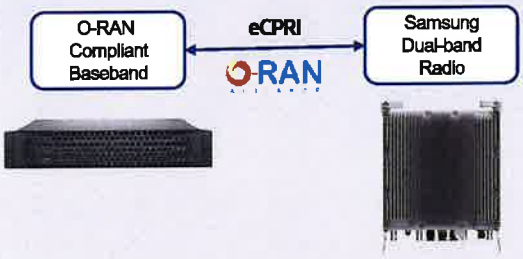
Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



O-RAN Compliant

A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

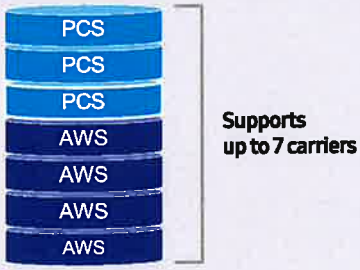
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



Optimum Spectrum Utilization

The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.

- **2 FH connectivity**
- **O-RAN capability**
- **More carriers and spectrum**

Same as an incumbent radio volume

Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/ Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb

ATTACHMENT 3

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

verizon

Wolcott NW

107 Andrews Road, Wolcott, CT

June 21, 2024

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of Verizon's antenna arrays mounted at 67' on an existing lattice tower located at 107 Andrews Road in Wolcott, CT. The coordinates of the tower are 41° 37' 3.65" N, 73° 00' 16.22" W.

Verizon is proposing the following:

1) Install six (6) multi-band antennas, three (3) per sector to support its commercial LTE and 5G network.

This report considers the planned antenna configuration for Verizon[1] as well as existing antenna configuration for T-Mobile[2] and two dipole antennas[3] to derive the resulting % MPE of its proposed modification.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to Verizon's Radio Frequency Design Sheet updated 01/26/2024.

[2] As referenced to T-Mobile's Connecticut Siting Council Notice of Exempt Modification – Andrews Road, Wolcott, Connecticut, dated 07/10/2022.

[3] As referenced to TEP Northeast's Structural Analysis Report, dated 5/20/2024

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{\text{GRF}^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2}\right) \text{X Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor (GRF) of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Antenna Inventory

Table 1 below outlines Verizon's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Azimuth	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 20°	700	160	14.4	4407	MX06FIT665-02	66	0	6	67
		850	160	14.8	4832		57			
		1900	160	18.1	10330		63			
		2100	240	18.2	15857		58			
	Alpha / 40°	3700	320	25.5	113540	MT6413-77A	-	0	2.46	67
	Beta / 260°	700	160	14.4	4407	MX06FIT665-02	66	0	6	67
		850	160	14.8	4832		57			
		1900	160	18.1	10330		63			
		2100	240	18.2	15857		58			
	Beta / 250°	3700	320	25.5	113540	MT6413-77A	-	0	2.46	67

Table 1: Proposed Antenna Inventory[4,5]

[4] Antenna heights are in referenced to Verizon's Radio Frequency Design Sheet updated 01/26/2024.

[5] Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

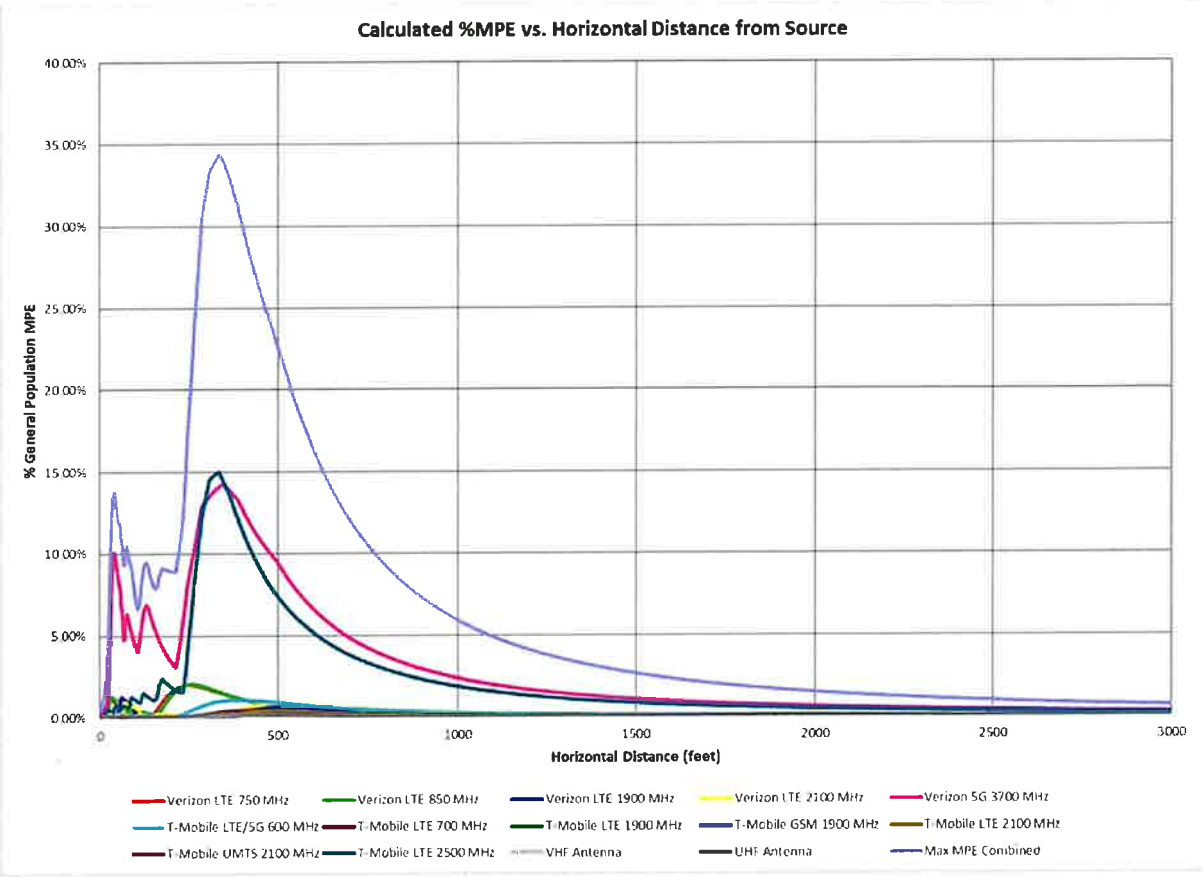


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (34.39% of the General Population limit) is calculated to occur at a horizontal distance of 334 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 334 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
T-Mobile GSM 1900 MHz	1	120.0	77.0	334	0.000895	1.000	0.09%
T-Mobile LTE 1900 MHz	1	120.0	77.0	334	0.000895	1.000	0.09%
T-Mobile LTE 2100 MHz	1	120.0	77.0	334	0.000598	1.000	0.06%
T-Mobile LTE 2500 MHz	1	240.0	77.0	334	0.150121	1.000	15.01%
T-Mobile LTE 700 MHz	1	69.0	77.0	334	0.001506	0.467	0.32%
T-Mobile LTE/5G 600 MHz	1	140.0	77.0	334	0.003957	0.400	0.99%
T-Mobile UMTS 2100 MHz	1	60.0	77.0	334	0.000299	1.000	0.03%
UHF Antenna	1	100.0	80.0	334	0.000635	0.300	0.21%
Verizon 5G 3700 MHz	1	320.0	67.0	334	0.141057	1.000	14.11%
Verizon LTE 1900 MHz	1	160.0	67.0	334	0.000990	1.000	0.10%
Verizon LTE 2100 MHz	1	240.0	67.0	334	0.001243	1.000	0.12%
Verizon LTE 750 MHz	1	160.0	67.0	334	0.007698	0.500	1.54%
Verizon LTE 850 MHz	1	160.0	67.0	334	0.008910	0.567	1.57%
VHF Antenna	1	100.0	80.0	334	0.000281	0.200	0.14%
						Total	**34.39%**

Table 2: Maximum Percent of General Population Exposure Values[6,7,8,9]

[6] Frequencies listed are representative of the operating band and are not the specific operating frequency.

[7] The total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[8] In the case where antenna pattern data was unavailable from the manufacturer, generic antenna pattern was used based on the frequency, bandwidth and gain of the antenna.

[9] Reasonable assumptions for the frequency and power was used in the calculation for absolute worst case %MPE for the two dipole antennas (VHF and UHF).

6. Conclusion

The above analysis verifies that RF exposure levels from the site with Verizon's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **34.39%** of the FCC limit (General Population/Uncontrolled). This maximum cumulative percent of MPE value is calculated to occur 334 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Report Prepared By: Ram Acharya
RF Engineer
C Squared Systems, LLC

June 20, 2024
Date

Reviewed/Approved By: Martin Lavin
Senior RF Engineer
C Squared Systems, LLC

June 21, 2024
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2019, IEEE Standard Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2021, IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[10]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[11]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $|E|^2$, $|H|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

[10] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[11] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

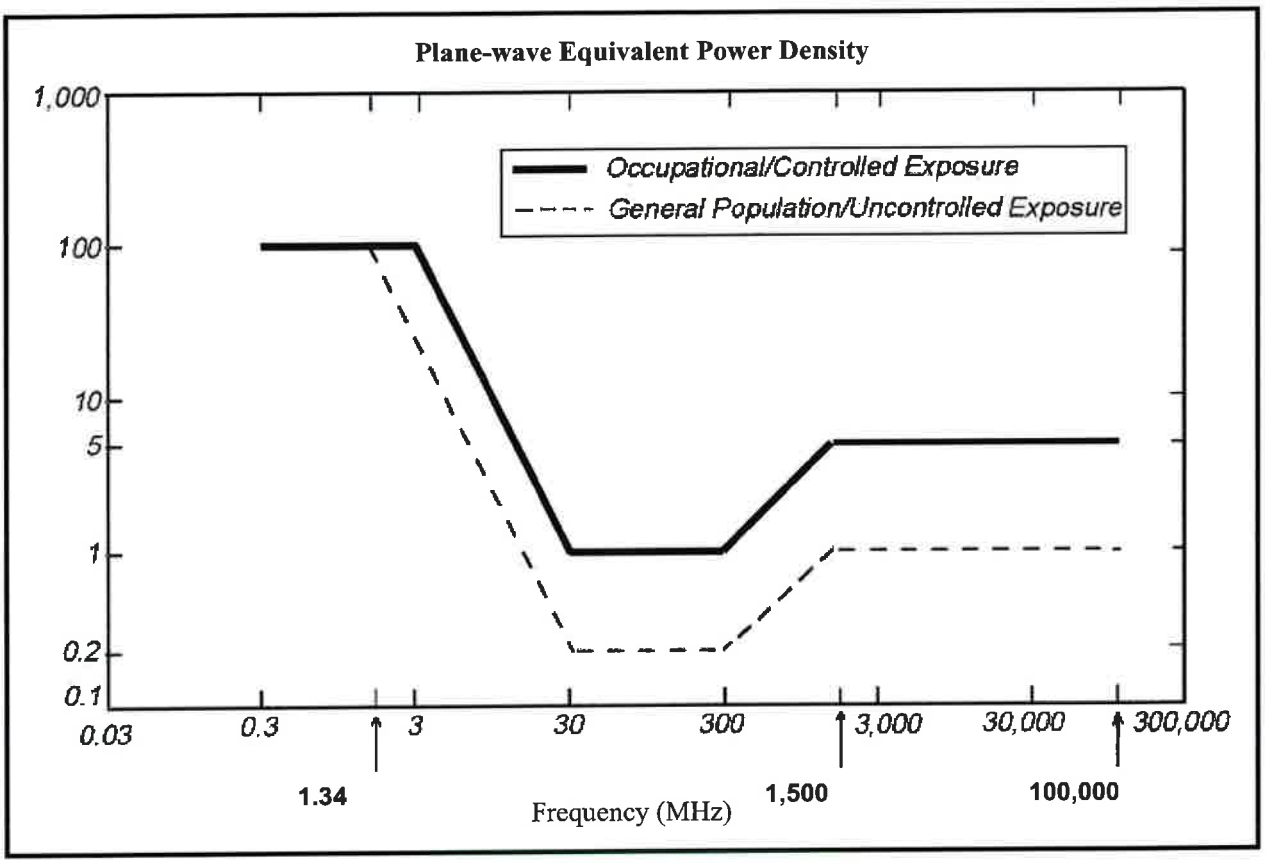
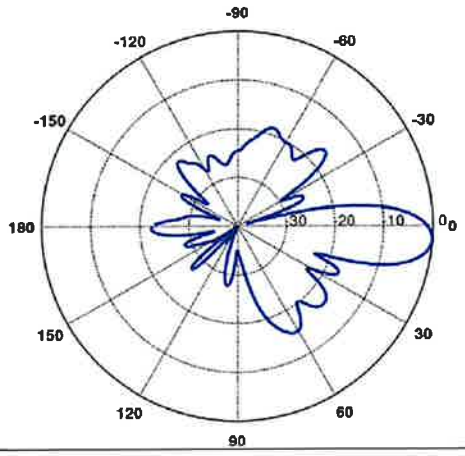


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Verizon Antenna Model Data Sheets and Electrical Patterns

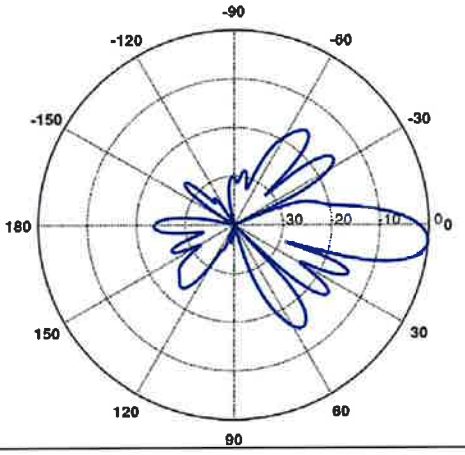
750 MHz

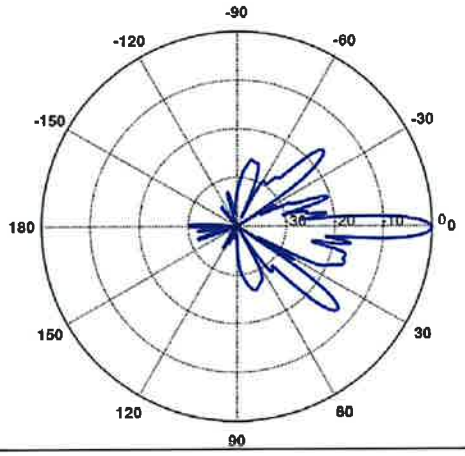
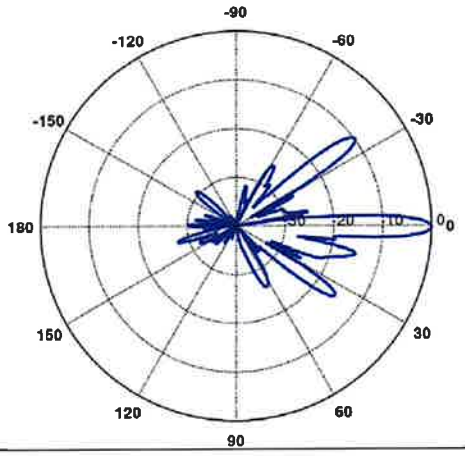
Manufacturer:	JMA
Model #:	MX06FIT665-02
Frequency Band:	698-806 MHz
Gain:	14.4 dBi
Vertical Beamwidth:	13.4°
Horizontal Beamwidth:	66°
Polarization:	±45°
Dimensions (L x W x D):	71.3" x 12.2" x 10.7"



850 MHz

Manufacturer:	JMA
Model #:	MX06FIT665-02
Frequency Band:	806-894 MHz
Gain:	14.8 dBi
Vertical Beamwidth:	12°
Horizontal Beamwidth:	57°
Polarization:	±45°
Dimensions (L x W x D):	71.3" x 12.2" x 10.7"



1900 MHz Manufacturer: JMA Model #: MX06FIT665-02 Frequency Band: 1850-1990 MHz Gain: 18.1 dBi Vertical Beamwidth: 18.1° Horizontal Beamwidth: 63° Polarization: ±45° Dimensions (L x W x D): 71.3" x 12.2" x 10.7"	
2100 MHz Manufacturer: JMA Model #: MX06FIT665-02 Frequency Band: 1920-2200 MHz Gain: 18.2 dBi Vertical Beamwidth: 5.4° Horizontal Beamwidth: 58° Polarization: ±45° Dimensions (L x W x D): 71.3" x 12.2" x 10.7"	

ATTACHMENT 4

STRUCTURAL ANALYSIS REPORT

For

VERIZON SITE NAME: WOLCOTT NW CT

TEP PROJECT NUMBER: 263231.924790

107 Andrews Road
Wolcott, CT 06716

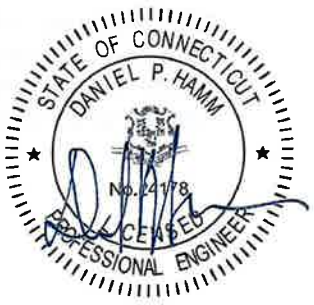
Antennas Mounted on the Tower

Prepared for:

verizon

51 Alder Street
Medway, MA 02053

Dated: May 20, 2024



Prepared by:

TEP NORTHEAST

(TEP OPCO, LLC)
45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553
www.tepgroup.net

SCOPE OF WORK:

TEP Northeast (TEP NE) has been authorized by Verizon to conduct a structural evaluation of the 80' self-supporting tower supporting the proposed Verizon antennas located at elevations 67.0' and 68.8' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of Verizon's existing and proposed equipment listed below.

The following documents were used for our reference:

- Foundation Mapping Report prepared by FDH dated June 25, 2013.
- Geotechnical Report prepared by Armor Tower Engineering dated December 5, 2017.
- Previous Tower Structural Analysis Report prepared by Armor Tower Engineering dated September 6, 2023.
- Mount Structural Analysis Report prepared by Colliers Engineering & Design dated February 27, 2024.
- Tower Mapping Report prepared by TEP Northeast dated May 6, 2024.

TOWER SUMMARY:

Based on our evaluation, we have determined that the existing tower **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The tower structure is rated at **74.6 %** - (Bolts at Tower Legs at Tower Section T8 from EL.11' to EL.21' Controlling).

FOUNDATION SUMMARY:

Based on our evaluation, we have determined that the existing foundation **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The foundation is rated at **44.7 %** - (Bearing Controlling).

- **Reinforcing bar information was not available at the time of our analysis. In lieu of original foundation design documentation, TEP NE has assumed a minimum volume of steel reinforcement present in the mat, based on similar structures, and assumes that the volume present meets or exceeds our assumptions.**

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	(2) 20' Dipoles (Dead)	95.8'	Pipe Mast
	(1) Tower Top Platform	80.0'	Tower Top
	(3) 4460 RRH's	78.3'	Pipe Mast
	(3) 4480 RRH's	78.3'	Pipe Mast
	(3) VV-65A-R1 Antennas	77.3'	Pipe Mast
	(3) AIR6449 B41 Antennas	77.0'	Pipe Mast
	(3) APXVAARR24 Antennas	75.5'	Pipe Mast
Verizon	***(2) MT6413-77A Antennas w/ RRH's***	68.8'	Tower Leg
Verizon	***(4) MX06FIT665-02 Antennas***	67.0'	Dual Mount
Verizon	***(2) RF4439d-25A RRH's***	67.0'	Dual Mount
Verizon	***(2) RF4461d-13A RRH's***	67.0'	Dual Mount
	(1) OVP Box	67.0'	Tower Face

Proposed Verizon Appurtenances shown in Bold.

VERIZON EXISTING/PROPOSED COAX CABLES:

Tenant	Appurtenances	Elev.	Mount
Verizon	**(1) 12x24 Hybrid Cable**	**67.0'**	**Tower Face**

Proposed Verizon Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Leg	**74.6%**	11.0 – 21.0	**PASS**	**Controlling**
Diagonal	65.5%	41.0 – 50.5	PASS	
Horizontal	7.2%	1.0 – 11.0	PASS	
Top Girt	18.8%	1.0 – 11.0	PASS	
Inner Bracing	0.5%	11.0 – 21.0	PASS	
Bolt Checks	**74.6%**	11.0 – 21.0	**PASS**	**Controlling**
Anchor Rods	29.1%	0.0	PASS	

FOUNDATION RESULTS SUMMARY:

Component	Max. Stress Ratio	Pass/Fail	Comments
Bearing	**44.7%**	**PASS**	**Controlling**
Overturning	42.1%	PASS	
Shear	12.7%	PASS	
Reinforcing [1]	38.4%	PASS	

[1] See reinforcing bar disclaimer on page 2.

DESIGN CRITERIA:

1. This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, and the International Building Code 2021 with 2022 Connecticut State Building Code.

   County: New Haven
   Ultimate Wind Speed: 120 mph
   Risk Category: II
   Exposure Category: B
   Topographic Category: 1
   Nominal Ice Thickness: 1.00 inch

1. Approximate height above grade to proposed antennas: 67.0' and 68.8'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.

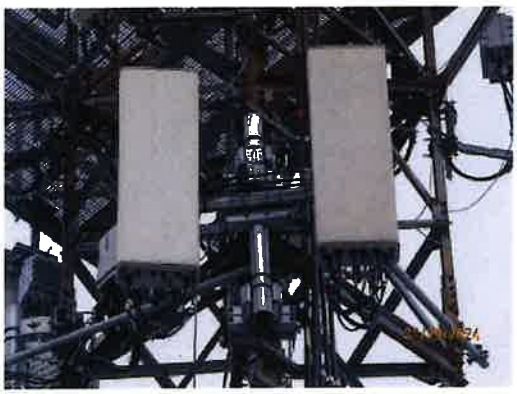
2. The tower and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

3. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

SUPPORT RECOMMENDATIONS:

TEP NE recommends that the proposed antennas and RRH's be mounted on the existing T-frames supported by the tower.

FIELD PHOTOS:



TEP NORTHEAST

CALCULATIONS

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x3/16		

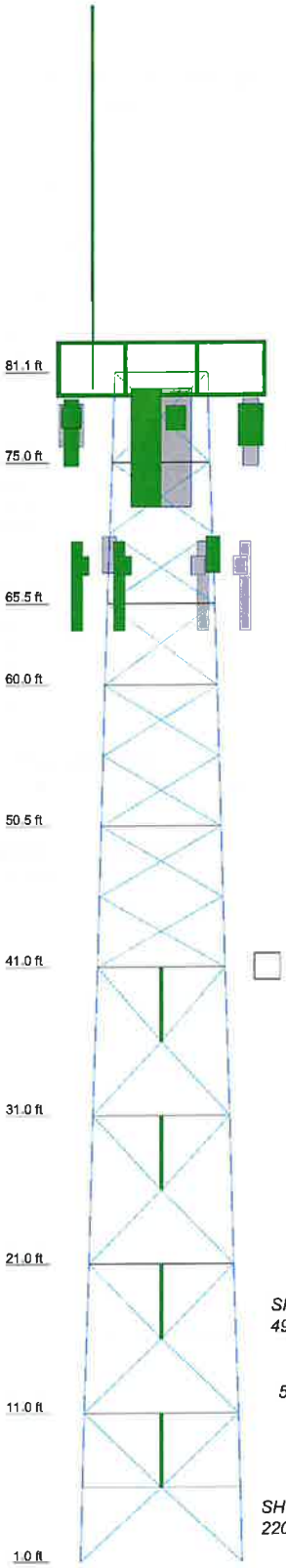
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 120.0 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50.0 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60.0 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 74.6%

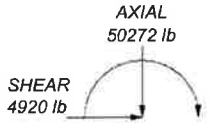
Section	19	18	17	16	15	14	13	12	11
Legs	L6x6x5/8		L6x6x1/2			L5x5x1/2		L4x4x3/8	
Leg Grade	A36								
Diagonals	L3x3x5/16		L3x3x1/4			L2x2 1/2x1/4		L2 1/2x2 1/2x1/4	A
Diagonal Grade	A36								
Top Girts	L2 1/2x2 1/2x1/4			L2 1/2x2 1/2x3/16		L2x2 1/2x1/4	C7x9.8	L2 1/2x2 1/2x1/4	C8x11.5
Horizontals	L2x2 1/2x1/4			L2x2 1/2x3/16		N.A.			
Inner Bracing	L3x3x3/16					L2 1/2x2 1/2x3/16			
Face Width (ft)	10.83	10.253	9.67602	9.09903	8.52204	7.97369	7.42575	7.10841	6.56027	6.2083
# Panels @ (ft)		8 @ 5				4 @ 4.75		1 @ 5.5	2 @ 4.75	1 @ 6.1
Weight (lb)	13572.0	2996.3	2997.2	1856.5	1353.7	1338.7	1255.1	964.8	1048.6	791.9



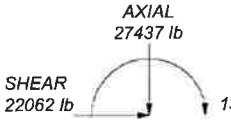
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 93258 lb
SHEAR: 11409 lb

UPLIFT: -80956 lb
SHEAR: 9941 lb



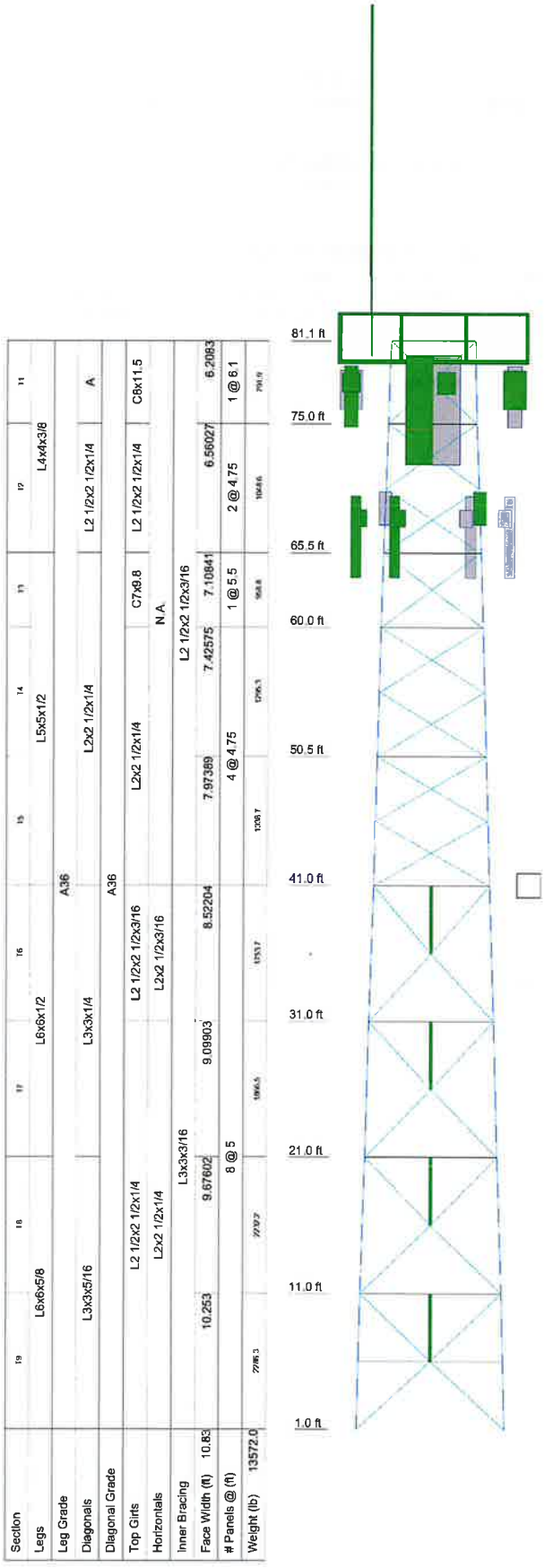
TORQUE 4314 lb-ft
50.0 mph WIND - 1.0000 in ICE



TORQUE 18984 lb-ft
REACTIONS - 120.0 mph WIND

TEP Northeast
45 Beechwood Drive
North Andover, MA
Phone: (978) 557-5553
FAX:

Job: **WOLCOTT NW CT**			
Project: **80'-0" Self-Support Tower**			
Client: Verizon	Drawn by: CL	App'd:	
Code: TIA-222-H	Date: 05/20/24	Scale: NTS	
Path: C:\Users\cleavitt\TOWER\Desktop\TNXW\wolcott NW CT - Existing Tower (Rev 0).eat		Dwg No. E-1	



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Top Platform - Wolcott NW	80	Dual Mount - Wolcott NW CT	67.33
20' Dipole Antenna	80	MX06FIT665-02 Antenna w/ Mounting Pipe	67
Empty Pipe Mast (8'-0")	80	MX06FIT665-02 Antenna w/ Mounting Pipe	67
20' Dipole Antenna	80	MX06FIT665-02 Antenna w/ Mounting Pipe	67
Empty Pipe Mast (6'-0")	80	MX06FIT665-02 Antenna w/ Mounting Pipe	67
VV-65A-R1 Antenna w/ Mounting Pipe	80	RF4439d-25A RRH	67
VV-65A-R1 Antenna w/ Mounting Pipe	80	RF4439d-25A RRH	67
VV-65A-R1 Antenna w/ Mounting Pipe	80	RF4461d-13A RRH	67
APXVAARR24_43-C-NA20 Antenna w/ Mounting Pipe	80	RF4461d-13A RRH	67
APXVAARR24_43-C-NA20 Antenna w/ Mounting Pipe	80	OVP	67
APXVAARR24_43-C-NA20 Antenna w/ Mounting Pipe	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	37.5
AIR6449 B41 Antenna w/ Mounting Pipe	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	37.5
AIR6449 B41 Antenna w/ Mounting Pipe	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	37.5
AIR6449 B41 Antenna w/ Mounting Pipe	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	37.5
4460 B25+B66 RRH	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	27.5
4460 B25+B66 RRH	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	27.5
4460 B25+B66 RRH	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	27.5
4460 B71+B85 RRH	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	27.5
4480 B71+B85 RRH	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	17.5
4480 B71+B85 RRH	80	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	17.5
MT6413-77A Antenna w/ Mounting Pipe	68.8	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	17.5
MT6413-77A Antenna w/ Mounting Pipe	68.8	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	17.5
Dual Mount - Wolcott NW CT	67.33	L2x2-1/2x1/4 Red. Vert. (5'-0" L)	7.5
		L2x2-1/2x1/4 Red. Vert. (5'-0" L)	7.5
		L2x2-1/2x1/4 Red. Vert. (5'-0" L)	7.5
		L2x2-1/2x1/4 Red. Vert. (5'-0" L)	7.5

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x3/16		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

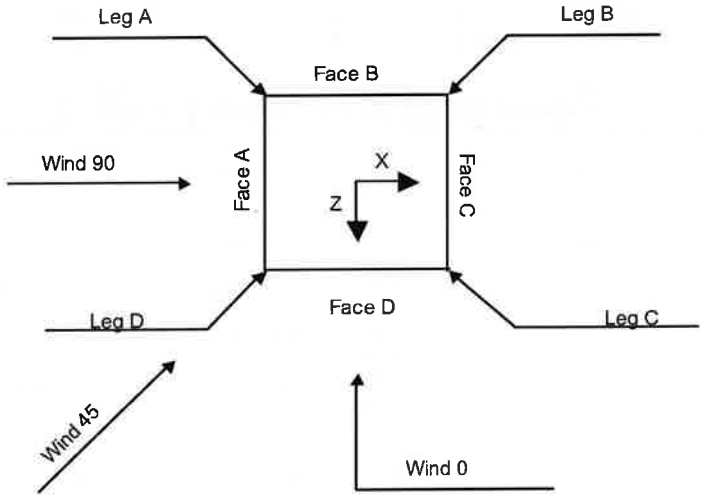
TEP Northeast
45 Beechwood Drive
North Andover, MA
Phone: (978) 557-5553
FAX:

Job: WOLCOTT NW CT			
Project: 80'-0" Self-Support Tower			
Client: Verizon	Drawn by: CL		App'd:
Code: TIA-222-H	Date: 05/20/24		Scale: NTS
Path: C:\Users\cleavitt.TOWER\Desktop\TNX\Wolcott NW CT - Existing Tower (Rev 0).eri			Dwg No. E-1

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 81.10 ft above the ground line.
The base of the tower is set at an elevation of 1.00 ft above the ground line.
The face width of the tower is 6.21 ft at the top and 10.83 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1. Tower base elevation above sea level: 1034.00 ft.
2. Basic wind speed of 120.0 mph.
3. Risk Category II.
4. Exposure Category B.
5. Simplified Topographic Factor Procedure for wind speed-up calculations is used.
6. Topographic Category: 1.
7. Crest Height: 0.00 ft.
8. Nominal ice thickness of 1.0000 in.
9. Ice thickness is considered to increase with height.
10. Ice density of 56.0 pcf.
11. A wind speed of 50.0 mph is used in combination with ice.
12. Temperature drop of 50.0 °F.
13. Deflections calculated using a wind speed of 60.0 mph.
14. A non-linear (P-delta) analysis was used.
15. Pressures are calculated at each section.
16. Stress ratio used in tower member design is 1.
17. Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Square Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	81.10-75.00			6.21	1	6.10
T2	75.00-65.50			6.56	1	9.50
T3	65.50-60.00			7.11	1	5.50
T4	60.00-50.50			7.43	1	9.50
T5	50.50-41.00			7.97	1	9.50
T6	41.00-31.00			8.52	1	10.00
T7	31.00-21.00			9.10	1	10.00
T8	21.00-11.00			9.68	1	10.00
T9	11.00-1.00			10.25	1	10.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	81.10-75.00	6.10	CX Brace	No	No	0.0000	0.0000
T2	75.00-65.50	4.75	CX Brace	No	No	0.0000	0.0000
T3	65.50-60.00	5.50	CX Brace	No	No	0.0000	0.0000
T4	60.00-50.50	4.75	CX Brace	No	No	0.0000	0.0000
T5	50.50-41.00	4.75	CX Brace	No	No	0.0000	0.0000
T6	41.00-31.00	5.00	Double K	No	Yes	0.0000	0.0000
T7	31.00-21.00	5.00	Double K	No	Yes	0.0000	0.0000
T8	21.00-11.00	5.00	Double K	No	Yes	0.0000	0.0000
T9	11.00-1.00	5.00	Double K	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 81.10-75.00	Equal Angle	L4x4x3/8	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T2 75.00-65.50	Equal Angle	L4x4x3/8	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T3 65.50-60.00	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)
T4 60.00-50.50	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)
T5 50.50-41.00	Equal Angle	L5x5x1/2	A36 (36 ksi)	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)
T6 41.00-31.00	Equal Angle	L6x6x1/2	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T7 31.00-21.00	Equal Angle	L6x6x1/2	A36 (36 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T8 21.00-11.00	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T9 11.00-1.00	Equal Angle	L6x6x5/8	A36 (36 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 81.10-75.00	Channel	C8x11.5	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 75.00-65.50	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 65.50-60.00	Channel	C7x9.8	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 60.00-50.50	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T5 50.50-41.00	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T6 41.00-31.00	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T7 31.00-21.00	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T8 21.00-11.00	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T9 11.00-1.00	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T6 41.00-31.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2 1/2x3/16	A36 (36 ksi)
T7 31.00-21.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)
T8 21.00-11.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)
T9 11.00-1.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2 1/2x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 81.10-75.00	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T2 75.00-65.50	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T3 65.50-60.00	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 60.00-50.50	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 50.50-41.00	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 41.00-31.00	Solid Round		A572-50	Single Angle	L3x3x3/16	A36

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T7 31.00-21.00	Solid Round		(50 ksi) A572-50 (50 ksi)	Single Angle	L3x3x3/16	(36 ksi) A36 (36 ksi)
T8 21.00-11.00	Solid Round		A572-50 (50 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)
T9 11.00-1.00	Solid Round		A572-50 (50 ksi)	Single Angle	L3x3x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 81.10-75.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 75.00-65.50	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 65.50-60.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 60.00-50.50	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 50.50-41.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 41.00-31.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 31.00-21.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 21.00-11.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 11.00-1.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Connection Offsets: Diagonal Vert. Top in	Diagonal Horiz. Top in	Diagonal Vert. Bot. in	Diagonal Horiz. Bot. in	K-Bracing Vert. Top in	K-Bracing Horiz. Top in	K-Bracing Vert. Bot. in	K-Bracing Horiz. Bot. in
T1 81.10-75.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T2 75.00-65.50	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T3 65.50-60.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T4 60.00-50.50	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T5 50.50-41.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T6 41.00-31.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T7 31.00-21.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T8 21.00-11.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T9 11.00-1.00	8.0000	0.0000	8.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 81.10-75.00	Sleeve SS	0.7500 A325N	4	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T2 75.00-65.50	Sleeve SS	0.7500 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T3 65.50-60.00	Sleeve SS	0.7500 A325N	10	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T4 60.00-50.50	Sleeve SS	0.7500 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T5 50.50-41.00	Sleeve SS	0.7500 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T6 41.00-31.00	Sleeve SS	0.7500 A325N	10	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T7 31.00-21.00	Sleeve SS	0.7500 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T8 21.00-11.00	Sleeve SS	0.7500 A325N	10	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0
T9 11.00-1.00	Sleeve SS	0.7500 A325N	0	0.7500 A325N	2	0.7500 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft²/ft	Weight plf
*****											
Hybrid Cable (1-1/4")	B	No	No	CaAa (In Face)	81.00 - 9.00	-0.5000	-0.45	5	No Ice 1/2" Ice 1" Ice	0.13 0.23 0.32	1.70 2.77 4.45
*****											
12X24 Hybrid Cable	B	No	No	CaAa (In Face)	81.00 - 9.00	-0.5000	-0.37	1	No Ice 1/2" Ice 1" Ice	0.16 0.26 0.36	3.20 4.50 6.41
*****											

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
*****										
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	A	From Face	0.00	0.0000	7.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	A	From Face	0.00	0.0000	17.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	A	From Face	0.00	0.0000	27.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	A	From Face	0.00	0.0000	37.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
*****										
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	B	From Face	0.00	0.0000	7.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	B	From Face	0.00	0.0000	17.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	B	From Face	0.00	0.0000	27.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	B	From Face	0.00	0.0000	37.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
*****										
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	C	From Face	0.00	0.0000	7.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	C	From Face	0.00	0.0000	17.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	C	From Face	0.00	0.0000	27.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	C	From Face	0.00	0.0000	37.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
*****										
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	D	From Face	0.00	0.0000	7.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	D	From Face	0.00	0.0000	17.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	D	From Face	0.00	0.0000	27.50	No Ice		2.05	1.67	18.10
			0.00			1/2" Ice		2.41	2.16	29.13
			1.00			1" Ice		2.78	2.53	44.54

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	D	From Face	0.00 0.00 1.00	0.0000	37.50	No Ice 1/2" Ice 1" Ice	2.05 2.41 2.78	1.67 2.16 2.53	18.10 29.13 44.54
*****									
Top Platform - Wolcott NW	D	From Face	0.00 0.00 1.25	0.0000	80.00	No Ice 1/2" Ice 1" Ice	353.84 392.53 431.23	297.42 336.16 374.89	5260.00 6838.00 8416.00
*****									
20' Dipole Antenna	A	From Leg	2.00 0.00 15.80	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.08	6.00 8.03 10.08	50.00 93.17 149.01
Empty Pipe Mast (8'-0")	A	From Leg	2.00 0.00 4.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	29.20 43.57 63.21
20' Dipole Antenna	D	From Leg	2.00 0.00 15.80	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.00 8.03 10.08	6.00 8.03 10.08	50.00 93.17 149.01
Empty Pipe Mast (8'-0")	D	From Leg	2.00 0.00 4.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	29.20 43.57 63.21
*****									
VV-65A-R1 Antenna w/ Mounting Pipe	A	From Face	2.50 6.00 -3.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.27 6.75 7.21	4.16 5.00 5.71	45.90 95.54 151.68
VV-65A-R1 Antenna w/ Mounting Pipe	B	From Face	2.50 6.00 -3.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.27 6.75 7.21	4.16 5.00 5.71	45.90 95.54 151.68
VV-65A-R1 Antenna w/ Mounting Pipe	D	From Face	2.50 6.00 -3.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.27 6.75 7.21	4.16 5.00 5.71	45.90 95.54 151.68
APXVAARR24_43-C-NA20 Antenna w/ Mounting Pipe	A	From Face	2.50 1.00 -4.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.79 12.21 13.49	157.20 290.89 435.20
APXVAARR24_43-C-NA20 Antenna w/ Mounting Pipe	B	From Face	2.50 1.00 -4.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.79 12.21 13.49	157.20 290.89 435.20
APXVAARR24_43-C-NA20 Antenna w/ Mounting Pipe	D	From Face	2.50 1.00 -4.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	20.24 20.89 21.55	10.79 12.21 13.49	157.20 290.89 435.20
AIR6449 B41 Antenna w/ Mounting Pipe	A	From Face	2.50 -6.00 -2.50	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.42 7.00 7.50	3.89 4.62 5.22	124.90 179.59 240.17
AIR6449 B41 Antenna w/ Mounting Pipe	B	From Face	2.50 -6.00 -2.50	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.42 7.00 7.50	3.89 4.62 5.22	124.90 179.59 240.17
AIR6449 B41 Antenna w/ Mounting Pipe	D	From Face	2.50 -6.00 -2.50	0.0000	80.00	No Ice 1/2" Ice 1" Ice	6.42 7.00 7.50	3.89 4.62 5.22	124.90 179.59 240.17
4460 B25+B66 RRH	A	From Face	1.50 6.00 -2.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	104.00 126.16 151.36
4460 B25+B66 RRH	B	From Face	1.50 6.00	0.0000	80.00	No Ice 1/2" Ice	2.14 2.32	1.69 1.85	104.00 126.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			-2.00			1" Ice	2.51	2.02	151.36
4460 B25+B66 RRH	D	From Face	1.50	0.0000	80.00	No Ice	2.14	1.69	104.00
			6.00			1/2" Ice	2.32	1.85	126.16
			-2.00			1" Ice	2.51	2.02	151.36
4480 B71+B85 RRH	A	From Face	1.50	0.0000	80.00	No Ice	2.42	1.20	93.00
			-1.00			1/2" Ice	2.61	1.35	112.12
			-2.00			1" Ice	2.81	1.51	134.14
4480 B71+B85 RRH	B	From Face	1.50	0.0000	80.00	No Ice	2.42	1.20	93.00
			-1.00			1/2" Ice	2.61	1.35	112.12
			-2.00			1" Ice	2.81	1.51	134.14
4480 B71+B85 RRH	D	From Face	1.50	0.0000	80.00	No Ice	2.42	1.20	93.00
			-1.00			1/2" Ice	2.61	1.35	112.12
			-2.00			1" Ice	2.81	1.51	134.14
*****									
Dual Mount - Wolcott NW CT	A	From Leg	0.50	0.0000	67.33	No Ice	7.67	6.21	175.70
			0.00			1/2" Ice	10.44	8.53	228.41
			0.00			1" Ice	13.30	10.94	281.12
Dual Mount - Wolcott NW CT	D	From Leg	0.50	0.0000	67.33	No Ice	7.67	6.21	175.70
			0.00			1/2" Ice	10.44	8.53	228.41
			0.00			1" Ice	13.30	10.94	281.12
*****									
MT6413-77A Antenna w/ Mounting Pipe	A	From Leg	0.00	45.0000	68.80	No Ice	3.92	2.04	68.95
			0.00			1/2" Ice	4.21	2.42	101.44
			0.00			1" Ice	4.51	2.81	138.46
MT6413-77A Antenna w/ Mounting Pipe	C	From Leg	0.00	45.0000	68.80	No Ice	3.92	2.04	68.95
			0.00			1/2" Ice	4.21	2.42	101.44
			0.00			1" Ice	4.51	2.81	138.46
MX06FIT665-02 Antenna w/ Mounting Pipe	B	From Leg	1.00	0.0000	67.00	No Ice	8.16	8.76	72.90
			-2.00			1/2" Ice	8.62	9.71	149.02
			-0.33			1" Ice	9.08	10.53	233.11
MX06FIT665-02 Antenna w/ Mounting Pipe	B	From Leg	1.00	0.0000	67.00	No Ice	8.16	8.76	72.90
			2.00			1/2" Ice	8.62	9.71	149.02
			-0.33			1" Ice	9.08	10.53	233.11
MX06FIT665-02 Antenna w/ Mounting Pipe	D	From Leg	1.00	0.0000	67.00	No Ice	8.16	8.76	72.90
			-2.00			1/2" Ice	8.62	9.71	149.02
			-0.33			1" Ice	9.08	10.53	233.11
MX06FIT665-02 Antenna w/ Mounting Pipe	D	From Leg	1.00	0.0000	67.00	No Ice	8.16	8.76	72.90
			2.00			1/2" Ice	8.62	9.71	149.02
			-0.33			1" Ice	9.08	10.53	233.11
RF4439d-25A RRH	B	From Leg	0.50	0.0000	67.00	No Ice	1.88	1.25	98.00
			-2.00			1/2" Ice	2.05	1.39	116.34
			1.00			1" Ice	2.22	1.54	137.47
RF4439d-25A RRH	D	From Leg	0.50	0.0000	67.00	No Ice	1.88	1.25	98.00
			-2.00			1/2" Ice	2.05	1.39	116.34
			1.00			1" Ice	2.22	1.54	137.47
RF4461d-13A RRH	B	From Leg	0.50	0.0000	67.00	No Ice	1.88	1.27	79.00
			2.00			1/2" Ice	2.05	1.42	97.54
			1.00			1" Ice	2.22	1.57	118.89
RF4461d-13A RRH	D	From Leg	0.50	0.0000	67.00	No Ice	1.88	1.27	79.00
			2.00			1/2" Ice	2.05	1.42	97.54
			1.00			1" Ice	2.22	1.57	118.89
OVP	C	From Face	0.00	0.0000	67.00	No Ice	3.78	2.51	32.00
			0.00			1/2" Ice	4.03	2.72	63.40

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
*****			0.00			1" Ice	4.29	2.94	98.56

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	5696.78					
Bracing Weight	7875.20					
Total Member Self-Weight	13571.98			12823.38	7715.08	
Total Weight	22864.28			12823.38	7715.08	
Wind 0 deg - No Ice		-0.90	-21538.66	-1301625.07	7746.53	-7349.76
Wind 45 deg - No Ice		14992.47	-16182.00	-956283.39	-867217.19	8199.62
Wind 90 deg - No Ice		19856.41	0.90	12854.83	-1173550.51	18945.78
Wind 135 deg - No Ice		14993.75	16183.28	981974.63	-867261.67	18593.76
Wind 180 deg - No Ice		0.90	21538.66	1327271.83	7683.63	7349.76
Wind 225 deg - No Ice		-14992.47	16182.00	981930.16	882647.35	-8199.62
Wind 270 deg - No Ice		-19856.41	-0.90	12791.93	1188980.66	-18945.78
Wind 315 deg - No Ice		-14993.75	-16183.28	-956327.87	882691.82	-18593.76
Member Ice	14117.36					
Total Weight Ice	45698.65			17967.57	17858.42	
Wind 0 deg - Ice		-5.45	-4711.67	-270907.51	18211.22	-2447.23
Wind 45 deg - Ice		3369.55	-3569.42	-195740.58	-179993.82	838.92
Wind 90 deg - Ice		4429.02	5.45	18320.38	-248593.02	3633.65
Wind 135 deg - Ice		3377.26	3577.13	232174.67	-180492.76	4299.83
Wind 180 deg - Ice		5.45	4711.67	306842.66	17505.62	2447.23
Wind 225 deg - Ice		-3369.55	3569.42	231675.73	215710.66	-838.92
Wind 270 deg - Ice		-4429.02	-5.45	17614.77	284309.86	-3633.65
Wind 315 deg - Ice		-3377.26	-3577.13	-196239.52	216209.60	-4299.83
Total Weight	22864.28			12823.38	7715.08	
Wind 0 deg - Service		-0.23	-5384.67	-312331.56	4732.72	-1837.44
Wind 45 deg - Service		3748.12	-4045.50	-225996.14	-214008.21	2049.91
Wind 90 deg - Service		4964.10	0.23	16288.41	-290591.54	4736.44
Wind 135 deg - Service		3748.44	4045.82	258568.36	-214019.33	4648.44
Wind 180 deg - Service		0.23	5384.67	344892.66	4717.00	1837.44
Wind 225 deg - Service		-3748.12	4045.50	258557.25	223457.93	-2049.91
Wind 270 deg - Service		-4964.10	-0.23	16272.69	300041.26	-4736.44
Wind 315 deg - Service		-3748.44	-4045.82	-226007.26	223469.05	-4648.44

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 45 deg - No Ice
5	0.9 Dead+1.0 Wind 45 deg - No Ice
6	1.2 Dead+1.0 Wind 90 deg - No Ice
7	0.9 Dead+1.0 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Wind 135 deg - No Ice
9	0.9 Dead+1.0 Wind 135 deg - No Ice
10	1.2 Dead+1.0 Wind 180 deg - No Ice
11	0.9 Dead+1.0 Wind 180 deg - No Ice
12	1.2 Dead+1.0 Wind 225 deg - No Ice
13	0.9 Dead+1.0 Wind 225 deg - No Ice
14	1.2 Dead+1.0 Wind 270 deg - No Ice
15	0.9 Dead+1.0 Wind 270 deg - No Ice
16	1.2 Dead+1.0 Wind 315 deg - No Ice
17	0.9 Dead+1.0 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	81.1 - 75	Leg	Max Tension	13	3256.60	-851.27	-399.05
			Max. Compression	12	-7382.70	510.98	834.46
			Max. Mx	14	1664.60	2202.47	-588.90
			Max. My	6	1713.21	-556.57	2217.34
			Max. Vy	14	3170.58	2202.47	-588.90
			Max. Vx	6	3193.20	-556.57	2217.34
		Diagonal	Max Tension	7	3631.88	0.00	0.00
			Max. Compression	6	-4201.85	0.00	0.00
			Max. Mx	23	-282.65	-62.61	0.00
			Max. My	23	-609.66	0.00	2.53
			Max. Vy	23	31.43	0.00	0.00
			Max. Vx	23	-1.27	0.00	0.00
		Top Girt	Max Tension	23	643.23	241.24	-0.55

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	11	-119.92	0.00	0.00
			Max. Mx	24	408.44	241.43	-0.46
			Max. My	25	428.52	241.22	-1.65
			Max. Vy	24	118.61	0.00	0.00
			Max. Vx	25	1.66	0.00	0.00
		Inner Bracing	Max Tension	14	0.97	0.00	0.00
			Max. Compression	14	-3.48	0.00	0.00
			Max. Mx	18	-0.88	-47.42	0.00
			Max. My	14	-0.33	0.00	0.05
			Max. Vy	18	-30.55	0.00	0.00
			Max. Vx	25	-0.05	0.00	0.00
T2	75 - 65.5	Leg	Max Tension	13	13571.35	1977.83	1036.58
			Max. Compression	12	-19012.90	808.59	1263.50
			Max. Mx	6	-9395.78	-4156.66	1127.84
			Max. My	14	-10054.26	1112.00	-4134.30
			Max. Vy	6	-1596.18	-4156.66	1127.84
			Max. Vx	14	-1586.37	1112.00	-4134.30
		Diagonal	Max Tension	6	5309.30	0.00	0.00
			Max. Compression	6	-5311.35	0.00	0.00
			Max. Mx	23	736.24	-74.01	0.00
			Max. My	25	69.63	0.00	-2.60
			Max. Vy	23	-38.13	0.00	0.00
			Max. Vx	25	1.34	0.00	0.00
		Top Girt	Max Tension	23	1118.15	0.00	0.00
			Max. Compression	11	-178.42	-55.96	2.71
			Max. Mx	23	654.60	-182.26	8.53
			Max. My	22	668.33	-182.12	8.58
			Max. Vy	23	73.50	0.00	0.00
			Max. Vx	22	-3.15	0.00	0.00
		Inner Bracing	Max Tension	4	4.66	0.00	0.00
			Max. Compression	4	-4.11	0.00	0.00
			Max. Mx	18	-0.00	-52.52	0.00
			Max. My	14	-0.01	0.00	0.06
			Max. Vy	18	-32.02	0.00	0.00
			Max. Vx	24	-0.05	0.00	0.00
T3	65.5 - 60	Leg	Max Tension	13	18580.77	2865.29	1671.82
			Max. Compression	12	-24458.00	1702.20	2318.19
			Max. Mx	14	8757.52	3887.29	-923.68
			Max. My	6	7913.58	-913.69	3919.11
			Max. Vy	6	-1293.45	-3815.87	1108.61
			Max. Vx	6	1301.21	-913.69	3919.11
		Diagonal	Max Tension	7	5314.86	0.00	0.00
			Max. Compression	6	-5700.26	0.00	0.00
			Max. Mx	23	246.93	-75.26	0.00
			Max. My	25	-444.71	0.00	-2.74
			Max. Vy	23	-35.93	0.00	0.00
			Max. Vx	25	1.31	0.00	0.00
		Top Girt	Max Tension	23	1154.40	0.00	0.00
			Max. Compression	11	-755.24	0.00	0.00
			Max. Mx	23	568.32	290.42	-1.32
			Max. My	23	568.32	290.42	-1.85
			Max. Vy	23	-121.90	0.00	0.00
			Max. Vx	23	1.60	0.00	0.00
		Inner Bracing	Max Tension	9	4.86	0.00	0.00
			Max. Compression	8	-7.07	0.00	0.00
			Max. Mx	18	-0.98	-61.13	0.00
			Max. My	14	-0.37	0.00	0.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vy	18	-34.40	0.00	0.00
			Max. Vx	8	-0.04	0.00	0.00
T4	60 - 50.5	Leg	Max Tension	13	29853.83	2404.27	1473.49
			Max. Compression	12	-36690.76	1571.17	2035.52
			Max. Mx	14	15870.45	3349.12	-827.40
			Max. My	6	15012.10	-816.03	3369.48
			Max. Vy	14	1395.18	3349.12	-827.40
			Max. Vx	6	1405.04	-816.03	3369.48
		Diagonal	Max Tension	6	5287.69	0.00	0.00
			Max. Compression	6	-5336.76	0.00	0.00
			Max. Mx	23	910.07	-82.08	0.00
			Max. My	25	31.71	0.00	-2.78
			Max. Vy	23	-38.40	0.00	0.00
			Max. Vx	25	-1.30	0.00	0.00
		Top Girt	Max Tension	23	1036.53	0.00	0.00
			Max. Compression	11	-625.75	-71.13	4.27
			Max. Mx	23	564.18	-218.62	13.65
			Max. My	23	564.18	-218.62	13.65
			Max. Vy	23	77.07	0.00	0.00
			Max. Vx	23	-4.21	0.00	0.00
		Inner Bracing	Max Tension	12	7.58	0.00	0.00
			Max. Compression	9	-6.08	0.00	0.00
			Max. Mx	18	0.81	-66.07	0.00
			Max. My	14	0.30	0.00	0.06
			Max. Vy	18	35.59	0.00	0.00
			Max. Vx	14	-0.03	0.00	0.00
T5	50.5 - 41	Leg	Max Tension	13	39943.20	2386.83	1653.53
			Max. Compression	12	-47585.76	1348.68	1572.45
			Max. Mx	6	-28086.86	-3337.27	645.43
			Max. My	14	-28944.67	645.30	-3313.85
			Max. Vy	6	-1419.92	-3337.27	645.43
			Max. Vx	14	-1408.16	645.30	-3313.85
		Diagonal	Max Tension	7	5239.46	0.00	0.00
			Max. Compression	6	-5343.43	0.00	0.00
			Max. Mx	23	1092.25	-91.79	0.00
			Max. My	25	113.60	0.00	-3.05
			Max. Vy	23	40.55	0.00	0.00
			Max. Vx	25	1.35	0.00	0.00
		Top Girt	Max Tension	10	743.16	0.00	0.00
			Max. Compression	11	-596.82	-82.41	4.70
			Max. Mx	23	174.95	-254.54	13.92
			Max. My	23	174.95	-254.54	13.92
			Max. Vy	23	83.12	0.00	0.00
			Max. Vx	23	-4.06	0.00	0.00
		Inner Bracing	Max Tension	12	8.35	0.00	0.00
			Max. Compression	13	-6.92	0.00	0.00
			Max. Mx	18	0.92	-75.11	0.00
			Max. My	14	0.33	0.00	0.06
			Max. Vy	18	-37.68	0.00	0.00
			Max. Vx	14	-0.03	0.00	0.00
T6	41 - 31	Leg	Max Tension	13	44677.33	545.34	348.41
			Max. Compression	12	-52007.51	165.76	211.12
			Max. Mx	14	25582.51	716.35	-116.46
			Max. My	6	24795.41	-116.81	733.38
			Max. Vy	14	136.29	716.35	-116.46
			Max. Vx	6	142.92	-116.81	733.38
		Diagonal	Max Tension	9	6233.94	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	16	-6996.94	0.00	0.00
			Max. Mx	23	237.54	-47.50	0.00
			Max. My	23	-34.29	0.00	2.05
			Max. Vy	23	28.10	0.00	0.00
			Max. Vx	23	-1.21	0.00	0.00
		Horizontal	Max Tension	14	138.68	7.82	-0.23
			Max. Compression	15	-147.83	5.85	-0.18
			Max. Mx	25	6.12	20.43	-0.65
			Max. My	23	-4.11	20.43	-0.66
			Max. Vy	25	-23.34	20.43	-0.65
			Max. Vx	23	0.70	20.43	-0.66
		Top Girt	Max Tension	10	2091.13	0.00	0.00
			Max. Compression	11	-1750.46	-109.28	3.60
			Max. Mx	23	-50.61	-324.47	10.33
			Max. My	23	-50.61	-324.47	10.33
			Max. Vy	23	-95.92	0.00	0.00
			Max. Vx	23	-3.01	0.00	0.00
		Inner Bracing	Max Tension	13	5.07	0.00	0.00
			Max. Compression	8	-11.61	0.00	0.00
			Max. Mx	18	-1.38	-105.98	0.00
			Max. My	14	-0.00	0.00	0.07
			Max. Vy	18	48.12	0.00	0.00
			Max. Vx	14	-0.03	0.00	0.00
T7	31 - 21	Leg	Max Tension	13	54410.19	-138.86	-149.12
			Max. Compression	12	-62841.97	229.23	265.25
			Max. Mx	10	-46982.32	-498.27	-87.69
			Max. My	10	-46147.98	-84.79	-491.82
			Max. Vy	8	158.97	-391.84	-394.51
			Max. Vx	16	158.52	-355.77	-417.60
		Diagonal	Max Tension	9	6218.02	0.00	0.00
			Max. Compression	16	-7077.71	0.00	0.00
			Max. Mx	23	345.39	-50.94	0.00
			Max. My	23	60.09	0.00	2.13
			Max. Vy	23	-29.28	0.00	0.00
			Max. Vx	23	1.22	0.00	0.00
		Horizontal	Max Tension	8	280.24	11.50	0.19
			Max. Compression	13	-309.25	9.12	-0.80
			Max. Mx	21	-4.22	25.22	-0.76
			Max. My	10	-152.92	12.16	-1.07
			Max. Vy	21	27.22	25.22	-0.76
			Max. Vx	23	0.81	25.17	-0.80
		Top Girt	Max Tension	10	4679.04	0.00	0.00
			Max. Compression	11	-3791.46	-150.61	5.30
			Max. Mx	23	-82.60	-374.15	12.79
			Max. My	23	-82.59	-374.15	12.94
			Max. Vy	23	-105.53	0.00	0.00
			Max. Vx	23	-3.53	0.00	0.00
		Inner Bracing	Max Tension	13	9.43	0.00	0.00
			Max. Compression	12	-16.19	0.00	0.00
			Max. Mx	18	-1.44	-117.61	0.00
			Max. My	14	0.00	0.00	0.06
			Max. Vy	18	50.11	0.00	0.00
			Max. Vx	14	-0.03	0.00	0.00
T8	21 - 11	Leg	Max Tension	13	64547.52	-178.41	-214.54
			Max. Compression	12	-74277.89	285.04	332.27
			Max. Mx	10	-54381.37	507.64	-50.76
			Max. My	10	-55267.15	-46.09	511.60

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vy	8	-186.44	-474.17	-483.69
			Max. Vx	12	-183.64	-490.75	-477.49
		Diagonal	Max Tension	9	5938.09	0.00	0.00
			Max. Compression	16	-6717.90	0.00	0.00
			Max. Mx	23	-218.94	-60.32	0.00
			Max. My	23	-716.89	0.00	2.44
			Max. Vy	23	33.69	0.00	0.00
			Max. Vx	23	-1.36	0.00	0.00
		Horizontal	Max Tension	8	332.36	12.40	0.12
			Max. Compression	13	-372.95	10.75	-0.79
			Max. Mx	23	-66.91	29.48	-0.99
			Max. My	10	-248.33	14.36	-1.05
			Max. Vy	23	-28.39	29.48	-0.99
			Max. Vx	25	0.85	29.42	-1.00
		Top Girt	Max Tension	10	4465.19	0.00	0.00
			Max. Compression	11	-3619.68	-173.65	5.84
			Max. Mx	23	396.16	-398.52	14.19
			Max. My	23	396.18	-398.51	14.29
			Max. Vy	23	-106.39	0.00	0.00
			Max. Vx	23	-3.65	0.00	0.00
		Inner Bracing	Max Tension	13	9.58	0.00	0.00
			Max. Compression	12	-17.20	0.00	0.00
			Max. Mx	18	-1.48	-128.20	0.00
			Max. My	14	0.00	0.00	0.04
			Max. Vy	18	51.46	0.00	0.00
			Max. Vx	14	-0.02	0.00	0.00
T9	11 - 1	Leg	Max Tension	13	72461.47	-230.09	-269.61
			Max. Compression	12	-83063.59	0.47	-0.47
			Max. Mx	10	-61253.39	-600.03	48.91
			Max. My	10	-60418.83	57.50	-601.46
			Max. Vy	12	176.72	-405.70	-358.56
			Max. Vx	16	175.63	-355.62	-395.45
		Diagonal	Max Tension	17	7094.73	0.00	0.00
			Max. Compression	8	-8241.98	0.00	0.00
			Max. Mx	22	2323.47	-62.41	0.00
			Max. My	19	3025.47	0.00	2.47
			Max. Vy	22	33.86	0.00	0.00
			Max. Vx	19	1.34	0.00	0.00
		Horizontal	Max Tension	10	283.37	15.23	-0.45
			Max. Compression	11	-318.83	11.41	-0.35
			Max. Mx	25	82.40	21.88	-0.17
			Max. My	10	-72.59	12.25	-1.06
			Max. Vy	25	-26.53	21.88	-0.17
			Max. Vx	25	0.73	20.59	-0.39
		Top Girt	Max Tension	10	5658.94	0.00	0.00
			Max. Compression	11	-4596.89	-219.56	7.34
			Max. Mx	23	-1904.72	-492.08	11.42
			Max. My	23	-1904.77	-492.08	11.48
			Max. Vy	23	-120.00	0.00	0.00
			Max. Vx	23	-2.93	0.00	0.00
		Inner Bracing	Max Tension	13	6.16	0.00	0.00
			Max. Compression	12	-14.55	0.00	0.00
			Max. Mx	18	-1.54	-134.61	0.00
			Max. My	14	0.01	0.00	0.03
			Max. Vy	18	51.08	0.00	0.00
			Max. Vx	14	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg D	Max. Vert	12	93257.96	8305.06	-7821.80
	Max. H_x	12	93257.96	8305.06	-7821.80
	Max. H_z	5	-79246.02	-7161.14	6747.21
	Min. Vert	5	-79246.02	-7161.14	6747.21
	Min. H_x	5	-79246.02	-7161.14	6747.21
	Min. H_z	12	93257.96	8305.06	-7821.80
Leg C	Max. Vert	8	92406.17	-8546.38	-7508.33
	Max. H_x	17	-79893.01	7402.69	6562.30
	Max. H_z	17	-79893.01	7402.69	6562.30
	Min. Vert	17	-79893.01	7402.69	6562.30
	Min. H_x	8	92406.17	-8546.38	-7508.33
	Min. H_z	8	92406.17	-8546.38	-7508.33
Leg B	Max. Vert	4	90977.97	-7803.90	8127.19
	Max. H_x	13	-80955.94	6874.02	-7181.70
	Max. H_z	4	90977.97	-7803.90	8127.19
	Min. Vert	13	-80955.94	6874.02	-7181.70
	Min. H_x	4	90977.97	-7803.90	8127.19
	Min. H_z	13	-80955.94	6874.02	-7181.70
Leg A	Max. Vert	16	91839.15	7563.67	8441.71
	Max. H_x	16	91839.15	7563.67	8441.71
	Max. H_z	16	91839.15	7563.67	8441.71
	Min. Vert	9	-80318.00	-6633.50	-7367.64
	Min. H_x	9	-80318.00	-6633.50	-7367.64
	Min. H_z	9	-80318.00	-6633.50	-7367.64

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	22864.28	-0.00	0.00	12826.02	7715.87	-0.06
1.2 Dead+1.0 Wind 0 deg - No Ice	27437.14	-0.90	-21538.66	-1301093.19	9344.48	-7369.19
0.9 Dead+1.0 Wind 0 deg - No Ice	20577.86	-0.90	-21538.66	-1304437.22	7020.68	-7364.27
1.2 Dead+1.0 Wind 45 deg - No Ice	27437.14	14992.47	-16182.00	-955158.77	-867065.21	8206.03
0.9 Dead+1.0 Wind 45 deg - No Ice	20577.85	14992.47	-16182.00	-958642.28	-869045.78	8202.59
1.2 Dead+1.0 Wind 90 deg - No Ice	27437.14	19856.41	0.90	15556.38	-1173848.51	18983.61
0.9 Dead+1.0 Wind 90 deg - No Ice	20577.85	19856.41	0.90	11689.84	-1175704.19	18973.91
1.2 Dead+1.0 Wind 135 deg - No Ice	27437.14	14993.75	16183.28	986179.37	-866988.89	18635.11
0.9 Dead+1.0 Wind 135 deg - No Ice	20577.85	14993.75	16183.28	981930.73	-868969.32	18624.37
1.2 Dead+1.0 Wind 180 deg - No Ice	27437.14	0.90	21538.66	1331948.60	9278.30	7369.83
0.9 Dead+1.0 Wind 180 deg - No Ice	20577.86	0.90	21538.66	1327563.54	6955.26	7364.80

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
1.2 Dead+1.0 Wind 225 deg - No Ice	27437.14	-14992.47	16182.00	986097.66	885525.98	-8212.07
0.9 Dead+1.0 Wind 225 deg - No Ice	20577.86	-14992.47	16182.00	981851.98	882861.95	-8209.31
1.2 Dead+1.0 Wind 270 deg - No Ice	27437.14	-19856.41	-0.90	15488.71	1192401.94	-18983.42
0.9 Dead+1.0 Wind 270 deg - No Ice	20577.85	-19856.41	-0.90	11623.36	1189612.09	-18973.90
1.2 Dead+1.0 Wind 315 deg - No Ice	27437.14	-14993.75	-16183.28	-955179.05	885703.49	-18628.39
0.9 Dead+1.0 Wind 315 deg - No Ice	20577.85	-14993.75	-16183.28	-958661.44	883036.32	-18617.79
1.2 Dead+1.0 Ice+1.0 Temp	50271.51	-0.00	0.00	20588.76	19434.39	1.06
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	50271.51	-5.45	-4711.67	-268979.58	19823.78	-2455.69
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	50271.51	3369.55	-3569.42	-193616.52	-178881.79	841.14
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	50271.51	4429.02	5.45	20986.94	-247659.26	3644.87
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	50271.51	3377.26	3577.13	235382.27	-179383.01	4314.10
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	50271.51	5.45	4711.67	310239.49	19112.81	2455.89
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	50271.51	-3369.55	3569.42	234875.55	217815.46	-840.93
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	50271.51	-4429.02	-5.45	20274.66	286594.55	-3644.79
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	50271.51	-3377.26	-3577.13	-194119.59	218321.85	-4314.19
Dead+Wind 0 deg - Service	22864.28	-0.23	-5384.67	-316188.76	7738.27	-1841.62
Dead+Wind 45 deg - Service	22864.28	3748.12	-4045.50	-229735.48	-211286.59	2052.70
Dead+Wind 90 deg - Service	22864.28	4964.10	0.23	12863.56	-287972.25	4744.09
Dead+Wind 135 deg - Service	22864.28	3748.44	4045.82	255452.61	-211294.71	4655.92
Dead+Wind 180 deg - Service	22864.28	0.23	5384.67	341890.80	7720.71	1841.66
Dead+Wind 225 deg - Service	22864.28	-3748.12	4045.50	255438.75	226739.75	-2051.76
Dead+Wind 270 deg - Service	22864.28	-4964.10	-0.23	12845.42	303428.24	-4744.29
Dead+Wind 315 deg - Service	22864.28	-3748.44	-4045.82	-229746.67	226755.54	-4656.37

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	81.1 - 75	0.4539	31	0.0575	0.0147
T2	75 - 65.5	0.3943	31	0.0549	0.0128
T3	65.5 - 60	0.3146	31	0.0475	0.0100
T4	60 - 50.5	0.2702	31	0.0442	0.0085
T5	50.5 - 41	0.2035	31	0.0372	0.0060
T6	41 - 31	0.1474	31	0.0291	0.0039
T7	31 - 21	0.0866	31	0.0221	0.0025
T8	21 - 11	0.0417	32	0.0143	0.0014
T9	11 - 1	0.0135	32	0.0073	0.0007

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
80.00	Top Platform - Wolcott NW	31	0.4429	0.0571	0.0144	59648
68.80	MT6413-77A Antenna w/ Mounting Pipe	31	0.3413	0.0501	0.0109	192239
67.33	Dual Mount - Wolcott NW CT	31	0.3294	0.0489	0.0105	415530
67.00	MX06FIT665-02 Antenna w/ Mounting Pipe	31	0.3268	0.0487	0.0104	370560
37.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	31	0.1257	0.0266	0.0034	Inf
27.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	32	0.0687	0.0194	0.0021	59976
17.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	32	0.0300	0.0117	0.0011	74049
7.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	32	0.0076	0.0048	0.0004	99307

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	81.1 - 75	1.7273	10	0.2068	0.0590
T2	75 - 65.5	1.5094	10	0.2001	0.0512
T3	65.5 - 60	1.2126	10	0.1775	0.0399
T4	60 - 50.5	1.0445	10	0.1663	0.0339
T5	50.5 - 41	0.7900	10	0.1414	0.0241
T6	41 - 31	0.5735	10	0.1115	0.0158
T7	31 - 21	0.3385	10	0.0851	0.0102
T8	21 - 11	0.1634	12	0.0552	0.0057
T9	11 - 1	0.0532	12	0.0282	0.0026

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
80.00	Top Platform - Wolcott NW	10	1.6870	0.2059	0.0576	18106
68.80	MT6413-77A Antenna w/ Mounting Pipe	10	1.3129	0.1857	0.0438	76159
67.33	Dual Mount - Wolcott NW CT	10	1.2683	0.1819	0.0420	235930
67.00	MX06FIT665-02 Antenna w/ Mounting Pipe	10	1.2583	0.1811	0.0417	175581
37.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	10	0.4898	0.1020	0.0135	924131
27.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	10	0.2687	0.0749	0.0085	15718
17.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	12	0.1177	0.0454	0.0045	19117
7.50	L 2x2-1/2x1/4 Red. Vert. (5'-0" L)	12	0.0302	0.0186	0.0017	25656

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	81.1	Leg	A325N	0.7500	4	3691.35	19880.40	0.186 ✔	1	Bolt SS
		Diagonal	A325N	0.7500	2	1815.94	12560.60	0.145 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	321.61	14737.80	0.022 ✔	1	Member Bearing
T2	75	Diagonal	A325N	0.7500	2	2654.65	16747.50	0.159 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	559.08	16747.50	0.033 ✔	1	Member Bearing
T3	65.5	Leg	A325N	0.7500	10	4891.60	19880.40	0.246 ✔	1	Bolt SS
		Diagonal	A325N	0.7500	2	2657.43	16747.50	0.159 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	577.20	14067.90	0.041 ✔	1	Member Bearing
T4	60	Diagonal	A325N	0.7500	2	2643.85	16747.50	0.158 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	518.26	16747.50	0.031 ✔	1	Member Bearing
T5	50.5	Diagonal	A325N	0.7500	2	2619.73	16747.50	0.156 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	371.58	16747.50	0.022 ✔	1	Member Bearing
T6	41	Leg	A325N	0.7500	10	10376.50	19880.40	0.522 ✔	1	Bolt SS
		Diagonal	A325N	0.7500	2	3116.97	16747.50	0.186 ✔	1	Member Bearing
		Horizontal	A325N	0.7500	2	390.22	12560.60	0.031 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	1045.57	12560.60	0.083 ✔	1	Member Bearing
T7	31	Diagonal	A325N	0.7500	2	3109.01	16747.50	0.186 ✔	1	Member Bearing
		Horizontal	A325N	0.7500	2	471.51	16747.50	0.028 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	2339.52	16747.50	0.140 ✔	1	Member Bearing
T8	21	Leg	A325N	0.7500	10	14826.90	19880.40	0.746 ✔	1	Bolt SS
		Diagonal	A325N	0.7500	2	3358.95	19880.40	0.169 ✔	1	Bolt Shear
		Horizontal	A325N	0.7500	2	557.32	16747.50	0.033 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	2232.59	16747.50	0.133 ✔	1	Member Bearing
T9	11	Diagonal	A325N	0.7500	2	4120.99	19880.40	0.207 ✔	1	Bolt Shear
		Horizontal	A325N	0.7500	2	623.24	16747.50	0.037 ✔	1	Member Bearing
		Top Girt	A325N	0.7500	2	2829.47	16747.50	0.169 ✔	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	81.1 - 75	L4x4x3/8	6.11	6.11	93.0 K=1.00	2.8600	-7382.70	74976.30	0.098 [1] ✔
T2	75 - 65.5	L4x4x3/8	9.51	4.75	72.4 K=1.00	2.8600	-19012.90	85991.90	0.221 [1] ✔
T3	65.5 - 60	L5x5x1/2	5.50	5.50	67.2 K=1.00	4.7500	-24458.00	146720.00	0.167 [1] ✔
T4	60 - 50.5	L5x5x1/2	9.51	4.75	58.0 K=1.00	4.7500	-36690.80	152891.00	0.240 [1] ✔
T5	50.5 - 41	L5x5x1/2	9.51	4.75	58.0 K=1.00	4.7500	-47585.80	152891.00	0.311 [1] ✔
T6	41 - 31	L6x6x1/2	10.01	5.00	50.9 K=1.00	5.7500	-52007.50	190143.00	0.274 [1] ✔
T7	31 - 21	L6x6x1/2	10.01	5.00	50.9 K=1.00	5.7500	-62842.00	190143.00	0.330 [1] ✔
T8	21 - 11	L6x6x5/8	10.01	5.00	50.9 K=1.00	7.1100	-74277.90	235116.00	0.316 [1] ✔
T9	11 - 1	L6x6x5/8	10.01	5.00	50.9 K=1.00	7.1100	-83063.60	235116.00	0.353 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	81.1 - 75	L2 1/2x2 1/2x3/16	7.97	7.51	158.2 K=0.87	0.9020	-4201.85	10318.60	0.407 [1] ✔
T2	75 - 65.5	L2 1/2x2 1/2x1/4	7.52	7.06	152.3 K=0.88	1.1900	-5311.35	14678.00	0.362 [1] ✔
T3	65.5 - 60	L2x2 1/2x1/4	8.38	7.92	184.0 K=0.82	1.0600	-5700.26	8956.68	0.636 [1] ✔
T4	60 - 50.5	L2x2 1/2x1/4	8.55	8.09	187.0 K=0.82	1.0600	-5336.76	8672.14	0.615 [1] ✔
T5	50.5 - 41	L2x2 1/2x1/4	8.80	8.34	191.4 K=0.81	1.0600	-5343.43	8279.44	0.645 [1] ✔
T6	41 - 31	L3x3x1/4	6.76	5.93	120.1 K=1.00	1.4400	-6996.94	28308.90	0.247 [1] ✔
T7	31 - 21	L3x3x1/4	6.96	6.14	122.8 K=0.99	1.4400	-7077.71	27275.70	0.259 [1] ✔

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T8	21 - 11	L3x3x5/16	7.16	6.36	125.8 K=0.97	1.7800	-6717.90	32178.30	0.209 [1] ✔
T9	11 - 1	L3x3x5/16	7.37	6.57	128.6 K=0.96	1.7800	-8241.98	30824.90	0.267 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T6	41 - 31	L2x2 1/2x3/16	8.81	3.93	115.2 K=1.04	0.8090	-780.44	16977.30	0.046 [1] ✔
T7	31 - 21	L2x2 1/2x1/4	9.39	4.21	119.6 K=1.00	1.0600	-943.02	20984.50	0.045 [1] ✔
T8	21 - 11	L2x2 1/2x1/4	9.96	4.50	125.7 K=0.99	1.0600	-1114.63	19196.50	0.058 [1] ✔
T9	11 - 1	L2x2 1/2x1/4	10.54	4.79	131.9 K=0.97	1.0600	-1246.47	17429.30	0.072 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	81.1 - 75	C8x11.5	6.21	2.94	56.4 K=1.00	3.3800	-119.92	92626.60	0.001 [1] ✔
T2	75 - 65.5	L2 1/2x2 1/2x1/4	6.56	2.88	95.2 K=1.35	1.1900	-285.31	30619.50	0.009 [1] ✔
T3	65.5 - 60	C7x9.8	7.11	3.35	69.1 K=1.00	2.8700	-755.24	72317.20	0.010 [1] ✔
T4	60 - 50.5	L2x2 1/2x1/4	7.43	3.28	106.3 K=1.15	1.0600	-625.75	24588.60	0.025 [1] ✔
T5	50.5 - 41	L2x2 1/2x1/4	7.97	3.55	110.2 K=1.10	1.0600	-714.08	23580.70	0.030 [1] ✔
T6	41 - 31	L2 1/2x2 1/2x3/16	8.52	3.78	105.8 K=1.15	0.9020	-1750.46	21033.80	0.083 [1] ✔
T7	31 - 21	L2 1/2x2 1/2x1/4	9.10	4.07	109.7 K=1.10	1.1900	-3791.46	26617.40	0.142 [1] ✔
T8	21 - 11	L2 1/2x2 1/2x1/4	9.68	4.36	113.3 K=1.06	1.1900	-3619.68	25558.40	0.142 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T9	11 - 1	L2 1/2x2 1/2x1/4	10.25	4.65	116.8 K=1.03	1.1900	-4596.89	24465.80	0.188 [1] ✔

[1] $P_u / \phi P_n$ controls

Inner Bracing Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	81.1 - 75	L2 1/2x2 1/2x3/16	4.39	4.39	113.2 K=1.06	0.9020	-3.48	19385.20	0.000 [1] ✔
T2	75 - 65.5	L2 1/2x2 1/2x3/16	4.64	4.64	116.2 K=1.03	0.9020	-4.11	18678.50	0.000 [1] ✔
T3	65.5 - 60	L2 1/2x2 1/2x3/16	5.03	5.03	121.9 K=1.00	0.9020	-7.07	17311.30	0.000 [1] ✔
T4	60 - 50.5	L2 1/2x2 1/2x3/16	5.25	5.25	127.3 K=1.00	0.9020	-6.08	15933.10	0.000 [1] ✔
T5	50.5 - 41	L2 1/2x2 1/2x3/16	5.64	5.64	136.7 K=1.00	0.9020	-6.92	13817.90	0.001 [1] ✔
T6	41 - 31	L3x3x3/16	6.23	6.23	125.4 K=1.00	1.0900	-11.61	19789.70	0.001 [1] ✔
T7	31 - 21	L3x3x3/16	6.64	6.64	133.7 K=1.00	1.0900	-16.19	17465.60	0.001 [1] ✔
T8	21 - 11	L3x3x3/16	7.05	7.05	141.9 K=1.00	1.0900	-17.20	15501.40	0.001 [1] ✔
T9	11 - 1	L3x3x3/16	7.45	7.45	150.1 K=1.00	1.0900	-14.55	13850.90	0.001 [1] ✔

[1] $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	81.1 - 75	L4x4x3/8	6.11	6.11	59.6	2.8600	3256.60	92664.00	0.035 [1] ✔
T2	75 - 65.5	L4x4x3/8	9.51	4.75	46.4	2.8600	13571.30	92664.00	0.146 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	65.5 - 60	L5x5x1/2	5.50	5.50	42.9	4.7500	18580.80	153900.00	0.121 [1] ✔
T4	60 - 50.5	L5x5x1/2	9.51	4.75	37.0	4.7500	29853.80	153900.00	0.194 [1] ✔
T5	50.5 - 41	L5x5x1/2	9.51	4.75	37.0	4.7500	39943.20	153900.00	0.260 [1] ✔
T6	41 - 31	L6x6x1/2	10.01	5.00	32.3	5.7500	44677.30	186300.00	0.240 [1] ✔
T7	31 - 21	L6x6x1/2	10.01	5.00	32.3	5.7500	54410.20	186300.00	0.292 [1] ✔
T8	21 - 11	L6x6x5/8	10.01	5.00	32.6	7.1100	64547.50	230364.00	0.280 [1] ✔
T9	11 - 1	L6x6x5/8	10.01	5.00	32.6	7.1100	72461.50	230364.00	0.315 [1] ✔

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	81.1 - 75	L2 1/2x2 1/2x3/16	7.97	7.51	122.9	0.5535	3631.88	24075.20	0.151 [1] ✔
T2	75 - 65.5	L2 1/2x2 1/2x1/4	7.52	7.06	117.3	0.7284	5309.30	31687.00	0.168 [1] ✔
T3	65.5 - 60	L2x2 1/2x1/4	8.38	7.92	169.7	0.6309	5314.86	27445.80	0.194 [1] ✔
T4	60 - 50.5	L2x2 1/2x1/4	8.30	7.84	168.1	0.6309	5287.69	27445.80	0.193 [1] ✔
T5	50.5 - 41	L2x2 1/2x1/4	8.80	8.34	178.3	0.6309	5239.46	27445.80	0.191 [1] ✔
T6	41 - 31	L3x3x1/4	6.57	5.74	80.0	0.9159	6233.94	39843.30	0.156 [1] ✔
T7	31 - 21	L3x3x1/4	6.96	6.14	85.2	0.9159	6218.02	39843.30	0.156 [1] ✔
T8	21 - 11	L3x3x5/16	7.16	6.36	88.7	1.1299	5938.09	49151.60	0.121 [1] ✔
T9	11 - 1	L3x3x5/16	7.37	6.57	91.5	1.1299	7094.73	49151.60	0.144 [1] ✔

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T6	41 - 31	L2x2 1/2x3/16	8.81	3.93	83.1	0.4837	780.44	21041.10	0.037 [1] ✔
T7	31 - 21	L2x2 1/2x1/4	9.39	4.21	90.0	0.6309	943.02	27445.80	0.034 [1] ✔
T8	21 - 11	L2x2 1/2x1/4	9.96	4.50	95.9	0.6309	1114.63	27445.80	0.041 [1] ✔
T9	11 - 1	L2x2 1/2x1/4	10.54	4.79	101.7	0.6309	1246.47	27445.80	0.045 [1] ✔

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	81.1 - 75	C8x11.5	6.21	2.94	56.4	2.3906	643.23	103992.00	0.006 [1] ✔
T2	75 - 65.5	L2 1/2x2 1/2x1/4	6.56	2.88	48.6	0.7284	1118.15	31687.00	0.035 [1] ✔
T3	65.5 - 60	C7x9.8	7.11	3.35	69.1	2.0147	1154.40	87638.90	0.013 [1] ✔
T4	60 - 50.5	L2x2 1/2x1/4	7.43	3.28	71.0	0.6309	1036.53	27445.80	0.038 [1] ✔
T5	50.5 - 41	L2x2 1/2x1/4	7.97	3.55	76.5	0.6309	743.16	27445.80	0.027 [1] ✔
T6	41 - 31	L2 1/2x2 1/2x3/16	8.52	3.78	61.9	0.5535	2091.13	24075.20	0.087 [1] ✔
T7	31 - 21	L2 1/2x2 1/2x1/4	9.10	4.07	67.1	0.7284	4679.04	31687.00	0.148 [1] ✔
T8	21 - 11	L2 1/2x2 1/2x1/4	9.68	4.36	71.6	0.7284	4465.19	31687.00	0.141 [1] ✔
T9	11 - 1	L2 1/2x2 1/2x1/4	10.25	4.65	76.1	0.7284	5658.94	31687.00	0.179 [1] ✔

[1] $P_u / \phi P_n$ controls

Inner Bracing Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	81.1 - 75	L2 1/2x2 1/2x3/16	4.39	4.39	67.7	0.9020	0.97	29224.80	0.000 [1] ✔
T2	75 - 65.5	L2 1/2x2 1/2x3/16	4.64	4.64	71.5	0.9020	4.66	29224.80	0.000 [1] ✔
T3	65.5 - 60	L2 1/2x2 1/2x3/16	5.03	5.03	77.5	0.9020	4.86	29224.80	0.000 [1] ✔
T4	60 - 50.5	L2 1/2x2 1/2x3/16	5.25	5.25	81.0	0.9020	7.58	29224.80	0.000 [1] ✔
T5	50.5 - 41	L2 1/2x2 1/2x3/16	5.64	5.64	87.0	0.9020	8.35	29224.80	0.000 [1] ✔
T6	41 - 31	L3x3x3/16	6.23	6.23	79.6	1.0900	5.07	35316.00	0.000 [1] ✔
T7	31 - 21	L3x3x3/16	6.64	6.64	84.8	1.0900	9.43	35316.00	0.000 [1] ✔
T8	21 - 11	L3x3x3/16	7.05	7.05	90.0	1.0900	9.58	35316.00	0.000 [1] ✔
T9	11 - 1	L3x3x3/16	7.45	7.45	95.3	1.0900	6.16	35316.00	0.000 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	81.1 - 75	Leg	L4x4x3/8	1	-7382.70	74976.30	11.0 18.6 (b)	Pass
		Diagonal	L2 1/2x2 1/2x3/16	15	-4201.85	10318.60	40.7	Pass
		Top Girt	C8x11.5	5	643.23	103992.00	0.6 2.2 (b)	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	13	-0.92	11397.40	0.3	Pass
T2	75 - 65.5	Leg	L4x4x3/8	22	-19012.90	85991.90	22.1	Pass
		Diagonal	L2 1/2x2 1/2x1/4	44	-5311.35	14678.00	36.2	Pass
		Top Girt	L2 1/2x2 1/2x1/4	26	1118.15	31687.00	3.5	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	34	-0.04	10207.30	0.4	Pass
T3	65.5 - 60	Leg	L5x5x1/2	51	-24458.00	146720.00	16.7 24.6 (b)	Pass
		Diagonal	L2x2 1/2x1/4	65	-5700.26	8956.68	63.6	Pass
		Top Girt	C7x9.8	55	1154.40	87638.90	1.3 4.1 (b)	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	63	-1.05	8693.76	0.4	Pass
T4	60 - 50.5	Leg	L5x5x1/2	72	-36690.80	152891.00	24.0	Pass
		Diagonal	L2x2 1/2x1/4	86	-5336.76	8672.14	61.5	Pass
		Top Girt	L2x2 1/2x1/4	76	1036.53	27445.80	3.8	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	84	0.83	29224.80	0.4	Pass
T5	50.5 - 41	Leg	L5x5x1/2	101	-47585.80	152891.00	31.1	Pass
		Diagonal	L2x2 1/2x1/4	123	-5343.43	8279.44	64.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Top Girt	L2x2 1/2x1/4	108	-714.08	23580.70	3.0	Pass
		Inner Bracing	L2 1/2x2 1/2x3/16	113	0.95	29224.80	0.4	Pass
T6	41 - 31	Leg	L6x6x1/2	130	-52007.50	190143.00	27.4 52.2 (b)	Pass
		Diagonal	L3x3x1/4	153	-6996.94	28308.90	24.7	Pass
		Horizontal	L2x2 1/2x3/16	152	-780.44	16977.30	4.6	Pass
		Top Girt	L2 1/2x2 1/2x3/16	134	2091.13	24075.20	8.7	Pass
		Inner Bracing	L3x3x3/16	159	-2.36	9914.03	0.4	Pass
T7	31 - 21	Leg	L6x6x1/2	168	-62842.00	190143.00	33.0	Pass
		Diagonal	L3x3x1/4	191	-7077.71	27275.70	25.9	Pass
		Horizontal	L2x2 1/2x1/4	190	-943.02	20984.50	4.5	Pass
		Top Girt	L2 1/2x2 1/2x1/4	172	4679.04	31687.00	14.8	Pass
		Inner Bracing	L3x3x3/16	197	-2.96	8732.78	0.5	Pass
T8	21 - 11	Leg	L6x6x5/8	206	-74277.90	235116.00	31.6 74.6 (b)	Pass
		Diagonal	L3x3x5/16	229	-6717.90	32178.30	20.9	Pass
		Horizontal	L2x2 1/2x1/4	228	-1114.63	19196.50	5.8	Pass
		Top Girt	L2 1/2x2 1/2x1/4	212	-3619.68	25558.40	14.2	Pass
		Inner Bracing	L3x3x3/16	235	-2.12	7750.72	0.5	Pass
T9	11 - 1	Leg	L6x6x5/8	244	-83063.60	235116.00	35.3	Pass
		Diagonal	L3x3x5/16	259	-8241.98	30824.90	26.7	Pass
		Horizontal	L2x2 1/2x1/4	266	-1246.47	17429.30	7.2	Pass
		Top Girt	L2 1/2x2 1/2x1/4	250	-4596.89	24465.80	18.8	Pass
		Inner Bracing	L3x3x3/16	273	-4.63	6925.47	0.5	Pass
							Summary	
						Leg (T8)	74.6	Pass
						Diagonal (T5)	64.5	Pass
						Horizontal (T9)	7.2	Pass
						Top Girt (T9)	18.8	Pass
						Inner Bracing (T8)	0.5	Pass
						Bolt Checks	74.6	Pass
						RATING =	**74.6**	**Pass**

Self Support Anchor Rod Capacity

CROWN CASTLE

Site Info	
BU #	263231.924790
Site Name	WOLCOTT NW CT
Order #	

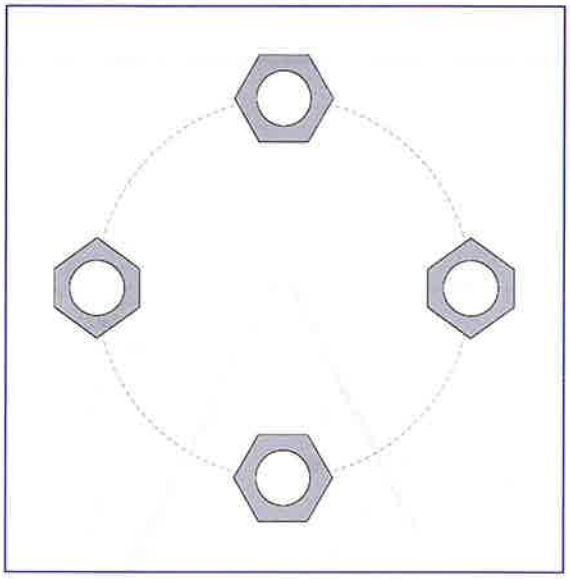
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	93.26	80.96
Shear Force (kips)	11.41	9.94

**TIA-222-H Section 15.5 Applied*

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.000
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	0.000

**Anchor Rod Eccentricity Applied*



Connection Properties

Anchor Rod Data

(4) 1-3/4" ø bolts (F1554-36 N; Fy=36 ksi, Fu=58 ksi)

l_{ar} (in): 0

Analysis Results

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

Pu_c = 23.31	ϕPn_c = 77.93	**Stress Rating**
Vu = 2.85	ϕVn = 35.07	**29.1%**
Mu = n/a	ϕMn = n/a	Pass

TOWER ENGINEERING PROFESSIONALS

JOB:	WOLCOTT NW CT		
SHEET #:	1	OF	2
CALCULATED BY:	CL	DATE	5/20/2024
CHECKED BY:	MSC	DATE	5/20/2024

Mat Foundation Design for 4 Sided Self Supporting Tower - TIA-222-H

q_a, ALLOWABLE SOIL PRESS. (ksf)	6.00
NET OR GROSS BEARING?	NET
SAFETY FACTOR IN q_a	2
SOIL DENSITY (pcf)	110.0
TOWER FACE WIDTH (ft.)	10.8
Tower Eccentricity (ft)	0.00

$\varphi * q_n$ = 9.0 ksf

Distance between tower centroid and the foundation centroid

F'c (ksi)	4
F'y (ksi)	60

Base Reactions LC1: 1.2D + 1.0W

M_u, MOMENT (k-ft)	1332.0
P_t, AXIAL (k)	27.4
H, SHEAR (k)	22.1

Base Reactions LC2: 0.9D + 1.0W

M, MOMENT (k-ft)	1332.0
P_t, AXIAL (k)	20.6
H, SHEAR (k)	22.1

Try:

L (ft.)	B (ft.)	t (ft.)	Soil depth to TOP of mat (ft.)	Soil depth to BOT. of mat (ft.)	Pier dia./width (ft.)	Pier Height, h (ft.)	Pier Shape
23.3	23.3	2.2	2.0	4.2	3.0	2.5	Square

W_f, WEIGHT OF FOUNDATION (k) =	191.9
W_s, WEIGHT OF SOIL (k) =	111.0

Concrete Volume (cu ft) 47.4

CHECK BEARING CAPACITY[1] FOR LC1: 1.2D + 1.0W

$P = P_t + 1.2*Wf + 1.2*Ws$ =	390.9 k
$e = (M_{ot} + P_t*e_t)/P$ =	3.67 ft
L/6 =	3.88 ft
90 Axis: q_{max} =	0.95 ksf
Diag. Axis: q_{max} =	0.52 ksf

Capacity: 10.5%

CHECK BEARING FAILURE[1] FOR LC2: 0.9D +1.0W

$P = P_t + 0.9*Wf + 0.9*Ws$ =		293.2 k
90° Axis	$M_{\varphi Qn}$[2] =	3212.8 k-ft
	$M_{ot}/M_{\varphi Qn}$ =	0.447
Diag. Axis	$M_{\varphi Qn}$ =	3666.0 k-ft
	$M_{ot}/M_{\varphi Qn}$ =	0.392

Capacity: 44.7%

[1] Per effective bearing area (AASHTO LRFD Bridge Design Specifications, 4th Ed.)

[2] $M_{\varphi Qn}$ is the applied moment for which qmax = φQ_n

CHECK OVERTURNING: LC2 CONTROLS

$M_{ot} = M+H*(t+h)$ =	1435.7 k-ft
$M_{st}=P*(L/2-e_t)+(W_{f+s}*L/2)$ =	3408.2 k-ft
M_{ot}/M_{st} =	0.421

Capacity: 42.1%

TOWER ENGINEERING PROFESSIONALS

JOB:	WOLCOTT NW CT		
SHEET #:	2	OF	2
CALCULATED BY:	CL	DATE	5/20/2024
CHECKED BY:	MSC	DATE	5/20/2024

Stress and capacity calculations of reinforced concrete mat assume a fully rigid foundation and a linear (triangular or trapeziodal) contact stress distribution based on factored loads.

CHECK BEAM SHEAR

Vu = 79.9 k
φVc = 599.5 k Vc > Vu **O.K**

Capacity*: 12.7%

CALCULATE REINFORCING REQUIRED

F'c = 4.0 ksi F'y = 60.0 ksi

Temp & Shrinkage Reinforcement, As, temp = 0.57 in^2/ft (ACI 318 Sec. 24.4.3)

BOTTOM REINFORCING

Bar Size= 4 (Min.) (Assumed)
Bar Spacing = 12.0 in. (Min.) (Assumed)
d = 22.7 in.

Mu= -98.4 in-k/ft

φMn=0.9*As*Fy*(d-1/2*As*Fy/(0.85*b*F'c))

Solution: As,req = 0.08 in^2/ft
Check, As= 0.20 in^2/ft

Capacity*: 38.4%

TOP REINFORCING

Bar Size= 4 (Min.) (Assumed)
Bar Spacing = 12.0 in. (Min.) (Assumed)
d= 22.7 in.

Mu= 80.3 in-k/ft

φMn=0.9*As*Fy*d(1-0.59*As*Fy/(b*d*F'c))

Solution: As,req = 0.07 in^2/ft
Check, As= 0.20 in^2/ft

Capacity*: 31.3%

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

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Antenna Mount Analysis Report with Hardware Upgrades and PMI Requirements

Mount Analysis

SMART Tool Project #: 10221813
Colliers Engineering & Design Project #: 24777022

February 27, 2024

Site Information	*Site ID:*	*5000383011-VZW / WOLCOTT NW CT - A*
	Site Name:	*WOLCOTT NW CT - A*
	Carrier Name:	*Verizon Wireless*
	Address:	*107 Andrews Rd* *Wolcott, Connecticut 06716* *New Haven County*
	Latitude:	*41.61768055°*
	Longitude:	*-73.00450555°*
Structure Information	*Tower Type:*	*Self Support*
	Mount Type:	*5.00-Ft Face Mount*

FUZE ID # 16945993

Analysis Results

Face Mount: **40.1% Pass w/ Hardware Upgrades***

*** Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

******Contractor PMI Requirements:***
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

Report Prepared By: Carol Luengas

Executive Summary:

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS, Site ID: 5062868, dated January 25, 2024*
Mount Mapping Report	*SGS Towers, Site ID: 701770, dated February 7, 2024*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (CSBC), Effective October 1, 2022	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	120 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.00 in
	Risk Category:	II
	Exposure Category:	B
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.964
Seismic Parameters:	S_S:	0.191 g
	S_1:	0.054 g
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Load, Lv:	250 lbs.
	Maintenance Load, Lm:	500 lbs.
Analysis Software:	RISA-3D (V17)	

Final Loading Configuration:

The following equipment has been considered for the analysis of the mounts:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
67.00	68.80	2	Samsung	MT6413-77A	Added
	67.00	4	JMA Wireless	MX06FIT665-02	
		2	Samsung	RF4439d-25A	
		2	Samsung	RF4461d-13A	
		1	Raycap	RHSDC-6627-PF-48*	Retained

* Equipment is flush mounted directly to the Self Support. They are not mounted on the mounts and are not included in this mount analysis.

The recent mount mapping reported existing OVP units. It is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required unless replacing an existing OVP.

Model Number	Ports	AKA
DB-B1-6C-12AB-0Z	6	OVP-6
RVZDC-6627-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

   Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

   The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. 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.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Colliers Engineering & Design.

Analysis Results:

Component	Utilization %	Pass/Fail
Antenna Pipe	9.1 %	Pass
Face Horizontal	40.1 %	Pass
Mast Pipe	10.4 %	Pass
Pipe to Pipe	3.4 %	Pass
Proposed Pipe	7.0 %	Pass
Mount Connection	11.1 %	Pass

Structure Rating – *(Controlling Utilization of all Components)*	**40.1%***

* Results valid after hardware upgrades noted in the PMI Requirements are installed.

Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector A Top Standoff	64.8	N16A	314	467	0.374	0.416	598	533	0.257	0.254
Sector A Bottom Standoff	60.5	N18A	314	429	0.333	0.395	598	522	0.247	0.248

Notes:
- Axial loads act along the axis of the tower leg
- Lateral reactions act perpendicular to the tower leg
- Moment loads introduce bending moment to the tower leg
- Torsion loads introduce twisting moment to the tower leg
- Batch solutions by individual load cases are included at the end of this document

Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	4.4	2.8	8.5	6.9
0.5	5.5	4.1	11.6	9.4
1	6.8	5.0	14.7	11.9

Notes:
- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The existing mounts will be **SUFFICIENT** for the final loading configuration shown in attachment 2 upon the completion of the requirements listed below.

Contractor shall replace existing position 1 mount pipe with new 72" long PIPE 2 1/2 SCH40 pipe (in all sectors). Install 48" from position 2 pipe. Top of pipe shall be 35" above face horizontal (match existing position 2 pipe location on mount). Attach using VZWSMART MSK2 crossover plates. Refer to placement diagrams.

Contractor shall install a new 72" long PIPE 2 SCH40 mount pipe position 2 (Alpha sector only). Contractor shall install X pipe to pipe clamps (Perfect Vision Part #: PV-DC-PTPC-2020-6). Install pipe-to-pipe clamps 12" from top of proposed pipe and 12" from top of existing pipe. Install the 2nd set of pipe-to-pipe clamps at 48" from the 1st set.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Photos
4. Mount Mapping Report (for reference only)
5. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Passing Mount Analysis

Passing Mount Analysis requires a PMI due to a modification in loading.

Electronic pdf version of this can be downloaded at https://pmi.vzwsmart.com.

For additional questions and support, please reach out to pmisupport@colliersengineering.com

MDG #: 5000383011 SMART Project #: 10221813 Fuze Project ID: 16945993

Purpose – to provide SMART Tool structural vendor the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide "as built mount drawings" showing contractor's name, contact information, preparer's signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: ***https://pmi.vzwsmart.com***

Photo Requirements:

- *Photos taken at ground level*
  - Photo of Gate Signs showing the tower owner, site name, and number.
  - Overall tower structure after installation.
  - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- *Photos taken at Mount Elevation*
  - Photos showing the safety climb wire rope above and below the mount prior to installation.
  - Photos showing the climbing facility and safety climb if present.
  - Photos showing each individual sector after installation. Each entire sector shall be in one photo to show the interconnection of members.

    - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
  - Photos that show the model number of each antenna and piece of equipment installed per sector.

Antenna & equipment placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

☐ The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue:

Contractor shall replace existing position 1 mount pipe with new 72" long PIPE 2 1/2 SCH40 pipe (in all sectors). Install 48" from position 2 pipe. Top of pipe shall be 35" above face horizontal (match existing position 2 pipe location on mount). Attach using VZWSMART MSK2 crossover plates. Refer to placement diagrams.

Contractor shall install a new 72" long PIPE 2 SCH40 mount pipe position 2 (Alpha sector only). Contractor shall install X pipe to pipe clamps (Perfect Vision Part #: PV-DC-PTPC-2020-6). Install pipe-to-pipe clamps 12" from top of proposed pipe and 12" from top of existing pipe. Install the 2nd set of pipe-to-pipe clamps at 48" from the 1st set.

Response:

Special Instruction Confirmation:

☐ The contractor has read and acknowledges the above special instructions.

☐ All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.

☐ The material utilized was as specified in the SMART Tool engineering vendor Special Instructions above (if applicable) and included in the material certification folder is a packing list or invoice for these materials.

OR

☐ The material utilized was approved by a SMART Tool engineering vendor as an "equivalent" and this approval is included as part of the contractor submission.

Comments:

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

☐ Yes ☐ No

Contractor certifies no new damage created during the current installation:

☐ Yes ☐ No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

☐ Safety Climb in Good Condition ☐ Safety Climb Damaged

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

Structure: 5000383011-VZW - WOLCOTT NW CT - A

Sector: **A**

Structure Type: Self Support

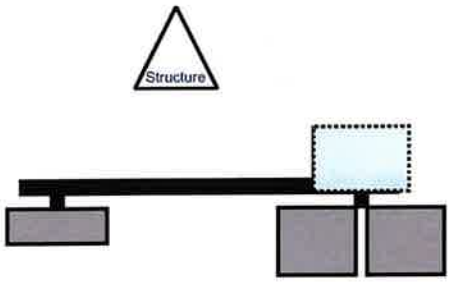
Mount Elev: 67.00

10221813

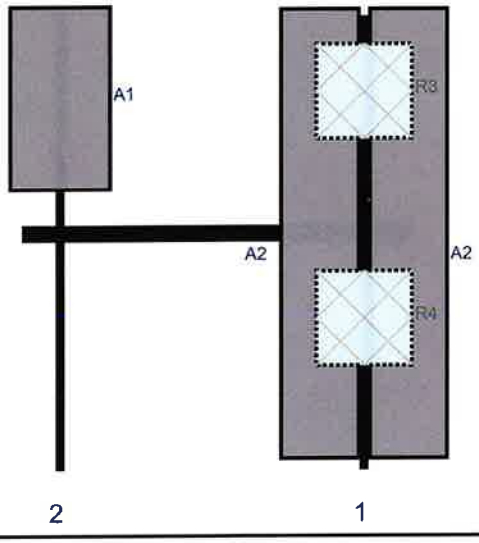
2/26/2024

Colliers Engineering & Design

Plan View

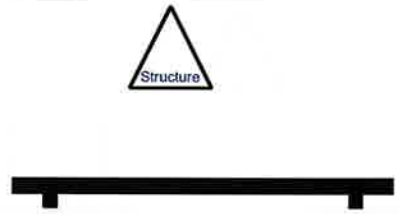


Front View - Looking at Structure

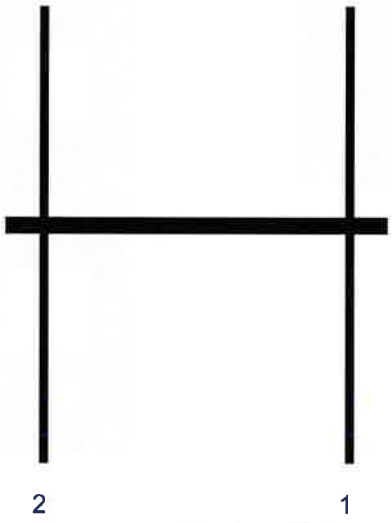


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	MX06FIT665-02	71.3	12.2	54	1	a	Front	34.56	7	Added	
A2	MX06FIT665-02	71.3	12.2	54	1	b	Front	34.56	-7	Added	
R3	RF4439d-25A	15	15	54	1	a	Behind	12	0	Added	
R4	RF4461d-13A	15	15	54	1	a	Behind	48	0	Added	
A1	MT6413-77A	28.9	15.8	6	2	a	Front	13.02	0	Added	

Plan View

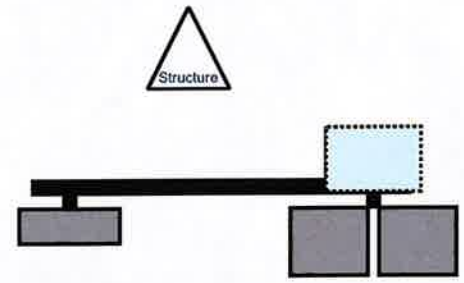


Front View - Looking at Structure

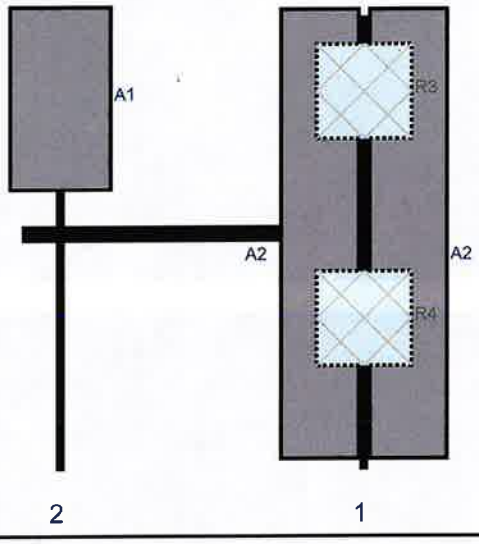


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation

Plan View



Front View - Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	MX06FIT665-02	71.3	12.2	54	1	a	Front	34.56	7	Added	
A2	MX06FIT665-02	71.3	12.2	54	1	b	Front	34.56	-7	Added	
R3	RF4439d-25A	15	15	54	1	a	Behind	12	0	Added	
R4	RF4461d-13A	15	15	54	1	a	Behind	48	0	Added	
A1	MT6413-77A	28.9	15.8	6	2	a	Front	13.02	0	Added	


02/06/2024 23:59


02/07/2024 00:13

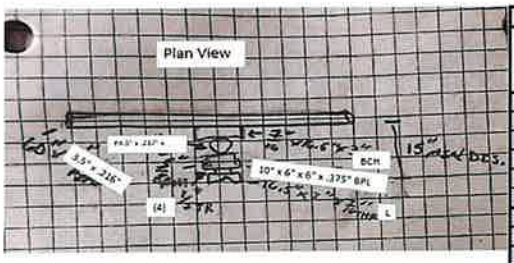
V4.1 Updated on 12-17-2021

Colliers Engineering & Design

Antenna Mount Mapping Form (PATENT PENDING)

FCC #: N/A

Tower Owner:	EVEREST	Mapping Date:	2/7/2024
Site Name:	5000383011	Tower Type:	Self Support
Site Number or ID:	701770	Tower Height (Ft.):	UNKNOWN
Mapping Contractor:	SGS TOWERS	Mount Elevation (Ft.):	68



Mount Pipe Configuration and Geometries [Unit = Inches]

Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "v"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "v"	Horizontal Offset "C1, C2, C3, etc."
A1	2.375"x .154"x 72"	34.50	6.00	C1			
A2	2.375"x .154"x 72"	34.50	54.00	C2			
A3				C3			
A4				C4			
A5				C5			
A6				C6			
B1				D1	2.375"x .154"x 72"	34.50	6.00
B2				D2	2.375"x .154"x 72"	34.50	54.00
B3				D3			
B4				D4			
B5				D5			
B6				D6			

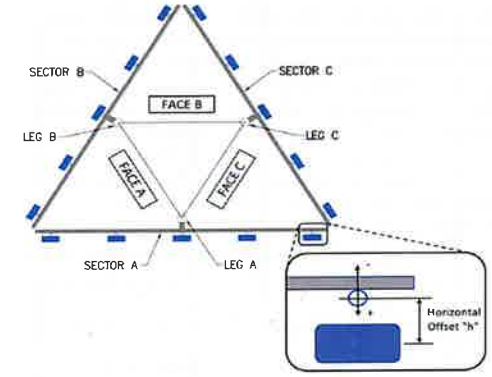
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :

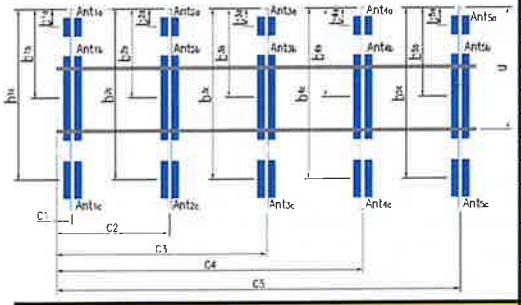
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :

Please enter additional infomation or comments below.

Raycap attached directly to tower face.

Tower Face Width at Mount Elev. (ft.): 5.833 | Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.): 5.5



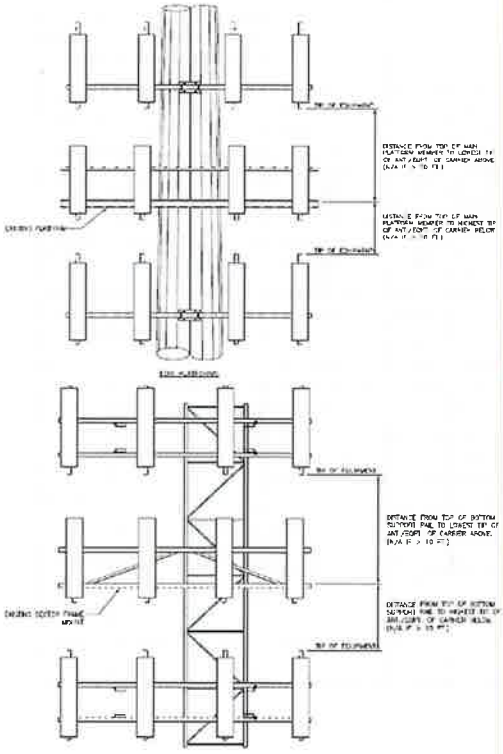


Antenna Layout (Looking Out From Tower)

Ants. Items	Enter antenna model. If not labeled, enter "Unknown". Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Mounting Locations [Units are inches and degrees] Vertical Distances "b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photos of antennas Photo Numbers
	Sector A									
Ant_{1a}	NNHH-65B-R4	19.60	7.80	72.00	(1) 2" FIB	68	38.00	9.00	30.00	100
Ant_{1b}	RFV01U-D2A	15.00	8.10	15.00			12.00	-8.50		104
Ant_{1c}										
Ant_{2a}	NNHH-65B-R4	19.60	7.80	72.00		68	38.00	9.00	30.00	115
Ant_{2b}	RFV01U-D1A	15.00	10.00	15.00			12.00	-9.50		118
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector	
Sector A:	30.00	Deg	Leg A:	0.00	Deg
Sector B:		Deg	Leg B:	90.00	Deg
Sector C:		Deg	Leg C:	180.00	Deg
Sector D:	270.00	Deg	Leg D:	270.00	Deg

Climbing Facility Information			
Location:	0.00	Deg	Inside Corner Leg A
Climbing Facility	Corrosion Type:		Good condition.
	Access:		Climbing path was unobstructed.
	Condition:		Good condition.



Sector B										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector C										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector D										
Ant_{1a}	NNHH-65B-R4	19.60	7.80	72.00		68	38.00	9.00	270.00	137
Ant_{1b}	RFV01U-D2A	15.00	8.10	15.00			12.00	-8.50		138
Ant_{1c}										
Ant_{2a}	NNHH-65B-R4	19.60	7.80	72.00		68	38.00	9.00	270.00	140
Ant_{2b}	RFV01U-D1A	15.00	10.00	15.00			12.00	-9.50		143
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower	RHSDC-6627-PF-48	16.50	12.60	29.50						132
Ant on Tower										

Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #
1	Sector D not level.	146
2		
3		
4		
5		
6		
7		
8		

Mapping Notes
1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
6. Please measure and report the size and length of all existing antenna mounting pipes.
7. Please measure and report the antenna information for all sectors.
8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

Standard Conditions
1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.

V4.1 Updated on 12-17-2021

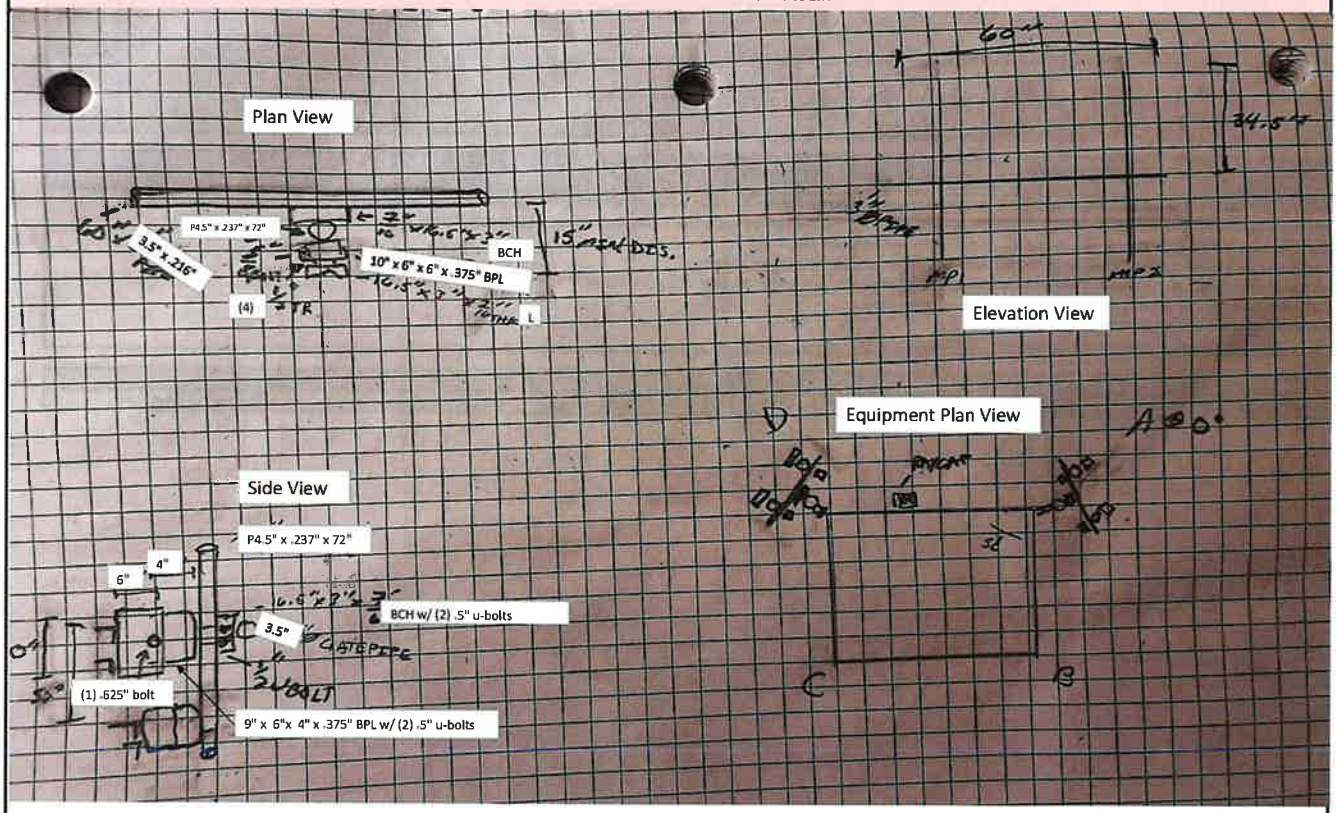
SMART Tool© Vendor

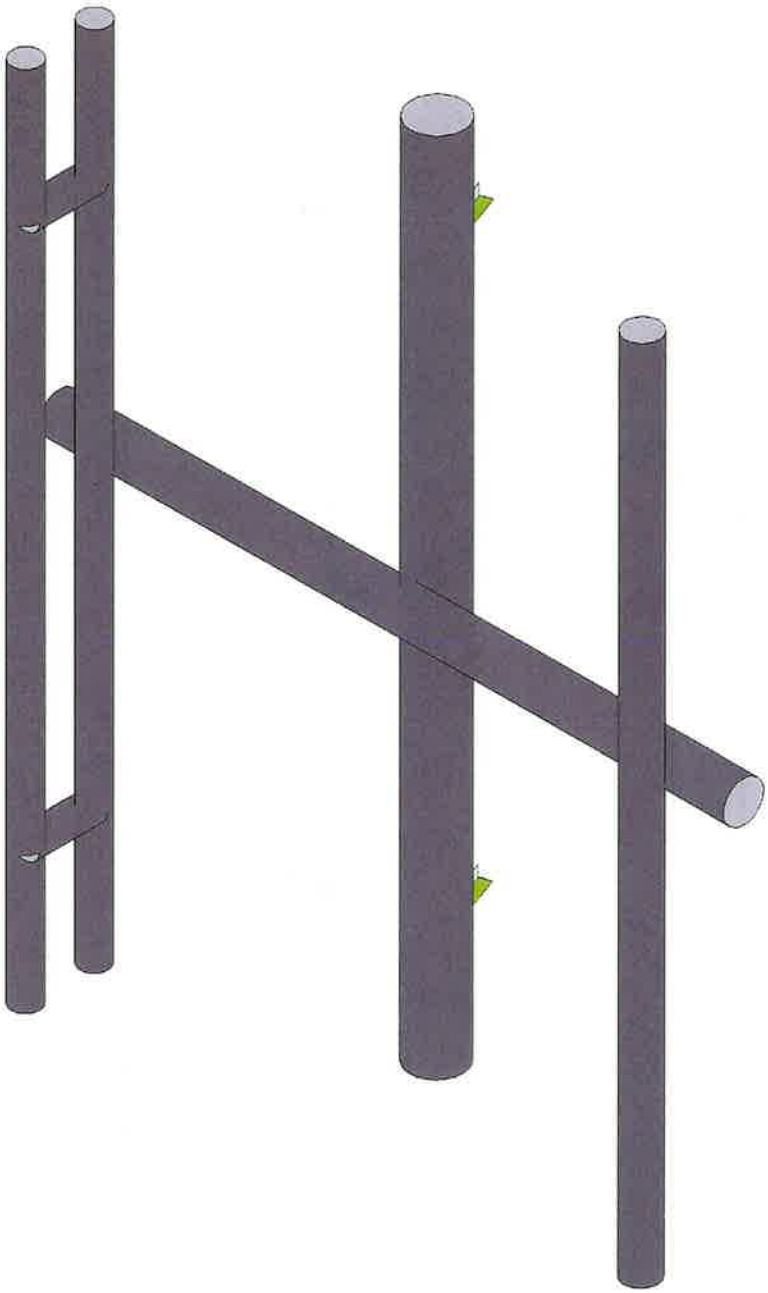
Antenna Mount Mapping Form (PATENT PENDING)

FCC #
N/A

Tower Owner:	EVEREST	Mapping Date:	2/7/2024
Site Name:	5000383011	Tower Type:	Self Support
Site Number or ID:	701770	Tower Height (FL):	UNKNOWN
Mapping Contractor:	SGS TOWERS	Mount Elevation (FL):	68

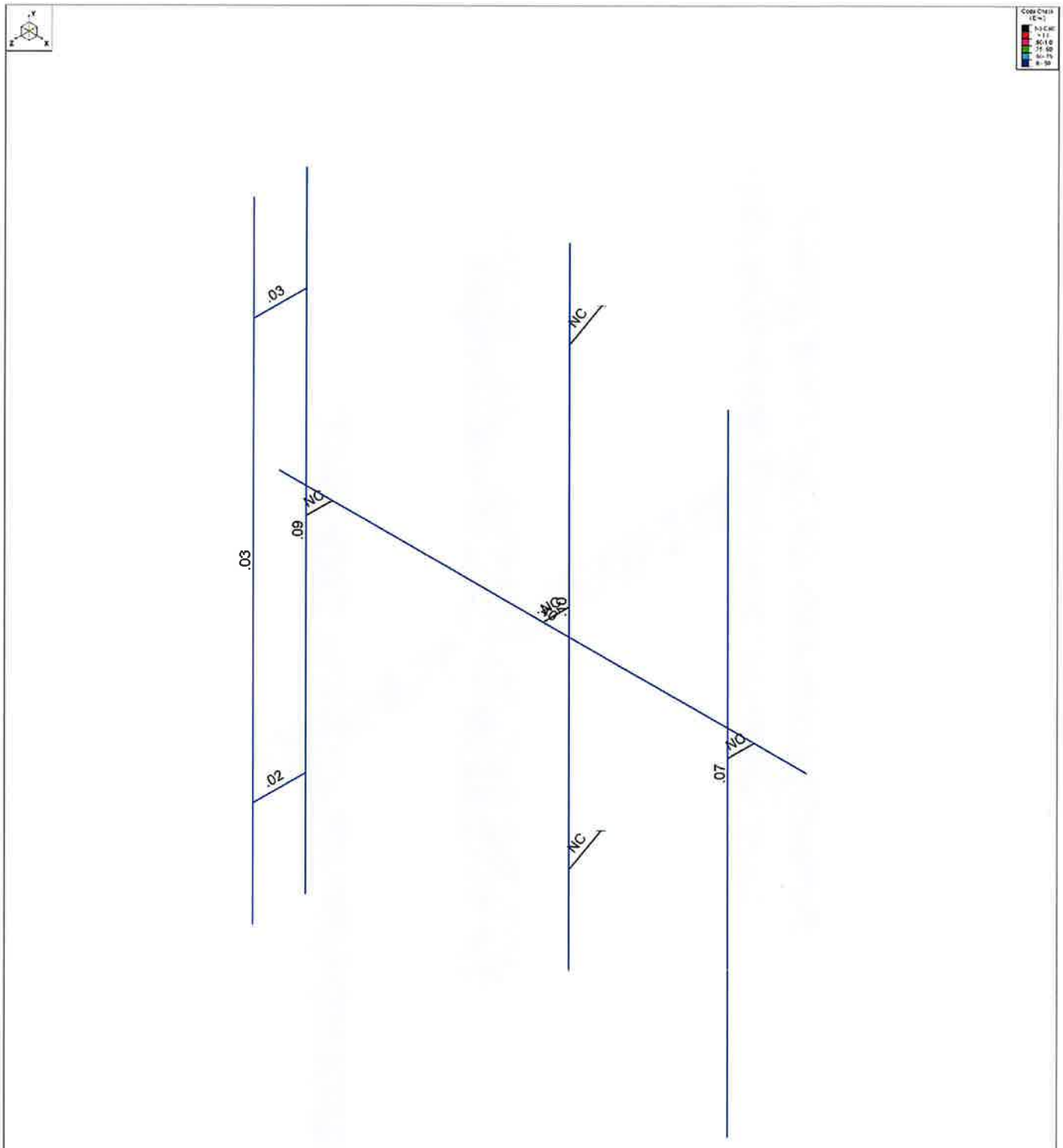
Please Insert Sketches of the Antenna Mount





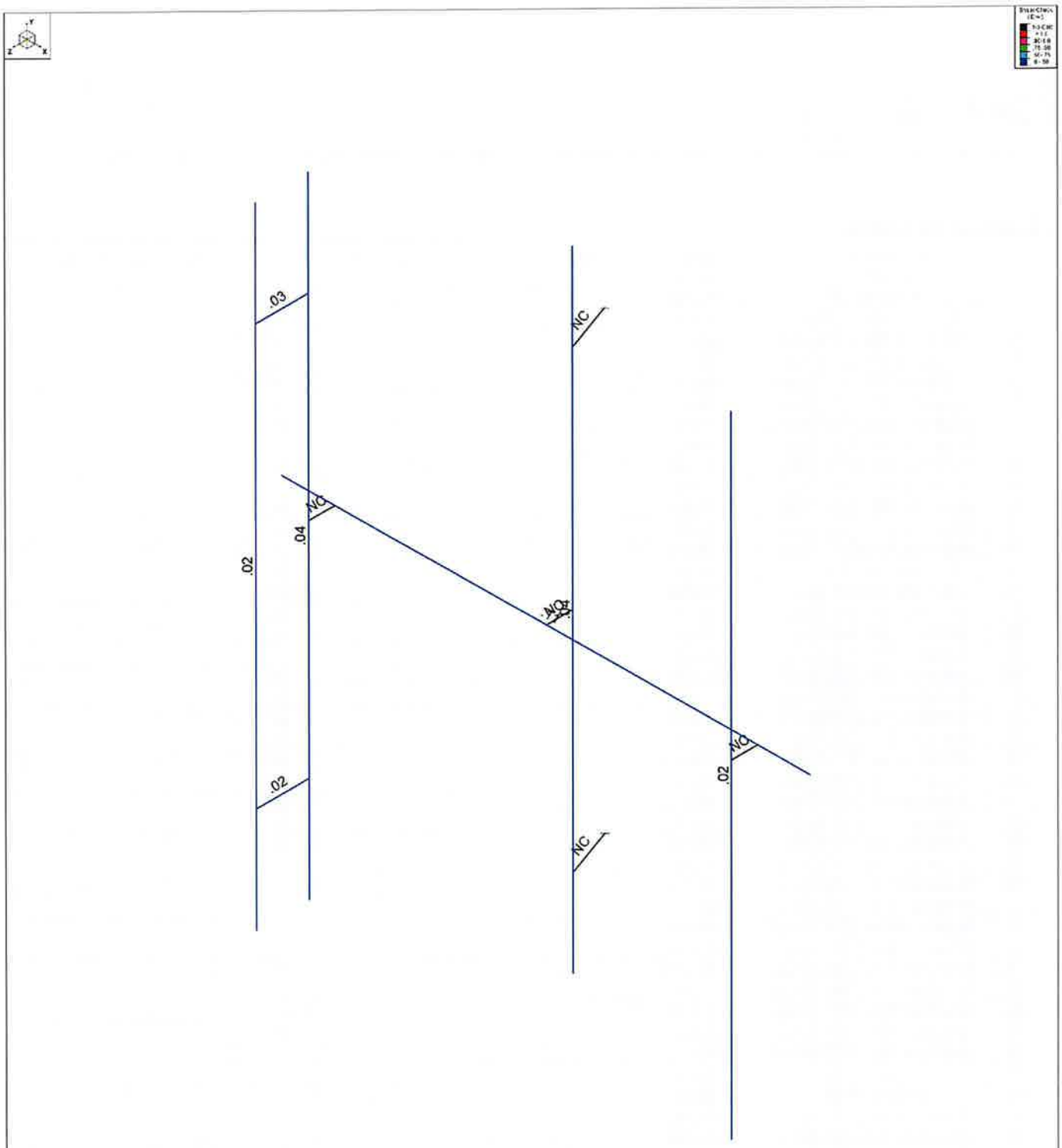
Envelope Only Solution

		SK - 1
		Feb 27, 2024 at 5:08 PM
		5000383011-VZW_MT_LOT_A_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 2
		Feb 27, 2024 at 5:08 PM
		5000383011-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 3
		Feb 27, 2024 at 5:08 PM
		5000383011-VZW_MT_LOT_A_H.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Antenna D	None					24			
2	Antenna Di	None					24			
3	Antenna Wo (0 Deg)	None					24			
4	Antenna Wo (30 Deg)	None					24			
5	Antenna Wo (60 Deg)	None					24			
6	Antenna Wo (90 Deg)	None					24			
7	Antenna Wo (120 Deg)	None					24			
8	Antenna Wo (150 Deg)	None					24			
9	Antenna Wo (180 Deg)	None					24			
10	Antenna Wo (210 Deg)	None					24			
11	Antenna Wo (240 Deg)	None					24			
12	Antenna Wo (270 Deg)	None					24			
13	Antenna Wo (300 Deg)	None					24			
14	Antenna Wo (330 Deg)	None					24			
15	Antenna Wi (0 Deg)	None					24			
16	Antenna Wi (30 Deg)	None					24			
17	Antenna Wi (60 Deg)	None					24			
18	Antenna Wi (90 Deg)	None					24			
19	Antenna Wi (120 Deg)	None					24			
20	Antenna Wi (150 Deg)	None					24			
21	Antenna Wi (180 Deg)	None					24			
22	Antenna Wi (210 Deg)	None					24			
23	Antenna Wi (240 Deg)	None					24			
24	Antenna Wi (270 Deg)	None					24			
25	Antenna Wi (300 Deg)	None					24			
26	Antenna Wi (330 Deg)	None					24			
27	Antenna Wm (0 Deg)	None					24			
28	Antenna Wm (30 Deg)	None					24			
29	Antenna Wm (60 Deg)	None					24			
30	Antenna Wm (90 Deg)	None					24			
31	Antenna Wm (120 Deg)	None					24			
32	Antenna Wm (150 Deg)	None					24			
33	Antenna Wm (180 Deg)	None					24			
34	Antenna Wm (210 Deg)	None					24			
35	Antenna Wm (240 Deg)	None					24			
36	Antenna Wm (270 Deg)	None					24			
37	Antenna Wm (300 Deg)	None					24			
38	Antenna Wm (330 Deg)	None					24			
39	Structure D	None		-1						
40	Structure Di	None						7		
41	Structure Wo (0 Deg)	None						14		
42	Structure Wo (30 Deg)	None						14		
43	Structure Wo (60 Deg)	None						14		
44	Structure Wo (90 Deg)	None						14		
45	Structure Wo (120 Deg)	None						14		
46	Structure Wo (150 Deg)	None						14		
47	Structure Wo (180 Deg)	None						14		
48	Structure Wo (210 Deg)	None						14		
49	Structure Wo (240 Deg)	None						14		
50	Structure Wo (270 Deg)	None						14		
51	Structure Wo (300 Deg)	None						14		
52	Structure Wo (330 Deg)	None						14		
53	Structure Wi (0 Deg)	None						14		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
54	Structure Wi (30 Deg)	None						14		
55	Structure Wi (60 Deg)	None						14		
56	Structure Wi (90 Deg)	None						14		
57	Structure Wi (120 Deg)	None						14		
58	Structure Wi (150 Deg)	None						14		
59	Structure Wi (180 Deg)	None						14		
60	Structure Wi (210 Deg)	None						14		
61	Structure Wi (240 Deg)	None						14		
62	Structure Wi (270 Deg)	None						14		
63	Structure Wi (300 Deg)	None						14		
64	Structure Wi (330 Deg)	None						14		
65	Structure Wm (0 Deg)	None						14		
66	Structure Wm (30 Deg)	None						14		
67	Structure Wm (60 Deg)	None						14		
68	Structure Wm (90 Deg)	None						14		
69	Structure Wm (120 Deg)	None						14		
70	Structure Wm (150 Deg)	None						14		
71	Structure Wm (180 Deg)	None						14		
72	Structure Wm (210 Deg)	None						14		
73	Structure Wm (240 Deg)	None						14		
74	Structure Wm (270 Deg)	None						14		
75	Structure Wm (300 Deg)	None						14		
76	Structure Wm (330 Deg)	None						14		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					24			
82	Antenna Eh (0 Deg)	None					16			
83	Antenna Eh (90 Deg)	None					16			
84	Structure Ev	ELY		-.041						
85	Structure Eh (0 Deg)	ELZ			-.102					
86	Structure Eh (90 Deg)	ELX	.102							

Load Combinations

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1														
2	1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1														
3	1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1														
4	1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1														
5	1.2D+1.0Wo (120 Deg)	Yes	Y		1	1.2	39	1.2	7	1	45	1														
6	1.2D+1.0Wo (150 Deg)	Yes	Y		1	1.2	39	1.2	8	1	46	1														
7	1.2D+1.0Wo (180 Deg)	Yes	Y		1	1.2	39	1.2	9	1	47	1														
8	1.2D+1.0Wo (210 Deg)	Yes	Y		1	1.2	39	1.2	10	1	48	1														
9	1.2D+1.0Wo (240 Deg)	Yes	Y		1	1.2	39	1.2	11	1	49	1														
10	1.2D+1.0Wo (270 Deg)	Yes	Y		1	1.2	39	1.2	12	1	50	1														
11	1.2D+1.0Wo (300 Deg)	Yes	Y		1	1.2	39	1.2	13	1	51	1														
12	1.2D+1.0Wo (330 Deg)	Yes	Y		1	1.2	39	1.2	14	1	52	1														
13	1.2D + 1.0Di + 1.0Wi (0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1										
14	1.2D + 1.0Di + 1.0Wi (3...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1										
15	1.2D + 1.0Di + 1.0Wi (6...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1										
16	1.2D + 1.0Di + 1.0Wi (9...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1										
17	1.2D + 1.0Di + 1.0Wi (1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1										
18	1.2D + 1.0Di + 1.0Wi (1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1										
19	1.2D + 1.0Di + 1.0Wi (1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1										

Load Combinations (Continued)

	Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
20	1.2D + 1.0Di + 1.0Wi (2...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1.0Di + 1.0Wi (2...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1.0Di + 1.0Wi (2...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1.0Di + 1.0Wi (3...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0Di + 1.0Wi (3...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0Ev + 1.0Eh (0...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83		ELZ	1	E...					
53	1.2D + 1.0Ev + 1.0Eh (3...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5				
54	1.2D + 1.0Ev + 1.0Eh (6...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866				
55	1.2D + 1.0Ev + 1.0Eh (9...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1				
56	1.2D + 1.0Ev + 1.0Eh (1...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	.866	ELZ	-.5	E...	.866				
57	1.2D + 1.0Ev + 1.0Eh (1...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.866	83	.5	ELZ	-.866	E...	.5				
58	1.2D + 1.0Ev + 1.0Eh (1...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83		ELZ	-1	E...					
59	1.2D + 1.0Ev + 1.0Eh (2...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.866	83	-.5	ELZ	-.866	E...	-.5				
60	1.2D + 1.0Ev + 1.0Eh (2...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	-.866	ELZ	-.5	E...	-.866				
61	1.2D + 1.0Ev + 1.0Eh (2...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1				
62	1.2D + 1.0Ev + 1.0Eh (3...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-.866	ELZ	.5	E...	-.866				
63	1.2D + 1.0Ev + 1.0Eh (3...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-.5	ELZ	.866	E...	-.5				
64	0.9D - 1.0Ev + 1.0Eh (0...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83		ELZ	1	E...					
65	0.9D - 1.0Ev + 1.0Eh (3...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5				
66	0.9D - 1.0Ev + 1.0Eh (6...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866				
67	0.9D - 1.0Ev + 1.0Eh (9...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1				
68	0.9D - 1.0Ev + 1.0Eh (1...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	.866	ELZ	-.5	E...	.866				
69	0.9D - 1.0Ev + 1.0Eh (1...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.866	83	.5	ELZ	-.866	E...	.5				
70	0.9D - 1.0Ev + 1.0Eh (1...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83		ELZ	-1	E...					
71	0.9D - 1.0Ev + 1.0Eh (2...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.866	83	-.5	ELZ	-.866	E...	-.5				
72	0.9D - 1.0Ev + 1.0Eh (2...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	-.866	ELZ	-.5	E...	-.866				
73	0.9D - 1.0Ev + 1.0Eh (2...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	ELZ		E...	-1				
74	0.9D - 1.0Ev + 1.0Eh (3...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-.866	ELZ	.5	E...	-.866				
75	0.9D - 1.0Ev + 1.0Eh (3...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-.5	ELZ	.866	E...	-.5				

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Antenna Pipe	PIPE_2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
2	Face Horizontal	PIPE_3.0	Column	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69
3	Mast Pipe	PIPE_4.0	Column	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
4	Pipe to Pipe	PIPE_2.0	Column	Pipe	A500 Gr C	Typical	1.02	.627	.627	1.25
5	Proposed Pipe	PIPE_2.5	Column	Pipe	A500 Gr C	Typical	1.61	1.45	1.45	2.89

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2
7	A500 Gr 50	29000	11154	.3	.65	.49	50	1.5	58	1.2
8	A500 Gr C	29000	11154	.3	.65	.49	45.7	1.5	61.6	1.2

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M4	N7	N6			Face Horizontal	Column	Pipe	A53 Gr. B	Typical
2	MP1A	N13	N14			Proposed Pipe	Column	Pipe	A500 Gr C	Typical
3	M8	N11	N12			RIGID	None	None	RIGID	Typical
4	MP3A	N17	N18			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
5	M10	N15	N16			RIGID	None	None	RIGID	Typical
6	M6	N11A	N12A			RIGID	None	None	RIGID	Typical
7	M7	N13A	N14A			Mast Pipe	Column	Pipe	A53 Gr. B	Typical
8	M8A	N15A	N16A			RIGID	None	None	RIGID	Typical
9	M9	N17A	N18A			RIGID	None	None	RIGID	Typical
10	MP2A	N21	N22			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
11	M11	N23	N24			Pipe to Pipe	Column	Pipe	A500 Gr C	Typical
12	M12	N25	N26			Pipe to Pipe	Column	Pipe	A500 Gr C	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M4						Yes	** NA **			None
2	MP1A						Yes	** NA **			None
3	M8						Yes	** NA **			None
4	MP3A						Yes	** NA **			None
5	M10						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M7						Yes	** NA **			None
8	M8A						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	MP2A						Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	Y	-28.65	12.6
2	MP2A	My	-.013	12.6
3	MP2A	Mz	-.005	12.6
4	MP2A	Y	-28.65	30.6
5	MP2A	My	-.013	30.6
6	MP2A	Mz	-.005	30.6
7	MP1A	Y	-34.5	1.56
8	MP1A	My	-.023	1.56
9	MP1A	Mz	.02	1.56
10	MP1A	Y	-34.5	67.56
11	MP1A	My	-.023	67.56
12	MP1A	Mz	.02	67.56
13	MP1A	Y	-34.5	1.56
14	MP1A	My	-.023	1.56
15	MP1A	Mz	-.02	1.56
16	MP1A	Y	-34.5	67.56
17	MP1A	My	-.023	67.56
18	MP1A	Mz	-.02	67.56
19	MP1A	Y	-74.7	12
20	MP1A	My	.037	12
21	MP1A	Mz	0	12
22	MP1A	Y	-79.1	48
23	MP1A	My	.04	48
24	MP1A	Mz	0	48

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	Y	-27.464	12.6
2	MP2A	My	-.013	12.6
3	MP2A	Mz	-.005	12.6
4	MP2A	Y	-27.464	30.6
5	MP2A	My	-.013	30.6
6	MP2A	Mz	-.005	30.6
7	MP1A	Y	-66.947	1.56
8	MP1A	My	-.045	1.56
9	MP1A	Mz	.039	1.56
10	MP1A	Y	-66.947	67.56
11	MP1A	My	-.045	67.56
12	MP1A	Mz	.039	67.56
13	MP1A	Y	-66.947	1.56
14	MP1A	My	-.045	1.56
15	MP1A	Mz	-.039	1.56
16	MP1A	Y	-66.947	67.56
17	MP1A	My	-.045	67.56
18	MP1A	Mz	-.039	67.56
19	MP1A	Y	-41.385	12
20	MP1A	My	.021	12
21	MP1A	Mz	0	12
22	MP1A	Y	-41.826	48
23	MP1A	My	.021	48
24	MP1A	Mz	0	48

Member Point Loads (BLC 3 : Antenna Wo (0 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	0	12.6

Member Point Loads (BLC 3 : Antenna Wo (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
2	MP2A	Z	-39.113	12.6
3	MP2A	Mx	.007	12.6
4	MP2A	X	0	30.6
5	MP2A	Z	-39.113	30.6
6	MP2A	Mx	.007	30.6
7	MP1A	X	0	1.56
8	MP1A	Z	-34.154	1.56
9	MP1A	Mx	-.02	1.56
10	MP1A	X	0	67.56
11	MP1A	Z	-34.154	67.56
12	MP1A	Mx	-.02	67.56
13	MP1A	X	0	1.56
14	MP1A	Z	-34.154	1.56
15	MP1A	Mx	.02	1.56
16	MP1A	X	0	67.56
17	MP1A	Z	-34.154	67.56
18	MP1A	Mx	.02	67.56
19	MP1A	X	0	12
20	MP1A	Z	-41.521	12
21	MP1A	Mx	0	12
22	MP1A	X	0	48
23	MP1A	Z	-50.093	48
24	MP1A	Mx	0	48

Member Point Loads (BLC 4 : Antenna Wo (30 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	20.748	12.6
2	MP2A	Z	-35.937	12.6
3	MP2A	Mx	-.004	12.6
4	MP2A	X	20.748	30.6
5	MP2A	Z	-35.937	30.6
6	MP2A	Mx	-.004	30.6
7	MP1A	X	18.182	1.56
8	MP1A	Z	-31.492	1.56
9	MP1A	Mx	-.03	1.56
10	MP1A	X	18.182	67.56
11	MP1A	Z	-31.492	67.56
12	MP1A	Mx	-.03	67.56
13	MP1A	X	18.182	1.56
14	MP1A	Z	-31.492	1.56
15	MP1A	Mx	.006	1.56
16	MP1A	X	18.182	67.56
17	MP1A	Z	-31.492	67.56
18	MP1A	Mx	.006	67.56
19	MP1A	X	19.053	12
20	MP1A	Z	-33	12
21	MP1A	Mx	.01	12
22	MP1A	X	23.054	48
23	MP1A	Z	-39.931	48
24	MP1A	Mx	.012	48

Member Point Loads (BLC 5 : Antenna Wo (60 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	26.829	12.6
2	MP2A	Z	-15.49	12.6
3	MP2A	Mx	-.01	12.6

Member Point Loads (BLC 5 : Antenna Wo (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
4	MP2A	X	26.829	30.6
5	MP2A	Z	-15.49	30.6
6	MP2A	Mx	-.01	30.6
7	MP1A	X	35.32	1.56
8	MP1A	Z	-20.392	1.56
9	MP1A	Mx	-.035	1.56
10	MP1A	X	35.32	67.56
11	MP1A	Z	-20.392	67.56
12	MP1A	Mx	-.035	67.56
13	MP1A	X	35.32	1.56
14	MP1A	Z	-20.392	1.56
15	MP1A	Mx	-.012	1.56
16	MP1A	X	35.32	67.56
17	MP1A	Z	-20.392	67.56
18	MP1A	Mx	-.012	67.56
19	MP1A	X	27.085	12
20	MP1A	Z	-15.637	12
21	MP1A	Mx	.014	12
22	MP1A	X	33.029	48
23	MP1A	Z	-19.069	48
24	MP1A	Mx	.017	48

Member Point Loads (BLC 6 : Antenna Wo (90 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	18.079	12.6
2	MP2A	Z	0	12.6
3	MP2A	Mx	-.008	12.6
4	MP2A	X	18.079	30.6
5	MP2A	Z	0	30.6
6	MP2A	Mx	-.008	30.6
7	MP1A	X	42.994	1.56
8	MP1A	Z	0	1.56
9	MP1A	Mx	-.029	1.56
10	MP1A	X	42.994	67.56
11	MP1A	Z	0	67.56
12	MP1A	Mx	-.029	67.56
13	MP1A	X	42.994	1.56
14	MP1A	Z	0	1.56
15	MP1A	Mx	-.029	1.56
16	MP1A	X	42.994	67.56
17	MP1A	Z	0	67.56
18	MP1A	Mx	-.029	67.56
19	MP1A	X	27.859	12
20	MP1A	Z	0	12
21	MP1A	Mx	.014	12
22	MP1A	X	34.154	48
23	MP1A	Z	0	48
24	MP1A	Mx	.017	48

Member Point Loads (BLC 7 : Antenna Wo (120 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	13.592	12.6
2	MP2A	Z	7.848	12.6
3	MP2A	Mx	-.008	12.6
4	MP2A	X	13.592	30.6
5	MP2A	Z	7.848	30.6

Member Point Loads (BLC 7 : Antenna Wo (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
6	MP2A	Mx	-.008	30.6
7	MP1A	X	35.32	1.56
8	MP1A	Z	20.392	1.56
9	MP1A	Mx	-.012	1.56
10	MP1A	X	35.32	67.56
11	MP1A	Z	20.392	67.56
12	MP1A	Mx	-.012	67.56
13	MP1A	X	35.32	1.56
14	MP1A	Z	20.392	1.56
15	MP1A	Mx	-.035	1.56
16	MP1A	X	35.32	67.56
17	MP1A	Z	20.392	67.56
18	MP1A	Mx	-.035	67.56
19	MP1A	X	27.085	12
20	MP1A	Z	15.637	12
21	MP1A	Mx	.014	12
22	MP1A	X	33.029	48
23	MP1A	Z	19.069	48
24	MP1A	Mx	.017	48

Member Point Loads (BLC 8 : Antenna Wo (150 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	13.106	12.6
2	MP2A	Z	22.7	12.6
3	MP2A	Mx	-.01	12.6
4	MP2A	X	13.106	30.6
5	MP2A	Z	22.7	30.6
6	MP2A	Mx	-.01	30.6
7	MP1A	X	18.182	1.56
8	MP1A	Z	31.492	1.56
9	MP1A	Mx	.006	1.56
10	MP1A	X	18.182	67.56
11	MP1A	Z	31.492	67.56
12	MP1A	Mx	.006	67.56
13	MP1A	X	18.182	1.56
14	MP1A	Z	31.492	1.56
15	MP1A	Mx	-.03	1.56
16	MP1A	X	18.182	67.56
17	MP1A	Z	31.492	67.56
18	MP1A	Mx	-.03	67.56
19	MP1A	X	19.053	12
20	MP1A	Z	33	12
21	MP1A	Mx	.01	12
22	MP1A	X	23.054	48
23	MP1A	Z	39.931	48
24	MP1A	Mx	.012	48

Member Point Loads (BLC 9 : Antenna Wo (180 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	0	12.6
2	MP2A	Z	39.113	12.6
3	MP2A	Mx	-.007	12.6
4	MP2A	X	0	30.6
5	MP2A	Z	39.113	30.6
6	MP2A	Mx	-.007	30.6
7	MP1A	X	0	1.56

Member Point Loads (BLC 9 : Antenna Wo (180 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
8	MP1A	Z	34.154	1.56
9	MP1A	Mx	.02	1.56
10	MP1A	X	0	67.56
11	MP1A	Z	34.154	67.56
12	MP1A	Mx	.02	67.56
13	MP1A	X	0	1.56
14	MP1A	Z	34.154	1.56
15	MP1A	Mx	-.02	1.56
16	MP1A	X	0	67.56
17	MP1A	Z	34.154	67.56
18	MP1A	Mx	-.02	67.56
19	MP1A	X	0	12
20	MP1A	Z	41.521	12
21	MP1A	Mx	0	12
22	MP1A	X	0	48
23	MP1A	Z	50.093	48
24	MP1A	Mx	0	48

Member Point Loads (BLC 10 : Antenna Wo (210 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-20.748	12.6
2	MP2A	Z	35.937	12.6
3	MP2A	Mx	.004	12.6
4	MP2A	X	-20.748	30.6
5	MP2A	Z	35.937	30.6
6	MP2A	Mx	.004	30.6
7	MP1A	X	-18.182	1.56
8	MP1A	Z	31.492	1.56
9	MP1A	Mx	.03	1.56
10	MP1A	X	-18.182	67.56
11	MP1A	Z	31.492	67.56
12	MP1A	Mx	.03	67.56
13	MP1A	X	-18.182	1.56
14	MP1A	Z	31.492	1.56
15	MP1A	Mx	-.006	1.56
16	MP1A	X	-18.182	67.56
17	MP1A	Z	31.492	67.56
18	MP1A	Mx	-.006	67.56
19	MP1A	X	-19.053	12
20	MP1A	Z	33	12
21	MP1A	Mx	-.01	12
22	MP1A	X	-23.054	48
23	MP1A	Z	39.931	48
24	MP1A	Mx	-.012	48

Member Point Loads (BLC 11 : Antenna Wo (240 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-26.829	12.6
2	MP2A	Z	15.49	12.6
3	MP2A	Mx	.01	12.6
4	MP2A	X	-26.829	30.6
5	MP2A	Z	15.49	30.6
6	MP2A	Mx	.01	30.6
7	MP1A	X	-35.32	1.56
8	MP1A	Z	20.392	1.56
9	MP1A	Mx	.035	1.56

Member Point Loads (BLC 11 : Antenna Wo (240 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
10	MP1A	X	-35.32	67.56
11	MP1A	Z	20.392	67.56
12	MP1A	Mx	.035	67.56
13	MP1A	X	-35.32	1.56
14	MP1A	Z	20.392	1.56
15	MP1A	Mx	.012	1.56
16	MP1A	X	-35.32	67.56
17	MP1A	Z	20.392	67.56
18	MP1A	Mx	.012	67.56
19	MP1A	X	-27.085	12
20	MP1A	Z	15.637	12
21	MP1A	Mx	-.014	12
22	MP1A	X	-33.029	48
23	MP1A	Z	19.069	48
24	MP1A	Mx	-.017	48

Member Point Loads (BLC 12 : Antenna Wo (270 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-18.079	12.6
2	MP2A	Z	0	12.6
3	MP2A	Mx	.008	12.6
4	MP2A	X	-18.079	30.6
5	MP2A	Z	0	30.6
6	MP2A	Mx	.008	30.6
7	MP1A	X	-42.994	1.56
8	MP1A	Z	0	1.56
9	MP1A	Mx	.029	1.56
10	MP1A	X	-42.994	67.56
11	MP1A	Z	0	67.56
12	MP1A	Mx	.029	67.56
13	MP1A	X	-42.994	1.56
14	MP1A	Z	0	1.56
15	MP1A	Mx	.029	1.56
16	MP1A	X	-42.994	67.56
17	MP1A	Z	0	67.56
18	MP1A	Mx	.029	67.56
19	MP1A	X	-27.859	12
20	MP1A	Z	0	12
21	MP1A	Mx	-.014	12
22	MP1A	X	-34.154	48
23	MP1A	Z	0	48
24	MP1A	Mx	-.017	48

Member Point Loads (BLC 13 : Antenna Wo (300 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-13.592	12.6
2	MP2A	Z	-7.848	12.6
3	MP2A	Mx	.008	12.6
4	MP2A	X	-13.592	30.6
5	MP2A	Z	-7.848	30.6
6	MP2A	Mx	.008	30.6
7	MP1A	X	-35.32	1.56
8	MP1A	Z	-20.392	1.56
9	MP1A	Mx	.012	1.56
10	MP1A	X	-35.32	67.56
11	MP1A	Z	-20.392	67.56

Member Point Loads (BLC 13 : Antenna Wo (300 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
12	MP1A	Mx	.012	67.56
13	MP1A	X	-35.32	1.56
14	MP1A	Z	-20.392	1.56
15	MP1A	Mx	.035	1.56
16	MP1A	X	-35.32	67.56
17	MP1A	Z	-20.392	67.56
18	MP1A	Mx	.035	67.56
19	MP1A	X	-27.085	12
20	MP1A	Z	-15.637	12
21	MP1A	Mx	-.014	12
22	MP1A	X	-33.029	48
23	MP1A	Z	-19.069	48
24	MP1A	Mx	-.017	48

Member Point Loads (BLC 14 : Antenna Wo (330 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-13.106	12.6
2	MP2A	Z	-22.7	12.6
3	MP2A	Mx	.01	12.6
4	MP2A	X	-13.106	30.6
5	MP2A	Z	-22.7	30.6
6	MP2A	Mx	.01	30.6
7	MP1A	X	-18.182	1.56
8	MP1A	Z	-31.492	1.56
9	MP1A	Mx	-.006	1.56
10	MP1A	X	-18.182	67.56
11	MP1A	Z	-31.492	67.56
12	MP1A	Mx	-.006	67.56
13	MP1A	X	-18.182	1.56
14	MP1A	Z	-31.492	1.56
15	MP1A	Mx	.03	1.56
16	MP1A	X	-18.182	67.56
17	MP1A	Z	-31.492	67.56
18	MP1A	Mx	.03	67.56
19	MP1A	X	-19.053	12
20	MP1A	Z	-33	12
21	MP1A	Mx	-.01	12
22	MP1A	X	-23.054	48
23	MP1A	Z	-39.931	48
24	MP1A	Mx	-.012	48

Member Point Loads (BLC 15 : Antenna Wi (0 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	0	12.6
2	MP2A	Z	-9.307	12.6
3	MP2A	Mx	.002	12.6
4	MP2A	X	0	30.6
5	MP2A	Z	-9.307	30.6
6	MP2A	Mx	.002	30.6
7	MP1A	X	0	1.56
8	MP1A	Z	-20.742	1.56
9	MP1A	Mx	-.012	1.56
10	MP1A	X	0	67.56
11	MP1A	Z	-20.742	67.56
12	MP1A	Mx	-.012	67.56
13	MP1A	X	0	1.56

Member Point Loads (BLC 15 : Antenna Wi (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
14	MP1A	Z	-20.742	1.56
15	MP1A	Mx	.012	1.56
16	MP1A	X	0	67.56
17	MP1A	Z	-20.742	67.56
18	MP1A	Mx	.012	67.56
19	MP1A	X	0	12
20	MP1A	Z	-10.28	12
21	MP1A	Mx	0	12
22	MP1A	X	0	48
23	MP1A	Z	-10.28	48
24	MP1A	Mx	0	48

Member Point Loads (BLC 16 : Antenna Wi (30 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	4.905	12.6
2	MP2A	Z	-8.496	12.6
3	MP2A	Mx	-.000852	12.6
4	MP2A	X	4.905	30.6
5	MP2A	Z	-8.496	30.6
6	MP2A	Mx	-.000852	30.6
7	MP1A	X	10.128	1.56
8	MP1A	Z	-17.542	1.56
9	MP1A	Mx	-.017	1.56
10	MP1A	X	10.128	67.56
11	MP1A	Z	-17.542	67.56
12	MP1A	Mx	-.017	67.56
13	MP1A	X	10.128	1.56
14	MP1A	Z	-17.542	1.56
15	MP1A	Mx	.003	1.56
16	MP1A	X	10.128	67.56
17	MP1A	Z	-17.542	67.56
18	MP1A	Mx	.003	67.56
19	MP1A	X	4.746	12
20	MP1A	Z	-8.221	12
21	MP1A	Mx	.002	12
22	MP1A	X	4.762	48
23	MP1A	Z	-8.248	48
24	MP1A	Mx	.002	48

Member Point Loads (BLC 17 : Antenna Wi (60 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	6.573	12.6
2	MP2A	Z	-3.795	12.6
3	MP2A	Mx	-.002	12.6
4	MP2A	X	6.573	30.6
5	MP2A	Z	-3.795	30.6
6	MP2A	Mx	-.002	30.6
7	MP1A	X	16.699	1.56
8	MP1A	Z	-9.641	1.56
9	MP1A	Mx	-.017	1.56
10	MP1A	X	16.699	67.56
11	MP1A	Z	-9.641	67.56
12	MP1A	Mx	-.017	67.56
13	MP1A	X	16.699	1.56
14	MP1A	Z	-9.641	1.56
15	MP1A	Mx	-.006	1.56

Member Point Loads (BLC 17 : Antenna Wi (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
16	MP1A	X	16.699	67.56
17	MP1A	Z	-9.641	67.56
18	MP1A	Mx	-.006	67.56
19	MP1A	X	6.857	12
20	MP1A	Z	-3.959	12
21	MP1A	Mx	.003	12
22	MP1A	X	6.939	48
23	MP1A	Z	-4.006	48
24	MP1A	Mx	.003	48

Member Point Loads (BLC 18 : Antenna Wi (90 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	4.867	12.6
2	MP2A	Z	0	12.6
3	MP2A	Mx	-.002	12.6
4	MP2A	X	4.867	30.6
5	MP2A	Z	0	30.6
6	MP2A	Mx	-.002	30.6
7	MP1A	X	18.795	1.56
8	MP1A	Z	0	1.56
9	MP1A	Mx	-.013	1.56
10	MP1A	X	18.795	67.56
11	MP1A	Z	0	67.56
12	MP1A	Mx	-.013	67.56
13	MP1A	X	18.795	1.56
14	MP1A	Z	0	1.56
15	MP1A	Mx	-.013	1.56
16	MP1A	X	18.795	67.56
17	MP1A	Z	0	67.56
18	MP1A	Mx	-.013	67.56
19	MP1A	X	7.131	12
20	MP1A	Z	0	12
21	MP1A	Mx	.004	12
22	MP1A	X	7.257	48
23	MP1A	Z	0	48
24	MP1A	Mx	.004	48

Member Point Loads (BLC 19 : Antenna Wi (120 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	3.779	12.6
2	MP2A	Z	2.182	12.6
3	MP2A	Mx	-.002	12.6
4	MP2A	X	3.779	30.6
5	MP2A	Z	2.182	30.6
6	MP2A	Mx	-.002	30.6
7	MP1A	X	16.699	1.56
8	MP1A	Z	9.641	1.56
9	MP1A	Mx	-.006	1.56
10	MP1A	X	16.699	67.56
11	MP1A	Z	9.641	67.56
12	MP1A	Mx	-.006	67.56
13	MP1A	X	16.699	1.56
14	MP1A	Z	9.641	1.56
15	MP1A	Mx	-.017	1.56
16	MP1A	X	16.699	67.56
17	MP1A	Z	9.641	67.56

Member Point Loads (BLC 19 : Antenna Wi (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
18	MP1A	Mx	-.017	67.56
19	MP1A	X	6.857	12
20	MP1A	Z	3.959	12
21	MP1A	Mx	.003	12
22	MP1A	X	6.939	48
23	MP1A	Z	4.006	48
24	MP1A	Mx	.003	48

Member Point Loads (BLC 20 : Antenna Wi (150 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	3.292	12.6
2	MP2A	Z	5.702	12.6
3	MP2A	Mx	-.003	12.6
4	MP2A	X	3.292	30.6
5	MP2A	Z	5.702	30.6
6	MP2A	Mx	-.003	30.6
7	MP1A	X	10.128	1.56
8	MP1A	Z	17.542	1.56
9	MP1A	Mx	.003	1.56
10	MP1A	X	10.128	67.56
11	MP1A	Z	17.542	67.56
12	MP1A	Mx	.003	67.56
13	MP1A	X	10.128	1.56
14	MP1A	Z	17.542	1.56
15	MP1A	Mx	-.017	1.56
16	MP1A	X	10.128	67.56
17	MP1A	Z	17.542	67.56
18	MP1A	Mx	-.017	67.56
19	MP1A	X	4.746	12
20	MP1A	Z	8.221	12
21	MP1A	Mx	.002	12
22	MP1A	X	4.762	48
23	MP1A	Z	8.248	48
24	MP1A	Mx	.002	48

Member Point Loads (BLC 21 : Antenna Wi (180 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	0	12.6
2	MP2A	Z	9.307	12.6
3	MP2A	Mx	-.002	12.6
4	MP2A	X	0	30.6
5	MP2A	Z	9.307	30.6
6	MP2A	Mx	-.002	30.6
7	MP1A	X	0	1.56
8	MP1A	Z	20.742	1.56
9	MP1A	Mx	.012	1.56
10	MP1A	X	0	67.56
11	MP1A	Z	20.742	67.56
12	MP1A	Mx	.012	67.56
13	MP1A	X	0	1.56
14	MP1A	Z	20.742	1.56
15	MP1A	Mx	-.012	1.56
16	MP1A	X	0	67.56
17	MP1A	Z	20.742	67.56
18	MP1A	Mx	-.012	67.56
19	MP1A	X	0	12

Member Point Loads (BLC 21 : Antenna Wi (180 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
20	MP1A	Z	10.28	12
21	MP1A	Mx	0	12
22	MP1A	X	0	48
23	MP1A	Z	10.28	48
24	MP1A	Mx	0	48

Member Point Loads (BLC 22 : Antenna Wi (210 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-4.905	12.6
2	MP2A	Z	8.496	12.6
3	MP2A	Mx	.000852	12.6
4	MP2A	X	-4.905	30.6
5	MP2A	Z	8.496	30.6
6	MP2A	Mx	.000852	30.6
7	MP1A	X	-10.128	1.56
8	MP1A	Z	17.542	1.56
9	MP1A	Mx	.017	1.56
10	MP1A	X	-10.128	67.56
11	MP1A	Z	17.542	67.56
12	MP1A	Mx	.017	67.56
13	MP1A	X	-10.128	1.56
14	MP1A	Z	17.542	1.56
15	MP1A	Mx	-.003	1.56
16	MP1A	X	-10.128	67.56
17	MP1A	Z	17.542	67.56
18	MP1A	Mx	-.003	67.56
19	MP1A	X	-4.746	12
20	MP1A	Z	8.221	12
21	MP1A	Mx	-.002	12
22	MP1A	X	-4.762	48
23	MP1A	Z	8.248	48
24	MP1A	Mx	-.002	48

Member Point Loads (BLC 23 : Antenna Wi (240 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-6.573	12.6
2	MP2A	Z	3.795	12.6
3	MP2A	Mx	.002	12.6
4	MP2A	X	-6.573	30.6
5	MP2A	Z	3.795	30.6
6	MP2A	Mx	.002	30.6
7	MP1A	X	-16.699	1.56
8	MP1A	Z	9.641	1.56
9	MP1A	Mx	.017	1.56
10	MP1A	X	-16.699	67.56
11	MP1A	Z	9.641	67.56
12	MP1A	Mx	.017	67.56
13	MP1A	X	-16.699	1.56
14	MP1A	Z	9.641	1.56
15	MP1A	Mx	.006	1.56
16	MP1A	X	-16.699	67.56
17	MP1A	Z	9.641	67.56
18	MP1A	Mx	.006	67.56
19	MP1A	X	-6.857	12
20	MP1A	Z	3.959	12
21	MP1A	Mx	-.003	12

Member Point Loads (BLC 23 : Antenna Wi (240 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
22	MP1A	X	-6.939	48
23	MP1A	Z	4.006	48
24	MP1A	Mx	-.003	48

Member Point Loads (BLC 24 : Antenna Wi (270 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-4.867	12.6
2	MP2A	Z	0	12.6
3	MP2A	Mx	.002	12.6
4	MP2A	X	-4.867	30.6
5	MP2A	Z	0	30.6
6	MP2A	Mx	.002	30.6
7	MP1A	X	-18.795	1.56
8	MP1A	Z	0	1.56
9	MP1A	Mx	.013	1.56
10	MP1A	X	-18.795	67.56
11	MP1A	Z	0	67.56
12	MP1A	Mx	.013	67.56
13	MP1A	X	-18.795	1.56
14	MP1A	Z	0	1.56
15	MP1A	Mx	.013	1.56
16	MP1A	X	-18.795	67.56
17	MP1A	Z	0	67.56
18	MP1A	Mx	.013	67.56
19	MP1A	X	-7.131	12
20	MP1A	Z	0	12
21	MP1A	Mx	-.004	12
22	MP1A	X	-7.257	48
23	MP1A	Z	0	48
24	MP1A	Mx	-.004	48

Member Point Loads (BLC 25 : Antenna Wi (300 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-3.779	12.6
2	MP2A	Z	-2.182	12.6
3	MP2A	Mx	.002	12.6
4	MP2A	X	-3.779	30.6
5	MP2A	Z	-2.182	30.6
6	MP2A	Mx	.002	30.6
7	MP1A	X	-16.699	1.56
8	MP1A	Z	-9.641	1.56
9	MP1A	Mx	.006	1.56
10	MP1A	X	-16.699	67.56
11	MP1A	Z	-9.641	67.56
12	MP1A	Mx	.006	67.56
13	MP1A	X	-16.699	1.56
14	MP1A	Z	-9.641	1.56
15	MP1A	Mx	.017	1.56
16	MP1A	X	-16.699	67.56
17	MP1A	Z	-9.641	67.56
18	MP1A	Mx	.017	67.56
19	MP1A	X	-6.857	12
20	MP1A	Z	-3.959	12
21	MP1A	Mx	-.003	12
22	MP1A	X	-6.939	48
23	MP1A	Z	-4.006	48

Member Point Loads (BLC 25 : Antenna Wi (300 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
24	MP1A	Mx	-.003	48

Member Point Loads (BLC 26 : Antenna Wi (330 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-3.292	12.6
2	MP2A	Z	-5.702	12.6
3	MP2A	Mx	.003	12.6
4	MP2A	X	-3.292	30.6
5	MP2A	Z	-5.702	30.6
6	MP2A	Mx	.003	30.6
7	MP1A	X	-10.128	1.56
8	MP1A	Z	-17.542	1.56
9	MP1A	Mx	-.003	1.56
10	MP1A	X	-10.128	67.56
11	MP1A	Z	-17.542	67.56
12	MP1A	Mx	-.003	67.56
13	MP1A	X	-10.128	1.56
14	MP1A	Z	-17.542	1.56
15	MP1A	Mx	.017	1.56
16	MP1A	X	-10.128	67.56
17	MP1A	Z	-17.542	67.56
18	MP1A	Mx	.017	67.56
19	MP1A	X	-4.746	12
20	MP1A	Z	-8.221	12
21	MP1A	Mx	-.002	12
22	MP1A	X	-4.762	48
23	MP1A	Z	-8.248	48
24	MP1A	Mx	-.002	48

Member Point Loads (BLC 27 : Antenna Wm (0 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	0	12.6
2	MP2A	Z	-2.445	12.6
3	MP2A	Mx	.000418	12.6
4	MP2A	X	0	30.6
5	MP2A	Z	-2.445	30.6
6	MP2A	Mx	.000418	30.6
7	MP1A	X	0	1.56
8	MP1A	Z	-2.135	1.56
9	MP1A	Mx	-.001	1.56
10	MP1A	X	0	67.56
11	MP1A	Z	-2.135	67.56
12	MP1A	Mx	-.001	67.56
13	MP1A	X	0	1.56
14	MP1A	Z	-2.135	1.56
15	MP1A	Mx	.001	1.56
16	MP1A	X	0	67.56
17	MP1A	Z	-2.135	67.56
18	MP1A	Mx	.001	67.56
19	MP1A	X	0	12
20	MP1A	Z	-2.595	12
21	MP1A	Mx	0	12
22	MP1A	X	0	48
23	MP1A	Z	-3.131	48
24	MP1A	Mx	0	48

Member Point Loads (BLC 28 : Antenna Wm (30 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	1.297	12.6
2	MP2A	Z	-2.246	12.6
3	MP2A	Mx	-.000225	12.6
4	MP2A	X	1.297	30.6
5	MP2A	Z	-2.246	30.6
6	MP2A	Mx	-.000225	30.6
7	MP1A	X	1.136	1.56
8	MP1A	Z	-1.968	1.56
9	MP1A	Mx	-.002	1.56
10	MP1A	X	1.136	67.56
11	MP1A	Z	-1.968	67.56
12	MP1A	Mx	-.002	67.56
13	MP1A	X	1.136	1.56
14	MP1A	Z	-1.968	1.56
15	MP1A	Mx	.000391	1.56
16	MP1A	X	1.136	67.56
17	MP1A	Z	-1.968	67.56
18	MP1A	Mx	.000391	67.56
19	MP1A	X	1.191	12
20	MP1A	Z	-2.063	12
21	MP1A	Mx	.000596	12
22	MP1A	X	1.441	48
23	MP1A	Z	-2.496	48
24	MP1A	Mx	.000721	48

Member Point Loads (BLC 29 : Antenna Wm (60 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	1.677	12.6
2	MP2A	Z	-.968	12.6
3	MP2A	Mx	-.000622	12.6
4	MP2A	X	1.677	30.6
5	MP2A	Z	-.968	30.6
6	MP2A	Mx	-.000622	30.6
7	MP1A	X	2.208	1.56
8	MP1A	Z	-1.275	1.56
9	MP1A	Mx	-.002	1.56
10	MP1A	X	2.208	67.56
11	MP1A	Z	-1.275	67.56
12	MP1A	Mx	-.002	67.56
13	MP1A	X	2.208	1.56
14	MP1A	Z	-1.275	1.56
15	MP1A	Mx	-.000728	1.56
16	MP1A	X	2.208	67.56
17	MP1A	Z	-1.275	67.56
18	MP1A	Mx	-.000728	67.56
19	MP1A	X	1.693	12
20	MP1A	Z	-.977	12
21	MP1A	Mx	.000847	12
22	MP1A	X	2.064	48
23	MP1A	Z	-1.192	48
24	MP1A	Mx	.001	48

Member Point Loads (BLC 30 : Antenna Wm (90 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	1.13	12.6
2	MP2A	Z	0	12.6

Member Point Loads (BLC 30 : Antenna Wm (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
3	MP2A	Mx	-.000531	12.6
4	MP2A	X	1.13	30.6
5	MP2A	Z	0	30.6
6	MP2A	Mx	-.000531	30.6
7	MP1A	X	2.687	1.56
8	MP1A	Z	0	1.56
9	MP1A	Mx	-.002	1.56
10	MP1A	X	2.687	67.56
11	MP1A	Z	0	67.56
12	MP1A	Mx	-.002	67.56
13	MP1A	X	2.687	1.56
14	MP1A	Z	0	1.56
15	MP1A	Mx	-.002	1.56
16	MP1A	X	2.687	67.56
17	MP1A	Z	0	67.56
18	MP1A	Mx	-.002	67.56
19	MP1A	X	1.741	12
20	MP1A	Z	0	12
21	MP1A	Mx	.000871	12
22	MP1A	X	2.135	48
23	MP1A	Z	0	48
24	MP1A	Mx	.001	48

Member Point Loads (BLC 31 : Antenna Wm (120 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	.85	12.6
2	MP2A	Z	.49	12.6
3	MP2A	Mx	-.000483	12.6
4	MP2A	X	.85	30.6
5	MP2A	Z	.49	30.6
6	MP2A	Mx	-.000483	30.6
7	MP1A	X	2.208	1.56
8	MP1A	Z	1.275	1.56
9	MP1A	Mx	-.000728	1.56
10	MP1A	X	2.208	67.56
11	MP1A	Z	1.275	67.56
12	MP1A	Mx	-.000728	67.56
13	MP1A	X	2.208	1.56
14	MP1A	Z	1.275	1.56
15	MP1A	Mx	-.002	1.56
16	MP1A	X	2.208	67.56
17	MP1A	Z	1.275	67.56
18	MP1A	Mx	-.002	67.56
19	MP1A	X	1.693	12
20	MP1A	Z	.977	12
21	MP1A	Mx	.000847	12
22	MP1A	X	2.064	48
23	MP1A	Z	1.192	48
24	MP1A	Mx	.001	48

Member Point Loads (BLC 32 : Antenna Wm (150 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	.819	12.6
2	MP2A	Z	1.419	12.6
3	MP2A	Mx	-.000627	12.6
4	MP2A	X	.819	30.6

Member Point Loads (BLC 32 : Antenna Wm (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
5	MP2A	Z	1.419	30.6
6	MP2A	Mx	-.000627	30.6
7	MP1A	X	1.136	1.56
8	MP1A	Z	1.968	1.56
9	MP1A	Mx	.000391	1.56
10	MP1A	X	1.136	67.56
11	MP1A	Z	1.968	67.56
12	MP1A	Mx	.000391	67.56
13	MP1A	X	1.136	1.56
14	MP1A	Z	1.968	1.56
15	MP1A	Mx	-.002	1.56
16	MP1A	X	1.136	67.56
17	MP1A	Z	1.968	67.56
18	MP1A	Mx	-.002	67.56
19	MP1A	X	1.191	12
20	MP1A	Z	2.063	12
21	MP1A	Mx	.000596	12
22	MP1A	X	1.441	48
23	MP1A	Z	2.496	48
24	MP1A	Mx	.000721	48

Member Point Loads (BLC 33 : Antenna Wm (180 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	0	12.6
2	MP2A	Z	2.445	12.6
3	MP2A	Mx	-.000418	12.6
4	MP2A	X	0	30.6
5	MP2A	Z	2.445	30.6
6	MP2A	Mx	-.000418	30.6
7	MP1A	X	0	1.56
8	MP1A	Z	2.135	1.56
9	MP1A	Mx	.001	1.56
10	MP1A	X	0	67.56
11	MP1A	Z	2.135	67.56
12	MP1A	Mx	.001	67.56
13	MP1A	X	0	1.56
14	MP1A	Z	2.135	1.56
15	MP1A	Mx	-.001	1.56
16	MP1A	X	0	67.56
17	MP1A	Z	2.135	67.56
18	MP1A	Mx	-.001	67.56
19	MP1A	X	0	12
20	MP1A	Z	2.595	12
21	MP1A	Mx	0	12
22	MP1A	X	0	48
23	MP1A	Z	3.131	48
24	MP1A	Mx	0	48

Member Point Loads (BLC 34 : Antenna Wm (210 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-1.297	12.6
2	MP2A	Z	2.246	12.6
3	MP2A	Mx	.000225	12.6
4	MP2A	X	-1.297	30.6
5	MP2A	Z	2.246	30.6
6	MP2A	Mx	.000225	30.6

Member Point Loads (BLC 34 : Antenna Wm (210 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
7	MP1A	X	-1.136	1.56
8	MP1A	Z	1.968	1.56
9	MP1A	Mx	.002	1.56
10	MP1A	X	-1.136	67.56
11	MP1A	Z	1.968	67.56
12	MP1A	Mx	.002	67.56
13	MP1A	X	-1.136	1.56
14	MP1A	Z	1.968	1.56
15	MP1A	Mx	-.000391	1.56
16	MP1A	X	-1.136	67.56
17	MP1A	Z	1.968	67.56
18	MP1A	Mx	-.000391	67.56
19	MP1A	X	-1.191	12
20	MP1A	Z	2.063	12
21	MP1A	Mx	-.000596	12
22	MP1A	X	-1.441	48
23	MP1A	Z	2.496	48
24	MP1A	Mx	-.000721	48

Member Point Loads (BLC 35 : Antenna Wm (240 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-1.677	12.6
2	MP2A	Z	.968	12.6
3	MP2A	Mx	.000622	12.6
4	MP2A	X	-1.677	30.6
5	MP2A	Z	.968	30.6
6	MP2A	Mx	.000622	30.6
7	MP1A	X	-2.208	1.56
8	MP1A	Z	1.275	1.56
9	MP1A	Mx	.002	1.56
10	MP1A	X	-2.208	67.56
11	MP1A	Z	1.275	67.56
12	MP1A	Mx	.002	67.56
13	MP1A	X	-2.208	1.56
14	MP1A	Z	1.275	1.56
15	MP1A	Mx	.000728	1.56
16	MP1A	X	-2.208	67.56
17	MP1A	Z	1.275	67.56
18	MP1A	Mx	.000728	67.56
19	MP1A	X	-1.693	12
20	MP1A	Z	.977	12
21	MP1A	Mx	-.000847	12
22	MP1A	X	-2.064	48
23	MP1A	Z	1.192	48
24	MP1A	Mx	-.001	48

Member Point Loads (BLC 36 : Antenna Wm (270 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-1.13	12.6
2	MP2A	Z	0	12.6
3	MP2A	Mx	.000531	12.6
4	MP2A	X	-1.13	30.6
5	MP2A	Z	0	30.6
6	MP2A	Mx	.000531	30.6
7	MP1A	X	-2.687	1.56
8	MP1A	Z	0	1.56

Member Point Loads (BLC 36 : Antenna Wm (270 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
9	MP1A	Mx	.002	1.56
10	MP1A	X	-2.687	67.56
11	MP1A	Z	0	67.56
12	MP1A	Mx	.002	67.56
13	MP1A	X	-2.687	1.56
14	MP1A	Z	0	1.56
15	MP1A	Mx	.002	1.56
16	MP1A	X	-2.687	67.56
17	MP1A	Z	0	67.56
18	MP1A	Mx	.002	67.56
19	MP1A	X	-1.741	12
20	MP1A	Z	0	12
21	MP1A	Mx	-.000871	12
22	MP1A	X	-2.135	48
23	MP1A	Z	0	48
24	MP1A	Mx	-.001	48

Member Point Loads (BLC 37 : Antenna Wm (300 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-.85	12.6
2	MP2A	Z	-.49	12.6
3	MP2A	Mx	.000483	12.6
4	MP2A	X	-.85	30.6
5	MP2A	Z	-.49	30.6
6	MP2A	Mx	.000483	30.6
7	MP1A	X	-2.208	1.56
8	MP1A	Z	-1.275	1.56
9	MP1A	Mx	.000728	1.56
10	MP1A	X	-2.208	67.56
11	MP1A	Z	-1.275	67.56
12	MP1A	Mx	.000728	67.56
13	MP1A	X	-2.208	1.56
14	MP1A	Z	-1.275	1.56
15	MP1A	Mx	.002	1.56
16	MP1A	X	-2.208	67.56
17	MP1A	Z	-1.275	67.56
18	MP1A	Mx	.002	67.56
19	MP1A	X	-1.693	12
20	MP1A	Z	-.977	12
21	MP1A	Mx	-.000847	12
22	MP1A	X	-2.064	48
23	MP1A	Z	-1.192	48
24	MP1A	Mx	-.001	48

Member Point Loads (BLC 38 : Antenna Wm (330 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	-.819	12.6
2	MP2A	Z	-1.419	12.6
3	MP2A	Mx	.000627	12.6
4	MP2A	X	-.819	30.6
5	MP2A	Z	-1.419	30.6
6	MP2A	Mx	.000627	30.6
7	MP1A	X	-1.136	1.56
8	MP1A	Z	-1.968	1.56
9	MP1A	Mx	-.000391	1.56
10	MP1A	X	-1.136	67.56

Member Point Loads (BLC 38 : Antenna Wm (330 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
11	MP1A	Z	-1.968	67.56
12	MP1A	Mx	-.000391	67.56
13	MP1A	X	-1.136	1.56
14	MP1A	Z	-1.968	1.56
15	MP1A	Mx	.002	1.56
16	MP1A	X	-1.136	67.56
17	MP1A	Z	-1.968	67.56
18	MP1A	Mx	.002	67.56
19	MP1A	X	-1.191	12
20	MP1A	Z	-2.063	12
21	MP1A	Mx	-.000596	12
22	MP1A	X	-1.441	48
23	MP1A	Z	-2.496	48
24	MP1A	Mx	-.000721	48

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	M8	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	M10	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	M4	Y	-250	%50

Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	M4	Y	-250	0

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	Y	-1.167	12.6
2	MP2A	My	-.000548	12.6
3	MP2A	Mz	-.0002	12.6
4	MP2A	Y	-1.167	30.6
5	MP2A	My	-.000548	30.6
6	MP2A	Mz	-.0002	30.6
7	MP1A	Y	-1.406	1.56
8	MP1A	My	-.000937	1.56
9	MP1A	Mz	.00082	1.56
10	MP1A	Y	-1.406	67.56
11	MP1A	My	-.000937	67.56
12	MP1A	Mz	.00082	67.56
13	MP1A	Y	-1.406	1.56
14	MP1A	My	-.000937	1.56
15	MP1A	Mz	-.00082	1.56
16	MP1A	Y	-1.406	67.56
17	MP1A	My	-.000937	67.56
18	MP1A	Mz	-.00082	67.56
19	MP1A	Y	-3.044	12
20	MP1A	My	.002	12
21	MP1A	Mz	0	12

Member Point Loads (BLC 81 : Antenna Ev) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
22	MP1A	Y	-3.223	48
23	MP1A	My	.002	48
24	MP1A	Mz	0	48

Member Point Loads (BLC 82 : Antenna Eh (0 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	Z	-2.918	12.6
2	MP2A	Mx	.000499	12.6
3	MP2A	Z	-2.918	30.6
4	MP2A	Mx	.000499	30.6
5	MP1A	Z	-3.514	1.56
6	MP1A	Mx	-.002	1.56
7	MP1A	Z	-3.514	67.56
8	MP1A	Mx	-.002	67.56
9	MP1A	Z	-3.514	1.56
10	MP1A	Mx	.002	1.56
11	MP1A	Z	-3.514	67.56
12	MP1A	Mx	.002	67.56
13	MP1A	Z	-7.609	12
14	MP1A	Mx	0	12
15	MP1A	Z	-8.058	48
16	MP1A	Mx	0	48

Member Point Loads (BLC 83 : Antenna Eh (90 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	MP2A	X	2.918	12.6
2	MP2A	Mx	-.001	12.6
3	MP2A	X	2.918	30.6
4	MP2A	Mx	-.001	30.6
5	MP1A	X	3.514	1.56
6	MP1A	Mx	-.002	1.56
7	MP1A	X	3.514	67.56
8	MP1A	Mx	-.002	67.56
9	MP1A	X	3.514	1.56
10	MP1A	Mx	-.002	1.56
11	MP1A	X	3.514	67.56
12	MP1A	Mx	-.002	67.56
13	MP1A	X	7.609	12
14	MP1A	Mx	.004	12
15	MP1A	X	8.058	48
16	MP1A	Mx	.004	48

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/...
No Data to Print ...			

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [...	LC
1	N16A	m...	340.645	46	688.646	31	171.851	1	.219	7	.295	9	.349	46
2		m...	-687.59	28	224.585	75	-414.82	7	-.352	1	-.416	3	-.344	28
3	N18A	m...	686.14	34	688.646	25	361.636	13	.179	1	.395	9	.348	40
4		m...	-339.152	40	224.585	69	-111.748	7	-.312	7	-.273	3	-.343	34
5	Totals:	m...	453.915	10	1377.292	27	526.568	1						
6		m...	-453.915	4	449.169	74	-526.568	7						

Joint Reactions (By Combination)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N16A	-173.553	313.646	171.851	-.352	-.224	-.062
2	1	N18A	173.553	313.646	354.717	.179	-.092	-.062
3	1	Totals:	0	627.292	526.568			
4	1	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
5	2	N16A	-319.9	313.646	132.184	-.313	-.362	-.204
6	2	N18A	58.056	313.646	321.343	.144	-.217	.06
7	2	Totals:	-261.844	627.292	453.527			
8	2	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
9	3	N16A	-403.604	313.646	11.428	-.196	-.416	-.286
10	3	N18A	-18.464	313.646	232.252	.048	-.273	.137
11	3	Totals:	-422.069	627.292	243.681			
12	3	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
13	4	N16A	-412.55	313.646	-121.504	-.067	-.341	-.296
14	4	N18A	-41.366	313.646	121.504	-.067	-.209	.157
15	4	Totals:	-453.915	627.292	0			
16	4	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
17	5	N16A	-380.889	313.646	-241.322	.051	-.194	-.265
18	5	N18A	-14.705	313.646	12.924	-.177	-.066	.129
19	5	Totals:	-395.595	627.292	-228.398			
20	5	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
21	6	N16A	-306.789	313.646	-352.46	.159	-.045	-.192
22	6	N18A	60.229	313.646	-74.593	-.27	.08	.056
23	6	Totals:	-246.56	627.292	-427.053			
24	6	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
25	7	N16A	-173.552	313.646	-414.82	.219	.103	-.062
26	7	N18A	173.552	313.646	-111.748	-.312	.214	-.062
27	7	Totals:	0	627.292	-526.568			
28	7	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
29	8	N16A	-27.205	313.646	-375.16	.18	.241	.081
30	8	N18A	289.049	313.646	-78.367	-.278	.338	-.184
31	8	Totals:	261.844	627.292	-453.527			
32	8	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
33	9	N16A	56.496	313.646	-254.43	.063	.295	.163
34	9	N18A	365.573	313.646	10.749	-.182	.395	-.261
35	9	Totals:	422.069	627.292	-243.681			
36	9	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
37	10	N16A	65.446	313.646	-121.504	-.067	.22	.173
38	10	N18A	388.47	313.646	121.504	-.067	.33	-.28
39	10	Totals:	453.915	627.292	0			
40	10	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
41	11	N16A	33.786	313.646	-1.684	-.184	.073	.142
42	11	N18A	361.809	313.646	230.081	.044	.187	-.253
43	11	Totals:	395.595	627.292	228.398			
44	11	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
45	12	N16A	-40.319	313.646	109.468	-.293	-.077	.069

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
46	12	N18A	286.878	313.646	317.585	.136	.041	-.179
47	12	Totals:	246.56	627.292	427.053			
48	12	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
49	13	N16A	-348.732	598.457	-171.846	-.201	-.207	-.129
50	13	N18A	348.732	598.457	361.636	-.007	.03	-.129
51	13	Totals:	0	1196.914	189.79			
52	13	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
53	14	N16A	-398.717	598.457	-187.707	-.185	-.251	-.179
54	14	N18A	306.402	598.457	347.602	-.022	-.012	-.085
55	14	Totals:	-92.315	1196.914	159.894			
56	14	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
57	15	N16A	-426.293	598.457	-229.578	-.143	-.254	-.207
58	15	N18A	280.929	598.457	313.504	-.058	-.014	-.059
59	15	Totals:	-145.364	1196.914	83.925			
60	15	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
61	16	N16A	-430.318	598.457	-274.44	-.099	-.22	-.211
62	16	N18A	274.081	598.457	274.44	-.099	.017	-.053
63	16	Totals:	-156.236	1196.914	0			
64	16	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
65	17	N16A	-421.498	598.457	-316.534	-.057	-.165	-.202
66	17	N18A	281.722	598.457	235.835	-.139	.071	-.06
67	17	Totals:	-139.776	1196.914	-80.7			
68	17	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
69	18	N16A	-395.949	598.457	-356.378	-.017	-.096	-.177
70	18	N18A	306.86	598.457	202.071	-.174	.138	-.086
71	18	Totals:	-89.089	1196.914	-154.307			
72	18	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
73	19	N16A	-348.732	598.457	-377.031	.004	-.027	-.129
74	19	N18A	348.732	598.457	187.241	-.191	.204	-.129
75	19	Totals:	0	1196.914	-189.79			
76	19	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
77	20	N16A	-298.746	598.457	-361.17	-.013	.018	-.08
78	20	N18A	391.061	598.457	201.276	-.176	.245	-.174
79	20	Totals:	92.315	1196.914	-159.894			
80	20	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
81	21	N16A	-271.17	598.457	-319.301	-.054	.02	-.052
82	21	N18A	416.534	598.457	235.376	-.14	.248	-.2
83	21	Totals:	145.364	1196.914	-83.925			
84	21	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
85	22	N16A	-267.145	598.457	-274.44	-.099	-.014	-.048
86	22	N18A	423.381	598.457	274.44	-.099	.216	-.206
87	22	Totals:	156.236	1196.914	0			
88	22	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
89	23	N16A	-275.965	598.457	-232.345	-.141	-.069	-.057
90	23	N18A	415.741	598.457	313.045	-.059	.162	-.198
91	23	Totals:	139.776	1196.914	80.7			
92	23	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
93	24	N16A	-301.514	598.457	-192.5	-.181	-.137	-.082
94	24	N18A	390.603	598.457	346.807	-.023	.095	-.173
95	24	Totals:	89.089	1196.914	154.307			
96	24	COG (in):	X: 10.729	Y: 2.002	Z: 29.514			
97	25	N16A	-672.68	688.646	-165.577	-.219	-.295	-.329
98	25	N18A	672.68	688.646	198.49	-.186	.275	-.329
99	25	Totals:	0	1377.292	32.913			
100	25	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
101	26	N16A	-681.814	688.646	-168.058	-.217	-.303	-.338
102	26	N18A	665.449	688.646	196.403	-.188	.267	-.322

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
103	26	Totals:	-16.365	1377.292	28.345			
104	26	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
105	27	N16A	-687.037	688.646	-175.605	-.209	-.307	-.343
106	27	N18A	660.655	688.646	190.837	-.194	.264	-.317
107	27	Totals:	-26.382	1377.292	15.232			
108	27	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
109	28	N16A	-687.59	688.646	-183.914	-.201	-.302	-.344
110	28	N18A	659.221	688.646	183.914	-.201	.268	-.316
111	28	Totals:	-28.37	1377.292	0			
112	28	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
113	29	N16A	-685.617	688.646	-191.404	-.194	-.293	-.342
114	29	N18A	660.89	688.646	177.128	-.208	.277	-.317
115	29	Totals:	-24.728	1377.292	-14.276			
116	29	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
117	30	N16A	-680.993	688.646	-198.352	-.187	-.284	-.337
118	30	N18A	665.585	688.646	171.661	-.214	.286	-.322
119	30	Totals:	-15.409	1377.292	-26.691			
120	30	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
121	31	N16A	-672.68	688.646	-202.251	-.183	-.274	-.329
122	31	N18A	672.68	688.646	169.338	-.217	.294	-.329
123	31	Totals:	0	1377.292	-32.913			
124	31	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
125	32	N16A	-663.547	688.646	-199.771	-.186	-.266	-.32
126	32	N18A	679.911	688.646	171.425	-.215	.302	-.337
127	32	Totals:	16.365	1377.292	-28.345			
128	32	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
129	33	N16A	-658.323	688.646	-192.224	-.193	-.262	-.315
130	33	N18A	684.705	688.646	176.992	-.209	.305	-.342
131	33	Totals:	26.382	1377.292	-15.232			
132	33	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
133	34	N16A	-657.77	688.646	-183.914	-.201	-.267	-.315
134	34	N18A	686.14	688.646	183.914	-.201	.301	-.343
135	34	Totals:	28.37	1377.292	0			
136	34	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
137	35	N16A	-659.743	688.646	-176.425	-.209	-.276	-.317
138	35	N18A	684.471	688.646	190.701	-.194	.293	-.341
139	35	Totals:	24.728	1377.292	14.276			
140	35	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
141	36	N16A	-664.367	688.646	-169.477	-.215	-.286	-.321
142	36	N18A	679.776	688.646	196.168	-.189	.283	-.337
143	36	Totals:	15.409	1377.292	26.691			
144	36	COG (in):	X: 17.716	Y: 1.069	Z: 27.751			
145	37	N16A	325.713	688.646	-165.577	-.219	.174	.334
146	37	N18A	-325.713	688.646	198.49	-.186	-.194	.334
147	37	Totals:	0	1377.292	32.913			
148	37	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
149	38	N16A	316.573	688.646	-168.058	-.217	.166	.325
150	38	N18A	-332.937	688.646	196.403	-.188	-.202	.342
151	38	Totals:	-16.365	1377.292	28.345			
152	38	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
153	39	N16A	311.342	688.646	-175.605	-.209	.162	.32
154	39	N18A	-337.723	688.646	190.836	-.194	-.205	.347
155	39	Totals:	-26.382	1377.292	15.232			
156	39	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
157	40	N16A	310.782	688.646	-183.914	-.201	.167	.32
158	40	N18A	-339.152	688.646	183.914	-.201	-.201	.348
159	40	Totals:	-28.37	1377.292	0			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
160	40	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
161	41	N16A	312.758	688.646	-191.404	-.194	.176	.321
162	41	N18A	-337.485	688.646	177.128	-.208	-.192	.346
163	41	Totals:	-24.728	1377.292	-14.276			
164	41	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
165	42	N16A	317.391	688.646	-198.352	-.187	.185	.326
166	42	N18A	-332.8	688.646	171.66	-.214	-.183	.342
167	42	Totals:	-15.409	1377.292	-26.691			
168	42	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
169	43	N16A	325.714	688.646	-202.251	-.183	.195	.334
170	43	N18A	-325.714	688.646	169.338	-.217	-.175	.334
171	43	Totals:	0	1377.292	-32.913			
172	43	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
173	44	N16A	334.854	688.646	-199.77	-.186	.203	.343
174	44	N18A	-318.49	688.646	171.425	-.215	-.167	.327
175	44	Totals:	16.365	1377.292	-28.345			
176	44	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
177	45	N16A	340.085	688.646	-192.224	-.193	.207	.348
178	45	N18A	-313.704	688.646	176.992	-.209	-.164	.322
179	45	Totals:	26.382	1377.292	-15.232			
180	45	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
181	46	N16A	340.645	688.646	-183.914	-.201	.202	.349
182	46	N18A	-312.275	688.646	183.914	-.201	-.168	.321
183	46	Totals:	28.37	1377.292	0			
184	46	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
185	47	N16A	338.669	688.646	-176.425	-.209	.193	.347
186	47	N18A	-313.942	688.646	190.7	-.194	-.177	.322
187	47	Totals:	24.728	1377.292	14.276			
188	47	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
189	48	N16A	334.036	688.646	-169.477	-.215	.183	.342
190	48	N18A	-318.627	688.646	196.168	-.189	-.186	.327
191	48	Totals:	15.409	1377.292	26.691			
192	48	COG (in):	X: -8.422	Y: 1.069	Z: 27.751			
193	49	N16A	-173.551	501.146	-152.709	-.134	-.055	-.03
194	49	N18A	173.551	501.146	152.709	-.134	.055	-.03
195	49	Totals:	0	1002.292	0			
196	49	COG (in):	X: 6.386	Y: 1.469	Z: 28.266			
197	50	N16A	138.487	501.146	-152.709	-.134	.091	.178
198	50	N18A	-138.487	501.146	152.709	-.134	-.091	.178
199	50	Totals:	0	1002.292	0			
200	50	COG (in):	X: -4.838	Y: 1.469	Z: 28.266			
201	51	N16A	-202.459	365.921	-141.745	-.078	-.071	-.072
202	51	N18A	202.459	365.921	141.745	-.078	.071	-.072
203	51	Totals:	0	731.841	0			
204	51	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
205	52	N16A	-179.441	324.296	-95.51	-.098	-.09	-.064
206	52	N18A	179.441	324.296	148.76	-.044	.037	-.064
207	52	Totals:	0	648.592	53.25			
208	52	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
209	53	N16A	-194.485	324.296	-99.546	-.094	-.101	-.078
210	53	N18A	167.86	324.296	145.66	-.048	.027	-.052
211	53	Totals:	-26.625	648.592	46.115			
212	53	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
213	54	N16A	-205.498	324.296	-110.569	-.083	-.102	-.089
214	54	N18A	159.383	324.296	137.194	-.057	.027	-.043
215	54	Totals:	-46.115	648.592	26.625			
216	54	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
217	55	N16A	-209.529	324.296	-125.627	-.069	-.092	-.093
218	55	N18A	156.279	324.296	125.627	-.069	.036	-.039
219	55	Totals:	-53.25	648.592	0			
220	55	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
221	56	N16A	-205.498	324.296	-140.686	-.054	-.075	-.089
222	56	N18A	159.383	324.296	114.061	-.081	.053	-.043
223	56	Totals:	-46.115	648.592	-26.625			
224	56	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
225	57	N16A	-194.485	324.296	-151.709	-.044	-.054	-.078
226	57	N18A	167.86	324.296	105.594	-.09	.072	-.052
227	57	Totals:	-26.625	648.592	-46.115			
228	57	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
229	58	N16A	-179.441	324.296	-155.744	-.04	-.036	-.064
230	58	N18A	179.441	324.296	102.494	-.093	.089	-.064
231	58	Totals:	0	648.592	-53.25			
232	58	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
233	59	N16A	-164.396	324.296	-151.709	-.044	-.024	-.049
234	59	N18A	191.021	324.296	105.594	-.09	.099	-.076
235	59	Totals:	26.625	648.592	-46.115			
236	59	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
237	60	N16A	-153.383	324.296	-140.686	-.054	-.024	-.039
238	60	N18A	199.498	324.296	114.061	-.081	.099	-.085
239	60	Totals:	46.115	648.592	-26.625			
240	60	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
241	61	N16A	-149.352	324.296	-125.627	-.069	-.033	-.035
242	61	N18A	202.602	324.296	125.627	-.069	.089	-.088
243	61	Totals:	53.25	648.592	0			
244	61	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
245	62	N16A	-153.384	324.296	-110.569	-.083	-.051	-.039
246	62	N18A	199.498	324.296	137.194	-.057	.073	-.085
247	62	Totals:	46.115	648.592	26.625			
248	62	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
249	63	N16A	-164.396	324.296	-99.545	-.094	-.072	-.049
250	63	N18A	191.021	324.296	145.66	-.048	.053	-.076
251	63	Totals:	26.625	648.592	46.115			
252	63	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
253	64	N16A	-124.288	224.585	-56.903	-.077	-.071	-.044
254	64	N18A	124.288	224.585	110.153	-.023	.017	-.044
255	64	Totals:	0	449.169	53.25			
256	64	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
257	65	N16A	-139.333	224.585	-60.938	-.073	-.082	-.059
258	65	N18A	112.708	224.585	107.052	-.027	.008	-.032
259	65	Totals:	-26.625	449.169	46.115			
260	65	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
261	66	N16A	-150.346	224.585	-71.958	-.062	-.083	-.069
262	66	N18A	104.231	224.585	98.583	-.035	.008	-.023
263	66	Totals:	-46.115	449.169	26.625			
264	66	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
265	67	N16A	-154.378	224.585	-87.013	-.048	-.073	-.073
266	67	N18A	101.128	224.585	87.013	-.048	.017	-.02
267	67	Totals:	-53.25	449.169	0			
268	67	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
269	68	N16A	-150.346	224.585	-102.067	-.033	-.056	-.069
270	68	N18A	104.231	224.585	75.442	-.06	.034	-.023
271	68	Totals:	-46.115	449.169	-26.625			
272	68	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
273	69	N16A	-139.333	224.585	-113.087	-.023	-.035	-.059

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
274	69	N18A	112.708	224.585	66.973	-.069	.053	-.032
275	69	Totals:	-26.625	449.169	-46.115			
276	69	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
277	70	N16A	-124.288	224.585	-117.122	-.019	-.016	-.044
278	70	N18A	124.288	224.585	63.872	-.072	.07	-.044
279	70	Totals:	0	449.169	-53.25			
280	70	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
281	71	N16A	-109.243	224.585	-113.087	-.023	-.005	-.03
282	71	N18A	135.868	224.585	66.973	-.069	.079	-.056
283	71	Totals:	26.625	449.169	-46.115			
284	71	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
285	72	N16A	-98.23	224.585	-102.067	-.033	-.004	-.019
286	72	N18A	144.345	224.585	75.442	-.06	.079	-.065
287	72	Totals:	46.115	449.169	-26.625			
288	72	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
289	73	N16A	-94.198	224.585	-87.013	-.048	-.014	-.015
290	73	N18A	147.448	224.585	87.013	-.048	.07	-.069
291	73	Totals:	53.25	449.169	0			
292	73	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
293	74	N16A	-98.23	224.585	-71.958	-.062	-.031	-.019
294	74	N18A	144.345	224.585	98.583	-.035	.053	-.065
295	74	Totals:	46.115	449.169	26.625			
296	74	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			
297	75	N16A	-109.243	224.585	-60.938	-.073	-.052	-.03
298	75	N18A	135.868	224.585	107.052	-.027	.034	-.056
299	75	Totals:	26.625	449.169	46.115			
300	75	COG (in):	X: 10.204	Y: 2.347	Z: 29.396			

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	L...	Dir	LC	phi*Pn...	phi*P...	phi*Mn y...	phi*Mn ...	Eqn
1	M4	PIPE_...	.401	30	27	.111	30		19	57037...	65205	5.749	5.749	H1-...
2	MP1A	PIPE_...	.070	34.5	4	.019	4...		4	45073...	66219...	4.696	4.696	H1-...
3	MP3A	PIPE_...	.091	34.5	8	.035	3...		9	20866...	32130	1.872	1.872	H1-...
4	M7	PIPE_...	.104	36	27	.038	1...		3	83097...	93240	10.631	10.631	H1-...
5	MP2A	PIPE_...	.032	13.5	8	.016	12		7	20866...	32130	1.872	1.872	H1-...
6	M11	PIPE_...	.034	0	1	.025	0		3	41788...	41952...	2.444	2.444	H1-...
7	M12	PIPE_...	.023	0	7	.020	0		9	41788...	41952...	2.444	2.444	H1-...

VzW SMART Tool© Vendor

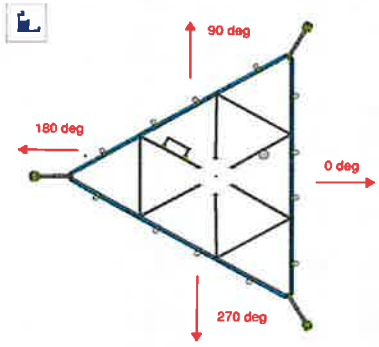
Client:	Verizon Wireless	Date:	2/27/2024
Site Name:	WOLCOTT NW CT - A		
MDG #:	5000383011		
Fuze ID #:	16945993	Page:	1

Version 2.00

I. Mount-to-Tower Connection Check

Custom Orientation Required — Yes

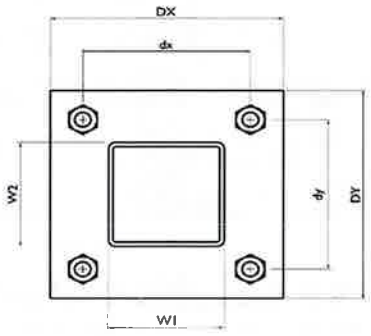
Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N16A	20
N18A	20



Tower Connection Bolt Checks — Yes

Bolt Orientation — Parallel

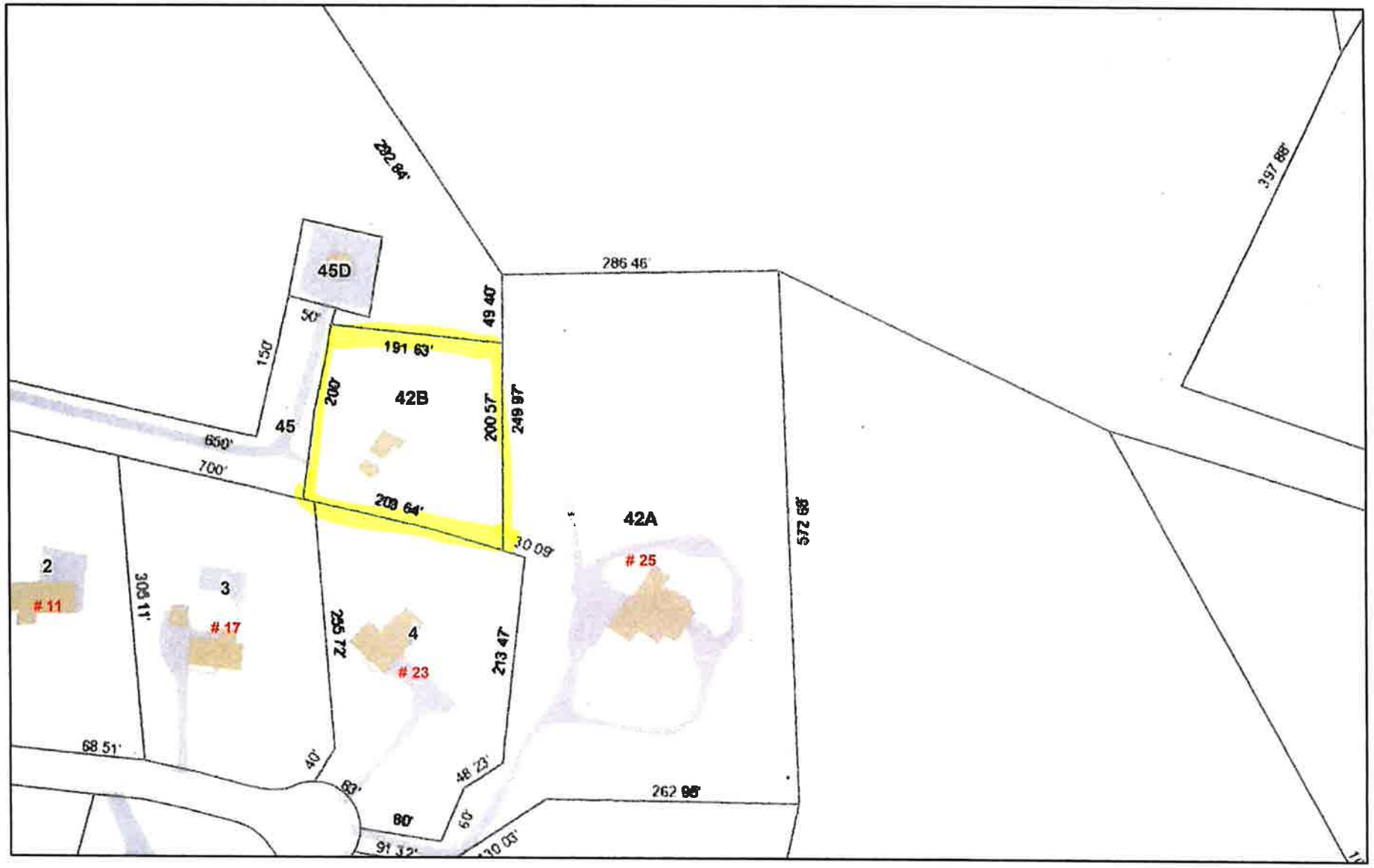
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	13
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	3
Bolt Type:	A307
Bolt Diameter (in):	0.5
Required Tensile Strength / bolt (kips):	0.7
Required Shear Strength / bolt (kips):	0.3
Tensile Capacity / bolt (kips):	6.6
Shear Capacity / bolt (kips):	4.0
Bolt Overall Utilization:	**11.1%**



Tower Connection Baseplate Checks — No

ATTACHMENT 5

Town of Wolcott



10/16/2023, 7:33:54 AM

Parcels

Buildings

Other Impervious

1:2,257

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

UConn/CTDEEP, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

ANDREWS RD

Location	ANDREWS RD	**Mblu**	106/ 1/ 42B/ /
Acct#	S0522200	**Owner**	SOUTHERN NEW ENG TEL CO
Assessment	$210,410	**Appraisal**	$300,590
PID	5792	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$70,090	$230,500	$300,590
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$49,060	$161,350	$210,410

Owner of Record

Owner	SOUTHERN NEW ENG TEL CO
Co-Owner	C/O FRONTIER COMMUNICATIONS
Address	401 MERRITT 7 TAX DEPT NORWALK , CT 06851

Sale Price	$0
Certificate	
Book & Page	0059/0443
Sale Date	10/17/1957
Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**

ATTACHMENT 6

Verizon/Wolcott NW

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	quadient CORRECTION IM! $003.34 FIRST-CLASS POSTAGE
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Thomas G. Dunn, Mayor Town of Wolcott 10 Kenea Avenue Wolcott, CT 06716				
2.	David Kalinowski, Zoning Enforcement Officer Town of Wolcott 10 Kenea Avenue Wolcott, CT 06716				
3.	Southern New England Telephone Co. C/O Frontier Communications 401 Merritt 7 – Tax Dept Norwalk, CT 06851				
4.					
5.					
6.					

OLD STATE HOUSE STATION 06103 JUN 26 2024 US

PS Form **3665**, January 2017 (Page 1 of 1) PSN 7530-17-000-5549

See Reverse for Instructions