VERTICAL DEVELOPMENT

20 Commercial St.
Branford, CT 06405
Phone: (203) 208-0806
Fax: (203) 488-4820

December 1, 2014

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Attn: Ms. Melanie Bachman, Executive Director

Re: 1069 Connecticut Ave. – Bridgeport, CT

Dear Ms. Bachman,

On behalf of New Cingular Wireless PCS, LLC ("AT&T"), enclosed for filing are One (1) original and two (2) copies of AT&T's Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site.

I also enclose herewith a check in the amount of $625.00 representing the fee for the Notice of Exempt Modification.

If you have any questions, please feel free to contact me.

Thank you,

By: Paul F. Sagristano Digitally signed by Paul F. Sagristano DN: cn=Paul F. Sagristano, o, ou, email=psagristano@yahoo.com, c=US Date: 2014.12.02 08:05:00 -05'00'

Name: Paul F. Sagristano
Vertical Development LLC
20 Commercial Street
Branford, CT 06405
Phone – 917-841-0247
Fax – 401-633-6202
psagristano@verticaldevelopmentllc.com

Notice of Exempt Modification
1069 Connecticut Ave., Bridgeport, CT

New Cingular Wireless PCS, LLC ("AT&T") submits this Notice of Exempt Modification to the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-73 and 16-50j-72(b) of the Regulations of Connecticut State Agencies ("Regulations") in connection with AT&T's planned modification of antennas and associated equipment on an existing 126' Monopole tower located at 1069 Connecticut Ave., in the City of Bridgeport. More particularly, AT&T plans to upgrade this site by adding 4G LTE technology to its facilities. The proposed modifications will not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six (6) decibels, or add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Connecticut General Statutes § 22a-162.

To better meet the growing voice and data demands of its wireless customers, AT&T is upgrading their network nationwide to include the 2500 MHz band to its current 4G technology, which will provide faster service and better overall performance. Pursuant to the LTE upgrade at this site, AT&T will add antennas, install RRHs, and install related equipment to its equipment area within the fenced compound at the base of the tower.

The 126' monopole tower located at 1069 Connecticut Ave., in the City of Bridgeport (lat. 41.183609, long. -73.158305) is owned by American Tower Corp. It is in an approx. 2700+ square foot fenced compound. AT&T currently has nine (9) antennas, three (3) per sector), behind which, mounted to the same pipe as the 3 LTE antennas currently at the site, is one (1) RRH for a total of six (3) at a centerline of 106' installed on the tower and associated transmission lines (one (1) per antenna). AT&T's base station equipment is located adjacent to the base of the tower within the fenced compound. A site plan depicting this is attached.

AT&T plans to remove all existing equipment and install a new Commscope MTC3607 platform mount. The existing equipment will be replaced on the new platform mount with the exception of the 3 existing Kathrein 800 10122 GSM antennas, which will be replaced with three (3) OPA-65R-LCUU-H6 LTE antennas, one (1) per sector, each with a centerline of 106', and associated transmission lines (one (1) per antenna). Located behind each new and each existing antenna, installed on the same pipe mount, will be 3 new RRU's per sector (1 RRU 12, 1 RRU 32, 1 RRU E2 and 1 RRU A2 (which is attached to the back of the RRU 12) in addition to the replaced RRUs 11 for a total of 12. The height of the tower will not need to be increased. AT&T also plans to install new Ericcson RBS 6601 radio equipment within an existing cabinet and a new GE Power plant inside their existing equipment room within the tower compound's fenced border, they also plan to add 2 Fiber Trunks and 4 DC Trunks along the same route as the existing Fiber and DC Trunks within the inside of the Monopole. The compound's boundaries will not need to be extended. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

AT&T commissioned American Tower Corporation to perform a structural analysis of the tower to verify that it can support the proposed loading. The tower "Passes with Proposed modifications at (94.0% Capacity)" (see page 1 of Structural Analysis Report, November 12, 2014).

The proposed modifications will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Connecticut General Statutes § 22a-162. A radio frequency emissions analysis prepared by EBI Consulting indicates that the proposed final configuration (including other carriers on the tower) will emit 58.88% of the allowable FCC established general public limit sampled at the ground level (see the 5th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, November 21, 2014). Emission values for the AT&T antennas have been calculated from the sample

point, which is the top of a six foot person standing at the base of the tower. Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 3rd and 4th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, October 15, 2014). The information used in the report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1 (see the 2nd & 3rd page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, October 15, 2014).

In conclusion, AT&T's proposed modifications do not constitute a modification subject to the Council's review because AT&T will not change the height of the tower, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards. Therefore, AT&T respectfully requests that the Council acknowledge that this Notice of Exempt Modification meets the Council's exemption criteria.

PROJECT INFORMATION

SCOPE OF WORK:
- REMOVE ALL TOWER TOP EQUIPMENT & REPLACE SECTOR FRAMES.
- AT&T ANTENNAS: (2) NEW LTE ANTENNAS PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (6) NEW LTE ANTENNAS; (3) EXISTING UMTS ANTENNAS & TMAs TO BE RE-USED (1 PER SECTOR)
- AT&T RRUs: (3) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (9) NEW RRUs; (1) EXISTING RRU PER SECTOR TO BE REUSED, FOR A TOTAL OF (3) EXISTING RRUs.
- (1) NEW A2 MODULES PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) A2 MODULES.
- (2) NEW AT&T DC6 SURGE SUPPRESSORS; (1) EXISTING DC6 TO BE REUSED.
- NEW POWER PLANT.
- NEW LTE RBS-6601 & DC-DC CONVERTER INSTALLED IN EXISTING LTE RACK
- REMOVE (6) EXISTING DIPLEXERS INSIDE EQUIPMENT SHELTER & REPLACE WITH (6) NEW DIPLEXERS ON EXISTING OVERHEAD LADDER RACK.
- (2) NEW FIBER TRUNKS & (4) NEW DC TRUNKS TOTAL.

SITE ADDRESS:	1069 CONNECTICUT AVENUE BRIDGEPORT, CT 06607
LATITUDE:	41.183609 41° 11' 0.99"N
LONGITUDE:	-73.158385 73° 9' 30.19"W
USID:	79478
TOWER OWNER:	AMERICAN TOWER CORPORATION 116 HUNTINGTON AVE., 11TH FLOOR BOSTON, MA 02116
TYPE OF SITE:	MONOPOLE/INDOOR EQUIPMENT
MONOPOLE HEIGHT:	126'-0"±
RAD CENTER:	106'-0"±
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

at&t MOBILITY

FA CODE: 10084453
SITE NUMBER: CT2252
SITE NAME: BRIDGEPORT CT. CONN AVE

PROJECT TEAM

CLIENT REPRESENTATIVE
COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: DAVID COOPER
PHONE: 617-639-4908
EMAIL: dcooper@empiretelecomm.com

SITE ACQUISITION:
COMPANY: VERTICAL DEVELOPMENT, LLC
ADDRESS: 20 COMMERCIAL STREET, BRANFORD, CT 06405
CONTACT: DAVID BASS
PHONE: 203-826-5857
EMAIL: dbass@verticaldevelopmentllc.com

ZONING:
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ADDRESS: 20 COMMERCIAL STREET, BRANFORD, CT 06405
CONTACT: DAVID BASS
PHONE: 203-826-5857
EMAIL: dbass@verticaldevelopmentllc.com

ENGINEERING:
COMPANY: COM-EX CONSULTANTS, LLC
ADDRESS: 4 SECOND AVENUE, SUITE 204, DENVILLE, NJ 07834
CONTACT: NICHOLAS D. BARILE, P.E.
PHONE: 862-209-4300
EMAIL: nbarile@comexconsultants.com

RF ENGINEER:
COMPANY: AT&T MOBILITY - NEW ENGLAND
ADDRESS: 550 COCHITUATE ROAD, SUITE 550 13 & 14, FRAMINGHAM, MA 01701
CONTACT: CAMERON SYME
PHONE: 508-596-7146
EMAIL: cs6970@att.com

CONSTRUCTION MANAGEMENT:
COMPANY: EMPIRE TELECOM
ADDRESS: 16 ESQUIRE ROAD, BILLERICA, MA 01821
CONTACT: GRZEGORZ "GREG" DORMAN
PHONE: 484-683-1750
EMAIL: gdorman@empiretelecomm.com

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ATC SITE ID: BRIDGEPORT CT2
SITE NAME: 302469

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN, ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AMD MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

DISCIPLINE:	NAME:	DATE:
SITE ACQUISITION:		
CONSTRUCTION MANAGER:		
AT&T PROJECT MANAGER:		

VICINITY MAP

1. HEAD WEST ON COCHITUATE RD TOWARD BURR ST (0.3 MI). 2. TURN LEFT ONTO SHOPPERS WORLD DR (230 FT). 3. MAKE A U-TURN AT RING RD (138 FT). 4. TAKE THE 1ST RIGHT ONTO COCHITUATE RD (0.3 MI). 5. TAKE THE RAMP TO I-90 E/MASSPIKE W/SPRINGFIELD (0.6 MI). 6. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSACHUSETTS TURNPIKE AND MERGE ONTO I-90 W/MASSACHUSETTS TURNPIKE (38.3 MI). 7. TAKE EXIT 9 TO MERGE ONTO I-84 TOWARD US-20/HARTFORD (41.7 MI). 8. KEEP LEFT TO CONTINUE ON CT-15 S, FOLLOW SIGNS FOR I-91 S/CHARTER OAK BRIDGE (1.1 MI). 9. CONTINUE ONTO CT-15 S/US-5 S (0.8 MI). 10. TAKE EXIT 86 TO MERGE ONTO I-91 S TOWARD NEW HAVEN (36.6 MI). 11. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 95 S/N.Y. CITY AND MERGE ONTO I-95 S (15.4 MI). 12. TAKE EXIT 31 FOR SOUTH AVE (0.2 MI). 13. TURN RIGHT ONTO SOUTH AVE (0.1 MI). 14. TURN LEFT ONTO STRATFORD AVE (0.6 MI). 15. CONTINUE ONTO CONNECTICUT AVE (0.3 MI). SITE WILL BE ON RIGHT.

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

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

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

CONNECTICUT ONE CALL SYSTEM, INC. 1-800-922-4455 STOP · CALL BEFORE YOU DIG!

CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811

COM-EX Consultants
4 SECOND AVENUE
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PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2252
SITE NAME: BRIDGEPORT CT. CONN AVE
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607
FAIRFIELD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	10/22/14	REVISED PER CLIENT COMMENTS	CJT	NDB	NDB
A	08/28/14	INITIAL SUBMISSION	CJT	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · REGISTERED PROFESSIONAL ENGINEER · CT LIC. No. 28643 · 10/22/14

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
14031-EMP	T-1	B

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').
14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – EMPIRE TELECOM
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
   - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
   - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
   - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS
20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
   - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
   - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
   - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
   - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
   - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
   - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
   - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
21. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

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BILLERICA, MA 01821

SITE NUMBER: CT2252
SITE NAME: BRIDGEPORT CT. CONN AVE
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A	08/28/14	INITIAL SUBMISSION	CJT	NDB	NDB

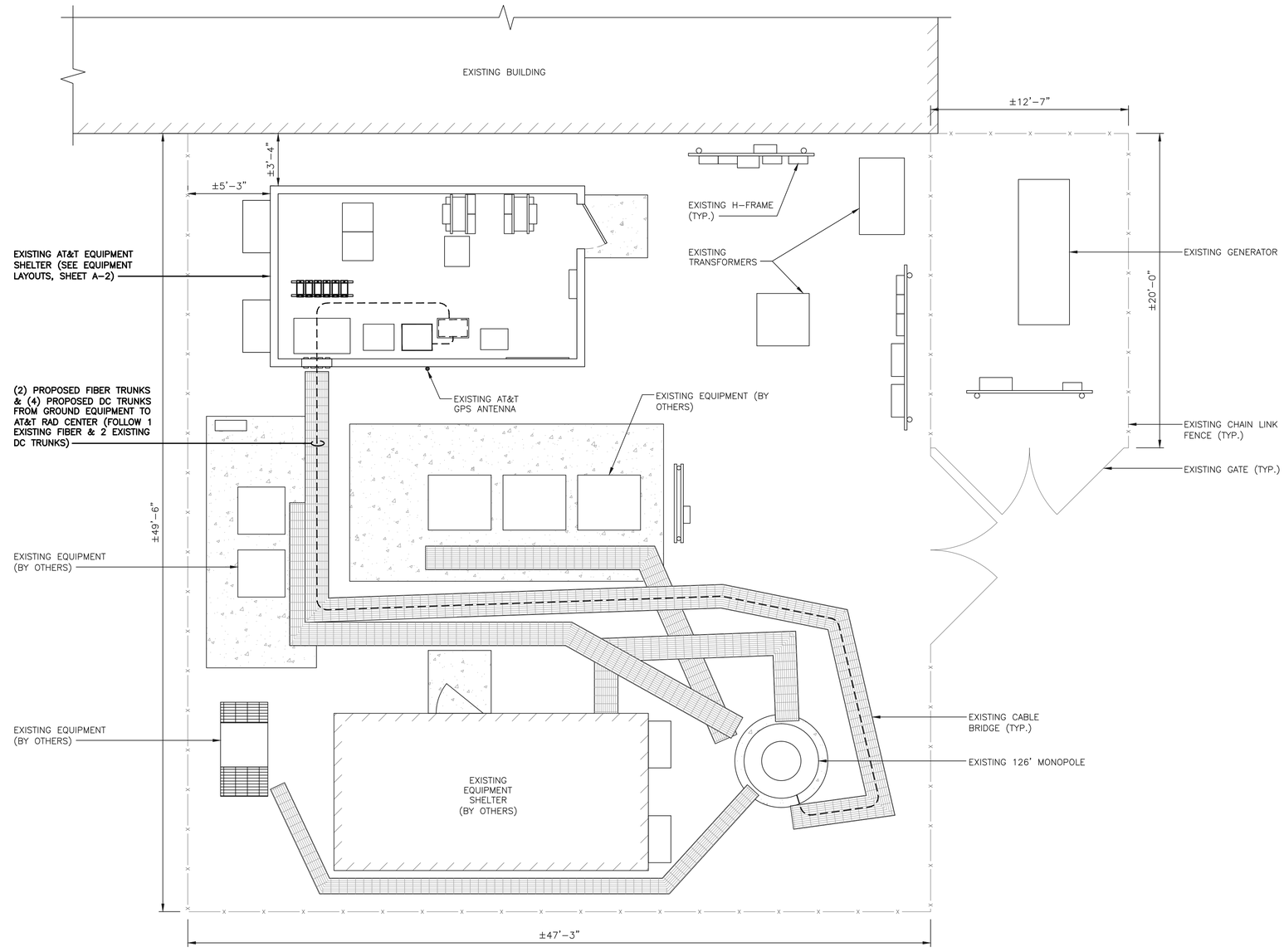
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILE — No. 28643 — LICENSED PROFESSIONAL ENGINEER
NICHOLAS D. BARILE
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643
10/22/14

AT&T

DRAWING TITLE:
GROUNDING NOTES & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
14031-EMP	GN-1	B



13.22 W

NORTH

COMPOUND LAYOUT

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

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)

1/4 Inch = 1 Foot

COM-EX Consultants
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BILLERICA, MA 01821

SITE NUMBER: CT2252
SITE NAME: BRIDGEPORT CT. CONN AVE

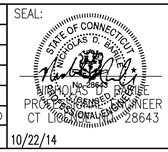
1069 CONNECTICUT AVENUE
BRIDGEPORT, CT 06607
FAIRFIELD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	10/22/14	REVISED PER CLIENT COMMENTS	CJT	NDB	NDB
A	08/28/14	INITIAL SUBMISSION	CJT	NDB	NDB

SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:

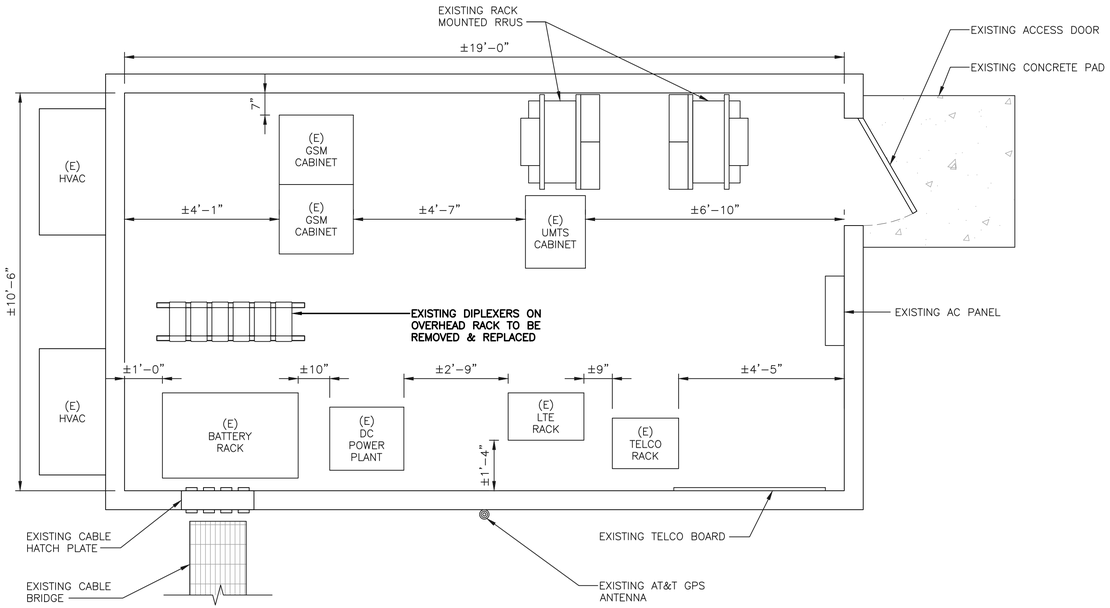


10/22/14

AT&T

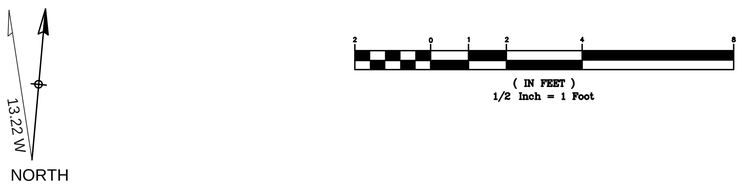
DRAWING TITLE: COMPOUND LAYOUT

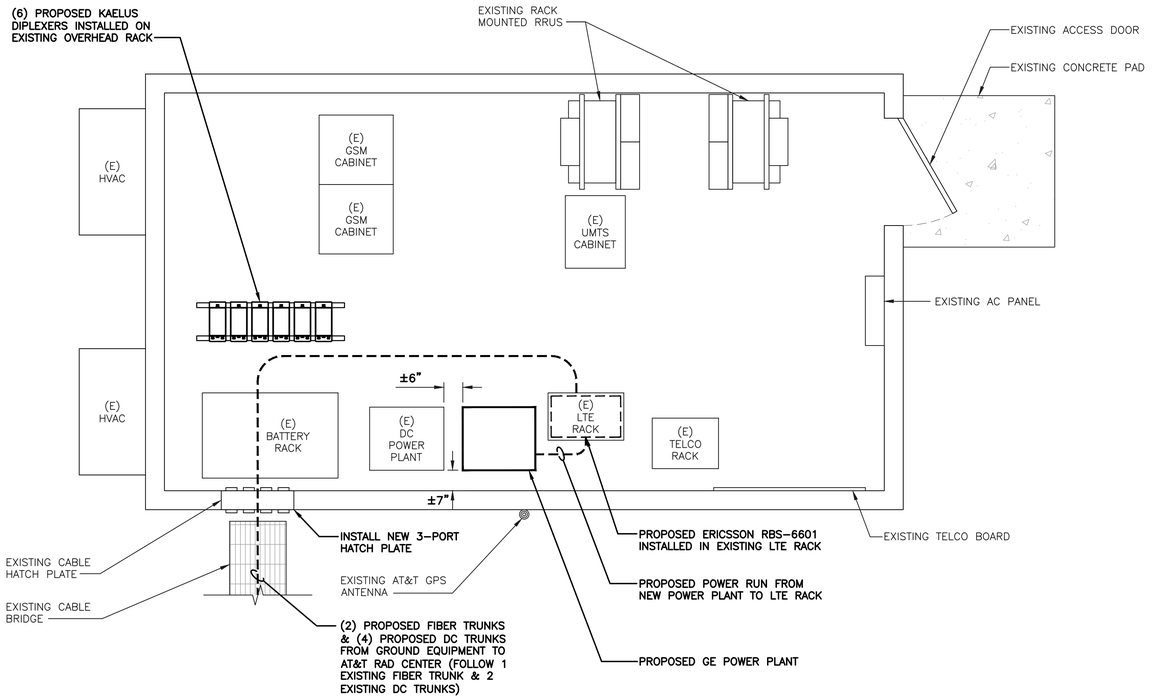
JOB NUMBER	DRAWING NUMBER	REV
14031-EMP	A-1	B



EXISTING EQUIPMENT LAYOUT

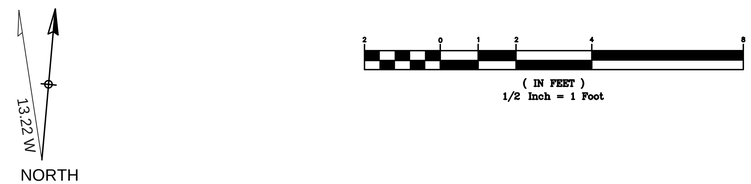
SCALE: 1" = 2'-0"





PROPOSED EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"



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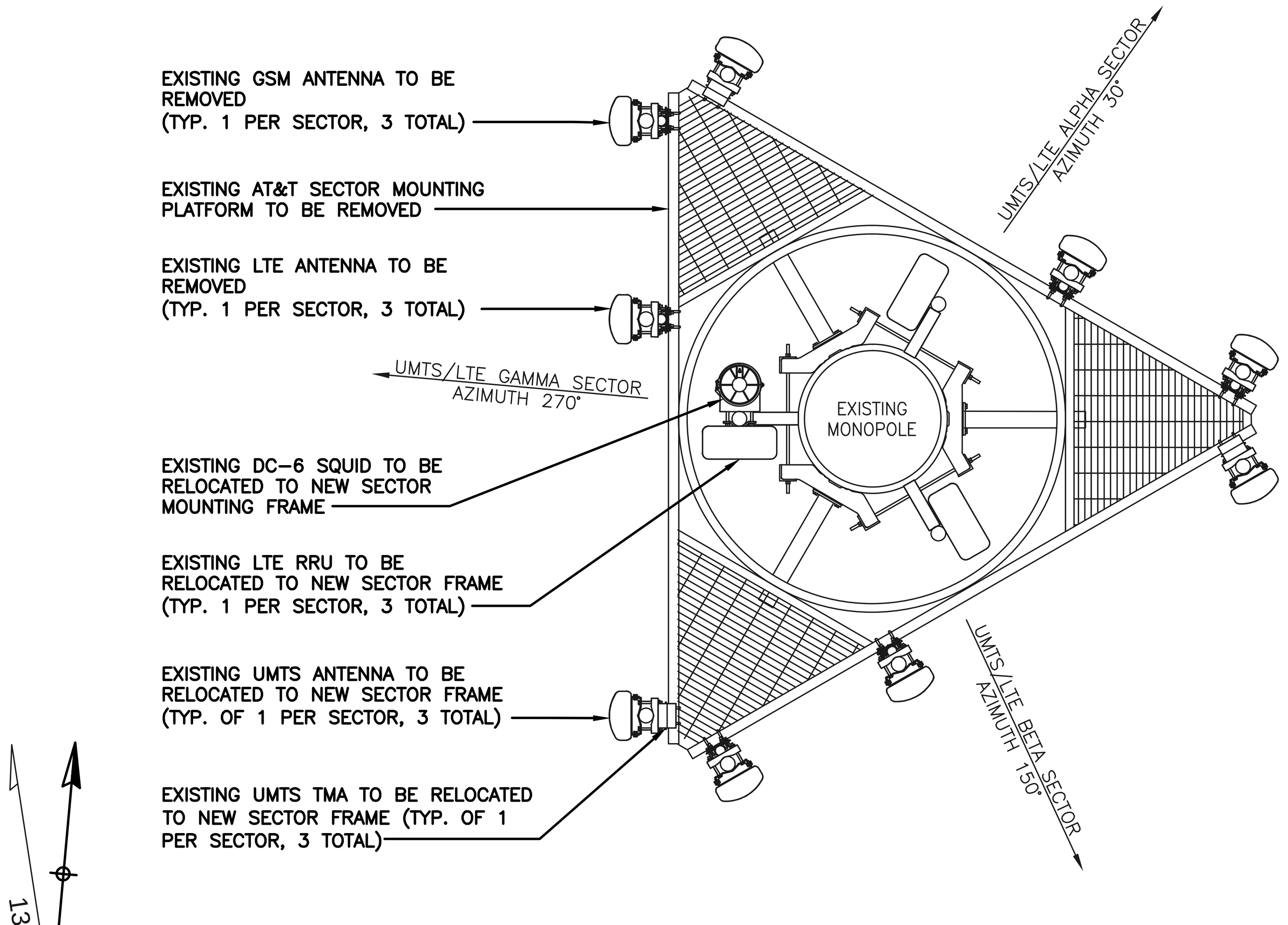
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARBIERI — No. 28643 — PROFESSIONAL ENGINEER
10/22/14

AT&T

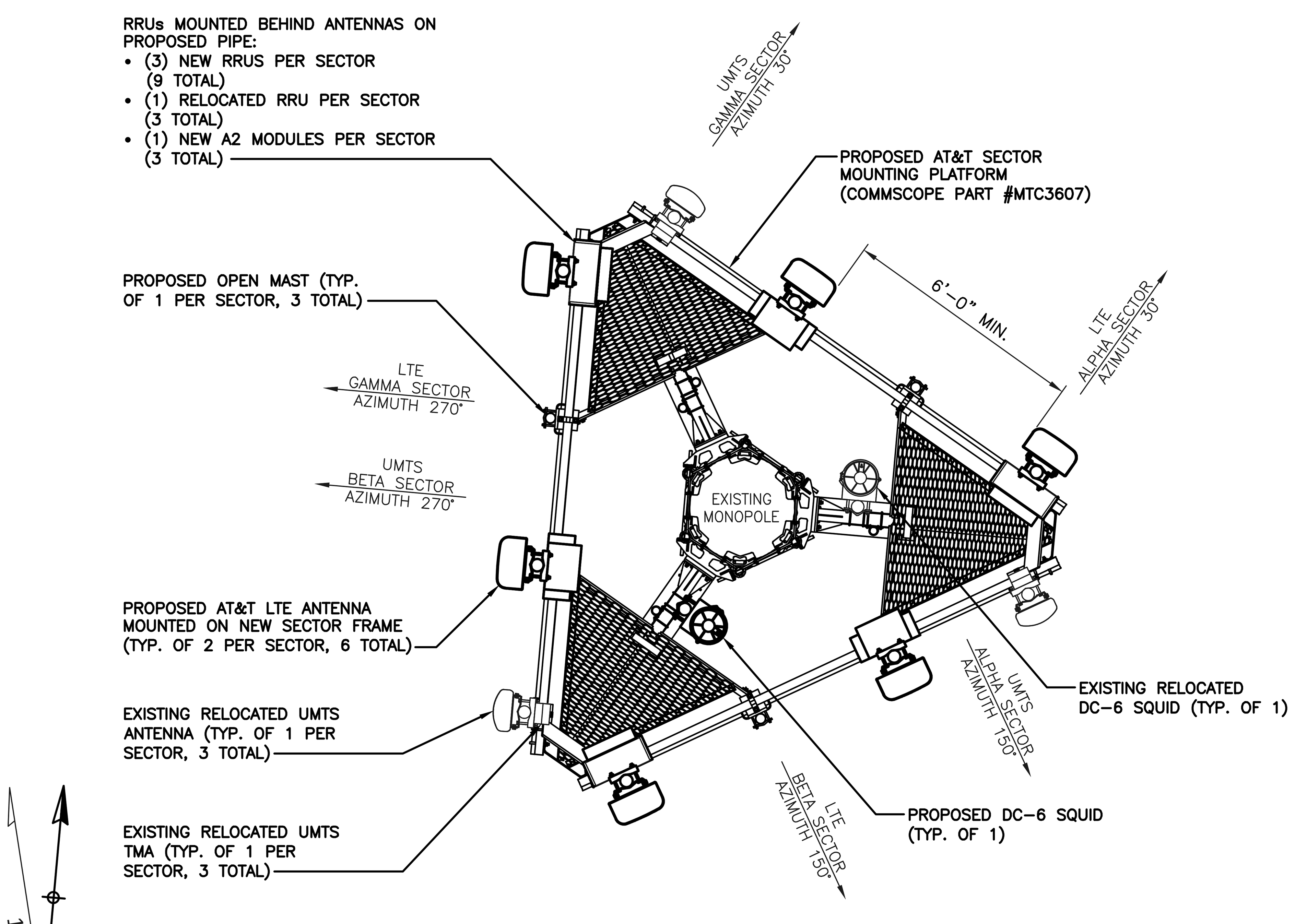
DRAWING TITLE: EQUIPMENT LAYOUTS

JOB NUMBER	DRAWING NUMBER	REV
14031-EMP	A-2	B



EXISTING ANTENNA LAYOUT

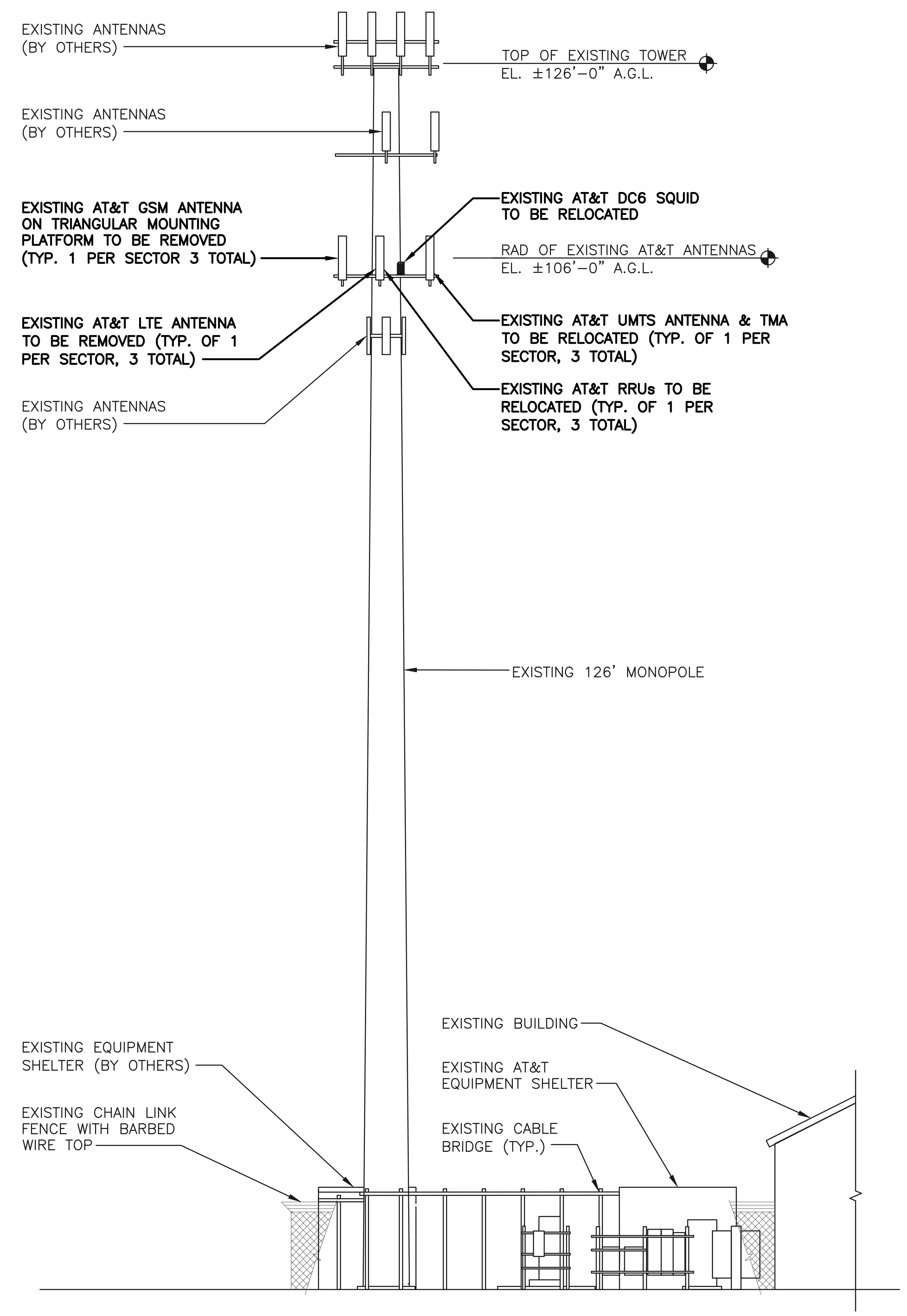
SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT

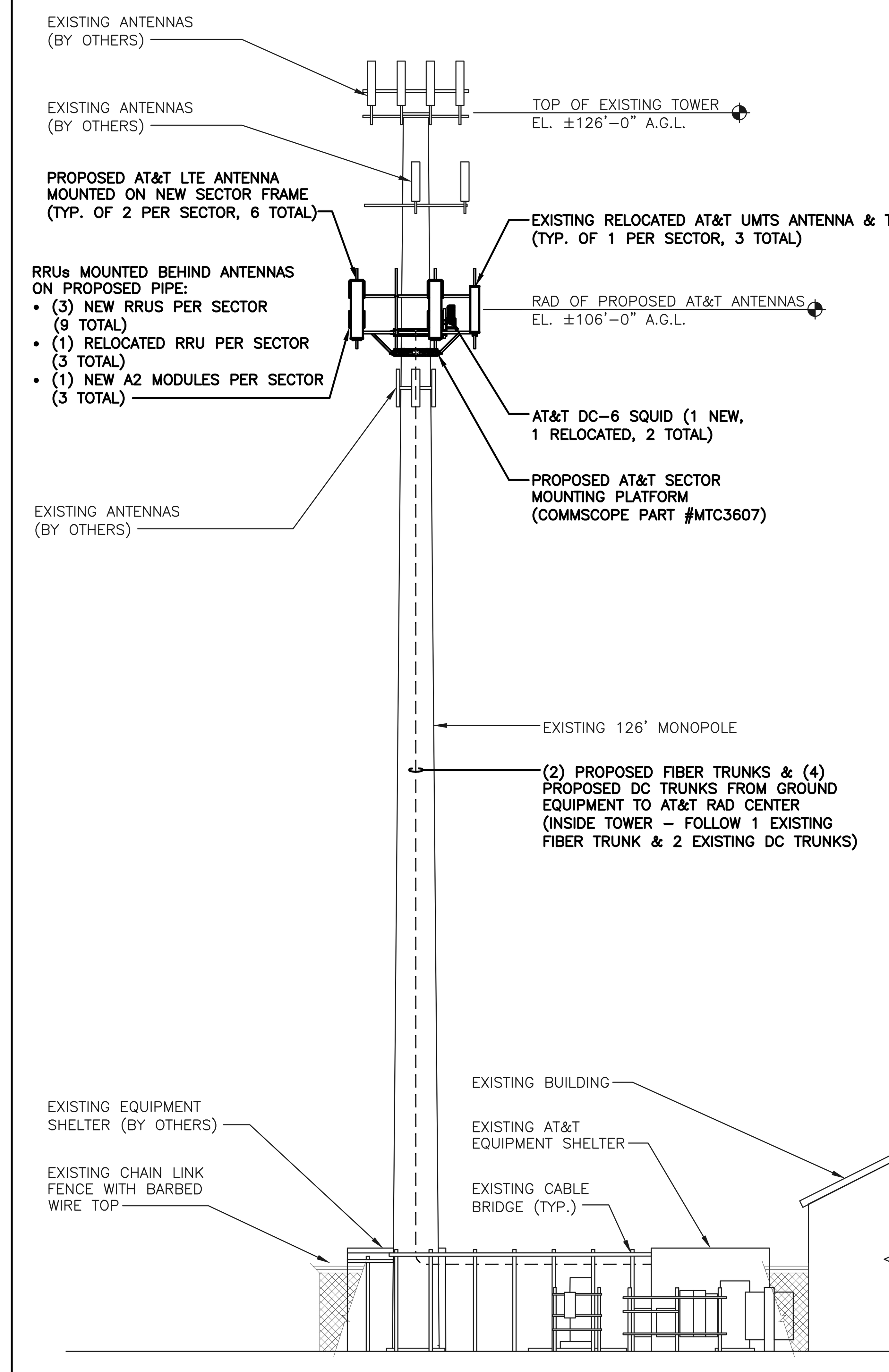
SCALE: N.T.S.

MINIMUM SEPARATION OF 6'-0" TO BE MAINTAINED BETWEEN ALL PROPOSED AT&T LTE ANTENNAS



EXISTING TOWER ELEVATION

SCALE: NTS



PROPOSED TOWER ELEVATION

SCALE: NTS

PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

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SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL: NICHOLAS D. BARILE, PROFESSIONAL ENGINEER, CT LICENSE NO. 28643, 10/22/14

AT&T

DRAWING TITLE: ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
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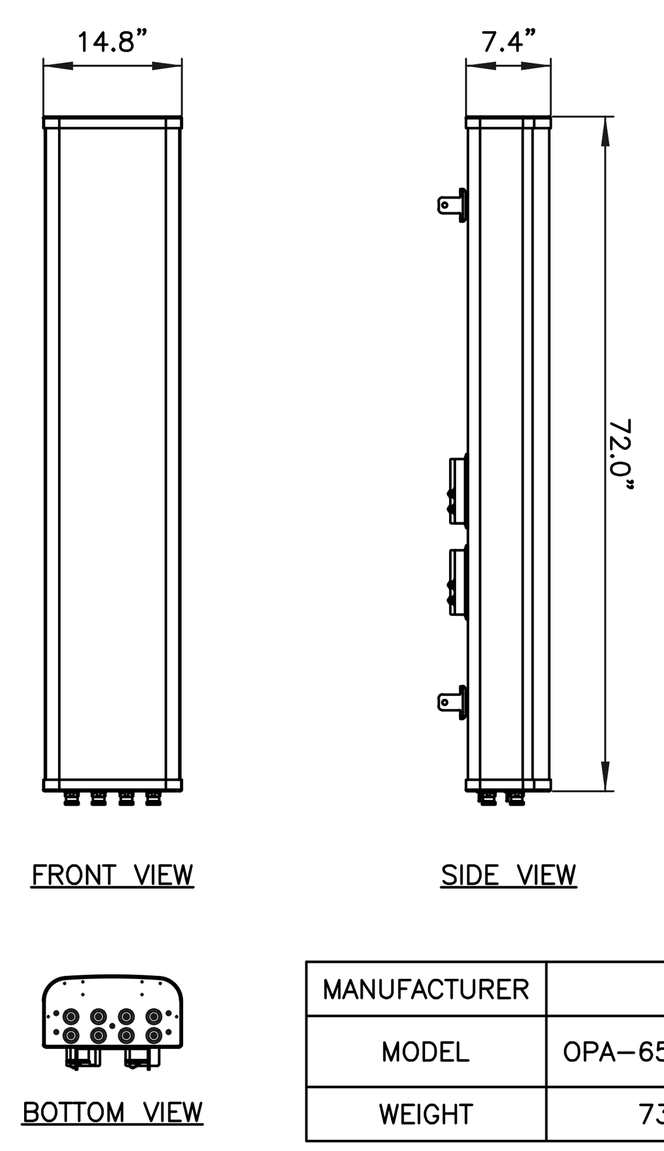
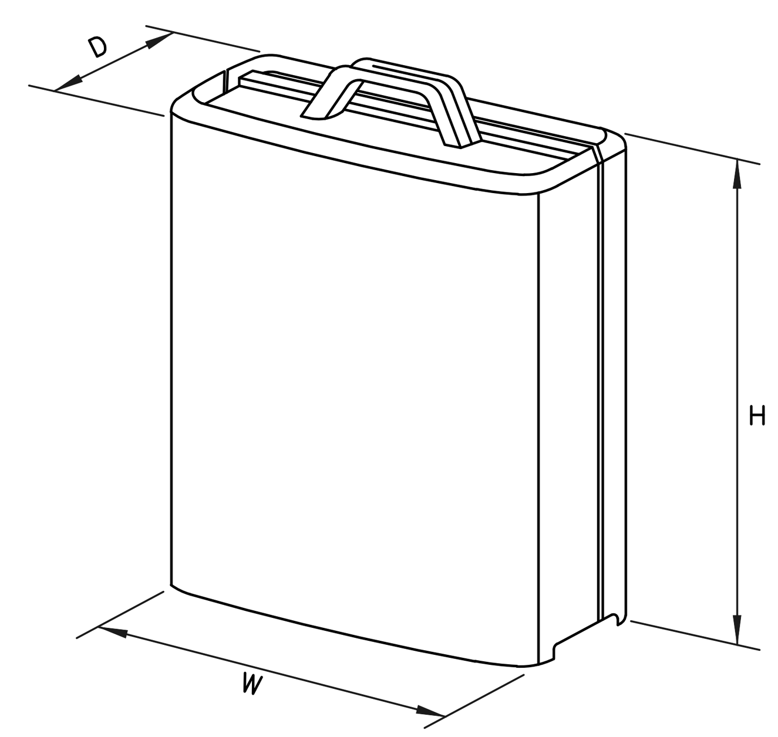


MANUFACTURER	CCI
MODEL	OPA-65R-LCUU-H6
WEIGHT	73.0 LBS

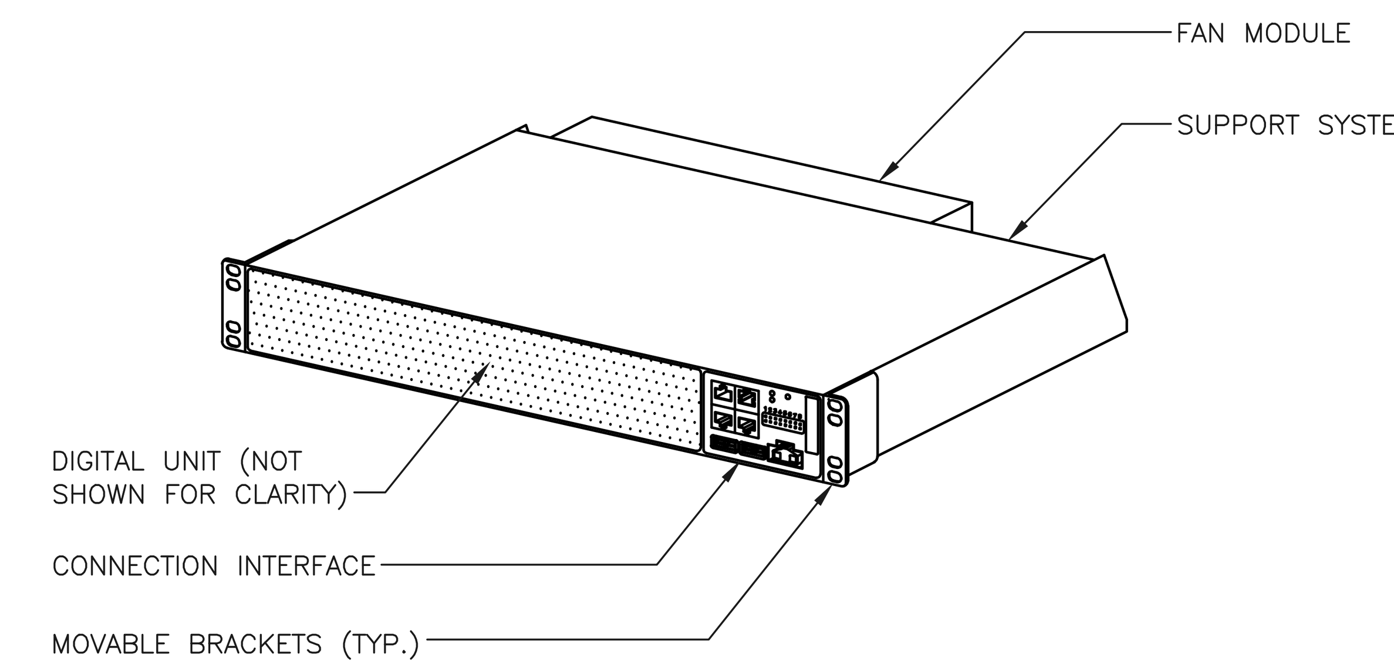
LTE ANTENNA DETAIL
SCALE: N.T.S.



MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
RRUS-32	29.9" x 13.3" x 9.5"	77 LBS
RRUS-E2	20.4" x 18.5" x 7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

*ALL EXISTING RRUS-11 TO BE RELOCATED & REUSED

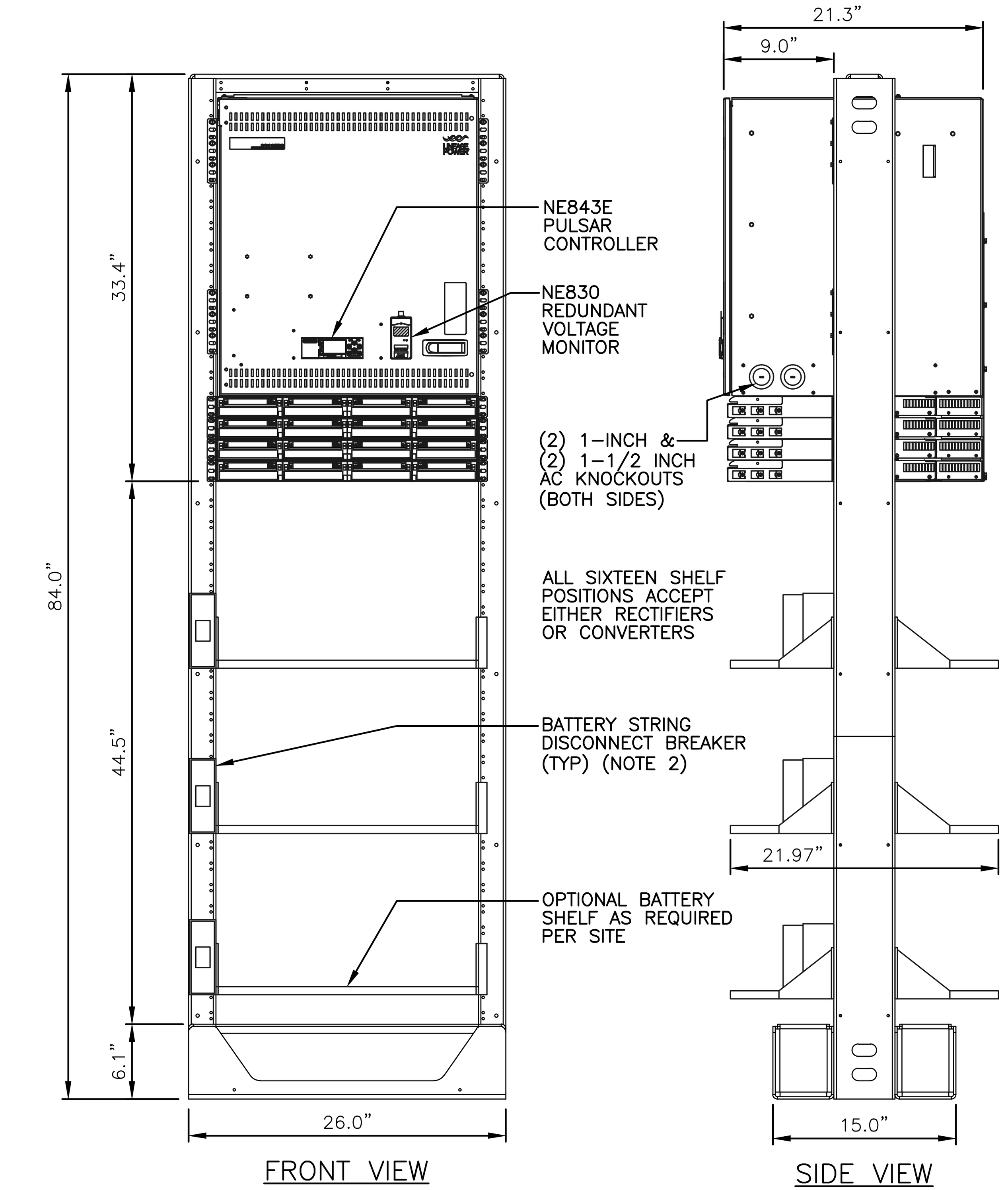
RRUS DETAIL
SCALE: N.T.S.



PHYSICAL CHARACTERISTICS	
HEIGHT	2.59" (1.5 U)
WIDTH	19"
DEPTH	13.77"
WEIGHT (FULLY EQUIPPED)	<22 LBS.
COLOR	WHITE

DC POWER SUPPLY	
NOMINAL VOLTAGE	-48VDC
OPERATING VOLTAGE RANGE	-40.0 TO -57.6 VDC
NON-DESTRUCTIVE VOLTAGE RANGE	0 TO -60 VDC

RBS 6601 DETAIL
SCALE: N.T.S.



WEIGHT:
FRAME W/DC POWER SYSTEM AND W/O BATTERIES = 435lbs

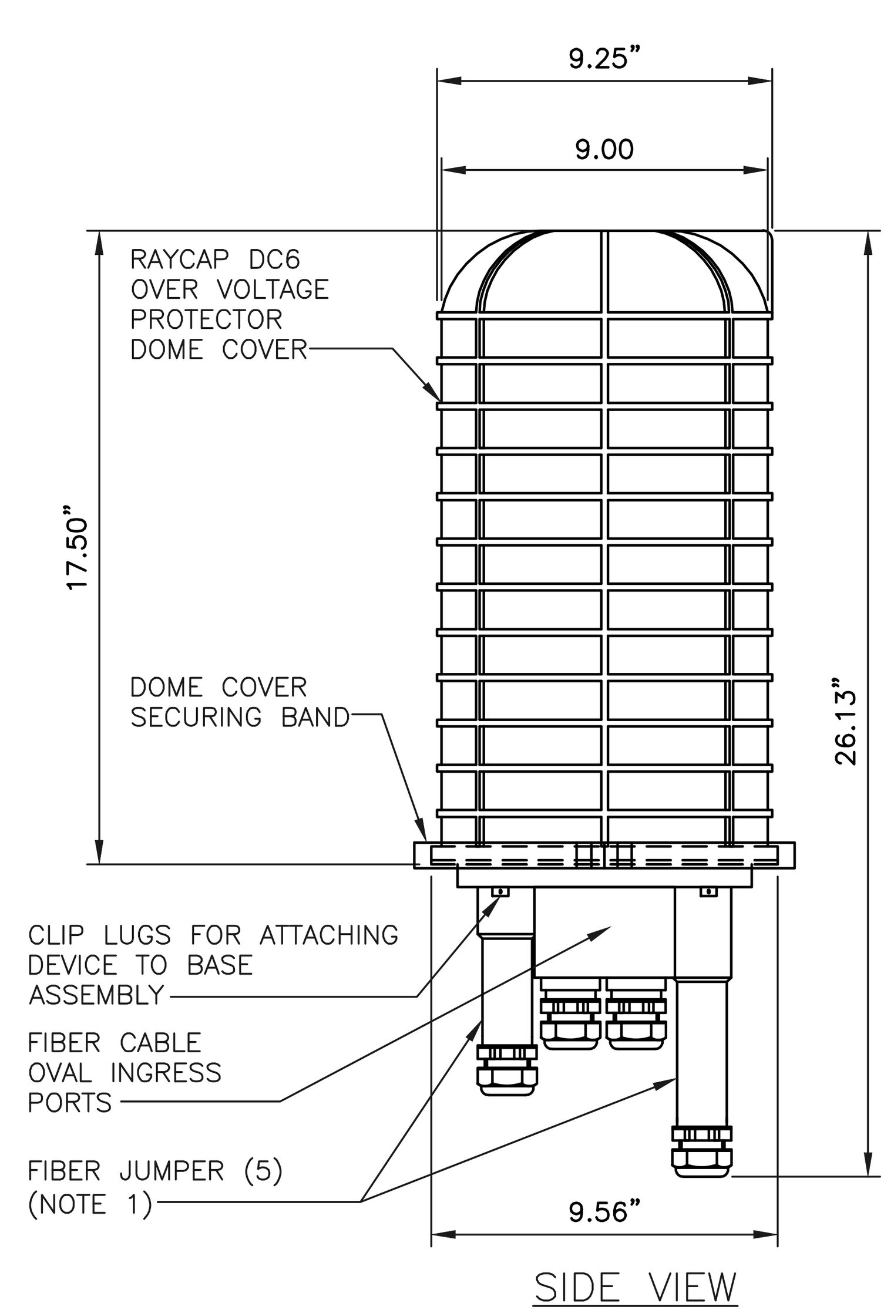
BATTERY SHELF (W/(4) 155AH BATTERIES = APPROXIMATELY 500lbs PER SHELF

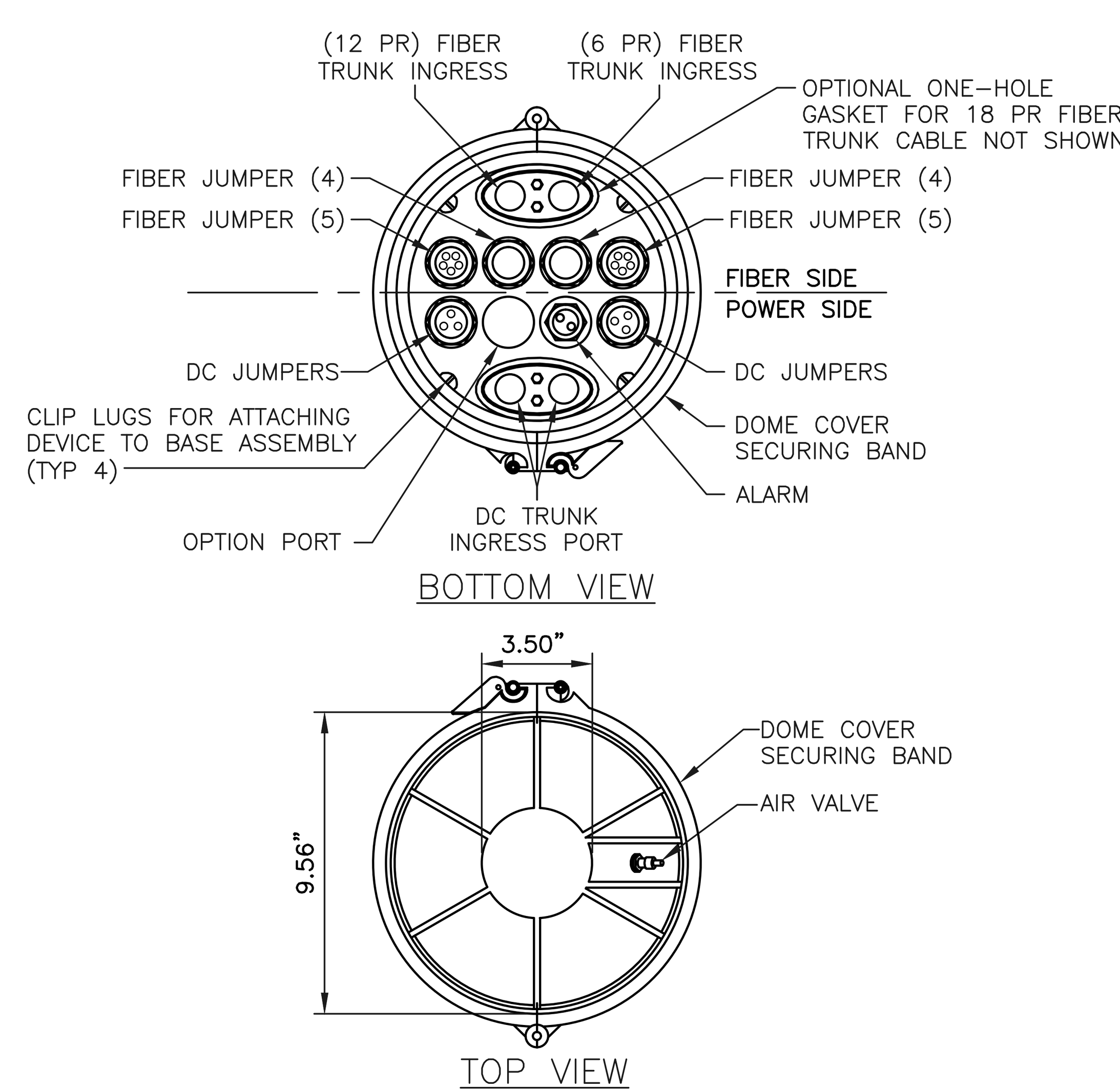
CLEARANCE:
FRONT = 36"
REAR = 6"
SIDES = 2"

NOTES:

1. GE/LINEAGE FLOOR ANCHOR KIT (847135688) MAY BE USED UNLESS LOCAL REQUIREMENTS GOVERN.
2. DISCONNECT MAY BE MOUNTED TO EITHER SIDE OF TRAY OR DIRECTLY TO FRAMEWORK
3. PER MANUFACTURER, FRAME IS SEISMIC COMPLIANT UP TO 3 BATTERY SHELVES.

POWER PLANT DETAIL
SCALE: N.T.S.

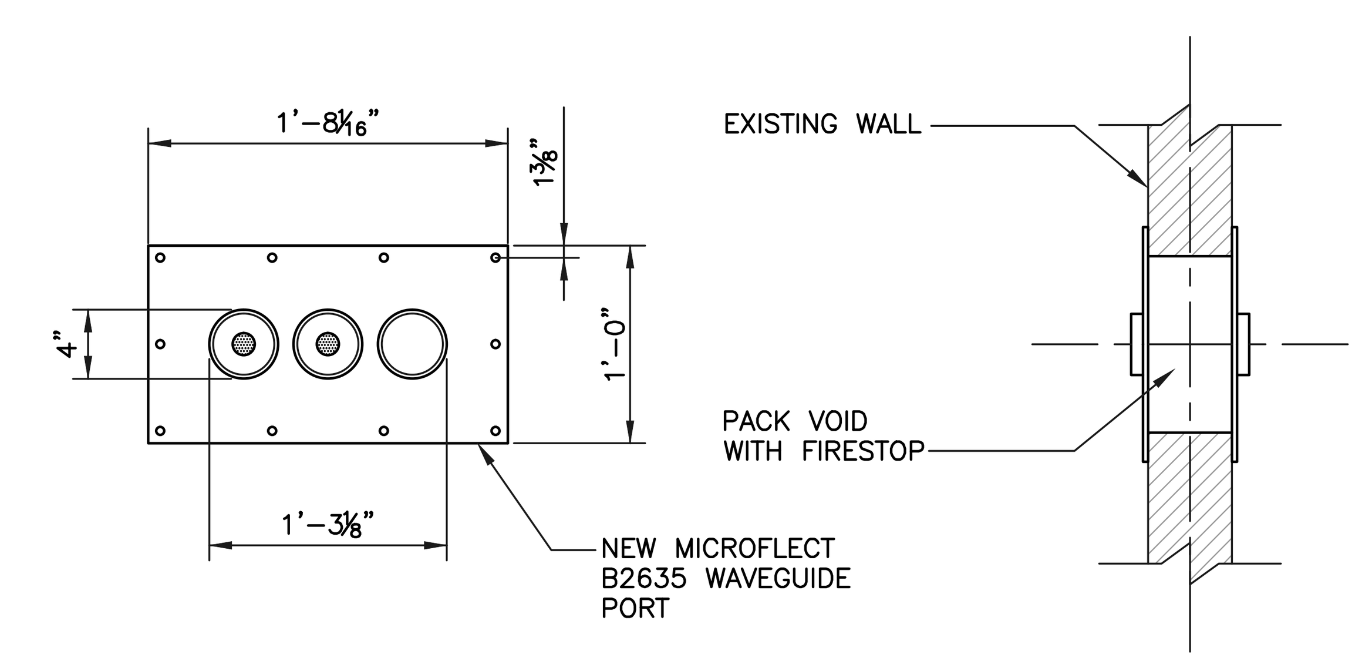




NOTES:

1. REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

DC-6 SURGE SUPPRESSOR DETAIL
SCALE: N.T.S.



HATCH PLATE DETAIL
SCALE: N.T.S.

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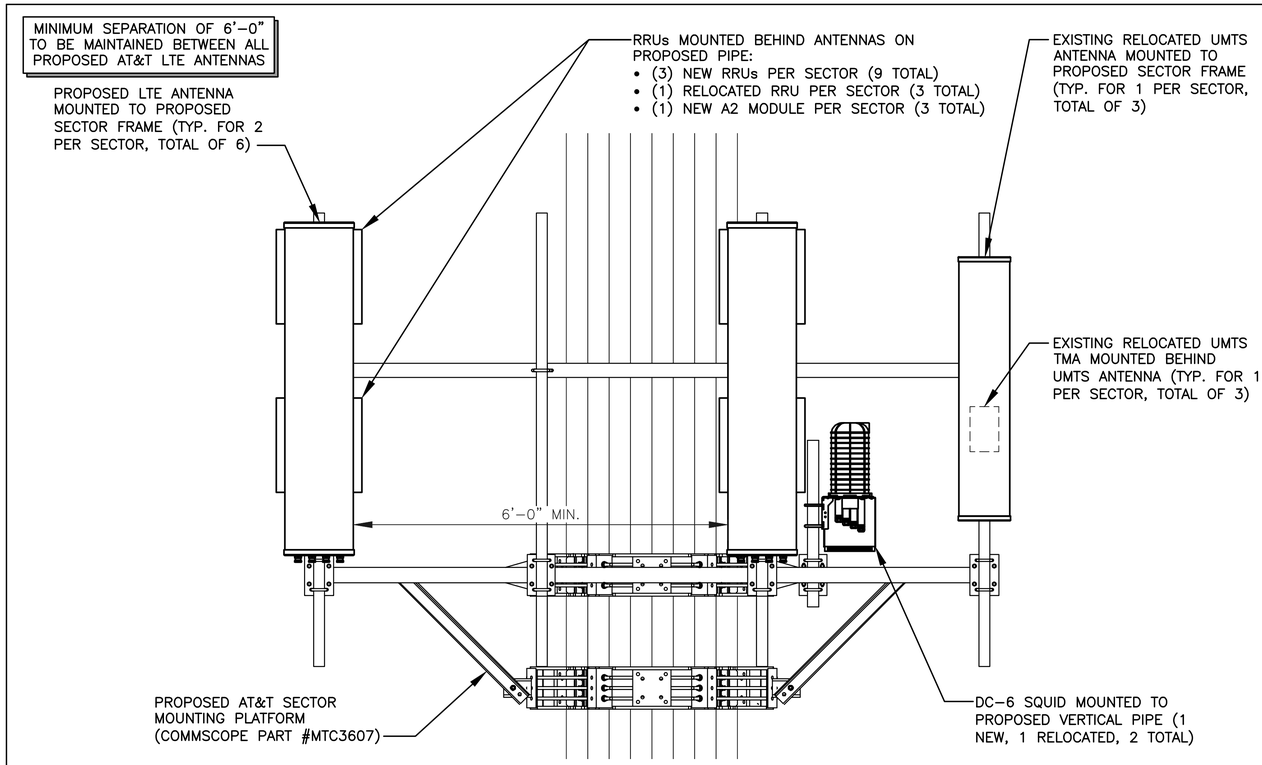
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:
PROFESSIONAL ENGINEER
CT LIC. 28643
10/22/14

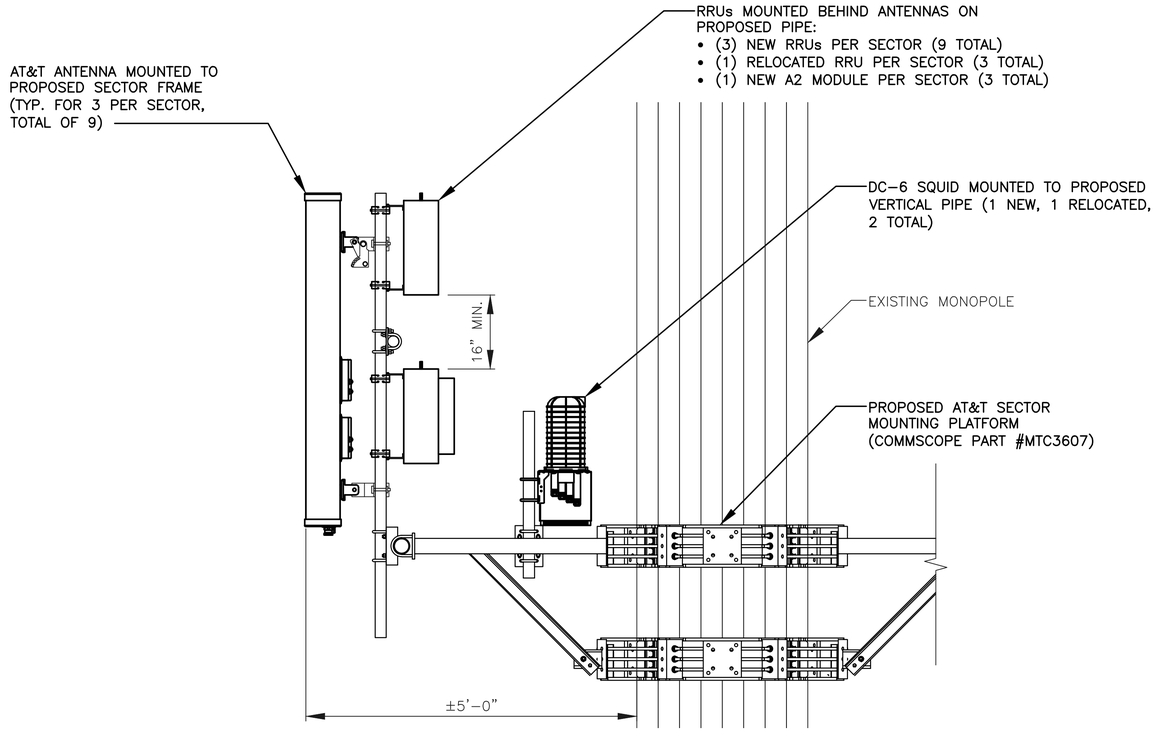
AT&T
DRAWING TITLE:
DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14031-EMP	A-4	B



PROPOSED ANTENNA MOUNTING DETAIL (FRONT VIEW)

SCALE: N.T.S.



PROPOSED ANTENNA MOUNTING DETAIL (SIDE VIEW)

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7750	57"x11"x5"
	A2	–	–	–
	A3	KMW	AM–X–CD–14–65–00T–RET	48"x11.8"x5.9"
	A4	POWERWAVE	7750	57"x11"x5"
BETA	B1	POWERWAVE	7750	57"x11"x5"
	B2	–	–	–
	B3	KMW	AM–X–CD–14–65–00T–RET	48"x11.8"x5.9"
	B4	POWERWAVE	7750	57"x11"x5"
GAMMA	G1	POWERWAVE	7750	57"x11"x5"
	G2	–	–	–
	G3	KMW	AM–X–CD–14–65–00T–RET	48"x11.8"x5.9"
	G4	POWERWAVE	7750	57"x11"x5"

PROPOSED ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7750	57"x11"x5"
	A2	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
	A3	–	–	–
	A4	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
BETA	B1	POWERWAVE	7750	57"x11"x5"
	B2	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
	B3	–	–	–
	B4	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
GAMMA	G1	POWERWAVE	7750	57"x11"x5"
	G2	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
	G3	–	–	–
	G4	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"

PROPOSED RRH SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS–12	20.4"x18.5"x7.5"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS–11 (RELOCATED)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS–32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS–E2	20.4"x18.5"x7.5"		
BETA	ERICSSON	RRUS–12	20.4"x18.5"x7.5"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS–11 (RELOCATED)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS–32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS–E2	20.4"x18.5"x7.5"		
GAMMA	ERICSSON	RRUS–12	20.4"x18.5"x7.5"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS–11 (RELOCATED)	19.7"x16.9"x7.2"		
	ERICSSON	RRUS–32	29.9"x13.3"x9.5"		
	ERICSSON	RRUS–E2	20.4"x18.5"x7.5"		

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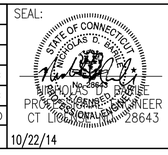
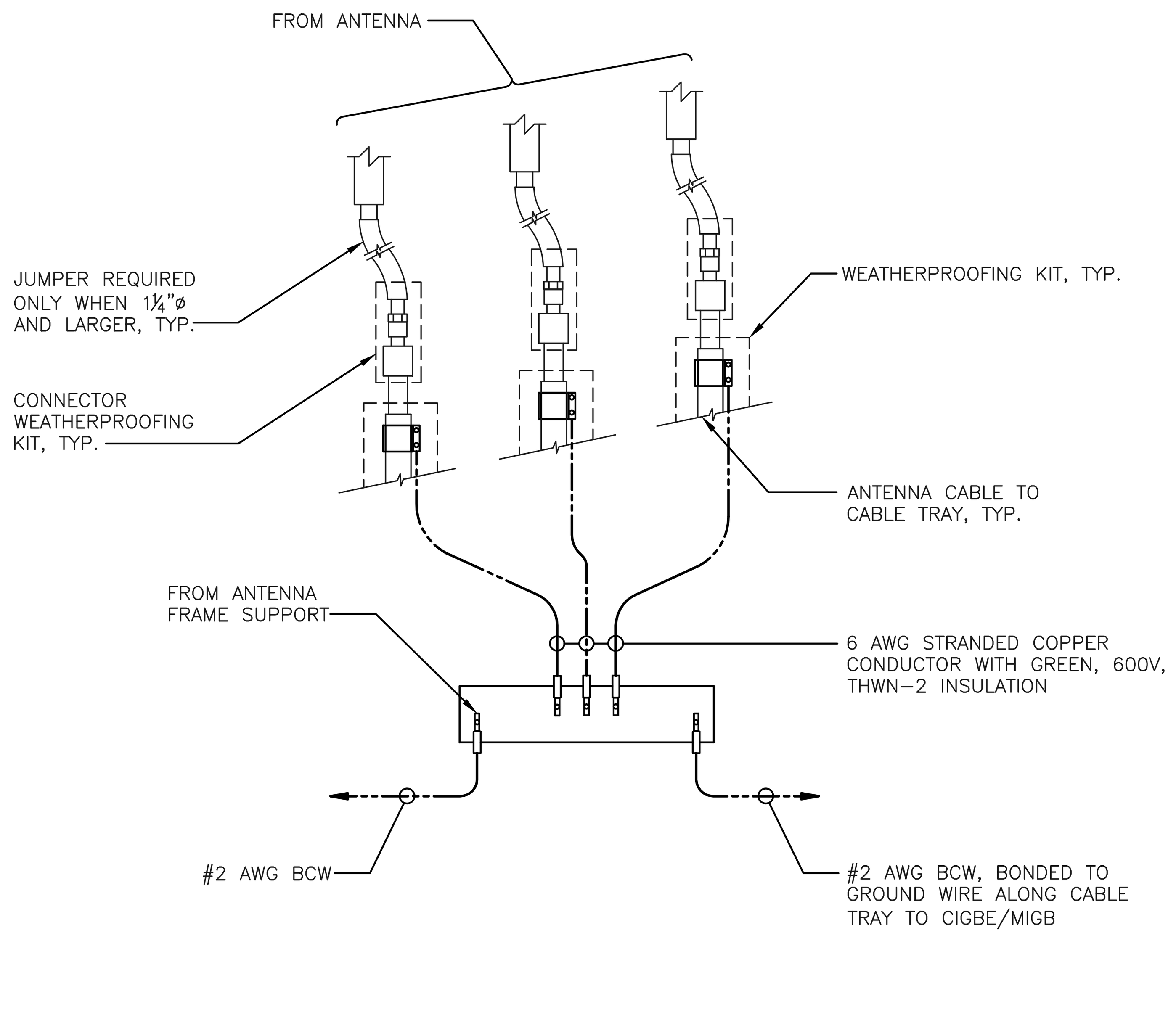
SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL:


AT&T

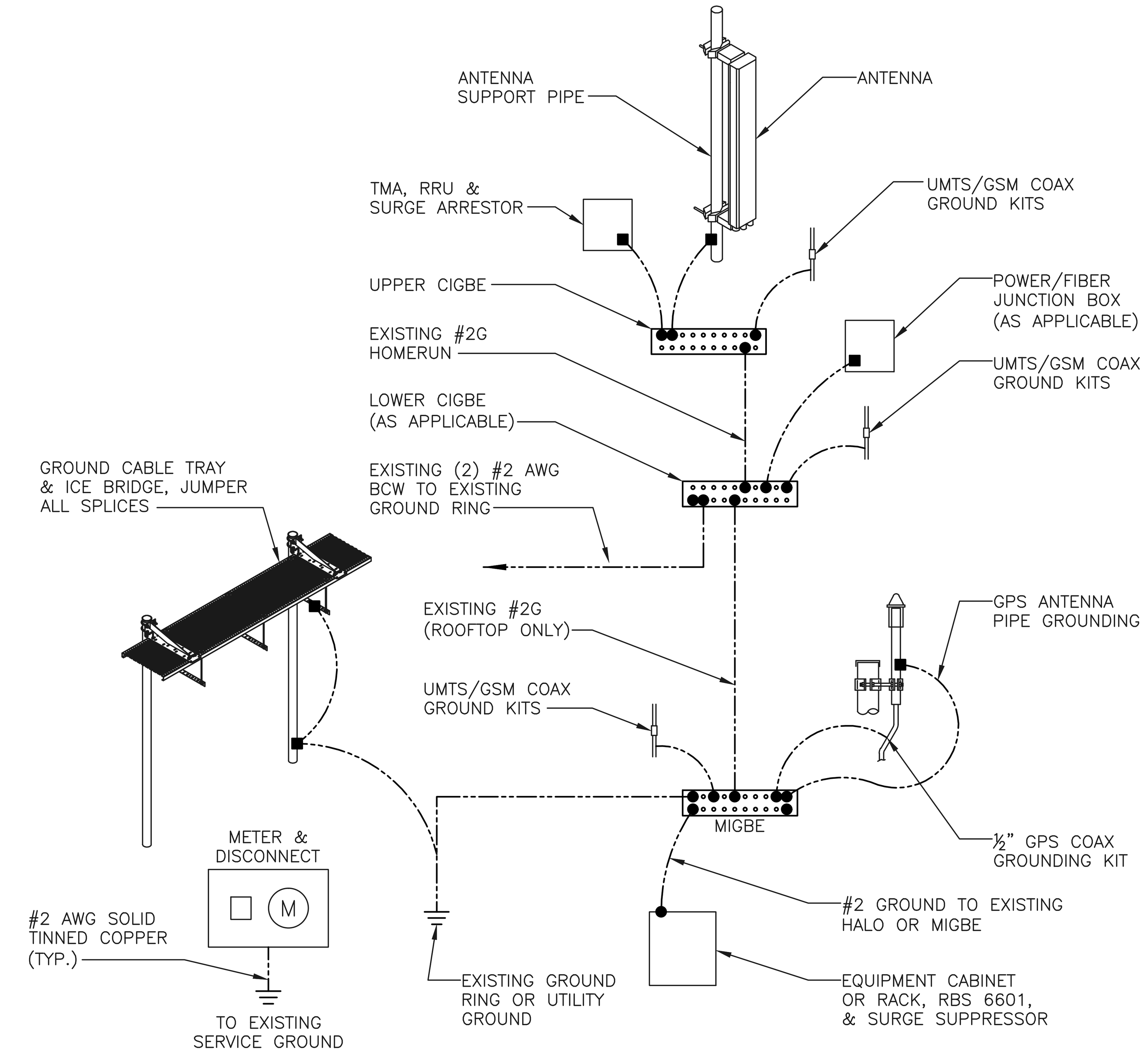
DRAWING TITLE:
ANTENNA MOUNTING DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14031–EMP	A–5	B



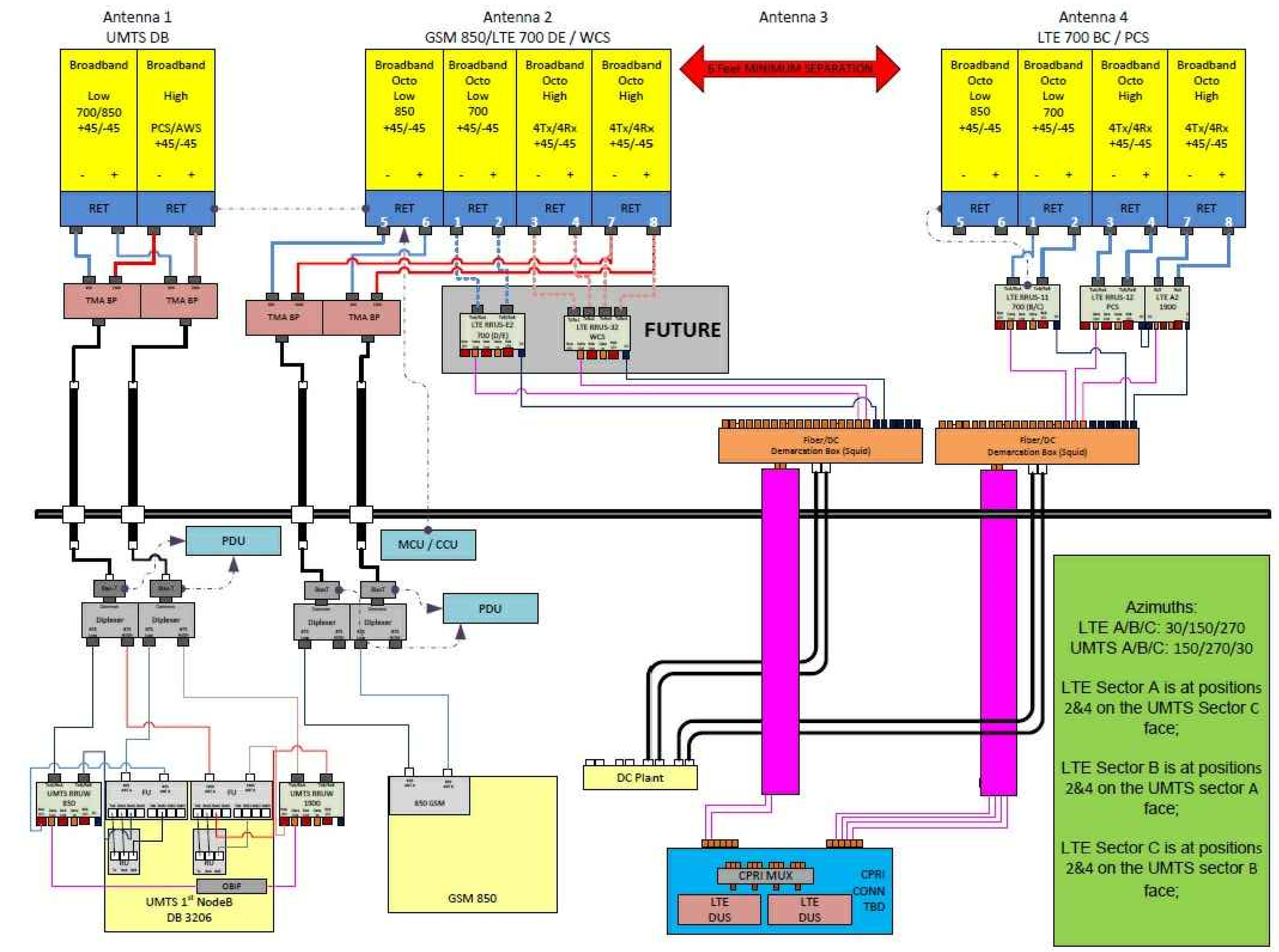
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



GROUNDING RISER DIAGRAM

SCALE: N.T.S.



PLUMBING DIAGRAM

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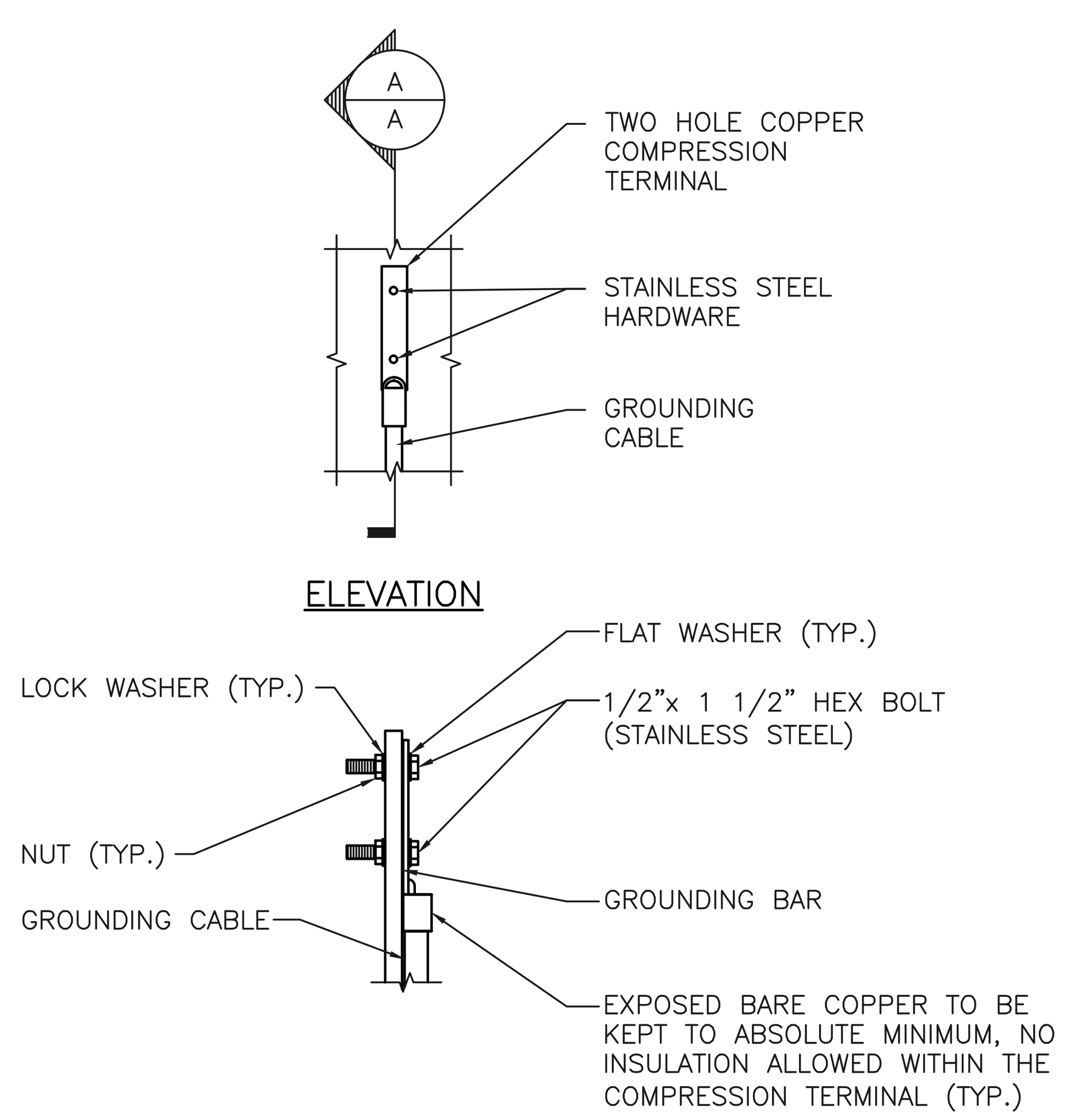


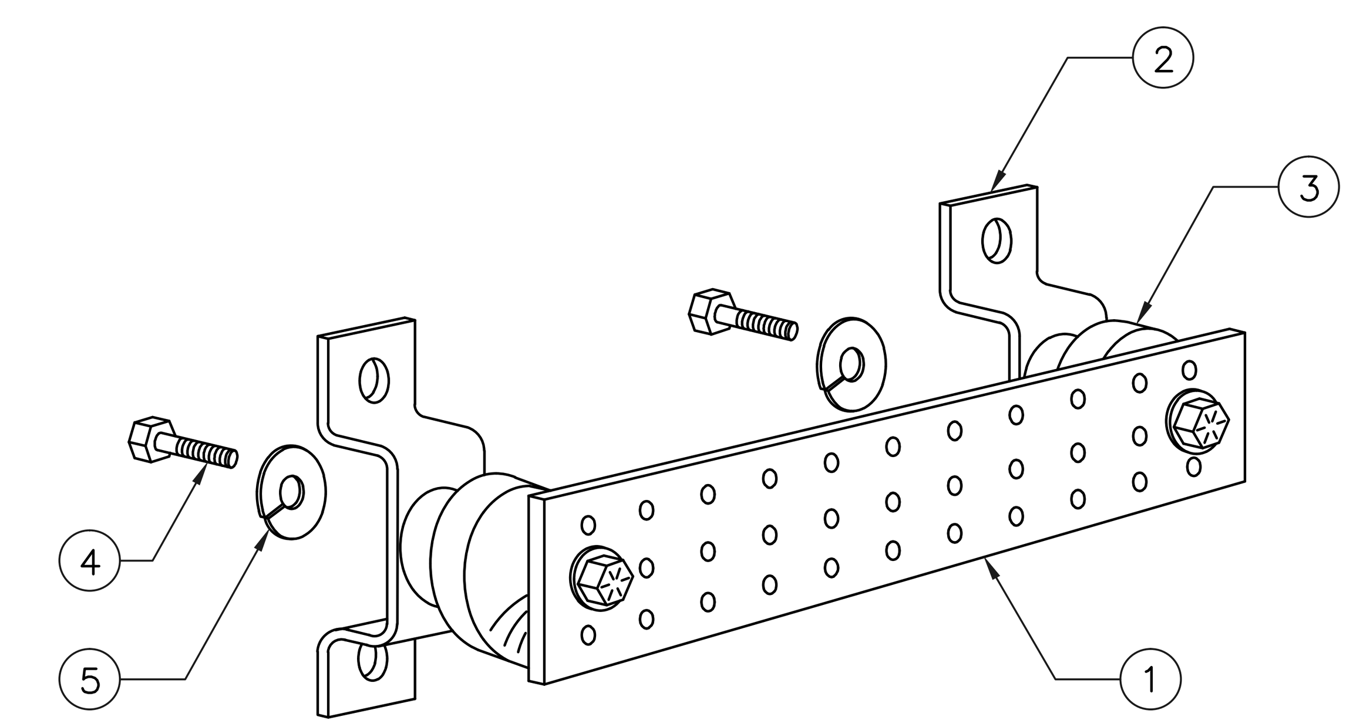
SECTION "A–A"

NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x ¼")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	⅝"–11x1" H.H.C.S.
5	4	⅝" LOCK WASHER

NOTES:

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION

SECTION "P" – SURGE PRODUCERS
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- –48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES

SECTION "A" – SURGE ABSORBERS
- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

GROUND BAR DETAIL

SCALE: N.T.S.

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SCALE: AS SHOWN | DESIGNED BY: JW | DRAWN BY: JW

SEAL: NICHOLAS D. BARILE, PROFESSIONAL ENGINEER, CT LIC. NO. 28643, 10/22/14

AT&T

DRAWING TITLE: GROUNDING, ONE–LINE DIAGRAM & DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14031–EMP	G–1	B

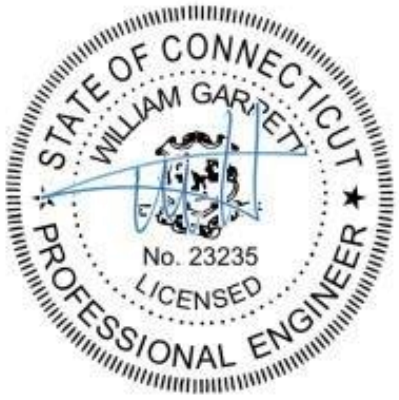
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**126 ft Monopole**
ATC Site Name	:	**Bridgeport CT 2, CT**
ATC Site Number	:	**302469**
Engineering Number	:	**60291222**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Bridgeport Connecticut Avenue**
Carrier Site Number	:	**CT2252/FA#10084453**
Site Location	:	**1069 Connecticut Avenue** **Bridgeport, CT 06607-1226** **41.183617,-73.158383**
County	:	**Fairfield**
Date	:	**November 12, 2014**
Max Usage	:	**94%**
Result	:	**Pass**

Joseph Thomas

Joseph Thomas



Nov 13 2014 4:58 PM

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 126 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	EEI Project #5543, dated October 14, 1999
Foundation Drawing	EEI Project #5543, dated October 14, 1999
Geotechnical Report	Applied Earth Technologies, dated November 23, 1999

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

Basic Wind Speed:	85 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
126.0	131.0	9	48"x12" Panels	Platform w/ Handrails	(12) 1 5/8 Coax	Sprint Nextel
		3	72"x12" Panels			
123.0	123.0	2	DragonWave Horizon Compact	Stand-Off	(6) 5/16" Coax (3) 1/2" Coax (2) 2" Conduit	Clearwire
		1	Dragonwave A-ANT-23G-1-C			
		3	NextNet BTS-2500			
		1	Dragonwave A-ANT-18G-12-C			
		3	Argus LLPX310R			
119.0	119.0	3	Andrew ETW200VS12UB	Low Profile Platform	(12) 1 5/8 Coax	T-Mobile
		6	Ericsson KRY 112 71			
		3	RFS APX16PV-16PVL-A			
		3	RFS APX16DWV-16DWVS-E-A20			
106.0	106.0	12	Powerwave LGP2140X	Low Profile Platform	-	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS-11			
104.0		3	Powerwave 7770.00		-	
98.0	98.0	3	RCU	Flush Mounts	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS
		3	Kathrein 800 10504			
80.0	85.5	1	BCD-87010__	Side Arm	(1) 7/8 Coax	USA Mobility

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
110.0	110.0	6	Kathrein 800 10122	-	(12) 1 5/8" Coax	AT&T Mobility

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
106.0	106.0	6	Powerwave LGP21901	Low Profile Platform	(4) 1.24" Hybrid (3) 0.51" Hybrid	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		3	Ericsson A2 B2			
		3	Ericsson RRUS 12			
		3	Ericsson RRUS E2B29			
		3	Ericsson RRUS-32			
104.0		6	CCI OPA-65R-LCUU-H4		-	

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax outside the pole shaft. Stacking coax is not allowed.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	49%	Pass
Shaft	94%	Pass
Base Plate	84%	Pass

Foundations

Reaction Component	Analysis Reactions
Moment (Kips-Ft)	2,184.0
Axial (Kips)	30.1
Shear (Kips)	22.4

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
106.0	1.799	2.071

***Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.**

AMERICAN TOWER®
CORPORATION

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

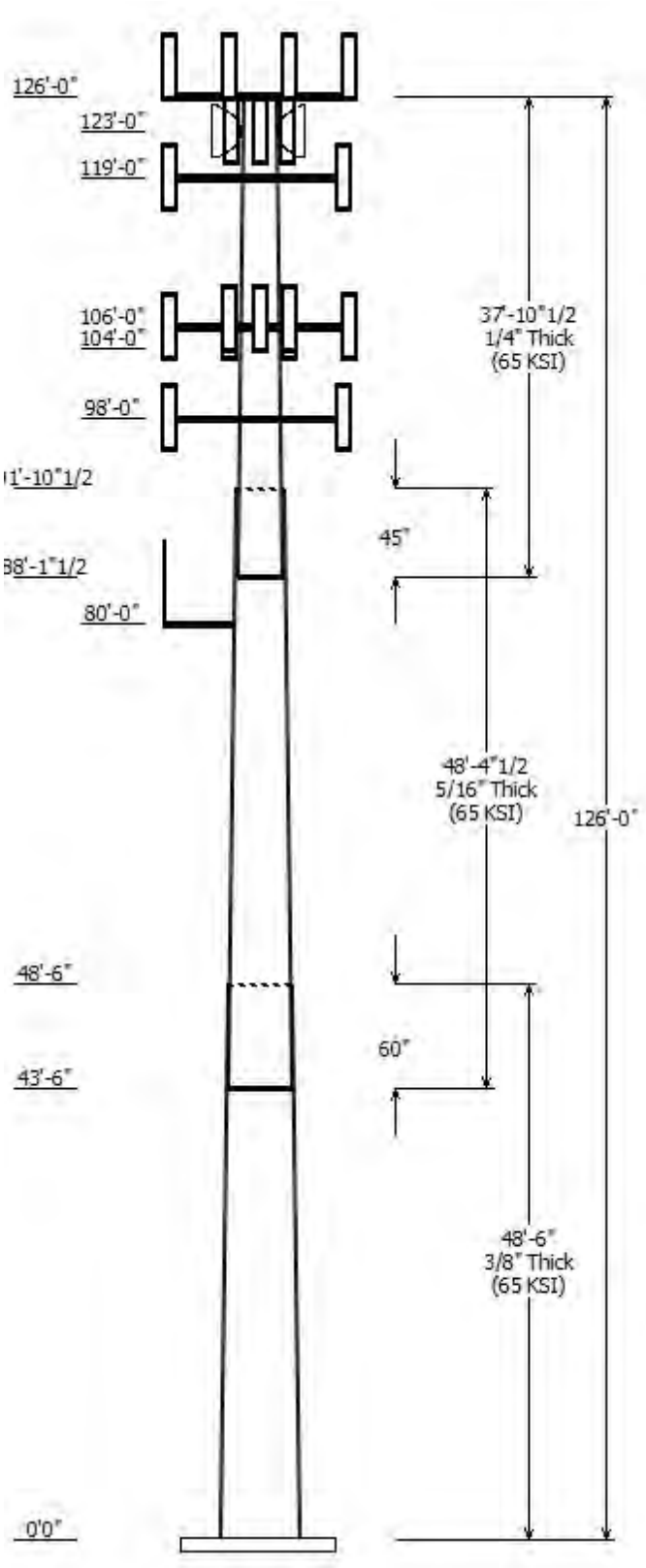
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Tower Services, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Job Information

Pole :	302469
Description :	Monopole
Client :	AT&T Mobility
Location :	Bridgeport CT 2, CT
Shape :	18 Sides
Height :	126.00 (ft)
Base Elev (ft):	0.00
Taper:	0.23512 (in/ft)

Code: TIA/EIA-222 Rev F

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	48.500	34.09	45.50	0.375		0.000	0.235121	65
2	48.375	24.52	35.89	0.313	Slip Joint	60.000	0.235121	65
3	37.875	17.00	25.90	0.250	Slip Joint	45.000	0.235121	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
126.000	131.000	3	72"x12" Panels
126.000	131.000	9	48"x12" Panels
126.000	126.000	1	Flat Platform w/ Handrails
123.000	123.000	1	Dragonwave A-ANT-23G-1-C
123.000	123.000	1	Clearwire Mount
123.000	123.000	2	DragonWave Horizon Compact
123.000	123.000	3	Argus LLPX310R
123.000	123.000	1	Dragonwave A-ANT-18G-12-C
123.000	123.000	3	NextNet BTS-2500
119.000	119.000	3	RFS APX16DWV-16DWVS-E-A20
119.000	119.000	6	Ericsson KRY 112 71
119.000	119.000	3	Andrew ETW200VS12UB
119.000	119.000	3	RFS APX16PV-16PVL-A
119.000	119.000	1	Round Low Profile Platform
106.000	106.000	3	Ericsson RRUS E2B29
106.000	106.000	3	Ericsson A2 B2
106.000	106.000	3	Ericsson RRUS-32
106.000	106.000	3	Ericsson RRUS 12
106.000	106.000	6	Powerwave LGP21901
106.000	106.000	1	Raycap DC6-48-60-18-8F
106.000	106.000	1	Raycap DC6-48-60-18-8F
106.000	106.000	12	Powerwave LGP2140X
106.000	106.000	3	Ericsson RRUS-11
106.000	106.000	1	Low Profile Platform
104.000	106.000	6	CCI OPA-65R-LCUU-H4
104.000	106.000	3	Powerwave 7770.00
98.000	98.000	3	RCU
98.000	98.000	3	Kathrein 800 10504
98.000	98.000	3	Flush Mounts
80.000	85.500	1	BCD-87010__
80.000	80.000	1	Round Side Arm

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	80.000	7/8 Coax	No
0.000	98.000	1 5/8" Coax	Yes
0.000	98.000	3/8" Coax	Yes
0.000	106.0	0.51" Hybrid	Yes
0.000	106.0	1.24" Hybrid	No
0.000	119.0	1 5/8 Coax	No
0.000	119.0	1 5/8" Coax	No

0.000	123.0	1/2" Coax	No
0.000	123.0	2" Conduit	No
0.000	123.0	5/16" Coax	No
0.000	126.0	1 5/8 Coax	No

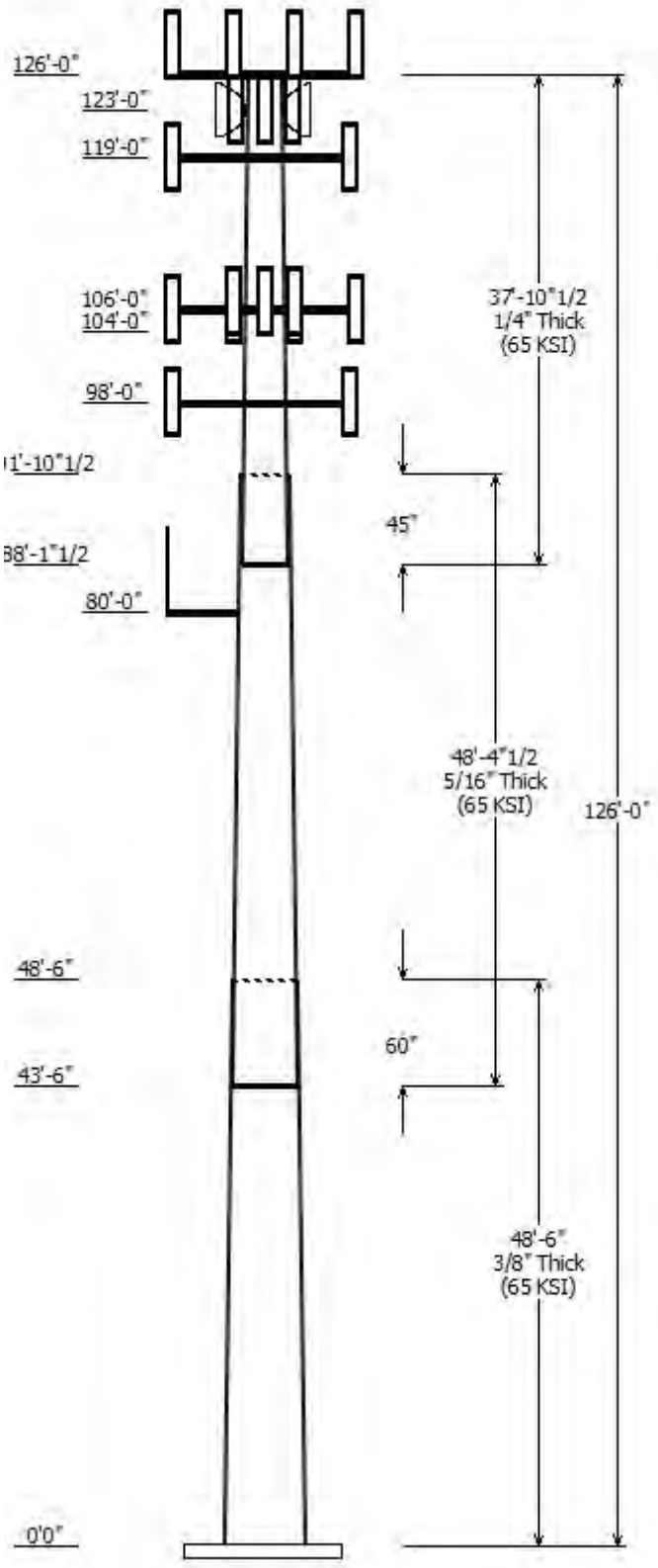
Load Cases	
No Ice	85.00 mph Wind with No Ice
Ice	73.61 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

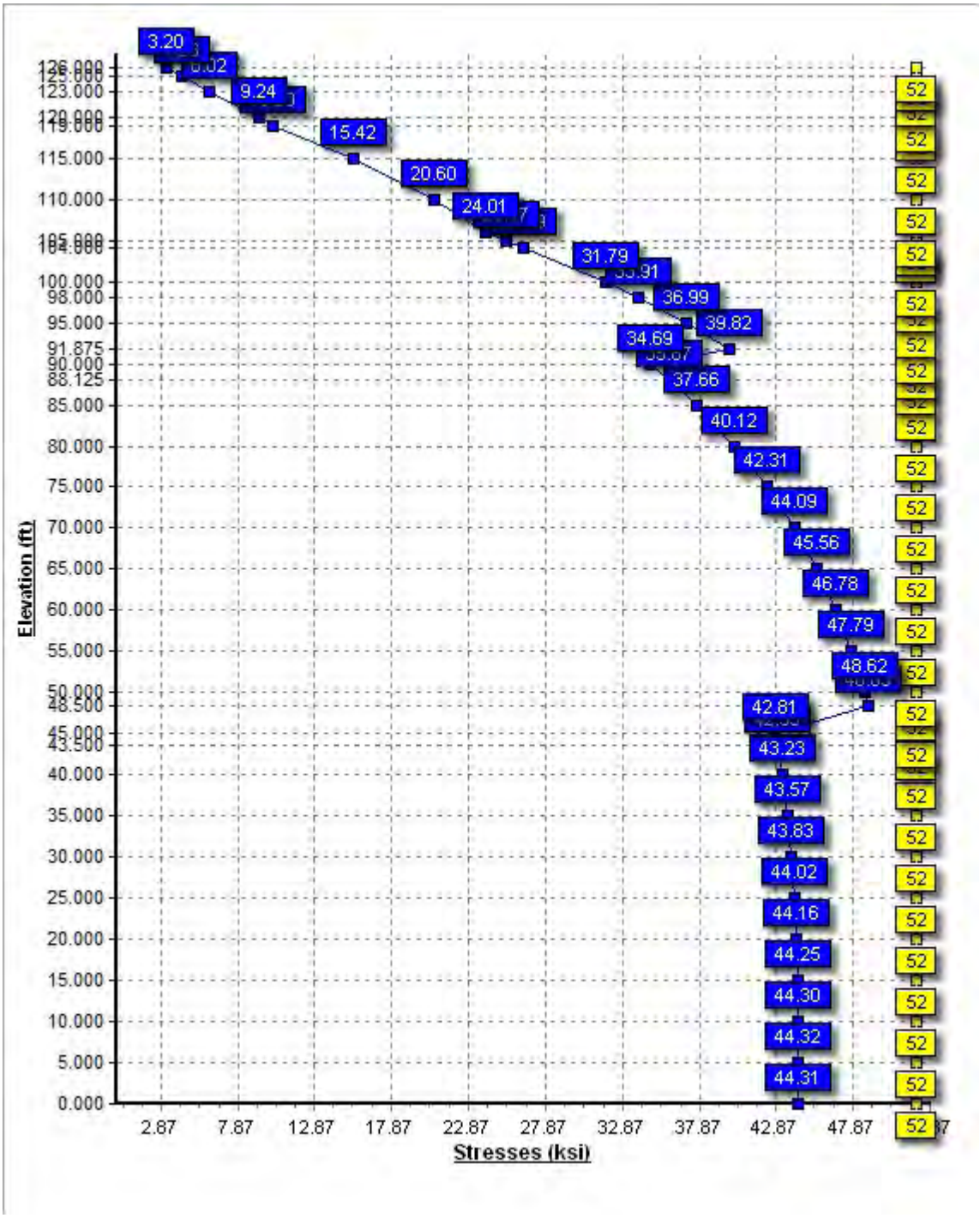
Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	2184.00	22.39	25.36
Ice	1726.85	17.61	30.05
Twist/Sway	756.91	7.75	25.40

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	123.00	29.376	2.266
Twist/Sway	123.00	29.376	2.266

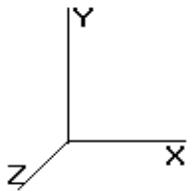



3.20
9.24
15.42
20.60
24.01
31.79
36.99
39.82
34.69
37.66
40.12
42.31
44.09
45.56
46.78
47.79
48.62
42.81
43.23
43.57
43.83
44.02
44.16
44.25
44.30
44.32
44.31
52
Elevation (ft)
Stresses (ksi)
2.87
7.87
12.87
17.87
22.87
27.87
32.87
37.87
42.87
47.87

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (sqin)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (sqin)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	48.500	0.3750	65		0.00	7,744	45.50	0.00	53.71	13817.4	19.98	121.33	34.09	48.50	40.14	5766.3	14.62	90.92	0.235121
2-18	48.375	0.3125	65	Slip	60.00	4,881	35.89	43.50	35.29	5646.6	18.84	114.87	24.52	91.88	24.01	1778.4	12.43	78.47	0.235121
3-18	37.875	0.2500	65	Slip	45.00	2,168	25.90	88.13	20.36	1692.8	16.86	103.62	17.00	126.00	13.29	471.1	10.58	68.00	0.235121
				Shaft Weight		14,793													

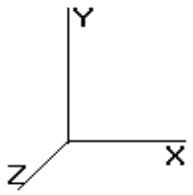
Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
126.00	48"x12" Panels	9	30.00	5.600	0.76	63.00	6.190	0.76	0.000	5.000
126.00	72"x12" Panels	3	45.00	8.400	0.78	87.00	9.230	0.78	0.000	5.000
126.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	2,450.00	48.400	1.00	0.000	0.000
123.00	Argus LLPX310R	3	28.60	4.830	0.62	54.50	5.360	0.62	0.000	0.000
123.00	Clearwire Mount	1	40.00	8.500	1.00	50.00	10.500	1.00	0.000	0.000
123.00	Dragonwave A-ANT-18G-12-C	1	27.10	4.690	1.00	54.80	5.050	1.00	0.000	0.000
123.00	Dragonwave A-ANT-23G-1-C	1	15.00	1.610	1.00	24.10	1.820	1.00	0.000	0.000
123.00	DragonWave Horizon	2	10.60	0.430	1.00	17.00	0.580	1.00	0.000	0.000
123.00	NextNet BTS-2500	3	35.00	2.120	0.67	48.30	2.430	0.67	0.000	0.000
119.00	Andrew ETW200VS12UB	3	11.00	0.470	0.50	14.52	0.620	0.50	0.000	0.000
119.00	Ericsson KRY 112 71	6	13.20	0.680	0.50	18.25	0.840	0.50	0.000	0.000
119.00	RFS APX16DWV-16DWVS-E-	3	40.70	7.220	0.59	75.00	7.910	0.59	0.000	0.000
119.00	RFS APX16PV-16PVL-A	3	39.60	6.647	0.59	70.65	7.298	0.59	0.000	0.000
119.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
106.00	Ericsson A2 B2	3	22.00	2.410	0.67	0.00	0.000	0.67	0.000	0.000
106.00	Ericsson RRUS 12	3	50.00	3.670	0.67	81.20	4.060	0.67	0.000	0.000
106.00	Ericsson RRUS E2B29	3	60.00	3.670	0.67	0.00	0.000	0.67	0.000	0.000
106.00	Ericsson RRUS-11	3	51.00	3.260	0.67	69.90	3.340	0.67	0.000	0.000
106.00	Ericsson RRUS-32	3	77.00	3.870	0.67	104.90	4.300	0.67	0.000	0.000
106.00	Low Profile Platform	1	1500.00	20.000	1.00	1,700.00	27.200	1.00	0.000	0.000
106.00	Powerwave LGP2140X	12	19.00	1.260	0.67	21.26	1.530	0.67	0.000	0.000
106.00	Powerwave LGP21901	6	5.50	0.230	0.50	7.70	0.340	0.50	0.000	0.000
106.00	Raycap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
106.00	Raycap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
104.00	CCI OPA-65R-LCUU-H4	6	57.00	6.900	0.64	0.00	0.000	0.64	0.000	2.000
104.00	Powerwave 7770.00	3	35.00	5.880	0.64	67.63	6.530	0.64	0.000	2.000
98.00	Flush Mounts	3	60.00	2.000	0.75	100.00	3.000	0.75	0.000	0.000
98.00	Kathrein 800 10504	3	17.60	3.350	0.67	35.70	3.870	0.67	0.000	0.000
98.00	RCU	3	1.00	0.160	1.00	2.50	0.260	1.00	0.000	0.000
80.00	BCD-87010__	1	26.50	2.900	1.00	48.00	3.680	1.00	0.000	5.500
80.00	Round Side Arm	1	150.00	5.200	1.00	175.00	5.900	1.00	0.000	0.000
	Totals	96	8016.10			9,748.11			Number of Loadings :	31

Linear Appurtenance Properties

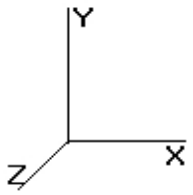
Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	126.00	(12) 1 5/8 Coax	1.04	0.00	0.00	0.00	N
0.00	123.00	(3) 1/2" Coax	0.15	0.00	0.00	0.00	N
0.00	123.00	(2) 2" Conduit	3.65	0.00	0.00	0.00	N
0.00	123.00	(6) 5/16" Coax	0.05	0.00	0.00	0.00	N
0.00	119.00	(9) 1 5/8 Coax	1.04	0.00	0.00	0.00	N

Pole :	**302469**	**Code: TIA/EIA-222 Rev F**	**11/12/2014 4:18:07 PM**
Location :	**Bridgeport CT 2, CT**		**Page: 2**
Height :	**126.0 (ft)**		
Base Dia :	**45.50 (in)**		
Top Dia :	**17.00 (in)**	**Base Elev : 0.000 (ft)**	
Shape :	**18 Sides**		
Taper :	**0.235121 (in/ft)**		



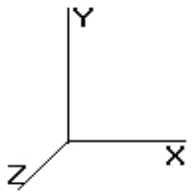
0.00	**119.00**	**(9) 1 5/8" Coax**	**7.38**	**0.20**	**14.20**	**0.25**	**N**
0.00	**106.00**	**(3) 0.51" Hybrid**	**0.14**	**0.04**	**0.50**	**0.10**	**Y**
0.00	**106.00**	**(4) 1.24" Hybrid**	**4.20**	**0.15**	**8.00**	**0.20**	**N**
0.00	**98.00**	**(6) 1 5/8" Coax**	**4.92**	**0.20**	**9.46**	**0.25**	**Y**
0.00	**98.00**	**(1) 3/8" Coax**	**0.08**	**0.04**	**0.37**	**0.09**	**Y**
0.00	**80.00**	**(1) 7/8 Coax**	**0.52**	**0.00**	**0.00**	**0.00**	**N**
		Total Weight	**2,597.60 (lb)**		**3,554.14 (lb)**		

Pole :	302469	Code: TIA/EIA-222 Rev F	11/12/2014 4:18:07 PM
Location :	Bridgeport CT 2, CT		Page: 3
Height :	126.0 (ft)		
Base Dia :	45.50 (in)		
Top Dia :	17.00 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.235121 (in/ft)		



Segment Properties (Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.3750	45.500	53.708	13,817.4	19.98	121.33	65	52	0.0
5.00		0.3750	44.324	52.309	12,765.4	19.43	118.20	65	52	901.9
10.00		0.3750	43.149	50.910	11,768.2	18.88	115.06	65	52	878.1
15.00		0.3750	41.973	49.510	10,824.3	18.33	111.93	65	52	854.3
20.00		0.3750	40.798	48.111	9,932.2	17.77	108.79	65	52	830.5
25.00		0.3750	39.622	46.712	9,090.6	17.22	105.66	65	52	806.7
30.00		0.3750	38.446	45.313	8,297.9	16.67	102.52	65	52	782.9
35.00		0.3750	37.271	43.914	7,552.7	16.11	99.39	65	52	759.0
40.00		0.3750	36.095	42.514	6,853.5	15.56	96.25	65	52	735.2
43.50	Bot - Section 2	0.3750	35.272	41.535	6,390.7	15.17	94.06	65	52	500.5
45.00		0.3750	34.920	41.115	6,198.9	15.01	93.12	65	52	390.2
48.50	Top - Section 1	0.3125	34.722	34.128	5,105.2	18.18	111.11	65	52	895.2
50.00		0.3125	34.369	33.779	4,949.8	17.98	109.98	65	52	173.3
55.00		0.3125	33.193	32.612	4,454.7	17.32	106.22	65	52	564.8
60.00		0.3125	32.018	31.446	3,993.8	16.66	102.46	65	52	544.9
65.00		0.3125	30.842	30.280	3,565.8	15.99	98.69	65	52	525.1
70.00		0.3125	29.667	29.114	3,169.5	15.33	94.93	65	52	505.3
75.00		0.3125	28.491	27.948	2,803.8	14.67	91.17	65	52	485.4
80.00		0.3125	27.315	26.782	2,467.3	14.00	87.41	65	52	465.6
85.00		0.3125	26.140	25.616	2,158.9	13.34	83.65	65	52	445.8
88.13	Bot - Section 3	0.3125	25.405	24.888	1,979.8	12.92	81.30	65	52	268.5
90.00		0.3125	24.964	24.450	1,877.3	12.68	79.89	65	52	286.2
91.88	Top - Section 2	0.2500	25.023	19.657	1,524.2	16.24	100.09	65	52	281.1
95.00		0.2500	24.288	19.074	1,392.5	15.72	97.15	65	52	205.9
98.00		0.2500	23.583	18.514	1,273.5	15.22	94.33	65	52	191.9
100.0		0.2500	23.113	18.141	1,198.1	14.89	92.45	65	52	124.7
104.0		0.2500	22.172	17.395	1,056.2	14.23	88.69	65	52	241.8
105.0		0.2500	21.937	17.208	1,022.6	14.06	87.75	65	52	58.9
106.0		0.2500	21.702	17.022	989.7	13.90	86.81	65	52	58.2
110.0		0.2500	20.762	16.275	865.1	13.23	83.05	65	52	226.6
115.0		0.2500	19.586	15.343	724.7	12.40	78.34	65	52	269.0
119.0		0.2500	18.646	14.596	624.1	11.74	74.58	65	52	203.8
120.0		0.2500	18.410	14.410	600.4	11.57	73.64	65	52	49.4
123.0		0.2500	17.705	13.850	533.1	11.08	70.82	65	52	144.2
125.0		0.2500	17.235	13.477	491.2	10.75	68.94	65	52	93.0
126.0		0.2500	17.000	13.290	471.1	10.58	68.00	65	52	45.5
										14,793.2

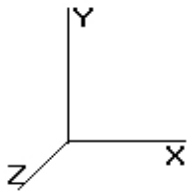


Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description		Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	18.496	31.25	322.29	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.25	313.96	0.650	0.000	5.00	18.713	12.16	380.2	0.0	901.9
10.00		0.00	1.00	18.496	31.25	305.63	0.650	0.000	5.00	18.224	11.85	370.3	0.0	878.1
15.00		0.00	1.00	18.496	31.25	297.31	0.650	0.000	5.00	17.734	11.53	360.3	0.0	854.3
20.00		0.00	1.00	18.496	31.25	288.98	0.650	0.000	5.00	17.244	11.21	350.4	0.0	830.5
25.00		0.00	1.00	18.496	31.25	280.65	0.650	0.000	5.00	16.754	10.89	340.4	0.0	806.7
30.00		0.00	1.00	18.496	31.25	272.32	0.650	0.000	5.00	16.264	10.57	330.5	0.0	782.9
35.00		0.00	1.01	18.810	31.78	266.23	0.650	0.000	5.00	15.774	10.25	325.9	0.0	759.0
40.00		0.00	1.05	19.541	33.02	262.79	0.650	0.000	5.00	15.285	9.93	328.1	0.0	735.2
43.50	Bot - Section 2	0.00	1.08	20.015	33.82	259.90	0.650	0.000	3.50	10.408	6.77	228.8	0.0	500.5
45.00		0.00	1.09	20.210	34.15	258.55	0.650	0.000	1.50	4.465	2.90	99.1	0.0	390.2
48.50	Top - Section 1	0.00	1.11	20.647	34.89	255.17	0.650	0.000	3.50	10.247	6.66	232.4	0.0	895.2
50.00		0.00	1.12	20.827	35.19	258.33	0.650	0.000	1.50	4.318	2.81	98.8	0.0	173.3
55.00		0.00	1.15	21.402	36.17	252.91	0.650	0.000	5.00	14.075	9.15	330.9	0.0	564.8
60.00		0.00	1.18	21.941	37.08	247.01	0.650	0.000	5.00	13.586	8.83	327.4	0.0	544.9
65.00		0.00	1.21	22.449	37.93	240.67	0.650	0.000	5.00	13.096	8.51	322.9	0.0	525.1
70.00		0.00	1.24	22.929	38.75	233.96	0.650	0.000	5.00	12.606	8.19	317.5	0.0	505.3
75.00		0.00	1.26	23.386	39.52	226.92	0.650	0.000	5.00	12.116	7.88	311.3	0.0	485.4
80.00	Appertunance(s)	0.00	1.28	23.821	40.25	219.57	0.650	0.000	5.00	11.626	7.56	304.2	0.0	465.6
85.00		0.00	1.31	24.237	40.96	211.95	0.650	0.000	5.00	11.136	7.24	296.5	0.0	445.8
88.13	Bot - Section 3	0.00	1.32	24.488	41.38	207.06	0.650	0.000	3.13	6.712	4.36	180.5	0.0	268.5
90.00		0.00	1.33	24.636	41.63	204.08	0.650	0.000	1.88	4.013	2.61	108.6	0.0	286.2
91.88	Top - Section 2	0.00	1.34	24.782	41.88	201.06	0.650	0.000	1.88	3.944	2.56	107.4	0.0	281.1
95.00		0.00	1.35	25.020	42.28	200.09	0.650	0.000	3.13	6.421	4.17	176.5	0.0	205.9
98.00	Appertunance(s)	0.00	1.36	25.243	42.66	195.15	0.650	0.000	3.00	5.984	3.89	165.9	0.0	191.9
100.0		0.00	1.37	25.389	42.90	191.81	0.650	0.000	2.00	3.891	2.53	108.5	0.0	124.7
104.0	Appertunance(s)	0.00	1.38	25.675	43.39	185.04	0.650	0.000	4.00	7.548	4.91	212.9	0.0	241.8
105.0		0.00	1.39	25.745	43.51	183.32	0.650	0.000	1.00	1.838	1.19	52.0	0.0	58.9
106.0	Appertunance(s)	0.00	1.39	25.815	43.62	181.61	0.650	0.000	1.00	1.818	1.18	51.6	0.0	58.2
110.0		0.00	1.41	26.090	44.09	174.66	0.650	0.000	4.00	7.077	4.60	202.8	0.0	226.6
115.0		0.00	1.42	26.423	44.65	165.82	0.650	0.000	5.00	8.406	5.46	244.0	0.0	269.0
119.0	Appertunance(s)	0.00	1.44	26.683	45.09	158.63	0.650	0.000	4.00	6.372	4.14	186.8	0.0	203.8
120.0		0.00	1.44	26.747	45.20	156.81	0.650	0.000	1.00	1.544	1.00	45.4	0.0	49.4
123.0	Appertunance(s)	0.00	1.45	26.936	45.52	151.34	0.650	0.000	3.00	4.514	2.93	133.6	0.0	144.2
125.0		0.00	1.46	27.060	45.73	147.66	0.650	0.000	2.00	2.912	1.89	86.6	0.0	93.0
126.0	Appertunance(s)	0.00	1.46	27.122	45.83	145.81	0.650	0.000	1.00	1.426	0.93	42.5	0.0	45.5
							Totals:		126.00			7,761.5	0.0	14,793.2



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

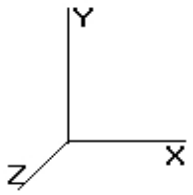
Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
80.00	Round Side Arm	1	23.821	40.257	1.00	5.20	0.000	0.000	209.34	0.00	0.00	150.00
80.00	BCD-87010__	1	24.278	41.029	1.00	2.90	0.000	5.500	118.98	0.00	654.42	26.50
98.00	Flush Mounts	3	25.243	42.660	0.75	4.50	0.000	0.000	191.97	0.00	0.00	180.00
98.00	Kathrein 800 10504	3	25.243	42.660	0.67	6.73	0.000	0.000	287.25	0.00	0.00	52.80
98.00	RCU	3	25.243	42.660	1.00	0.48	0.000	0.000	20.48	0.00	0.00	3.00
104.0	Powerwave 7770.00	3	25.815	43.628	0.64	11.29	0.000	2.000	492.54	0.00	985.08	105.00
104.0	CCI OPA-65R-LCUU-H4	6	25.815	43.628	0.64	26.50	0.000	2.000	1,155.96	0.00	2,311.92	342.00
106.0	Raycap DC6-48-60-18-	1	25.815	43.628	1.00	1.47	0.000	0.000	64.13	0.00	0.00	31.80
106.0	Powerwave LGP21901	6	25.815	43.628	0.50	0.69	0.000	0.000	30.10	0.00	0.00	33.00
106.0	Ericsson RRUS 12	3	25.815	43.628	0.67	7.38	0.000	0.000	321.83	0.00	0.00	150.00
106.0	Ericsson RRUS-32	3	25.815	43.628	0.67	7.78	0.000	0.000	339.37	0.00	0.00	231.00
106.0	Ericsson A2 B2	3	25.815	43.628	0.67	4.84	0.000	0.000	211.34	0.00	0.00	66.00
106.0	Ericsson RRUS E2B29	3	25.815	43.628	0.67	7.38	0.000	0.000	321.83	0.00	0.00	180.00
106.0	Low Profile Platform	1	25.815	43.628	1.00	20.00	0.000	0.000	872.55	0.00	0.00	1,500.00
106.0	Ericsson RRUS-11	3	25.815	43.628	0.67	6.55	0.000	0.000	285.87	0.00	0.00	153.00
106.0	Powerwave LGP2140X	12	25.815	43.628	0.67	10.13	0.000	0.000	441.97	0.00	0.00	228.00
106.0	Raycap DC6-48-60-18-	1	25.815	43.628	1.00	1.47	0.000	0.000	64.13	0.00	0.00	31.80
119.0	Round Low Profile Pl	1	26.683	45.094	1.00	21.70	0.000	0.000	978.53	0.00	0.00	1,500.00
119.0	RFS APX16PV-16PVL-	3	26.683	45.094	0.59	11.77	0.000	0.000	530.54	0.00	0.00	118.80
119.0	Andrew	3	26.683	45.094	0.50	0.70	0.000	0.000	31.79	0.00	0.00	33.00
119.0	Ericsson KRY 112 71	6	26.683	45.094	0.50	2.04	0.000	0.000	91.99	0.00	0.00	79.20
119.0	RFS APX16DWV-	3	26.683	45.094	0.59	12.78	0.000	0.000	576.27	0.00	0.00	122.10
123.0	NextNet BTS-2500	3	26.936	45.522	0.67	4.26	0.000	0.000	193.98	0.00	0.00	105.00
123.0	Dragonwave A-ANT-	1	26.936	45.522	1.00	4.69	0.000	0.000	213.50	0.00	0.00	27.10
123.0	Argus LLPX310R	3	26.936	45.522	0.62	8.98	0.000	0.000	408.96	0.00	0.00	85.80
123.0	DragonWave Horizon	2	26.936	45.522	1.00	0.86	0.000	0.000	39.15	0.00	0.00	21.20
123.0	Clearwire Mount	1	26.936	45.522	1.00	8.50	0.000	0.000	386.94	0.00	0.00	40.00
123.0	Dragonwave A-ANT-	1	26.936	45.522	1.00	1.61	0.000	0.000	73.29	0.00	0.00	15.00
126.0	Flat Platform w/ Han	1	27.122	45.836	1.00	42.40	0.000	0.000	1,943.45	0.00	0.00	2,000.00
126.0	48"x12" Panels	9	27.425	46.349	0.76	38.30	0.000	5.000	1,775.34	0.00	8,876.71	270.00
126.0	72"x12" Panels	3	27.425	46.349	0.78	19.66	0.000	5.000	911.03	0.00	4,555.16	135.00
									13,584.40			8,016.10

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



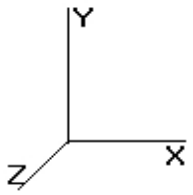
Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Linear Appurtenance Segment Forces

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	F X (lb)	Dead Load (lb)
5.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.496	6.25	0.70
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.496	31.26	24.60
5.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.496	6.25	0.40
10.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.496	6.25	0.70
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.496	31.26	24.60
10.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.496	6.25	0.40
15.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.496	6.25	0.70
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.496	31.26	24.60
15.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.496	6.25	0.40
20.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.496	6.25	0.70
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.496	31.26	24.60
20.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.496	6.25	0.40
25.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.496	6.25	0.70
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.496	31.26	24.60
25.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.496	6.25	0.40
30.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.496	6.25	0.70
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.496	31.26	24.60
30.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.496	6.25	0.40
35.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	18.810	6.36	0.70
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	18.810	31.79	24.60
35.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	18.810	6.36	0.40
40.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	19.541	6.60	0.70
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	19.541	33.02	24.60
40.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	19.541	6.60	0.40
43.50	(3) 0.51" Hybrid	Yes	3.50	0.14	0.04	20.015	4.74	0.49
43.50	(6) 1 5/8" Coax	Yes	3.50	4.92	0.20	20.015	23.68	17.22
43.50	(1) 3/8" Coax	Yes	3.50	0.08	0.04	20.015	4.74	0.28
45.00	(3) 0.51" Hybrid	Yes	1.50	0.14	0.04	20.210	2.05	0.21
45.00	(6) 1 5/8" Coax	Yes	1.50	4.92	0.20	20.210	10.25	7.38
45.00	(1) 3/8" Coax	Yes	1.50	0.08	0.04	20.210	2.05	0.12
48.50	(3) 0.51" Hybrid	Yes	3.50	0.14	0.04	20.647	4.89	0.49
48.50	(6) 1 5/8" Coax	Yes	3.50	4.92	0.20	20.647	24.43	17.22
48.50	(1) 3/8" Coax	Yes	3.50	0.08	0.04	20.647	4.89	0.28
50.00	(3) 0.51" Hybrid	Yes	1.50	0.14	0.04	20.827	2.11	0.21
50.00	(6) 1 5/8" Coax	Yes	1.50	4.92	0.20	20.827	10.56	7.38
50.00	(1) 3/8" Coax	Yes	1.50	0.08	0.04	20.827	2.11	0.12
55.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	21.402	7.23	0.70
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	21.402	36.17	24.60
55.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	21.402	7.23	0.40
60.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	21.941	7.42	0.70
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	21.941	37.08	24.60
60.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	21.941	7.42	0.40
65.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	22.449	7.59	0.70
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	22.449	37.94	24.60
65.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	22.449	7.59	0.40
70.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	22.929	7.75	0.70
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	22.929	38.75	24.60
70.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	22.929	7.75	0.40
75.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	23.386	7.90	0.70
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	23.386	39.52	24.60
75.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	23.386	7.90	0.40

Pole :	302469	Code: TIA/EIA-222 Rev F	11/12/2014 4:18:07 PM
Location :	Bridgeport CT 2, CT		Page: 7
Height :	126.0 (ft)		
Base Dia :	45.50 (in)		
Top Dia :	17.00 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.235121 (in/ft)		

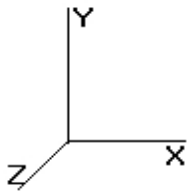


Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

80.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	23.821		8.05	0.70
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	23.821		40.26	24.60
80.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	23.821		8.05	0.40
85.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	24.237		8.19	0.70
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	24.237		40.96	24.60
85.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	24.237		8.19	0.40
88.13	(3) 0.51" Hybrid	Yes	3.13	0.14	0.04	24.488		5.17	0.44
88.13	(6) 1 5/8" Coax	Yes	3.13	4.92	0.20	24.488		25.87	15.38
88.13	(1) 3/8" Coax	Yes	3.13	0.08	0.04	24.488		5.17	0.25
90.00	(3) 0.51" Hybrid	Yes	1.88	0.14	0.04	24.636		3.12	0.26
90.00	(6) 1 5/8" Coax	Yes	1.88	4.92	0.20	24.636		15.61	9.23
90.00	(1) 3/8" Coax	Yes	1.88	0.08	0.04	24.636		3.12	0.15
91.88	(3) 0.51" Hybrid	Yes	1.88	0.14	0.04	24.782		3.14	0.26
91.88	(6) 1 5/8" Coax	Yes	1.88	4.92	0.20	24.782		15.71	9.23
91.88	(1) 3/8" Coax	Yes	1.88	0.08	0.04	24.782		3.14	0.15
95.00	(3) 0.51" Hybrid	Yes	3.13	0.14	0.04	25.020		5.29	0.44
95.00	(6) 1 5/8" Coax	Yes	3.13	4.92	0.20	25.020		26.43	15.38
95.00	(1) 3/8" Coax	Yes	3.13	0.08	0.04	25.020		5.29	0.25
98.00	(3) 0.51" Hybrid	Yes	3.00	0.14	0.04	25.243		5.12	0.42
98.00	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	25.243		25.60	14.76
98.00	(1) 3/8" Coax	Yes	3.00	0.08	0.04	25.243		5.12	0.24
100.0	(3) 0.51" Hybrid	Yes	2.00	0.14	0.04	25.389		3.43	0.28
104.0	(3) 0.51" Hybrid	Yes	4.00	0.14	0.04	25.675		6.94	0.56
105.0	(3) 0.51" Hybrid	Yes	1.00	0.14	0.04	25.745		1.74	0.14
106.0	(3) 0.51" Hybrid	Yes	1.00	0.14	0.04	25.815		1.75	0.14
							Totals:	995.48	504.84

Pole :	302469	Code: TIA/EIA-222 Rev F	11/12/2014 4:18:08 PM
Location :	Bridgeport CT 2, CT		Page: 8
Height :	126.0 (ft)		
Base Dia :	45.50 (in)		
Top Dia :	17.00 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.235121 (in/ft)		



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

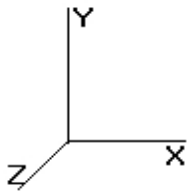
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	423.98	1,017.71	0.00	0.00
10.00	414.03	993.90	0.00	0.00
15.00	404.07	970.09	0.00	0.00
20.00	394.12	946.29	0.00	0.00
25.00	384.17	922.48	0.00	0.00
30.00	374.22	898.68	0.00	0.00
35.00	370.44	874.87	0.00	0.00
40.00	374.33	851.06	0.00	0.00
43.50	261.98	581.58	0.00	0.00
45.00	113.47	424.93	0.00	0.00
48.50	266.61	976.23	0.00	0.00
50.00	113.58	208.05	0.00	0.00
55.00	381.56	680.61	0.00	0.00
60.00	379.36	660.77	0.00	0.00
65.00	376.06	640.93	0.00	0.00
70.00	371.76	621.09	0.00	0.00
75.00	366.58	601.26	0.00	0.00
80.00	688.91	757.92	0.00	654.42
85.00	353.85	558.98	0.00	0.00
88.13	216.76	339.29	0.00	0.00
90.00	130.47	328.62	0.00	0.00
91.88	129.36	323.59	0.00	0.00
95.00	213.47	276.69	0.00	0.00
98.00	701.47	495.59	0.00	0.00
100.0	111.96	160.02	0.00	0.00
104.0	1,868.31	759.42	0.00	3,297.00
105.0	53.72	76.52	0.00	0.00
106.0	3,006.43	2,680.48	0.00	0.00
110.0	202.83	279.82	0.00	0.00
115.0	243.99	335.50	0.00	0.00
119.0	2,395.89	2,110.07	0.00	0.00
120.0	45.36	54.24	0.00	0.00
123.0	1,449.39	453.00	0.00	0.00
125.0	86.55	95.07	0.00	0.00
126.0	4,672.33	2,451.58	0.00	13,431.87
Totals:	22,341.35	25,406.93	0.00	17,383.28

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

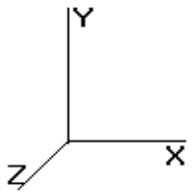
Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-22.391	-25.363	0.000	0.000	0.000	-2,184.004	0.000	0.000	0.000	0.000
5.00	-22.059	-24.261	0.000	0.000	0.000	-2,072.053	-0.117	0.000	0.117	-0.219
10.00	-21.731	-23.183	0.000	0.000	0.000	-1,961.761	-0.467	0.000	0.467	-0.444
15.00	-21.408	-22.130	0.000	0.000	0.000	-1,853.106	-1.056	0.000	1.056	-0.674
20.00	-21.089	-21.101	0.000	0.000	0.000	-1,746.066	-1.889	0.000	1.889	-0.911
25.00	-20.775	-20.097	0.000	0.000	0.000	-1,640.621	-2.973	0.000	2.973	-1.153
30.00	-20.465	-19.117	0.000	0.000	0.000	-1,536.748	-4.314	0.000	4.314	-1.402
35.00	-20.153	-18.162	0.000	0.000	0.000	-1,434.425	-5.919	0.000	5.919	-1.657
40.00	-19.820	-17.246	0.000	0.000	0.000	-1,333.660	-7.793	0.000	7.793	-1.917
43.50	-19.577	-16.628	0.000	0.000	0.000	-1,264.291	-9.270	0.000	9.270	-2.106
45.00	-19.487	-16.160	0.000	0.000	0.000	-1,234.926	-9.945	0.000	9.945	-2.190
48.50	-19.218	-15.149	0.000	0.000	0.000	-1,166.722	-11.622	0.000	11.622	-2.382
50.00	-19.149	-14.878	0.000	0.000	0.000	-1,137.895	-12.384	0.000	12.384	-2.468
55.00	-18.814	-14.113	0.000	0.000	0.000	-1,042.154	-15.136	0.000	15.136	-2.781
60.00	-18.476	-13.369	0.000	0.000	0.000	-948.084	-18.219	0.000	18.219	-3.099
65.00	-18.136	-12.649	0.000	0.000	0.000	-855.704	-21.635	0.000	21.635	-3.420
70.00	-17.794	-11.952	0.000	0.000	0.000	-765.026	-25.389	0.000	25.389	-3.743
75.00	-17.451	-11.279	0.000	0.000	0.000	-676.058	-29.481	0.000	29.481	-4.067
80.00	-16.766	-10.481	0.000	0.000	0.000	-588.150	-33.910	0.000	33.910	-4.388
85.00	-16.413	-9.879	0.000	0.000	0.000	-504.320	-38.671	0.000	38.671	-4.702
88.13	-16.195	-9.515	0.000	0.000	0.000	-453.029	-41.813	0.000	41.813	-4.900
90.00	-16.055	-9.166	0.000	0.000	0.000	-422.664	-43.759	0.000	43.759	-5.018
91.88	-15.921	-8.813	0.000	0.000	0.000	-392.561	-45.750	0.000	45.750	-5.133
95.00	-15.712	-8.505	0.000	0.000	0.000	-342.808	-49.169	0.000	49.169	-5.317
98.00	-14.989	-8.036	0.000	0.000	0.000	-295.674	-52.569	0.000	52.569	-5.513
100.0	-14.886	-7.842	0.000	0.000	0.000	-265.697	-54.903	0.000	54.903	-5.638
104.0	-12.968	-7.243	0.000	0.000	0.000	-202.855	-59.719	0.000	59.719	-5.862
105.0	-12.914	-7.161	0.000	0.000	0.000	-189.887	-60.951	0.000	60.951	-5.915
106.0	-9.656	-4.786	0.000	0.000	0.000	-176.973	-62.193	0.000	62.193	-5.966
110.0	-9.439	-4.498	0.000	0.000	0.000	-138.351	-67.263	0.000	67.263	-6.148
115.0	-9.171	-4.168	0.000	0.000	0.000	-91.155	-73.796	0.000	73.796	-6.336
119.0	-6.558	-2.330	0.000	0.000	0.000	-54.471	-79.147	0.000	79.147	-6.451
120.0	-6.508	-2.277	0.000	0.000	0.000	-47.914	-80.498	0.000	80.498	-6.474
123.0	-5.018	-1.988	0.000	0.000	0.000	-28.390	-84.576	0.000	84.576	-6.528
125.0	-4.922	-1.902	0.000	0.000	0.000	-18.354	-87.311	0.000	87.311	-6.553
126.0	-4.672	0.000	0.000	0.000	0.000	-13.432	-88.682	0.000	88.682	-6.562

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

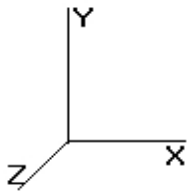
Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.47	0.84	0.00	0.00	0.00	43.82	44.31	52.0	0.0	0.853
5.00	0.46	0.85	0.00	0.00	0.00	43.83	44.32	52.0	0.0	0.853
10.00	0.46	0.86	0.00	0.00	0.00	43.82	44.30	52.0	0.0	0.852
15.00	0.45	0.87	0.00	0.00	0.00	43.78	44.25	52.0	0.0	0.851
20.00	0.44	0.88	0.00	0.00	0.00	43.70	44.16	52.0	0.0	0.850
25.00	0.43	0.90	0.00	0.00	0.00	43.57	44.02	52.0	0.0	0.847
30.00	0.42	0.91	0.00	0.00	0.00	43.38	43.83	52.0	0.0	0.843
35.00	0.41	0.92	0.00	0.00	0.00	43.13	43.57	52.0	0.0	0.838
40.00	0.41	0.94	0.00	0.00	0.00	42.79	43.23	52.0	0.0	0.832
43.50	0.40	0.95	0.00	0.00	0.00	42.51	42.95	52.0	0.0	0.826
45.00	0.39	0.96	0.00	0.00	0.00	42.38	42.81	52.0	0.0	0.824
48.50	0.44	1.13	0.00	0.00	0.00	48.35	48.83	52.0	0.0	0.939
50.00	0.44	1.14	0.00	0.00	0.00	48.14	48.62	52.0	0.0	0.935
55.00	0.43	1.16	0.00	0.00	0.00	47.31	47.79	52.0	0.0	0.919
60.00	0.43	1.18	0.00	0.00	0.00	46.31	46.78	52.0	0.0	0.900
65.00	0.42	1.21	0.00	0.00	0.00	45.09	45.56	52.0	0.0	0.877
70.00	0.41	1.23	0.00	0.00	0.00	43.63	44.09	52.0	0.0	0.848
75.00	0.40	1.26	0.00	0.00	0.00	41.85	42.31	52.0	0.0	0.814
80.00	0.39	1.26	0.00	0.00	0.00	39.67	40.12	52.0	0.0	0.772
85.00	0.39	1.29	0.00	0.00	0.00	37.20	37.66	52.0	0.0	0.724
88.13	0.38	1.31	0.00	0.00	0.00	35.42	35.87	52.0	0.0	0.690
90.00	0.37	1.32	0.00	0.00	0.00	34.24	34.69	52.0	0.0	0.668
91.88	0.45	1.63	0.00	0.00	0.00	39.27	39.82	52.0	0.0	0.766
95.00	0.45	1.66	0.00	0.00	0.00	36.43	36.99	52.0	0.0	0.712
98.00	0.43	1.63	0.00	0.00	0.00	33.36	33.91	52.0	0.0	0.652
100.00	0.43	1.65	0.00	0.00	0.00	31.23	31.79	52.0	0.0	0.612
104.00	0.42	1.50	0.00	0.00	0.00	25.94	26.49	52.0	0.0	0.510
105.00	0.42	1.51	0.00	0.00	0.00	24.82	25.37	52.0	0.0	0.488
106.00	0.28	1.14	0.00	0.00	0.00	23.64	24.01	52.0	0.0	0.462
110.00	0.28	1.17	0.00	0.00	0.00	20.23	20.60	52.0	0.0	0.396
115.00	0.27	1.20	0.00	0.00	0.00	15.01	15.42	52.0	0.0	0.297
119.00	0.16	0.91	0.00	0.00	0.00	9.92	10.20	52.0	0.0	0.196
120.00	0.16	0.91	0.00	0.00	0.00	8.95	9.24	52.0	0.0	0.178
123.00	0.14	0.73	0.00	0.00	0.00	5.74	6.02	52.0	0.0	0.116
125.00	0.14	0.74	0.00	0.00	0.00	3.92	4.26	52.0	0.0	0.082
126.00	0.00	0.71	0.00	0.00	0.00	2.95	3.20	52.0	0.0	0.062

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

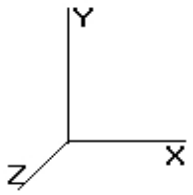


Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description		Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	13.871	23.44	279.10	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	13.871	23.44	271.89	0.650	0.500	5.00	19.130	12.43	291.5	138.3	1,040.2
10.00		0.00	1.00	13.871	23.44	264.68	0.650	0.500	5.00	18.640	12.12	284.0	134.7	1,012.8
15.00		0.00	1.00	13.871	23.44	257.47	0.650	0.500	5.00	18.150	11.80	276.6	131.1	985.3
20.00		0.00	1.00	13.871	23.44	250.25	0.650	0.500	5.00	17.661	11.48	269.1	127.4	957.9
25.00		0.00	1.00	13.871	23.44	243.04	0.650	0.500	5.00	17.171	11.16	261.6	123.8	930.5
30.00		0.00	1.00	13.871	23.44	235.83	0.650	0.500	5.00	16.681	10.84	254.2	120.2	903.0
35.00		0.00	1.01	14.106	23.84	230.55	0.650	0.500	5.00	16.191	10.52	250.9	116.6	875.6
40.00		0.00	1.05	14.655	24.76	227.58	0.650	0.500	5.00	15.701	10.21	252.8	112.9	848.2
43.50	Bot - Section 2	0.00	1.08	15.010	25.36	225.07	0.650	0.500	3.50	10.699	6.95	176.4	77.3	577.8
45.00		0.00	1.09	15.156	25.61	223.90	0.650	0.500	1.50	4.590	2.98	76.4	33.4	423.6
48.50	Top - Section 1	0.00	1.11	15.484	26.16	220.98	0.650	0.500	3.50	10.539	6.85	179.3	76.1	971.2
50.00		0.00	1.12	15.620	26.39	223.71	0.650	0.500	1.50	4.443	2.89	76.2	32.3	205.6
55.00		0.00	1.15	16.051	27.12	219.02	0.650	0.500	5.00	14.492	9.42	255.5	104.0	668.8
60.00		0.00	1.18	16.455	27.80	213.91	0.650	0.500	5.00	14.002	9.10	253.1	100.3	645.3
65.00		0.00	1.21	16.836	28.45	208.42	0.650	0.500	5.00	13.512	8.78	249.9	96.7	621.8
70.00		0.00	1.24	17.196	29.06	202.61	0.650	0.500	5.00	13.023	8.46	246.0	93.1	598.4
75.00		0.00	1.26	17.538	29.63	196.51	0.650	0.500	5.00	12.533	8.15	241.5	89.5	574.9
80.00	Appertunance(s)	0.00	1.28	17.865	30.19	190.15	0.650	0.500	5.00	12.043	7.83	236.3	85.8	551.4
85.00		0.00	1.31	18.177	30.71	183.55	0.650	0.500	5.00	11.553	7.51	230.7	82.2	528.0
88.13	Bot - Section 3	0.00	1.32	18.365	31.03	179.31	0.650	0.500	3.13	6.972	4.53	140.7	50.0	318.5
90.00		0.00	1.33	18.476	31.22	176.73	0.650	0.500	1.88	4.169	2.71	84.6	30.0	316.2
91.88	Top - Section 2	0.00	1.34	18.585	31.40	174.12	0.650	0.500	1.88	4.101	2.67	83.7	29.5	310.7
95.00		0.00	1.35	18.764	31.71	173.28	0.650	0.500	3.13	6.681	4.34	137.7	47.8	253.7
98.00	Appertunance(s)	0.00	1.36	18.931	31.99	169.00	0.650	0.500	3.00	6.234	4.05	129.6	44.6	236.4
100.0		0.00	1.37	19.041	32.17	166.10	0.650	0.500	2.00	4.058	2.64	84.9	29.1	153.9
104.0	Appertunance(s)	0.00	1.38	19.255	32.54	160.24	0.650	0.500	4.00	7.881	5.12	166.7	56.0	297.8
105.0		0.00	1.39	19.308	32.63	158.76	0.650	0.500	1.00	1.921	1.25	40.7	13.8	72.7
106.0	Appertunance(s)	0.00	1.39	19.360	32.71	157.27	0.650	0.500	1.00	1.902	1.24	40.4	13.7	71.9
110.0		0.00	1.41	19.566	33.06	151.25	0.650	0.500	4.00	7.411	4.82	159.3	52.5	279.1
115.0		0.00	1.42	19.816	33.49	143.60	0.650	0.500	5.00	8.822	5.73	192.0	62.0	331.0
119.0	Appertunance(s)	0.00	1.44	20.011	33.81	137.37	0.650	0.500	4.00	6.705	4.36	147.4	47.3	251.0
120.0		0.00	1.44	20.059	33.89	135.80	0.650	0.500	1.00	1.627	1.06	35.9	11.7	61.0
123.0	Appertunance(s)	0.00	1.45	20.201	34.13	131.06	0.650	0.500	3.00	4.764	3.10	105.7	33.7	177.9
125.0		0.00	1.46	20.294	34.29	127.87	0.650	0.500	2.00	3.078	2.00	68.6	21.9	114.9
126.0	Appertunance(s)	0.00	1.46	20.340	34.37	126.27	0.650	0.500	1.00	1.510	0.98	33.7	10.8	56.3
							Totals:		126.00			6,013.8	2,429.9	17,223.2



Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

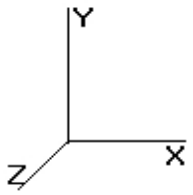
Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
80.00	Round Side Arm	1	17.865	30.191	1.00	5.90	0.000	0.000	178.13	0.00	0.00	175.00
80.00	BCD-87010__	1	18.207	30.770	1.00	3.68	0.000	5.500	113.23	0.00	622.79	48.00
98.00	Flush Mounts	3	18.931	31.993	0.75	6.75	0.000	0.000	215.96	0.00	0.00	300.00
98.00	Kathrein 800 10504	3	18.931	31.993	0.67	7.78	0.000	0.000	248.87	0.00	0.00	107.10
98.00	RCU	3	18.931	31.993	1.00	0.78	0.000	0.000	24.95	0.00	0.00	7.50
104.0	Powerwave 7770.00	3	19.360	32.719	0.64	12.54	0.000	2.000	410.21	0.00	820.43	202.89
104.0	CCI OPA-65R-LCUU-H4	6	19.360	32.719	0.64	0.00	0.000	2.000	0.00	0.00	0.00	0.00
106.0	Raycap DC6-48-60-18-	1	19.360	32.719	1.00	1.67	0.000	0.000	54.64	0.00	0.00	49.50
106.0	Powerwave LGP21901	6	19.360	32.719	0.50	1.02	0.000	0.000	33.37	0.00	0.00	46.20
106.0	Ericsson RRUS 12	3	19.360	32.719	0.67	8.16	0.000	0.000	267.00	0.00	0.00	243.60
106.0	Ericsson RRUS-32	3	19.360	32.719	0.67	8.64	0.000	0.000	282.79	0.00	0.00	314.70
106.0	Ericsson A2 B2	3	19.360	32.719	0.67	0.00	0.000	0.000	0.00	0.00	0.00	0.00
106.0	Ericsson RRUS E2B29	3	19.360	32.719	0.67	0.00	0.000	0.000	0.00	0.00	0.00	0.00
106.0	Low Profile Platform	1	19.360	32.719	1.00	27.20	0.000	0.000	889.95	0.00	0.00	1,700.00
106.0	Ericsson RRUS-11	3	19.360	32.719	0.67	6.71	0.000	0.000	219.65	0.00	0.00	209.70
106.0	Powerwave LGP2140X	12	19.360	32.719	0.67	12.30	0.000	0.000	402.48	0.00	0.00	255.12
106.0	Raycap DC6-48-60-18-	1	19.360	32.719	1.00	1.67	0.000	0.000	54.64	0.00	0.00	49.50
119.0	Round Low Profile Pl	1	20.011	33.818	1.00	27.20	0.000	0.000	919.85	0.00	0.00	1,700.00
119.0	RFS APX16PV-16PVL-	3	20.011	33.818	0.59	12.92	0.000	0.000	436.85	0.00	0.00	211.94
119.0	Andrew	3	20.011	33.818	0.50	0.93	0.000	0.000	31.45	0.00	0.00	43.56
119.0	Ericsson KRY 112 71	6	20.011	33.818	0.50	2.52	0.000	0.000	85.22	0.00	0.00	109.51
119.0	RFS APX16DWV-	3	20.011	33.818	0.59	14.00	0.000	0.000	473.48	0.00	0.00	225.00
123.0	NextNet BTS-2500	3	20.201	34.139	0.67	4.88	0.000	0.000	166.75	0.00	0.00	144.90
123.0	Dragonwave A-ANT-	1	20.201	34.139	1.00	5.05	0.000	0.000	172.40	0.00	0.00	54.80
123.0	Argus LLPX310R	3	20.201	34.139	0.62	9.97	0.000	0.000	340.35	0.00	0.00	163.50
123.0	DragonWave Horizon	2	20.201	34.139	1.00	1.16	0.000	0.000	39.60	0.00	0.00	34.00
123.0	Clearwire Mount	1	20.201	34.139	1.00	10.50	0.000	0.000	358.46	0.00	0.00	50.00
123.0	Dragonwave A-ANT-	1	20.201	34.139	1.00	1.82	0.000	0.000	62.13	0.00	0.00	24.10
126.0	Flat Platform w/ Han	1	20.340	34.375	1.00	48.40	0.000	0.000	1,663.75	0.00	0.00	2,450.00
126.0	48"x12" Panels	9	20.568	34.759	0.76	42.34	0.000	5.000	1,471.70	0.00	7,358.50	567.00
126.0	72"x12" Panels	3	20.568	34.759	0.78	21.60	0.000	5.000	750.74	0.00	3,753.71	261.00
									10,368.63			9,748.11

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



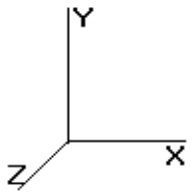
Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Linear Appurtenance Segment Forces

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	F X (lb)	Dead Load (lb)
5.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	13.871	11.72	2.50
5.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	13.871	29.30	47.30
5.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	13.871	10.55	1.85
10.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	13.871	11.72	2.50
10.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	13.871	29.30	47.30
10.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	13.871	10.55	1.85
15.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	13.871	11.72	2.50
15.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	13.871	29.30	47.30
15.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	13.871	10.55	1.85
20.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	13.871	11.72	2.50
20.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	13.871	29.30	47.30
20.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	13.871	10.55	1.85
25.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	13.871	11.72	2.50
25.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	13.871	29.30	47.30
25.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	13.871	10.55	1.85
30.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	13.871	11.72	2.50
30.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	13.871	29.30	47.30
30.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	13.871	10.55	1.85
35.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	14.106	11.92	2.50
35.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	14.106	29.80	47.30
35.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	14.106	10.73	1.85
40.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	14.655	12.38	2.50
40.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	14.655	30.96	47.30
40.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	14.655	11.15	1.85
43.50	(3) 0.51" Hybrid	Yes	3.50	0.50	0.10	15.010	8.88	1.75
43.50	(6) 1 5/8" Coax	Yes	3.50	9.46	0.25	15.010	22.20	33.11
43.50	(1) 3/8" Coax	Yes	3.50	0.37	0.09	15.010	7.99	1.30
45.00	(3) 0.51" Hybrid	Yes	1.50	0.50	0.10	15.156	3.84	0.75
45.00	(6) 1 5/8" Coax	Yes	1.50	9.46	0.25	15.156	9.61	14.19
45.00	(1) 3/8" Coax	Yes	1.50	0.37	0.09	15.156	3.46	0.56
48.50	(3) 0.51" Hybrid	Yes	3.50	0.50	0.10	15.484	9.16	1.75
48.50	(6) 1 5/8" Coax	Yes	3.50	9.46	0.25	15.484	22.90	33.11
48.50	(1) 3/8" Coax	Yes	3.50	0.37	0.09	15.484	8.24	1.30
50.00	(3) 0.51" Hybrid	Yes	1.50	0.50	0.10	15.620	3.96	0.75
50.00	(6) 1 5/8" Coax	Yes	1.50	9.46	0.25	15.620	9.90	14.19
50.00	(1) 3/8" Coax	Yes	1.50	0.37	0.09	15.620	3.56	0.56
55.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	16.051	13.56	2.50
55.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	16.051	33.91	47.30
55.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	16.051	12.21	1.85
60.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	16.455	13.90	2.50
60.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	16.455	34.76	47.30
60.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	16.455	12.51	1.85
65.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	16.836	14.23	2.50
65.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	16.836	35.57	47.30
65.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	16.836	12.80	1.85
70.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	17.196	14.53	2.50
70.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	17.196	36.33	47.30
70.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	17.196	13.08	1.85
75.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	17.538	14.82	2.50
75.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	17.538	37.05	47.30
75.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	17.538	13.34	1.85

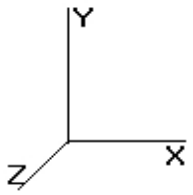
Pole :	302469	Code: TIA/EIA-222 Rev F	11/12/2014 4:18:08 PM
Location :	Bridgeport CT 2, CT		Page: 14
Height :	126.0 (ft)		
Base Dia :	45.50 (in)		
Top Dia :	17.00 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.235121 (in/ft)		



Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

80.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	17.865	15.10	2.50
80.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	17.865	37.74	47.30
80.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	17.865	13.59	1.85
85.00	(3) 0.51" Hybrid	Yes	5.00	0.50	0.10	18.177	15.36	2.50
85.00	(6) 1 5/8" Coax	Yes	5.00	9.46	0.25	18.177	38.40	47.30
85.00	(1) 3/8" Coax	Yes	5.00	0.37	0.09	18.177	13.82	1.85
88.13	(3) 0.51" Hybrid	Yes	3.13	0.50	0.10	18.365	9.70	1.56
88.13	(6) 1 5/8" Coax	Yes	3.13	9.46	0.25	18.365	24.25	29.56
88.13	(1) 3/8" Coax	Yes	3.13	0.37	0.09	18.365	8.73	1.16
90.00	(3) 0.51" Hybrid	Yes	1.88	0.50	0.10	18.476	5.85	0.94
90.00	(6) 1 5/8" Coax	Yes	1.88	9.46	0.25	18.476	14.64	17.74
90.00	(1) 3/8" Coax	Yes	1.88	0.37	0.09	18.476	5.27	0.69
91.88	(3) 0.51" Hybrid	Yes	1.88	0.50	0.10	18.585	5.89	0.94
91.88	(6) 1 5/8" Coax	Yes	1.88	9.46	0.25	18.585	14.72	17.74
91.88	(1) 3/8" Coax	Yes	1.88	0.37	0.09	18.585	5.30	0.69
95.00	(3) 0.51" Hybrid	Yes	3.13	0.50	0.10	18.764	9.91	1.56
95.00	(6) 1 5/8" Coax	Yes	3.13	9.46	0.25	18.764	24.77	29.56
95.00	(1) 3/8" Coax	Yes	3.13	0.37	0.09	18.764	8.92	1.16
98.00	(3) 0.51" Hybrid	Yes	3.00	0.50	0.10	18.931	9.60	1.50
98.00	(6) 1 5/8" Coax	Yes	3.00	9.46	0.25	18.931	24.00	28.38
98.00	(1) 3/8" Coax	Yes	3.00	0.37	0.09	18.931	8.64	1.11
100.0	(3) 0.51" Hybrid	Yes	2.00	0.50	0.10	19.041	6.44	1.00
104.0	(3) 0.51" Hybrid	Yes	4.00	0.50	0.10	19.255	13.02	2.00
105.0	(3) 0.51" Hybrid	Yes	1.00	0.50	0.10	19.308	3.26	0.50
106.0	(3) 0.51" Hybrid	Yes	1.00	0.50	0.10	19.360	3.27	0.50
						Totals:	1,182.83	1,016.34

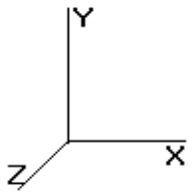


Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	343.07	1,181.97	0.00	0.00
10.00	335.60	1,154.54	0.00	0.00
15.00	328.14	1,127.10	0.00	0.00
20.00	320.68	1,099.67	0.00	0.00
25.00	313.21	1,072.24	0.00	0.00
30.00	305.75	1,044.80	0.00	0.00
35.00	303.34	1,017.37	0.00	0.00
40.00	307.25	989.94	0.00	0.00
43.50	215.49	677.01	0.00	0.00
45.00	93.33	466.08	0.00	0.00
48.50	219.56	1,070.48	0.00	0.00
50.00	93.66	248.12	0.00	0.00
55.00	315.20	810.53	0.00	0.00
60.00	314.28	787.06	0.00	0.00
65.00	312.49	763.60	0.00	0.00
70.00	309.93	740.13	0.00	0.00
75.00	306.66	716.66	0.00	0.00
80.00	594.11	916.20	0.00	622.79
85.00	298.26	667.13	0.00	0.00
88.13	183.33	405.47	0.00	0.00
90.00	110.38	368.39	0.00	0.00
91.88	109.63	362.86	0.00	0.00
95.00	181.31	340.72	0.00	0.00
98.00	661.65	734.55	0.00	0.00
100.0	91.31	189.88	0.00	0.00
104.0	589.93	572.72	0.00	820.43
105.0	44.01	90.73	0.00	0.00
106.0	2,248.24	2,958.26	0.00	0.00
110.0	159.28	332.31	0.00	0.00
115.0	192.05	397.48	0.00	0.00
119.0	2,094.25	2,594.24	0.00	0.00
120.0	35.86	65.91	0.00	0.00
123.0	1,245.43	663.90	0.00	0.00
125.0	68.63	116.96	0.00	0.00
126.0	3,919.93	3,335.38	0.00	11,112.21
Totals:	17,565.21	30,080.37	0.00	12,555.42



Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

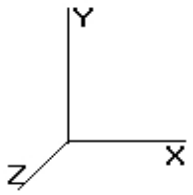
Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-17.610	-30.053	0.000	0.000	0.000	-1,726.847	0.000	0.000	0.000	0.000
5.00	-17.354	-28.819	0.000	0.000	0.000	-1,638.796	-0.093	0.000	0.093	-0.173
10.00	-17.100	-27.612	0.000	0.000	0.000	-1,552.028	-0.370	0.000	0.370	-0.351
15.00	-16.848	-26.433	0.000	0.000	0.000	-1,466.531	-0.835	0.000	0.835	-0.533
20.00	-16.600	-25.282	0.000	0.000	0.000	-1,382.290	-1.494	0.000	1.494	-0.721
25.00	-16.353	-24.159	0.000	0.000	0.000	-1,299.294	-2.352	0.000	2.352	-0.913
30.00	-16.109	-23.064	0.000	0.000	0.000	-1,217.530	-3.413	0.000	3.413	-1.110
35.00	-15.863	-21.997	0.000	0.000	0.000	-1,136.985	-4.683	0.000	4.683	-1.311
40.00	-15.597	-20.967	0.000	0.000	0.000	-1,057.670	-6.167	0.000	6.167	-1.518
43.50	-15.400	-20.267	0.000	0.000	0.000	-1,003.083	-7.336	0.000	7.336	-1.668
45.00	-15.331	-19.775	0.000	0.000	0.000	-979.983	-7.871	0.000	7.871	-1.734
48.50	-15.114	-18.683	0.000	0.000	0.000	-926.325	-9.200	0.000	9.200	-1.887
50.00	-15.063	-18.396	0.000	0.000	0.000	-903.654	-9.804	0.000	9.804	-1.955
55.00	-14.796	-17.533	0.000	0.000	0.000	-828.339	-11.984	0.000	11.984	-2.204
60.00	-14.524	-16.695	0.000	0.000	0.000	-754.361	-14.428	0.000	14.428	-2.456
65.00	-14.249	-15.882	0.000	0.000	0.000	-681.741	-17.137	0.000	17.137	-2.712
70.00	-13.971	-15.096	0.000	0.000	0.000	-610.498	-20.115	0.000	20.115	-2.970
75.00	-13.691	-14.335	0.000	0.000	0.000	-540.645	-23.364	0.000	23.364	-3.228
80.00	-13.104	-13.397	0.000	0.000	0.000	-471.570	-26.882	0.000	26.882	-3.485
85.00	-12.809	-12.704	0.000	0.000	0.000	-406.054	-30.667	0.000	30.667	-3.738
88.13	-12.627	-12.284	0.000	0.000	0.000	-366.026	-33.166	0.000	33.166	-3.897
90.00	-12.511	-11.904	0.000	0.000	0.000	-342.351	-34.715	0.000	34.715	-3.993
91.88	-12.401	-11.523	0.000	0.000	0.000	-318.894	-36.301	0.000	36.301	-4.087
95.00	-12.226	-11.163	0.000	0.000	0.000	-280.143	-39.024	0.000	39.024	-4.236
98.00	-11.534	-10.454	0.000	0.000	0.000	-243.467	-41.737	0.000	41.737	-4.397
100.0	-11.455	-10.242	0.000	0.000	0.000	-220.399	-43.600	0.000	43.600	-4.500
104.0	-10.841	-9.697	0.000	0.000	0.000	-173.759	-47.449	0.000	47.449	-4.688
105.0	-10.797	-9.602	0.000	0.000	0.000	-162.918	-48.435	0.000	48.435	-4.733
106.0	-8.323	-6.826	0.000	0.000	0.000	-152.122	-49.431	0.000	49.431	-4.777
110.0	-8.155	-6.485	0.000	0.000	0.000	-118.830	-53.497	0.000	53.497	-4.933
115.0	-7.942	-6.088	0.000	0.000	0.000	-78.058	-58.749	0.000	58.749	-5.095
119.0	-5.627	-3.687	0.000	0.000	0.000	-46.290	-63.057	0.000	63.057	-5.192
120.0	-5.588	-3.621	0.000	0.000	0.000	-40.663	-64.146	0.000	64.146	-5.212
123.0	-4.289	-3.071	0.000	0.000	0.000	-23.900	-67.433	0.000	67.433	-5.258
125.0	-4.210	-2.960	0.000	0.000	0.000	-15.323	-69.637	0.000	69.637	-5.279
126.0	-3.920	0.000	0.000	0.000	0.000	-11.112	-70.743	0.000	70.743	-5.287

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: Ice — 73.61 mph Wind with Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

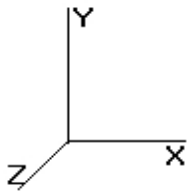
Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.56	0.66	0.00	0.00	0.00	34.64	35.22	52.0	0.0	0.678
5.00	0.55	0.67	0.00	0.00	0.00	34.67	35.24	52.0	0.0	0.678
10.00	0.54	0.68	0.00	0.00	0.00	34.67	35.23	52.0	0.0	0.678
15.00	0.53	0.69	0.00	0.00	0.00	34.65	35.20	52.0	0.0	0.677
20.00	0.53	0.70	0.00	0.00	0.00	34.59	35.14	52.0	0.0	0.676
25.00	0.52	0.71	0.00	0.00	0.00	34.50	35.04	52.0	0.0	0.674
30.00	0.51	0.72	0.00	0.00	0.00	34.37	34.90	52.0	0.0	0.671
35.00	0.50	0.73	0.00	0.00	0.00	34.18	34.71	52.0	0.0	0.668
40.00	0.49	0.74	0.00	0.00	0.00	33.94	34.45	52.0	0.0	0.663
43.50	0.49	0.75	0.00	0.00	0.00	33.73	34.24	52.0	0.0	0.659
45.00	0.48	0.75	0.00	0.00	0.00	33.63	34.14	52.0	0.0	0.657
48.50	0.55	0.89	0.00	0.00	0.00	38.38	38.96	52.0	0.0	0.750
50.00	0.54	0.90	0.00	0.00	0.00	38.23	38.80	52.0	0.0	0.747
55.00	0.54	0.91	0.00	0.00	0.00	37.60	38.17	52.0	0.0	0.734
60.00	0.53	0.93	0.00	0.00	0.00	36.85	37.41	52.0	0.0	0.720
65.00	0.52	0.95	0.00	0.00	0.00	35.93	36.49	52.0	0.0	0.702
70.00	0.52	0.97	0.00	0.00	0.00	34.81	35.37	52.0	0.0	0.681
75.00	0.51	0.99	0.00	0.00	0.00	33.47	34.03	52.0	0.0	0.655
80.00	0.50	0.99	0.00	0.00	0.00	31.81	32.35	52.0	0.0	0.622
85.00	0.50	1.01	0.00	0.00	0.00	29.95	30.50	52.0	0.0	0.587
88.13	0.49	1.02	0.00	0.00	0.00	28.62	29.16	52.0	0.0	0.561
90.00	0.49	1.03	0.00	0.00	0.00	27.74	28.28	52.0	0.0	0.544
91.88	0.59	1.27	0.00	0.00	0.00	31.90	32.56	52.0	0.0	0.626
95.00	0.59	1.29	0.00	0.00	0.00	29.77	30.44	52.0	0.0	0.586
98.00	0.56	1.26	0.00	0.00	0.00	27.47	28.12	52.0	0.0	0.541
100.00	0.56	1.27	0.00	0.00	0.00	25.91	26.56	52.0	0.0	0.511
104.00	0.56	1.26	0.00	0.00	0.00	22.22	22.88	52.0	0.0	0.440
105.00	0.56	1.26	0.00	0.00	0.00	21.29	21.96	52.0	0.0	0.423
106.00	0.40	0.99	0.00	0.00	0.00	20.32	20.79	52.0	0.0	0.400
110.00	0.40	1.01	0.00	0.00	0.00	17.37	17.86	52.0	0.0	0.344
115.00	0.40	1.04	0.00	0.00	0.00	12.85	13.37	52.0	0.0	0.257
119.00	0.25	0.78	0.00	0.00	0.00	8.43	8.78	52.0	0.0	0.169
120.00	0.25	0.78	0.00	0.00	0.00	7.60	7.96	52.0	0.0	0.153
123.00	0.22	0.62	0.00	0.00	0.00	4.84	5.17	52.0	0.0	0.099
125.00	0.22	0.63	0.00	0.00	0.00	3.28	3.66	52.0	0.0	0.070
126.00	0.00	0.59	0.00	0.00	0.00	2.44	2.65	52.0	0.0	0.051

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

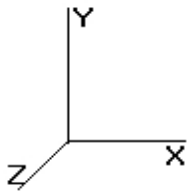


Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description		Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.81	189.58	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.81	184.68	0.650	0.000	5.00	18.713	12.16	131.6	0.0	901.9
10.00		0.00	1.00	6.400	10.81	179.78	0.650	0.000	5.00	18.224	11.85	128.1	0.0	878.1
15.00		0.00	1.00	6.400	10.81	174.88	0.650	0.000	5.00	17.734	11.53	124.7	0.0	854.3
20.00		0.00	1.00	6.400	10.81	169.99	0.650	0.000	5.00	17.244	11.21	121.2	0.0	830.5
25.00		0.00	1.00	6.400	10.81	165.09	0.650	0.000	5.00	16.754	10.89	117.8	0.0	806.7
30.00		0.00	1.00	6.400	10.81	160.19	0.650	0.000	5.00	16.264	10.57	114.3	0.0	782.9
35.00		0.00	1.01	6.509	10.99	156.60	0.650	0.000	5.00	15.774	10.25	112.8	0.0	759.0
40.00		0.00	1.05	6.762	11.42	154.58	0.650	0.000	5.00	15.285	9.93	113.5	0.0	735.2
43.50	Bot - Section 2	0.00	1.08	6.926	11.70	152.88	0.650	0.000	3.50	10.408	6.77	79.2	0.0	500.5
45.00		0.00	1.09	6.993	11.81	152.09	0.650	0.000	1.50	4.465	2.90	34.3	0.0	390.2
48.50	Top - Section 1	0.00	1.11	7.144	12.07	150.10	0.650	0.000	3.50	10.247	6.66	80.4	0.0	895.2
50.00		0.00	1.12	7.207	12.17	151.96	0.650	0.000	1.50	4.318	2.81	34.2	0.0	173.3
55.00		0.00	1.15	7.406	12.51	148.77	0.650	0.000	5.00	14.075	9.15	114.5	0.0	564.8
60.00		0.00	1.18	7.592	12.83	145.30	0.650	0.000	5.00	13.586	8.83	113.3	0.0	544.9
65.00		0.00	1.21	7.768	13.12	141.57	0.650	0.000	5.00	13.096	8.51	111.7	0.0	525.1
70.00		0.00	1.24	7.934	13.40	137.62	0.650	0.000	5.00	12.606	8.19	109.9	0.0	505.3
75.00		0.00	1.26	8.092	13.67	133.48	0.650	0.000	5.00	12.116	7.88	107.7	0.0	485.4
80.00	Appertunance(s)	0.00	1.28	8.242	13.93	129.16	0.650	0.000	5.00	11.626	7.56	105.3	0.0	465.6
85.00		0.00	1.31	8.387	14.17	124.67	0.650	0.000	5.00	11.136	7.24	102.6	0.0	445.8
88.13	Bot - Section 3	0.00	1.32	8.473	14.32	121.80	0.650	0.000	3.13	6.712	4.36	62.5	0.0	268.5
90.00		0.00	1.33	8.525	14.40	120.04	0.650	0.000	1.88	4.013	2.61	37.6	0.0	286.2
91.88	Top - Section 2	0.00	1.34	8.575	14.49	118.27	0.650	0.000	1.88	3.944	2.56	37.2	0.0	281.1
95.00		0.00	1.35	8.657	14.63	117.70	0.650	0.000	3.13	6.421	4.17	61.1	0.0	205.9
98.00	Appertunance(s)	0.00	1.36	8.735	14.76	114.79	0.650	0.000	3.00	5.984	3.89	57.4	0.0	191.9
100.0		0.00	1.37	8.785	14.84	112.83	0.650	0.000	2.00	3.891	2.53	37.6	0.0	124.7
104.0	Appertunance(s)	0.00	1.38	8.884	15.01	108.84	0.650	0.000	4.00	7.548	4.91	73.7	0.0	241.8
105.0		0.00	1.39	8.908	15.05	107.84	0.650	0.000	1.00	1.838	1.19	18.0	0.0	58.9
106.0	Appertunance(s)	0.00	1.39	8.933	15.09	106.82	0.650	0.000	1.00	1.818	1.18	17.8	0.0	58.2
110.0		0.00	1.41	9.028	15.25	102.74	0.650	0.000	4.00	7.077	4.60	70.2	0.0	226.6
115.0		0.00	1.42	9.143	15.45	97.542	0.650	0.000	5.00	8.406	5.46	84.4	0.0	269.0
119.0	Appertunance(s)	0.00	1.44	9.233	15.60	93.313	0.650	0.000	4.00	6.372	4.14	64.6	0.0	203.8
120.0		0.00	1.44	9.255	15.64	92.246	0.650	0.000	1.00	1.544	1.00	15.7	0.0	49.4
123.0	Appertunance(s)	0.00	1.45	9.320	15.75	89.025	0.650	0.000	3.00	4.514	2.93	46.2	0.0	144.2
125.0		0.00	1.46	9.363	15.82	86.861	0.650	0.000	2.00	2.912	1.89	29.9	0.0	93.0
126.0	Appertunance(s)	0.00	1.46	9.385	15.86	85.773	0.650	0.000	1.00	1.426	0.93	14.7	0.0	45.5
							Totals:		126.00			2,685.6	0.0	14,793.2

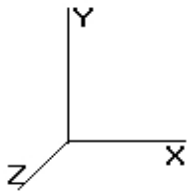


Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
80.00	Round Side Arm	1	8.242	13.930	1.00	5.20	0.000	0.000	72.44	0.00	0.00	150.00
80.00	BCD-87010__	1	8.401	14.197	1.00	2.90	0.000	5.500	41.17	0.00	226.44	26.50
98.00	Flush Mounts	3	8.735	14.761	0.75	4.50	0.000	0.000	66.43	0.00	0.00	180.00
98.00	Kathrein 800 10504	3	8.735	14.761	0.67	6.73	0.000	0.000	99.40	0.00	0.00	52.80
98.00	RCU	3	8.735	14.761	1.00	0.48	0.000	0.000	7.09	0.00	0.00	3.00
104.0	Powerwave 7770.00	3	8.933	15.096	0.64	11.29	0.000	2.000	170.43	0.00	340.86	105.00
104.0	CCI OPA-65R-LCUU-H4	6	8.933	15.096	0.64	26.50	0.000	2.000	399.99	0.00	799.97	342.00
106.0	Raycap DC6-48-60-18-	1	8.933	15.096	1.00	1.47	0.000	0.000	22.19	0.00	0.00	31.80
106.0	Powerwave LGP21901	6	8.933	15.096	0.50	0.69	0.000	0.000	10.42	0.00	0.00	33.00
106.0	Ericsson RRUS 12	3	8.933	15.096	0.67	7.38	0.000	0.000	111.36	0.00	0.00	150.00
106.0	Ericsson RRUS-32	3	8.933	15.096	0.67	7.78	0.000	0.000	117.43	0.00	0.00	231.00
106.0	Ericsson A2 B2	3	8.933	15.096	0.67	4.84	0.000	0.000	73.13	0.00	0.00	66.00
106.0	Ericsson RRUS E2B29	3	8.933	15.096	0.67	7.38	0.000	0.000	111.36	0.00	0.00	180.00
106.0	Low Profile Platform	1	8.933	15.096	1.00	20.00	0.000	0.000	301.92	0.00	0.00	1,500.00
106.0	Ericsson RRUS-11	3	8.933	15.096	0.67	6.55	0.000	0.000	98.92	0.00	0.00	153.00
106.0	Powerwave LGP2140X	12	8.933	15.096	0.67	10.13	0.000	0.000	152.93	0.00	0.00	228.00
106.0	Raycap DC6-48-60-18-	1	8.933	15.096	1.00	1.47	0.000	0.000	22.19	0.00	0.00	31.80
119.0	Round Low Profile Pl	1	9.233	15.603	1.00	21.70	0.000	0.000	338.59	0.00	0.00	1,500.00
119.0	RFS APX16PV-16PVL-	3	9.233	15.603	0.59	11.77	0.000	0.000	183.58	0.00	0.00	118.80
119.0	Andrew	3	9.233	15.603	0.50	0.70	0.000	0.000	11.00	0.00	0.00	33.00
119.0	Ericsson KRY 112 71	6	9.233	15.603	0.50	2.04	0.000	0.000	31.83	0.00	0.00	79.20
119.0	RFS APX16DWV-	3	9.233	15.603	0.59	12.78	0.000	0.000	199.40	0.00	0.00	122.10
123.0	NextNet BTS-2500	3	9.320	15.751	0.67	4.26	0.000	0.000	67.12	0.00	0.00	105.00
123.0	Dragonwave A-ANT-	1	9.320	15.751	1.00	4.69	0.000	0.000	73.87	0.00	0.00	27.10
123.0	Argus LLPX310R	3	9.320	15.751	0.62	8.98	0.000	0.000	141.51	0.00	0.00	85.80
123.0	DragonWave Horizon	2	9.320	15.751	1.00	0.86	0.000	0.000	13.55	0.00	0.00	21.20
123.0	Clearwire Mount	1	9.320	15.751	1.00	8.50	0.000	0.000	133.89	0.00	0.00	40.00
123.0	Dragonwave A-ANT-	1	9.320	15.751	1.00	1.61	0.000	0.000	25.36	0.00	0.00	15.00
126.0	Flat Platform w/ Han	1	9.385	15.860	1.00	42.40	0.000	0.000	672.48	0.00	0.00	2,000.00
126.0	48"x12" Panels	9	9.490	16.038	0.76	38.30	0.000	5.000	614.31	0.00	3,071.53	270.00
126.0	72"x12" Panels	3	9.490	16.038	0.78	19.66	0.000	5.000	315.24	0.00	1,576.18	135.00
									4,700.49			8,016.10

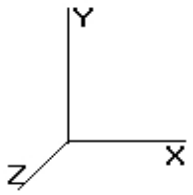


Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Linear Appurtenance Segment Forces

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	F X (lb)	Dead Load (lb)
5.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.400	2.16	0.70
5.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.400	10.82	24.60
5.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.400	2.16	0.40
10.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.400	2.16	0.70
10.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.400	10.82	24.60
10.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.400	2.16	0.40
15.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.400	2.16	0.70
15.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.400	10.82	24.60
15.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.400	2.16	0.40
20.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.400	2.16	0.70
20.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.400	10.82	24.60
20.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.400	2.16	0.40
25.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.400	2.16	0.70
25.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.400	10.82	24.60
25.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.400	2.16	0.40
30.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.400	2.16	0.70
30.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.400	10.82	24.60
30.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.400	2.16	0.40
35.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.509	2.20	0.70
35.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.509	11.00	24.60
35.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.509	2.20	0.40
40.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	6.762	2.29	0.70
40.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	6.762	11.43	24.60
40.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	6.762	2.29	0.40
43.50	(3) 0.51" Hybrid	Yes	3.50	0.14	0.04	6.926	1.64	0.49
43.50	(6) 1 5/8" Coax	Yes	3.50	4.92	0.20	6.926	8.19	17.22
43.50	(1) 3/8" Coax	Yes	3.50	0.08	0.04	6.926	1.64	0.28
45.00	(3) 0.51" Hybrid	Yes	1.50	0.14	0.04	6.993	0.71	0.21
45.00	(6) 1 5/8" Coax	Yes	1.50	4.92	0.20	6.993	3.55	7.38
45.00	(1) 3/8" Coax	Yes	1.50	0.08	0.04	6.993	0.71	0.12
48.50	(3) 0.51" Hybrid	Yes	3.50	0.14	0.04	7.144	1.69	0.49
48.50	(6) 1 5/8" Coax	Yes	3.50	4.92	0.20	7.144	8.45	17.22
48.50	(1) 3/8" Coax	Yes	3.50	0.08	0.04	7.144	1.69	0.28
50.00	(3) 0.51" Hybrid	Yes	1.50	0.14	0.04	7.207	0.73	0.21
50.00	(6) 1 5/8" Coax	Yes	1.50	4.92	0.20	7.207	3.65	7.38
50.00	(1) 3/8" Coax	Yes	1.50	0.08	0.04	7.207	0.73	0.12
55.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	7.406	2.50	0.70
55.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	7.406	12.52	24.60
55.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	7.406	2.50	0.40
60.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	7.592	2.57	0.70
60.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	7.592	12.83	24.60
60.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	7.592	2.57	0.40
65.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	7.768	2.63	0.70
65.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	7.768	13.13	24.60
65.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	7.768	2.63	0.40
70.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	7.934	2.68	0.70
70.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	7.934	13.41	24.60
70.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	7.934	2.68	0.40
75.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	8.092	2.74	0.70
75.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	8.092	13.68	24.60
75.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	8.092	2.74	0.40



Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

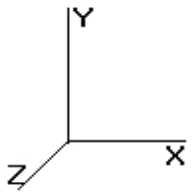
Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

80.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	8.242		2.79	0.70
80.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	8.242		13.93	24.60
80.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	8.242		2.79	0.40
85.00	(3) 0.51" Hybrid	Yes	5.00	0.14	0.04	8.387		2.83	0.70
85.00	(6) 1 5/8" Coax	Yes	5.00	4.92	0.20	8.387		14.17	24.60
85.00	(1) 3/8" Coax	Yes	5.00	0.08	0.04	8.387		2.83	0.40
88.13	(3) 0.51" Hybrid	Yes	3.13	0.14	0.04	8.473		1.79	0.44
88.13	(6) 1 5/8" Coax	Yes	3.13	4.92	0.20	8.473		8.95	15.38
88.13	(1) 3/8" Coax	Yes	3.13	0.08	0.04	8.473		1.79	0.25
90.00	(3) 0.51" Hybrid	Yes	1.88	0.14	0.04	8.525		1.08	0.26
90.00	(6) 1 5/8" Coax	Yes	1.88	4.92	0.20	8.525		5.40	9.23
90.00	(1) 3/8" Coax	Yes	1.88	0.08	0.04	8.525		1.08	0.15
91.88	(3) 0.51" Hybrid	Yes	1.88	0.14	0.04	8.575		1.09	0.26
91.88	(6) 1 5/8" Coax	Yes	1.88	4.92	0.20	8.575		5.43	9.23
91.88	(1) 3/8" Coax	Yes	1.88	0.08	0.04	8.575		1.09	0.15
95.00	(3) 0.51" Hybrid	Yes	3.13	0.14	0.04	8.657		1.83	0.44
95.00	(6) 1 5/8" Coax	Yes	3.13	4.92	0.20	8.657		9.14	15.38
95.00	(1) 3/8" Coax	Yes	3.13	0.08	0.04	8.657		1.83	0.25
98.00	(3) 0.51" Hybrid	Yes	3.00	0.14	0.04	8.735		1.77	0.42
98.00	(6) 1 5/8" Coax	Yes	3.00	4.92	0.20	8.735		8.86	14.76
98.00	(1) 3/8" Coax	Yes	3.00	0.08	0.04	8.735		1.77	0.24
100.0	(3) 0.51" Hybrid	Yes	2.00	0.14	0.04	8.785		1.19	0.28
104.0	(3) 0.51" Hybrid	Yes	4.00	0.14	0.04	8.884		2.40	0.56
105.0	(3) 0.51" Hybrid	Yes	1.00	0.14	0.04	8.908		0.60	0.14
106.0	(3) 0.51" Hybrid	Yes	1.00	0.14	0.04	8.933		0.60	0.14
							Totals:	344.46	504.84

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

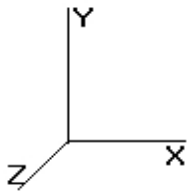


Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	146.71	1,017.71	0.00	0.00
10.00	143.26	993.90	0.00	0.00
15.00	139.82	970.09	0.00	0.00
20.00	136.37	946.29	0.00	0.00
25.00	132.93	922.48	0.00	0.00
30.00	129.49	898.68	0.00	0.00
35.00	128.18	874.87	0.00	0.00
40.00	129.53	851.06	0.00	0.00
43.50	90.65	581.58	0.00	0.00
45.00	39.26	424.93	0.00	0.00
48.50	92.25	976.23	0.00	0.00
50.00	39.30	208.05	0.00	0.00
55.00	132.03	680.61	0.00	0.00
60.00	131.27	660.77	0.00	0.00
65.00	130.12	640.93	0.00	0.00
70.00	128.64	621.09	0.00	0.00
75.00	126.85	601.26	0.00	0.00
80.00	238.38	757.92	0.00	226.44
85.00	122.44	558.98	0.00	0.00
88.13	75.00	339.29	0.00	0.00
90.00	45.14	328.62	0.00	0.00
91.88	44.76	323.59	0.00	0.00
95.00	73.86	276.69	0.00	0.00
98.00	242.72	495.59	0.00	0.00
100.0	38.74	160.02	0.00	0.00
104.0	646.47	759.42	0.00	1,140.83
105.0	18.59	76.52	0.00	0.00
106.0	1,040.29	2,680.48	0.00	0.00
110.0	70.18	279.82	0.00	0.00
115.0	84.42	335.50	0.00	0.00
119.0	829.03	2,110.07	0.00	0.00
120.0	15.70	54.24	0.00	0.00
123.0	501.52	453.00	0.00	0.00
125.0	29.95	95.07	0.00	0.00
126.0	1,616.72	2,451.58	0.00	4,647.71
Totals:	7,730.57	25,406.93	0.00	6,014.98



Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

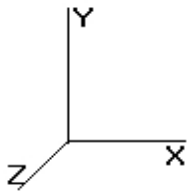
Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-7.747	-25.402	0.000	0.000	0.000	-756.906	0.000	0.000	0.000	0.000
5.00	-7.633	-24.374	0.000	0.000	0.000	-718.170	-0.041	0.000	0.041	-0.076
10.00	-7.520	-23.370	0.000	0.000	0.000	-680.007	-0.162	0.000	0.162	-0.154
15.00	-7.408	-22.390	0.000	0.000	0.000	-642.410	-0.366	0.000	0.366	-0.234
20.00	-7.298	-21.434	0.000	0.000	0.000	-605.370	-0.655	0.000	0.655	-0.316
25.00	-7.190	-20.501	0.000	0.000	0.000	-568.879	-1.030	0.000	1.030	-0.400
30.00	-7.083	-19.593	0.000	0.000	0.000	-532.930	-1.495	0.000	1.495	-0.486
35.00	-6.976	-18.708	0.000	0.000	0.000	-497.513	-2.052	0.000	2.052	-0.574
40.00	-6.862	-17.850	0.000	0.000	0.000	-462.632	-2.702	0.000	2.702	-0.665
43.50	-6.778	-17.264	0.000	0.000	0.000	-438.615	-3.214	0.000	3.214	-0.730
45.00	-6.748	-16.833	0.000	0.000	0.000	-428.448	-3.448	0.000	3.448	-0.759
48.50	-6.655	-15.853	0.000	0.000	0.000	-404.832	-4.030	0.000	4.030	-0.826
50.00	-6.632	-15.638	0.000	0.000	0.000	-394.849	-4.294	0.000	4.294	-0.856
55.00	-6.518	-14.947	0.000	0.000	0.000	-361.690	-5.249	0.000	5.249	-0.964
60.00	-6.402	-14.276	0.000	0.000	0.000	-329.101	-6.318	0.000	6.318	-1.075
65.00	-6.286	-13.625	0.000	0.000	0.000	-297.090	-7.504	0.000	7.504	-1.186
70.00	-6.170	-12.995	0.000	0.000	0.000	-265.659	-8.807	0.000	8.807	-1.299
75.00	-6.053	-12.385	0.000	0.000	0.000	-234.811	-10.227	0.000	10.227	-1.411
80.00	-5.818	-11.623	0.000	0.000	0.000	-204.321	-11.765	0.000	11.765	-1.522
85.00	-5.697	-11.058	0.000	0.000	0.000	-175.233	-13.418	0.000	13.418	-1.632
88.13	-5.622	-10.716	0.000	0.000	0.000	-157.431	-14.510	0.000	14.510	-1.700
90.00	-5.575	-10.385	0.000	0.000	0.000	-146.889	-15.186	0.000	15.186	-1.741
91.88	-5.529	-10.058	0.000	0.000	0.000	-136.437	-15.878	0.000	15.878	-1.781
95.00	-5.458	-9.777	0.000	0.000	0.000	-119.159	-17.065	0.000	17.065	-1.845
98.00	-5.208	-9.285	0.000	0.000	0.000	-102.785	-18.247	0.000	18.247	-1.913
100.0	-5.174	-9.121	0.000	0.000	0.000	-92.369	-19.058	0.000	19.058	-1.957
104.0	-4.508	-8.381	0.000	0.000	0.000	-70.534	-20.732	0.000	20.732	-2.035
105.0	-4.489	-8.304	0.000	0.000	0.000	-66.026	-21.160	0.000	21.160	-2.053
106.0	-3.357	-5.660	0.000	0.000	0.000	-61.536	-21.592	0.000	21.592	-2.071
110.0	-3.283	-5.379	0.000	0.000	0.000	-48.107	-23.355	0.000	23.355	-2.134
115.0	-3.191	-5.044	0.000	0.000	0.000	-31.691	-25.627	0.000	25.627	-2.200
119.0	-2.282	-2.967	0.000	0.000	0.000	-18.928	-27.488	0.000	27.488	-2.239
120.0	-2.265	-2.913	0.000	0.000	0.000	-16.647	-27.958	0.000	27.958	-2.247
123.0	-1.746	-2.479	0.000	0.000	0.000	-9.853	-29.376	0.000	29.376	-2.266
125.0	-1.713	-2.385	0.000	0.000	0.000	-6.361	-30.328	0.000	30.328	-2.275
126.0	-1.617	0.000	0.000	0.000	0.000	-4.648	-30.804	0.000	30.804	-2.278

Pole : 302469
Location : Bridgeport CT 2, CT
Height : 126.0 (ft)
Base Dia : 45.50 (in)
Top Dia : 17.00 (in)
Shape : 18 Sides
Taper : 0.235121 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



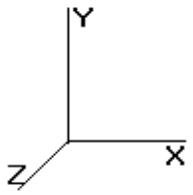
Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 24 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.47	0.29	0.00	0.00	0.00	15.19	15.67	52.0	0.0	0.301
5.00	0.47	0.29	0.00	0.00	0.00	15.19	15.67	52.0	0.0	0.301
10.00	0.46	0.30	0.00	0.00	0.00	15.19	15.66	52.0	0.0	0.301
15.00	0.45	0.30	0.00	0.00	0.00	15.18	15.64	52.0	0.0	0.301
20.00	0.45	0.31	0.00	0.00	0.00	15.15	15.60	52.0	0.0	0.300
25.00	0.44	0.31	0.00	0.00	0.00	15.11	15.55	52.0	0.0	0.299
30.00	0.43	0.32	0.00	0.00	0.00	15.04	15.49	52.0	0.0	0.298
35.00	0.43	0.32	0.00	0.00	0.00	14.96	15.39	52.0	0.0	0.296
40.00	0.42	0.33	0.00	0.00	0.00	14.84	15.27	52.0	0.0	0.294
43.50	0.42	0.33	0.00	0.00	0.00	14.75	15.18	52.0	0.0	0.292
45.00	0.41	0.33	0.00	0.00	0.00	14.70	15.12	52.0	0.0	0.291
48.50	0.46	0.39	0.00	0.00	0.00	16.77	17.25	52.0	0.0	0.332
50.00	0.46	0.40	0.00	0.00	0.00	16.70	17.18	52.0	0.0	0.331
55.00	0.46	0.40	0.00	0.00	0.00	16.42	16.89	52.0	0.0	0.325
60.00	0.45	0.41	0.00	0.00	0.00	16.07	16.54	52.0	0.0	0.318
65.00	0.45	0.42	0.00	0.00	0.00	15.66	16.12	52.0	0.0	0.310
70.00	0.45	0.43	0.00	0.00	0.00	15.15	15.61	52.0	0.0	0.300
75.00	0.44	0.44	0.00	0.00	0.00	14.54	15.00	52.0	0.0	0.289
80.00	0.43	0.44	0.00	0.00	0.00	13.78	14.24	52.0	0.0	0.274
85.00	0.43	0.45	0.00	0.00	0.00	12.93	13.38	52.0	0.0	0.257
88.13	0.43	0.46	0.00	0.00	0.00	12.31	12.76	52.0	0.0	0.246
90.00	0.42	0.46	0.00	0.00	0.00	11.90	12.35	52.0	0.0	0.238
91.88	0.51	0.57	0.00	0.00	0.00	13.65	14.19	52.0	0.0	0.273
95.00	0.51	0.58	0.00	0.00	0.00	12.66	13.21	52.0	0.0	0.254
98.00	0.50	0.57	0.00	0.00	0.00	11.60	12.14	52.0	0.0	0.234
100.00	0.50	0.57	0.00	0.00	0.00	10.86	11.40	52.0	0.0	0.219
104.00	0.48	0.52	0.00	0.00	0.00	9.02	9.55	52.0	0.0	0.184
105.00	0.48	0.53	0.00	0.00	0.00	8.63	9.16	52.0	0.0	0.176
106.00	0.33	0.40	0.00	0.00	0.00	8.22	8.58	52.0	0.0	0.165
110.00	0.33	0.41	0.00	0.00	0.00	7.03	7.40	52.0	0.0	0.142
115.00	0.33	0.42	0.00	0.00	0.00	5.22	5.59	52.0	0.0	0.108
119.00	0.20	0.32	0.00	0.00	0.00	3.45	3.69	52.0	0.0	0.071
120.00	0.20	0.32	0.00	0.00	0.00	3.11	3.36	52.0	0.0	0.065
123.00	0.18	0.25	0.00	0.00	0.00	1.99	2.22	52.0	0.0	0.043
125.00	0.18	0.26	0.00	0.00	0.00	1.36	1.60	52.0	0.0	0.031
126.00	0.00	0.25	0.00	0.00	0.00	1.02	1.11	52.0	0.0	0.021

Pole :	**302469**	**Code: TIA/EIA-222 Rev F**	**11/12/2014 4:18:08 PM**
Location :	**Bridgeport CT 2, CT**		**Page: 25**
Height :	**126.0 (ft)**		
Base Dia :	**45.50 (in)**		
Top Dia :	**17.00 (in)**	**Base Elev : 0.000 (ft)**	
Shape :	**18 Sides**		
Taper :	**0.235121 (in/ft)**		



Analysis Summary

	Reactions						Max Stresses			
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	22.4	0.00	25.36	0.00	0.00	2184.00	48.83	52.0	48.50	0.939
Ice	17.6	0.00	30.05	0.00	0.00	1726.85	38.96	52.0	48.50	0.750
Twist/Sway	7.7	0.00	25.40	0.00	0.00	756.91	17.25	52.0	48.50	0.332

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	45.5	in
	Pole Thickness	0.375	in
	Plate Diameter	60	in
	Plate Thickness	1.75	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	Allowable	883.20	k-in
	Applied	429.91	k-in
Stiffeners	#	***12***	***Show***
	Thickness	0.375	in
	Length	6	in
	Height	12	in
	Chamfer	1	in
	Offset Angle	0	°
	Fy	36	ksi
Bolts	#	***12***	
	Bolt Circle	54	in
	(R)adial / (S)quare	R	
●	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615-75	
	Fy	75	ksi
	Fu	100	ksi
	Allowable	194.86	k
	Applied	163.78	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev.	***F***	**Date**	11/12/2014
A.S.I.	1.33	**Engineer**	JCT
		Site #	302469
Moment	2184.0 k-ft	**Carrier**	AT&T Mobility
Axial	25.4 k		

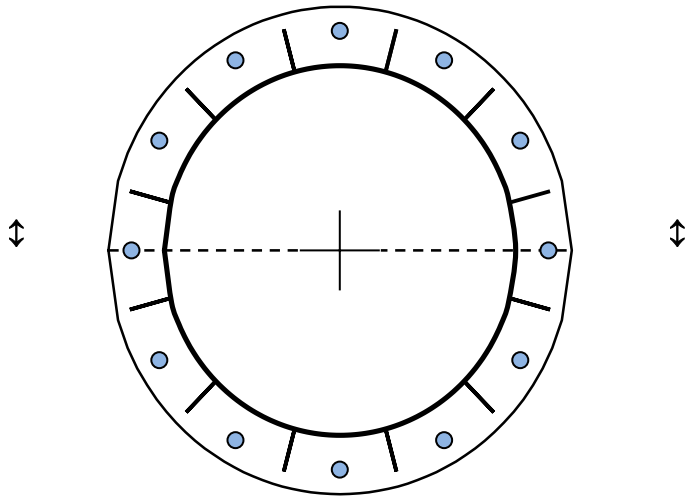
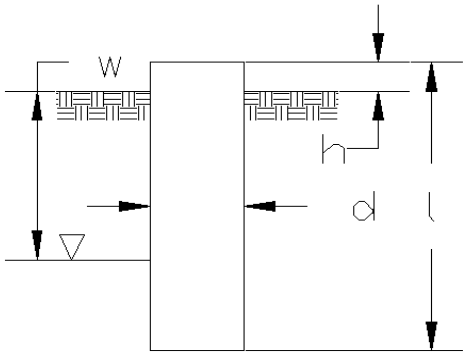


Plate Stress Ratio:
0.49 (Pass)

Bolt Stress Ratio:
0.84 (Pass)

Site Name:	Bridgeport CT 2, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	302469	*American Tower Corporation*	
Engineer:	J. Thomas		
Engineering Number:	60291222		
Date:	11/12/14		



Design Base Loads (Unfactored) - Analysis per TIA-222-F Standards

Analyze or Design a Foundation?	Analyze	
Foundation Mapped:	N	
Moment (M):	2184.0	k-ft
Shear/Leg (V):	22.4	k
Axial Load (P):	30.1	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	6.0	ft
Caisson Embedment (L-h):	18.0	ft
Caisson Height Above Ground (h):	1.0	ft
Depth Below Ground Surface to Water Table (w):	99.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes

Soil Mechanical Properties

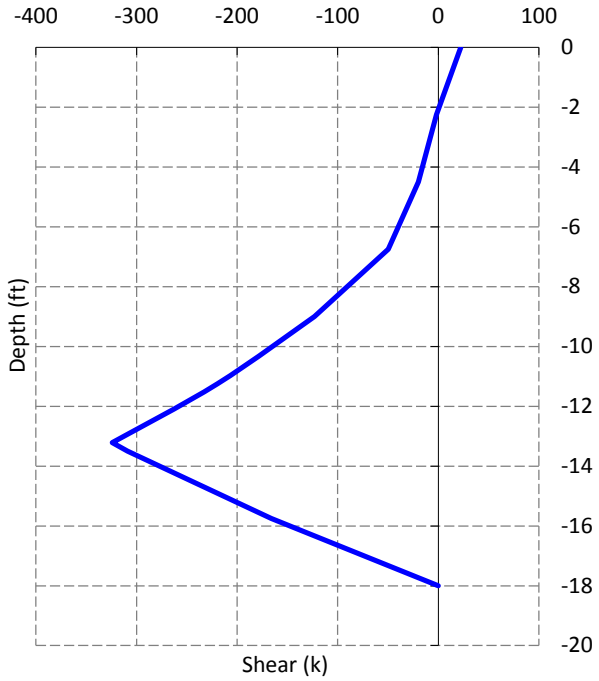
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Allowable Skin Friction (psf)	Allowable Bearing Pressure (psf)
0.0	2.0	120	0	0	0	0
2.0	5.0	120	0	33	200	20000
5.0	17.0	135	0	45	650	20000
17.0	22.0	135	0	45	850	20000

Required Embedment:	18.4		
Volume of Concrete:	537.2	ft^3 =	19.9 yd^3
Weight of Concrete (Buoyancy Effect Considered):	80.6	k	
Average Soil Unit Weight:	130.8	pcf	
Skin Friction Resistance:	174.4	k	
Compressive Bearing Resistance:	565.5	k	
Pullout Weight (Minus Concrete Weight):	497.0	k	
Allowable Uplift Capacity (U_{Allow}):	238.8	k	
Allowable Compressive Capacity (P_{Allow}):	739.8	k	
Compressive Design Load (P):	39.8	k	
U / U_{Allow}:	0.00	Result:	OK
P / P_{Allow}:	0.05	Result:	OK
Total Lateral Resistance:	1604.9	k	
Inflection Point (Below Ground Surface):	13.2	ft	
Design Overturning Moment At Inflection Point (M_D):	2502.3	k-ft	
Nominal Moment Capacity (M_{Allow}):	5025.4	k-ft	
M_{Allow} / M_D Factor of Safety:	2.01	Result:	OK

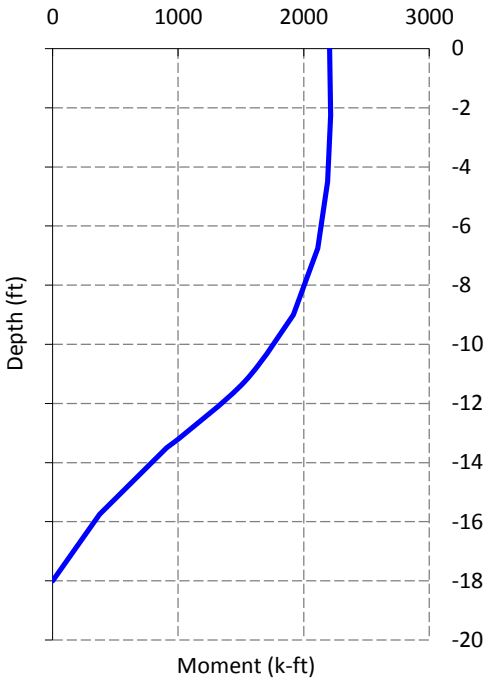
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
Design # of Vertical Steel Rebars:	16	
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Design Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	64.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-05 - 9.3.2.2
Wind Design Factor:	1.30	ACI318-05 - 9.2.1
Steel Elastic Modulus:	29000	ksi
Design Moment (M_u):	2879.0	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	3528.7	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.82	Result: OK
Design Shear (V_u):	421.3	k
Nominal Shear Capacity ($\phi_V V_n$):	521.6	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.81	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	1347.8	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	51.7	k
Nominal Compression Capacity ($\phi_P P_n$):	7154.3	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.006	ACI318-05 - 10.8.4 & 10.9.1
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.82	Result: OK

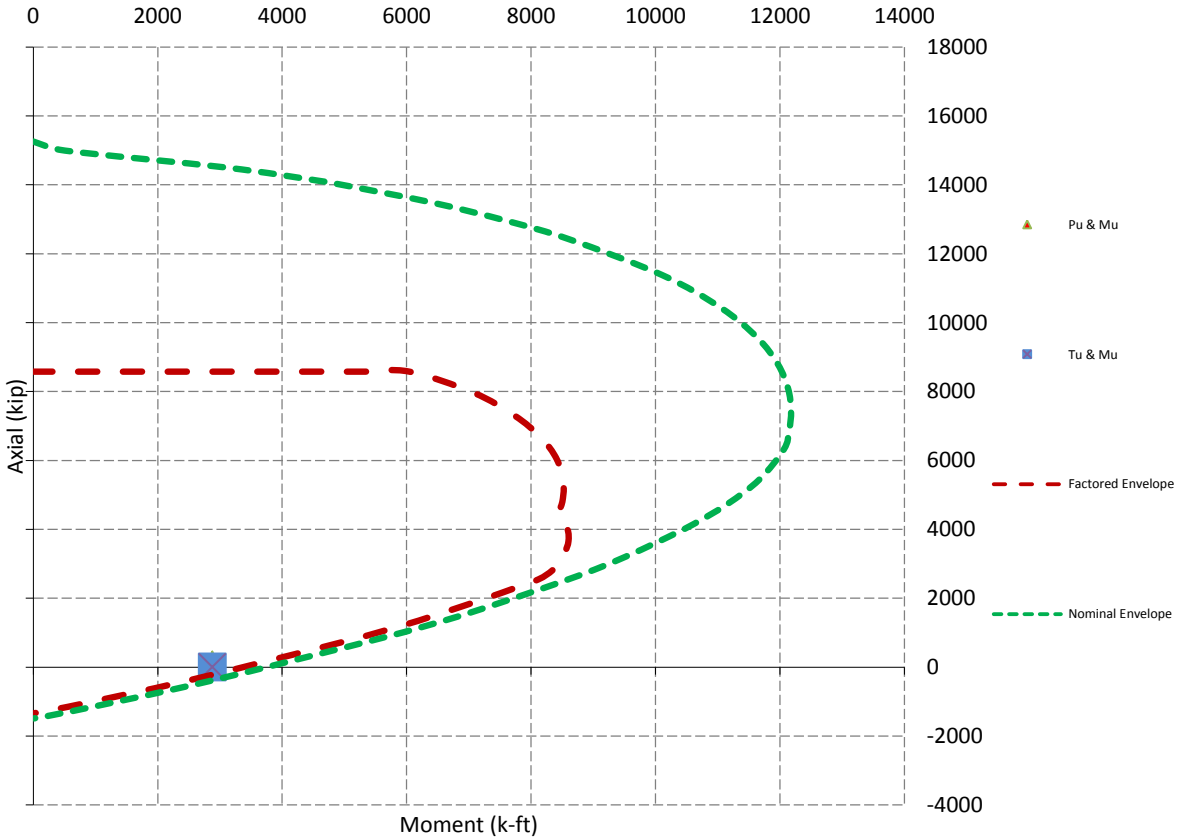
Design Unfactored Shear / Depth



Design Unfactored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads



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

AT&T Existing Facility

Site ID: CT2252

Bridgeport CT Conn Ave
1069 Connecticut Avenue
Bridgeport, CT 06607

November 21, 2014

EBI Project Number: 62146234

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	58.88 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
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November 21, 2014

AT&T Mobility – New England
Attn: Cameron Syme
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 01701

Emissions Analysis for Site: **CT2252 – Bridgeport CT Conn Ave**

EBI Consulting was directed to analyze the proposed AT&T facility located at **1069 Connecticut Avenue, Bridgeport, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 MHz and 800 MHz Bands are 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **1069 Connecticut Avenue, Bridgeport, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band -1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (WCS Band – 2300 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 4 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts

8) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

9) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antennas used in this modeling are the **Powerwave 7750** for 850 MHz and 1900 MHz (PCS) channels and the **CCI OPA-65R-LCUU-H4** for 700 MHz, 850 MHz, 1900 MHz and 2300 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Powerwave 7750** has a maximum gain of **12.1 dBd for 850 MHz and 15.4 dBd for 1900 MHz** at its main lobe. The **CCI OPA-65R-LCUU-H4** has a maximum gain of **10.6 dBd for 700 MHz, 11.2 dBd for 850 MHz, 13.8 dBd for 1900 MHz and 14.8 dBd for 2300 MHz** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

11) The antenna mounting height centerline of the proposed antennas is **106 feet** above ground level (AGL).

12) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Powerwave 7750	Make / Model:	Powerwave 7750	Make / Model:	Powerwave 7750
Gain:	12.1 / 15.4 dBd	Gain:	12.1 / 15.4 dBd	Gain:	12.1 / 15.4 dBd
Height (AGL):	106 feet	Height (AGL):	106 feet	Height (AGL):	106 feet
Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)
Channel Count	8	Channel Count	8	# PCS Channels:	8
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	3,212.27	ERP (W):	3,212.27	ERP (W):	3,212.27
Antenna A1 MPE%	2.73	Antenna B1 MPE%	2.73	Antenna C1 MPE%	2.73
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4
Gain:	10.6/14.8/11.2 dBd	Gain:	10.6/14.8/11.2 dBd	Gain:	10.6/14.8/11.2 dBd
Height (AGL):	106 feet	Height (AGL):	106 feet	Height (AGL):	106 feet
Frequency Bands	700 MHz / 2300 MHz (WCS)/ 850 MHz	Frequency Bands	700 MHz / 2300 MHz (WCS)/ 850 MHz	Frequency Bands	700 MHz / 2300 MHz (WCS)/ 850 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	240	Total TX Power:	240	Total TX Power:	240
ERP (W):	2,865.66	ERP (W):	2,865.66	ERP (W):	2,865.66
Antenna A2 MPE%	2.36	Antenna B2 MPE%	2.36	Antenna C2 MPE%	2.36
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4	Make / Model:	CCI OPA-65R-LCUU-H4
Gain:	10.6 / 13.8 dBd	Gain:	10.6 / 13.8 dBd	Gain:	10.6 / 13.8 dBd
Height (AGL):	106 feet	Height (AGL):	106 feet	Height (AGL):	106 feet
Frequency Bands	700 Mhz / 1900 MHz (PCS)	Frequency Bands	700 Mhz / 1900 MHz (PCS)	Frequency Bands	700 Mhz / 1900 MHz (PCS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	2,714.61	ERP (W):	2,714.61	ERP (W):	2,865.66
Antenna A3 MPE%	2.10	Antenna B3 MPE%	2.10	Antenna C3 MPE%	2.10

Site Composite MPE%	
Carrier	**MPE%**
AT&T	**21.57**
T-Mobile	7.65 %
Clearwire	0.70 %
Clearwire MW	0.97 %
Sprint Nextel	8.61
Spring Nextel MW	0.14
Metro PCS	19.24
Site Total MPE %:	**58.88 %**

AT&T Sector 1 Total:	7.19 %
AT&T Sector 2 Total:	7.19 %
AT&T Sector 3 Total:	7.19 %
Site Total:	58.88 %

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Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector 1:	7.19 %
Sector 2:	7.19 %
Sector 3 :	7.19 %
AT&T Total:	21.57 %
Site Total:	58.88 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **58.88%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

EBI Consulting
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