



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

December 18, 2014

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

**Re: Notice of Exempt Modification Application
585 South Main Street
Naugatuck, CT 06770**

Dear Ms. Bachman,

On behalf of New Cingular Wireless PCS, LLC ("AT&T"), enclosed for filing are an 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: _____

Name: David Weisman
Vertical Development LLC
20 Commercial Street
Branford, CT 06405
Phone – 401-743-9011
Fax – 401-633-6202
DWeisman@verticaldevelopmentllc.com

CC: Robert A. Mezzo, Mayor
Naugatuck Town Hall
229 Church Street
Naugatuck, CT 06770

The Office LLC
585 South Main Street
Naugatuck, CT 06770
Attn.: Owner

siting.council@ct.gov (electronic copy)

Notice of Exempt Modification
585 South Main Street
Naugatuck, CT 06770

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 49' monopole located at 585 South Main Street, in the Town of Naugatuck, Connecticut. More particularly, AT&T plans to upgrade this site by adding LTE technology to its facilities. The proposed modifications will not increase the tower height, cause a significant adverse change or alteration in the physical or environmental characteristics of the site, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six (6) decibels, 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 Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes, or impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

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

The existing 49' monopole located at 585 South Main Street, in the Town of Naugatuck, Connecticut (lat. 41° 28' 42.37", long. -73° 2' 54.60") is owned by American Tower Corporation, a Delaware corporation. AT&T's existing facility is located within the Landlord's existing fenced compound. AT&T currently has six (6) panel antennas (two (2) per sector) with a centerline of 52' installed on the tower. 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. AT&T will relocate to the new platform two (2) existing Powerwave 7777.00 panel antennas (one (1) per sector), two (2) TMAs, two (2) Ericsson RRUS-11 (one (1) per sector) which will be connected and located behind the Powerwave 7777.00 panel antennas, one (1) DC-6 Surge Suppressors.

AT&T plans to add to the new platform four (4) CCI OPA-65R-LCUU-H6 panel antennas (2 per sector), four (4) Powerwave Allgon CM1007-DBXBC-003 Diplexers, (2) RRUS-12 (1 per sector), two (2) Ericsson A2 modules (1) per sector (attached behind each respective RRU-12), two (2) additional RRUS-11 (1 per sector), two (2) RRUS-32 (1 per sector), and two (2) RRUS-E2 (1 per sector) and will add one (1) new Raycap DC-6 Surge Suppressor. The height of the tower will not be increased and all antennas, surge suppressors, and RRHs will be installed at the 52' centerline.

Within the existing equipment shelter AT&T also plans to install a new DC-DC Converter and Ericsson RBS 6601 in an existing LTE Rack, remove and replace an existing rack with a new GE Power Plant, remove existing diplexers on an existing rack and replace them with six (6) new Kaelus Diplexers. Finally, AT&T will be removing four (4) existing coax runs (leaving four (4) coax runs) and adding one (1) fiber trunk and six (6) DC Trunks from the ground equipment to the AT&T Rad Center outside the tower following one (1) existing fiber trunk and two (2) existing DC Trunks. The compound's boundaries will not need to be extended. The proposed modifications will not cause a significant adverse change or alteration in the physical or environmental

characteristics of the site, since it is already a telecommunications installation and the modifications will be compatible with this. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

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 Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes. A radio frequency emissions analysis prepared by EBI Consulting concludes that the proposed final configuration (including other carriers on the tower) will emit 54.87% of the allowable FCC established general public limits sampled at the ground level (see page 1 and the 6th page of Radio Frequency Emissions Analysis Report Evaluation of Human Exposure Potential to Non-Ionizing Emissions (the "MPE" Assessment) dated December 11, 2014). Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 2nd and 6 page of the MPE Assessment dated December 11, 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 97-01 and ANSI/IEEE Std C95.1 (see the 2nd page of the MPE Assessment).

The proposed modifications will not impair the structural integrity of the facility. On AT&T's behalf, American Tower Corporation commissioned Semaan Engineering Solutions to perform a structural analysis of the tower to verify that it can support the proposed loading. The structure and foundation were found to meet the specified TIA requirements and deemed adequate to support the existing and proposed loading, and was rated at 66% (see page 1 of the Structural Analysis Report dated November 25, 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 cause a significant adverse change or alteration in the physical or environmental characteristics of the site, will not increase the noise levels at the site, will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards, and will not impair the structural integrity of the facility. 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.
- REMOVE EXISTING UNUSED RACK INSIDE SHELTER.
- NEW AT&T ANTENNAS: (2) NEW ANTENNAS PER SECTOR WITH (2) SECTORS, FOR A TOTAL OF (4) NEW ANTENNAS.
- (2) EXISTING UMTS ANTENNAS TO BE RE-USED (1 PER SECTOR).
- AT&T RRUs: (4) NEW RRUs PER SECTOR WITH (2) SECTORS, FOR A TOTAL OF (8) NEW RRUs; (1) EXISTING RRU PER SECTOR TO BE RE-USED, FOR A TOTAL OF (2) EXISTING RRUs.
- (1) NEW A2 MODULE PER SECTOR WITH (2) SECTORS, FOR A TOTAL OF (2) A2 MODULES.
- (1) NEW AT&T DC-6 SURGE SUPPRESSORS; (1) EXISTING DC-6 SURGE SUPPRESSOR TO BE RE-USED.
- (2) EXISTING TMA's TO BE RE-USED (1 PER SECTOR)
- NEW LTE RBS-6601 & DC-DC CONVERTER INSTALLED IN EXISTING LTE RACK.
- (1) NEW FIBER TRUNK & (6) NEW DC TRUNKS.
- EXISTING DIPLEXERS INSIDE SHELTER TO BE REMOVED & REPLACED.
- NEW DC POWER PLANT INSTALLED INSIDE SHELTER.

SITE ADDRESS: 585 SOUTH MAIN STREET
NAUGATUCK, CT 06770

LATITUDE: 41.478436 41° 28' 42.37"N
LONGITUDE: -73.048499 -73° 02' 54.59"W

USID: 61187

TOWER OWNER: AMERICAN TOWER CORPORATION
116 HUNTINGTON AVE, 11TH FLOOR
BOSTON, MA 02116

TYPE OF SITE: MONOPOLE/INDOOR EQUIPMENT

MONOPOLE HEIGHT: 49'-0"±
RAD CENTER: 52'-0"±

CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY
PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY



**at&t
MOBILITY**

FA CODE: 10035065
SITE NUMBER: CT2166
SITE NAME:
NAUGATUCK SOUTH MAIN

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:

COMPANY: VERTICAL DEVELOPMENT, LLC
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
DENVER, 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

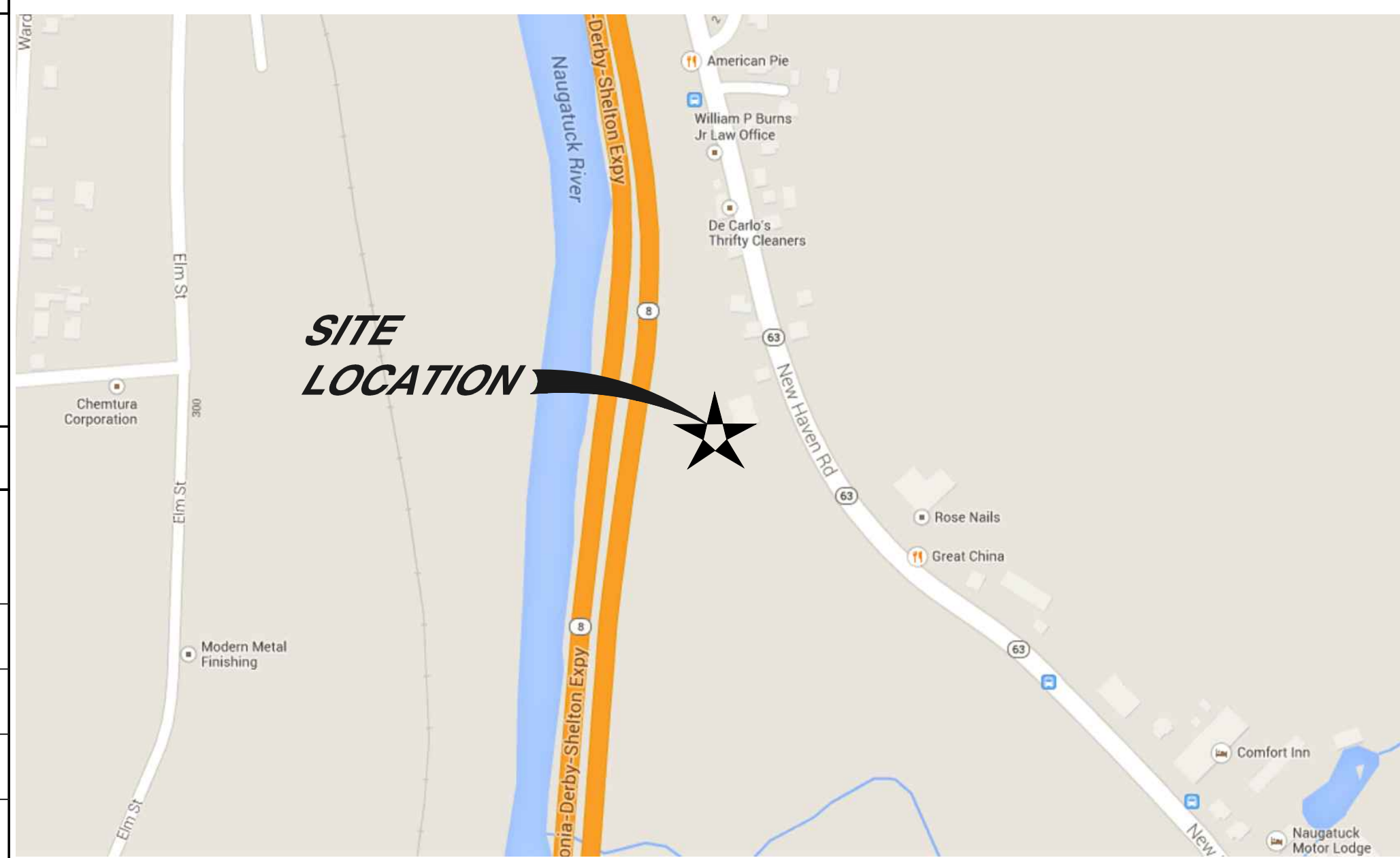
DRAWING INDEX

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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/BOSTON (0.6 MI). 6. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSACHUSETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 W/MASSACHUSETTS TURNPIKE (38.3 MI). 7. TAKE EXIT 9 TO MERGE ONTO I-84 TOWARD US-20/HARTFORD/NEW YORK CITY (73.8 MI). 8. TAKE EXIT 19 ON THE LEFT FOR CONNECTICUT 8 S TOWARD NAUGATUCK/BRIDGEPORT (0.2 MI). 9. MERGE ONTO CT-8 S (5.6 MI). 10. TAKE EXIT 25 FOR CROSS STREET (0.3 MI). 11. TURN LEFT ONTO CROSS ST (299 FT). 12. TURN LEFT TO MERGE ONTO CT-8 N – DESTINATION WILL BE ON THE RIGHT (0.7 MI).



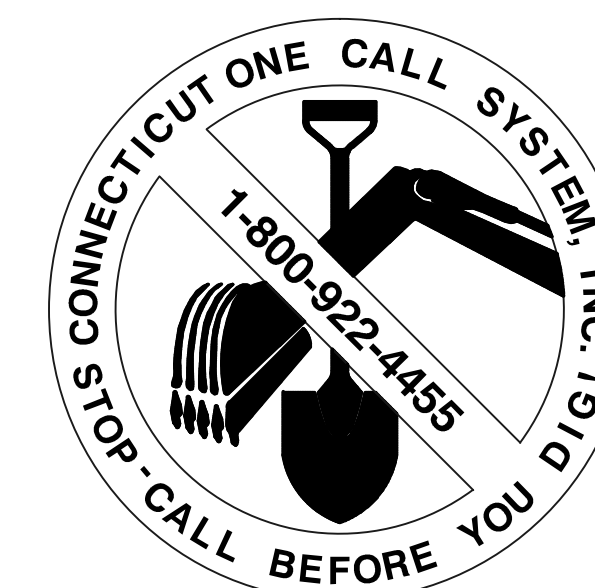
GENERAL NOTES

- 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.
- 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.
- 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.

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 AND MAY IMPOSE CHANGES OR SITE MODIFICATIONS.

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



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



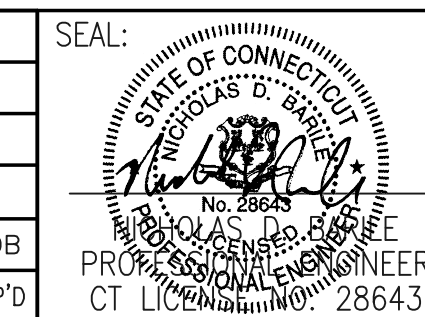
SITE NUMBER: CT2166
SITE NAME: NAUGATUCK SOUTH MAIN

585 SOUTH MAIN STREET
NAUGATUCK, CT 06770
NEW HAVEN COUNTY



550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/15/14	INITIAL SUBMISSION	CJT	NDB	NDB
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		



AT&T		
DRAWING TITLE:		
JOB NUMBER	DRAWING NUMBER	REV
14009-EMP	T-1	0

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 1/2" 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.

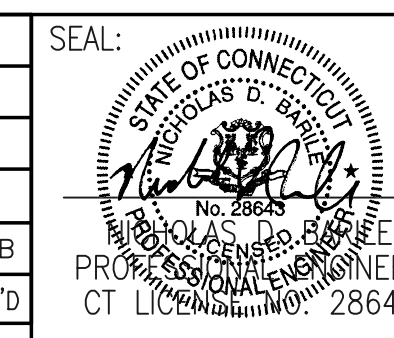


SITE NUMBER: CT2166
SITE NAME: NAUGATUCK SOUTH MAIN

585 SOUTH MAIN STREET
NAUGATUCK, CT 06770
NEW HAVEN COUNTY

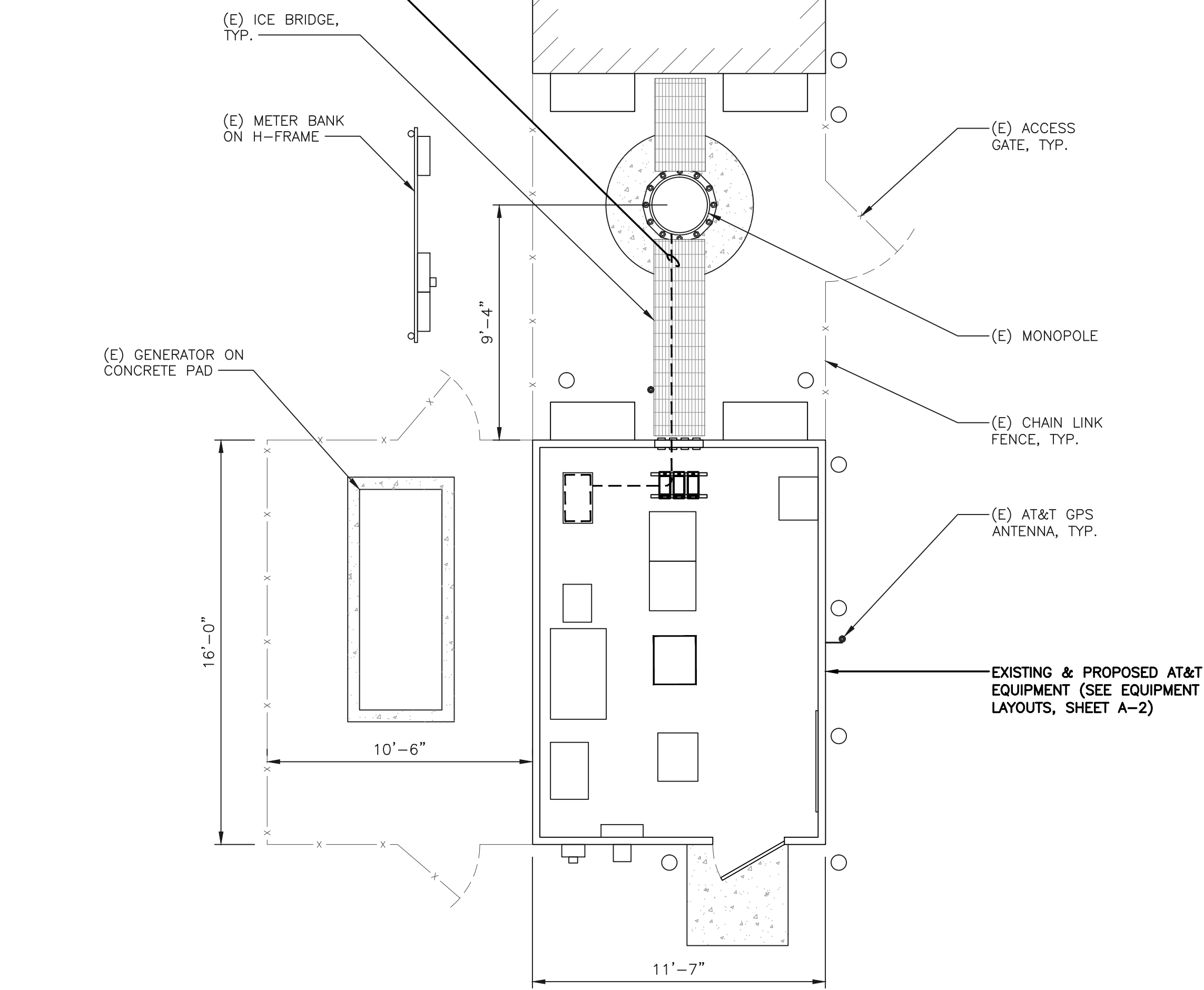


0	12/15/14	INITIAL SUBMISSION	CJT	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		



AT&T		
DRAWING TITLE: GROUNDING NOTES & GENERAL NOTES		
JOB NUMBER 14009-EMP	DRAWING NUMBER GN-1	REV 0

(1) PROPOSED FIBER TRUNK & (6) PROPOSED DC TRUNKS FROM GROUND EQUIPMENT TO AT&T RAD CENTER (FOLLOW 1 EXISTING FIBER TRUNK & 2 EXISTING DC TRUNKS)

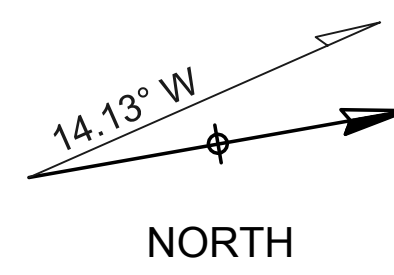


COMPOUND LAYOUT

SCALE: 1" = 4'-0"



(IN FEET)
1/4 Inch = 1 Foot



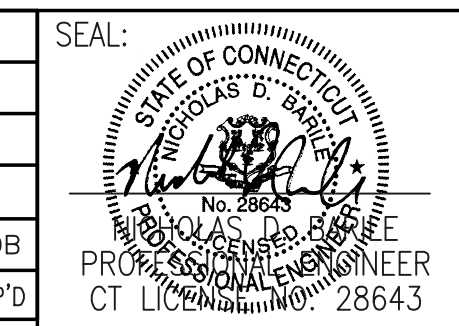
COM-EX
Consultants
4 SECOND AVENUE
SUITE 204
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PHONE: 862.209.4300
FAX: 862.209.4301

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telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

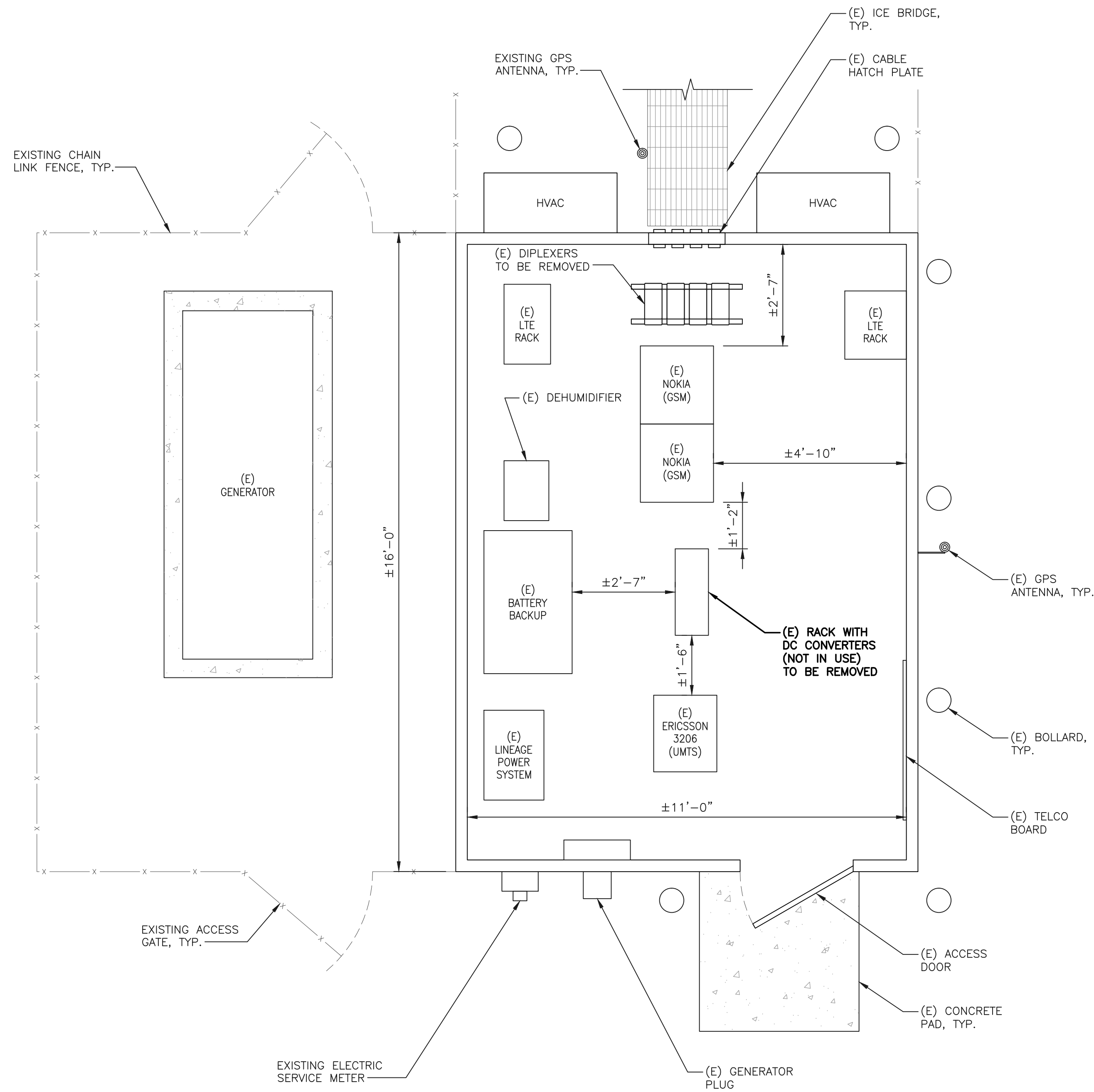
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SITE NAME: NAUGATUCK SOUTH MAIN
585 SOUTH MAIN STREET
NAUGATUCK, CT 06770
NEW HAVEN COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0	12/15/14	INITIAL SUBMISSION	CJT	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		



AT&T		
DRAWING TITLE: COMPOUND LAYOUT		
JOB NUMBER 14009-EMP	DRAWING NUMBER A-1	REV 0

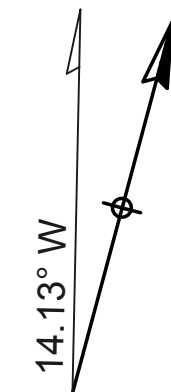


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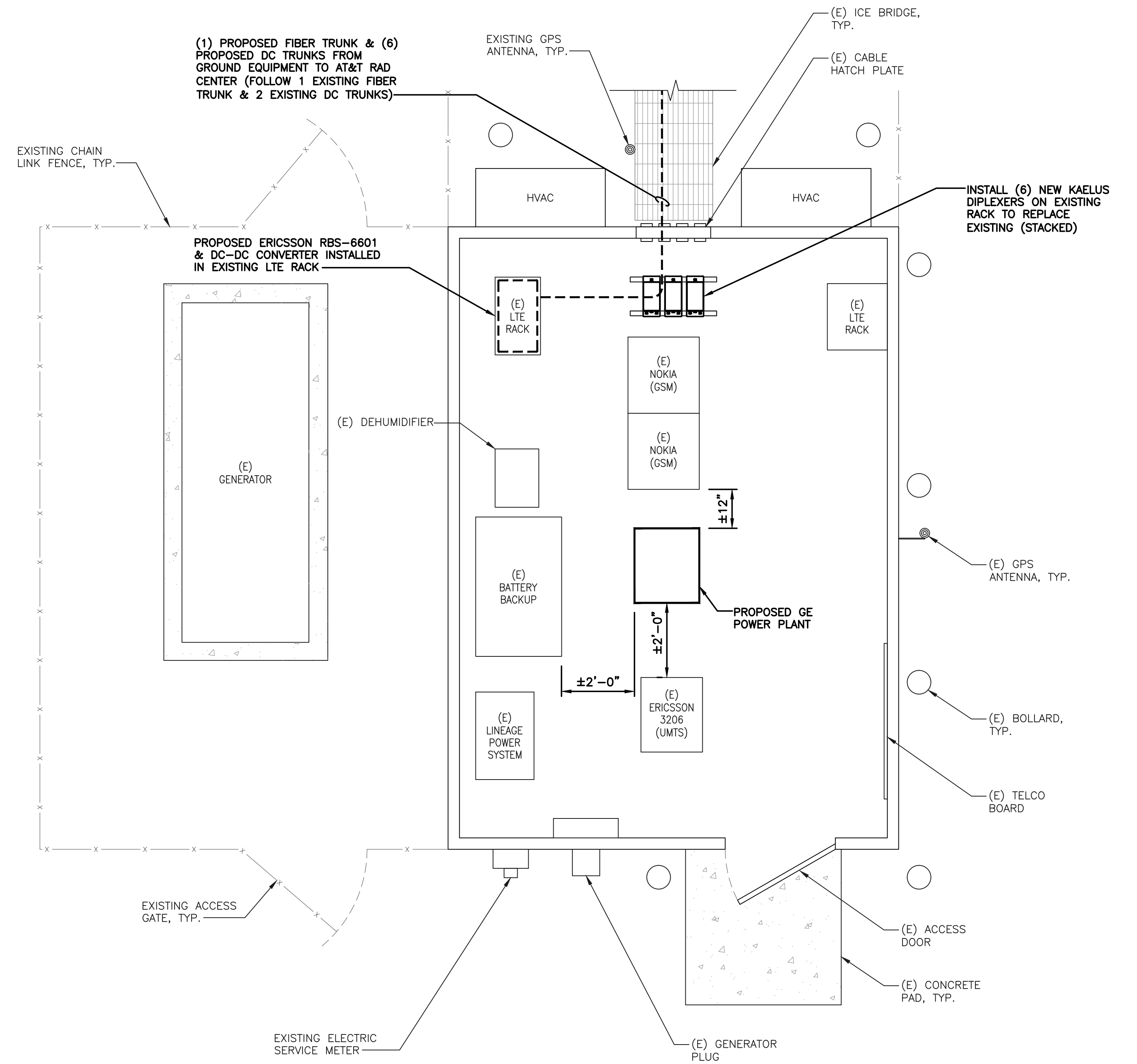
SCALE: 1" = 2'-0"



(IN FEET)
 1/2 Inch = 1 Foot

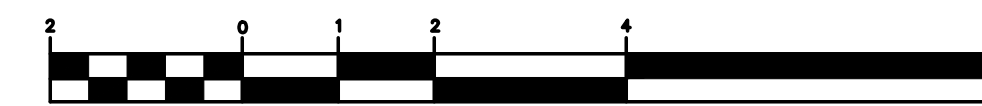


NORTH

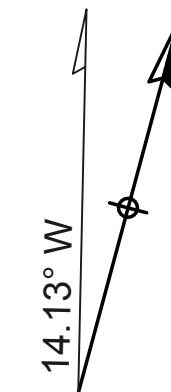


PROPOSED EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"



(IN FEET)
 1/2 Inch = 1 Foot



NORTH

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SITE NUMBER: CT2166
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 NEW HAVEN COUNTY

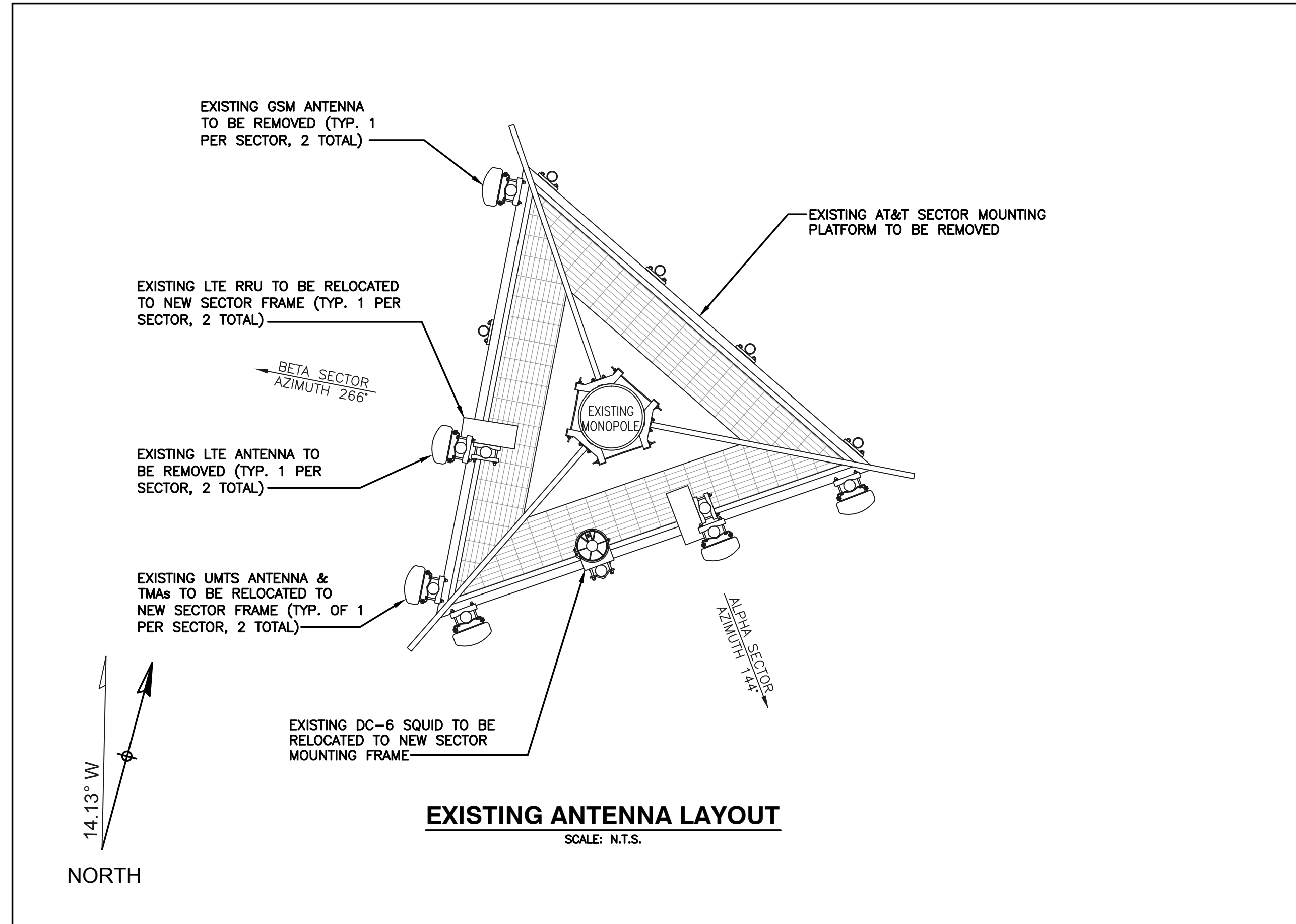
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		

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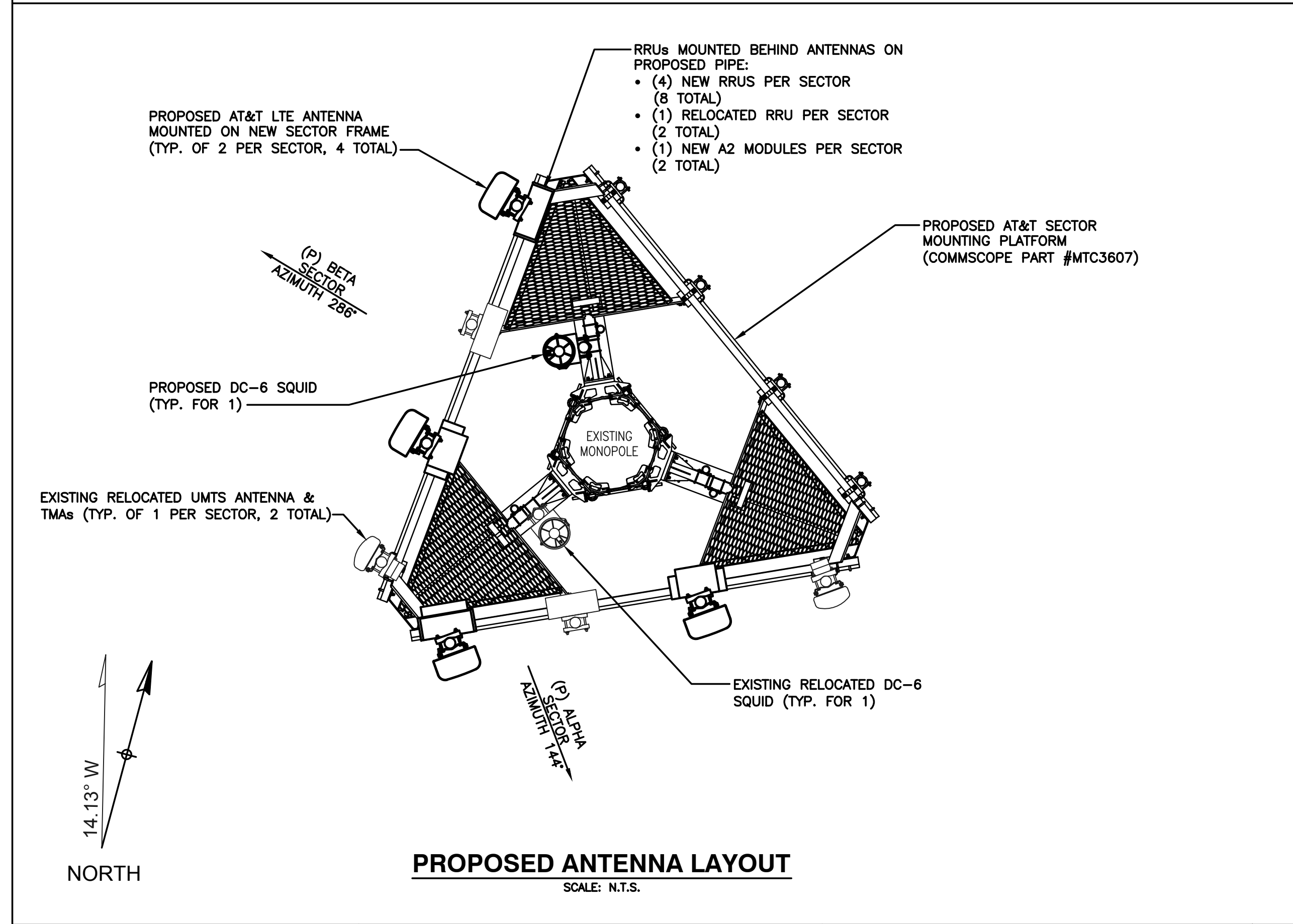
 NICHOLAS D. PAVESI
 PROFESSIONAL ENGINEER
 CT LICENSE NO. 28643

AT&T		
DRAWING TITLE: EQUIPMENT LAYOUTS		
JOB NUMBER 14009-EMP	DRAWING NUMBER A-2	REV 0



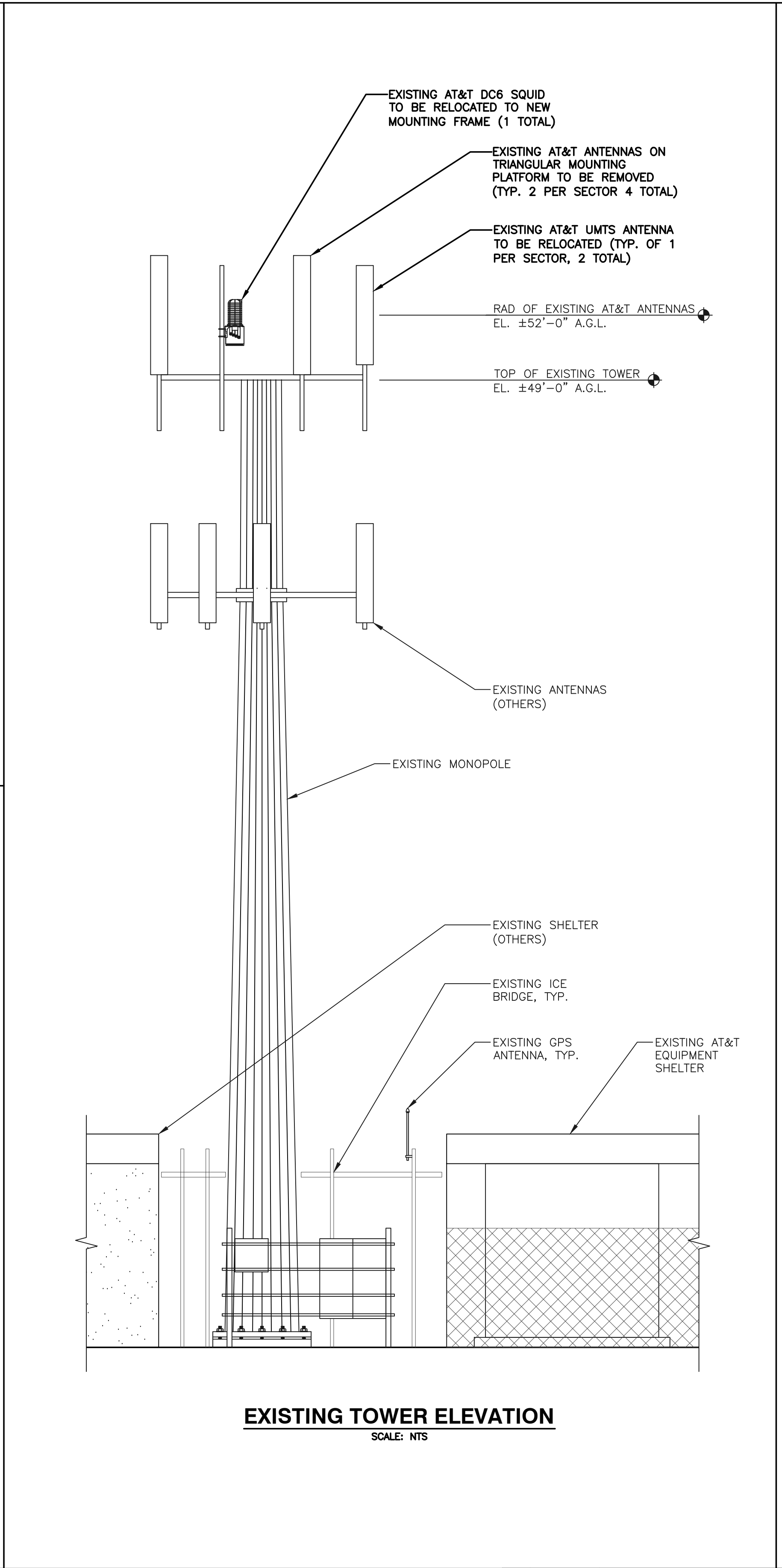
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



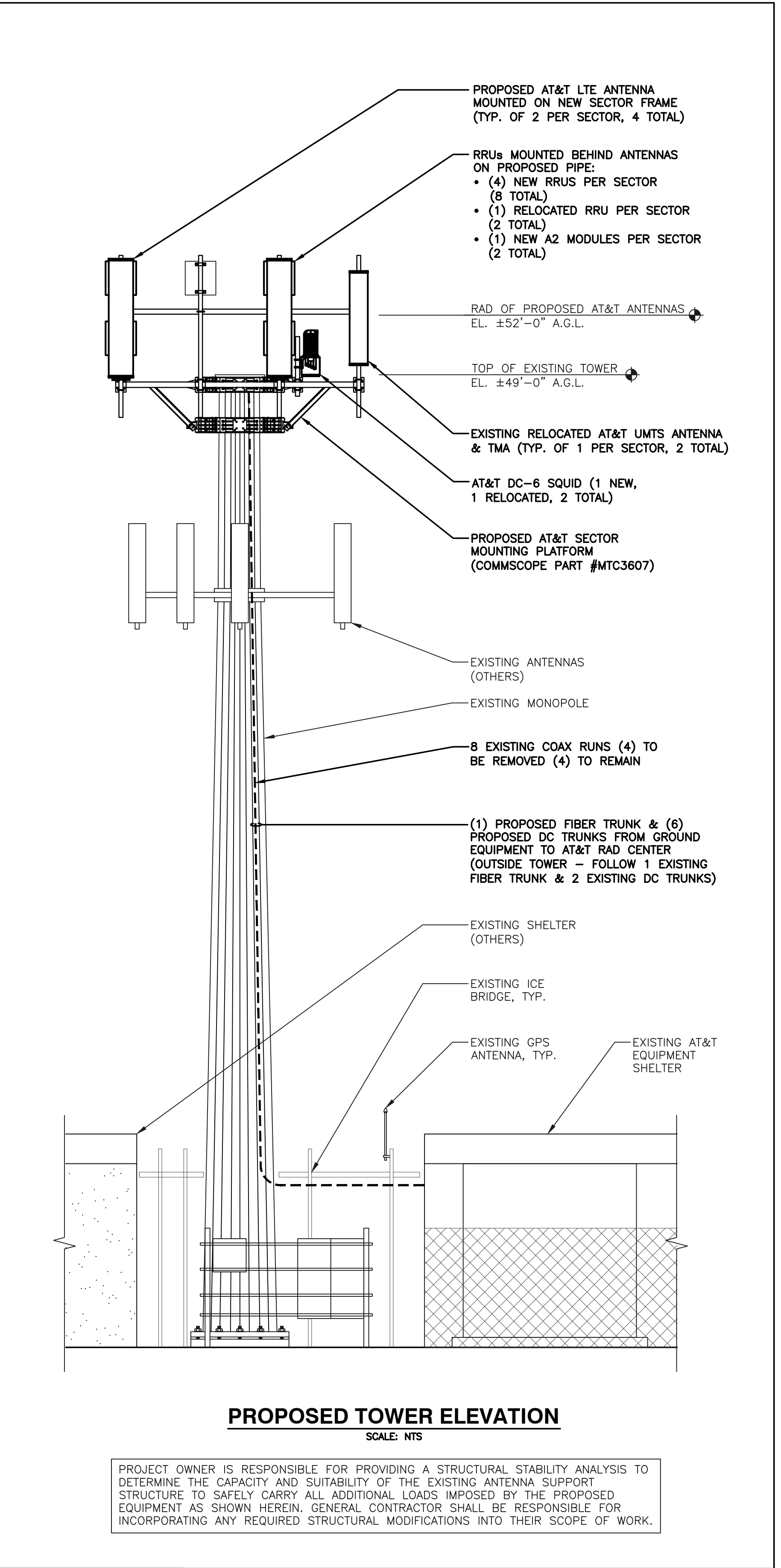
PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.



EXISTING TOWER ELEVATION

SCALE: N.T.S.



PROPOSED TOWER ELEVATION

SCALE: N.T.S.

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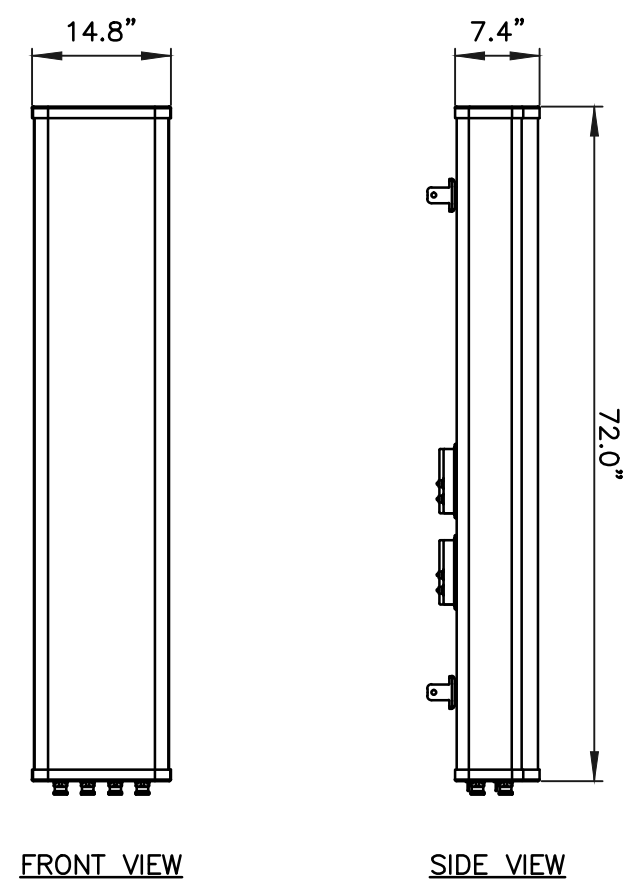
SITE NUMBER: CT2166
SITE NAME: NAUGATUCK SOUTH MAIN
585 SOUTH MAIN STREET
NAUGATUCK, CT 06770
NEW HAVEN COUNTY

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550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		

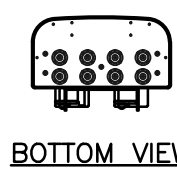
SEAL:
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T
DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS
JOB NUMBER: 14009-EMP
DRAWING NUMBER: A-3
REV: 0



FRONT VIEW

SIDE VIEW

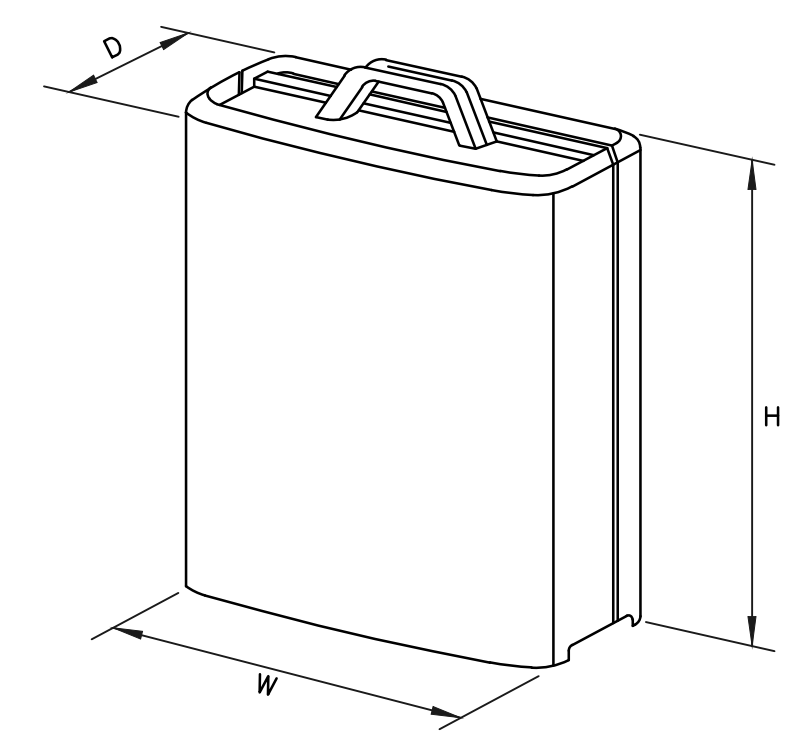


BOTTOM VIEW

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

LTE ANTENNA DETAIL

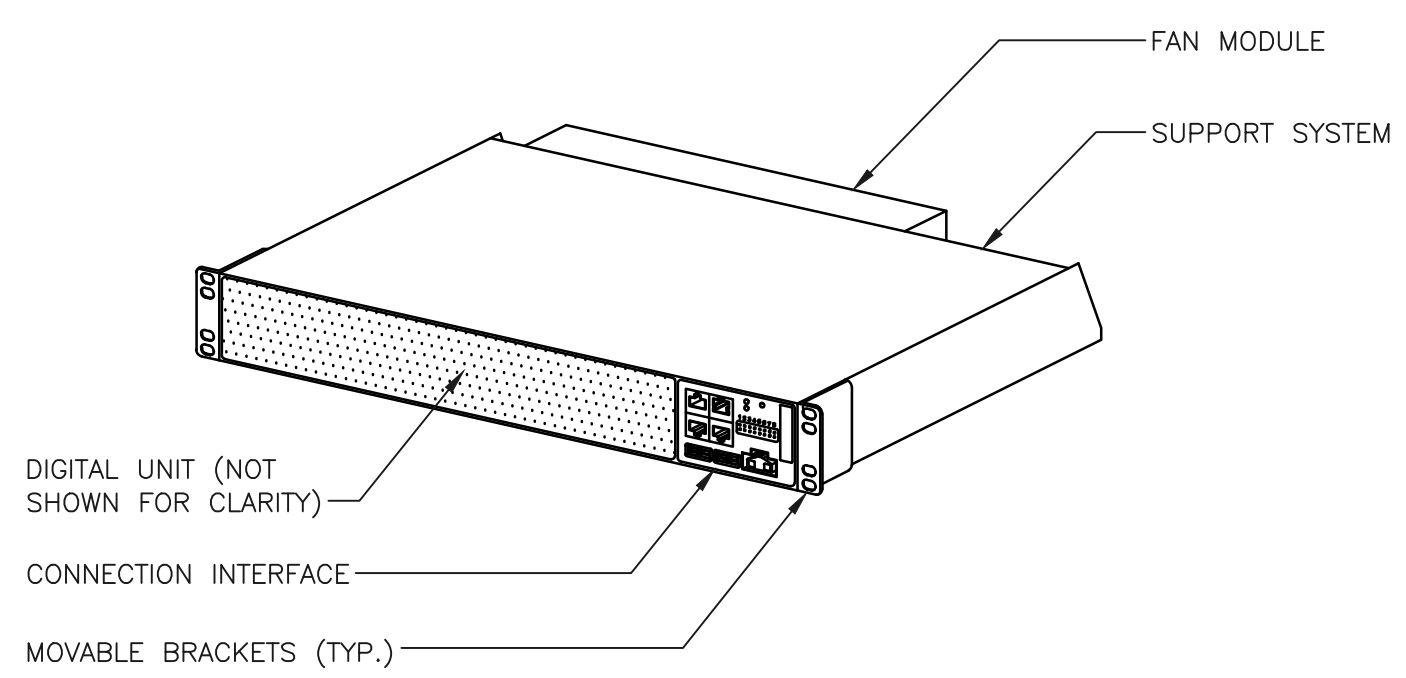
SCALE: N.T.S.



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

RRUS DETAIL

SCALE: N.T.S.

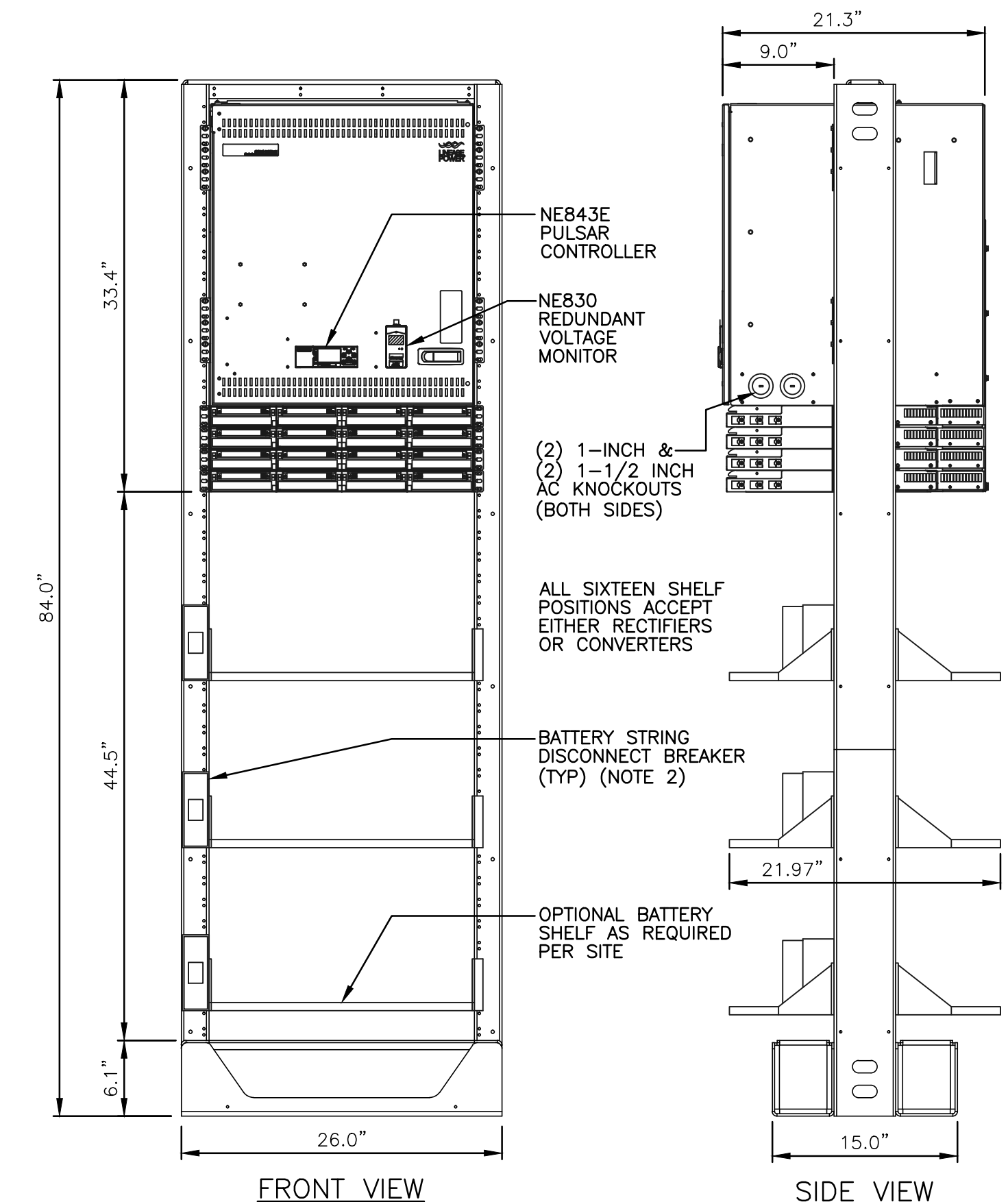


PHYSICAL CHARACTERISTICS	
HEIGHT	2.59" (1.5 U)
WIDTH	19"
DEPTH	13.77"
WEIGHT (FULLY EQUIPPED)	<22 LBS.
COLOR	WHITE

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.



FRONT VIEW

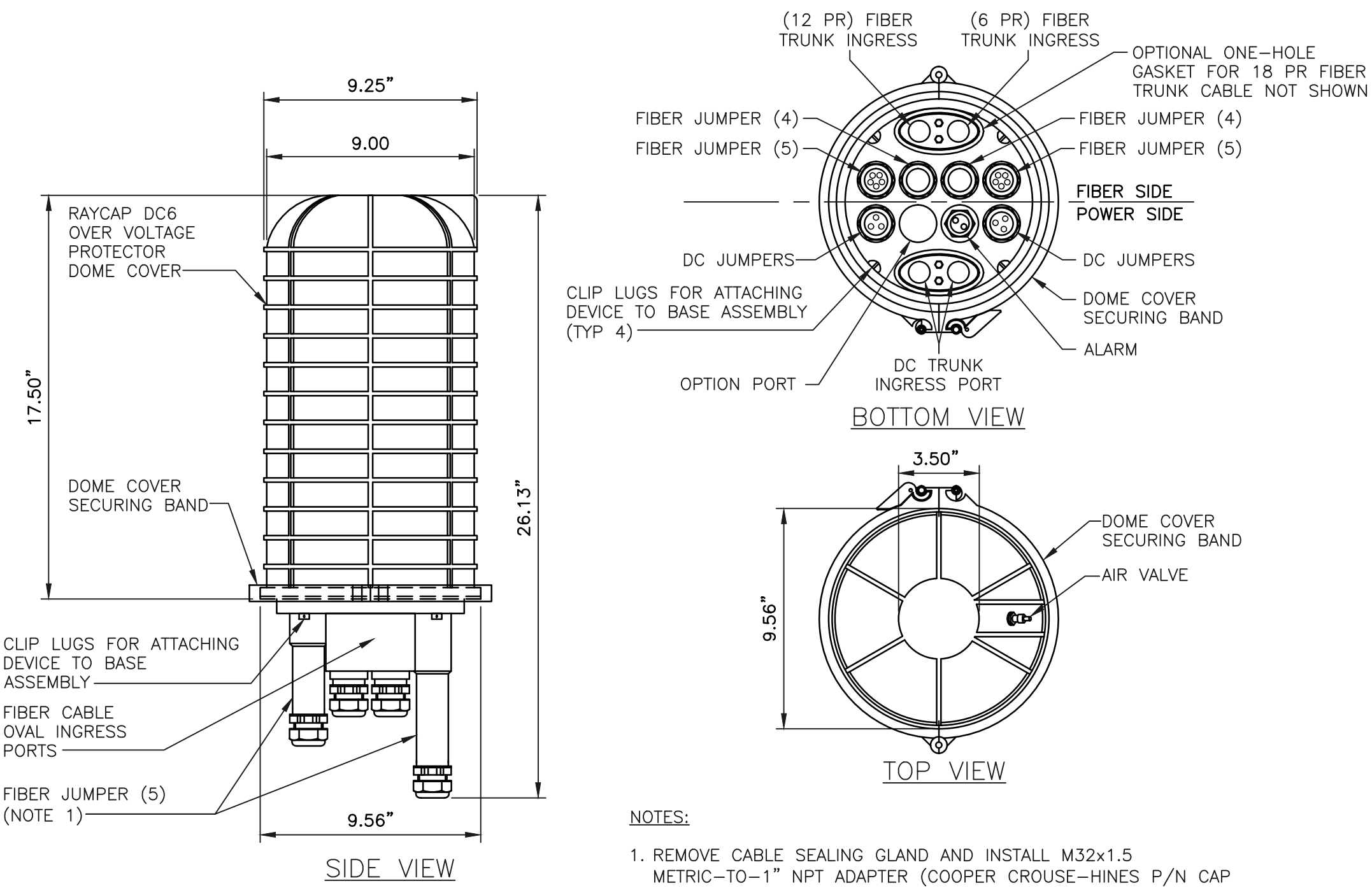
SIDE VIEW

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

DC POWER PLANT DETAIL

SCALE: N.T.S.



BOTTOM VIEW

TOP VIEW

SIDE VIEW

- NOTES:**
- 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.

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 PHONE: 862.209.4300
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 telecom
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 BILLERICA, MA 01821

SITE NUMBER: CT2166
SITE NAME: NAUGATUCK SOUTH MAIN
 585 SOUTH MAIN STREET
 NAUGATUCK, CT 06770
 NEW HAVEN COUNTY

at&t
 MOBILITY
 550 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/15/14	INITIAL SUBMISSION	CJT	NDB	NDB

SCALE: AS SHOWN DESIGNED BY: CJT DRAWN BY: PAV

SEAL:
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 CT LICENSE NO. 28643

AT&T
 DRAWING TITLE:
DETAILS
 JOB NUMBER: 14009-EMP DRAWING NUMBER: A-4 REV: 0

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

PROPOSED LTE ANTENNA MOUNTED TO PROPOSED SECTOR FRAME (TYP. FOR 2 PER SECTOR, TOTAL OF 4)

RRUs MOUNTED BEHIND ANTENNAS ON PROPOSED PIPE:
 • (4) NEW RRUs PER SECTOR (8 TOTAL)
 • (1) RELOCATED RRU PER SECTOR (2 TOTAL)
 • (1) NEW A2 MODULE PER SECTOR (2 TOTAL)

EXISTING RELOCATED UMTS ANTENNA & TMAs MOUNTED TO PROPOSED SECTOR FRAME (TYP. FOR 1 PER SECTOR, TOTAL OF 2)

PROPOSED AT&T SECTOR MOUNTING PLATFORM (COMMSCOPE PART #MTC3607)

DC-6 SQUID MOUNTED TO PROPOSED VERTICAL PIPE (1 PER SECTOR, 2 TOTAL)

PROPOSED ANTENNA MOUNTING DETAIL (FRONT VIEW)
SCALE: N.T.S.

AT&T ANTENNA MOUNTED TO PROPOSED SECTOR FRAME (TYP. FOR 3 PER SECTOR, TOTAL OF 6)

RRUs MOUNTED BEHIND ANTENNAS ON PROPOSED PIPE:
 • (4) NEW RRUs PER SECTOR (8 TOTAL)
 • (1) RELOCATED RRU PER SECTOR (2 TOTAL)
 • (1) NEW A2 MODULE PER SECTOR (2 TOTAL)

DC-6 SQUID MOUNTED TO PROPOSED VERTICAL PIPE (1 PER SECTOR, 2 TOTAL)

EXISTING MONOPOLE

PROPOSED AT&T SECTOR MOUNTING PLATFORM (COMMSCOPE PART #MTC3607)

PROPOSED ANTENNA MOUNTING DETAIL (SIDE VIEW)
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	A3	-	-	-
	A4	POWERWAVE	7770	55"x11"x5"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	B3	-	-	-
	B4	POWERWAVE	7770	55"x11"x5"
GAMMA	N/A	-	-	-

PROPOSED ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	CCI	HPA-65R-BUU-H6	72"x14.8"x7.4"
	A3	-	-	-
	A4	CCI	HPA-65R-BUU-H6	72"x14.8"x7.4"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	CCI	HPA-65R-BUU-H6	72"x14.8"x7.4"
	B3	-	-	-
	B4	CCI	HPA-65R-BUU-H6	72"x14.8"x7.4"
GAMMA	N/A	-	-	-

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	19.7"x16.9"x7.2"		
	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	19.7"x16.9"x7.2"		
	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	N/A	N/A	-	-	-

***TWO SECTOR SITE; NO EXISTING/PROPOSED GAMMA SECTOR**

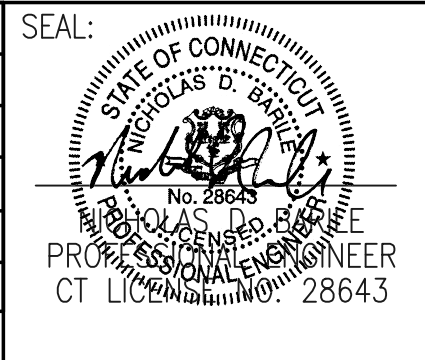
PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING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



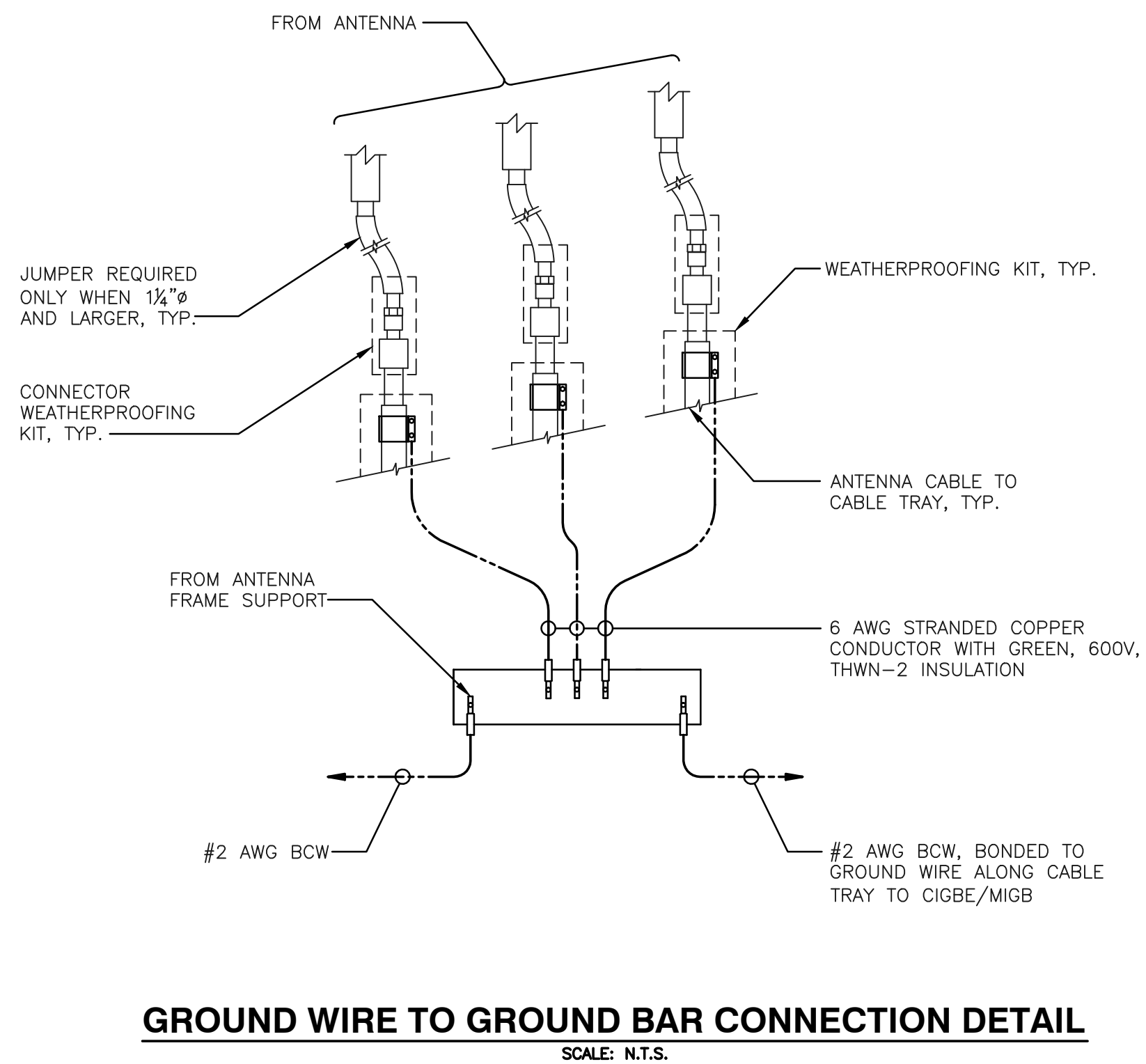
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SITE NAME: NAUGATUCK SOUTH MAIN
 585 SOUTH MAIN STREET
 NAUGATUCK, CT 06770
 NEW HAVEN COUNTY



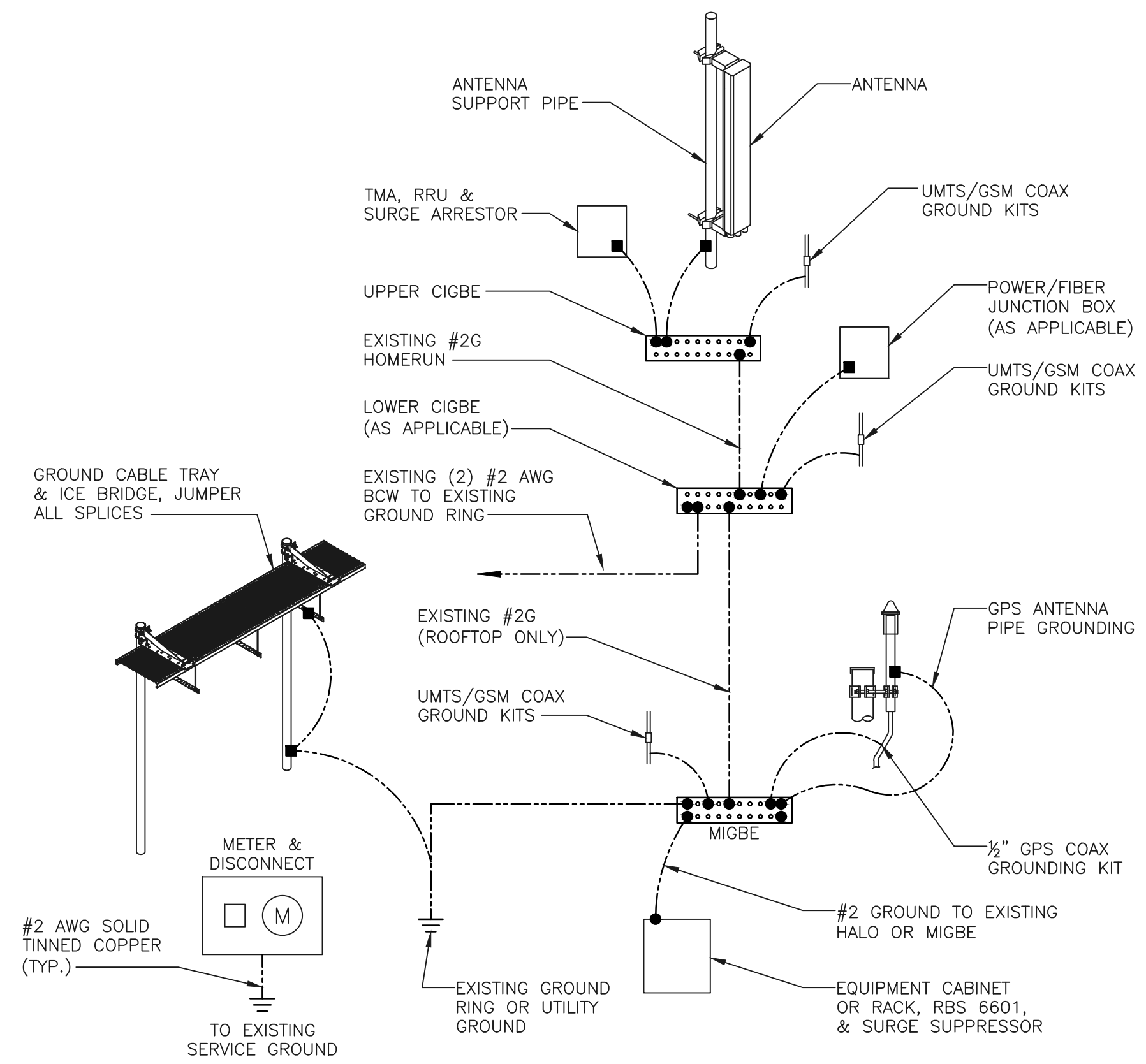
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		



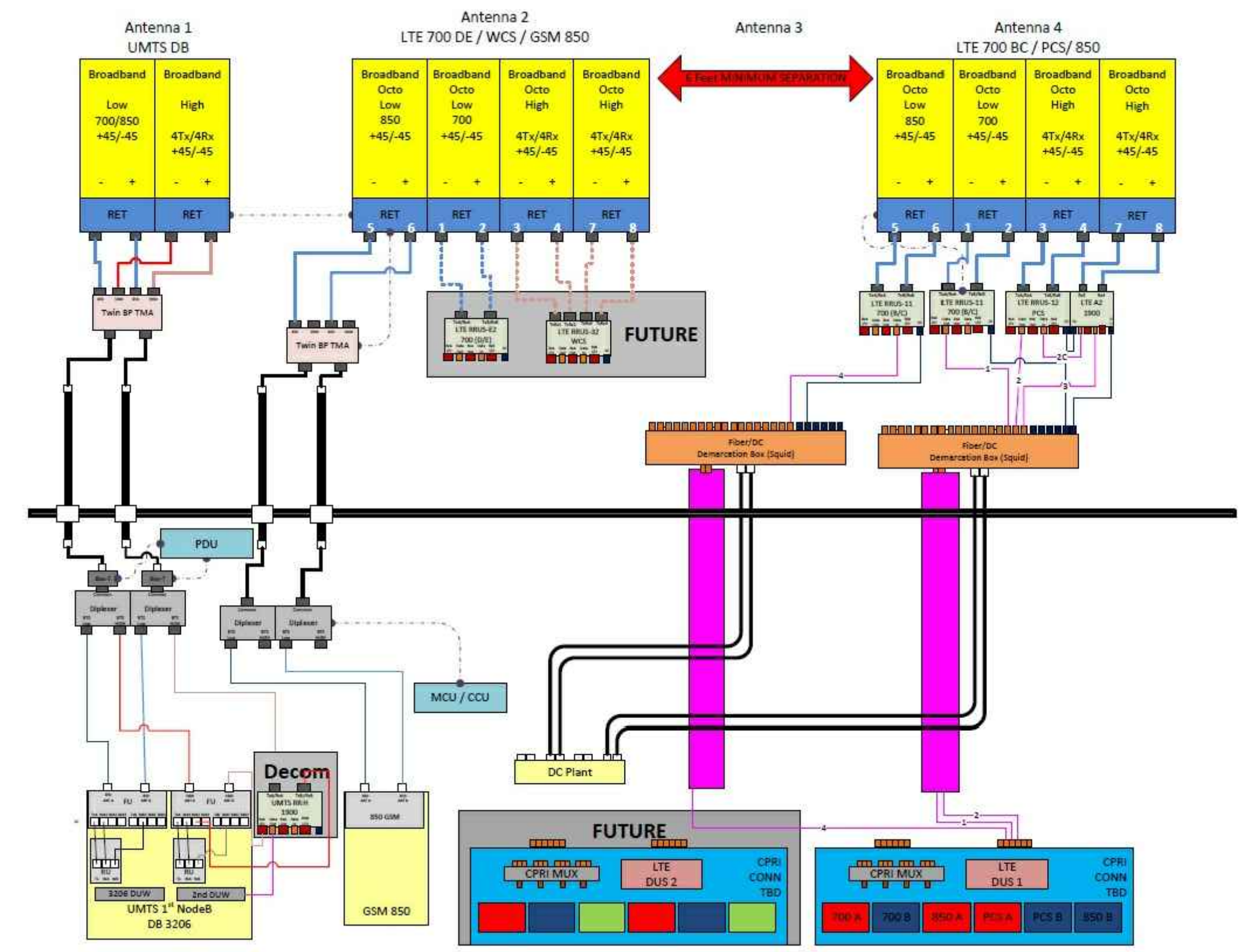
AT&T		
DRAWING TITLE: ANTENNA MOUNTING DETAILS		
JOB NUMBER 14009-EMP	DRAWING NUMBER A-5	REV 0



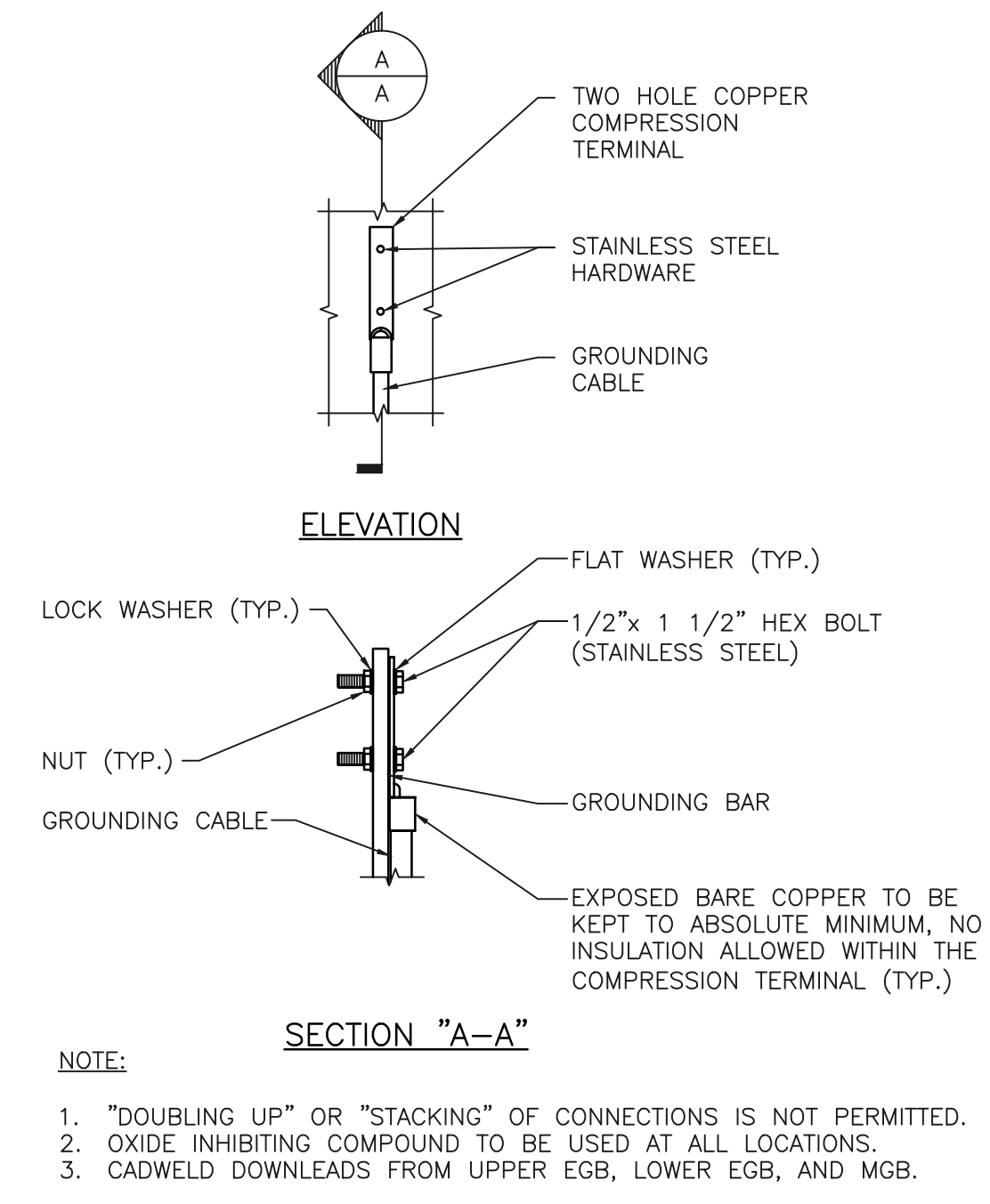
GROUND WIRE TO GROUND BAR CONNECTION DETAIL
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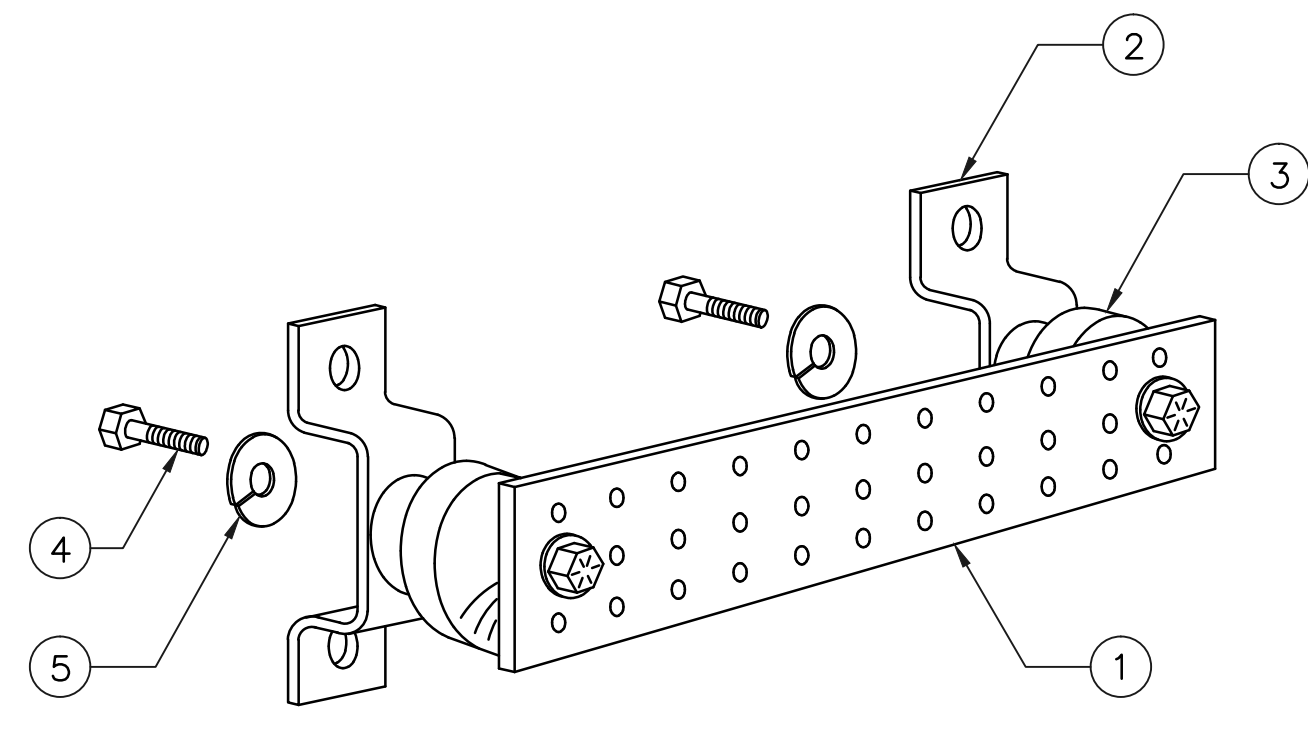
GROUNDING RISER DIAGRAM
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PLUMBING DIAGRAM
SCALE: N.T.S.



TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

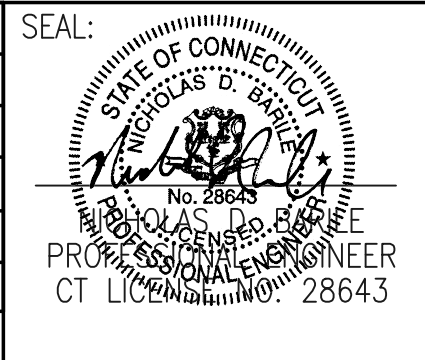


ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x 1/4")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	5/8"-11x1" H.H.C.S.
5	4	5/8" LOCK WASHER

- 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.

NO.	DATE	REVISIONS	BY	CHK	APP'D
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SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: PAV		





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Structural Analysis Report

Structure : 49 ft Monopole
ATC Site Name : Naugatuck (telephone Pole), CT
ATC Site Number : 302526
Engineering Number : 60737621
Proposed Carrier : AT&T Mobility
Carrier Site Name : Naugatuck South Main
Carrier Site Number : CT2166/FA#10035065
Site Location : 585 South Main St.
Naugatuck, CT 06770-4725
41.47844, -73.04850
County : New Haven
Date : November 25, 2014
Max Usage : 66%
Result : Pass

Kyle Klabunde
Structural Engineer I





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CORPORATION

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Structural Analysis Report

Structure : 49 ft Monopole

ATC Site Name : Naugatuck (telephone Pole), CT

ATC Site Number : 302526

Engineering Number : 60737621

Proposed Carrier : AT&T Mobility

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Kyle Klabunde
Structural Engineer I

Table of Contents

Introduction	1
Supporting Documents	1
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Conclusion.....	1
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Deflection, Twist, and Sway.....	3
Standard Conditions	4
Calculations	Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 49 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	EEI Job #11696, dated January 22, 2001
Foundation Drawing	EEI Job #11696, dated June 5, 2003
Geotechnical Report	CET Project #07729-76, dated March 28, 2003
Modifications	N/A

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/TIA-222.

Basic Wind Speed:	100 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1

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					
49.0	52.0	6	CCI DTMABP7819VG12A	Low Profile Platform	(2) 1 5/8" Coax (2) 0.78" 8 AWG 6	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		4	Ericsson RRUS 11 (Band 12)(55 lb)			
		2	Powerwave Allgon 7770.00			
40.0	40.0	6	RFS FD9R6004/1C-3L	Low Profile Platform	(12) 1 5/8" Coax	Verizon Wireless
		3	Ryma MGD3-800T0			
		6	Decibel DB844H80E-XY			
		3	Antel BXA-70063/4CF			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
49.0	52.0	2	Ericsson RRUS 11 (Band 12) (55 lb)	-	(4) 1 5/8" Coax (1) 3/8" Coax (1) 0.39" Cable	AT&T Mobility
		5	Powerwave Allgon LGP13519			
		4	KMW AM-X-CD-16-65-00T-RET			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
49.0	52.0	4	Powerwave Allgon CM1007-DBPXBC-003	Existing Low Profile Platform	(6) 1.24" 4 AWG 6 (1) 0.51" Hybrid	AT&T Mobility
		2	Ericsson RRUS A2			
		2	Raycap DC6-48-60-18-8F			
		2	Ericsson RRUS 32 B30			
		2	Ericsson RRUS 12			
		2	Ericsson RRUS E2 B29			
		4	CCI OPA-65R-LCUU-H6			

¹Mount 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 inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	46%	Pass
Shaft	66%	Pass
Base Plate	59%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	288.5	389.5	291.6	75%
Shear (Kips)	7.0	9.5	6.7	71%

* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
49.0	0.369	-0.722

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



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:

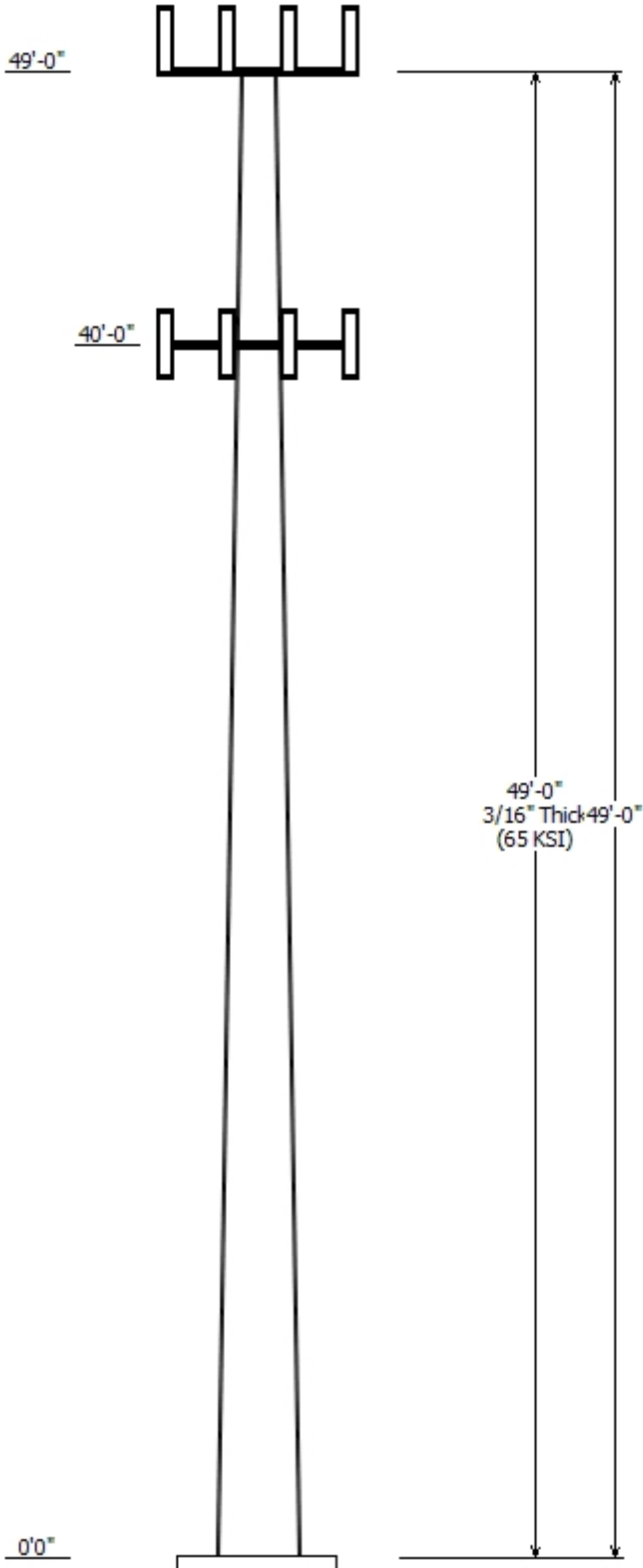
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of Semaan Engineering Solutions, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Semaan Engineering Solutions Holdings 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 Semaan Engineering Solutions, 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. Semaan Engineering Solutions Holdings is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

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Job Information	
Pole :	302526
Code :	ANSI/TIA-222 Rev G
Description :	49' EEI Monopole
Client :	AT&T Mobility
Struct Class :	II
Location :	Naugatuck (telephone Pole), CT
Shape :	18 Sides
Exposure :	B
Height :	49.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.18370(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap		Steel Grade (ksi)
		Top	Bottom			Length (in)	Taper (in/ft)	
1	49.000	13.99	23.00	0.188		0.000	0.183700	65

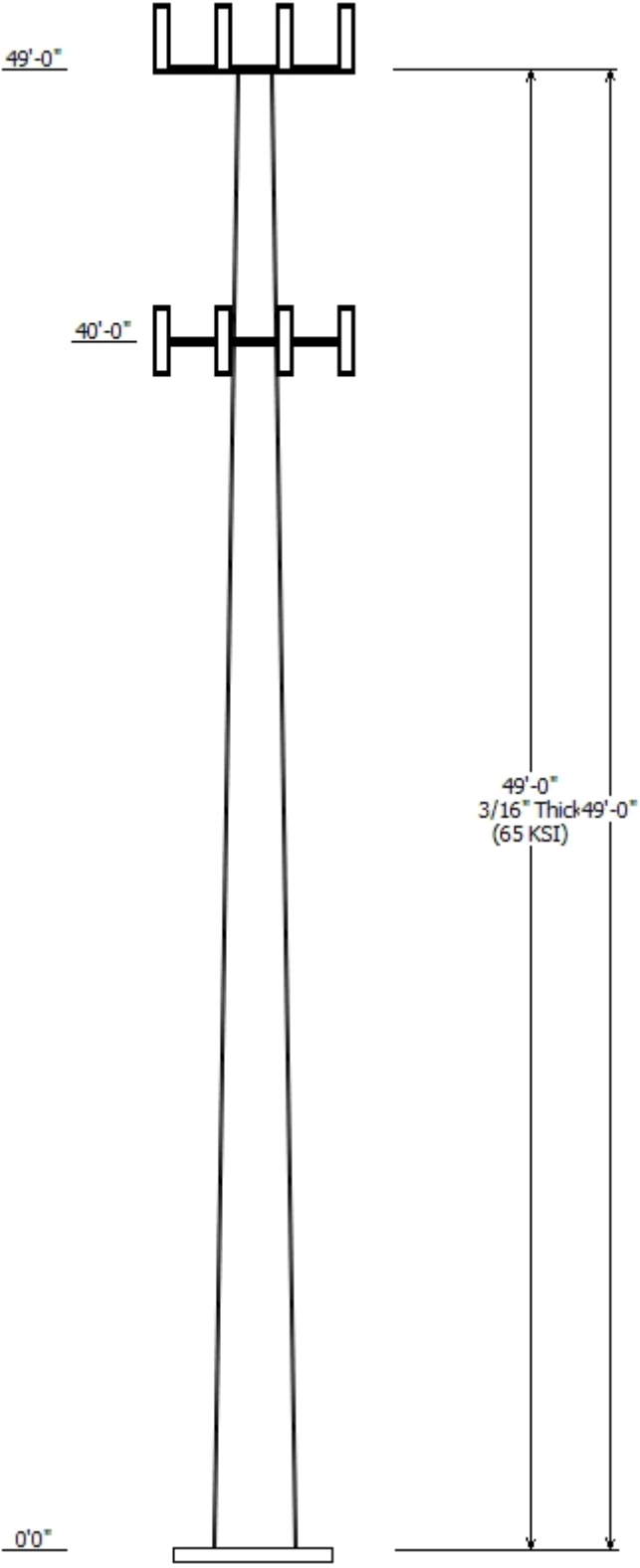
Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
49.000	52.000	4	CCI OPA-65R-LCUU-H6	
49.000	52.000	2	Ericsson RRUS E2 B29	
49.000	52.000	2	Ericsson RRUS 12	
49.000	52.000	2	Ericsson RRUS 32 B30	
49.000	52.000	2	Ericsson RRUS A2	
49.000	52.000	4	Powerwave CM1007-DBPXBC-	
49.000	52.000	2	Raycap DC6-48-60-18-8F	
49.000	52.000	2	Powerwave Allgon 7770.00	
49.000	52.000	6	CCI DTMABP7819VG12A	
49.000	52.000	1	Raycap DC6-48-60-18-8F	
49.000	52.000	4	Ericsson RRUS 11 (Band 12)	
49.000	49.000	1	Flat Low Profile Platform	
40.000	40.000	6	RFS FD9R6004/1C-3L	
40.000	40.000	3	Antel BXA-70063/4CF	
40.000	40.000	3	Rym sa MGD3-800T0	
40.000	40.000	1	Flat Low Profile Platform	
40.000	40.000	6	Decibel DB844H80E-XY	

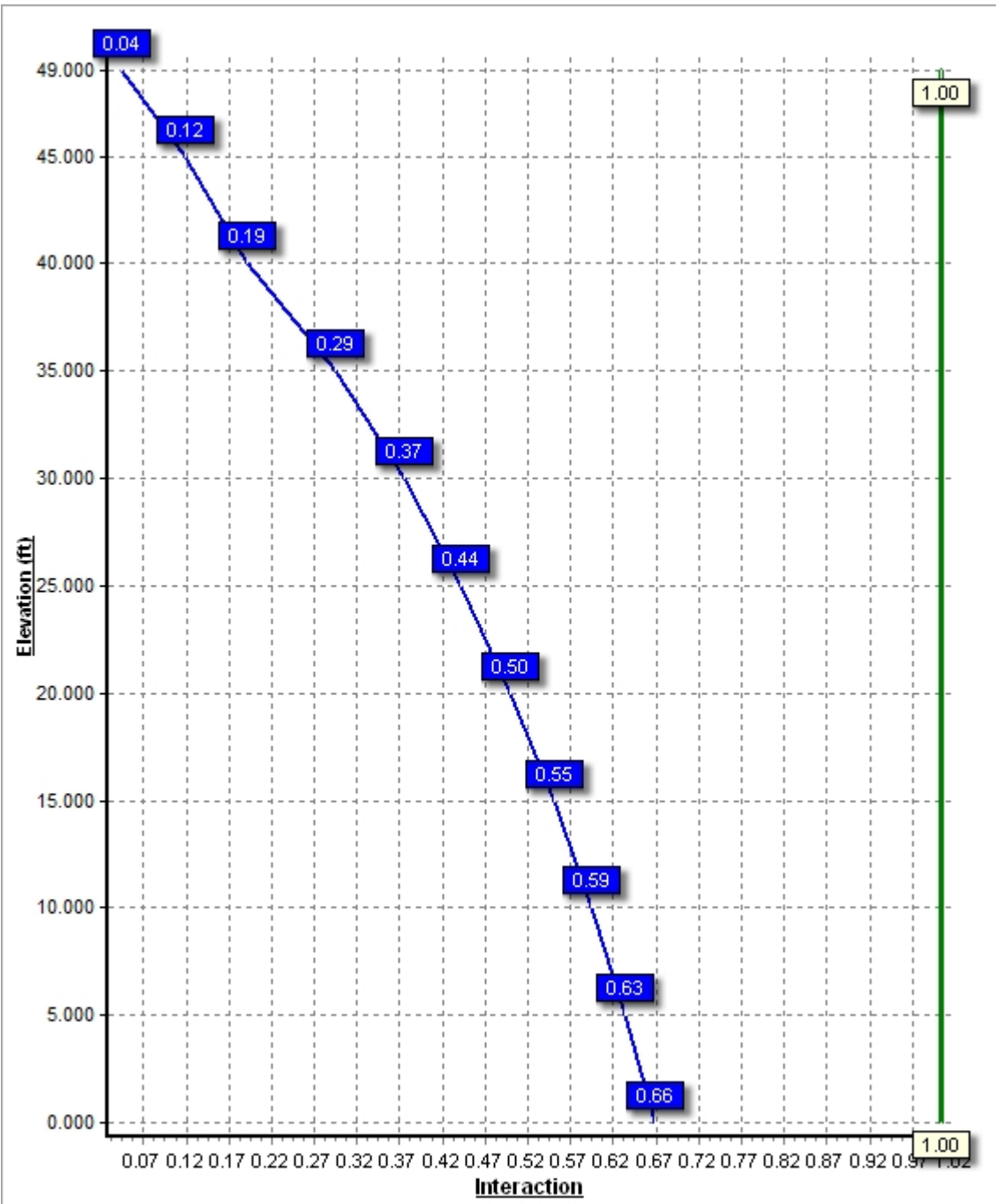
Linear Appurtenance				
Elev (ft)		Description	Exposed To Wind	
From	To			
0.000	40.000	1 5/8" Coax	No	
0.000	49.000	0.51" Hybrid	No	
0.000	49.000	0.78" 8 AWG 6	No	
0.000	49.000	1 5/8" Coax	No	
0.000	49.000	1.24" 4 AWG 6	No	

Load Cases	
1.2D + 1.6W	100.00 mph with No Ice
0.9D + 1.6W	100.00 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50.00 mph with 0.75 in Radial Ice
1.0D + 1.0W	60.00 mph Serviceability

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	291.58	6.74	8.43
0.9D + 1.6W	289.13	6.73	6.31
1.2D + 1.0Di + 1.0Wi	81.91	1.87	14.14
1.0D + 1.0W	65.27	1.51	7.04

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000

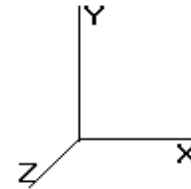




Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top											
							Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)					
1-18	49.000	0.1875	65		0.00	1,817	23.00	0.00	13.58	892.6	20.22	122.67	13.99	49.00	8.22	198.1	11.75	74.66	0.183700					
Shaft Weight						1,817																		

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
49.00	CCI DTMABP7819VG12A	6	19.20	0.970	0.67	48.23	1.342	0.67	0.000	3.000
49.00	CCI OPA-65R-LCUU-H6	4	73.00	9.660	0.79	276.46	10.874	0.79	0.000	3.000
49.00	Ericsson RRUS 11 (Band 12)	4	55.00	2.520	0.71	125.08	3.091	0.71	0.000	3.000
49.00	Ericsson RRUS 12	2	50.00	3.150	0.70	112.48	4.190	0.70	0.000	3.000
49.00	Ericsson RRUS 32 B30	2	60.00	2.690	0.78	127.90	3.624	0.78	0.000	3.000
49.00	Ericsson RRUS A2	2	15.00	1.600	0.62	47.53	2.349	0.62	0.000	3.000
49.00	Ericsson RRUS E2 B29	2	60.00	3.150	0.00	134.98	4.190	7.00	0.000	3.000
49.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,080.50	43.206	1.00	0.000	0.000
49.00	Powerwave Allgon 7770.00	2	35.00	5.510	0.77	152.89	6.441	0.77	0.000	3.000
49.00	Powerwave CM1007-	4	6.50	0.430	0.84	22.01	0.626	0.84	0.000	3.000
49.00	Raycap DC6-48-60-18-8F	2	31.80	2.200	1.00	112.95	2.778	1.00	0.000	3.000
49.00	Raycap DC6-48-60-18-8F	1	31.80	2.200	1.00	112.95	2.778	1.00	0.000	3.000
40.00	Antel BXA-70063/4CF	3	9.90	4.710	0.76	111.76	5.541	0.76	0.000	0.000
40.00	Decibel DB844H80E-XY	6	14.00	3.610	0.92	108.01	3.806	0.92	0.000	0.000
40.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,068.84	42.862	1.00	0.000	0.000
40.00	RFS FD9R6004/1C-3L	6	3.10	0.370	0.62	13.77	0.542	0.62	0.000	0.000
40.00	Rymrsa MGD3-800T0	3	19.80	3.450	0.82	95.16	4.295	0.82	0.000	0.000
Totals		51	4380.30			8,974.73			Number of Loadings : 17	

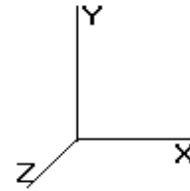
Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Exposed Width (in)	Exposed To Wind
0.00	49.00	(1) 0.51" Hybrid	0.00	N
0.00	49.00	(2) 0.78" 8 AWG 6	0.00	N
0.00	49.00	(2) 1 5/8" Coax	0.00	N
0.00	49.00	(6) 1.24" 4 AWG 6	0.00	N
0.00	40.00	(12) 1 5/8" Coax	0.00	N

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.6W 100.00 mph with No Ice 17 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

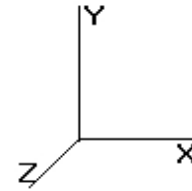
Wind Load Factor : 1.60

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	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		1.00	0.70	17.024	18.72	162.83	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.024	18.72	156.33	0.650	0.000	5.00	9.537	6.20	185.7	0.0	271.6
10.00		1.00	0.70	17.024	18.72	149.82	0.650	0.000	5.00	9.148	5.95	178.2	0.0	260.4
15.00		1.00	0.70	17.024	18.72	143.32	0.650	0.000	5.00	8.760	5.69	170.6	0.0	249.3
20.00		1.00	0.70	17.024	18.72	136.82	0.650	0.000	5.00	8.371	5.44	163.0	0.0	238.1
25.00		1.00	0.70	17.024	18.72	130.32	0.650	0.000	5.00	7.982	5.19	155.5	0.0	227.0
30.00		1.00	0.70	17.038	18.74	123.87	0.650	0.000	5.00	7.594	4.94	148.0	0.0	215.8
35.00		1.00	0.73	17.806	19.58	119.97	0.650	0.000	5.00	7.205	4.68	146.8	0.0	204.6
40.00	Appertunance(s)	1.00	0.76	18.498	20.34	115.51	0.650	0.000	5.00	6.817	4.43	144.3	0.0	193.5
45.00		1.00	0.78	19.131	21.04	110.57	0.650	0.000	5.00	6.428	4.18	140.7	0.0	182.3
49.00	Appertunance(s)	1.00	0.80	19.602	21.56	106.34	0.650	0.000	4.00	4.863	3.16	109.0	0.0	137.8
Totals:									49.00			1,541.8	0.0	2,180.4

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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Load Case: 1.2D + 1.6W 100.00 mph with No Ice 17 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

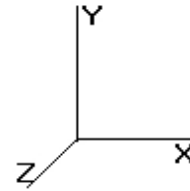
Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Ka	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
40.00	Decibel DB844H80E-	6	18.498	20.348	0.92	0.80	15.94	0.000	0.000	519.01	0.00	0.00	100.80
40.00	Flat Low Profile Pla	1	18.498	20.348	1.00	1.00	26.10	0.000	0.000	849.72	0.00	0.00	1,800.00
40.00	Rymsa MGD3-800T0	3	18.498	20.348	0.82	0.80	6.79	0.000	0.000	221.05	0.00	0.00	71.28
40.00	Antel BXA-70063/4CF	3	18.498	20.348	0.76	0.80	8.59	0.000	0.000	279.69	0.00	0.00	35.64
40.00	RFS FD9R6004/1C-3L	6	18.498	20.348	0.62	0.80	1.10	0.000	0.000	35.85	0.00	0.00	22.32
49.00	Ericsson RRUS 11 (Ba	4	19.938	21.932	0.71	0.90	6.44	0.000	3.000	226.02	0.00	678.07	264.00
49.00	Raycap DC6-48-60-18-	1	19.938	21.932	1.00	0.90	1.98	0.000	3.000	69.48	0.00	208.44	38.16
49.00	CCI	6	19.938	21.932	0.67	0.80	3.12	0.000	3.000	109.47	0.00	328.40	138.24
49.00	Powerwave Allgon 777	2	19.938	21.932	0.77	0.90	7.64	0.000	3.000	267.98	0.00	803.95	84.00
49.00	Raycap DC6-48-60-18-	2	19.938	21.932	1.00	0.90	3.96	0.000	3.000	138.96	0.00	416.88	76.32
49.00	Powerwave CM1007-	4	19.938	21.932	0.84	0.90	1.30	0.000	3.000	45.63	0.00	136.89	31.20
49.00	Ericsson RRUS A2	2	19.938	21.932	0.62	0.90	1.79	0.000	3.000	62.66	0.00	187.97	36.00
49.00	Ericsson RRUS 32 B30	2	19.938	21.932	0.78	0.90	3.78	0.000	3.000	132.53	0.00	397.59	144.00
49.00	Ericsson RRUS 12	2	19.938	21.932	0.70	0.90	3.97	0.000	3.000	139.28	0.00	417.83	120.00
49.00	Ericsson RRUS E2 B29	2	19.938	21.932	0.00	0.90	5.67	0.000	3.000	198.96	0.00	596.89	144.00
49.00	CCI OPA-65R-LCUU-H6	4	19.938	21.932	0.79	0.90	27.47	0.000	3.000	964.05	0.00	2,892.15	350.40
49.00	Flat Low Profile Pla	1	19.602	21.563	1.00	1.00	26.10	0.000	0.000	900.45	0.00	0.00	1,800.00
										5,160.79			5,256.36

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.6W 100.00 mph with No Ice 17 Iterations
 Gust Response Factor : 1.10 Wind Importance Factor : 1.00
 Dead Load Factor : 1.20
 Wind Load Factor : 1.60

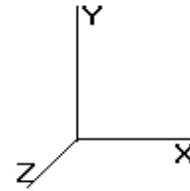
Applied Segment Forces Summary

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	185.73	386.18	0.00	0.00
10.00	178.17	375.02	0.00	0.00
15.00	170.60	363.86	0.00	0.00
20.00	163.03	352.70	0.00	0.00
25.00	155.46	341.55	0.00	0.00
30.00	148.02	330.39	0.00	0.00
35.00	146.77	319.23	0.00	0.00
40.00	2,049.57	2,338.11	0.00	0.00
45.00	140.68	237.87	0.00	0.00
49.00	3,364.51	3,408.58	0.00	7,065.06
Totals:	6,702.54	8,453.50	0.00	7,065.06

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.6W 100.00 mph with No Ice 17 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

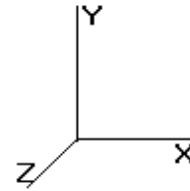
Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-8.43	-6.74	0.00	-291.58	0.00	291.58	948.37	474.19	888.66	444.99	0.00	0.00	0.664
5.00	-7.99	-6.61	0.00	-257.91	0.00	257.91	922.10	461.05	828.97	415.10	0.24	-0.44	0.630
10.00	-7.57	-6.48	0.00	-224.86	0.00	224.86	894.83	447.42	770.42	385.78	0.93	-0.87	0.592
15.00	-7.16	-6.36	0.00	-192.44	0.00	192.44	866.56	433.28	713.12	357.09	2.08	-1.30	0.547
20.00	-6.77	-6.24	0.00	-160.64	0.00	160.64	837.29	418.65	657.19	329.08	3.66	-1.71	0.496
25.00	-6.39	-6.11	0.00	-129.47	0.00	129.47	805.56	402.78	601.65	301.27	5.67	-2.11	0.438
30.00	-6.04	-5.98	0.00	-98.92	0.00	98.92	764.96	382.48	542.22	271.51	8.08	-2.46	0.372
35.00	-5.70	-5.85	0.00	-69.00	0.00	69.00	724.35	362.17	485.89	243.30	10.83	-2.77	0.292
40.00	-3.45	-3.70	0.00	-39.75	0.00	39.75	683.74	341.87	432.64	216.64	13.86	-3.00	0.189
45.00	-3.22	-3.55	0.00	-21.26	0.00	21.26	643.13	321.56	382.49	191.53	17.10	-3.16	0.116
49.00	0.00	-3.36	0.00	-7.07	0.00	7.07	610.64	305.32	344.59	172.55	19.78	-3.23	0.041

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 0.9D + 1.6W 100.00 mph with No Ice (Reduced DL) 17 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

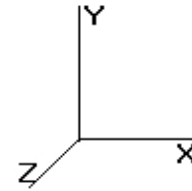
Wind Load Factor : 1.60

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	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		1.00	0.70	17.024	18.72	162.83	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.024	18.72	156.33	0.650	0.000	5.00	9.537	6.20	185.7	0.0	203.7
10.00		1.00	0.70	17.024	18.72	149.82	0.650	0.000	5.00	9.148	5.95	178.2	0.0	195.3
15.00		1.00	0.70	17.024	18.72	143.32	0.650	0.000	5.00	8.760	5.69	170.6	0.0	187.0
20.00		1.00	0.70	17.024	18.72	136.82	0.650	0.000	5.00	8.371	5.44	163.0	0.0	178.6
25.00		1.00	0.70	17.024	18.72	130.32	0.650	0.000	5.00	7.982	5.19	155.5	0.0	170.2
30.00		1.00	0.70	17.038	18.74	123.87	0.650	0.000	5.00	7.594	4.94	148.0	0.0	161.8
35.00		1.00	0.73	17.806	19.58	119.97	0.650	0.000	5.00	7.205	4.68	146.8	0.0	153.5
40.00	Appertunance(s)	1.00	0.76	18.498	20.34	115.51	0.650	0.000	5.00	6.817	4.43	144.3	0.0	145.1
45.00		1.00	0.78	19.131	21.04	110.57	0.650	0.000	5.00	6.428	4.18	140.7	0.0	136.7
49.00	Appertunance(s)	1.00	0.80	19.602	21.56	106.34	0.650	0.000	4.00	4.863	3.16	109.0	0.0	103.4
Totals:									49.00			1,541.8	0.0	1,635.3

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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Load Case: 0.9D + 1.6W 100.00 mph with No Ice (Reduced DL) 17 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

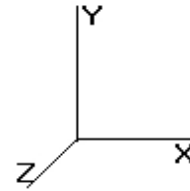
Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Ka	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
40.00	Decibel DB844H80E-	6	18.498	20.348	0.92	0.80	15.94	0.000	0.000	519.01	0.00	0.00	75.60
40.00	Flat Low Profile Pla	1	18.498	20.348	1.00	1.00	26.10	0.000	0.000	849.72	0.00	0.00	1,350.00
40.00	Rymsa MGD3-800T0	3	18.498	20.348	0.82	0.80	6.79	0.000	0.000	221.05	0.00	0.00	53.46
40.00	Antel BXA-70063/4CF	3	18.498	20.348	0.76	0.80	8.59	0.000	0.000	279.69	0.00	0.00	26.73
40.00	RFS FD9R6004/1C-3L	6	18.498	20.348	0.62	0.80	1.10	0.000	0.000	35.85	0.00	0.00	16.74
49.00	Ericsson RRUS 11 (Ba	4	19.938	21.932	0.71	0.90	6.44	0.000	3.000	226.02	0.00	678.07	198.00
49.00	Raycap DC6-48-60-18-	1	19.938	21.932	1.00	0.90	1.98	0.000	3.000	69.48	0.00	208.44	28.62
49.00	CCI	6	19.938	21.932	0.67	0.80	3.12	0.000	3.000	109.47	0.00	328.40	103.68
49.00	Powerwave Allgon 777	2	19.938	21.932	0.77	0.90	7.64	0.000	3.000	267.98	0.00	803.95	63.00
49.00	Raycap DC6-48-60-18-	2	19.938	21.932	1.00	0.90	3.96	0.000	3.000	138.96	0.00	416.88	57.24
49.00	Powerwave CM1007-	4	19.938	21.932	0.84	0.90	1.30	0.000	3.000	45.63	0.00	136.89	23.40
49.00	Ericsson RRUS A2	2	19.938	21.932	0.62	0.90	1.79	0.000	3.000	62.66	0.00	187.97	27.00
49.00	Ericsson RRUS 32 B30	2	19.938	21.932	0.78	0.90	3.78	0.000	3.000	132.53	0.00	397.59	108.00
49.00	Ericsson RRUS 12	2	19.938	21.932	0.70	0.90	3.97	0.000	3.000	139.28	0.00	417.83	90.00
49.00	Ericsson RRUS E2 B29	2	19.938	21.932	0.00	0.90	5.67	0.000	3.000	198.96	0.00	596.89	108.00
49.00	CCI OPA-65R-LCUU-H6	4	19.938	21.932	0.79	0.90	27.47	0.000	3.000	964.05	0.00	2,892.15	262.80
49.00	Flat Low Profile Pla	1	19.602	21.563	1.00	1.00	26.10	0.000	0.000	900.45	0.00	0.00	1,350.00
										5,160.79			3,942.27

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 0.9D + 1.6W 100.00 mph with No Ice (Reduced DL) 17 Iterations
 Gust Response Factor : 1.10 Wind Importance Factor : 1.00
 Dead Load Factor : 0.90
 Wind Load Factor : 1.60

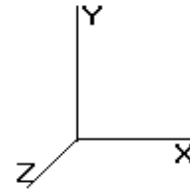
Applied Segment Forces Summary

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	185.73	289.64	0.00	0.00
10.00	178.17	281.27	0.00	0.00
15.00	170.60	272.90	0.00	0.00
20.00	163.03	264.53	0.00	0.00
25.00	155.46	256.16	0.00	0.00
30.00	148.02	247.79	0.00	0.00
35.00	146.77	239.42	0.00	0.00
40.00	2,049.57	1,753.58	0.00	0.00
45.00	140.68	178.40	0.00	0.00
49.00	3,364.51	2,556.44	0.00	7,065.06
Totals:	6,702.54	6,340.12	0.00	7,065.06

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 0.9D + 1.6W 100.00 mph with No Ice (Reduced DL) 17 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

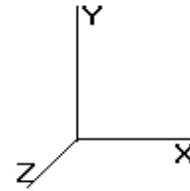
Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-6.31	-6.73	0.00	-289.13	0.00	289.13	948.37	474.19	888.66	444.99	0.00	0.00	0.657
5.00	-5.98	-6.59	0.00	-255.50	0.00	255.50	922.10	461.05	828.97	415.10	0.23	-0.43	0.622
10.00	-5.65	-6.45	0.00	-222.57	0.00	222.57	894.83	447.42	770.42	385.78	0.92	-0.86	0.583
15.00	-5.33	-6.31	0.00	-190.34	0.00	190.34	866.56	433.28	713.12	357.09	2.06	-1.29	0.539
20.00	-5.03	-6.17	0.00	-158.79	0.00	158.79	837.29	418.65	657.19	329.08	3.63	-1.70	0.489
25.00	-4.74	-6.04	0.00	-127.92	0.00	127.92	805.56	402.78	601.65	301.27	5.62	-2.08	0.431
30.00	-4.46	-5.91	0.00	-97.71	0.00	97.71	764.96	382.48	542.22	271.51	7.99	-2.44	0.366
35.00	-4.20	-5.77	0.00	-68.16	0.00	68.16	724.35	362.17	485.89	243.30	10.72	-2.74	0.286
40.00	-2.54	-3.65	0.00	-39.30	0.00	39.30	683.74	341.87	432.64	216.64	13.72	-2.97	0.185
45.00	-2.37	-3.50	0.00	-21.07	0.00	21.07	643.13	321.56	382.49	191.53	16.92	-3.13	0.114
49.00	0.00	-3.36	0.00	-7.07	0.00	7.07	610.64	305.32	344.59	172.55	19.57	-3.19	0.041

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.0Di + 1.0Wi 50.00 mph with 0.75 in Radial Ice 16 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

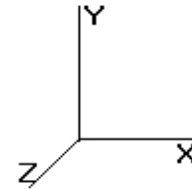
Wind Load Factor : 1.00

Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	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		1.00	0.70	4.256	4.682	0.000	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.682	0.000	1.200	1.242	5.00	10.572	12.69	59.4	181.4	453.0
10.00		1.00	0.70	4.256	4.682	0.000	1.200	1.331	5.00	10.258	12.31	57.6	187.5	447.9
15.00		1.00	0.70	4.256	4.682	0.000	1.200	1.386	5.00	9.915	11.90	55.7	187.7	437.0
20.00		1.00	0.70	4.256	4.682	0.000	1.200	1.427	5.00	9.560	11.47	53.7	185.4	423.5
25.00		1.00	0.70	4.256	4.682	0.000	1.200	1.459	5.00	9.198	11.04	51.7	181.4	408.4
30.00		1.00	0.70	4.260	4.686	0.000	1.200	1.486	5.00	8.832	10.60	49.7	176.5	392.3
35.00		1.00	0.73	4.451	4.897	0.000	1.200	1.509	5.00	8.463	10.16	49.7	170.7	375.4
40.00	Appertunance(s)	1.00	0.76	4.625	5.087	0.000	1.200	1.529	5.00	8.091	9.71	49.4	164.4	357.9
45.00		1.00	0.78	4.783	5.261	0.000	1.200	1.547	5.00	7.717	9.26	48.7	157.6	339.9
49.00	Appertunance(s)	1.00	0.80	4.901	5.391	0.000	1.200	1.560	4.00	5.903	7.08	38.2	121.5	259.4
Totals:									49.00			513.8	1,714.2	3,894.6

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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Load Case: 1.2D + 1.0Di + 1.0Wi 50.00 mph with 0.75 in Radial Ice 16 Iterations

Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00
 Dead Load Factor : 1.20 Ice Importance Factor : 1.00
 Wind Load Factor : 1.00

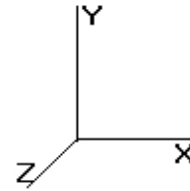
Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Ka	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
40.00	Decibel DB844H80E-	6	4.625	5.087	0.92	0.80	16.81	0.000	0.000	85.51	0.00	0.00	664.84
40.00	Flat Low Profile Pla	1	4.625	5.087	1.00	1.00	42.86	0.000	0.000	218.04	0.00	0.00	2,168.84
40.00	Rymasa MGD3-800T0	3	4.625	5.087	0.82	0.80	8.45	0.000	0.000	43.00	0.00	0.00	297.36
40.00	Antel BXA-70063/4CF	3	4.625	5.087	0.76	0.80	10.11	0.000	0.000	51.41	0.00	0.00	341.22
40.00	RFS FD9R6004/1C-3L	6	4.625	5.087	0.62	0.80	1.61	0.000	0.000	8.21	0.00	0.00	86.34
49.00	Ericsson RRUS 11 (Ba	4	4.984	5.483	0.71	0.90	7.90	0.000	3.000	43.31	0.00	129.94	544.32
49.00	Raycap DC6-48-60-18-	1	4.984	5.483	1.00	0.90	2.50	0.000	3.000	13.71	0.00	41.13	119.31
49.00	CCI	6	4.984	5.483	0.67	0.80	4.32	0.000	3.000	23.67	0.00	71.01	312.39
49.00	Powerwave Allgon 777	2	4.984	5.483	0.77	0.90	8.93	0.000	3.000	48.95	0.00	146.84	319.78
49.00	Raycap DC6-48-60-18-	2	4.984	5.483	1.00	0.90	5.00	0.000	3.000	27.42	0.00	82.26	238.61
49.00	Powerwave CM1007-	4	4.984	5.483	0.84	0.90	1.89	0.000	3.000	10.37	0.00	31.12	93.25
49.00	Ericsson RRUS A2	2	4.984	5.483	0.62	0.90	2.62	0.000	3.000	14.37	0.00	43.12	80.25
49.00	Ericsson RRUS 32 B30	2	4.984	5.483	0.78	0.90	5.09	0.000	3.000	27.89	0.00	83.68	190.00
49.00	Ericsson RRUS 12	2	4.984	5.483	0.70	0.90	5.28	0.000	3.000	28.95	0.00	86.84	182.56
49.00	Ericsson RRUS E2 B29	2	4.984	5.483	7.00	0.90	52.80	0.000	3.000	289.47	0.00	868.42	251.56
49.00	CCI OPA-65R-LCUU-H6	4	4.984	5.483	0.79	0.90	30.93	0.000	3.000	169.56	0.00	508.69	1,164.26
49.00	Flat Low Profile Pla	1	4.901	5.391	1.00	1.00	43.21	0.000	0.000	232.91	0.00	0.00	2,180.50
										1,336.76			9,235.39

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.0Di + 1.0Wi 50.00 mph with 0.75 in Radial Ice 16 Iterations
 Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00
 Dead Load Factor : 1.20 Ice Importance Factor : 1.00
 Wind Load Factor : 1.00

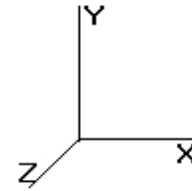
Applied Segment Forces Summary

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	59.39	567.58	0.00	0.00
10.00	57.63	562.50	0.00	0.00
15.00	55.70	551.59	0.00	0.00
20.00	53.71	538.06	0.00	0.00
25.00	51.67	522.97	0.00	0.00
30.00	49.66	506.85	0.00	0.00
35.00	49.72	489.96	0.00	0.00
40.00	455.56	4,031.07	0.00	0.00
45.00	48.72	395.50	0.00	0.00
49.00	968.78	5,980.60	0.00	2,093.06
Totals:	1,850.54	14,146.68	0.00	2,093.06

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.2D + 1.0Di + 1.0Wi 50.00 mph with 0.75 in Radial Ice 16 Iterations

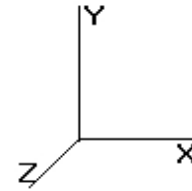
Gust Response Factor : 1.10 Ice Dead Load Factor : 1.00 Wind Importance Factor : 1.00
 Dead Load Factor : 1.20 Ice Importance Factor : 1.00
 Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-14.14	-1.87	0.00	-81.91	0.00	81.91	948.37	474.19	888.66	444.99	0.00	0.00	0.199
5.00	-13.57	-1.83	0.00	-72.58	0.00	72.58	922.10	461.05	828.97	415.10	0.07	-0.12	0.190
10.00	-13.01	-1.80	0.00	-63.41	0.00	63.41	894.83	447.42	770.42	385.78	0.26	-0.25	0.179
15.00	-12.45	-1.77	0.00	-54.39	0.00	54.39	866.56	433.28	713.12	357.09	0.58	-0.37	0.167
20.00	-11.91	-1.74	0.00	-45.54	0.00	45.54	837.29	418.65	657.19	329.08	1.03	-0.48	0.153
25.00	-11.39	-1.70	0.00	-36.86	0.00	36.86	805.56	402.78	601.65	301.27	1.60	-0.59	0.136
30.00	-10.88	-1.66	0.00	-28.35	0.00	28.35	764.96	382.48	542.22	271.51	2.28	-0.70	0.119
35.00	-10.38	-1.62	0.00	-20.03	0.00	20.03	724.35	362.17	485.89	243.30	3.06	-0.79	0.097
40.00	-6.36	-1.12	0.00	-11.92	0.00	11.92	683.74	341.87	432.64	216.64	3.92	-0.85	0.064
45.00	-5.96	-1.06	0.00	-6.35	0.00	6.35	643.13	321.56	382.49	191.53	4.84	-0.90	0.042
49.00	0.00	-0.97	0.00	-2.09	0.00	2.09	610.64	305.32	344.59	172.55	5.61	-0.92	0.012

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
 Height : 49.00 (ft)
 Base Dia : 23.00 (in)
 Top Dia : 13.99 (in)
 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)



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Load Case: 1.0D + 1.0W	60.00 mph Serviceability	16 Iterations
Gust Response Factor : 1.10		Wind Importance Factor : 1.00
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

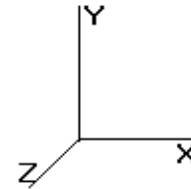
Shaft Segment Forces (Factored)

Seg Top Elev (ft)	Description	Kzt	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		1.00	0.70	6.129	6.742	97.700	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.742	93.799	0.650	0.000	5.00	9.537	6.20	41.8	0.0	226.3
10.00		1.00	0.70	6.129	6.742	89.897	0.650	0.000	5.00	9.148	5.95	40.1	0.0	217.0
15.00		1.00	0.70	6.129	6.742	85.995	0.650	0.000	5.00	8.760	5.69	38.4	0.0	207.7
20.00		1.00	0.70	6.129	6.742	82.094	0.650	0.000	5.00	8.371	5.44	36.7	0.0	198.4
25.00		1.00	0.70	6.129	6.742	78.192	0.650	0.000	5.00	7.982	5.19	35.0	0.0	189.1
30.00		1.00	0.70	6.134	6.747	74.322	0.650	0.000	5.00	7.594	4.94	33.3	0.0	179.8
35.00		1.00	0.73	6.410	7.051	71.986	0.650	0.000	5.00	7.205	4.68	33.0	0.0	170.5
40.00	Appertunance(s)	1.00	0.76	6.659	7.325	69.306	0.650	0.000	5.00	6.817	4.43	32.5	0.0	161.2
45.00		1.00	0.78	6.887	7.576	66.346	0.650	0.000	5.00	6.428	4.18	31.7	0.0	151.9
49.00	Appertunance(s)	1.00	0.80	7.057	7.763	63.808	0.652	0.000	4.00	4.863	3.17	24.6	0.0	114.8
Totals:									49.00			347.0	0.0	1,817.0

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Load Case: 1.0D + 1.0W 60.00 mph Serviceability 16 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

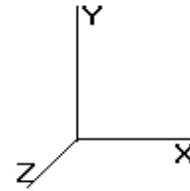
Discrete Appurtenance Segment Forces (Factored)

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Ka	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
40.00	Decibel DB844H80E-	6	6.659	7.325	0.92	0.80	15.94	0.000	0.000	116.78	0.00	0.00	84.00
40.00	Flat Low Profile Pla	1	6.659	7.325	1.00	1.00	26.10	0.000	0.000	191.19	0.00	0.00	1,500.00
40.00	Rymsa MGD3-800T0	3	6.659	7.325	0.82	0.80	6.79	0.000	0.000	49.74	0.00	0.00	59.40
40.00	Antel BXA-70063/4CF	3	6.659	7.325	0.76	0.80	8.59	0.000	0.000	62.93	0.00	0.00	29.70
40.00	RFS FD9R6004/1C-3L	6	6.659	7.325	0.62	0.80	1.10	0.000	0.000	8.07	0.00	0.00	18.60
49.00	Ericsson RRUS 11 (Ba	4	7.178	7.895	0.71	0.90	6.44	0.000	3.000	50.86	0.00	152.57	220.00
49.00	Raycap DC6-48-60-18-	1	7.178	7.895	1.00	0.90	1.98	0.000	3.000	15.63	0.00	46.90	31.80
49.00	CCI	6	7.178	7.895	0.67	0.80	3.12	0.000	3.000	24.63	0.00	73.89	115.20
49.00	Powerwave Allgon 777	2	7.178	7.895	0.77	0.90	7.64	0.000	3.000	60.30	0.00	180.89	70.00
49.00	Raycap DC6-48-60-18-	2	7.178	7.895	1.00	0.90	3.96	0.000	3.000	31.27	0.00	93.80	63.60
49.00	Powerwave CM1007-	4	7.178	7.895	0.84	0.90	1.30	0.000	3.000	10.27	0.00	30.80	26.00
49.00	Ericsson RRUS A2	2	7.178	7.895	0.62	0.90	1.79	0.000	3.000	14.10	0.00	42.29	30.00
49.00	Ericsson RRUS 32 B30	2	7.178	7.895	0.78	0.90	3.78	0.000	3.000	29.82	0.00	89.46	120.00
49.00	Ericsson RRUS 12	2	7.178	7.895	0.70	0.90	3.97	0.000	3.000	31.34	0.00	94.01	100.00
49.00	Ericsson RRUS E2 B29	2	7.178	7.895	0.00	0.90	5.67	0.000	3.000	44.77	0.00	134.30	120.00
49.00	CCI OPA-65R-LCUU-H6	4	7.178	7.895	0.79	0.90	27.47	0.000	3.000	216.91	0.00	650.73	292.00
49.00	Flat Low Profile Pla	1	7.057	7.763	1.00	1.00	26.10	0.000	0.000	202.60	0.00	0.00	1,500.00
										1,161.18			4,380.30

Pole : 302526
 Location : Naugatuck (telephone Pole), CT
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 Shape : 18 Sides
 Taper : 0.183700 (in/ft)

Code: ANSI/TIA-222 Rev G
 Struct Class : II
 Exposure Category : B
 Topographic Category : 1
 Base Elev : 0.000 (ft)

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Load Case: 1.0D + 1.0W 60.00 mph Serviceability 16 Iterations
 Gust Response Factor : 1.10 Wind Importance Factor : 1.00
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

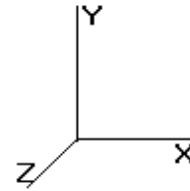
Applied Segment Forces Summary

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	41.79	321.82	0.00	0.00
10.00	40.09	312.52	0.00	0.00
15.00	38.38	303.22	0.00	0.00
20.00	36.68	293.92	0.00	0.00
25.00	34.98	284.62	0.00	0.00
30.00	33.30	275.32	0.00	0.00
35.00	33.02	266.02	0.00	0.00
40.00	461.15	1,948.42	0.00	0.00
45.00	31.65	198.23	0.00	0.00
49.00	757.09	2,840.49	0.00	1,589.64
Totals:	1,508.15	7,044.58	0.00	1,589.64

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Load Case: 1.0D + 1.0W 60.00 mph Serviceability 16 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.00

Wind Load Factor : 1.00

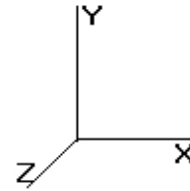
Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-7.04	-1.51	0.00	-65.27	0.00	65.27	948.37	474.19	888.66	444.99	0.00	0.00	0.154
5.00	-6.72	-1.48	0.00	-57.70	0.00	57.70	922.10	461.05	828.97	415.10	0.05	-0.10	0.146
10.00	-6.40	-1.45	0.00	-50.28	0.00	50.28	894.83	447.42	770.42	385.78	0.21	-0.20	0.138
15.00	-6.10	-1.42	0.00	-43.02	0.00	43.02	866.56	433.28	713.12	357.09	0.46	-0.29	0.128
20.00	-5.80	-1.39	0.00	-35.90	0.00	35.90	837.29	418.65	657.19	329.08	0.82	-0.38	0.116
25.00	-5.52	-1.37	0.00	-28.93	0.00	28.93	805.56	402.78	601.65	301.27	1.27	-0.47	0.103
30.00	-5.24	-1.34	0.00	-22.10	0.00	22.10	764.96	382.48	542.22	271.51	1.81	-0.55	0.088
35.00	-4.97	-1.31	0.00	-15.42	0.00	15.42	724.35	362.17	485.89	243.30	2.42	-0.62	0.070
40.00	-3.03	-0.83	0.00	-8.89	0.00	8.89	683.74	341.87	432.64	216.64	3.10	-0.67	0.045
45.00	-2.83	-0.79	0.00	-4.76	0.00	4.76	643.13	321.56	382.49	191.53	3.82	-0.71	0.029
49.00	0.00	-0.76	0.00	-1.59	0.00	1.59	610.64	305.32	344.59	172.55	4.42	-0.72	0.009

Pole : 302526
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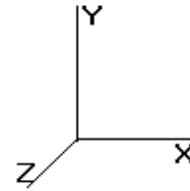
Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	6.74	0.00	8.43	0.00	0.00	291.58	0.00	0.66
0.9D + 1.6W	6.73	0.00	6.31	0.00	0.00	289.13	0.00	0.66
1.2D + 1.0Di + 1.0Wi	1.87	0.00	14.14	0.00	0.00	81.91	0.00	0.20
1.0D + 1.0W	1.51	0.00	7.04	0.00	0.00	65.27	0.00	0.15

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Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
288.50	6.70	7.00	291.58	14.14	6.74	74.87

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
60.0	1.500	37.000	Round	0	0.00	18.250	325.94	554.34	0.59

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
31.00	04	2.25" 18J	2.25	75.00	100.00	Radial	0.00	45.0	116.41	260.00	0.46	109.34	260.00	0.43

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

AT&T Existing Facility

Site ID: CT2166

Naugatuck South Main
585 South Main Street
Naugatuck, CT 06770

December 11, 2014

EBI Project Number: 62146232

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	54.87 %

December 11, 2014

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

Emissions Analysis for Site: **CT2166 – Naugatuck South Main**

EBI Consulting was directed to analyze the proposed AT&T facility located at **585 South Main Street, Naugatuck, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 MHz and 800 MHz Bands are $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the PCS and AWS bands is $1000 \mu\text{W}/\text{cm}^2$. 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 **585 South Main Street, Naugatuck, 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 (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 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.
- 3) 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.
- 4) 1 LTE channel (850 MHz) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts.
- 5) 1 LTE channel (PCS Band – 1900 MHz) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts.
- 6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts.

- 7) 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.
- 8) 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.
- 9) The antennas used in this modeling are the **Powerwave 7770** for 850 MHz and 1900 MHz (PCS) channels and the **CCI OPA-65R-LCUU-H6** 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 7770** has a maximum gain of **13.4 dBd for 850 MHz and 13.4 dBd for 1900 MHz** at its main lobe. The **CCI OPA-65R-LCUU-H6** has a maximum gain of **12.7 dBd for 700 MHz, 12.7 dBd for 850 MHz, 14.8 dBd for 1900 MHz and 15.3 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.
- 10) The antenna mounting height centerlines of the proposed antennas are **52 feet** above ground level (AGL). There are only two sectors for this AT&T facility.
- 11) 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
Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	13.4 / 11.4 dBd	Gain:	15.5 / 13.5 dBd
Height (AGL):	52 feet	Height (AGL):	52 feet
Frequency Bands	1900 MHz(PCS) / 850 MHz	Frequency Bands	1900 MHz(PCS) / 850 MHz
Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120
ERP (W):	1,799.38	ERP (W):	1,799.38
Antenna A1 MPE%	4.62	Antenna B1 MPE%	4.62
Antenna #:	2	Antenna #:	2
Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H6
Gain:	12.7 dBd	Gain:	12.7 dBd
Height (AGL):	52 feet	Height (AGL):	52 feet
Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2
Total TX Power:	60	Total TX Power:	60
ERP (W):	810.05	ERP (W):	810.05
Antenna A2 MPE%	2.51	Antenna B2 MPE%	2.51
Antenna #:	3	Antenna #:	3
Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H6
Gain:	12 / 12.7 / 14.8 dBd	Gain:	12 / 12.7 / 14.8 dBd
Height (AGL):	52 feet	Height (AGL):	52 feet
Frequency Bands	700 MHz / 850 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 850 MHz / 1900 MHz (PCS)
Channel Count	3	Channel Count	3
Total TX Power:	180	Total TX Power:	180
ERP (W):	2,291.84	ERP (W):	2,291.84
Antenna A3 MPE%	9.89	Antenna B3 MPE%	9.89

Site Composite MPE%	
Carrier	MPE%
AT&T	34.04 %
Verizon Wireless	20.83 %
Site Total MPE %:	54.87 %

AT&T Sector 1 Total:	17.02 %
AT&T Sector 2 Total:	17.02 %
Site Total:	34.04 %

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:	17.02 %
Sector 2:	17.02 %
AT&T Total:	34.04 %
Site Total:	54.87 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **54.87%** 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

21 B Street
Burlington, MA 01803