



20 Commercial St

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

July 21, 2015

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

Re: Notice of Exempt Modification Application
605 Willard Avenue
Newington, CT 06111

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 Bass
Vertical Development LLC

CC:

Mayor Stephen Woods 131 Cedar Street Newington, CT 06111	Town of Newington (as Owner) Attn.: Building Department 131 Cedar Street Newington, CT 06111
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siting.council@ct.gov

Notice of Exempt Modification
Newington Central
605 Willard Avenue
Newington, CT 06111

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 180' monopole tower located at 605 Willard Avenue, in the Town of Newington, 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 and install RRHs and related equipment within the fenced tower compound.

The existing 180' monopole located at 605 Willard Avenue, in the Town of Newington, Connecticut (lat. 41.698372 N, long. -72.737147 W) is owned by American Tower Corporation. AT&T's existing facility is located within the Landlord's existing fenced compound. AT&T currently has nine (9) panel antennas (three (3) per sector) with a centerline of 157' 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 will remove three (3) antennas and reuse six (6) Kathrein 800 10121 @850 panel antennas (2 per sector), three (3) RRUs-11 (one per sector) and one (1) DC6 Squid. AT&T plans to add: a new Commscope (MC3607) low profile platform; three (3) CCI OPA-65R-LCUU-H8 panel antennas (1 per sector), three (3) RRUS-12 (1 per sector), and three (3) Ericsson A2 modules (1 per sector). The height of the tower will not be increased and all antennas, surge suppressors, and RRHs will be installed at the 157' centerline.

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 52.77% 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 July 15, 2015). Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 1st and 6th page of the MPE Assessment dated May 21, 2015). 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. American Tower Corporation performed 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 73% (see page 1 of the Structural Analysis Report dated May 1, 2015.)

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.

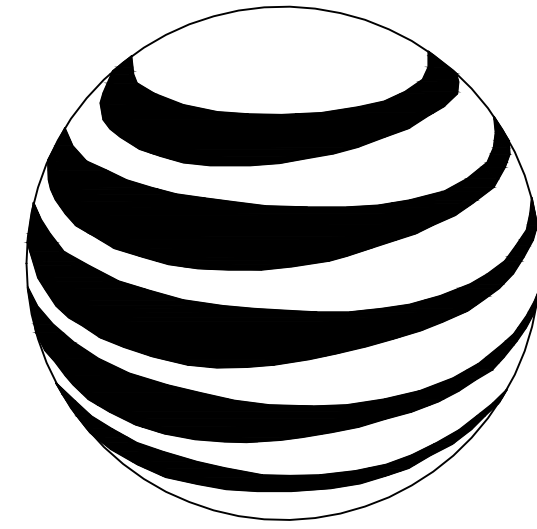
PROJECT INFORMATION

- SCOPE OF WORK:
- REMOVE (1) EXISTING LTE ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE REMOVED. (1) EXISTING ANTENNA PER SECTOR TO BE RELOCATED, (3) ANTENNAS TOTAL TO BE RELOCATED TO NEW MOUNT
 - REMOVE EXISTING ANTENNA MOUNT AND REPLACE WITH COMMSCOPE MC3607 MOUNT
 - NEW AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW ANTENNAS; AT&T RRUs: (1) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW RRUs; (1) EXISTING RRU PER SECTOR TO BE RELOCATED TO NEW MOUNT, FOR A TOTAL OF (3) EXISTING RELOCATED RRUs.
 - (1) NEW A2 MODULE PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW A2 MODULES.

SITE ADDRESS: 605 WILLARD AVENUE
NEWINGTON, CT 06111

LATITUDE: 41.698384 41° 41' 54.1824" N
LONGITUDE: -72.737164 -72° 44' 13.7904" W
USID: 65076

TOWER OWNER:
TYPE OF SITE: MONOPOLE/OUTDOOR EQUIPMENT
MONOPOLE HEIGHT: 180'-0"±
RAD CENTER: 157'-0"±
CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY
PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY



at&t
MOBILITY

FA CODE: 10071165
SITE NUMBER: CT5403
SITE NAME: NEWINGTON CENTRAL

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

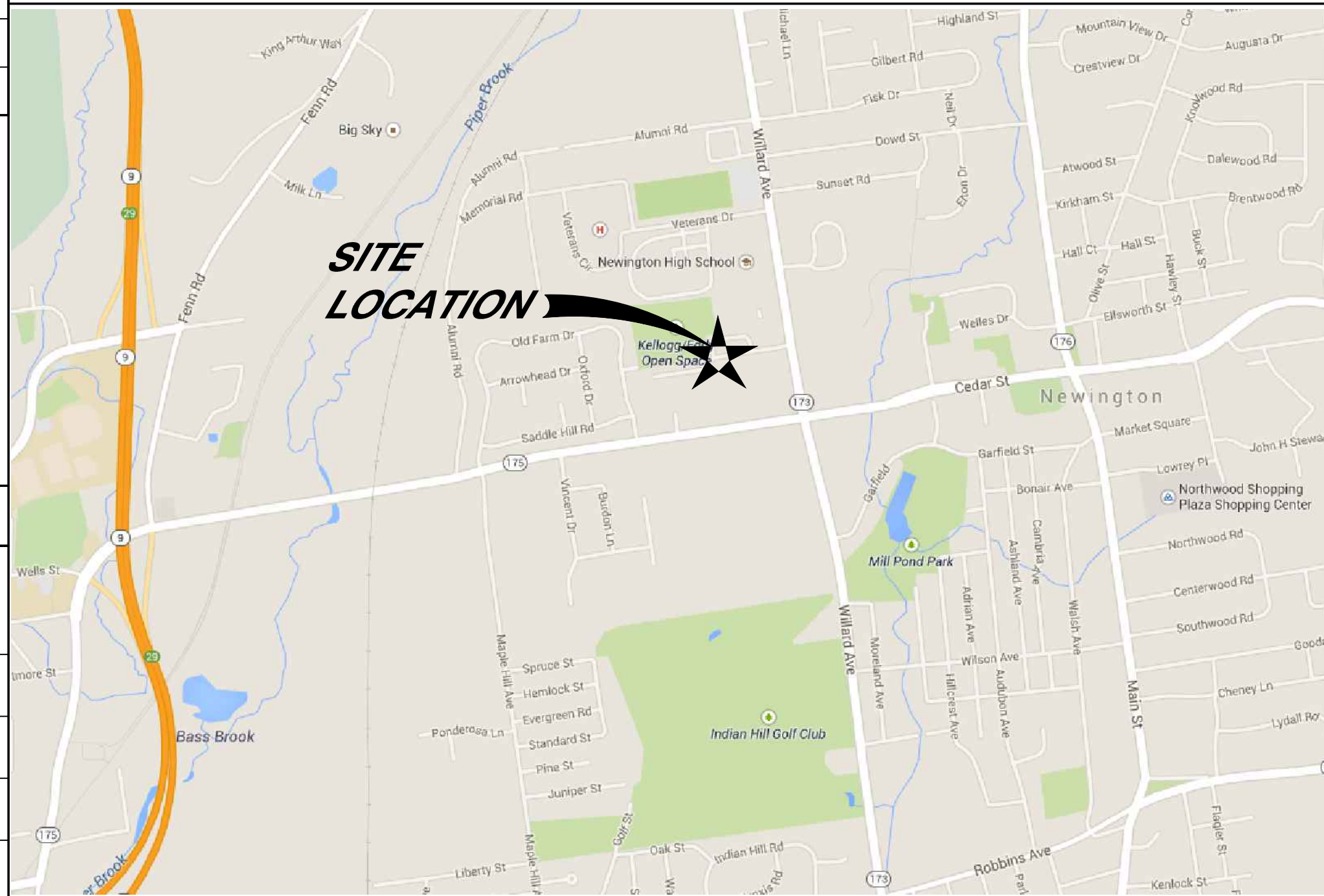
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VICINITY MAP

1. START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD; 0.4 MILES. TURN LEFT ONTO CAPITAL BLVD; 0.3 MILES. TURN LEFT ONTO WEST ST' 0.2 MILES. MERGE ONTO I-91; 6.9 MILES. AT EXIT 22N, TAKE RAMP RIGHT FOR CT-9 NORTH TOWARD BRITAIN; 8.5 MILES. AT EXIT 29, TAKE RAMP RIGHT FOR CT-175 TOWARD NEWINGTON; 0.2 MILES. TURN RIGHT ONTO CT-175/CEDAR ST; 1.2 MILES. TURN LEFT ONTO CT-173/WILLARD AVE; 0.2 MILES. END AT 605 WILLARD AVE NEWINGTON, CT.



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



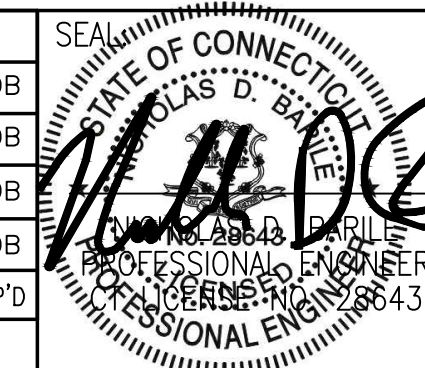
SITE NUMBER: CT5403
SITE NAME: NEWINGTON CENTRAL

605 WILLARD AVENUE
NEWINGTON, CT 06111
HARTFORD COUNTY



550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
3	07/10/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
2	06/18/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
1	04/30/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB



AT&T		
DRAWING TITLE:		
JOB NUMBER	DRAWING NUMBER	REV
14262-EMP	T-1	3

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 (EMPIRE TELECOM).
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.

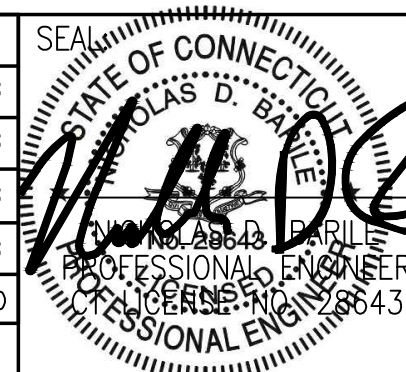
19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 - INTERNATIONAL 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.
22. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.
23. INFORMATION SHOWN ON THIS SET OF PLANS TAKEN FROM DRAWINGS PREPARED BY HUDSON DESIGN GROUP FOR AN LTE UPGRADE DATED 07/11/2012. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.



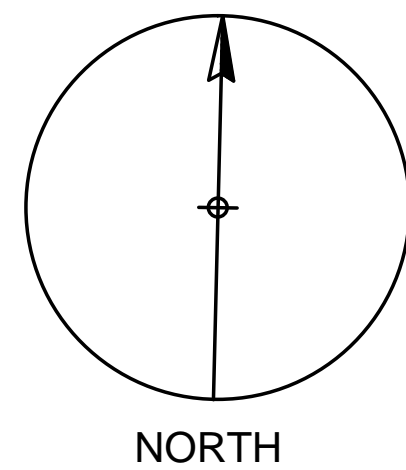
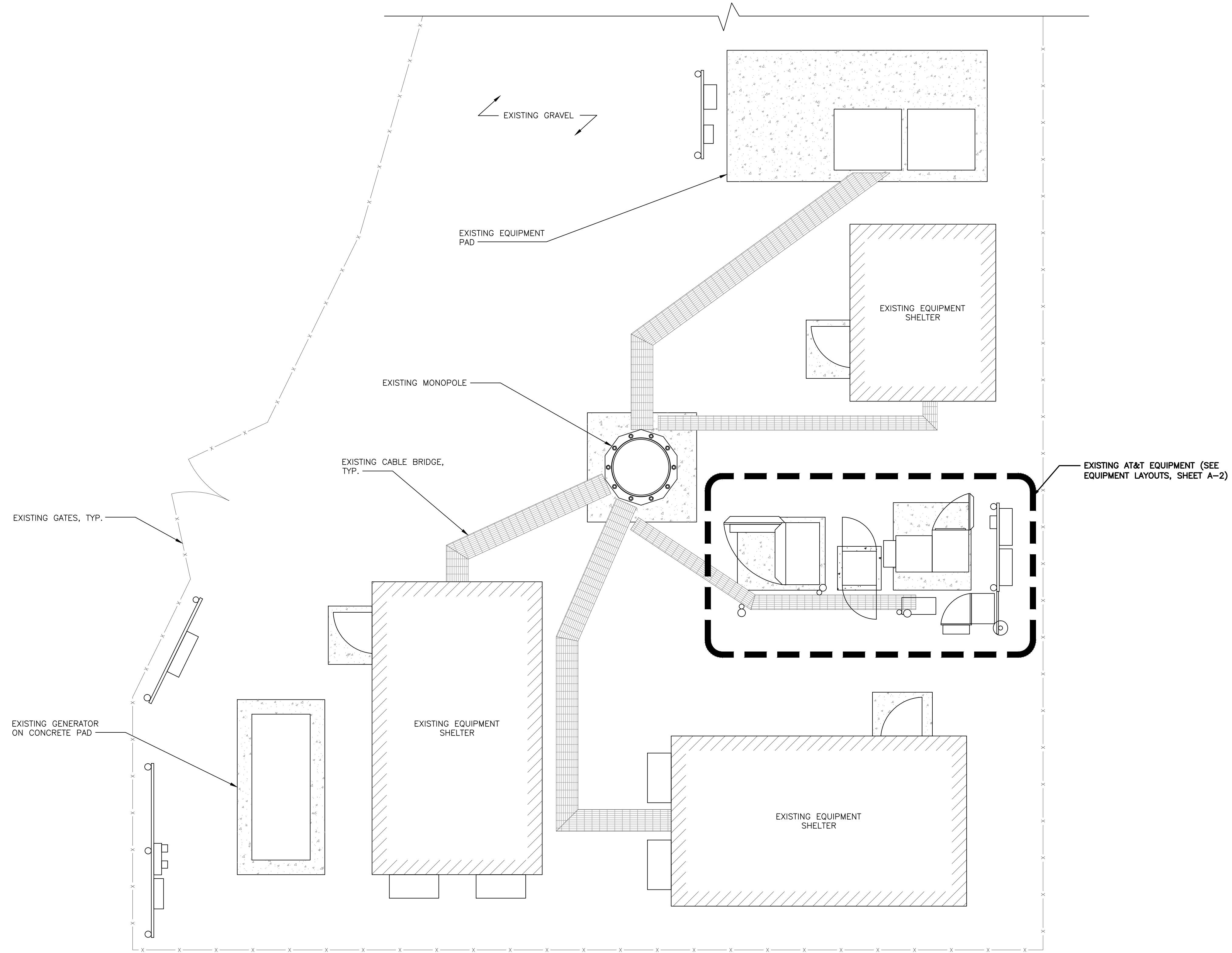
SITE NUMBER: CT5403
SITE NAME: NEWINGTON CENTRAL
 605 WILLARD AVENUE
 NEWINGTON, CT 06111
 HARTFORD COUNTY



3	07/10/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
2	06/18/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
1	04/30/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: AM		



AT&T		
DRAWING TITLE: GROUNDING & GENERAL NOTES		
JOB NUMBER 14262-EMP	DRAWING NUMBER GN-1	REV 3



COMPOUND LAYOUT

SCALE: 1" = 4'-0"



(IN FEET)
1/4 Inch = 1 Foot

NOTE:
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

COM-EX
Consultants
4 SECOND AVENUE
SUITE 204
DENVER, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301

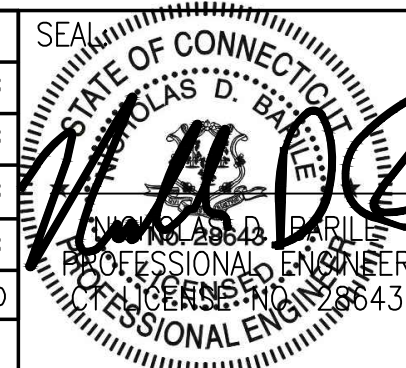
EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5403
SITE NAME: NEWINGTON CENTRAL

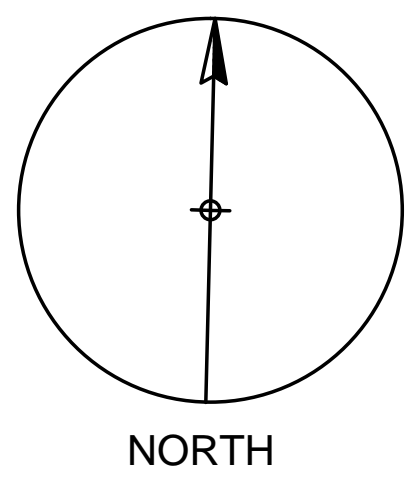
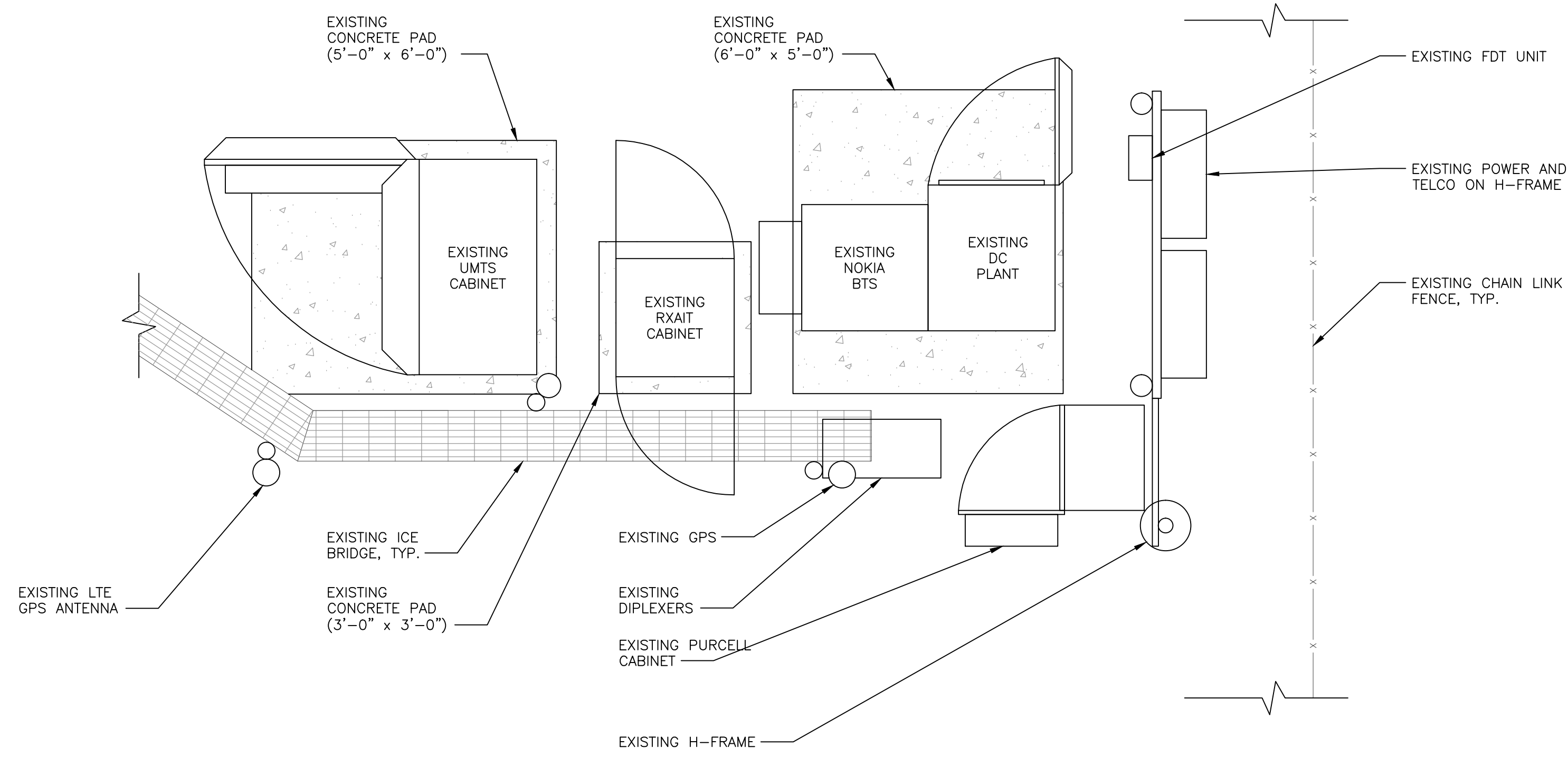
605 WILLARD AVENUE
NEWINGTON, CT 06111
HARTFORD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

3	07/10/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
2	06/18/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
1	04/30/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: CJT		DRAWN BY: AM

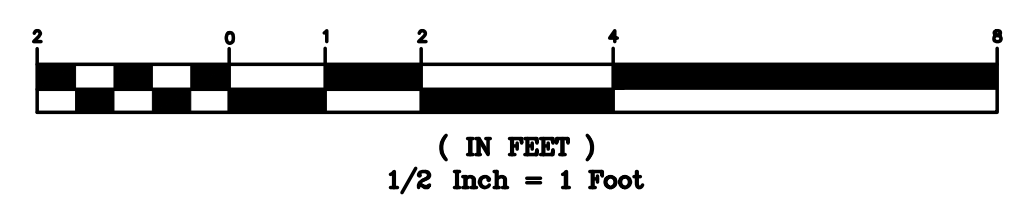


AT&T		
DRAWING TITLE: COMPOUND LAYOUT		
JOB NUMBER 14262-EMP	DRAWING NUMBER A-1	REV 3



EXISTING EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"



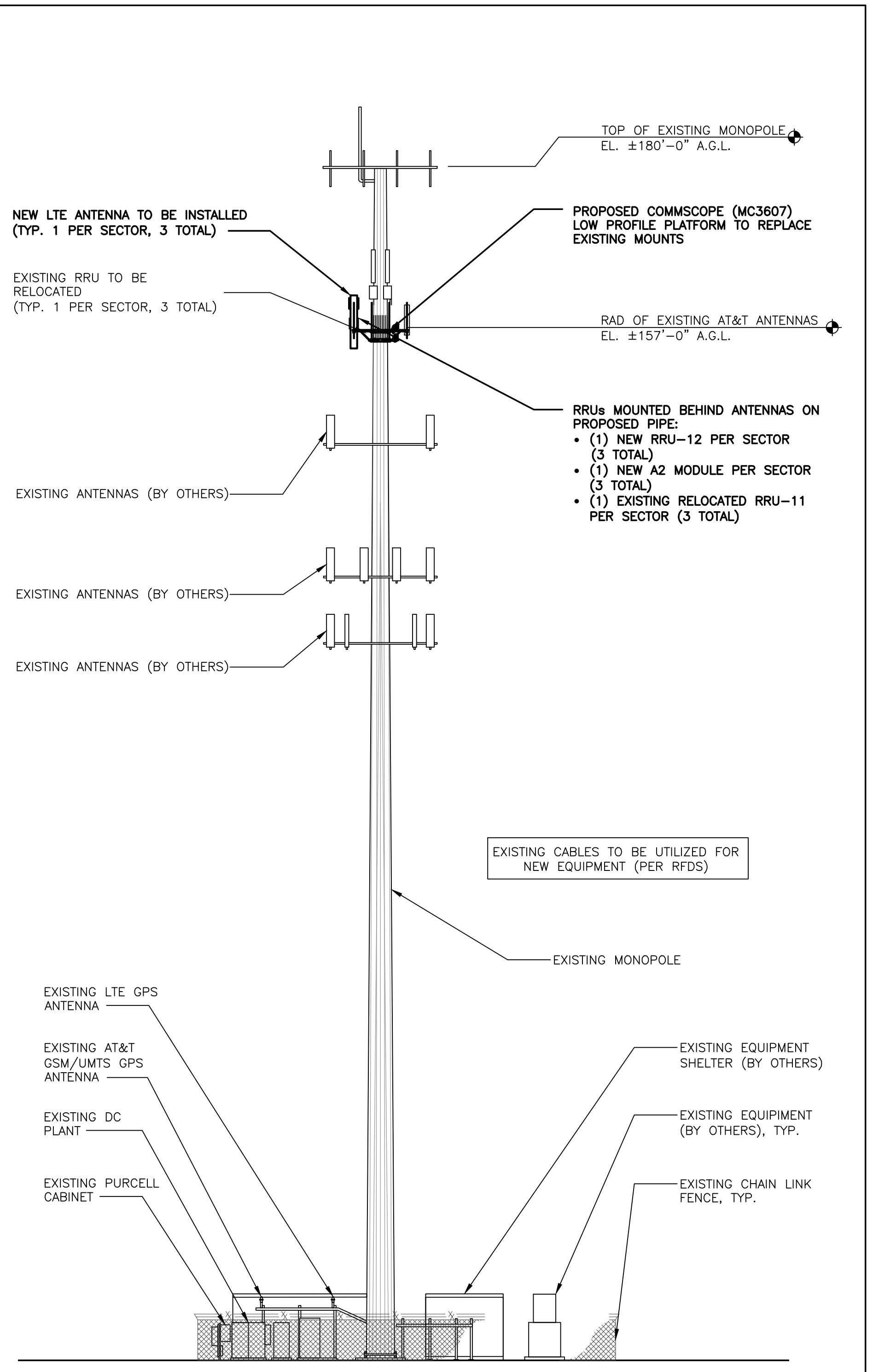
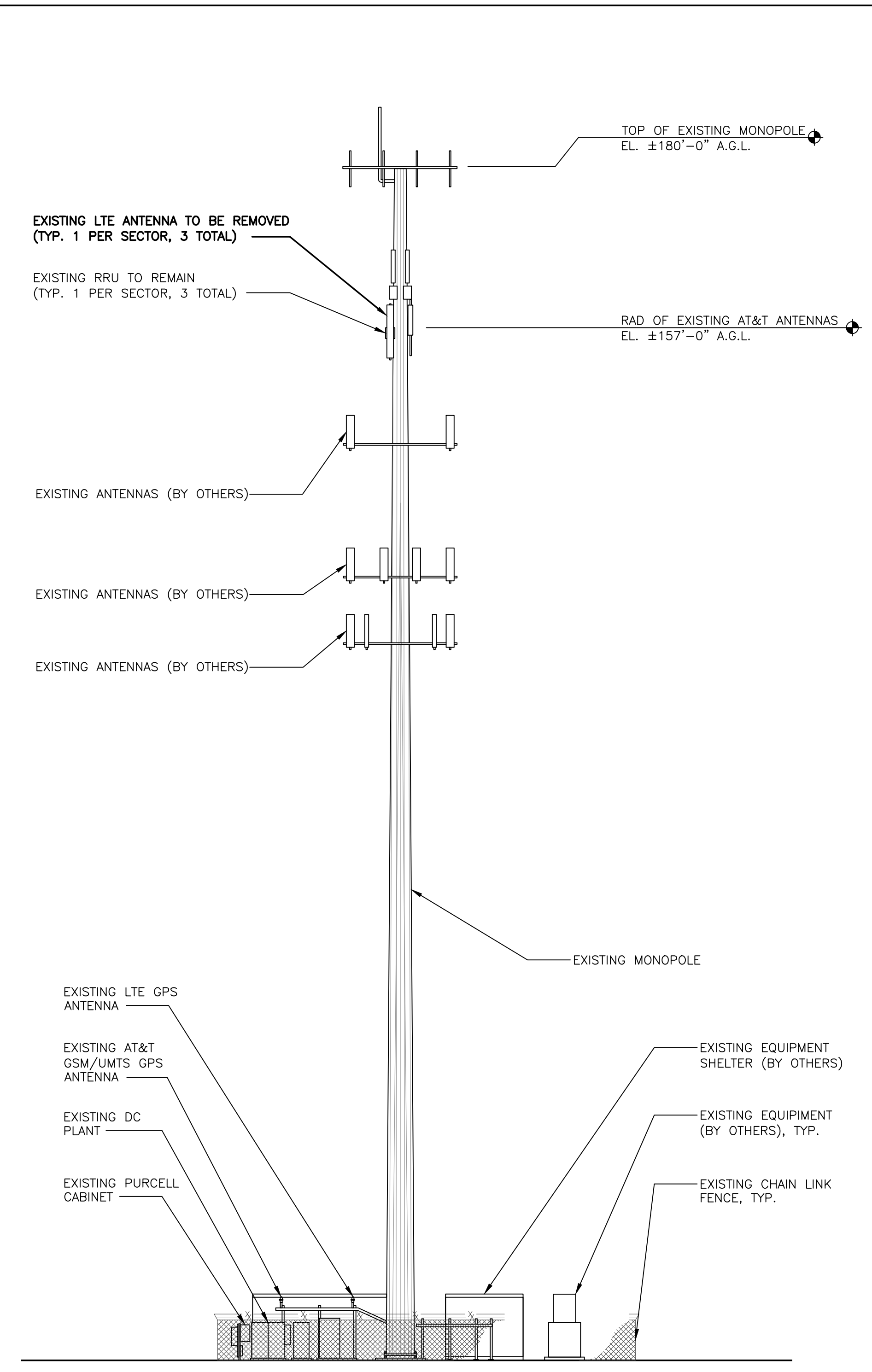
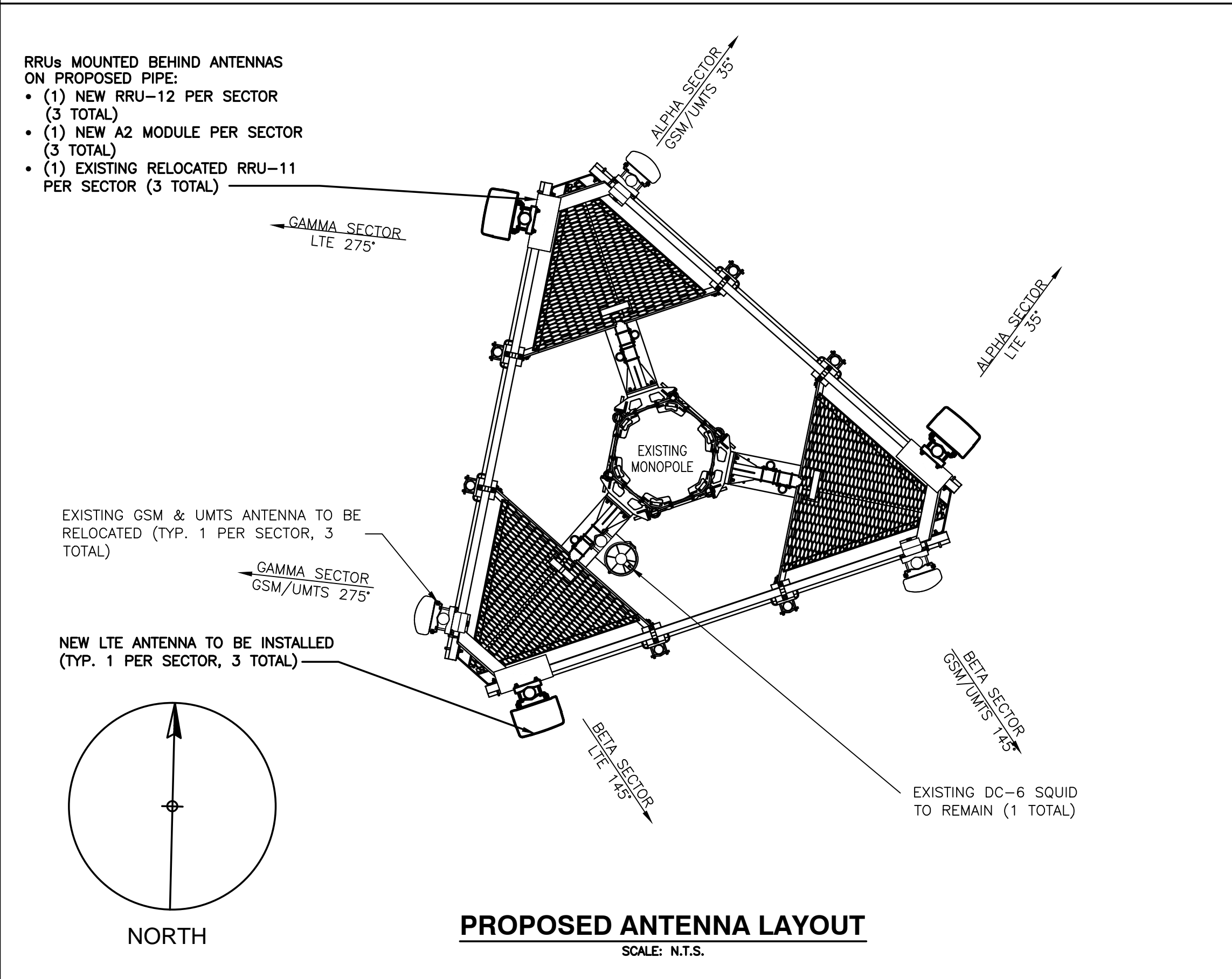
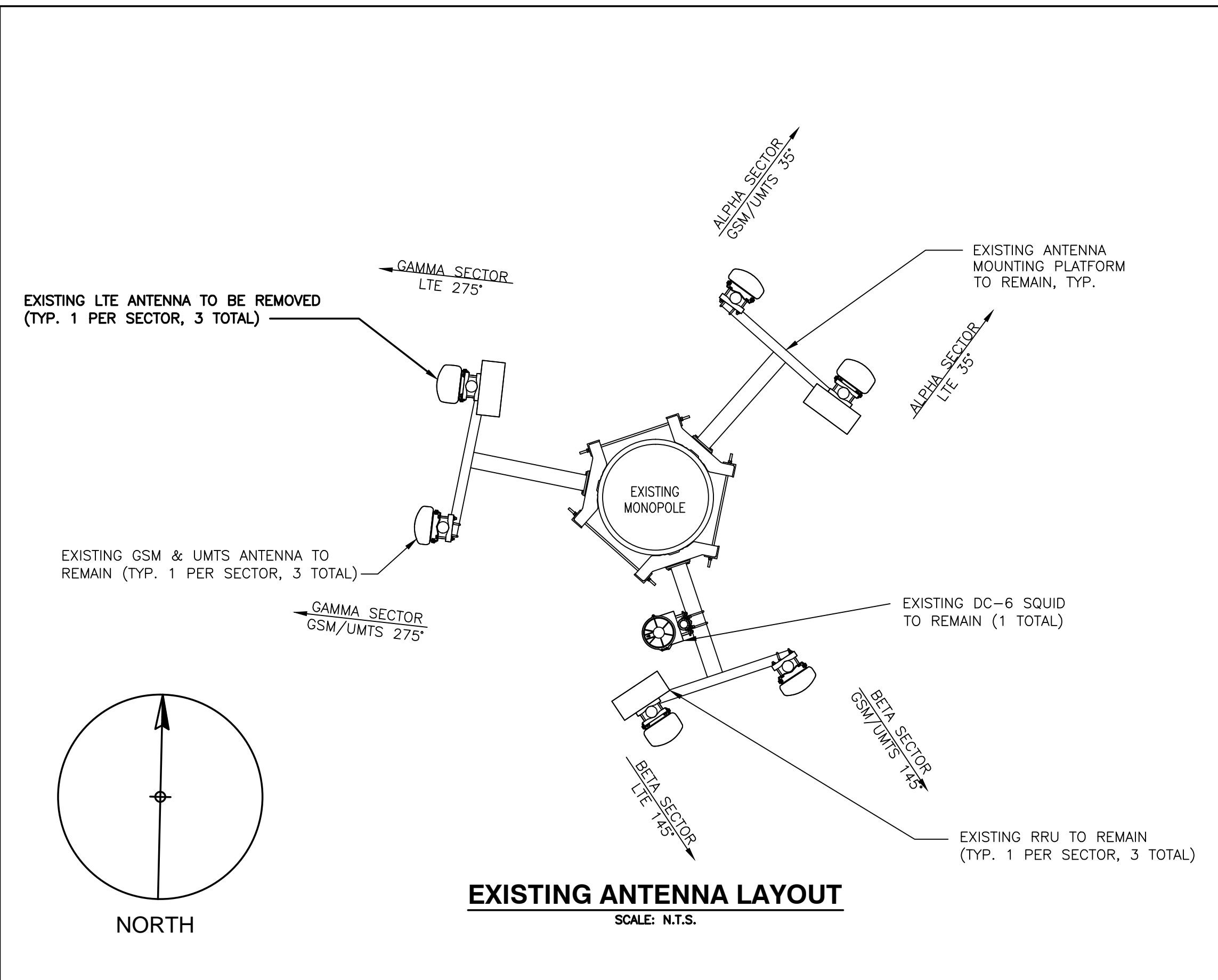
NO GROUND EQUIPMENT MODIFICATIONS ARE BEING MADE AS PART OF THIS SCOPE. EXISTING GROUND EQUIPMENT CONFIGURATION TO REMAIN.

NO.	DATE	REVISIONS	BY	CHK	APP'D
3	07/10/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
2	06/18/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
1	04/30/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB

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



AT&T		
DRAWING TITLE: EQUIPMENT LAYOUT		
JOB NUMBER 14262-EMP	DRAWING NUMBER A-2	REV 3



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.

COM-EX
Consultants
4 SECOND AVENUE
SUITE 204
DENVER, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT5403
SITE NAME: NEWINGTON CENTRAL
605 WILLARD AVENUE
NEWINGTON, CT 06111
HARTFORD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

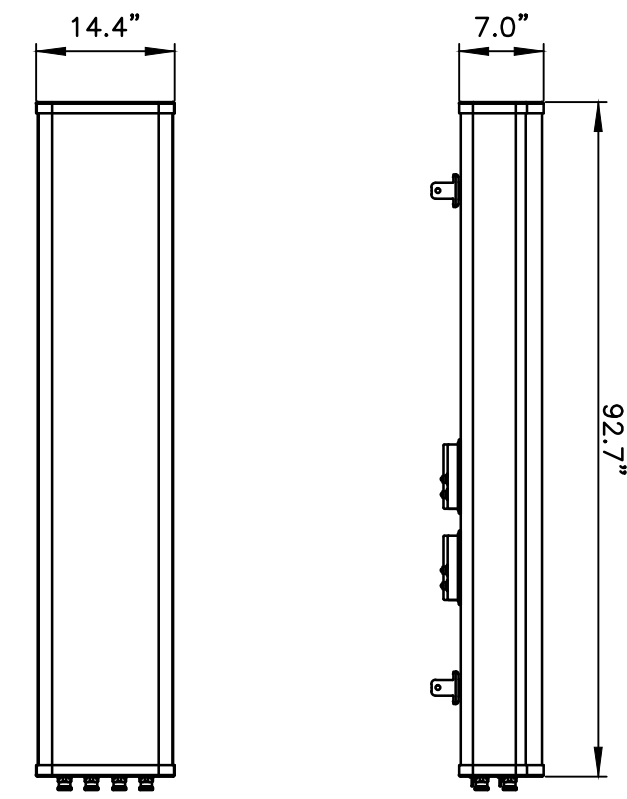
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1	04/30/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
0	04/27/15	ISSUED AS FINAL	KCD	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CJT	DRAWN BY: AM		

STATE OF CONNECTICUT
Professional Engineer
No. 43

AT&T

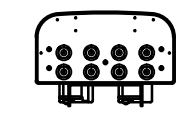
DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
14262-EMP	A-3	3



FRONT VIEW

SIDE VIEW

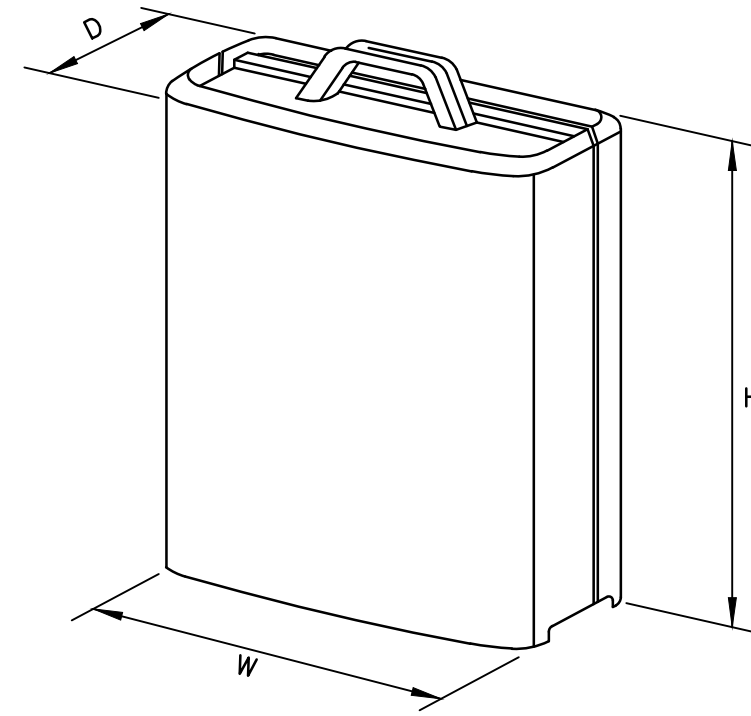


BOTTOM VIEW

MANUFACTURER	CCI
MODEL	OPA-65R-LCUU-H8
WEIGHT	88.0 LBS

LTE ANTENNA DETAIL

SCALE: N.T.S.



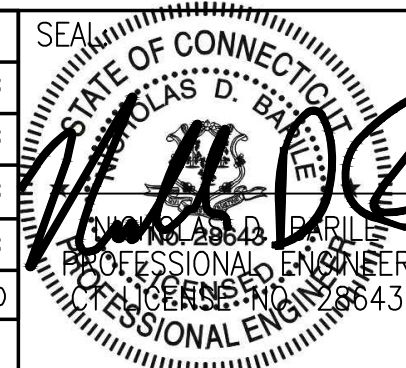
MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4" x 18.5" x 7.5"	58 LBS
A2 MODULE	16.4" x 15.2" x 3.4"	22 LBS

*DENOTES EXISTING.

RRUS DETAIL

SCALE: N.T.S.

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2	06/18/15	REVISED PER CLIENT COMMENTS	KCD	NDB	NDB
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: CJT		DRAWN BY: AM

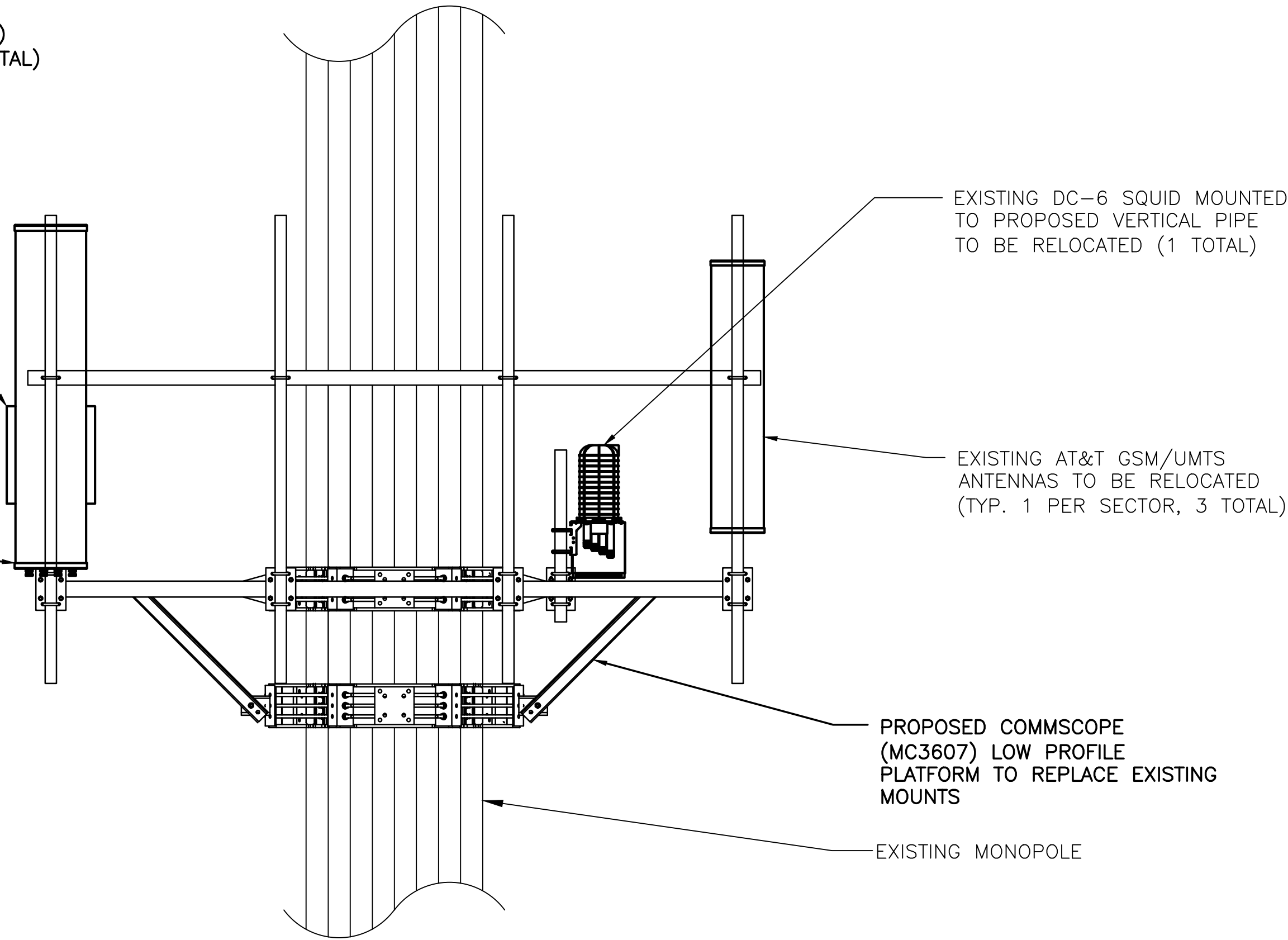


AT&T		
DRAWING TITLE:		
DETAILS		
JOB NUMBER	DRAWING NUMBER	REV
14262-EMP	A-4	3

PROPOSED RRUs MOUNTED BEHIND ANTENNAS ON PROPOSED PIPE:

- (1) NEW RRU-12 PER SECTOR (3 TOTAL)
- (1) NEW A2 MODULE PER SECTOR (3 TOTAL)
- (1) EXISTING RELOCATED RRU-11 PER SECTOR (3 TOTAL)

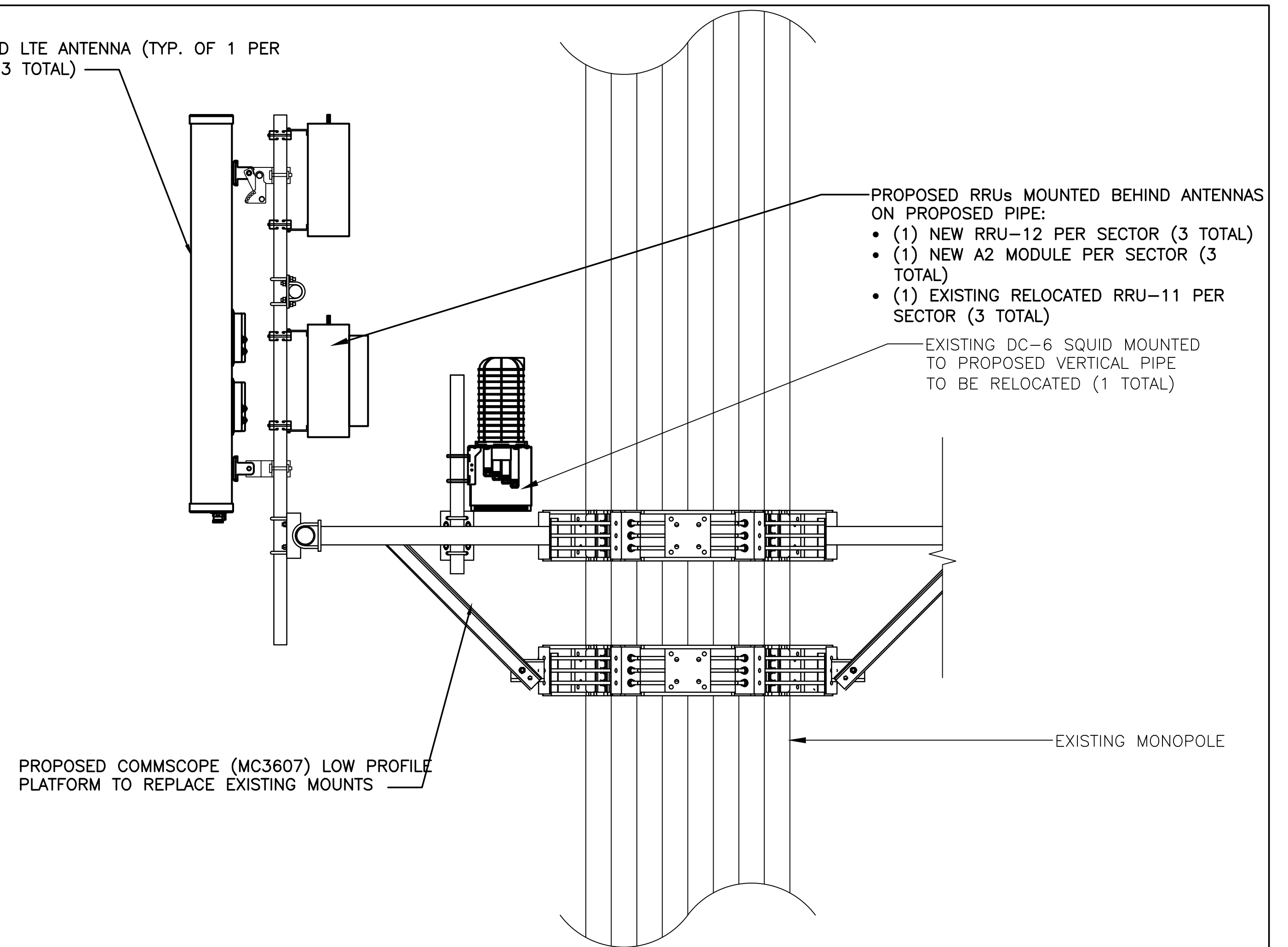
PROPOSED LTE ANTENNA (TYP. OF 1 PER SECTOR, 3 TOTAL)



PROPOSED ANTENNA MOUNTING DETAIL (FRONT VIEW)

SCALE: N.T.S.

PROPOSED LTE ANTENNA (TYP. OF 1 PER SECTOR, 3 TOTAL)



PROPOSED ANTENNA MOUNTING DETAIL (SIDE VIEW)

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00	55"x11"x5"
	A2	-	-	-
	A3	-	-	-
	A4	POWERWAVE	P65-17-XLH-RR	96"x12"x6"
BETA	B1	POWERWAVE	7770.00	55"x11"x5"
	B2	-	-	-
	B3	-	-	-
	B4	POWERWAVE	P65-17-XLH-RR	96"x12"x6"
GAMMA	G1	POWERWAVE	7770.00	55"x11"x5"
	G2	-	-	-
	G3	-	-	-
	G4	POWERWAVE	P65-17-XLH-RR	96"x12"x6"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00	55"x11"x5"
	A2	-	-	-
	A3	-	-	-
	A4	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"
BETA	B1	POWERWAVE	7770.00	55"x11"x5"
	B2	-	-	-
	B3	-	-	-
	B4	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"
GAMMA	G1	POWERWAVE	7770.00	55"x11"x5"
	G2	-	-	-
	G3	-	-	-
	G4	CCI	OPA-65R-LCUU-H8	92.7"x14.4"x7"

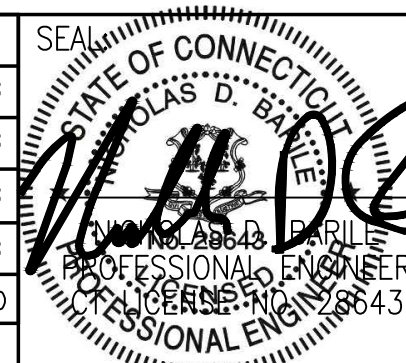
FINAL RRU SCHEDULE

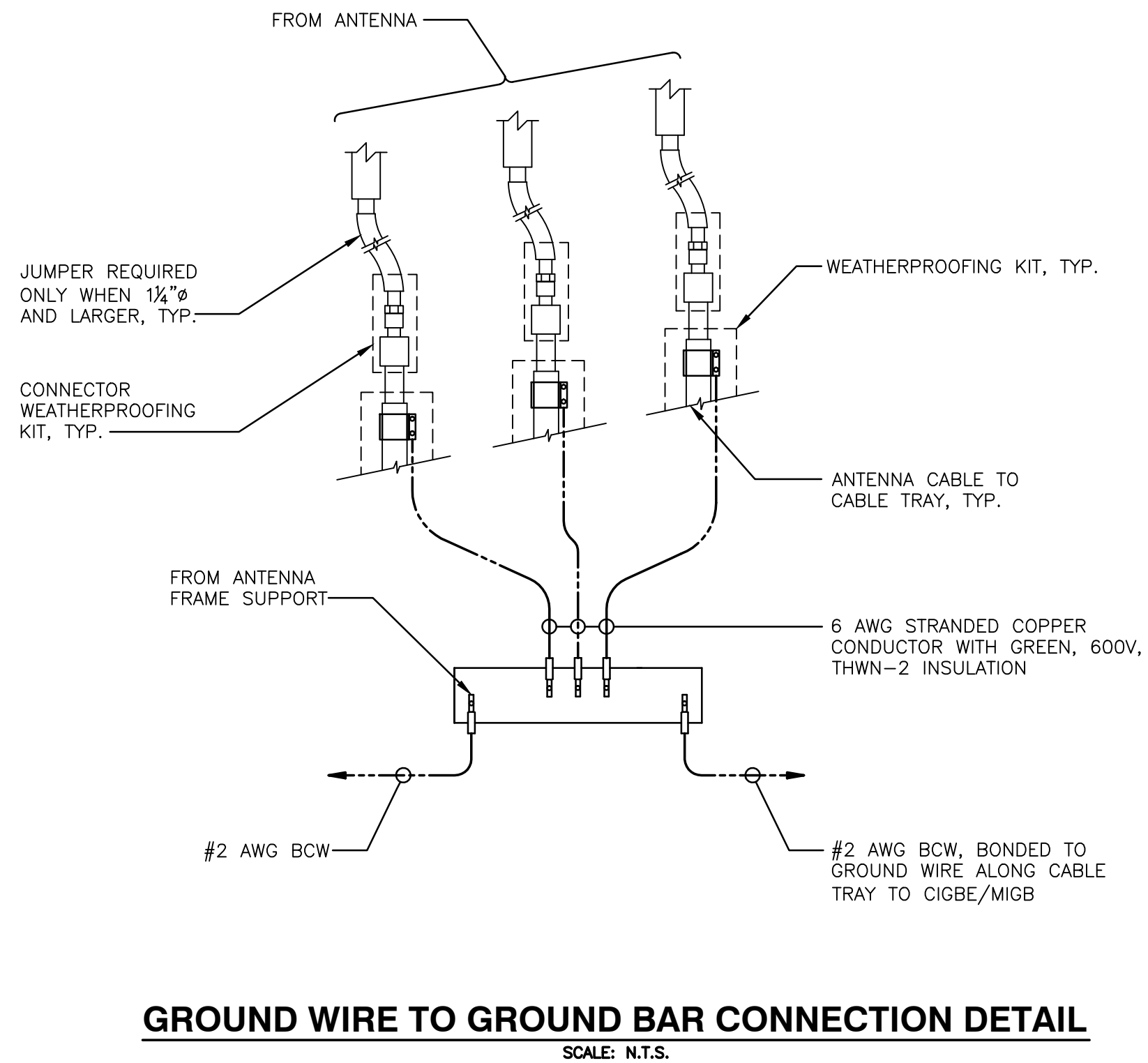
SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS-12	20.4"x18.5"x7.5"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
BETA	ERICSSON	RRUS-12	20.4"x18.5"x7.5"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		
GAMMA	ERICSSON	RRUS-12	20.4"x18.5"x7.5"	ERICSSON A2 MODULE	16.4"x15.2"x3.4"
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"		

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

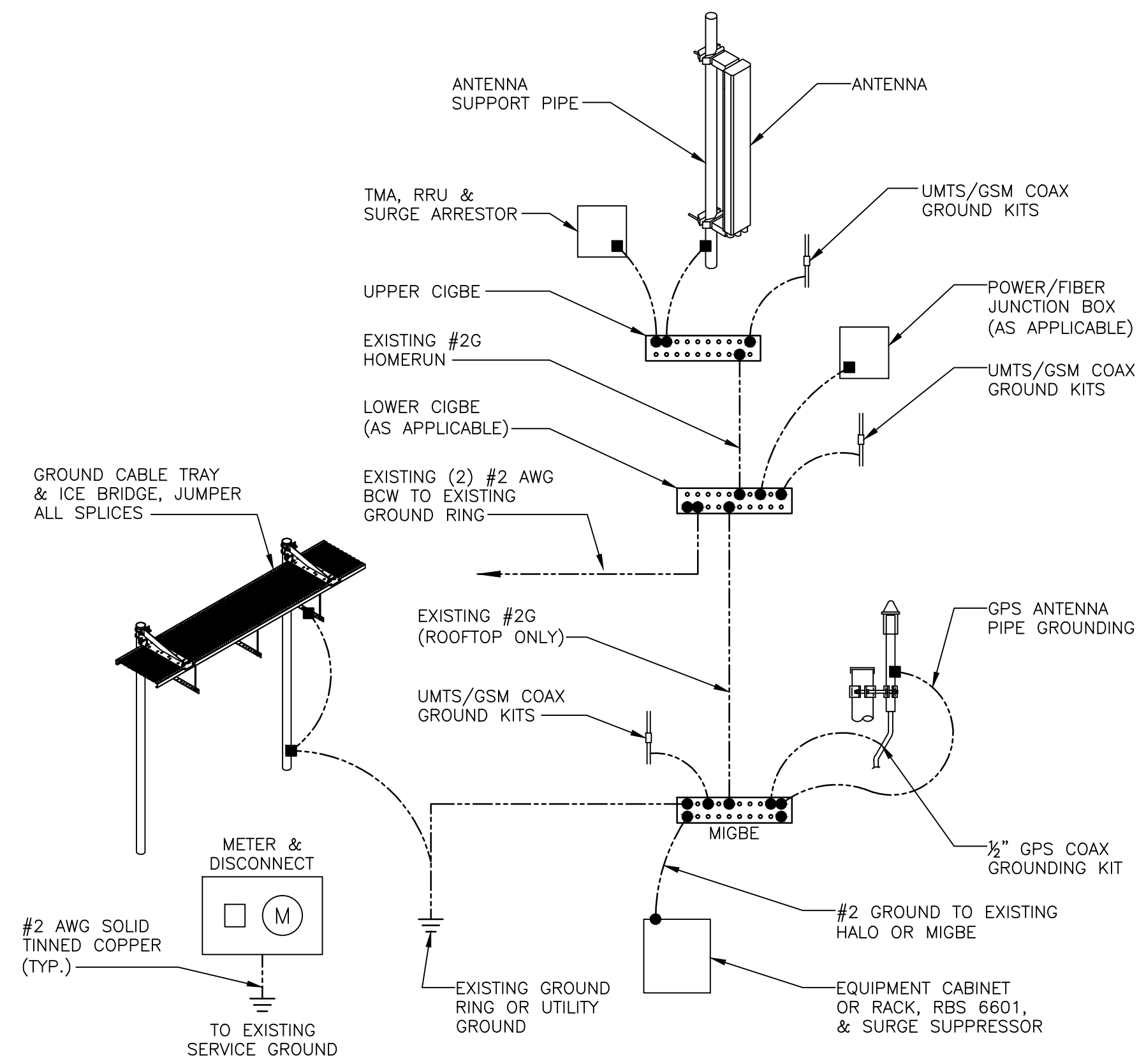
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SCALE: AS SHOWN DESIGNED BY: CJT DRAWN BY: AM

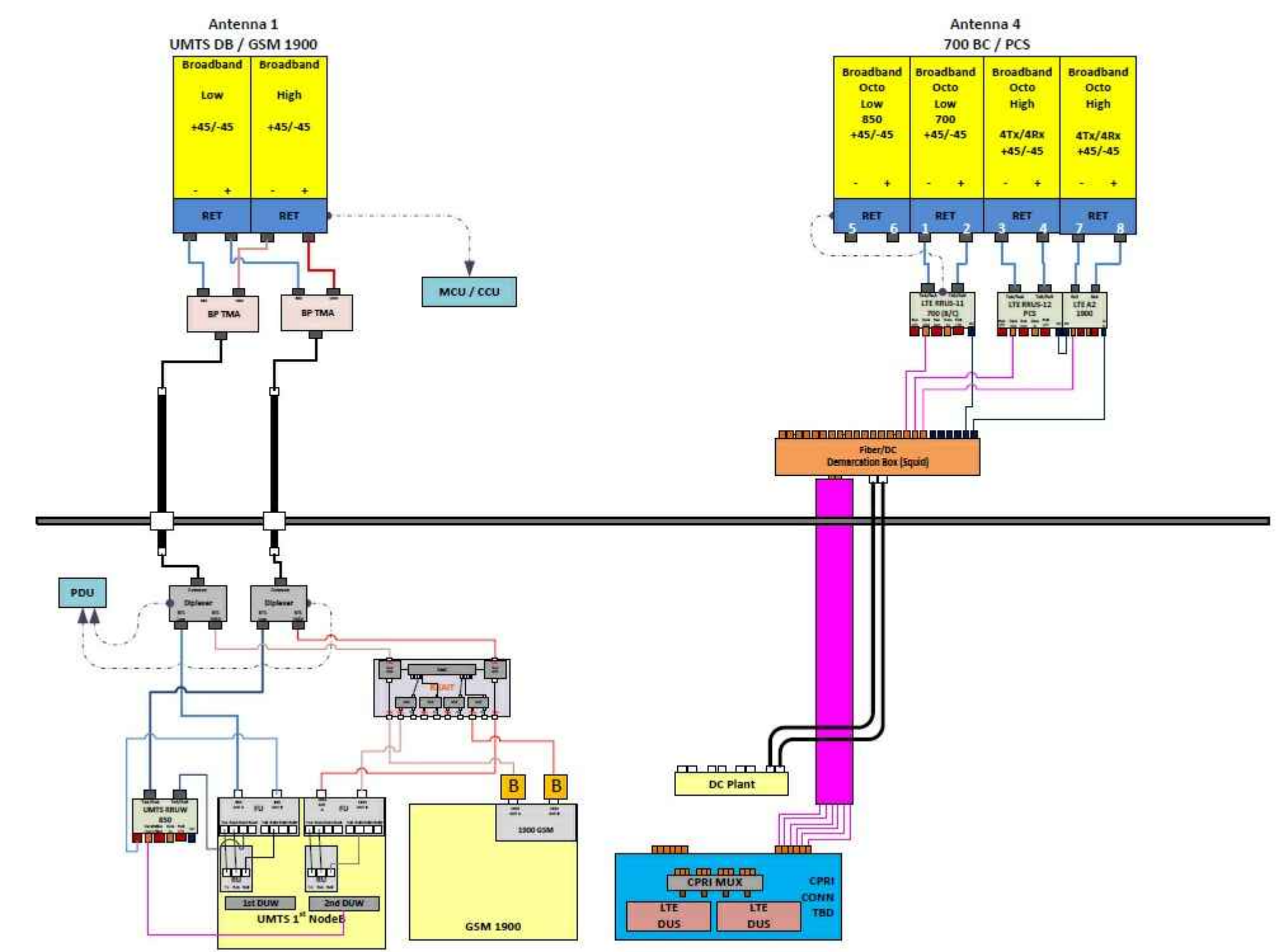




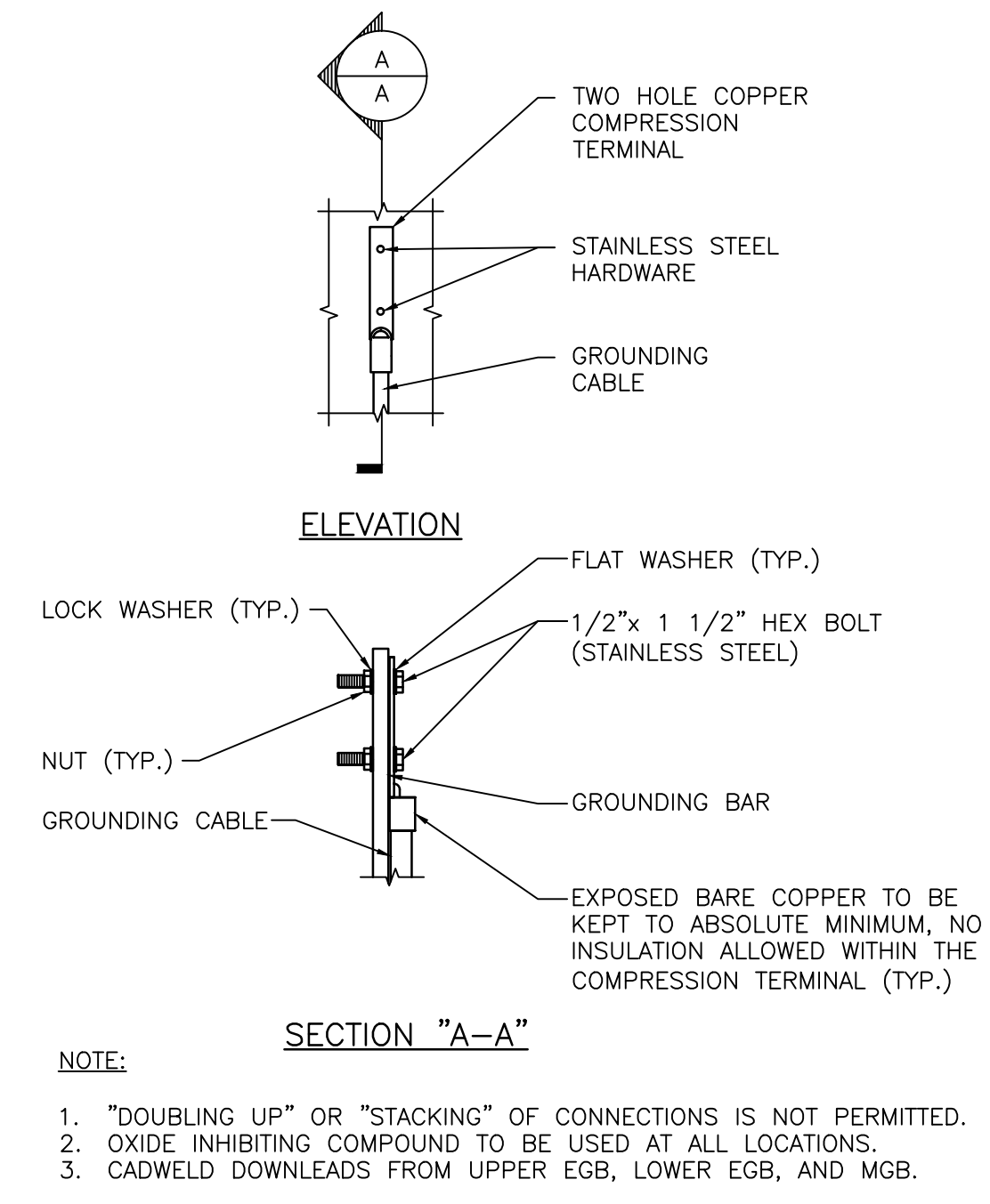
GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



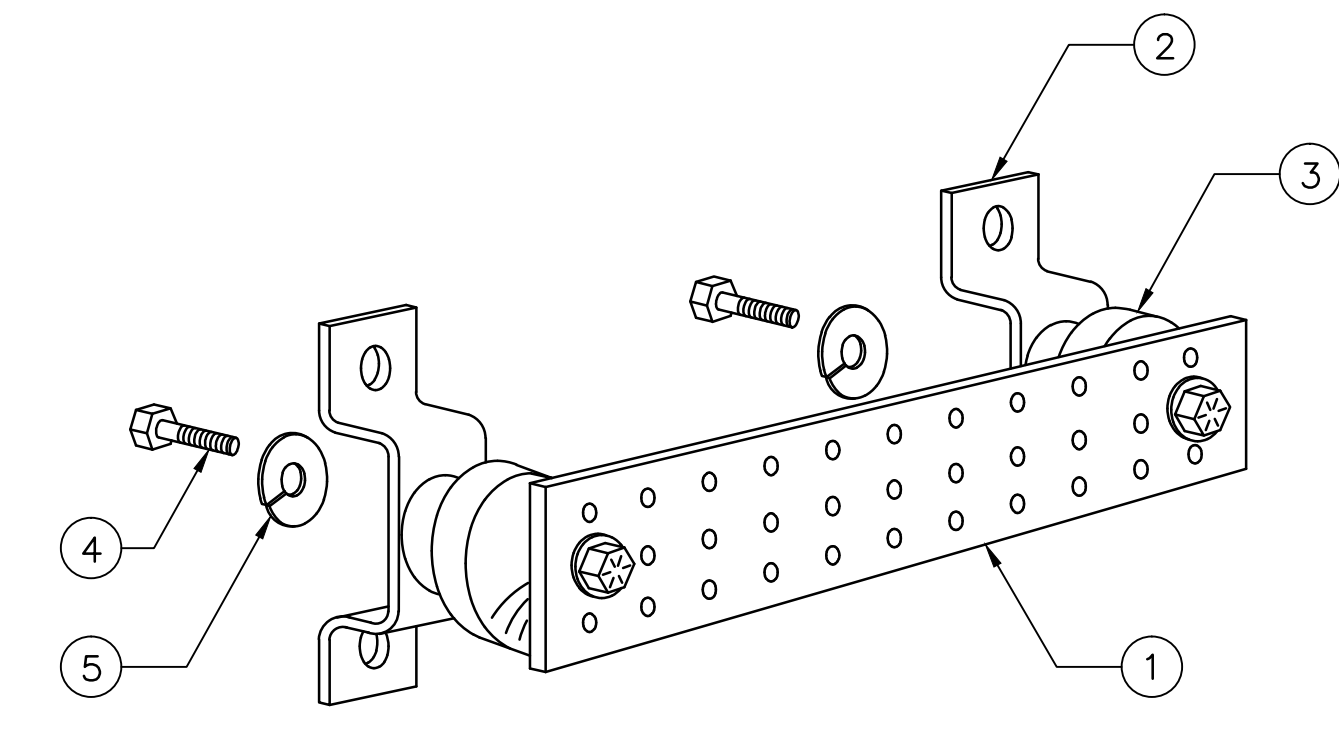
GROUNDING RISER DIAGRAM
SCALE: N.T.S.



TYPICAL PLUMBING DIAGRAM (PER SECTOR)
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

GROUND BAR DETAIL
SCALE: N.T.S.

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)



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 179 ft Monopole
ATC Site Name : Newington CT, CT
ATC Site Number : 370627
Engineering Number : 61682623
Proposed Carrier : AT&T Mobility
Carrier Site Name : N/A
Carrier Site Number : /FA#10071165
Site Location : 605 Willard Avenue
Newington, CT 06111-0000
41.698372,-72.737147
County : Hartford
Date : May 1, 2015
Max Usage : 73%
Result : Pass

Reviewed by:
Scott Wirgau, PE
Structural Team Leader

Prepared By:
Alireza Mashhadi Ali, E.I.



May 1 2015 5:19 PM

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
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Deflection, Twist, and Sway.....	3
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Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 179 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	PiRod Engineering File #A-118092, dated August 10, 2001
Foundation Drawing	PiRod Engineering File #A-118092, dated August 10, 2001
Geotechnical Report	Clarence Welti, dated August 1, 2001

Analysis

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

Basic Wind Speed:	80 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	69 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

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

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

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
180.0	190.0	1	20' Dipole	Low Profile Platform	(3) 7/8" Coax	Town Of Newington
	180.0	1	8' Yagi			
170.0	170.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(12) 1 5/8" Coax (1) 1" Hybrid	Metro PCS
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
160.0	160.0	3	RCU	Side Arms	(3) 0.28" Fiber (3) 5/8" Coax (2) 2" Conduit (3) 1/2" Coax (1) 0.32" Cable	Clearwire
		3	DragonWave Horizon Compact			
		3	Samsung U-RAS Premium-F FRH			
		3	DragonWave A-ANT-18G-2-C			
		3	Argus LLPX310R			
154.0	154.0	6	Powerwave LGP21401	T-Arms	(6) 1 5/8" Coax (1) 3" Conduit	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12)			
		3	Powerwave 7770.00			
140.0	140.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20			
		3	RFS APXVTM14-C-I20			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
108.0	110.0	3	Alcatel-Lucent RRH2X60-1900	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Fiber (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2X60-AWS			
		3	Alcatel-Lucent RRH2x60 700			
		3	Antel BXA-80063/4CF ___ 5°			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063-6CF-EDIN-X			
		6	Commscope SBNHH-1D65B			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
154.0	154.0	1	KMW AM-X-CD-16-65-00T-RET	-	(1) 1/2" Coax	AT&T Mobility
		1	Andrew SBNH-1D6565C			
		1	Powerwave P65-17-XLH-RR			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
154.0	154.0	3	Ericsson RRUS 12 w/ RRUS A2	T-Arm	(2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk	AT&T Mobility
		3	CCI OPA-65R-LCUU-H8			

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	67%	Pass
Shaft	73%	Pass
Base Plate	16%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,398.2	46%
Axial (Kips)	43.4	41%
Shear (Kips)	27.9	36%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required. Foundations/anchorages have a factor of safety greater than or equal to 2.0.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
160.0	DragonWave A-ANT-18G-2-C	Clearwire	3.014	2.360
109.0	Alcatel-Lucent RRH2X60-AWS	Verizon	1.289	1.494
	Alcatel-Lucent RRH2x60 700			
107.0	Alcatel-Lucent RRH2X60-1900			
107.0	Commscope SBNHH-1D65B		1.237	1.459

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



Standard Conditions

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

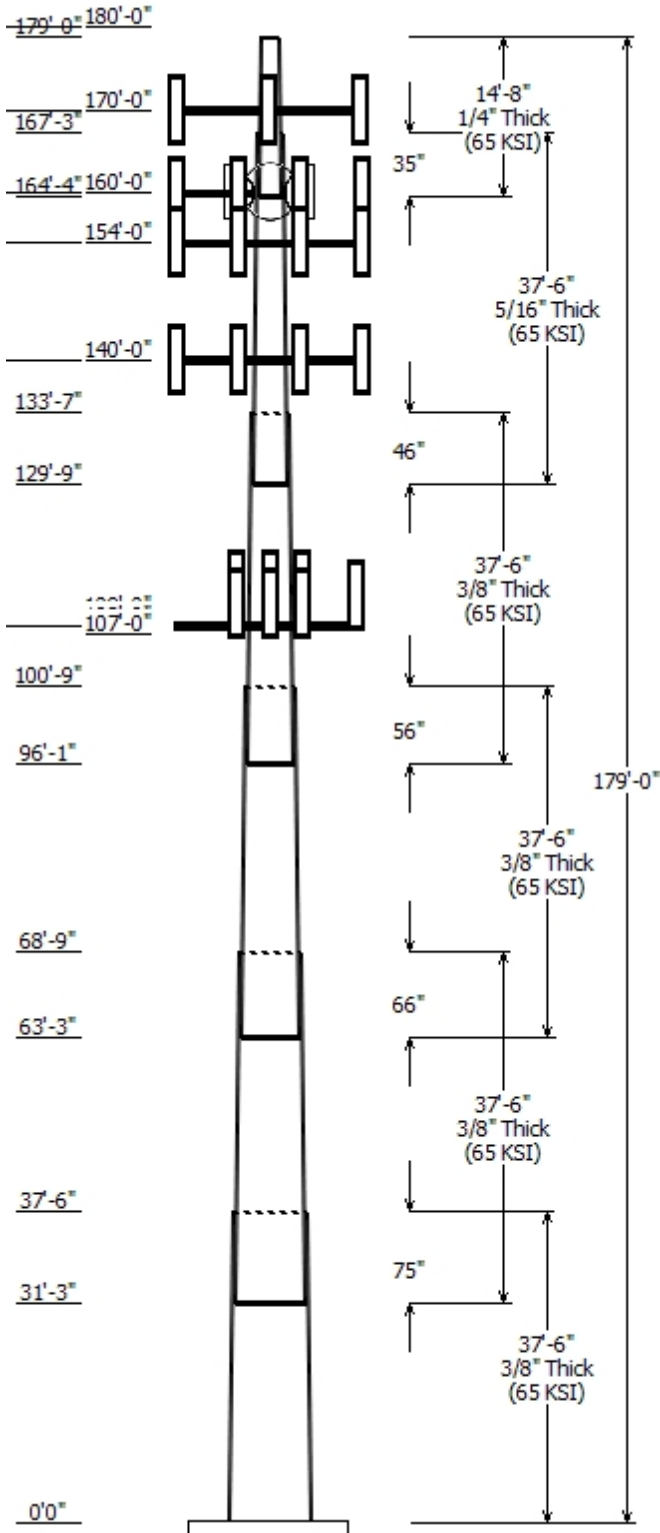
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements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

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

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

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

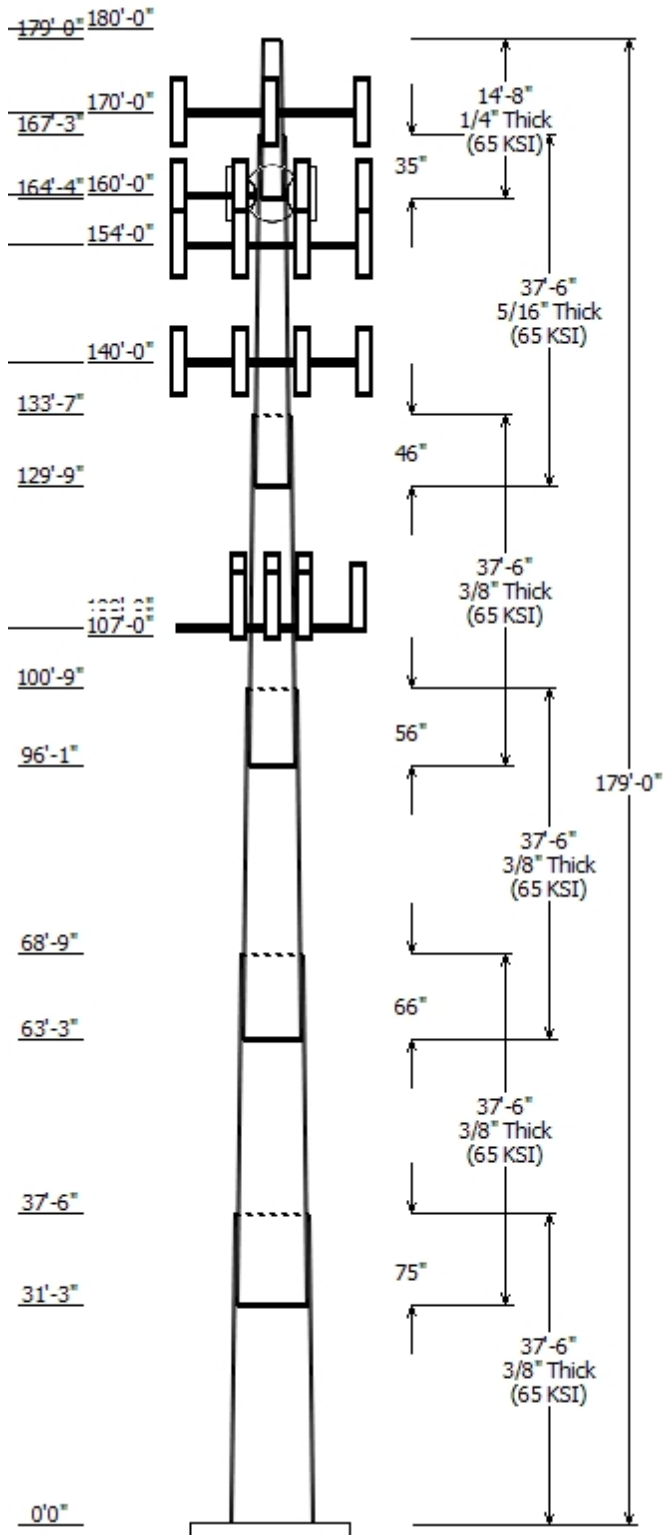
Job Information	
Pole :	370627
Code:	TIA/EIA-222-F
Description :	179' Pirod Monopole
Client :	AT&T Mobility
Location :	Newington CT, CT
Shape :	18 Sides
Height :	179.00 (ft)
Base Elev (ft):	0.00
Taper:	0.30377(in/ft)



Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Taper (in/ft)	Grade (ksi)
		Top	Bottom					
1	37.500	51.60	63.00	0.375		0.000	0.303771	65
2	37.500	42.86	54.25	0.375	Slip Joint	75.000	0.303771	65
3	37.500	33.89	45.28	0.375	Slip Joint	66.000	0.303771	65
4	37.500	24.67	36.06	0.375	Slip Joint	56.000	0.303771	65
5	37.500	15.06	26.46	0.313	Slip Joint	46.000	0.303771	65
6	14.667	12.00	16.45	0.250	Slip Joint	35.000	0.303771	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.000	190.000	1	20' Dipole
180.000	180.000	1	8' Yagi
180.000	180.000	1	Round Low Profile Platform
170.000	170.000	3	Ericsson AIR 21, 1.3M, B4A B2P
170.000	170.000	3	Ericsson AIR 21, 1.3 M, B2A B4
170.000	170.000	3	Ericsson KRY 112 144/1
170.000	170.000	1	Flat Low Profile Platform
160.000	160.000	3	Argus LLPX310R
160.000	160.000	3	Samsung U-RAS Premium-F
160.000	160.000	3	DragonWave A-ANT-18G-2-C
160.000	160.000	3	DragonWave Horizon Compact
160.000	160.000	3	RCU
160.000	160.000	1	Side Arms
154.000	154.000	3	CCI OPA-65R-LCUU-H8
154.000	154.000	3	Ericsson RRUS 12 w/ RRUS A2
154.000	154.000	3	Powerwave 7770.00
154.000	154.000	6	Ericsson RRUS 11 (Band 12)
154.000	154.000	1	Raycap DC6-48-60-18-8F
154.000	154.000	6	Powerwave LGP21401
154.000	154.000	3	Round T-Arm
140.000	140.000	3	RFS APXVTM14-C-I20
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20
140.000	140.000	2	RFS APXVSP18-C-A20
140.000	140.000	1	RFS APXV9ERR18-C-A20
140.000	140.000	3	Alcatel-Lucent 1900MHz RRH
140.000	140.000	3	Alcatel-Lucent 800 MHz 2X50W
140.000	140.000	1	Round Low Profile Platform
109.000	110.000	3	Alcatel-Lucent RRH2X60-1900
109.000	110.000	3	Alcatel-Lucent RRH2x60 700
109.000	110.000	3	Alcatel-Lucent RRH2X60-AWS
108.000	110.000	3	Antel BXA-70063-6CF-EDIN-X
108.000	110.000	3	Antel BXA-80063/4CF ___ 5°
108.000	110.000	1	RFS DB-T1-6Z-8AB-0Z
108.000	108.000	1	Flat Low Profile Platform
107.000	110.000	6	Commscope SBNHH-1D65B

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind
0.000	108.0	1 5/8" Coax	No



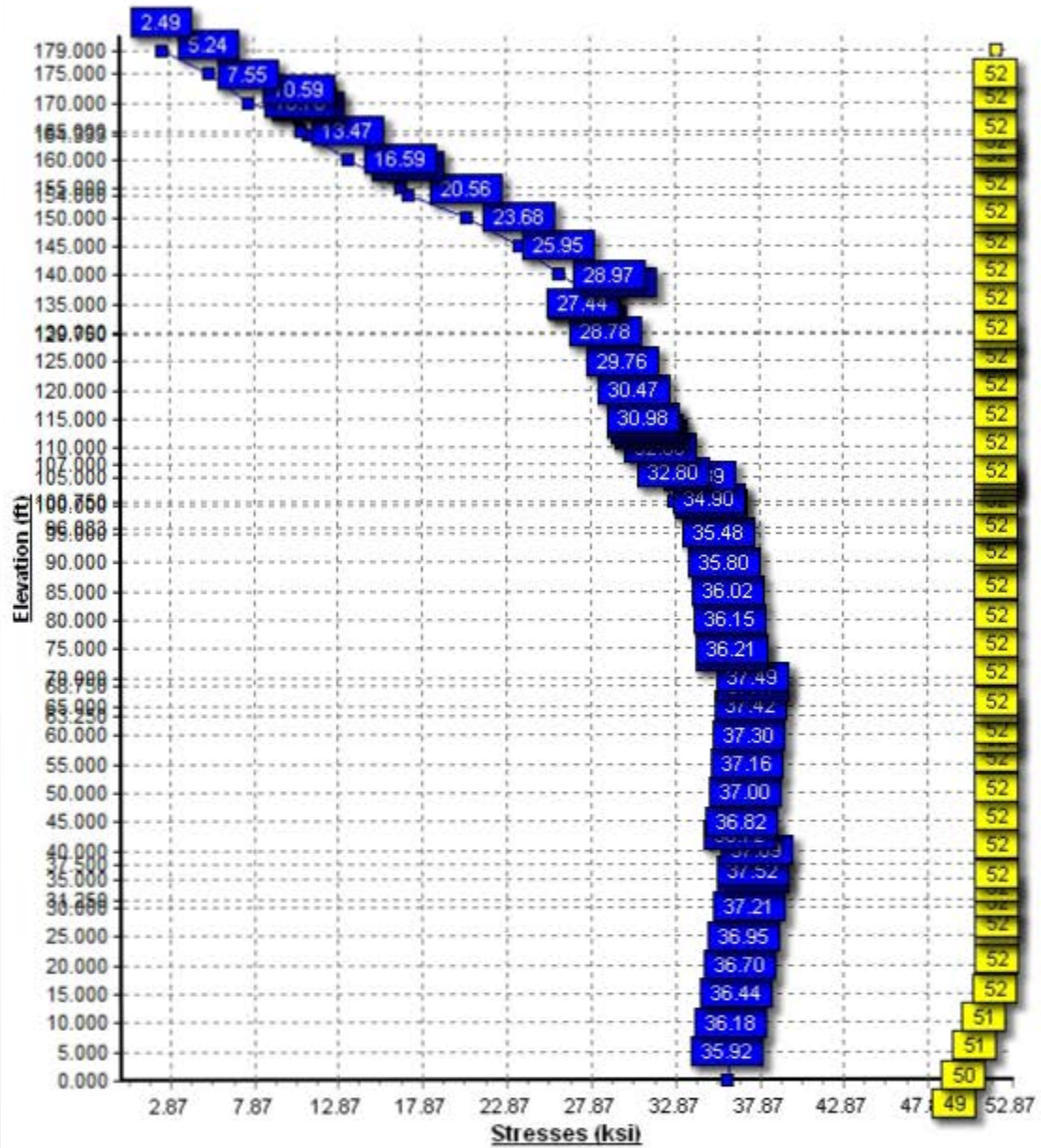
0.000	108.0	1 5/8" Fiber	No
0.000	108.0	1 5/8" Hybriflex	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	154.0	0.39" Fiber Trunk	No
0.000	154.0	0.78" 8 AWG 6	No
0.000	154.0	1 5/8" Coax	No
0.000	154.0	3" Conduit	No
0.000	160.0	0.28" Fiber	No
0.000	160.0	0.32" Cable	No
0.000	160.0	1/2" Coax	No
0.000	160.0	2" Conduit	No
0.000	160.0	5/8" Coax	No
0.000	170.0	1 5/8" Coax	No
0.000	170.0	1" Hybrid	No
0.000	180.0	7/8" Coax	No

Load Cases	
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	3398.16	27.89	43.40
Ice	2935.83	23.24	50.94
Twist/Sway	1328.82	10.89	43.43

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	160.00	36.162	2.360

Load Case : No Ice
Max Stress 72.7% at 0.0ft



Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:52 AM

Customer: AT&T Mobility

Analysis Parameters

Location:	Hartford County, CT	Height (ft):	179
Code:	TIA/EIA-222-F	Base Diameter (in):	63.00
Shape:	18 Sides	Top Diameter (in):	12.00
Pole Type:	Taper	Taper (in/ft) :	0.304
Pole Manufacturer:	Pirod		

Load Cases

No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Site Number: 370627

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Site Name: Newington CT, CT

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Customer: AT&T Mobility

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Bottom						Top								
						Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	37.500	0.3750	65		0.00	8,646	63.00	0.00	74.54	36933.4	27.86	168.00	51.60	37.50	60.98	20222.7	22.50	137.62	0.303771	
2-18	37.500	0.3750	65	Slip	75.00	7,318	54.25	31.25	64.13	23524.0	23.75	144.69	42.86	68.75	50.57	11536.1	18.39	114.31	0.303771	
3-18	37.500	0.3750	65	Slip	66.00	5,956	45.28	63.25	53.45	13622.2	19.53	120.76	33.89	100.75	39.90	5663.6	14.17	90.39	0.303771	
4-18	37.500	0.3750	65	Slip	56.00	4,555	36.06	96.08	42.48	6834.9	15.19	96.17	24.67	133.58	28.92	2156.7	9.84	65.79	0.303771	
5-18	37.500	0.3125	65	Slip	46.00	2,589	26.46	129.75	25.93	2240.4	13.17	84.67	15.06	167.25	14.64	402.7	6.74	48.22	0.303771	
6-18	14.667	0.2500	65	Slip	35.00	554	16.45	164.33	12.86	426.6	9.84	65.82	12.00	179.00	9.32	162.6	6.70	48.00	0.303771	
Shaft Weight						29,617														

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		
180.00	20' Dipole	1	60.00	7.520	1.00	147.40	11.630	1.00	0.000	10.000
180.00	8' Yagi	1	30.00	12.000	1.00	127.20	21.590	1.00	0.000	0.000
180.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
170.00	Ericsson AIR 21, 1.3 M, B2A	3	83.00	6.530	0.69	132.60	7.200	0.69	0.000	0.000
170.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.590	0.69	132.60	7.200	0.69	0.000	0.000
170.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	14.10	0.550	0.50	0.000	0.000
170.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
160.00	Argus LLPX310R	3	28.60	4.820	0.62	54.60	5.360	0.62	0.000	0.000
160.00	DragonWave A-ANT-18G-2-C	3	27.10	4.690	1.00	55.10	5.050	1.00	0.000	0.000
160.00	DragonWave Horizon	3	11.50	0.840	0.50	17.90	1.030	0.50	0.000	0.000
160.00	RCU	3	1.00	0.160	0.50	2.50	0.260	0.50	0.000	0.000
160.00	Samsung U-RAS Premium-F	3	33.00	1.820	0.50	45.00	2.100	0.50	0.000	0.000
160.00	Side Arms	1	560.00	8.500	1.00	680.00	10.500	1.00	0.000	0.000
154.00	CCI OPA-65R-LCUU-H8	3	88.00	13.300	0.66	141.77	14.350	0.66	0.000	0.000
154.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.940	0.50	74.30	3.290	0.50	0.000	0.000
154.00	Ericsson RRUS 12 w/ RRUS	3	71.40	3.670	0.50	80.99	4.060	0.50	0.000	0.000
154.00	Powerwave 7770.00	3	35.00	5.880	0.64	67.63	6.530	0.64	0.000	0.000
154.00	Powerwave LGP21401	6	14.10	1.290	0.50	7.70	0.340	0.50	0.000	0.000
154.00	Raycap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
154.00	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
140.00	Alcatel-Lucent 1900MHz RRH	3	44.00	3.800	0.50	75.20	4.200	0.50	0.000	0.000
140.00	Alcatel-Lucent 800 MHz	3	64.00	2.400	0.50	71.30	2.720	0.50	0.000	0.000
140.00	Alcatel-Lucent TD-RRH8x20	3	66.10	4.300	0.50	82.70	4.430	0.50	0.000	0.000
140.00	RFS APXV9ERR18-C-A20	1	62.00	8.260	0.70	113.90	9.080	0.70	0.000	0.000
140.00	RFS APXVSP18-C-A20	2	57.00	8.260	0.68	106.50	9.080	0.68	0.000	0.000
140.00	RFS APXVTM14-C-I20	3	56.20	6.900	0.65	92.40	7.580	0.65	0.000	0.000
140.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
109.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.510	0.50	61.40	2.870	0.50	0.000	1.000
109.00	Alcatel-Lucent RRH2X60-	3	43.00	2.190	0.50	61.40	2.870	0.50	0.000	1.000
109.00	Alcatel-Lucent RRH2X60-	3	44.00	2.190	0.50	61.40	2.870	0.50	0.000	1.000
108.00	Antel BXA-70063-6CF-EDIN-X	3	17.00	7.730	0.66	58.00	8.540	0.66	0.000	2.000
108.00	Antel BXA-80063/4CF 5°	3	9.90	5.160	0.63	37.73	5.741	0.63	0.000	2.000
108.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
108.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	5.600	0.50	144.50	6.080	0.50	0.000	2.000
107.00	Commscope SBNHH-1D65B	6	40.60	8.330	0.69	97.61	9.240	0.69	0.000	3.000
Totals		93	10926.00			14,334.11			Number of Loadings : 35	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	No Ice		Ice		Exposed To Wind
				Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	180.00	3	7/8" Coax	0.33	0.00	0.00	0.00	N

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

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Customer: AT&T Mobility

0.00	170.00	12	1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	170.00	1	1" Hybrid	0.65	0.00	0.00	0.00	N
0.00	160.00	3	0.28" Fiber	0.03	0.00	0.00	0.00	N
0.00	160.00	1	0.32" Cable	0.06	0.00	0.00	0.00	N
0.00	160.00	3	1/2" Coax	0.15	0.00	0.00	0.00	N
0.00	160.00	2	2" Conduit	3.65	0.00	0.00	0.00	N
0.00	160.00	3	5/8" Coax	0.15	0.00	0.00	0.00	N
0.00	154.00	1	0.39" Fiber Trunk	0.07	0.00	0.00	0.00	N
0.00	154.00	2	0.78" 8 AWG6	0.59	0.00	0.00	0.00	N
0.00	154.00	6	1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	154.00	1	3" Conduit	7.58	0.00	0.00	0.00	N
0.00	140.00	4	1 1/4" Hybriflex Cable	1.00	0.00	0.00	0.00	N
0.00	108.00	12	1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	108.00	1	1 5/8" Fiber	1.61	0.00	0.00	0.00	N
0.00	108.00	1	1 5/8" Hybriflex	1.30	0.00	0.00	0.00	N
			Total Weight	2,893.78 (lb)		0.00 (lb)		

Site Number: 370627

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:52 AM

Customer: AT&T Mobility

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Fa (ksi)	Weight (lb)
0.00		0.3750	63.000	74.537	36,933.4	27.86	168.00	65	49	0	0.0
5.00		0.3750	61.481	72.729	34,310.8	27.15	163.95	65	50	0	1,252.8
10.00		0.3750	59.962	70.921	31,815.3	26.43	159.90	65	51	0	1,222.0
15.00		0.3750	58.443	69.113	29,443.9	25.72	155.85	65	51	0	1,191.3
20.00		0.3750	56.925	67.306	27,193.4	25.00	151.80	65	52	0	1,160.5
25.00		0.3750	55.406	65.498	25,060.6	24.29	147.75	65	52	0	1,129.8
30.00		0.3750	53.887	63.690	23,042.3	23.57	143.70	65	52	0	1,099.0
31.25	Bot - Section 2	0.3750	53.507	63.238	22,555.3	23.40	142.69	65	52	0	269.9
35.00		0.3750	52.368	61.882	21,135.4	22.86	139.65	65	52	0	1,608.0
37.50	Top - Section 1	0.3750	52.359	61.871	21,123.9	22.86	139.62	65	52	0	1,052.8
40.00		0.3750	51.599	60.967	20,211.6	22.50	137.60	65	52	0	522.5
45.00		0.3750	50.080	59.160	18,466.5	21.78	133.55	65	52	0	1,021.9
50.00		0.3750	48.561	57.352	16,824.8	21.07	129.50	65	52	0	991.2
55.00		0.3750	47.043	55.544	15,283.5	20.36	125.45	65	52	0	960.4
60.00		0.3750	45.524	53.736	13,839.3	19.64	121.40	65	52	0	929.6
63.25	Bot - Section 3	0.3750	44.536	52.561	12,951.1	19.18	118.76	65	52	0	587.8
65.00		0.3750	44.005	51.929	12,489.0	18.93	117.35	65	52	0	627.5
68.75	Top - Section 2	0.3750	43.616	51.465	12,157.8	18.75	116.31	65	52	0	1,319.4
70.00		0.3750	43.236	51.014	11,840.3	18.57	115.30	65	52	0	217.9
75.00		0.3750	41.717	49.206	10,625.7	17.85	111.25	65	52	0	852.6
80.00		0.3750	40.198	47.398	9,497.0	17.14	107.20	65	52	0	821.8
85.00		0.3750	38.679	45.590	8,451.3	16.42	103.15	65	52	0	791.0
90.00		0.3750	37.161	43.783	7,485.3	15.71	99.09	65	52	0	760.3
95.00		0.3750	35.642	41.975	6,595.9	15.00	95.04	65	52	0	729.5
96.08	Bot - Section 4	0.3750	35.313	41.583	6,412.9	14.84	94.17	65	52	0	154.0
100.0		0.3750	34.123	40.167	5,779.8	14.28	90.99	65	52	0	1,101.4
100.7	Top - Section 3	0.3750	34.645	40.788	6,052.3	14.53	92.39	65	52	0	206.6
105.0		0.3750	33.354	39.252	5,393.7	13.92	88.94	65	52	0	578.8
107.0		0.3750	32.747	38.529	5,101.1	13.63	87.32	65	52	0	264.7
108.0		0.3750	32.443	38.167	4,958.8	13.49	86.51	65	52	0	130.5
109.0		0.3750	32.139	37.806	4,819.3	13.35	85.70	65	52	0	129.3
110.0		0.3750	31.835	37.444	4,682.3	13.21	84.89	65	52	0	128.0
115.0		0.3750	30.316	35.636	4,036.4	12.49	80.84	65	52	0	621.7
120.0		0.3750	28.797	33.829	3,452.7	11.78	76.79	65	52	0	590.9
125.0		0.3750	27.279	32.021	2,928.3	11.06	72.74	65	52	0	560.2
129.7	Bot - Section 5	0.3750	25.836	30.304	2,481.9	10.38	68.90	65	52	0	503.7
130.0		0.3750	25.760	30.213	2,459.8	10.35	68.69	65	52	0	47.8
133.5	Top - Section 4	0.3125	25.296	24.780	1,954.2	12.51	80.95	65	52	0	669.2
135.0		0.3125	24.866	24.353	1,854.9	12.27	79.57	65	52	0	118.4
140.0		0.3125	23.347	22.847	1,531.6	11.41	74.71	65	52	0	401.5
145.0		0.3125	21.828	21.340	1,248.1	10.55	69.85	65	52	0	375.9
150.0		0.3125	20.309	19.834	1,002.0	9.70	64.99	65	52	0	350.3
154.0		0.3125	19.094	18.629	830.2	9.01	61.10	65	52	0	261.8
155.0		0.3125	18.791	18.327	790.6	8.84	60.13	65	52	0	62.9
160.0		0.3125	17.272	16.821	611.2	7.98	55.27	65	52	0	299.0
164.3	Bot - Section 6	0.3125	15.955	15.515	479.7	7.24	51.06	65	52	0	238.4
165.0		0.3125	15.753	15.314	461.3	7.13	50.41	65	52	0	64.0
167.2	Top - Section 5	0.2500	15.569	12.155	360.4	9.22	62.28	65	52	0	209.8
170.0		0.2500	14.734	11.493	304.6	8.63	58.94	65	52	0	110.6
175.0		0.2500	13.215	10.287	218.5	7.56	52.86	65	52	0	185.3
179.0		0.2500	12.000	9.323	162.6	6.70	48.00	65	52	0	133.5
											29,617.5

Load Case: No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		233.4	0.0					0.0	0.0	233.4	0.0	0.0	0.0
5.00		461.1	1,252.8					0.0	98.2	461.1	1,350.9	0.0	0.0
10.00		449.7	1,222.0					0.0	98.2	449.7	1,320.2	0.0	0.0
15.00		438.3	1,191.3					0.0	98.2	438.3	1,289.4	0.0	0.0
20.00		426.9	1,160.5					0.0	98.2	426.9	1,258.7	0.0	0.0
25.00		415.5	1,129.8					0.0	98.2	415.5	1,227.9	0.0	0.0
30.00		255.2	1,099.0					0.0	98.2	255.2	1,197.1	0.0	0.0
31.25	Bot - Section 2	201.5	269.9					0.0	24.5	201.5	294.5	0.0	0.0
35.00		252.7	1,608.0					0.0	73.6	252.7	1,681.6	0.0	0.0
37.50	Top - Section 1	203.6	1,052.8					0.0	49.1	203.6	1,101.8	0.0	0.0
40.00		306.9	522.5					0.0	49.1	306.9	571.6	0.0	0.0
45.00		410.1	1,021.9					0.0	98.2	410.1	1,120.1	0.0	0.0
50.00		409.9	991.2					0.0	98.2	409.9	1,089.3	0.0	0.0
55.00		408.0	960.4					0.0	98.2	408.0	1,058.5	0.0	0.0
60.00		334.6	929.6					0.0	98.2	334.6	1,027.8	0.0	0.0
63.25	Bot - Section 3	202.6	587.8					0.0	63.8	202.6	651.6	0.0	0.0
65.00		223.5	627.5					0.0	34.4	223.5	661.9	0.0	0.0
68.75	Top - Section 2	202.4	1,319.4					0.0	73.6	202.4	1,393.0	0.0	0.0
70.00		249.8	217.9					0.0	24.5	249.8	242.5	0.0	0.0
75.00		395.4	852.6					0.0	98.2	395.4	950.7	0.0	0.0
80.00		388.1	821.8					0.0	98.2	388.1	920.0	0.0	0.0
85.00		380.0	791.0					0.0	98.2	380.0	889.2	0.0	0.0
90.00		371.1	760.3					0.0	98.2	371.1	858.4	0.0	0.0
95.00		222.3	729.5					0.0	98.2	222.3	827.7	0.0	0.0
96.08	Bot - Section 4	181.2	154.0					0.0	21.3	181.2	175.3	0.0	0.0
100.00		169.1	1,101.4					0.0	76.9	169.1	1,178.3	0.0	0.0
100.75	Top - Section 3	176.8	206.6					0.0	14.7	176.8	221.3	0.0	0.0
105.00		219.1	578.8					0.0	83.4	219.1	662.2	0.0	0.0
107.00	Appertunance(s)	103.4	264.7	1,346.9	0.0	4,040.8	243.6	0.0	39.3	1,450.4	547.5	0.0	0.0
108.00	Appertunance(s)	68.3	130.5	2,102.1	0.0	2,176.1	1,624.7	0.0	19.6	2,170.4	1,774.8	0.0	0.0
109.00	Appertunance(s)	67.8	129.3	403.7	0.0	403.7	431.1	0.0	15.9	471.5	576.3	0.0	0.0
110.00		199.2	128.0					0.0	15.9	199.2	143.9	0.0	0.0
115.00		324.7	621.7					0.0	79.5	324.7	701.2	0.0	0.0
120.00		312.2	590.9					0.0	79.5	312.2	670.4	0.0	0.0
125.00		292.1	560.2					0.0	79.5	292.1	639.7	0.0	0.0
129.75	Bot - Section 5	146.5	503.7					0.0	75.5	146.5	579.2	0.0	0.0
130.00		110.5	47.8					0.0	4.0	110.5	51.7	0.0	0.0
133.58	Top - Section 4	142.9	669.2					0.0	57.0	142.9	726.2	0.0	0.0
135.00		175.7	118.4					0.0	22.5	175.7	141.0	0.0	0.0
140.00	Appertunance(s)	264.5	401.5	2,842.0	0.0	0.0	2,366.9	0.0	79.5	3,106.5	2,847.9	0.0	0.0
145.00		249.8	375.9					0.0	74.5	249.8	450.4	0.0	0.0
150.00		212.6	350.3					0.0	74.5	212.6	424.8	0.0	0.0
154.00	Appertunance(s)	113.5	261.8	3,301.6	0.0	0.0	1,779.6	0.0	59.6	3,415.2	2,101.0	0.0	0.0
155.00		127.7	62.9					0.0	5.8	127.7	68.7	0.0	0.0
160.00	Appertunance(s)	190.7	299.0	1,554.7	0.0	0.0	863.6	0.0	29.2	1,745.5	1,191.8	0.0	0.0
164.33	Bot - Section 6	98.0	238.4					0.0	7.8	98.0	246.2	0.0	0.0
165.00		55.5	64.0					0.0	1.2	55.5	65.2	0.0	0.0
167.25	Top - Section 5	92.4	209.8					0.0	4.1	92.4	213.8	0.0	0.0

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:55 AM

Customer: AT&T Mobility

Load Case: No Ice 80.00 mph Wind with No Ice 27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

170.00	Appertunance(s)	133.8	110.6	2,382.8	0.0	0.0	2,026.5	0.0	4.9	2,516.7	2,142.1	0.0	0.0
175.00		145.2	185.3					0.0	1.7	145.2	186.9	0.0	0.0
179.00		61.1	133.5					0.0	1.3	61.1	134.8	0.0	0.0
Totals:										26,210.9	41,846.9	0.00	0.00

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:55 AM

Customer: AT&T Mobility

Load Case: No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-27.885	-43.405	0.000	0.000	0.000	-3,398.156	0.000	0.000	0.000	0.000
5.00	-27.518	-41.992	0.000	0.000	0.000	-3,258.732	-0.069	0.000	0.069	-0.128
10.00	-27.160	-40.610	0.000	0.000	0.000	-3,121.143	-0.275	0.000	0.275	-0.260
15.00	-26.809	-39.258	0.000	0.000	0.000	-2,985.349	-0.621	0.000	0.621	-0.397
20.00	-26.467	-37.937	0.000	0.000	0.000	-2,851.306	-1.113	0.000	1.113	-0.538
25.00	-26.133	-36.646	0.000	0.000	0.000	-2,718.975	-1.755	0.000	1.755	-0.684
30.00	-25.921	-35.409	0.000	0.000	0.000	-2,588.312	-2.552	0.000	2.552	-0.834
31.25	-25.763	-35.082	0.000	0.000	0.000	-2,555.912	-2.776	0.000	2.776	-0.874
35.00	-25.542	-33.361	0.000	0.000	0.000	-2,459.301	-3.510	0.000	3.510	-0.993
37.50	-25.364	-32.226	0.000	0.000	0.000	-2,395.448	-4.052	0.000	4.052	-1.074
40.00	-25.114	-31.607	0.000	0.000	0.000	-2,332.039	-4.637	0.000	4.637	-1.157
45.00	-24.766	-30.426	0.000	0.000	0.000	-2,206.472	-5.935	0.000	5.935	-1.317
50.00	-24.416	-29.276	0.000	0.000	0.000	-2,082.645	-7.404	0.000	7.404	-1.482
55.00	-24.064	-28.156	0.000	0.000	0.000	-1,960.570	-9.048	0.000	9.048	-1.653
60.00	-23.769	-27.077	0.000	0.000	0.000	-1,840.250	-10.874	0.000	10.874	-1.830
63.25	-23.588	-26.394	0.000	0.000	0.000	-1,763.004	-12.162	0.000	12.162	-1.951
65.00	-23.389	-25.698	0.000	0.000	0.000	-1,721.726	-12.890	0.000	12.890	-2.017
68.75	-23.177	-24.274	0.000	0.000	0.000	-1,634.019	-14.532	0.000	14.532	-2.161
70.00	-22.968	-23.994	0.000	0.000	0.000	-1,605.049	-15.105	0.000	15.105	-2.211
75.00	-22.610	-22.985	0.000	0.000	0.000	-1,490.213	-17.519	0.000	17.519	-2.397
80.00	-22.257	-22.007	0.000	0.000	0.000	-1,377.165	-20.132	0.000	20.132	-2.589
85.00	-21.910	-21.060	0.000	0.000	0.000	-1,265.879	-22.949	0.000	22.949	-2.787
90.00	-21.569	-20.144	0.000	0.000	0.000	-1,156.330	-25.976	0.000	25.976	-2.990
95.00	-21.345	-19.282	0.000	0.000	0.000	-1,048.487	-29.219	0.000	29.219	-3.200
96.08	-21.191	-19.076	0.000	0.000	0.000	-1,025.363	-29.951	0.000	29.951	-3.248
100.0	-20.986	-17.873	0.000	0.000	0.000	-942.364	-32.687	0.000	32.687	-3.419
100.7	-20.831	-17.621	0.000	0.000	0.000	-926.625	-33.227	0.000	33.227	-3.454
105.0	-20.611	-16.925	0.000	0.000	0.000	-838.095	-36.386	0.000	36.386	-3.642
107.0	-19.147	-16.450	0.000	0.000	0.000	-792.832	-37.930	0.000	37.930	-3.728
108.0	-16.877	-14.808	0.000	0.000	0.000	-771.509	-38.715	0.000	38.715	-3.772
109.0	-16.379	-14.252	0.000	0.000	0.000	-754.229	-39.509	0.000	39.509	-3.816
110.0	-16.203	-14.085	0.000	0.000	0.000	-737.850	-40.313	0.000	40.313	-3.860
115.0	-15.880	-13.349	0.000	0.000	0.000	-656.838	-44.466	0.000	44.466	-4.072
120.0	-15.569	-12.643	0.000	0.000	0.000	-577.436	-48.845	0.000	48.845	-4.289
125.0	-15.274	-11.970	0.000	0.000	0.000	-499.593	-53.453	0.000	53.453	-4.511
129.7	-15.103	-11.375	0.000	0.000	0.000	-427.042	-58.047	0.000	58.047	-4.725
130.0	-15.007	-11.309	0.000	0.000	0.000	-423.266	-58.294	0.000	58.294	-4.737
133.5	-14.825	-10.568	0.000	0.000	0.000	-369.492	-61.909	0.000	61.909	-4.901
135.0	-14.666	-10.402	0.000	0.000	0.000	-348.491	-63.373	0.000	63.373	-4.969
140.0	-11.351	-7.795	0.000	0.000	0.000	-275.162	-68.701	0.000	68.701	-5.208
145.0	-11.089	-7.327	0.000	0.000	0.000	-218.408	-74.273	0.000	74.273	-5.437
150.0	-10.859	-6.889	0.000	0.000	0.000	-162.964	-80.079	0.000	80.079	-5.654
154.0	-7.259	-5.128	0.000	0.000	0.000	-119.529	-84.880	0.000	84.880	-5.815
155.0	-7.135	-5.059	0.000	0.000	0.000	-112.269	-86.100	0.000	86.100	-5.854
160.0	-5.286	-4.041	0.000	0.000	0.000	-76.594	-92.316	0.000	92.316	-6.024
164.3	-5.167	-3.800	0.000	0.000	0.000	-53.688	-97.837	0.000	97.837	-6.156
165.0	-5.108	-3.737	0.000	0.000	0.000	-50.244	-98.697	0.000	98.697	-6.176
167.2	-4.997	-3.529	0.000	0.000	0.000	-38.751	-101.617	0.000	101.617	-6.238
170.0	-2.263	-1.672	0.000	0.000	0.000	-25.010	-105.223	0.000	105.223	-6.300
175.0	-2.100	-1.499	0.000	0.000	0.000	-13.693	-111.859	0.000	111.859	-6.390
179.0	-1.920	0.000	0.000	0.000	0.000	-5.292	-117.226	0.000	117.226	-6.440

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:55 AM

Customer: AT&T Mobility

Load Case: No Ice

80.00 mph Wind with No Ice

27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.58	0.75	0.00	0.00	0.00	35.32	35.92	49.4	0.0	0.727
5.00	0.58	0.76	0.00	0.00	0.00	35.58	36.18	50.0	0.0	0.724
10.00	0.57	0.77	0.00	0.00	0.00	35.84	36.44	50.6	0.0	0.720
15.00	0.57	0.78	0.00	0.00	0.00	36.10	36.70	51.2	0.0	0.717
20.00	0.56	0.79	0.00	0.00	0.00	36.36	36.95	51.8	0.0	0.713
25.00	0.56	0.80	0.00	0.00	0.00	36.62	37.21	52.0	0.0	0.716
30.00	0.56	0.82	0.00	0.00	0.00	36.88	37.46	52.0	0.0	0.721
31.25	0.55	0.82	0.00	0.00	0.00	36.94	37.52	52.0	0.0	0.722
35.00	0.54	0.83	0.00	0.00	0.00	37.13	37.69	52.0	0.0	0.725
37.50	0.52	0.83	0.00	0.00	0.00	36.17	36.72	52.0	0.0	0.706
40.00	0.52	0.83	0.00	0.00	0.00	36.27	36.82	52.0	0.0	0.708
45.00	0.51	0.84	0.00	0.00	0.00	36.46	37.00	52.0	0.0	0.712
50.00	0.51	0.86	0.00	0.00	0.00	36.62	37.16	52.0	0.0	0.715
55.00	0.51	0.87	0.00	0.00	0.00	36.77	37.30	52.0	0.0	0.718
60.00	0.50	0.89	0.00	0.00	0.00	36.88	37.42	52.0	0.0	0.720
63.25	0.50	0.90	0.00	0.00	0.00	36.94	37.47	52.0	0.0	0.721
65.00	0.49	0.91	0.00	0.00	0.00	36.96	37.49	52.0	0.0	0.721
68.75	0.47	0.91	0.00	0.00	0.00	35.71	36.22	52.0	0.0	0.697
70.00	0.47	0.91	0.00	0.00	0.00	35.71	36.21	52.0	0.0	0.697
75.00	0.47	0.93	0.00	0.00	0.00	35.65	36.15	52.0	0.0	0.695
80.00	0.46	0.95	0.00	0.00	0.00	35.51	36.02	52.0	0.0	0.693
85.00	0.46	0.97	0.00	0.00	0.00	35.30	35.80	52.0	0.0	0.689
90.00	0.46	0.99	0.00	0.00	0.00	34.97	35.48	52.0	0.0	0.682
95.00	0.46	1.02	0.00	0.00	0.00	34.52	35.02	52.0	0.0	0.674
96.08	0.46	1.03	0.00	0.00	0.00	34.40	34.90	52.0	0.0	0.671
100.00	0.44	1.05	0.00	0.00	0.00	33.90	34.39	52.0	0.0	0.662
100.75	0.43	1.03	0.00	0.00	0.00	32.32	32.80	52.0	0.0	0.631
105.00	0.43	1.06	0.00	0.00	0.00	31.58	32.06	52.0	0.0	0.617
107.00	0.43	1.00	0.00	0.00	0.00	31.01	31.48	52.0	0.0	0.606
108.00	0.39	0.89	0.00	0.00	0.00	30.75	31.18	52.0	0.0	0.600
109.00	0.38	0.87	0.00	0.00	0.00	30.64	31.06	52.0	0.0	0.598
110.00	0.38	0.87	0.00	0.00	0.00	30.56	30.98	52.0	0.0	0.596
115.00	0.37	0.90	0.00	0.00	0.00	30.06	30.47	52.0	0.0	0.586
120.00	0.37	0.93	0.00	0.00	0.00	29.34	29.76	52.0	0.0	0.573
125.00	0.37	0.96	0.00	0.00	0.00	28.36	28.78	52.0	0.0	0.554
129.75	0.38	1.00	0.00	0.00	0.00	27.08	27.51	52.0	0.0	0.529
130.00	0.37	1.00	0.00	0.00	0.00	27.01	27.44	52.0	0.0	0.528
133.58	0.43	1.21	0.00	0.00	0.00	29.14	29.64	52.0	0.0	0.570
135.00	0.43	1.21	0.00	0.00	0.00	28.46	28.97	52.0	0.0	0.557
140.00	0.34	1.00	0.00	0.00	0.00	25.56	25.95	52.0	0.0	0.499
145.00	0.34	1.05	0.00	0.00	0.00	23.27	23.68	52.0	0.0	0.456
150.00	0.35	1.10	0.00	0.00	0.00	20.12	20.56	52.0	0.0	0.396
154.00	0.28	0.79	0.00	0.00	0.00	16.75	17.08	52.0	0.0	0.329
155.00	0.28	0.78	0.00	0.00	0.00	16.26	16.59	52.0	0.0	0.319
160.00	0.24	0.63	0.00	0.00	0.00	13.19	13.47	52.0	0.0	0.259
164.33	0.24	0.67	0.00	0.00	0.00	10.88	11.19	52.0	0.0	0.215
165.00	0.24	0.67	0.00	0.00	0.00	10.45	10.76	52.0	0.0	0.207
167.25	0.29	0.83	0.00	0.00	0.00	10.20	10.59	52.0	0.0	0.204
170.00	0.15	0.40	0.00	0.00	0.00	7.37	7.55	52.0	0.0	0.145
175.00	0.15	0.41	0.00	0.00	0.00	5.05	5.24	52.0	0.0	0.101
179.00	0.00	0.41	0.00	0.00	0.00	2.38	2.49	52.0	0.0	0.048

Load Case: Ice	69.28 mph Wind with Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		177.8	0.0					0.0	0.0	177.8	0.0	0.0	0.0
5.00		351.4	1,444.0					0.0	98.2	351.4	1,542.2	0.0	0.0
10.00		342.9	1,408.6					0.0	98.2	342.9	1,506.7	0.0	0.0
15.00		334.3	1,373.2					0.0	98.2	334.3	1,471.3	0.0	0.0
20.00		325.8	1,337.7					0.0	98.2	325.8	1,435.9	0.0	0.0
25.00		317.2	1,302.3					0.0	98.2	317.2	1,400.4	0.0	0.0
30.00		194.9	1,266.8					0.0	98.2	194.9	1,365.0	0.0	0.0
31.25	Bot - Section 2	153.9	311.6					0.0	24.5	153.9	336.1	0.0	0.0
35.00		193.1	1,732.1					0.0	73.6	193.1	1,805.7	0.0	0.0
37.50	Top - Section 1	155.6	1,134.3					0.0	49.1	155.6	1,183.4	0.0	0.0
40.00		234.7	602.9					0.0	49.1	234.7	651.9	0.0	0.0
45.00		313.7	1,178.0					0.0	98.2	313.7	1,276.1	0.0	0.0
50.00		313.7	1,142.5					0.0	98.2	313.7	1,240.7	0.0	0.0
55.00		312.5	1,107.1					0.0	98.2	312.5	1,205.3	0.0	0.0
60.00		256.4	1,071.7					0.0	98.2	256.4	1,169.8	0.0	0.0
63.25	Bot - Section 3	155.3	678.1					0.0	63.8	155.3	741.9	0.0	0.0
65.00		171.4	676.4					0.0	34.4	171.4	710.8	0.0	0.0
68.75	Top - Section 2	155.2	1,421.4					0.0	73.6	155.2	1,495.1	0.0	0.0
70.00		191.7	251.7					0.0	24.5	191.7	276.2	0.0	0.0
75.00		303.7	982.8					0.0	98.2	303.7	1,081.0	0.0	0.0
80.00		298.3	947.4					0.0	98.2	298.3	1,045.5	0.0	0.0
85.00		292.4	911.9					0.0	98.2	292.4	1,010.1	0.0	0.0
90.00		285.8	876.5					0.0	98.2	285.8	974.6	0.0	0.0
95.00		171.3	841.1					0.0	98.2	171.3	939.2	0.0	0.0
96.08	Bot - Section 4	139.8	178.0					0.0	21.3	139.8	199.2	0.0	0.0
100.00		130.4	1,186.9					0.0	76.9	130.4	1,263.8	0.0	0.0
100.75	Top - Section 3	136.5	222.9					0.0	14.7	136.5	237.6	0.0	0.0
105.00		169.2	667.6					0.0	83.4	169.2	751.0	0.0	0.0
107.00	Appertunance(s)	79.9	305.7	1,120.5	0.0	3,361.5	585.7	0.0	39.3	1,200.4	930.6	0.0	0.0
108.00	Appertunance(s)	52.8	150.8	1,822.9	0.0	1,804.3	2,131.7	0.0	19.6	1,875.7	2,302.1	0.0	0.0
109.00	Appertunance(s)	52.4	149.4	378.3	0.0	378.3	552.6	0.0	15.9	430.7	717.9	0.0	0.0
110.00		154.2	148.0					0.0	15.9	154.2	163.9	0.0	0.0
115.00		251.6	716.8					0.0	79.5	251.6	796.3	0.0	0.0
120.00		242.3	681.3					0.0	79.5	242.3	760.8	0.0	0.0
125.00		227.1	645.9					0.0	79.5	227.1	725.4	0.0	0.0
129.75	Bot - Section 5	114.0	580.9					0.0	75.5	114.0	656.4	0.0	0.0
130.00		86.0	51.9					0.0	4.0	86.0	55.9	0.0	0.0
133.58	Top - Section 4	111.4	726.3					0.0	57.0	111.4	783.2	0.0	0.0
135.00		137.2	140.6					0.0	22.5	137.2	163.1	0.0	0.0
140.00	Appertunance(s)	206.9	475.1	2,438.6	0.0	0.0	2,991.7	0.0	79.5	2,645.5	3,546.3	0.0	0.0
145.00		195.9	444.8					0.0	74.5	195.9	519.3	0.0	0.0
150.00		167.2	414.5					0.0	74.5	167.2	489.0	0.0	0.0
154.00	Appertunance(s)	89.5	310.1	2,706.2	0.0	0.0	2,354.7	0.0	59.6	2,795.7	2,724.4	0.0	0.0
155.00		101.1	74.8					0.0	5.8	101.1	80.6	0.0	0.0
160.00	Appertunance(s)	151.3	353.8	1,327.0	0.0	0.0	1,205.3	0.0	29.2	1,478.3	1,588.3	0.0	0.0
164.33	Bot - Section 6	77.9	282.4					0.0	7.8	77.9	290.2	0.0	0.0
165.00		44.3	70.8					0.0	1.2	44.3	72.0	0.0	0.0
167.25	Top - Section 5	73.8	232.1					0.0	4.1	73.8	236.2	0.0	0.0

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:58 AM

Customer: AT&T Mobility

Load Case: Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

170.00	Appertunance(s)	107.4	136.5	2,064.3	0.0	0.0	2,537.9	0.0	4.9	2,171.7	2,679.3	0.0	0.0
175.00		117.0	227.6					0.0	1.7	117.0	229.3	0.0	0.0
179.00		49.5	164.3					0.0	1.3	49.5	165.6	0.0	0.0
Totals:										21,327.1	48,992.9	0.00	0.00

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:58 AM

Customer: AT&T Mobility

Load Case: Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-23.243	-50.944	0.000	0.000	0.000	-2,935.828	0.000	0.000	0.000	0.000
5.00	-22.987	-49.357	0.000	0.000	0.000	-2,819.617	-0.060	0.000	0.060	-0.111
10.00	-22.737	-47.806	0.000	0.000	0.000	-2,704.685	-0.237	0.000	0.237	-0.225
15.00	-22.493	-46.289	0.000	0.000	0.000	-2,591.004	-0.537	0.000	0.537	-0.344
20.00	-22.254	-44.807	0.000	0.000	0.000	-2,478.543	-0.963	0.000	0.963	-0.466
25.00	-22.022	-43.360	0.000	0.000	0.000	-2,367.275	-1.520	0.000	1.520	-0.593
30.00	-21.871	-41.966	0.000	0.000	0.000	-2,257.169	-2.211	0.000	2.211	-0.724
31.25	-21.764	-41.606	0.000	0.000	0.000	-2,229.830	-2.406	0.000	2.406	-0.759
35.00	-21.606	-39.770	0.000	0.000	0.000	-2,148.218	-3.044	0.000	3.044	-0.862
37.50	-21.480	-38.562	0.000	0.000	0.000	-2,094.206	-3.515	0.000	3.515	-0.934
40.00	-21.305	-37.875	0.000	0.000	0.000	-2,040.507	-4.023	0.000	4.023	-1.006
45.00	-21.058	-36.552	0.000	0.000	0.000	-1,933.985	-5.152	0.000	5.152	-1.146
50.00	-20.809	-35.265	0.000	0.000	0.000	-1,828.697	-6.431	0.000	6.431	-1.291
55.00	-20.559	-34.013	0.000	0.000	0.000	-1,724.654	-7.864	0.000	7.864	-1.441
60.00	-20.346	-32.804	0.000	0.000	0.000	-1,621.862	-9.457	0.000	9.457	-1.597
63.25	-20.216	-32.038	0.000	0.000	0.000	-1,555.739	-10.581	0.000	10.581	-1.703
65.00	-20.074	-31.300	0.000	0.000	0.000	-1,520.362	-11.217	0.000	11.217	-1.762
68.75	-19.915	-29.781	0.000	0.000	0.000	-1,445.087	-12.652	0.000	12.652	-1.889
70.00	-19.769	-29.475	0.000	0.000	0.000	-1,420.194	-13.153	0.000	13.153	-1.933
75.00	-19.510	-28.349	0.000	0.000	0.000	-1,321.353	-15.266	0.000	15.266	-2.098
80.00	-19.255	-27.257	0.000	0.000	0.000	-1,223.804	-17.554	0.000	17.554	-2.268
85.00	-19.003	-26.201	0.000	0.000	0.000	-1,127.533	-20.024	0.000	20.024	-2.444
90.00	-18.756	-25.179	0.000	0.000	0.000	-1,032.520	-22.681	0.000	22.681	-2.626
95.00	-18.588	-24.212	0.000	0.000	0.000	-938.743	-25.532	0.000	25.532	-2.814
96.08	-18.480	-23.988	0.000	0.000	0.000	-918.607	-26.175	0.000	26.175	-2.857
100.0	-18.322	-22.704	0.000	0.000	0.000	-846.227	-28.583	0.000	28.583	-3.010
100.7	-18.213	-22.441	0.000	0.000	0.000	-832.486	-29.058	0.000	29.058	-3.041
105.0	-18.049	-21.662	0.000	0.000	0.000	-755.084	-31.842	0.000	31.842	-3.211
107.0	-16.819	-20.784	0.000	0.000	0.000	-715.626	-33.204	0.000	33.204	-3.288
108.0	-14.826	-18.584	0.000	0.000	0.000	-697.003	-33.896	0.000	33.896	-3.328
109.0	-14.367	-17.882	0.000	0.000	0.000	-681.799	-34.598	0.000	34.598	-3.368
110.0	-14.239	-17.699	0.000	0.000	0.000	-667.433	-35.307	0.000	35.307	-3.407
115.0	-13.997	-16.872	0.000	0.000	0.000	-596.237	-38.977	0.000	38.977	-3.599
120.0	-13.763	-16.080	0.000	0.000	0.000	-526.253	-42.850	0.000	42.850	-3.797
125.0	-13.540	-15.325	0.000	0.000	0.000	-457.441	-46.934	0.000	46.934	-4.000
129.7	-13.405	-14.654	0.000	0.000	0.000	-393.127	-51.011	0.000	51.011	-4.196
130.0	-13.337	-14.586	0.000	0.000	0.000	-389.776	-51.231	0.000	51.231	-4.207
133.5	-13.193	-13.789	0.000	0.000	0.000	-341.986	-54.445	0.000	54.445	-4.359
135.0	-13.078	-13.603	0.000	0.000	0.000	-323.297	-55.747	0.000	55.747	-4.421
140.0	-10.200	-10.238	0.000	0.000	0.000	-257.907	-60.495	0.000	60.495	-4.644
145.0	-9.997	-9.700	0.000	0.000	0.000	-206.910	-65.471	0.000	65.471	-4.860
150.0	-9.817	-9.196	0.000	0.000	0.000	-156.925	-70.669	0.000	70.669	-5.067
154.0	-6.799	-6.723	0.000	0.000	0.000	-117.656	-74.978	0.000	74.978	-5.223
155.0	-6.704	-6.639	0.000	0.000	0.000	-110.856	-76.075	0.000	76.075	-5.262
160.0	-5.098	-5.182	0.000	0.000	0.000	-77.336	-81.672	0.000	81.672	-5.431
164.3	-4.999	-4.894	0.000	0.000	0.000	-55.247	-86.659	0.000	86.659	-5.565
165.0	-4.951	-4.823	0.000	0.000	0.000	-51.914	-87.437	0.000	87.437	-5.586
167.2	-4.860	-4.590	0.000	0.000	0.000	-40.774	-90.081	0.000	90.081	-5.651
170.0	-2.437	-2.135	0.000	0.000	0.000	-27.409	-93.352	0.000	93.352	-5.717
175.0	-2.300	-1.916	0.000	0.000	0.000	-15.225	-99.386	0.000	99.386	-5.816
179.0	-2.093	0.000	0.000	0.000	0.000	-6.026	-104.277	0.000	104.277	-5.872

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:58 AM

Customer: AT&T Mobility

Load Case: Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.68	0.63	0.00	0.00	0.00	30.51	31.21	49.4	0.0	0.632
5.00	0.68	0.64	0.00	0.00	0.00	30.78	31.48	50.0	0.0	0.630
10.00	0.67	0.65	0.00	0.00	0.00	31.06	31.75	50.6	0.0	0.627
15.00	0.67	0.66	0.00	0.00	0.00	31.33	32.02	51.2	0.0	0.625
20.00	0.67	0.67	0.00	0.00	0.00	31.61	32.30	51.8	0.0	0.623
25.00	0.66	0.68	0.00	0.00	0.00	31.89	32.57	52.0	0.0	0.627
30.00	0.66	0.69	0.00	0.00	0.00	32.16	32.84	52.0	0.0	0.632
31.25	0.66	0.69	0.00	0.00	0.00	32.23	32.91	52.0	0.0	0.633
35.00	0.64	0.70	0.00	0.00	0.00	32.43	33.09	52.0	0.0	0.637
37.50	0.62	0.70	0.00	0.00	0.00	31.63	32.27	52.0	0.0	0.621
40.00	0.62	0.70	0.00	0.00	0.00	31.74	32.38	52.0	0.0	0.623
45.00	0.62	0.72	0.00	0.00	0.00	31.95	32.60	52.0	0.0	0.627
50.00	0.61	0.73	0.00	0.00	0.00	32.16	32.80	52.0	0.0	0.631
55.00	0.61	0.75	0.00	0.00	0.00	32.34	32.98	52.0	0.0	0.634
60.00	0.61	0.76	0.00	0.00	0.00	32.50	33.14	52.0	0.0	0.638
63.25	0.61	0.78	0.00	0.00	0.00	32.59	33.23	52.0	0.0	0.639
65.00	0.60	0.78	0.00	0.00	0.00	32.64	33.27	52.0	0.0	0.640
68.75	0.58	0.78	0.00	0.00	0.00	31.59	32.19	52.0	0.0	0.619
70.00	0.58	0.78	0.00	0.00	0.00	31.60	32.20	52.0	0.0	0.620
75.00	0.58	0.80	0.00	0.00	0.00	31.61	32.21	52.0	0.0	0.620
80.00	0.58	0.82	0.00	0.00	0.00	31.56	32.17	52.0	0.0	0.619
85.00	0.57	0.84	0.00	0.00	0.00	31.44	32.05	52.0	0.0	0.617
90.00	0.58	0.86	0.00	0.00	0.00	31.23	31.84	52.0	0.0	0.613
95.00	0.58	0.89	0.00	0.00	0.00	30.91	31.52	52.0	0.0	0.606
96.08	0.58	0.90	0.00	0.00	0.00	30.82	31.43	52.0	0.0	0.605
100.00	0.57	0.92	0.00	0.00	0.00	30.44	31.04	52.0	0.0	0.597
100.75	0.55	0.90	0.00	0.00	0.00	29.03	29.62	52.0	0.0	0.570
105.00	0.55	0.93	0.00	0.00	0.00	28.45	29.04	52.0	0.0	0.559
107.00	0.54	0.88	0.00	0.00	0.00	27.99	28.57	52.0	0.0	0.550
108.00	0.49	0.78	0.00	0.00	0.00	27.78	28.30	52.0	0.0	0.544
109.00	0.47	0.77	0.00	0.00	0.00	27.70	28.21	52.0	0.0	0.543
110.00	0.47	0.77	0.00	0.00	0.00	27.65	28.15	52.0	0.0	0.542
115.00	0.47	0.79	0.00	0.00	0.00	27.28	27.79	52.0	0.0	0.535
120.00	0.48	0.82	0.00	0.00	0.00	26.74	27.25	52.0	0.0	0.524
125.00	0.48	0.85	0.00	0.00	0.00	25.96	26.48	52.0	0.0	0.509
129.75	0.48	0.89	0.00	0.00	0.00	24.93	25.46	52.0	0.0	0.490
130.00	0.48	0.89	0.00	0.00	0.00	24.87	25.40	52.0	0.0	0.489
133.58	0.56	1.07	0.00	0.00	0.00	26.97	27.59	52.0	0.0	0.531
135.00	0.56	1.08	0.00	0.00	0.00	26.40	27.03	52.0	0.0	0.520
140.00	0.45	0.90	0.00	0.00	0.00	23.95	24.45	52.0	0.0	0.470
145.00	0.45	0.94	0.00	0.00	0.00	22.05	22.56	52.0	0.0	0.434
150.00	0.46	1.00	0.00	0.00	0.00	19.38	19.92	52.0	0.0	0.383
154.00	0.36	0.74	0.00	0.00	0.00	16.49	16.89	52.0	0.0	0.325
155.00	0.36	0.74	0.00	0.00	0.00	16.05	16.46	52.0	0.0	0.317
160.00	0.31	0.61	0.00	0.00	0.00	13.31	13.66	52.0	0.0	0.263
164.33	0.32	0.65	0.00	0.00	0.00	11.20	11.57	52.0	0.0	0.223
165.00	0.31	0.65	0.00	0.00	0.00	10.80	11.17	52.0	0.0	0.215
167.25	0.38	0.81	0.00	0.00	0.00	10.73	11.20	52.0	0.0	0.215
170.00	0.19	0.43	0.00	0.00	0.00	8.08	8.30	52.0	0.0	0.160
175.00	0.19	0.45	0.00	0.00	0.00	5.61	5.85	52.0	0.0	0.113
179.00	0.00	0.45	0.00	0.00	0.00	2.71	2.82	52.0	0.0	0.054

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:39:58 AM

Customer: AT&T Mobility

Load Case: Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		91.2	0.0					0.0	0.0	91.2	0.0	0.0	0.0
5.00		180.1	1,252.8					0.0	98.2	180.1	1,350.9	0.0	0.0
10.00		175.6	1,222.0					0.0	98.2	175.6	1,320.2	0.0	0.0
15.00		171.2	1,191.3					0.0	98.2	171.2	1,289.4	0.0	0.0
20.00		166.8	1,160.5					0.0	98.2	166.8	1,258.7	0.0	0.0
25.00		162.3	1,129.8					0.0	98.2	162.3	1,227.9	0.0	0.0
30.00		99.7	1,099.0					0.0	98.2	99.7	1,197.1	0.0	0.0
31.25	Bot - Section 2	78.7	269.9					0.0	24.5	78.7	294.5	0.0	0.0
35.00		98.7	1,608.0					0.0	73.6	98.7	1,681.6	0.0	0.0
37.50	Top - Section 1	79.5	1,052.8					0.0	49.1	79.5	1,101.8	0.0	0.0
40.00		119.9	522.5					0.0	49.1	119.9	571.6	0.0	0.0
45.00		160.2	1,021.9					0.0	98.2	160.2	1,120.1	0.0	0.0
50.00		160.1	991.2					0.0	98.2	160.1	1,089.3	0.0	0.0
55.00		159.4	960.4					0.0	98.2	159.4	1,058.5	0.0	0.0
60.00		130.7	929.6					0.0	98.2	130.7	1,027.8	0.0	0.0
63.25	Bot - Section 3	79.1	587.8					0.0	63.8	79.1	651.6	0.0	0.0
65.00		87.3	627.5					0.0	34.4	87.3	661.9	0.0	0.0
68.75	Top - Section 2	79.1	1,319.4					0.0	73.6	79.1	1,393.0	0.0	0.0
70.00		97.6	217.9					0.0	24.5	97.6	242.5	0.0	0.0
75.00		154.5	852.6					0.0	98.2	154.5	950.7	0.0	0.0
80.00		151.6	821.8					0.0	98.2	151.6	920.0	0.0	0.0
85.00		148.4	791.0					0.0	98.2	148.4	889.2	0.0	0.0
90.00		145.0	760.3					0.0	98.2	145.0	858.4	0.0	0.0
95.00		86.8	729.5					0.0	98.2	86.8	827.7	0.0	0.0
96.08	Bot - Section 4	70.8	154.0					0.0	21.3	70.8	175.3	0.0	0.0
100.00		66.0	1,101.4					0.0	76.9	66.0	1,178.3	0.0	0.0
100.75	Top - Section 3	69.1	206.6					0.0	14.7	69.1	221.3	0.0	0.0
105.00		85.6	578.8					0.0	83.4	85.6	662.2	0.0	0.0
107.00	Appertunance(s)	40.4	264.7	526.1	0.0	1,578.4	243.6	0.0	39.3	566.6	547.5	0.0	0.0
108.00	Appertunance(s)	26.7	130.5	821.1	0.0	850.0	1,624.7	0.0	19.6	847.8	1,774.8	0.0	0.0
109.00	Appertunance(s)	26.5	129.3	157.7	0.0	157.7	431.1	0.0	15.9	184.2	576.3	0.0	0.0
110.00		77.8	128.0					0.0	15.9	77.8	143.9	0.0	0.0
115.00		126.8	621.7					0.0	79.5	126.8	701.2	0.0	0.0
120.00		122.0	590.9					0.0	79.5	122.0	670.4	0.0	0.0
125.00		114.1	560.2					0.0	79.5	114.1	639.7	0.0	0.0
129.75	Bot - Section 5	57.2	503.7					0.0	75.5	57.2	579.2	0.0	0.0
130.00		43.2	47.8					0.0	4.0	43.2	51.7	0.0	0.0
133.58	Top - Section 4	55.8	669.2					0.0	57.0	55.8	726.2	0.0	0.0
135.00		68.6	118.4					0.0	22.5	68.6	141.0	0.0	0.0
140.00	Appertunance(s)	103.3	401.5	1,110.2	0.0	0.0	2,366.9	0.0	79.5	1,213.5	2,847.9	0.0	0.0
145.00		97.6	375.9					0.0	74.5	97.6	450.4	0.0	0.0
150.00		83.0	350.3					0.0	74.5	83.0	424.8	0.0	0.0
154.00	Appertunance(s)	44.3	261.8	1,289.7	0.0	0.0	1,779.6	0.0	59.6	1,334.0	2,101.0	0.0	0.0
155.00		49.9	62.9					0.0	5.8	49.9	68.7	0.0	0.0
160.00	Appertunance(s)	74.5	299.0	607.3	0.0	0.0	863.6	0.0	29.2	681.8	1,191.8	0.0	0.0
164.33	Bot - Section 6	38.3	238.4					0.0	7.8	38.3	246.2	0.0	0.0
165.00		21.7	64.0					0.0	1.2	21.7	65.2	0.0	0.0
167.25	Top - Section 5	36.1	209.8					0.0	4.1	36.1	213.8	0.0	0.0

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:40:01 AM

Customer: AT&T Mobility

Load Case: Twist/Sway

50.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

170.00	Appertunance(s)	52.3	110.6	930.8	0.0	0.0	2,026.5	0.0	4.9	983.1	2,142.1	0.0	0.0
175.00		56.7	185.3					0.0	1.7	56.7	186.9	0.0	0.0
179.00		23.9	133.5					0.0	1.3	23.9	134.8	0.0	0.0
Totals:										10,238.6	41,846.9	0.00	0.00

Site Number: 370627

Code: TIA/EIA-222-F

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Customer: AT&T Mobility

Load Case: Twist/Sway

50.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-10.892	-43.432	0.000	0.000	0.000	-1,328.824	0.000	0.000	0.000	0.000
5.00	-10.749	-42.072	0.000	0.000	0.000	-1,274.364	-0.027	0.000	0.027	-0.050
10.00	-10.609	-40.742	0.000	0.000	0.000	-1,220.621	-0.107	0.000	0.107	-0.102
15.00	-10.472	-39.443	0.000	0.000	0.000	-1,167.578	-0.243	0.000	0.243	-0.155
20.00	-10.339	-38.175	0.000	0.000	0.000	-1,115.218	-0.435	0.000	0.435	-0.210
25.00	-10.209	-36.937	0.000	0.000	0.000	-1,063.525	-0.686	0.000	0.686	-0.267
30.00	-10.126	-35.734	0.000	0.000	0.000	-1,012.482	-0.998	0.000	0.998	-0.326
31.25	-10.065	-35.435	0.000	0.000	0.000	-999.825	-1.086	0.000	1.086	-0.342
35.00	-9.978	-33.747	0.000	0.000	0.000	-962.084	-1.373	0.000	1.373	-0.388
37.50	-9.909	-32.640	0.000	0.000	0.000	-937.138	-1.585	0.000	1.585	-0.420
40.00	-9.812	-32.061	0.000	0.000	0.000	-912.365	-1.814	0.000	1.814	-0.453
45.00	-9.676	-30.932	0.000	0.000	0.000	-863.308	-2.321	0.000	2.321	-0.515
50.00	-9.540	-29.833	0.000	0.000	0.000	-814.926	-2.896	0.000	2.896	-0.580
55.00	-9.404	-28.765	0.000	0.000	0.000	-767.226	-3.539	0.000	3.539	-0.647
60.00	-9.289	-27.730	0.000	0.000	0.000	-720.209	-4.254	0.000	4.254	-0.716
63.25	-9.219	-27.073	0.000	0.000	0.000	-690.021	-4.757	0.000	4.757	-0.763
65.00	-9.141	-26.406	0.000	0.000	0.000	-673.888	-5.042	0.000	5.042	-0.789
68.75	-9.059	-25.009	0.000	0.000	0.000	-639.609	-5.685	0.000	5.685	-0.845
70.00	-8.978	-24.760	0.000	0.000	0.000	-628.286	-5.909	0.000	5.909	-0.865
75.00	-8.839	-23.801	0.000	0.000	0.000	-583.398	-6.854	0.000	6.854	-0.938
80.00	-8.702	-22.872	0.000	0.000	0.000	-539.203	-7.876	0.000	7.876	-1.013
85.00	-8.568	-21.974	0.000	0.000	0.000	-495.691	-8.979	0.000	8.979	-1.090
90.00	-8.436	-21.107	0.000	0.000	0.000	-452.853	-10.164	0.000	10.164	-1.170
95.00	-8.349	-20.274	0.000	0.000	0.000	-410.675	-11.433	0.000	11.433	-1.252
96.08	-8.290	-20.094	0.000	0.000	0.000	-401.630	-11.720	0.000	11.720	-1.271
100.0	-8.210	-18.911	0.000	0.000	0.000	-369.162	-12.791	0.000	12.791	-1.338
100.7	-8.150	-18.686	0.000	0.000	0.000	-363.005	-13.002	0.000	13.002	-1.352
105.0	-8.065	-18.018	0.000	0.000	0.000	-328.367	-14.240	0.000	14.240	-1.425
107.0	-7.493	-17.482	0.000	0.000	0.000	-310.658	-14.844	0.000	14.844	-1.459
108.0	-6.605	-15.727	0.000	0.000	0.000	-302.315	-15.152	0.000	15.152	-1.476
109.0	-6.410	-15.154	0.000	0.000	0.000	-295.553	-15.463	0.000	15.463	-1.494
110.0	-6.342	-15.007	0.000	0.000	0.000	-289.143	-15.777	0.000	15.777	-1.511
115.0	-6.217	-14.300	0.000	0.000	0.000	-257.433	-17.404	0.000	17.404	-1.594
120.0	-6.097	-13.624	0.000	0.000	0.000	-226.348	-19.120	0.000	19.120	-1.679
125.0	-5.983	-12.979	0.000	0.000	0.000	-195.865	-20.925	0.000	20.925	-1.766
129.7	-5.917	-12.398	0.000	0.000	0.000	-167.447	-22.725	0.000	22.725	-1.850
130.0	-5.880	-12.344	0.000	0.000	0.000	-165.968	-22.822	0.000	22.822	-1.855
133.5	-5.809	-11.615	0.000	0.000	0.000	-144.900	-24.239	0.000	24.239	-1.919
135.0	-5.748	-11.470	0.000	0.000	0.000	-136.671	-24.812	0.000	24.812	-1.945
140.0	-4.450	-8.659	0.000	0.000	0.000	-107.932	-26.901	0.000	26.901	-2.039
145.0	-4.349	-8.206	0.000	0.000	0.000	-85.683	-29.086	0.000	29.086	-2.129
150.0	-4.260	-7.779	0.000	0.000	0.000	-63.940	-31.363	0.000	31.363	-2.214
154.0	-2.848	-5.730	0.000	0.000	0.000	-46.902	-33.246	0.000	33.246	-2.277
155.0	-2.800	-5.662	0.000	0.000	0.000	-44.054	-33.724	0.000	33.724	-2.293
160.0	-2.075	-4.496	0.000	0.000	0.000	-30.056	-36.162	0.000	36.162	-2.360
164.3	-2.028	-4.251	0.000	0.000	0.000	-21.067	-38.328	0.000	38.328	-2.411
165.0	-2.005	-4.186	0.000	0.000	0.000	-19.715	-38.666	0.000	38.666	-2.419
167.2	-1.962	-3.973	0.000	0.000	0.000	-15.204	-39.811	0.000	39.811	-2.443
170.0	-0.889	-1.875	0.000	0.000	0.000	-9.809	-41.226	0.000	41.226	-2.468
175.0	-0.825	-1.690	0.000	0.000	0.000	-5.366	-43.830	0.000	43.830	-2.503
179.0	-0.750	0.000	0.000	0.000	0.000	-2.067	-45.936	0.000	45.936	-2.523

Load Case: Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.58	0.29	0.00	0.00	0.00	13.81	14.40	49.4	0.0	0.292
5.00	0.58	0.30	0.00	0.00	0.00	13.91	14.50	50.0	0.0	0.290
10.00	0.57	0.30	0.00	0.00	0.00	14.02	14.60	50.6	0.0	0.289
15.00	0.57	0.31	0.00	0.00	0.00	14.12	14.70	51.2	0.0	0.287
20.00	0.57	0.31	0.00	0.00	0.00	14.22	14.80	51.8	0.0	0.286
25.00	0.56	0.31	0.00	0.00	0.00	14.33	14.90	52.0	0.0	0.287
30.00	0.56	0.32	0.00	0.00	0.00	14.43	15.00	52.0	0.0	0.289
31.25	0.56	0.32	0.00	0.00	0.00	14.45	15.02	52.0	0.0	0.289
35.00	0.55	0.32	0.00	0.00	0.00	14.52	15.08	52.0	0.0	0.290
37.50	0.53	0.32	0.00	0.00	0.00	14.15	14.69	52.0	0.0	0.283
40.00	0.53	0.32	0.00	0.00	0.00	14.19	14.73	52.0	0.0	0.283
45.00	0.52	0.33	0.00	0.00	0.00	14.26	14.80	52.0	0.0	0.285
50.00	0.52	0.34	0.00	0.00	0.00	14.33	14.86	52.0	0.0	0.286
55.00	0.52	0.34	0.00	0.00	0.00	14.39	14.92	52.0	0.0	0.287
60.00	0.52	0.35	0.00	0.00	0.00	14.43	14.96	52.0	0.0	0.288
63.25	0.52	0.35	0.00	0.00	0.00	14.46	14.98	52.0	0.0	0.288
65.00	0.51	0.35	0.00	0.00	0.00	14.47	14.99	52.0	0.0	0.288
68.75	0.49	0.35	0.00	0.00	0.00	13.98	14.48	52.0	0.0	0.279
70.00	0.49	0.35	0.00	0.00	0.00	13.98	14.48	52.0	0.0	0.278
75.00	0.48	0.36	0.00	0.00	0.00	13.95	14.45	52.0	0.0	0.278
80.00	0.48	0.37	0.00	0.00	0.00	13.91	14.40	52.0	0.0	0.277
85.00	0.48	0.38	0.00	0.00	0.00	13.82	14.32	52.0	0.0	0.275
90.00	0.48	0.39	0.00	0.00	0.00	13.70	14.20	52.0	0.0	0.273
95.00	0.48	0.40	0.00	0.00	0.00	13.52	14.02	52.0	0.0	0.270
96.08	0.48	0.40	0.00	0.00	0.00	13.47	13.97	52.0	0.0	0.269
100.00	0.47	0.41	0.00	0.00	0.00	13.28	13.77	52.0	0.0	0.265
100.75	0.46	0.40	0.00	0.00	0.00	12.66	13.14	52.0	0.0	0.253
105.00	0.46	0.41	0.00	0.00	0.00	12.37	12.85	52.0	0.0	0.247
107.00	0.45	0.39	0.00	0.00	0.00	12.15	12.62	52.0	0.0	0.243
108.00	0.41	0.35	0.00	0.00	0.00	12.05	12.48	52.0	0.0	0.240
109.00	0.40	0.34	0.00	0.00	0.00	12.01	12.42	52.0	0.0	0.239
110.00	0.40	0.34	0.00	0.00	0.00	11.98	12.39	52.0	0.0	0.238
115.00	0.40	0.35	0.00	0.00	0.00	11.78	12.20	52.0	0.0	0.235
120.00	0.40	0.36	0.00	0.00	0.00	11.50	11.92	52.0	0.0	0.229
125.00	0.41	0.38	0.00	0.00	0.00	11.12	11.54	52.0	0.0	0.222
129.75	0.41	0.39	0.00	0.00	0.00	10.62	11.05	52.0	0.0	0.213
130.00	0.41	0.39	0.00	0.00	0.00	10.59	11.02	52.0	0.0	0.212
133.58	0.47	0.47	0.00	0.00	0.00	11.43	11.92	52.0	0.0	0.229
135.00	0.47	0.48	0.00	0.00	0.00	11.16	11.66	52.0	0.0	0.224
140.00	0.38	0.39	0.00	0.00	0.00	10.02	10.43	52.0	0.0	0.201
145.00	0.38	0.41	0.00	0.00	0.00	9.13	9.54	52.0	0.0	0.184
150.00	0.39	0.43	0.00	0.00	0.00	7.90	8.32	52.0	0.0	0.160
154.00	0.31	0.31	0.00	0.00	0.00	6.57	6.90	52.0	0.0	0.133
155.00	0.31	0.31	0.00	0.00	0.00	6.38	6.71	52.0	0.0	0.129
160.00	0.27	0.25	0.00	0.00	0.00	5.17	5.46	52.0	0.0	0.105
164.33	0.27	0.26	0.00	0.00	0.00	4.27	4.57	52.0	0.0	0.088
165.00	0.27	0.26	0.00	0.00	0.00	4.10	4.40	52.0	0.0	0.085
167.25	0.33	0.33	0.00	0.00	0.00	4.00	4.36	52.0	0.0	0.084
170.00	0.16	0.16	0.00	0.00	0.00	2.89	3.07	52.0	0.0	0.059
175.00	0.16	0.16	0.00	0.00	0.00	1.98	2.16	52.0	0.0	0.042
179.00	0.00	0.16	0.00	0.00	0.00	0.93	0.97	52.0	0.0	0.019

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:40:01 AM

Customer: AT&T Mobility

Load Case: Twist/Sway

50.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Site Number: 370627

Code: TIA/EIA-222-F

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Site Name: Newington CT, CT

Engineering Number: 61682623

5/1/2015 11:40:01 AM

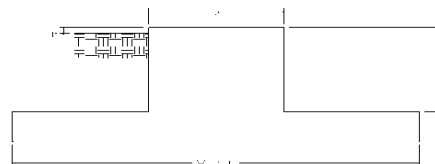
Customer: AT&T Mobility

Analysis Summary

Load Case	Reactions						Combined Stress (ksi)	Max Stresses		
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)		Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	27.9	0.00	43.40	0.00	0.00	3398.16	35.92	49.4	0.00	0.727
Ice	23.2	0.00	50.94	0.00	0.00	2935.83	33.27	52.0	65.00	0.640
Twist/Sway	10.9	0.00	43.43	0.00	0.00	1328.82	14.40	49.4	0.00	0.292

Site Name: Newington CT, CT
 Site Number: 370627
 Engineering Number: 61682623
 Engineer: Ali Mashhadi
 Date: 05/01/15
 Tower Type: MP

Program Last Updated: 5/13/2014



Design Loads (Unfactored)

	Analysis
Design / Analysis / Mapping:	
Compression/Leg:	43.4 k
Uplift/Leg:	0.0 k
Total Shear:	27.9 k
Moment:	3398.2 k-ft
Tower + Appurtenance Weight:	43.4 k
Depth to Base of Foundation:	6.50 ft
Diameter of Pier (d):	7.50 ft
Height of Pier above Ground (h):	0.50
Width of Pad (W):	24.50 ft
Length of Pad (L):	24.50 ft
Thickness of Pad (t):	2.50 ft
Tower Leg Center to Center:	0.00 ft
Number of Tower Legs:	1.0 (1 if MP or GT)
Tower Center from Mat Center:	0.00 ft
Depth Below Ground Surface to Water Table:	11.00 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Soil Above Water Table:	135.0 pcf
Unit Weight of Water:	62.4 pcf
Unit Weight of Soil Below Water Table:	75.0 pcf
Friction Angle of Uplift:	15.00 Degrees
Ultimate Coefficient of Shear Friction:	0.35
Allowable Compressive Bearing Pressure:	6000.0 psf
Ultimate Passive Pressure on Pad Face:	0.0 psf
Allowable Capacity Increase:	1.00

Concrete Strength (f'_c):	4000 psi
Pad Tension Steel Depth:	26.00 in
Wind Load Factor:	1.3
ϕ_{Shear} :	0.75
$\phi_{\text{Flexure / Tension}}$:	0.90
$\phi_{\text{Compression}}$:	0.65
β :	0.85
Bottom Pad Rebar Size #:	9
# of Bottom Pad Rebar:	36
Pad Bottom Steel Area:	36.00 in ²
Pad Steel F_y :	60000 psi
Top Pad Rebar Size #:	9
# of Top Pad Rebar:	36
Pad Top Steel Area:	36.00 in ²
Pier Rebar Size #:	9
Pier Steel Area (Single Bar):	1.00 in ²
# of Pier Rebar:	43
Pier Steel F_y :	60000 psi
Pier Cage Diameter:	82.0 in
Rebar Strain Limit:	0.008
Steel Elastic Modulus:	29000 ksi
Tie Rebar Size #:	4
Tie Steel Area (Single Bar):	0.20 in ²
Tie Spacing:	6 in
Tie Steel F_y :	60000 psi

Overturning Factor of Safety

Design OTM:	3593.5 k-ft
OTM Resistance:	7802.3 k-ft
OTM Resistance / Design OTM Factor of Safety:	2.17 Result: OK

Soil Bearing Pressure Usage:

Net Bearing Pressure:	2483 psf
Allowable Bearing Pressure:	6000 psf
Net Bearing Pressure/Allowable Bearing Pressure:	0.41 Result: OK
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge

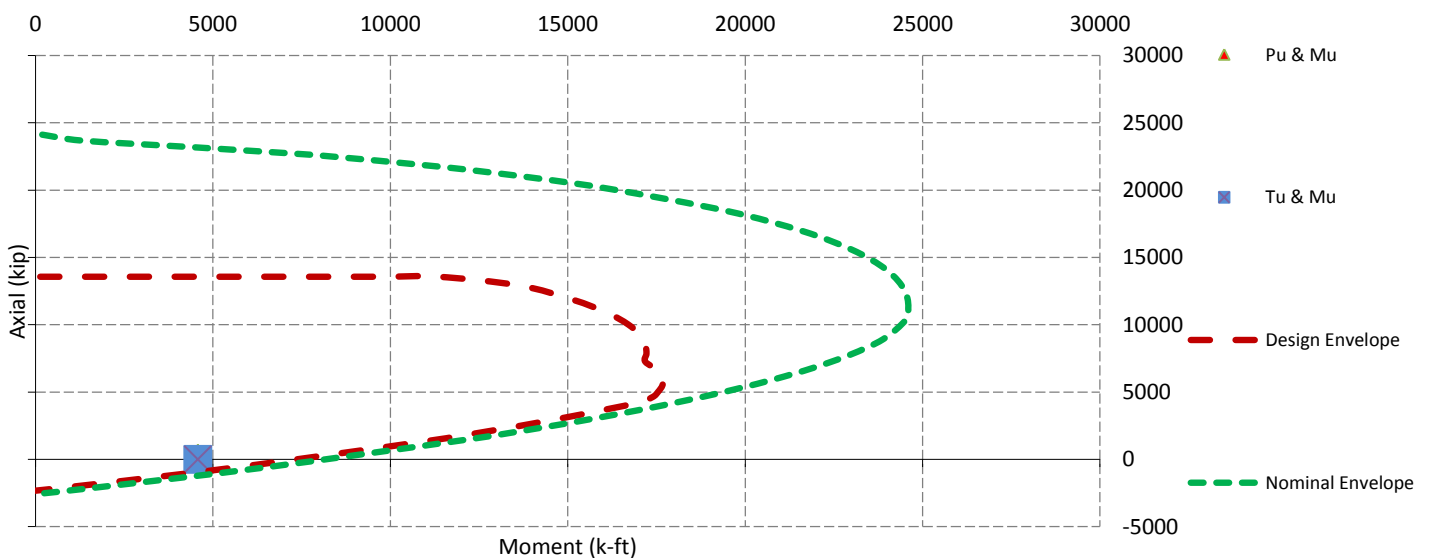
Sliding Factor of Safety

Total Ultimate Sliding Resistance:	209.5 k
Sliding Resistance/Sliding Design Factor of Safety:	7.51 Result: OK

One Way Shear, Flexural Capacity, and Punching Shear

Factored One Way Shear (V_u):	260.6 k
One Way Shear Capacity (ϕV_c):	725.2 k - ACI11.3.1.1
$V_u / \phi V_c$:	0.36 Result: OK
Load Direction Controlling Shear Capacity:	Parallel to Pad Edge
Lower Pad Steel Factored Moment (M_u):	1539.9 k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	4063.2 k-ft - ACI10.3
$M_u / \phi M_n$:	0.38 Result: OK
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge
Upper Steel Pad Factored Moment (M_u):	1218.1 k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	4063.2 k-ft
$M_u / \phi M_n$:	0.30 Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0047 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0047 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	8 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	8 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0 k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1797.8 k - ACI11.12.2.1
$V_u / \phi V_c$:	0.00 Result: OK
Factored Moment in Pier (M_u):	4580.8 k-ft
Pier Moment Capacity (ϕM_n):	7393.4 k-ft
$M_u / \phi M_n$:	0.62 Result: OK
Factored Shear in Pier (V_u):	36.3 k
Pier Shear Capacity (ϕV_n):	605.6 k
$V_u / \phi V_c$:	0.06 Result: OK
Pier Shear Reinforcement Ratio:	0.0003 No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0 k
Pier Tension Capacity (ϕT_n):	2322.0 k
$T_u / \phi T_n$:	0.00 Result: OK
Factored Compression in Pier (P_u):	56.4 k
Pier Compression Capacity (ϕP_n):	11171.5 k - ACI10.3.6.2
$P_u / \phi P_n$:	0.01 Result: OK
Pier Compression Reinforcement Ratio:	0.007 OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.62 Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



Base/Flange Plate	Plate Type	Baseplate
	Pole Diameter	63 in
	Pole Thickness	0.375 in
	Plate Diameter	73 in
	Plate Thickness	1.5 in
	Plate Fy	50 ksi
	Weld Length	0.3125 in
	Allowable	514.47 k-in
	Applied	81.39 k-in
	Stiffeners	#
	Thickness	0.375 in
	Length	5 in
	Height	10 in
	Chamfer	0 in
	Offset Angle	0 °
	Fy	36 ksi

Code Rev. **F**
A.S.I. **1.33**
Moment **3398.2 k-ft**
Axial **43.4 k**

Date **4/24/2015**
Engineer **AM**
Site # **370627**
Carrier **AT&T**

Bolts	#	45
	Bolt Circle (R)adial / (S)quare	68 in R
	Diameter	1.25 in
	Hole Diameter	1.375 in
	Type	A687
	Fy	105 ksi
	Fu	150 ksi
	Allowable	81.41 k
	Applied	54.26 k
	Reinforcement	#
Extra Bolts O	#	0

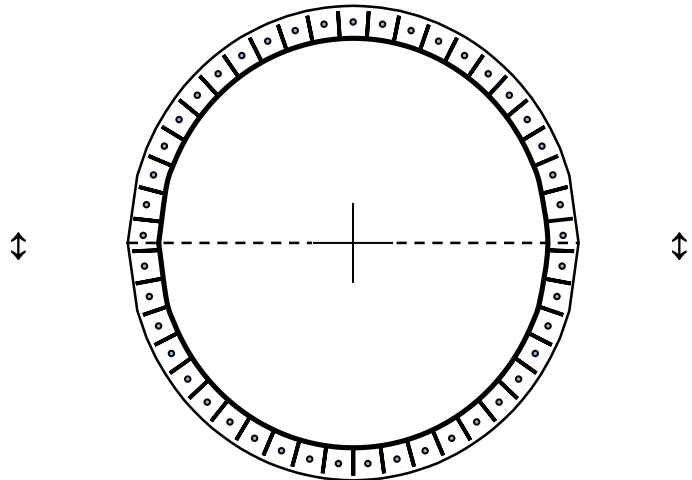


Plate Stress Ratio:
0.16 (Pass)

Bolt Stress Ratio:
0.67 (Pass)

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

AT&T Existing Facility

Site ID: CT5403

Newington Central
605 Willard Avenue
Newington, CT 06111

July 20, 2015

EBI Project Number: 6215002981

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	52.77 %

July 20, 2015

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

Emissions Analysis for Site: **CT5403 – Newington Central**

EBI Consulting was directed to analyze the proposed AT&T facility located at **605 Willard Avenue, Newington, 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 limit for the 700 MHz Band and the 800 MHz band is $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively, and the general population exposure limit for the 1900 MHz PCS band 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 **605 Willard Avenue, Newington, 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) 4 GSM channels (PCS Band -1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 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) 4 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) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts

- 6) 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.
- 7) 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.
- 8) The antennas used in this modeling are the **Powerwave 7770** for 1900 MHz (PCS) and 850 MHz channels and the **CCI OPA-65R-LCUU-H8** for 700 MHz and 1900 MHz (PCS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Powerwave 7770** has a maximum gain of **11.4 dBd** at its main lobe at 850 MHz and a maximum gain of **13.4 dBd** at its main lobe at 1900 MHz. The **CCI OPA-65R-LCUU-H8** has a maximum gain of **12.6 dBd** at its main lobe at 700 MHz and a maximum gain of **14.9 dBd** at its main lobe at 1900 MHz. 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.
- 9) The antenna mounting height centerline of the proposed antennas is **154 feet** above ground level (AGL).
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	154 feet
Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)
Channel Count	12	Channel Count	12	# PCS Channels:	12
Total TX Power:	360	Total TX Power:	360	# AWS Channels:	360
ERP (W):	6,907.09	ERP (W):	6,907.09	ERP (W):	6,907.09
Antenna A1 MPE%	1.34	Antenna B1 MPE%	1.34	Antenna C1 MPE%	1.34
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	CCI OPA-65R-LCUU-H8	Make / Model:	CCI OPA-65R-LCUU-H8	Make / Model:	CCI OPA-65R-LCUU-H8
Gain:	12.6 / 15.9 dBd	Gain:	12.6 / 15.9 dBd	Gain:	12.6 / 15.9 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	154 feet
Frequency Bands	700 MHz / 1900 MHz	Frequency Bands	700 MHz / 1900 MHz	Frequency Bands	700 MHz / 1900 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	240	Total TX Power:	240	Total TX Power:	240
ERP (W):	5,891.99	ERP (W):	5,891.99	ERP (W):	5,891.99
Antenna A2 MPE%	1.38	Antenna B2 MPE%	1.38	Antenna C2 MPE%	1.38

Site Composite MPE%	
Carrier	MPE%
AT&T	8.15 %
Nextel	3.96 %
Town of Newington	0.27 %
Verizon Wireless	31.92 %
Clearwire	0.73 %
MetroPCS / T-Mobile	0.12 %
Sprint	7.62 %
Site Total MPE %:	52.77 %

AT&T Sector 1 Total:	2.72 %
AT&T Sector 2 Total:	2.72 %
AT&T Sector 3 Total:	2.72 %
Site Total:	52.77 %

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:	2.72 %
Sector 2:	2.72 %
Sector 3 :	2.72 %
AT&T Total:	8.15 %
Site Total:	52.77 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **52.77%** 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
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