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

September 10, 2015

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

Re: Notice of Exempt Modification Application
723 Farmington Ave.
New Britain, CT 06503

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: Paul Sagristano
Vertical Development LLC
Phone- 917-841-0247
Fax- 401-633-6202
psagristano@verticaldevelopmentllc.com

cc:

Hon. Erin Stewart 50 South Main Street New Britain, CT 06503 860-826-3300		Polish Falcons Alliance of America Nest 88 723 Farmington Ave. New Britain, CT 06053 412-922-2244

siting.council@ct.gov (electronic copy)
cc – Mike Villa SBA via email

Notice of Exempt Modification
723 Farmington Ave.
West Hartford, CT 06503

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 119' monopole located at 723 Farmington Ave., in the City of New Britain, Connecticut. More particularly, AT&T plans to upgrade this site by adding LTE technology to its facilities. The proposed modifications will not increase the tower height, cause a significant adverse change or alteration in the physical or environmental characteristics of the site, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six (6) decibels, add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes, or impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

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

The monopole tower located at 723 Farmington Ave, in the City of New Britain, Connecticut (lat. 41.69832°, long. -72.78619°) is owned and operated by SBA Properties, Inc, a Florida corporation ("Landlord"). AT&T's existing facility is located within the Landlord's existing fenced compound. AT&T currently has Twelve (9) panel antennas (three (3) per sector) with a centerline of 98' 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 currently has three (3) LTE antennas, 6 (6) existing Powerwave 7770 panel antennas (Two (2) per sector), Nine (9) Powerwave TMAs, three (3) Ericsson RRUS-11 (one (1) per sector) which will be connected and located behind the Kathrein panel antennas, and one (1) DC-6 Surge Suppressor.

AT&T plans to replace the three (3) existing LTE antennas with three (3) CCI OPA-65R-LCUU-H6 panel antennas, and add three (3) RRUS-12 (1 per sector), three (3) Ericsson A2 modules (1) per sector (attached behind each respective RRU-12). The height of the tower will not be increased and all antennas, surge suppressors, and RRHs will be installed at the existing 98' centerline.

AT&T will make no modifications to their existing ground based communications platform. 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 41.85% 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 May 15, 2015). Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 2nd and 6 page of the MPE Assessment dated May 15, 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 overtax the structural integrity of the facility. Tower Engineering Solutions structural engineers performed a structural analysis of the tower on September 4, 2015 to verify that it can support the proposed loading at 96.7% of capacity for the Tower and 96% Capacity for the foundation. The monopole will comply with the specified ANSI-TIA-222-G requirements and adequately structurally support the proposed loading.

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.
- NEW AT&T ANTENNAS: (1) NEW ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW ANTENNAS; (6) EXISTING GSM/UMTS ANTENNAS TO REMAIN (2 PER SECTOR)
- RELOCATE (1) EXISTING GSM ANTENNA PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) EXISTING ANTENNAS TO BE RELOCATED.
- AT&T RRUs: (1) NEW RRUs PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW RRUs; (1) EXISTING RRU PER SECTOR TO REMAIN, FOR A TOTAL OF (3) EXISTING RRUs.
- (1) NEW A2 MODULE PER SECTOR WITH (3) SECTORS, FOR A TOTAL OF (3) NEW A2 MODULES.

SITE ADDRESS: 723 FARMINGTON AVENUE
NEW BRITAIN, CT 06503

LATITUDE: 41.6983250 41° 41' 53.97"N
LONGITUDE: −72.7861931 −72° 47' 10.295"W

USID: 86941

TOWER OWNER: SBA COMMUNICATIONS CORPORATION
5900 BROKEN SOUND PARKWAY NW
BOCA RATON, FLORIDA 33487−2797

TYPE OF SITE: MONOPOLE/INDOOR EQUIPMENT

MONOPOLE HEIGHT: 110'−0"±
RAD CENTER: 98'−0"±

CURRENT USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

PROPOSED USE: UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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APPROVALS

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

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

at&t MOBILITY

FA CODE: 10065751
SITE NUMBER: CT1028
SITE NAME: NEW BRITAIN FARMINGTON AVE.

VICINITY MAP

1. UPDATE 1/10I−84 EXIT 37 FIENEMANN RD AT END OF EXIT TAKE RIGHT GOING SOUTH IN ABOUT 1/2 MILE THE ROAD WILL CHANGE TO FRAMINGTON AVE NEW BRITAIN ABOUT 1 MILE THE PARK ENTRANCE TO FALCON PARK ON YOUR LEFT JUST BEFORE THE MOBILE GAS STATION. GATE COMBO 4722 GO UP ROAD TO SITE ON LEFT. SHELTER. 24/7 ACCESS. DEMARK LOCATED IN HOFFMAN BOX IN COMPOUND T−1 GSM 1 HCGS 728710 2 HGCS 728711 3 HCGS 728712 UMTS 1 HCGS 741838 2 HCGS 741839 3 HCGS 752904 4 HCGS 752905 METER 89 094 481 N/U POWER CO 860−947−2000.

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: PAUL SAGRISTANO
PHONE: 917−841−0247
EMAIL: psagristano@verticaldevelopmentllc.com

ZONING:
COMPANY: VERTICAL DEVELOPMENT, LLC
ADDRESS: 20 COMMERCIAL STREET
BRANFORD, CT 06405
CONTACT: PAUL SAGRISTANO
PHONE: 917−841−0247
EMAIL: psagristano@verticaldevelopmentllc.com

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

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

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

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY, AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

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

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

COM−EX Consultants
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PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
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SITE NUMBER: CT1028
SITE NAME: NEW BRITAIN FARMINGTON AVE.

723 FARMINGTON AVENUE
NEW BRITAIN, CT 06053
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/27/15	INITIAL SUBMISSION	KCD	NDB	NDB

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

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILE — No. 23693 — REGISTERED PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
14180−EMP	T−1	0

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-EG00-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').

14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE ½" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – EMPIRE TELECOM
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR (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 A RECENT UPGRADE DATED 04/18/2012. CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1028
SITE NAME: NEW BRITAIN FARMINGTON AVE.

723 FARMINGTON AVENUE
NEW BRITAIN, CT 06053
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/27/15	INITIAL SUBMISSION	KCD	NDB	NDB

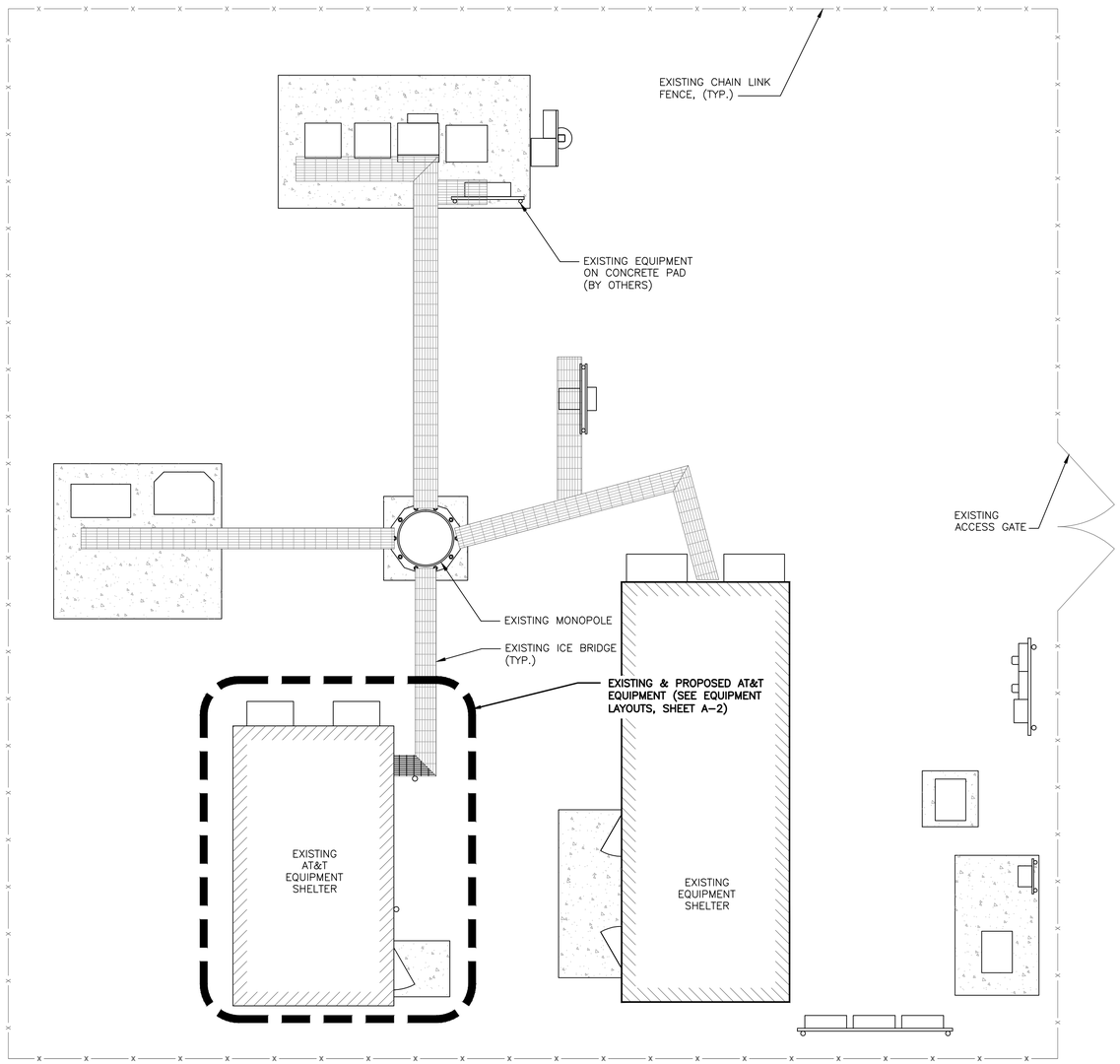
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT – NICHOLAS D. BARILE – No. 23693 – PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: GROUNDING & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
14180-EMP	GN-1	0



NORTH

COMPOUND LAYOUT

SCALE: 3/16" = 1'-0"

6' 2' 0 6' 18'

(IN FEET)
3/16 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.

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NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/27/15	INITIAL SUBMISSION	KCD	NDB	NDB

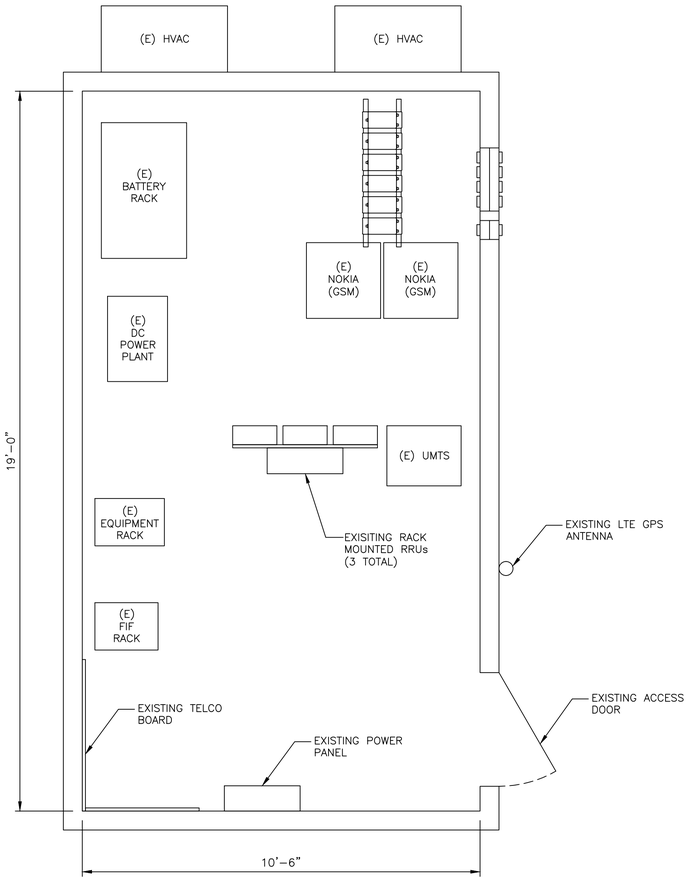
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: NICHOLAS D. BARILE, 25693, STATE OF CONNECTICUT, PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE:
COMPOUND LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
14180-EMP	A-1	0



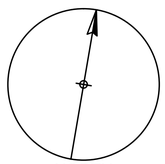
EXISTING EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot

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



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

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1028
SITE NAME: NEW BRITAIN FARMINGTON AVE.

723 FARMINGTON AVENUE
NEW BRITAIN, CT 06053
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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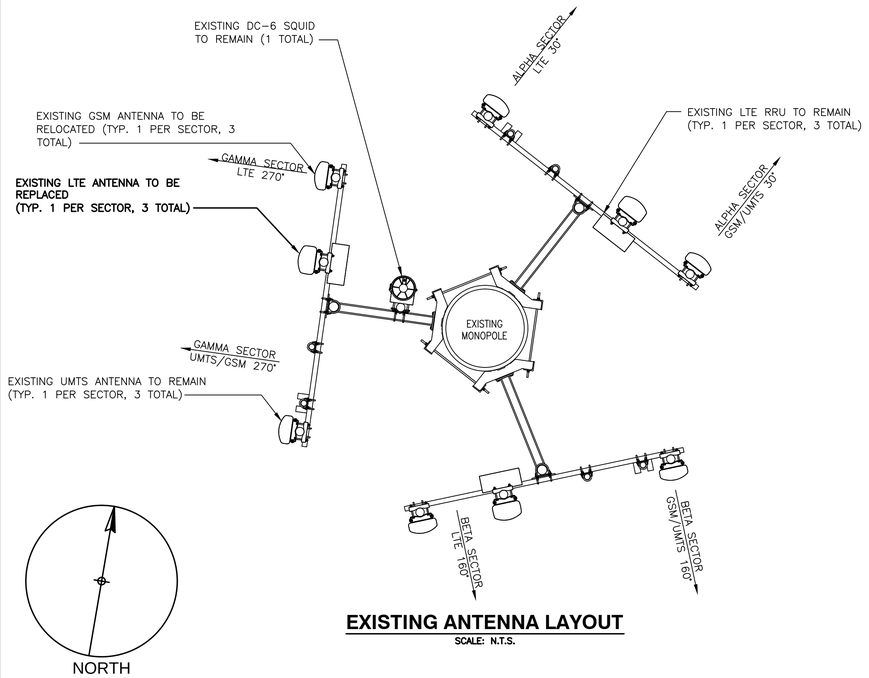
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · 28693 · REGISTERED PROFESSIONAL ENGINEER

AT&T

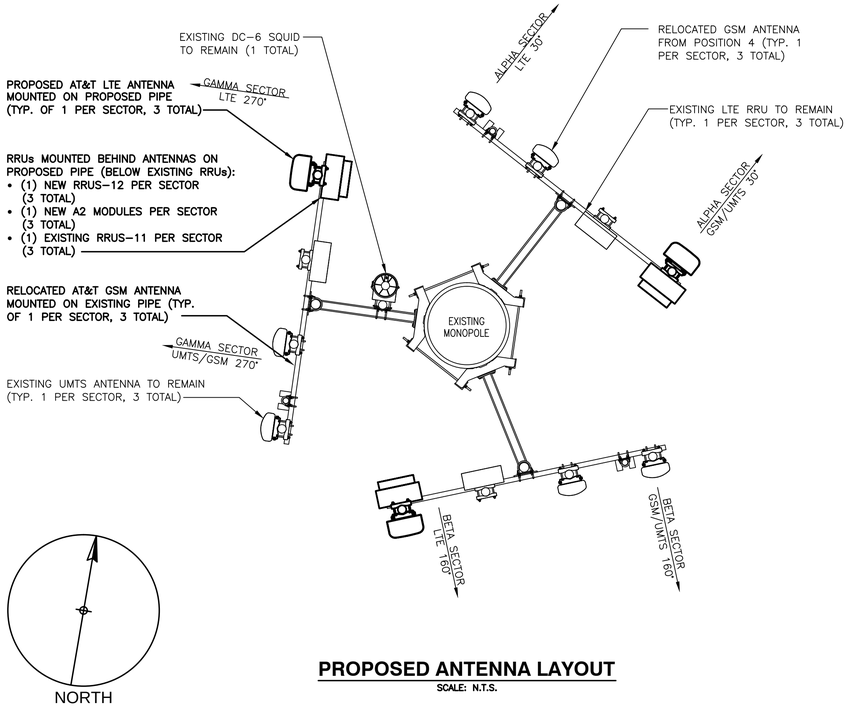
DRAWING TITLE: EQUIPMENT LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
14180-EMP	A-2	0



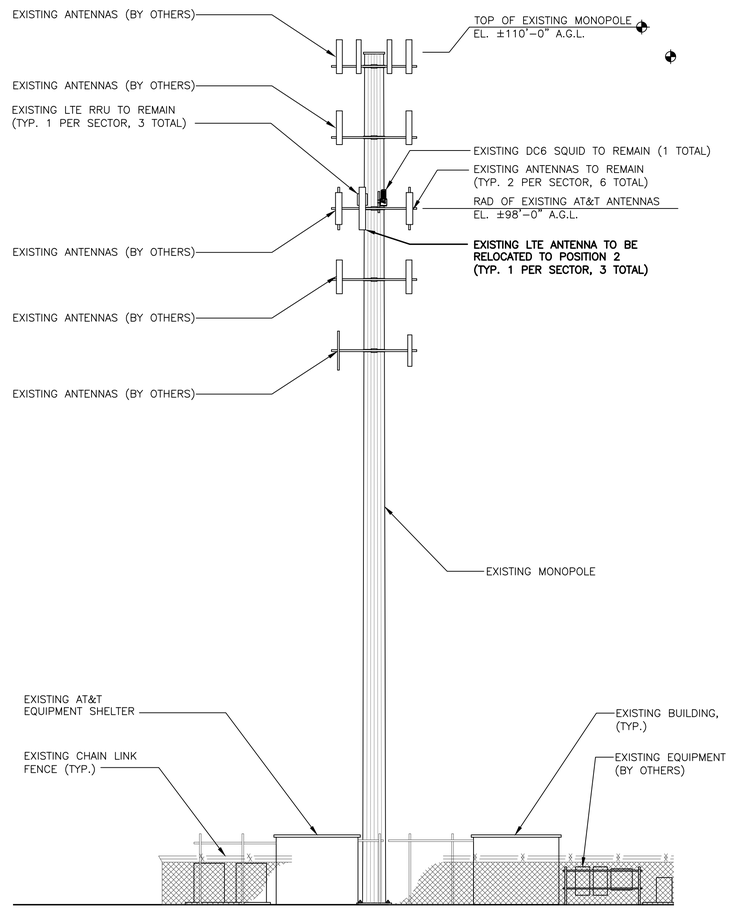
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



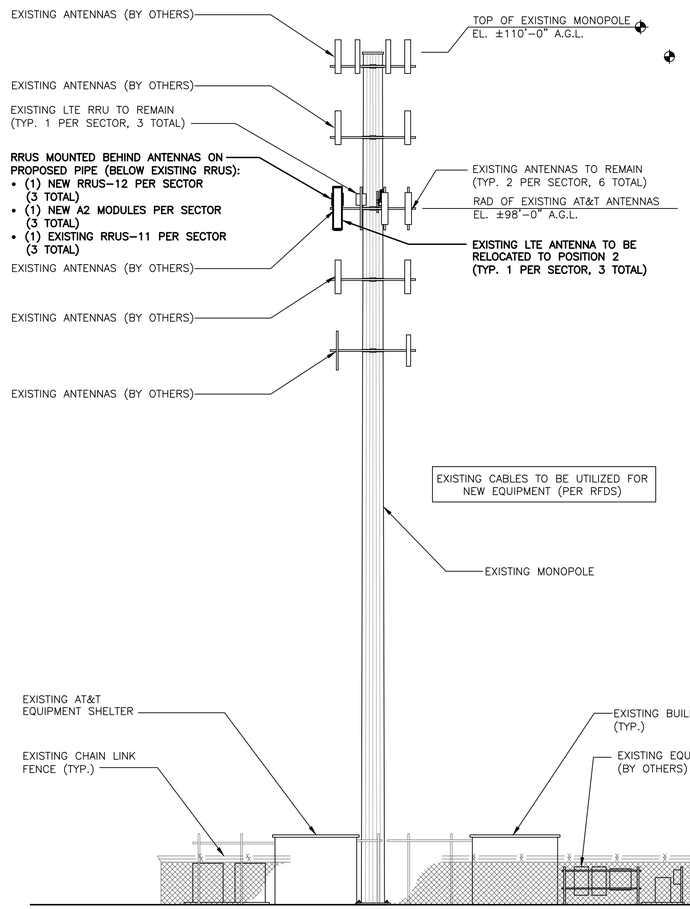
PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.



EXISTING TOWER ELEVATION

SCALE: NTS



PROPOSED TOWER ELEVATION

SCALE: NTS

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4 SECOND AVENUE
SUITE 204
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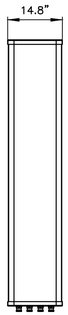
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILE — LICENSED PROFESSIONAL ENGINEER — NO. 28693

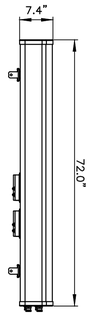
AT&T

DRAWING TITLE: ANTENNA & RRU LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
14180-EMP	A-3	0



FRONT VIEW



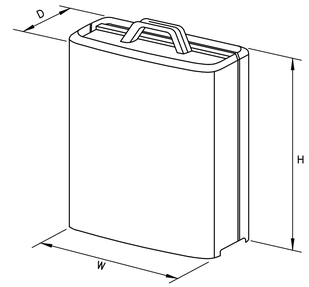
SIDE VIEW

BOTTOM VIEW

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

LTE ANTENNA DETAIL

SCALE: N.T.S.



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

*DENOTES EXISTING.

RRUS DETAIL

SCALE: N.T.S.

COM-EX Consultants
4 SECOND AVENUE
SUITE 204
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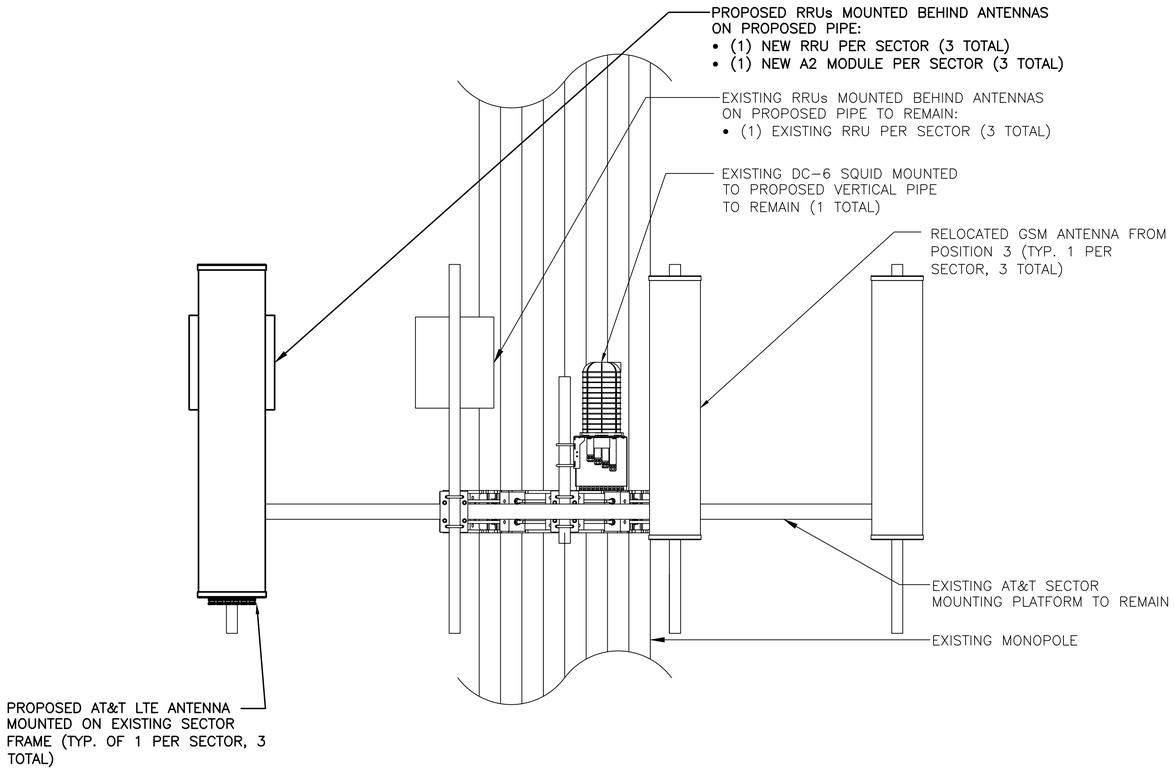
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 23583 · PROFESSIONAL ENGINEER

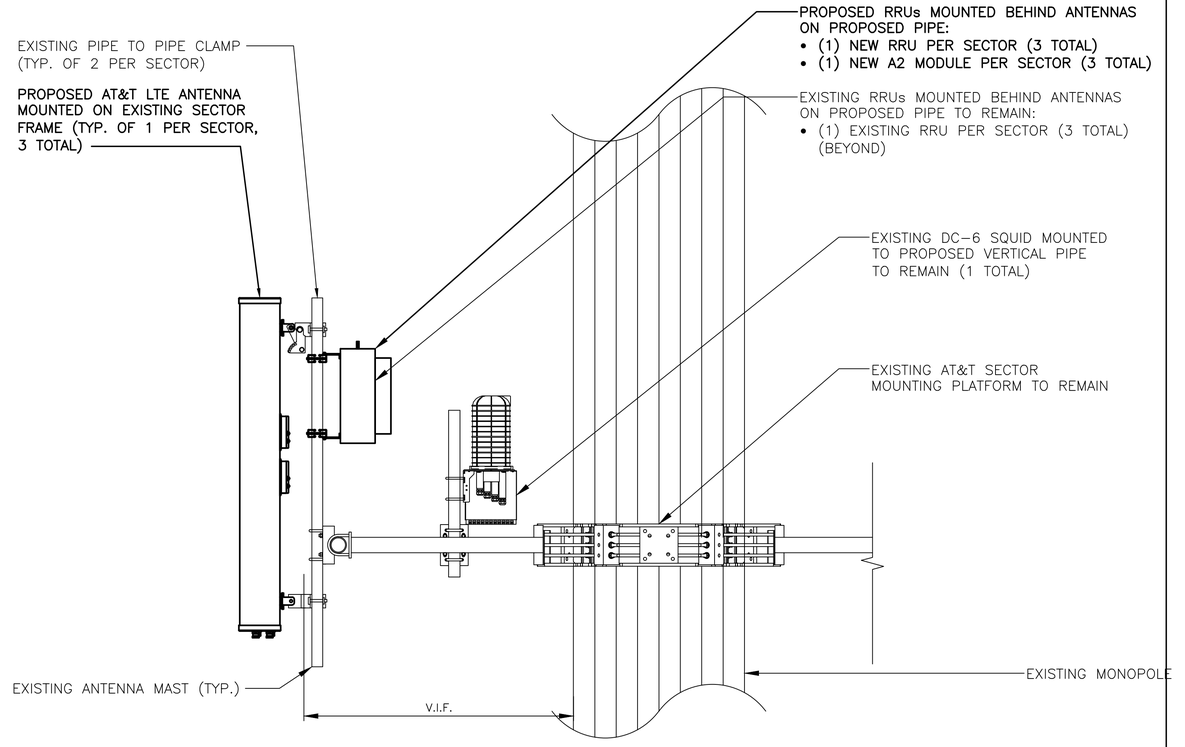
AT&T

DRAWING TITLE: DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14180-EMP	A-4	0



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



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

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	–	–	–
	A3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	A4	POWERWAVE	7770	55"x11"x5"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	–	–	–
	B3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	B4	POWERWAVE	7770	55"x11"x5"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	–	–	–
	G3	KMW	AM–X–CD–16–65–00T–RET	72"x11.8"x5.9"
	G4	POWERWAVE	7770	55"x11"x5"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770	55"x11"x5"
	A2	POWERWAVE	7770	55"x11"x5"
	A3	–	–	–
	A4	**CCI**	**OPA–65R–LCUU–H6**	**72"x14.8"x7.4"**
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	POWERWAVE	7770	55"x11"x5"
	B3	–	–	–
	B4	**CCI**	**OPA–65R–LCUU–H6**	**72"x14.8"x7.4"**
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	POWERWAVE	7770	55"x11"x5"
	G3	–	–	–
	G4	**CCI**	**OPA–65R–LCUU–H6**	**72"x14.8"x7.4"**

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"		

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DENVILLE, NJ 07834
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EMPIRE telecom
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NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/27/15	INITIAL SUBMISSION	KCD	NDB	NDB

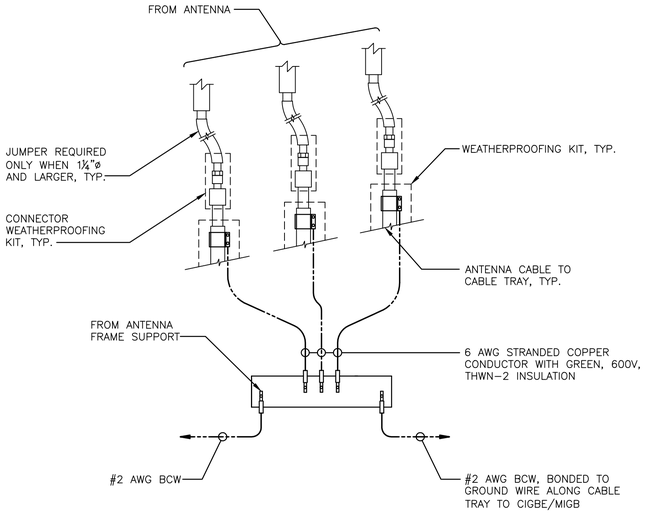
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 23583 · PROFESSIONAL ENGINEER · 04/27/15

AT&T

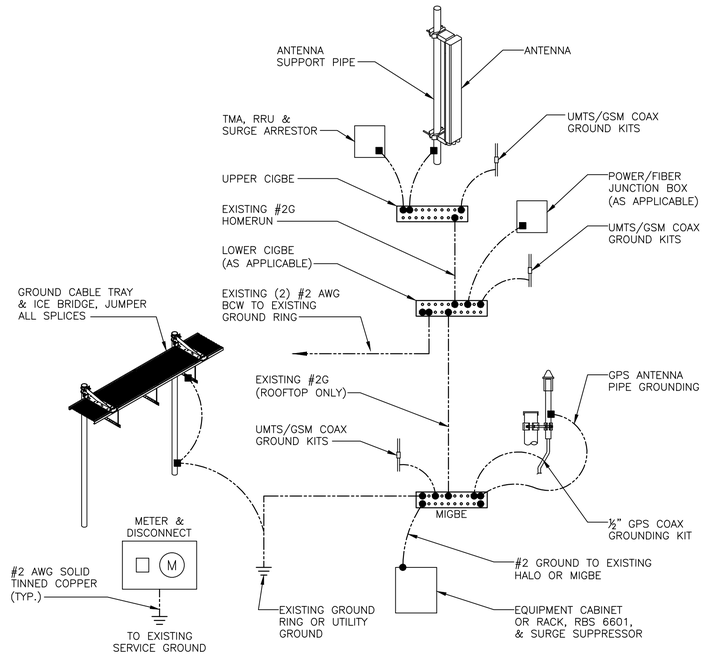
DRAWING TITLE:
ANTENNA & RRU MOUNTING DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14180–EMP	A–5	0



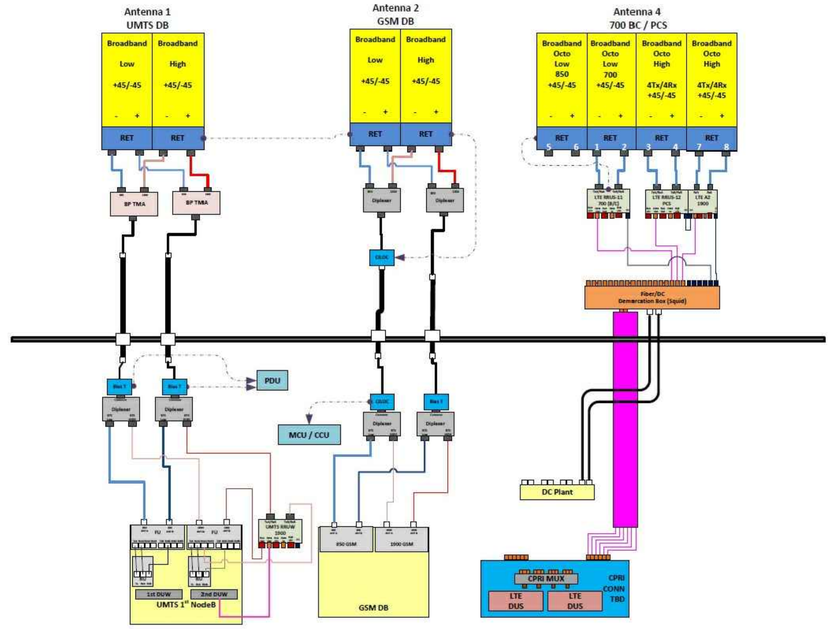
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



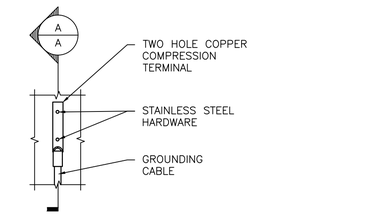
GROUNDING RISER DIAGRAM

SCALE: N.T.S.

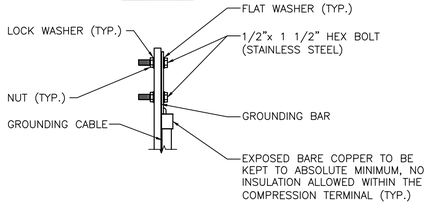


TYPICAL PLUMBING DIAGRAM (PER SECTOR)

SCALE: N.T.S.



ELEVATION



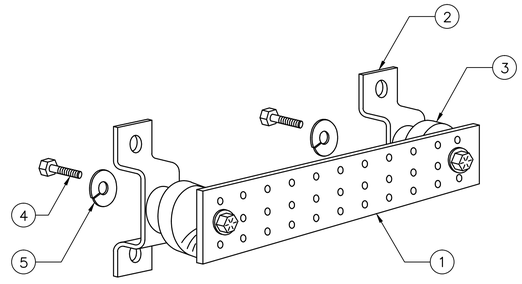
SECTION "A–A"

NOTE:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



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

NOTES:

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

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

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

GROUND BAR DETAIL

SCALE: N.T.S.

COM-EX Consultants
4 SECOND AVENUE
SUITE 204
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SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: AM

SEAL: STATE OF CONNECTICUT – NICHOLAS D. BARILE – No. 28583 – PROFESSIONAL ENGINEER – 04/27/15

AT&T

DRAWING TITLE: GROUNDING, ONE-LINE DIAGRAM & DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14180-EMP	G-1	0

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 119 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT08558-B-02

Customer Site Name: New Britain 3, CT

Carrier Name: AT&T

Carrier Site ID / Name: CT1028

Site Location: 723 Farmington Ave

New Britain, Connecticut

Hartford County

Latitude: 41.698414

Longitude: -72.785944

Analysis Result:

Max Structural Usage: 96.7% [Pass]

Max Foundation Usage: 96% [Pass]

Report Prepared By : Jie Chen

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Latitude: 41.698414

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Max Foundation Usage: 96% [Pass]

Report Prepared By : Jie Chen

Introduction

The purpose of this report is to summarize the analysis results on the 119 ft Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Original Tower drawings by Sabre, Job# 06-08008, dated 08/1/2005
Foundation Drawing	Original Foundation drawings by Sabre, Job# 06-08008, dated 08/1/2005
Geotechnical Report	Geotechnical Report prepared by DR. Clarence Welti, dated 07/7/2005
Modification Drawings	N/A

Analysis Criteria

The analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-F**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Basic Wind Speed Used in the Analysis:	80.0 mph (fastest mile)
Basic Wind Speed with Ice:	69 mph (fastest mile) with 1/2" radial ice concurrent
Operational Wind Speed:	50 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	118.0	3	Kathrein 800 10735V01 Panels	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Hybrid*	Verizon
2		3	Antel BXA-171063-12BF Panels			
3		3	Antel BXA-171063-8BF Panels			
4		3	Antel BXA-70063-6BF Panels			
5		1	RFS DB-T1-6Z-8AB-0Z Dist. Box			
6		6	RFS FD9R6004/2C-3L Diplexers			
7		3	ALU RRH2x40-AWS RRU's			
8	108.0	3	ALU 1900MHz RRU's	(3) T-Arms	(4) 1-1/4" Hybrid (3) 1/2" (6) 5/16"	Clearwire/ Sprint
9		3	ALU 800 MHz Filters			
10		3	ALU 800 MHz RRU's			
11		3	Kathrein 840 10054 Panels			
12		4	RFS ACU-A20-N RET's			
13		2	RFS APXVSPP18-C-A20 Panels			
14		3	RFS APXVTM14-C-120 Panels			
15		2	DragonwaveHorizon ODU Radios			
16		1	Powerwave P40-16-XLPP-RR-A Panels			
17		3	ALU TD-RRH8x20-25 RRU's			
18		2	Andrew VHLP2.5 Dishes			
-	98.0	3	KWM AM-X-CD-16-65-00T Panels	(3) T-Arms	(12) 1 5/8" (3) 3/4" DC (1) 3/8" Fiber	AT&T
-		6	Powerwave 7770 - Panel			
-		9	Powerwave 21401 TMA			
-		6	Ericsson RRUS11			
-		6	Powerwave 13519 Diplexer			
26	88.0	3	Ericsson AIR B2A B4P - Panel	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
27		3	Ericsson AIR B4A B2P - Panel			
28		3	Commscope LNX-6515DS-A1M Panels			
29		3	Ericsson Double TMA 17/21			
30		3	Ericcson S11B12 RRU			
31	78.0	3	RFS APXV18-206517S-C Panels	(3) T-Arms	(6) 1-5/8"	Pocket

*(1)1-5/8" Hybrid cable of Verizon is installed outside the pole shaft.

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
19	98.0	3	Cci Antennas OPA-65R-LCUU-H6 - Panel	(3) Commscope T-Arms	(12) 1 5/8" (3) 3/4" DC (1) 3/8" Fiber	AT&T
20		6	Powerwave 7770 - Panel			
21		9	Powerwave 21401 TMA			
22		6	Ericsson RRUS11			
23		3	Ericsson RRUS A2			
24		3	Ericsson RRU-12			
25		6	Powerwave 13519 Diplexer			

All proposed transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**96.7%**	**86.4%**	**81.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	2356.0	24.7
Analysis Reactions	2236.5	24.7
% of Design Reactions	94.9%	99.9%

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-F for the installed antennas. Maximum twist/sway at the elevation of the proposed equipment is 1.7944 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-F Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.

4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.

5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.

6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed or/and ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Stress 96.7% at 0.0ft

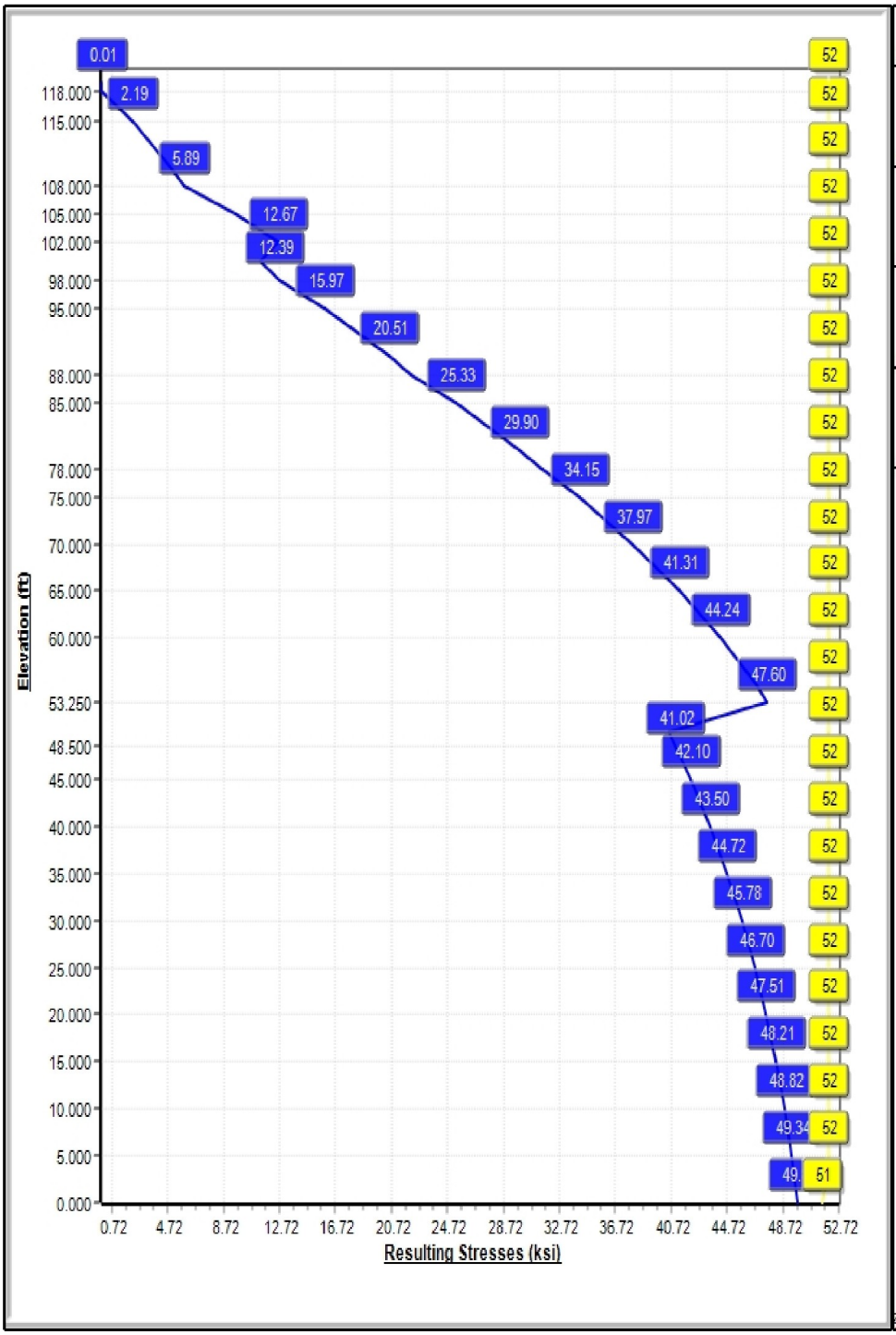
Structure: T A
Site Name: r T
Height:
Base Elev:

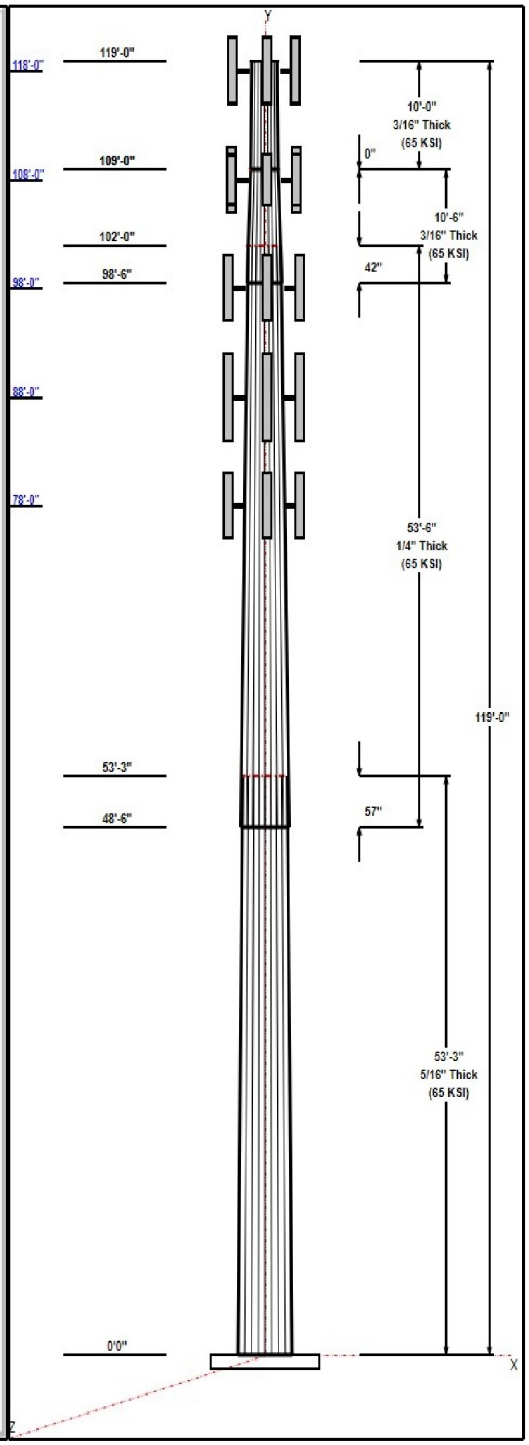
Code: A T A
Exposure:
Gh:

d d r
d d r
51 A r ss
50 s r ss

Load Case : 80 mph Wind with 0 in Ice

Iterations:





Structure: CT08558-B-SBA

Type: T r d
Site Name: r T
Height:
Base Elev:

Base Shape: d d
Taper:

Shaft Properties

T	T	r d
T	T r	s

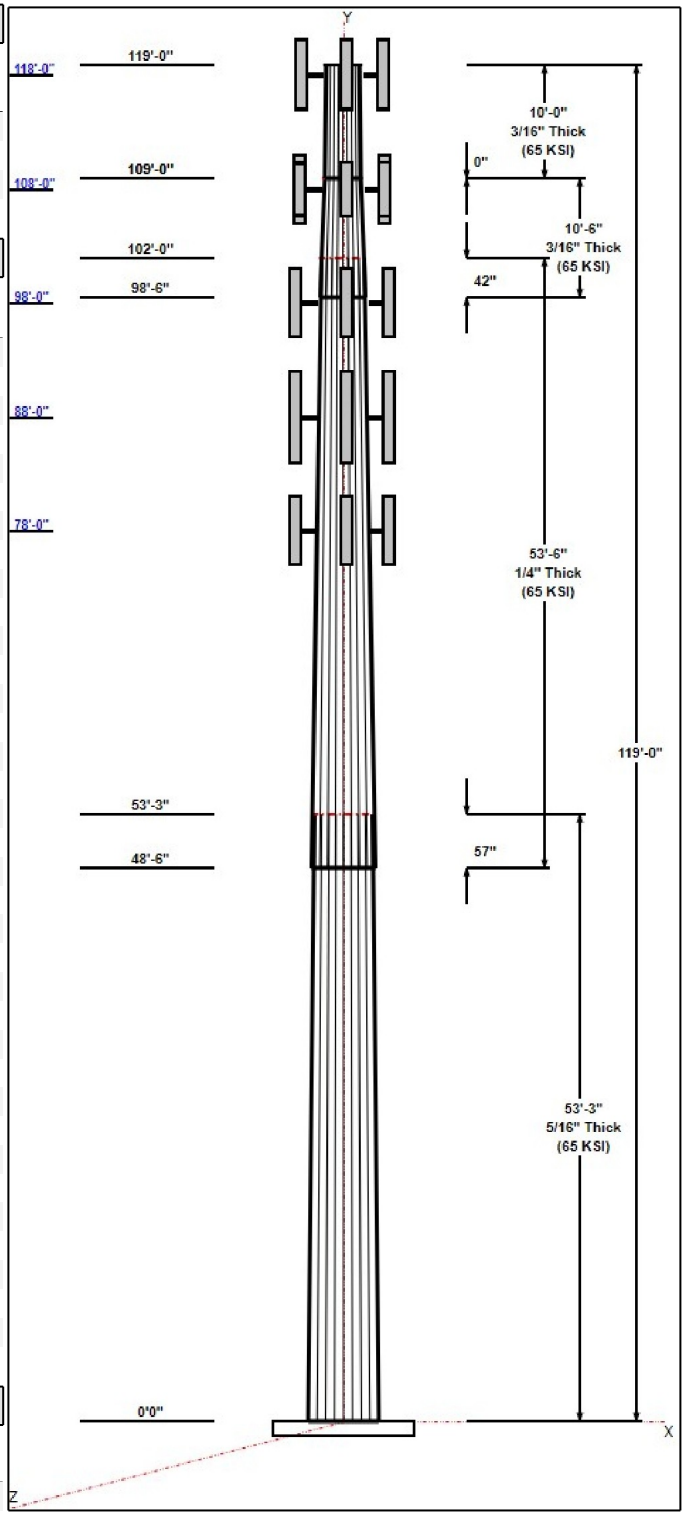
Discrete Appurtenances

A r

s r	rr r
	r
A	r
A	r
A	r
A s	r
s	r
A	r
T Ar s	r
M	r r r
M rs	r r r
M	r r r
	r r r
A A	r r r
A	r r r
A TM	r r r
r	r r r
A	r r r
T Ar s	r r r
T	r r r
	r r r
	AT&T
	AT&T
	AT&T
A	AT&T
	AT&T
	AT&T
A M d	AT&T
T Ar s	AT&T
A A	T M
A A	T M
TMA	T M
A M	T M
	T M
T Ar s	T M
A	
T Ar s	

Linear Appurtenances

r T	s r	rr r
s d "		r
s d "	r d	r
s d "	r d	r r r
s d "		r r r
s d "		r r r
s d "		AT&T



Structure: CT08558-B-SBA

Type: T r d
Site Name: r T
Height:
Base Elev:

Base Shape: d d
Taper:

Tower Engineering Solutions

s d	"		AT&T
s d	"	r	AT&T
s d	"		T M
s d	"	r	T M
s d	"		

Anchor Bolts

r d

s	s	Arr
"		s r

Base Plate

T ss s r d

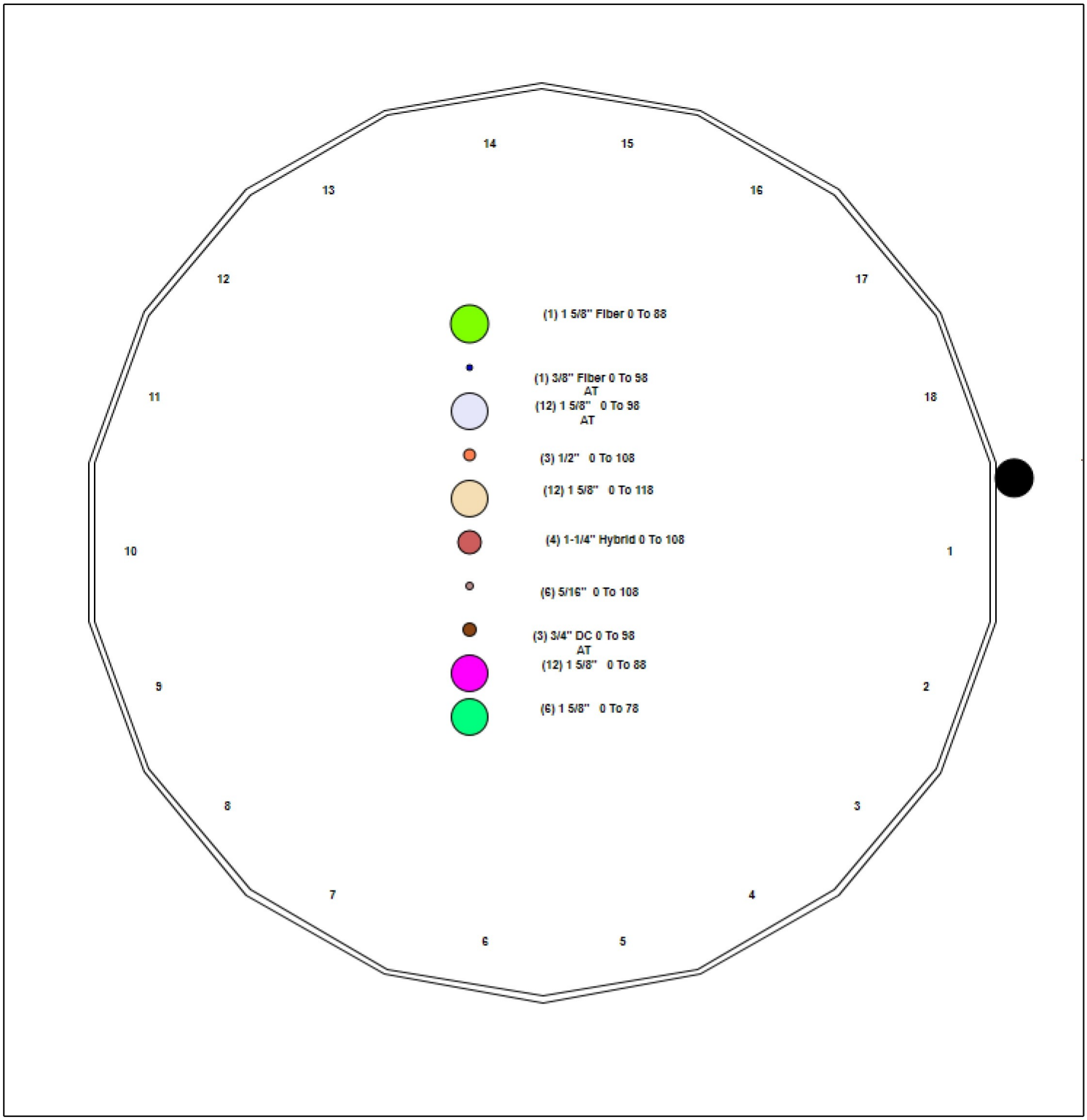
s	r
	d

Reactions

d s	M	r	A
d "			
d "			
d "			

Structure: CT08558-B-SBA - Coax Line Placement

Type: M
Site Name: r T
Height:



Shaft Properties

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)

Total Shaft Weight: 12,908

T

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper

Loading Summary

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
		A									
		A									
		A									
		A s									
		s									
		A									
		T Ar s									
		M									
		M rs									
		M									
		A A									
		A									
		A TM									
		r									
		A									
		T Ar s									
		T									
		A									
		A M d									
		T Ar s									
		A A									
		A A									
		TMA									
		A M									
		T Ar s									
		A									
		T Ar s									
		Totals:	**120**	**9,743.20**			**12,840.90**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	Exposed
		"					s d
		" r d					s d
		" r d					s d

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
		"							s d		
		"							s d		
		"							s d		
		"							s d		
		" r							s d		
		"							s d		
		" r							s d		
		"							s d		
		Totals:		**5,641.89**			**0.00**				

Shaft Section Properties

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
	T									
	T									
	T					A	A			

12908.1

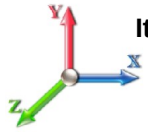
Wind Loading - Shaft

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Tower Engineering Solutions

Load Case: 80 mph Wind with 0" Ice
Dead Load Factor
Wind Load Factor



Iterations:

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
	T													
	A r s													
	A r s													
	A r s													
	T													
	A r s													
	T													
	A r s													
								Totals:	**119.00**			**7,171.4**		**12,908.1**

Discrete Appurtenance Forces

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
		A											
		s											
		A s											
		A											
		A											
		A											
		T Ar s											
		A A											
		A											
		A TM											
		M											
		r											
		A											
		T Ar s											
		T											
		M rs											
		M											
		A											
		A M d											
		T Ar s											
		TMA											
		A A											
		A A											
		A M											
		T Ar s											
		T Ar s											
		A											
						Totals:		**9,743.20**			**16,823.17**		

Total Applied Force Summary

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
	r s				
	r s				
	r s				
	r s				
	r s				
	Totals:	**24,616.24**	**28,293.16**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)

Resulting Stresses

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

A d r ss s

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Allow Stress (ksi)	f/Fb Stress Ratio

Wind Loading - Shaft

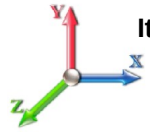
Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Tower Engineering Solutions

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor
Wind Load Factor



Iterations:

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
	T													
	A r s													
	A r s													
	A r s													
	T													
	A r s													
	T													
	A r s													
	Totals:								**119.00**			**5,537.7**		**15,457.0**

Discrete Appurtenance Forces

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor
Wind Load Factor

Iterations:

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
		A											
		s											
		A s											
		A											
		A											
		A											
		T Ar s											
		A A											
		A											
		A TM											
		M											
		r											
		A											
		T Ar s											
		T											
		M rs											
		M											
		A											
		A M d											
		T Ar s											
		TMA											
		A A											
		A A											
		A M											
		T Ar s											
		T Ar s											
		A											
						Totals:		**12,840.90**			**14,311.50**		

Total Applied Force Summary

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 69.28 mph Wind with 0.5" Ice
Dead Load Factor
Wind Load Factor

Iterations:

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
	r s				
	r s				
	r s				
	r s				
	r s				
	Totals:	**19,849.20**	**33,810.03**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor
Wind Load Factor

Iterations:

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)

Resulting Stresses

Structure:	T A	**Code:**	A T A
Site Name:	r T	**Exposure:**	
Height:		**Gh:**	
Base Elev:		**Struct Class:**	

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor

Wind Load Factor

Iterations:

A d r ss s

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Allow Stress (ksi)	f/Fb Stress Ratio

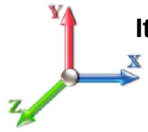
Wind Loading - Shaft

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor



Iterations:

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
	T													
	A r s													
	A r s													
	A r s													
	T													
	A r s													
	T													
	A r s													
	Totals:								**119.00**			**2,801.3**		**12,908.1**

Discrete Appurtenance Forces

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
		A											
		s											
		A s											
		A											
		A											
		A											
		T Ar s											
		A A											
		A											
		A TM											
		M											
		r											
		A											
		T Ar s											
		T											
		M rs											
		M											
		A											
		A M d											
		T Ar s											
		TMA											
		A A											
		A A											
		A M											
		T Ar s											
		T Ar s											
		A											
						Totals:		**9,743.20**			**6,571.55**		

Total Applied Force Summary

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
	r s				
	r s				
	r s				
	r s				
	r s				
	Totals:	**9,615.72**	**28,293.16**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure: T
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)

Resulting Stresses

Structure: T A
Site Name: r T
Height:
Base Elev:

Code: A T A
Exposure:
Gh:
Struct Class:

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor
Wind Load Factor

Iterations:

	A d r ss s								
Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Allow Stress (ksi)	f/Fb Stress Ratio

Final Analysis Summary

Structure:	T A	**Code:**	A T A
Site Name:	r T	**Exposure:**	
Height:		**Gh:**	
Base Elev:		**Struct Class:**	

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	t MZ (ft-kips)
d "						
d "						
d "						

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
d "										
d "										
d "										

Pier Foundation Design For Monopole

				Date
				9/4/2015
	Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-F
	Site Name:		**Structure Height (Ft.):**	119
	Site Number:	CT08558-B-SBA	**Engineer Name:**	J. Chen
	Engr. Number:	17361	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

Acceptable overstress (5.0%

Base Reactions (Unfactored)

Axial Load (Kips):	33.8	Shear Force (Kips):	24.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2236.5

Foundation Geometries:

Mods required -Yes/No ?:	No			ft.
Diameter of Pier (ft.):	6.0	Depth of Base B. G. S. :	24.0	ft.
Pier Height A. G. (ft.):	1.00			

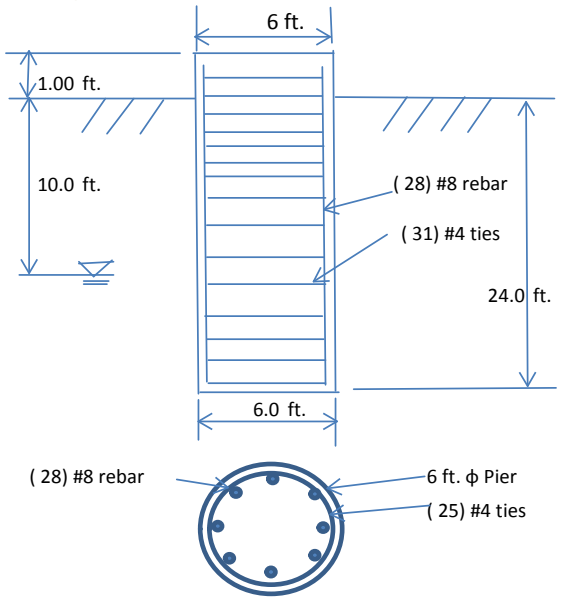
Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	28	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	10.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)

Skin Frictions are to be obtained from: Soil Report



Monopole Pier Foundation

Depth of Layers (ft) Top	Depth of Layers (ft) Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Allowable Skin Friction (psf)	Allowable Bearing (psf)	Soil Types					
0.0	2.0	135	0	0	0	0	Sand					
2.0	10.0	135	34	0	0	0	Sand					
10.0	25.0	137	34	0	0	0	Sand					
25.0	30.0	137	34	0	0	0	Sand					

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Total Dry Soil Volume from Conical Failure (cu. Ft.):	5907	Dry Soil Weight from Conical Failure:	797	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	2024	Buoyant Soil Weight from Conical Failure (Ki	194	Kips
Total Dry Concrete Volume (cu. Ft.):	311	Total Dry Concrete Weight:	46.7	Kips
Total Buoyant Concrete Volume (cu. Ft.):	395.8	Total Buoyant Concrete Weight:	34.68	Kips
Total Effective Concrete Weight (Kips):	81.3	Total Effective Soil Weight:	991.0	Kips
Total Effective Vertical Load on Base (Kips):	39.1			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	4210.2	>	Applied Momont (kips-ft):	2647	0.63	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.18	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.30

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	3165	>	Design Factored Moment (Mu, K-Ft):	3034.8	0.96	OK!
Calculated Shear Capacity (Kips):	785.5	>	Design Factored Shear (Kips):	324.2	0.41	OK!
Calculated Tension Capacity (Tn, Kips):	1194.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7159	>	Design Factored Axial Load (Pu Kips):	43.9	0.01	OK!
Moment & Axial Strength Combination(Tu/Tn+Mu/Mn):	0.97	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.	
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI				

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

AT&T Existing Facility

Site ID: CT1028

New Britain Farmington Ave.
723 Farmington Avenue
New Britain, CT 06503

May 15, 2015

EBI Project Number: 6215002977

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	41.85 %

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

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May 15, 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: **CT1028 – New Britain Farmington Ave.**

EBI Consulting was directed to analyze the proposed AT&T facility located at **723 Farmington Avenue, New Britain, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band and the 800 MHz band is 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the 1900 MHz PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **723 Farmington Avenue, New Britain, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

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

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

3) 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.

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

5) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 60 Watts

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

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

9) The antennas used in this modeling are the **Powerwave 7770** for 1900 MHz (PCS) and 850 MHz channels and the **CCI OPA-65R-LCUU-H6** 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 800 MHz and a maximum gain of **13.4 dBd** at its main lobe at 1900 MHz. The **CCI OPA-65R-LCUU-H6** has a maximum gain of **13.8 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.

10) The antenna mounting height centerline of the proposed antennas is **98 feet** above ground level (AGL).

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

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

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	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):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 feet
Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	180	Total TX Power:	180	# AWS Channels:	180
ERP (W):	2,189.09	ERP (W):	2,189.09	ERP (W):	2,189.09
Antenna A1 MPE%	**1.74**	Antenna B1 MPE%	**1.74**	Antenna C1 MPE%	**1.74**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
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):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 feet
Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)	Frequency Bands	850 MHz / 1900 MHz(PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	1,359.90	ERP (W):	1,359.90	ERP (W):	1,359.90
Antenna A2 MPE%	**1.18**	Antenna B2 MPE%	**1.18**	Antenna C2 MPE%	**1.18**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H6	Make / Model:	CCI OPA-65R-LCUU-H6
Gain:	13.8 / 14.9 dBd	Gain:	13.8 / 14.9 dBd	Gain:	13.8 / 14.9 dBd
Height (AGL):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 feet
Frequency Bands	700 MHz(PCS) / 1900 MHz	Frequency Bands	700 MHz(PCS) / 1900 MHz	Frequency Bands	700 MHz(PCS) / 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):	3,172.53	ERP (W):	3,172.53	ERP (W):	3,172.53
Antenna A3 MPE%	**1.36**	Antenna B3 MPE%	**1.36**	Antenna C3 MPE%	**1.36**

Site Composite MPE%	
Carrier	**MPE%**
AT&T	**12.82 %**
Sprint	0.31 %
Clearwire	1.55 %
MetroPCS	19.98 %
T-Mobile	0.45 %
Verizon Wireless	6.74 %
Site Total MPE %:	**41.85 %**

AT&T Sector 1 Total:	4.27 %
AT&T Sector 2 Total:	4.27 %
AT&T Sector 3 Total:	4.27 %
Site Total:	**41.85 %**

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Summary

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

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

AT&T Sector	Power Density Value (%)
Sector 1:	4.27 %
Sector 2:	4.27 %
Sector 3 :	4.27 %
AT&T Total:	12.82 %
Site Total:	41.85 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **41.85%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803