VERTICAL DEVELOPMENT

20 Commercial St

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

July 29, 2015

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

Re: Notice of Exempt Modification Application
310 Prestige Drive (a/k/a 2 Prestige Drive)
East Hartford, CT 06108

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 Marcia A. Leclerc 740 Main Street East Hartford, CT 06108	Fremont Prestige Park LLC C/O Fremont Management LLC 65 LaSalle Road, Suite 202 West Hartford, CT 06107-0000
American Tower Corporation Attn.: Brent Hodgin Brent.Hodgin@AmericanTower.com	Connecticut Siting Council siting.council@ct.gov

Notice of Exempt Modification
East Hartford
310 Prestige Drive (a/k/a 2 Prestige Drive)
East Hartford, CT 06108

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 150' monopole tower located at 310 Prestige Drive (a/k/a 2 Prestige Drive), in the Town of East Hartford, CT. 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 replace the

existing platform with a new platform, replace certain panel antennas and install new RRHs and related equipment all within the fenced tower compound.

The existing 150' monopole located at 310 Prestige Drive (a/k/a 2 Prestige Drive), in the Town of East Hartford, CT (lat. 41° 47' 17.90" N, long. -72° 36' 13.00.90" 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 154' 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 the existing platform and three (3) antennas. It will reuse six (6) Powerwave 7770 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-H6 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 154' centerline level.

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 27.02% of the allowable FCC established general public limits sampled at the ground level (see pages 1 and 6 page of Radio Frequency Emissions Analysis Report Evaluation of Human Exposure Potential to Non-Ionizing Emissions (the "MPE" Assessment) dated May 14 2015). Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see page 4 of the MPE Assessment). 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 page 2 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 95% (see page 1 of the Structural Analysis Report dated May 19, 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:

- REPLACE ANTENNA MOUNT WITH COMMSCOPE MTC3607 ANTENNA MOUNT
- 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)
- 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:	2 PRESTIGE PARK ROAD EAST HARTFORD, CT 06108	
LATITUDE:	41.788306	41° 47' 17.90"N
LONGITUDE:	−72.600250	−72° 36' 00.90"W
USID:	59330	
TOWER OWNER:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801	
TYPE OF SITE:	MONOPOLE/INDOOR EQUIPMENT	
MONOPOLE HEIGHT:	150'−0"±	
RAD CENTER:	154'−0"±	
CURRENT USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	
PROPOSED USE:	UNMANNED WIRELESS TELECOMMUNICATIONS FACILITY	

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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: 10034965
SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD

VICINITY MAP

1. HEAD WEST ON COCHITUATE RD TOWARD SPEEN STREET (0.3 MI). 2. TAKE THE RAMP TO I−90 E/MASSPIKE W/SPRINGFIELD/BOSTON (0.6 MI). 3. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSACHUSETTS TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I−90 W/MASSACHUSETTS TURNPIKE (38.3 MI). 4. TAKE EXIT 9 TO MERGE ONTO I−84 TOWARD US−20/HARTFORD/NEW YORK CITY (73.9 MI). 5. TAKE EXIT 20 TO MERGE ONTO US−44 WEST. 6. CONTINUE ON US−44 W. DRIVE TO PRESTIGE PARK RD IN EAST HARTFORD (2.5 MI). DESTINATION WILL BE ON YOUR LEFT.

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, 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
4 SECOND AVENUE
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DENVILLE, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD
2 PRESTIGE PARK RD.
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HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
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SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: CJT

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · Lic. No. 28843 · REGISTERED PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
14178−EMP	T−1	1

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.

COM-EX Consultants
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DENVILLE, NJ 07834
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD

2 PRESTIGE PARK RD.
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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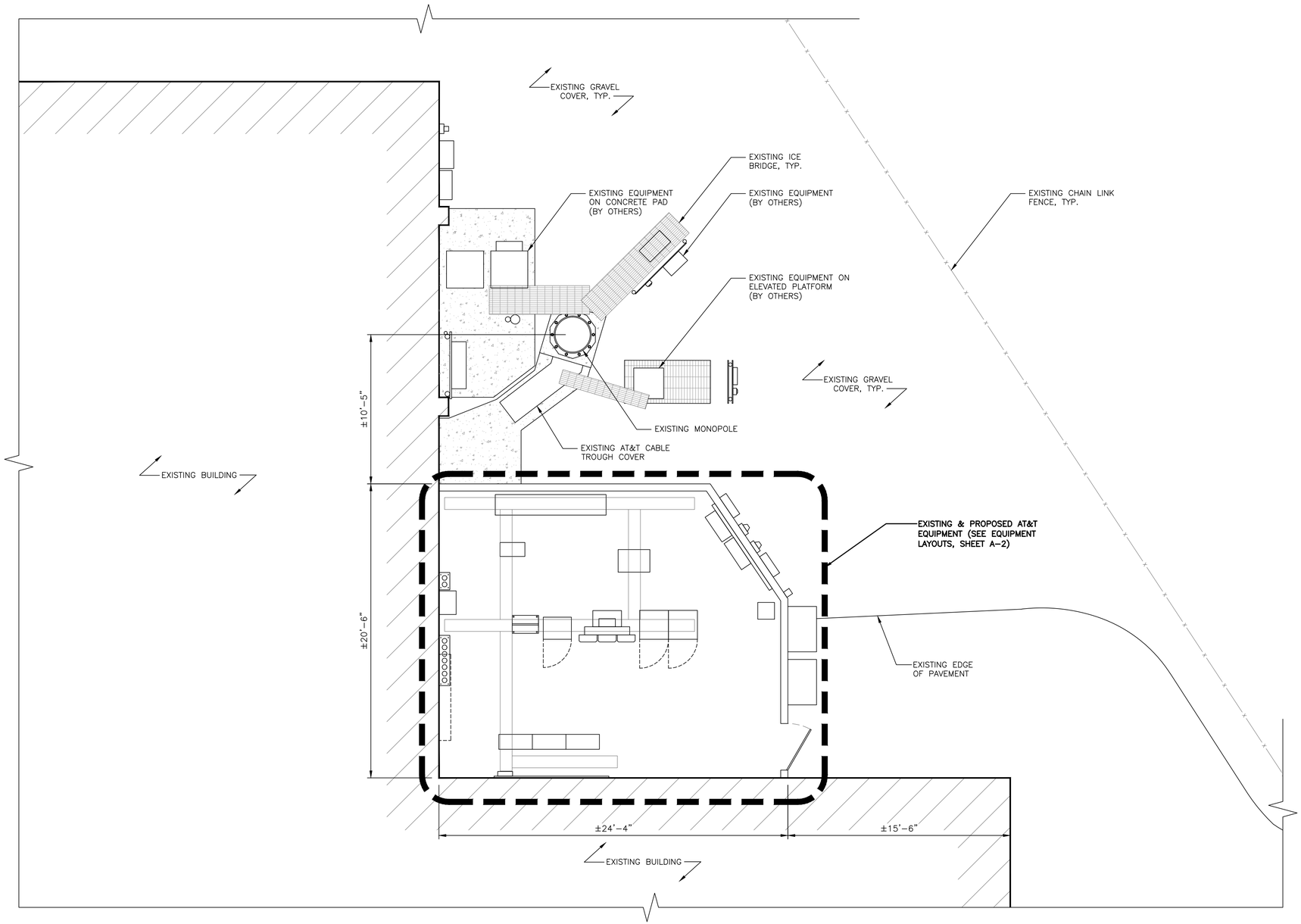
SCALE: AS SHOWN | DESIGNED BY: CJT | DRAWN BY: CJT

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · 29643 · PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE: GROUNDING & GENERAL NOTES

JOB NUMBER	DRAWING NUMBER	REV
14178-EMP	GN-1	1



NORTH

COMPOUND LAYOUT

SCALE: 1" = 4'-0"

4 0 2 4 8 16

(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.

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

SEAL:
STATE OF CONNECTICUT
NICHOLAS D. BARILE
LICENSED PROFESSIONAL ENGINEER
LICENSE NO. 30643
PROFESSIONAL ENGINEER

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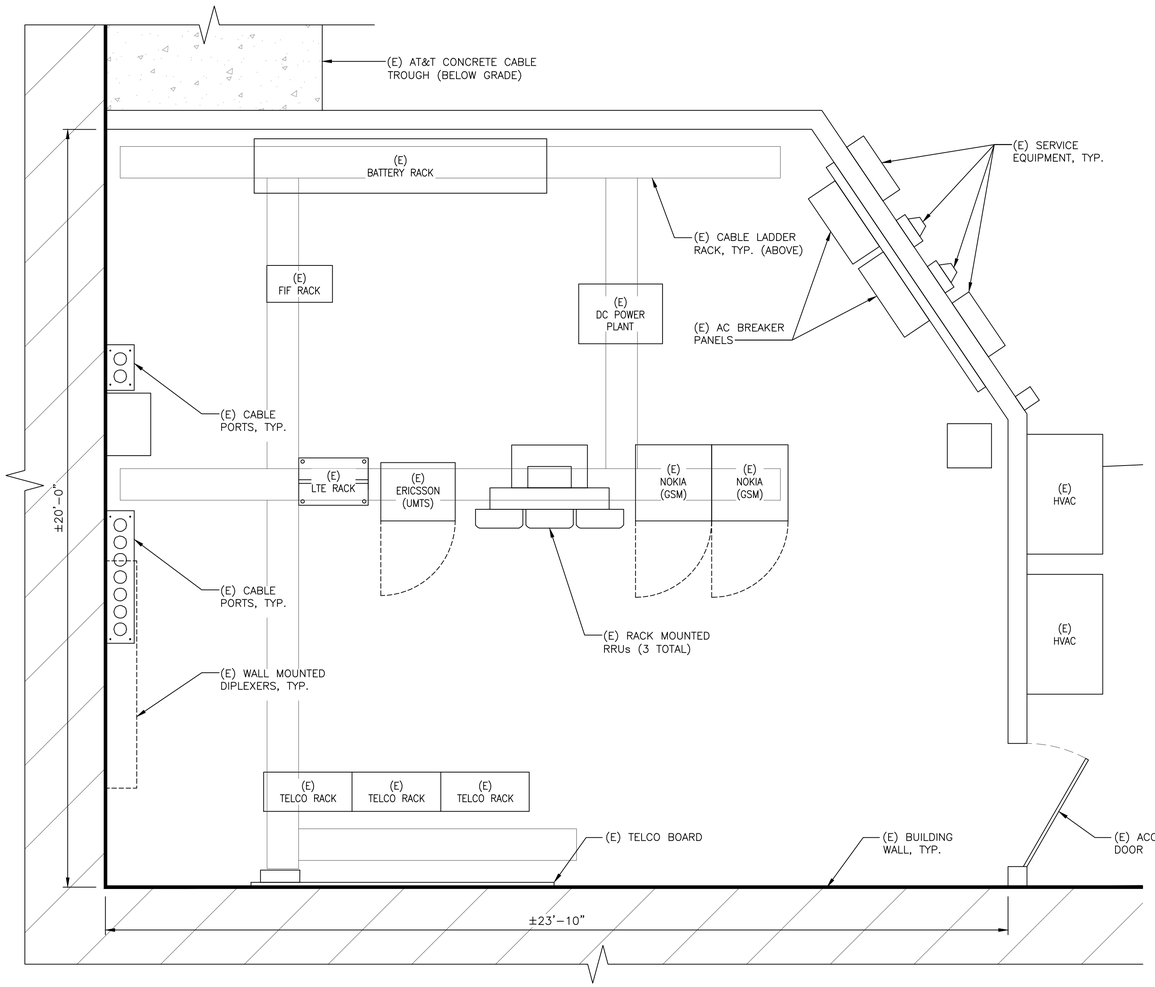
DRAWING TITLE:
COMPOUND LAYOUT

JOB NUMBER	DRAWING NUMBER	REV
14178-EMP	A-1	1

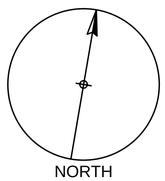


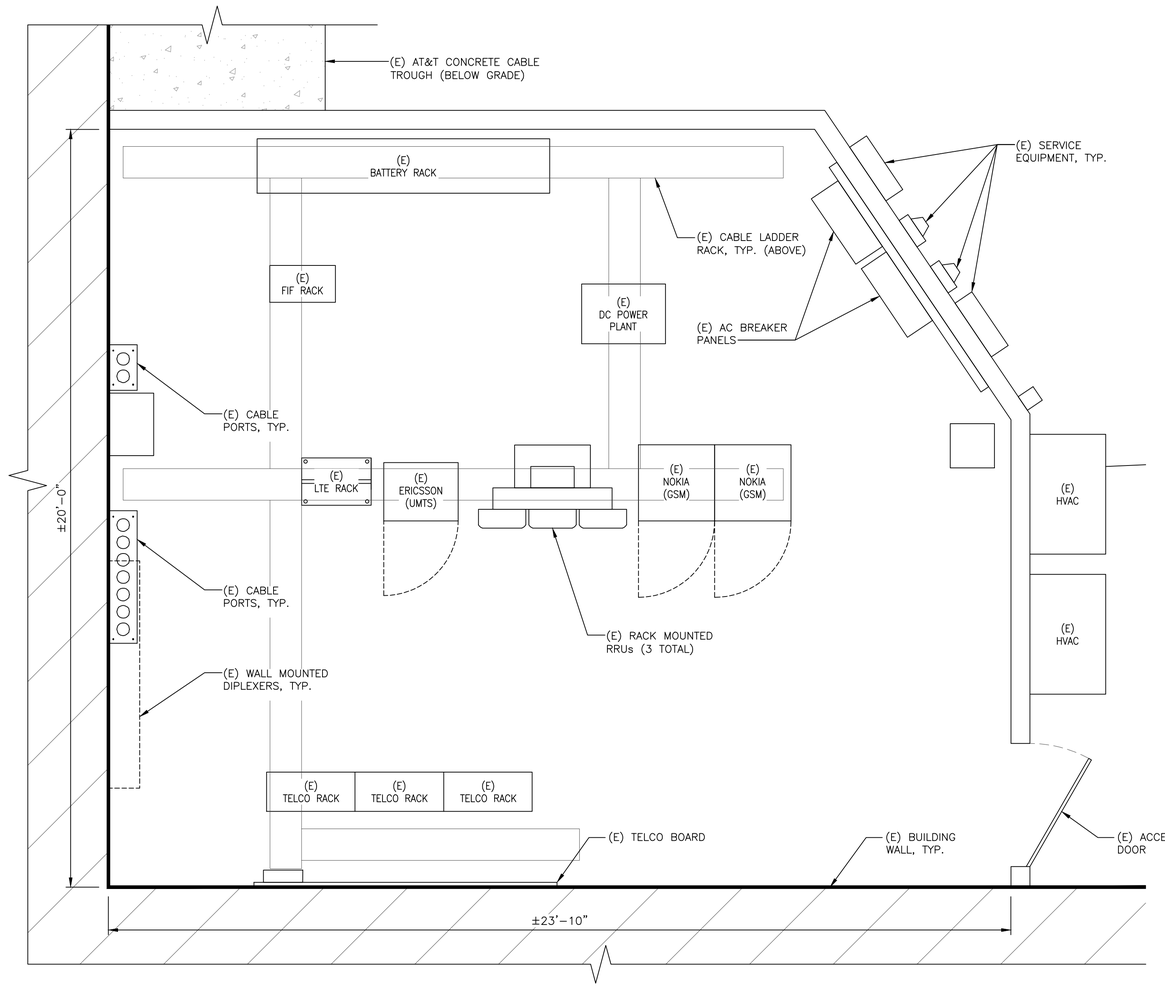
EXISTING EQUIPMENT LAYOUT

SCALE: 1" = 2'-0"

2 0 1 2 4 8

(IN FEET)
1/2 Inch = 1 Foot





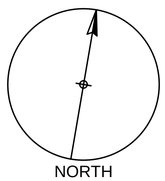
PROPOSED EQUIPMENT LAYOUT

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.



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FAX: 862.209.4301

EMPIRE telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1002
SITE NAME: EAST HARTFORD

2 PRESTIGE PARK RD.
EAST HARTFORD, CT 06108
HARTFORD COUNTY

at&t MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	07/22/15	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: CJT

SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARILE · PROFESSIONAL ENGINEER · REG. NO. 28643 · PROFESSIONAL ENGINEER

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DRAWING TITLE: EQUIPMENT LAYOUTS

JOB NUMBER	DRAWING NUMBER	REV
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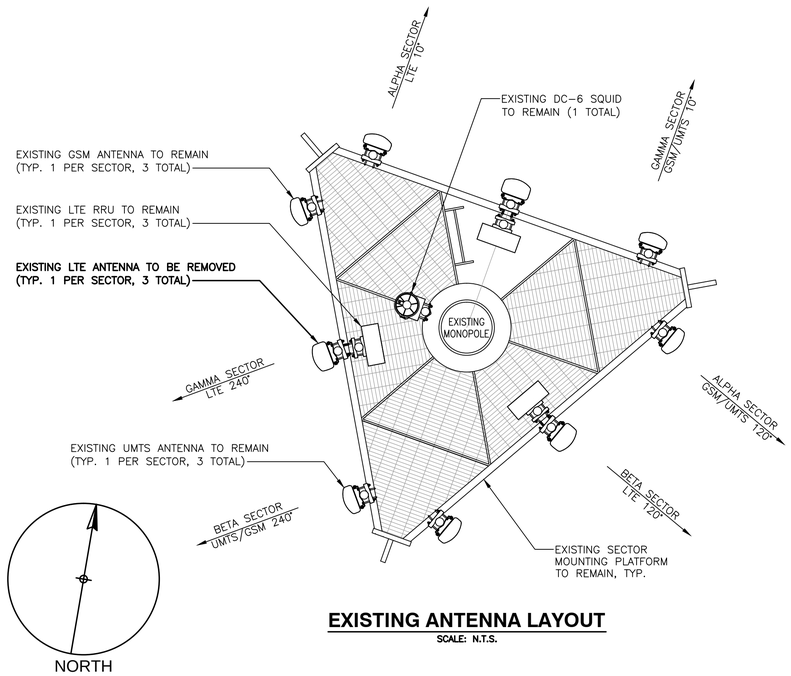
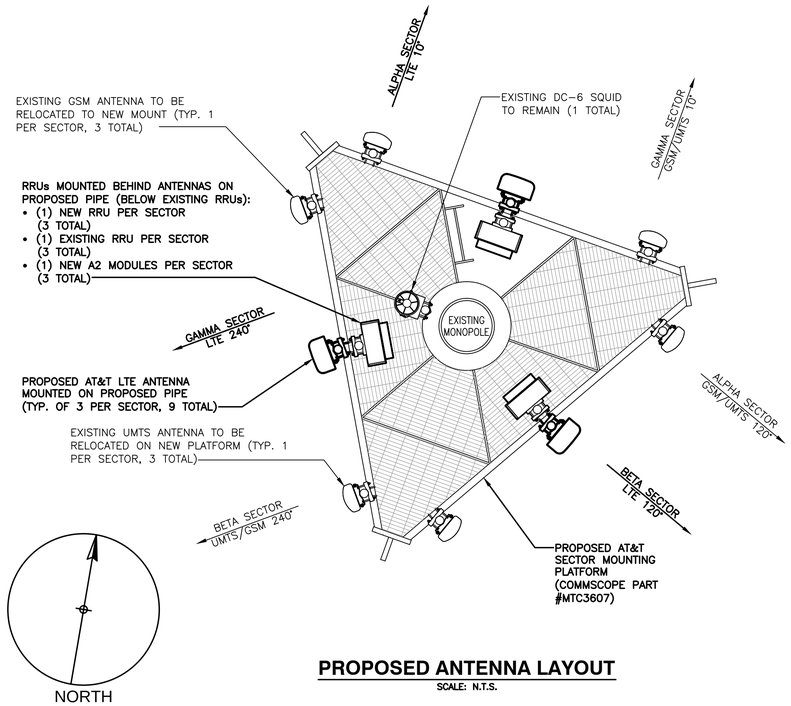


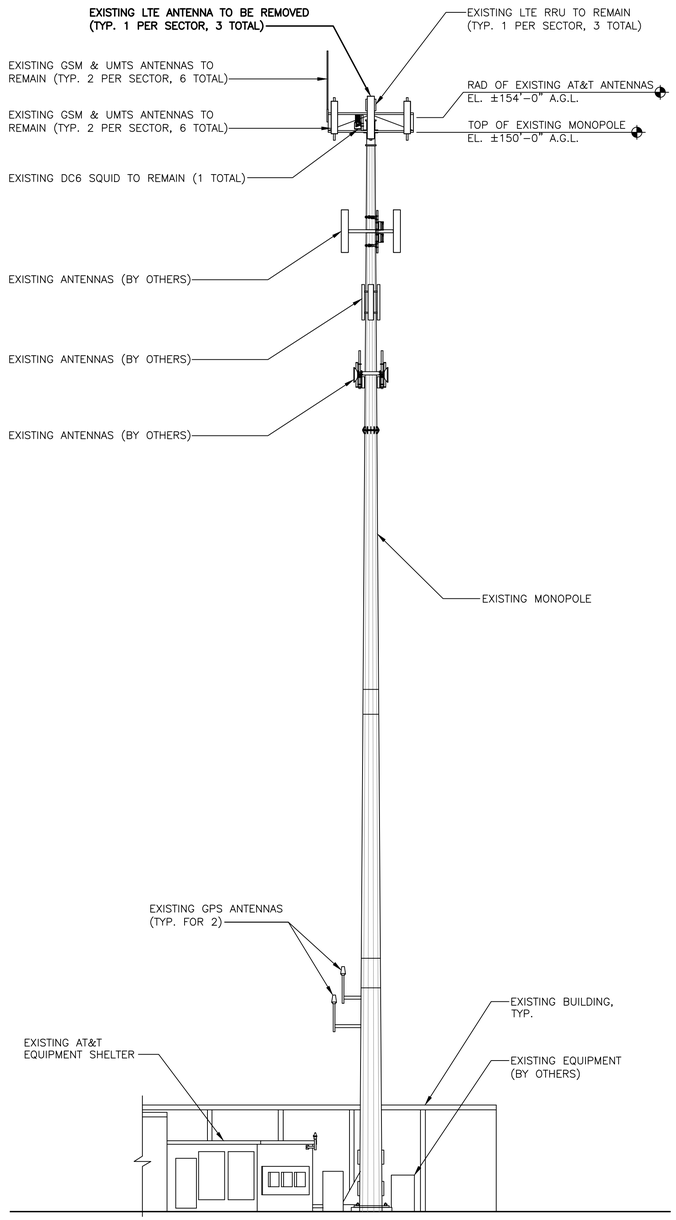
EXISTING ANTENNA LAYOUT

SCALE: N.T.S.



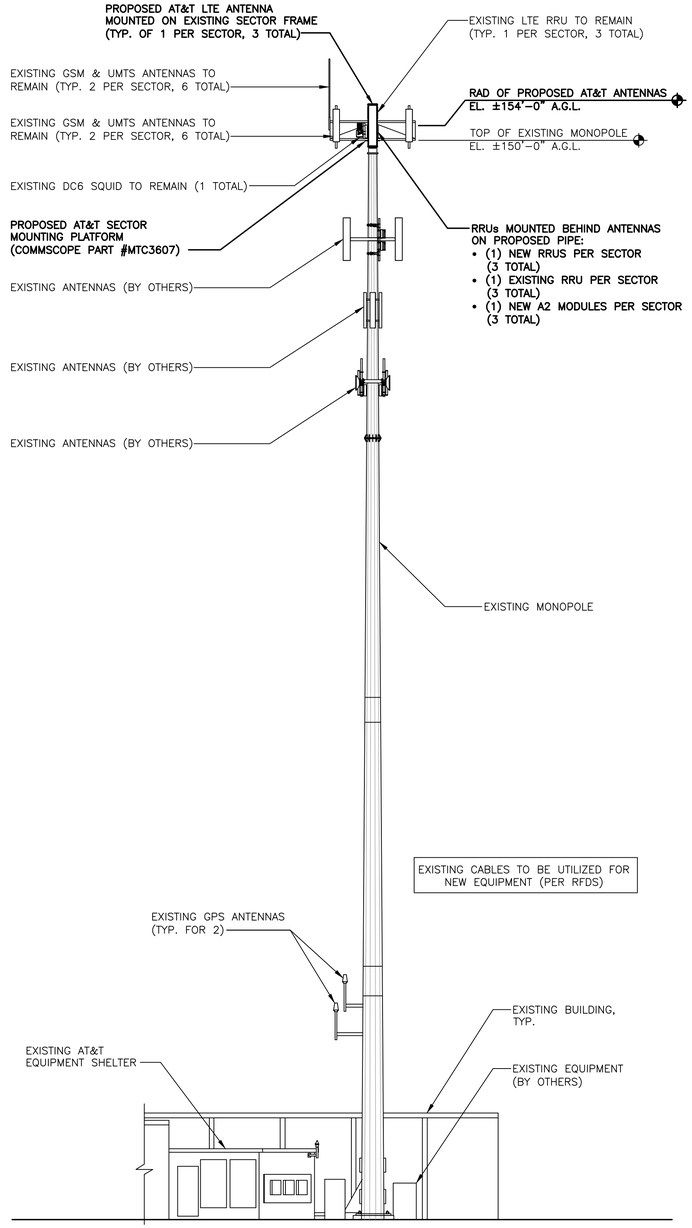
PROPOSED ANTENNA LAYOUT

SCALE: N.T.S.



EXISTING TOWER ELEVATION

SCALE: NTS



PROPOSED TOWER ELEVATION

SCALE: NTS

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

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SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILE — LICENSED PROFESSIONAL ENGINEER — 28643

AT&T

DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS

JOB NUMBER	DRAWING NUMBER	REV
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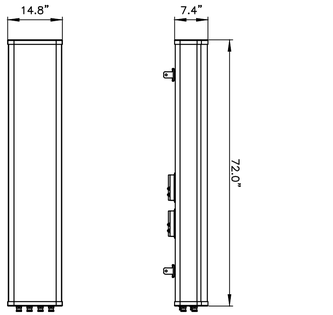


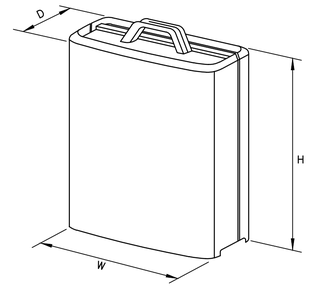
FRONT VIEW SIDE VIEW

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.

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

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AT&T

DRAWING TITLE: DETAILS

JOB NUMBER	DRAWING NUMBER	REV
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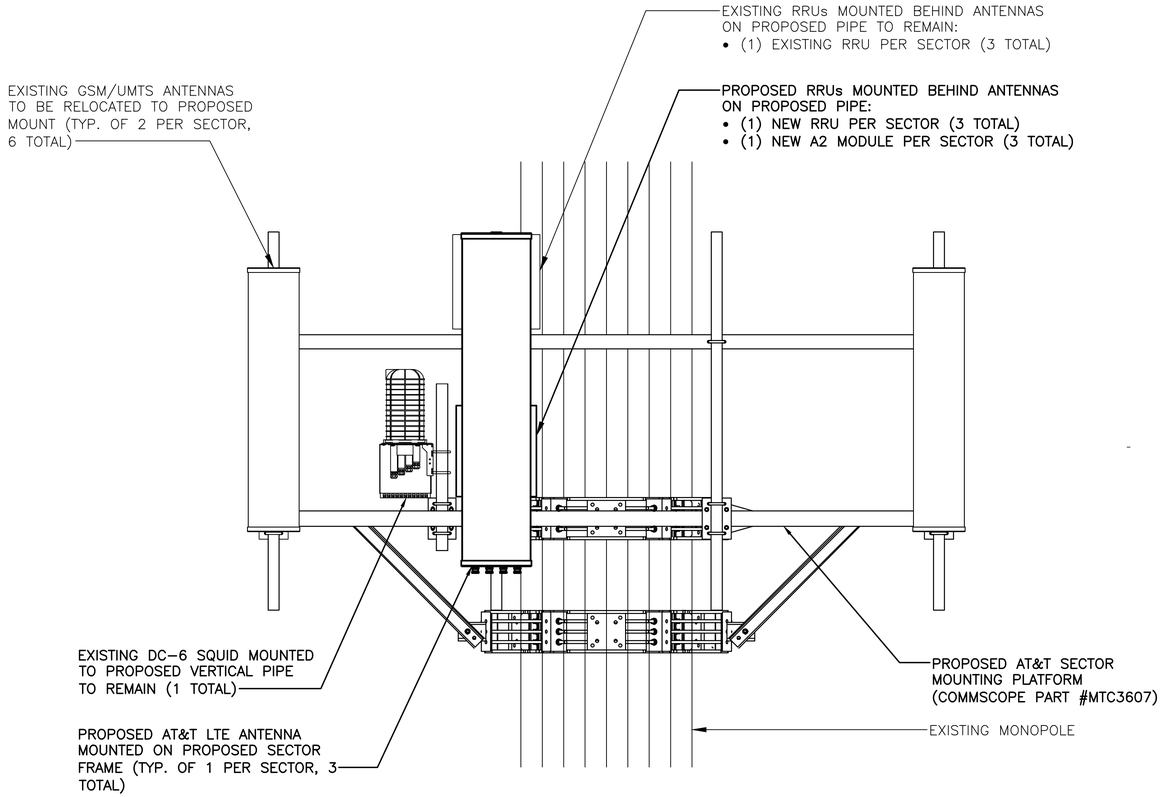
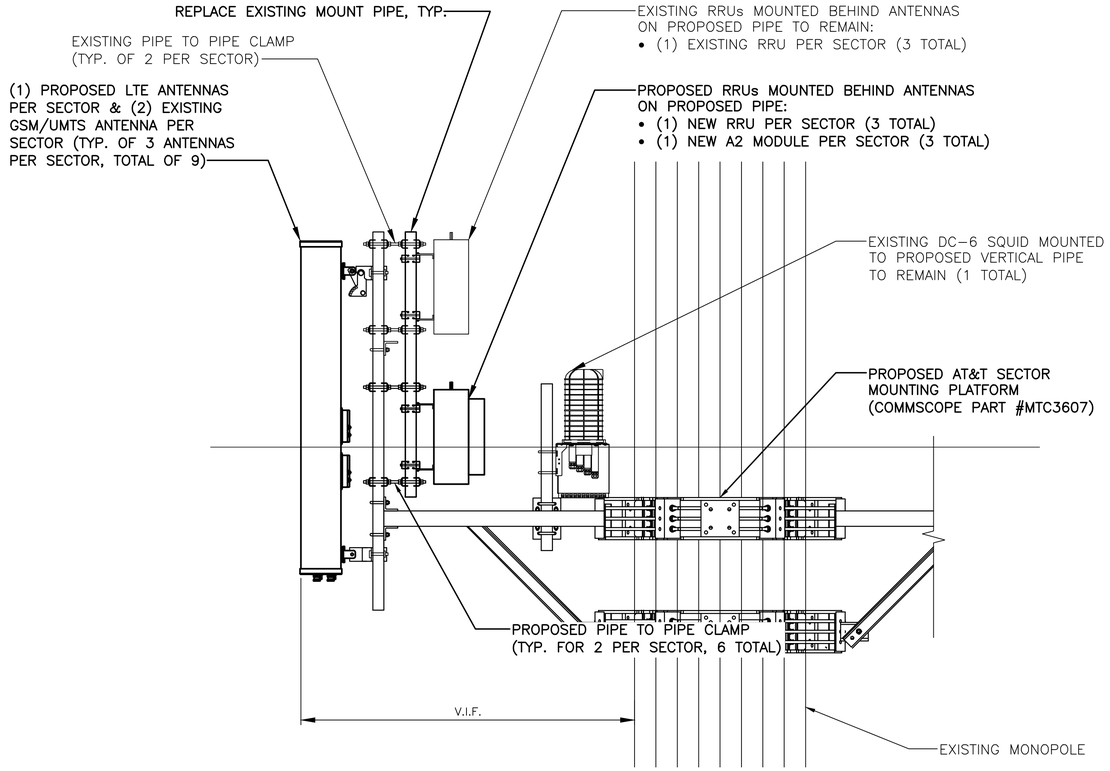


PROPOSED ANTENNA MOUNTING DETAIL (FRONT VIEW)

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	–	–	–
	A3	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
	A4	POWERWAVE	7770	55"x11"x5"
BETA	B1	POWERWAVE	7770	55"x11"x5"
	B2	–	–	–
	B3	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
	B4	POWERWAVE	7770	55"x11"x5"
GAMMA	G1	POWERWAVE	7770	55"x11"x5"
	G2	–	–	–
	G3	CCI	OPA–65R–LCUU–H6	72"x14.8"x7.4"
	G4	POWERWAVE	7770	55"x11"x5"

PROPOSED 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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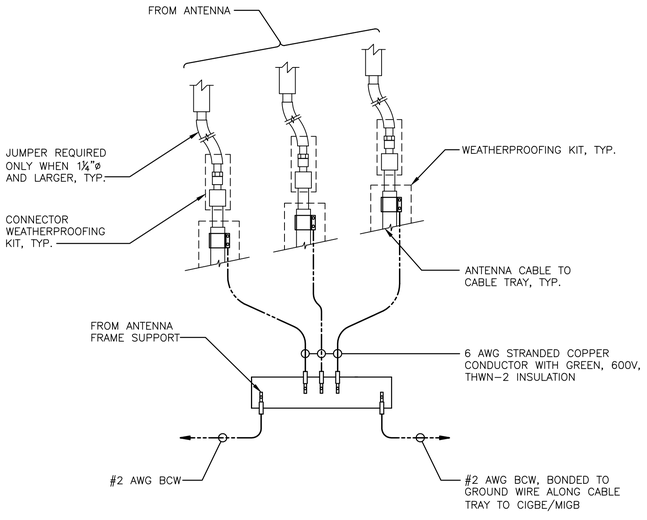
SEAL: STATE OF CONNECTICUT — NICHOLAS D. BARILE — LICENSED PROFESSIONAL ENGINEER — 28643

AT&T

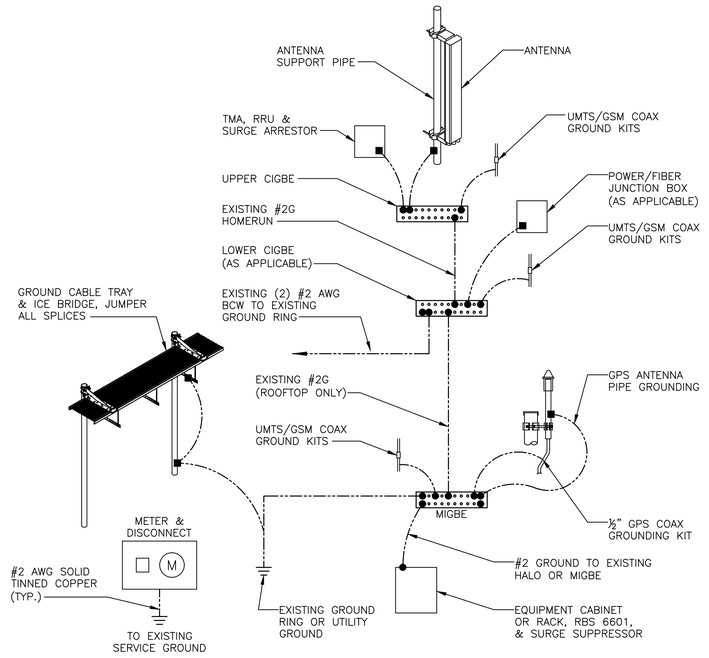
DRAWING TITLE: ANTENNA MOUNTING DETAILS

JOB NUMBER	DRAWING NUMBER	REV
14178–EMP	A–5	1



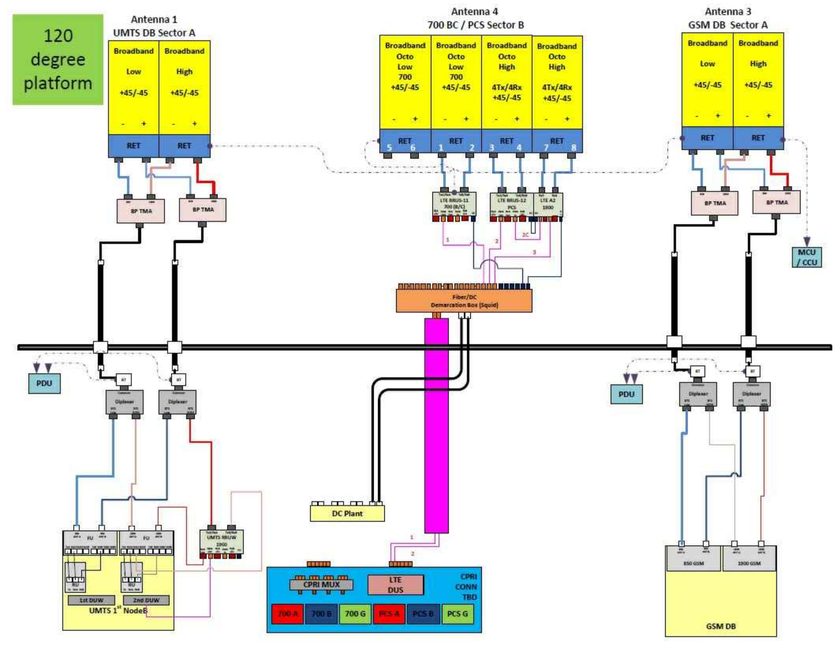
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.



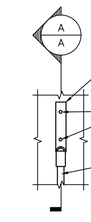
GROUNDING RISER DIAGRAM

SCALE: N.T.S.

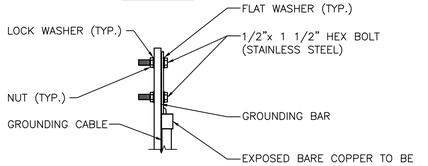


TYPICAL PLUMBING DIAGRAM (PER SECTOR)

SCALE: N.T.S.



ELEVATION



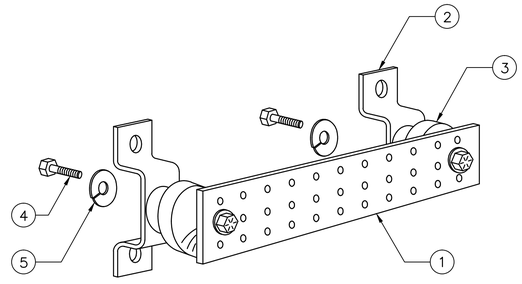
SECTION "A–A"

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.

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SEAL: STATE OF CONNECTICUT · NICHOLAS D. BARLOW · 28643 · PROFESSIONAL ENGINEER

AT&T

DRAWING TITLE:
GROUNDING, ONE–LINE DIAGRAM & DETAILS

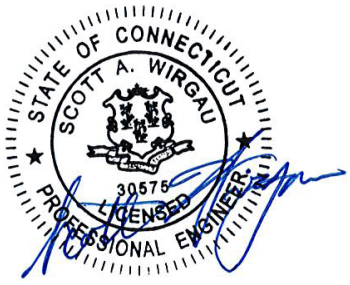
JOB NUMBER	DRAWING NUMBER	REV
14178–EMP	G–1	1

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**E H F R - Prestige Park, CT**
ATC Site Number	:	**302473**
Engineering Number	:	**61681621**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**East Hartford**
Carrier Site Number	:	**CTL01002/FA#10034965**
Site Location	:	**310 Prestige Park Rd.** **East Hartford, CT 06108-1206** **41.788333,-72.600556**
County	:	**Hartford**
Date	:	**May 19, 2015**
Max Usage	:	**95%**
Result	:	**Pass**

Reviewed by:
Scott Wirgau, PE
Structural Team Leader



Prepared By:
Ammar Elhassan, E.I.

May 19 2015 4:11 PM

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	SpectraSite Drawing #D1, dated June 12, 20032
Foundation Drawing	Southern New England Telephone Job #38904, dated April 20, 1983
Geotechnical Report	GeoTechnologies Inc. Project #1-02-1122-EA, dated September 6, 2002
Modifications	ATC Project #51574133, dated January 17, 2013

Analysis

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

Basic Wind Speed:	95 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

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					
150.0	153.0	6	Kathrein 860 10025	Platform w/ Handrails	(12) 7/8" Coax (2) 0.78" 8 AWG 6 (1) 3/8" Coax (1) 0.39" Cable	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12) (55 lb)			
	155.0	1	10' Omni		(1) 1 5/8" Coax	USA Mobility
138.0	138.0	3	RFS IBC1900BB-1	T-Arms	(4) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	RFS IBC1900HG-2A			
		6	Alcatel-Lucent 4X40W RRH			
		3	Alcatel-Lucent 800MHz RRH w/ Notch Filter			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		2	RFS APXV9ERR18-C-A20			
		1	RFS APXVSPP18-C-A20			
128.0	128.0	3	Ericsson AIR 21, 1.3M, B2A B4P (91.5 lbs)	Sector Frame	(6) 1 5/8" Coax (1) 1 5/8" Hybriflex	Metro PCS
		3	Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)			
118.0	118.0	3	DragonWave Horizon Compact	Collar Mount	(6) 5/16" Coax (3) 1/2" Coax	Clearwire
		1	DragonWave A-ANT-23G-1-C			
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		2	DragonWave A-ANT-23G-2-C			
112.0	112.0	1	12" x 12" Junction Box	Flush	(1) 2" Conduit	
34.0	34.0	1	GPS	Stand-off	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
153.0	155.0	6	ADC DD1900	-	(12) 7/8" Coax	AT&T Mobility
		6	CSS DUO4-8670			
		3	KMW AM-X-CD-16-65-00T-RET			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	153.0	12	Powerwave LGP21401	Platform w/ Handrails	-	AT&T Mobility
		3	Ericsson RRUS 12 w/ RRUS A2			
		6	Powerwave 7770.00 (27 lbs)			
		3	CCI OPA-65R-LCUU-H6			
35.0	35.0	1	GPS	Stand-off	(1) 1/2" Coax	

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

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	70%	Pass
Shaft	95%	Pass
Base Plate	45%	Pass
Flanges	94%	Pass
Reinforcement	74%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,332.2	83%
Shear (Kips)	23.7	78%

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.

The foundation and anchorages for the tower were analyzed with a safety factor greater than or equal to 2 with respect to wind.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
150.0	Powerwave LGP21401	AT&T Mobility	2.746	2.290
	Powerwave Allgon 7770.00 (27 lbs)			
	Ericsson RRUS 12 w/ RRUS A2			
	CCI OPA-65R-LCUU-H6			
118.0	DragonWave A-ANT-23G-1-C	Clearwire Corporatio	1.565	1.803
	DragonWave A-ANT-23G-2-C			
35.0	GPS	AT&T Mobility	0.132	0.430

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

AMERICAN TOWER®
CORPORATION

Standard Conditions

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

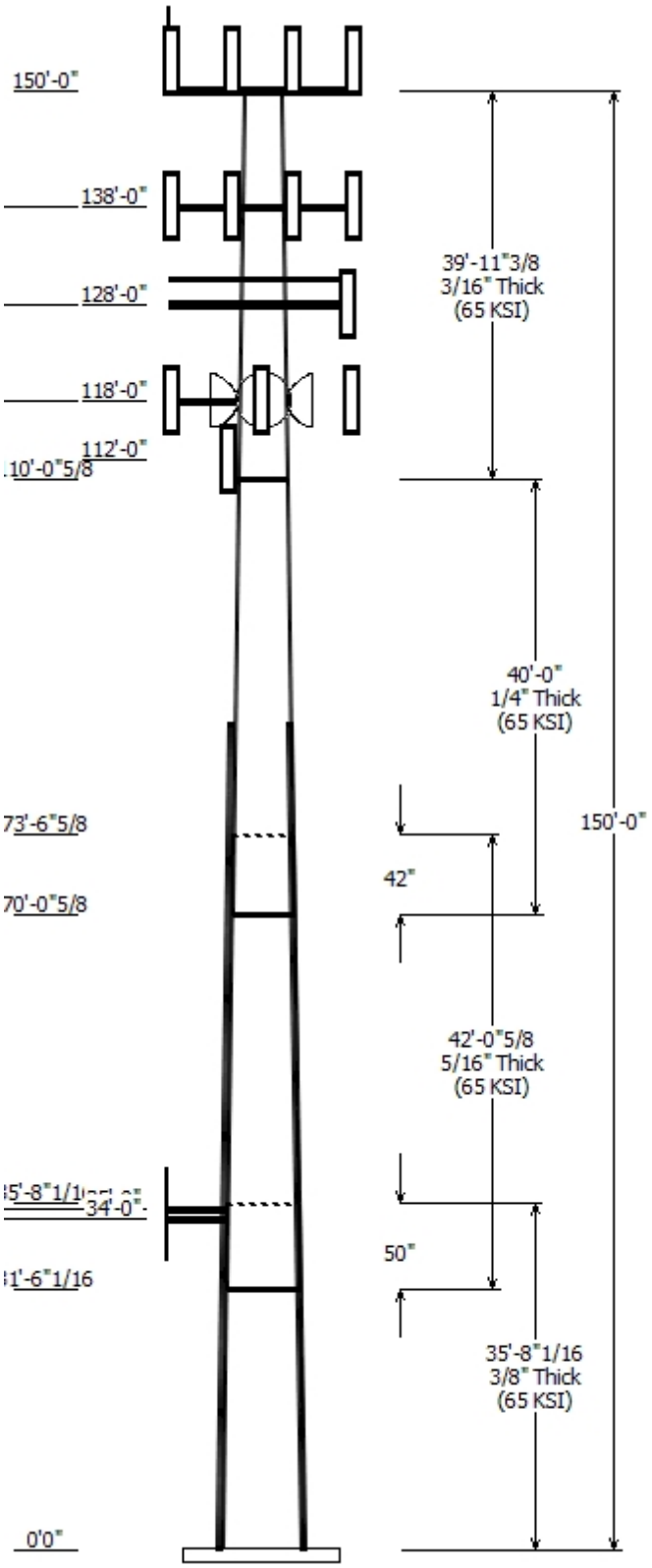
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

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

It is the responsibility of the client to ensure that the information provided to 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 :	302473
Code:	ANSI/TIA-222-G
Description :	150' ITT Meyer Type "B" Monopole
Client :	AT&T Mobility
Struct Class :	II
Location :	E H F R - Prestige Park, CT
Shape :	12 Sides
Exposure :	B
Height :	150.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.15656 (in/ft)

Sections Properties

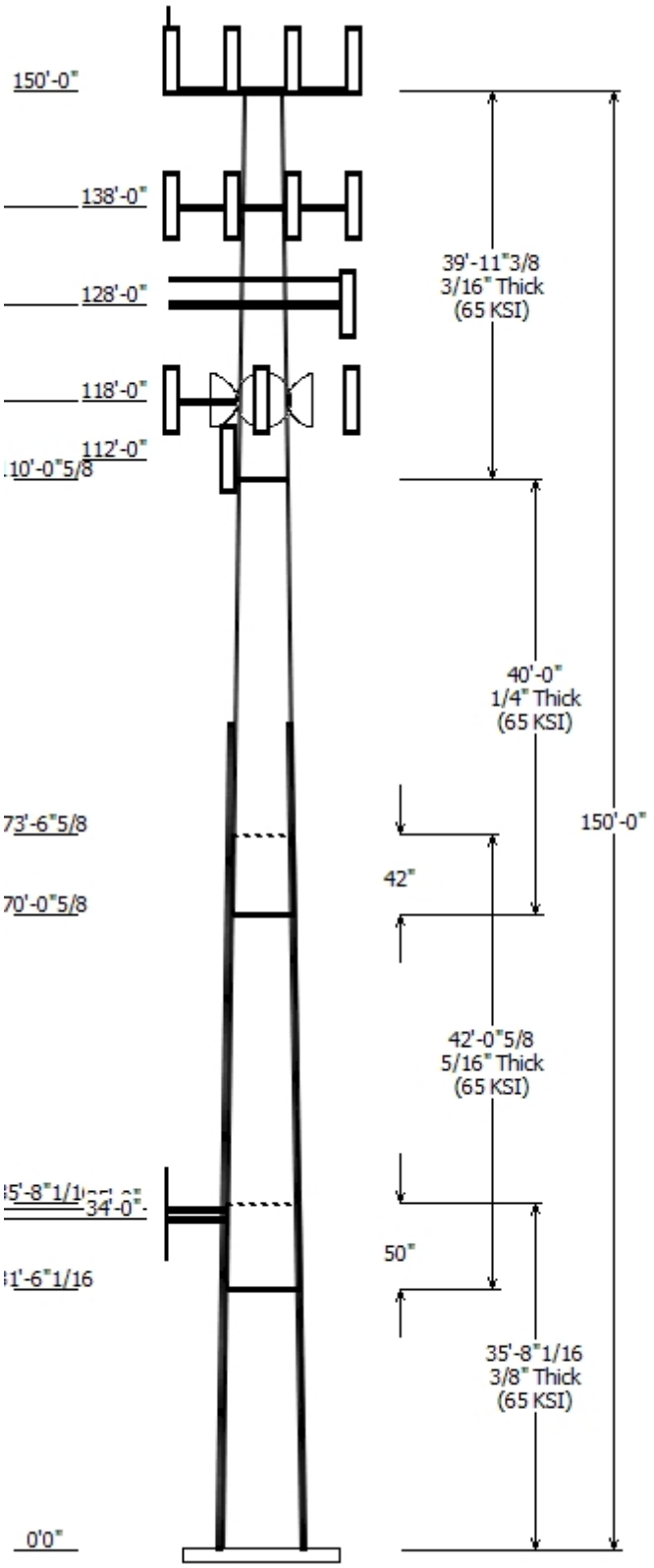
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	35.670	31.77	37.36	0.375		0.000	0.156567	65
2	42.050	26.46	33.05	0.313	Slip Joint	50.000	0.156567	65
3	40.000	21.25	27.51	0.250	Slip Joint	42.000	0.156567	65
4	39.947	15.00	21.25	0.188	Butt Joint	0.000	0.156567	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	153.000	3	CCI OPA-65R-LCUU-H6
150.000	153.000	3	Ericsson RRUS 12 w/ RRUS A2
150.000	153.000	1	Raycap DC6-48-60-18-8F
150.000	150.000	1	Flat Platform w/ Handrails
150.000	153.000	6	Powerwave Allgon 7770.00 (27
150.000	153.000	6	Kathrein 860 10025
150.000	153.000	6	Ericsson RRUS 11 (Band 12) (55
150.000	153.000	12	Powerwave LGP21401
150.000	155.000	1	10' Omni
138.000	138.000	3	Alcatel-Lucent TD-RRH8x20-25
138.000	138.000	3	RFS APXVTM14-C-I20
138.000	138.000	3	Round T-Arm
138.000	138.000	3	RFS IBC1900HG-2A
138.000	138.000	3	RFS IBC1900BB-1
138.000	138.000	1	RFS APXVSPP18-C-A20
138.000	138.000	2	RFS APXV9ERR18-C-A20
138.000	138.000	3	Alcatel-Lucent 800 MHz RRH
138.000	138.000	6	Alcatel-Lucent 4X40W RRH
128.000	128.000	1	Round Sector Frame
128.000	128.000	3	Ericsson AIR 21, 1.3M, B2A B4P
128.000	128.000	3	Ericsson AIR 21, 1.3M, B4A B2P
118.000	118.000	3	NextNet BTS-2500
118.000	118.000	3	DragonWave Horizon Compact
118.000	118.000	2	DragonWave A-ANT-23G-2-C
118.000	118.000	1	DragonWave A-ANT-23G-1-C
118.000	118.000	1	Collar Mount
118.000	118.000	3	Argus LLPX310R
112.000	112.000	1	12" x 12" Junction Box
35.000	35.000	1	GPS
35.000	35.000	1	Stand-off
34.000	34.000	1	Stand-off
34.000	34.000	1	GPS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
4.000	112.0	2" Conduit	No
4.000	118.0	1/2" Coax	No
4.000	118.0	5/16" Coax	No
4.000	128.0	1 5/8" Coax	Yes
4.000	128.0	1 5/8" Hybriflex	No



4.000	138.0	1 1/4" Hybriflex	No
4.000	138.0	1 1/4" Hybriflex	No
4.000	150.0	0.39" Cable	No
4.000	150.0	0.78" 8 AWG 6	No
4.000	150.0	1 5/8" Coax	No
4.000	150.0	3/8" Coax	No
4.000	150.0	7/8" Coax	No
4.000	34.000	1/2" Coax	Yes
4.000	35.000	1/2" Coax	Yes
0.000	91.000	#20 Dywidag Bars	Yes

Load Cases

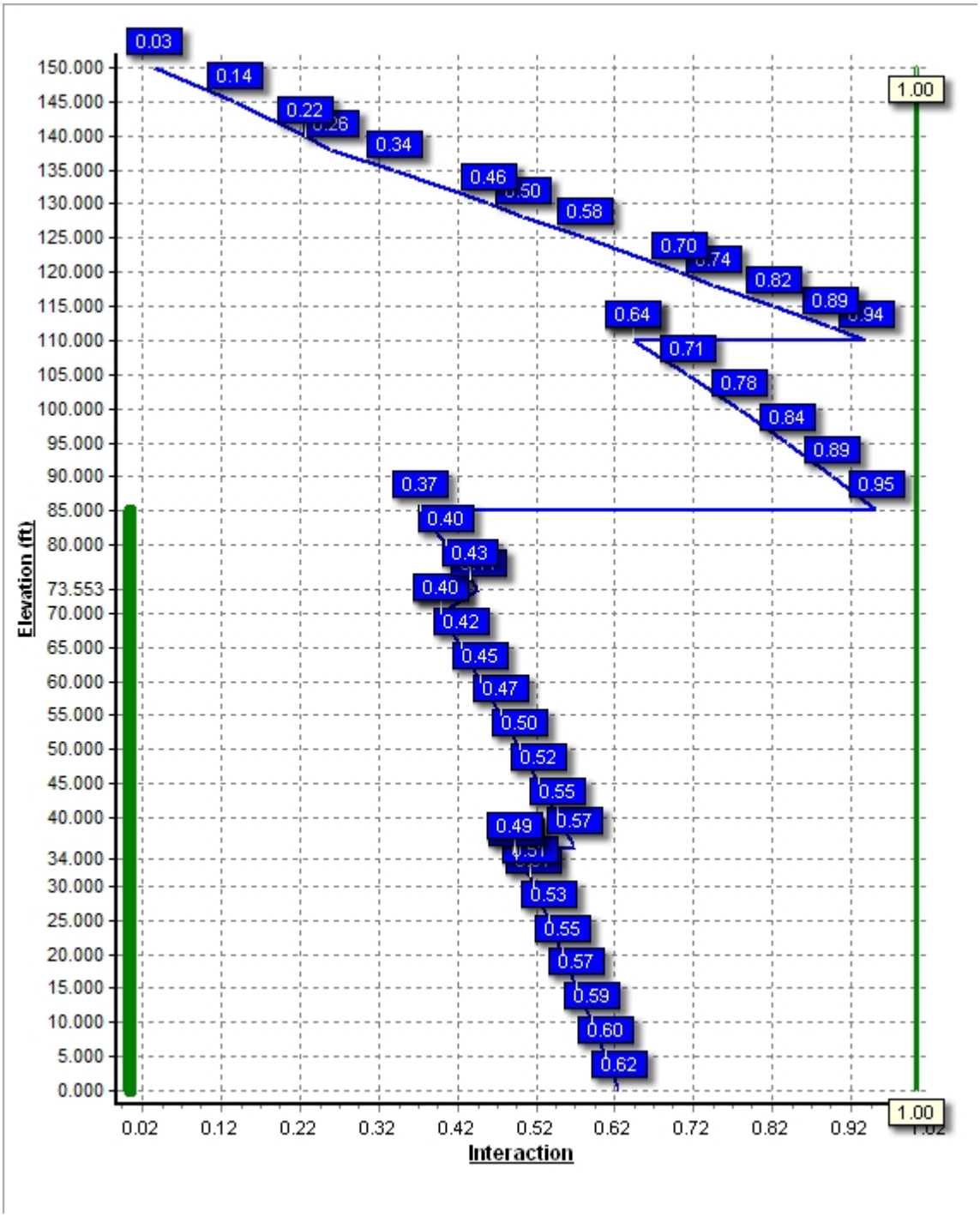
1.2D + 1.6W	95 mph with No Ice
0.9D + 1.6W	95 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2332.17	23.69	34.32
0.9D + 1.6W	2227.41	23.03	25.73
1.2D + 1.0Di + 1.0Wi	634.21	5.68	64.82
(1.2 + 0.2Sds) * DL + E ELFM	122.59	1.01	30.76
(1.2 + 0.2Sds) * DL + E EMAM	246.41	2.05	34.10
(0.9 - 0.2Sds) * DL + E ELFM	120.84	1.01	21.41
(0.9 - 0.2Sds) * DL + E EMAM	241.04	2.05	23.74
1.0D + 1.0W	559.40	5.74	28.65

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	118.00	18.775	1.803
1.0D + 1.0W	118.00	18.775	1.803


0.03
0.14
0.22
0.34
0.46
0.58
0.70
0.82
0.89
0.64
0.71
0.78
0.84
0.89
0.95
0.37
0.40
0.43
0.40
0.42
0.45
0.47
0.50
0.52
0.55
0.49
0.57
0.53
0.55
0.57
0.59
0.60
0.62
1.00
1.00
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
73.553
70.000
65.000
60.000
55.000
50.000
45.000
40.000
34.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	**302473**	**Code: ANSI/TIA-222-G**	
Site Name:	**E H F R - Prestige Park, CT**	**Engineering Number: 61681621**	**5/19/2015 11:32:26 AM**
Customer:	**AT&T Mobility**		

Analysis Parameters

Location:	**Hartford County, CT**		
Code:	**ANSI/TIA-222-G**	**Height (ft):**	**150**
Shape:	**12 Sides**	**Base Diameter (in):**	**37.36**
Pole Type:	**Taper**	**Top Diameter (in):**	**15.00**
Pole Manfacturer:	**ITT Meyer**	**Taper (in/ft) :**	**0.157**

Ice & Wind Parameters

Structure Class:	**II**	**Design Wind Speed Without Ice:**	**95 mph**
Exposure Catagory:	**B**	**Design Wind Speed With Ice:**	**50 mph**
Topographic Catagory:	**1**	**Operational Wind Speed:**	**60 mph**
Crest Height:	**0.0 ft**	**Design Ice Thickness:**	**0.50 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**2.80**				
T_L (sec):	**6**	**p:**	**1.3**	**C_s:**	**0.030**
S_s:	**0.179**	**S_1:**	**0.064**	**C_s Max:**	**0.030**
F_a:	**1.600**	**F_v:**	**1.600**	**C_s Min:**	**0.030**
S_{ds}:	**0.191**	**S_{d1}:**	**0.068**		

Load Cases

1.2D + 1.6W	**95 mph with No Ice**
0.9D + 1.6W	**95 mph with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi	**50 mph with 1.00 in Radial Ice**
(1.2 + 0.2Sds) * DL + E ELFM	**Seismic Equivalent Lateral Forces Method**
(1.2 + 0.2Sds) * DL + E EMAM	**Seismic Equivalent Modal Analysis Method**
(0.9 - 0.2Sds) * DL + E ELFM	**Seismic (Reduced DL) Equivalent Lateral Forces Method**
(0.9 - 0.2Sds) * DL + E EMAM	**Seismic (Reduced DL) Equivalent Modal Analysis Method**
1.0D + 1.0W	**Serviceability 60 mph**

Site Number: 302473	**Code:** ANSI/TIA-222-G		
Site Name: E H F R - Prestige Park, CT	**Engineering Number:** 61681621	**5/19/2015 11:32:26 AM**	
Customer: AT&T Mobility			

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	35.670	0.3750	65		0.00	5,011	37.36	0.00	44.66	7797.4	24.55	99.63	31.77	35.67	37.92	4771.7	20.56	84.73	0.156567
2-12	42.050	0.3125	65	Slip	50.00	4,240	33.05	31.50	32.94	4507.5	26.20	105.77	26.46	73.55	26.32	2298.4	20.55	84.70	0.156567
3-12	40.000	0.2500	65	Slip	42.00	2,645	27.51	70.05	21.95	2083.0	27.35	110.07	21.25	110.05	16.91	952.2	20.64	85.02	0.156567
4-12	39.947	0.1875	65	Butt	0.00	1,472	21.25	110.05	12.72	720.5	28.23	113.36	15.00	150.00	8.94	250.5	19.29	80.00	0.156567
				Shaft Weight		13,368													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
150.00	10' Omni	1	25.00	3.000	1.00	226.16	6.663	1.00	0.000	5.000
150.00	CCI OPA-65R-LCUU-H6	3	73.00	9.660	0.66	481.77	15.173	0.66	0.000	3.000
150.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.520	0.50	170.75	3.406	0.50	0.000	3.000
150.00	Ericsson RRUS 12 w/ RRUS	3	71.40	3.150	0.50	187.15	3.406	0.50	0.000	3.000
150.00	Flat Platform w/ Handrails	1	2000.00	38.000	1.00	3,895.59	63.070	1.00	0.000	0.000
150.00	Kathrein 860 10025	6	1.20	0.180	0.50	18.60	0.483	0.50	0.000	3.000
150.00	Powerwave Allgon 7770.00	6	27.00	5.510	0.65	220.57	6.943	0.65	0.000	3.000
150.00	Powerwave LGP21401	12	14.10	1.100	0.50	64.86	1.742	0.50	0.000	3.000
150.00	Raycap DC6-48-60-18-8F	1	20.00	1.110	1.00	71.76	1.813	1.00	0.000	3.000
138.00	Alcatel-Lucent 4X40W RRH	6	59.50	2.320	0.50	194.40	3.234	0.50	0.000	0.000
138.00	Alcatel-Lucent 800 MHz RRH	3	61.80	2.500	0.50	210.49	3.381	0.50	0.000	0.000
138.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.050	0.50	174.62	2.613	0.50	0.000	0.000
138.00	RFS APXV9ERR18-C-A20	2	62.00	8.020	0.71	354.18	9.766	0.71	0.000	0.000
138.00	RFS APXVSPP18-C-A20	1	57.00	8.020	0.83	337.29	9.766	0.83	0.000	0.000
138.00	RFS APXVTM14-C-I20	3	52.90	6.340	0.66	278.64	7.838	0.66	0.000	0.000
138.00	RFS IBC1900BB-1	3	22.00	0.970	0.50	74.87	1.558	0.50	0.000	0.000
138.00	RFS IBC1900HG-2A	3	22.00	0.970	0.50	74.87	1.558	0.50	0.000	0.000
138.00	Round T-Arm	3	250.00	9.700	0.67	526.61	20.611	0.67	0.000	0.000
128.00	Ericsson AIR 21, 1.3M, B2A	3	91.50	6.040	0.70	326.55	7.564	0.70	0.000	0.000
128.00	Ericsson AIR 21, 1.3M, B4A	3	90.40	6.080	0.70	325.51	7.518	0.70	0.000	0.000
128.00	Round Sector Frame	1	300.00	10.000	0.75	783.15	25.098	0.75	0.000	0.000
118.00	Argus LLPX310R	3	28.60	4.290	0.63	179.02	5.484	0.63	0.000	0.000
118.00	Collar Mount	1	560.00	8.500	1.00	1,169.87	17.757	1.00	0.000	0.000
118.00	DragonWave A-ANT-23G-1-C	1	15.00	1.610	0.90	61.03	2.596	0.90	0.000	0.000
118.00	DragonWave A-ANT-23G-2-C	2	12.30	4.690	1.00	70.13	6.350	1.00	0.000	0.000
118.00	DragonWave Horizon	3	10.60	0.430	0.50	39.89	1.095	0.50	0.000	0.000
118.00	NextNet BTS-2500	3	35.00	1.820	0.50	115.95	2.558	0.50	0.000	0.000
112.00	12" x 12" Junction Box	1	10.00	1.200	0.50	64.00	2.141	0.50	0.000	0.000
35.00	GPS	1	10.00	1.000	1.00	56.70	1.014	1.00	0.000	0.000
35.00	Stand-off	1	50.00	2.000	1.00	90.18	3.607	1.00	0.000	0.000
34.00	GPS	1	10.00	1.000	1.00	43.57	1.815	1.00	0.000	0.000
34.00	Stand-off	1	50.00	2.000	1.00	89.97	3.599	1.00	0.000	0.000
	Totals	91	6918.60			21,129.96			Number of Loadings :	32

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Protected Width (in)	Exposed To Wind	Carrier
4.00	150.00	1	0.39" Cable	0.39	0.07	N	0.00	N	AT&T Mobility
4.00	150.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
4.00	150.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	USA Mobility
4.00	150.00	1	3/8" Coax	0.44	0.08	N	0.00	N	AT&T Mobility

4.00	150.00	12	7/8" Coax	1.09	3.96	N	0.00	N	AT&T Mobility
4.00	138.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
4.00	138.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
4.00	128.00	6	1 5/8" Coax	1.98	4.92	N	3.96	Y	Metro PCS
4.00	128.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Metro PCS
4.00	118.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire Corporation
4.00	118.00	6	5/16" Coax	0.31	0.05	N	0.00	N	Clearwire Corporation
4.00	112.00	1	2" Conduit	2.38	3.65	N	0.00	N	Clearwire Corporation
0.00	91.00	4	#20 Dywidag Bars	2.72	0.00	N	4.04	Y	
4.00	35.00	1	1/2" Coax	0.63	0.15	N	0.00	Y	AT&T Mobility
4.00	34.00	1	1/2" Coax	0.63	0.15	N	0.00	Y	Sprint Nextel

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections — Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	85.00	4	SOL #20 All Thread	80	2.08	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No

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)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Ix (in^4)	Weight (lb)
0.00		0.3750	37.360	44.659	7,797.4	24.55	99.63	77.9	403.2	0.0	0.0	19.64	4,764	0.0
5.00		0.3750	36.577	43.714	7,312.7	23.99	97.54	78.5	386.2	0.0	751.8	19.64	4,597	334.0
10.00		0.3750	35.794	42.769	6,848.5	23.43	95.45	79.2	369.6	0.0	735.7	19.64	4,432	334.0
15.00		0.3750	35.012	41.824	6,404.4	22.87	93.36	79.8	353.4	0.0	719.6	19.64	4,270	334.0
20.00		0.3750	34.229	40.878	5,979.9	22.31	91.28	80.4	337.5	0.0	703.5	19.64	4,112	334.0
25.00		0.3750	33.446	39.933	5,574.5	21.75	89.19	81.0	322.0	0.0	687.5	19.64	3,956	334.0
30.00		0.3750	32.663	38.988	5,188.0	21.20	87.10	81.6	306.8	0.0	671.4	19.64	3,803	334.0
31.50	Bot - Section 2	0.3750	32.428	38.704	5,075.3	21.03	86.47	81.8	302.4	0.0	198.7	19.64	3,758	100.4
34.00		0.3750	32.037	38.232	4,891.9	20.75	85.43	81.9	295.0	0.0	605.0	19.64	3,803	166.8
35.00		0.3750	31.880	38.042	4,819.7	20.64	85.01	81.9	292.1	0.0	240.3	19.64	3,773	66.8
35.67	Top - Section 1	0.3125	32.400	32.288	4,243.4	25.64	103.68	76.8	253.0	0.0	160.3	19.64	3,753	44.8
40.00		0.3125	31.722	31.606	3,980.1	25.06	101.51	77.4	242.4	0.0	470.7	19.64	3,624	289.2
45.00		0.3125	30.940	30.818	3,689.8	24.39	99.01	78.1	230.4	0.0	531.0	19.64	3,478	334.0
50.00		0.3125	30.157	30.031	3,414.1	23.71	96.50	78.9	218.7	0.0	517.6	19.64	3,335	334.0
55.00		0.3125	29.374	29.243	3,152.4	23.04	94.00	79.6	207.3	0.0	504.2	19.64	3,195	334.0
60.00		0.3125	28.591	28.455	2,904.4	22.37	91.49	80.3	196.2	0.0	490.8	19.64	3,058	334.0
65.00		0.3125	27.808	27.668	2,669.8	21.70	88.99	81.0	185.5	0.0	477.4	19.64	2,924	334.0
70.00		0.3125	27.025	26.880	2,448.2	21.03	86.48	81.8	175.0	0.0	464.0	19.64	2,793	334.0
70.05	Bot - Section 3	0.3125	27.017	26.871	2,445.9	21.02	86.45	81.8	174.9	0.0	4.9	19.64	2,792	3.6
73.55	Top - Section 2	0.2500	26.969	21.509	1,959.9	26.76	107.88	75.5	140.4	0.0	575.5	19.64	2,784	233.8
75.00		0.2500	26.743	21.326	1,910.5	26.52	106.97	75.8	138.0	0.0	105.4	19.64	2,746	96.6
80.00		0.2500	25.960	20.696	1,746.1	25.68	103.84	76.7	129.9	0.0	357.5	19.64	2,619	334.0
85.00	Reinf. Top	0.2500	25.177	20.066	1,591.4	24.84	100.71	77.6	122.1	0.0	346.8	19.64	2,496	334.0
90.00		0.2500	24.394	19.436	1,446.1	24.00	97.58	78.5	114.5	0.0	336.0			
95.00		0.2500	23.611	18.806	1,310.0	23.16	94.44	79.5	107.2	0.0	325.3			
100.0		0.2500	22.828	18.176	1,182.7	22.32	91.31	80.4	100.1	0.0	314.6			
105.0		0.2500	22.046	17.545	1,063.9	21.48	88.18	81.3	93.2	0.0	303.9			
110.0		0.2500	21.263	16.915	953.3	20.65	85.05	81.9	86.6	0.0	293.2			
110.0	Top - Section 3	0.2500	21.254	16.908	952.2	20.64	85.02	81.9	86.5	0.0	3.1			
110.0	Bot - Section 4	0.1875	21.254	12.719	720.5	28.23	113.36	73.9	65.5	0.0				
112.0		0.1875	20.950	12.535	689.7	27.79	111.73	74.4	63.6	0.0	83.6			
115.0		0.1875	20.480	12.251	643.9	27.12	109.23	75.1	60.7	0.0	126.5			
118.0		0.1875	20.010	11.968	600.2	26.45	106.72	75.9	57.9	0.0	123.6			
120.0		0.1875	19.697	11.779	572.2	26.00	105.05	76.4	56.1	0.0	80.8			
125.0		0.1875	18.914	11.306	506.1	24.89	100.88	77.6	51.7	0.0	196.4			
128.0		0.1875	18.444	11.023	469.0	24.21	98.37	78.3	49.1	0.0	114.0			
130.0		0.1875	18.131	10.834	445.2	23.77	96.70	78.8	47.4	0.0	74.4			
135.0		0.1875	17.349	10.361	389.5	22.65	92.53	80.0	43.4	0.0	180.3			
138.0		0.1875	16.879	10.077	358.4	21.98	90.02	80.7	41.0	0.0	104.3			
140.0		0.1875	16.566	9.888	338.6	21.53	88.35	81.2	39.5	0.0	67.9			
145.0		0.1875	15.783	9.416	292.3	20.41	84.18	81.9	35.8	0.0	164.2			
150.0		0.1875	15.000	8.943	250.5	19.29	80.00	81.9	32.3	0.0	156.2			
											13,368.2			5,678.0

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 61681621 5/19/2015 11:32:27 AM

Customer: AT&T Mobility

Load Case: 1.2D + 1.6W 95 mph with No Ice 27 Iterations

Gust Response Factor : 1.10 Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		232.6	0.0					0.0	0.0	232.6	0.0	0.0	0.0
5.00		485.8	902.1					0.0	426.0	485.8	1,328.1	0.0	0.0
10.00		501.0	882.8					108.2	526.8	609.2	1,409.6	0.0	0.0
15.00		490.1	863.5					108.2	526.8	598.2	1,390.3	0.0	0.0
20.00		479.1	844.2					108.2	526.8	587.3	1,371.0	0.0	0.0
25.00		468.2	824.9					108.2	526.8	576.3	1,351.7	0.0	0.0
30.00		300.4	805.6					108.2	526.8	408.5	1,332.4	0.0	0.0
31.50	Bot - Section 2	186.9	238.5					32.8	158.4	219.6	396.8	0.0	0.0
34.00	Appertunance(s)	165.3	726.0	81.3	0.0	0.0	72.0	55.4	263.0	302.1	1,061.1	0.0	0.0
35.00	Appertunance(s)	79.4	288.3	82.0	0.0	0.0	72.0	22.5	105.2	184.0	465.5	0.0	0.0
35.67	Top - Section 1	239.7	192.4					15.2	70.3	254.9	262.7	0.0	0.0
40.00		450.2	564.9					100.2	454.6	550.4	1,019.5	0.0	0.0
45.00		486.4	637.3					119.6	525.0	606.0	1,162.2	0.0	0.0
50.00		488.6	621.2					123.4	525.0	612.1	1,146.2	0.0	0.0
55.00		489.1	605.1					127.0	525.0	616.1	1,130.1	0.0	0.0
60.00		488.1	589.0					130.4	525.0	618.5	1,114.0	0.0	0.0
65.00		485.7	572.9					133.5	525.0	619.2	1,097.9	0.0	0.0
70.00		244.7	556.8					136.5	525.0	381.2	1,081.8	0.0	0.0
70.05	Bot - Section 3	174.0	5.9					1.5	5.6	175.5	11.5	0.0	0.0
73.55	Top - Section 2	241.9	690.6					97.2	367.5	339.2	1,058.1	0.0	0.0
75.00		312.6	126.5					40.6	151.9	353.2	278.4	0.0	0.0
80.00		481.2	429.0					142.0	525.0	623.2	954.0	0.0	0.0
85.00	Reinf. Top	474.8	416.1					144.5	525.0	619.4	941.1	0.0	0.0
90.00		482.3	403.2					147.0	124.2	629.3	527.4	0.0	0.0
95.00		473.2	390.4					0.0	124.2	473.2	514.6	0.0	0.0
100.00		452.1	377.5					0.0	124.2	452.1	501.7	0.0	0.0
105.00		449.3	364.7					0.0	124.2	449.3	488.8	0.0	0.0
110.00		226.2	351.8					0.0	124.2	226.2	476.0	0.0	0.0
110.05	Top - Section 3	89.1	3.7					0.0	1.3	89.1	5.0	0.0	0.0
112.00	Appertunance(s)	219.7	100.4	23.7	0.0	0.0	12.0	0.0	48.4	243.4	160.7	0.0	0.0
115.00		265.4	151.8					0.0	61.4	265.4	213.2	0.0	0.0
118.00	Appertunance(s)	220.2	148.3	1,054.6	0.0	0.0	986.6	0.0	61.4	1,274.8	1,196.4	0.0	0.0
120.00		305.9	97.0					0.0	39.2	305.9	136.2	0.0	0.0
125.00		336.5	235.7					0.0	98.0	336.5	333.6	0.0	0.0
128.00	Appertunance(s)	183.2	136.8	1,064.5	0.0	0.0	1,014.8	48.2	58.8	1,295.9	1,210.4	0.0	0.0
130.00		223.1	89.2					0.0	24.3	223.1	113.5	0.0	0.0
135.00		250.7	216.4					0.0	60.7	250.7	277.0	0.0	0.0
138.00	Appertunance(s)	152.9	125.2	2,265.4	0.0	0.0	2,368.9	0.0	36.4	2,418.3	2,530.5	0.0	0.0
140.00		207.9	81.5					0.0	14.7	207.9	96.2	0.0	0.0
145.00		289.0	197.1					0.0	36.7	289.0	233.7	0.0	0.0
150.00	Appertunance(s)	141.6	187.4	3,703.2	0.0	6,417.9	3,775.9	0.0	36.7	3,844.8	4,000.0	0.0	0.0
								Totals:		23,847.2	34,379.2	0.00	0.00

Load Case: 1.2D + 1.6W — 95 mph with No Ice — 27 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60
Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.32	-23.69	0.00	-2,332.17	0.00	2,332.17	3,132.59	1,566.30	4,772.22	2,356.82	0.00	0.00	0.622
5.00	-32.89	-23.35	0.00	-2,213.71	0.00	2,213.71	3,090.29	1,545.14	4,607.13	2,275.29	0.14	-0.26	0.605
10.00	-31.39	-22.87	0.00	-2,096.96	0.00	2,096.96	3,046.95	1,523.47	4,443.28	2,194.37	0.55	-0.51	0.587
15.00	-29.90	-22.39	0.00	-1,982.59	0.00	1,982.59	3,002.57	1,501.28	4,280.78	2,114.12	1.22	-0.77	0.570
20.00	-28.44	-21.91	0.00	-1,870.62	0.00	1,870.62	2,957.15	1,478.58	4,119.72	2,034.57	2.17	-1.03	0.552
25.00	-27.01	-21.43	0.00	-1,761.05	0.00	1,761.05	2,910.70	1,455.35	3,960.20	1,955.80	3.38	-1.28	0.533
30.00	-25.62	-21.06	0.00	-1,653.90	0.00	1,653.90	2,863.20	1,431.60	3,802.34	1,877.83	4.87	-1.54	0.514
31.50	-25.20	-20.88	0.00	-1,622.24	0.00	1,622.24	2,848.72	1,424.36	3,755.21	1,854.56	5.36	-1.62	0.509
34.00	-24.11	-20.58	0.00	-1,570.11	0.00	1,570.11	2,818.05	1,409.02	3,668.95	1,811.96	6.24	-1.75	0.493
35.00	-23.64	-20.40	0.00	-1,549.53	0.00	1,549.53	2,804.11	1,402.06	3,632.54	1,793.98	6.62	-1.80	0.490
35.67	-23.34	-20.19	0.00	-1,535.86	0.00	1,535.86	2,230.41	1,115.20	2,949.08	1,456.44	6.87	-1.83	0.566
40.00	-22.26	-19.70	0.00	-1,448.44	0.00	1,448.44	2,201.32	1,100.66	2,848.53	1,406.78	8.63	-2.05	0.545
45.00	-21.03	-19.14	0.00	-1,349.95	0.00	1,349.95	2,166.76	1,083.38	2,733.25	1,349.85	10.92	-2.31	0.521
50.00	-19.83	-18.57	0.00	-1,254.23	0.00	1,254.23	2,131.16	1,065.58	2,618.93	1,293.39	13.47	-2.57	0.496
55.00	-18.65	-17.99	0.00	-1,161.37	0.00	1,161.37	2,094.53	1,047.26	2,505.70	1,237.47	16.30	-2.82	0.472
60.00	-17.49	-17.39	0.00	-1,071.44	0.00	1,071.44	2,056.86	1,028.43	2,393.64	1,182.13	19.38	-3.07	0.447
65.00	-16.36	-16.78	0.00	-984.50	0.00	984.50	2,018.14	1,009.07	2,282.87	1,127.42	22.73	-3.32	0.422
70.00	-15.27	-16.36	0.00	-900.62	0.00	900.62	1,978.40	989.20	2,173.48	1,073.40	26.33	-3.56	0.397
70.05	-15.25	-16.21	0.00	-899.74	0.00	899.74	1,977.97	988.98	2,172.32	1,072.83	26.37	-3.56	0.396
73.55	-14.18	-15.83	0.00	-843.01	0.00	843.01	1,462.05	731.02	1,610.31	795.27	29.04	-3.72	0.443
75.00	-13.88	-15.50	0.00	-820.10	0.00	820.10	1,454.74	727.37	1,588.55	784.52	30.18	-3.79	0.434
80.00	-12.91	-14.87	0.00	-742.60	0.00	742.60	1,428.79	714.40	1,513.69	747.55	34.28	-4.03	0.402
85.00	-11.96	-14.23	0.00	-668.27	0.00	668.27	1,401.82	700.91	1,439.45	710.89	38.62	-4.26	0.371
85.00	-11.96	-14.23	0.00	-668.27	0.00	668.27	1,401.82	700.91	1,439.45	710.89	38.62	-4.26	0.949
90.00	-11.39	-13.64	0.00	-597.13	0.00	597.13	1,373.80	686.90	1,365.94	674.59	43.20	-4.48	0.894
95.00	-10.79	-13.23	0.00	-528.94	0.00	528.94	1,344.74	672.37	1,293.25	638.69	48.18	-5.03	0.837
100.00	-10.22	-12.83	0.00	-462.80	0.00	462.80	1,314.65	657.33	1,221.50	603.25	53.74	-5.57	0.775
105.00	-9.67	-12.41	0.00	-398.67	0.00	398.67	1,283.52	641.76	1,150.77	568.32	59.85	-6.09	0.709
110.00	-9.17	-12.18	0.00	-336.60	0.00	336.60	1,246.82	623.41	1,077.26	532.02	66.48	-6.58	0.640
110.05	-9.15	-12.10	0.00	-335.95	0.00	335.95	1,246.32	623.16	1,076.40	531.59	66.55	-6.59	0.640
110.05	-9.15	-12.10	0.00	-335.95	0.00	335.95	846.24	423.12	735.22	363.10	66.55	-6.59	0.937
112.00	-8.97	-11.89	0.00	-312.39	0.00	312.39	839.36	419.68	718.59	354.89	69.27	-6.78	0.892
115.00	-8.71	-11.65	0.00	-276.73	0.00	276.73	828.44	414.22	693.06	342.28	73.64	-7.14	0.820
118.00	-7.64	-10.27	0.00	-241.78	0.00	241.78	817.15	408.57	667.65	329.73	78.23	-7.48	0.743
120.00	-7.48	-10.00	0.00	-221.24	0.00	221.24	809.41	404.71	650.78	321.40	81.40	-7.70	0.698
125.00	-7.14	-9.67	0.00	-171.25	0.00	171.25	789.35	394.68	608.94	300.73	89.71	-8.19	0.579
128.00	-6.10	-8.23	0.00	-142.25	0.00	142.25	776.82	388.41	584.09	288.46	94.93	-8.46	0.501
130.00	-5.98	-8.02	0.00	-125.79	0.00	125.79	768.25	384.13	567.64	280.34	98.49	-8.62	0.457
135.00	-5.71	-7.75	0.00	-85.69	0.00	85.69	746.11	373.06	526.99	260.26	107.67	-8.96	0.337
138.00	-3.58	-4.98	0.00	-62.43	0.00	62.43	732.33	366.17	502.94	248.38	113.33	-9.12	0.256
140.00	-3.51	-4.76	0.00	-52.48	0.00	52.48	722.94	361.47	487.07	240.55	117.16	-9.21	0.223
145.00	-3.32	-4.45	0.00	-28.66	0.00	28.66	694.03	347.02	445.00	219.77	126.86	-9.38	0.135
150.00	0.00	-3.84	0.00	-6.42	0.00	6.42	659.19	329.60	401.19	198.13	136.69	-9.47	0.033

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 61681621 5/19/2015 11:32:30 AM

Customer: AT&T Mobility

Load Case: 0.9D + 1.6W — 95 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		215.6	0.0					0.0	0.0	215.6	0.0	0.0	0.0
5.00		468.9	676.6					0.0	319.5	468.9	996.1	0.0	0.0
10.00		501.0	662.1					108.2	395.1	609.2	1,057.2	0.0	0.0
15.00		490.1	647.7					108.2	395.1	598.2	1,042.8	0.0	0.0
20.00		479.1	633.2					108.2	395.1	587.3	1,028.3	0.0	0.0
25.00		468.2	618.7					108.2	395.1	576.3	1,013.8	0.0	0.0
30.00		300.4	604.2					108.2	395.1	408.5	999.3	0.0	0.0
31.50	Bot - Section 2	186.9	178.8					32.8	118.8	219.6	297.6	0.0	0.0
34.00	Appertunance(s)	165.3	544.5	81.3	0.0	0.0	54.0	55.4	197.3	302.1	795.8	0.0	0.0
35.00	Appertunance(s)	79.4	216.2	82.0	0.0	0.0	54.0	22.5	78.9	184.0	349.1	0.0	0.0
35.67	Top - Section 1	239.7	144.3					15.2	52.8	254.9	197.0	0.0	0.0
40.00		450.2	423.6					100.2	341.0	550.4	764.6	0.0	0.0
45.00		486.4	477.9					119.6	393.7	606.0	871.7	0.0	0.0
50.00		488.6	465.9					123.4	393.7	612.1	859.6	0.0	0.0
55.00		489.1	453.8					127.0	393.7	616.1	847.6	0.0	0.0
60.00		488.1	441.8					130.4	393.7	618.5	835.5	0.0	0.0
65.00		485.7	429.7					133.5	393.7	619.2	823.4	0.0	0.0
70.00		244.7	417.6					136.5	393.7	381.2	811.4	0.0	0.0
70.05	Bot - Section 3	174.0	4.4					1.5	4.2	175.5	8.6	0.0	0.0
73.55	Top - Section 2	241.9	518.0					97.2	275.6	339.2	793.6	0.0	0.0
75.00		312.6	94.9					40.6	113.9	353.2	208.8	0.0	0.0
80.00		481.2	321.7					142.0	393.7	623.2	715.5	0.0	0.0
85.00	Reinf. Top	474.8	312.1					144.5	393.7	619.4	705.8	0.0	0.0
90.00		429.0	302.4					147.0	93.1	576.0	395.6	0.0	0.0
95.00		383.1	292.8					0.0	93.1	383.1	385.9	0.0	0.0
100.00		375.9	283.1					0.0	93.1	375.9	376.3	0.0	0.0
105.00		368.1	273.5					0.0	93.1	368.1	366.6	0.0	0.0
110.00		183.9	263.8					0.0	93.1	183.9	357.0	0.0	0.0
110.05	Top - Section 3	71.6	2.8					0.0	1.0	71.6	3.8	0.0	0.0
112.00	Appertunance(s)	175.8	75.3	23.7	0.0	0.0	9.0	0.0	36.3	199.5	120.5	0.0	0.0
115.00		210.6	113.9					0.0	46.0	210.6	159.9	0.0	0.0
118.00	Appertunance(s)	173.2	111.3	1,054.6	0.0	0.0	740.0	0.0	46.0	1,227.8	897.3	0.0	0.0
120.00		237.2	72.7					0.0	29.4	237.2	102.1	0.0	0.0
125.00		286.9	176.7					0.0	73.5	286.9	250.2	0.0	0.0
128.00	Appertunance(s)	183.2	102.6	1,064.5	0.0	0.0	761.1	48.2	44.1	1,295.9	907.8	0.0	0.0
130.00		223.1	66.9					0.0	18.2	223.1	85.1	0.0	0.0
135.00		250.7	162.3					0.0	45.5	250.7	207.8	0.0	0.0
138.00	Appertunance(s)	152.9	93.9	2,265.4	0.0	0.0	1,776.7	0.0	27.3	2,418.3	1,897.9	0.0	0.0
140.00		207.9	61.1					0.0	11.0	207.9	72.1	0.0	0.0
145.00		289.0	147.8					0.0	27.5	289.0	175.3	0.0	0.0
150.00	Appertunance(s)	141.6	140.6	3,703.2	0.0	6,417.9	2,831.9	0.0	27.5	3,844.8	3,000.0	0.0	0.0
								Totals:		23,188.6	25,784.4	0.00	0.00

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 61681621 5/19/2015 11:32:32 AM

Customer: AT&T Mobility

Load Case: 0.9D + 1.6W — 95 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60

Wind Importance Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.73	-23.03	0.00	-2,227.41	0.00	2,227.41	3,132.59	1,566.30	4,772.22	2,356.82	0.00	0.00	0.593
5.00	-24.64	-22.66	0.00	-2,112.27	0.00	2,112.27	3,090.29	1,545.14	4,607.13	2,275.29	0.13	-0.25	0.576
10.00	-23.49	-22.15	0.00	-1,998.95	0.00	1,998.95	3,046.95	1,523.47	4,443.28	2,194.37	0.52	-0.49	0.559
15.00	-22.37	-21.63	0.00	-1,888.21	0.00	1,888.21	3,002.57	1,501.28	4,280.78	2,114.12	1.17	-0.74	0.541
20.00	-21.26	-21.12	0.00	-1,780.04	0.00	1,780.04	2,957.15	1,478.58	4,119.72	2,034.57	2.07	-0.98	0.523
25.00	-20.17	-20.61	0.00	-1,674.43	0.00	1,674.43	2,910.70	1,455.35	3,960.20	1,955.80	3.23	-1.22	0.506
30.00	-19.12	-20.23	0.00	-1,571.36	0.00	1,571.36	2,863.20	1,431.60	3,802.34	1,877.83	4.64	-1.47	0.487
31.50	-18.80	-20.04	0.00	-1,540.95	0.00	1,540.95	2,848.72	1,424.36	3,755.21	1,854.56	5.11	-1.54	0.482
34.00	-17.98	-19.74	0.00	-1,490.92	0.00	1,490.92	2,818.05	1,409.02	3,668.95	1,811.96	5.95	-1.66	0.467
35.00	-17.62	-19.56	0.00	-1,471.18	0.00	1,471.18	2,804.11	1,402.06	3,632.54	1,793.98	6.31	-1.71	0.464
35.67	-17.39	-19.33	0.00	-1,458.08	0.00	1,458.08	2,230.41	1,115.20	2,949.08	1,456.44	6.55	-1.74	0.536
40.00	-16.57	-18.83	0.00	-1,374.36	0.00	1,374.36	2,201.32	1,100.66	2,848.53	1,406.78	8.22	-1.95	0.516
45.00	-15.64	-18.26	0.00	-1,280.24	0.00	1,280.24	2,166.76	1,083.38	2,733.25	1,349.85	10.40	-2.20	0.493
50.00	-14.74	-17.67	0.00	-1,188.96	0.00	1,188.96	2,131.16	1,065.58	2,618.93	1,293.39	12.83	-2.44	0.469
55.00	-13.84	-17.08	0.00	-1,100.60	0.00	1,100.60	2,094.53	1,047.26	2,505.70	1,237.47	15.52	-2.68	0.446
60.00	-12.97	-16.47	0.00	-1,015.22	0.00	1,015.22	2,056.86	1,028.43	2,393.64	1,182.13	18.45	-2.92	0.422
65.00	-12.12	-15.86	0.00	-932.87	0.00	932.87	2,018.14	1,009.07	2,282.87	1,127.42	21.63	-3.15	0.399
70.00	-11.30	-15.45	0.00	-853.58	0.00	853.58	1,978.40	989.20	2,173.48	1,073.40	25.05	-3.38	0.375
70.05	-11.28	-15.29	0.00	-852.75	0.00	852.75	1,977.97	988.98	2,172.32	1,072.83	25.09	-3.38	0.375
73.55	-10.48	-14.93	0.00	-799.23	0.00	799.23	1,462.05	731.02	1,610.31	795.27	27.63	-3.54	0.419
75.00	-10.26	-14.59	0.00	-777.63	0.00	777.63	1,454.74	727.37	1,588.55	784.52	28.71	-3.60	0.411
80.00	-9.53	-13.96	0.00	-704.69	0.00	704.69	1,428.79	714.40	1,513.69	747.55	32.60	-3.83	0.381
85.00	-8.82	-13.32	0.00	-634.91	0.00	634.91	1,401.82	700.91	1,439.45	710.89	36.73	-4.05	0.351
85.00	-8.82	-13.32	0.00	-634.91	0.00	634.91	1,401.82	700.91	1,439.45	710.89	36.73	-4.05	0.900
90.00	-8.38	-12.78	0.00	-568.29	0.00	568.29	1,373.80	686.90	1,365.94	674.59	41.08	-4.26	0.849
95.00	-7.92	-12.44	0.00	-504.42	0.00	504.42	1,344.74	672.37	1,293.25	638.69	45.81	-4.78	0.796
100.00	-7.47	-12.09	0.00	-442.24	0.00	442.24	1,314.65	657.33	1,221.50	603.25	51.10	-5.30	0.739
105.00	-7.04	-11.75	0.00	-381.77	0.00	381.77	1,283.52	641.76	1,150.77	568.32	56.90	-5.79	0.678
110.00	-6.66	-11.56	0.00	-323.01	0.00	323.01	1,246.82	623.41	1,077.26	532.02	63.21	-6.26	0.613
110.05	-6.64	-11.50	0.00	-322.40	0.00	322.40	1,246.32	623.16	1,076.40	531.59	63.28	-6.27	0.612
110.05	-6.64	-11.50	0.00	-322.40	0.00	322.40	846.24	423.12	735.22	363.10	63.28	-6.27	0.896
112.00	-6.49	-11.32	0.00	-300.02	0.00	300.02	839.36	419.68	718.59	354.89	65.87	-6.45	0.854
115.00	-6.29	-11.13	0.00	-266.06	0.00	266.06	828.44	414.22	693.06	342.28	70.03	-6.80	0.786
118.00	-5.50	-9.83	0.00	-232.68	0.00	232.68	817.15	408.57	667.65	329.73	74.40	-7.13	0.713
120.00	-5.37	-9.61	0.00	-213.03	0.00	213.03	809.41	404.71	650.78	321.40	77.43	-7.34	0.670
125.00	-5.11	-9.32	0.00	-164.98	0.00	164.98	789.35	394.68	608.94	300.73	85.35	-7.81	0.556
128.00	-4.36	-7.93	0.00	-137.01	0.00	137.01	776.82	388.41	584.09	288.46	90.33	-8.07	0.481
130.00	-4.27	-7.72	0.00	-121.15	0.00	121.15	768.25	384.13	567.64	280.34	93.73	-8.22	0.438
135.00	-4.07	-7.46	0.00	-82.56	0.00	82.56	746.11	373.06	526.99	260.26	102.50	-8.55	0.323
138.00	-2.55	-4.79	0.00	-60.20	0.00	60.20	732.33	366.17	502.94	248.38	107.90	-8.71	0.246
140.00	-2.50	-4.57	0.00	-50.63	0.00	50.63	722.94	361.47	487.07	240.55	111.56	-8.79	0.214
145.00	-2.36	-4.27	0.00	-27.75	0.00	27.75	694.03	347.02	445.00	219.77	120.82	-8.96	0.130
150.00	0.00	-3.84	0.00	-6.42	0.00	6.42	659.19	329.60	401.19	198.13	130.22	-9.04	0.033

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 61681621 5/19/2015 11:32:33 AM

Customer: AT&T Mobility

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 28 Iterations

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

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		48.4	0.0					0.0	0.0	48.4	0.0	0.0	0.0
5.00		96.3	1,283.4					0.0	544.9	96.3	1,828.3	0.0	0.0
10.00		95.0	1,301.6					34.9	783.1	129.9	2,084.7	0.0	0.0
15.00		93.5	1,296.1					35.7	799.3	129.2	2,095.4	0.0	0.0
20.00		91.8	1,282.8					36.3	810.7	128.2	2,093.5	0.0	0.0
25.00		90.2	1,265.4					36.7	819.6	126.9	2,085.1	0.0	0.0
30.00		58.0	1,245.6					37.1	827.0	95.1	2,072.6	0.0	0.0
31.50	Bot - Section 2	36.2	371.4					11.3	249.9	47.5	621.3	0.0	0.0
34.00	Appertunance(s)	32.0	949.8	25.4	0.0	0.0	112.3	19.2	416.2	76.6	1,478.3	0.0	0.0
35.00	Appertunance(s)	15.4	378.0	22.1	0.0	0.0	208.9	7.8	161.0	45.3	747.9	0.0	0.0
35.67	Top - Section 1	46.6	252.5					5.3	103.8	51.8	356.3	0.0	0.0
40.00		87.7	948.2					34.9	672.7	122.6	1,620.9	0.0	0.0
45.00		95.1	1,075.0					41.9	780.1	137.0	1,855.1	0.0	0.0
50.00		95.9	1,053.6					43.5	783.3	139.4	1,836.9	0.0	0.0
55.00		96.4	1,031.5					45.0	786.2	141.4	1,817.7	0.0	0.0
60.00		96.6	1,008.8					46.4	788.9	143.1	1,797.7	0.0	0.0
65.00		96.6	985.7					47.8	791.4	144.4	1,777.0	0.0	0.0
70.00		48.8	962.1					49.0	793.7	97.8	1,755.8	0.0	0.0
70.05	Bot - Section 3	34.7	10.2					0.5	8.5	35.3	18.7	0.0	0.0
73.55	Top - Section 2	48.3	975.6					35.0	556.9	83.4	1,532.6	0.0	0.0
75.00		62.7	243.8					14.6	230.5	77.4	474.3	0.0	0.0
80.00		96.9	825.2					51.4	797.9	148.2	1,623.2	0.0	0.0
85.00	Reinf. Top	96.1	803.9					52.4	799.9	148.5	1,603.8	0.0	0.0
90.00		95.1	782.3					53.5	400.9	148.6	1,183.2	0.0	0.0
95.00		94.1	760.5					0.0	293.7	94.1	1,054.2	0.0	0.0
100.00		92.9	738.4					0.0	267.3	92.9	1,005.8	0.0	0.0
105.00		91.5	716.2					0.0	268.2	91.5	984.3	0.0	0.0
110.00		45.9	693.7					0.0	268.9	45.9	962.6	0.0	0.0
110.05	Top - Section 3	18.0	7.3					0.0	2.9	18.0	10.2	0.0	0.0
112.00	Appertunance(s)	44.2	232.2	7.3	0.0	0.0	76.0	0.0	104.9	51.5	413.1	0.0	0.0
115.00		53.1	351.3					0.0	148.8	53.1	500.1	0.0	0.0
118.00	Appertunance(s)	43.8	344.3	294.2	0.0	0.0	2,305.3	0.0	149.0	338.1	2,798.6	0.0	0.0
120.00		60.4	226.0					0.0	97.8	60.4	323.8	0.0	0.0
125.00		68.3	547.8					0.0	244.9	68.3	792.7	0.0	0.0
128.00	Appertunance(s)	42.1	320.5	279.8	0.0	0.0	2,793.5	18.1	147.3	340.0	3,261.2	0.0	0.0
130.00		57.8	210.2					0.0	24.3	57.8	234.4	0.0	0.0
135.00		65.3	507.9					0.0	60.7	65.3	568.5	0.0	0.0
138.00	Appertunance(s)	40.1	296.5	571.5	0.0	0.0	6,435.2	0.0	36.4	611.6	6,768.0	0.0	0.0
140.00		55.0	194.1					0.0	14.7	55.0	208.7	0.0	0.0
145.00		77.1	467.5					0.0	36.7	77.1	504.1	0.0	0.0
150.00	Appertunance(s)	38.0	447.1	987.8	0.0	1,634.0	9,588.0	0.0	36.7	1,025.8	10,071.7	0.0	0.0
								Totals:		5,688.58	64,822.1	0.00	0.00

Site Number: 302473 Code: ANSI/TIA-222-G

Site Name: E H F R - Prestige Park, CT Engineering Number: 61681621 5/19/2015 11:32:35 AM

Customer: AT&T Mobility

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 28 Iterations

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

Dead Load Factor : 1.20 Ice Importance Factor : 1.00

Wind Load Factor : 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-64.82	-5.68	0.00	-634.21	0.00	634.21	3,132.59	1,566.30	4,772.22	2,356.82	0.00	0.00	0.181
5.00	-62.98	-5.66	0.00	-605.81	0.00	605.81	3,090.29	1,545.14	4,607.13	2,275.29	0.04	-0.07	0.178
10.00	-60.89	-5.60	0.00	-577.51	0.00	577.51	3,046.95	1,523.47	4,443.28	2,194.37	0.15	-0.14	0.173
15.00	-58.79	-5.54	0.00	-549.50	0.00	549.50	3,002.57	1,501.28	4,280.78	2,114.12	0.33	-0.21	0.169
20.00	-56.69	-5.47	0.00	-521.80	0.00	521.80	2,957.15	1,478.58	4,119.72	2,034.57	0.59	-0.28	0.165
25.00	-54.60	-5.40	0.00	-494.44	0.00	494.44	2,910.70	1,455.35	3,960.20	1,955.80	0.93	-0.35	0.160
30.00	-52.52	-5.34	0.00	-467.42	0.00	467.42	2,863.20	1,431.60	3,802.34	1,877.83	1.34	-0.43	0.156
31.50	-51.90	-5.31	0.00	-459.40	0.00	459.40	2,848.72	1,424.36	3,755.21	1,854.56	1.48	-0.45	0.154
34.00	-50.42	-5.24	0.00	-446.14	0.00	446.14	2,818.05	1,409.02	3,668.95	1,811.96	1.72	-0.49	0.150
35.00	-49.67	-5.20	0.00	-440.90	0.00	440.90	2,804.11	1,402.06	3,632.54	1,793.98	1.83	-0.50	0.150
35.67	-49.31	-5.18	0.00	-437.41	0.00	437.41	2,230.41	1,115.20	2,949.08	1,456.44	1.90	-0.51	0.173
40.00	-47.69	-5.10	0.00	-414.99	0.00	414.99	2,201.32	1,100.66	2,848.53	1,406.78	2.39	-0.57	0.168
45.00	-45.83	-5.00	0.00	-389.50	0.00	389.50	2,166.76	1,083.38	2,733.25	1,349.85	3.03	-0.65	0.161
50.00	-43.98	-4.90	0.00	-364.49	0.00	364.49	2,131.16	1,065.58	2,618.93	1,293.39	3.74	-0.72	0.155
55.00	-42.16	-4.79	0.00	-340.01	0.00	340.01	2,094.53	1,047.26	2,505.70	1,237.47	4.54	-0.80	0.149
60.00	-40.36	-4.67	0.00	-316.08	0.00	316.08	2,056.86	1,028.43	2,393.64	1,182.13	5.41	-0.87	0.142
65.00	-38.58	-4.54	0.00	-292.73	0.00	292.73	2,018.14	1,009.07	2,282.87	1,127.42	6.36	-0.94	0.135
70.00	-36.83	-4.44	0.00	-270.01	0.00	270.01	1,978.40	989.20	2,173.48	1,073.40	7.38	-1.01	0.128
70.05	-36.80	-4.42	0.00	-269.77	0.00	269.77	1,977.97	988.98	2,172.32	1,072.83	7.39	-1.01	0.128
73.55	-35.27	-4.33	0.00	-254.30	0.00	254.30	1,462.05	731.02	1,610.31	795.27	8.16	-1.06	0.145
75.00	-34.80	-4.27	0.00	-248.04	0.00	248.04	1,454.74	727.37	1,588.55	784.52	8.48	-1.08	0.142
80.00	-33.17	-4.13	0.00	-226.67	0.00	226.67	1,428.79	714.40	1,513.69	747.55	9.66	-1.16	0.133
85.00	-31.57	-3.99	0.00	-206.00	0.00	206.00	1,401.82	700.91	1,439.45	710.89	10.91	-1.23	0.124
85.00	-31.57	-3.99	0.00	-206.00	0.00	206.00	1,401.82	700.91	1,439.45	710.89	10.91	-1.23	0.312
90.00	-30.38	-3.88	0.00	-186.04	0.00	186.04	1,373.80	686.90	1,365.94	674.59	12.23	-1.30	0.298
95.00	-29.31	-3.85	0.00	-166.64	0.00	166.64	1,344.74	672.37	1,293.25	638.69	13.68	-1.47	0.283
100.00	-28.30	-3.81	0.00	-147.39	0.00	147.39	1,314.65	657.33	1,221.50	603.25	15.31	-1.64	0.266
105.00	-27.31	-3.77	0.00	-128.33	0.00	128.33	1,283.52	641.76	1,150.77	568.32	17.11	-1.80	0.247
110.00	-26.34	-3.73	0.00	-109.48	0.00	109.48	1,246.82	623.41	1,077.26	532.02	19.09	-1.96	0.227
110.05	-26.33	-3.72	0.00	-109.29	0.00	109.29	1,246.32	623.16	1,076.40	531.59	19.11	-1.97	0.227
110.05	-26.33	-3.72	0.00	-109.29	0.00	109.29	846.24	423.12	735.22	363.10	19.11	-1.97	0.332
112.00	-25.91	-3.70	0.00	-102.04	0.00	102.04	839.36	419.68	718.59	354.89	19.92	-2.03	0.318
115.00	-25.41	-3.68	0.00	-90.94	0.00	90.94	828.44	414.22	693.06	342.28	21.24	-2.15	0.296
118.00	-22.62	-3.27	0.00	-79.90	0.00	79.90	817.15	408.57	667.65	329.73	22.62	-2.26	0.270
120.00	-22.29	-3.24	0.00	-73.36	0.00	73.36	809.41	404.71	650.78	321.40	23.58	-2.33	0.256
125.00	-21.50	-3.19	0.00	-57.14	0.00	57.14	789.35	394.68	608.94	300.73	26.12	-2.49	0.217
128.00	-18.25	-2.73	0.00	-47.57	0.00	47.57	776.82	388.41	584.09	288.46	27.71	-2.58	0.188
130.00	-18.01	-2.69	0.00	-42.12	0.00	42.12	768.25	384.13	567.64	280.34	28.80	-2.64	0.174
135.00	-17.45	-2.62	0.00	-28.69	0.00	28.69	746.11	373.06	526.99	260.26	31.63	-2.75	0.134
138.00	-10.71	-1.69	0.00	-20.84	0.00	20.84	732.33	366.17	502.94	248.38	33.38	-2.80	0.099
140.00	-10.51	-1.63	0.00	-17.46	0.00	17.46	722.94	361.47	487.07	240.55	34.56	-2.84	0.087
145.00	-10.01	-1.54	0.00	-9.31	0.00	9.31	694.03	347.02	445.00	219.77	37.56	-2.89	0.057
150.00	0.00	-1.03	0.00	-1.63	0.00	1.63	659.19	329.60	401.19	198.13	40.60	-2.92	0.008

Load Case: 1.0D + 1.0W **Serviceability 60 mph** **26 Iterations**

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		53.8	0.0					0.0	0.0	53.8	0.0	0.0	0.0
5.00		116.9	751.8					0.0	355.0	116.9	1,106.8	0.0	0.0
10.00		124.9	735.7					27.0	439.0	151.9	1,174.7	0.0	0.0
15.00		122.2	719.6					27.0	439.0	149.1	1,158.6	0.0	0.0
20.00		119.4	703.5					27.0	439.0	146.4	1,142.5	0.0	0.0
25.00		116.7	687.5					27.0	439.0	143.7	1,126.5	0.0	0.0
30.00		74.9	671.4					27.0	439.0	101.8	1,110.4	0.0	0.0
31.50	Bot - Section 2	46.6	198.7					8.2	132.0	54.8	330.7	0.0	0.0
34.00	Appertunance(s)	41.2	605.0	20.3	0.0	0.0	60.0	13.8	219.2	75.3	884.2	0.0	0.0
35.00	Appertunance(s)	19.8	240.3	20.4	0.0	0.0	60.0	5.6	87.6	45.9	387.9	0.0	0.0
35.67	Top - Section 1	59.8	160.3					3.8	58.6	63.6	218.9	0.0	0.0
40.00		112.2	470.7					25.0	378.9	137.2	849.6	0.0	0.0
45.00		121.3	531.0					29.8	437.5	151.1	968.5	0.0	0.0
50.00		121.8	517.6					30.8	437.5	152.6	955.1	0.0	0.0
55.00		121.9	504.2					31.7	437.5	153.6	941.7	0.0	0.0
60.00		121.7	490.8					32.5	437.5	154.2	928.3	0.0	0.0
65.00		121.1	477.4					33.3	437.5	154.4	914.9	0.0	0.0
70.00		61.0	464.0					34.0	437.5	95.0	901.5	0.0	0.0
70.05	Bot - Section 3	43.4	4.9					0.4	4.7	43.7	9.5	0.0	0.0
73.55	Top - Section 2	60.3	575.5					24.2	306.2	84.6	881.8	0.0	0.0
75.00		77.9	105.4					10.1	126.6	88.0	232.0	0.0	0.0
80.00		120.0	357.5					35.4	437.5	155.4	795.0	0.0	0.0
85.00	Reinf. Top	118.4	346.8					36.0	437.5	154.4	784.3	0.0	0.0
90.00		107.0	336.0					36.6	103.5	143.6	439.5	0.0	0.0
95.00		95.5	325.3					0.0	103.5	95.5	428.8	0.0	0.0
100.00		93.7	314.6					0.0	103.5	93.7	418.1	0.0	0.0
105.00		91.8	303.9					0.0	103.5	91.8	407.4	0.0	0.0
110.00		45.9	293.2					0.0	103.5	45.9	396.7	0.0	0.0
110.05	Top - Section 3	17.9	3.1					0.0	1.1	17.9	4.2	0.0	0.0
112.00	Appertunance(s)	43.8	83.6	5.9	0.0	0.0	10.0	0.0	40.3	49.7	133.9	0.0	0.0
115.00		52.5	126.5					0.0	51.1	52.5	177.7	0.0	0.0
118.00	Appertunance(s)	43.2	123.6	262.9	0.0	0.0	822.2	0.0	51.1	306.1	997.0	0.0	0.0
120.00		59.1	80.8					0.0	32.7	59.1	113.5	0.0	0.0
125.00		71.5	196.4					0.0	81.6	71.5	278.0	0.0	0.0
128.00	Appertunance(s)	45.7	114.0	265.4	0.0	0.0	845.7	12.1	49.0	323.2	1,008.7	0.0	0.0
130.00		55.6	74.4					0.0	20.2	55.6	94.6	0.0	0.0
135.00		62.5	180.3					0.0	50.5	62.5	230.9	0.0	0.0
138.00	Appertunance(s)	38.1	104.3	564.8	0.0	0.0	1,974.1	0.0	30.3	602.9	2,108.8	0.0	0.0
140.00		51.8	67.9					0.0	12.2	51.8	80.2	0.0	0.0
145.00		72.0	164.2					0.0	30.5	72.0	194.8	0.0	0.0
150.00	Appertunance(s)	35.3	156.2	923.2	0.0	1,600.0	3,146.6	0.0	30.5	958.5	3,333.3	0.0	0.0
									Totals:	5,781.20	28,649.4	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.65	-5.74	0.00	-559.40	0.00	559.40	3,132.59	1,566.30	4,772.22	2,356.82	0.00	0.00	0.154
5.00	-27.53	-5.65	0.00	-530.69	0.00	530.69	3,090.29	1,545.14	4,607.13	2,275.29	0.03	-0.06	0.149
10.00	-26.35	-5.53	0.00	-502.41	0.00	502.41	3,046.95	1,523.47	4,443.28	2,194.37	0.13	-0.12	0.145
15.00	-25.19	-5.40	0.00	-474.77	0.00	474.77	3,002.57	1,501.28	4,280.78	2,114.12	0.29	-0.19	0.140
20.00	-24.04	-5.28	0.00	-447.75	0.00	447.75	2,957.15	1,478.58	4,119.72	2,034.57	0.52	-0.25	0.136
25.00	-22.91	-5.15	0.00	-421.35	0.00	421.35	2,910.70	1,455.35	3,960.20	1,955.80	0.81	-0.31	0.131
30.00	-21.80	-5.06	0.00	-395.58	0.00	395.58	2,863.20	1,431.60	3,802.34	1,877.83	1.17	-0.37	0.127
31.50	-21.46	-5.01	0.00	-387.97	0.00	387.97	2,848.72	1,424.36	3,755.21	1,854.56	1.29	-0.39	0.125
34.00	-20.58	-4.94	0.00	-375.46	0.00	375.46	2,818.05	1,409.02	3,668.95	1,811.96	1.50	-0.42	0.121
35.00	-20.19	-4.89	0.00	-370.52	0.00	370.52	2,804.11	1,402.06	3,632.54	1,793.98	1.59	-0.43	0.121
35.67	-19.97	-4.84	0.00	-367.24	0.00	367.24	2,230.41	1,115.20	2,949.08	1,456.44	1.65	-0.44	0.139
40.00	-19.12	-4.71	0.00	-346.28	0.00	346.28	2,201.32	1,100.66	2,848.53	1,406.78	2.07	-0.49	0.134
45.00	-18.14	-4.57	0.00	-322.71	0.00	322.71	2,166.76	1,083.38	2,733.25	1,349.85	2.61	-0.55	0.128
50.00	-17.19	-4.43	0.00	-299.84	0.00	299.84	2,131.16	1,065.58	2,618.93	1,293.39	3.23	-0.61	0.122
55.00	-16.24	-4.28	0.00	-277.69	0.00	277.69	2,094.53	1,047.26	2,505.70	1,237.47	3.90	-0.68	0.116
60.00	-15.31	-4.13	0.00	-256.27	0.00	256.27	2,056.86	1,028.43	2,393.64	1,182.13	4.64	-0.74	0.110
65.00	-14.39	-3.98	0.00	-235.60	0.00	235.60	2,018.14	1,009.07	2,282.87	1,127.42	5.44	-0.79	0.104
70.00	-13.49	-3.88	0.00	-215.70	0.00	215.70	1,978.40	989.20	2,173.48	1,073.40	6.31	-0.85	0.098
70.05	-13.48	-3.84	0.00	-215.49	0.00	215.49	1,977.97	988.98	2,172.32	1,072.83	6.32	-0.85	0.098
73.55	-12.60	-3.75	0.00	-202.04	0.00	202.04	1,462.05	731.02	1,610.31	795.27	6.95	-0.89	0.109
75.00	-12.37	-3.67	0.00	-196.62	0.00	196.62	1,454.74	727.37	1,588.55	784.52	7.23	-0.91	0.107
80.00	-11.57	-3.51	0.00	-178.29	0.00	178.29	1,428.79	714.40	1,513.69	747.55	8.21	-0.96	0.100
85.00	-10.79	-3.35	0.00	-160.75	0.00	160.75	1,401.82	700.91	1,439.45	710.89	9.25	-1.02	0.092
85.00	-10.79	-3.35	0.00	-160.75	0.00	160.75	1,401.82	700.91	1,439.45	710.89	9.25	-1.02	0.234
90.00	-10.34	-3.22	0.00	-143.99	0.00	143.99	1,373.80	686.90	1,365.94	674.59	10.35	-1.07	0.221
95.00	-9.91	-3.14	0.00	-127.91	0.00	127.91	1,344.74	672.37	1,293.25	638.69	11.54	-1.21	0.208
100.00	-9.49	-3.05	0.00	-112.24	0.00	112.24	1,314.65	657.33	1,221.50	603.25	12.88	-1.34	0.193
105.00	-9.08	-2.97	0.00	-96.97	0.00	96.97	1,283.52	641.76	1,150.77	568.32	14.34	-1.46	0.178
110.00	-8.68	-2.92	0.00	-82.11	0.00	82.11	1,246.82	623.41	1,077.26	532.02	15.94	-1.58	0.161
110.05	-8.67	-2.91	0.00	-81.96	0.00	81.96	1,246.32	623.16	1,076.40	531.59	15.96	-1.58	0.161
110.05	-8.67	-2.91	0.00	-81.96	0.00	81.96	846.24	423.12	735.22	363.10	15.96	-1.58	0.236
112.00	-8.54	-2.87	0.00	-76.29	0.00	76.29	839.36	419.68	718.59	354.89	16.61	-1.63	0.225
115.00	-8.36	-2.82	0.00	-67.69	0.00	67.69	828.44	414.22	693.06	342.28	17.67	-1.72	0.208
118.00	-7.37	-2.49	0.00	-59.23	0.00	59.23	817.15	408.57	667.65	329.73	18.77	-1.80	0.189
120.00	-7.25	-2.44	0.00	-54.24	0.00	54.24	809.41	404.71	650.78	321.40	19.54	-1.86	0.178
125.00	-6.97	-2.37	0.00	-42.03	0.00	42.03	789.35	394.68	608.94	300.73	21.55	-1.98	0.149
128.00	-5.97	-2.02	0.00	-34.91	0.00	34.91	776.82	388.41	584.09	288.46	22.82	-2.04	0.129
130.00	-5.88	-1.97	0.00	-30.88	0.00	30.88	768.25	384.13	567.64	280.34	23.68	-2.08	0.118
135.00	-5.65	-1.90	0.00	-21.04	0.00	21.04	746.11	373.06	526.99	260.26	25.91	-2.16	0.088
138.00	-3.56	-1.22	0.00	-15.34	0.00	15.34	732.33	366.17	502.94	248.38	27.28	-2.20	0.067
140.00	-3.48	-1.17	0.00	-12.89	0.00	12.89	722.94	361.47	487.07	240.55	28.21	-2.23	0.058
145.00	-3.29	-1.09	0.00	-7.05	0.00	7.05	694.03	347.02	445.00	219.77	30.56	-2.27	0.037
150.00	0.00	-0.96	0.00	-1.60	0.00	1.60	659.19	329.60	401.19	198.13	32.95	-2.29	0.008

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	1.60	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.07	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.80	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	25.95	k
Seismic Base Shear (E):	1.01	k

Site Number:	**302473**	**Code: ANSI/TIA-222-G**	
Site Name:	**E H F R - Prestige Park, CT**	**Engineering Number: 61681621**	**5/19/2015 11:32:38 AM**
Customer:	**AT&T Mobility**		

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	**0.18**
Spectral Response Acceleration at 1.0 Second Period (S_1):	**0.06**
Importance Factor (I_E):	**1.00**
Site Coefficient F_a:	**1.60**
Site Coefficient F_v	**1.60**
Response Modification Coefficient (R):	**1.50**
Design Spectral Response Acceleration at Short Period (S_{ds}):	**0.19**
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	**0.07**
Period Based on Rayleigh Method (sec):	**2.80**
Redundancy Factor (p):	**1.30**

Load Case (1.2 + 0.2Sds) * DL + E ELFM **Seismic Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
40	147.50	187	1.828	1.667	1.025	0.317	51	161
39	142.50	195	1.706	1.144	0.823	0.244	41	168
38	139.00	80	1.623	0.851	0.702	0.198	14	69
37	136.50	135	1.565	0.674	0.624	0.167	19	116
36	132.50	231	1.475	0.441	0.513	0.122	24	199
35	129.00	95	1.398	0.280	0.430	0.087	7	82
34	126.50	163	1.344	0.186	0.377	0.063	9	140
33	122.50	278	1.261	0.069	0.302	0.030	7	240
32	119.00	113	1.190	-0.005	0.247	0.005	1	98
31	116.50	175	1.140	-0.045	0.213	-0.010	-2	151
30	113.50	178	1.082	-0.079	0.176	-0.027	-4	153
29	111.03	124	1.035	-0.099	0.150	-0.039	-4	107
28	110.03	4	1.017	-0.105	0.140	-0.043	0	4
27	107.50	397	0.971	-0.116	0.117	-0.052	-18	342
26	102.50	407	0.883	-0.121	0.081	-0.066	-23	351
25	97.50	418	0.799	-0.112	0.053	-0.071	-26	360
24	92.50	429	0.719	-0.092	0.034	-0.069	-26	370
23	87.50	440	0.643	-0.068	0.020	-0.058	-22	379
22	82.50	784	0.572	-0.043	0.012	-0.038	-26	676
21	77.50	795	0.505	-0.018	0.007	-0.012	-8	685
20	74.28	232	0.463	-0.003	0.006	0.006	1	200
19	71.80	882	0.433	0.007	0.006	0.018	14	760
18	70.03	10	0.412	0.014	0.006	0.027	0	8
17	67.50	902	0.383	0.023	0.007	0.037	29	777
16	62.50	915	0.328	0.039	0.010	0.052	41	788
15	57.50	928	0.278	0.050	0.014	0.060	48	800
14	52.50	942	0.232	0.058	0.019	0.063	51	812
13	47.50	955	0.190	0.064	0.025	0.063	52	823
12	42.50	969	0.152	0.068	0.030	0.062	52	835
11	37.83	850	0.120	0.070	0.034	0.061	45	732
10	35.33	219	0.105	0.071	0.037	0.060	11	189
9	34.50	328	0.100	0.071	0.037	0.060	17	283
8	32.75	824	0.090	0.071	0.038	0.059	42	710
7	30.75	331	0.079	0.072	0.040	0.059	17	285

6	27.50	1,110	0.064	0.072	0.041	0.058	56	957
5	22.50	1,126	0.043	0.070	0.042	0.056	55	971
4	17.50	1,143	0.026	0.067	0.040	0.054	54	985
3	12.50	1,159	0.013	0.059	0.034	0.050	50	999
2	7.50	1,175	0.005	0.044	0.025	0.041	42	1,012
1	2.50	1,107	0.001	0.018	0.010	0.021	21	954
10' Omni	150.00	25	1.890	1.980	1.140	0.357	8	22
Powerwave LGP21401	150.00	169	1.890	1.980	1.140	0.357	52	146
Ericsson RRUS 11 (Ba	150.00	330	1.890	1.980	1.140	0.357	102	284
Kathrein 860 10025	150.00	7	1.890	1.980	1.140	0.357	2	6
Powerwave Allgon 777	150.00	162	1.890	1.980	1.140	0.357	50	140
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.357	619	1,724
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.357	6	17
Ericsson RRUS 12 w/	150.00	214	1.890	1.980	1.140	0.357	66	185
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.357	68	189
Alcatel-Lucent 4X40W	138.00	357	1.600	0.778	0.670	0.185	57	308
Alcatel-Lucent 800 M	138.00	185	1.600	0.778	0.670	0.185	30	160
RFS APXV9ERR18-C-A20	138.00	124	1.600	0.778	0.670	0.185	20	107
RFS APXVSPP18-C-A20	138.00	57	1.600	0.778	0.670	0.185	9	49
RFS IBC1900BB-1	138.00	66	1.600	0.778	0.670	0.185	11	57
RFS IBC1900HG-2A	138.00	66	1.600	0.778	0.670	0.185	11	57
Round T-Arm	138.00	750	1.600	0.778	0.670	0.185	120	646
RFS APXVTM14-C-I20	138.00	159	1.600	0.778	0.670	0.185	25	137
Alcatel-Lucent TD-RR	138.00	210	1.600	0.778	0.670	0.185	34	181
Ericsson AIR 21, 1.3	128.00	271	1.376	0.240	0.408	0.077	18	234
Ericsson AIR 21, 1.3	128.00	275	1.376	0.240	0.408	0.077	18	237
Round Sector Frame	128.00	300	1.376	0.240	0.408	0.077	20	259
Argus LLPX310R	118.00	86	1.170	-0.022	0.233	-0.001	0	74
Collar Mount	118.00	560	1.170	-0.022	0.233	-0.001	-1	483
DragonWave A-ANT-23G	118.00	15	1.170	-0.022	0.233	-0.001	0	13
DragonWave A-ANT-23G	118.00	25	1.170	-0.022	0.233	-0.001	0	21
DragonWave Horizon C	118.00	32	1.170	-0.022	0.233	-0.001	0	27
NextNet BTS-2500	118.00	105	1.170	-0.022	0.233	-0.001	0	90
12" x 12" Junction B	112.00	10	1.054	-0.092	0.160	-0.034	0	9
Stand-off	35.00	50	0.103	0.071	0.037	0.060	3	43
GPS	35.00	10	0.103	0.071	0.037	0.060	1	9
GPS	34.00	10	0.097	0.071	0.038	0.060	1	9
Stand-off	34.00	50	0.097	0.071	0.038	0.060	3	43
		28,649	70.275	31.013	25.761	7.029	2,067	24,690

Load Case (1.2 + 0.2Sds) * DL + E EMAM **Seismic Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
40	147.50	187	1.828	1.667	1.025	0.317	51	161
39	142.50	195	1.706	1.144	0.823	0.244	41	168
38	139.00	80	1.623	0.851	0.702	0.198	14	69
37	136.50	135	1.565	0.674	0.624	0.167	19	116
36	132.50	231	1.475	0.441	0.513	0.122	24	199
35	129.00	95	1.398	0.280	0.430	0.087	7	82
34	126.50	163	1.344	0.186	0.377	0.063	9	140
33	122.50	278	1.261	0.069	0.302	0.030	7	240
32	119.00	113	1.190	-0.005	0.247	0.005	1	98
31	116.50	175	1.140	-0.045	0.213	-0.010	-2	151
30	113.50	178	1.082	-0.079	0.176	-0.027	-4	153
29	111.03	124	1.035	-0.099	0.150	-0.039	-4	107
28	110.03	4	1.017	-0.105	0.140	-0.043	0	4
27	107.50	397	0.971	-0.116	0.117	-0.052	-18	342
26	102.50	407	0.883	-0.121	0.081	-0.066	-23	351
25	97.50	418	0.799	-0.112	0.053	-0.071	-26	360

24	92.50	429	0.719	-0.092	0.034	-0.069	-26	370
23	87.50	440	0.643	-0.068	0.020	-0.058	-22	379
22	82.50	784	0.572	-0.043	0.012	-0.038	-26	676
21	77.50	795	0.505	-0.018	0.007	-0.012	-8	685
20	74.28	232	0.463	-0.003	0.006	0.006	1	200
19	71.80	882	0.433	0.007	0.006	0.018	14	760
18	70.03	10	0.412	0.014	0.006	0.027	0	8
17	67.50	902	0.383	0.023	0.007	0.037	29	777
16	62.50	915	0.328	0.039	0.010	0.052	41	788
15	57.50	928	0.278	0.050	0.014	0.060	48	800
14	52.50	942	0.232	0.058	0.019	0.063	51	812
13	47.50	955	0.190	0.064	0.025	0.063	52	823
12	42.50	969	0.152	0.068	0.030	0.062	52	835
11	37.83	850	0.120	0.070	0.034	0.061	45	732
10	35.33	219	0.105	0.071	0.037	0.060	11	189
9	34.50	328	0.100	0.071	0.037	0.060	17	283
8	32.75	824	0.090	0.071	0.038	0.059	42	710
7	30.75	331	0.079	0.072	0.040	0.059	17	285
6	27.50	1,110	0.064	0.072	0.041	0.058	56	957
5	22.50	1,126	0.043	0.070	0.042	0.056	55	971
4	17.50	1,143	0.026	0.067	0.040	0.054	54	985
3	12.50	1,159	0.013	0.059	0.034	0.050	50	999
2	7.50	1,175	0.005	0.044	0.025	0.041	42	1,012
1	2.50	1,107	0.001	0.018	0.010	0.021	21	954
10' Omni	150.00	25	1.890	1.980	1.140	0.357	8	22
Powerwave LGP21401	150.00	169	1.890	1.980	1.140	0.357	52	146
Ericsson RRUS 11 (Ba	150.00	330	1.890	1.980	1.140	0.357	102	284
Kathrein 860 10025	150.00	7	1.890	1.980	1.140	0.357	2	6
Powerwave Allgon 777	150.00	162	1.890	1.980	1.140	0.357	50	140
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.357	619	1,724
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.357	6	17
Ericsson RRUS 12 w/	150.00	214	1.890	1.980	1.140	0.357	66	185
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.357	68	189
Alcatel-Lucent 4X40W	138.00	357	1.600	0.778	0.670	0.185	57	308
Alcatel-Lucent 800 M	138.00	185	1.600	0.778	0.670	0.185	30	160
RFS APXV9ERR18-C-A20	138.00	124	1.600	0.778	0.670	0.185	20	107
RFS APXVSPP18-C-A20	138.00	57	1.600	0.778	0.670	0.185	9	49
RFS IBC1900BB-1	138.00	66	1.600	0.778	0.670	0.185	11	57
RFS IBC1900HG-2A	138.00	66	1.600	0.778	0.670	0.185	11	57
Round T-Arm	138.00	750	1.600	0.778	0.670	0.185	120	646
RFS APXVTM14-C-I20	138.00	159	1.600	0.778	0.670	0.185	25	137
Alcatel-Lucent TD-RR	138.00	210	1.600	0.778	0.670	0.185	34	181
Ericsson AIR 21, 1.3	128.00	271	1.376	0.240	0.408	0.077	18	234
Ericsson AIR 21, 1.3	128.00	275	1.376	0.240	0.408	0.077	18	237
Round Sector Frame	128.00	300	1.376	0.240	0.408	0.077	20	259
Argus LLPX310R	118.00	86	1.170	-0.022	0.233	-0.001	0	74
Collar Mount	118.00	560	1.170	-0.022	0.233	-0.001	-1	483
DragonWave A-ANT-23G	118.00	15	1.170	-0.022	0.233	-0.001	0	13
DragonWave A-ANT-23G	118.00	25	1.170	-0.022	0.233	-0.001	0	21
DragonWave Horizon C	118.00	32	1.170	-0.022	0.233	-0.001	0	27
NextNet BTS-2500	118.00	105	1.170	-0.022	0.233	-0.001	0	90
12" x 12" Junction B	112.00	10	1.054	-0.092	0.160	-0.034	0	9
Stand-off	35.00	50	0.103	0.071	0.037	0.060	3	43
GPS	35.00	10	0.103	0.071	0.037	0.060	1	9
GPS	34.00	10	0.097	0.071	0.038	0.060	1	9
Stand-off	34.00	50	0.097	0.071	0.038	0.060	3	43
		28,649	70.275	31.013	25.761	7.029	2,067	24,690

Load Case (0.9 - 0.2Sds) * DL + E ELFM **Seismic (Reduced DL) Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
40	147.50	187	1.828	1.667	1.025	0.317	51	161
39	142.50	195	1.706	1.144	0.823	0.244	41	168
38	139.00	80	1.623	0.851	0.702	0.198	14	69
37	136.50	135	1.565	0.674	0.624	0.167	19	116
36	132.50	231	1.475	0.441	0.513	0.122	24	199
35	129.00	95	1.398	0.280	0.430	0.087	7	82
34	126.50	163	1.344	0.186	0.377	0.063	9	140
33	122.50	278	1.261	0.069	0.302	0.030	7	240
32	119.00	113	1.190	-0.005	0.247	0.005	1	98
31	116.50	175	1.140	-0.045	0.213	-0.010	-2	151
30	113.50	178	1.082	-0.079	0.176	-0.027	-4	153
29	111.03	124	1.035	-0.099	0.150	-0.039	-4	107
28	110.03	4	1.017	-0.105	0.140	-0.043	0	4
27	107.50	397	0.971	-0.116	0.117	-0.052	-18	342
26	102.50	407	0.883	-0.121	0.081	-0.066	-23	351
25	97.50	418	0.799	-0.112	0.053	-0.071	-26	360
24	92.50	429	0.719	-0.092	0.034	-0.069	-26	370
23	87.50	440	0.643	-0.068	0.020	-0.058	-22	379
22	82.50	784	0.572	-0.043	0.012	-0.038	-26	676
21	77.50	795	0.505	-0.018	0.007	-0.012	-8	685
20	74.28	232	0.463	-0.003	0.006	0.006	1	200
19	71.80	882	0.433	0.007	0.006	0.018	14	760
18	70.03	10	0.412	0.014	0.006	0.027	0	8
17	67.50	902	0.383	0.023	0.007	0.037	29	777
16	62.50	915	0.328	0.039	0.010	0.052	41	788
15	57.50	928	0.278	0.050	0.014	0.060	48	800
14	52.50	942	0.232	0.058	0.019	0.063	51	812
13	47.50	955	0.190	0.064	0.025	0.063	52	823
12	42.50	969	0.152	0.068	0.030	0.062	52	835
11	37.83	850	0.120	0.070	0.034	0.061	45	732
10	35.33	219	0.105	0.071	0.037	0.060	11	189
9	34.50	328	0.100	0.071	0.037	0.060	17	283
8	32.75	824	0.090	0.071	0.038	0.059	42	710
7	30.75	331	0.079	0.072	0.040	0.059	17	285
6	27.50	1,110	0.064	0.072	0.041	0.058	56	957
5	22.50	1,126	0.043	0.070	0.042	0.056	55	971
4	17.50	1,143	0.026	0.067	0.040	0.054	54	985
3	12.50	1,159	0.013	0.059	0.034	0.050	50	999
2	7.50	1,175	0.005	0.044	0.025	0.041	42	1,012
1	2.50	1,107	0.001	0.018	0.010	0.021	21	954
10' Omni	150.00	25	1.890	1.980	1.140	0.357	8	22
Powerwave LGP21401	150.00	169	1.890	1.980	1.140	0.357	52	146
Ericsson RRUS 11 (Ba	150.00	330	1.890	1.980	1.140	0.357	102	284
Kathrein 860 10025	150.00	7	1.890	1.980	1.140	0.357	2	6
Powerwave Allgon 777	150.00	162	1.890	1.980	1.140	0.357	50	140
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.357	619	1,724
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.357	6	17
Ericsson RRUS 12 w/	150.00	214	1.890	1.980	1.140	0.357	66	185
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.357	68	189
Alcatel-Lucent 4X40W	138.00	357	1.600	0.778	0.670	0.185	57	308
Alcatel-Lucent 800 M	138.00	185	1.600	0.778	0.670	0.185	30	160
RFS APXV9ERR18-C-A20	138.00	124	1.600	0.778	0.670	0.185	20	107
RFS APXVSPP18-C-A20	138.00	57	1.600	0.778	0.670	0.185	9	49
RFS IBC1900BB-1	138.00	66	1.600	0.778	0.670	0.185	11	57
RFS IBC1900HG-2A	138.00	66	1.600	0.778	0.670	0.185	11	57
Round T-Arm	138.00	750	1.600	0.778	0.670	0.185	120	646

RFS APXVTM14-C-I20	138.00	159	1.600	0.778	0.670	0.185	25	137
Alcatel-Lucent TD-RR	138.00	210	1.600	0.778	0.670	0.185	34	181
Ericsson AIR 21, 1.3	128.00	271	1.376	0.240	0.408	0.077	18	234
Ericsson AIR 21, 1.3	128.00	275	1.376	0.240	0.408	0.077	18	237
Round Sector Frame	128.00	300	1.376	0.240	0.408	0.077	20	259
Argus LLPX310R	118.00	86	1.170	-0.022	0.233	-0.001	0	74
Collar Mount	118.00	560	1.170	-0.022	0.233	-0.001	-1	483
DragonWave A-ANT-23G	118.00	15	1.170	-0.022	0.233	-0.001	0	13
DragonWave A-ANT-23G	118.00	25	1.170	-0.022	0.233	-0.001	0	21
DragonWave Horizon C	118.00	32	1.170	-0.022	0.233	-0.001	0	27
NextNet BTS-2500	118.00	105	1.170	-0.022	0.233	-0.001	0	90
12" x 12" Junction B	112.00	10	1.054	-0.092	0.160	-0.034	0	9
Stand-off	35.00	50	0.103	0.071	0.037	0.060	3	43
GPS	35.00	10	0.103	0.071	0.037	0.060	1	9
GPS	34.00	10	0.097	0.071	0.038	0.060	1	9
Stand-off	34.00	50	0.097	0.071	0.038	0.060	3	43
		28,649	70.275	31.013	25.761	7.029	2,067	24,690

Load Case (0.9 - 0.2Sds) * DL + E EMAM **Seismic (Reduced DL) Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
40	147.50	187	1.828	1.667	1.025	0.317	51	161
39	142.50	195	1.706	1.144	0.823	0.244	41	168
38	139.00	80	1.623	0.851	0.702	0.198	14	69
37	136.50	135	1.565	0.674	0.624	0.167	19	116
36	132.50	231	1.475	0.441	0.513	0.122	24	199
35	129.00	95	1.398	0.280	0.430	0.087	7	82
34	126.50	163	1.344	0.186	0.377	0.063	9	140
33	122.50	278	1.261	0.069	0.302	0.030	7	240
32	119.00	113	1.190	-0.005	0.247	0.005	1	98
31	116.50	175	1.140	-0.045	0.213	-0.010	-2	151
30	113.50	178	1.082	-0.079	0.176	-0.027	-4	153
29	111.03	124	1.035	-0.099	0.150	-0.039	-4	107
28	110.03	4	1.017	-0.105	0.140	-0.043	0	4
27	107.50	397	0.971	-0.116	0.117	-0.052	-18	342
26	102.50	407	0.883	-0.121	0.081	-0.066	-23	351
25	97.50	418	0.799	-0.112	0.053	-0.071	-26	360
24	92.50	429	0.719	-0.092	0.034	-0.069	-26	370
23	87.50	440	0.643	-0.068	0.020	-0.058	-22	379
22	82.50	784	0.572	-0.043	0.012	-0.038	-26	676
21	77.50	795	0.505	-0.018	0.007	-0.012	-8	685
20	74.28	232	0.463	-0.003	0.006	0.006	1	200
19	71.80	882	0.433	0.007	0.006	0.018	14	760
18	70.03	10	0.412	0.014	0.006	0.027	0	8
17	67.50	902	0.383	0.023	0.007	0.037	29	777
16	62.50	915	0.328	0.039	0.010	0.052	41	788
15	57.50	928	0.278	0.050	0.014	0.060	48	800
14	52.50	942	0.232	0.058	0.019	0.063	51	812
13	47.50	955	0.190	0.064	0.025	0.063	52	823
12	42.50	969	0.152	0.068	0.030	0.062	52	835
11	37.83	850	0.120	0.070	0.034	0.061	45	732
10	35.33	219	0.105	0.071	0.037	0.060	11	189
9	34.50	328	0.100	0.071	0.037	0.060	17	283
8	32.75	824	0.090	0.071	0.038	0.059	42	710
7	30.75	331	0.079	0.072	0.040	0.059	17	285
6	27.50	1,110	0.064	0.072	0.041	0.058	56	957
5	22.50	1,126	0.043	0.070	0.042	0.056	55	971
4	17.50	1,143	0.026	0.067	0.040	0.054	54	985
3	12.50	1,159	0.013	0.059	0.034	0.050	50	999

2	7.50	1,175	0.005	0.044	0.025	0.041	42	1,012
1	2.50	1,107	0.001	0.018	0.010	0.021	21	954
10' Omni	150.00	25	1.890	1.980	1.140	0.357	8	22
Powerwave LGP21401	150.00	169	1.890	1.980	1.140	0.357	52	146
Ericsson RRUS 11 (Ba	150.00	330	1.890	1.980	1.140	0.357	102	284
Kathrein 860 10025	150.00	7	1.890	1.980	1.140	0.357	2	6
Powerwave Allgon 777	150.00	162	1.890	1.980	1.140	0.357	50	140
Flat Platform w/ Han	150.00	2,000	1.890	1.980	1.140	0.357	619	1,724
Raycap DC6-48-60-18-	150.00	20	1.890	1.980	1.140	0.357	6	17
Ericsson RRUS 12 w/	150.00	214	1.890	1.980	1.140	0.357	66	185
CCI OPA-65R-LCUU-H6	150.00	219	1.890	1.980	1.140	0.357	68	189
Alcatel-Lucent 4X40W	138.00	357	1.600	0.778	0.670	0.185	57	308
Alcatel-Lucent 800 M	138.00	185	1.600	0.778	0.670	0.185	30	160
RFS APXV9ERR18-C-A20	138.00	124	1.600	0.778	0.670	0.185	20	107
RFS APXVSPP18-C-A20	138.00	57	1.600	0.778	0.670	0.185	9	49
RFS IBC1900BB-1	138.00	66	1.600	0.778	0.670	0.185	11	57
RFS IBC1900HG-2A	138.00	66	1.600	0.778	0.670	0.185	11	57
Round T-Arm	138.00	750	1.600	0.778	0.670	0.185	120	646
RFS APXVTM14-C-I20	138.00	159	1.600	0.778	0.670	0.185	25	137
Alcatel-Lucent TD-RR	138.00	210	1.600	0.778	0.670	0.185	34	181
Ericsson AIR 21, 1.3	128.00	271	1.376	0.240	0.408	0.077	18	234
Ericsson AIR 21, 1.3	128.00	275	1.376	0.240	0.408	0.077	18	237
Round Sector Frame	128.00	300	1.376	0.240	0.408	0.077	20	259
Argus LLPX310R	118.00	86	1.170	-0.022	0.233	-0.001	0	74
Collar Mount	118.00	560	1.170	-0.022	0.233	-0.001	-1	483
DragonWave A-ANT-23G	118.00	15	1.170	-0.022	0.233	-0.001	0	13
DragonWave A-ANT-23G	118.00	25	1.170	-0.022	0.233	-0.001	0	21
DragonWave Horizon C	118.00	32	1.170	-0.022	0.233	-0.001	0	27
NextNet BTS-2500	118.00	105	1.170	-0.022	0.233	-0.001	0	90
12" x 12" Junction B	112.00	10	1.054	-0.092	0.160	-0.034	0	9
Stand-off	35.00	50	0.103	0.071	0.037	0.060	3	43
GPS	35.00	10	0.103	0.071	0.037	0.060	1	9
GPS	34.00	10	0.097	0.071	0.038	0.060	1	9
Stand-off	34.00	50	0.097	0.071	0.038	0.060	3	43
		28,649	70.275	31.013	25.761	7.029	2,067	24,690

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	23.69	0.00	34.32	0.00	0.00	2332.17	85.00	0.95
0.9D + 1.6W	23.03	0.00	25.73	0.00	0.00	2227.41	85.00	0.90
1.2D + 1.0Di + 1.0Wi	5.68	0.00	64.82	0.00	0.00	634.21	110.05	0.33
(1.2 + 0.2Sds) * DL + E ELFM	1.01	0.00	30.76	0.00	0.00	122.59	110.05	0.06
(1.2 + 0.2Sds) * DL + E EMAM	2.05	0.00	34.10	0.00	0.00	246.41	110.05	0.18
(0.9 - 0.2Sds) * DL + E ELFM	1.01	0.00	21.41	0.00	0.00	120.84	110.05	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.05	0.00	23.74	0.00	0.00	241.04	110.05	0.17
1.0D + 1.0W	5.74	0.00	28.65	0.00	0.00	559.40	110.05	0.24

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	85.0	(4) SOL-#20 All Thre	272.9	8.2	16.8	153.3	12.0	13	14	0.0	12.0	0	0	243.4	330.5	0.736

Code Rev.	G	Date	5/19/2015
		Engineer	A.E
		Site #	302473
Moment	2332.2 k-ft	Carrier	AT&T Mobility
Axial	34.3 k		

Base/Flange Plate	Plate Type	*Baseplate*	
	Pole Diameter	37.36	in
	Pole Thickness	0.375	in
	Plate Length	44	in
	Plate Thickness	2.5	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	1385.29	k-in
	Applied	619.31	k-in
Stiffeners	#	*0*	

Bolts	#	*8*	
	Bolt Circle	44	in
	(R)adial / (S)quare	S	
	Bolt Gap	6	in
●	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	182.69	k
Reinforcement	#	*4*	
●	DYW. Circle	44.235	in
	Offset Angle	22.5	°
	Type	#20	
	Diameter	2.5	in
	Fu	105	ksi
Extra Bolts O	#	*0*	

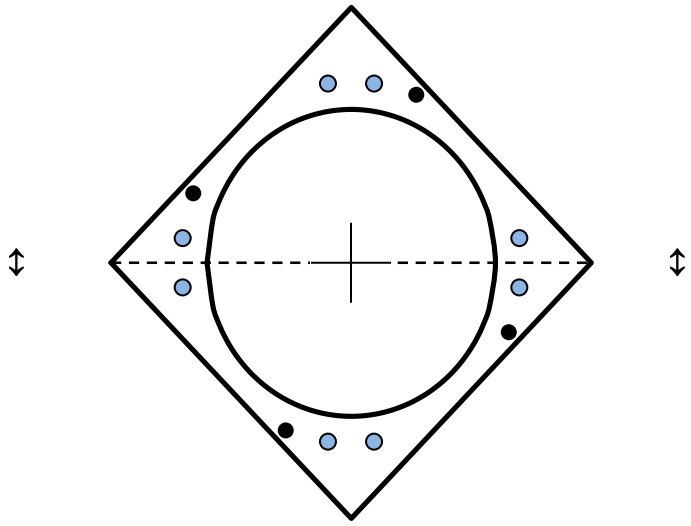


Plate Stress Ratio:

0.45 (Pass)

Bolt Stress Ratio:

0.70 (Pass)

Base/Flange Plate			
	Plate Type	***Flange***	***@ 110.0 ft***
	Pole Diameter	21.25	in
	Pole Thickness	0.1875	in
	Plate Diameter	28.6	in
	Plate Thickness	1	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	238.53	k-in
	Applied	69.19	k-in

Stiffeners			
	#	***24***	***Show***
	Thickness	0.5	in
	Length	3	in
	Height	3.5	in
	Chamfer	0	in
	Offset Angle	22	°
	Fy	36	ksi

Bolts			
	#	***12***	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.1875	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	51.49	k

Reinforcement ●		
#	***0***	

Extra Bolts O		
#	***0***	

Code Rev. ***G***

Moment 336.6 k-ft

Axial 9.2 k

Date 5/19/2015

Engineer A.E

Site # 302473

Carrier AT&T Mobility

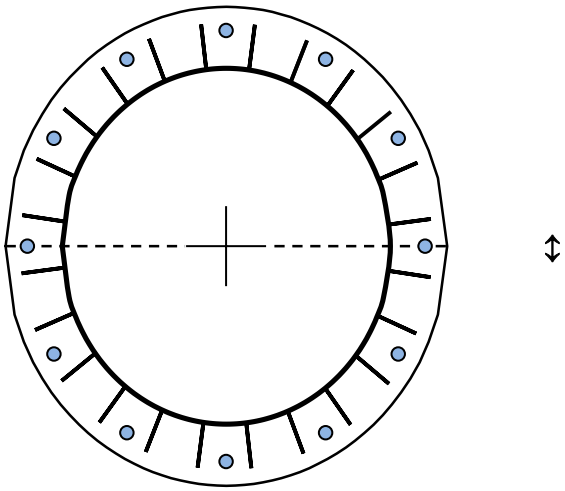


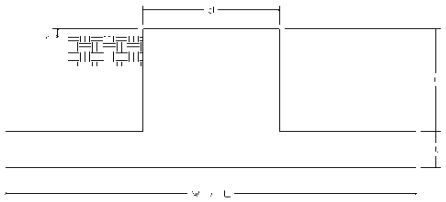
Plate Stress Ratio:

0.29 (Pass)

Bolt Stress Ratio:

0.94 (Pass)

Site Name:	E H F R - Prestige Park	*Program Last Updated:*	*5/13/2014*
Site Number:	302473		
Engineering Number:	61681621		
Engineer:	A.E		
Date:	05/19/15		
Tower Type:	MP		



Design Loads (Factored) - Analysis per TIA-222-G Standards

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	34.3	k	Concrete Strength (f'_c):	4000	psi
Uplift/Leg:	0.0	k	Pad Tension Steel Depth:	32.00	in
Total Shear:	23.7	k	ϕ_{Shear}:	0.75	
Moment:	2332.2	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	34.3	k	$\phi_{Compression:}$	0.65	
Depth to Base of Foundation (l + t - h):	8.00	ft	β:	0.85	
Diameter of Pier (d):	4.33	ft	Bottom Pad Rebar Size #:	10	
Height of Pier above Ground (h):	0.50		# of Bottom Pad Rebar:	36	
Width of Pad (W):	18.00	ft	Pad Bottom Steel Area:	45.72	in^2
Length of Pad (L):	18.00	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3.00	ft	Top Pad Rebar Size #:	6	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	36	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	15.84	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	11	
Depth Below Ground Surface to Water Table:	12.00	ft	Pier Steel Area (Single Bar):	1.56	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	14	
Unit Weight of Soil Above Water Table:	115.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	44.0	in
Unit Weight of Soil Below Water Table:	53.0	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	15.0	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.40		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	50168.3	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	3200.0	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.8		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

Design OTM:	2533.5	k-ft
OTM Resistance:	3055.2	k-ft
Design OTM / OTM Resistance:	0.83	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	4592	psf
Factored Nominal Bearing Pressure:	37626	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.12	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

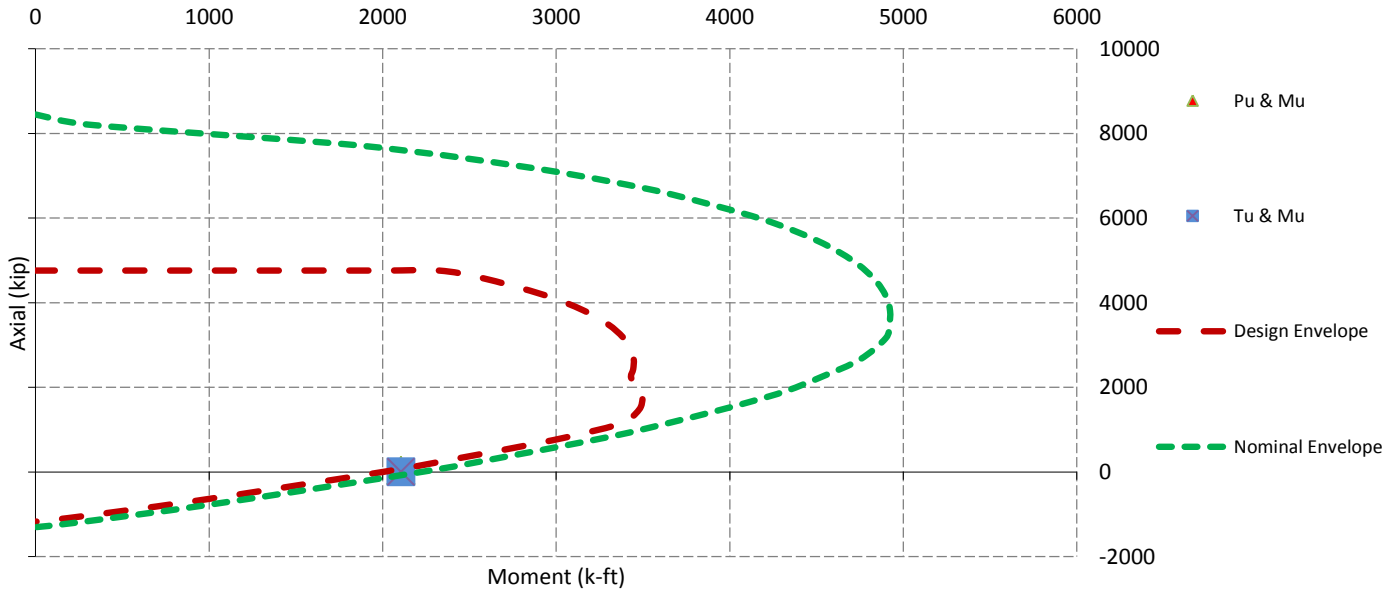
Sliding Factor of Safety

Total Factored Sliding Resistance:	213.0	k
Sliding Design / Sliding Resistance:	0.11	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	171.3	k
One Way Shear Capacity (ϕV_c):	575.3	k - ACI11.3.1.1
V_u / ϕV_c:	0.30	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	1009.1	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	6257.1	k-ft - ACI10.3
M_u / ϕM_n:	0.16	Result: OK
Load Direction Controling Flexural Capacity:	Parallel to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	666.8	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	2241.8	k-ft
M_u / ϕM_n:	0.30	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0066	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0023	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1601.5	k - ACI11.12.2.1
V_u / ϕV_c:	0.00	Result: OK
Factored Moment in Pier (M_u):	2106.1	k-ft
Pier Moment Capacity (ϕM_n):	2120.7	k-ft
M_u / ϕM_n:	0.99	Result: OK
Factored Shear in Pier (V_u):	23.7	k
Pier Shear Capacity (ϕV_n):	202.8	k
V_u / ϕV_c:	0.12	Result: OK
Pier Shear Reinforcement Ratio:	0.0009	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	1179.4	k
T_u / ϕT_n:	0.00	Result: OK
Factored Compression in Pier (P_u):	34.3	k
Pier Compression Capacity (ϕP_n):	3710.3	k - ACI10.3.6.2
P_u / ϕP_n:	0.01	Result: OK
Pier Compression Reinforcement Ratio:	0.010	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.99	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



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

AT&T Existing Facility

Site ID: CT1002

East Hartford
2 Prestige Park Road
East Hartford, CT 06108

May 14, 2015

EBI Project Number: 6215002976

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	27.02 %

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

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May 14, 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: **CT1002 – East Hartford**

EBI Consulting was directed to analyze the proposed AT&T facility located at **2 Prestige Park Road, East Hartford, 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 **2 Prestige Park Road, East Hartford, 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 **154 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):	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	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%	0.67	Antenna B1 MPE%	0.67	Antenna C1 MPE%	0.67
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
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):	154 feet	Height (AGL):	154 feet	Height (AGL):	154 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 A2 MPE%	1.36	Antenna B2 MPE%	1.36	Antenna C2 MPE%	1.36
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
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	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	1,395.90	ERP (W):	1,395.90	ERP (W):	1,395.90
Antenna A3 MPE%	0.46	Antenna B3 MPE%	0.46	Antenna C3 MPE%	0.46

Site Composite MPE%	
Carrier	**MPE%**
AT&T	**7.46 %**
Clearwire	0.79 %
Clearwire MW	1.09 %
MetroPCS	8.37 %
Sprint	9.31 %
Site Total MPE %:	**27.02 %**

AT&T Sector 1 Total:	2.49 %
AT&T Sector 2 Total:	2.49 %
AT&T Sector 3 Total:	2.49 %
Site Total:	27.02 %

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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:	2.49 %
Sector 2:	2.49 %
Sector 3 :	2.49 %
AT&T Total:	7.46 %
Site Total:	27.02 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **27.02%** 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

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Burlington, MA 01803