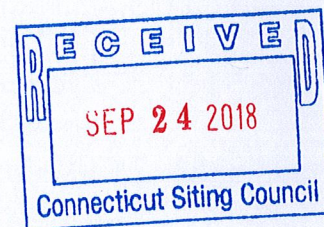




August 22, 2018

EM-AT&T-094-180924

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051



**RE: Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 881364
AT&T Site ID: CT1108
123 Costello Road, Newington, CT 06111
Latitude: 41° 39' 18.72" / Longitude: -72° 43' 17.19"**

ORIGINAL

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 105-foot level of the existing 145-foot monopole at 123 Costello Road in Newington, CT. The tower is owned by Crown Castle. The property is owned by Costello Industries Inc. AT&T now intends to add three (3) new antennas. These antennas would be installed at the 105-foot level of the tower. AT&T also intends to replace three (3) RRU11s with three (3) RRU32 B2s.

This facility was approved by Newington Town Plan and Zoning Commission in Petition 65-01 on November 28, 2001. This approval included the conditions that:

1. All ground equipment shall be located within a 8' fence enclosure, no equipment shall be placed within 10' side setback area.

This modification complies with the aforementioned condition(s).

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to The Honorable Roy Zartarian, Mayor, Town of Newington, Craig Minor, Town Planner, Town of Newington, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

Melanie A. Bachman

November 7, 2016

Page 2

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn:

Sincerely,



Robert C. Wilson

Site Acquisition Manager

200 N. Warner Rd – suite 215

King of Prussia, PA 19406

484-919-0391

rwilson@velocitel.com

Enclosures: Exhibit 1 – Field Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation

cc: The Honorable Roy Zartarian, Mayor, Town of Newington, Craig Minor, Town Planner, Town of Newington, and Crown Castle is the tower owner.

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:
Craig Minor
Town Planner
Town of Newington
31 Cedar Street
Newington, CT 06111



9590 9402 3770 8032 0966 89

Article Number (Transfer from service label)
7015 0640 0007 2962 5624

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

Article Addressed to:
The Honorable Roy Zartarian, Mayor
Mayor's Office
Town of Newington
31 Cedar Street
Newington, CT 06111



9590 9402 3845 8032 6733 19

Article Number (Transfer from service label)
7015 0640 0007 2962 5617

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
B. Received by (Printed Name) Addressee
Kerry Townsend Addressee
Date of Delivery 8/27/18
D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Adult Signature
 Adult Signature Restricted Delivery
 Certified Mail®
 Certified Mail Restricted Delivery
 Collect on Delivery
 Collect on Delivery Restricted Delivery
 Mail
 Mail Restricted Delivery

Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee
B. Received by (Printed Name) Addressee
Kerry Townsend Addressee
Date of Delivery 8/27/18
D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Adult Signature
 Adult Signature Restricted Delivery
 Certified Mail®
 Certified Mail Restricted Delivery
 Collect on Delivery
 Collect on Delivery Restricted Delivery
 Mail
 Mail Restricted Delivery

Domestic Return Receipt

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C. Date of Delivery 8/27/18
D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Adult Signature
 Adult Signature Restricted Delivery
 Certified Mail®
 Certified Mail Restricted Delivery
 Collect on Delivery
 Collect on Delivery Restricted Delivery
 Insured Mail
 Mail Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

Complete items 1, 2, and 3.
Print your name and address on the reverse so that we can return the card to you.
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Crown Castle
Paul Pedicone, Project Manager
3 Corporate Drive, Suite 101
Clifton Park, NY 12065



9590 9402 3845 8032 6734 56

2. Article Number (Transfer from service label)
7015 0640 0007 2962 5587

PS Form 3811, July 2015 PSN 7530-02-000-9053

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2015.

Town of Newington

ASSESSOR'S OFFICE



Information on the Property Records for the Municipality of Newington was last updated on 11/5/2016.

Parcel Information

| | | | | | |
|--------------------------|-----------------|-------------------|------------|-------------------|------------------|
| Location: | 123 COSTELLO RD | Property Use: | Industrial | Primary Use: | Office Warehouse |
| Unique ID: | C0685500 | Map Block Lot: | 32/018/00A | Acres: | 2.84 |
| 490 Acres: | 0.00 | Zone: | PD | Volume / Page: | 0573/0098 |
| Developers Map / Lot: | S/E 2020 & 2815 | Census: | | | |

Value Information

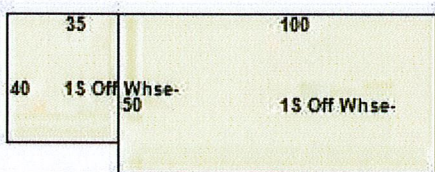
| | Appraised Value | 70% Assessed Value |
|-----------------------|-----------------|--------------------|
| Land | 382,500 | 267,750 |
| Buildings | 118,943 | 83,260 |
| Detached Outbuildings | 287,500 | 201,250 |
| Total | 788,943 | 552,260 |

Owner's Information

Owner's Data

COSTELLO INDUSTRIES INC
123 COSTELLO RD
NEWINGTON CT 06111

Building 1



| | | | | | |
|-----------|----------------|---------------|-------------|------------------|-------|
| Category: | Industrial | Use: | Warehouse | GLA: | 6,400 |
| Stories: | 1.00 | Construction: | Steel | Year Built: | 1975 |
| Heating: | Unit Heater/AC | Fuel: | Natural Gas | Cooling Percent: | 0 |

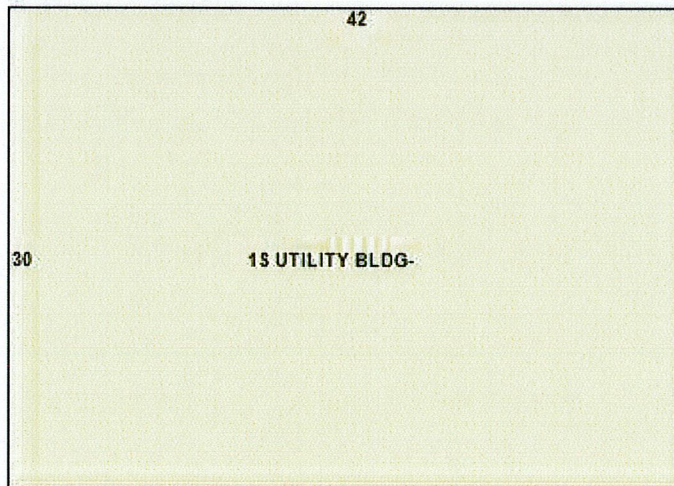
| | | | | | |
|---------|----------------|----------------|-------|-------------|---|
| Siding: | Concrete Block | Roof Material: | Other | Beds/Units: | 0 |
|---------|----------------|----------------|-------|-------------|---|

Special Features

| | |
|----------------|---|
| Overhead Doors | 2 |
|----------------|---|

Attached Components

Building 2



| | | | | | |
|-----------|------------|------|------------------|------|-------|
| Category: | Industrial | Use: | Utility Building | GLA: | 1,260 |
|-----------|------------|------|------------------|------|-------|

| | | | | | |
|----------|----------------|----------------|-------------|---------------------|------|
| Stories: | 1.00 | Construction: | Steel | Year Built: | 1981 |
| Heating: | Unit Heater/AC | Fuel: | Natural Gas | Cooling Percent: | 0 |
| Siding: | Metal | Roof Material: | Other | Beds/Units: | 0 |

Special Features

| | |
|----------------|---|
| Overhead Doors | 1 |
|----------------|---|

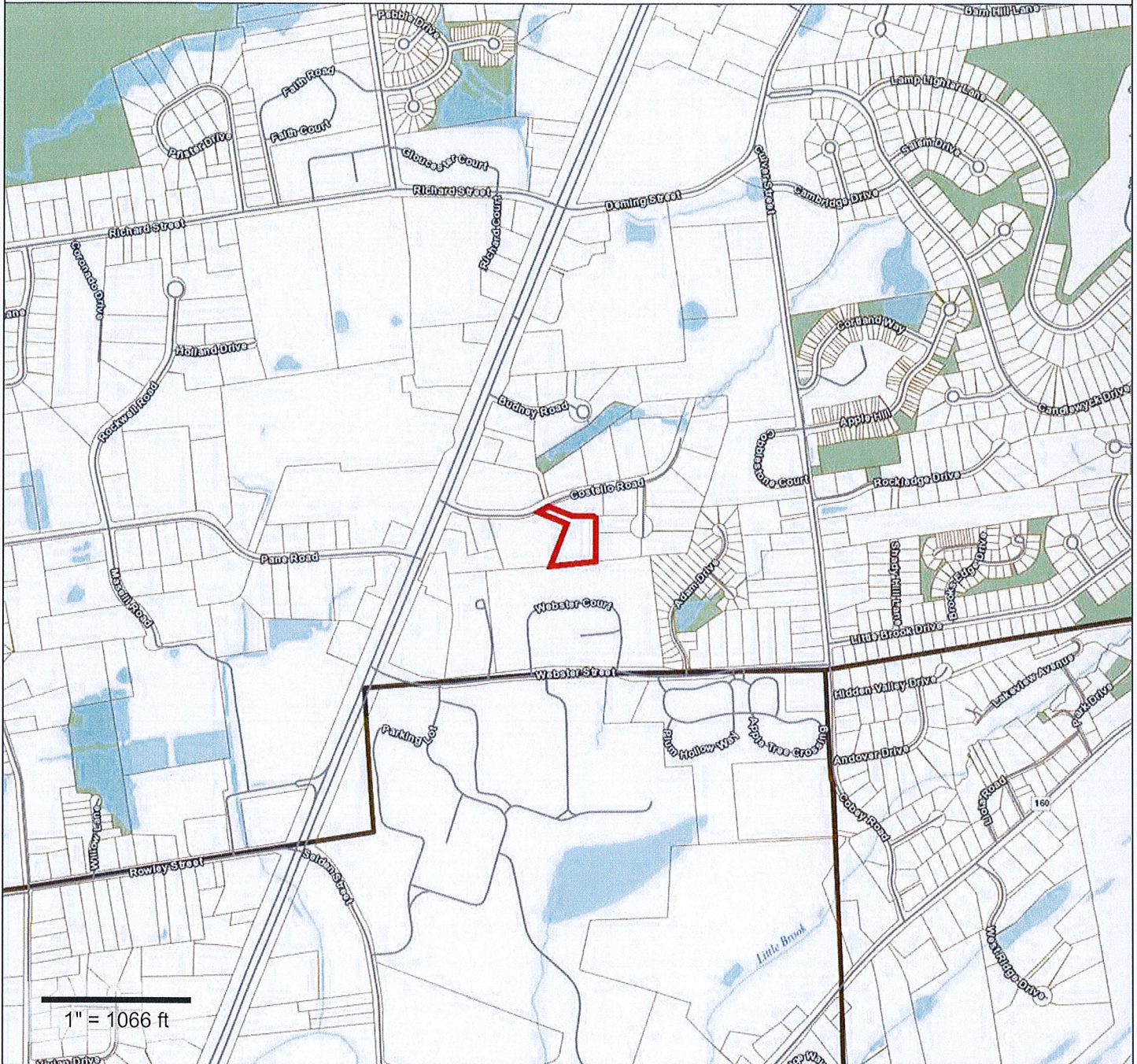
Attached Components

Detached Outbuildings

| Type: | Year Built: | Length: | Width: | Area: |
|------------|-------------|---------|-----------|--------|
| Paving | 1975 | 1.00 | 25,000.00 | 25,000 |
| Cell Tower | 1975 | 0.00 | 0.00 | 1 |

Owner History - Sales

| Owner Name | Volume | Page | Sale Date | Deed Type | Valid Sale | Sale Price |
|--------------------------------|--------|------|------------|-----------|------------|------------|
| COSTELLO INDUSTRIES INC | 573 | 98 | 03/31/1986 | | No | \$0 |
| COSTELLO INDUSTRIES INC | 399 | 332 | 08/18/1980 | | No | \$0 |
| COSTELLO INDUSTRIES INC | 385 | 280 | 12/18/1979 | | No | \$0 |
| COSTELLO INDUSTRIES INC | 385 | 278 | 12/18/1979 | | No | \$0 |
| COSTELLO INDUSTRIES INC | 314 | 129 | 06/06/1977 | | No | \$0 |
| COSTELLO CONSTRUCTION CORP THE | 284 | 147 | 02/19/1976 | | No | \$0 |
| COSTELLO CONSTRUCTION CORP THE | 271 | 180 | 06/17/1975 | | No | \$0 |



Property Information

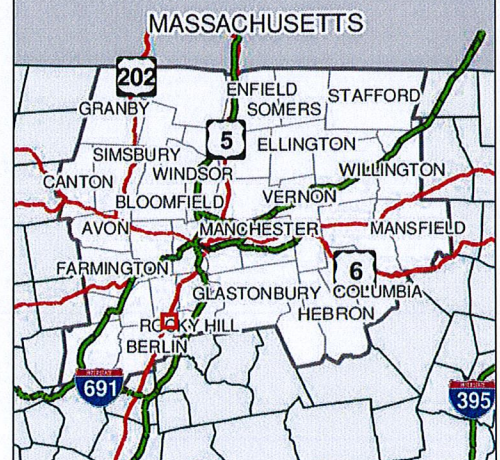
Property ID 09003094-C0685500
 Location 123 COSTELLO RD
 Owner Current Owner



**MAP FOR REFERENCE ONLY
 NOT A LEGAL DOCUMENT**

CRCOG and AppGeo make no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

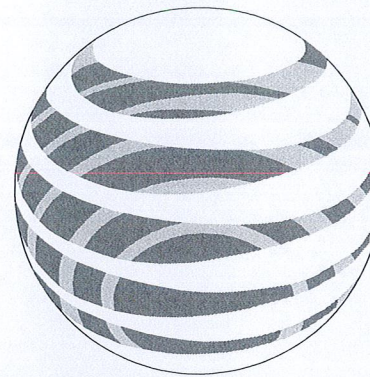
Parcels updated October 1, 2013



PROJECT INFORMATION

SCOPE OF WORK
 UNMANNED COMMUNICATIONS FACILITY MODIFICATIONS INCLUDING:
 - (P) LTE700B14 CCI HP655RBUH6 IN POSITION #3 (1/SECT., 3 TOT.)
 - (P) LTE700D RRUS-4478 RADIOS BEHIND NEW PANEL POSITION #3 (1/SECT., 3 TOT.)
 - (P) LTE700DE RRUS-E2 RADIOS INSIDE SHELTER CONNECTED TO PANEL POSITION #2 (1/SECT., 3 TOT.)
 - (P) (2) DC-6-48-60-18-8F SURGE ARRESTORS TO BE RE-USED (2 TOT.)
 - (P) 2-FIBER TRUNKS, 4-DC TRUNKS TO BE RE-USED
 - (P) IN AT&T EQUIPMENT SHELTER:
 - UPGRADE DUS TO RBS5216
 - ADD IDL2 CABLE
 - ADD 2nd XMU
 - DECOMMISSION & REMOVE 1 GSM CABINET
 - DECOMMISSION & REMOVE UMS850 RADIOS (3 TOT.)

SITE NUMBER: CT1108
SITE NAME: NEWINGTON SOUTH
SITE ADDRESS: 123 COSTELO ROAD
 NEWINGTON, CT 06111
TOWER OWNER: CROWN ATLANTIC COMPANY
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
APPLICANT: AT&T MOBILITY
 550 COCHITUATE RD
 SUITES 13 & 14
 FRAMINGHAM, MA 01701
NOC CONTACT: TEL 866-915-5600
COORDINATES: LAT. N41°39'18.7"
 LONG. W72°43'17.1"
GROUND LEVEL: ±135'
DEED REFERENCE: N/A
SITE PARCEL NO.: N/A
CURRENT ZONING: N/A
HORIZONTAL DATUM: (NAD) 1983



at&t
 Mobility

SITE NUMBER: CT1108
SITE NAME: NEWINGTON SOUTH
PROJECT: LTE 5C 700DE 6C 700D FirstNet
CROWN BU: 881364

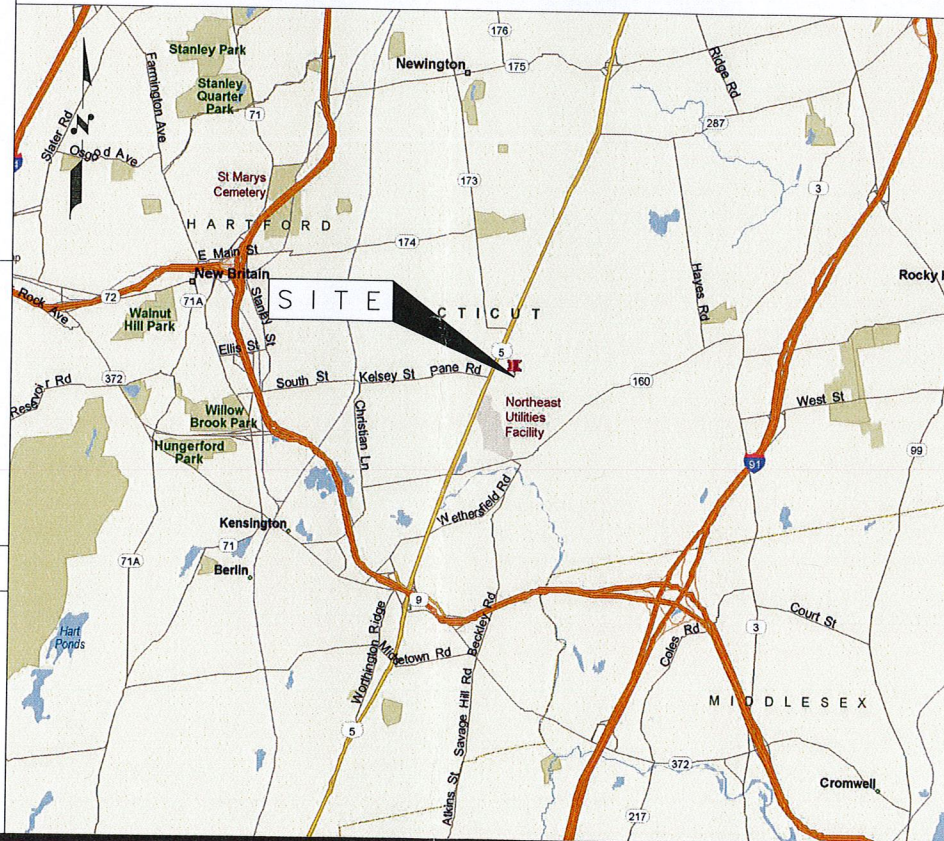
DRAWING INDEX

REV

| | | |
|----|---------------------------------|---|
| 01 | TITLE SHEET | 0 |
| 02 | NOTES | 0 |
| 03 | SITE PLAN & EQUIPMENT PLAN | 0 |
| 04 | ELEVATION VIEW & ANTENNA LAYOUT | 0 |
| 05 | GROUNDING DETAILS | 0 |

LOCATION MAP

DIRECTIONS: FROM ROCKY HILL, TAKE EXIT 23 OFF I-91, GO WEST TO ROUTE 3. TAKE ROUTE 3 NORTH TO ROUTE 160 WEST. FOLLOW ROUTE 160 WEST TO THE BERLIN TURNPIKE (RT-5/15). TURN RIGHT ONTO TURNPIKE. LOOK FOR COSTELLO ROAD ON RIGHT (DUNKIN DONUTS ON THE CORNER). TOWER SITE ENTRANCE IS 2/10 MILE ON RIGHT BEHIND COSTELLO EXCAVATION COMPANY. ENTER THROUGH EXCAVATION COMPANY DRIVEWAY.
SITE ACCESS: LOCKED GATE



APPLICABLE BUILDING CODES AND STANDARDS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARDS AND SPECIFICATIONS. SUBCONTRACTOR 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.

BUILDING CODE:
 CONNECTICUT STATE BUILDING CODE

ELECTRICAL CODE:
 NATIONAL ELECTRICAL CODE LATEST EDITION
 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, ASD, NINTH EDITION
 AMERICAN NATIONAL STANDARDS INSTITUTE/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA) 222-F OR G AS APPLICABLE, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
 TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

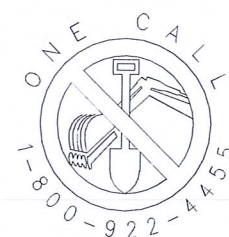
INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
 IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM, ENVIRONMENTAL PROTECTION

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.



AT LEAST 2 WORKING DAYS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CONNECTICUT ONE CALL SYSTEM AT 1-800-922-4455

CONTACT & UTILITY INFORMATION

| CONTACT | CONTACT | COMPANY | PHONE NO. |
|-------------------|--------------------|---------------|----------------|
| ENGINEERING: | MIGUEL NOBRE | VRG | (508) 981-9590 |
| SITE ACQUISITION: | DAVID COOPER | EMPIRE | (484) 683-5349 |
| CONSTRUCTION: | BILL DANIELS | EMPIRE | (484) 683-5349 |
| UTILITIES | | | |
| POWER: | WORK REQUEST GROUP | NATIONAL GRID | (800) 375-7405 |
| TELCO: | | VERIZON | (800) 941-9900 |

VRG
 VERTICAL RESOURCES GRP.

489 Washington Street
 Auburn, MA 01501
 Tel. (508) 981-9590
 Fax (508) 519-8939
 mnobre@verticalresourcesgrp.com

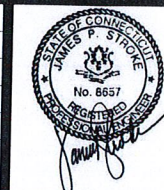
EMPIRE telecom
 EMPIRE TELECOM USA, LLC
 16 ESQUIRE ROAD
 BILLERICA, MA 01821

SITE NUMBER: CT1108
SITE NAME: NEWINGTON S
PROJECT: LTE 5C 6C
CROWN SITE ID: 881364
 123 COSTELO ROAD
 NEWINGTON, CT 06111
 HARTFORD COUNTY



at&t
 Mobility
 550 COCHITUATE RD
 SUITES 13 & 14
 FRAMINGHAM, MA 01701

| | | | | | |
|-------|-------------------|------------------|----|-----|----------------|
| NO. | DATE | REVISION | BY | CHK | APP'D |
| | 06/20/18 | FOR CONSTRUCTION | | | E.L.P., G.A.M. |
| SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M. | | | |



AT&T MOBILITY
 TITLE SHEET

| JOB NUMBER | DRAWING NUMBER | REV |
|----------------|----------------|-----|
| CT1108-LTE5C6C | 01 | 0 |

GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR - PRIME CONTRACTOR
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER - AT&T WIRELESS
 OEM - ORIGINAL EQUIPMENT MANUFACTURER
- 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.
- 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.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. ROUTING OF CONDUIT FOR POWER AND TELCO SHALL BE APPROVED BY OWNER OF SITE.
- 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.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF 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.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

SITE WORK GENERAL NOTES

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE OWNER SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE DETAIL 303.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 (HOT-DIP) UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4") CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. STEEL FASTENER HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (HOT-DIP)
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" D.A. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI OR APPROVED EQUAL.
- ALL STRUCTURAL STEEL SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 CONCRETE CAST AGAINST EARTH.....3 IN.
 CONCRETE EXPOSED TO EARTH OR WEATHER:
 #6 AND LARGER2 INCH
 #5 AND SMALLER & WWF.....1 1/2 INCH
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
 SLAB AND WALL3/4 INCH
 BEAMS AND COLUMNS.....1 1/2 INCH
- A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD HILTI OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER:
 (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
 (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
 FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.
- ALL CONCRETE SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL. EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH "100% PASSING 1" SIEVE.
- AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOF ROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BV 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.
- COMPACTION CRITERIA FOR OTHER FILL AREAS ON SITE SHALL MEET THE SAME REQUIREMENTS AS NOTED ABOVE.
- SOIL COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

COMPACTION EQUIPMENT:

HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

ELECTRICAL INSTALLATION NOTES

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PERMANENT LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S). NO HAND WRITTEN LABELS ALLOWED.
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED. NO HAND WRITTEN LABELS ALLOWED.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

ELECTRICAL INSTALLATION NOTES (cont.)

- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.



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 BILLERICA, MA 01821

SITE NUMBER: CT1108
SITE NAME: NEWINGTON S
PROJECT: LTE 5C 6C
CROWN SITE ID: 881364
 123 COSTELO ROAD
 NEWINGTON, CT 06111
 HARTFORD COUNTY



at&t
Mobility
 550 COCHITUATE RD
 SUITE 13 & 14
 FRAMINGHAM, MA 01701

| | | | | | |
|-------|----------|-------------------|------------------|--------|-------|
| NO. | DATE | REVISION | BY | CHK | APP'D |
| 1 | 06/20/18 | FOR CONSTRUCTION | E.L.P. | G.A.M. | |
| SCALE | | DESIGNED BY: M.N. | DRAWN BY: G.A.M. | | |



AT&T MOBILITY

NOTES

| | | |
|----------------|----------------|-----|
| JOB NUMBER | DRAWING NUMBER | REV |
| CT1108-LTE5C6C | 02 | 0 |

GENERAL NOTES

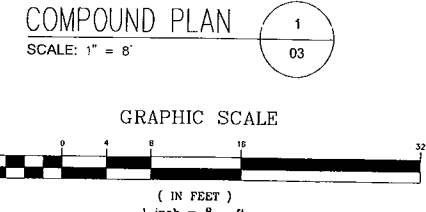
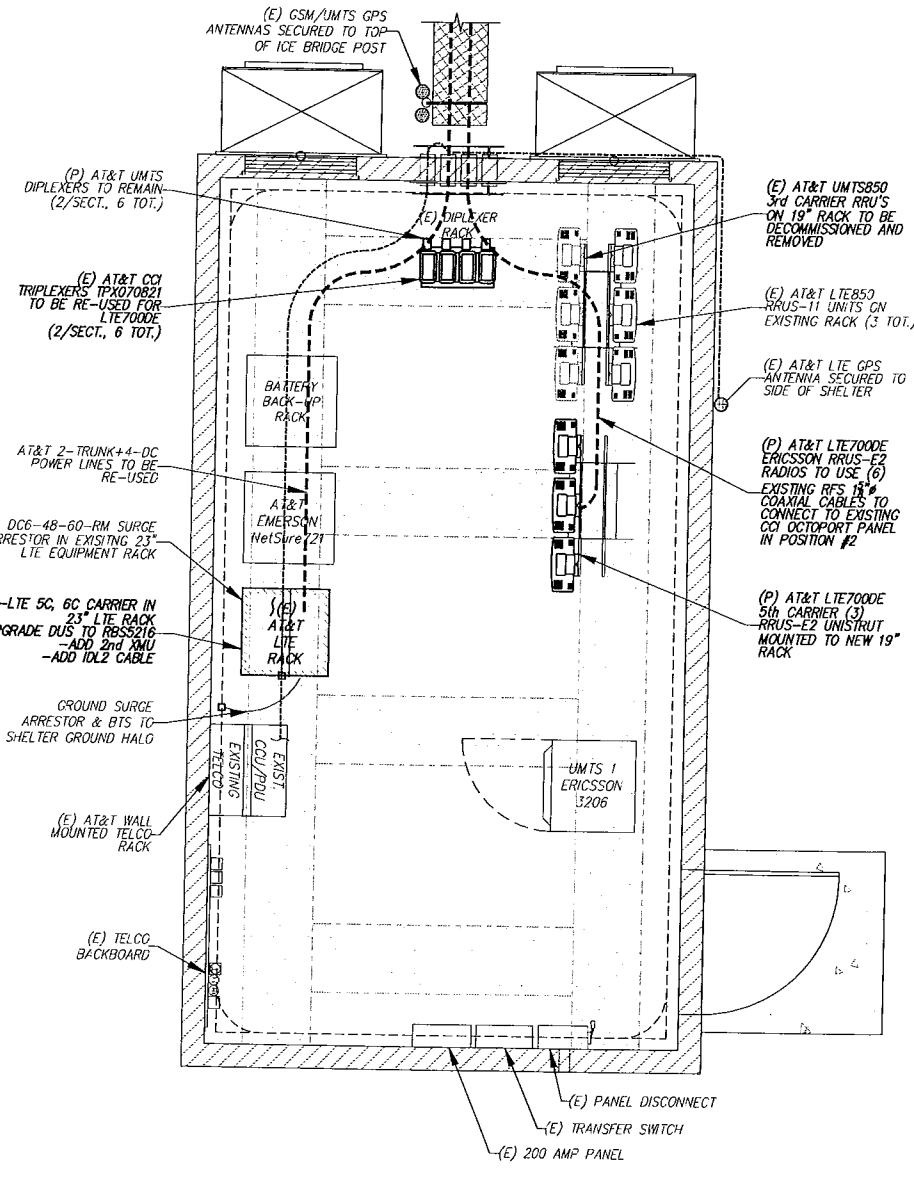
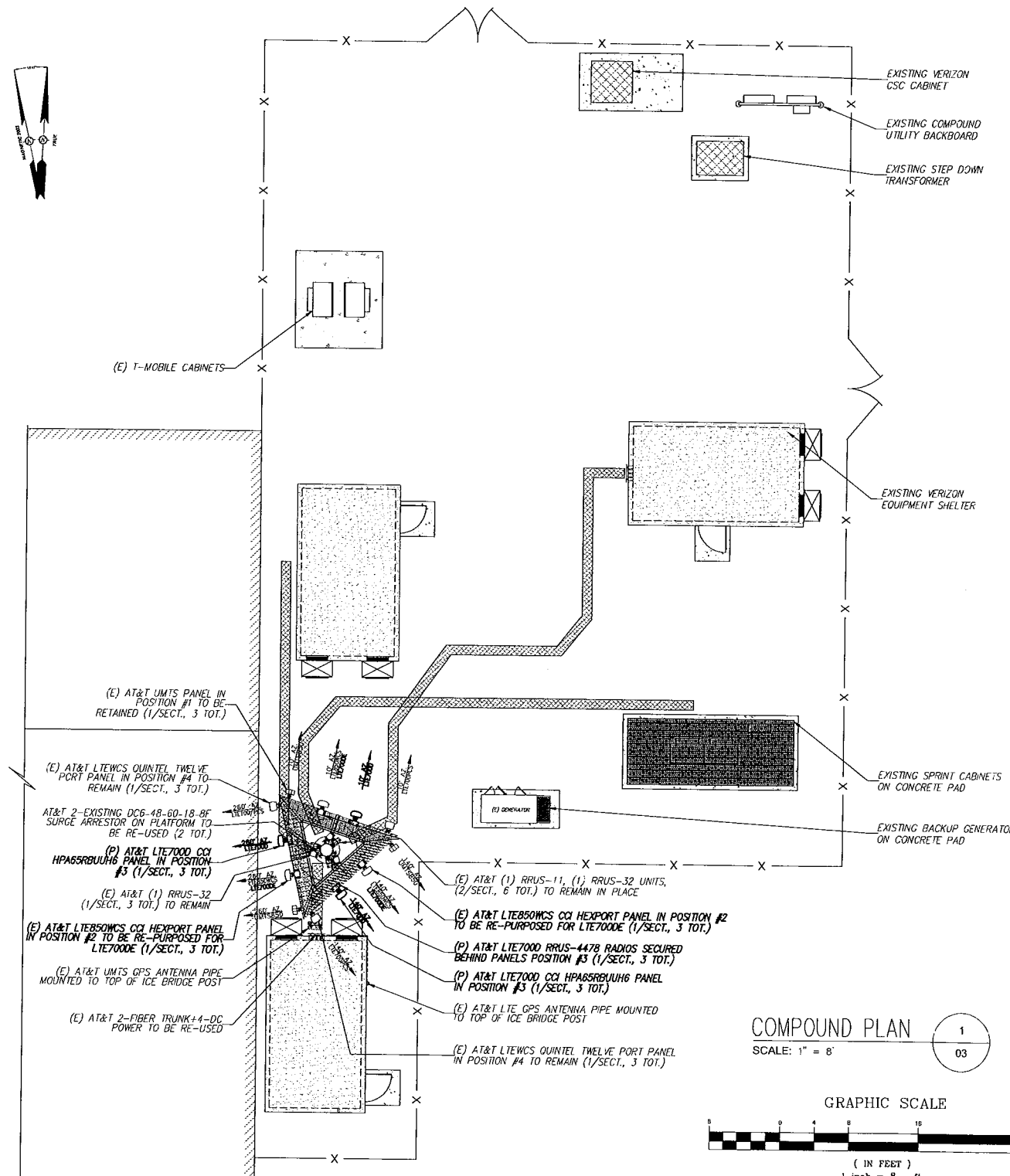
1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND THE POSITIONS OF ALL EQUIPMENT IN THE COMPOUND ARE SHOWN IN ILLUSTRATIVE FASHION. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.

2. THE CELLULAR INSTALLATION IS AN UNMANNED PRIVATE AND SECURED COMPOUND. 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. CONSTRUCTION, MAINTENANCE & OPERATION OF PROPOSED TOWER FACILITY WILL BE HELD IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS AND GUIDELINES.

AT&T RF SYSTEM SCHEDULE

| SECTOR | STATUS | BAND | ANTENNA MAKE | ANTENNA MODEL | SIZE (INCHES) (LxWxH) | RAD. CTR. FT. AGL. | AZIMUTH | TMA DIPLEXER | REMOTE RADIOS | SIZE (INCHES) (LxWxH) | FEEDER | RAYCAP |
|--------|----------|------------------|--------------|---------------|-----------------------|--------------------|---------|--------------|---------------|-----------------------|-----------|--------------|
| A1 | EXISTING | UMTS850/1900 | POWERWAVE | 7770 | 55.0x11.0x5.0 | ±105' | 140° | 2-1P2070821 | RRUS-32 | 18.7x17.0x7.1 | RRUS-32 | (E2) 1.5x7.8 |
| A2 | EXISTING | LTEWCS/850/700de | CCI | OPA65RLCUH6 | 72.0x14.8x7.4 | ±105' | 10° | 4-1P2070821 | RRUS-11 | 18.7x17.0x7.1 | RRUS-11 | (E2) 1.5x7.8 |
| A3 | PROPOSED | LTE700B14 | CCI | OPA65RLCUH6 | 72.0x14.8x7.4 | ±105' | 10° | RRUS-447B | RRUS-447B | 16.5x13.4x5.8 | RRUS-447B | (E2) 1.5x7.8 |
| A4 | EXISTING | LTE700BC/PCS | CCI | OPA65RLCUH6 | 72.0x14.8x7.4 | ±105' | 10° | RRUS-32 | RRUS-32 | 18.7x17.0x7.1 | RRUS-32 | (E2) 1.5x7.8 |
| B1 | EXISTING | UMTS850/1900 | POWERWAVE | 7770 | 55.0x11.0x5.0 | ±105' | 260° | 2-1P2070821 | RRUS-32 | 18.7x17.0x7.1 | RRUS-32 | (E2) 1.5x7.8 |
| B2 | EXISTING | LTEWCS/850/700de | CCI | OPA65RLCUH6 | 72.0x14.8x7.4 | ±105' | 140° | 4-1P2070821 | RRUS-11 | 18.7x17.0x7.1 | RRUS-11 | (E2) 1.5x7.8 |
| B3 | PROPOSED | LTE700B14 | CCI | OPA65RLCUH6 | 72.0x14.8x7.4 | ±105' | 140° | RRUS-447B | RRUS-447B | 16.5x13.4x5.8 | RRUS-447B | (E2) 1.5x7.8 |
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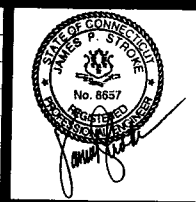
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16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT1108
SITE NAME: NEWINGTON S
PROJECT: LTE 5C 6C
CROWN SITE ID: 881364
123 COSTELO ROAD
NEWINGTON, CT 06111
HARTFORD COUNTY

at&t
Mobility
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

| | | | | | |
|--------------|------|------------------|--------|--------|--------|
| NO. | DATE | REVISION | BY | CHK | APP'D |
| 06/20/18 | | FOR CONSTRUCTION | | E.L.P. | G.A.M. |
| DESIGNED BY: | M.N. | DRAWN BY: | G.A.M. | | |



AT&T MOBILITY
SITE PLAN & EQUIPMENT PLAN
JOB NUMBER: CT1108-LTE5C6C
DRAWING NUMBER: 03
REV: 0



Date: July 26, 2018

Denice Nicholson
Crown Castle
3 Corporate Park Drive Suite 101
Clifton Park, NY 12065

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject: Structural Analysis Report

Carrier Designation: AT&T Mobility Co-Locate
Carrier Site Number: 10042331
Carrier Site Name: Newington South

Crown Castle Designation: **Crown Castle BU Number:** 881364
Crown Castle Site Name: Newington
Crown Castle JDE Job Number: 508679
Crown Castle Work Order Number: 1607665
Crown Castle Order Number: 443197 Rev. 1

Engineering Firm Designation: **Crown Castle Project Number:** 1607665

Site Data: 123 Costelo Road, Newington, Hartford County, CT
Latitude 41° 39' 18.72", Longitude -72° 43' 17.19"
145 Foot - Monopole Tower

Dear Denice Nicholson,

Crown Castle is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1607665, in accordance with order 443197, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at Crown Castle appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Steven Hu / KB

Respectfully submitted by:

Terry P. Styran, P.E.
Senior Project Engineer

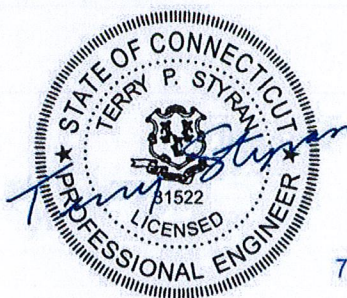


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1) INTRODUCTION

This tower is a 145 ft Monopole tower designed by SUMMIT in August of 1999. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

The tower has been modified per reinforcement drawings prepared by Paul J. Ford & Company, in November of 2015. Reinforcement consists of flat plate reinforcement between the elevations of .5' and 60.583'.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 97 mph with no ice, 50 mph with 1 inch ice thickness and 60 mph under service loads, exposure category C.

Table 1 - Proposed Antenna and Cable Information

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|----------------------|------------------------------|----------------------|---------------------|------|
| 105.0 | 105.0 | 3 | cci antennas | HPA-45R-BUU-H6 w/ Mount Pipe | - | - | - |
| | | 3 | ericsson | RRUS 4478 B14 | | | |
| | | 1 | sitepro1 | F3P-12W | | | |

Table 2 - Existing and Reserved Antenna and Cable Information

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|----------------------|------------------------------|----------------------|-------------------------|------|
| 133.0 | 139.0 | 2 | andrew | VHLP2.5-11 | 6 2 2 | 5/16 1/2 conduits | 1 |
| | 135.0 | 3 | argus technologies | LLPX310R-V1 w/ Mount Pipe | | | |
| | | 1 | motorola | TIMING 2000 | | | |
| | 133.0 | 2 | dragonwave | HORIZON COMPACT | | | |
| | | | 3 | samsung telecommunications | | | |
| | | 1 | tower mounts | Platform Mount [LP 712-1] | | | |
| 124.0 | 124.0 | 3 | alcatel lucent | TD-RRH8x20-25 | 4 | 1-1/4 | 1 |
| | | 3 | rfs celwave | APXVSP18-C-A20 w/ Mount Pipe | | | |
| | | 3 | rfs celwave | APXVTM14-C-120 w/ Mount Pipe | | | |
| | | 3 | rfs celwave | IBC1900BB-1 | | | |
| | | 3 | rfs celwave | IBC1900HG-2A | | | |
| | | 1 | tower mounts | Platform Mount [LP 712-1] | | | |
| 122.0 | 122.0 | 3 | alcatel lucent | PCS 1900MHz 4x45W-65MHz | - | - | 1 |
| | | 1 | tower mounts | Pipe Mount [PM 601-3] | | | |
| | 118.0 | 3 | alcatel lucent | 800MHz 2X50W RRH W/FILTER | | | |

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|----------------------------|---------------------------------------|----------------------|---------------------------------|------|
| 114.0 | 116.0 | 1 | lucent | KS24019-L112A | - | - | 1 |
| | 115.0 | 6 | andrew | SBNHH-1D65B w/ Mount Pipe | 1 | 1-5/8 | 2 |
| | | 3 | antel | BXA-80063/4CFX5 w/ Mount Pipe | | | |
| | | 1 | rfs celwave | DB-T1-6Z-8AB-0Z | | | |
| | | 3 | samsung telecommunications | RFV01U-D1A | | | |
| | | 3 | samsung telecommunications | RFV01U-D2A | | | |
| | | 3 | antel | BXA-80063/4CFx5 w/ Mount Pipe | 1 7 | 1/2 1-5/8 | 1 |
| | | 1 | rfs celwave | DB-T1-6Z-8AB-0Z | | | |
| 114.0 | 1 | tower mounts | Platform Mount [LP 712-1] | | | | |
| 105.0 | 105.0 | 3 | cci antennas | OPA-65R-LCUU-H6 w/ Mount Pipe | 2 4 12 2 | 3/8 3/4 1-5/8 conduits | 1 |
| | | 3 | ericsson | RRUS 32 B30 | | | |
| | | 6 | ericsson | RRUS-11 | | | |
| | | 3 | kmw communications | AM-X-CD-16-65-00T-RET w/ Mount Pipe | | | |
| | | 3 | powerwave technologies | 7770.00 w/ Mount Pipe | | | |
| | | 6 | powerwave technologies | LGP2140X | | | |
| | | 2 | raycap | DC6-48-60-18-8F | | | |
| | 1 | tower mounts | Platform Mount [LP 712-1] | - | - | 3 | |
| 94.0 | 95.0 | 3 | ericsson | RADIO 4449 B12/B71 | 1 | 1-5/8 | 2 |
| | | 3 | rfs celwave | APXVAARR24_43-U-NA20 w/ Mount Pipe | | | |
| | | 3 | ericsson | AIR -32 B2A/B66AA w/ Mount Pipe | 1 11 | 1-1/4 1-5/8 | 1 |
| | | 3 | ericsson | ERICSSON AIR 21 B4A B2P w/ Mount Pipe | | | |
| | 94.0 | 3 | ericsson | KRY 112 144/1 | | | |
| | | 1 | tower mounts | Platform Mount [LP 712-1] | | | |
| 87.0 | 87.0 | 3 | kathrein | 742 213 w/ Mount Pipe | 6 | 1-5/8 | 1 |
| 77.0 | 77.0 | 1 | symmetricom | 58532A | 1 | 1/2 | 1 |
| | | 1 | tower mounts | Side Arm Mount [SO 701-1] | | | |

- Notes:
 1) Existing Equipment
 2) Reserved Equipment
 3) Equipment to be removed; Not considered in this analysis

Table 3 - Design Antenna and Cable Information

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) |
|---------------------|----------------------------|--------------------|----------------------|---------------|----------------------|---------------------|
| 145.0 | 150.0 | 6 | generic | WHIP 10' | - | - |
| | 147.0 | 12 | dapa | 58210 | | |
| 135.0 | 135.0 | 12 | dapa | 58210 | - | - |
| 125.0 | 125.0 | 12 | dapa | 58210 | - | - |
| 115.0 | 115.0 | 12 | dapa | 58210 | - | - |
| 105.0 | 105.0 | 12 | dapa | 58210 | - | - |
| 95.0 | 95.0 | 12 | dapa | 58210 | - | - |

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

| Document | Remarks | Reference | Source |
|--|----------------------------------|-----------|----------|
| 4-GEOTECHNICAL REPORTS | Dr. Clarence Welti, P.E., P.C. | 1425352 | CCISITES |
| 4-POST-MODIFICATION INSPECTION | Engineered Tower Solutions, PLLC | 6120832 | CCISITES |
| 4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS | Summiit Manufacturing, LLC | 1425473 | CCISITES |
| 4-TOWER MANUFACTURER DRAWINGS | Summiit Manufacturing, LLC | 1425417 | CCISITES |
| 4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA | Paul J. Ford & Company | 5976614 | CCISITES |

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

| Elevation (ft) | Component Type | Size | Critical Element | % Capacity | Pass / Fail |
|----------------|----------------|------------------------|----------------------|------------|-------------|
| 145 - 140 | Pole | TP24.923x24x0.1875 | Pole | 0.2% | Pass |
| 140 - 135 | Pole | TP25.847x24.923x0.1875 | Pole | 1.3% | Pass |
| 135 - 130 | Pole | TP26.77x25.847x0.1875 | Pole | 4.7% | Pass |
| 130 - 125 | Pole | TP27.709x26.77x0.25 | Pole | 5.8% | Pass |
| 125 - 120 | Pole | TP28.648x27.709x0.25 | Pole | 10.5% | Pass |
| 120 - 115 | Pole | TP29.588x28.648x0.25 | Pole | 15.4% | Pass |
| 115 - 110 | Pole | TP30.527x29.588x0.25 | Pole | 22.6% | Pass |
| 110 - 105 | Pole | TP31.466x30.527x0.25 | Pole | 29.3% | Pass |
| 105 - 100 | Pole | TP32.405x31.466x0.25 | Pole | 39.4% | Pass |
| 100 - 95 | Pole | TP33.345x32.405x0.25 | Pole | 48.5% | Pass |
| 95 - 90 | Pole | TP34.284x33.345x0.25 | Pole | 59.1% | Pass |
| 90 - 89.25 | Pole | TP35.27x34.284x0.25 | Pole | 60.6% | Pass |
| 89.25 - 84.25 | Pole | TP34.851x33.925x0.3125 | Pole | 53.8% | Pass |
| 84.25 - 79.25 | Pole | TP35.777x34.851x0.3125 | Pole | 60.7% | Pass |
| 79.25 - 74.25 | Pole | TP36.703x35.777x0.3125 | Pole | 67.1% | Pass |
| 74.25 - 69.25 | Pole | TP37.629x36.703x0.3125 | Pole | 73.1% | Pass |
| 69.25 - 64.25 | Pole | TP38.555x37.629x0.3125 | Pole | 78.6% | Pass |
| 64.25 - 59.25 | Pole | TP39.482x38.555x0.3125 | Pole | 83.8% | Pass |
| 59.25 - 58.08 | Pole | TP39.698x39.482x0.3125 | Pole | 85.0% | Pass |
| 58.08 - 57.83 | Pole | TP39.744x39.698x0.3125 | Pole | 85.2% | Pass |
| 57.83 - 52.83 | Pole | TP40.67x39.744x0.3125 | Pole | 90.1% | Pass |
| 52.83 - 49.5 | Pole | TP42.26x40.67x0.3125 | Pole | 93.3% | Pass |
| 49.5 - 43.25 | Pole | TP41.82x40.663x0.375 | Pole | 80.1% | Pass |
| 43.25 - 38.25 | Pole | TP42.746x41.82x0.375 | Pole | 83.4% | Pass |
| 38.25 - 35.5 | Pole | TP43.255x42.746x0.375 | Pole | 85.2% | Pass |
| 35.5 - 35.25 | Pole + Reinf. | TP43.302x43.255x0.5375 | Reinf. 1 Compression | 74.6% | Pass |
| 35.25 - 30.25 | Pole + Reinf. | TP44.228x43.302x0.5375 | Reinf. 1 Compression | 77.6% | Pass |
| 30.25 - 25.25 | Pole + Reinf. | TP45.154x44.228x0.5375 | Reinf. 1 Compression | 80.4% | Pass |
| 25.25 - 20.25 | Pole + Reinf. | TP46.08x45.154x0.525 | Reinf. 1 Compression | 83.1% | Pass |
| 20.25 - 15.25 | Pole + Reinf. | TP47.006x46.08x0.525 | Reinf. 1 Compression | 85.7% | Pass |
| 15.25 - 10.25 | Pole + Reinf. | TP47.932x47.006x0.525 | Reinf. 1 Compression | 88.3% | Pass |
| 10.25 - 5.25 | Pole + Reinf. | TP48.858x47.932x0.5188 | Reinf. 1 Compression | 90.7% | Pass |
| 5.25 - 0.25 | Pole + Reinf. | TP49.784x48.858x0.5125 | Reinf. 1 Compression | 93.0% | Pass |
| 0.25 - 0 | Pole + Reinf. | TP49.83x49.784x0.5125 | Reinf. 1 Compression | 93.1% | Pass |
| | | | | Summary | |

| | | | | | |
|--|--|--|---------------|-------|------|
| | | | Pole | 93.3% | Pass |
| | | | Reinforcement | 93.1% | Pass |
| | | | Overall | 93.3% | Pass |

Table 6 - Tower Component Stresses vs. Capacity – LC7

| Notes | Component | Elevation (ft) | % Capacity | Pass / Fail |
|-------|----------------------------------|----------------|------------|-------------|
| 1 | Flange Bolts | 130 | 7.0 | Pass |
| 1 | Flange Plate | | 2.1 | Pass |
| 1 | Anchor Rods | 0 | 90.5 | Pass |
| 1 | Base Plate | 0 | 84.4 | Pass |
| 1 | Base Foundation | 0 | 68.5 | Pass |
| 1 | Base Foundation Soil Interaction | 0 | 66.0 | Pass |

| | |
|---|--------------|
| Structure Rating (max from all components) = | 93.3% |
|---|--------------|

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1108

FA#: 10042331

Newington South
123 Costello Road
Newington, CT 06111

September 19, 2018

Centerline Communications Project Number: 950006-138

| Site Compliance Summary | |
|---|------------------|
| Compliance Status: | COMPLIANT |
| Site total MPE% of FCC general population allowable limit: | 25.34 % |



September 19, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT1108 – Newington South**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **123 Costello Road, Newington, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general population 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 population 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **123 Costello Road, Newington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

| Technology | Frequency Band | Channel Count | Transmit Power per Channel (W) |
|------------|-------------------|---------------|--------------------------------|
| UMTS | Frequency Band | 2 | 30 |
| UMTS | Frequency Band | 2 | 30 |
| LTE | 850 MHz | 2 | 40 |
| LTE | 700 MHz | 4 | 40 |
| LTE | 2300 MHz (WCS) | 4 | 30 |
| LTE | 700 MHz (Band 14) | 2 | 40 |
| LTE | 1900 MHz (PCS) | 4 | 40 |

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. 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.

| Sector | Antenna Number | Antenna Make / Model | Antenna Centerline (ft) |
|--------|----------------|----------------------|-------------------------|
| A | 1 | Kathrein 7770 | 105 |
| A | 2 | CCI OPA-65R-LCUU-H6 | 105 |
| A | 3 | CCI OPA-65R-LCUU-H6 | 105 |
| A | 4 | CCI OPA-65R-LCUU-H6 | 105 |
| B | 1 | Kathrein 7770 | 105 |
| B | 2 | CCI OPA-65R-LCUU-H6 | 105 |
| B | 3 | CCI OPA-65R-LCUU-H6 | 105 |
| B | 4 | CCI OPA-65R-LCUU-H6 | 105 |
| C | 1 | Kathrein 7770 | 105 |
| C | 2 | CCI OPA-65R-LCUU-H6 | 105 |
| C | 3 | CCI OPA-65R-LCUU-H6 | 105 |
| C | 4 | CCI OPA-65R-LCUU-H6 | 105 |

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

| Antenna ID | Antenna Make / Model | Frequency Bands | Antenna Gain (dBd) | Channel Count | Total TX Power (W) | ERP (W) | MPE % |
|-------------------------|------------------------|--|--------------------------|---------------|--------------------|----------|-------------|
| Antenna A1 | Kathrein 7770 | 850 MHz / 1900 MHz (PCS) | 11.4 / 13.4 | 4 | 120 | 2,140.89 | 1.02 |
| Antenna A2 | CCI OPA-65R-LCUU-H6 | 850 MHz / 700 MHz / 2300 MHz (WCS) | 12.45 / 11.65 / 15.45 | 8 | 280 | 6,785.10 | 3.37 |
| Antenna A3 | CCI OPA-65R-LCUU-H6 | 700 MHz (Band 14) | 11.65 | 2 | 80 | 1,169.74 | 0.92 |
| Antenna A4 | CCI OPA-65R-LCUU-H6 | 700 MHz / 1900 MHz (PCS) | 11.65 / 14.85 | 6 | 240 | 6,057.62 | 2.71 |
| Sector A Composite MPE% | | | | | | | 8.02 |
| Antenna B1 | Kathrein 7770 | 850 MHz / 1900 MHz (PCS) | 11.4 / 13.4 | 4 | 120 | 2,140.89 | 1.02 |
| Antenna B2 | CCI OPA-65R-LCUU-H6 | 850 MHz / 700 MHz / 2300 MHz (WCS) | 12.45 / 11.65 / 15.45 | 8 | 280 | 6,785.10 | 3.37 |
| Antenna B3 | CCI OPA-65R-LCUU-H6 | 700 MHz (Band 14) | 11.65 | 2 | 80 | 1,169.74 | 0.92 |
| Antenna B4 | CCI OPA-65R-LCUU-H6 | 700 MHz / 1900 MHz (PCS) | 11.65 / 14.85 | 6 | 240 | 6,057.62 | 2.71 |
| Sector B Composite MPE% | | | | | | | 8.02 |
| Antenna C1 | Kathrein 7770 | 850 MHz / 1900 MHz (PCS) | 11.4 / 13.4 | 4 | 120 | 2,140.89 | 1.02 |
| Antenna C2 | CCI OPA-65R-LCUU-H6 | 850 MHz / 700 MHz / 2300 MHz (WCS) | 12.45 / 11.65 / 15.45 | 8 | 280 | 6,785.10 | 3.37 |
| Antenna C3 | CCI OPA-65R-LCUU-H6 | 700 MHz (Band 14) | 11.65 | 2 | 80 | 1,169.74 | 0.92 |
| Antenna C4 | CCI OPA-65R-LCUU-H6 | 700 MHz / 1900 MHz (PCS) | 11.65 / 14.85 | 6 | 240 | 6,057.62 | 2.71 |
| Sector C Composite MPE% | | | | | | | 8.02 |

Table 3: AT&T Emissions Levels



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

| Site Composite MPE% | |
|-----------------------------|----------------|
| Carrier | MPE% |
| AT&T – Max Per Sector Value | 8.02 % |
| Verizon Wireless | 6.61 % |
| MetroPCS | 1.85 % |
| Clearwire | 0.12 % |
| Sprint | 0.14 % |
| Nextel | 0.34 % |
| T-Mobile | 8.26 % |
| Site Total MPE %: | 25.34 % |

Table 4: All Carrier MPE Contributions

| | |
|----------------------|---------|
| AT&T Sector A Total: | 8.02 % |
| AT&T Sector B Total: | 8.02 % |
| AT&T Sector C Total: | 8.02 % |
| | |
| Site Total: | 25.34 % |

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

| AT&T _ Frequency Band / Technology Max Power Values (Per Sector) | # Channels | Watts ERP (Per Channel) | Height (feet) | Total Power Density ($\mu\text{W}/\text{cm}^2$) | Frequency (MHz) | Allowable MPE ($\mu\text{W}/\text{cm}^2$) | Calculated % MPE |
|--|---------------|----------------------------|------------------|---|--------------------|---|---------------------|
| AT&T 850 MHz UMTS – Antenna 1 | 2 | 414.12 | 105 | 3.04 | 850 MHz | 567 | 0.54% |
| AT&T 1900 MHz (PCS) UMTS – Antenna 1 | 2 | 656.33 | 105 | 4.81 | 1900 MHz (PCS) | 1000 | 0.48% |
| AT&T 850 MHz LTE – Antenna 2 | 2 | 703.17 | 105 | 5.16 | 850 MHz | 567 | 0.91% |
| AT&T 700 MHz LTE – Antenna 2 | 2 | 584.87 | 105 | 4.29 | 700 MHz | 467 | 0.92% |
| AT&T 2300 MHz (WCS) LTE – Antenna 2 | 4 | 1,052.26 | 105 | 15.44 | 2300 MHz (WCS) | 1000 | 1.54% |
| AT&T 700 MHz LTE (Band 14) – Antenna 3 | 2 | 584.87 | 105 | 4.29 | 700 MHz | 467 | 0.92% |
| AT&T 700 MHz LTE – Antenna 3 | 2 | 584.87 | 105 | 4.29 | 700 MHz | 467 | 0.92% |
| AT&T 1900 MHz (PCS) LTE – Antenna 4 | 4 | 1,221.97 | 105 | 17.93 | 1900 MHz (PCS) | 1000 | 1.79% |
| | | | | | | Total: | 8.02% |

Table 6: AT&T Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

| AT&T Sector | Power Density Value (%) |
|-------------------------------------|-------------------------|
| Sector A: | 8.02 % |
| Sector B: | 8.02 % |
| Sector C: | 8.02 % |
| AT&T Maximum Total (per sector): | 8.02 % |
| | |
| Site Total: | 25.34 % |
| | |
| Site Compliance Status: | COMPLIANT |

The anticipated composite MPE value for this site assuming all carriers present is **25.34 %** of the allowable FCC established general population 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.

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is written over a horizontal line.

Scott Heffernan
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