STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

January 3, 2023

Domenica Tatasciore
Site Acquisition Specialist
Crown Castle
1800 W. Park Drive
Westborough, MA 01581
Domenica.Tatasciore@crowncastle.com

RE: **EM-AT&T-166-221109 –** AT&T notice of intent to modify an existing telecommunications facility located at 347 East Street, Wolcott, Connecticut.

Dear Domenica Tatasciore:

The Connecticut Siting Council (Council) is in receipt of your correspondence of January 3, 2023 submitted in response to the Council's November 15, 2022 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie Bachman
Executive Director

MB/AM/laf

laf

From: Tatasciore, Domenica <Domenica.Tatasciore@crowncastle.com>
Sent: Tuesday, January 3, 2023 9:14 AM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>; Chapman, Veronica <Veronica.Chapman@crowncastle.com>
Subject: RE: Council Incomplete Letter for EM-AT&T-166-221109 (347 East Street, Wolcott)

Good morning and Happy New Year,

With reference to the documents cited in the Council's Incomplete Letter, dated November 15, 2022, please find attached the following revised documents that the letter asked me to send electronically prior to the January 9 deadline:

1. Construction Drawings;
2. Mount Analysis;
3. EME.

Please advise if you have any questions.

Take care,

DOMENICA TATASCIORE
Site Acquisition Specialist
T: 508-621-9161

CROWN CASTLE
1800 West Park Drive, Westborough, MA 01581
CrownCastle.com

laf

AT&T

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!

AT&T SITE NUMBER: CTL01060
AT&T SITE NAME: WOLCOTT-EAST ST
AT&T FA CODE: 10035040
AT&T PACE NUMBER: MRCTB056377, MRCTB053929, MRCTB053828, MRCTB056180
AT&T PROJECT: 5G NR RADIO || 5G NR 1SR CBAND, 5G NR SOFTWARE RADIO || 5G NR ACTIVATION

BUSINESS UNIT #: 806362
SITE ADDRESS: 347 EAST ST. WOLCOTT, CT 06716
COUNTY: NEW HAVEN
STRUCTURE TYPE: SELF SUPPORT
TOWER HEIGHT: 185'-0"

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	NHV 108 943133
SITE ADDRESS:	347 EAST ST. WOLCOTT, CT 06716
COUNTY:	NEW HAVEN
PARCEL #:	131-1-19
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41° 33' 34.41" (41.559556)
LONGITUDE:	-72° 56' 49.10" (-72.946972)
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	671' (AMSL)
CURRENT ZONING:	R-30
JURISDICTION:	TOWN OF WOLCOTT
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	RODRIGUES AGOSTINHO V & JOANNE 347 EAST ST WOLCOTT, CT 06716
TOWER OWNER:	CROWN CASTLE USA INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	AT&T MOBILITY 700 BELL STREET AKRON, OHIO 44307
ELECTRIC PROVIDER:	EVERSOURCE ENERGY (800) 286-2000
TELCO PROVIDER:	LIGHTOWER (855) 933-4237

DRAWING INDEX

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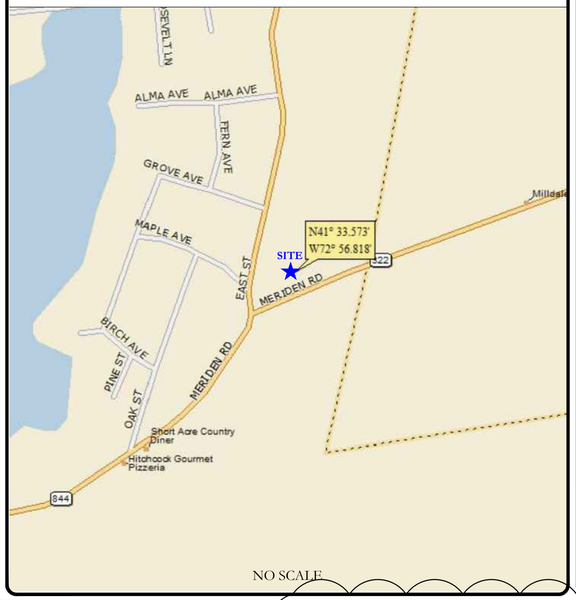
C-1.1	COMPOUND PLAN
C-1.2	EQUIPMENT LAYOUT
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	EQUIPMENT DETAILS
C-4	EQUIPMENT DETAILS
C-5	COLOR CODE CHART
C-6	LTE RET NAMING CONVENTION
E-1	ELECTRICAL NOTES
E-2	EQUIPMENT ONE-LINE DIAGRAM
G-1	GROUNDING SCHEMATIC
G-2	GROUNDING DETAILS
ATTACHED	PLUMBING DIAGRAMS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22x34. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

LOCATION MAP



NO SCALE

SITE PHOTO

PROJECT TEAM

A&E FIRM:	TOWER ENGINEERING PROFESSIONALS 326 TRYON ROAD RALEIGH, NC 27603
	JOSEPH T. CRESS - PROJECT MANAGER (919) 661-6351
	SCOTT C. BRANTLEY - CIVIL ENGINEER (704) 975-3328
	SCOTT C. BRANTLEY - ELECTRICAL ENGINEER (704) 975-3328
CROWN CASTLE USA INC. DISTRICT CONTACTS:	12 GILL STREET, SUITE 5800 WOBURN, MA 01801
	PAUL PEDICONE - PROJECT MANAGER PAUL.PEDICONE@CROWNCASTLE.COM

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (3) 7770 ANTENNAS
- REMOVE (2) QS66512-2 ANTENNAS
- REMOVE (1) TPA-65R-LCUUUU-H8 ANTENNA
- REMOVE (2) OPA65R-BU6DA-K ANTENNAS
- REMOVE (1) OPA65R-BU8DA-K ANTENNA
- REMOVE (1) DC6-48-60-18-8F
- REMOVE (3) DTMABP7819VG12A TMAS
- REMOVE (6) CM1007-DBPXBC-003 DIPLEXERS
- REMOVE (6) DBC0061F1V51-2 DIPLEXERS
- REMOVE (6) LDF6-50A COAX CABLES
- INSTALL (3) AIR6449 B77D ANTENNAS
- INSTALL (3) AIR6419 B77G ANTENNAS
- INSTALL (2) QD6616-7 ANTENNAS
- INSTALL (1) QD8616-7 ANTENNAS
- INSTALL (6) APTDC-BDFDM-DB SURGE ARRESTORS TO PORTS OF EXISTING RRUS E2 B29S
- INSTALL (1) DC9-48-60-24-8C-EV
- INSTALL (1) PWRT-606-S (6AWG)
- INSTALL (1) FB-L98B-235 (24-PAIR)
- INSTALL (3) Y-CABLES TO EXISTING DUAL-BAND RRUS

GROUND SCOPE OF WORK:
- INSTALL (4) RECTIFIERS IN EMERSON SHELF
- INSTALL 6648(+XCEDE)
- INSTALL GPS SPLITTER FOR BBU CONFIGURATION

2 APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2022 CONNECTICUT BUILDING CODE/2021 IBC
MECHANICAL	2022 CONNECTICUT BUILDING CODE/2021 IMC
ELECTRICAL	2022 CONNECTICUT BUILDING CODE/2020 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	TOWER ENGINEERING PROFESSIONALS
DATED:	09/30/2022
MOUNT ANALYSIS:	B+T GROUP
DATED:	12/19/2022
RFDS REVISION:	3.00
DATED:	08/11/2022
ORDER ID:	632627
REVISION:	0

NOTE:
THE POWER DESIGN FOR ANY AC ELECTRICAL POWER CHANGES IS TO BE PERFORMED BY OTHERS AND IS SHOWN HEREIN FOR REFERENCE PURPOSES ONLY. AT&T IS SOLELY RESPONSIBLE FOR THE ELECTRICAL POWER DESIGN.

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH
2	12/27/22	RST	CONSTRUCTION	DA

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
35536
LICENSED
PROFESSIONAL ENGINEER

12/27/22

SHEET NUMBER: T-1
REVISION: 2

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
   THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR 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.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. 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 CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR 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 AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. 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, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. 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 AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR 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.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. 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.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: AT&T
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR 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.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR 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.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. 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.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER........40 ksi
   #5 BARS AND LARGER........60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH........3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 BARS AND LARGER........2"
   #5 BARS AND SMALLER........1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
   SLAB AND WALLS........3/4"
   BEAMS AND COLUMNS........1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. 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.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. 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.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING 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 CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. 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 BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "AT&T".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

AT&T
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CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

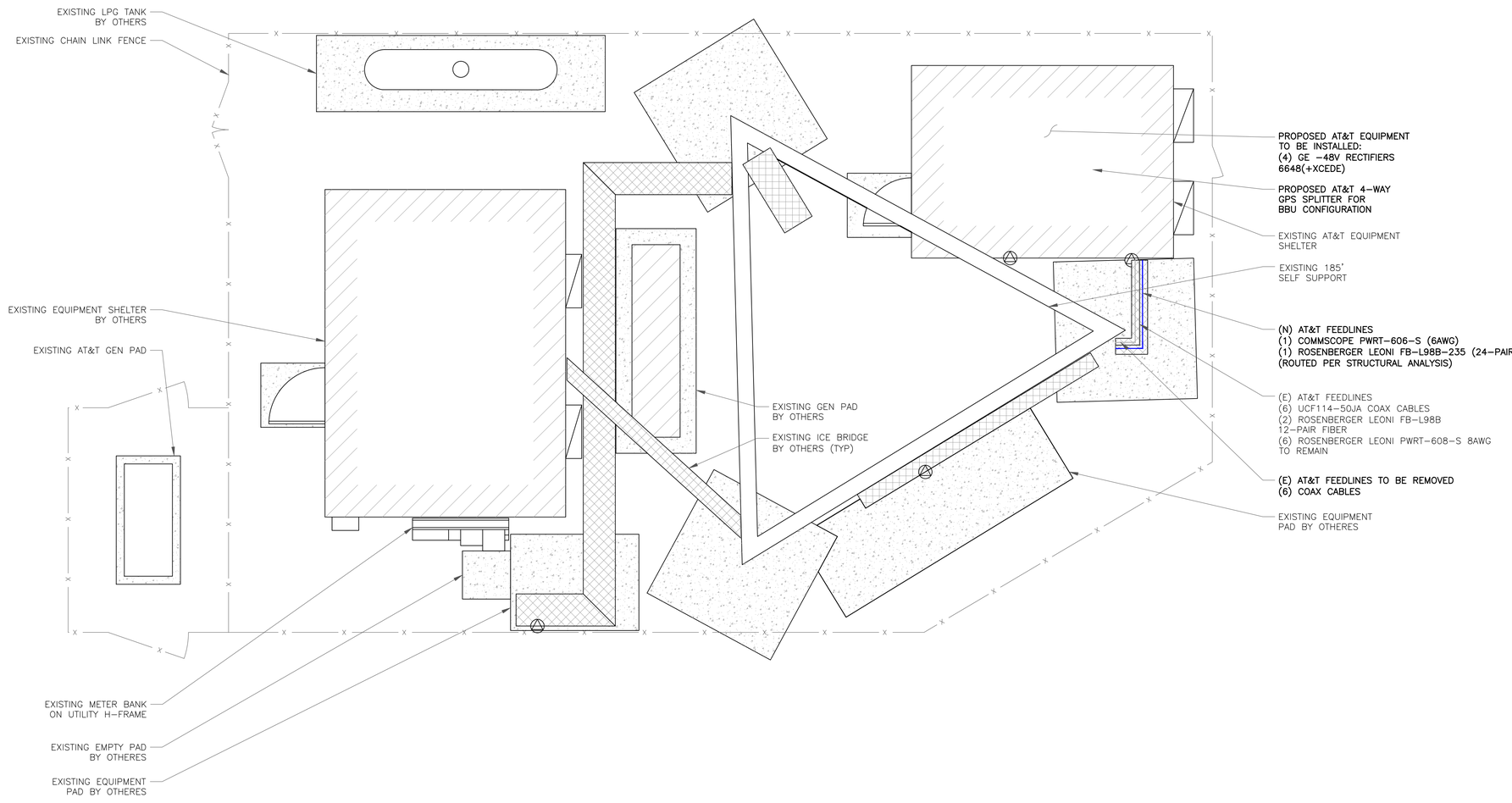
SHEET NUMBER: T-2
REVISION: 1

NOTE:

TEP DID NOT CONDUCT FIELD VISIT TO VERIFY LAYOUT. LAYOUT SHOWN BELOW GENERATED FROM INFORMATION PROVIDED BY CROWN CASTLE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

GROUND SCOPE OF WORK:

- INSTALL (4) RECTIFIERS IN EMERSON SHELF
- INSTALL 6648(+XCEDE)
- INSTALL GPS SPLITTER FOR BBU CONFIGURATION"



1 COMPOUND AREA

SCALE: 4' 3' 2' 1' 0 4' — 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

N

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STATE OF CONNECTICUT
SCOTT C. BRANT
35536
LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-1.1

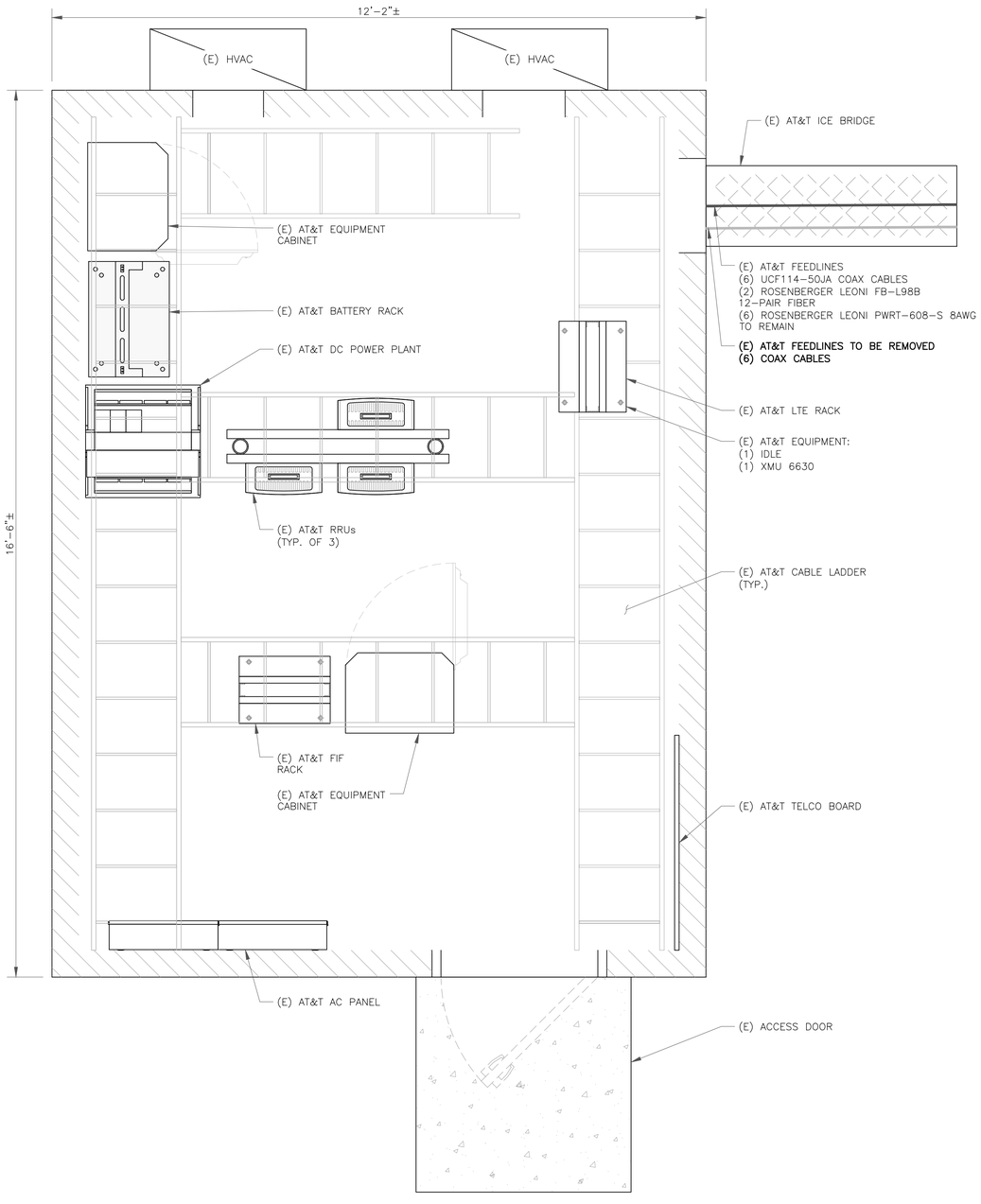
REVISION: 1

NOTE:

TEP DID NOT CONDUCT FIELD VISIT TO VERIFY LAYOUT. LAYOUT SHOWN BELOW GENERATED FROM INFORMATION PROVIDED BY CROWN CASTLE. FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

EXISTING BBU CONFIGURATION

- XMU/6630-6630(+IDLe)



1 EXISTING EQUIPMENT LAYOUT

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

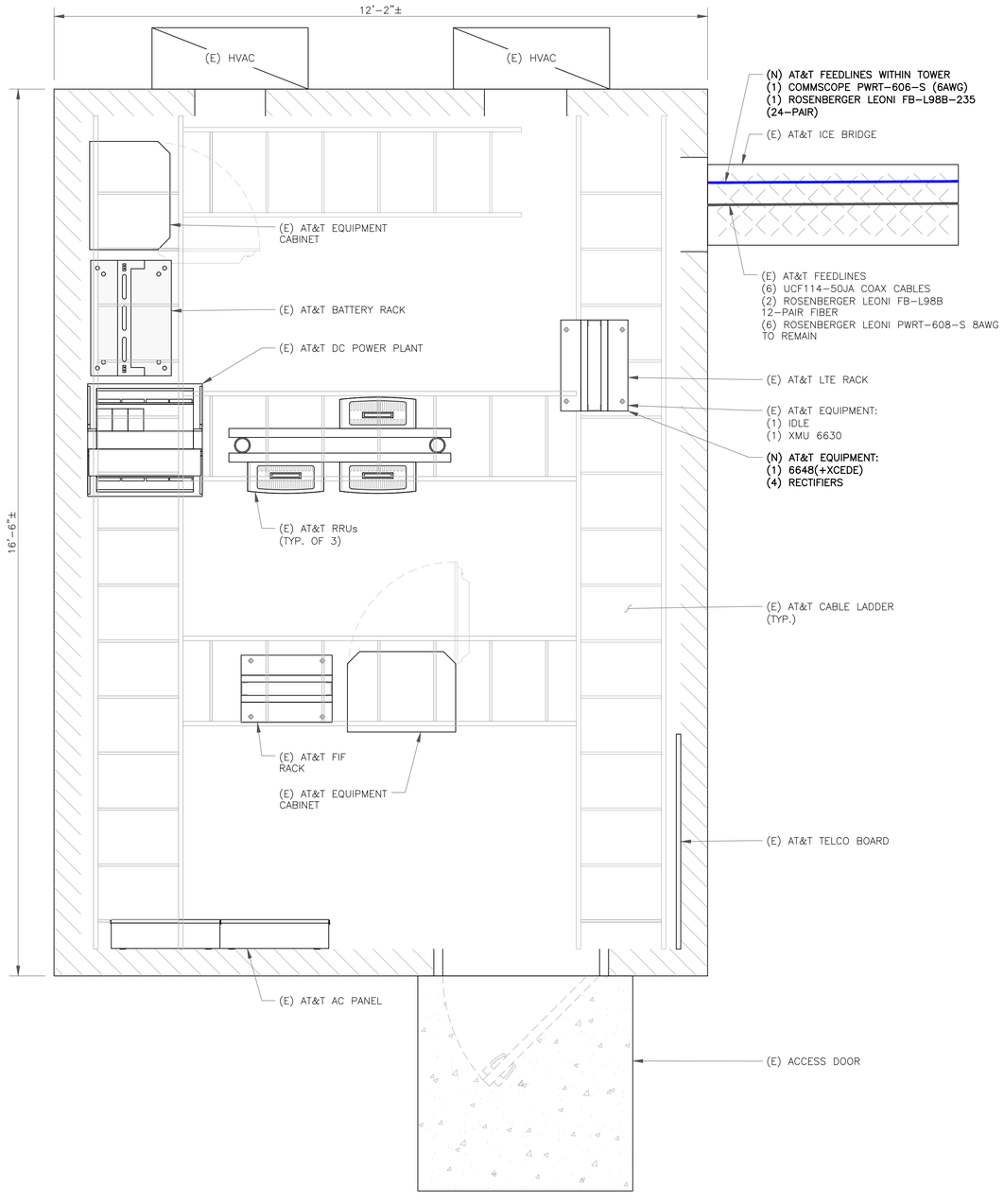
N

GROUND SCOPE OF WORK:

- REMOVE (12) 782 10250 DIPLEXERS
- INSTALL (4) RECTIFIERS IN EXISTING POWER PLANT
- INSTALL (1) 6648(+XCEDE)

FINAL BBU CONFIGURATION

- XMU/6630-6630(+IDLe)-6648(+Xcede)



2 FINAL EQUIPMENT LAYOUT

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N

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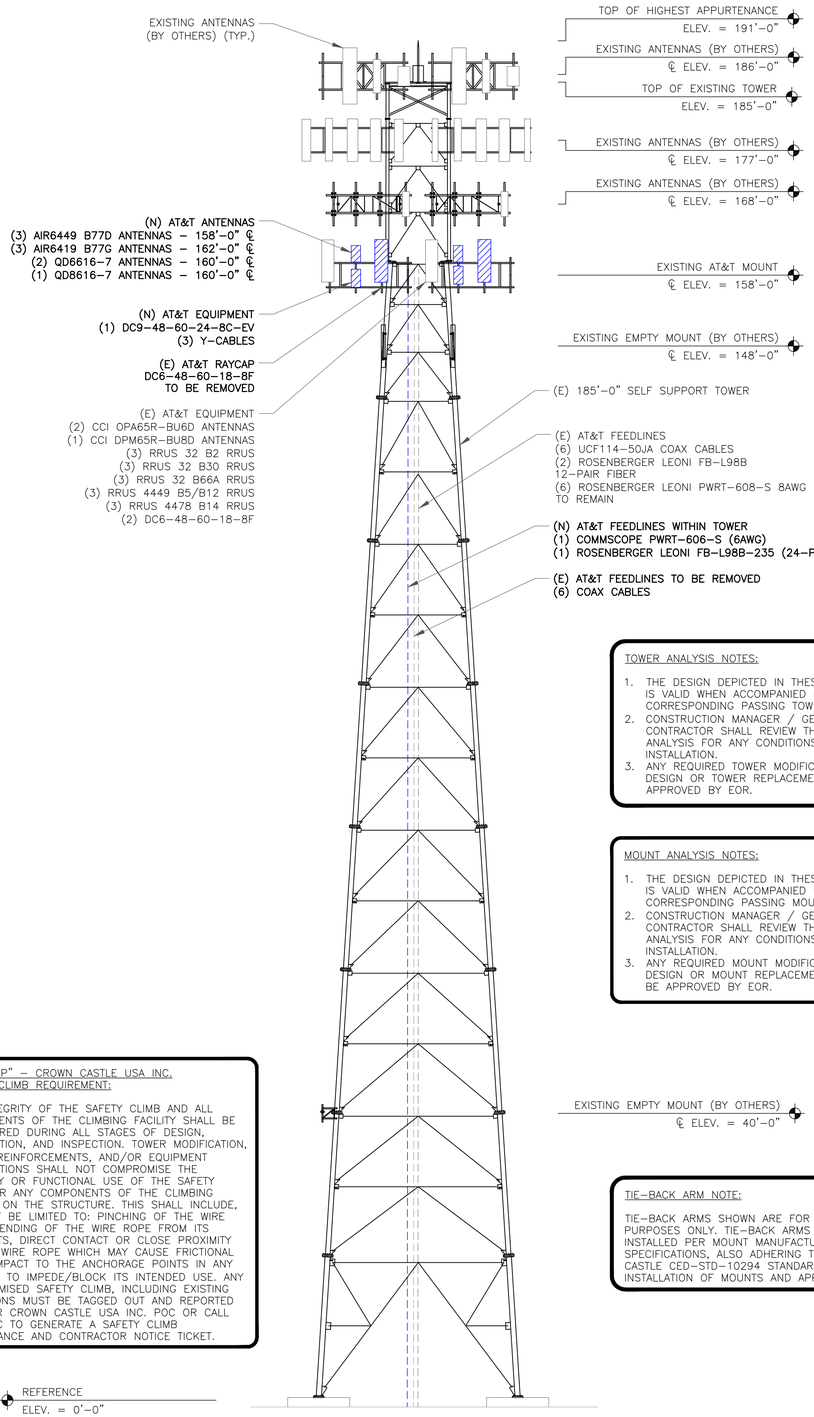
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT · SCOTT C. BRANT · 25536 · LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-1.2

REVISION: 1



1 FINAL ELEVATION
SCALE: 8' 4' 0 8' 3/32"=1'-0" (FULL SIZE) 3/64"=1'-0" (11x17)

"LOOK UP" – CROWN CASTLE USA INC.
SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

TOWER ANALYSIS NOTES:

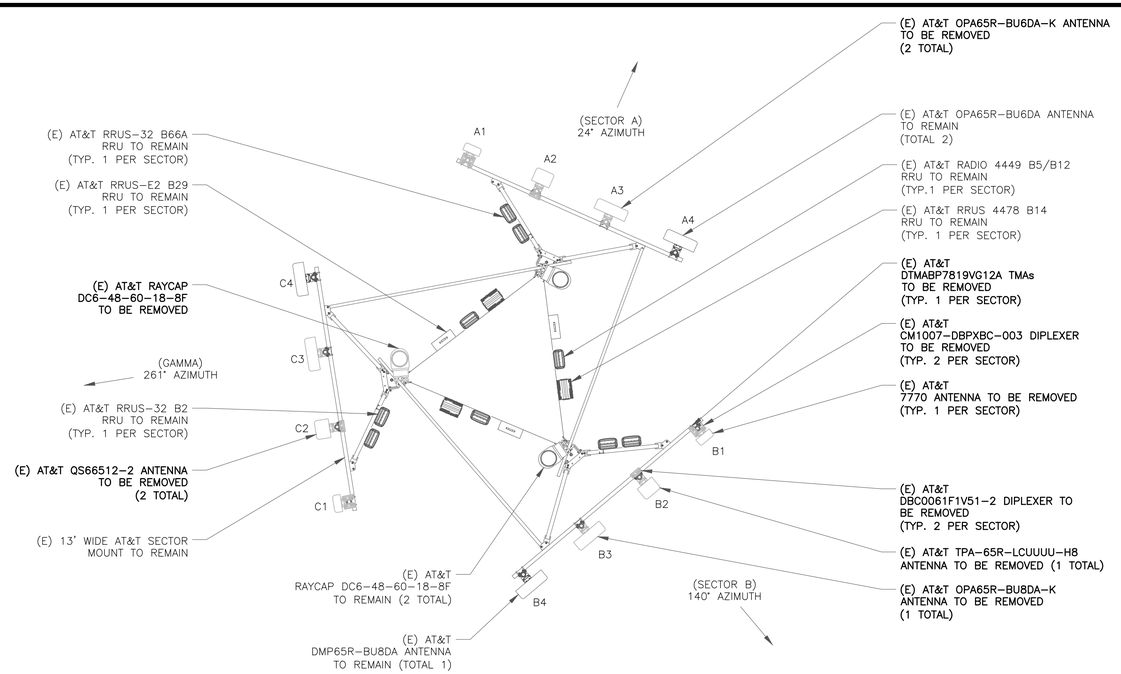
1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING TOWER ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE TOWER ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED TOWER MODIFICATION DESIGN OR TOWER REPLACEMENT SHALL BE APPROVED BY EOR.

MOUNT ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

TIE-BACK ARM NOTE:

TIE-BACK ARMS SHOWN ARE FOR REFERENCE PURPOSES ONLY. TIE-BACK ARMS TO BE INSTALLED PER MOUNT MANUFACTURERS SPECIFICATIONS, ALSO ADHERING TO CROWN CASTLE CED-STD-10294 STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES.

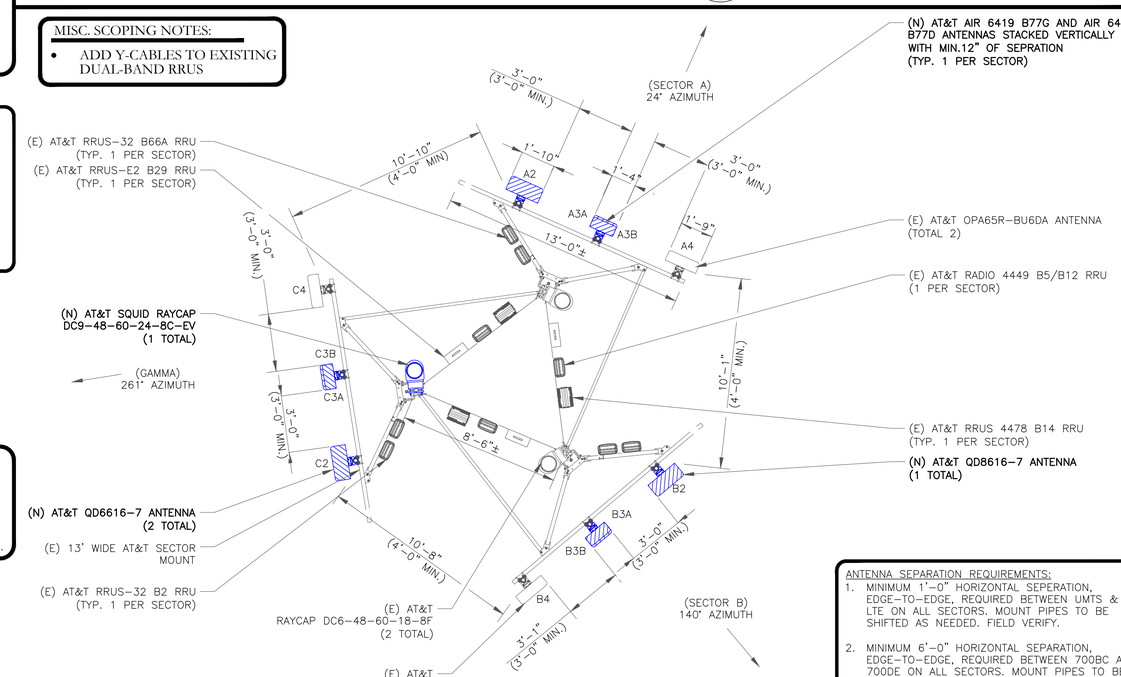


2 EXISTING ANTENNA PLAN
SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

N

MISC. SCOPING NOTES:

- ADD Y-CABLES TO EXISTING DUAL-BAND RRUS



3 FINAL ANTENNA PLAN
SCALE: 4' 3' 2' 1' 0 4' 1/4"=1'-0" (FULL SIZE) 1/8"=1'-0" (11x17)

N

ANTENNA SEPARATION REQUIREMENTS:

1. MINIMUM 1'-0" HORIZONTAL SEPERATION, EDGE-TO-EDGE, REQUIRED BETWEEN UMTS & LTE ON ALL SECTORS. MOUNT PIPES TO BE SHIFTED AS NEEDED. FIELD VERIFY.
2. MINIMUM 6'-0" HORIZONTAL SEPARATION, EDGE-TO-EDGE, REQUIRED BETWEEN 700BC AND 700DE ON ALL SECTORS. MOUNT PIPES TO BE SHIFTED AS NEEDED. FIELD VERIFY.

INSTALLER NOTES:

1. REFERENCE C-3 FOR FINAL EQUIPMENT SCHEDULE.
2. REFERENCE C-4 FOR NEW EQUIPMENT SPECIFICATIONS.
3. CONTRACTOR TO VERIFY FILTER LOCATION PRIOR TO INSTALLATION, WHEN APPLICABLE.

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NHV 108 943133

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STATE OF CONNECTICUT
SCOTT C. BRAINERD
LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-2

REVISION: 1

EXISTING ANTENNA SCHEDULE (RFDS 08/11/2022, VERSION 3.00)

SECTOR	ANTENNA					TMA	RRH	RAYCAP	DIPLEXER	TRANSMISSION LINE		
	POS.	TECHNOLOGY	AZIMUTH	MODEL NO.	RAD CL.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.	DC POWER	FIBER	COAX
A	A1	UMTS 850	24°	*POWERWAVE 7770	160'-0"	*(1) DTMABP7819VG12A	–	–	*(2) CM1007-DBPXBC-003	(6) PWRT-608-S (8AWG)	(2) FB-L98B (12PAIR)	–
	A2	LTE 700 LTE 1900 LTE WCS	24°	*QUINTEL QS66512-2	160'-0"	–	(1) RRUS-E2 B29 (1) RRUS-32 B2 ***(1) RRUS-32 B30	–	*(2) DBC0061F1V51-2			*(2) UCF114-50JA (2) UCF114-50JA
	A3	LTE 700 LTE AWS	24°	*CCI OPA65R-BU6DA-K	160'-0"	–	***(1) RADIO 4478 B14 ***(1) RRUS-32 B66A	(1) RAYCAP DC6-48-60-18-8F	–			–
	A4	LTE 700 LTE 850, 5G 850	24°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12	–	–			–
B	B1	UMTS 850	140°	*POWERWAVE 7770	160'-0"	*(1) DTMABP7819VG12A	–	–	*(2) CM1007-DBPXBC-003			–
	B2	LTE 700 LTE 1900 LTE WCS	140°	*CCI TPA-65R-LCUUUU-H8	160'-0"	–	(1) RRUS-E2 B29 (1) RRUS-32 B2 ***(1) RRUS-32 B30	–	*(2) DBC0061F1V51-2			*(2) UCF114-50JA (2) UCF114-50JA
	B3	LTE 700 LTE AWS	140°	*CCI OPA65R-BU8DA-K	160'-0"	–	***(1) RADIO 4478 B14 ***(1) RRUS-32 B66A	*(1) RAYCAP DC6-48-60-18-8F	–			–
	B4	LTE 700 LTE 850, 5G 850	140°	CCI DMP65R-BU8DA	160'-0"	–	(1) RADIO 4449 B5/B12	–	–			–
C	C1	UMTS 850	261°	*POWERWAVE 7770	160'-0"	*(1) DTMABP7819VG12A	–	–	*(2) CM1007-DBPXBC-003			–
	C2	LTE 700 LTE 1900 LTE WCS	261°	*QUINTEL QS66512-2	160'-0"	–	(1) RRUS-E2 B29 (1) RRUS-32 B2 ***(1) RRUS-32 B30	–	*(2) DBC0061F1V51-2			*(2) UCF114-50JA (2) UCF114-50JA
	C3	LTE 700 LTE AWS	261°	*CCI OPA65R-BU6DA-K	160'-0"	–	***(1) RADIO 4478 B14 ***(1) RRUS-32 B66A	(1) RAYCAP DC6-48-60-18-8F	–			–
	C4	LTE 700 LTE 850, 5G 850	261°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12	–	–			–

*ANTENNA/TOWER MOUNTED EQUIPMENT TO BE REMOVED
**COAX TO BE REMOVED
***TO BE RELOCATED

1 EXISTING EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

FINAL ANTENNA SCHEDULE (RFDS 08/11/2022, VERSION 3.00)

SECTOR	ANTENNA					TMA	RRH	RAYCAP	DIPLEXER	TRANSMISSION LINE			
	POS.	TECHNOLOGY	AZIMUTH	MODEL NO.	RAD CL.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.	DC POWER	FIBER	COAX	ADDITIONAL COMPONENT
A	A1	–	–	–	–	–	–	–	–	(6) PWRT-608-S (8AWG) (1) PWRT-606-S (6AWG)	(2) FB-L98B (12-PAIR) (1) FB-L98B-235 (24-PAIR)	–	–
	A2	**LTE 700, LTE AWS, LTE 1900, 5G 1900, 5G AWS**	**24°**	**QUINTEL QD6616-7**	**160'-0"**	–	(1) RADIO 4478 B14, (1) RRUS-32 B2, (1) RRUS-32 B66A, (1) RRUS-E2 B29	(1) RAYCAP DC6-48-60-18-8F	–			(2) UCF114-50JA	**(2) APTDC-BDFDM-DB SURGE ARRESTORS ON RRUS-E2 B29 RRUS**
	A3A	**5G DoD**	**24°**	**ERICSSON AIR6419 B77G**	**162'-0"**	–	–	–	–			–	–
	A3B	**5G CBAND**	**24°**	**ERICSSON AIR6449 B77D**	**158'-0"**	–	–	–	–			–	–
	A4	LTE 700, LTE WCS, 5G 850	24°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12 1) RRUS-32 B30	–	–			–	**(1) Y-CABLE ON RADIO 4449 B5/B12**
B	B1	–	–	–	–	–	–	–	–			–	–
	B2	**LTE 700, LTE AWS, LTE 1900, 5G 1900, 5G AWS**	**140°**	**QUINTEL QD6616-7**	**160'-0"**	–	(1) RADIO 4478 B14, (1) RRUS-32 B2, (1) RRUS-32 B66A, (1) RRUS-E2 B29	–	–			(2) UCF114-50JA	**(2) APTDC-BDFDM-DB SURGE ARRESTORS ON RRUS-E2 B29 RRUS**
	B3A	**5G DoD**	**140°**	**ERICSSON AIR6419 B77G**	**162'-0"**	–	–	(1) RAYCAP DC6-48-60-18-8F	–			–	–
	B3B	**5G CBAND**	**140°**	**ERICSSON AIR6449 B77D**	**158'-0"**	–	–	–	–			–	–
	B4	LTE 700, LTE WCS, 5G 850	140°	CCI DMP65R-BU8DA	160'-0"	–	(1) RADIO 4449 B5/B12 (1) RRUS-32 B30	–	–			–	**(1) Y-CABLE ON RADIO 4449 B5/B12**
C	C1	–	–	–	–	–	–	–	–			–	–
	C2	**LTE 700, LTE AWS, LTE 1900, 5G 1900, 5G AWS**	**261°**	**QUINTEL QD6616-7**	**160'-0"**	–	(1) RADIO 4478 B14, (1) RRUS-32 B2, (1) RRUS-32 B66A, (1) RRUS-E2 B29	–	–			(2) UCF114-50JA	**(2) APTDC-BDFDM-DB SURGE ARRESTORS ON RRUS-E2 B29 RRUS**
	C3A	**5G DoD**	**261°**	**ERICSSON AIR6419 B77G**	**162'-0"**	–	–	**(1) RAYCAP DC9-48-60-24-8C-EV**	–			–	–
	C3B	**5G CBAND**	**261°**	**ERICSSON AIR6449 B77D**	**158'-0"**	–	–	–	–			–	–
	C4	LTE 700, LTE WCS, 5G 850	261°	CCI OPA65R-BU6DA	160'-0"	–	(1) RADIO 4449 B5/B12 (1) RRUS-32 B30	–	–			–	**(1) Y-CABLE ON RADIO 4449 B5/B12**

NEW ANTENNA/TOWER MOUNTED EQUIPMENT IN BOLD.

2 FINAL EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

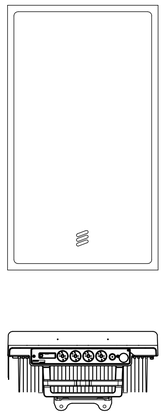
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
LICENSED
PROFESSIONAL ENGINEER

10/14/22

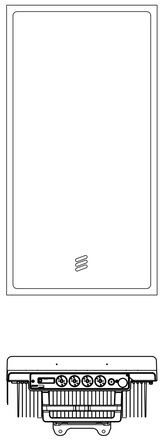
SHEET NUMBER: C-3

REVISION: 1



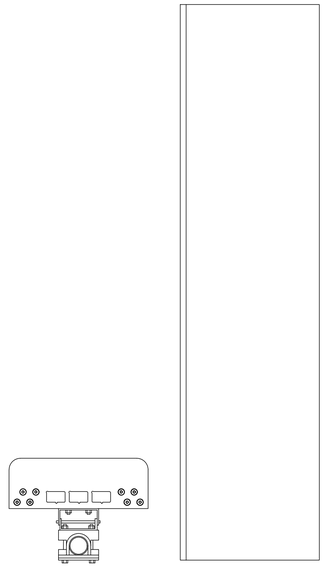
ERICSSON – AIR 6419 B77G
WEIGHT (WITHOUT MOUNTING HARDWARE): 66.20 LBS
SIZE (HxWxD): 27.95x15.75x6.68 IN.

1 ERICSSON – AIR 6419 B77G
SCALE: NOT TO SCALE



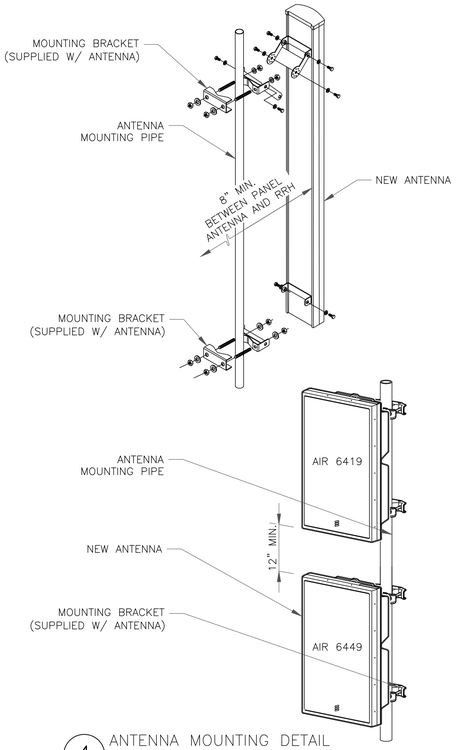
ERICSSON – AIR 6449 B77D
WEIGHT (WITHOUT MOUNTING HARDWARE): 81.60 LBS
SIZE (HxWxD): 30.39x15.87x8.07 IN.

2 ERICSSON – AIR 6449 B77D
SCALE: NOT TO SCALE

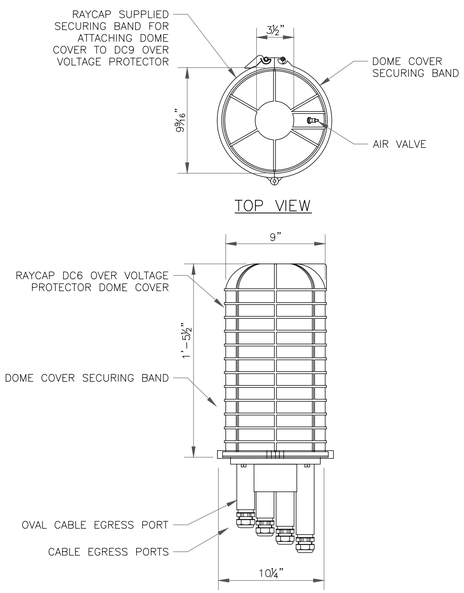


QUINTEL – QD6616-7
WEIGHT (WITHOUT MOUNTING HARDWARE): 81.60 LBS
SIZE (HxWxD): 72.0x22.0x9.60 IN.

3 QUINTEL – QD6616-7
SCALE: NOT TO SCALE

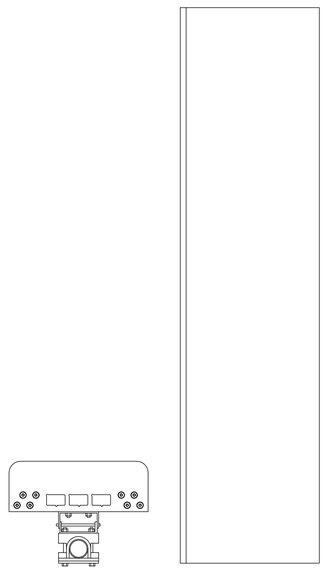


4 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE



5 RAYCAP–DC9–48–60–24–8C–EV
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE



QUINTEL – QD8616-7
WEIGHT (WITHOUT MOUNTING HARDWARE): 150.0 LBS
SIZE (HxWxD): 96.0x22.0x9.60 IN.

7 QUINTEL – QD8616-7
SCALE: NOT TO SCALE

8 NOT USED
SCALE: NOT TO SCALE

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AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
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RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

SHEET NUMBER: C-4

REVISION: 1

Table 1: E. PA/S. NJ/DE Coax Trunk/Jumper Color Code Definition		
Sector	Alpha	Green
	Beta	Blue
	Gamma	White
	Delta	Orange
	Epsilon	Brown
	Psi	Violet
Frequency Band	700 (B/C)	Violet
	850	Yellow
	850 - 2nd Block	Yellow
	1900	Red
	1900 - 2nd Block	Red
	2100 (AWS)	Orange
	2100 (AWS) - 2nd Block	Orange
	2300 (WCS)	Brown
	2300 (WCS) - 2nd Block	Brown
	700 (D/E)	Slate
	700 - FIRSTNET	Violet/ Blue

Table 2 E. PA/S. NJ/DE Coax Trunk/Jumper Color Code Standard

Sector	Technology	Frequency Band	Color Code - Additional Stripe for Sector Split	Color Code - Sector (Amount of Stripes based on Antenna Position)	BOTTOM- Code Code - Frequency Band (RRH JUMPERS ONLY)	45+ Coax	45- Coax	TOP- Low Port (ANTENNA JUMPERS ONLY)	TOP- High Port (ANTENNA JUMPERS ONLY)
A	LTE	700 B/C	Blank	GREEN	VIOLET	YELLOW	Blank	Blank	RED
A	LTE	850	Blank	GREEN	YELLOW	YELLOW	Blank	Blank	RED
A	LTE	850 - 2nd Block	Blank	GREEN	YELLOW	YELLOW	Blank	Blank	RED
A	LTE	1900	Blank	GREEN	RED	YELLOW	Blank	Blank	RED
A	LTE	1900 - 2nd Block	Blank	GREEN	RED	YELLOW	Blank	Blank	RED
A	LTE	2100	Blank	GREEN	ORANGE	YELLOW	Blank	Blank	RED
A	LTE	2100 - 2nd Block	Blank	GREEN	ORANGE	YELLOW	Blank	Blank	RED
A	LTE	700 D/E	Blank	GREEN	SLATE	YELLOW	Blank	Blank	RED
A	LTE	2300	Blank	GREEN	BROWN	YELLOW	Blank	Blank	RED
A	LTE	2300 - 2nd Block	Blank	GREEN	BROWN	YELLOW	Blank	Blank	RED
A	LTE FirstNet	700 - FirstNet	Blank	GREEN	VIOLET / BLUE	YELLOW	Blank	Blank	RED
A	UMTS	850	Blank	GREEN	YELLOW	YELLOW	Blank	Blank	RED
A	UMTS	1900	Blank	GREEN	RED	YELLOW	Blank	Blank	RED
B	LTE	700 B/C	Blank	BLUE	VIOLET	YELLOW	Blank	Blank	RED
B	LTE	850	Blank	BLUE	YELLOW	YELLOW	Blank	Blank	RED
B	LTE	850 - 2nd Block	Blank	BLUE	YELLOW	YELLOW	Blank	Blank	RED
B	LTE	1900	Blank	BLUE	RED	YELLOW	Blank	Blank	RED
B	LTE	1900 - 2nd Block	Blank	BLUE	RED	YELLOW	Blank	Blank	RED
B	LTE	2100	Blank	BLUE	ORANGE	YELLOW	Blank	Blank	RED
B	LTE	2100 - 2nd Block	Blank	BLUE	ORANGE	YELLOW	Blank	Blank	RED
B	LTE	700 D/E	Blank	BLUE	SLATE	YELLOW	Blank	Blank	RED
B	LTE	2300	Blank	BLUE	BROWN	YELLOW	Blank	Blank	RED
B	LTE	2300 - 2nd Block	Blank	BLUE	BROWN	YELLOW	Blank	Blank	RED
B	LTE FirstNet	700 - FirstNet	Blank	BLUE	VIOLET / BLUE	YELLOW	Blank	Blank	RED
B	UMTS	850	Blank	BLUE	YELLOW	YELLOW	Blank	Blank	RED
B	UMTS	1900	Blank	BLUE	RED	YELLOW	Blank	Blank	RED
C	LTE	700 B/C	Blank	WHITE	VIOLET	YELLOW	Blank	Blank	RED
C	LTE	850	Blank	WHITE	YELLOW	YELLOW	Blank	Blank	RED
C	LTE	850 - 2nd Block	Blank	WHITE	YELLOW	YELLOW	Blank	Blank	RED
C	LTE	1900	Blank	WHITE	RED	YELLOW	Blank	Blank	RED
C	LTE	1900 - 2nd Block	Blank	WHITE	RED	YELLOW	Blank	Blank	RED
C	LTE	2100	Blank	WHITE	ORANGE	YELLOW	Blank	Blank	RED
C	LTE	2100 - 2nd Block	Blank	WHITE	ORANGE	YELLOW	Blank	Blank	RED
C	LTE	700 D/E	Blank	WHITE	SLATE	YELLOW	Blank	Blank	RED
C	LTE	2300	Blank	WHITE	BROWN	YELLOW	Blank	Blank	RED
C	LTE	2300 - 2nd Block	Blank	WHITE	BROWN	YELLOW	Blank	Blank	RED
C	LTE FirstNet	700 - FirstNet	Blank	WHITE	VIOLET / BLUE	YELLOW	Blank	Blank	RED
C	UMTS	850	Blank	WHITE	YELLOW	YELLOW	Blank	Blank	RED
C	UMTS	1900	Blank	WHITE	RED	YELLOW	Blank	Blank	RED
D	LTE	700 B/C	Blank	ORANGE	VIOLET	YELLOW	Blank	Blank	RED
D	LTE	850	Blank	ORANGE	YELLOW	YELLOW	Blank	Blank	RED
D	LTE	850 - 2nd Block	Blank	ORANGE	YELLOW	YELLOW	Blank	Blank	RED
D	LTE	1900	Blank	ORANGE	RED	YELLOW	Blank	Blank	RED
D	LTE	1900 - 2nd Block	Blank	ORANGE	RED	YELLOW	Blank	Blank	RED
D	LTE	2100	Blank	ORANGE	ORANGE	YELLOW	Blank	Blank	RED
D	LTE	2100 - 2nd Block	Blank	ORANGE	ORANGE	YELLOW	Blank	Blank	RED
D	LTE	700 D/E	Blank	ORANGE	SLATE	YELLOW	Blank	Blank	RED
D	LTE	2300	Blank	ORANGE	BROWN	YELLOW	Blank	Blank	RED
D	LTE	2300 - 2nd Block	Blank	ORANGE	BROWN	YELLOW	Blank	Blank	RED
D	LTE FirstNet	700 - FirstNet	Blank	ORANGE	VIOLET / BLUE	YELLOW	Blank	Blank	RED
D	UMTS	850	Blank	ORANGE	YELLOW	YELLOW	Blank	Blank	RED
D	UMTS	1900	Blank	ORANGE	RED	YELLOW	Blank	Blank	RED

COAX COLOR CODE

1 COLOR CODE CHART
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/25/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT · SCOTT C. BRAILSFORD · 30536 · LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-5

REVISION: 1

3. ATT Naming Convention for "RET NAME"

ATT-002-290-125 (Issue 8, 02/03/14)
Antenna Remote Electrical Tilt (RET) Guidelines

Usage: [USID][CellId1][CellId2][CellId3][AntPos][FrequencyBand][Tech]

USID						CellId 1	CellId 2	CellId 3	AntPos	Freq	Tech
1	2	3	4	5	6	7	8	9	10	11	12

Field	Length	Description	
USID	6	Six characters that define the sites USID. USID's less than 6 characters in length are preceded with 0's (zeros) (example: 003831)	
CellId1	1	Allowed Value	Description
		A	Alpha
		B	Beta
CellId2	1	C	Gamma
		D	Delta
		E	Epsilon
CellId3	1	F	Zeta
		-	No Transmitter connected to this port
AntPos	1	Allowed Value	Description
		1	Antenna Position 1 on this face
		2	Antenna Position 2 on this face
		3	Antenna Position 3 on this face
		4	Antenna Position 4 on this face
		5	Antenna Position 5 on this face
FreqBand	1	Allowed Value	Description
		2	2100 MHz (AWS)
		7	700 MHz
		8	850 MHz
		9	1900 MHz
		Q	700 MHz D & E Band Only
		W	2300 MHz (WCS)

Field	Length	Description				
Tech	1	Allowed Value	GSM	UMTS	LTE	Split Sector
		G	GSM			
		J	GSM	UMTS		
		K	GSM		LTE	
		L			LTE	
		N				
		U		UMTS		
		V		UMTS	LTE	
		Y	GSM	UMTS	LTE	
		H	GSM			Split
		M	GSM	UMTS		Split
		P	GSM		LTE	Split
		Q			LTE	Split
		R				Split
		S		UMTS		Split
		T		UMTS	LTE	Split

1 LTE RET NAMING CONVENTION
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

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AT&T SITE NUMBER:
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347 EAST ST.
WOLCOTT, CT 06716
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EXISTING 185' SELF SUPPORT

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0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT
SCOTT C. BRAINARD
35536
LICENSED PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: C-6
REVISION: 1

SCOPE:

1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
   - A. THE NATIONAL ELECTRICAL SAFETY CODE
   - B. THE NATIONAL ELECTRIC CODE – NFPA–70
   - C. REGULATIONS OF THE SERVING UTILITY COMPANY
   - D. LOCAL AND STATE AMENDMENTS
   - E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)
2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.
3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE COMPLETE BEFORE INSTALLING CONDUCTORS.
2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS. SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
2. THE CONDUIT SHALL BE RIGID STEEL AT GRADE TRANSITIONS OR WHERE EXPOSED TO DAMAGE.
3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT OR PVC.
2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
   - A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
   - B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
   - C. CONNECTION FOR #10 AWG #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
   - D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP–ON SLEEVES WITH NYLON INSULATOR.
3. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH NEC STANDARDS.

UL COMPLIANCE:

1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

1. ELECTRICAL NEUTRALS, RACEWAYS AND NON–CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	–	AMPERE
AFG	–	ABOVE FINISHED GRADE
ATS	–	AUTOMATIC TRANSFER SWITCH
AWG	–	AMERICAN WIRE GAUGE
BCW	–	BARE COPPER WIRE
BFG	–	BELOW FINISHED GRADE
BKR	–	BREAKER
C	–	CONDUIT
CKT	–	CIRCUIT
DISC	–	DISCONNECT
EGR	–	EXTERNAL GROUND RING
EMT	–	ELECTRIC METALLIC TUBING
FSC	–	FLEXIBLE STEEL CONDUIT
GEN	–	GENERATOR
GPS	–	GLOBAL POSITIONING SYSTEM
GRD	–	GROUND
IGB	–	ISOLATED GROUND BAR
IGR	–	INTERIOR GROUND RING (HALO)
KW	–	KILOWATTS
NEC	–	NATIONAL ELECTRIC CODE
PCS	–	PERSONAL COMMUNICATION SYSTEM
PH	–	PHASE
PNL	–	PANEL
PNLBD	–	PANELBOARD
PVC	–	RIGID NON–METALLIC CONDUIT
RGS	–	RIGID GALVANIZED STEEL CONDUIT
SW	–	SWITCH
TGB	–	TOWER GROUND BAR
UL	–	UNDERWRITERS LABORATORIES
V	–	VOLTAGE
W	–	WATTS
XFMR	–	TRANSFORMER
XMTR	–	TRANSMITTER

——E——	UNDERGROUND ELECTRICAL CONDUIT
——T——	UNDERGROUND TELEPHONE CONDUIT
	KILOWATT–HOUR METER
—— ——	UNDERGROUND BONDING AND GROUNDING CONDUCTOR.
Ø	GROUND ROD
●	CADWELD
⊠	GROUND ROD WITH INSPECTION WELL

1 ELECTRICAL NOTES
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
AKRON, OHIO 44307

CROWN CASTLE
12 GILL STREET, SUITE 5800
WOBURN, MA 01801

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

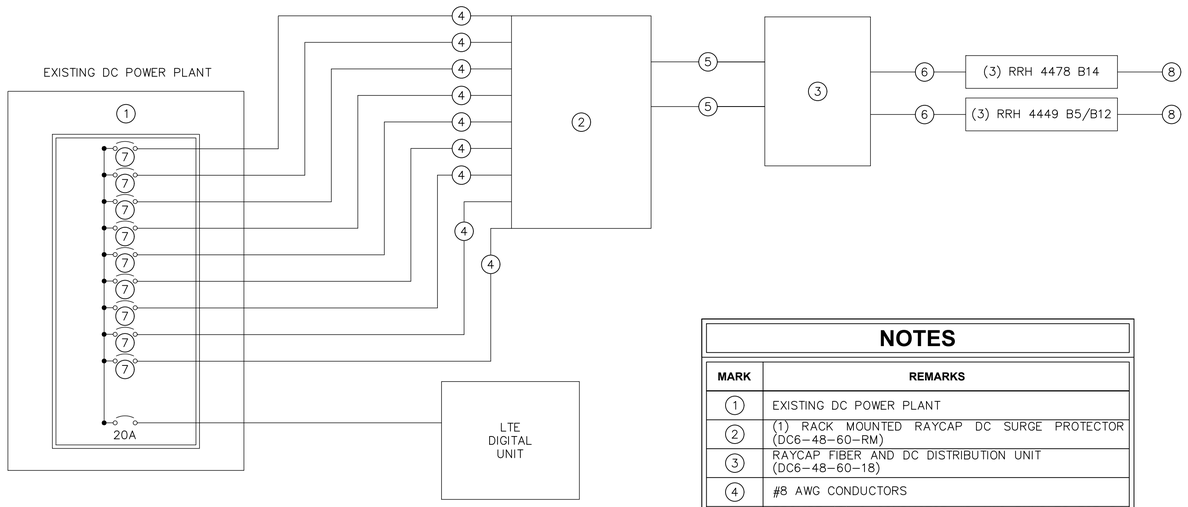
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	01/07/22	KBA	PRELIMINARY	DA
B	02/23/22	PSS	PRELIMINARY	DA
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

SHEET NUMBER: E-1

REVISION: 1



NOTES

MARK	REMARKS
1	EXISTING DC POWER PLANT
2	(1) RACK MOUNTED RAYCAP DC SURGE PROTECTOR (DC6-48-60-RM)
3	RAYCAP FIBER AND DC DISTRIBUTION UNIT (DC6-48-60-18)
4	#8 AWG CONDUCTORS
5	PROVIDE (2) 6-CONDUCTOR #8 AWG BUNDLES FOR DC POWER FROM RACK MOUNTED RAYCAP SURGE PROTECTION UNIT TO THE RAYCAP FIBER AND DISTRIBUTION UNIT ON TOWER
6	EXISTING FIBER AND DC CABLE ROUTED TO EXISTING RRH UNITS
7	REFER TO BREAKER SCHEDULE FOR BREAKER SIZES
8	REFER TO LATEST RFDS FOR RRH TECHNOLOGIES AND QUANTITIES

RRUS BREAKER SCHEDULE

RRU MODEL	BREAKER SIZE	TECHNOLOGY
RRUS 32 B66	30A	AWS (2100)
RRUS 32 B30	20A	WCS (2300)
RRUS 32 B2	30A	PCS (1900)
RRUS 11	25A	VARIOUS BANDS (700 [B12], 850 [B5], 1900 [B2], 2100 [B4])
RRUS 12	25A	VARIOUS BANDS (850 [B5], 1900 [B2], 2100 [B4])
RRUS 4415 B25	25A	1900
RRUS 4426 B66	30A	2100
RRUS 4478 B14	25A	700
RRUS 4478 B5	25A	850
RRUS E2 B29	25A	700
RRUS 4449 B5/B12	(2) 25A	700/850
RRUS 8843 B2/B66	(2) 30A	1900/2100
RRUS 2203 B5	10A	850
RRUS 2205 B46	10A	5 GHz

1 EQUIPMENT ONE-LINE DIAGRAM
SCALE: NOT TO SCALE

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TOWER ENGINEERING PROFESSIONALS
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TEP JOB #: 217724.633806

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347 EAST ST.
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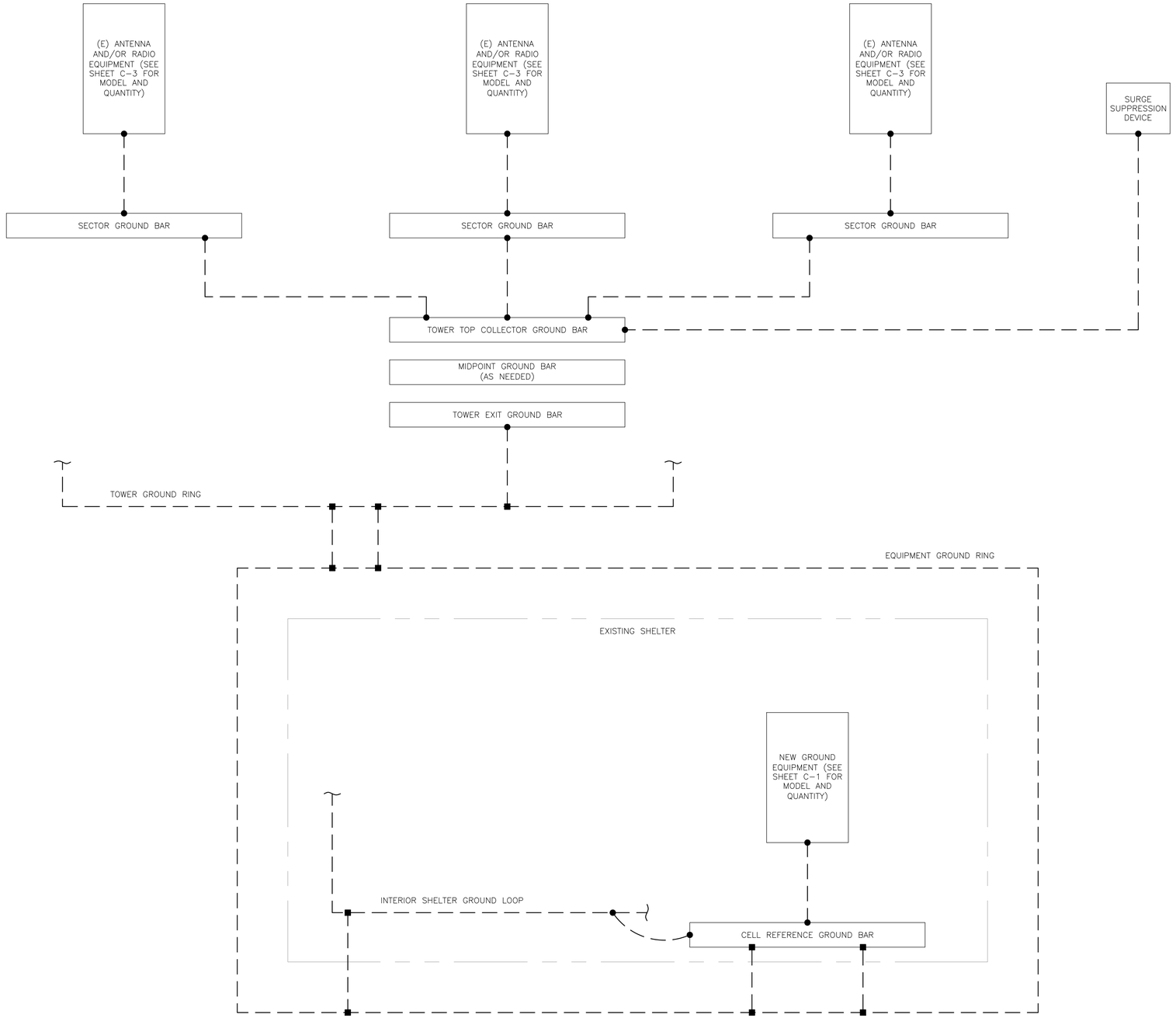
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

STATE OF CONNECTICUT
SCOTT C. GRANTZ
32236
LICENSED
PROFESSIONAL ENGINEER

10/14/22

SHEET NUMBER: E-2

REVISION: 1



1 TYPICAL GROUNDING SCHEMATIC
SCALE: NOT TO SCALE

GROUNDING PLAN LEGEND:

--- GROUND WIRE
■ EXOTHERMIC WELD
● MECHANICAL CONNECTION
COPPER GROUND ROD
GROUND ROD W/ TEST WELL

CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUITS (ATT-TP-76416 7.6.7).

HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CELL SITE REFERENCE GROUND BAR MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) #2 STRANDED GREEN INSULATED COPPER CONDUCTORS.

EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE (ATT-TP-76416 7.6.7.2).

DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICES CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR PER TP76300 SECTION H 6 AND TP76416 FIGURE 7-11 REQUIREMENTS.

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TEP JOB #: 217724.633806

AT&T SITE NUMBER:
CTL01060

BU #: **806362**
NHV 108 943133

347 EAST ST.
WOLCOTT, CT 06716
(NEW HAVEN COUNTY)

EXISTING 185' SELF SUPPORT

ISSUED FOR:

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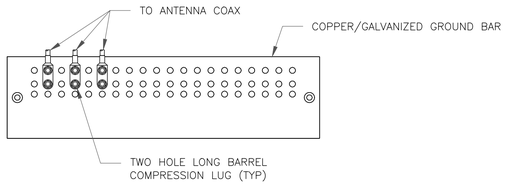
1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

SHEET NUMBER: G-1

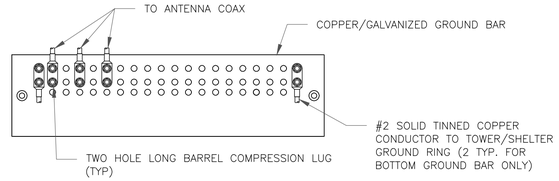
REVISION: 1



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

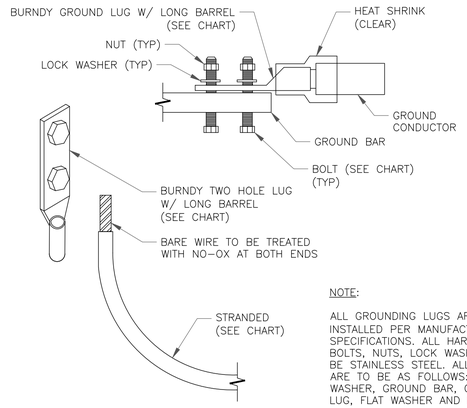


NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE

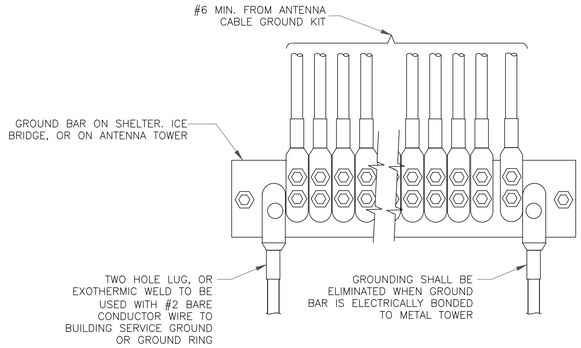
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" – 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" – 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" – 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" – 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" – 16 NC SS 2 BOLT



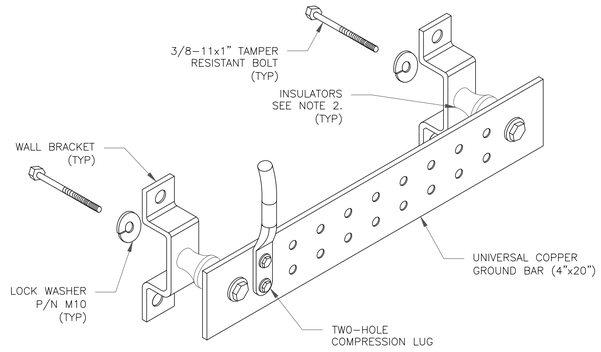
NOTE:

ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

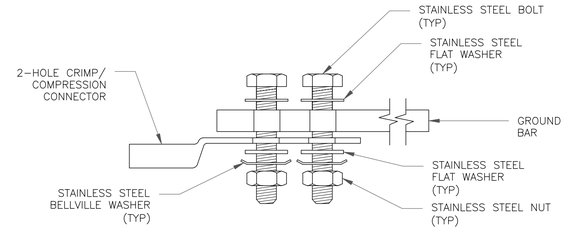


NOTES:

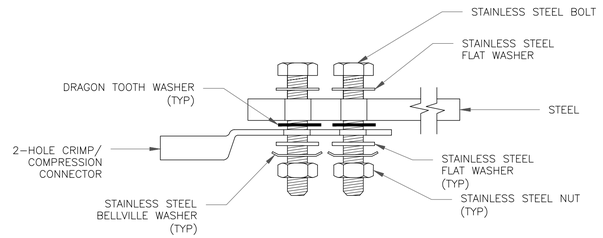
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

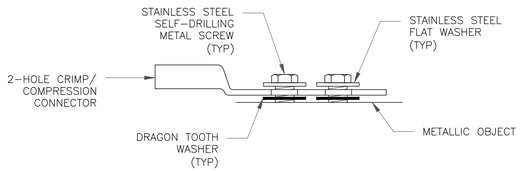
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

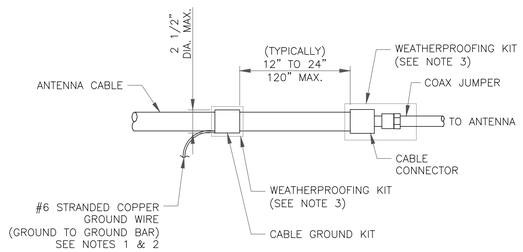


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

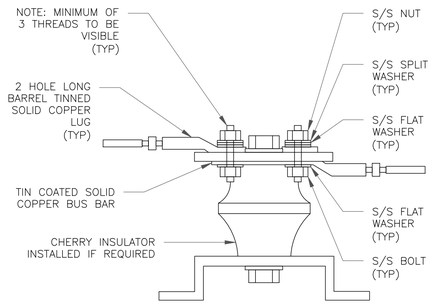
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

AT&T
700 BELL STREET
AKRON, OHIO 44307

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347 EAST ST.
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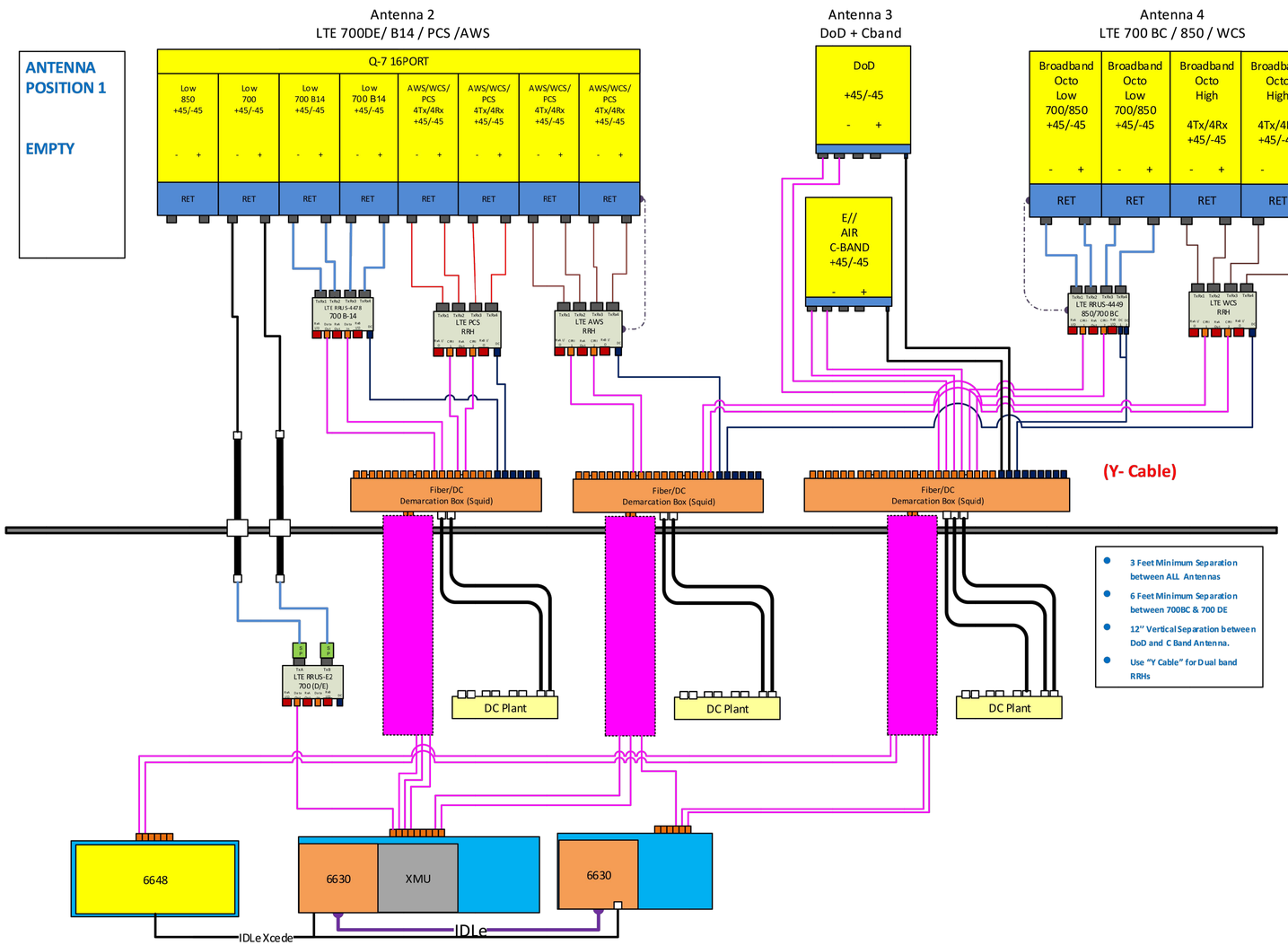
C	04/11/22	RST	PRELIMINARY	NH
0	10/05/22	RST	PRELIMINARY	NH
1	10/14/22	RST	CONSTRUCTION	NH

10/14/22

SHEET NUMBER: G-2

REVISION: 1

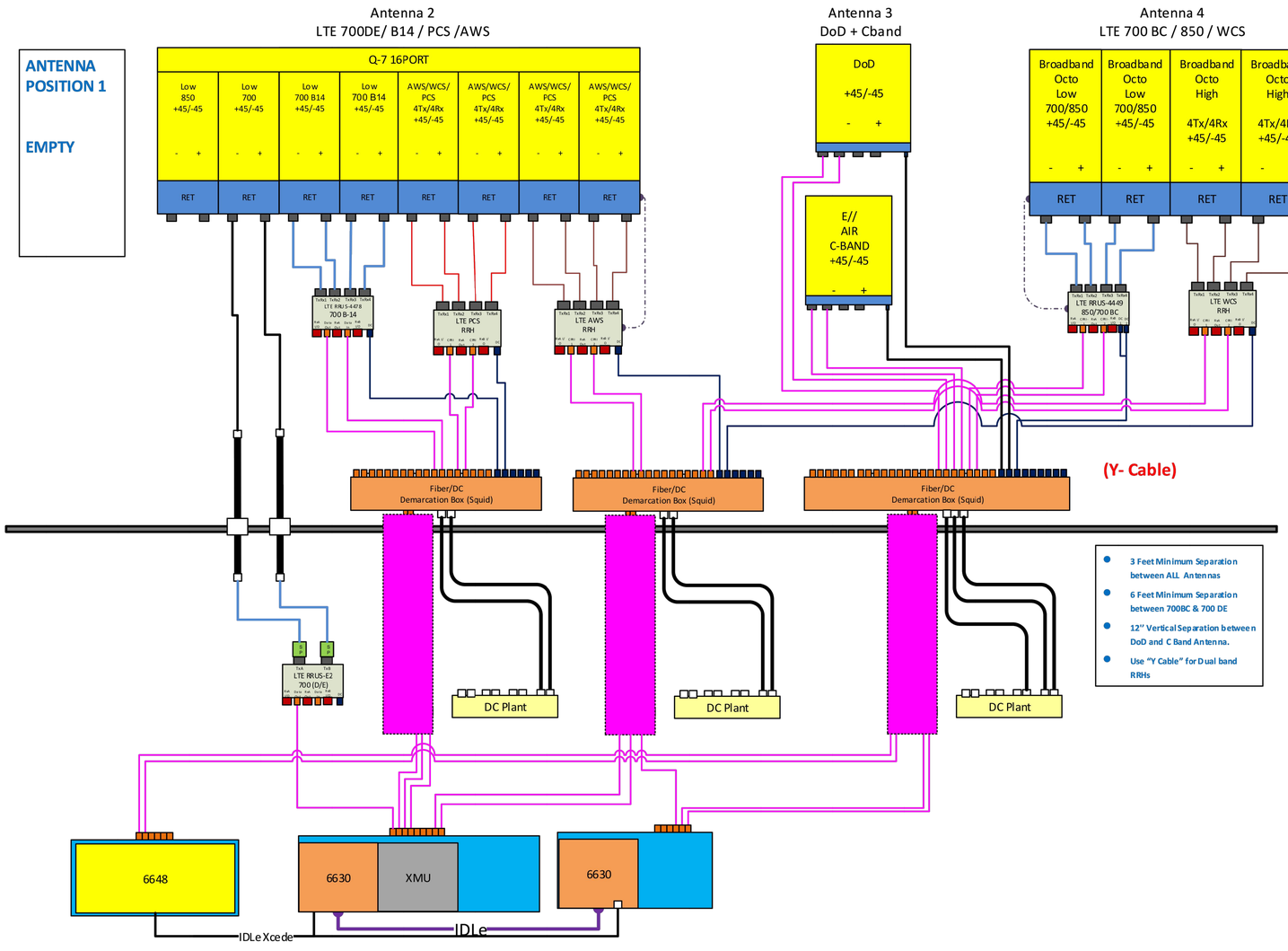
Diagram - Sector	A	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_BAOCTO__AWS_PCS_2DCFIB_1DC9_1x6630_1x6630_1xXMU_6648.vsd					
Atoll Site Name -	CTL01060	Location Name -	WOLCOTT-EAST ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"							



PLUMBING DIAGRAM

Diagram - Sector	B	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_BAOCTO__AWS_PCS_2DCFIB_1DC9_1x6630_1x6630_1xXMU_6648.vsd					
Atoll Site Name -	CTL01060	Location Name -	WOLCOTT-EAST ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

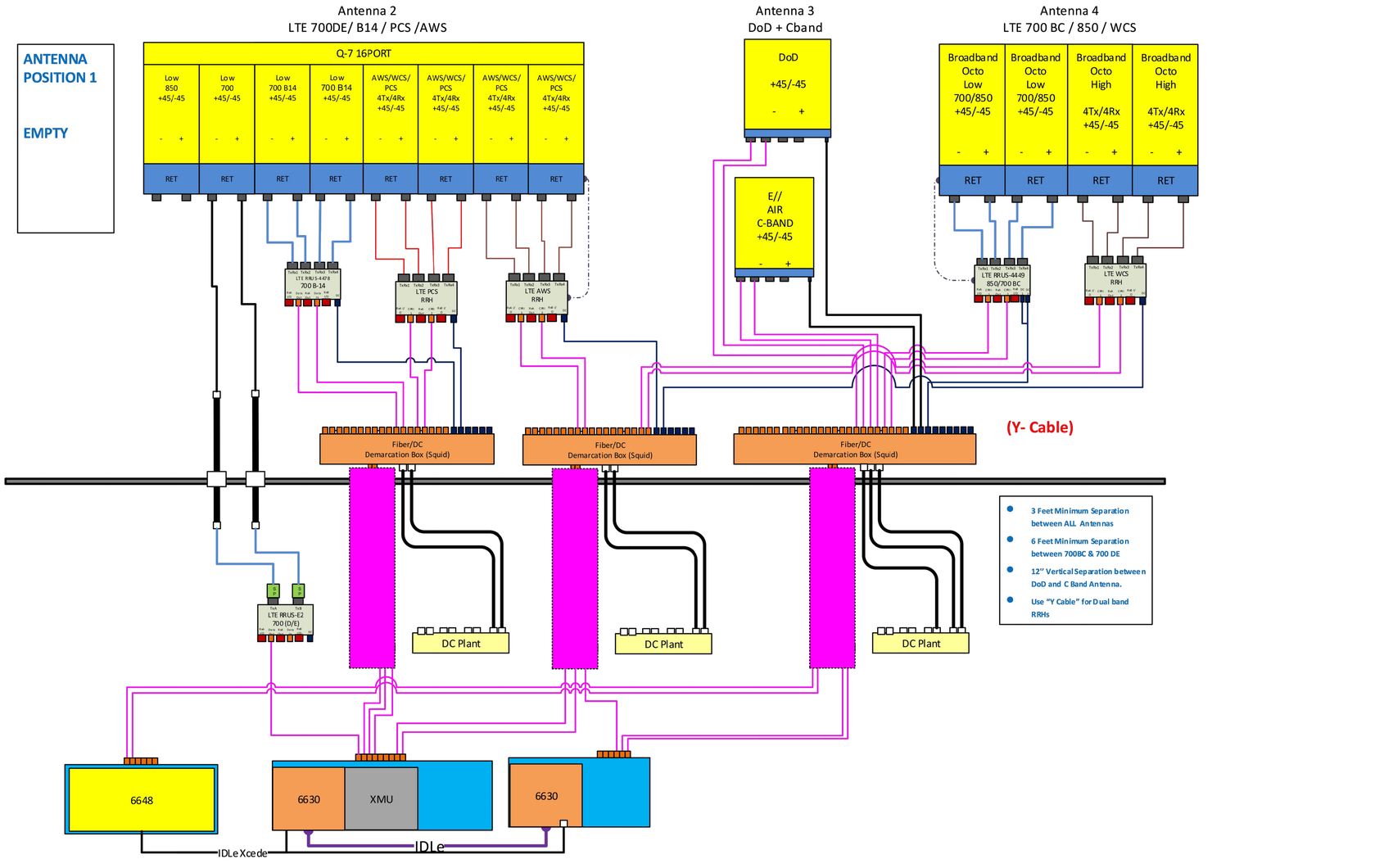
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"



PLUMBING DIAGRAM

Diagram - Sector	C	Diagram File Name - Cband_3Ant_Q7DEBOT_DoD_CB_BAOCTO__AWS_PCS_2DCFIB_1DC9_1x6630_1x6630_1xXMU_6648.vsd					
Atoll Site Name -	CTL01060	Location Name -	WOLCOTT-EAST ST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)"



PLUMBING DIAGRAM

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

Site Name:	WOLCOTT-EAST ST
Crown Castle Site#:	806362
Site ID:	CTL01060
Project Name:	5G NR 1SR C-BAND
Address:	347 EAST STREET, WOLCOTT, CT 06716
County:	NEW HAVEN
Latitude:	41.5595481
Longitude:	-72.9469711
Structure Type:	SELF SUPPORT
Property Owner:	RODRIGUES AGOSTINHO V & JOANNE
Property Contact:	PAUL PEDICONE

AT&T Existing Facility

Report Information

Report Writer: Monti Kumar **Report Generated Date:** 12-06-2022

Site Compliance Statement

Compliance Status	Compliant
Cumulative General Population % MPE (Ground Level)	0.1756%

December 06, 2022

Emissions Analysis for Site: **CTL01060– WOLCOTT-EAST ST**

MobileComm Professionals, Inc was directed to analyze the proposed AT&T facility located at **347 EAST STREET, WOLCOTT, CT 06716**, 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 milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter (µW/cm2). The number of mW/cm^2 or µW/cm2 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 milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the 700 and 850 MHz Bands are approximately 0.467 mW/cm^2 and 0.567 mW/cm^2 respectively or 466.667 µW/cm2 and 566.667 µW/cm2 respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2300 MHz (WCS), 3540 MHz (DoD Band) and 3840 MHz (C-Band) bands is 1 mW/cm^2 or 1000 µW/cm2. 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.

1. Theoretical Calculations: Methods and Procedures

MobileComm Professionals, Inc has performed theoretical modeling of the site using a software tool, RoofMaster® Version 35.5.26.2022, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

2. Antenna Inventory & Power Data

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (^{0})	HBW (^{0})	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power Per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	Calculated MPE%
A	1	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	24	71	12.05	6	4	40.00	2287.05	3750.77	160.00	0.003421	466.67	0.00074
A	1	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	24	71	12.05	6	2	40.00	1143.53	1875.38	160.00	0.002343	466.67	0.00052
A	1	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	24	67	15.05	6	4	40.00	4563.27	7483.76	160.00	0.004932	1000.00	0.00049
A	1	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	24	62	15.55	6	4	40.00	5120.07	8396.92	160.00	0.004743	1000.00	0.00047
A	2-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	24	11	23.5	2.55	1	54.22	12138.53	19914.34	162.00	0.003419	1000.00	0.00034
A	2-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	24	11	23.5	2.55	1	86.75	19421.64	31862.94	158.00	0.230136	1000.00	0.02301
A	3	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	24	73	12.15	6	4	40.00	2340.32	3838.13	160.00	0.060152	466.67	0.01289
A	3	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	24	64	13.05	6	4	40.00	2879.23	4721.93	160.00	0.060889	566.67	0.01075
A	3	AT&T	CCI	OPA65R-BU6D	Panel	2300	LTE	24	55	16.05	6	4	25.00	3590.51	5888.44	160.00	0.048272	1000.00	0.00483
B	4	AT&T	Quintel	QD8616-7	Panel	700	LTE(FN)	140	72	12.75	8	4	40.00	2687.05	4406.77	160.00	0.000032	466.67	0.00001
B	4	AT&T	Quintel	QD8616-7	Panel	700	LTE(B29)	140	72	12.75	8	2	40.00	1343.53	2203.38	160.00	0.000026	466.67	0.00001
B	4	AT&T	Quintel	QD8616-7	Panel	1900	LTE/5G	140	62	15.05	8	4	40.00	4563.27	7483.76	160.00	0.000043	1000.00	0.00000
B	4	AT&T	Quintel	QD8616-7	Panel	2100	LTE/5G	140	62	15.35	8	4	40.00	4889.63	8019.00	160.00	0.000001	1000.00	0.00000
B	5-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	140	11	23.5	2.55	1	54.22	12138.53	19914.34	162.00	0.000010	1000.00	0.00000
B	5-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	140	11	23.5	2.55	1	86.75	19421.64	31862.94	158.00	0.000017	1000.00	0.00000
B	6	AT&T	CCI	DMP65R-BU8D	Panel	700	LTE(B12)	140	75	12.95	8	4	40.00	2813.69	4614.45	160.00	0.000007	466.67	0.00000
B	6	AT&T	CCI	DMP65R-BU8D	Panel	850	5G	140	64	13.85	8	4	40.00	3461.59	5677.01	160.00	0.000003	566.67	0.00000
B	6	AT&T	CCI	DMP65R-BU8D	Panel	2300	LTE	140	64	15.95	8	4	25.00	3508.78	5754.40	160.00	0.000024	1000.00	0.00000
C	7	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	261	71	12.05	6	4	40.00	2287.05	3750.77	160.00	0.000022	466.67	0.00001
C	7	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	261	71	12.05	6	2	40.00	1143.53	1875.38	160.00	0.000017	466.67	0.00000
C	7	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	261	67	15.05	6	4	40.00	4563.27	7483.76	160.00	0.000008	1000.00	0.00000
C	7	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	261	62	15.55	6	4	40.00	5120.07	8396.92	160.00	0.000013	1000.00	0.00000
C	8-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	261	11	23.5	2.55	1	54.22	12138.53	19914.34	162.00	0.000001	1000.00	0.00000
C	8-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	261	11	23.5	2.55	1	86.75	19421.64	31862.94	158.00	0.003419	1000.00	0.00034
C	9	AT&T	CCI	OPA65R-BU6D	Panel	700	LTE(B12)	261	73	12.15	6	4	40.00	2340.32	3838.13	160.00	0.000037	466.67	0.00001
C	9	AT&T	CCI	OPA65R-BU6D	Panel	850	5G	261	64	13.05	6	4	40.00	2879.23	4721.93	160.00	0.000006	566.67	0.00000
C	9	AT&T	CCI	OPA65R-BU6D	Panel	2300	LTE	261	55	16.05	6	4	25.00	3590.51	5888.44	160.00	0.000000	1000.00	0.00000

Table 2.1: Antenna Inventory & Power Data

**NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.*

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (^{0})	H B W (^{0})	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power Per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	Calculated MPE%
A	10	T-Mobile	Ericsson	KRD901146-1_A	Panel	1900	GSM	30	63.3	15.35	4.94	4	30.00	4114.69	6748.10	186.00	0.001928	1000.00	0.00000
A	10	T-Mobile	Ericsson	KRD901146-1_A	Panel	1900	LTE	30	63.3	15.35	4.94	4	60.00	8229.39	13496.19	186.00	0.003101	1000.00	0.00050
A	10	T-Mobile	Ericsson	KRD901146-1_A	Panel	2100	LTE	30	63.3	15.35	4.94	2	60.00	4114.69	6748.10	186.00	0.003957	1000.00	0.00040
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	30	69	13.25	8	2	30.00	1130.60	1854.18	186.00	0.011436	400.00	0.00296
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	30	69	13.25	8	1	80.00	1507.46	2472.24	186.00	0.000623	400.00	0.00136
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	30	64	13.65	8	2	30.00	1239.67	2033.06	186.00	0.005423	466.67	0.00116
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	UMTS	30	63	16.05	8	2	30.00	2417.17	3964.16	186.00	0.005006	1000.00	0.00060
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	LTE	30	63	16.05	8	4	60.00	8617.22	14132.25	186.00	0.017024	1000.00	0.00140
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	2100	UMTS	30	65	16.45	8	2	30.00	2362.15	3873.93	186.00	0.025084	1000.00	0.00251
A	12	T-Mobile	Ericsson	AIR6449_LTE_B41	Panel	2500	LTE	30	12.5	22.65	2.75	1	40.67	7485.61	12280.81	186.00	0.102924	1000.00	0.01029
A	12	T-Mobile	Ericsson	AIR6449_NR_B41	Panel	2500	5G	30	12.5	22.65	2.75	1	67.78	12476.02	20468.02	186.00	0.171516	1000.00	0.01715
B	13	T-Mobile	Ericsson	KRD901146-1_A	Panel	1900	GSM	150	63.3	15.35	4.94	4	30.00	4114.69	6748.10	186.00	0.000001	1000.00	0.00000
B	13	T-Mobile	Ericsson	KRD901146-1_A	Panel	1900	LTE	150	63.3	15.35	4.94	4	60.00	8229.39	13496.19	186.00	0.000002	1000.00	0.00000
B	13	T-Mobile	Ericsson	KRD901146-1_A	Panel	2100	LTE	150	63.3	15.35	4.94	2	60.00	4114.69	6748.10	186.00	0.000007	1000.00	0.00000
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	150	69	13.25	8	2	30.00	1130.60	1854.18	186.00	0.000005	400.00	0.00000
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	150	69	13.25	8	1	80.00	1507.46	2472.24	186.00	0.000007	400.00	0.00000
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	150	64	13.65	8	2	30.00	1239.67	2033.06	186.00	0.000004	466.67	0.00000
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	UMTS	150	63	16.05	8	2	30.00	2417.17	3964.16	186.00	0.000002	1000.00	0.00000
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	LTE	150	63	16.05	8	4	60.00	8617.22	14132.25	186.00	0.000003	1000.00	0.00000
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	2100	UMTS	150	65	16.45	8	2	30.00	2362.15	3873.93	186.00	0.000025	1000.00	0.00000
B	15	T-Mobile	Ericsson	AIR6449_LTE_B41	Panel	2500	LTE	150	12.5	22.65	2.75	1	40.67	7485.61	12280.81	186.00	0.000031	1000.00	0.00000
B	15	T-Mobile	Ericsson	AIR6449_NR_B41	Panel	2500	5G	150	12.5	22.65	2.75	1	67.78	12476.02	20468.02	186.00	0.000052	1000.00	0.00001
C	16	T-Mobile	Ericsson	KRD901146-1_A	Panel	1900	GSM	270	63.3	15.35	4.94	4	30.00	4114.69	6748.10	186.00	0.000003	1000.00	0.00000
C	16	T-Mobile	Ericsson	KRD901146-1_A	Panel	1900	LTE	270	63.3	15.35	4.94	4	60.00	8229.39	13496.19	186.00	0.000006	1000.00	0.00000
C	16	T-Mobile	Ericsson	KRD901146-1_A	Panel	2100	LTE	270	63.3	15.35	4.94	2	60.00	4114.69	6748.10	186.00	0.000003	1000.00	0.00000
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	270	69	13.25	8	2	30.00	1130.60	1854.18	186.00	0.000002	400.00	0.00000
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	270	69	13.25	8	1	80.00	1507.46	2472.24	186.00	0.000001	400.00	0.00000
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	270	64	13.65	8	2	30.00	1239.67	2033.06	186.00	0.000002	466.67	0.00000
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	UMTS	270	63	16.05	8	2	30.00	2417.17	3964.16	186.00	0.000005	1000.00	0.00000
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	1900	LTE	270	63	16.05	8	4	60.00	8617.22	14132.25	186.00	0.000006	1000.00	0.00000
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	2100	UMTS	270	65	16.45	8	2	30.00	2362.15	3873.93	186.00	0.000005	1000.00	0.00000
C	18	T-Mobile	Ericsson	AIR6449_LTE_B41	Panel	2500	LTE	270	12.5	22.65	2.75	1	40.67	7485.61	12280.81	186.00	0.000037	1000.00	0.00000
C	18	T-Mobile	Ericsson	AIR6449_NR_B41	Panel	2500	5G	270	12.5	22.65	2.75	1	67.78	12476.02	20468.02	186.00	0.000062	1000.00	0.00001

Table 2.2: Antenna Inventory & Power Data

**NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.*

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (^{0})	H B W (^{0})	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power Per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	Calculated MPE%
A	19	Verizon	Andrew	DB846F65ZAXY	Panel	850	LTE	20	65	14.45	6	4	40.00	3974.44	6518.08	177.00	0.027653	566.67	0.00488
A	20-1	Verizon	Commscope	JAHH-65B-R3B	Panel	1900	LTE	20	63	16.25	6	4	40.00	6015.56	9865.52	177.00	0.039777	1000.00	0.00398
A	20-2	Verizon	Commscope	JAHH-65B-R3B	Panel	2100	LTE	20	65	16.35	6	4	40.00	6155.68	10095.32	177.00	0.000014	1000.00	0.00000
A	21	Verizon	Samsung	MT6407-77A	Panel	3700	5G	20	17	22.85	2.92	1	35.00	24059.37	39457.36	177.00	0.273323	1000.00	0.02733
B	22	Verizon	Antel	LPA-80063/6cf	Panel	850	LTE	140	63	14.5	5.9	4	40.00	4020.46	6593.56	177.00	0.000005	566.67	0.00000
B	23-1	Verizon	Commscope	JAHH-65B-R3B	Panel	1900	LTE	140	63	16.25	6	4	40.00	6015.56	9865.52	177.00	0.000015	1000.00	0.00000
B	23-2	Verizon	Commscope	JAHH-65B-R3B	Panel	2100	LTE	140	65	16.35	6	4	40.00	6155.68	10095.32	177.00	0.010707	1000.00	0.00107
B	24	Verizon	Samsung	MT6407-77A	Panel	3700	5G	140	17	22.85	2.92	1	35.00	24059.37	39457.36	177.00	0.000529	1000.00	0.00005
C	25	Verizon	Swedcom	SC-E-6014 REV2	Panel	850	LTE	270	54	16	7.1	4	40.00	5679.06	9313.65	177.00	0.000020	566.67	0.00000
C	26-1	Verizon	Commscope	JAHH-65B-R3B	Panel	1900	LTE	270	63	16.25	6	4	40.00	6015.56	9865.52	177.00	0.000007	1000.00	0.00000
C	26-2	Verizon	Commscope	JAHH-65B-R3B	Panel	2100	LTE	270	65	16.35	6	4	40.00	6155.68	10095.32	177.00	0.000040	1000.00	0.00000
C	27	Verizon	Samsung	MT6407-77A	Panel	3700	5G	270	17	22.85	2.92	1	35.00	24059.37	39457.36	177.00	0.000171	1000.00	0.00002
A	28	Clearwire	Commscope	NNVV-65B-R4	Panel	850	CDMA	30	64	12.75	6.5	1	20.00	335.88	550.85	168.00	0.000249	566.67	0.00033
A	28	Clearwire	Commscope	NNVV-65B-R4	Panel	850	LTE	30	64	12.75	6.5	2	20.00	671.76	1101.69	168.00	0.005249	566.67	0.00093
A	28	Clearwire	Commscope	NNVV-65B-R4	Panel	1900	CDMA	30	60	15.05	6.5	5	16.00	2281.63	3741.88	168.00	0.016064	1000.00	0.00161
A	28	Clearwire	Commscope	NNVV-65B-R4	Panel	1900	LTE	30	60	15.05	6.5	2	40.00	2281.63	3741.88	168.00	0.016091	1000.00	0.00161
A	29	Clearwire	Nokia	AAHC	Panel	2500	5G	30	60	21.85	2.16	8	20.00	24506.21	40190.18	168.00	0.377660	1000.00	0.03777
B	30	Clearwire	Commscope	NNVV-65B-R4	Panel	850	CDMA	150	64	12.75	6.5	1	20.00	335.88	550.85	168.00	0.000003	566.67	0.00000
B	30	Clearwire	Commscope	NNVV-65B-R4	Panel	850	LTE	150	64	12.75	6.5	2	20.00	671.76	1101.69	168.00	0.000008	566.67	0.00000
B	30	Clearwire	Commscope	NNVV-65B-R4	Panel	1900	CDMA	150	60	15.05	6.5	5	16.00	2281.63	3741.88	168.00	0.000011	1000.00	0.00000
B	30	Clearwire	Commscope	NNVV-65B-R4	Panel	1900	LTE	150	60	15.05	6.5	2	40.00	2281.63	3741.88	168.00	0.016091	1000.00	0.00161
B	31	Clearwire	Nokia	AAHC	Panel	2500	5G	150	60	21.85	2.16	8	20.00	24506.21	40190.18	168.00	0.000091	1000.00	0.00001
B	32	Clearwire	Commscope	VHLP2-18	Microwave	18000	Unknown	150	2.1	36.85	1.96	1	1.00	4316.74	7079.46	168.00	0.000000	1000.00	0.00000
C	33	Clearwire	Commscope	NNVV-65B-R4	Panel	850	CDMA	260	64	12.75	6.5	1	20.00	335.88	550.85	168.00	0.000002	566.67	0.00000
C	33	Clearwire	Commscope	NNVV-65B-R4	Panel	850	LTE	260	64	12.75	6.5	2	20.00	671.76	1101.69	168.00	0.000004	566.67	0.00000
C	33	Clearwire	Commscope	NNVV-65B-R4	Panel	1900	CDMA	260	60	15.05	6.5	5	16.00	2281.63	3741.88	168.00	0.000016	1000.00	0.00000
C	33	Clearwire	Commscope	NNVV-65B-R4	Panel	1900	LTE	260	60	15.05	6.5	2	40.00	2281.63	3741.88	168.00	0.016091	1000.00	0.00161
C	34	Clearwire	Nokia	AAHC	Panel	2500	5G	260	60	21.85	2.16	8	20.00	24506.21	40190.18	168.00	0.000265	1000.00	0.00003
C	35	Clearwire	Dragonwave	A-ANT-18G-2-C	Microwave	18000	Unknown	337	0.7	36.45	5.9	1	1.00	3936.92	6456.54	168.00	0.000000	1000.00	0.00000
																Calculated Power Density ($\mu W/cm^2$)	**1.570442**	**Calculated MPE%**	**0.1756**

Table 2.3: Antenna Inventory & Power Data

**NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.*

3. Compliance Summary

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

The anticipated composite MPE value for this site assuming all carriers present is 0.1756% of the allowable FCC established general public limit sampled at the ground level.

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 within the allowable 100% threshold standard per the federal government.