



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

October 4, 2018

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

RE: Notice of Exempt Modification for Sprint DO Macro: 828915
Sprint Site ID: CT52XC118
316 Woodhouse Ave. Wallingford, Connecticut 06492
Latitude: 41° 26' 2.76"/Longitude: 72° 48' 5.26"

Dear Ms. Bachman:

Sprint currently maintains three (3) antennas at the 138-foot level of the existing 148-foot monopole tower at 316 Woodhouse Ave. Wallingford, CT. 06051. The tower is owned by Crown Castle. Connecticut Hot Rod Assn. owns the property. Sprint now intends to replace three (3) antennas with six (6) new antennas. These antennas would be installed at the 138-foot level of the tower. Sprint also intends to install nine (9) RRHs, one (1) new cabinet, three (3) PCS 1900 MHZ and add four (4) hybrid cables.

This facility was approved by the Town of Wallingford Planning & Zoning commission on January 4th 2000. This approval was given without conditions.

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 Mayor William Dickinson Jr., Town of Wallingford, Justin Rossetti, Building Official, Town of Wallingford, as well as the property owner, 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.
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.

The Foundation for a Wireless World.

CrownCastle.com

Melanie A. Bachman

October 4, 2018

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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, Sprint 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: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

- Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
- Tab 2: Exhibit-2: Structural Modification Report
- Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: The Honorable William A. Dickinson, Mayor
45 South Main St.
Wallingford Ct, 06492

Building Official, Justin Rossetti
45 South Main st.
Wallingford, CT 06492

Connecticut St. Rod Assoc.
P.O Box 1517
Wallingford, CT 06492-1117



316 Woodhouse Ave
Wallingford, CT 06492



Directions



SAVE



NEARBY



SEND TO YOUR PHONE



SHARE



Add a missing place



Add a label



At this location

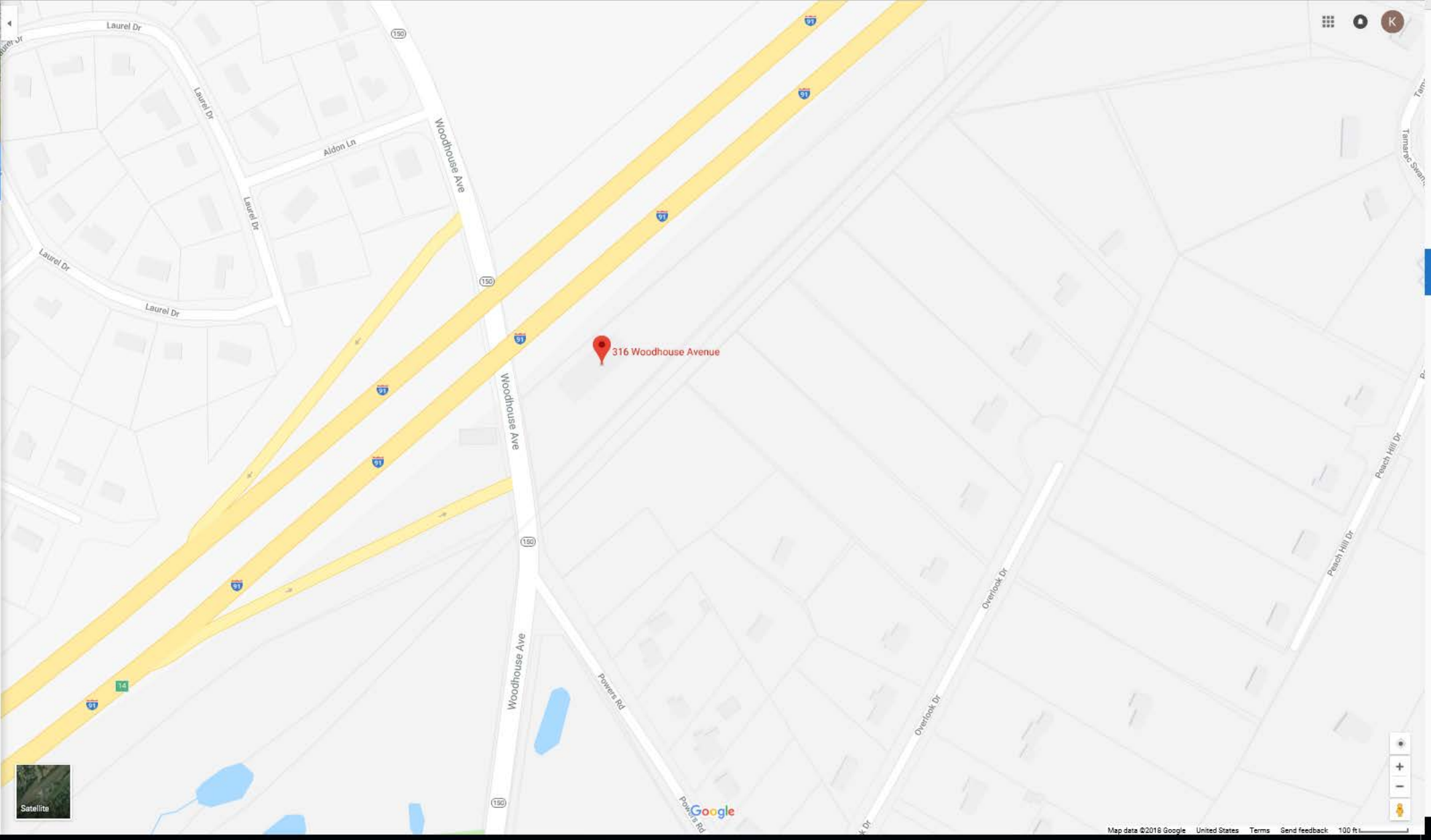
Connecticut Street Rod Association

5.0 ★★★★★ (2)

Association or Organization - 316 Woodhouse Ave



Satellite



Property Detail Report

For Property Located At :

316 WOODHOUSE AVE, WALLINGFORD, CT 06492-5439



RealQuest

Owner Information

Owner Name: CONNECTICUT ST ROD ASSOC
Mailing Address: PO BOX 1517, WALLINGFORD CT 06492-1117 B010
Vesting Codes: //

Location Information

Legal Description:
County: NEW HAVEN, CT APN: WALL-000190-000000-000028
Census Tract / Block: 1760.00 / 1 Alternate APN: 2040774
Township-Range-Sect: Subdivision:
Legal Book/Page: Map Reference: /
Legal Lot: Tract #:
Legal Block: School District:
Market Area: School District Name:
Neighbor Code: Munic/Township: WALLINGFORD

Owner Transfer Information

Recording/Sale Date: / Deed Type:
Sale Price: 1st Mtg Document #:
Document #:

Last Market Sale Information

Recording/Sale Date: 03/28/2001 / 1st Mtg Amount/Type: \$150,000 / CONV
Sale Price: \$315,000 1st Mtg Int. Rate/Type: /
Sale Type: FULL 1st Mtg Document #: /
Document #: 981-1034 2nd Mtg Amount/Type: /
Deed Type: WARRANTY DEED 2nd Mtg Int. Rate/Type: /
Transfer Document #: Price Per SqFt: \$25.78
New Construction: Multi/Split Sale:
Title Company:
Lender: THE FIRST UNION NAT'L BK
Seller Name: JR ACHIEVEMENT OF S

Prior Sale Information

Prior Rec/Sale Date: / Prior Lender:
Prior Sale Price: Prior 1st Mtg Amt/Type: /
Prior Doc Number: 596-851 Prior 1st Mtg Rate/Type: /
Prior Deed Type: DEED (REG)

Property Characteristics

Year Built / Eff: 1969 / Total Rooms/Offices
Gross Area: 12,220 Total Restrooms:
Building Area: 12,220 Roof Type: GABLE
Tot Adj Area: Roof Material: ASPHALT SHINGLE
Above Grade: Construction: FRAME
of Stories: 1 Foundation:
Other Improvements: Building Permit Exterior wall: VINYL
Basement Area: Garage Area:
Garage Capacity:
Parking Spaces:
Heat Type: FORCED AIR
Air Cond: YES
Pool:
Quality:
Condition: FAIR

Site Information

Zoning: Acres: 3.22 County Use:
Lot Area: 140,096 Lot Width/Depth: x State Use: MIXED USE-PRIM COMM & IND (034)
Land Use: COMMERCIAL (NEC) Commercial Units: 1 Water Type:
Site Influence: Sewer Type: Building Class:

Tax Information

Total Value: \$328,700 Assessed Year: 2018 Property Tax: \$9,414.00
Land Value: \$226,800 Improved %: 31% Tax Area: 310
Improvement Value: \$101,900 Tax Year: 2018 Tax Exemption:
Total Taxable Value:



2.5 EQUIPMENT DEPLOYMENT

SITE NUMBER:
CT52XC118

SITE NAME:
WALLINGFORD

SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

CROWN ID#: 828915

CROWN SITE NAME: WALLINGFORD/ I-91/ X14/ S

Sprint
2.5 EQUIPMENT DEPLOYMENT
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251

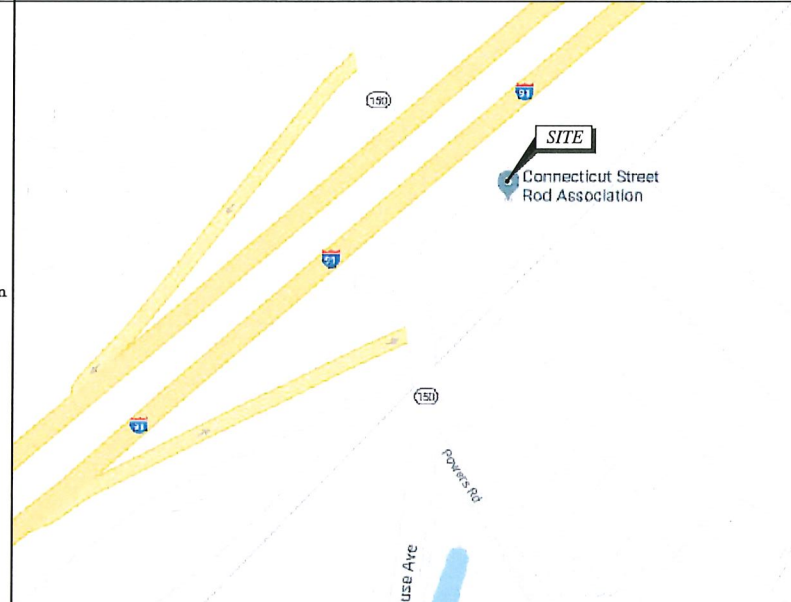


Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
1279 Route 300 Phone: (845) 567-6656
Newburgh, NY 12550 (800) 829-6531
www.tectonicengineering.com

SHEET INFORMATION

| | | | |
|--------------------------|-----------------------------------------------|----------------------|-----------------------------------------------------------------------------------|
| SITE NUMBER: | CT52XC118 | LANDLORD: | CROWN CASTLE USA 2000 CORPORATE DRIVE CANONSBURG, PA |
| SITE NAME: | WALLINGFORD | LOCAL POWER COMPANY: | CONNECTICUT LIGHT AND POWER CONTACT CUSTOMER SERVICE (800) 286-2000 |
| SITE ADDRESS: | 316 WOODHOUSE AVENUE WALLINGFORD, CT 06492 | APPLICANT: | SPRINT 8580 SPRINT PARKWAY OVERLAND PARK, KANSAS 66251 |
| COUNTY: | NEW HAVEN | ENGINEER: | JAMES QUICKSELL (845) 567-6656 EXT. 2835 jquicksell@tectonicengineering.com |
| COORDINATES: (NAD 83) | 41° 26' 2.76" N 72° 48' 5.26" W | SPRINT CM: | ELIZABETH ROMAN (617)247-4305 ELIZABETH.ROMAN@sprint.com |
| GROUND ELEV: | 310'± AMSL | CROWN CM: | JEFF BARBADORA (781)970-0065 jeff.barbadora@sprint.com |
| STRUCTURE TYPE: | MONOPOLE | AAV: | SPRINT |
| STRUCTURE HEIGHT: | 148'-0"± AGL | | |
| STRUCTURE RAD CENTER: | 136'-0"± AGL | | |
| ZONING CLASSIFICATION: | CA40 | | |

VICINITY MAP (NOT TO SCALE)



SHEET INDEX

| SHT. NO. | SHEET DESCRIPTION |
|----------|---------------------------------|
| T-1 | TITLE SHEET |
| SP-1 | GENERAL NOTES |
| SP-2 | GENERAL NOTES |
| A-1 | SITE PLAN |
| A-2 | ELEVATION |
| A-3 | ENLARGED EQUIPMENT LAYOUT PLANS |
| A-4 | ANTENNA LAYOUT PLANS |
| A-5 | RAN WIRING DIAGRAM |
| A-6 | CABLE DETAILS |
| S-1 | EQUIPMENT DETAILS |
| S-2 | EQUIPMENT SCHEMATIC DETAILS |
| E-1 | ELECTRICAL & GROUNDING PLANS |
| E-2 | GROUNDING DETAILS & NOTES |

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SUBMITTALS

| NO | DATE | DESCRIPTION | BY |
|----|----------|------------------|----|
| 0 | 08/09/18 | FOR COMMENT | EN |
| 1 | 08/27/18 | FOR CONSTRUCTION | JQ |

| DATE | REVIEWED BY |
|---------|-------------|
| 8/27/18 | JMQ |

GENERAL NOTES

- THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED. FACILITY HAS NO PLUMBING OR REFRIGERANTS. THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATOR REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- DEVELOPMENT AND USE OF THIS SITE WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
 - 2005 STATE OF CONNECTICUT BUILDING CODE.
 - ANSI/TIA/222-G.
 - NATIONAL ELECTRICAL CODE, LATEST EDITION.

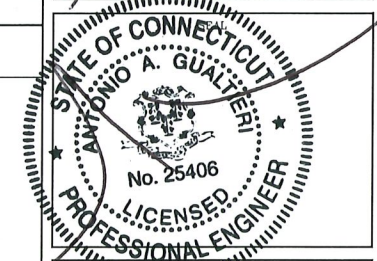
AERIAL VIEW (NOT TO SCALE)



APPROVALS

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

| | |
|-------------------------------|-------|
| CONSTRUCTION: | DATE: |
| LEASING/ SITE ACQUISITION: | DATE: |
| LANDLORD/ PROPERTY OWNER: | DATE: |
| R.F. ENGINEER: | DATE: |



PROJECT DESCRIPTION

- (3) REMOVE EXISTING ANTENNAS AND RRHS
- (3) PROPOSED COMMSCOPE NNVV-65B-R4 ANTENNAS
- (3) NEW RFS CELWAVE APXVTM14-ALU-I20 ANTENNAS
- (3) NEW PCS 1900MHZ 4X45W-65MHZ
- (6) NEW RRH2X50-800
- (3) NEW RRH2X20-25
- (4) NEW 1-1/4" HYBRID CABLES
- (1) NEW ELTEK EQUIPMENT CABINET W/BATTERY CABINET

SHEET NUMBER:
CT52XC118
SITE NAME:
WALLINGFORD
SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

SHEET TITLE:
TITLE SHEET

SHEET NO:
T-1



DIVISION 01000—GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE PROJECT OWNER'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE NOTICE TO PROCEED, CONTRACTOR WILL CONTACT THE CROWN CASTLE CONSTRUCTION MANAGER OF RECORD (NOTED ON THE FIRST PAGE ON THIS CONSTRUCTION DRAWING) A MINIMUM OF 48 HOURS PRIOR TO WORK START. UPON ARRIVAL TO THE JOB SITE, CONTRACTOR CREW IS REQUIRED CALL 1-800-788-7011 TO NOTIFY THE CROWN CASTLE NOC WORK HAS BEGUN.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE BASIC STATE BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. 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 THE ARCHITECT/ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. THE CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, D) TRENCHING AND EXCAVATION OF 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 THE POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER.
14. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
16. THE CONTRACTOR SHALL NOTIFY THE THE RF ENGINEER FOR ANTENNA AZIMUTH VERIFICATION (DURING ANTENNA INSTALLATION) PRIOR TO CONDUCTING SWEEP TESTS.
17. THE CONTRACTOR SHALL SUBMIT AT THE END OF THE PROJECT A COMPLETE SET OF AS-BUILT DRAWINGS TO THE CLIENT REPRESENTATIVE.

18. REFER TO: CONSTRUCTION STANDARDS—SPRINT DOCUMENT EXHIBIT A—STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES REV. 4.0— 02.15.2011.DOCM.
19. REFER TO: WEATHER PROOFING SPECS: EXCERPT EXH A—WIHRPRF—STD CONSTR SPECS...157201110421855492.DOCM.
20. REFER TO: COLOR CODING—SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF
21. REFER TO LATEST DOCUMENTATION REVISION.

DIVISION 03000—CONCRETE

- 1.03 APPLICABLE STANDARDS (USE LATEST EDITIONS)
 - A. ACI-301 — SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
 - B. ACI-347 GUIDE TO FORM WORK FOR CONCRETE.
 - C. ASTM C33— CONCRETE AGGREGATE
 - D. ASTM C94 — READY MIXED CONCRETE e. ASTM C150 — PORTLAND CEMENT.
 - E. ASTM C260 — AIR—ENTRAINING ADMIXTURES FOR CONCRETE
 - F. ASTM C309— LIQUID MEMBRANE FORMING COMPOUNDS FOR CURING CONCRETE.
 - H. ASTM C494 — CHEMICAL ADMIXTURES FOR CONCRETE
 - I. ASTM A615— DEFORMED AND PLAIN BILLET—STEEL BARS FOR CONCRETE REINFORCEMENT
 - J. ASTM A185— STEEL WELDED WIRE FABRIC (PLAIN) FOR CONCRETE REINFORCEMENT
- 1.04 QUALITY ASSURANCE

CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ARCHITECT/ENGINEER AS DIRECTED BY THE CLIENT'S REPRESENTATIVE.

3.04 SURFACE FINISHES

- A. SURFACES AGAINST WHICH BACKFILL OR CONCRETE SHALL BE PLACED REQUIRE NO TREATMENT EXCEPT REPAIR OF DEFECTIVE AREAS.
- B. SURFACES THAT WILL BE PERMANENTLY EXPOSED SHALL PRESENT A UNIFORM FINISH PROVIDED BY THE REMOVAL OF FINIS AND THE FILLING HOLES AND OTHER IRREGULARITIES WITH DRY PACK GROUT, OR BY SACKING WITH UTILITY OR ORDINARY GROUT.

- C. SURFACES THAT WOULD NORMALLY BE LEVEL AND WHICH WILL BE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE SLOPED FOR DRAINAGE. UNLESS ENGINEER'S DESIGN DRAWING SPECIFIES A HORIZONTAL SURFACE OR SURFACES SUCH AS STAIR TREADS, WALLS, CURBS, AND PARAPETS SHALL BE SLOPED APPROXIMATELY 1/4" PER FOOT.
- D. SURFACES THAT WILL BE COVERED BY BACKFILL OR CONCRETE SHALL BE SMOOTH SCREENED.

- E. EXPOSED SLAB SURFACES SHALL BE CONSOLIDATED, SCREENED, FLOATED, AND STEEL TROWELED. HAND OR POWER—DRIVEN EQUIPMENT MAY BE USED FOR FLOATING. FLOATING SHALL BE STARTED AS SOON AS THE SCREENED SURFACE HAS ATTAINED A STIFFNESS TO PERMIT FINISHING OPERATIONS. OPERATIONS. ALL EDGES MUST HAVE A 3/4" CHAMFER.

1.04 QUALITY ASSURANCE CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER.

3.05 PATCHING

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON REMOVAL OF THE FORMS TO OBSERVE CONCRETE SURFACE CONDITIONS. IMPERFECTIONS SHALL BE PATCHED ACCORDING TO THE ENGINEER'S DIRECTION.

3.06 DEFECTIVE CONCRETE
THE CONTRACTOR SHALL NOTIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LEVELS AND LINES, DETAILS, AND ELEVATIONS AS SPECIFIED IN ACI 301.

3.07 PROTECTION

- A. IMMEDIATELY AFTER PLACEMENT, THE CONTRACTOR SHALL PROTECT THE CONCRETE FROM PREMATURE DRYING, EXCESSIVELY HOT OR COLD TEMPERATURES, AND MECHANICAL INJURY. FINISHED WORK SHALL BE PROTECTED.
- B. CONCRETE SHALL BE MAINTAINED WITH MINIMAL MOISTURE LOSS AT RELATIVELY CONSTANT TEMPERATURE FOR PERIOD NECESSARY FOR HYDRATION OF CEMENT AND HARDENING OF CONCRETE.
- C. ALL CONCRETE SHALL BE WATER CURED PER ACCEPTABLE PRACTICES SPECIFIED BY ACI CODE (LATEST EDITION)

DIVISION 05000 — METALS

PART 1 — GENERAL

- 1.01 WORK INCLUDED
 - A. THE WORK CONSISTS OF THE FABRICATION AND INSTALLATION OF ALL MATERIALS TO BE FURNISHED, AND WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDING ALL EQUIPMENT, LABOR AND SERVICES REQUIRED FOR ALL STRUCTURAL STEEL WORK AND ALL ITEMS INCIDENTAL AS SPECIFIED AND AS SHOWN ON THE DRAWINGS:

1. STEEL FRAMING INCLUDING BEAMS, ANGLES, CHANNELS AND PLATES.
2. WELDING AND BOLTING OF ATTACHMENTS.

1.02 REFERENCE STANDARDS

- A. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:
 1. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS IN BUILDING CODES" OR LATEST EDITION.
 2. AWS: AMERICAN WELDING SOCIETY CODE OR LATEST EDITION.
 3. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).

PART 2 — PRODUCTS

2.01 MATERIALS

- A. STRUCTURAL STEEL: SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A36 AND A992 FOR STRUCTURAL STEEL.

ALL PROPOSED STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH AISC CODE AND ASTM SPECIFICATIONS (LATEST EDITION) ALL NEW STEEL SHALL CONFORM TO THE FOLLOWING.

1. STRUCTURAL WIDE FLANGE: ASTM A992 Fy=50KSI.
2. MISCELLANEOUS STEEL (PLATES), CHANNELS, ANGLES, ETC): ASTM A36 (Fy=36KSI).
3. STRUCTURAL TUBING: ASTM A500 Gr. B (Fy=46KSI).
4. STEEL PIPE: ASTM A53 Gr B (Fy=35KSI).

2.02 WELDING

- A. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUESTED.
- B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL CONFORM TO ASTM 1-233, E70 SERIES. BARE ELECTRODES AND GRANULAR FLUX USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS.
- C. FIELD WELDING SHALL BE DONE AS PER AWS D1.1 REQUIREMENTS VISUAL INSPECTION IS ACCEPTABLE.
- D. STUD WELDING SHALL BE ACCOMPLISHED BY CAPACITOR DISCHARGE (CD) WELDING TECHNIQUE USING CAPACITOR DISCHARGE STUD WELDER.
- E. PROVIDE STUD FASTENERS OF MATERIALS AND SIZES SHOWN ON DRAWINGS OR AS RECOMMENDED BY THE MANUFACTURER FOR STRUCTURAL LOADINGS REQUIRED.
- F. FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTRUCTIONS TO PROPERLY SELECT AND INSTALL STUD WELDS.

2.03 BOLTING

- A. BOLTS SHALL BE CONFORMING TO ASTM A35 HIGH STRENGTH HOT DIP GALVANIZED WITH ASTM A153 HEAVY HEX TYPE NUTS.
- B. BOLTS SHALL BE 3/4" (MINIMUM) CONFORMING TO ASTM A325, HOT DIP GALVANIZED, ASTM A153 NUTS SHALL BE HEAVY HEX TYPE.
- C. ALL CONNECTIONS SHALL BE 2 BOLTS MINIMUM.
- D. EXCEPT WHERE SHOWN, ALL BEAM TO BEAM AND BEAM TO COLUMN CONNECTIONS TO BE DOUBLE ANGLED CONNECTIONS WITH HIGH STRENGTH BOLTS (THREADS EXCLUDED FROM SHEAR PLANE) AND HARDENED WASHERS.
- E. STANDARD, OVERSIZED OR HORIZONTAL SHORT SLOTTED HOLES.
- F. SNUG—TIGHT STRENGTH BEARING BOLTS MAY BE USED IN STANDARD HOLES CONFORMING TO ACIS, USING THE TURN OF THE NUT METHOD.
- H. FULLY—TENSIONED HIGH STRENGTH (SLIP CRITICAL) SHALL BE USED IN OVERSIZED SLOT HOLES (RESPECTIVE OF SLOT ORIENTATION).
- I. ALL BRACED CONNECTION, MOMENT CONNECTION AND CONNECTIONS NOTED AS "SLIP CRITICAL" SHALL BE BE SLIP CRITICAL JOINTS WITH CLASS A SURFACE CONDITIONS, UNLESS OTHERWISE NOTED.

- J. EPOXY ANCHOR ASSEMBLIES SHALL BE AS MANUFACTURED BY HILTI OR ENGINEER APPROVED EQUAL, AS FOLLOWS:

| BASE MATERIAL | ANCHOR SYSTEM |
|-------------------------------|------------------|
| CONCRETE | HILTI HIT—HY 200 |
| HOLLOW & GROUTED CMU OR BRICK | HILTI HIT—HY 270 |

2.04 FABRICATION

- A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS

2.05 FINISH

- A. STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE HOT—DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123. (LATEST EDITION) UNLESS OTHERWISE NOTED.

2.06 PROTECTION

- A. UPON COMPLETION OF ERECTION, INSPECT ALL GALVANIZED STEEL AND PAINT ANY FIELD CUTS, WELDS OR GALVANIZED BREAKS WITH (2) COATS OF ZINC—RICH COLD GALVANIZING PAINT.

PART 3 — ERECTION

- A. PROVIDE ALL ERECTION, EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPLETED CONSTRUCTION, BUT ARE NECESSARY FOR ITS PROPER ERECTION.
- B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING
- C. TEMPORARY BRACING, GUYING, AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SET AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TO PREVENT DANGER TO PERSONS AND PROPERTY. CHECK ALL TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.



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SUBMITTALS

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| 0 | 08/09/18 | FOR COMMENT | EN |
| 1 | 08/27/18 | FOR CONSTRUCTION | JQ |
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| DATE | REVIEWED BY |
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SITE NUMBER:
CT52XC118

SITE NAME:
WALLINGFORD

SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

SHEET TITLE:
GENERAL NOTES

SHEET NO:
SP-1

DIVISION 13000--SPECIAL CONSTRUCTION ANTENNA INSTALLATION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. ANTENNAS AND HYBRIFLEX CABLES ARE FURNISHED BY CLIENT'S REPRESENTATIVE UNDER SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPERTY.

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND CLIENT'S REPRESENTATIVE SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT RESULT

F. INSTALL HYBRIFLEX CABLES AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.

G. ANTENNA AND HYBRIFLEX CABLE GROUNDING:

1. ALL EXTERIOR #6 GREEN GROUND WIRE DAISY CHAIN CONNECTIONS ARE TO BE WEATHER SEALED WITH ANDREWS CONNECTOR/SPLICE WEATHERPROOFING KIT TYPE 3221213 OR EQUIVALENT.

2. ALL HYBRIFLEX CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF HYBRIFLEX CABLE (NOT WITHIN BENDS). 1.02 RELATED WORK FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:

1. FLASHING OF OPENING INTO OUTSIDE WALLS.
2. SEALING AND CAULKING ALL OPENINGS.
3. PAINTING.
4. CUTTING AND PATCHING.

1.03 REQUIREMENTS OF REGULATOR AGENCIES

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

1. EIA - ELECTRONIC INDUSTRIES ASSOCIATION RS-22. STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. FAA - FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7480-1H, CONSTRUCTION MARKING AND LIGHTING.
3. FCC - FEDERAL COMMUNICATION COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES
4. AISC - AMERICAN INSTITUTE OF STEEL CONSTRUCTION FOR STRUCTURAL JOINTS USING ASTM 1325 OR A490 BOLTS.
5. NEC - NATIONAL ELECTRIC CODE - ON TOWER LIGHTING KITS.
6. UL - UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.
7. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.
8. LIFE SAFETY CODE NFPA, LATEST EDITION.

DIVISION 13000--EARTHWORK

PART 1 GENERAL

1.01 WORK INCLUDED: REFER TO SURVEY AND SITE PLAN FOR WORK INCLUDED.

1.02 RELATED WORK

A. CONSTRUCTION OF EQUIPMENT FOUNDATIONS
B. INSTALLATION OF ANTENNA SYSTEM

PART 2 PRODUCTS

2.01 MATERIALS

A. ROAD AND SITE MATERIALS; FILL MATERIAL SHALL BE ACCEPTABLE, SELECT FILL SHALL BE IN ACCORDANCE WITH LOCAL DEPARTMENT OF HIGHWAY AND PUBLIC TRANSPORTATION STANDARD SPECIFICATIONS.

B. SOIL STERILIZER SHALL BE EPA REGISTERED OF LIQUID COMPOSITION AND OF PRE-EMERGENCE DESIGN.

C. SOIL STABILIZER FABRIC SHALL BE MIRAFI OR EQUAL - 600X AT ACCESS ROAD AND COMPOUND.

D. GRAVEL FILL; WELL GRADED, HARD, DURABLE, NATURAL SAND AND GRAVEL, FREE FROM ICE AND SNOW, ROOTS, SOD RUBBISH, AND OTHER DELETERIOUS OR ORGANIC MATTER.

MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS.

GRAVEL FILL TO BE PLACED IN LIFTS OF 9" MAXIMUM THICKNESS AND 90 % DENSITY. COMPACTED TO 95

E. NO FILL OR EMBANKMENT MATERIALS SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OF EMBANKMENT

2.02 EQUIPMENT

A. COMPACTION SHALL BE ACCOMPLISHED BY MECHANICAL MEANS. LARGER AREAS SHALL BE COMPACTED BY SHEEPS FOOT, VIBRATORY OR RUBBER TIED ROLLERS WEIGHING AT LEAST FIVE TONS. SMALLER AREAS SHALL BE COMPACTED BY POWER-DRIVER, HAND HELD TAMPERS.

B. PRIOR TO OTHER EXCAVATION AND CONSTRUCTION EFFORTS GRUB ORGANIC MATERIAL TO A MINIMUM OF 6" BELOW ORIGINAL GROUND LEVEL.

C. UNLESS OTHERWISE INSTRUCTED BY CLIENT'S REPRESENTATIVE. REMOVE TREES, BRUSH AND DEBRIS FROM THE PROPERTY TO AN AUTHORIZED DISPOSAL LOCATION.

D. PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL.

E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE GRUBBED AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.

3.03 INSTALLATION

A. THE SITE AND TURNAROUND AREAS SHALL BE AT THE SUB-BASE COURSE ELEVATION PRIOR TO FORMING FOUNDATIONS. GRADE OR FILL THE SITE AND ACCESS ROAD AS REQUIRED TO PRODUCE EVEN DISTRIBUTION OF SPOILS RESULTING FROM FOUNDATION EXCAVATIONS. THE RESULTING GRADE SHALL CORRESPOND WITH SAID SUB-BASE COURSE. ELEVATIONS ARE TO BE CALCULATED FROM FINISHED GRADES OR SLOPES INDICATED.

B. THE ACCESS ROAD SHALL BE BROUGHT TO BASE COURSE ELEVATION PRIOR TO FOUNDATION CONSTRUCTION.

C. DO NOT CREATE DEPRESSIONS WHERE WATER MAY POND.

D. THE CONTRACT INCLUDES ALL NECESSARY GRADING, BANKING, DITCHING AND COMPLETE SURFACE COURSE FOR ACCESS ROAD. ALL ROADS OR ROUTES UTILIZED FOR ACCESS TO PUBLIC THOROUGHFARE IS INCLUDED IN SCOPE OF WORK UNLESS OTHERWISE INDICATED.

E. WHEN IMPROVING AN EXISTING ACCESS ROAD, GRADE THE EXISTING ROAD TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.

F. PLACE FILL OR STONE IN 3" MAXIMUM LIFTS AND COMPACT BEFORE PLACING NEXT LIFT.

G. THE FINISH GRADE, INCLUDING TOP SURFACE COURSE, SHALL EXTEND A MINIMUM OF 12" BEYOND THE SITE FENCE AND SHALL COVER THE AREA AS INDICATED.

H. RIPRAP SHALL BE APPLIED TO THE SIDE SLOPES OF ALL FENCED AREAS, PARKING AREAS AND TO ALL OTHER SLOPES GREATER THAN 2:1.

I. RIPRAP SHALL BE APPLIED TO THE SIDES OF DITCHES OR DRAINAGE SWALES AS INDICATED ON PLANS.

J. RIPRAP ENTIRE DITCH FOR 6'-0" IN ALL DIRECTIONS AT CULVERT OPENINGS.

K. SEED, FERTILIZER AND STRAW COVER SHALL BE APPLIED TO ALL OTHER DISTURBED AREAS AND DITCHES, DRAINAGE, SWALES, NOT OTHERWISE RIP-RAPPED.

L. UNDER NO CIRCUMSTANCES SHALL DITCHES, SWALES OR CULVERTS BE PLACED SO THEY DIRECT WATER TOWARDS, OR PERMIT STANDING WATER IMMEDIATELY ADJACENT TO SITE. IF OWNER DESIGNS OR IF DESIGN ELEVATIONS CONFLICT WITH THIS GUIDANCE ADVISE THE OWNER IMMEDIATELY.

M. IF A DITCH LIES WITH SLOPE GREATER THAN TEN PERCENT, MOUND DIVERSIONARY HEADWALL IN THE DITCH AT CULVERT ENTRANCES. RIP-RAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR 6'-0" ABOVE THE CULVERT.

N. IF A DITCH LIES WITH SLOPES GREATER THAN TEN PERCENT, MOUND DIVERSIONARY HEADWALLS IN THE DITCH FOR 6'-0" ABOVE THE CULVERT ENTRANCE.

O. SEED AND FERTILIZER SHALL BE APPLIED TO SURFACE CONDITIONS WHICH WILL ENCOURAGE ROOTING. RAKE AREAS TO BE SEEDED TO EVEN THE SURFACE AND TO LOOSEN THE SOIL.

P. SOW SEED IN TWO DIRECTIONS IN TWICE THE QUANTITY RECOMMENDED BY THE SEED PRODUCER.

Q. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE GROWTH OF SEEDED AND LANDSCAPED AREAS BY WATERING UP TO THE POINT OF RELEASE FROM THE CONTRACT. CONTINUE TO REWORK BARE AREAS UNTIL COMPLETE COVERAGE IS OBTAINED.

3.04 FIELD QUALITY CONTROL

A. COMPACTION SHALL BE D-1557 FOR SITE WORK AND 95 % MAXIMUM DENSITY UNDER SLAB AREAS. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET SHALL BE AN ACCEPTABLE ALTERNATIVE.

B. THE COMPACTION TEST RESULTS SHALL BE AVAILABLE PRIOR TO THE CONCRETE POUR.

3.05 PROTECTION

A. PROTECT SEEDED AREAS FORM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1"-2". STAKE AND TIE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET SHALL BE AN ACCEPTABLE ALTERNATIVE.

B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACT SHALL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE AND SECURED TO STAKES EXTENDING 2'-0" INTO THE GROUND ON FOUR SIDES OF THE TREE.

C. ALL EXPOSED AREAS SHALL BE PROTECTED AGAINST WASHOUTS AND SOIL EROSION. STRAW BALES SHALL BE PLACED AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. REFER TO DETAILS ON DRAWINGS

| SYMBOLS | ABBREVIATIONS |
|---------------------------------|-------------------|
| --- G --- G --- | GROUND WIRE |
| --- E --- E --- | ELECTRIC |
| --- T --- T --- | TELEPHONE |
| --- OW --- OW --- OW --- OW --- | OVERHEAD WIRE |
| --- | PROPERTY LINE |
| -x-x-x-x- | CHAIN LINK FENCE |
| A-1 | ANTENNA MARK |
| (E) | EXISTING |
| (P) | PROPOSED DETAIL |
| | REFERENCE |
| | SURFACE ELEVATION |

2.5 EQUIPMENT DEPLOYMENT
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251

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SUBMITTALS

PROJECT NO: 8887.CT52XC118

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| 1 | 08/27/18 | FOR CONSTRUCTION | JQ |
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| 8/27/18 | JQ |

SITE NUMBER:
CT52XC118

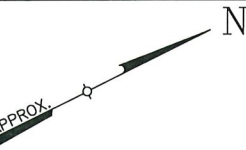
SITE NAME:
WALLINGFORD

SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

SHEET TITLE:
GENERAL NOTES

SHEET NO:
SP-2

NORTH NOTE:
 NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.



STRUCTURAL NOTE:
 REFER TO THE STRUCTURAL ANTENNA ANALYSIS REPORT COMPLETED BY B+T GROUP DATED 08/01/18.

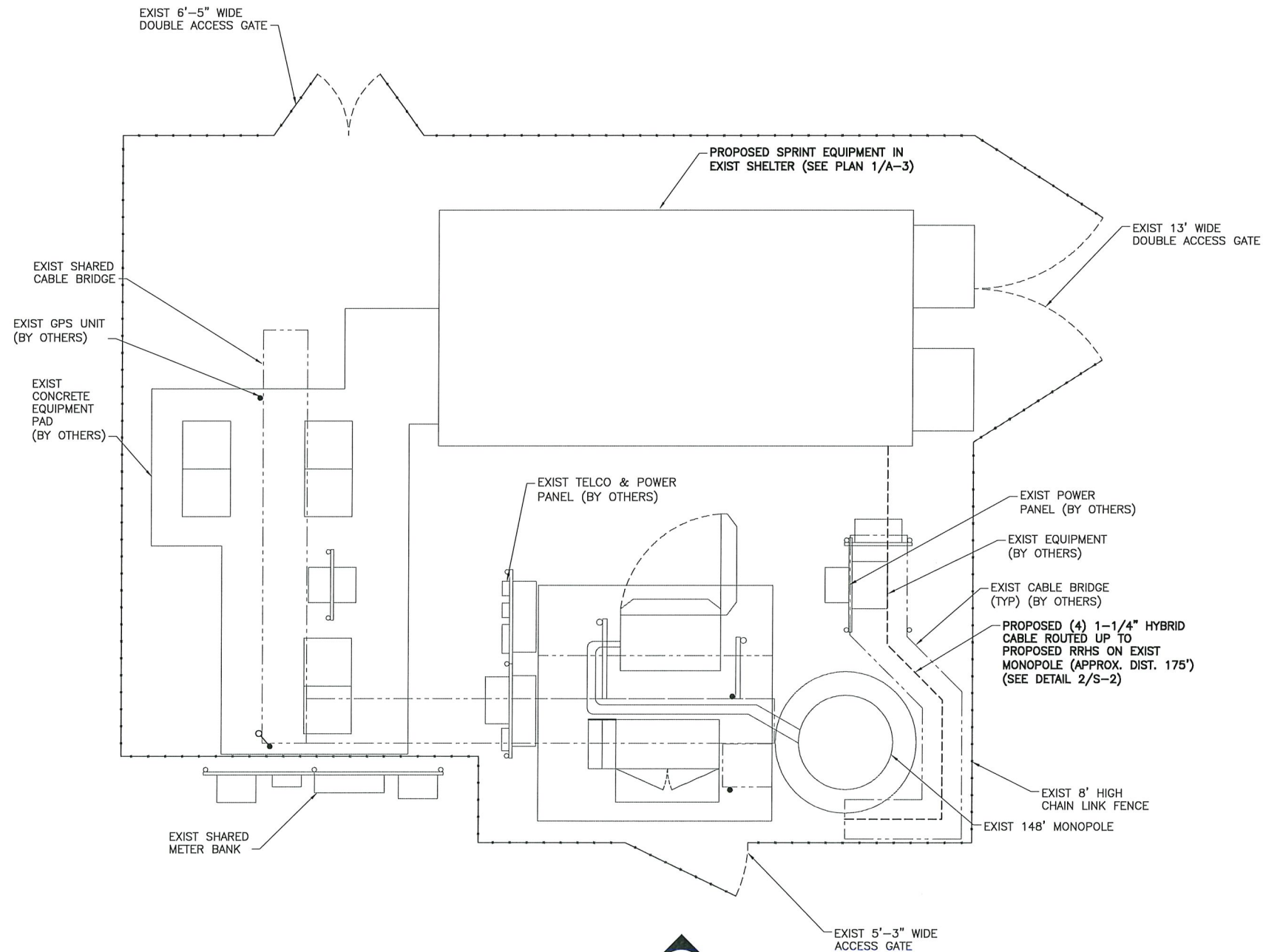
MOUNT STRUCTURAL NOTE:
 THE EXIST MOUNT SHALL BE STRUCTURALLY ANALYZED FOR THE PROPOSED DESIGN BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CT.

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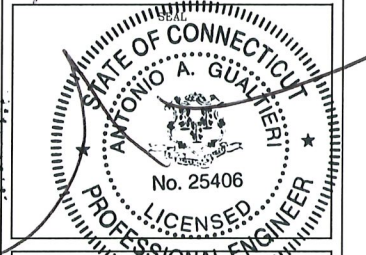


SUBMITTALS

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DATE: 8/27/18 REVIEWED BY: JMO



PROJECT NUMBER:
 CT52XC118

SITE NAME:
 WALLINGFORD

SITE ADDRESS:
 316 WOODHOUSE AVENUE
 WALLINGFORD, CT 06492

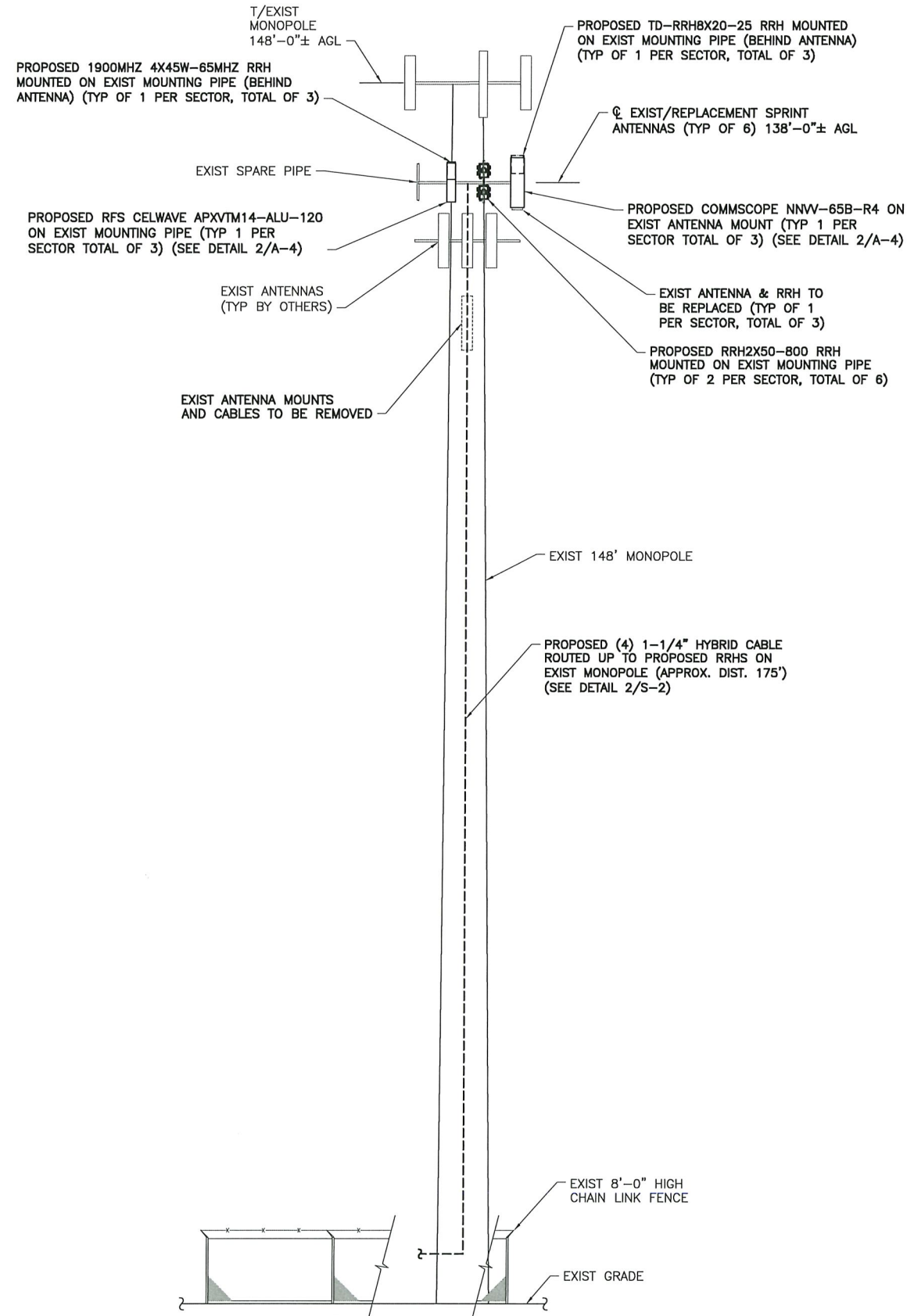
SHEET TITLE:
 SITE PLAN

SHEET NO:
 A-1

1
 A-2

1
 A-1

SITE PLAN
 SCALE: 3/8" = 1'-0"



STRUCTURAL NOTE:
REFER TO THE STRUCTURAL ANTENNA ANALYSIS REPORT COMPLETED BY B+T GROUP DATED 08/01/18.

MOUNT STRUCTURAL NOTE:
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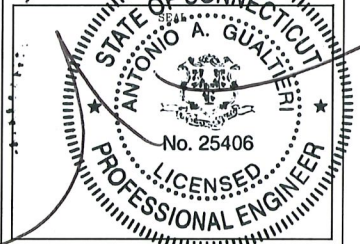
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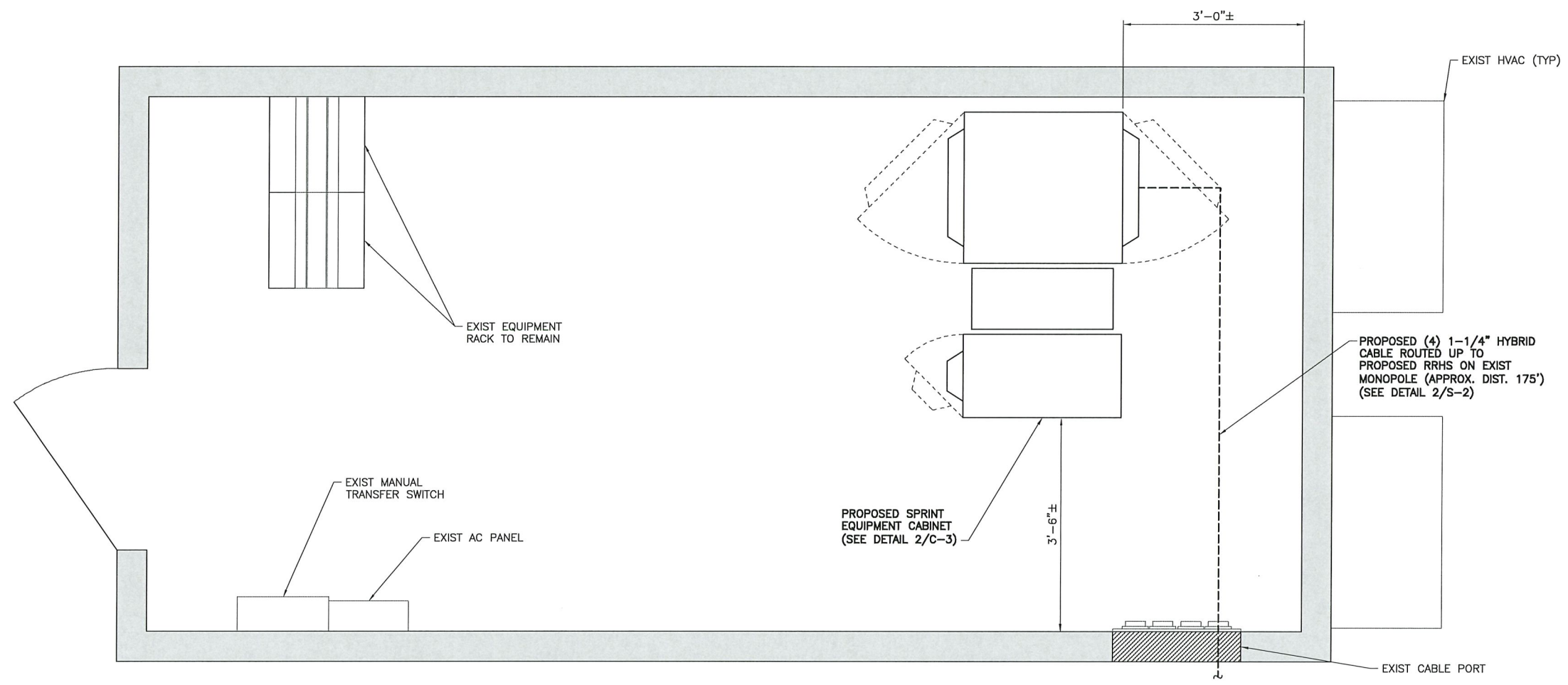
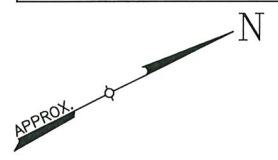
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CT52XC118
SITE NAME:
WALLINGFORD
SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

SHEET TITLE:
ELEVATION

SHEET NO:
A-2

ELEVATION
SCALE: 1/8" = 1'-0"

NORTH NOTE:
 NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.



PROPOSED (4) 1-1/4" HYBRID CABLE ROUTED UP TO PROPOSED RRHS ON EXIST MONOPOLE (APPROX. DIST. 175') (SEE DETAIL 2/S-2)

2 EQUIPMENT LAYOUT PLAN
 A-3 SCALE: 1/2" = 1'-0"

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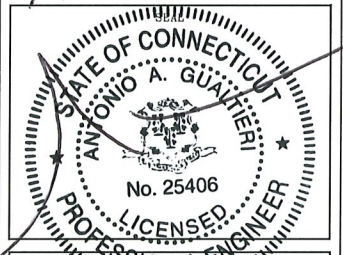
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| 8/27/18 | JMQ |



SITE NAME:
WALLINGFORD

SITE ADDRESS:
 316 WOODHOUSE AVENUE
 WALLINGFORD, CT 06492

SHEET TITLE:
 ENLARGED EQUIPMENT LAYOUT PLANS

SHEET NO:
A-3

APPROX. 

ANTENNA DATA

| Status | REMOVE | Proposed | Proposed |
|--------------------------|-----------|-----------------------------|-------------|
| Antenna Manufacturer | CLEARWIRE | RFS-CEL WAVE | COMMSCOPE |
| Antenna Model Number | N/A | APXVTM14-C-120 | NNVV-65B-R4 |
| Number of Antennas | 3 | 3 | 3 |
| Antenna RAD Center | 138' | 138' | 138' |
| Antenna Azimuth | 0/120/240 | 0/120/240 | 0/120/240 |
| Antenna RRH Model Number | N/A | TD-RRH8X20-25 & PCS 1900MHZ | RRH2X50-800 |
| Number of RRH | 3 | 3 | 3/3 |

STRUCTURAL NOTE:
REFER TO THE STRUCTURAL ANTENNA ANALYSIS REPORT COMPLETED BY B+T GROUP DATED 08/01/18.

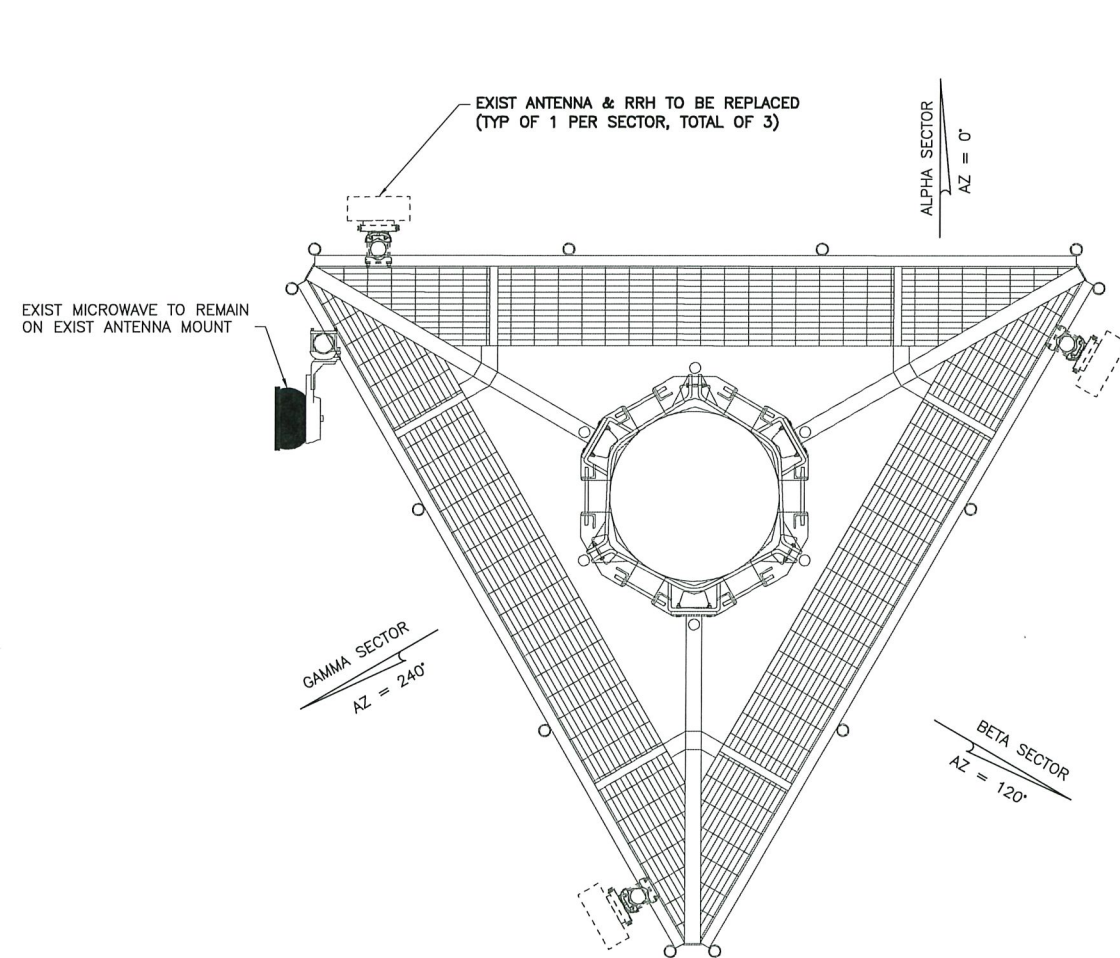
MOUNT STRUCTURAL NOTE:
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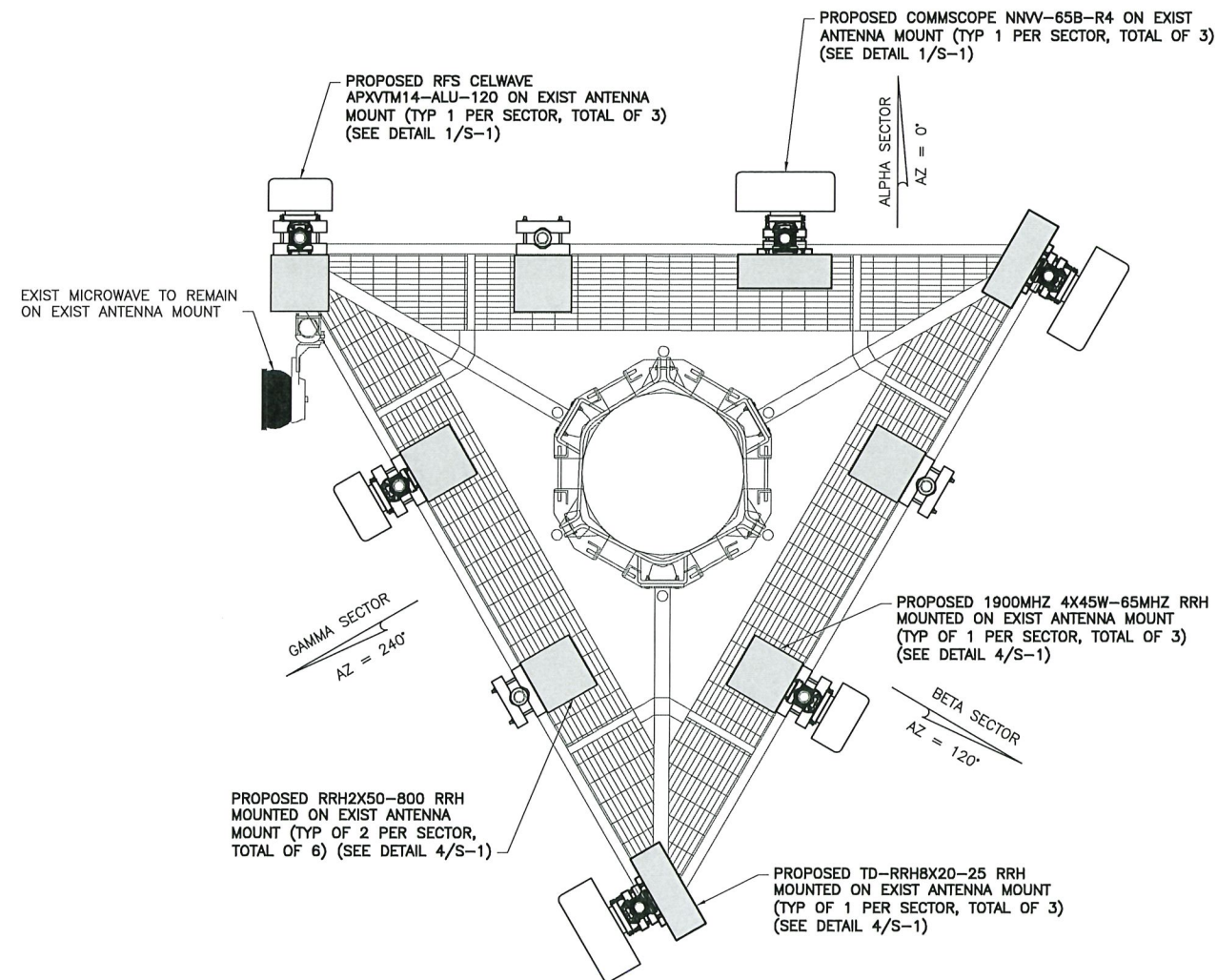
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1 ANTENNA LAYOUT PLAN (EXIST)
A-4 SCALE: 3/4" = 1'-0"

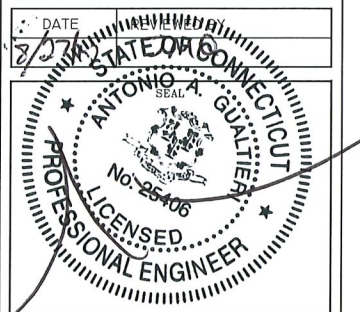


2 ANTENNA LAYOUT PLAN (FINAL)
A-4 SCALE: 3/4" = 1'-0"

SUBMITTALS

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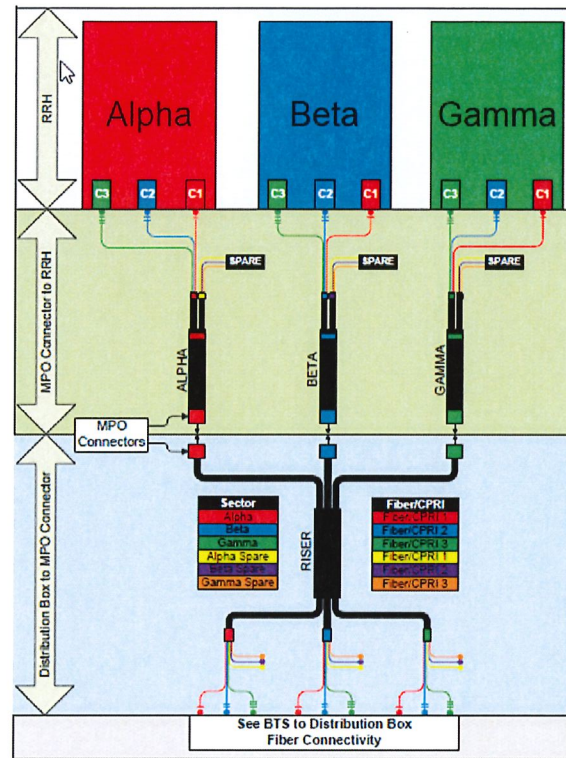
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SITE NAME:
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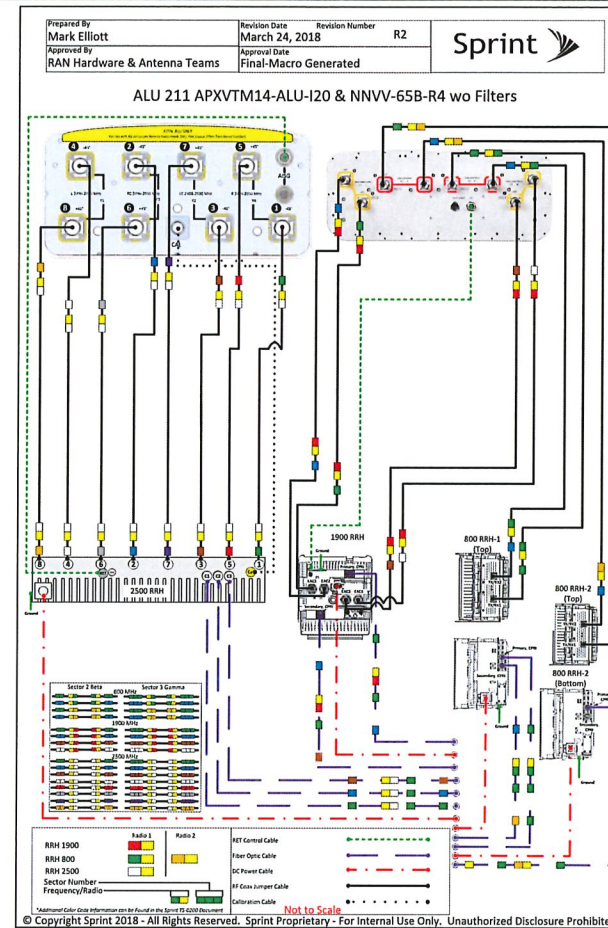
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SHEET TITLE:
ANTENNA LAYOUT PLANS

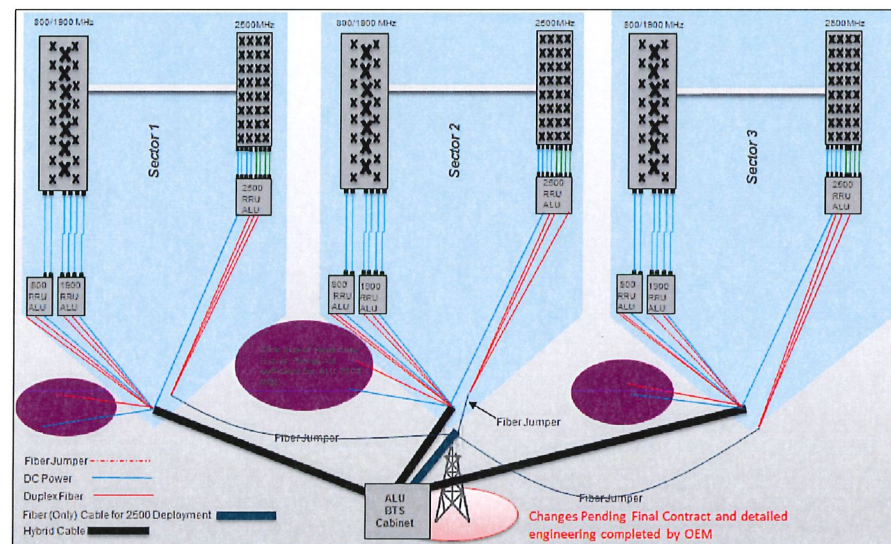
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A-4



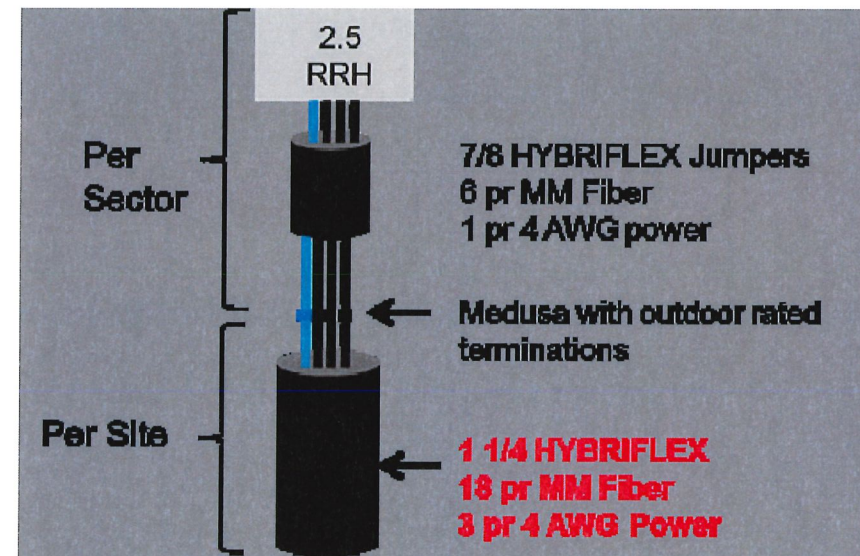
1 2.5 CABLE COLOR CODING
A-5 SCALE: N.T.S.



2 RRH CONNECTIVITY
A-5 SCALE: N.T.S.



3 RAN WIRING
A-5 SCALE: N.T.S.



4 CABLE SCENARIO
A-5 SCALE: N.T.S.

Sprint
2.5 EQUIPMENT DEPLOYMENT
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251

CROWN CASTLE

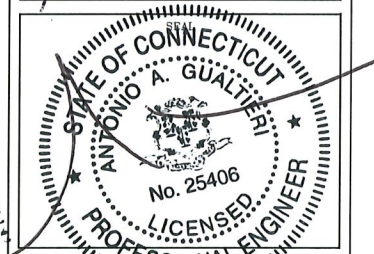
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| 1 | 08/27/18 | FOR CONSTRUCTION | JQ |
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| 8/27/18 | JMA |



CT52XC118
SITE NAME:
WALLINGFORD
SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

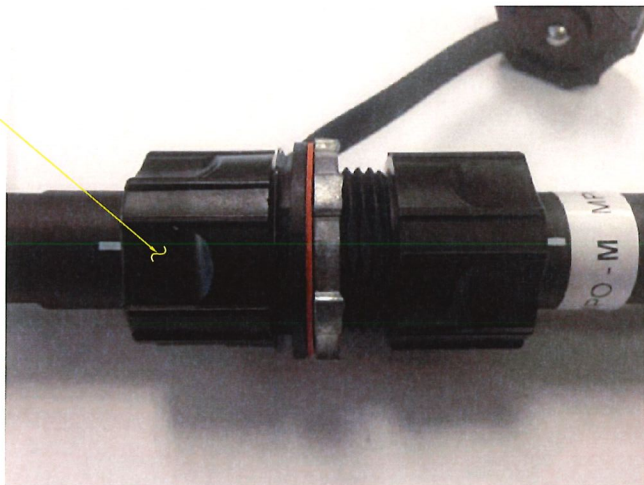
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RAN WIRING DIAGRAM

SHEET NO:
A-5

IMPORTANT!! LINE UP WHITE MARKINGS ON JUMPER AND RISER IP-MPO CONNECTOR. PUSH THE WHITE MARK ON THE JUMPER CONNECTOR FLUSH AGAINST THE RED SEAL ON THE RISER CONNECTION

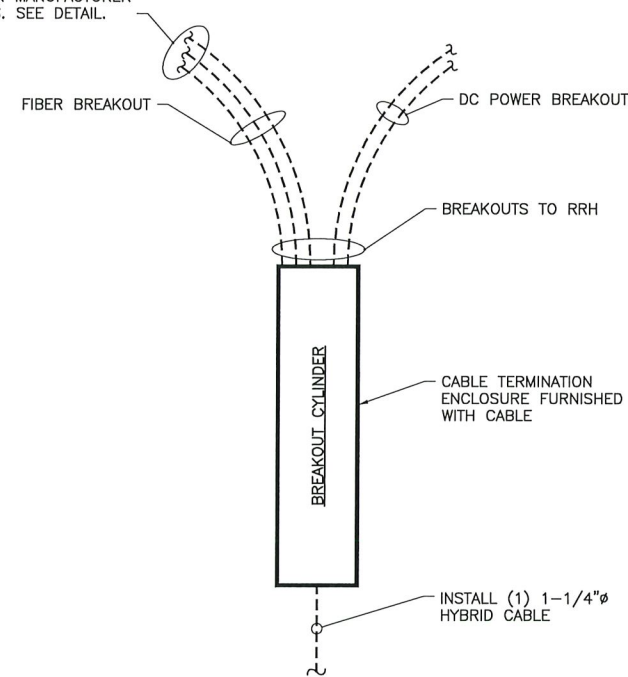


IMPORTANT!! ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL A CLICK SOUND IS HEARD TO ENSURE A GOOD CONNECTION

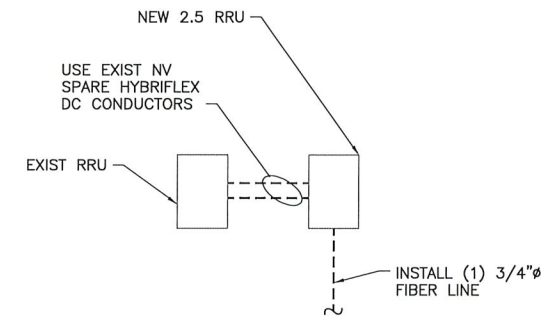


1 HYBRIFLEX RISER/JUMPER CONNECTION DETAILS
A-6 SCALE: N.T.S.

TRUNK-LINE TO JUMPER CONNECTION (MPO) TO BE INSTALLED PER MANUFACTURER REQUIREMENTS. SEE DETAIL.



2.5 HYBRID CABLE W/FIBER & DC FEEDERS



FIBER ONLY TRUNK LINES

2 TRUNK LINE DETAILS (TYPICAL)
A-6 SCALE: N.T.S.

SPECIAL NOTES: CABLE MARKINGS AT RAD CENTER AND ALL WALL/BLDG. PENETRATIONS

- ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) WRAPS OF TAPE.
- ALL COLOR BANDS INSTALLED AT THE TOWER TOP SHALL BE A MINIMUM OF 3" WIDE AND SHALL HAVE A MINIMUM OF 3/4" OF SPACING BETWEEN EACH COLOR.
- ALL COLOR BANDS INSTALLED AT OR NEAR THE GROUND MAY BE ONLY 3/4" WIDE. EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
- EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH 3/4" COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
- ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" BANDS ON EACH END OF THE BOTTOM JUMPER.
- ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
- EACH COLOR BAND SHALL HAVE A MINIMUM OF (3) WRAPS AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT AS TO AVOID UNRAVELING.
- X-POLE ANTENNAS SHOULD USE "XX-1" FOR THE "+45" PORT, "XX-2" FOR THE "-45" PORT.
- COLOR BAND #4 REFERS TO THE FREQUENCY BAND: ORANGE=850, VIOLET=1900. USED ON JUMPERS ONLY.
- RF FEEDLINE SHALL BE IDENTIFIED WITH A METAL TAG (STAINLESS OR BRASS) AND STAMPED WITH THE SECTOR, ANTENNA POSITION, AND CABLE NUMBER.
- ANTENNAS MUST BE IDENTIFIED, USING THE SECTOR LETTER AND ANTENNA NUMBER, WITH A BLACK MARKER PRIOR TO INSTALLATION.

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DATE: 8/27/18 REVIEWED BY: [Signature]



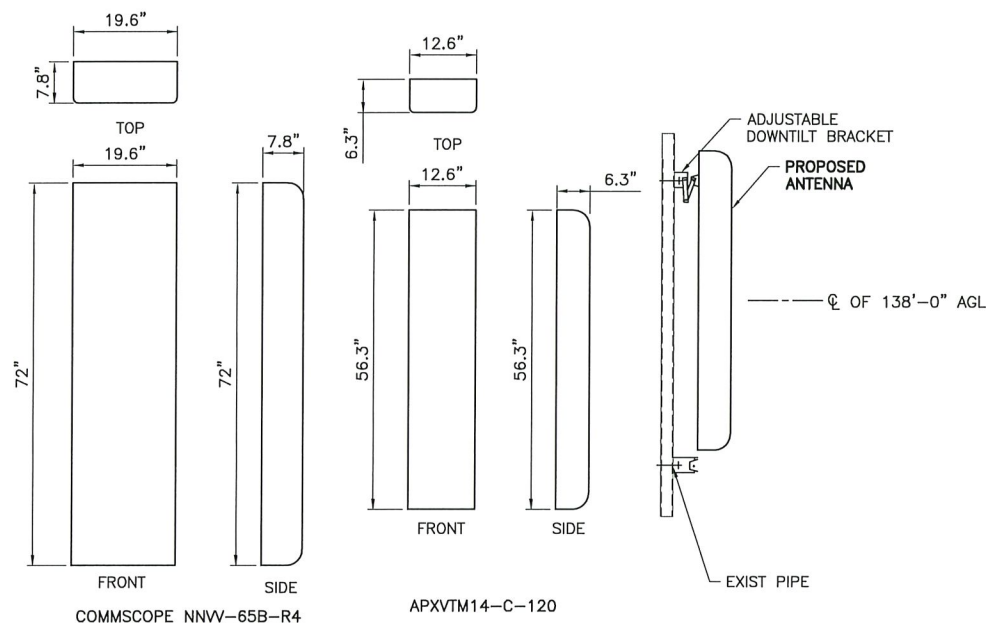
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SITE NAME:
WALLINGFORD

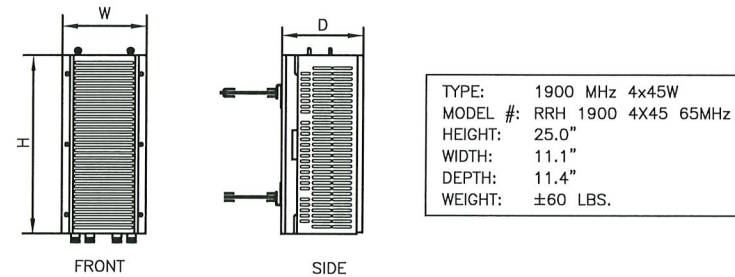
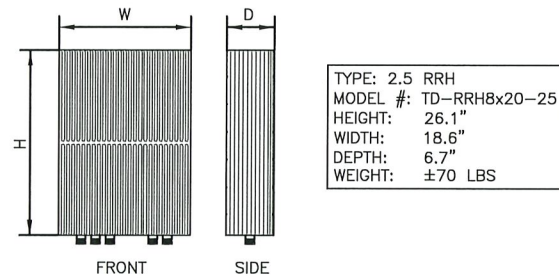
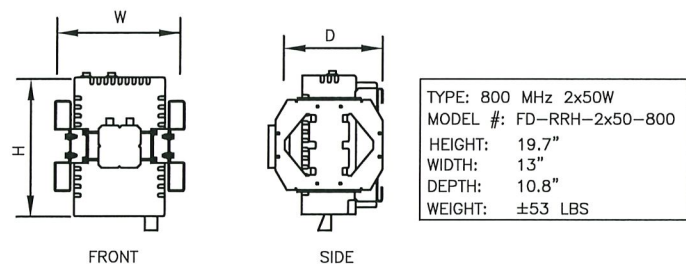
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WALLINGFORD, CT 06492

SHEET TITLE:
CABLE DETAILS

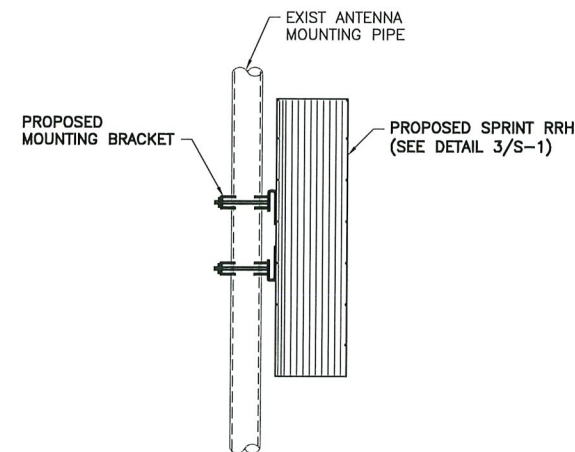
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A-6



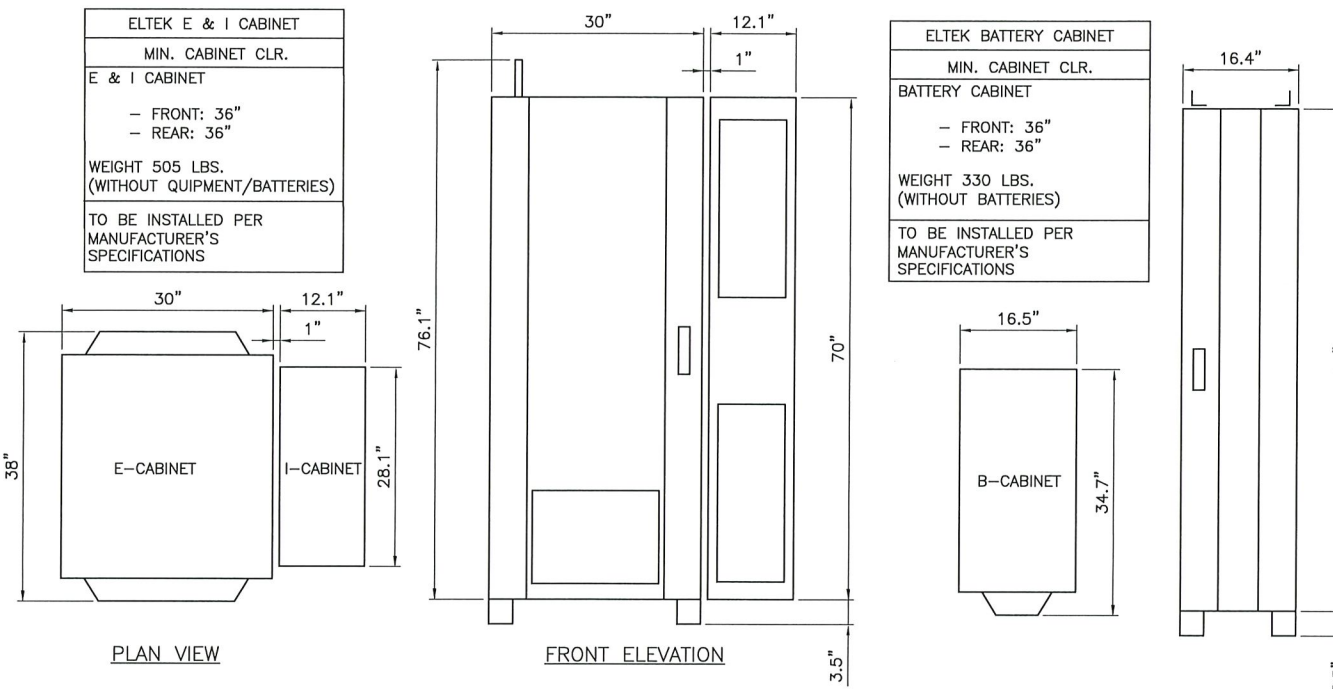
1 (PROPOSED) ANTENNA DETAILS
S-1 SCALE: 3/4" = 1'-0"



3 (PROPOSED) RRH DETAILS
S-1 SCALE: 1" = 1'-0"



4 RRH MOUNTING DETAIL
S-1 SCALE: 1 1/2" = 1'-0"



2 (PROPOSED) EQUIPMENT CABINET DETAILS
S-1 SCALE: 1" = 1'-0"

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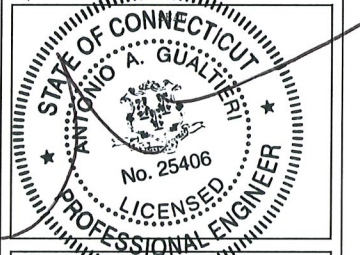
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SITE ADDRESS:
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WALLINGFORD, CT 06492

SHEET TITLE:
EQUIPMENT DETAILS

SHEET NO:
S-1

RFS HYBRIFLEX RISER CABLES SCHEDULE

| | | |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Fiber Only (Existing DC Power) | Hybrid cable MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50ft | 50 ft |
| | MN: HB058-M12-075F | 75 ft |
| | MN: HB058-M12-100F | 100 ft |
| | MN: HB058-M12-125F | 125 ft |
| | MN: HB058-M12-150F | 150 ft |
| | MN: HB058-M12-175F | 175 ft |
| | MN: HB058-M12-200F | 200 ft |

| | | |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 8 AWG Power | Hybrid cable MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50ft | 50 ft |
| | MN: HB114-08U3M12-075F | 75 ft |
| | MN: HB114-08U3M12-100F | 100 ft |
| | MN: HB114-08U3M12-125F | 125 ft |
| | MN: HB114-08U3M12-150F | 150 ft |
| | MN: HB114-08U3M12-175F | 175 ft |
| | MN: HB114-08U3M12-200F | 200 ft |

| | | |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 6 AWG Power | Hybrid cable MN: HB114-13U3M12-225F 3x 6 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225ft | 225 ft |
| | MN: HB114-13U3M12-250F | 250 ft |
| | MN: HB114-13U3M12-275F | 275 ft |
| | MN: HB114-13U3M12-300F | 300 ft |

| | | |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| 4 AWG Power | Hybrid cable MN: HB114-21U3M12-225F 3x 4 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225ft | 325 ft |
| | MN: HB114-21U3M12-350F | 350 ft |
| | MN: HB114-21U3M12-375F | 375 ft |

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

| | | |
|------------|-----------------------------------------------------------------------------------------------------------------|-------|
| Fiber Only | Hybrid Jumper cable MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable | 5 ft |
| | MN: HBF012-M3-10F1 | 10 ft |
| | MN: HBF012-M3-15F1 | 15 ft |
| | MN: HBF012-M3-20F1 | 20 ft |
| | MN: HBF012-M3-25F1 | 25 ft |
| | MN: HBF012-M3-30F1 | 30 ft |

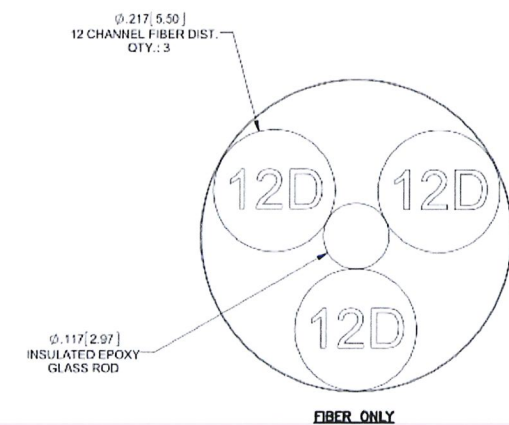
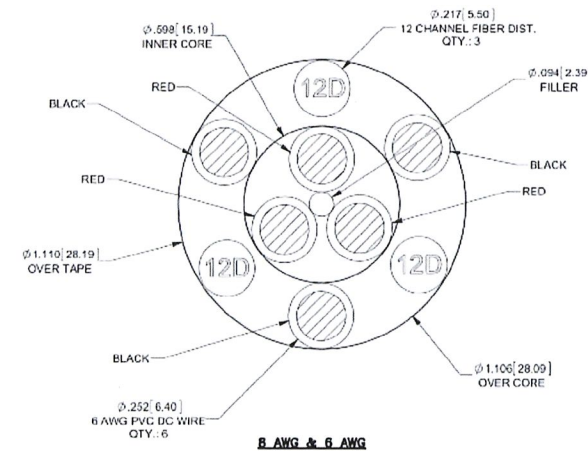
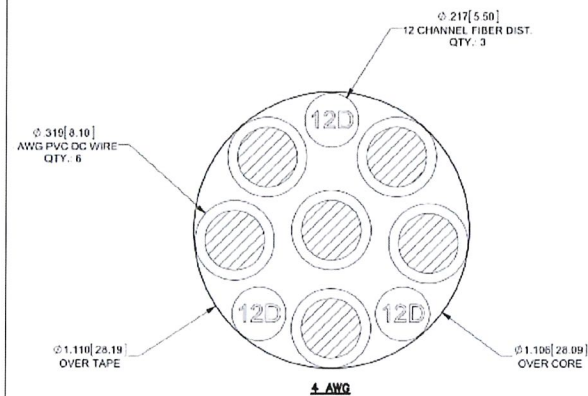
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| 8 AWG Power | Hybrid Jumper cable MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable | 5 ft |
| | MN: HBF058-08U1M3-10F1 | 10 ft |
| | MN: HBF058-08U1M3-15F1 | 15 ft |
| | MN: HBF058-08U1M3-20F1 | 20 ft |
| | MN: HBF058-08U1M3-25F1 | 25 ft |
| | MN: HBF058-08U1M3-30F1 | 30 ft |

| | | |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 6 AWG Power | Hybrid Jumper cable MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable | 5 ft |
| | MN: HBF058-13U1M3-10F1 | 10 ft |
| | MN: HBF058-13U1M3-15F1 | 15 ft |
| | MN: HBF058-13U1M3-20F1 | 20 ft |
| | MN: HBF058-13U1M3-25F1 | 25 ft |
| | MN: HBF058-13U1M3-30F1 | 30 ft |

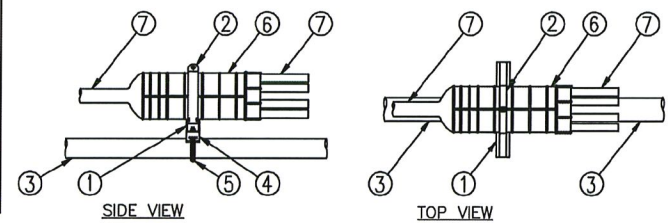
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|-------------|------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 4 AWG Power | Hybrid Jumper cable MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable | 5 ft |
| | MN: HBF078-21U1M3-10F1 | 10 ft |
| | MN: HBF078-21U1M3-15F1 | 15 ft |
| | MN: HBF078-21U1M3-20F1 | 20 ft |
| | MN: HBF078-21U1M3-25F1 | 25 ft |
| | MN: HBF078-21U1M3-30F1 | 30 ft |

HYBRID CABLE DC CONDUCTOR SIZE GUIDELINE

| | | | |
|------------|-----------|------------------|----------------|
| MANUF: | RFS | | |
| CABLE | LENGTH | DC CONDUCTOR | CABLE DIAMETER |
| FIBER ONLY | VARIABLES | USE NV HYBRIFLEX | 7/8" |
| HYBRIFLEX | <200' | 8 AWG | 1-1/4" |
| HYBRIFLEX | 225-300' | 6 AWG | 1-1/4" |
| HYBRIFLEX | 325-375' | 4 AWG | 1-1/4" |



- LEGEND:**
- P1000T-HG UNISTRUT, 12" LONG.
 - 6" PIPE HANGER.
 - EXISTING SUPPORT PIPE.
 - NEW STANDOFF BRACKET, ANDREW PART# 30848-4.
 - NEW ROUND MEMBER ADAPTER SIZED FOR EXISTING PIPE SUPPORT.
 - BREAKOUT UNIT.
 - CABLE.



2 MEDUSA HEAD DETAIL
S-2 SCALE: NTS

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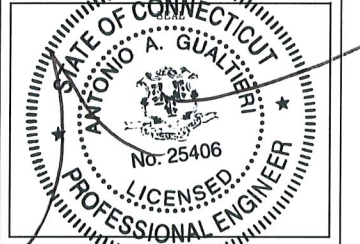
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SITE NAME:
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SITE ADDRESS:
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SCHEMATIC DETAILS

SHEET NO:
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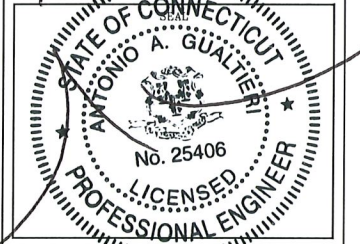
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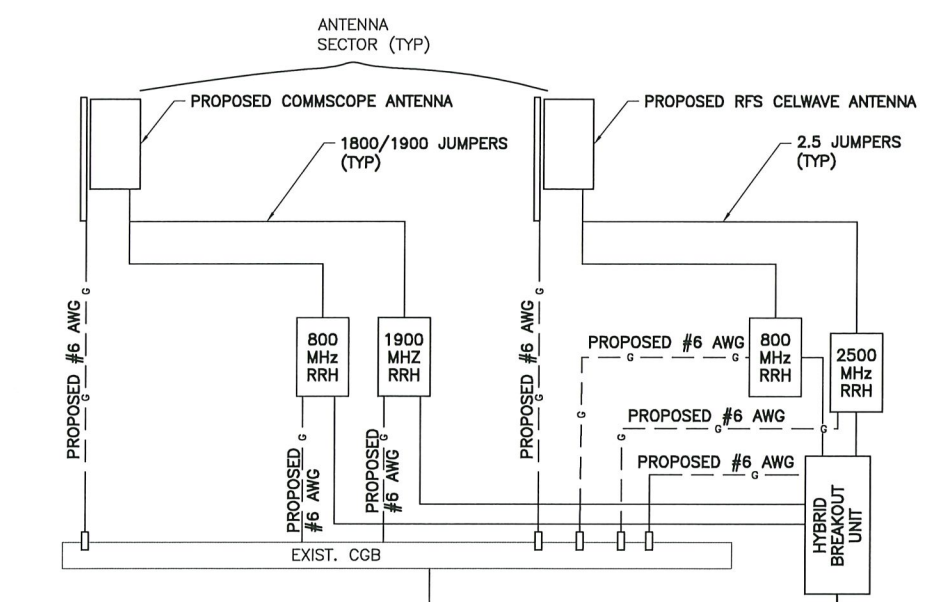
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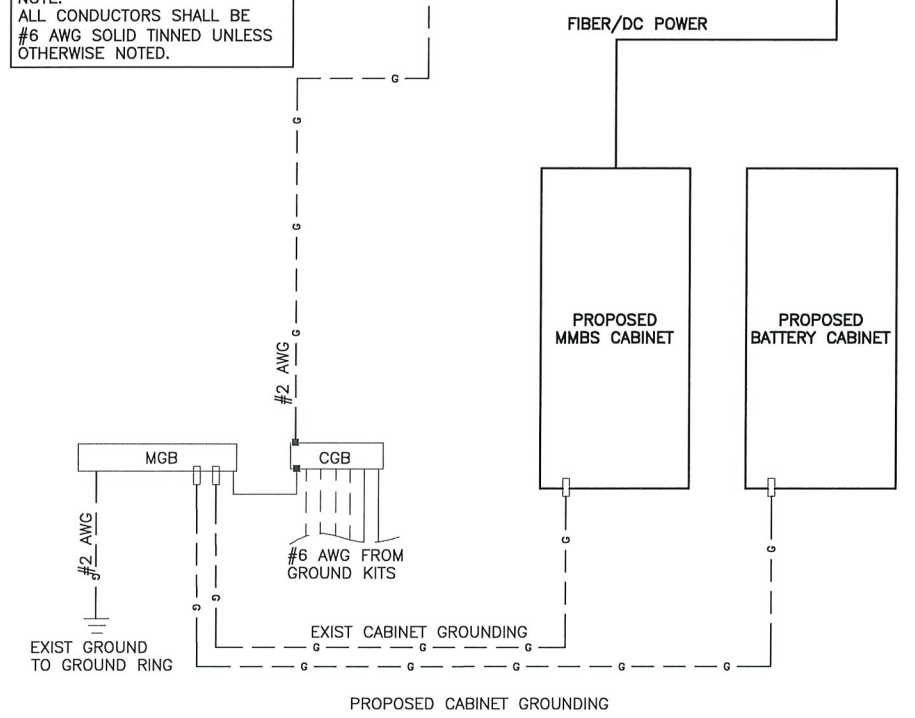
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SHEET TITLE:
ELECTRICAL & GROUNDING
PLANS

SHEET NO:
E-1



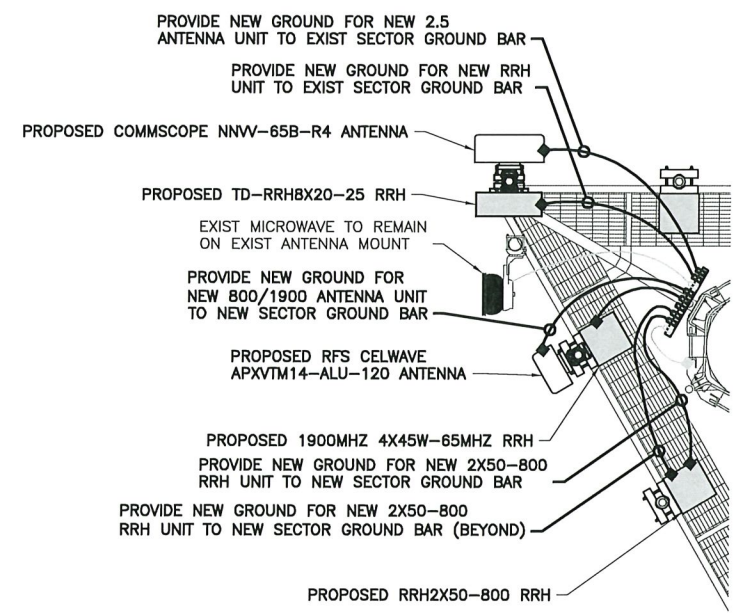
NOTE:
ALL CONDUCTORS SHALL BE #6 AWG SOLID TINNED UNLESS OTHERWISE NOTED.



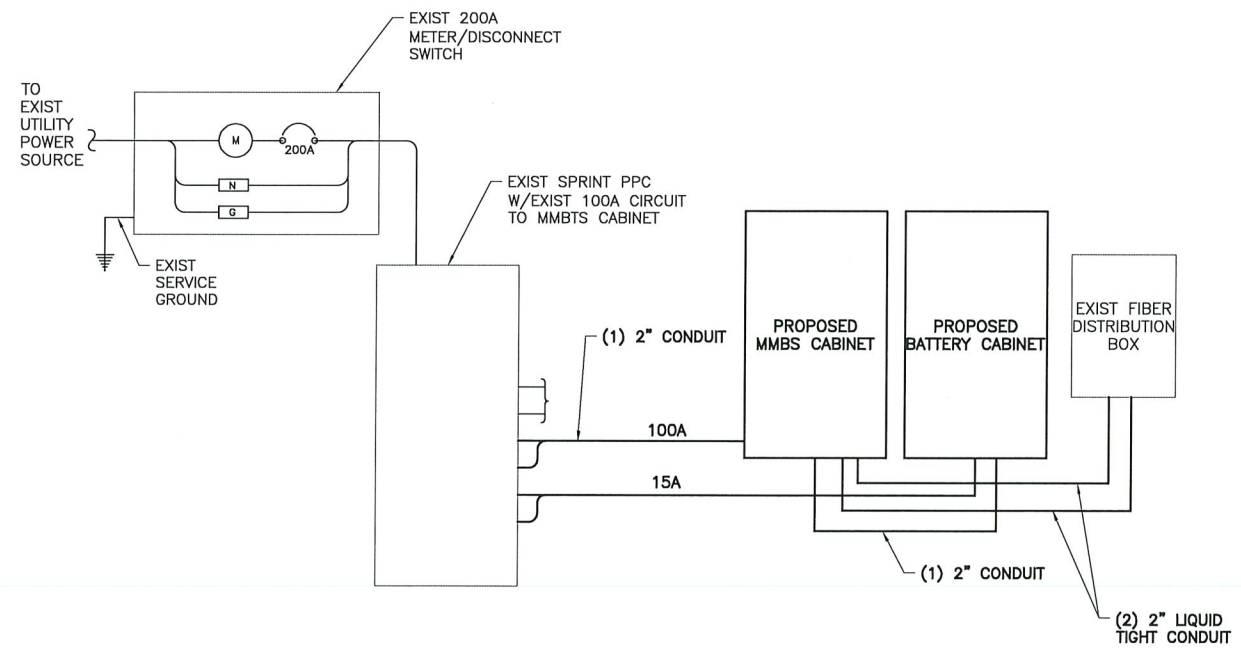
LEGEND

- CADWELD CONNECTION
- MECHANICAL CONNECTION
- COMPRESSION CONNECTION

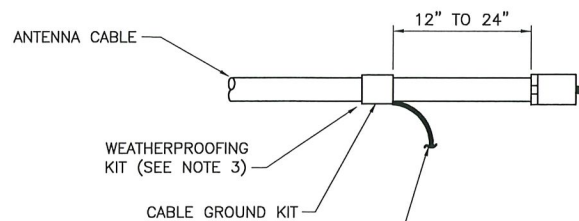
1
E-1
SCALE: NTS
TYPICAL GROUNDING ONE LINE DIAGRAM



2
E-1
SCALE: NTS
TYPICAL ANTENNA GROUNDING PLAN



NOTE: FINAL ELECTRICAL DESIGN TO BE DETERMINED BY OTHER.
3
E-1
SCALE: NTS
TYPICAL ELECTRICAL & TELCO PLAN



6 AWG STRANDED Cu WIRE WITH GREEN, 600V, THWN INSULATION OR BLACK, MARKED AS REQUIRED BY THE NEC (GROUNDED TO GROUND BAR) (SEE NOTES 1 & 2)

CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

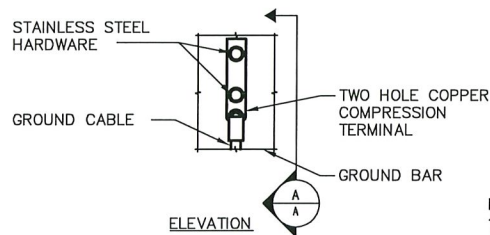
NOTES:

DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

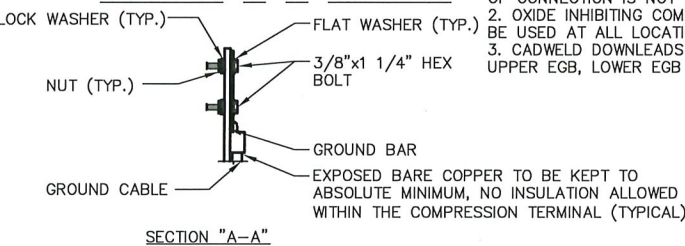
GROUNING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.

WEATHER PROOFING SHALL BE (TYPE AND PART NUMBER) AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER AND APPROVED BY CONTRACTOR.

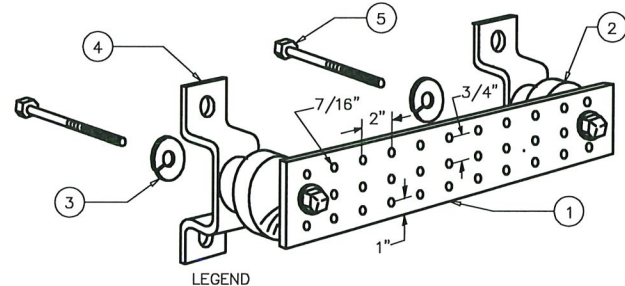
1 CABLE GROUNDING KIT DETAIL
E-2 SCALE: N.T.S.



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



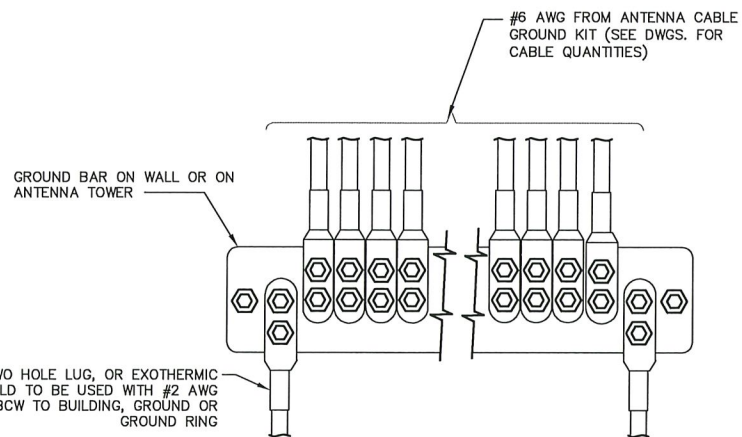
2 GROUNDING BAR CONN. DETAIL
E-2 SCALE: NTS



- 1- COPPER TINNED GROUND BAR, 1/4"X 4"X 20", OR OTHER LENGTH AS REQUIRED, HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION
- 2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4 OR EQUAL
- 3- 5/8" LOCKWASHERS OR EQUAL
- 4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056 OR EQUAL
- 5- 5/8-11 X 1" H.H.C.S.BOLTS

NOTE:
ALL BOLTS, NUTS, WASHERS AND LOCK WASHERS SHALL BE 18-8 STAINLESS STEEL.

3 GROUNDING BAR DETAIL
E-2 SCALE: NTS



*TWO HOLE LUG, OR EXOTHERMIC WELD TO BE USED WITH #2 AWG BCW TO BUILDING, GROUND OR GROUND RING

* - GROUND BARS AT THE BOTTOM OF TOWERS/MONOPOLES SHALL ONLY USE EXOTHERMIC WELDS.

- ATTACH "DO NOT DISCONNECT" LABELS TO GROUND BARS. CAN USE BRASS TAG "DO NOT DISCONNECT" AT EACH HYBRID GROUND POINT OR BACK-A-LITE PLATE LABEL ON GROUND BAR.

- CONNECT SEQUENCE- BOLT/WASHER/NO-OX/GROUND BAR/NO-OX/WASHER/LOCK-WASHER/NUT. THIS IS REPEATED FOR EACH LUG CONNECTION POINT.

4 ANTENNA GROUND BAR DETAIL
E-2 SCALE: NTS

GROUNING NOTES:

1. GROUNING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250-GROUNING AND BONDING.
2. ALL GROUND WIRES SHALL BE #2 AWG UNLESS NOTED OTHERWISE.
3. ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPEO OR SHARPLY BENT.
4. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
5. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
6. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
7. ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL AND SHALL BE PROVIDED WITH GROUNING BUSHINGS.
8. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
9. WHEN CABLE LENGTH IS OVER 20' THE MANUFACTURERS GROUND KIT MUST BE INSTALLED PER THE MANUFACTURERS SPECIFICATIONS.
10. REFER TO "ANTI-THEFT UPDATE TO SPRINT GROUNING 082412.PDF" FOR GUIDELINE TO SUSPECTED OR ACTUAL THEFT OF GROUNING.
11. HOME RUN GROUNDS ARE NOT APPROVED BY CROWN CASTLE CONSTRUCTION STANDARDS AND THAT ANTENNA BUSS BARS SHOULD BE INSTALLED DIRECTLY TO TOWER STEEL WITHOUT INSULATORS OR DOWN CONDUCTORS.

PROTECTIVE GROUNING SYSTEM GENERAL NOTES:

1. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNING. CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
2. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNING CONDUCTOR.
3. ALL GROUNING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH PROJECT MANAGER.
4. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNING CONNECTIONS SHALL BE STAINLESS STEEL.
5. INSTALL GROUND BUSHING ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUS IN THE PANEL BOARD.
6. GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNING.
7. GROUND HYBRID CABLE SHIELD AT BOTH ENDS USING MANUFACTURER'S GUIDELINES.

ELECTRICAL AND GROUNING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
4. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
5. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THNN INSULATION.
6. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
7. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
8. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
9. GROUNING SHALL COMPLY WITH NEC ART. 250.
10. GROUND HYBRID CABLE SHIELDS AT 3 LOCATIONS USING MANUFACTURER'S HYBRID CABLE GROUNING KITS SUPPLIED BY PROJECT OWNER.
11. USE #2 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNING AS INDICATED ON THE DRAWING.
12. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
13. ROUTE GROUNING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #2 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNING RING.
14. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
15. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
16. BOND ANTENNA MOUNTING BRACKETS, HYBRID CABLE GROUND KITS, AND RRHs TO EGB PLACED NEAR THE ANTENNA LOCATION.
17. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
18. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULT FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
19. CONTRACTOR SHALL CONDUCT ANTENNA, HYBRID CABLES, GPS COAX AND RRH RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
20. CONTRACTOR SHALL CHECK CAPACITY OF EXISTING SERVICE & PANEL ON SITE TO DETERMINE IF CAPACITY EXISTS TO ACCOMMODATE THE ADDED LOAD OF THIS PROJECT. ADVISE ENGINEER OF ANY DISCREPANCY.
21. LOCATION OF ALL OUTLET, BOXES, ETC, AND THE TYPE OF CONNECTION (PLUG OR DIRECT) SHALL BE CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
22. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNERS REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE NAMEPLATE DATA FURNISHED ON THE EQUIPMENT.

Sprint
2.5 EQUIPMENT DEPLOYMENT
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251

CROWN CASTLE

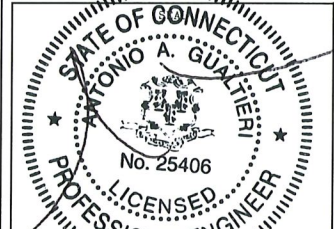
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SUBMITTALS

| NO | DATE | DESCRIPTION | BY |
|----|----------|------------------|----|
| 0 | 08/09/18 | FOR COMMENT | EN |
| 1 | 08/27/18 | FOR CONSTRUCTION | JQ |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| DATE | REVIEWED BY |
|---------|-------------|
| 8/27/18 | JMA |



SITE NUMBER:
CT52XC118
SITE NAME:
WALLINGFORD
SITE ADDRESS:
316 WOODHOUSE AVENUE
WALLINGFORD, CT 06492

SHEET TITLE:
GROUNING DETAILS & NOTES

SHEET NO:
E-2

MICROFILM

JAN 04 2000

UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

OMNIPPOINT COMMUNICATIONS, INC.
Plaintiff,

v.

PLANNING & ZONING COMMISSION OF
THE TOWN OF WALLINGFORD, AND
TOWN OF WALLINGFORD
Defendants,

DW
3:98CV2533 (WWE)

U.S. District
Court
Jan 4 9 20 AM '00
FBI

RULING ON PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT

Plaintiff, Omnipoint Communications, Inc., brings this action against the defendants, Planning & Zoning Commission of the Town of Wallingford ("Commission") and the Town of Wallingford, alleging violations of the Telecommunications Act of 1996, arising out of the denial of the plaintiff's application to erect a wireless communications tower. Omnipoint seeks summary judgment and a writ of mandamus directing the Commission to issue it a permit to construct its wireless facility. For the reasons set forth below, the plaintiff's motion for summary judgment [Doc. #13] will be granted.

Facts

Plaintiff, Omnipoint, is an FCC approved telecommunications corporation that provides, inter alia, personal wireless services within the State of Connecticut. Plaintiff is able to provide

because regulations permit the wireless facilities in a commercial district. See Beit Havurah, 177 Conn. at 443.

Therefore, the Commission's feelings of inappropriateness are not valid reasons to deny a site plan application where the applicant has complied with all of Wallingford's zoning regulations.

Conclusion

The Court finds that the Commission violated the Telecommunications Act when it failed to issue a decision in writing supported by substantial evidence in the written record. Consequently, Omnipoint's Motion for Summary Judgment [Doc. #13] is GRANTED, and the Commission's conclusion and denial of Omnipoint's application is null and void.


In view of the violation, the Court concludes that the appropriate relief is an injunction directing the Town of Wallingford to approve Omnipoint's application and issue the requested permit. See Illinois RSA NO., 963 F.Supp. at 744. The Court further finds that remand would not be appropriate as that would create further delay especially in light of the multiple hearings that have already spanned many months during the Commission's investigation of the site plan application. Cellco Partnership, 3 F.Supp.2d at 187.

The Planning & Zoning Commission of the Town of Wallingford and the Town of Wallingford are hereby ordered to approve

Oxxpoint's site plan application and to issue it a zoning permit.

A violation of the Telecommunications Act is also a violation of the Civil Rights Act. Smart SMR, 995 F.Supp. at 60-62. Therefore, the plaintiff is entitled to reasonable attorneys fees. Cellco Partnership, 3 F. Supp.2d at 186-87. The Court directs the Plaintiff's counsel to submit a summary of applicable billable hours, an affidavit as to the amount of billable hours and the reasonable market rate for attorneys' fees, and an affidavit from another attorney with a similar practice who will aver to the requested billable rate.

So Ordered this 3rd day of January, 2000, at Bridgeport, Connecticut.



WARREN W. EGINTON
SENIOR U.S. DISTRICT JUDGE



Date: **August 1, 2018**

Mr. Timothy Howell
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject: Structural Analysis Report

Carrier Designation: *Clearwire Corp Co-Locate*
Carrier Site Number: CT52XC118
Carrier Site Name: CT52XC118

Crown Castle Designation:
Crown Castle BU Number: 828915
Crown Castle Site Name: Wallingford/ I-91/ X14/ S
Crown Castle JDE Job Number: 499048
Crown Castle Work Order Number: 1582917
Crown Castle Order Number: 436915 Rev. 6

Engineering Firm Designation: **B+T Group Project Number:** 126632.001.01

Site Data: **316 Woodhouse Avenue, Wallingford, CT, New Haven County**
Latitude 41° 26' 2.76", Longitude -72° 48' 5.26"
147.1 Foot - Monopole

Dear Mr. Howell,

B+T Group 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 1209258, in accordance with order 436915, revision 6.

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:

LC8: Existing + Reserved + Proposed Equipment **Sufficient Capacity***
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

***The structure has sufficient capacity once the loading changes, described in the Recommendations section of this report, are completed.**

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 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 B+T Group 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: Kishore Machani

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564; Exp: 02/10/2019

Scott S. Vance, P.E.

tnxTower Report - version 8.0.2.1

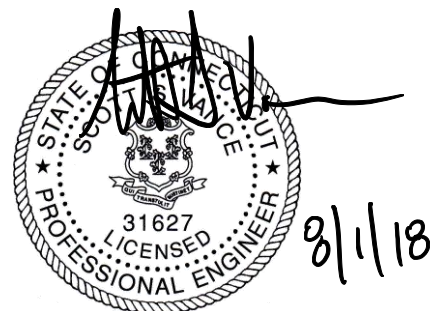


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1) INTRODUCTION

This tower is a 147.1 ft monopole designed by PiRod in March of 2000. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

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 0.75 inch ice thickness and 60 mph under service loads, exposure category C with topographic category 1 and crest height of 0 feet.

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 |
|---------------------|----------------------------|--------------------|----------------------|-------------------------|----------------------|---------------------|------|
| 138.0 | 138.0 | 3 | Alcatel Lucent | PCS 1900MHZ 4X45W-65MHZ | 4 | 1-1/4 | -- |
| | | 3 | Alcatel Lucent | RRH2X50-800 | | | |
| | | 3 | Alcatel Lucent | TD-RRH8X20-25 | | | |
| | | 3 | Commscope | NNVV-65B-R4 | | | |
| | | 3 | RFS Celwave | APXVTM14-ALU-I20 | | | |
| | 135.0 | 3 | Alcatel Lucent | RRH2X50-800 | | | |

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 |
|---------------------|----------------------------|---------------------------|----------------------|---------------------------|----------------------|---------------------|------|
| 148.0 | 148.0 | 3 | Commscope | LNx-6515DS-VTM | 13 | 1-5/8 | 1 |
| | | 3 | Ericsson | ERICSSON AIR 21 B2A B4P | | | |
| | | 3 | Ericsson | ERICSSON AIR 21 B4A B2P | | | |
| | | 3 | Ericsson | KRY 112 144/1 | | | |
| | | 3 | Ericsson | RRUS 11 B12 | | | |
| | | 1 | -- | Platform Mount [LP 403-1] | | | |
| 138.0 | 138.0 | 1 | Andrew | VHLP1-23-DW1 | 1 | 1/2 | 1 |
| | | 1 | -- | Platform Mount [LP 403-1] | | | |
| | 135.0 | 3 | Argus | LLPX310R | 1 | 1/2 | 3 |
| 128.0 | 129.0 | 1 | Raycap | DC6-48-60-18-8F | -- | -- | 1 |
| | 128.0 | 3 | CCI Antennas | HPA-65R-BUU-H6 | 1 | 3/8 | 2 |
| | | 3 | Ericsson | RRUS 32 B2 | | | |
| | | 3 | Kathrein | 782-10250 | | | |
| | | 12 | Kathrein | 860 10025 | 2 | 7/16 | |
| | | 6 | Powerwave | 7770.00 | | | |
| | | 3 | Ericsson | RRUS 11 | | | |
| | | 6 | Powerwave | LGP21401 | | | |
| | | 1 | -- | Platform Mount [LP 403-1] | | | |
| 1 | -- | Side Arm Mount [SO 102-3] | 12 | 1-5/8 | 1 | | |

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---------------------|----------------------------|--------------------|----------------------|------------------|----------------------|---------------------|------|
| 118.0 | 118.0 | 3 | RFS Celwave | APXV18-206517S-C | 6 | 1-5/8 | 4 |

Notes:

- 1) Existing Equipment
- 2) Reserved Equipment
- 3) **Equipment to be Removed; Not Considered in this Analysis**
- 4) **Abandoned 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) |
|---------------------|----------------------------|--------------------|----------------------|----------------------|----------------------|---------------------|
| 147.1 | 147.1 | 6 | Andrew | RR90-17 | 12 | 1-5/8 |
| | | 12 | Generic | Mast Head Amplifiers | | |
| 138.0 | 138.0 | 12 | Andrew | RR90-17 | 12 | 1-5/8 |
| 128.0 | 128.0 | 12 | Andrew | RR90-17 | 12 | 1-5/8 |

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

| Document | Remarks | Reference | Source |
|----------------------------|---------------------------------------------|-----------------|----------|
| Online Order Information | Clearwire Crop, Rev. 6 | 436915 | CCIsites |
| Tower Manufacturer Drawing | PIRod, File No. A-116718 | 3822414 | CCIsites |
| Foundation Drawing | FDH, Project No.04-04707E | 3590825 | CCIsites |
| Geotech Report | Clarence Welti Associates | 3590826 | CCIsites |
| Geotechnical letter | Delta Oaks Group | Date:07/30/2018 | CCIsites |
| Antenna Configuration | Failing SA by TEP, Project No. 83248.201001 | 7527705 | CCIsites |

3.1) Analysis Method

tnxTower (version 8.0.2.1), 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.

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.
- 4) Mount areas and weights are assumed based on photographs provided.
- 5) The existing base plate grout was not considered in this analysis.
- 6) Base plate design methodology of the manufacturer has been reviewed and found to be an acceptable means of designing to resist the full capacity of the bolts and shaft.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary) (Monopole) – LC8

| Section No. | Elevation (ft) | Component Type | Size | Critical Element | P (K) | SF*P_allow (K) | % Capacity | Pass / Fail |
|-------------|-------------------|----------------|-----------------------|------------------|---------|----------------|------------|-------------|
| L1 | 147.083 - 136.583 | Pole | TP17.688x15x0.25 | 1 | -2.771 | 997.816 | 16.2 | Pass |
| L2 | 136.583 - 101.083 | Pole | TP26x16.676x0.25 | 2 | -12.477 | 1475.150 | 81.1 | Pass |
| L3 | 101.083 - 66.5 | Pole | TP34.063x24.775x0.313 | 3 | -18.967 | 2387.420 | 80.3 | Pass |
| L4 | 66.5 - 32.8333 | Pole | TP41.75x32.488x0.375 | 4 | -27.467 | 3492.650 | 70.6 | Pass |
| L5 | 32.8333 - 0 | Pole | TP49.063x39.847x0.375 | 5 | -38.997 | 3984.000 | 74.9 | Pass |
| | | | | | | | Summary | |
| | | | | | | Pole (L2) | 81.1 | Pass |
| | | | | | | RATING = | 81.1 | Pass |

Table 6 - Tower Component Stresses vs. Capacity (Monopole) – LC8

| Notes | Component | Elevation (ft) | % Capacity | Pass / Fail |
|-------|------------------------------------|----------------|------------|-------------|
| 1 | Anchor Rods | Base | 84.8 | Pass |
| 1,3 | Base Plate | Base | 74.9 | Pass |
| 1 | Base Foundation (Structural) | Base | 99.5 | Pass |
| 1 | Base Foundation (Soil Interaction) | Base | 91.2 | Pass |

| | |
|-----------------------------------------------------|--------------|
| Structure Rating (max from all components) = | 99.5% |
|-----------------------------------------------------|--------------|

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Capacities up to 100% are considered acceptable based on analysis methods used.
- 3) Base plates are assumed to have the same capacity as their respective splice bolts or shaft.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. In order for the results of this analysis to be considered valid, the loading modification, as follows, must be completed.

Loading Changes:

- a. Removal of the abandoned antennas, feed lines and mounts at the 118 ft level.



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

SPRINT Existing Facility

Site ID: CT52XC118

Wallingford
316 Woodhouse Avenue
Wallingford, CT 06492

September 26, 2018

EBI Project Number: 6218006281

| Site Compliance Summary | |
|---------------------------------------------------------------------|------------------|
| Compliance Status: | COMPLIANT |
| Site total MPE% of FCC general population allowable limit: | 7.74 % |



September 26, 2018

SPRINT

Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Emissions Analysis for Site: **CT52XC118 – Wallingford**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **316 Woodhouse Avenue, Wallingford, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT 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.

General 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 850 MHz Band is approximately $567 \mu\text{W}/\text{cm}^2$. The general population exposure limit for the 1900 MHz (PCS), 2500 MHz (BRS) and 23 GHz microwave 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 done for the proposed SPRINT Wireless antenna facility located at **316 Woodhouse Avenue, Wallingford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT 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 for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.
- 3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 6) 1 microwave channel (23 GHz) was considered for Sector C of the proposed installation. This channel has a transmit power of 1 Watt.



- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **Commscope NNVV-65B-R4 and the RFS APXVTM14-ALU-I20** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands as well as the Commscope VHLP1-23-DW1 for microwave transmissions in the 23 GHz band. 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 for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerlines of the proposed panel antennas and microwave dish are **138 feet** above ground level (AGL) for **Sector A**, **138 feet** above ground level (AGL) for **Sector B** and **138 feet** above ground level (AGL) for Sector C.
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



SPRINT Site Inventory and Power Data by Antenna

| Sector: | A | Sector: | B | Sector: | C |
|--------------------|-----------------------------|--------------------|-----------------------------|--------------------|-----------------------------|
| Antenna #: | 1 | Antenna #: | 1 | Antenna #: | 1 |
| Make / Model: | Commscope NNVV-65B-R4 | Make / Model: | Commscope NNVV-65B-R4 | Make / Model: | Commscope NNVV-65B-R4 |
| Gain: | 12.75 / 15.05 dBd | Gain: | 12.75 / 15.05 dBd | Gain: | 12.75 / 15.05 dBd |
| Height (AGL): | 138 feet | Height (AGL): | 138 feet | Height (AGL): | 138 feet |
| Frequency Bands | 850 MHz / 1900 MHz (PCS) | Frequency Bands | 850 MHz / 1900 MHz (PCS) | Frequency Bands | 850 MHz / 1900 MHz (PCS) |
| Channel Count | 10 | Channel Count | 10 | Channel Count | 10 |
| Total TX Power(W): | 280 Watts | Total TX Power(W): | 280 Watts | Total TX Power(W): | 280 Watts |
| ERP (W): | 7,378.61 | ERP (W): | 7,378.61 | ERP (W): | 7,378.61 |
| Antenna A1 MPE% | 1.88 % | Antenna B1 MPE% | 1.88 % | Antenna C1 MPE% | 1.88 % |
| Antenna #: | 2 | Antenna #: | 2 | Antenna #: | 2 |
| Make / Model: | RFS APXVTM14-ALU-I20 | Make / Model: | RFS APXVTM14-ALU-I20 | Make / Model: | RFS APXVTM14-ALU-I20 |
| Gain: | 15.9 dBd | Gain: | 15.9 dBd | Gain: | 15.9 dBd |
| Height (AGL): | 138 feet | Height (AGL): | 138 feet | Height (AGL): | 138 feet |
| Frequency Bands | 2500 MHz (BRS) | Frequency Bands | 2500 MHz (BRS) | Frequency Bands | 2500 MHz (BRS) |
| Channel Count | 8 | Channel Count | 8 | Channel Count | 8 |
| Total TX Power(W): | 160 Watts | Total TX Power(W): | 160 Watts | Total TX Power(W): | 160 Watts |
| ERP (W): | 6,224.72 | ERP (W): | 6,224.72 | ERP (W): | 6,224.72 |
| Antenna A2 MPE% | 1.28 % | Antenna B2 MPE% | 1.28 % | Antenna C2 MPE% | 1.28 % |

Microwave Backhaul Data

| Antenna Type: | Gain (dBd) | Height (feet AGL): | Frequency Bands | Channel Count | Total TX Power(W) | ERP (W) | MPE % | Sector |
|---------------------------|------------|--------------------|-----------------|---------------|-------------------|----------|-------------|----------|
| Commscope VHLP1-23-DW1 | 33.45 dBd | 138 | 23 GHz | 1 | 1 | 2,213.09 | 0.05 | C |

| Site Composite MPE% | |
|--------------------------|---------------|
| Carrier | MPE% |
| SPRINT – Sector C | 3.21 % |
| Nextel | 0.34 % |
| Clearwire | 0.11 % |
| MetroPCS | 0.97 % |
| T-Mobile | 0.85 % |
| AT&T | 2.26 % |
| Site Total MPE %: | 7.74 % |

| | |
|------------------------|---------------|
| SPRINT Sector A Total: | 3.16 % |
| SPRINT Sector B Total: | 3.16 % |
| SPRINT Sector C Total: | 3.21 % |
| Site Total: | 7.74 % |

| SPRINT _ Frequency Band / Technology (Sector C) | # 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 |
|-------------------------------------------------|------------|-------------------------|---------------|---------------------------------------------------|-----------------|---------------------------------------------|------------------|
| Sprint 850 MHz CDMA | 1 | 376.73 | 138 | 0.78 | 850 MHz | 567 | 0.13% |
| Sprint 850 MHz LTE | 2 | 941.82 | 138 | 3.89 | 850 MHz | 567 | 0.69% |
| Sprint 1900 MHz (PCS) CDMA | 5 | 511.82 | 138 | 5.28 | 1900 MHz (PCS) | 1000 | 0.53% |
| Sprint 1900 MHz (PCS) LTE | 2 | 1,279.56 | 138 | 5.28 | 1900 MHz (PCS) | 1000 | 0.53% |
| Sprint 2500 MHz (BRS) LTE | 8 | 778.09 | 138 | 12.84 | 2500 MHz (BRS) | 1000 | 1.28% |
| Sprint 23 GHz Microwave | 1 | 2,213.09 | 138 | 0.46 | 23 GHz | 1000 | 0.05% |
| Total: | | | | | | | 3.21% |

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 SPRINT 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:

| SPRINT Sector | Power Density Value (%) |
|----------------------------------|-------------------------|
| Sector A: | 3.16 % |
| Sector B: | 3.16 % |
| Sector C: | 3.21 % |
| SPRINT Maximum MPE % (Sector C): | 3.21 % |
| | |
| Site Total: | 7.74 % |
| | |
| Site Compliance Status: | COMPLIANT |

The anticipated composite MPE value for this site assuming all carriers present is **7.74 %** 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.

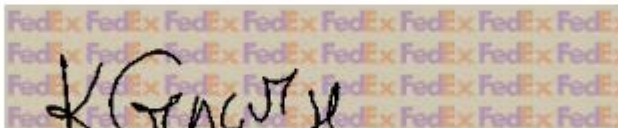
FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100%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

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