



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

October 9, 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: 876361
Sprint Site ID: CT23XC507
20 Great Oak Rd. Oxford, CT 06478
Latitude: 41° 25' 34.91"/Longitude: 73° 8' 39.33"

Dear Ms. Bachman:

Sprint currently maintains three (3) antennas at the 150-foot level of the existing 150-foot monopole tower at 20 Great Oak Rd. Oxford, CT 06478. The tower is owned by Crown Castle. STC Five LLC (A subsidiary of Sprint) own the property. Sprint now intends to replace three (3) antennas with six (6) new antennas. These antennas would be installed at the 150-foot level of the tower. Sprint also intends to install six (6) RRHs, install equipment inside an existing cabinet, and install one (1) new hybrid cable.

This facility was approved by the Connecticut Siting Council in early 2000 and an email was sent to the town building department on 10/09/2018 to ascertain the original zoning documents.

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 First Selectman Gerorge R. Temple, Town of Oxford, Gordon Gramolini, Building Official, Town of Oxford, 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

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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 George Temple
Town Hall
486 Oxford Rd.
Oxford , CT 06478-7298

Gordon Gramolini, Building Official
Town Hall
486 Oxford Rd.
Oxford, CT 06478-7298



20 Great Oak Rd
Oxford, CT 06478



Directions



SAVE



NEARBY



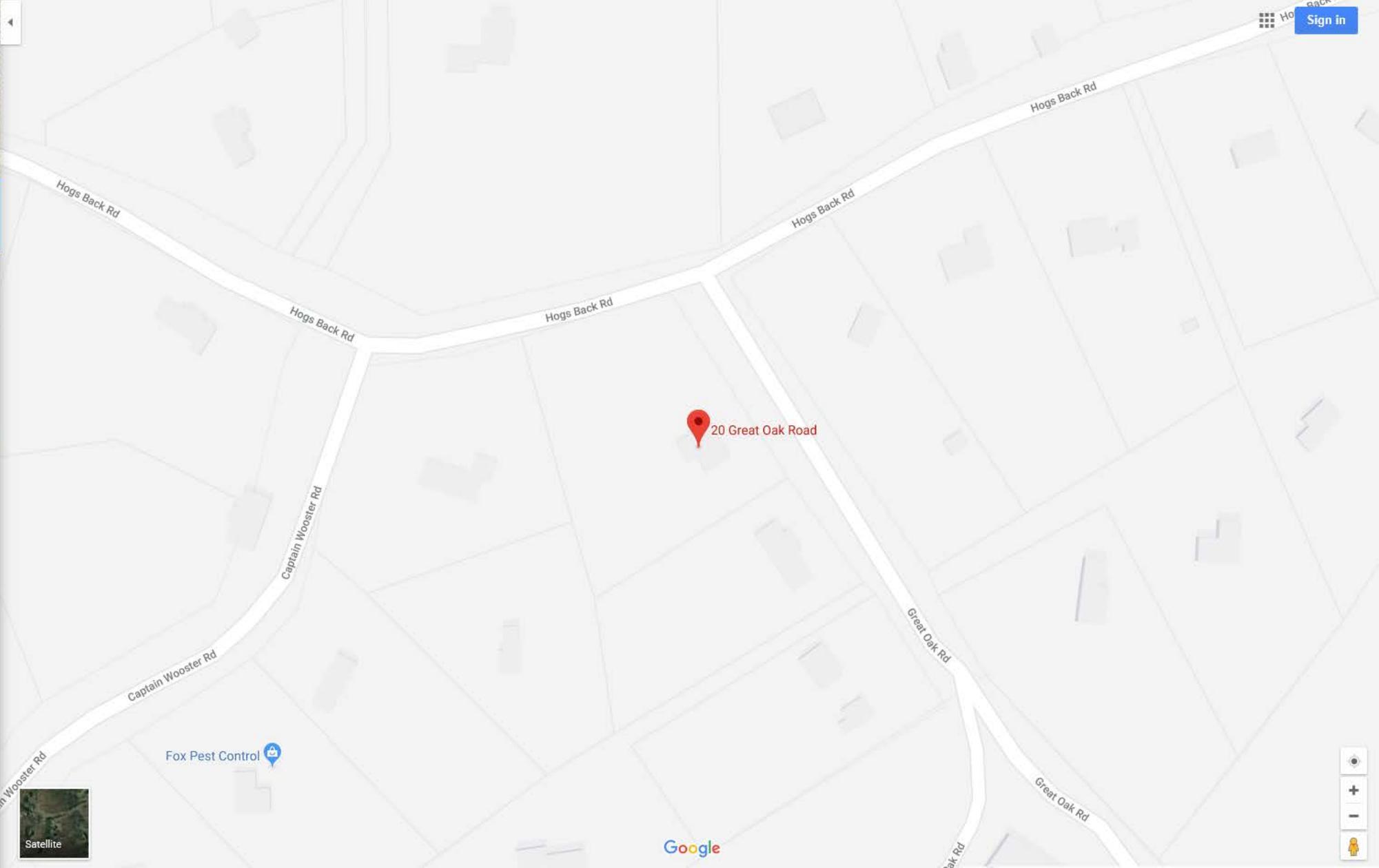
SEND TO YOUR PHONE



SHARE



Add a missing place



20 Great Oak Road

Fox Pest Control



Satellite

20 GREAT OAK RD

Location 20 GREAT OAK RD

Mblu 21/ 61/ 1A/ CELL/

Acct# 0041290C

Owner STC FIVE LLC

Assessment \$425,200

Appraisal \$607,400

PID 5982

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$607,400	\$0	\$607,400
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$425,200	\$0	\$425,200

Owner of Record

Owner STC FIVE LLC

Sale Price \$0

Co-Owner C/O CROWN CASTLE

Book & Page 000/ 000

Address 4017 WASHINGTON RD

Sale Date 10/01/2010

PMB 331

MCMURRAY , PA 15317

Ownership History

Ownership History			
Owner	Sale Price	Book & Page	Sale Date
STC FIVE LLC	\$0	000/ 000	10/01/2010

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Replacement Cost: \$0

Building Percent

Good:

Replacement Cost

Less Depreciation: \$0

Building Photo

Building Attributes	
Field	Description
Style	Outbuildings
Model	

Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Extra Kitchens	
Fireplace(s)	
Extra Opening(s)	
Gas Fireplace(s)	
Blocked FPL(s)	
Woodstove(s)	
Bsmt Garage(s)	
SF Fin Bsmt	
FBM Quality	
Dormer LF	
Ext Millwork	
Foundation	



(<http://images.vgsi.com/photos/OxfordCTPhotos//\00\00\84\12.jpg>)

Building Layout

 Building

(<http://images.vgsi.com/photos/OxfordCTPhotos//Sketches/5982>)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 307

Land Line Valuation

Size (Acres) 0

Description Cell Tower
Zone
Neighborhood 090
Alt Land Appr No
Category

Frontage
Depth
Assessed Value \$0
Appraised Value \$0

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CELL	Cell Site			3 SITES	\$528,000	1
SHD4	Cell Shed			288 S.F.	\$77,800	1
FNS	Fence 10'			240 L.F.	\$1,600	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$607,400	\$0	\$607,400
2014	\$608,000	\$0	\$608,000

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$425,200	\$0	\$425,200
2014	\$425,600	\$0	\$425,600

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2.5 EQUIPMENT DEPLOYMENT

SITE NUMBER:
CT23XC507

SITE NAME:
SEYMOUR 2/OXFORD TOWN GARAGE

SITE ADDRESS:
20 GREAT OAK RD
OXFORD, CT 06478

CROWN ID#: 876361

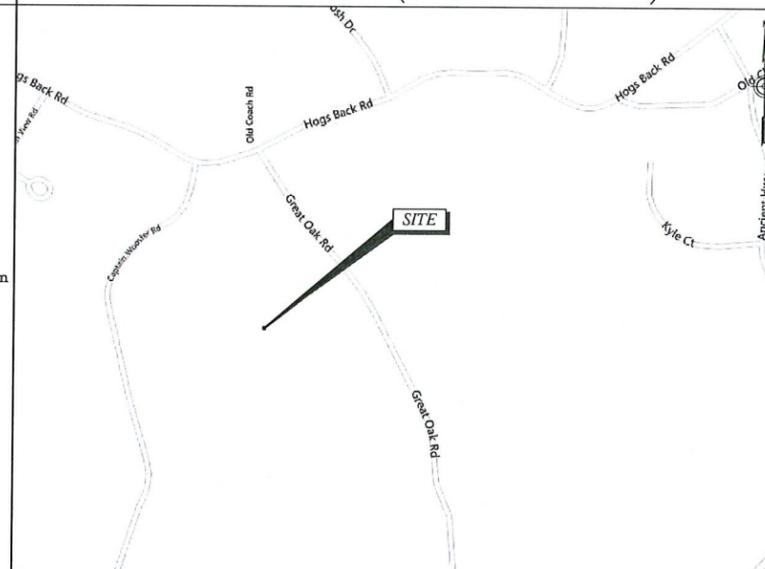
CROWN SITE NAME: SEYMOUR 2/OXFORD TOWN GARAGE



SHEET INFORMATION

SITE NUMBER:	CT23XC507	LANDLORD:	CROWN CASTLE USA 2000 CORPORATE DRIVE CANONSBURG, PA
SITE NAME:	SEYMOUR 2/OXFORD TOWN GARAGE	LOCAL POWER COMPANY:	CONNECTICUT LIGHT AND POWER CONTACT CUSTOMER SERVICE (800) 286-2000
SITE ADDRESS:	20 GREAT OAK RD OXFORD, CT 06478	APPLICANT:	SPRINT 6580 SPRINT PARKWAY OVERLAND PARK, KANSAS 66251
COUNTY:	FAIRFIELD	ENGINEER:	JAMES QUICKSELL (845) 567-6656 EXT. 2835 JQuicksell@tectonicengineering.com
COORDINATES: (NAD 83)	41° 25' 34.91" N 73° 8' 39.33" W	SPRINT CM:	HEATHER CASTAGNARO (617) 247-4905 Heather.2.castagnaro@sprint.com
GROUND ELEV:	259'± AMSL	CROWN CM:	JEFF BARBADORA (781) 970-0065 JEFF.BARBADORA@SPRINT.COM
STRUCTURE TYPE:	MONOPOLE	AAV:	AT&T
STRUCTURE HEIGHT:	150'-0"± AGL		
ANTENNA RAD CENTER:	150'-0"± AGL		
ZONING CLASSIFICATION:	OUTBUILDINGS		
MAP-BLOCK-LOT:	3003/890/1114//		

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	06/16/14	FOR COMMENT	NM
1	11/03/14	FOR CONSTRUCTION	MP
2	11/28/17	REVISED SA	JT
3	01/05/18	REVISED AZIMUTHS	RD
4	06/15/18	REVISED SCOPE	PG
5	10/01/18	PER COMMENTS	DE

DATE	REVIEWED BY
10/31/18	PHOTO

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-2005.
 - 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

- (1) NEW 2.5 EQUIPMENT RACK INSIDE EXIST MMBTS CABINET.
- REMOVE (3) EXIST RFS APXVSP-18-C-A20.
- (3) NEW RFS APXVTM14-C-120 & (3) NEW COMMSCOPE NNVV-65B-R4 ANTENNAS.
- (3) NEW TD-RRH0x20-25 RRH.
- (1) NEW 1-1/4" HYBRID CABLE.
- (3) NEW 8000MHZ RRH



SITE NUMBER: CT23XC507
SITE NAME: SEYMOUR 2/OXFORD TOWN GARAGE
SITE ADDRESS: 20 GREAT OAK RD OXFORD, CT 06487
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—WHRPRF—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 FINS 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 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.



2.5 EQUIPMENT DEPLOYMENT
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251

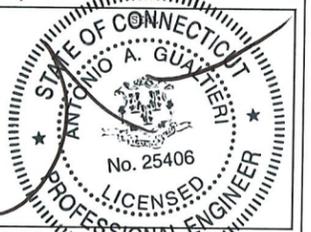



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SUBMITTALS			
NO	DATE	DESCRIPTION	BY
		PROJECT NO: 8887.CT23XC507	
0	06/16/14	FOR COMMENT	NM
1	11/03/14	FOR CONSTRUCTION	MP
2	11/28/17	REVISED SA	JT
3	01/05/18	REVISED AZIMUTHS	RD
4	06/15/18	REVISED SCOPE	PG
5	10/01/18	PER COMMENTS	DE

DATE	REVIEWED BY
10/31/18	JMG



PROJECT NUMBER
CT23XC507

SITE NAME:
SEYMOUR 2/OXFORD TOWN GARAGE

SITE ADDRESS:
20 GREAT OAK RD
OXFORD, CT 06487

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-IH, 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
— — — — O — — — — O —	OVERHEAD WIRE
— — — — — — — — — —	PROPERTY LINE
-X-X-X-X-X-	CHAIN LINK FENCE
A-1	ANTENNA MARK
(E)	EXISTING
(P)	PROPOSED DETAIL
DET # SRT #	REFERENCE
⊕	SURFACE ELEVATION

2.5 EQUIPMENT DEPLOYMENT
6580 SPRINT PARKWAY
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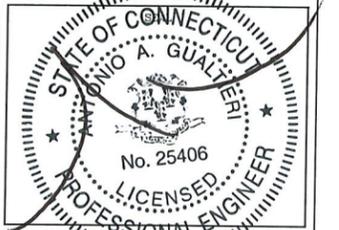
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SUBMITTALS

PROJECT NO: 8887.CT23XC507			
NO	DATE	DESCRIPTION	BY
0	06/16/14	FOR COMMENT	NM
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2	11/28/17	REVISED SA	JT
3	01/05/18	REVISED AZIMUTHS	RD
4	06/15/18	REVISED SCOPE	PG
5	10/01/18	PER COMMENTS	DE

DATE	REVIEWED BY
10/3/18	JMC



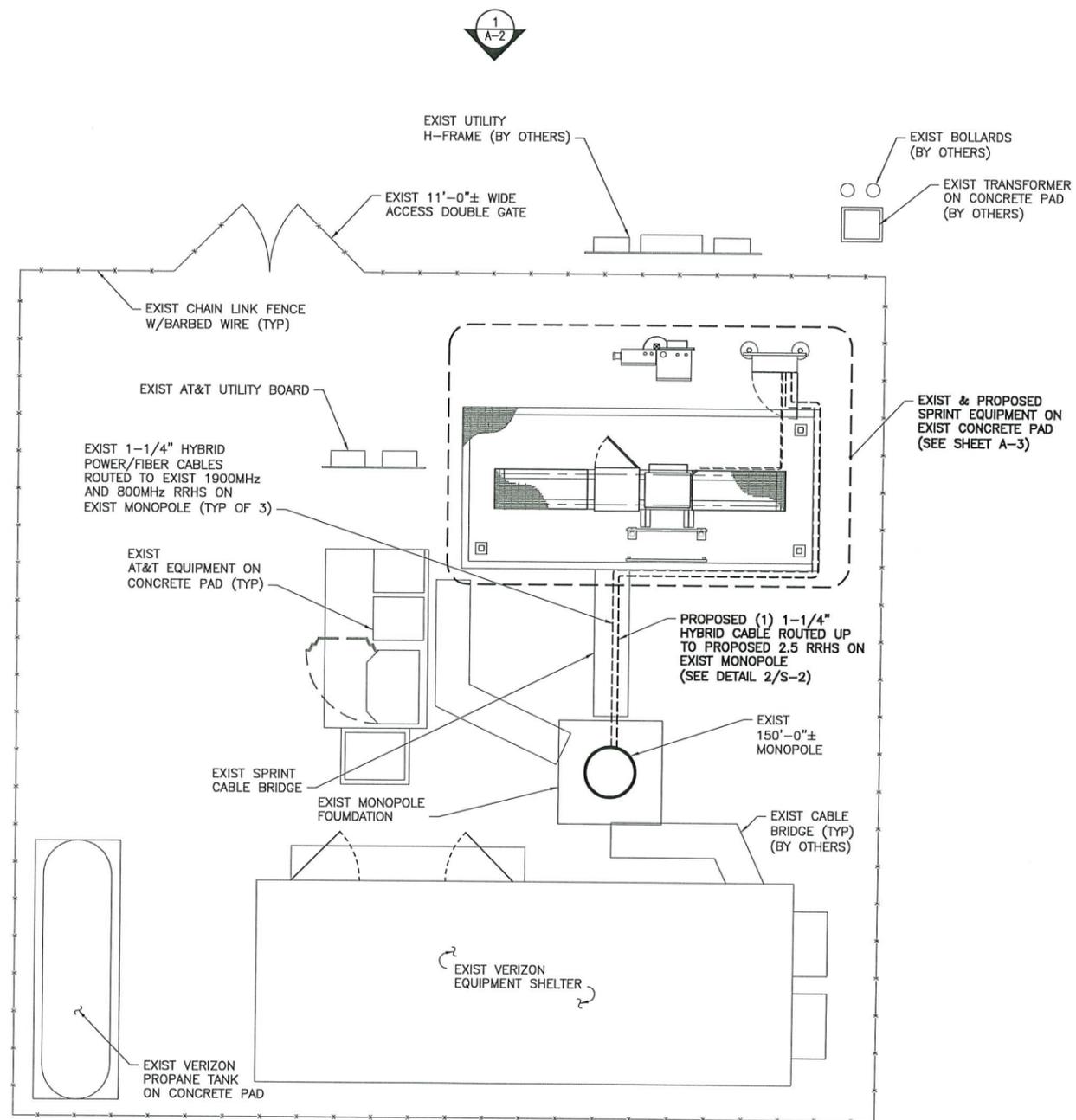
SITE NUMBER:
CT23XC507
SITE NAME:
SEYMOUR 2/OXFORD TOWN GARAGE
SITE ADDRESS:
20 GREAT OAK RD
OXFORD, CT 06487

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.



1 SITE PLAN
 A-1 SCALE: 1/4" = 1'-0"

Sprint
 2.5 EQUIPMENT DEPLOYMENT
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 OVERLAND PARK, KANSAS 66251

CROWN CASTLE

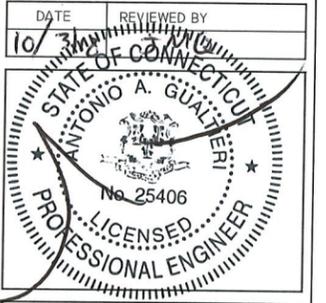
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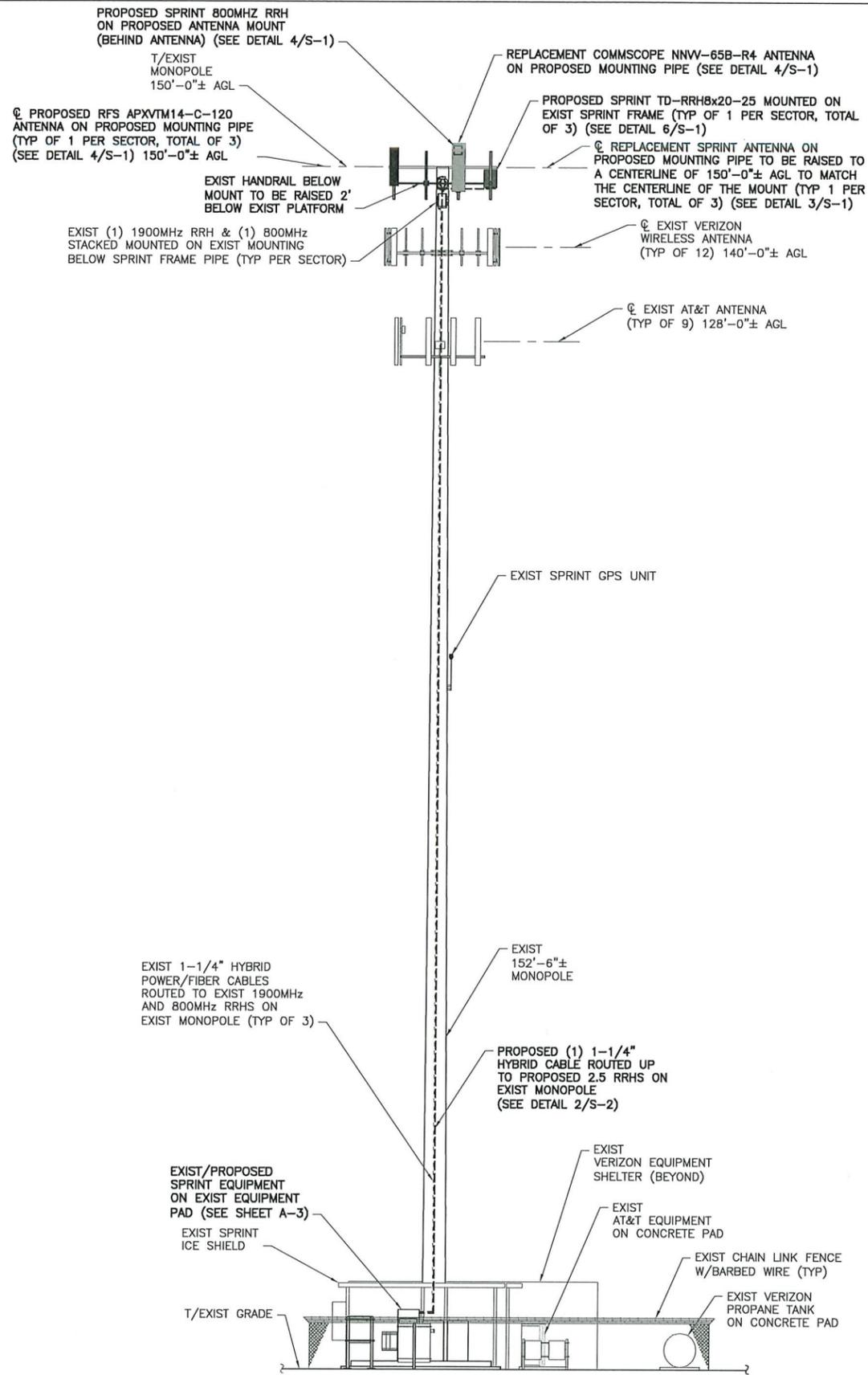
SITE NUMBER:
 CT23XC507

SITE NAME:
 SEYMOUR 2/OXFORD TOWN GARAGE

SITE ADDRESS:
 20 GREAT OAK RD
 OXFORD, CT 06487

SHEET TITLE:
 SITE PLAN

SHEET NO:
 A-1



NOTE: SOME EQUIPMENT NOT SHOWN FOR CLARITY.

1
A-2
ELEVATION
SCALE: 1/8" = 1'-0"

THE EXISTING MONOPOLE AND MOUNT SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT (TO BE COORDINATED BY OTHERS).

Sprint
2.5 EQUIPMENT DEPLOYMENT
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CROWN CASTLE

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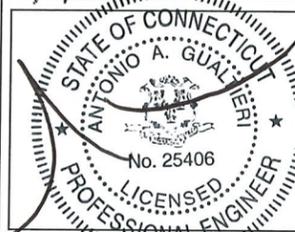
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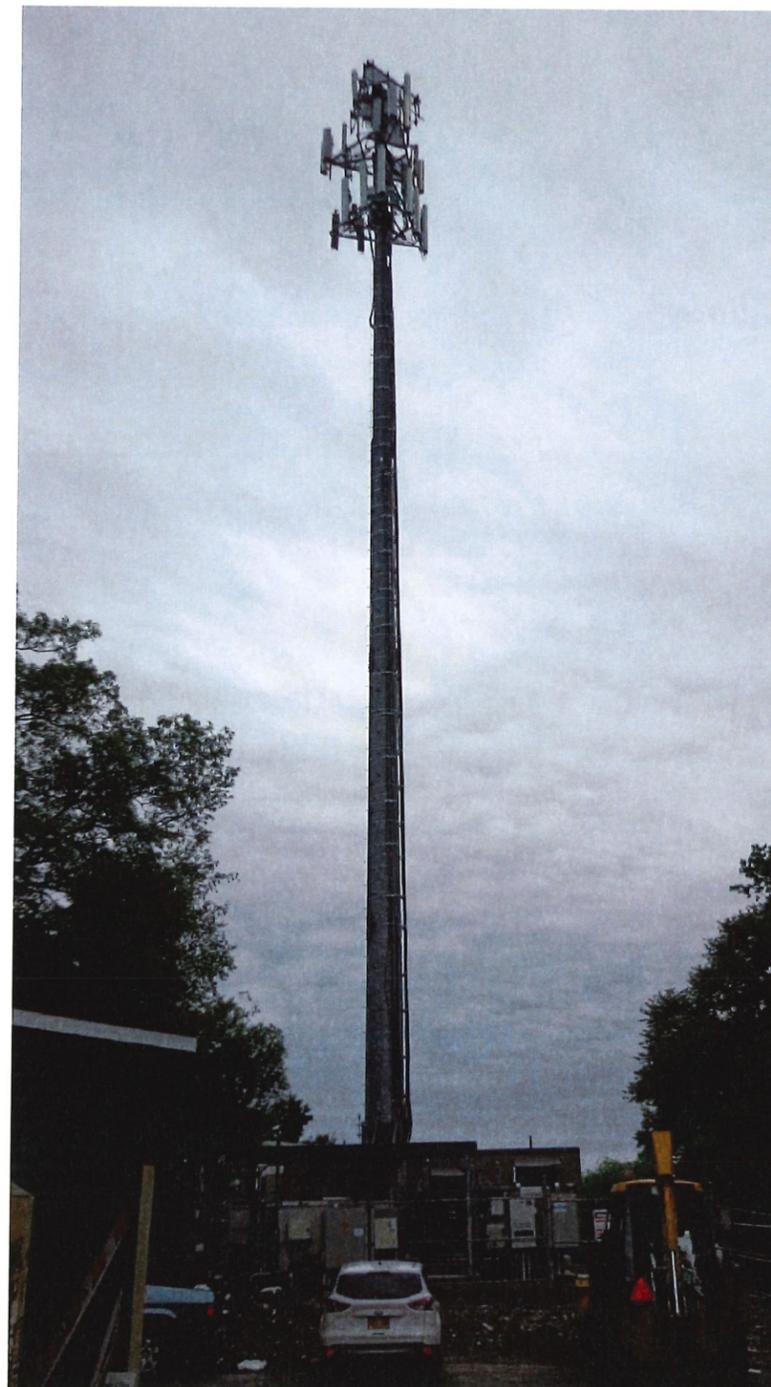
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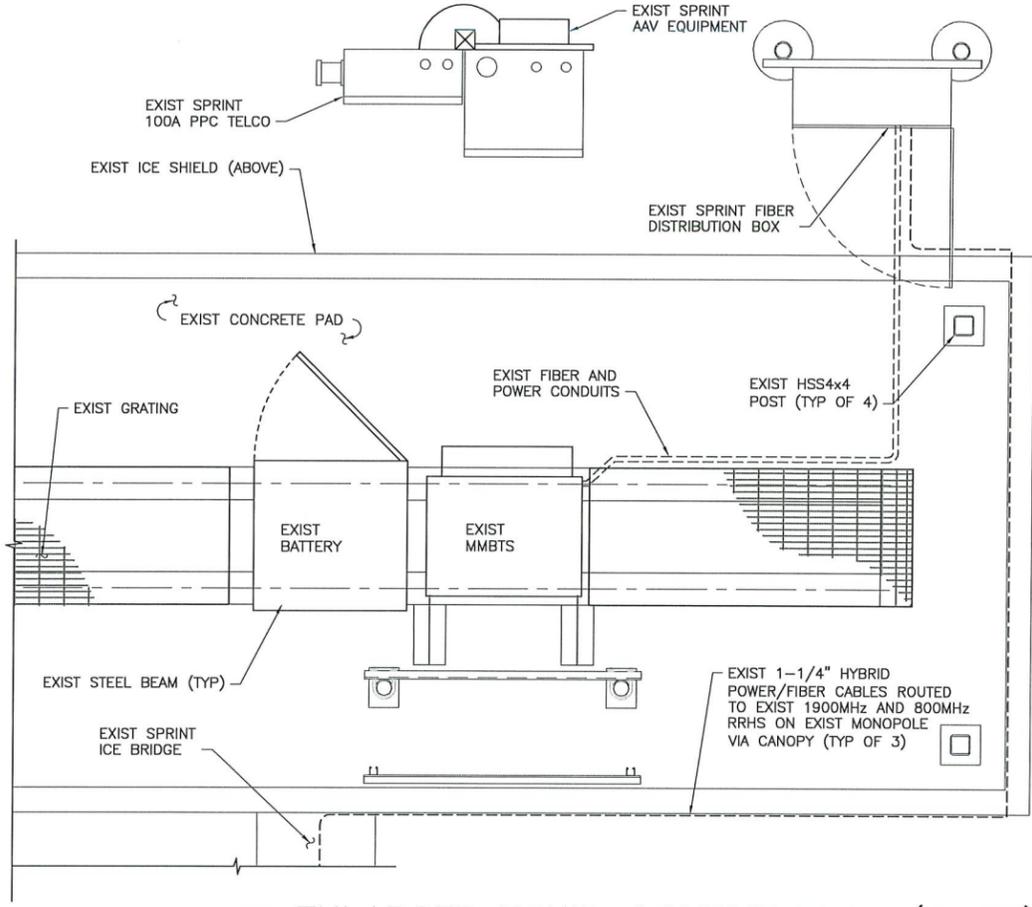
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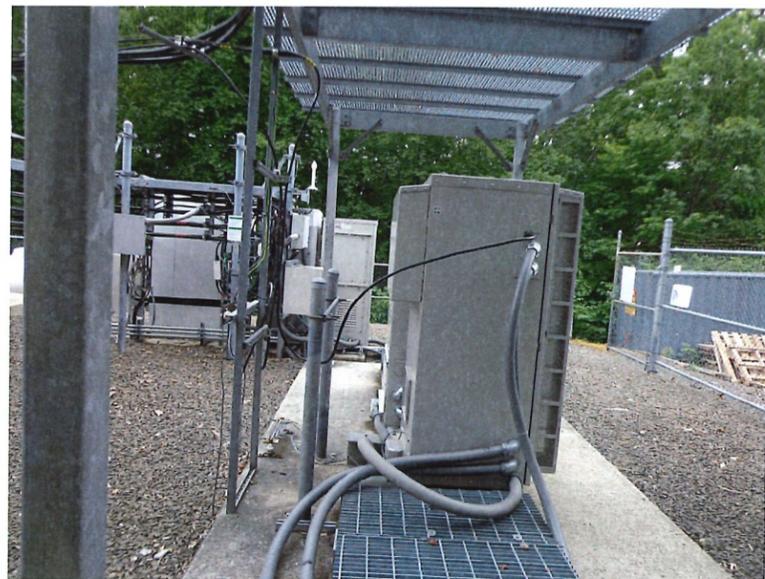
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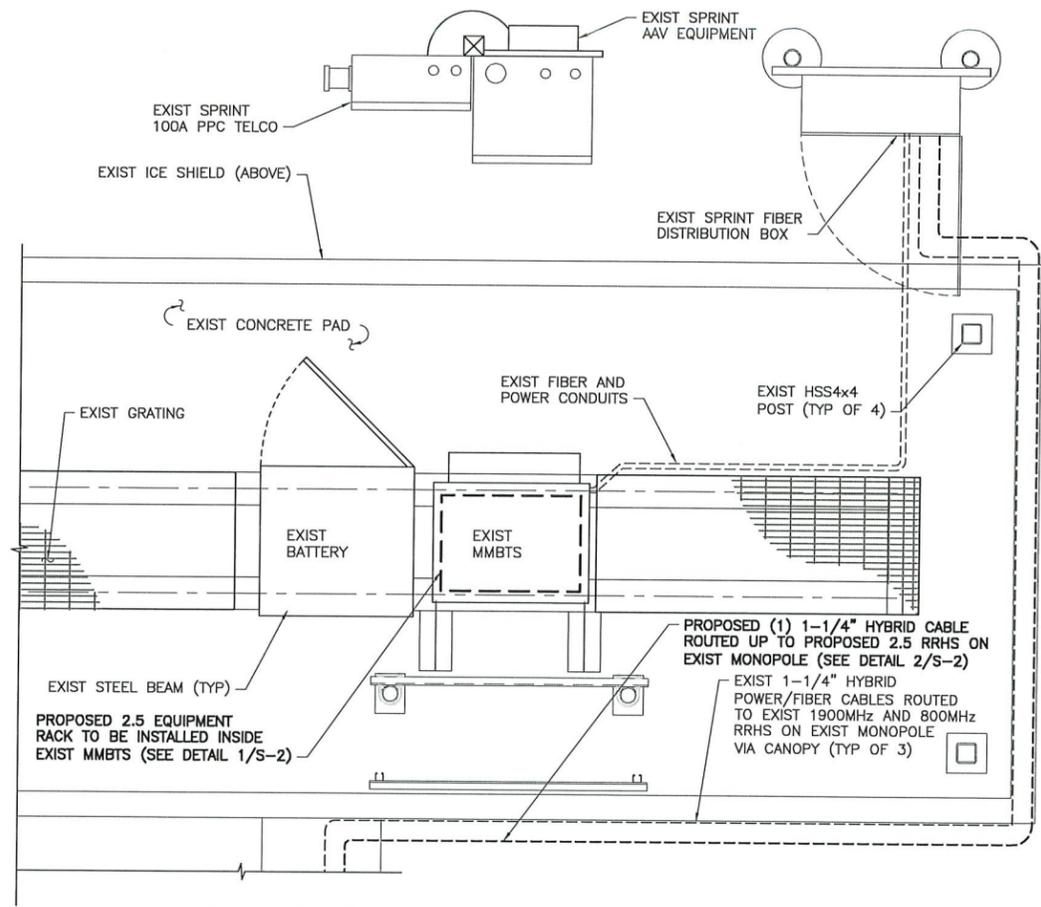
N
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 INSTALLATION OF ANTENNAS.



1 ENLARGED EQUIP. LAYOUT PLAN (EXIST)
 A-3 SCALE: 3/4" = 1'-0"



3 EXIST EQUIPMENT PAD
 A-3 SCALE: NTS



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



4 EXIST FIBER DISTRIBUTION BOX
 A-3 SCALE: NTS

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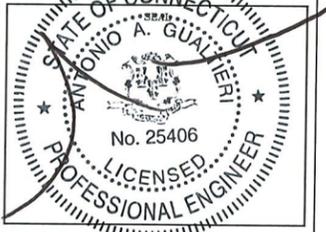
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DATE	REVIEWED BY
10/3/18	DE



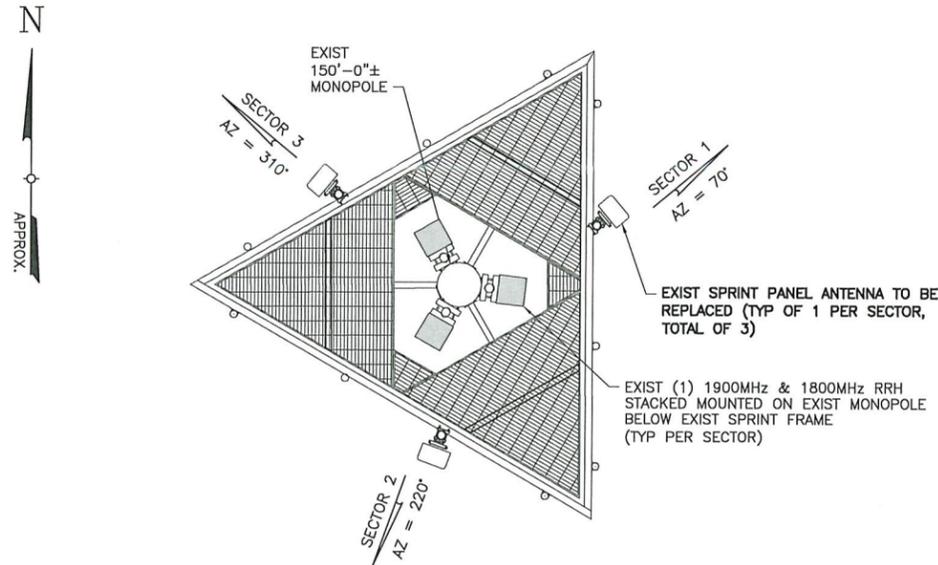
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 CT23XC507

SITE NAME:
 SEYMOUR 2/OXFORD TOWN GARAGE

SITE ADDRESS:
 20 GREAT OAK RD
 OXFORD, CT 06487

SHEET TITLE:
 ENLARGED EQUIPMENT LAYOUT PLANS

SHEET NO:
 A-3



1 ANTENNA LAYOUT PLAN (EXIST)
SCALE: 3/8" = 1'-0"



THE EXISTING MONOPOLE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT (TO BE COORDINATED BY OTHERS).

THE EXISTING MOUNT HAS BEEN ANALYZED BY TECTONIC ENGINEERING AND FOUND TO BE ADEQUATE TO SUPPORT THE PROPOSED SPRINT UPGRADE ONCE THE PROPOSED MODIFICATIONS HAVE BEEN COMPLETED AS DETAILED IN THE STRUCTURAL ANALYSIS EVALUATION LETTER DATED 06/18/18.

Sprint
2.5 EQUIPMENT DEPLOYMENT
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CROWN CASTLE

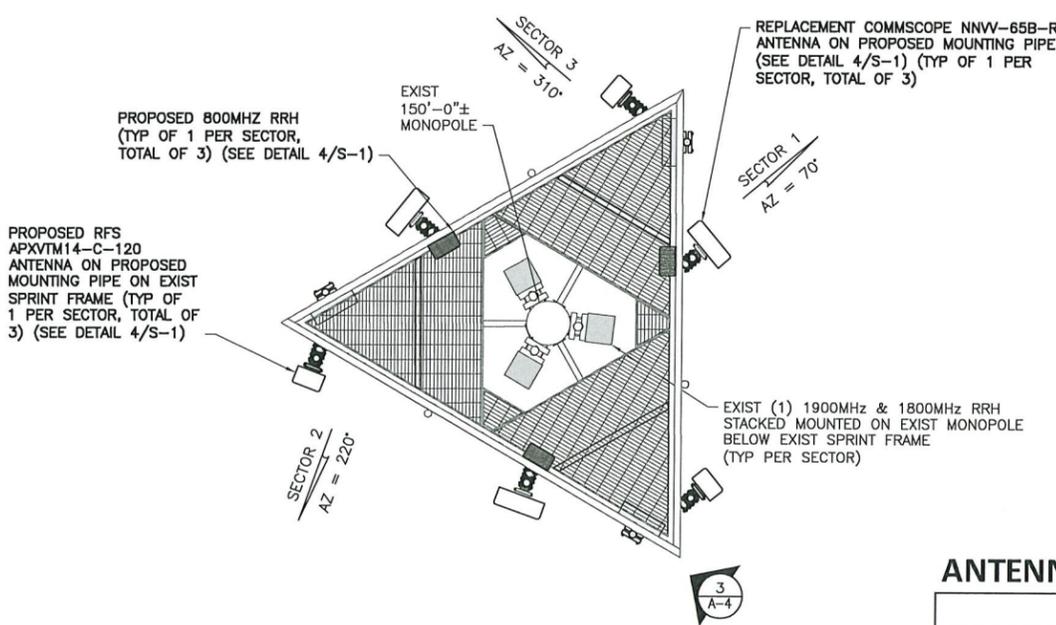
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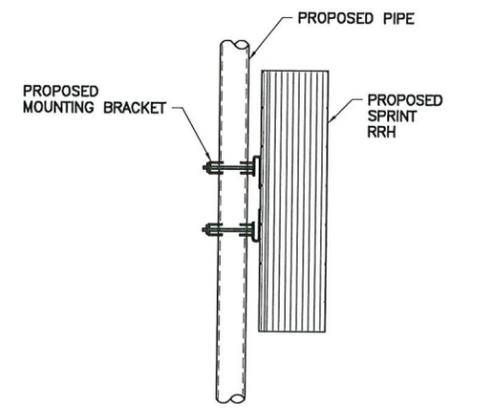
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2 ANTENNA LAYOUT PLAN (FINAL)
SCALE: 3/8" = 1'-0"



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

ANTENNA DATA

Status	Removed	Replacement	Proposed
Antenna Manufacturer	RFS-CEL WAVE	Commscope	RFS-CEL WAVE
Antenna Model Number	APXVSPP18C-A20	NNVV-65B-R4	APXVTM14-C-120
Number of Antennas	3	3	3
Antenna RAD Center	148'	150'	150'
Antenna Azimuth	70/220/310	70/220/310	70/220/310
Antenna RRH Model Number	1900MHz/800MHz RRHS	1900MHz/800MHz RRHS	TD-RRH8x20-25
Number of RRH	6 (to remain)	9 (6 Existing & 3 Proposed)	3

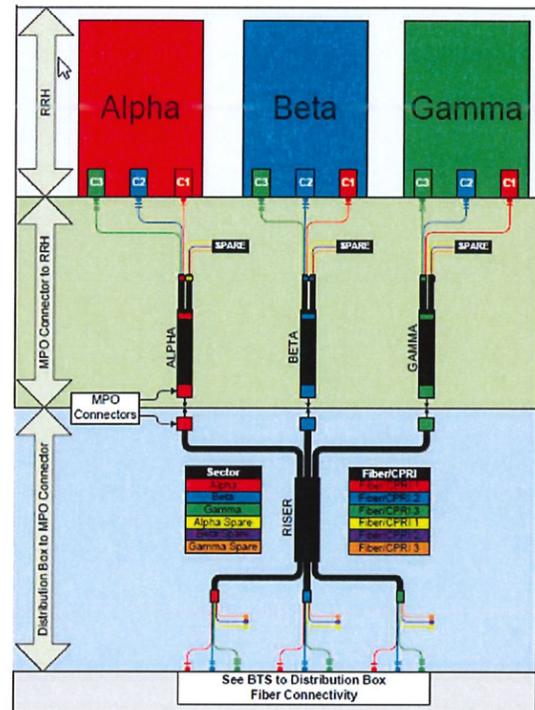
DATE: 10/3/18 REVIEWED BY: [Signature]

STATE OF CONNECTICUT
ANTONIO A. GUARINERI
No. 25406
LICENSED PROFESSIONAL ENGINEER

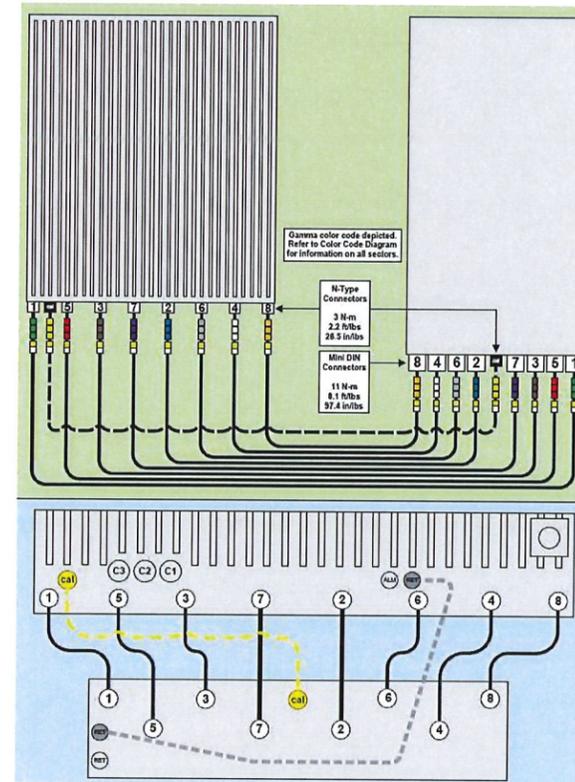
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SITE NAME: SEYMOUR 2/OXFORD TOWN GARAGE
SITE ADDRESS: 20 GREAT OAK RD OXFORD, CT 06487

SHEET TITLE: ANTENNA LAYOUT PLANS

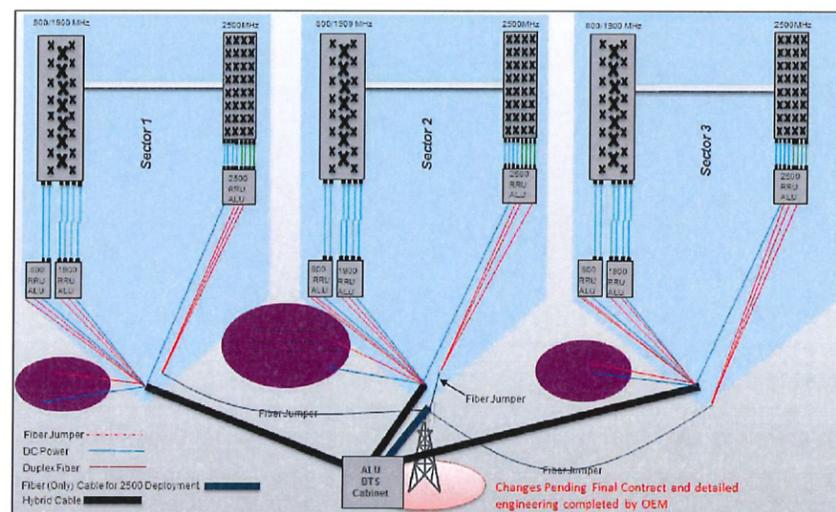
SHEET NO: A-4



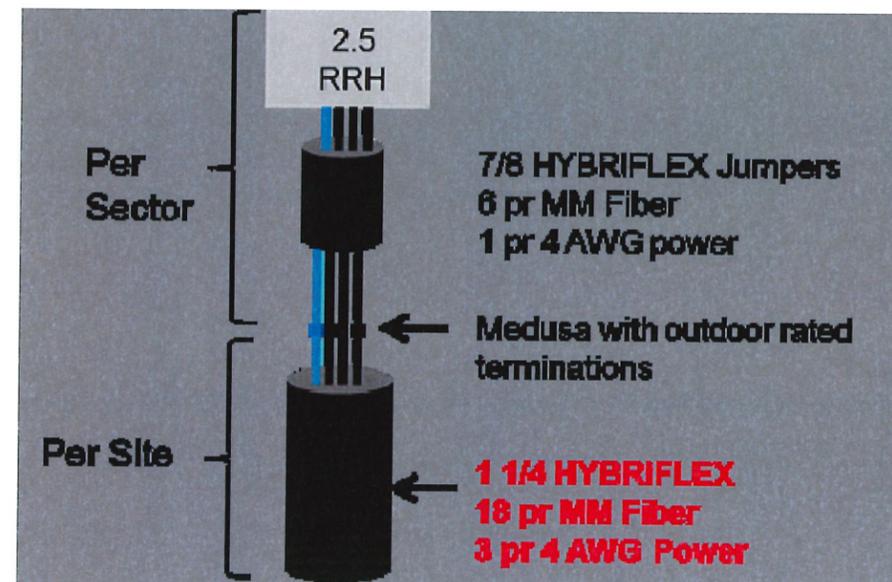
1 2.5 CABLE COLOR CODING
A-5 SCALE: N.T.S.



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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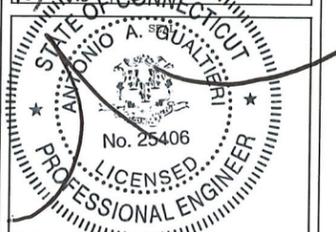
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SUBMITTALS

PROJECT NO: 8887.CT23XC507

NO	DATE	DESCRIPTION	BY
0	06/16/14	FOR COMMENT	NM
1	11/03/14	FOR CONSTRUCTION	MP
2	11/28/17	REVISED SA	JT
3	01/05/18	REVISED AZIMUTHS	RD
4	06/15/18	REVISED SCOPE	PG
5	10/01/18	PER COMMENTS	DE

DATE	REVIEWED BY
10/2/18	DE



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CT23XC507
SITE NAME:
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20 GREAT OAK RD
OXFORD, CT 06487

SHEET TITLE:
RAN WIRING DIAGRAM

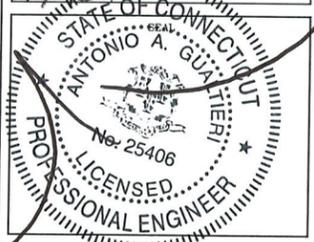
SHEET NO:
A-5

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3	01/05/18	REVISED AZIMUTHS	RD
4	06/15/18	REVISED SCOPE	PG
5	10/01/18	PER COMMENTS	DE

DATE	REVIEWED BY
10/31/18	[Signature]



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CT23XC507

SITE NAME:
SEYMOUR 2/OXFORD TOWN GARAGE

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20 GREAT OAK RD
OXFORD, CT 06487

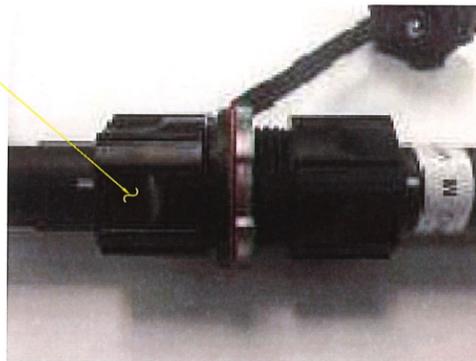
SHEET TITLE:
CABLE DETAILS

SHEET NO:
A-6

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

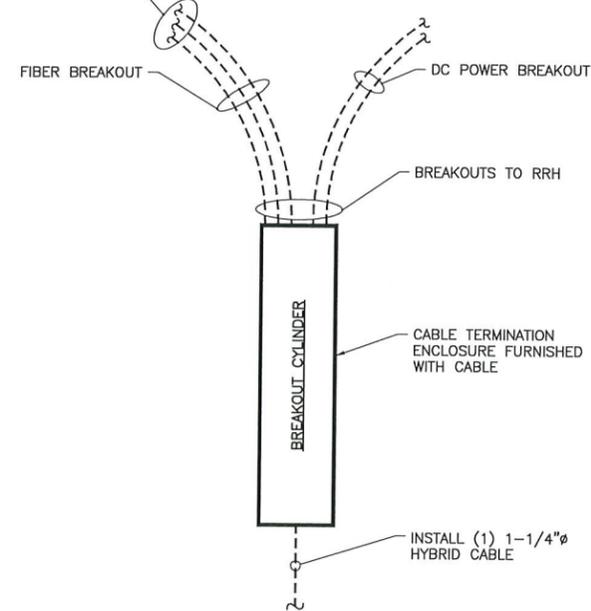


IMPORTANT!! ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL A CLICK SOUND IS HEARD TO ENSURE A GOOD CONNECTION

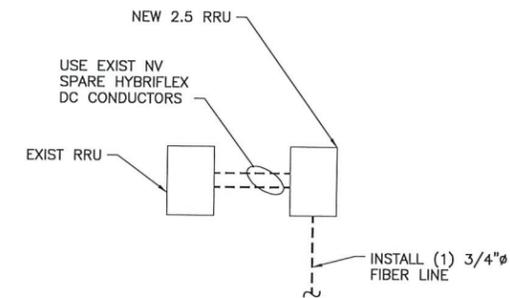


1 HYBRIFLEX RISER/JUMPER CONNECTION DETAILS
 A-6 SCALE: N.T.S.

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.

Sprint
 2.5 EQUIPMENT DEPLOYMENT
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 OVERLAND PARK, KANSAS 66251

CROWN CASTLE

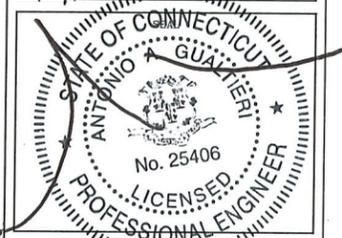
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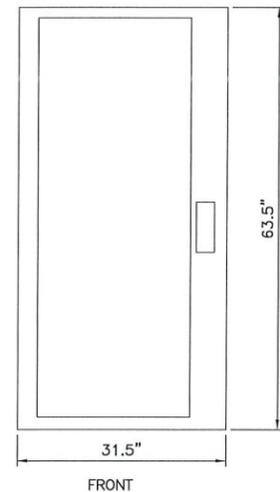
DATE	REVIEWED BY
10/3/18	JMG



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 20 GREAT OAK RD
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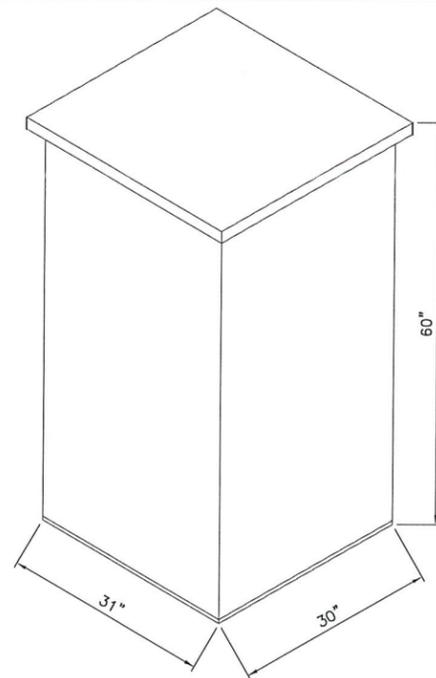
SHEET TITLE:
 EQUIPMENT DETAILS

SHEET NO:
 S-1



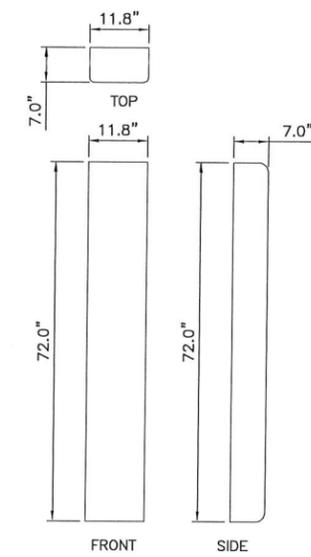
9927 MMBTS MODULAR CELL
 SPECIFICATIONS:
 HEIGHT: 63.5"
 WIDTH: 31.5"
 DEPTH: 38.0"

1 (EXIST) MMBTS CABINET
 S-1 SCALE: 1" = 1'-0"

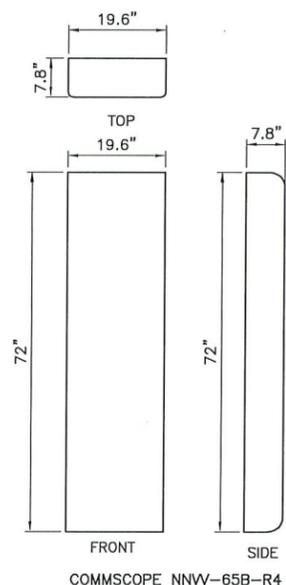


ANDREW 60ECV2
 SPECIFICATIONS:
 HEIGHT: 60"
 WIDTH: 31"
 DEPTH: 30"
 WEIGHT: 2430 LBS.

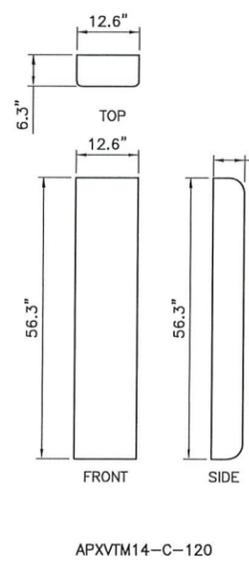
2 (EXIST) BATTERY CABINET
 S-1 SCALE: 1" = 1'-0"



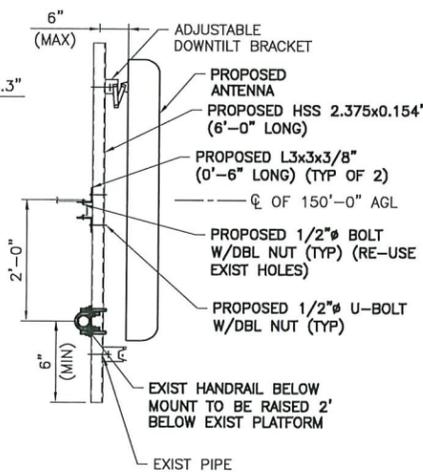
3 (EXIST) ANTENNA DETAIL
 S-1 SCALE: 3/4"=1'-0"



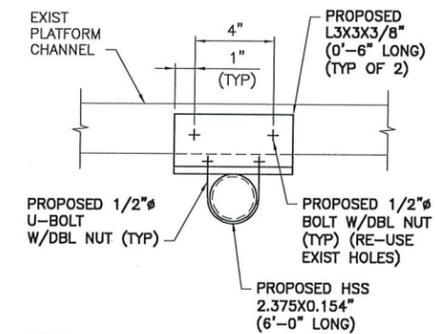
COMMSCOPE NNW-65B-R4



APXVTM14-C-120

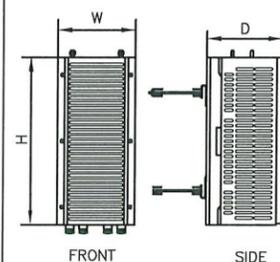


4 (PROPOSED) ANTENNA DETAIL
 S-1 SCALE: 3/4"=1'-0"



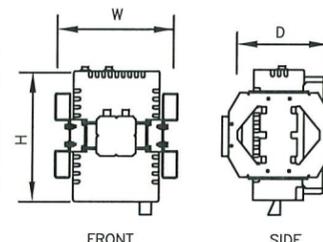
NOTES:
 1. SIMILAR CONNECTION FOR TOP & BOTTOM OF CHANNEL.
 2. CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO FABRICATION OR ORDERING OF ANY MATERIALS.

7 DETAIL
 S-1 SCALE: 3" = 1'-0"



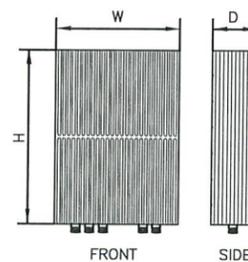
TYPE: 1900 MHz 4x45W
 MODEL #: RRH 1900 4X45 65MHz
 HEIGHT: 25.0"
 WIDTH: 11.1"
 DEPTH: 11.4"
 WEIGHT: ±60 LBS.

5 (EXIST) RRH DETAILS
 S-1 SCALE: 1" = 1'-0"

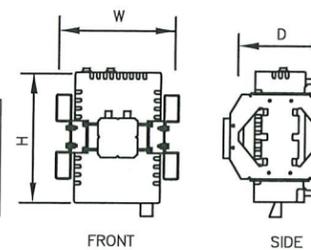


TYPE: 800 MHz 2x50W
 MODEL #: FD-RRH-2x50-800
 HEIGHT: 19.7"
 WIDTH: 13"
 DEPTH: 10.8"
 WEIGHT: ±53 LBS

6 (PROPOSED) RRH DETAIL
 S-1 SCALE: N.T.S.



TYPE: 2.5 RRH
 MODEL #: TD-RRH8x20-25
 HEIGHT: 26.1"
 WIDTH: 18.6"
 DEPTH: 6.7"
 WEIGHT: ±70 LBS

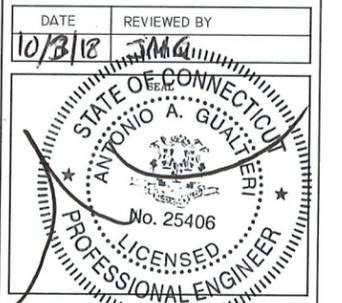


TYPE: 800 MHz 2x50W
 MODEL #: FD-RRH-2x50-800
 HEIGHT: 19.7"
 WIDTH: 13"
 DEPTH: 10.8"
 WEIGHT: ±53 LBS



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5	10/01/18	PER COMMENTS	DE



SITE NUMBER:
CT23XC507

SITE NAME:
SEYMOUR 2/OXFORD TOWN GARAGE

SITE ADDRESS:
20 GREAT OAK RD
OXFORD, CT 06487

SHEET TITLE:
EQUIPMENT SCHEMATIC DETAILS

SHEET NO:
S-2

RFS HYBRIFLEX RISER CABLES SCHEDULE

Power	Hybrid cable	Length
Fiber Only (Existing DC Power)	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	

Power	Hybrid cable	Length
8 AWG Power	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	

Power	Hybrid cable	Length
6 AWG Power	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

Power	Hybrid cable	Length
4 AWG Power	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

Power	Hybrid Jumper cable	Length
Fiber Only	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

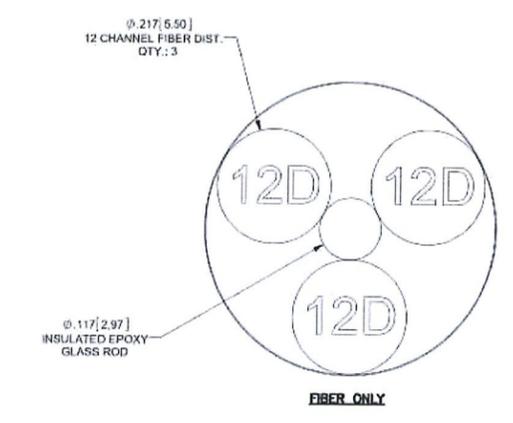
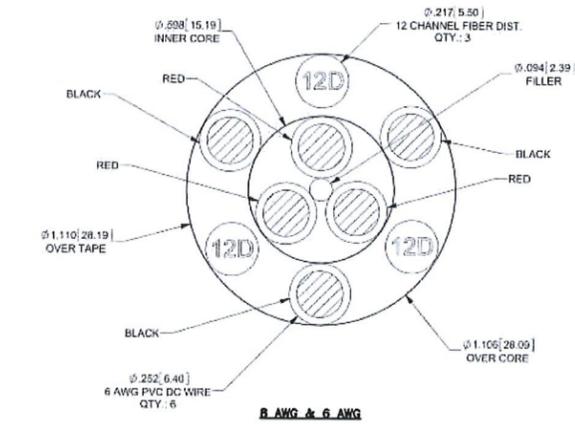
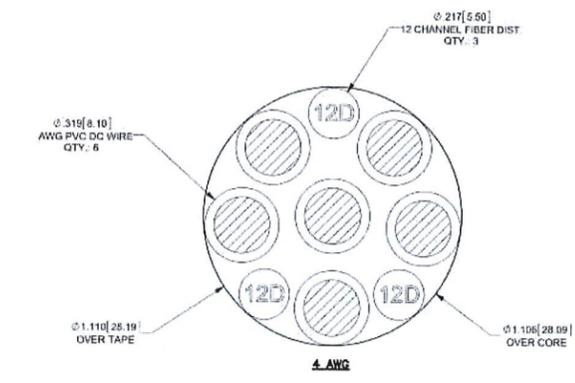
Power	Hybrid Jumper cable	Length
8 AWG Power	MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1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

Power	Hybrid Jumper cable	Length
6 AWG Power	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

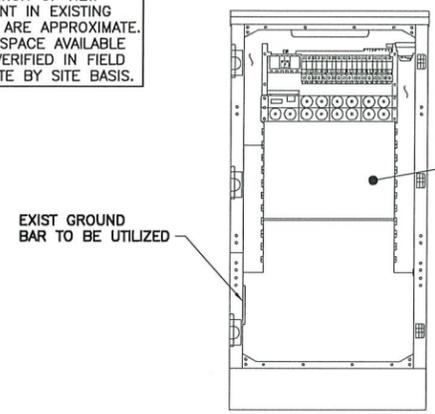
Power	Hybrid Jumper cable	Length
4 AWG Power	MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1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

HYBRID CABLE DC CONDUCTOR SIZE GUIDELINE

CABLE	LENGTH	DC CONDUCTOR	CABLE DIAMETER
FIBER ONLY	VARIES	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"



NOTE: LOCATIONS SHOWN FOR INSTALLATION OF NEW EQUIPMENT IN EXISTING CABINET ARE APPROXIMATE. ACTUAL SPACE AVAILABLE TO BE VERIFIED IN FIELD ON A SITE BY SITE BASIS.



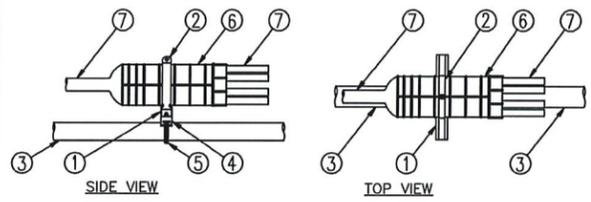
FRONT ELEVATION (CABINET INTERIOR)

INSTALL NEW 2.5 EQUIPMENT IN EXIST MMBTS CABINET INCLUDING BUT NOT LIMITED TO BASE BAND UNIT, CELL SITE ROUTER AND SURGE ARRESTORS. GROUND EQUIPMENT TO EXIST INTERIOR CABINET GROUND BAR

EXIST GROUND BAR TO BE UTILIZED

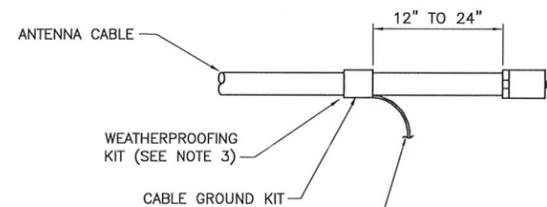
1 MMBTS INTERIOR DETAIL
SCALE: N.T.S.

- 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.



3 MEDUSA HEAD DETAIL
SCALE: NTS

2 2.5 HYBRID CABLE X-SECTION AND DATA
SCALE: NTS



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)

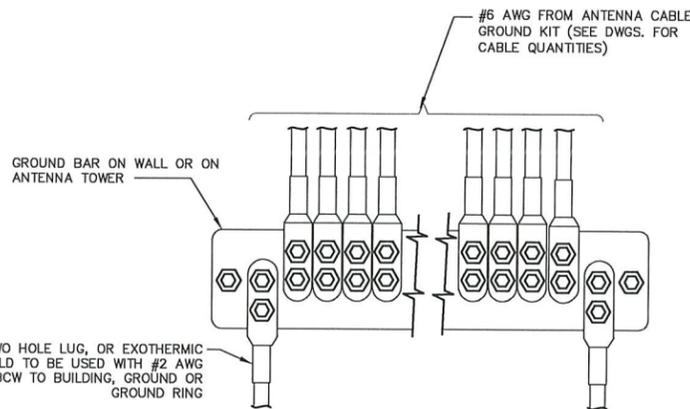
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:

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

GROUNDING 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.



*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.

ELECTRICAL AND GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- 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.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THNN INSULATION.
- 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.
- 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.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- GROUNDING SHALL COMPLY WITH NEC ART. 250.
- GROUND HYBRID CABLE SHIELDS AT 3 LOCATIONS USING MANUFACTURER'S HYBRID CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- USE #2 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- 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.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING 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 GROUNDING RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, HYBRID CABLE GROUND KITS, AND RRRs TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO GROUND RING.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULT FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, HYBRID CABLES, GPS COAX AND RRRH RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
- 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.
- 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.
- 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.

ANTENNA GROUND BAR DETAIL

SCALE: NTS

GROUNDING NOTES:

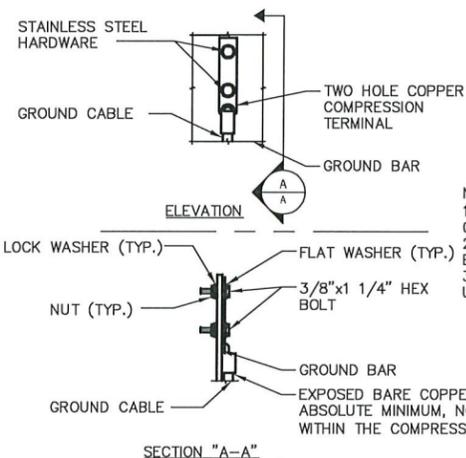
- GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250-GROUNDING AND BONDING.
- ALL GROUND WIRES SHALL BE #2 AWG UNLESS NOTED OTHERWISE.
- ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
- EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS WILL HAVE (2) CONNECTIONS.
- PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
- THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
- ALL CONDUITS SHALL BE RIGID GALVANIZED STEEL AND SHALL BE PROVIDED WITH GROUNDING BUSHINGS.
- PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
- WHEN CABLE LENGTH IS OVER 20' THE MANUFACTURERS GROUND KIT MUST BE INSTALLED PER THE MANUFACTURERS SPECIFICATIONS.
- REFER TO "ANTI-THEFT UPDATE TO SPRINT GROUNDING 082412.PDF" FOR GUIDELINE TO SUSPECTED OR ACTUAL THEFT OF GROUNDING.
- 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 GROUNDING SYSTEM GENERAL NOTES:

- AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING. CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
- ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING 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 GROUNDING CONDUCTOR.
- ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH PROJECT MANAGER.
- ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
- INSTALL GROUND BUSHING ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUS IN THE PANEL BOARD.
- GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
- GROUND HYBRID CABLE SHIELD AT BOTH ENDS USING MANUFACTURER'S GUIDELINES.

CABLE GROUNDING KIT DETAIL

SCALE: N.T.S.

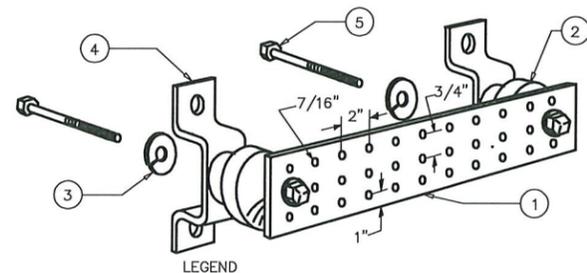


NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

SECTION "A-A"

GROUNDING BAR CONN. DETAIL

SCALE: NTS



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

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

GROUNDING BAR DETAIL

SCALE: NTS

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

CROWN CASTLE

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.
Tectonic Engineering & Surveying Consultants P.C.
1278 Route 300 Phone: (845) 657-8856
Newburgh, NY 12550 (800) 829-6531
www.tectonicengineering.com

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SUBMITTALS

NO	DATE	DESCRIPTION	BY
0	06/16/14	FOR COMMENT	NM
1	11/03/14	FOR CONSTRUCTION	MP
2	11/28/17	REVISED SA	JT
3	01/05/18	REVISED AZIMUTHS	RD
4	06/15/18	REVISED SCOPE	PG
5	10/01/18	PER COMMENTS	DE

DATE	REVIEWED BY
10/3/13	SMQ

STATE OF CONNECTICUT
ANTONIO A. GUARTELLI
No. 25406
LICENSED PROFESSIONAL ENGINEER

SITE NAME:
SEYMOUR 2/OXFORD TOWN GARAGE
SITE ADDRESS:
20 GREAT OAK RD
OXFORD, CT 06487

SHEET TITLE:
GROUNDING DETAILS & NOTES

SHEET NO:
E-2

From: [McKay, Kristian](#)
To: ["zoningenforce@oxford-ct.gov"](mailto:zoningenforce@oxford-ct.gov)
Subject: Original Zoning Docs - 20 Great Oak Rd.
Date: Tuesday, October 9, 2018 1:51:00 PM
Attachments: [Original Building.pdf](#)

Hello Mr. Macary,

I work for Crown Castle and have an inquiry regarding the original zoning documents for a tower and I am hoping your office can provide more information.

We are applying for CSC Zoning Approval for Sprint to modify their antennas and new requirements ask that we procure original zoning documents from the jurisdiction, if possible. However, if these documents are not available, please let me know.

The tower is located at 20 Great Oak Rd. and according to lease documents it would have been constructed sometime around early 2000. I have also attached the original BP in the hopes it will help ascertain the zoning approval docs.

If you have any questions, please don't hesitate to call or e-mail me.

Thank you,

Kristian McKay
Real Estate Specialist – East Area
T: (704) 405-6612 | M: (704) 713-5728 | F: (724) 416-6496

CROWN CASTLE
3530 Toringdon Way, Suite 300, Charlotte, NC 28277
Crowncastle.com

BUILDING PERMIT

TOWN OF OXFORD

No. B-00-026

NAME: Spew

ADDRESS: 20 Grant Oak Rd.

PURPOSE: New Town (150')

- INSPECTIONS -

FOOTINGS	_____	DATE	_____
FOOTING DRAINS	_____	DATE	_____
WATERPROOFING	_____	DATE	_____
FRAME	_____	DATE	_____
PLUMBING	_____	DATE	_____
HEATING	_____	DATE	_____
ELECTRICAL	_____	DATE	_____
INSULATION	_____	DATE	_____
OCCUPANCY	_____	DATE	_____

**This Permit Must Be Attached to or in Front of Building
To Be Removed Only By Building Official**

Date 2/17/00

Building Official [Signature]

* CONSTRUCTION MUST START WITHIN ONE YEAR & BE COMPLETED WITHIN TWO YEARS

Date: August 15, 2018

Amanda Brown
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford & Company
250 E. Broad St., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject: Structural Analysis Report

Carrier Designation: *Sprint PCS Co-Locate*
Carrier Site Number: CT23XC507
Carrier Site Name: N/A

Crown Castle Designation:
Crown Castle BU Number: 876361
Crown Castle Site Name: SEYMOUR 2 / OXFORD TOWN GARAGE
Crown Castle JDE Job Number: 519816
Crown Castle Work Order Number: 1615592
Crown Castle Order Number: 451231 Rev. 0

Engineering Firm Designation: Paul J. Ford & Company Project Number: 37518-1806.002.7805

Site Data: 20 Great Oak Rd., OXFORD, New Haven County, CT
Latitude 41° 25' 34.91", Longitude -73° 8' 39.33"
150 Foot - Monopole Tower

Dear Amanda Brown,

Paul J. Ford & Company 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 1236726, in accordance with order 451231, revision 0.

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:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

We at Paul J. Ford & Company 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.

Respectfully submitted by:



David Jack, E.I.
Structural Designer



8/17/18

Date: **August 15, 2018**

Amanda Brown
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford & Company
250 E. Broad St., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject: Structural Analysis Report

Carrier Designation:	Sprint PCS Co-Locate	
	Carrier Site Number:	CT23XC507
	Carrier Site Name:	N/A
Crown Castle Designation:	Crown Castle BU Number:	876361
	Crown Castle Site Name:	SEYMOUR 2 / OXFORD TOWN GARAGE
	Crown Castle JDE Job Number:	519816
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Engineering Firm Designation:	Paul J. Ford & Company Project Number:	37518-1806.002.7805
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David Jack, E.I.
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tnxTower Output

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7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in October of 1999. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

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 ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

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
150.0	150.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	1	1-1/4	---
		6	alcatel lucent	800MHZ RRH			
		3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ			
		3	alcatel lucent	TD-RRH8X20-25			
		3	commscope	NNVV-65B-R4 w/ Mount Pipe			
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe			

Table 2 - Existing 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
150.0	150.0	9	rfs celwave	ACU-A20-N	3	1-1/4	1
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe	---	---	2
148.0	150.0	3	alcatel lucent	1900MHz RRH (65MHz)	---	---	1
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	alcatel lucent	800MHZ RRH			
	148.0	1	tower mounts	Pipe Mount [PM 601-3]			
140.0	141.0	3	antel	BXA-171063-12BF w/ Mount Pipe	18	1-5/8	1
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe			
		6	antel	LPA-80063-6CF-EDIN-2 w/ Mount Pipe			
	140.0	1	tower mounts	Platform Mount [LP 601-1]			
128.0	128.0	3	ericsson	RRU-11	---	---	1
		1	raycap	DC6-48-60-18-8F			
		1	tower mounts	Pipe Mount [PM 601-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
127.0	128.0	6	andrew	SBNH-1D6565C w/ Mount Pipe	12 1 2	1-1/4 3/8 3/4	1
		6	communication components inc.	DTMABP7819VG12A			
		3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
	127.0	1	tower mounts	Platform Mount [LP 305-1]			
85.0	86.0	1	lucent	KS24019-L112D	1	1/2	1
	85.0	1	tower mounts	Side Arm Mount [SO 701-1]			

- Notes:
 1) Existing Equipment
 2) Equipment To Be Removed

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)
---	---	---	---	---	---	---

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welti, 09/22/1999	1532984	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 126580, 03/14/2013	3680653	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 126580, 04/10/2013	3772404	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	EEl, 5723, 06/23/2000	1447042	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEl, 5723, 10/01/1999	1446979	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) Monopole was modified in conformance with the referenced modification drawings.
- This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford & Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP16.065x15x0.1875	Pole	13.1%	Pass
145 - 140	Pole	TP17.129x16.065x0.1875	Pole	23.4%	Pass
140 - 135	Pole	TP18.194x17.129x0.1875	Pole	41.3%	Pass
135 - 130	Pole	TP19.259x18.194x0.1875	Pole	54.9%	Pass
130 - 126.59	Pole	TP20.66x19.259x0.1875	Pole	65.0%	Pass
126.59 - 121.59	Pole	TP20.677x19.61x0.25	Pole	62.0%	Pass
121.59 - 117	Pole	TP21.656x20.677x0.25	Pole	70.7%	Pass
117 - 116.75	Pole + Reinf.	TP21.71x21.656x0.5625	Reinf. 6 Tension Rupture	49.6%	Pass
116.75 - 111.75	Pole + Reinf.	TP22.777x21.71x0.55	Reinf. 6 Tension Rupture	56.6%	Pass
111.75 - 106.75	Pole + Reinf.	TP23.844x22.777x0.5313	Reinf. 6 Tension Rupture	62.9%	Pass
106.75 - 101.75	Pole + Reinf.	TP24.911x23.844x0.5125	Reinf. 6 Tension Rupture	68.7%	Pass
101.75 - 96.75	Pole + Reinf.	TP25.978x24.911x0.5	Reinf. 6 Tension Rupture	74.0%	Pass
96.75 - 91.75	Pole + Reinf.	TP27.044x25.978x0.4875	Reinf. 6 Tension Rupture	78.8%	Pass
91.75 - 90.04	Pole + Reinf.	TP28.28x27.044x0.4875	Reinf. 6 Tension Rupture	80.3%	Pass
90.04 - 84.96	Pole + Reinf.	TP27.993x26.909x0.675	Reinf. 5 Tension Rupture	62.4%	Pass
84.96 - 79.96	Pole + Reinf.	TP29.06x27.993x0.6625	Reinf. 5 Tension Rupture	65.4%	Pass
79.96 - 74.96	Pole + Reinf.	TP30.126x29.06x0.6375	Reinf. 5 Tension Rupture	68.3%	Pass
74.96 - 69.96	Pole + Reinf.	TP31.193x30.126x0.625	Reinf. 5 Tension Rupture	70.9%	Pass
69.96 - 64.96	Pole + Reinf.	TP32.26x31.193x0.6125	Reinf. 5 Tension Rupture	73.4%	Pass
64.96 - 60.5	Pole + Reinf.	TP33.211x32.26x0.6	Reinf. 5 Tension Rupture	75.5%	Pass
60.5 - 60.25	Pole + Reinf.	TP33.264x33.211x0.6	Reinf. 4 Tension Rupture	75.6%	Pass
60.25 - 55.25	Pole + Reinf.	TP34.331x33.264x0.5875	Reinf. 4 Tension Rupture	77.8%	Pass
55.25 - 50.25	Pole + Reinf.	TP35.398x34.331x0.5875	Reinf. 4 Tension Rupture	79.8%	Pass
50.25 - 47.58	Pole + Reinf.	TP37.07x35.398x0.575	Reinf. 4 Tension Rupture	80.8%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
47.58 - 41.41	Pole + Reinf.	TP36.659x35.342x0.6375	Reinf. 4 Tension Rupture	77.0%	Pass
41.41 - 36.41	Pole + Reinf.	TP37.727x36.659x0.625	Reinf. 4 Tension Rupture	78.4%	Pass
36.41 - 31.41	Pole + Reinf.	TP38.794x37.727x0.625	Reinf. 4 Tension Rupture	79.7%	Pass
31.41 - 30.5	Pole + Reinf.	TP38.989x38.794x0.6125	Reinf. 4 Tension Rupture	80.0%	Pass
30.5 - 30.25	Pole + Reinf.	TP39.042x38.989x0.6125	Reinf. 1 Tension Rupture	80.0%	Pass
30.25 - 25.25	Pole + Reinf.	TP40.109x39.042x0.6125	Reinf. 1 Tension Rupture	81.2%	Pass
25.25 - 20.25	Pole + Reinf.	TP41.177x40.109x0.6	Reinf. 1 Tension Rupture	82.3%	Pass
20.25 - 18	Pole + Reinf.	TP41.657x41.177x0.6	Reinf. 1 Tension Rupture	82.7%	Pass
18 - 17.75	Pole + Reinf.	TP41.711x41.657x0.5563	Reinf. 1 Tension Rupture	85.1%	Pass
17.75 - 12.75	Pole + Reinf.	TP42.778x41.711x0.55	Reinf. 1 Tension Rupture	86.0%	Pass
12.75 - 7.75	Pole + Reinf.	TP43.845x42.778x0.55	Reinf. 1 Tension Rupture	86.8%	Pass
7.75 - 2.75	Pole + Reinf.	TP44.913x43.845x0.5375	Reinf. 1 Tension Rupture	87.5%	Pass
2.75 - 0	Pole + Reinf.	TP45.5x44.913x0.5375	Reinf. 1 Tension Rupture	87.8%	Pass
				Summary	
			Pole	70.7%	Pass
			Reinforcement	87.8%	Pass
			Overall	87.8%	Pass

Table 6 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	78.2	Pass
1	Base Plate	0	73.3	Pass
1	Base Foundation	0	73.1	Pass
1	Base Foundation Soil Interaction	0	62.1	Pass

Structure Rating (max from all components) =	87.8%
---	--------------

Notes:

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

4.1) Recommendations

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



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

SPRINT Existing Facility

Site ID: CT23XC507

Seymour 2/Oxford Town Garage
20 Great Oak Road
Oxford, CT 06478

September 19, 2018

EBI Project Number: 6218006195

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.71 %



September 19, 2018

SPRINT

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

Emissions Analysis for Site: **CT23XC507 – Seymour 2/Oxford Town Garage**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **20 Great Oak Road, Oxford, 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) and 2500 MHz (BRS) 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 **20 Great Oak Road, Oxford, 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, 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) 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.
- 7) 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, 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.
- 8) 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. 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, 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.
- 9) The antenna mounting height centerlines of the proposed panel antennas are **150 feet** above ground level (AGL) for **Sector A**, **150 feet** above ground level (AGL) for **Sector B** and **150 feet** above ground level (AGL) for Sector C.
- 10) 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):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 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%	1.58 %	Antenna B1 MPE%	1.58 %	Antenna C1 MPE%	1.58 %
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):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 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%	1.08 %	Antenna B2 MPE%	1.08 %	Antenna C2 MPE%	1.08 %

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	2.66 %
AT&T	3.44 %
Verizon Wireless	1.61 %
Site Total MPE %:	7.71 %

SPRINT Sector A Total:	2.66 %
SPRINT Sector B Total:	2.66 %
SPRINT Sector C Total:	2.66 %
Site Total:	7.71 %

SPRINT _ Frequency Band / Technology (All Sectors)	# 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	150	0.65	850 MHz	567	0.12%
Sprint 850 MHz LTE	2	941.82	150	3.27	850 MHz	567	0.58%
Sprint 1900 MHz (PCS) CDMA	5	511.82	150	4.44	1900 MHz (PCS)	1000	0.44%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	150	4.44	1900 MHz (PCS)	1000	0.44%
Sprint 2500 MHz (BRS) LTE	8	778.09	150	10.79	2500 MHz (BRS)	1000	1.08%
						Total:	2.66%



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:	2.66 %
Sector B:	2.66 %
Sector C:	2.66 %
SPRINT Maximum MPE % (per sector):	2.66 %
Site Total:	7.71 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **7.71 %** 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.



October 12, 2018

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The following is the proof-of-delivery for tracking number **773431705933**.

Delivery Information:

Status:	Delivered	Delivered to:	Receptionist/Front Desk
Signed for by:	D.PASSERINE	Delivery location:	486 OXFORD RD OXFORD, CT 06478
Service type:	FedEx Standard Overnight	Delivery date:	Oct 10, 2018 11:49
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	773431705933	Ship date:	Oct 9, 2018
		Weight:	1.0 lbs/0.5 kg

Recipient:
Gordon Gramolini
Town Of Oxford
486 Oxford Rd.
OXFORD, CT 06478 US

Shipper:
Kristian McKay
3530 Toringdon Way
STE 300
CHARLOTTE, NC 28277 US

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Service type:	FedEx Standard Overnight	Delivery date:	Oct 10, 2018 11:49
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	773431695387	Ship date:	Oct 9, 2018
		Weight:	1.0 lbs/0.5 kg

Recipient:
George Temple
Town Of Oxford
486 Oxford Rd.
OXFORD, CT 06478 US

Shipper:
Kristian McKay
3530 Toringdon Way
STE 300
CHARLOTTE, NC 28277 US

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