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

September 13, 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: 806362**
**Sprint Site ID: CT52XC079**
**347 East St. Wolcott, Connecticut 06716**
**Latitude: 41° 33' 34.4"/ Longitude: 72° 56' 49.1"**

Dear Ms. Bachman:

Sprint currently maintains three (3) antennas at the 168-foot level of the existing 185-foot self-support tower at 347 East St. Wolcott, CT. The tower is owned by Crown Castle. The property is owned by Agostinho V. Rodrigues. Sprint now intends to replace three (3) antennas with six (6) new antennas. These antennas would be installed at the 168-foot level of the tower. Sprint also intends to remove four (4) existing RRHs and install nine (9) RRHs, replace an existing ground level cabinet and pad, replace three (3) mounts, and swap four (4) existing coax cables with four (4) hybrid cables.

This facility was approved by the Connecticut Siting Council, an email was sent on 09/13/18 to the Town of Wolcott Zoning Office to ascertain the original zoning approval documents and date.

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 Thomas G. Dunn, Town of Wolcott, Zoning Inspector David Kalinowski, 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.

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 Thomas G. Dunn
10 Kenea Ave.
Wolcott, CT 06716

Zoning Inspector David Kalinowski
10 Kenea Ave.
Wolcott CT, 06716

Agostinho Rodrigues
347 East St,
Wolcott, CT 06716

# 347 EAST ST

| | | | |
|---|---|---|---|
| **Location** | 347 EAST ST | **Mblu** | 131/ 1/ 19/ / |
| **Acct#** | R0478100 | **Owner** | RODRIGUES AGOSTINHO V & |
| **Assessment** | $453,670 | **Appraisal** | $648,090 |
| **PID** | 5352 | **Building Count** | 3 |

## Current Value

| Appraisal | | | |
|---|---|---|---|
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2016 | $401,720 | $246,370 | $648,090 |
| **Assessment** | | | |
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2016 | $281,210 | $172,460 | $453,670 |

## Owner of Record

| | |
|---|---|
| **Owner** | RODRIGUES AGOSTINHO V & |
| **Co-Owner** | JOANNE |
| **Address** | 347 EAST ST<br>WOLCOTT, CT 06716 |

| | |
|---|---|
| **Sale Price** | $0 |
| **Certificate** | |
| **Book & Page** | 131/ 23 |
| **Sale Date** | 06/27/1980 |
| **Instrument** | 25 |

## Ownership History

| Ownership History | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Sale Price** | **Certificate** | **Book & Page** | **Instrument** | **Sale Date** |
| RODRIGUES AGOSTINHO V & | $0 | | 131/ 23 | 25 | 06/27/1980 |

## Building Information

### Building 1 : Section 1

| | |
|---|---|
| **Year Built:** | 1930 |
| **Living Area:** | 3,139 |
| **Replacement Cost:** | $339,418 |
| **Building Percent Good:** | 62 |
| **Replacement Cost Less Depreciation:** | $210,440 |

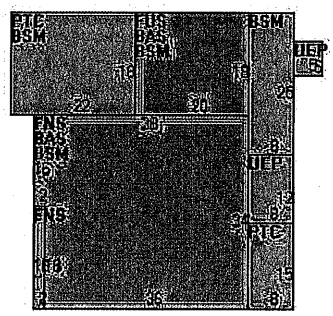
**Building Photo**

| Building Attributes | |
|---|---|
| **Field** | **Description** |
| Style | Colonial |
| Model | Residential |

| | |
|---|---|
| Grade: | B |
| Stories | 1.9 |
| Occupancy | 1 |
| Exterior Wall 1 | Vinyl Siding |
| Exterior Wall 2 | |
| Roof Structure | Gambrel |
| Roof Cover | Arch Shingles |
| Interior Wall 1 | Drywall |
| Interior Wall 2 | |
| Interior Flr 1 | Carpet |
| Interior Flr 2 | |
| Heat Fuel | Oil |
| Heat Type: | Hot Water |
| AC Percent | 35% CAC |
| Total Bedrooms: | 5 Bedrooms |
| Full Bthrms: | 3 |
| Half Baths: | 0 |
| Extra Fixtures | 0 |
| Total Rooms: | 9 |
| Bath Style: | Average |
| Kitchen Style: | Average |
| Num Kitchens | 1 |
| Fireplace(s) | 0 |
| % Attic Fin | 0 |
| LF Dormer | 12 |
| Foundation | Poured Conc |
| Bsmt Gar(s) | 0 |
| Bsmt % | 100 |
| SF FBM | 0 |
| Fin Bsmt Qual | LQ |
| Bsmt Access | Int & Ext |

(http://images.vgsi.com/photos/WolcottCTPhotos//\00\01\17/56.jpg)

**Building Layout**




| Building Sub-Areas (sq ft) | | | Legend |
|---|---|---|---|
| **Code** | **Description** | **Gross Area** | **Living Area** |
| BAS | First Floor | 1,616 | 1,616 |
| FNS | Finished 90% Story | 1,292 | 1,163 |
| FUS | Finished Upper Story | 360 | 360 |
| BSM | Basement | 2,212 | 0 |
| PTC | Concrete Patio | 516 | 0 |
| UEP | Unfin. Enclosed Porch | 126 | 0 |
| | | 6,122 | 3,139 |

**Building 2 : Section 1**

**Year Built:** 1910
**Living Area:** 1,308
**Replacement Cost:** $134,245
**Building Percent Good:** 60
**Replacement Cost Less Depreciation:** $80,550

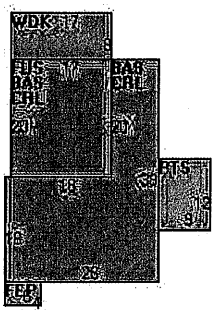
**Building Photo**

| Building Attributes : Bldg 2 of 3 | |
|---|---|
| **Field** | **Description** |
| Style | Conventional |
| Model | Residential |

| | |
|---|---|
| Grade: | D |
| Stories | 1 |
| Occupancy | 1 |
| Exterior Wall 1 | Vinyl Siding |
| Exterior Wall 2 | |
| Roof Structure | Gable |
| Roof Cover | Arch Shingles |
| Interior Wall 1 | Plaster |
| Interior Wall 2 | |
| Interior Flr 1 | Carpet |
| Interior Flr 2 | |
| Heat Fuel | Oil |
| Heat Type: | Hot Water |
| AC Percent | None |
| Total Bedrooms: | 2 Bedrooms |
| Full Bthrms: | 1 |
| Half Baths: | 0 |
| Extra Fixtures | 0 |
| Total Rooms: | 5 |
| Bath Style: | Average |
| Kitchen Style: | Average |
| Num Kitchens | 1 |
| Fireplace(s) | 0 |
| % Attic Fin | 0 |
| LF Dormer | 0 |
| Foundation | Poured Conc |
| Bsmt Gar(s) | 0 |
| Bsmt % | 0 |
| SF FBM | 0 |
| Fin Bsmt Qual | |
| Bsmt Access | None |

(http://images.vgsi.com/photos/WolcottCTPhotos//\00\01\17/57.jpg)

**Building Layout**




| Building Sub-Areas (sq ft) | | | Legend |
|---|---|---|---|
| **Code** | **Description** | **Gross Area** | **Living Area** |
| BAS | First Floor | 968 | 968 |
| FUS | Finished Upper Story | 340 | 340 |
| CRL | Crawl Space | 968 | 0 |
| FEP | Finished Enclosed Porch | 24 | 0 |
| PTS | Stone Patio | 108 | 0 |
| WDK | Deck | 136 | 0 |
| | | 2,544 | 1,308 |

**Building 3 : Section 1**

**Year Built:** 1912
**Living Area:** 1,481
**Replacement Cost:** $160,287
**Building Percent Good:** 60
**Replacement Cost Less Depreciation:** $96,170

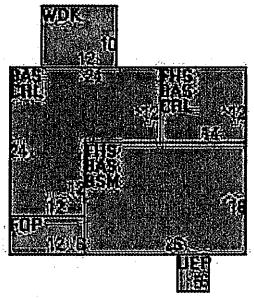
| Building Attributes : Bldg 3 of 3 | |
|---|---|
| **Field** | **Description** |
| Style | Conventional |
| Model | Residential |

**Building Photo**

| | |
|---|---|
| Grade: | D |
| Stories | 1.65 |
| Occupancy | 2 |
| Exterior Wall 1 | Vinyl Siding |
| Exterior Wall 2 | |
| Roof Structure | Gable |
| Roof Cover | Arch Shingles |
| Interior Wall 1 | Plaster |
| Interior Wall 2 | |
| Interior Flr 1 | Hardwood |
| Interior Flr 2 | Carpet |
| Heat Fuel | Oil |
| Heat Type: | Hot Water |
| AC Percent | None |
| Total Bedrooms: | 3 Bedrooms |
| Full Bthrms: | 2 |
| Half Baths: | 0 |
| Extra Fixtures | 0 |
| Total Rooms: | 7 |
| Bath Style: | Average |
| Kitchen Style: | Average |
| Num Kitchens | 2 |
| Fireplace(s) | 0 |
| % Attic Fin | 0 |
| LF Dormer | 0 |
| Foundation | Poured Conc |
| Bsmt Gar(s) | 0 |
| Bsmt % | 100 |
| SF FBM | 0 |
| Fin Bsmt Qual | |
| Bsmt Access | Int & Ext |

(http://images.vgsi.com/photos/WolcottCTPhotos//\00\01\17/58.jpg)

**Building Layout**




| Building Sub-Areas (sq ft) | | | Legend |
|---|---|---|---|
| **Code** | **Description** | **Gross Area** | **Living Area** |
| BAS | First Floor | 1,068 | 1,068 |
| FHS | Finished Half Story | 636 | 413 |
| BSM | Basement | 468 | 0 |
| CRL | Crawl Space | 600 | 0 |
| FOP | Open Porch | 72 | 0 |
| UEP | Unfin. Enclosed Porch | 30 | 0 |
| WDK | Deck | 120 | 0 |
| | | 2,994 | 1,481 |

**Extra Features**

| Extra Features | | | | Legend |
|---|---|---|---|---|
| **Code** | **Description** | **Size** | **Value** | **Bldg #** |
| SOL | Solar Array | 39 UNITS | $0 | 1 |

**Land**

**Land Use**

**Use Code** 112

**Land Line Valuation**

**Size (Acres)** 2.20

| | | | |
|---|---|---|---|
| **Description** | Multiple Houses | **Frontage** | |
| **Zone** | R-30 | **Depth** | |
| **Neighborhood** | 6C | **Assessed Value** | $172,460 |
| **Alt Land Appr** | No | **Appraised Value** | $246,370 |
| **Category** | | | |

## Outbuildings

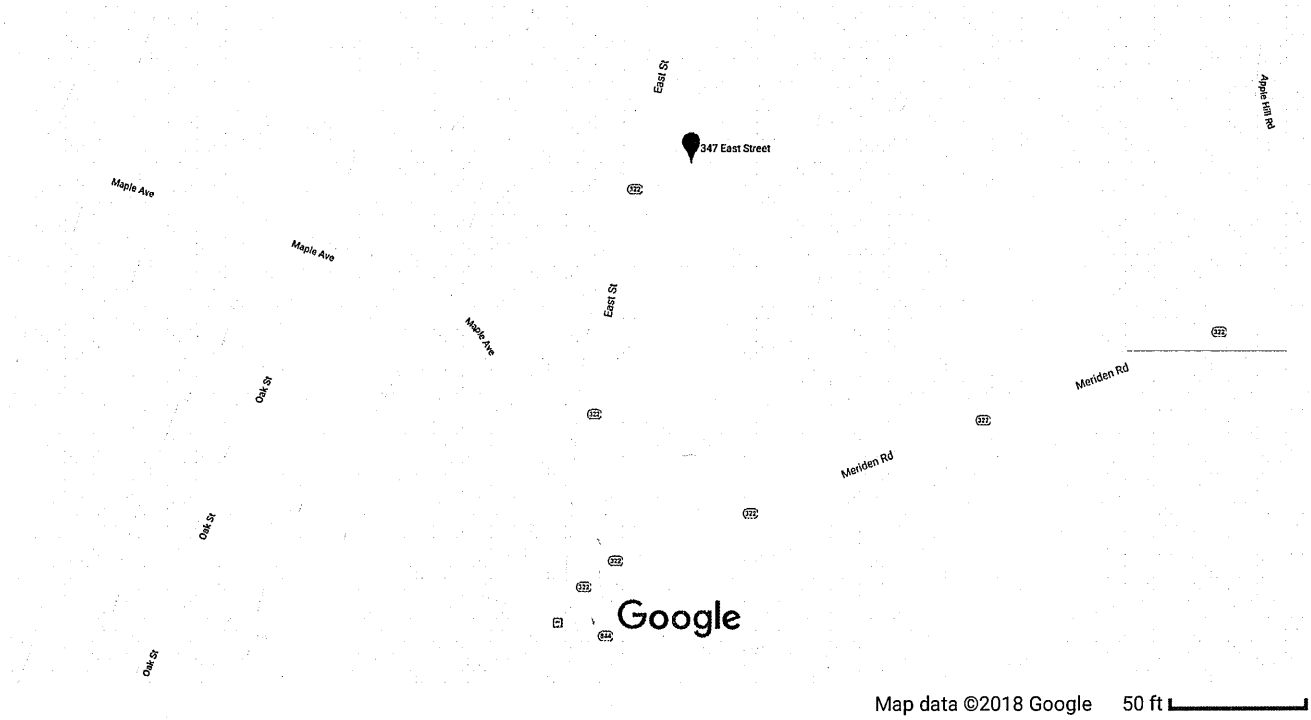
| Outbuildings | | | | | | Legend |
|---|---|---|---|---|---|---|
| **Code** | **Description** | **Sub Code** | **Sub Description** | **Size** | **Value** | **Bldg #** |
| FGR1 | Garage | FR | Frame | 672 S.F. | $5,880 | 1 |
| FGR1 | Garage | FR | Frame | 560 S.F. | $4,900 | 1 |
| FOP | Porch | | | 480 S.F. | $2,760 | 1 |
| PTO | Patio | CN | Concrete | 408 S.F. | $1,020 | 1 |

## Valuation History

| Appraisal | | | |
|---|---|---|---|
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2017 | $401,720 | $246,370 | $648,090 |
| 2015 | $496,350 | $249,680 | $746,030 |
| 2014 | $496,350 | $249,680 | $746,030 |

| Assessment | | | |
|---|---|---|---|
| **Valuation Year** | **Improvements** | **Land** | **Total** |
| 2017 | $281,210 | $172,460 | $453,670 |
| 2015 | $347,430 | $174,780 | $522,210 |
| 2014 | $347,430 | $174,780 | $522,210 |

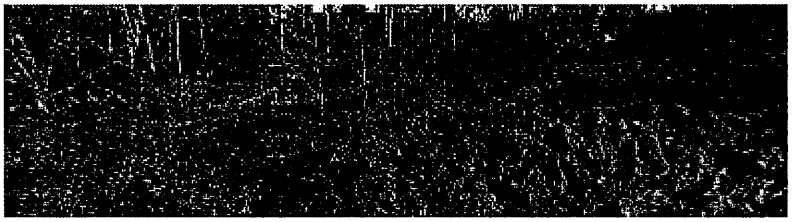
Google Maps 347 East St




## 347 East St

Wolcott, CT 06716

H362+2X Wolcott, Connecticut



Sprint

CROWN CASTLE

| | |
|---|---|
| PROJECT: | 2.5 EQUIPMENT DEPLOYMENT |
| SITE NAME: | NHV 108 943133 |
| SITE CASCADE: | CT52XC079 |
| SITE NUMBER: | 806362 |
| SITE ADDRESS: | INTERSECTION OF RTE 322/MERIDIAN RD<br>WOLCOTT, CT 06716 |
| SITE TYPE: | SELF SUPPORT |
| MARKET: | N. ENGLAND |

## SITE INFORMATION

**TOWER OWNER:**
CROWN ATLANTIC COMPANY LLC
2000 CORPORATE DRIVE
CANONSBURG, PA 15317
(704) 405-6555

**LATITUDE (NAD83):**
41° 33' 34.4" N
41.559556°

**LONGITUDE (NAD83):**
72° 56' 49.1" W
-72.946972°

**COUNTY:**
NEW HAVEN

**ZONING JURISDICTION:**
TOWN OF WOLCOTT

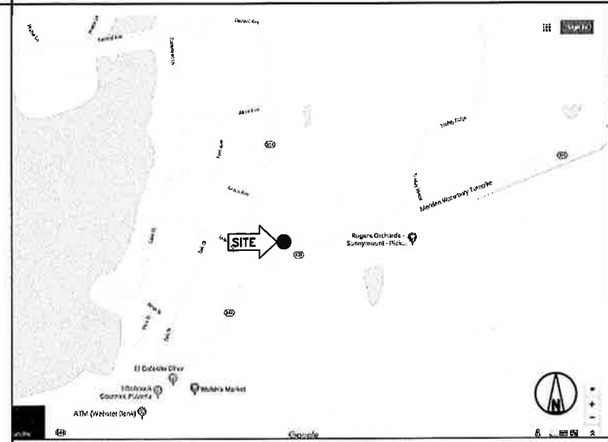
**ZONING DISTRICT:**
R-30

**POWER COMPANY:**
CONNECTICUT LIGHT & POWER CO
800-286-2000

**SPRINT CONSTRUCTION:**
TBD

**CROWN PM:**
SCOTT WIATROSKI
(201) 236-9228

## AREA MAP




## LOCATION MAP


## PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE EXISTING CLEARWIRE CABINET AND PAD
- REMOVE EXISTING (3) MOUNTS
- INSTALL (3) NEW MOUNTS
- INSTALL NEW ELTEK CABINET AND PAD
- REMOVE (3) EXISTING PANEL ANTENNAS FROM TOWER
- REMOVE (4) RRHs
- INSTALL (3) NNVV-65B-R4 PANEL ANTENNAS ON TOWER
- INSTALL (3) NOKIA/AAHC PANEL ANTENNAS ON TOWER
- INSTALL (3) 1900MHz 4x45W-65MHz RRHs ON TOWER
- INSTALL (6) RRH 2x50-800MHz RRHs ON TOWER
- INSTALL (4) HYBRID CABLES
- REMOVE (4) COAX CABLES

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH STRUCTURE AND MOUNT.

## APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2015 IBC)
2. TIA-222-G OR LATEST EDITION
3. NFPA 780 - LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. LOCAL BUILDING CODE
7. CITY/COUNTY ORDINANCES

811 Know what's below. Call before you dig. www.call811.com

## DRAWING INDEX

| SHEET NO. | SHEET TITLE | REV. |
|---|---|---|
| T-1 | TITLE SHEET & PROJECT DATA | 0 |
| SP-1 | SPRINT SPECIFICATIONS | 0 |
| SP-2 | SPRINT SPECIFICATIONS | 0 |
| SP-3 | SPRINT SPECIFICATIONS | 0 |
| A-1 | SITE PLAN | 0 |
| A-2 | TOWER ELEVATION & CABLE PLAN | 0 |
| A-3 | ANTENNA LAYOUT & MOUNTING DETAILS | 0 |
| A-4 | EQUIPMENT & MOUNTING DETAILS | 0 |
| A-5 | CIVIL DETAILS | 0 |
| A-6 | PLUMBING DIAGRAM | 0 |
| E-1 | ELECTRICAL & GROUNDING DETAILS | 0 |
| E-2 | ELECTRICAL & GROUNDING DETAILS | 0 |

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-103

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
Nov. 27 2018

DRAWING NOTICE:


REVISIONS:

| DESCRIPTION | DATE | BY | REV |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| ISSUED FOR CONSTRUCTION | 08/24/18 | RMS | 0 |
| ISSUED FOR REVIEW | 07/25/18 | RCD | A |

SITE NAME:
NHV 108 943133

SITE CASCADE:
CT52XC079

SITE ADDRESS:
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

## SECTION 01 100 – SCOPE OF WORK

### PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:

1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
7. AMERICAN CONCRETE INSTITUTE (ACI)
8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
11. PORTLAND CEMENT ASSOCIATION (PCA)
12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13. BRICK INDUSTRY ASSOCIATION (BIA)
14. AMERICAN WELDING SOCIETY (AWS)
15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
17. DOOR AND HARDWARE INSTITUTE (DHI)
18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.

B. COMPANY: SPRINT CORPORATION

C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.

D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.

E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.

C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

### PART 2 – PRODUCTS (NOT USED)

### PART 3 – EXECUTION

3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

## SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

### PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

### PART 2 – PRODUCTS (NOT USED)

### PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

1. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

## SECTION 01 300 – CELL SITE CONSTRUCTION CO.

### PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

*TOWER OWNER NOTIFICATION*
*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.*

### PART 2 – PRODUCTS (NOT USED)

### PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-103

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
REGISTERED
PROFESSIONAL ENGINEER
AUG 27 2018



REVISIONS:

| DESCRIPTION | DATE | BY | REV |
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| ISSUED FOR CONSTRUCTION | 08/24/18 | RMS | 0 |
| ISSUED FOR REVIEW | 07/25/18 | RCD | A |
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SITE NAME:
NHV 108 943133

SITE CASCADE:
CT52XC079

SITE ADDRESS:
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.

1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.

1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

## SECTION 01 400 - SUBMITTALS & TESTS

### PART 1 - GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER CURRENT VERSION OF SPRINT'S TS-0200 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL - UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

### PART 2 - PRODUCTS (NOT USED)

### PART 3 - EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS - ANTENNALIGN ALIGNMENT TOOL (AAT)

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6580 Sprint Parkway
Overland Park, Kansas 66251

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JOB NUMBER 526-103

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
PROFESSIONAL ENGINEER
LICENSED
AUG 27 2018

DRAWING NOTICE:



REVISIONS:

| DESCRIPTION | DATE | BY | REV |
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| ISSUED FOR CONSTRUCTION | 08/24/18 | RMS | 0 |
| ISSUED FOR REVIEW | 07/25/18 | RCD | A |

SITE NAME:

NHV 108 943133

SITE CASCADE:

CT52XC079

SITE ADDRESS:

INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.

6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.

2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;

3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS - PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.

4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING - TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;

6. SITE LAYOUT - PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.

7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.

8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.

9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

## SECTION 01 400 - SUBMITTALS & TESTS

### PART 1 - GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

### PART 2 - PRODUCTS (NOT USED)

### PART 3 - EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

1. 1SHELTER AND TOWER OVERVIEW.

2. TOWER FOUNDATION(S) - FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).

3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).

4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.

9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.

14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.

18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.

19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING - WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

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JOB NUMBER 526-103

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
PROFESSIONAL ENGINEER
AUG 27 2018



REVISIONS:

| DESCRIPTION | DATE | BY | REV |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| ISSUED FOR CONSTRUCTION | 08/24/18 | RMS | 0 |
| ISSUED FOR REVIEW | 07/25/18 | RCD | A |
| | | | |

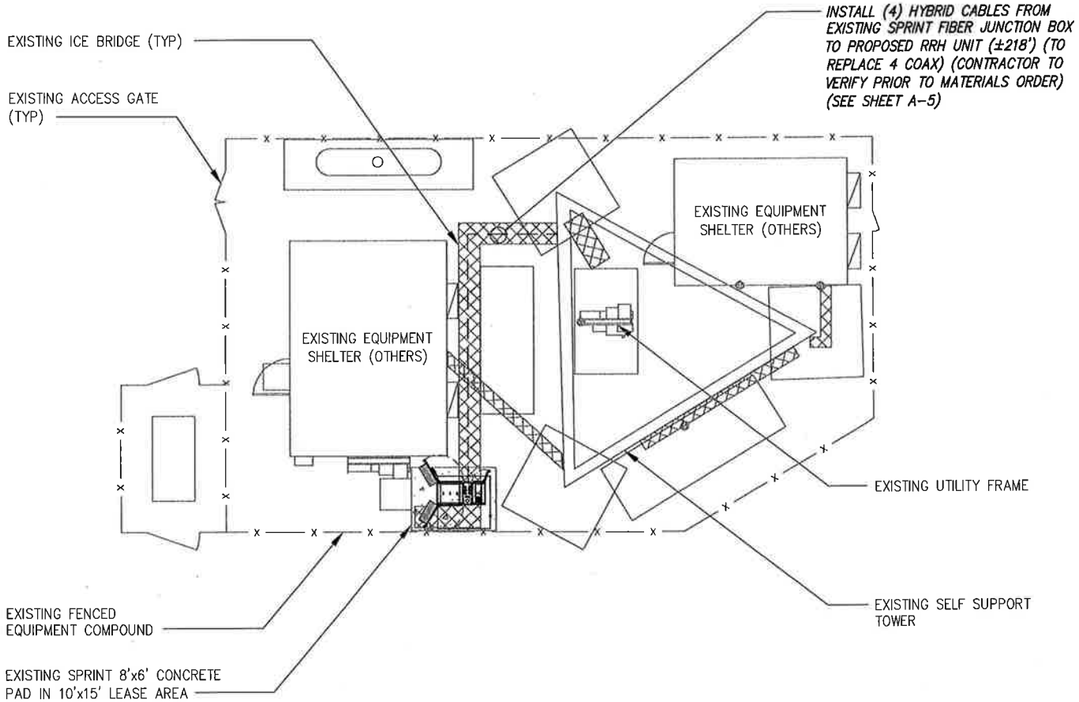
SITE NAME:
NHV 108 943133

SITE CASCADE:
CT52XC079

SITE ADDRESS:
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-3



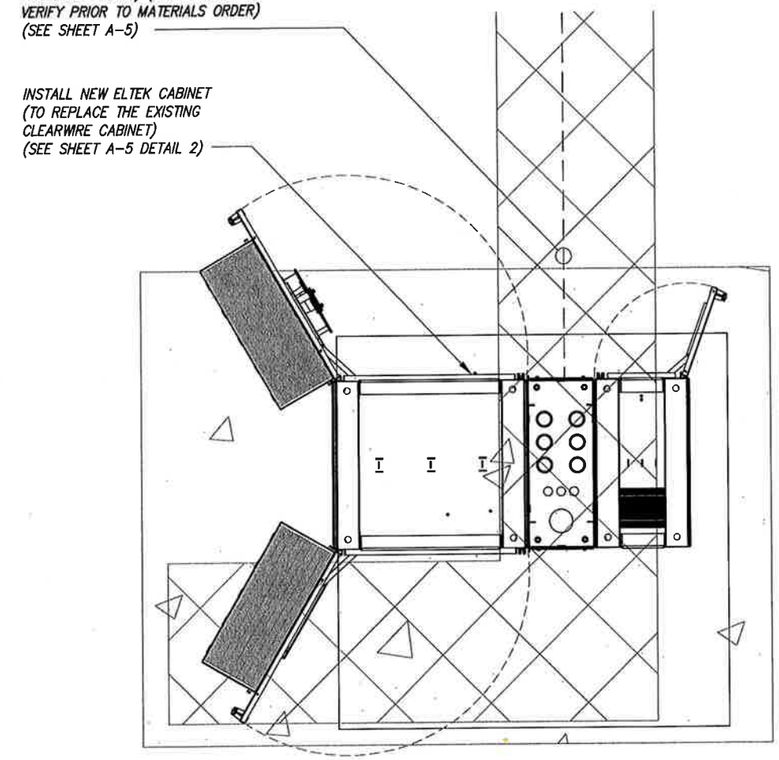

GRAPHIC SCALE:

15' 7.5' 0 7.5' 15'

SCALE (11x17): 1" = 15'-0"
SCALE (22x34): 1" = 7'-6"

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

**OVERALL SITE PLAN** | SCALE: AS NOTED | 1




NOTE:
NO LIQUID TIGHT FLEXIBLE METALLIC CONDUIT IS TO EXCEED 6 FEET PER SP-2 SECTION 26 200 ITEM E.

GRAPHIC SCALE:

2' 1' 0 1' 2'

SCALE (11x17): 1" = 2'-0"
SCALE (22x34): 1" = 1'-0"

**SPRINT EQUIPMENT PLAN** | SCALE: AS NOTED | 2

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MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
REGISTERED PROFESSIONAL ENGINEER
8-27-2018

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SITE ADDRESS:

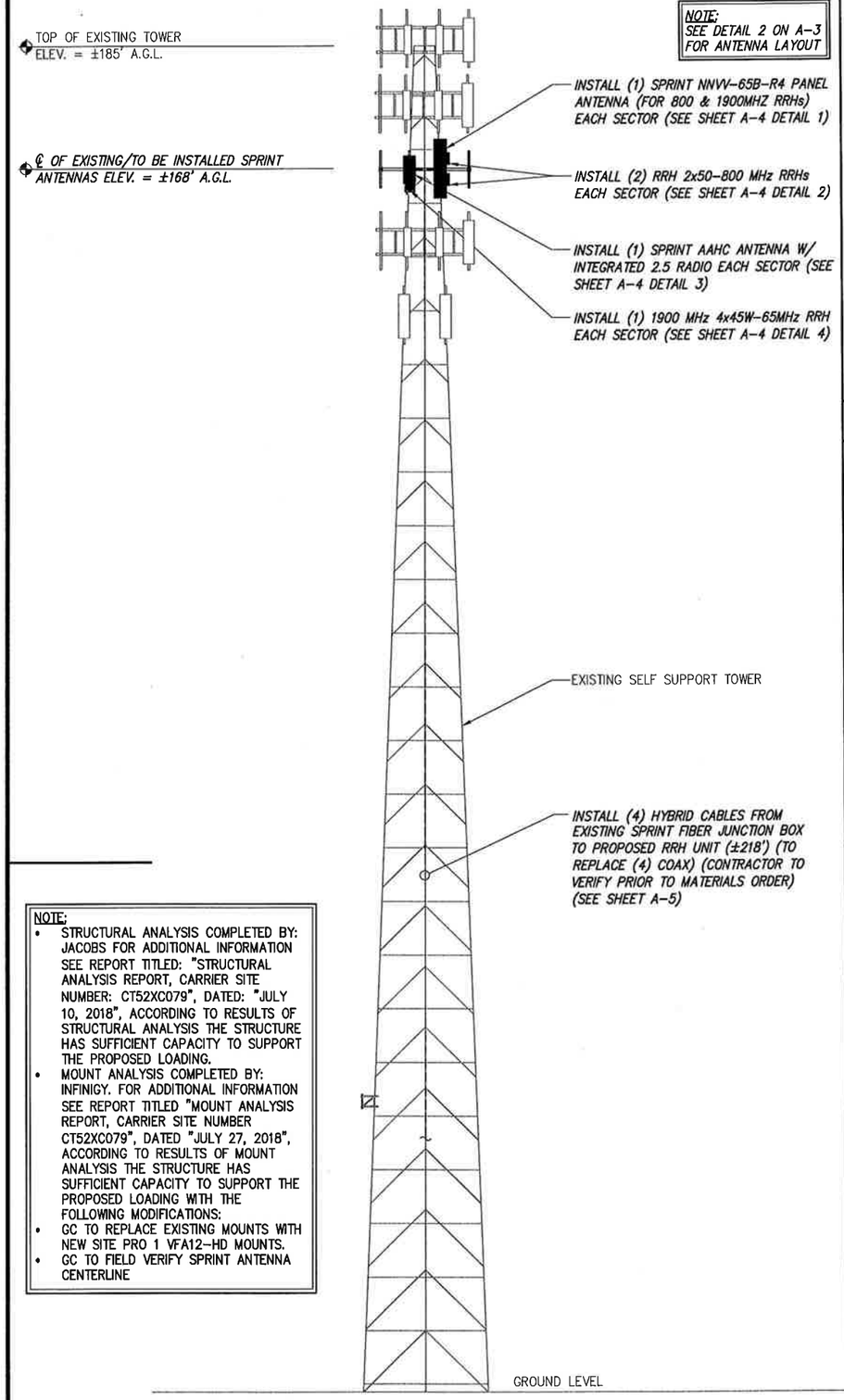
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

A-1

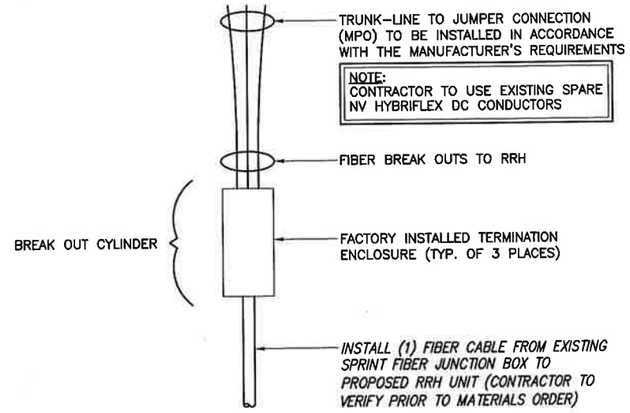



NOTE:
- STRUCTURAL ANALYSIS COMPLETED BY: JACOBS FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, CARRIER SITE NUMBER: CT52XC079", DATED: "JULY 10, 2018", ACCORDING TO RESULTS OF STRUCTURAL ANALYSIS THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.
- MOUNT ANALYSIS COMPLETED BY: INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED "MOUNT ANALYSIS REPORT, CARRIER SITE NUMBER CT52XC079", DATED "JULY 27, 2018", ACCORDING TO RESULTS OF MOUNT ANALYSIS THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING WITH THE FOLLOWING MODIFICATIONS:
- GC TO REPLACE EXISTING MOUNTS WITH NEW SITE PRO 1 VFA12-HD MOUNTS.
- GC TO FIELD VERIFY SPRINT ANTENNA CENTERLINE

**TOWER ELEVATION** | NO SCALE | 1

NOTE:
CONTRACTOR TO LINE UP WHITE MARKINGS ON JUMPER AND RISER IP-MPO CONNECTORS AND SLIDE THE RISER CONNECTOR TO THE JUMPER CONNECTOR. PUSH THE WHITE MARK ON THE JUMPER CONNECTOR FLUSH AGAIN THE RED SEAL ON THE RISER CONNECTOR.

CONTRACTOR TO ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL YOU HEAR A CLICK SOUND TO ENSURE A PROPER CONNECTION IS IN PLACE.




**HYBRID BREAKOUT DETAIL** | NO SCALE | 2

## EXISTING EQUIPMENT CONFIGURATION

| SECTOR | ANTENNA MANUFACTURER | ANTENNA MODEL | RAD CENTER | AZIMUTH | RRH/ODU MAKE AND MODEL |
|---|---|---|---|---|---|
| 1 | ARGUS TECHNOLOGIES | LLXP310R | 168' | 30° | (2) FDD_R6_RRH |
| | – | – | – | – | – |
| 2 | ARGUS TECHNOLOGIES | LLXP310R | 168' | 150° | FDD_R6_RRH |
| | ANDREW | VHLP2-18 | 168' | 150° | – |
| 3 | ARGUS TECHNOLOGIES | LLXP310R | 168' | 260° | FDD_R6_RRH |
| | DRAGONWAVE | A-ANT-18G-2-C | 168' | 337° | – |

## FEEDER CABLES

| MANUFACTURER | MODEL | LENGTH | QTY |
|---|---|---|---|
| N/A | 5/16" COAX | 220'± | (4) |
| BELDEN | 7983A | 220'± | (1) |

LEGEND
EXISTING
REMOVED

## FINAL EQUIPMENT CONFIGURATION

| SECTOR | ANTENNA MANUFACTURER | ANTENNA MODEL | RAD CENTER | AZIMUTH | RRH/ODU MAKE AND MODEL |
|---|---|---|---|---|---|
| 1 | COMMSCOPE | NNVV-65B-R4 | 168' | 30° | (1) ALU 1900MHZ 4X45W-65MHZ (2) ALU 800MHZ 2x50-800 |
| | NOKIA | AAHC | 168' | 30° | (1) INTEGRATED 2.5 RADIO |
| | – | – | – | – | – |
| 2 | COMMSCOPE | NNVV-65B-R4 | 168' | 150° | (1) ALU 1900MHZ 4X45W-65MHZ (2) ALU 800MHZ 2x50-800 |
| | NOKIA | AAHC | 168' | 150° | (1) INTEGRATED 2.5 RADIO |
| | ANDREW | VHLP2-18 | 168' | 150° | |
| 3 | COMMSCOPE | NNVV-65B-R4 | 168' | 260° | (1) ALU 1900MHZ 4X45W-65MHZ (2) ALU 800MHZ 2x50-800 |
| | NOKIA | AAHC | 168' | 260° | (1) INTEGRATED 2.5 RADIO |
| | DRAGONWAVE | A-ANT-18G-2-C | 168' | 337° | – |

## FEEDER CABLES

| MANUFACTURER | MODEL | LENGTH | QTY |
|---|---|---|---|
| RFS | HB114-1-0813U4-M5J | 218'± | (3) |
| BELDEN | 7983A | 220'± | (1) |

LEGEND
EXISTING
PROPOSED

NOTES:
1. CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT DATA AT TIME OF CONSTRUCTION.
2. CONTRACTOR TO CONFIRM CABLE LENGTHS PRIOR TO CONSTRUCTION.

**ANTENNA/CABLE SCHEDULE** | NO SCALE | 3

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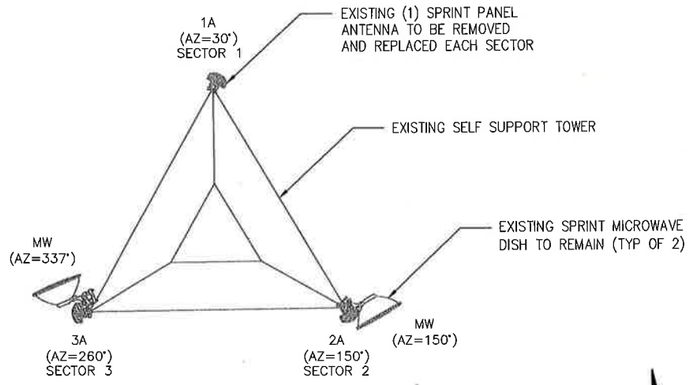
NHV 108 943133

SITE CASCADE:
CT52XC079

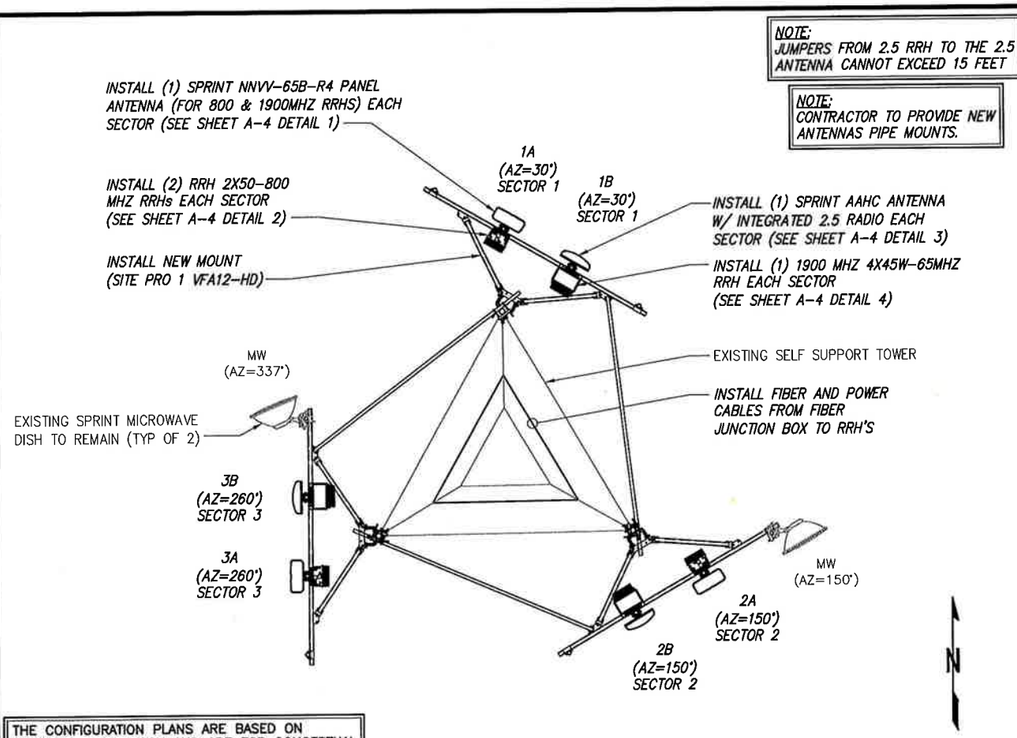
SITE ADDRESS:
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:
TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:
A-2




EXISTING ANTENNA LAYOUT | NO SCALE | 1




FINAL ANTENNA & RRH LAYOUT | NO SCALE | 2

NOTES:

1. ALL ANTENNA HEIGHTS ARE TO CENTER OF HORIZONTAL ANTENNA.

2. VERIFY AZIMUTH AND CL HEIGHT WITH AS-BUILT DRAWINGS IF AVAILABLE.

3. NO OBJECT IS TO BE WITHIN 45 DEGREES OF BORE-SIGHT OF 2.5G OR ANY OTHER TOWER ANTENNA. IF NECESSARY, 2.5G ANTENNA CAN BE PLACED AT FAR EDGE OF HORIZONTAL ANTENNA MOUNT MEMBER FOR CLEAR LINE OF SITE OR EVEN ON ANOTHER SECTOR FOR CLEAR LINE OF SITE.

4. 2.5G ANTENNA MUST BE AT LEAST 6" FROM 1900MHZ ANTENNA, 30" FROM 800MHZ ANTENNA AND 30MHZ FROM DUAL BAND 1900MHZ AND 800MHZ ANTENNA.

5. IF ANTENNAS ARE MOUNTED ON A FACE SURFACE SUCH AS A BUILDING WALL, PARAPET WALL, OR WATER TOWER WALL, THIS RFDS MUST BE ACCOMPANIED BY A SKETCH PROVIDED BY ITS ORIGINATING RF ENGINEER CALLING OUT THE EXACT LOCATION OF WHERE ANTENNA IS TO BE LOCATED. CONTACT SPRINT RF ENGINEER IF THE SKETCH IS MISSING.

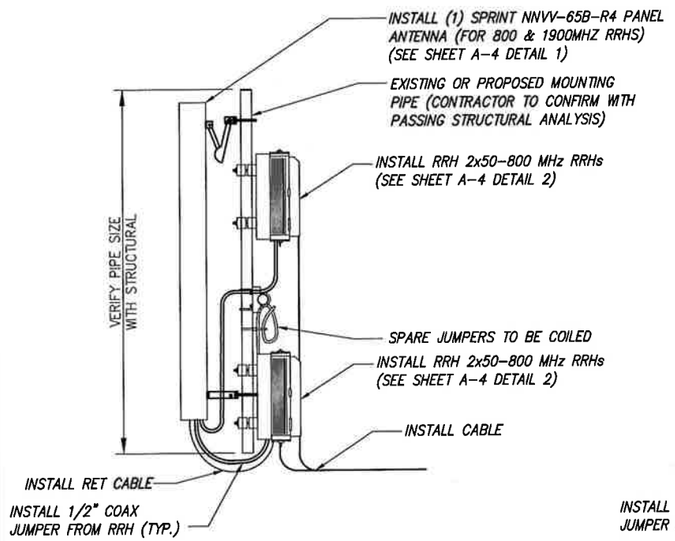
6. GENERAL CONTRACTOR TO FIELD VERIFY AZIMUTH AND CL HEIGHT AND MECHANICAL DOWNTILT. IF DIFFERENT THAN CALLED OUT BELOW, HALT ANTENNA WORK FOR ONE HOUR, CALL SPRINT RF ENGINEER (OR MANAGER IF RF ENGINEER DOES NOT ANSWER, BUT STILL LEAVE A MESSAGE TO RF ENGINEER) USING CONTACT INFORMATION ABOVE FOR FURTHER INSTRUCTIONS. IF SPRINT DOES NOT RESPOND WITHIN ONE HOUR, PLACE 2.5G ANTENNA AT SAME CL HEIGHT AS 1.9G ANTENNA AND EMAIL CORRECT CL HEIGHT AND AZIMUTH TO SPRINT RF ENGINEER. UPDATE AS-BUILD DRAWING WITH CORRECT CL HEIGHT. ALSO EMAIL CORRECT 1900 MHZ AND 800 MHZ ANTENNA CL HEIGHT, AZIMUTH AND MECHANICAL DOWNTILT TO RF ENGINEER.

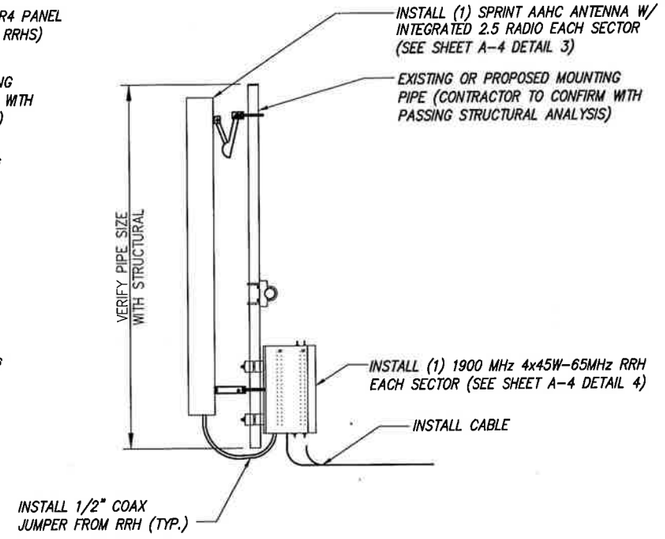
7. AISG TESTS TO VERIFY OPERATION IS TO BE PERFORMED AFTER FINAL INSTALLATION OF ANTENNAS AND AISG CABLES HAVE BEEN CONNECTED. VERIFY OPERATION OF ALL EXISTING SPRINT AISG EQUIPMENT INCLUDING 800MHZ, 1.9GHZ AND 2.5G. TEST INCLUDE COMPLETE DOWNTILT, AZIMUTH (IF APPLICABLE) AND BEAMWIDTH SWINGS (IF APPLICABLE). DOCUMENT AISG TEST RESULTS IN COAX SWEEP TEST SPREADSHEET.

8. GENERAL CONTRACTOR MUST INSURE THAT NO OBJECT IS LOCATED IN FRONT OF ANTENNA. THIS MEANS NO OBJECT IS TO BE LOCATED 45 DEGREES LEFT AND RIGHT OF FRONT OF ANTENNA OR 7 DEGREES UP AND DOWN FROM CENTER OF ANTENNA. IF THIS IS NOT POSSIBLE, CONTACT RF ENGINEER FOR FURTHER INSTRUCTION. IN ADDITION, 2.5G ANTENNA IS NOT TO BE PLACED IN FRONT OF ANY OTHER ANTENNA USING THE SAME 45 DEGREE RULE. THIS INCLUDES SPRINT AND NON-SPRINT ANTENNAS.

9. GENERAL CONTRACT IS REQUIRED TO USE A DIGITAL ALIGNMENT TOOL TO SET AZIMUTH, ROLL AND DOWNTILT. AZIMUTH ACCURACY IS TO BE WITHIN 1 DEGREES. DOWNTILT AND ROLL (LEFT TO RIGHT TILT) IS TO BE WITHIN 0.1 DEGREES. IF FOR SOME REASON THIS ACCURACY CANNOT BE ACHIEVED, UPDATE AS-BUILT DRAWINGS AND EMAIL SPRINT RF ENGINEER WITH AS-BUILT SETTINGS. USE 3Z RF ALIGNMENT TOOL OR EQUIVALENT TOOL. HTTP://WWW.3ZTELECOM.COM/ANTENNA-ALIGNMENT-TOOL/

NOTES | NO SCALE | 3




NOTES:

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.

NOTE:
CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE:
SPARE DC CABLES ARE COILED UP ON NV RRHS AT SPRINT ARRAY. THESE ARE TO BE USED TO POWER UP THE 2.5 RRHS AND TIED INTO EXISTING DC BREAKERS INSIDE THE FIBER JUNCTION BOX LOCATED AT EQUIPMENT.

NOTE:
THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRH MOUNTING DETAILS

TYPICAL ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 4

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| | | | |

SITE NAME:

NHV 108 943133

SITE CASCADE:

CT52XC079

SITE ADDRESS:

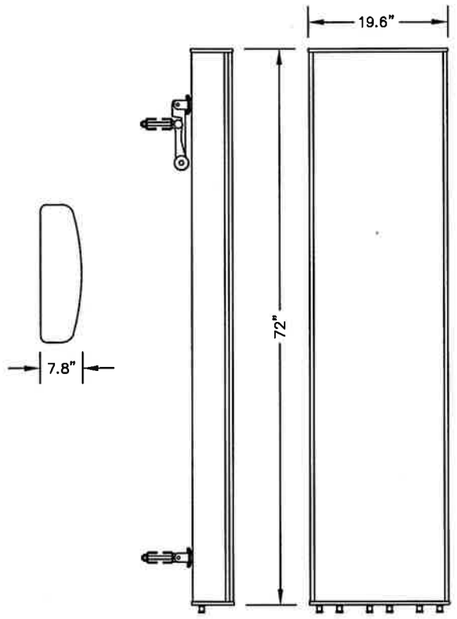
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:

ANTENNA LAYOUT
& MOUNTING DETAILS

SHEET NUMBER:

A-3




## ANTENNA COMMSCOPE NNVV-65B-R4

| | |
|---|---|
| RADOME MATERIAL: | FIBERGLASS |
| RADOME COLOR: | LIGHT GREY |
| DIMENSIONS, HxWxD.in(mim): | 72"x19.6"x7.8" |
| WEIGHT: | 77.4 lbs |
| CONNECTORS: | (8) 4.3-10 DIN FEMALE |

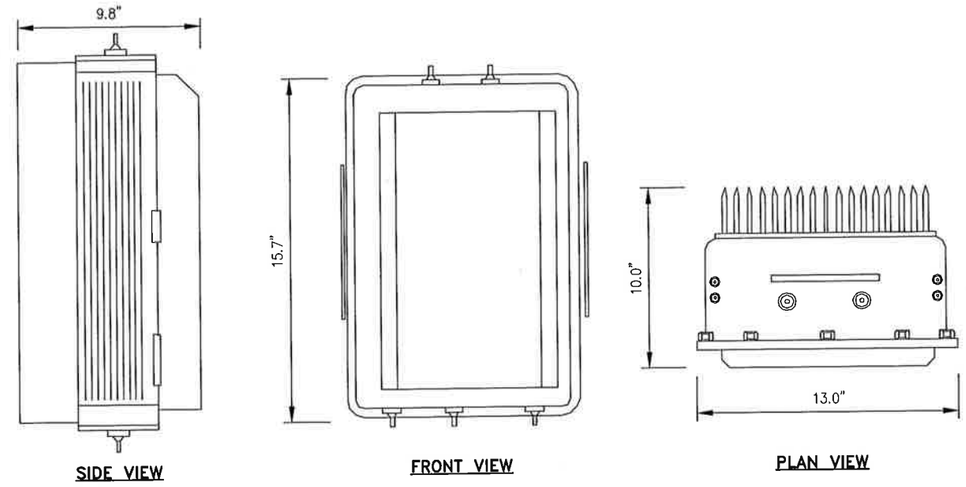
800/1900 PANEL ANTENNA | NO SCALE | 1

## RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

COLOR: LIGHT GREY
WEIGHT: 53 LBS.

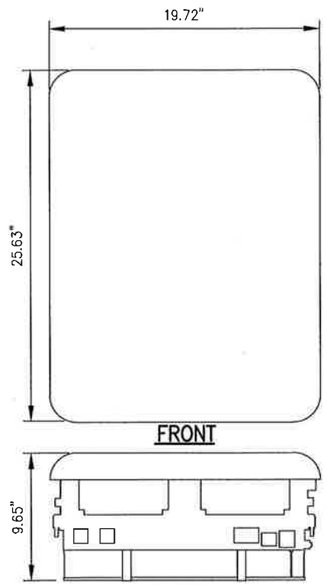
### NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.




SIDE VIEW | FRONT VIEW | PLAN VIEW

800 MHz RRH | NO SCALE | 2




FRONT

BOTTOM

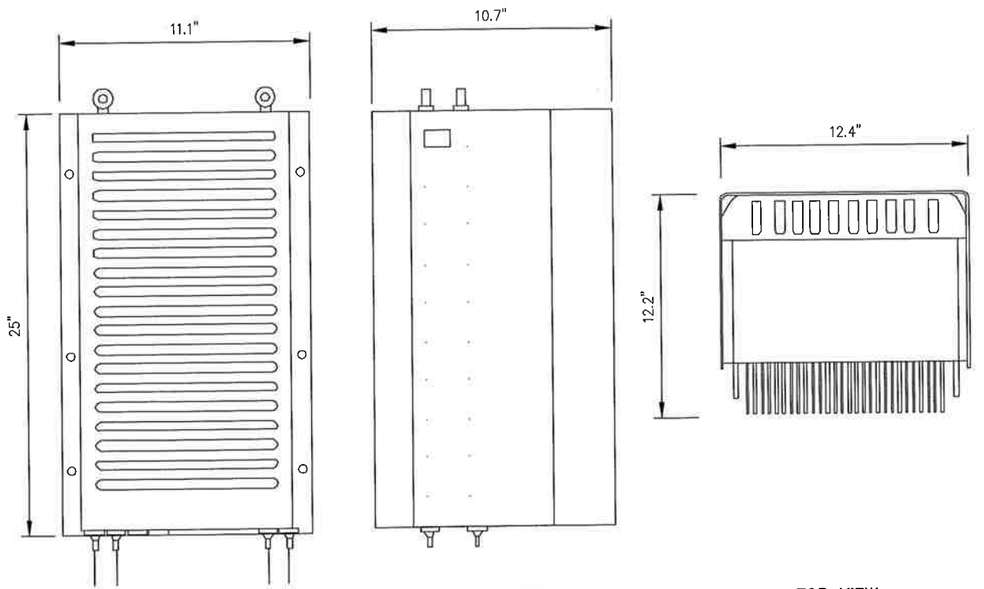
## ANTENNA NOKIA AAHC

| | |
|---|---|
| RADOME MATERIAL: | FIBERGLASS |
| RADOME COLOR: | LIGHT GREY |
| DIMENSIONS, HxWxD.In(mim): | 25.63"x19.72"x9.65" |
| WEIGHT: | 103.6LBS |

2.5 ANTENNA | NO SCALE | 3

## RRH: ALCATEL LUCENT 1900 MHz

COLOR: LIGHT GREY
WEIGHT: 60 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)




FRONT VIEW | SIDE VIEW | TOP VIEW

1900 MHz RRH | NO SCALE | 4

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JOB NUMBER 526-103

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
AUG 27 2018

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| ISSUED FOR REVIEW | 07/25/18 | RCD | A |

SITE NAME:

NHV 108 943133

SITE CASCADE:

CT52XC079

SITE ADDRESS:

INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:

EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:

A-4

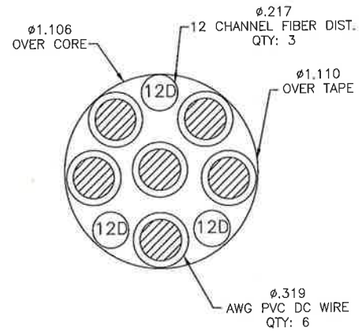
## RFS HYBRIFLEX RISER CABLE SCHEDULE

| | | |
|---|---|---|
| Fiber Only (Existing DC Power) | **Hybrid cable**<br>MN: HB058-M12-050F<br>12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft | 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**<br>MN: HB114-08U3M12-050F<br>3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft | 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**<br>MN: HB114-13U3M12-225F<br>3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft | 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**<br>MN: HB114-21U3M12-325F<br>3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft | 325 ft |
| | MN: HB114-21U3M12-350F | 350 ft |
| | MN: HB114-21U3M12-375F | 375 ft |

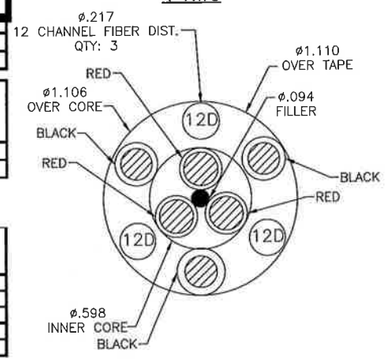
## RFS HYBRIFLEX JUMPER CABLE SCHEDULE

| | | |
|---|---|---|
| Fiber Only | **Hybrid Jumper cable**<br>MN: HBF012-M3-5F1<br>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 |
| 8 AWG Power | **Hybrid Jumper cable**<br>MN: HBF058-08U1M3-5F1<br>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**<br>MN: HBF058-13U1M3-5F1<br>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 |
| 4 AWG Power | **Hybrid Jumper cable**<br>MN: HBF078-21U1M3-5F1<br>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 |

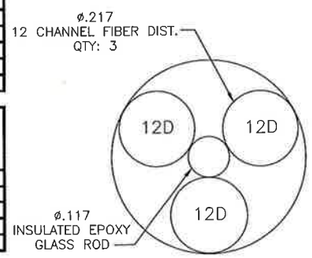
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.




4 AWG



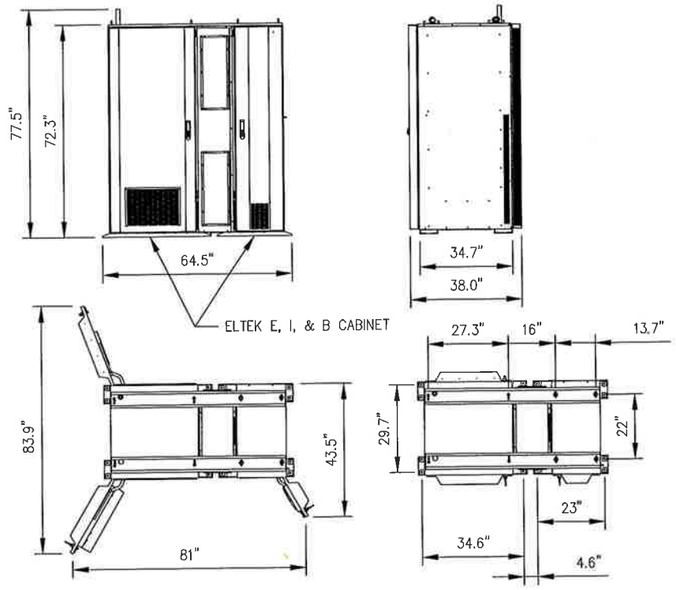

8 & 6 AWG




FIBER ONLY

## 2.5 CABLE CROSS SECTION DATA

NO SCALE | 1




## ELTEK CABINET DETAIL

NO SCALE | 2

## DETAIL NOT USED

NO SCALE | 3

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MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
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| ISSUED FOR REVIEW | 07/25/18 | RCD | A |
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SITE NAME:
NHV 108 943133

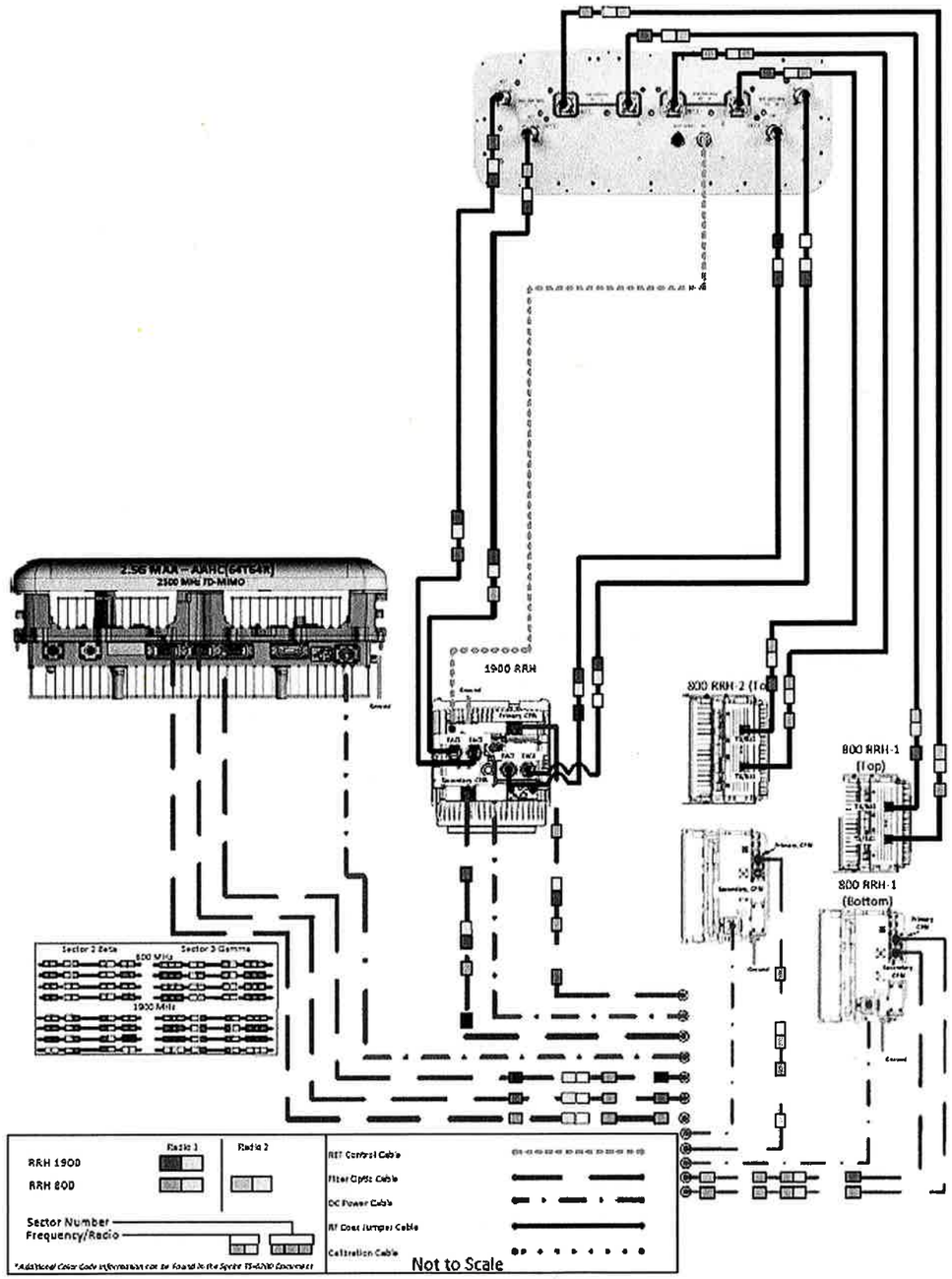
SITE CASCADE:
CT52XC079

SITE ADDRESS:
INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-5

## ALU 21-MIMO NNVV-65B-R4 wo Filters




PLUMBING DIAGRAM | NO SCALE | 1

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WOLCOTT, CT 06716

SHEET DESCRIPTION:

PLUMBING DIAGRAM

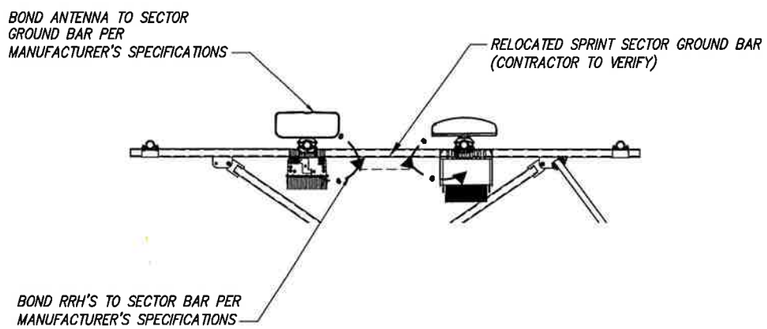
SHEET NUMBER:

A-6

DETAIL NOT USED | NO SCALE | 1

**LEGEND:**

| | |
|---|---|
| — G — | EXISTING GROUND RING |
| ■ | CADWELD CONNECTION (EXOTHERMIC WELD) |
| ▲ | MECHANICAL CONNECTION |
| ⊗ | GROUND ROD |
| ● | CABLE GROUND KIT |




TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2




TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION) | NO SCALE | 3

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Sprint

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INTERSECTION OF RTE 322/MERIDIAN RD
WOLCOTT, CT 06716

SHEET DESCRIPTION:

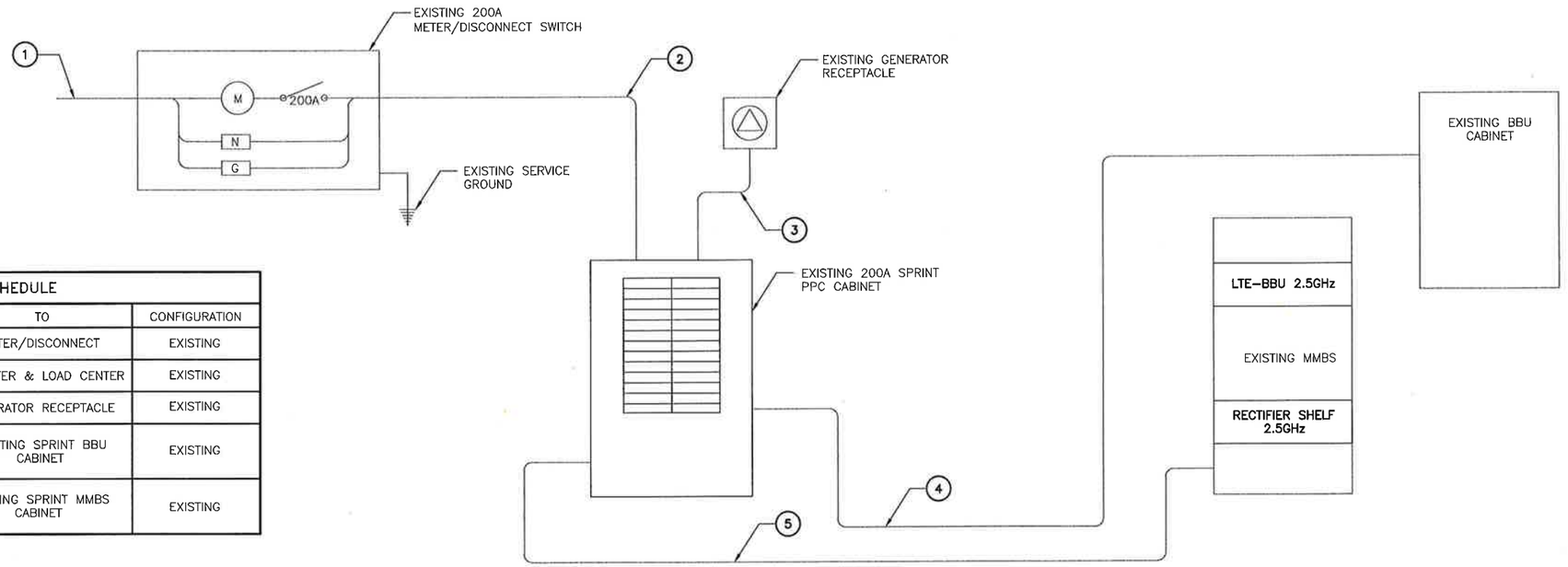
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-1

**NOTES**

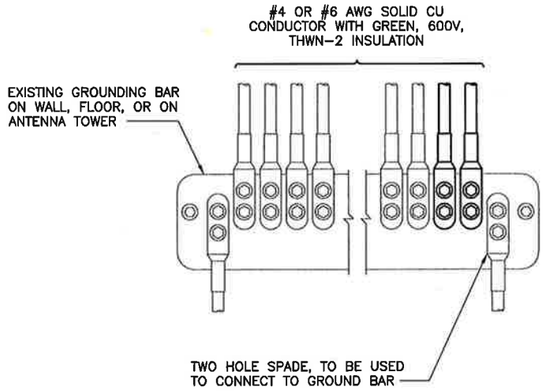
CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.




| CIRCUIT SCHEDULE | | | |
|---|---|---|---|
| NO | FROM | TO | CONFIGURATION |
| 1 | UTILITY SOURCE | METER/DISCONNECT | EXISTING |
| 2 | METER/DISCONNECT | TRANSFER & LOAD CENTER | EXISTING |
| 3 | TRANSFER & LOAD CENTER | GENERATOR RECEPTACLE | EXISTING |
| 4 | TRANSFER & LOAD CENTER | EXISTING SPRINT BBU CABINET | EXISTING |
| 5 | TRANSFER & LOAD CENTER | EXISTING SPRINT MMBS CABINET | EXISTING |

## ELECTRICAL ONE–LINE DIAGRAM

NO SCALE | 1

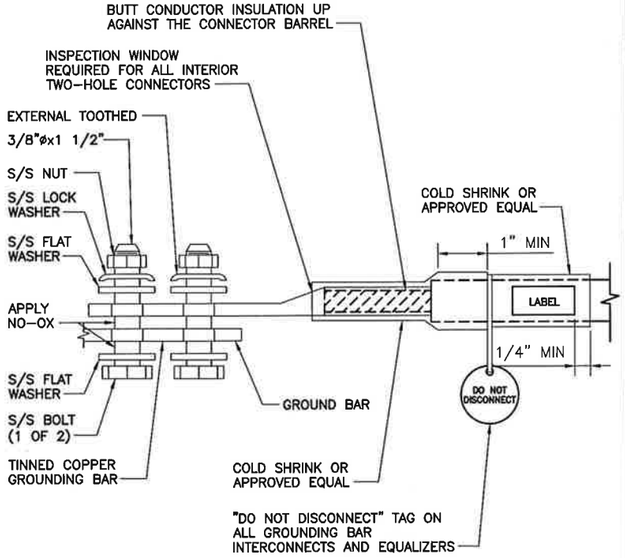



NOTES:

1. APPLY NO–OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

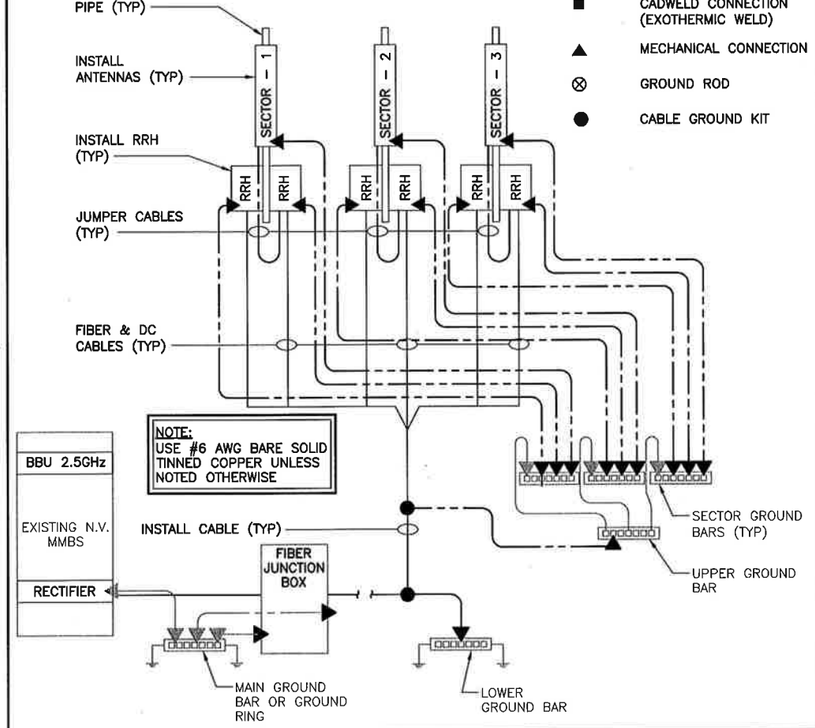
## INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR

NO SCALE | 2




## TWO HOLE LUG

NO SCALE | 3




## GROUNDING RISER DIAGRAM

NO SCALE | 4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WOLCOTT, CT 06716

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2

Reply Reply All Forward IM

McKay, Kristian pparks@wolcottct.org 4:33 PM

**Original zoning docs for 347 East St. tower**

Hello Mr. Parks,

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 347 East. St and according to lease documents it would have been constructed sometime in late 80s to early 90s. Agostinho Rodrigues owned the property at the time and continues to do so.
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

## McKay, Kristian

**From:** McKay, Kristian
**Sent:** Thursday, September 13, 2018 4:09 PM
**To:** 'ehenderson@wolcottct.org'
**Subject:** Original zoning docs for 347 East St. tower

Hello Mr. Henderson,

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 347 East. St and according to lease documents it would have been constructed sometime in late 80s to early 90s. Agostinho Rodrigues owned the property at the time and continues to do so.
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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

Date: **July 10, 2018**

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

JACOBS
Jacobs Engineering Group, Inc.
5449 Bells Ferry Road
Acworth, GA 30102
770-701-2500

**Subject:** **Structural Modification Report**

***Carrier Designation:*** ***Clearwire Corp* Co-Locate**
**Carrier Site Number:** CT52XC079
**Carrier Site Name:** CT52XC079

***Crown Castle Designation:***
**Crown Castle BU Number:** 806362
**Crown Castle Site Name:** NHV 108 943133
**Crown Castle JDE Job Number:** 499046
**Crown Castle Work Order Number:** 1590001
**Crown Castle Order Number:** 436908 Rev. 1

***Engineering Firm Designation:*** **Jacobs Engineering Group, Inc. Project Number:** 1590001

***Site Data:*** **INTERSECTION OF RTE 322/MERIDIAN RD, WOLCOTT SITE, WOLCOTT, New Haven County, CT**
**Latitude *41° 33' 34.41"*, Longitude *-72° 56' 49.1"***
**180 Foot - Self Support Tower**

Dear Timothy Howell,

*Jacobs Engineering Group, Inc.* is pleased to submit this **"Structural Modification 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 1206140, in accordance with order 436908, revision 1.

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

LC4: Modified Structure w/ Existing + Reserved + Proposed **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C with a maximum topographic factor, Kzt of 1.624 and Risk Category II were used in this analysis.

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

*Jacobs Engineering Group, Inc.* appreciates the opportunity to provide 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 modification prepared by:

Philip Lin
Tower Structural Engineer

tnxTower Report - version 8.0.2.1


Engineer of Record:

2018-07-10
T14:29:12-04:00

Paul L. Mucci, P.E.
Senior Project Engineer

## TABLE OF CONTENTS

## 1) INTRODUCTION

This tower is a 180 ft Self Support tower designed by ROHN in September of 1986. The tower was originally designed per EIA-222-E. The original design wind speed is unavailable.

## 2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas 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 5 and crest height of 530 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 |
|---|---|---|---|---|---|---|---|
| 168.0 | 168.0 | 3 | alcatel lucent | PCS 1900MHz 4x45W-65MHz | 4 | 1-1/4 | - |
| | | 6 | alcatel lucent | RRH2x50-800 | | | |
| | | 3 | commscope | NNVV-65B-R4 | | | |
| | | 3 | nokia | AAHC | | | |
| | | 1 | tower mounts | Sector Mount [SM 402-3] | | | |

**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 |
|---|---|---|---|---|---|---|---|
| 180.0 | 186.0 | 3 | rfs celwave | ATMAA1412D-1A20 | 12 | 1-5/8 | 1 |
| | | 3 | commscope | ATBT-BOTTOM-24V | 6 | 1-5/8 | 2 |
| | | 3 | commscope | SBNHH-1D65A w/ Mount Pipe | | | |
| | 182.0 | 3 | rfs celwave | ATMAA1412D-1A20 | | | |
| 177.0 | 177.0 | 3 | alcatel lucent | RRH2X60-AWS | 13 | 1-5/8 | 1 |
| | | 3 | alcatel lucent | RRH2X60-PCS | | | |
| | | 3 | alcatel lucent | RRH2x60-700 | | | |
| | | 2 | andrew | DB846F65ZAXY w/ Mount Pipe | | | |
| | | 2 | antel | LPA-80063/6CFx5 w/ Mount Pipe | | | |
| | | 6 | commscope | SBNHH-1D45B w/ Mount Pipe | | | |
| | | 3 | commscope | SBNHH-1D65B w/ Mount Pipe | | | |
| | | 2 | rfs celwave | DB-T1-6Z-8AB-0Z | | | |
| | | 2 | swedcom | SC-E 6014 rev2 w/ Mount Pipe | | | |
| | | 1 | tower mounts | Sector Mount [SM 504-3] | | | |

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) | Note |
|---|---|---|---|---|---|---|---|
| 168.0 | 168.0 | 1 | dragonwave | A-ANT-18G-2-C | 1 | 7983A | 1 |
| | | 1 | andrew | VHLP2-18 | | | |
| | | 3 | argus technologies | LLPX310R w/ Mount Pipe | 4 | 5/16 | 3 |
| | | 4 | samsung telecommunications | FDD_R6_RRH | | | |
| | | 1 | tower mounts | Pipe Mount [PM 602-3] | | | |
| 158.0 | 160.0 | 3 | ericsson | RRUS 32 B2 | - | - | 2 |
| | | 6 | kaelus | DBC0061F1V51-2 | | | |
| | | 2 | quintel technology | QS66512-2 w/ Mount Pipe | | | |
| | | 1 | andrew | SBNH-1D6565C w/ Mount Pipe | 12<br>4<br>2 | 1-1/4<br>3/4<br>3/8 | 1 |
| | | 1 | cci antennas | TPA-65R-LCUUUU-H8 w/ Mount Pipe | | | |
| | | 3 | ericsson | RRUS 32 | | | |
| | | 2 | kmw communications | AM-X-CD-16-65-00T-RET w/ Mount Pipe | | | |
| | | 3 | powerwave technologies | 7770.00 w/ Mount Pipe | | | |
| | | 1 | raycap | DC6-48-60-18-8F | | | |
| | 158.0 | 3 | communication components inc. | DTMABP7819VG12A | | | |
| | | 3 | ericsson | RRUS 11 | | | |
| | | 3 | powerwave technologies | 7020.00 | | | |
| | | 1 | raycap | DC6-48-60-18-8F | | | |
| | | 1 | tower mounts | Sector Mount [SM 504-3] | | | |
| 40.0 | 40.0 | 1 | gps | GPS_A | 1 | 1/2 | 1 |
| | | 1 | tower mounts | Side Arm Mount [SO 306-1] | | | |

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed; Not Considered In This Analysis

**Table 3 - Design Antenna and Cable Information**

| Mounting Level (ft) | Center Line Elevation (ft) | Number of Antennas | Antenna Manufacturer | Antenna Model | Number of Feed Lines | Feed Line Size (in) |
|---|---|---|---|---|---|---|
| 180.0 | 180.0 | 4 | rfs celwave | PD10017 | - | - |
| 170.0 | 170.0 | 3 | rfs celwave | PD1132D | - | - |
| 160.0 | 160.0 | 2 | generic | 6' STD Dish | - | - |

## 3) ANALYSIS PROCEDURE

**Table 4 - Documents Provided**

| Document | Remarks | Reference | Source |
|---|---|---|---|
| 4-GEOTECHNICAL REPORTS | FDH Engineering, Inc. | 2303630 | CCISITES |
| 4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS | Rohn | 217670 | CCISITES |
| 4-TOWER MANUFACTURER DRAWINGS | Rohn | 529684 | CCISITES |
| 4-EXPOSURE CATEGORY / TOPOGRAPHIC FACTOR | Crown Castle | 5965877 | 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) The existing base plate grout was not considered in this analysis.
5) Tower modifications outlined in Appendix D must be installed for this analysis to be valid.

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

## 4) ANALYSIS RESULTS

**Table 5 - Section Capacity (Summary)**

| Section No. | Elevation (ft) | Component Type | Size | Critical Element | P (K) | SF*P_allow (K) | % Capacity | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| T1 | 180 - 160 | Leg | ROHN 2.5 STD | 1 | -22.458 | 45.528 | 49.3 | Pass |
| T2 | 160 - 140 | Leg | ROHN 3 X-STR | 42 | -81.342 | 94.336 | 86.2 | Pass |
| T3 | 140 - 133.333 | Leg | ROHN 4 X-STR | 81 | -100.965 | 159.904 | 63.1 | Pass |
| T4 | 133.333 - 126.667 | Leg | ROHN 4 X-STR | 96 | -120.272 | 159.904 | 75.2 | Pass |
| T5 | 126.667 - 120 | Leg | ROHN 4 X-STR | 111 | -139.314 | 159.904 | 87.1 | Pass |
| T6 | 120 - 100 | Leg | ROHN 5 X-STR | 126 | -184.503 | 201.195 | 91.7 | Pass |
| T7 | 100 - 90 | Leg | P 5 XS w HSS 6.625x0.500 Half Pipe | 153 | -210.843 | 311.932 | 67.6 | Pass |
| T8 | 90 - 80 | Leg | P 5 XS w HSS 6.625x0.500 Half Pipe | 168 | -234.339 | 311.932 | 75.1 | Pass |
| T9 | 80 - 70 | Leg | Rohn 6 EHS w HSS 7.500x0.375 Half Pipe | 183 | -257.413 | 348.724 | 73.8 | Pass |
| T10 | 70 - 60 | Leg | Rohn 6 EHS w HSS 7.500x0.375 Half Pipe | 198 | -280.946 | 348.724 | 80.6<br>82.0 (b) | Pass |
| T11 | 60 - 50 | Leg | P 6 XS w HSS 7.500x0.375 Half Pipe | 213 | -304.309 | 403.375 | 75.4 | Pass |
| T12 | 50 - 40 | Leg | P 6 XS w HSS 7.500x0.375 Half Pipe | 228 | -327.692 | 403.375 | 81.2<br>95.3 (b) | Pass |

| Section No. | Elevation (ft) | Component Type | Size | Critical Element | P (K) | SF*P_allow (K) | % Capacity | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| T13 | 40 - 30 | Leg | P 6 XS w HSS 7.500x0.375 Half Pipe | 243 | -350.932 | 403.328 | 87.0 | Pass |
| T14 | 30 - 20 | Leg | P 6 XS w HSS 7.500x0.375 Half Pipe | 258 | -372.908 | 403.328 | 92.5 | Pass |
| T15 | 20 - 0 | Leg | Rohn 8 EHS w HSS9.625x0.375 Half Pipe | 273 | -393.171 | 547.818 | 71.8 | Pass |
| T1 | 180 - 160 | Diagonal | ROHN 2 STD | 12 | -11.437 | 17.637 | 64.8 | Pass |
| T2 | 160 - 140 | Diagonal | ROHN 2 STD | 48 | -14.149 | 15.187 | 93.2 | Pass |
| T3 | 140 - 133.333 | Diagonal | ROHN 2 STD | 87 | -14.205 | 14.601 | 97.3 | Pass |
| T4 | 133.333 - 126.667 | Diagonal | P 2 STD w HSS 2.875x0.250 Half Pipe | 103 | -14.319 | 18.371 | 77.8 | Pass |
| T5 | 126.667 - 120 | Diagonal | P 2 STD w HSS 2.875x0.250 Half Pipe | 118 | -14.387 | 17.702 | 81.3 | Pass |
| T6 | 120 - 100 | Diagonal | P 2.5 STD w HSS 3.500x0.300 Half Pipe | 132 | -17.921 | 24.745 | 72.4 | Pass |
| T7 | 100 - 90 | Diagonal | P 2.5 STD w HSS 3.500x0.300 Half Pipe | 159 | -16.729 | 23.802 | 70.3 | Pass |
| T8 | 90 - 80 | Diagonal | P 2.5 STD w HSS 3.500x0.300 Half Pipe | 175 | -16.960 | 22.221 | 76.3 | Pass |
| T9 | 80 - 70 | Diagonal | P 2.5 STD w HSS 3.500x0.300 Half Pipe | 189 | -17.765 | 20.246 | 87.7 | Pass |
| T10 | 70 - 60 | Diagonal | P 2.5 STD w HSS 3.500x0.300 Half Pipe | 204 | -18.105 | 20.246 | 89.4 | Pass |
| T11 | 60 - 50 | Diagonal | P 2.5 XS w HSS 3.500x0.300 Half Pipe | 219 | -18.675 | 22.664 | 82.4 | Pass |
| T12 | 50 - 40 | Diagonal | P 2.5 XS w HSS 3.500x0.300 Half Pipe | 234 | -19.024 | 21.227 | 89.5 | Pass |
| T13 | 40 - 30 | Diagonal | ROHN 3 STD | 249 | -18.781 | 20.586 | 91.2 | Pass |
| T14 | 30 - 20 | Diagonal | ROHN 3 STD | 264 | -19.024 | 19.246 | 98.8 | Pass |
| T15 | 20 - 0 | Diagonal | ROHN 3 STD | 285 | -30.066 | 32.170 | 93.5 | Pass |
| T1 | 180 - 160 | Horizontal | ROHN 1.5 STD | 10 | -6.119 | 22.564 | 27.1 | Pass |
| T2 | 160 - 140 | Horizontal | ROHN 1.5 STD | 46 | -8.759 | 19.143 | 45.8 | Pass |
| T3 | 140 - 133.333 | Horizontal | ROHN 2 STD | 85 | -9.131 | 30.720 | 29.7<br>36.8 (b) | Pass |
| T6 | 120 - 100 | Horizontal | ROHN 2 STD | 130 | -11.053 | 22.627 | 48.8 | Pass |
| T7 | 100 - 90 | Horizontal | ROHN 2 STD | 157 | -11.169 | 19.805 | 56.4 | Pass |
| T9 | 80 - 70 | Horizontal | ROHN 2.5 STD | 187 | -12.331 | 32.891 | 37.5<br>49.6 (b) | Pass |
| T10 | 70 - 60 | Horizontal | ROHN 2.5 STD | 202 | -13.025 | 29.084 | 44.8<br>52.4 (b) | Pass |
| T11 | 60 - 50 | Horizontal | ROHN 2.5 STD | 217 | -13.781 | 25.460 | 54.1<br>55.5 (b) | Pass |
| T12 | 50 - 40 | Horizontal | ROHN 2.5 STD | 232 | -14.313 | 22.473 | 63.7 | Pass |
| T13 | 40 - 30 | Horizontal | ROHN 2.5 STD | 247 | -14.729 | 19.983 | 73.7 | Pass |
| T14 | 30 - 20 | Horizontal | ROHN 2.5 STD | 262 | -14.651 | 17.780 | 82.4 | Pass |
| T15 | 20 - 0 | Horizontal | ROHN 3 STD | 281 | -16.598 | 31.409 | 52.8 | Pass |
| T1 | 180 - 160 | Top Girt | ROHN 1.5 STD | 5 | -2.395 | 22.635 | 10.6 | Pass |
| T4 | 133.333 - 126.667 | Top Girt | ROHN 2 STD | 98 | -9.571 | 29.069 | 32.9<br>38.5 (b) | Pass |
| T5 | 126.667 - 120 | Top Girt | ROHN 2 STD | 113 | -9.937 | 27.195 | 36.5<br>40.0 (b) | Pass |
| T8 | 90 - 80 | Top Girt | ROHN 2 STD | 170 | -11.474 | 16.954 | 67.7 | Pass |
| T15 | 20 - 0 | Redund Horz 1 Bracing | ROHN 1.5 x 11GA | 292 | -1.355 | 5.637 | 24.0 | Pass |

| Section No. | Elevation (ft) | Component Type | Size | Critical Element | P (K) | SF*P_allow (K) | % Capacity | Pass / Fail |
|---|---|---|---|---|---|---|---|---|
| T15 | 20 - 0 | Redund Diag 1 Bracing | ROHN 1.5 STD | 293 | -1.272 | 4.141 | 30.7 | Pass |
| T15 | 20 - 0 | Redund Hip 1 Bracing | ROHN 1.5 x 11GA | 288 | -0.035 | 4.941 | 0.7 | Pass |
| T15 | 20 - 0 | Redund Hip Diagonal 1 Bracing | ROHN 2.5 STD | 289 | -0.102 | 10.600 | 1.0 | Pass |
| T1 | 180 - 160 | Inner Bracing | L2x2x1/8 | 18 | -0.007 | 6.529 | 0.6 | Pass |
| T2 | 160 - 140 | Inner Bracing | L2x2x1/8 | 54 | -0.007 | 4.871 | 0.7 | Pass |
| T3 | 140 - 133.333 | Inner Bracing | L2x2x1/8 | 93 | -0.010 | 4.255 | 0.8 | Pass |
| T4 | 133.333 - 126.667 | Inner Bracing | L2x2x1/8 | 108 | -0.009 | 3.749 | 0.8 | Pass |
| T5 | 126.667 - 120 | Inner Bracing | L2x2x1/8 | 123 | -0.009 | 3.328 | 0.8 | Pass |
| T6 | 120 - 100 | Inner Bracing | L2x2x1/8 | 138 | -0.010 | 2.510 | 1.0 | Pass |
| T7 | 100 - 90 | Inner Bracing | L2 1/2x2 1/2x3/16 | 165 | -0.012 | 6.199 | 0.7 | Pass |
| T8 | 90 - 80 | Inner Bracing | L2 1/2x2 1/2x3/16 | 180 | -0.012 | 5.252 | 0.7 | Pass |
| T9 | 80 - 70 | Inner Bracing | L3x3x3/16 | 195 | -0.014 | 7.896 | 0.5 | Pass |
| T10 | 70 - 60 | Inner Bracing | L3x3x3/16 | 210 | -0.014 | 6.881 | 0.6 | Pass |
| T11 | 60 - 50 | Inner Bracing | L3 1/2x3 1/2x1/4 | 225 | -0.016 | 12.717 | 0.5 | Pass |
| T12 | 50 - 40 | Inner Bracing | L3 1/2x3 1/2x1/4 | 240 | -0.017 | 11.267 | 0.5 | Pass |
| T13 | 40 - 30 | Inner Bracing | L3 1/2x3 1/2x1/4 | 255 | -0.019 | 10.052 | 0.5 | Pass |
| T14 | 30 - 20 | Inner Bracing | L3 1/2x3 1/2x1/4 | 270 | -0.020 | 8.973 | 0.5 | Pass |
| T15 | 20 - 0 | Inner Bracing | ROHN 3 STD | 301 | -0.022 | 29.869 | 0.3 | Pass |
| | | | | | | | Summary | |
| | | | | | | Leg (T12) | 95.3 | Pass |
| | | | | | | Diagonal (T14) | 98.8 | Pass |
| | | | | | | Horizontal (T14) | 82.4 | Pass |
| | | | | | | Top Girt (T8) | 67.7 | Pass |
| | | | | | | Redund Horz 1 Bracing (T15) | 24.0 | Pass |
| | | | | | | Redund Diag 1 Bracing (T15) | 30.7 | Pass |
| | | | | | | Redund Hip 1 Bracing (T15) | 0.7 | Pass |
| | | | | | | Redund Hip Diagonal 1 Bracing (T15) | 1.0 | Pass |
| | | | | | | Inner Bracing (T6) | 1.0 | Pass |
| | | | | | | Bolt Checks | 95.3 | Pass |
| | | | | | | Rating = | 98.8 | Pass |

**Table 6 - Tower Component Stresses vs. Capacity - LC4**

| Notes | Component | Elevation (ft) | % Capacity | Pass / Fail |
|---|---|---|---|---|
| 1 | Anchor Rods | 0 | 74.6 | Pass |
| 1 | Base Foundation Structural | 0 | 74.2 | Pass |
| 1 | Base Foundation Soil Interaction | 0 | 43.3 | Pass |

| Structure Rating (max from all components) = | 98.8% |
|---|---|

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed..

### 4.1) Recommendations

Perform the modifications detailed in "Appendix D" to remedy the deficiencies identified in Crown Castle Work Order No. 1575608.

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT52XC079

NHV 108 943133
Intersection of RTE 322/Meridian Rd
Wolcott, CT 06716

**September 10, 2018**

**EBI Project Number: 6218005974**

| Site Compliance Summary | |
|---|---|
| Compliance Status: | COMPLIANT |
| Site total MPE% of FCC general population allowable limit: | 5.08 % |

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

EBI Consulting
environmental | engineering | due diligence

September 10, 2018

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

Emissions Analysis for Site: **CT52XC079 – NHV 108 943133**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **Intersection of RTE 322/Meridian Rd, Wolcott, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS), 2500 MHz (BRS) and 18 GHz microwave bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **Intersection of RTE 322/Meridian Rd, Wolcott, 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 20 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 (18 GHz) was considered for Sectors B & C of the proposed installation. These channels have a transmit power of 1 Watt per channel.

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 Nokia AAHC** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands as well as the **Commscope VHLP2-18** and **Dragonwave A-ANT-18G-2-C** microwave dish for transmissions in the 18 GHz frequency 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 dishes are **168 feet** above ground level (AGL) for **Sector A**, **168 feet** above ground level (AGL) for **Sector B** and **168 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): | **168 feet** | Height (AGL): | **168 feet** | Height (AGL): | **168 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% | **1.25 %** | Antenna B1 MPE% | **1.25 %** | Antenna C1 MPE% | **1.25 %** |
| Antenna #: | **2** | Antenna #: | **2** | Antenna #: | **2** |
| Make / Model: | Nokia AAHC | Make / Model: | Nokia AAHC | Make / Model: | Nokia AAHC |
| Gain: | 15.05 dBd | Gain: | 15.05 dBd | Gain: | 15.05 dBd |
| Height (AGL): | **168 feet** | Height (AGL): | **168 feet** | Height (AGL): | **168 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): | 5,118.23 | ERP (W): | 5,118.23 | ERP (W): | 5,118.23 |
| Antenna A2 MPE% | **0.70 %** | Antenna B2 MPE% | **0.70 %** | Antenna C2 MPE% | **0.70 %** |

## Microwave Backhaul Data

| Antenna Type: | Gain (dBd) | Height (feet AGL): | Frequency Bands | Channel Count | Total TX Power(W) | ERP (W) | MPE % | Sector |
|---|---|---|---|---|---|---|---|---|
| Commscope VHLP2-18 | 36.85 dBd | 168 | 18 GHz | 1 | 1 | 4,841.72 | **0.07** | B |
| Dragonwave A-ANT-18G-2-C | 36.45 dBd | 168 | 18 GHz | 1 | 1 | 4,415.70 | **0.06** | C |

| Site Composite MPE% | |
|---|---|
| **Carrier** | **MPE%** |
| SPRINT – Sector B | **2.02 %** |
| AT&T | 0.91 % |
| Clearwire | 0.07 % |
| Verizon Wireless | 1.54 % |
| T-Mobile | 0.54 % |
| **Site Total MPE %:** | **5.08 %** |

| | |
|---|---|
| SPRINT Sector A Total: | 1.95 % |
| SPRINT Sector B Total: | 2.02 % |
| SPRINT Sector C Total: | 2.01 % |
| | |
| Site Total: | 5.08 % |

# Sprint Maximum MPE Values (Sector B)

| SPRINT _ Frequency Band / Technology (Sector B) | # Channels | Watts ERP (Per Channel) | Height (feet) | Total Power Density ($\mu W/cm^2$) | Frequency (MHz) | Allowable MPE ($\mu W/cm^2$) | Calculated % MPE |
|---|---|---|---|---|---|---|---|
| Sprint 850 MHz CDMA | 1 | 376.73 | 168 | 0.52 | 850 MHz | 567 | 0.09% |
| Sprint 850 MHz LTE | 2 | 941.82 | 168 | 2.58 | 850 MHz | 567 | 0.46% |
| Sprint 1900 MHz (PCS) CDMA | 5 | 511.82 | 168 | 3.51 | 1900 MHz (PCS) | 1000 | 0.35% |
| Sprint 1900 MHz (PCS) LTE | 2 | 1,279.56 | 168 | 3.51 | 1900 MHz (PCS) | 1000 | 0.35% |
| Sprint 2500 MHz (BRS) LTE | 8 | 639.78 | 168 | 7.01 | 2500 MHz (BRS) | 1000 | 0.70% |
| Sprint 18 GHz Microwave | 1 | 4,841.72 | 168 | 0.66 | 18 GHz | 1000 | 0.07% |
| | | | | | | **Total:** | **2.02%** |

## 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: | 1.95 % |
| Sector B: | 2.02 % |
| Sector C: | 2.01 % |
| SPRINT Maximum MPE % (Sector B): | 2.02 % |
| | |
| Site Total: | 5.08 % |
| | |
| Site Compliance Status: | **COMPLIANT** |

The anticipated composite MPE value for this site assuming all carriers present is **5.08 %** 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.

773213670209

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3530 Toringdon Way
CHARLOTTE, NC US 28277
704 405-6612

**TO**

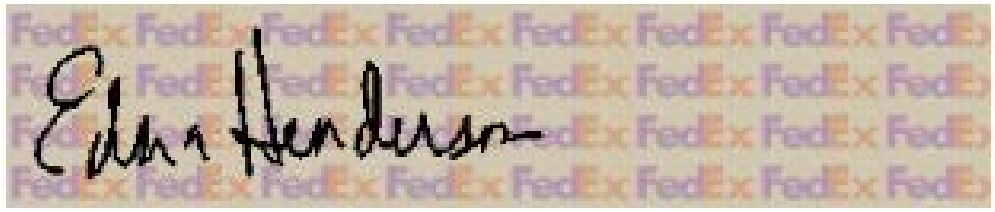
Mayors office
Thomas G Dunn
10 Kenea Ave.
WOLCOTT, CT US 06716
704 405-6612

773262651819

# Delivered
# Wednesday 9/19/2018 at 10:09 am

**DELIVERED**

Signed for by: E.HENDERSON



**GET STATUS UPDATES**

**OBTAIN PROOF OF DELIVERY**

**FROM**

Kristian McKay
STE 300
3530 Toringdon Way
CHARLOTTE, NC US 28277
704 405-6612

**TO**

Zoning & permitting
David Kalinowski
10 Kenea Ave.
WOLCOTT, CT US 06716
704 405-6612

773213779713

# Delivered
# Tuesday 9/18/2018 at 10:43 am

**DELIVERED**

Signature not required

**GET STATUS UPDATES**

**OBTAIN PROOF OF DELIVERY**

**FROM**

Kristian McKay
STE 300
3530 Toringdon Way
CHARLOTTE, NC US 28277
704 405-6612

**TO**

Agostinho Rodrigues
347 East St
SHELTON, CT US 06716
704 405-6612