



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

September 11, 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: 841288**  
**Sprint Site ID: CT52XC002**  
**2 Kaechele Pl. Bridgeport, CT 06606**  
**Latitude: 41° 13' 24"/Longitude: -73° 13' 0.4"**

Dear Ms. Bachman:

Sprint currently maintains three (3) antennas at the 148-foot level of the existing 150-foot monopole tower at 2 Kaechele Pl. Bridgeport, CT. The tower is owned by Crown Castle. The property is owned by Southern New England Telecommunications. Sprint now intends to replace three (3) antennas with six (6) new antennas. These antennas would be installed at the 148-foot and 140-foot level of the tower. Sprint also intends to remove one (1) existing cabinet and pad and replace it with one (1) cabinet and pad. Also Sprint intends to install six (6) RRHs, four (4) hybrid cable and six (6) Coax cables.

This facility was approved by the Connecticut Siting Council, an email was sent on 09/11/18 to the City of Bridgeport Building Officials 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 Dennis Buckley zoning administrator, City of Bridgeport, Mayor Joseph Peter Ganim, City of Bridgeport, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

**The Foundation for a Wireless World.**

CrownCastle.com

Melanie A. Bachman

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5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Jeffrey Barbadora  
Real Estate Specialist  
12 Gill Street, Suite 5800, Woburn, MA 01801  
781-729-0053  
[Jeff.Barbadora@crowncastle.com](mailto: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: **Zoning Administrator Dennis Buckley**  
**City of Bridgeport**  
**45 Lyon Terrace, Room 210**  
**Bridgeport, CT 06604**

**Mayor Joseph Peter Ganim**  
**City of Bridgeport**  
**999 Broad Street**  
**Bridgeport, CT 06604**

**Southern New England Telecommunications**  
**C/O Frontier Communications – Tax DPMT**  
**401 Merrit 7**  
**Norwalk, CT 06851**

## 205 KAECELE PL

**Location** 205 KAECELE PL

**Mblu** 81/ 2602/ 9/ /

**Acct#** R--0148640

**Owner** SOUTHERN NEW ENGLAND  
TEL

**Assessment** \$104,120

**Appraisal** \$148,730

**PID** 29859

**Building Count** 1

### Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$51,340	\$97,390	\$148,730

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$35,950	\$68,170	\$104,120

### Owner of Record

<b>Owner</b>	SOUTHERN NEW ENGLAND TEL	<b>Sale Price</b>	\$0
<b>Co-Owner</b>	C/O FRONTIER COMMUNICATIONS - TAX DPMT	<b>Certificate</b>	
<b>Address</b>	401 MERRITT 7 NORWALK , CT 06851	<b>Book &amp; Page</b>	0/ 0
		<b>Sale Date</b>	
		<b>Instrument</b>	

### Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
SOUTHERN NEW ENGLAND TEL	\$0		0/ 0		

### Building Information

#### Building 1 : Section 1

**Year Built:**  
**Living Area:** 0  
**Replacement Cost:** \$0  
**Building Percent**  
**Good:**  
**Replacement Cost**  
**Less Depreciation:** \$0

#### Building Photo

Building Attributes	
Field	Description
Style	Vacant Land

Model	
Grade:	
Stories:	
Occupancy:	
Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2:	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs:	
Total Rooms	
Bath Style:	
Kitchen Style:	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
.	



(<http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\03\05\86.JPG>)

**Building Layout**

(<http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches/>)

<b>Building Sub-Areas (sq ft)</b>	<b><u>Legend</u></b>
No Data for Building Sub-Areas	



**Extra Features**

<b>Extra Features</b>	<b><u>Legend</u></b>
No Data for Extra Features	

**Land**

**Land Use**

<b>Use Code</b>	499
<b>Description</b>	Utility Vac Ln
<b>Zone</b>	RA
<b>Neighborhood</b>	2080
<b>Alt Land Appr Category</b>	No

**Land Line Valuation**

<b>Size (Acres)</b>	0.15
<b>Frontage</b>	0
<b>Depth</b>	0
<b>Assessed Value</b>	\$68,170
<b>Appraised Value</b>	\$97,390

**Outbuildings**

<b>Outbuildings</b>						<b>Legend</b>
<b>Code</b>	<b>Description</b>	<b>Sub Code</b>	<b>Sub Description</b>	<b>Size</b>	<b>Value</b>	<b>Bldg #</b>
SHD3	Shed w/ Lt	CM	Comm	384 SF	\$6,910	1
SHD3	Shed w/ Lt	CM	Comm	384 SF	\$6,910	1
SHD3	Shed w/ Lt	CM	Comm	576 SF	\$10,370	1
FN1	Fence, Chain	8	8 ft	350 LF	\$3,150	1
TWR	Tower			120 LF	\$24,000	1

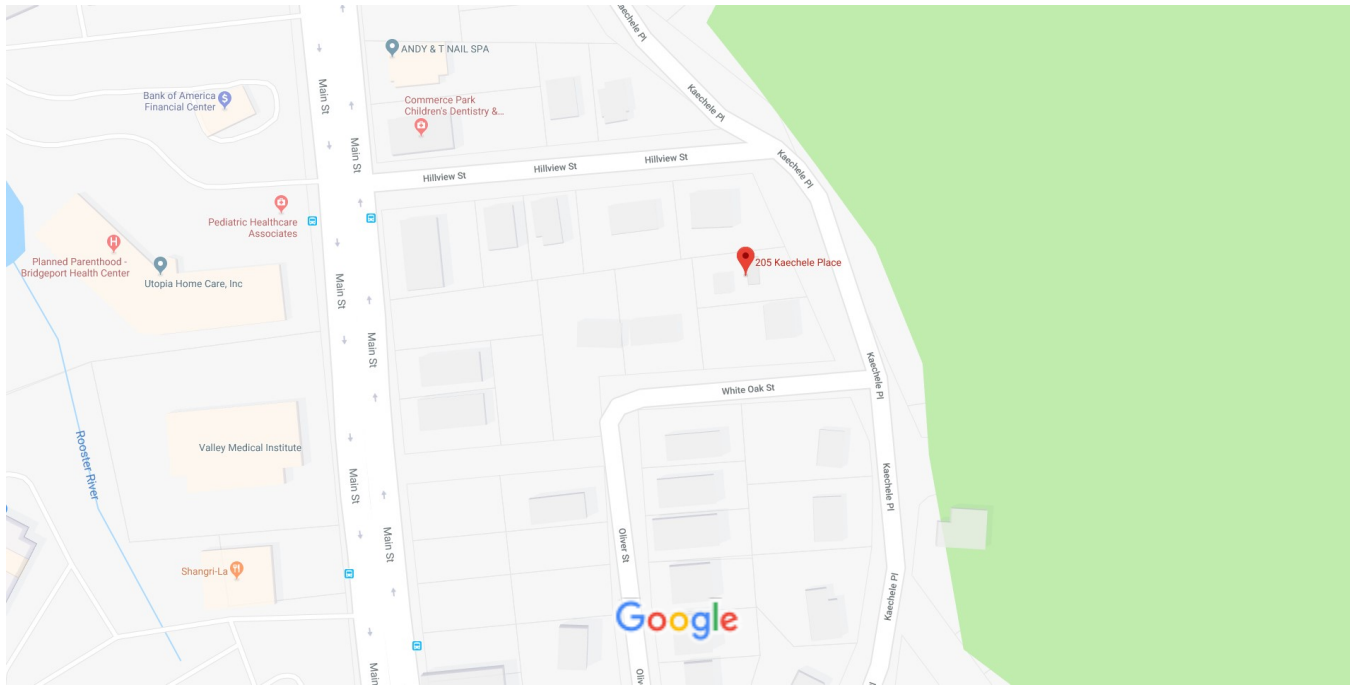
**Valuation History**

<b>Appraisal</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2017	\$51,340	\$97,390	\$148,730
2016	\$51,340	\$97,390	\$148,730
2015	\$51,340	\$97,390	\$148,730

<b>Assessment</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2017	\$35,950	\$68,170	\$104,120
2016	\$35,950	\$68,170	\$104,120
2015	\$35,950	\$68,170	\$104,120

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Google Maps 205 Kaechele Pl



205 Kaechele Pl  
Bridgeport, CT 06606

6QFM+88 Bridgeport, Connecticut







PROJECT: 2.5 EQUIPMENT DEPLOYMENT  
 SITE NAME: BRIDGEPORT NORTH  
 SITE CASCADE: CT52XC002  
 SITE NUMBER: 841288  
 SITE ADDRESS: 2 KAEICHELE PLACE  
 BRIDGEPORT, CT 06606  
 SITE TYPE: MONOPOLE  
 MARKET: N. ENGLAND

PLANS PREPARED FOR:

6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:

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:

ENGINEERING LICENSE:

DRAWING NOTICE:  
 THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:	DESCRIPTION	DATE	BY	REV
	STRUCTURAL UPDATED	09/12/18	RMS	1
	ISSUED FOR CONSTRUCTION	08/10/18	RMS	0
	CARRIER COMMENTS	06/27/18	SL	B
	ISSUED FOR REVIEW	06/08/18	RCD	A

SITE NAME:  
BRIDGEPORT NORTH

SITE CASCADE:  
CT52XC002

SITE ADDRESS:  
2 KAEICHELE PLACE  
BRIDGEPORT, CT 06606

SHEET DESCRIPTION:  
TITLE SHEET & PROJECT DATA

SHEET NUMBER:  
T-1

**SITE INFORMATION**

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

**LATITUDE (NAD83):**  
41° 13' 24.0" N  
41.223333°

**LONGITUDE (NAD83):**  
-73° 13' 00.4" W  
-73.216778°

**COUNTY:**  
FAIRFIELD

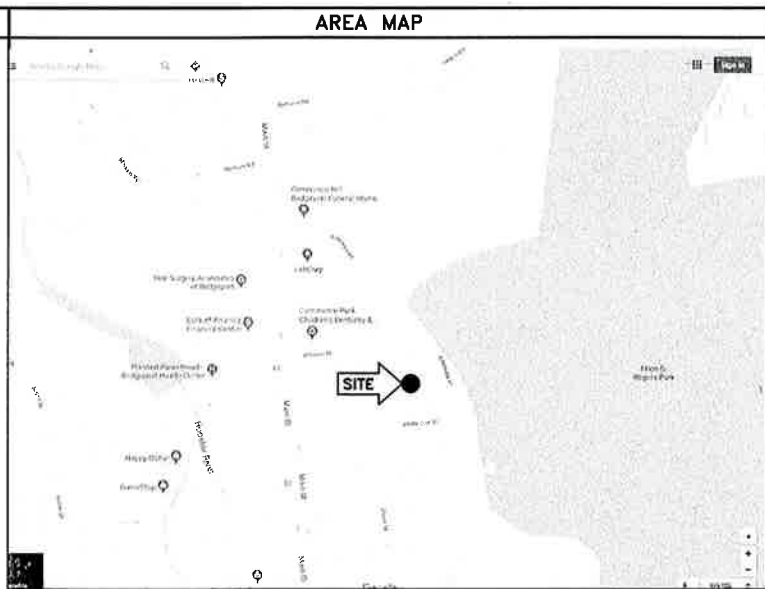
**ZONING JURISDICTION:**  
CITY OF BRIDGEPORT

**ZONING DISTRICT:**  
RA

**POWER COMPANY:**  
UNITED ILLUMINATING CO  
(800) 722-5584

**SPRINT CONSTRUCTION:**  
TBD

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



**PROJECT DESCRIPTION**

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE EXISTING CLEARWIRE CABINET AND PAD
- REMOVE EXISTING MOUNT
- INSTALL NEW MOUNT
- INSTALL NEW ELTEK CABINET AND PAD
- REMOVE (3) EXISTING PANEL ANTENNAS FROM TOWER
- REMOVE (3) EXISTING RRH's (WIMAX)
- 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 (6) COAX

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.

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

DRAWING INDEX		REV.
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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:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

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ISSUED FOR CONSTRUCTION	08/10/18	RWS	0
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BRIDGEPORT NORTH

SITE CASCADE:

CT52XC002

SITE ADDRESS:

2 KAECHLE PLACE  
BRIDGEPORT, CT 06606

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 ANTENNA 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, AASHTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASHTO, 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 - ANTENNA ALIGNMENT TOOL (AAT)

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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. SHELTER 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.

PLANS PREPARED FOR:



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BRIDGEPORT, CT 06606

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-3



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STRUCTURAL UPDATED	09/12/18	RMS	1
ISSUED FOR CONSTRUCTION	08/10/18	RMS	0
CARRIER COMMENTS	06/27/18	SL	B
ISSUED FOR REVIEW	06/08/18	RCD	A

**BRIDGEPORT NORTH**

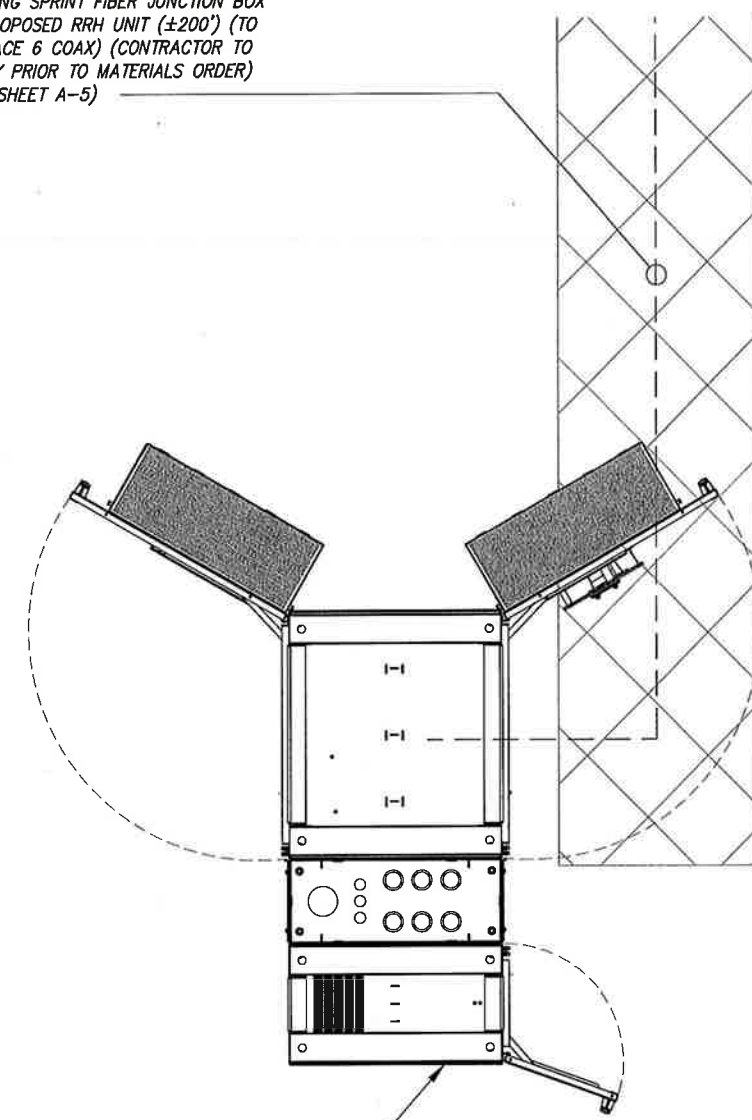
**CT52XC002**

**2 KAECHELE PLACE  
 BRIDGEPORT, CT 06606**

**SITE PLAN**

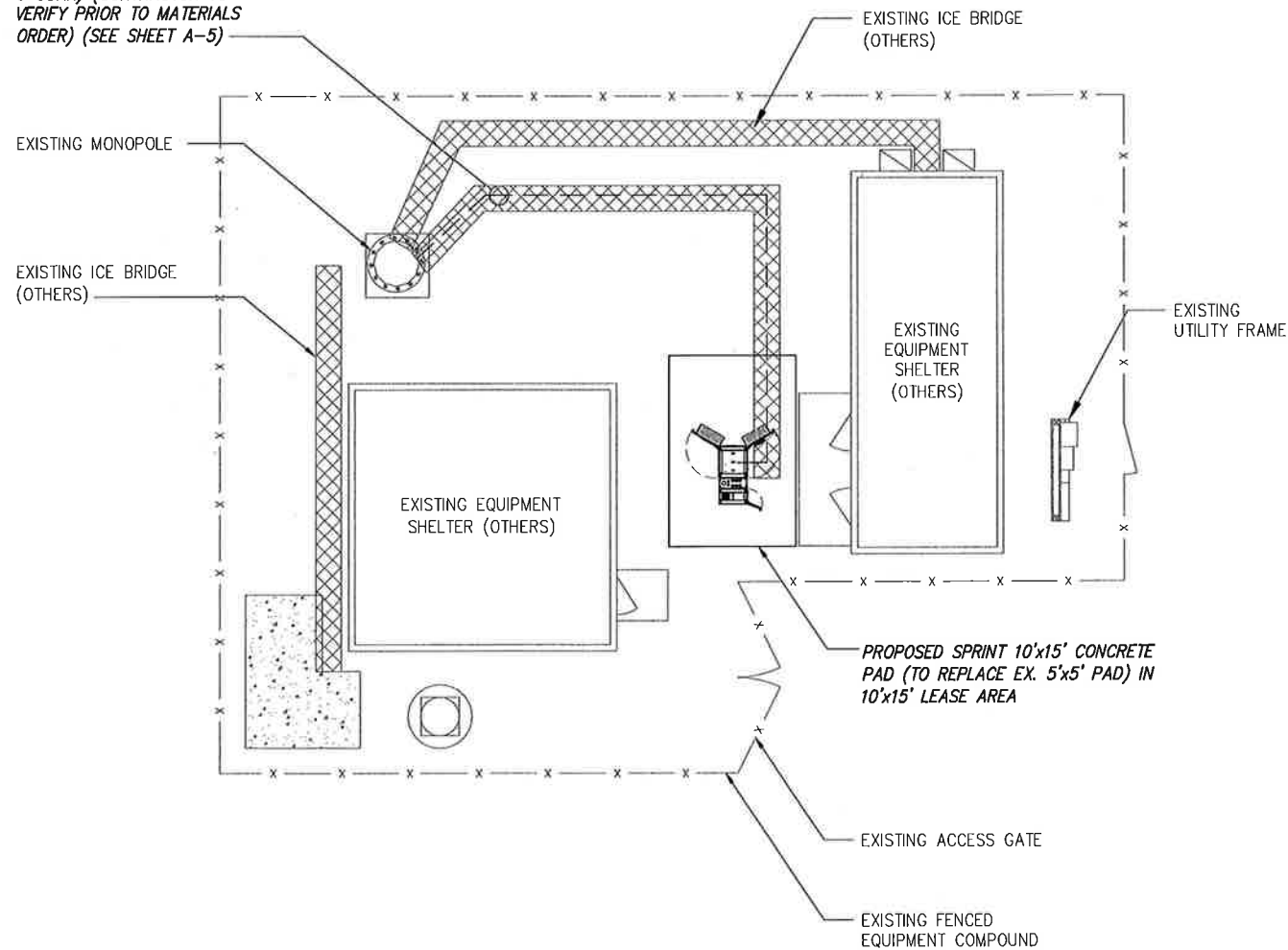
**A-1**

INSTALL (4) HYBRID CABLES FROM EXISTING SPRINT FIBER JUNCTION BOX TO PROPOSED RRH UNIT (±200') (TO REPLACE 6 COAX) (CONTRACTOR TO VERIFY PRIOR TO MATERIALS ORDER) (SEE SHEET A-5)

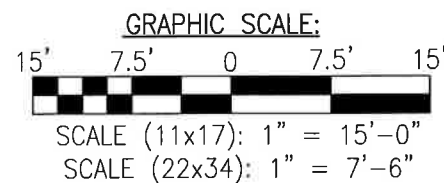


INSTALL NEW ELTEK CABINET (TO REPLACE EX. CLEARWIRE CABINET) (SEE SHEET A-5 DETAIL 2)

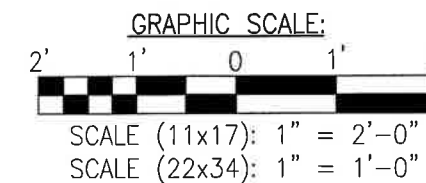
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INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.



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

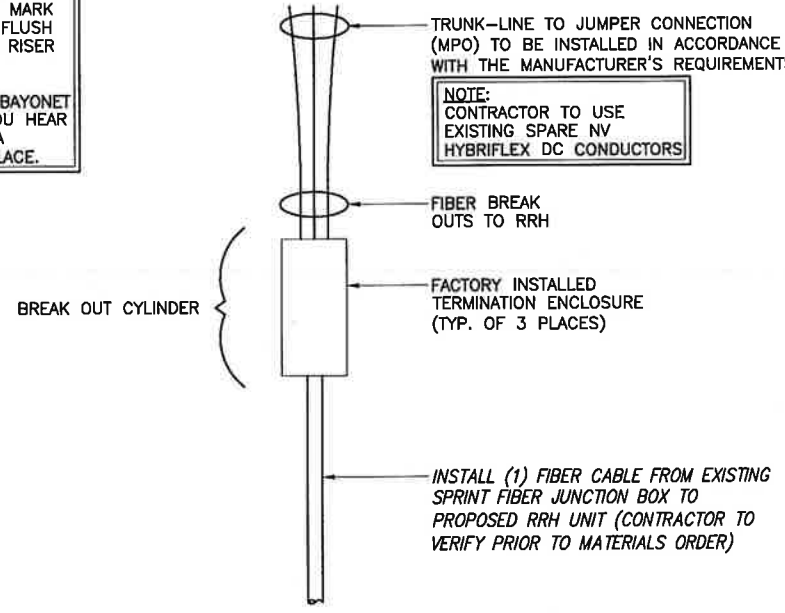




**NOTE:**  
SEE DETAIL 2 ON A-3  
FOR ANTENNA LAYOUT

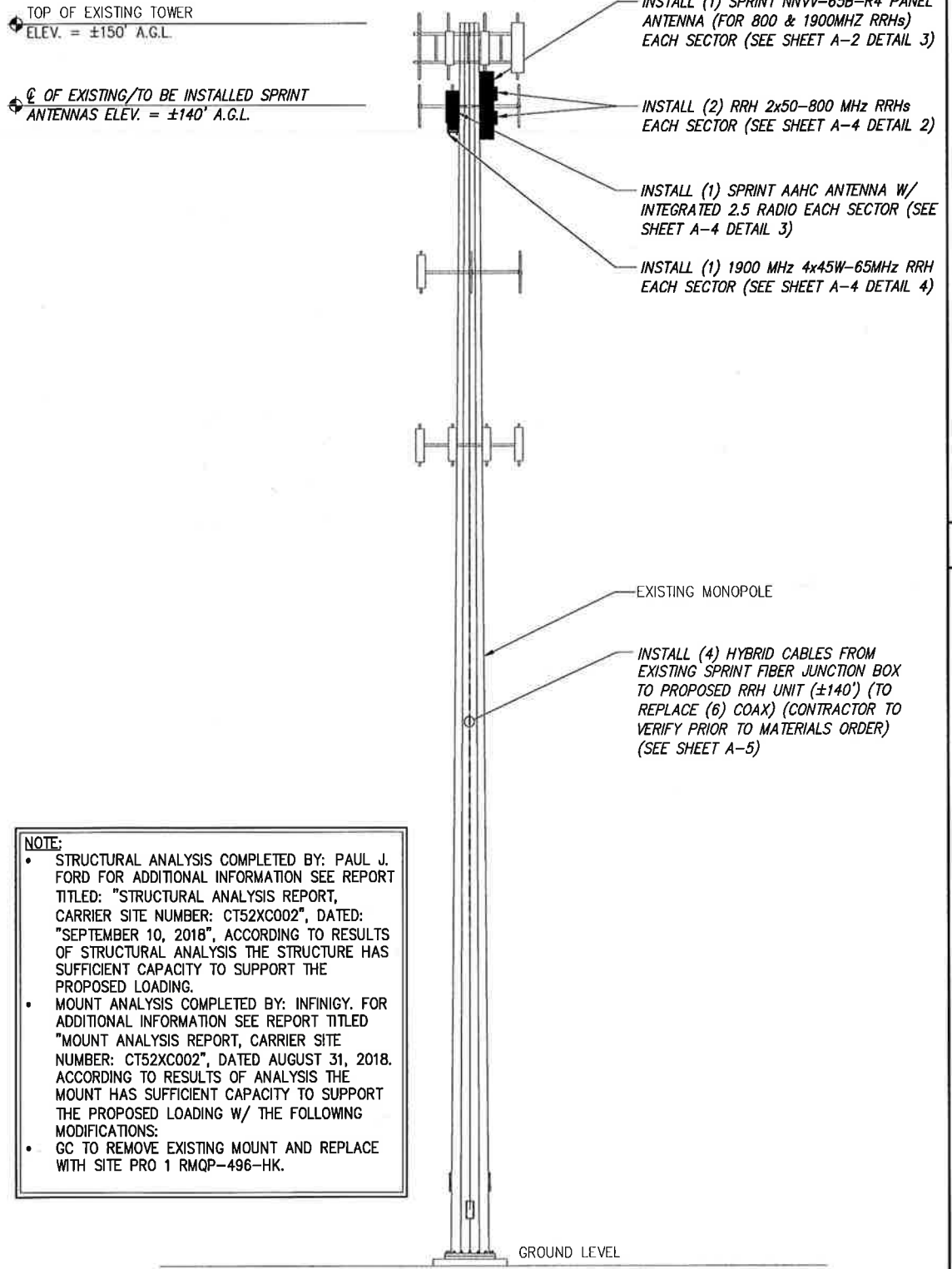
**NOTE:**  
CONTRACTOR TO LINE UP WHITE MARKINGS ON JUMPER AND RISER IP-MPO CONNECTORS AND SLIDE THE RISER CONNECTOR TO THE JUMPER CONNECTOR. PUSH THE WHITE MARK ON THE JUMPER CONNECTOR FLUSH AGAIN THE RED SEAL ON THE RISER CONNECTOR.  
  
CONTRACTOR TO ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL YOU HEAR A CLICK SOUND TO ENSURE A PROPER CONNECTION IS IN PLACE.

TRUNK-LINE TO JUMPER CONNECTION (MPO) TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS  
**NOTE:**  
CONTRACTOR TO USE EXISTING SPARE NV HYBRIFLEX DC CONDUCTORS



HYBRID BREAKOUT DETAIL

NO SCALE 2

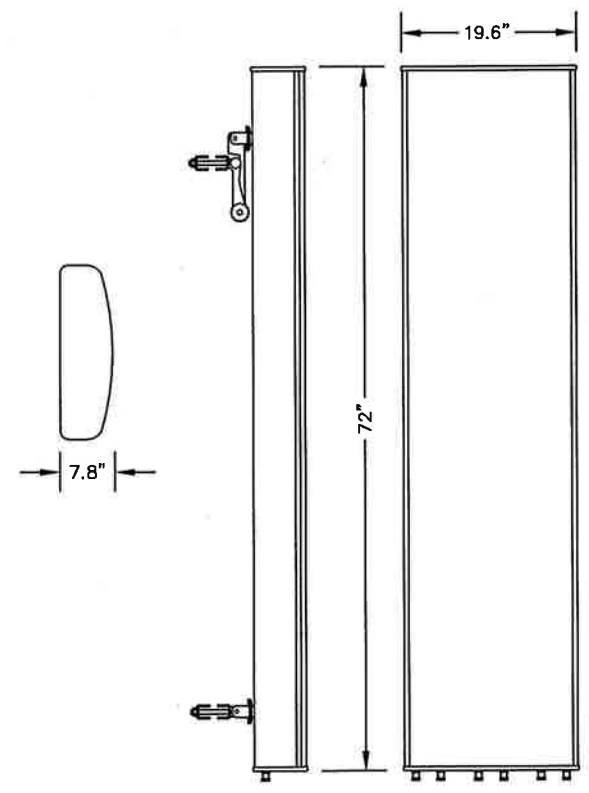


**NOTE:**

- STRUCTURAL ANALYSIS COMPLETED BY: PAUL J. FORD FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, CARRIER SITE NUMBER: CT52XC002", DATED: "SEPTEMBER 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: CT52XC002", DATED AUGUST 31, 2018. ACCORDING TO RESULTS OF ANALYSIS THE MOUNT HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING W/ THE FOLLOWING MODIFICATIONS:
- GC TO REMOVE EXISTING MOUNT AND REPLACE WITH SITE PRO 1 RMQP-496-HK.

TOWER ELEVATION

NO SCALE 1



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 3

PLANS PREPARED FOR:

6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:

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SITE NAME:  
**BRIDGEPORT NORTH**

SITE CASCADE:  
**CT52XC002**

SITE ADDRESS:  
**2 KAECHELE PLACE  
BRIDGEPORT, CT 06606**

SHEET DESCRIPTION:  
**TOWER ELEVATION  
& CABLE PLAN**

SHEET NUMBER:  
**A-2**





PLANS PREPARED BY:

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**BRIDGEPORT NORTH**

SITE CASCADE:  
**CT52XC002**

SITE ADDRESS:  
**2 KAECHELE PLACE  
BRIDGEPORT, CT 06606**

SHEET DESCRIPTION:  
**ANTENNA LAYOUT  
& MOUNTING DETAILS**

SHEET NUMBER:  
**A-3**

NOTE:  
JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET

NOTE:  
CONTRACTOR TO PROVIDE NEW ANTENNAS PIPE MOUNTS.

INSTALL (1) SPRINT NNVV-65B-R4 PANEL ANTENNA (FOR 800 & 1900MHZ RRHS) EACH SECTOR (SEE SHEET A-2 DETAIL 3)

EXISTING SPRINT MICROWAVE DISH TO REMAIN (TYP OF 2)

INSTALL (2) RRH 2X50-800 MHZ RRHS EACH SECTOR (SEE SHEET A-4 DETAIL 2)

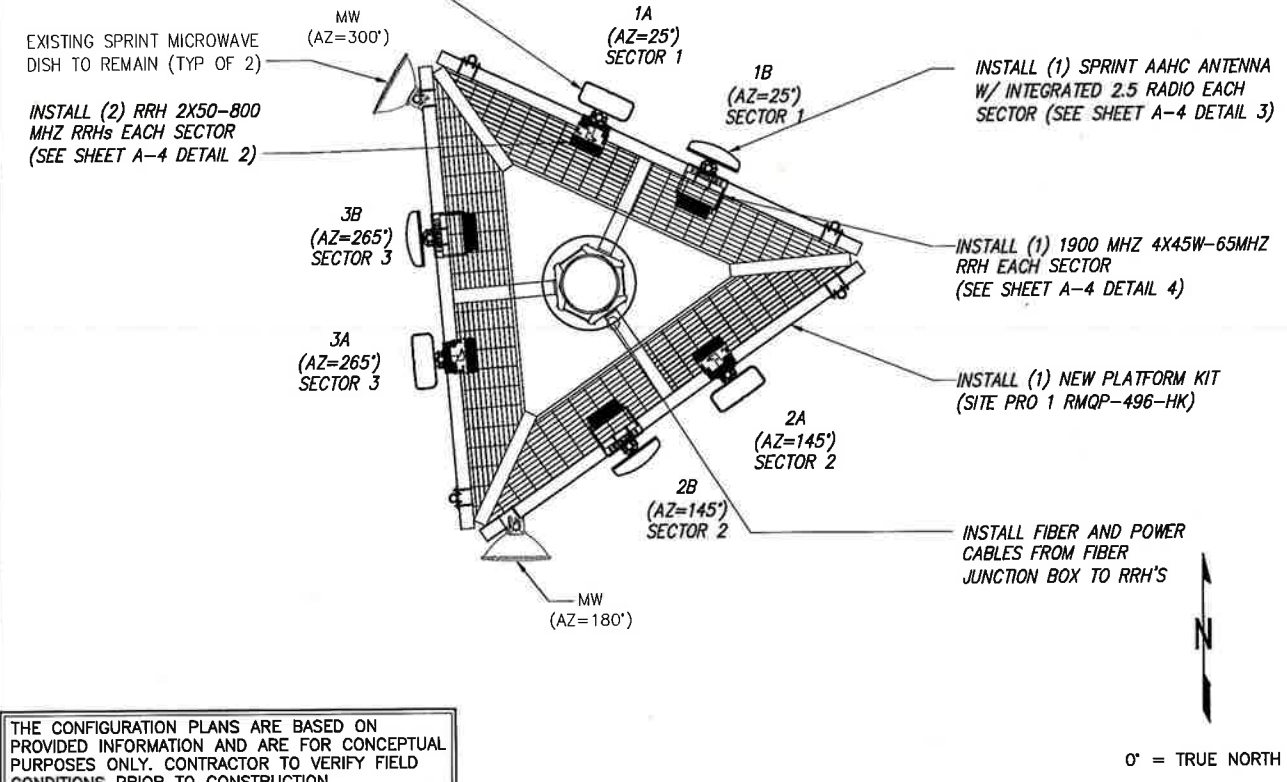
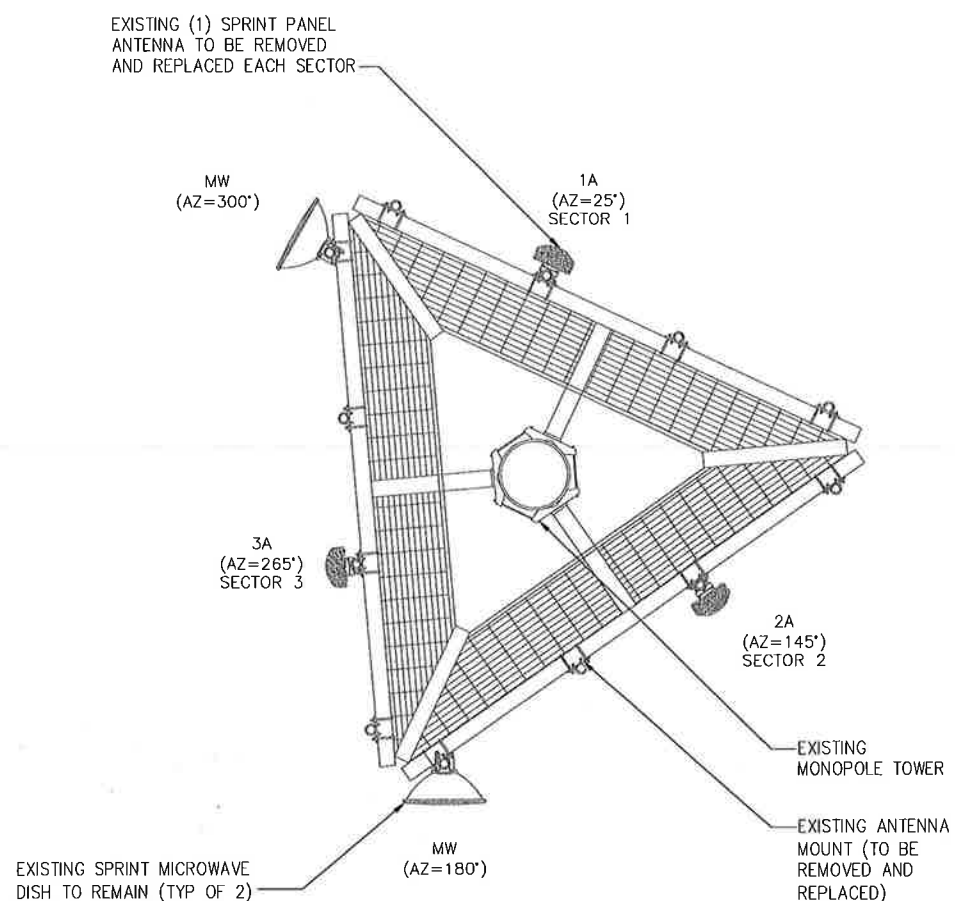
INSTALL (1) SPRINT AAHC ANTENNA W/ INTEGRATED 2.5 RADIO EACH SECTOR (SEE SHEET A-4 DETAIL 3)

INSTALL (1) 1900 MHZ 4X45W-65MHZ RRH EACH SECTOR (SEE SHEET A-4 DETAIL 4)

INSTALL (1) NEW PLATFORM KIT (SITE PRO 1 RMQP-496-HK)

INSTALL FIBER AND POWER CABLES FROM FIBER JUNCTION BOX TO RRH'S

THE CONFIGURATION PLANS ARE BASED ON PROVIDED INFORMATION AND ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.



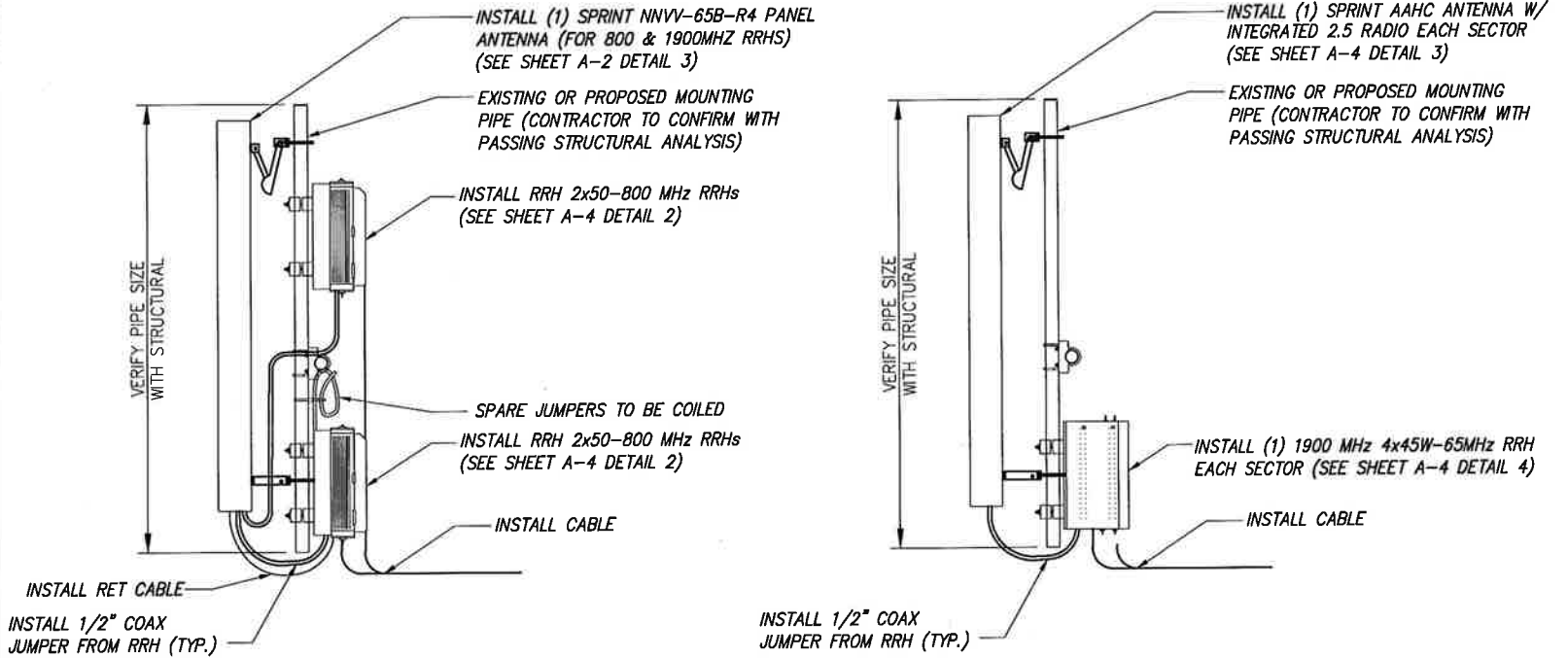
EXISTING ANTENNA LAYOUT

NO SCALE 1

FINAL ANTENNA & RRH LAYOUT

NO SCALE 2

- NOTES:
- ALL ANTENNA HEIGHTS ARE TO CENTER OF HORIZONTAL ANTENNA.
  - VERIFY AZIMUTH AND CL HEIGHT WITH AS-BUILT DRAWINGS IF AVAILABLE.
  - 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.
  - 2.5G ANTENNA MUST BE AT LEAST 6" FROM 1900MHZ ANTENNA, 30" FROM 800MHZ ANTENNA AND 30MHZ FROM DUAL BAND 1900MHZ AND 800MHZ ANTENNA.
  - 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.
  - 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-BUILT DRAWING WITH CORRECT CL HEIGHT. ALSO EMAIL CORRECT 1900 MHZ AND 800 MHZ ANTENNA CL HEIGHT, AZIMUTH AND MECHANICAL DOWNTILT TO RF ENGINEER.
  - 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.
  - 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.
  - 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/](http://www.3ztelecom.com/antenna-alignment-tool/)



- NOTES:
- CUT DC CONDUCTORS TO LENGTH.
  - COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
  - DO NOT 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.

NOTES

NO SCALE 3

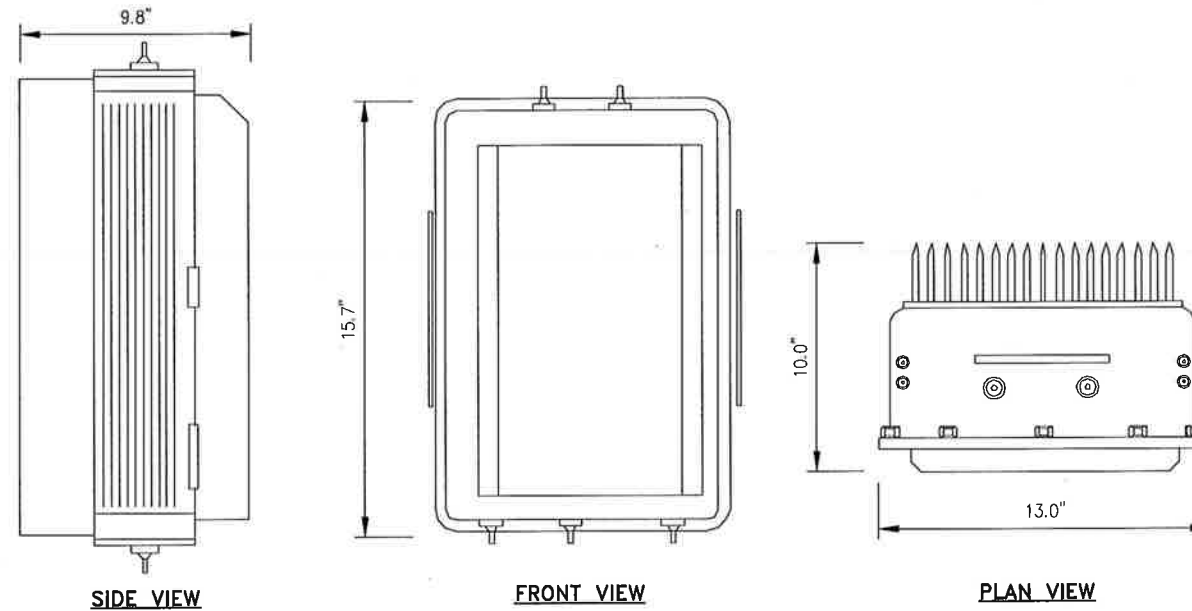
TYPICAL ANTENNA & RRH MOUNTING DETAILS

NO SCALE 4

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.



PLANS PREPARED FOR:

6580 Sprint Parkway  
 Overland Park, Kansas 66251

PLANS PREPARED BY:

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**BRIDGEPORT NORTH**

SITE CASCADE:  
**CT52XC002**

SITE ADDRESS:  
**2 KAECHELE PLACE  
 BRIDGEPORT, CT 06606**

SHEET DESCRIPTION:  
**EQUIPMENT &  
 MOUNTING DETAILS**

SHEET NUMBER:  
**A-4**

NOT USED

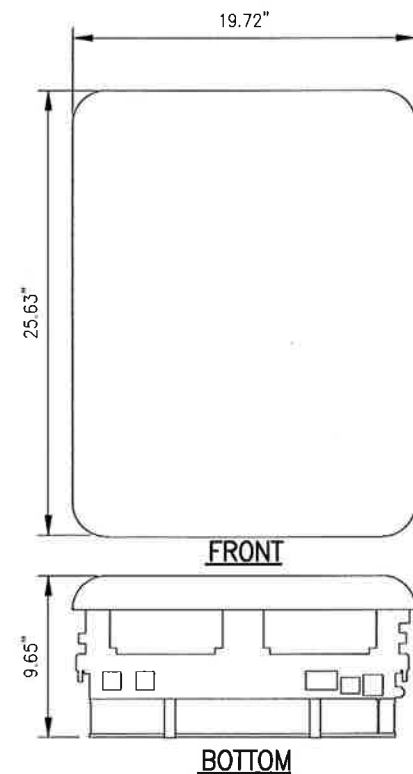
NO SCALE

1

800 MHz RRH

NO SCALE

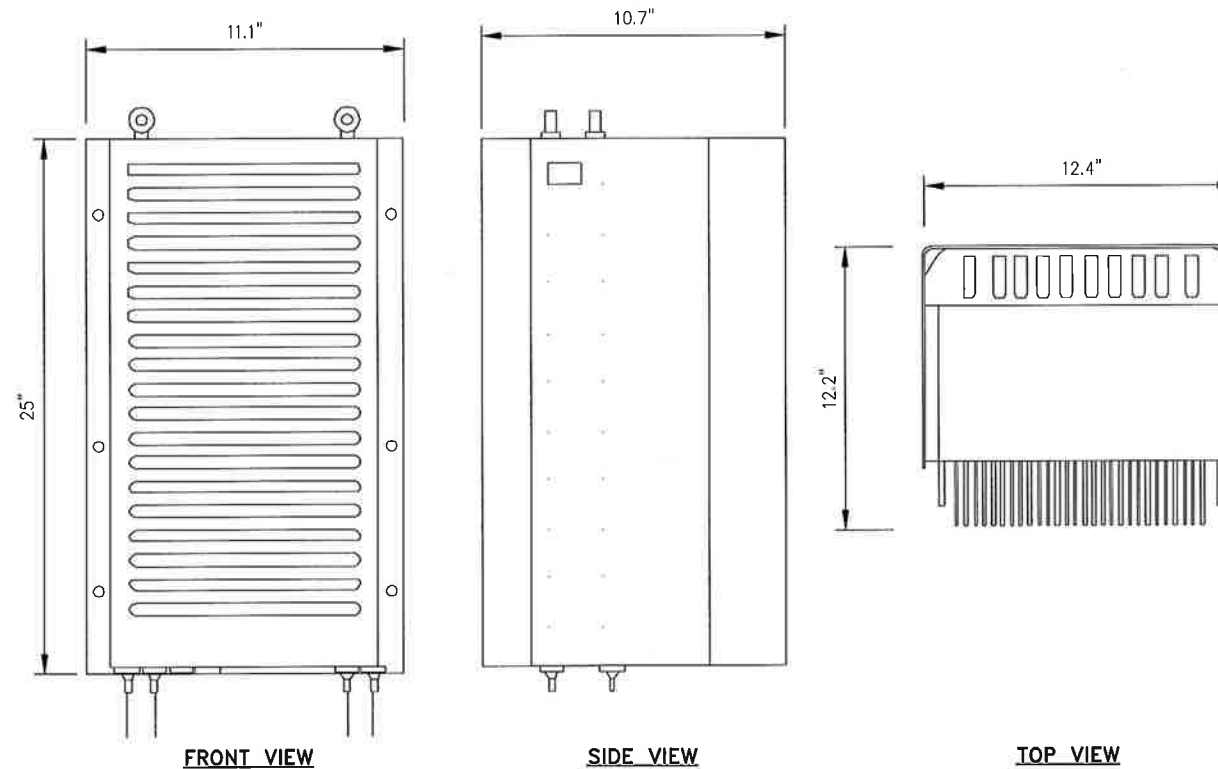
2



**ANTENNA NOKIA AAHC**

RADOME MATERIAL: FIBERGLASS  
 RADOME COLOR: LIGHT GREY  
 DIMENSIONS, HxWxD.in.(mm): 25.63"x19.72"x9.65"  
 WEIGHT: 103.6LBS

RRH: ALCATEL LUCENT 1900 MHz  
 COLOR: LIGHT GREY  
 WEIGHT: 60 LBS.  
 (INCLUDING OPTIONAL SOLAR SHIELD)



2.5 ANTENNA

NO SCALE

3

1900 MHz RRH

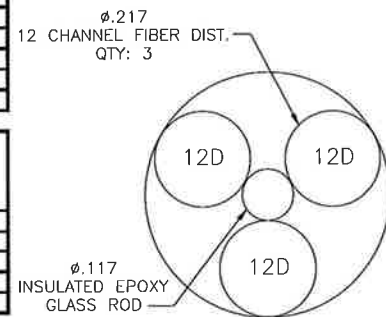
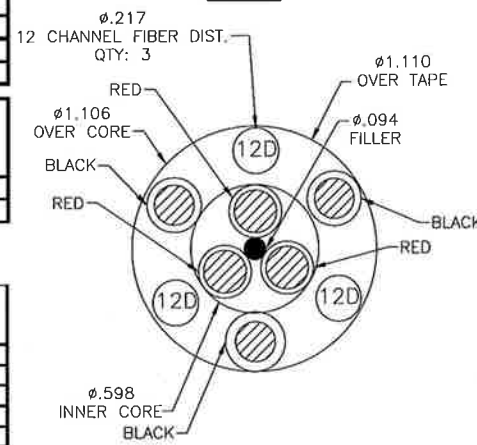
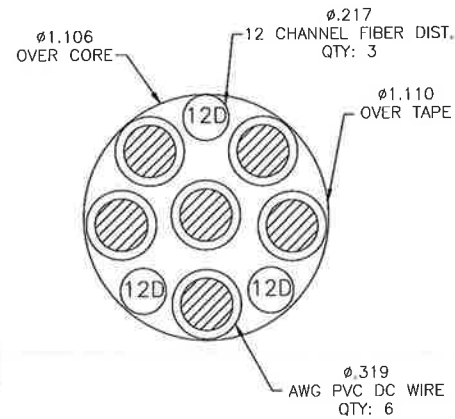
NO SCALE

4



**RFS HYBRIFLEX RISER CABLE SCHEDULE**

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

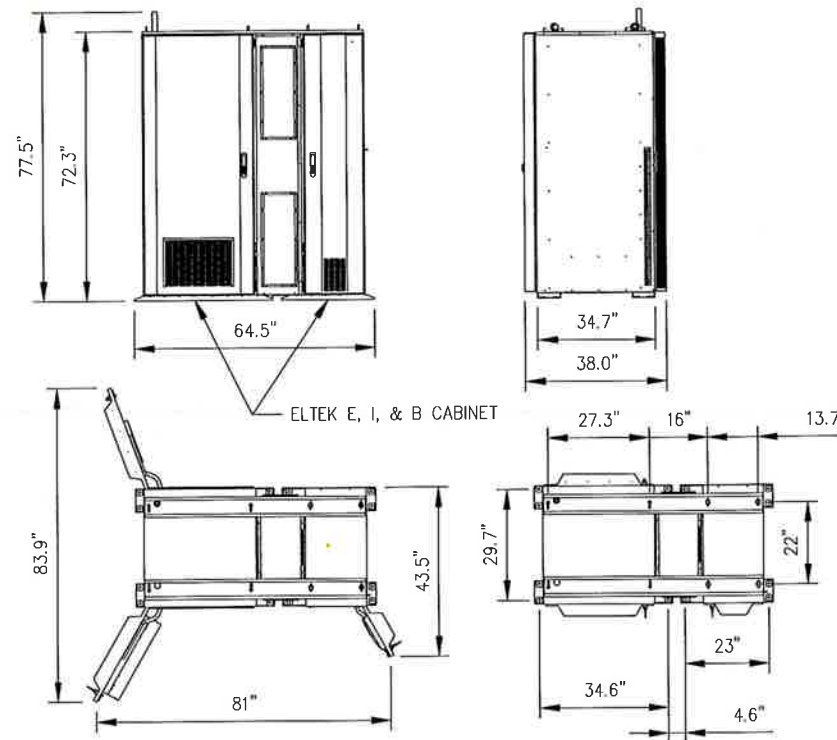


NOTE:  
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE  
AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF  
HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.

**2.5 CABLE CROSS SECTION DATA**

NO SCALE

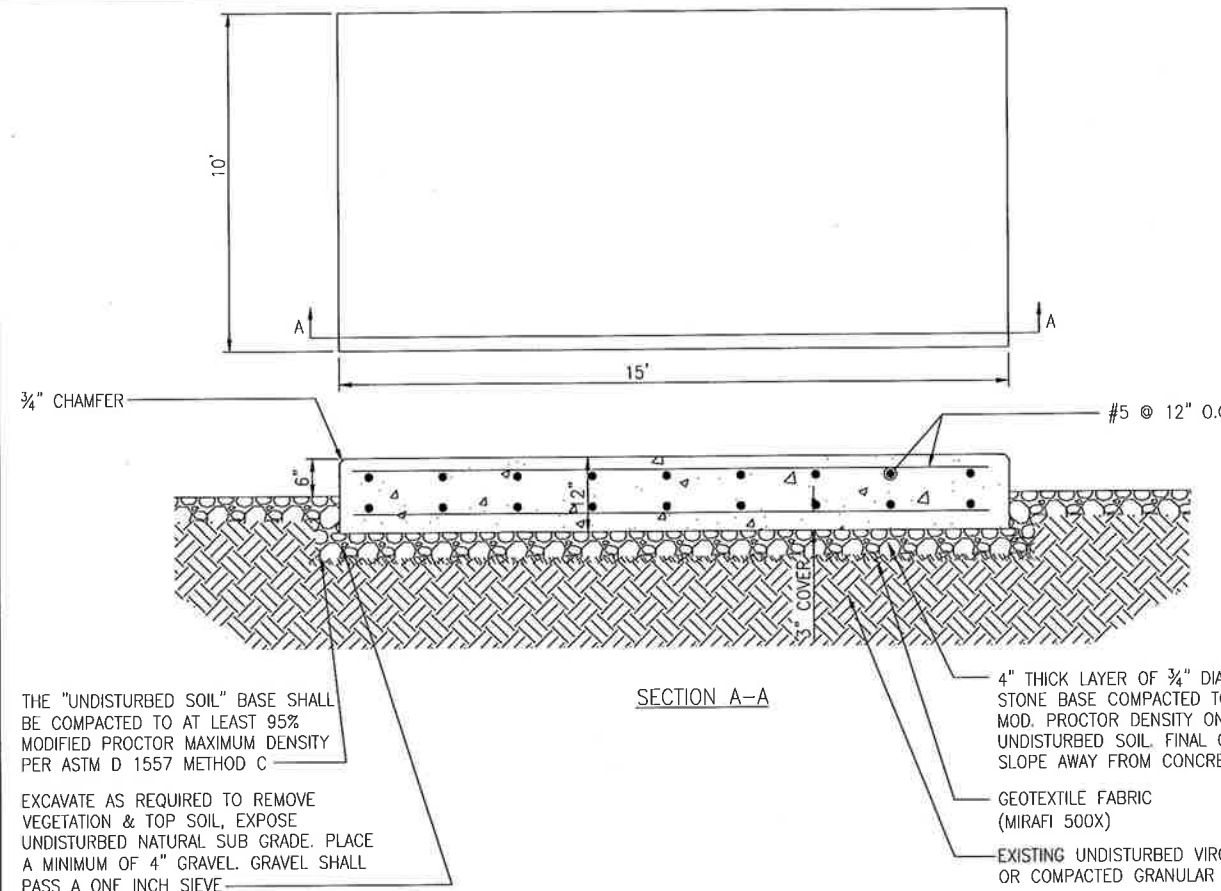
1



**ELTEK CABINET DETAIL**

NO SCALE

2



**CONCRETE PAD DETAIL**

NO SCALE

3

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PLANS PREPARED BY:



MLA PARTNER:



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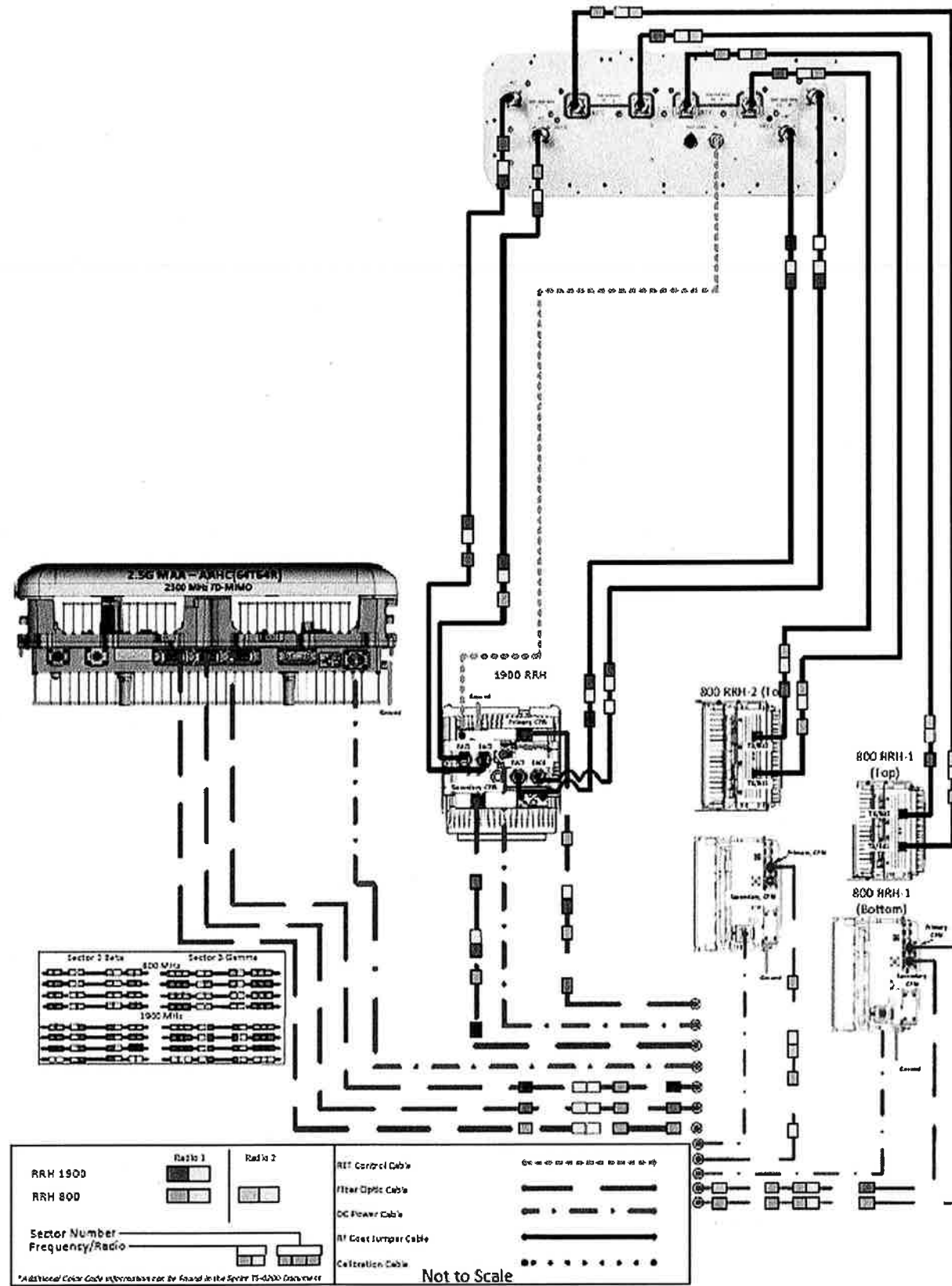
SHEET DESCRIPTION:

**CIVIL DETAILS**

SHEET NUMBER:

**A-5**

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



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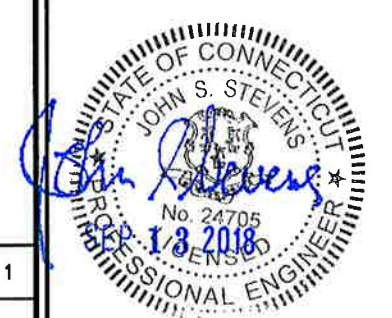
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PLUMBING DIAGRAM

SHEET NUMBER:

A-6





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BRIDGEPORT NORTH

CT52XC002

2 KAECHELE PLACE  
BRIDGEPORT, CT 06606

ELECTRICAL & GROUNDING DETAILS

E-1

### FINAL EQUIPMENT CONFIGURATION

SECTOR	ANTENNA MANUFACTURER	ANTENNA MODEL	RAD CENTER	AZIMUTH	RRH/ODU MAKE AND MODEL
1	COMMSCOPE	NNVV-65B-R4	140'	25°	(1) ALU 1900MHZ 4X45V-65MHZ (2) ALU 800MHZ 2x50-800
	NOKIA	AAHC	140'	25°	INTEGRATED 2.5 RADIO
2	COMMSCOPE	NNVV-65B-R4	140'	145°	(1) ALU 1900MHZ 4X45V-65MHZ (2) ALU 800MHZ 2x50-800
	NOKIA	AAHC	140'	145°	INTEGRATED 2.5 RADIO
	ANDREW	VHLP2-18	140'	180°	(1) DRAGONWAVE HORIZON COMPACT
3	COMMSCOPE	NNVV-65B-R4	140'	265°	(1) ALU 1900MHZ 4X45V-65MHZ (2) ALU 800MHZ 2x50-800
	NOKIA	AAHC	140'	265°	INTEGRATED 2.5 RADIO
	ANDREW	VHLP2-23	140'	300°	(1) DRAGONWAVE HORIZON COMPACT

### FEEDER CABLES

MANUFACTURER	MODEL	LENGTH	QTY
RFS	HB114-13U3M12-200F	200±	(3)
RFS	HB114-21U3M12-200F	200±	(1)

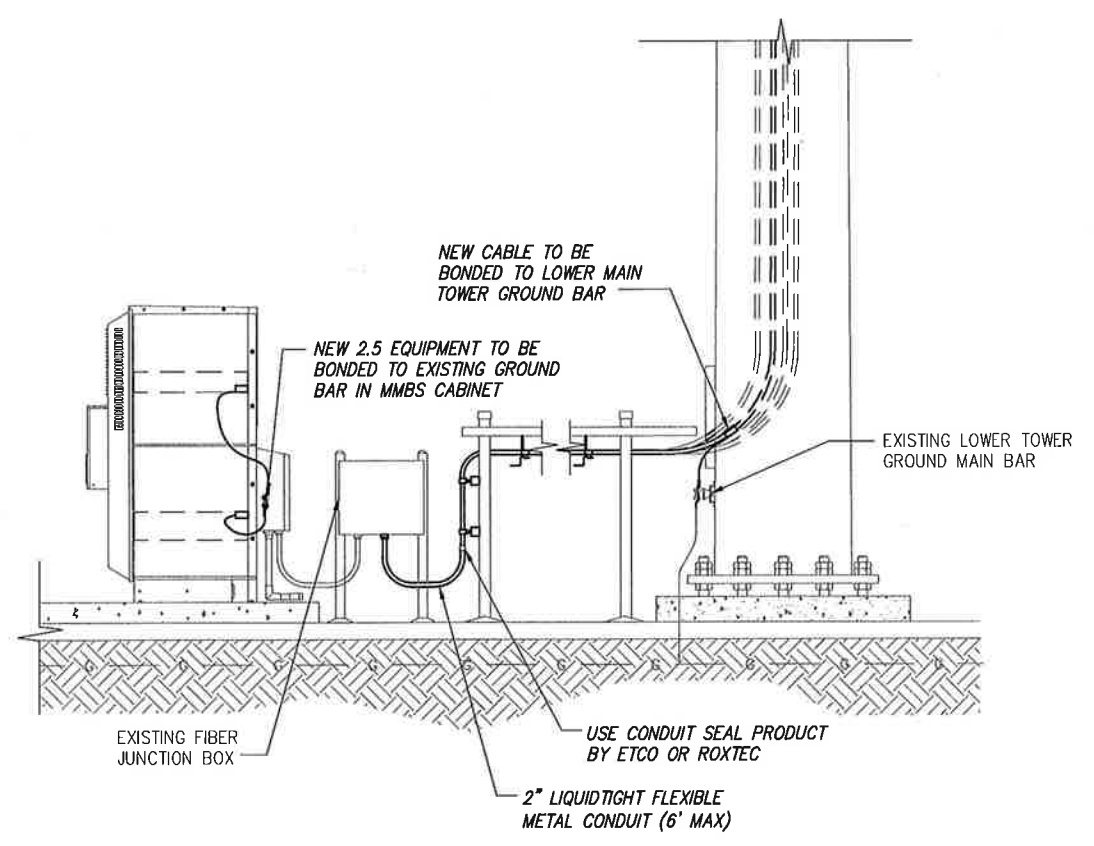
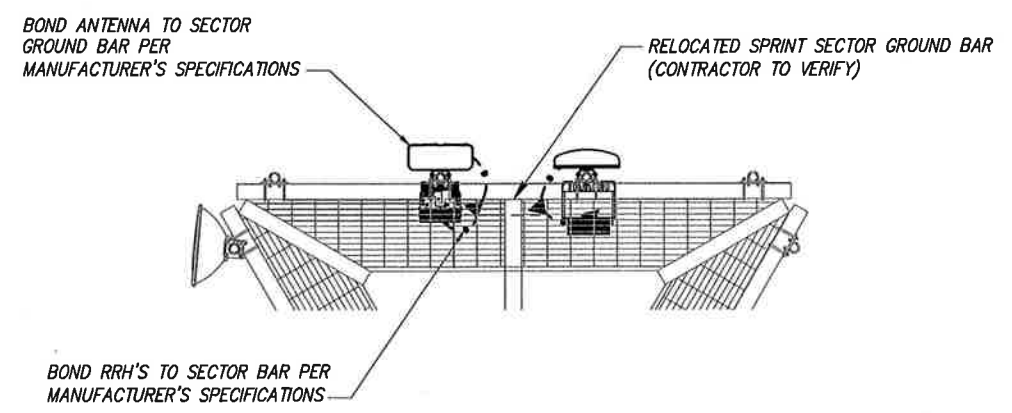
LEGEND
EXISTING
PROPOSED

**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 1

- LEGEND:**
- G — EXISTING GROUND RING
  - CADWELD CONNECTION (EXOTHERMIC WELD)
  - ▲ MECHANICAL CONNECTION
  - ⊗ GROUND ROD
  - CABLE GROUND KIT



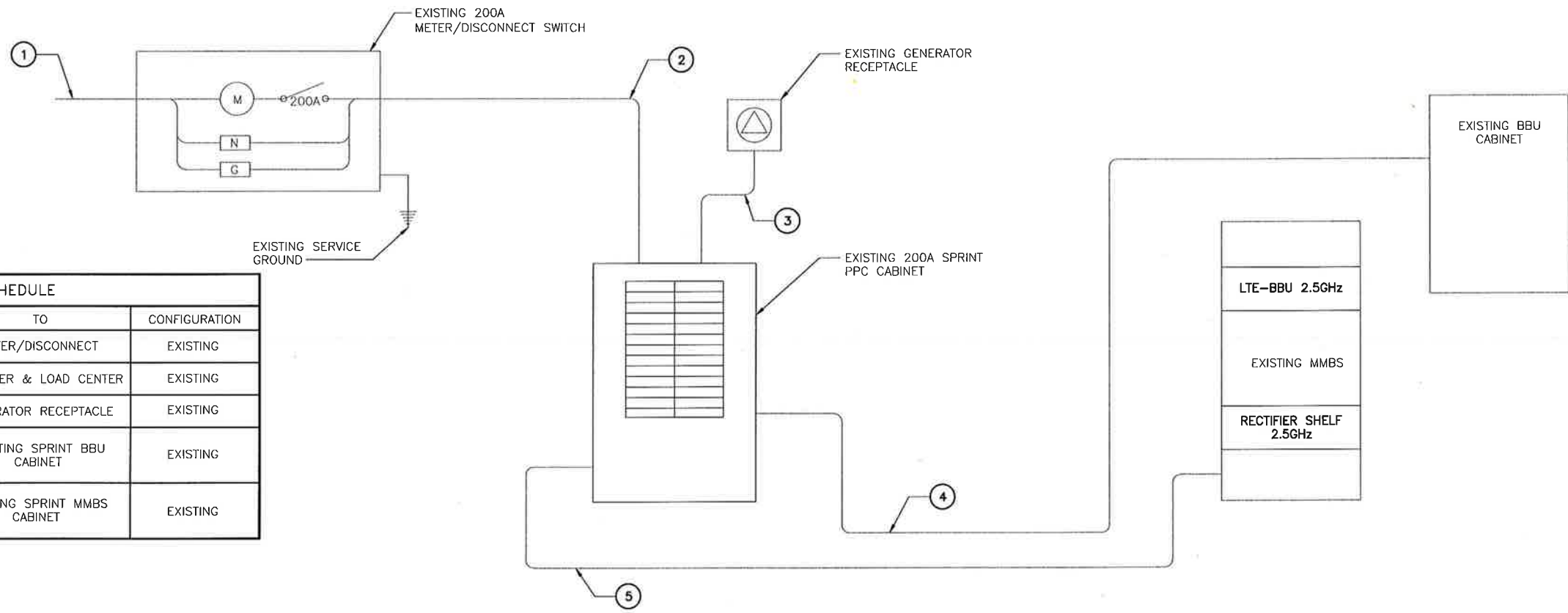
TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION)

NO SCALE 3

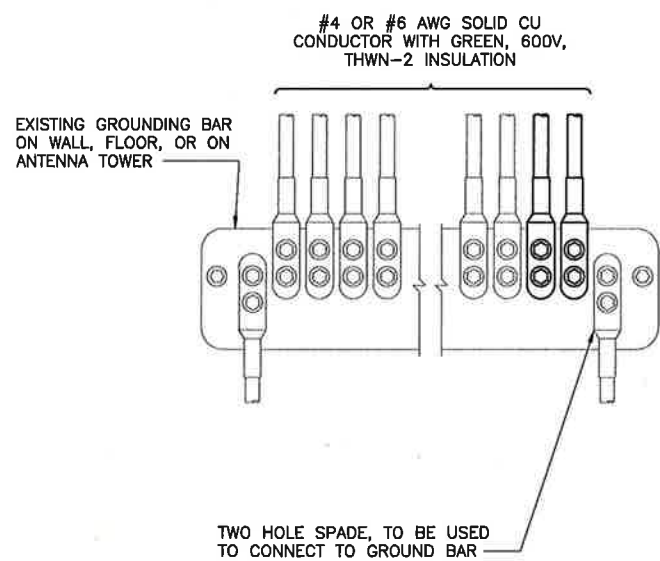
**NOTES**  
 CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



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**

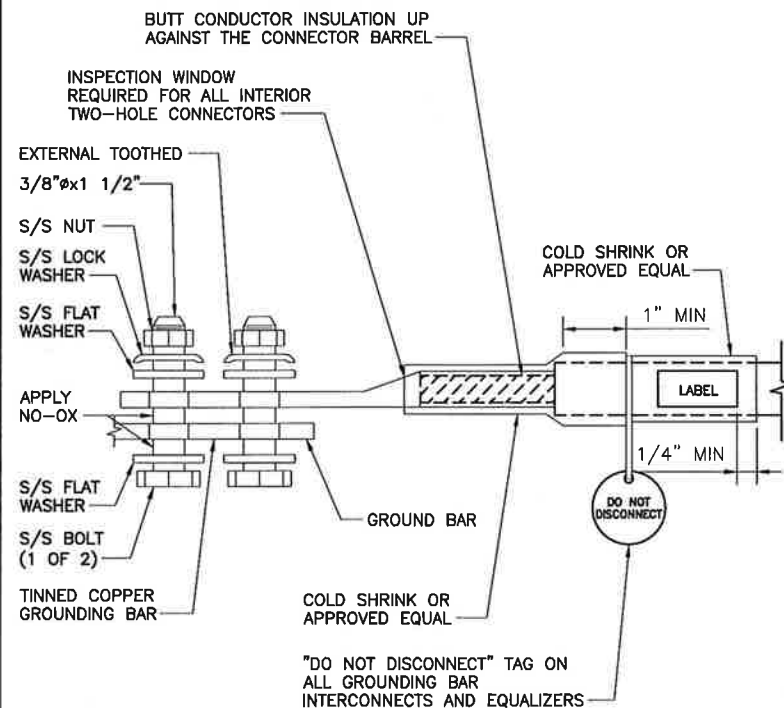
NO SCALE 1



**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.

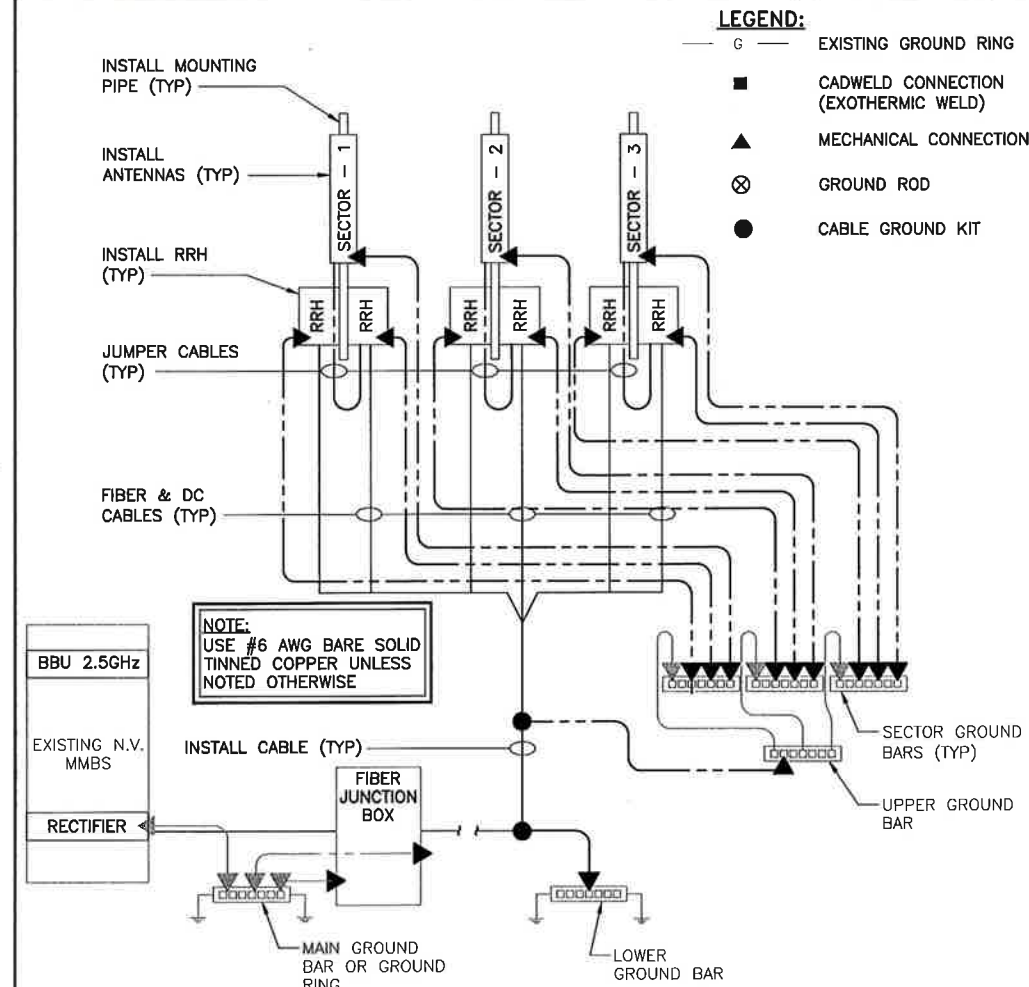
**INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR**

NO SCALE 2



**TWO HOLE LUG**

NO SCALE 3



**GROUNDING RISER DIAGRAM**

NO SCALE 4

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 528-103

MLA PARTNER:  
**CROWN CASTLE**

ENGINEERING LICENSE:  
  
**JOHN S. STEVENS**  
 No. 24909  
 SET 12/31/2018  
 PROFESSIONAL ENGINEER

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**REVISIONS:**

DESCRIPTION	DATE	BY	REV
STRUCTURAL UPDATED	09/12/18	RMS	1
ISSUED FOR CONSTRUCTION	08/10/18	RMS	0
CARRIER COMMENTS	06/27/18	SL	B
ISSUED FOR REVIEW	06/08/18	RCD	A

**SITE NAME:**  
 BRIDGEPORT NORTH

**SITE CASCADE:**  
 CT52XC002

**SITE ADDRESS:**  
 2 KAECHLE PLACE  
 BRIDGEPORT, CT 06606

**SHEET DESCRIPTION:**  
 ELECTRICAL & GROUNDING DETAILS

**SHEET NUMBER:**  
 E-2

**From:** [McKay, Kristian](#)  
**To:** ["bruce.nelson@bridgeportct.gov"](mailto:bruce.nelson@bridgeportct.gov)  
**Subject:** 205 Kaechele Place. Cell Tower zoning Docs.  
**Date:** Tuesday, September 11, 2018 11:43:00 AM

---

Hello Mr. Nelson,

I work for Crown Castle and have an inquiry regarding the original zoning documents for a cell 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 205 Kaechele Place Bridgeport, CT. 06851. I believe Southern New England Telecommunications owned the property and signed the lease at that time.

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

Thanks,

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

**From:** [McKay, Kristian](#)  
**To:** ["Dennis.Buckley@bridgeportct.gov"](mailto:Dennis.Buckley@bridgeportct.gov)  
**Subject:** 205 Kaechele Place. Cell Tower zoning Docs.  
**Date:** Tuesday, September 11, 2018 11:51:00 AM

---

Hello Mr. Buckley,

I work for Crown Castle and have an inquiry regarding the original zoning documents for a cell 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 205 Kaechele Place Bridgeport, CT. 06851. I believe Southern New England Telecommunications owned the property and signed the lease at that time.

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

Thanks,

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: September 10, 2018

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

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

**Subject:** Structural Analysis Report

**Carrier Designation:** Clearwire Corp Co-Locate  
**Carrier Site Number:** CT52XC002  
**Carrier Site Name:** CT52XC002

**Crown Castle Designation:** Crown Castle BU Number: 841288  
**Crown Castle Site Name:** BRIDGEPORT NORTH  
**Crown Castle JDE Job Number:** 499049  
**Crown Castle Work Order Number:** 1628084  
**Crown Castle Order Number:** 436906 Rev. 1

**Engineering Firm Designation:** Paul J. Ford and Company Project Number: 37518-0456.008.7805

**Site Data:** 2 Kaechele Place, BRIDGEPORT, Fairfield County, CT  
Latitude 41° 13' 24.04", Longitude -73° 13' 0.38"  
150 Foot - Monopole Tower

Dear Timothy Howell,

Paul J. Ford and Company is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower.

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

LC7: Proposed Equipment Configuration

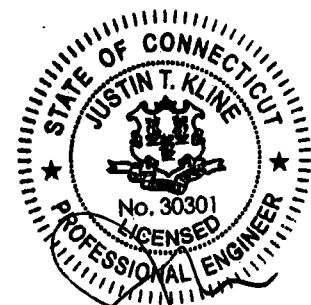
Sufficient Capacity

This analysis has been performed in accordance with the ANSI/TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph from the 2016 Connecticut State Building Code per section 1609.3 and Appendix N. Risk Category II, Exposure Category B and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

Respectfully submitted by:

*Aaron E. Pike*  
SSK

Aaron E. Pike, E.I.  
Structural Designer  
apike@pauljford.com



9-10-18

Date: **September 10, 2018**

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

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

**Subject:** Structural Analysis Report

**Carrier Designation:** *Clearwire Corp Co-Locate*  
**Carrier Site Number:** CT52XC002  
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This analysis has been performed in accordance with the ANSI/TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph from the 2016 Connecticut State Building Code per section 1609.3 and Appendix N. Risk Category II, Exposure Category B and Topographic Category 1 with a maximum Topographic Factor,  $K_{zt}$ , of 1.0 were used in this analysis.

Respectfully submitted by:

Aaron E. Pike, E.I.  
Structural Designer  
apike@pauljford.com

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## 1) INTRODUCTION

This tower is a 150 ft Monopole tower. All information on the monopole was obtained from the mapping referenced in Table 3 of this report.

## 2) ANALYSIS CRITERIA

<b>Building Code:</b>	2016 CSBC (2012 IBC)
<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Wind Speed:</b>	125 mph
<b>Exposure Category:</b>	B
<b>Topographic Factor:</b>	1
<b>Ice Thickness:</b>	1.275 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Service Wind Speed:</b>	60 mph

**Table 1 - Proposed Equipment Configuration**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	143.0	1	andrew	VHLP2-18	2 3 1	1/2 1-1/4 1-5/8
		1	andrew	VHLP2-23		
		2	dragonwave	HORIZON COMPACT		
	140.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		6	alcatel lucent	RRH2X50-800		
		3	commscope	NNVV-65B-R4 w/ MP		
		3	nokia	AAHC w/ Mount Pipe		
	138.0	1	clearwire	CW JUNCTION BOX		
		1	site pro	RMQP-496-HK		



**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	154.0	3	cci antennas	HPA-65R-BUU-H6	12 1 4	1-5/8 3/8 3/4
		6	cci antennas	TPX-070821		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		3	powerwave tech.	1001940		
		6	powerwave tech.	7020.00		
		3	powerwave tech.	7770.00		
		3	powerwave tech.	TT19-08BP111-001		
		3	quintel tech.	QS66512-2		
	2	raycap	DC6-48-60-18-8F			
	150.0	1	tower mounts	Platform Mount (LP 101-1)		
147.0	147.0	3	ericsson	RRUS 11	--	--
		1	raycap	TME-DC6-48-60-18-8F		
		1	tower mounts	Pipe Mount [PM 601-3]		
120.0	120.0	3	commscope	LNx-6515DS-A1M	13 1	1-5/8 1-1/2
		3	ericsson	AIR -32 B2A/B66AA		
		3	ericsson	AIR 21 B2A/B4P		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RRUS 11 B12		
		1	tower mounts	Platform Mount [LP 301-1]		
99.0	103.0	1	gps	GPS_A	12 1 2	1-5/8 1/2 1-1/4
	99.0	3	alcatel lucent	B13 RRH 4X30		
		3	alcatel lucent	B25 RRH2X60 PCS		
		3	alcatel lucent	B66A RRH4X45		
		3	antel	BXA-171063/8CF w/ Mount Pipe		
		3	antel	BXA-70063/4CF w/ MP		
		2	commscope	RC2DC-3315-PF-48		
		6	css	X7CQAP-465-VR0 w/ MP		
		6	rfc celwave	FD9R6004/2C-3L		
		1	tower mounts	T-Arm Mount [TA 602-3]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 08-09065E G1, 09/23/2008	5110784	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567.42283, 10/22/2014	5401472	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567_26102, 06/05/2015	5739992	CCISITES
4-POST-MODIFICATION INSPECTION	Crown Castle, 841288, 05/31/2017	6894091	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567.87194, 06/08/2018	7594134	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	FDH, 08-09065E NA, 09/23/2008	5110783	CCISITES
4-TOWER MAPPING	GPD, 2014777.841288.02, 04/11/2008	4710143	CCISITES

#### 3.1) Analysis Method

tnxTower (version 8.0.4.0), 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 and maintained in accordance with the manufacturer's specifications.
- 2) The configuration of antennas, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 3) Monopole was modified in conformance with the referenced modification drawings.
- 4) The monopole manufacturer drawings are not available at the time of this analysis. Therefore, we have assumed pole shaft and base plate steel yield strength(s) ( $F_y$ ) as shown in the attached calculations. Anchor rods are assumed to be ASTM A615 #18J, 2.25" diam, ( $F_u = 100$  ksi,  $F_y = 75$  ksi).

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

#### 4) ANALYSIS RESULTS

**Table 4 - Section Capacity (Summary)**

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.732x15x0.2188	Pole	22.4%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	35.9%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	56.1%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	75.1%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	80.4%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 12 Tension Rupture	40.5%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 12 Tension Rupture	49.9%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 12 Tension Rupture	60.0%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 12 Tension Rupture	71.3%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 12 Tension Rupture	80.4%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 7 Tension Rupture	61.4%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 7 Tension Rupture	68.4%	Pass
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 7 Tension Rupture	61.3%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.95	Reinf. 7 Tension Rupture	62.3%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 7 Tension Rupture	50.8%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.1	Reinf. 7 Tension Rupture	51.4%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.925	Reinf. 7 Tension Rupture	56.5%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.925	Reinf. 7 Tension Rupture	58.0%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1	Reinf. 7 Tension Rupture	56.7%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 7 Tension Rupture	58.0%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.375	Reinf. 17 Tension Rupture	41.5%	Pass
99.33 - 95.25	Pole + Reinf.	TP23.076x22.46x1.325	Reinf. 17 Tension Rupture	45.6%	Pass
95.25 - 95	Pole + Reinf.	TP23.114x23.076x1.025	Reinf. 18 Tension Rupture	56.4%	Pass
95 - 90	Pole + Reinf.	TP23.869x23.114x1	Reinf. 18 Tension Rupture	62.2%	Pass
90 - 85	Pole + Reinf.	TP24.624x23.869x0.9625	Reinf. 18 Tension Rupture	67.8%	Pass
85 - 80.5	Pole + Reinf.	TP25.304x24.624x0.925	Reinf. 18 Tension Rupture	72.6%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 6 Tension Rupture	60.2%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 6 Tension Rupture	64.5%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.225	Reinf. 6 Tension Rupture	66.0%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 6 Tension Rupture	66.2%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.2	Reinf. 6 Tension Rupture	67.3%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2625	Reinf. 6 Tension Rupture	69.0%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2625	Reinf. 6 Tension Rupture	69.2%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 5 Tension Rupture	60.2%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 5 Tension Rupture	63.3%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2625	Reinf. 5 Tension Rupture	66.2%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 5 Tension Rupture	69.1%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 5 Tension Rupture	70.9%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6375	Reinf. 2 Compression	62.3%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.6125	Reinf. 2 Compression	64.0%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.7125	Reinf. 2 Compression	60.4%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
44 - 43.08	Pole + Reinf.	TP30.771x30.622x1.7125	Reinf. 2 Compression	60.8%	Pass
43.08 - 42.83	Pole + Reinf.	TP30.812x30.771x1.7125	Reinf. 2 Compression	60.9%	Pass
42.83 - 37.83	Pole + Reinf.	TP31.622x30.812x1.6375	Reinf. 2 Compression	63.0%	Pass
37.83 - 34	Pole + Reinf.	TP32.89x31.622x1.6125	Reinf. 2 Compression	64.5%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.7063	Reinf. 2 Compression	63.9%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6563	Reinf. 2 Compression	65.5%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6563	Reinf. 2 Compression	65.6%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6563	Reinf. 2 Compression	65.7%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.6063	Reinf. 2 Compression	67.2%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5563	Reinf. 2 Compression	68.6%	Pass
13.5 - 11	Pole + Reinf.	TP35.502x35.08x1.5313	Reinf. 2 Compression	69.3%	Pass
11 - 10.75	Pole + Reinf.	TP35.544x35.502x1.2313	Reinf. 3 Tension Rupture	66.2%	Pass
10.75 - 6	Pole + Reinf.	TP36.347x35.544x1.2563	Reinf. 3 Tension Rupture	67.5%	Pass
6 - 5.75	Pole + Reinf.	TP36.389x36.347x1.5313	Reinf. 3 Tension Rupture	58.4%	Pass
5.75 - 3.25	Pole + Reinf.	TP36.811x36.389x1.5063	Reinf. 3 Tension Rupture	59.1%	Pass
3.25 - 3	Pole + Reinf.	TP36.853x36.811x1.1563	Reinf. 20 Compression	74.6%	Pass
3 - 0	Pole + Reinf.	TP37.36x36.853x1.1313	Reinf. 20 Compression	75.4%	Pass
				Summary	
			Pole	80.4%	Pass
			Reinforcement	80.4%	Pass

**Table 5 - Tower Component Stresses vs. Capacity – LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	78.0	Pass
1	Base Plate	0	53.7	Pass
1	Base Foundation Steel	0	63.5	Pass
1	Base Foundation Soil Interaction	0	54.8	Pass
1	Flange Connection	109	86.7	Pass

<b>Structure Rating (max from all components) =</b>	<b>86.7%</b>
---	--------------

- All structural ratings are per TIA-222-H section 15.5

Notes:

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

**Table 6 - Microwave Dish Tilt (Sway) Results for 60 mph Rev H Service**

Dish Elevation ft	Dish	Dish Diameter ft	Dish Frequency GHz	Analysis Results Tilt at Service Wind deg	Analysis Results Twist at Service Wind deg
143.0	VHLP2-23	2.175	--	1.4577	0.0087
143.0	VHLP2-18	2.175	--	1.4577	0.0087

#### 4.1) Recommendations

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





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

SPRINT Existing Facility

Site ID: CT52XC002

Bridgeport North  
2 Kaechele Place  
Bridgeport, CT 06606

**August 29, 2018**

**EBI Project Number: 6218005889**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>14.87 %</b>



August 29, 2018

SPRINT

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

## Emissions Analysis for Site: **CT52XC002 – Bridgeport North**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **2 Kaechele Place, Bridgeport, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 850 MHz Band is approximately  $567 \mu\text{W}/\text{cm}^2$ . The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) as well as the 18 GHz and 23 GHz microwave bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **2 Kaechele Place, Bridgeport, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.
- 3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 6) 1 microwave channel (18 GHz) was considered for Sector B of the proposed installation. This channel has a transmit power of 1 Watt.



- 7) 1 microwave channel (23 GHz) was considered for Sector C of the proposed installation. This channel has a transmit power of 1 Watt.
- 8) 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.
- 9) 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.
- 10) 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 and the **Commscope VHLP2-18** and **Commscope VHLP2-23** for microwave transmissions in the 18 GHz and 23 GHz bands respectively. 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.
- 11) The antenna mounting height centerlines of the proposed panel antennas are **140 feet** above ground level (AGL) for **Sectors A, B & C** and **143 feet** above ground level (AGL) for the microwave dishes on **Sectors B & C**.
- 12) 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 #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
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):	<b>140 feet</b>	Height (AGL):	<b>140 feet</b>	Height (AGL):	<b>140 feet</b>
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%	<b>1.82 %</b>	Antenna B1 MPE%	<b>1.82 %</b>	Antenna C1 MPE%	<b>1.82 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
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):	<b>140 feet</b>	Height (AGL):	<b>140 feet</b>	Height (AGL):	<b>140 feet</b>
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%	<b>1.03 %</b>	Antenna B2 MPE%	<b>1.03 %</b>	Antenna C2 MPE%	<b>1.03 %</b>

## 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	143	18 GHz	1	1	4,841.72	<b>0.10</b>	<b>B</b>
Commscope VHLP2-23	38.55 dBd	143	23 GHz	1	1	7,161.43	<b>0.14</b>	<b>C</b>

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max (Sector C)	<b>2.99 %</b>
Verizon Wireless	4.12 %
Clearwire	0.17 %
T-Mobile	5.03 %
AT&T	2.56 %
<b>Site Total MPE %:</b>	<b>14.87 %</b>

SPRINT Sector A Total:	2.85 %
SPRINT Sector B Total:	2.95 %
SPRINT Sector C Total:	<b>2.99 %</b>
<b>Site Total:</b>	<b>14.87 %</b>



## Sprint Maximum MPE Power Values (Sector C)

SPRINT _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	140	0.75	850 MHz	567	0.13%
Sprint 850 MHz LTE	2	941.82	140	3.77	850 MHz	567	0.67%
Sprint 1900 MHz (PCS) CDMA	5	511.82	140	5.12	1900 MHz (PCS)	1000	0.51%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	140	5.12	1900 MHz (PCS)	1000	0.51%
Sprint 2500 MHz (BRS) LTE	8	639.78	140	10.25	2500 MHz (BRS)	1000	1.03%
Sprint 23 GHz Microwave	1	7,161.43	140	1.43	23 GHz	1000	0.14%
						<b>Total:</b>	<b>2.99%</b>



## Summary

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

The anticipated maximum composite contributions from the SPRINT facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

SPRINT Sector	Power Density Value (%)
Sector A:	2.85 %
Sector B:	2.95 %
Sector C:	2.99 %
SPRINT Maximum MPE % (Sector C):	2.99 %
Site Total:	14.87 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **14.87 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



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