



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

September 27, 2017

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

**RE: Notice of Exempt Modification for Sprint 2.5 Rework Crown Site BU: 823530**  
**Sprint Site ID: CT33XC603**  
**583 Chapel Street Thomaston, CT 06787**  
**Latitude: 41° 39' 48.48" / Longitude: -73° 4' 27.41"**

Dear Ms. Bachman:

Sprint currently maintains three (3) antennas at the 162-foot level of the existing 175-foot monopole at 583 Chapel Street in Thomaston, CT. The tower and property is owned by Crown Castle. Sprint intends to install three (3) antennas, three (3) RRHs, and one (1) hybrid cable.

This facility was approved by the by the Thomaston Zoning Board of Appeals on July 18, 2000 with the following conditions:

1. Conduct an annual RF inspection and submit the results to the Commission.
2. Regrade the driveway as noted in Land Tech's letter dated October 6, 2000.
3. Planmetics dated November 1, 2000, regarding items 12-15.
4. If the Town decides not to have the tower removed, then the site plan and mylar must be revised. Any undertaking regarding the Town's tower shall be done in accordance with the conditions of the signed contract.

This modification complies with all aforementioned conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to First Selectman of Thomaston Edmond V. Mone, and to Jeremy Leifert the Land Use Administrator/Zoning Enforcement Officer for Thomaston. Crown Castle is the tower and land 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.

**The Foundation for a Wireless World.**

CrownCastle.com

Melanie A. Bachman

September 27, 2017

Page 2

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](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)

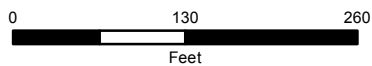
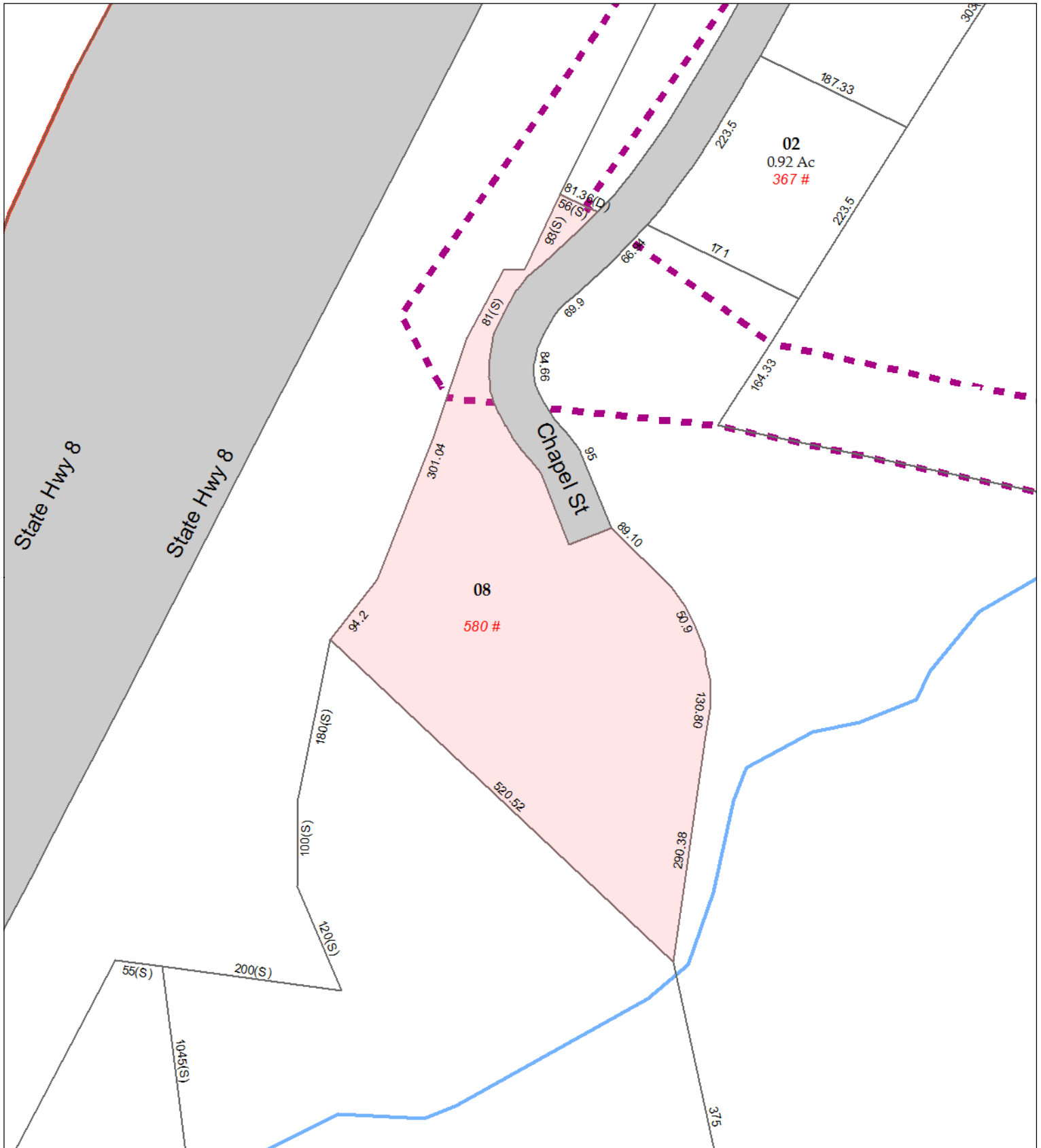
cc: First Selectman Edmond V. Mone  
Thomaston Town Hall  
158 Main Street  
Thomaston, CT 06787

Jeremy Leifert  
Land Use Administrator/Zoning Enforcement Officer  
Planning & Zoning  
Thomaston Town Hall  
158 Main Street  
Thomaston, CT 06787

# Town of Thomaston, Connecticut - Assessment Parcel Map

Parcel: 55-03-08

Address: 580 CHAPEL ST



Approximate Scale: 1 inch = 145 feet

Map Produced March 2016

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Thomaston and its mapping contractors assume no legal responsibility for the information contained herein.

# Thomaston, CT : Commercial Property Record Card

[\[ Back to Search Results \]](#)

[\[ Start a New Search \]](#) [\[ Help with Printing \]](#)

## Search For Properties

<b>Account</b>	<b>Name</b>	<b>Street Name</b>	<input type="button" value="Search"/>	<input type="button" value="Reset"/>
<input type="text"/>	<input type="text"/>	CHAPEL ST <input type="button" value="v"/>		

<b>Account</b>	<b>Card</b>	<b>Map-Block-Lot</b>	<b>Location</b>	<b>Zoning</b>	<b>State Class</b>	<b>Acres</b>
T0000001	1	55-03-08A	580 CHAPEL ST	RA80	508 - n/a	0.000
<b>Living Units</b>						
0						

## Owner Information

T Mobile (lessee) Town Of Thomaston (lessor) Crown Castle  
 Pmb331 4017 Washington Rd  
 McMurray PA 15317

## Property Picture



## Deed Information

**Book/Page:** n/a  
**Deed Date:** n/a

## Building Information

**Building No:** 1  
**Year Built:** 1950  
**No of Units:** 0  
**Structure Type:** Phone/Electric Equipment Build  
**Grade:** B  
**Identical Units:** 1

## Valuation

**Land:** \$0  
**Building:** \$473,714  
**Total:** \$473,714  
**Net Assessment:** \$331,600

## Sales History

Book/Page	Date	Price	Type	Validity
-----------	------	-------	------	----------

## Out Building Information

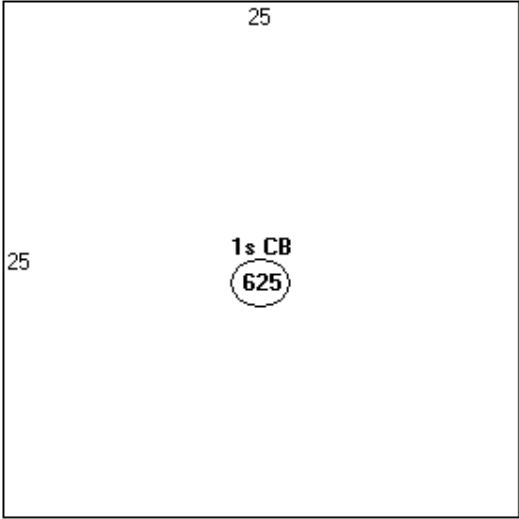
Structure Code	Width	Lgth/SqFt	Year	RCNLD
----------------	-------	-----------	------	-------

## Exterior/Interior Information

Levels	Size	Use Type	Ext. Walls	Const. Type	Partitions	Heating	A/C	Plumbing	Condition	Func. Utility	Unadj. RCNLD
01-01	1x620	Multi-Use Storage	Brick/Stone	Fireproof	Normal	None	None	Normal	Good	Good	14850

## Building Sketch



	<p><u>Descriptor/Area</u>                  A: 1s CB                  625 sqft</p>
---	---

**Notice**

**Tax Year 2015 Values**

The information delivered through this on-line database is provided in the spirit of open access to government information and is intended as an enhanced service and convenience for citizens of Thomaston, CT.

The providers of this database: CLT, Big Room Studios, and Thomaston, CT assume no liability for any error or omission in the information provided here.

**Currently All Values Have Not Been Finalized and Are Subject To Change.**

Comments regarding this service should be directed to: [rdudek@thomastonct.org](mailto:rdudek@thomastonct.org).



THOMASTON ZONING BOARD OF APPEALS  
TOWN HALL  
THOMASTON, CT 06787

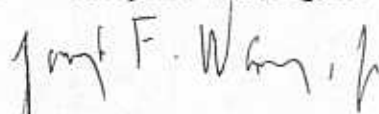
CERTIFICATE OF VARIANCE

This is to certify that the Thomaston Zoning Board of Appeals held a public hearing on July 18, 2000, at 7:45 pm in Meeting Room 1 of the Town Hall on an application from Voice Stream Wireless Corporation of 100 Filley St., Bloomfield, CT. The applicants sought a variance to permit their locating a ground mounted tower for a wireless communications facility on the west side of Chapel Street, approximately 1,000 feet distant from the intersection of Chapel Street with Prospect Street. The proposed tower is 175 feet in height. The applicants requested permission to locate the tower 201 feet from the property line. The property is owned by the Town of Thomaston and is located in an RA-40 zone.

Sec. 27.4.e of the Zoning Regulations of the Town of Thomaston provides that: "...the minimum distance from the base of any proposed ground mounted regulated facility to any property line, roadway, habitable dwelling, business or industrial use, public recreational areas, or public pathway shall be the height of the facility and mount, including any antennas or other appurtenances plus fifty per cent." Thus, 262.5 feet was the required setback.

With quorum present, the Board voted unanimously to grant the variance. The reasons were: topographic considerations; soil conditions on other parts of the site; and concerns over elevation on the site.

ATTEST: Joseph F. Wassong, Jr.

  
Chairman, TZBA

Town of Thomaston  
Planning & Zoning Board  
158 Main Street  
Thomaston, Connecticut 06787

Return Receipt Requested

November 9, 2000

Voice Stream Wireless  
100 Filley Street  
Bloomfield, CT 06002

Re: Special Permit Approval for a Commercial  
Cellular Telecommunications Tower  
Chapel Street, Thomaston, Conn.  
-----

Dear Sirs:

At its meeting on Wednesday, November 1, 2000, the Thomaston Planning and Zoning Commission approved your Special Permit Application to construct a commercial cellular communications tower on municipal property at the end of Chapel Street.

The application was approved with the following conditions:

1. Conduct an annual RF inspection and submit the results to the Commission.
2. Regrade the driveway as noted in Land Tech's letter dated October 6, 2000.
3. Agreed to the terms and conditions as noted in a FAX from Planimetrics dated November 1, 2000, regarding items 12-15.
4. If the Town decides not to have the tower removed, then the site plan and mylar must be revised. Any undertaking regarding the Town's tower shall be done in accordance with the conditions of the signed contract.

Sincerely,



Samuel Barto  
Staff, TPZC  
Land Use Officer / ZEO

# Town of Thomaston

SELECTMAN'S OFFICE  
TOWN HALL  
158 MAIN STREET  
THOMASTON, CONNECTICUT 06787  
283-4421

April 25, 2000

## SELECTMEN'S MEETING MINUTES

At a meeting of the Board of Selectmen held on April 25, 2000 the following business was conducted:

The meeting opened at 4:00 p.m. with the Entire Board in attendance.

Also attending were Thomas C. Cusa of In Telecom, Inc., Sam Barto Town Planner and Attorney George Seabourne.

Selectman Brammer read a Fair Housing Resolution and a Fair Housing Policy Statement. (Copies Attached)

Selectman DuPont made a motion to adopt the Fair Housing Resolution and the Fair Housing Policy Statement seconded by Selectman O'Connell and passed unanimously by Selectman Brammer.

Selectman Brammer explained that as recipients of Small Cities Funding from the Department of Economic and Community Development we must adopt the above to reaffirm our commitment to Fair Housing. Larry Wagner the Town's Grants Coordinator has been the administrator of the Town's projects and programs and Lorraine Babb is our designated representative and is responsible for the enforcement and implementation of the Fair Housing Regulations.

Sam Barto reported to the Board of Selectmen that the roadway system in Phase III of the Highwood Farms Subdivision has been inspected by Town Engineer Bob Oley, Highway Superintendent Gerry Grohoski and by himself and it is their recommendation that it be accepted as a Town Road.

Selectman O'Connell made a motion to approve Phase III Section of the Highwood Farms Subdivision as a Town approved road seconded by Selectman DuPont and passed unanimously by Selectman Brammer.

Selectman DuPont made a motion to add Highwood Farms Subdivision--Phase V to today's Agenda seconded by Selectman O'Connell and passed unanimously by Selectman Brammer.

Selectman O'Connell made a motion to release the lots in Phase V of the Highwood Farms Subdivision in exchange for an irrevocable letter of credit in the amount of \$60,000.00 seconded by Selectman DuPont and passed unanimously by Selectman Brammer.

(Copy of Irrevocable Standby Letter of Credit Attached)

Selectman Brammer reported that Representatives from the Water Company will be meeting with him at 9:30 a.m. in his office on April 27th to discuss the design of the Water Extension to upper High Street.

SELECTMEN'S MEETING  
MINUTES (Cont'd)

The Board of Selectmen briefly went over Town Attorney Rybak's suggestions for the Proposed Lease Agreement between the Town of Thomaston and Omnipoint Communications, Inc. regarding the Communications Tower on Chapel Street.


Mr. Cusa said looking over the suggested changes, they will be acceptable, however items that might involve Federal Regulations would be out of their control.

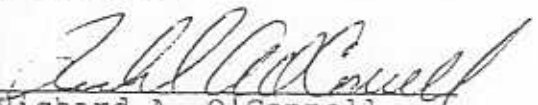
Selectman O'Connell made a motion to accept the Proposed Lease Agreement between the Town of Thomaston and Omnipoint Communications, Inc. with the suggested changes made by Attorney Rybak and subject to the approval of the Inland Wetlands Commission, Planning and Zoning Commission and Town Meeting Approval seconded by Selectman DuPont and passed unanimously by Selectman Brammer.

Selectman DuPont made a motion to approve Glenn C. Clarks request that his remaining vacation time for this year (4 days) be held past his anniversary date of July 6, 2000 as he is going on a cruise in May of 2001 seconded by Selectman O'Connell and passed unanimously by Selectman Brammer.

At 4:32 p.m. Selectman DuPont made a motion to adjourn the meeting seconded by Selectman O'Connell and passed unanimously by Selectman Brammer.

Signed   
Clifford C. Brammer, Jr.  
First Selectman

Signed   
Roger DuPont  
Selectman

Signed   
Richard A. O'Connell  
Selectman

Town of Thomaston  
Planning & Zoning Board  
158 Main Street  
Thomaston, Connecticut 06787

August 7, 2000

Voice Stream Wireless  
100 Filley Street  
Bloomfield, CT 06002

Attn: Mr. Rick Frazier

Re: Special Permit Application for a Commercial  
Telecommunications Tower and Facility  
-----

Dear Mr. Frazier:

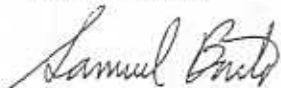
At its meeting on August 2, 2000, the Thomaston Planning and Zoning Commission accepted your Special Permit Application. The public hearing is scheduled for Wednesday, September 6, 2000, at 7:00 p.m. The meeting will be held in the Lena Morton Art Gallery.

The Commission has scheduled an on-site inspection for Wednesday, August 30, 2000, at 6:30 p.m. In accordance with the Zoning Regulations, Section 27.7, Part L, the Commission requests that you send aloft a site identification balloon on or just prior to the day of inspection. My office will publish a legal notice prior to the raising. The site walk will be open to the public.

Please make sure to address each of the requirements in Article XXVII at the public hearing. This should insure a very thorough and informative public hearing.

If you have any questions, comments or suggestions, please feel free to call the Land Use Office at 283-8411.

Sincerely,



Samuel Barto  
Land Use Officer

Please Note: The balloon shall also be raised at least 3 days prior to the public hearing.

cc: Bruce Hoben



SPECIAL PERMIT APPLICATION  
-----

Town of Thomaston, Connecticut

Date Received:

Application for a Special Permit  
-----

Applicant: Voice Stream/Omnipoint Wireless  
Address: 100 Filley St Bloomfield, CT 06002

The undersigned hereby makes application to the Planning and Zoning Commission for a SPECIAL PERMIT in accordance with the provisions of Section 3.11 - Schedule A - Permitted Uses and Article IX of the Thomaston Zoning Regulations.

Signature: Bruce Holm Date: 7/24/00

Section 1. Previous Application  
-----

Has a previous Special Permit Application been filed with the Commission for the same premises? Yes: \_\_\_\_\_ No:

Section 2. Placement on Agenda  
-----

In order for the Commission to consider your application, it must be received in the Planning and Zoning Office (Land-Use Office) no later than five (5) working days prior to the next regularly scheduled meeting.

Section 3. Plans and Documentation  
-----

All Special Permit applications, unless otherwise prescribed in the Zoning Regulations or directed by the Commission, must be accompanied by the following documentation:



Town of Thomaston  
Planning & Zoning Board  
158 Main Street  
Thomaston, Connecticut 06787

August 7, 2000

Voice Stream Wireless  
100 Filley Street  
Bloomfield, CT 06002

Attn: Mr. Rick Frazier

Re: Special Permit Application for a Commercial  
Telecommunications Tower and Facility  
-----

Dear Mr. Frazier:

At its meeting on August 2, 2000, the Thomaston Planning and Zoning Commission accepted your Special Permit Application. The public hearing is scheduled for Wednesday, September 6, 2000, at 7:00 p.m. The meeting will be held in the Lena Morton Art Gallery.

The Commission has scheduled an on-site inspection for Wednesday, August 30, 2000, at 6:30 p.m. In accordance with the Zoning Regulations, Section 27.7, Part L, the Commission requests that you send aloft a site identification balloon on or just prior to the day of inspection. My office will publish a legal notice prior to the raising. The site walk will be open to the public.

Please make sure to address each of the requirements in Article XXVII at the public hearing. This should insure a very thorough and informative public hearing.

If you have any questions, comments or suggestions, please feel free to call the Land Use Office at 283-8411.

Sincerely,



Samuel Barto  
Land Use Officer

Please Note: The balloon shall also be raised at least 3 days prior to the public hearing.

cc: Bruce Hoben

- a. A "Statement of Use" which shall detail the proposed use of the site.
- b. Site Plan and Landscaping Plan.
- c. Architectural and Construction Plan
- d. Flood Hazard Area Data
- e. Soil Erosion and Sedimentation Control Plan
- f. All other pertinent information and documentation that may be required by the Commission in order to make a decision on the application.

#### Section 4. Application Fees

-----

- a. Standard Application Fee: \$ 150.00
- b. Home Occupation Permit: \$ 100.00

#### Section 5. Waiver of Requirements

-----

Does the applicant request the Commission to waive any of the required documentation as specified in Sections 9.3.2, 9.3.3 or 9.3.4 of the Zoning Regulations?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

If yes, please specify: \_\_\_\_\_

\_\_\_\_\_

#### Section 6. Extension of Review Period

-----

Will the applicant consent to a formal extension of time in order for the Commission to take action on this application?

Yes: \_\_\_\_\_ No: \_\_\_\_\_

If yes, please specify period or date: \_\_\_\_\_

\_\_\_\_\_

Section 7. Failure to Submit  
-----

Failure by an applicant to submit any or all of the required or requested documentation under Section 3.11 or Article IX may be grounds for the Commission to consider the application as being incomplete.

Section 8. Review by Town Engineer  
-----

The applicant shall be responsible for paying all inspection and review costs incurred by the Town Engineer during the review process.

If additional on-site inspection and review is necessary and required by the Commission after the approval is granted and prior to completion of the project, the applicant shall also be responsible for these costs.

The costs shall be no more per hour than what is assessed to the Town in any given year by the Town Engineer.

Section 9. Public Hearing  
-----

The Thomaston Planning and Zoning Commission will conduct a "Public Hearing" on this application. The applicant, or their authorized agent, must be present at the hearing and should be prepared to present information showing how the proposed use of the site along with the buildings, structures, and facilities will conform to the standards as specified in these Regulations.

All standards as specified in Article IX are in addition to other requirements as contained in the Regulations which may be applicable in the District in which the Special Permit is proposed.

Section 10. Inspection of Property  
-----

The Commission is authorized by the submission of this application to inspect the premises.

Section 11. Additional Information  
-----

The Commission may obtain additional documentation and information on its own initiative but will need to rely upon data presented to it by the applicant.

Section 12. Modification of Approval  
-----

If approval is granted by the Planning and Zoning Commission, it may be subject to modifications deemed necessary to conform to specific standards of the Regulations. It may also be subject to appropriate conditions and safeguards necessary to conserve public health and safety, convenience, welfare and property values in the neighborhood.

Applicants Signature: \_\_\_\_\_



Home Phone: <sup>860</sup> 693 2724

Business Phone: 860-677 5267

-----  
OFFICE USE

Commission date when application was received: \_\_\_\_\_

Date of initial Public Hearing: \_\_\_\_\_

Public Hearing was continued to: \_\_\_\_\_

Date of Approval: \_\_\_\_\_ Disapproval: \_\_\_\_\_

Was approval modified: Yes: \_\_\_\_\_ No: \_\_\_\_\_

If yes, give specifics: \_\_\_\_\_  
\_\_\_\_\_

Land-Use Officer: \_\_\_\_\_ Date: \_\_\_\_\_

Samuel L. Barto  
Staff, PZC





# 2.5 EQUIPMENT DEPLOYMENT

SITE NUMBER:  
CT33XC603

SITE NAME:

THOMASTON/VOICESTREAM

SITE ADDRESS:

583 CHAPEL STREET  
THOMASTON, CT 06787

CROWN ID#: 823530

CROWN SITE NAME: CT364/CHAPEL ST. MONOPOLE

**APPROVED**

By Craig Koppang at 2:56 pm, Aug 09, 2017

**APPROVED**

By Ray Perry at 10:24 am, Oct 17, 2014



2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

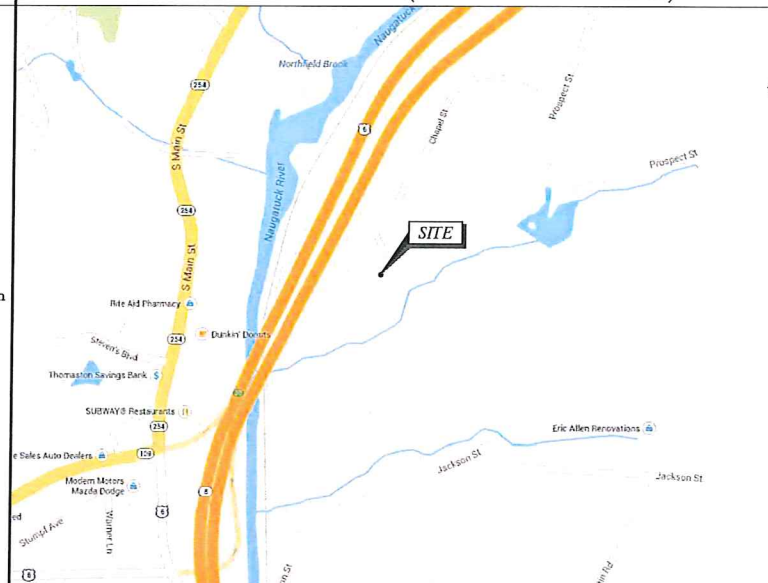


**Tectonic** Engineering & Surveying Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

## SHEET INFORMATION

SITE NUMBER:	CT33XC603	LANDLORD:	CROWN CASTLE USA 2000 CORPORATE DRIVE CANONSBURG, PA
SITE NAME:	THOMASTON/VOICESTREAM	LOCAL POWER COMPANY:	CONNECTICUT LIGHT AND POWER CONTACT CUSTOMER SERVICE (800) 286-2000
SITE ADDRESS:	583 CHAPEL STREET THOMASTON, CT 06787	APPLICANT:	SPRINT 6580 SPRINT PARKWAY OVERLAND PARK, KANSAS 66251
COUNTY:	LITCHFIELD	ENGINEER:	JAMES QUICKSELL (845) 567-6656 EXT. 2835 Jquicksell@tectonicengineering.com
COORDINATES: (NAD 83)	41° 39' 48.48" N 73° 4' 27.41" W	SPRINT CM:	ANDY CLARK Andrew.Clark@sprint.com
GROUND ELEV:	534'± AMSL	CROWN CM:	JASON D'AMICO (860) 209-0104 jason.d'amico@crowncastle.com
STRUCTURE TYPE:	MONOPOLE		
STRUCTURE HEIGHT:	175'-0"± AGL		
STRUCTURE RAD CENTER:	182'-0"± AGL		
ZONING CLASSIFICATION:	RA 80		
MAP-BLOCK-LOT:	55-03-08		

## VICINITY MAP (NOT TO SCALE)



## SHEET INDEX

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

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

## SUBMITTALS

PROJECT NO: 7225-CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE	REVIEWED BY
10/13/14	JMQ

## GENERAL NOTES

- THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED. FACILITY HAS NO PLUMBING OR REFRIGERANTS. THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATOR REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- DEVELOPMENT AND USE OF THIS SITE WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
  - 2005 STATE OF CONNECTICUT BUILDING CODE.
  - ANSI/TIA/EIA-222-F-1996.
  - NATIONAL ELECTRICAL CODE, LATEST EDITION.

## AERIAL VIEW (NOT TO SCALE)



## APPROVALS

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

CONSTRUCTION: \_\_\_\_\_ DATE: \_\_\_\_\_  
 LEASING/SITE ACQUISITION: \_\_\_\_\_ DATE: \_\_\_\_\_  
 LANDLORD/PROPERTY OWNER: \_\_\_\_\_ DATE: \_\_\_\_\_  
 R.F. ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_



## PROJECT DESCRIPTION

- (1) NEW 2.5 EQUIPMENT RACK INSIDE EXIST MMBTS CABINET.
- (3) NEW RFS APXVTM14-C-120 ANTENNAS.
- (3) NEW TD-RRH8x20-25 RRH.
- (1) NEW 1-1/4" HYBRID CABLE.



SITE NUMBER:  
CT33XC603  
SITE NAME:  
THOMASTON/VOICESTREAM  
SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
TITLE SHEET

SHEET NO:  
T-1



**DIVISION 01000—GENERAL NOTES**

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

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

**DIVISION 03000—CONCRETE**

- 1.03 APPLICABLE STANDARDS (USE LATEST EDITIONS)
- A. AC1-301 — SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
  - B. ACI-347 GUIDE TO FORM WORK FOR CONCRETE.
  - C. ASTM C33— CONCRETE AGGREGATE
  - D. ASTM C94 — READY MIXED CONCRETE e. ASTM C150 — PORTLAND CEMENT.
  - E. ASTM C260 — AIR—ENTRAINING ADMIXTURES FOR CONCRETE
  - F. ASTM C309— LIQUID MEMBRANE FORMING COMPOUNDS FOR CURING CONCRETE.
  - H. ASTM C494 — CHEMICAL ADMIXTURES FOR CONCRETE
  - I. ASTM A615— DEFORMED AND PLAIN BILLET—STEEL BARS FOR CONCRETE REINFORCEMENT
  - J. ASTM A185— STEEL WELDED WIRE FABRIC (PLAIN) FOR CONCRETE REINFORCEMENT

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

- 3.04 SURFACE FINISHES
- A. SURFACES AGAINST WHICH BACKFILL OR CONCRETE SHALL BE PLACED REQUIRE NO TREATMENT EXCEPT REPAIR OF DEFECTIVE AREAS.
  - B. SURFACES THAT WILL BE PERMANENTLY EXPOSED SHALL PRESENT A UNIFORM FINISH PROVIDED BY THE REMOVAL OF FINIS AND THE FILLING HOLES AND OTHER IRREGULARITIES WITH DRY PACK GROUT, OR BY SACKING WITH UTILITY OR ORDINARY GROUT.
  - C. SURFACES THAT WOULD NORMALLY BE LEVEL AND WHICH WILL BE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE SLOPED FOR DRAINAGE. UNLESS ENGINEER'S DESIGN DRAWING SPECIFIES A HORIZONTAL SURFACE OR SURFACES SUCH AS STAIR TREADS, WALLS, CURBS, AND PARAPETS SHALL BE SLOPED APPROXIMATELY 1/4" PER FOOT.
  - D. SURFACES THAT WILL BE COVERED BY BACKFILL OR CONCRETE SHALL BE SMOOTH SCREENED.
  - E. EXPOSED SLAB SURFACES SHALL BE CONSOLIDATED, SCREENED, FLOATED, AND STEEL TROWEL. HAND OR POWER—DRIVEN EQUIPMENT MAY BE USED FOR FLOATING. FLOATING SHALL BE STARTED AS SOON AS THE SCREENED SURFACE HAS ATTAINED A STIFFNESS TO PERMIT FINISHING OPERATIONS. OPERATIONS. ALL EDGES MUST HAVE A 3/4" CHAMFER.

- 1.04 QUALITY ASSURANCE CONCRETE MATERIALS AND OPERATIONS SHALL BE TESTED AND INSPECTED BY THE ENGINEER.
- 3.05 PATCHING  
THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON REMOVAL OF THE FORMS TO OBSERVE CONCRETE SURFACE CONDITIONS. IMPERFECTIONS SHALL BE PATCHED ACCORDING TO THE ENGINEER'S DIRECTION.
- 3.06 DEFECTIVE CONCRETE  
THE CONTRACTOR SHALL NOTIFY OR REPLACE CONCRETE NOT CONFORMING TO REQUIRED LEVELS AND LINES, DETAILS, AND ELEVATIONS AS SPECIFIED IN ACI 301.

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

**DIVISION 05000 — METALS**

- PART 1 — GENERAL
- 1.01 WORK INCLUDED
- A. THE WORK CONSISTS OF THE FABRICATION AND INSTALLATION OF ALL MATERIALS TO BE FURNISHED. AND WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDING ALL EQUIPMENT, LABOR AND SERVICES REQUIRED FOR ALL STRUCTURAL STEEL WORK AND ALL ITEMS INCIDENTAL AS SPECIFIED AND AS SHOWN ON THE DRAWINGS:
  1. STEEL FRAMING INCLUDING BEAMS, ANGLES, CHANNELS AND PLATES.
  2. WELDING AND BOLTING OF ATTACHMENTS.
- 1.02 REFERENCE STANDARDS
- A. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:
  1. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS AS PUBLISHED IN "COMPLIATION OF ASTM STANDARDS IN BUILDING CODES" OR LATEST EDITION.
  2. AWS: AMERICAN WELDING SOCIETY CODE OR LATEST EDITION.
  3. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).

PART 2 — PRODUCTS

2.01 MATERIALS

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

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

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

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

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

BASE MATERIAL	ANCHOR SYSTEM
CONCRETE	HILTI HIT—HY 200
HOLLOW & GROUTED CMU OR BRICK	HILTI HIT—HY 70

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

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

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

PART 3 — ERECTION

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



2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251




TECTONIC Engineering & Surveying  
Consultants P.C.

1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

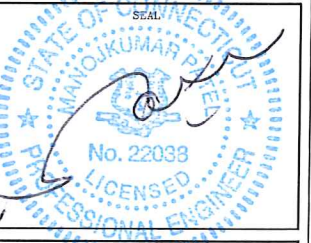
THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE	REVIEWED BY
10/13/14	JMG



SITE NUMBER:  
CT33XC603

SITE NAME:  
THOMASTON/VOICESTREAM

SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
GENERAL NOTES

SHEET NO:  
SP-1



DIVISION 13000--SPECIAL CONSTRUCTION ANTENNA INSTALLATION

PART 1 - GENERAL

1.01 WORK INCLUDED

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

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

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

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

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

G. ANTENNA AND HYBRIFLEX CABLE GROUNDING:

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

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

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

1.03 REQUIREMENTS OF REGULATOR AGENCIES

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

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

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

DIVISION 13000--EARTHWORK

PART 1 GENERAL

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

1.02 RELATED WORK

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

PART 2 PRODUCTS

2.01 MATERIALS

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

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

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

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

MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS.

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

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

2.02 EQUIPMENT

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

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

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

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

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

3.03 INSTALLATION

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

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

C. DO NOT CREATE DEPRESSIONS WHERE WATER MAY POND.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3.04 FIELD QUALITY CONTROL

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

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

3.05 PROTECTION

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

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

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

SYMBOLS	ABBREVIATIONS
— — — — — 0 — — — — — 0 — —	GROUND WIRE
— — — — — E — — — — — E — —	ELECTRIC
— — — — — T — — — — — T — —	TELEPHONE
— — — — — O — — — — — O — —	OVERHEAD WIRE
— — — — — — — — — — — — — — —	PROPERTY LINE
— X — — — — — X — — — — — X — — — — —	CHAIN LINK FENCE
A-1	ANTENNA MARK
(E)	EXISTING
(P)	PROPOSED DETAIL
	REFERENCE
	SURFACE ELEVATION

**Sprint**  
2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC** • PLANNING • ENGINEERING • SURVEYING • CONSTRUCTION MANAGEMENT  
TECTONIC Engineering & Surveying Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

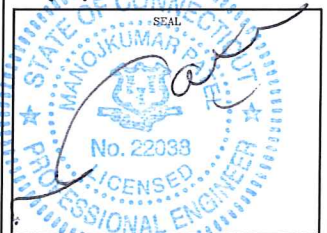
THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE: 10/13/14  
REVIEWED BY: JMG

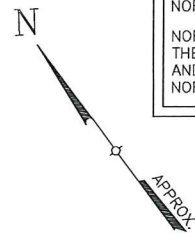


SITE NUMBER:  
CT33XC603  
SITE NAME:  
THOMASTON/VOICESTREAM  
SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

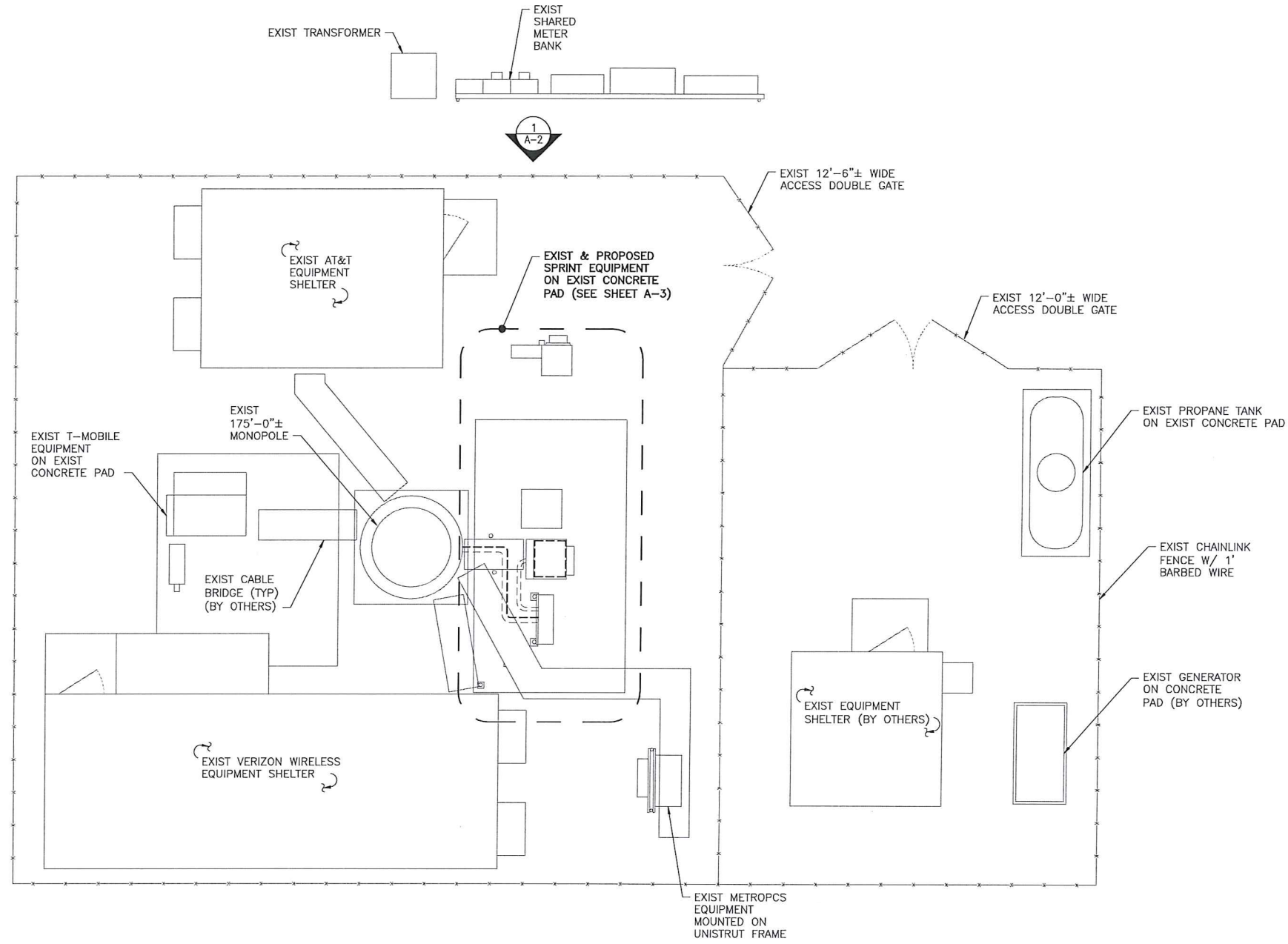
SHEET TITLE:  
GENERAL NOTES

SHEET NO:  
SP-2





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



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

**Sprint**  
 2.5 EQUIPMENT DEPLOYMENT  
 6850 SPRINT PARKWAY  
 OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**  
 • PLANNING  
 • ENGINEERING  
 • SURVEYING  
 • CONSTRUCTION MANAGEMENT

**TECTONIC Engineering & Surveying Consultants P.C.**  
 1279 Route 300  
 Newburgh, NY 12550  
 Phone: (845) 567-6656  
 Fax: (845) 567-8703  
 www.tectonicengineering.com

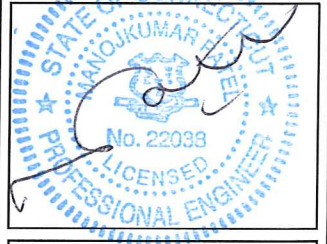
THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE: 10/13/14  
 REVIEWED BY: JMQ



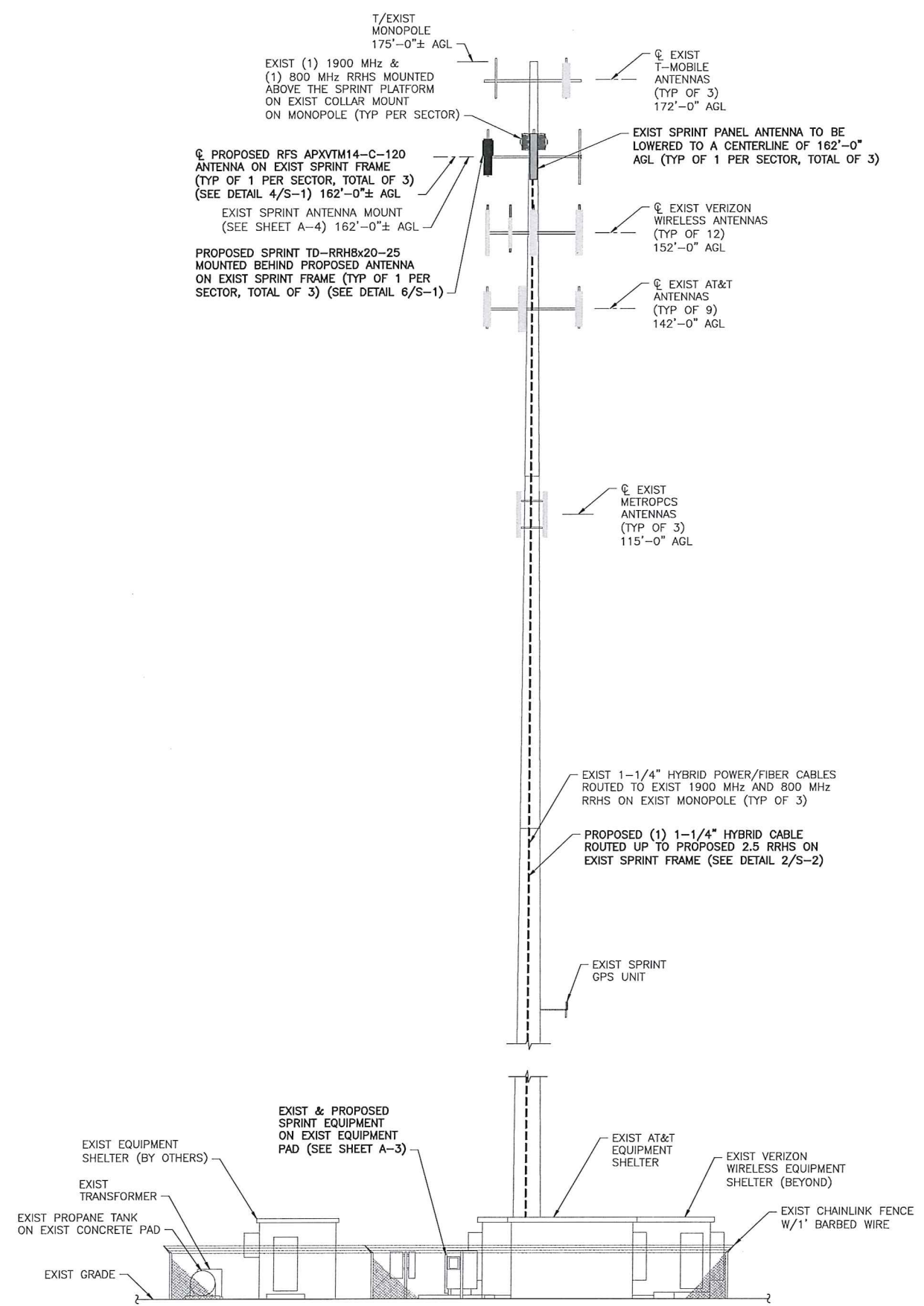
SITE NUMBER:  
 CT33XC603

SITE NAME:  
 THOMASTON/VOICESTREAM

SITE ADDRESS:  
 583 CHAPEL STREET  
 THOMASTON, CT 06787

SHEET TITLE:  
 SITE PLAN

SHEET NO:  
 A-1



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

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

THE EXISTING MOUNT HAS BEEN ANALYZED BY TECTONIC ENGINEERING AND FOUND TO BE ADEQUATE TO SUPPORT THE PROPOSED SPRINT UPGRADE ONCE THE PROPOSED MODIFICATIONS HAVE BEEN COMPLETED AS DETAILED IN THE STRUCTURAL ANALYSIS EVALUATION LETTER DATED 10/13/14.



**Sprint**  
2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC** ENGINEERING & SURVEYING CONSULTANTS P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE: 10/13/14 REVIEWED BY: SMG



SITE NUMBER: CT33XC603  
SITE NAME: THOMASTON/VOICESTREAM  
SITE ADDRESS: 583 CHAPEL STREET THOMASTON, CT 06787

SHEET TITLE: ELEVATION

SHEET NO: A-2



**Sprint**  
 2.5 EQUIPMENT DEPLOYMENT  
 6850 SPRINT PARKWAY  
 OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**  
 • PLANNING  
 • ENGINEERING  
 • SURVEYING  
 • CONSTRUCTION MANAGEMENT  
**TECTONIC Engineering & Surveying Consultants P.C.**  
 1279 Route 300  
 Newburgh, NY 12550  
 Phone: (845) 567-6656  
 Fax: (845) 567-8703  
 www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

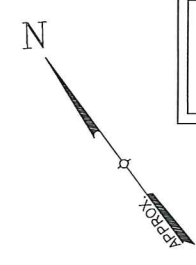
DATE: 10/13/14  
 REVIEWED BY: JMQ



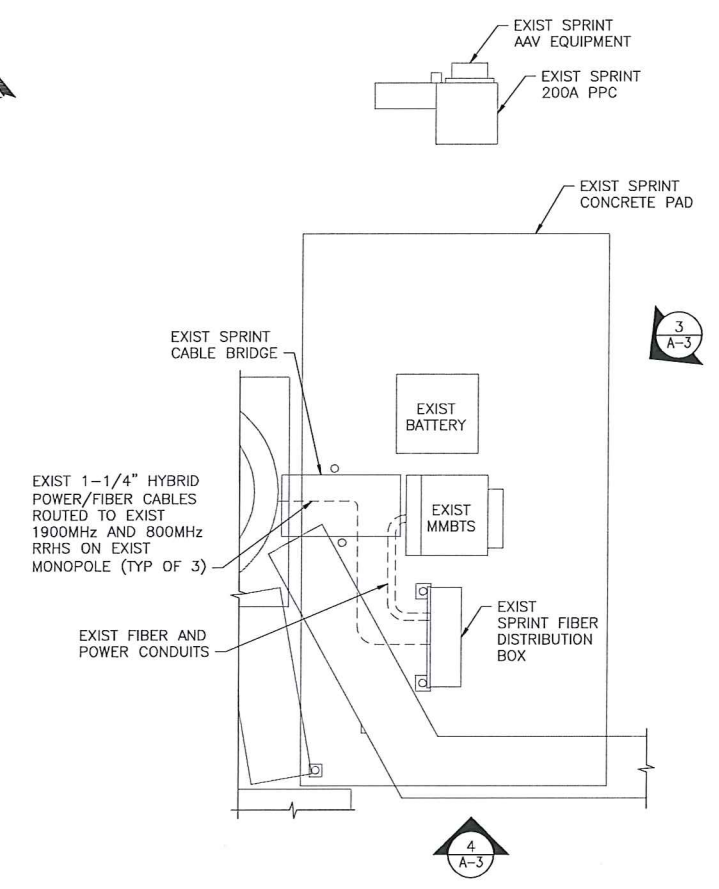
SITE NUMBER:  
 CT33XC603  
 SITE NAME:  
 THOMASTON/VOICESTREAM  
 SITE ADDRESS:  
 583 CHAPEL STREET  
 THOMASTON, CT 06787

SHEET TITLE:  
 ENLARGED EQUIPMENT LAYOUT PLANS

SHEET NO:  
 A-3



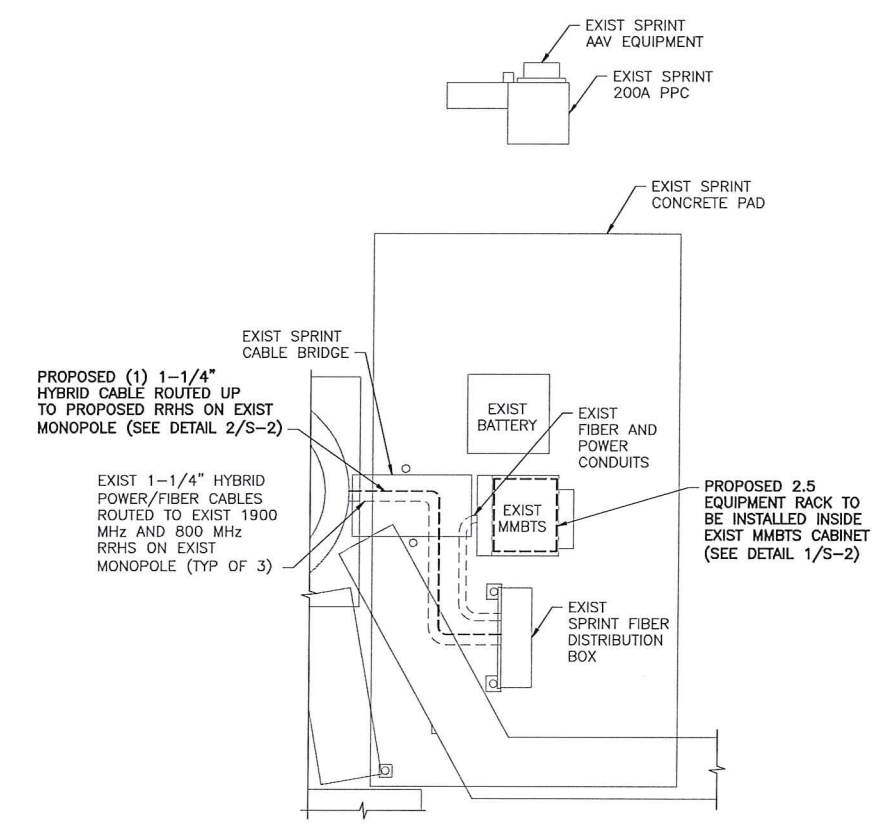
**NORTH NOTE:**  
 NORTH SHOWN HAS BEEN ESTABLISHED USING THE USGS QUADRANGLE 7.5 MINUTE MAPS AND IS APPROXIMATE. VERIFY TRUE NORTH PRIOR TO INSTALLATION OF ANTENNAS.



**1** ENLARGED EQUIPMENT LAYOUT PLAN (EXIST)  
 A-3 SCALE: 3/8" = 1'-0"



**3** EXIST EQUIPMENT PAD  
 A-3 SCALE: NTS

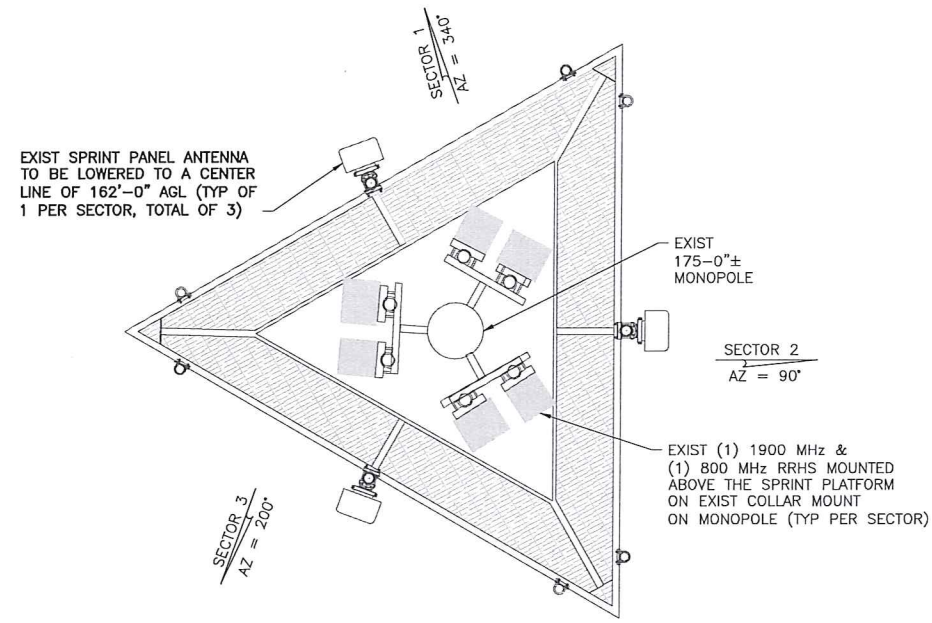


**2** ENLARGED EQUIPMENT LAYOUT PLAN (FINAL)  
 A-3 SCALE: 3/8" = 1'-0"



**4** EXIST FIBER DISTRIBUTION BOX  
 A-3 SCALE: NTS





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

EXIST SPRINT PANEL ANTENNA TO BE LOWERED TO A CENTER LINE OF 162'-0" AGL(TYP OF 1 PER SECTOR, TOTAL OF 3)



EXIST (1) 1900 MHz & (1) 800 MHz RRHS MOUNTED ABOVE THE SPRINT PLATFORM ON EXIST COLLAR MOUNT ON MONOPOLE (TYP PER SECTOR)

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

THE EXISTING MOUNT HAS BEEN ANALYZED BY TECTONIC ENGINEERING AND FOUND TO BE ADEQUATE TO SUPPORT THE PROPOSED SPRINT UPGRADE ONCE THE PROPOSED MODIFICATIONS HAVE BEEN COMPLETED AS DETAILED IN THE STRUCTURAL ANALYSIS EVALUATION LETTER DATED 10/13/14.

**Sprint**  
2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

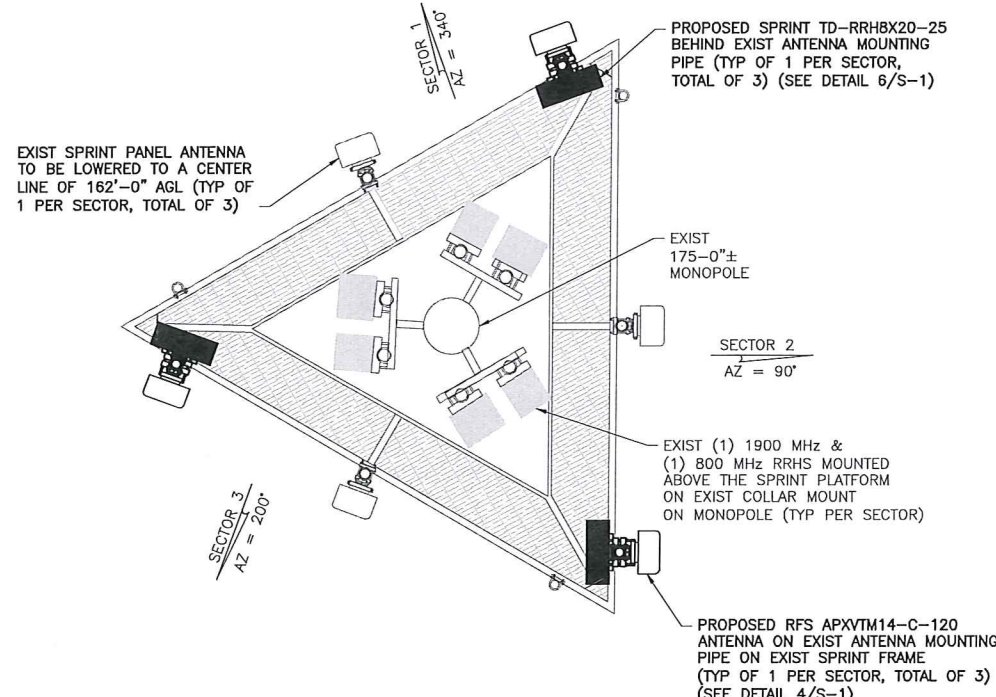
**TECTONIC**  
• PLANNING  
• ENGINEERING  
• SURVEYING  
• CONSTRUCTION MANAGEMENT  
TECTONIC Engineering & Surveying Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

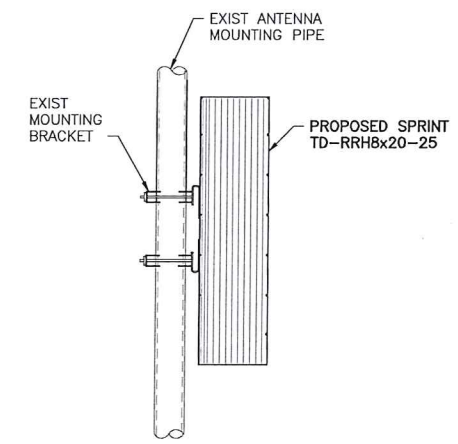
**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP



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



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

**ANTENNA DATA**

Status	Exist (Proposed)	Proposed
Antenna Manufacturer	RFS-CEL WAVE	RFS-CEL WAVE
Antenna Model Number	APXVSP18C-A20	APXVTM14-C-120
Number of Antennas	3	3
Antenna RAD Center	162'-6" (162'-0")	162'-0"
Antenna Azimuth	340/90/200	340/90/200
Antenna RRH Model Number	1900MHz/800MHz RRHS	2.5GHz RRH-V3
Number of RRH	6	3

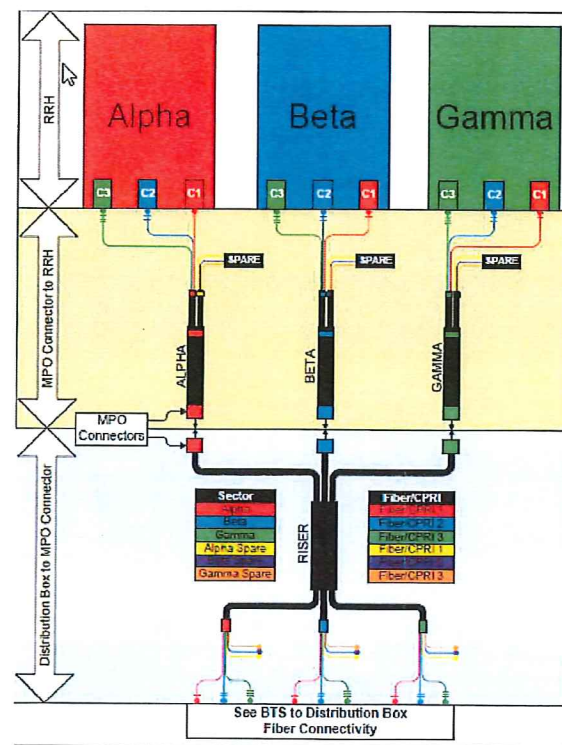
DATE: 10/13/14 REVIEWED BY: JMQ

SITE NUMBER: CT33XC603  
SITE NAME: THOMASTON/VOICESTREAM  
SITE ADDRESS: 583 CHAPEL STREET THOMASTON, CT 06787

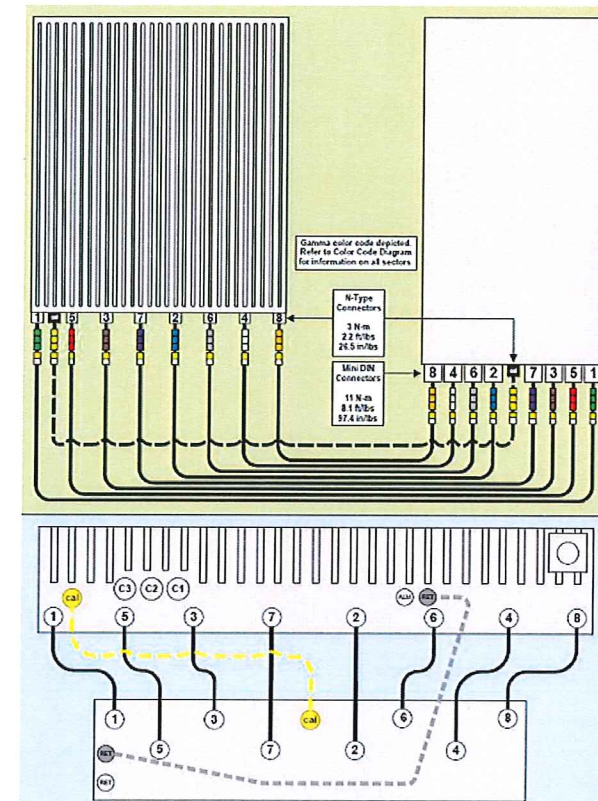
SHEET TITLE: ANTENNA LAYOUT PLANS

SHEET NO: A-4

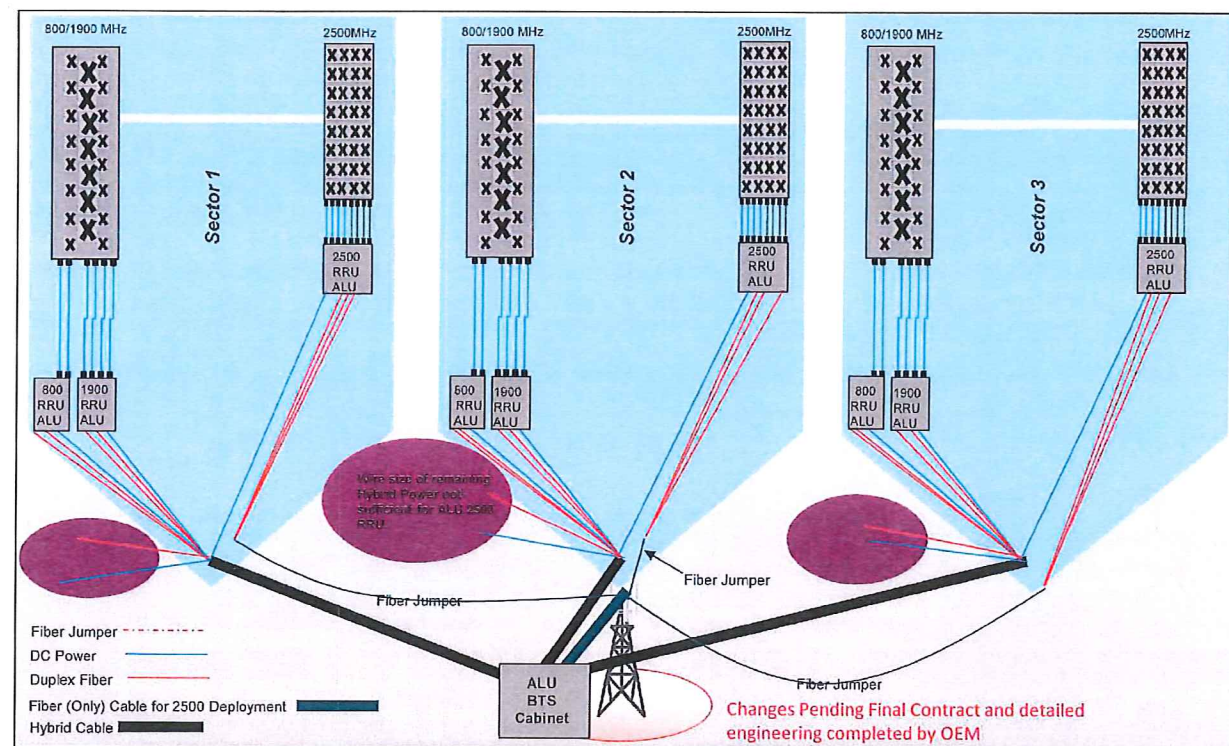




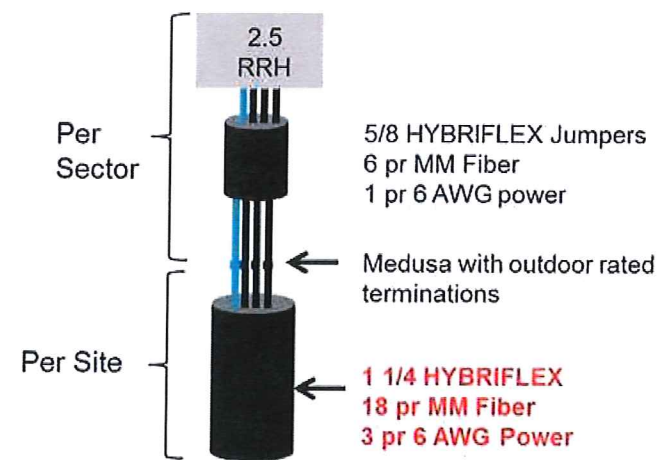
1 2.5 CABLE COLOR CODING  
A-5 SCALE: N.T.S.



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



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



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

**Sprint**

2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**

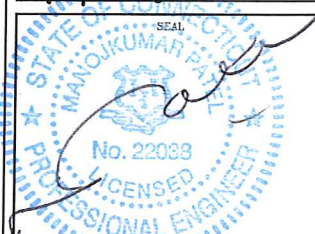
TECTONIC Engineering & Surveying  
Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE	REVIEWED BY
10/13/14	JMC



SITE NUMBER:  
CT33XC603  
SITE NAME:  
THOMASTON/VOICESTREAM  
SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
RAN WIRING DIAGRAM

SHEET NO:  
A-5



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

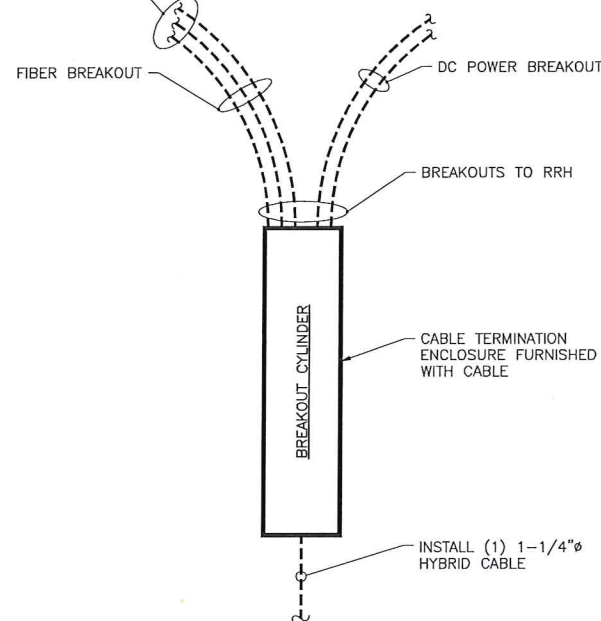


IMPORTANT!! ROTATE THE BAYONET HOUSING CLOCKWISE UNTIL A CLICK SOUND IS HEARD TO ENSURE A GOOD CONNECTION

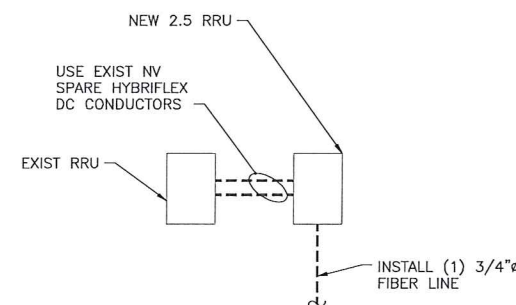


1 HYBRIFLEX RISER/JUMPER CONNECTION DETAILS  
A-6 SCALE: N.T.S.

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



2.5 HYBRID CABLE W/FIBER & DC FEEDERS



FIBER ONLY TRUNK LINES

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

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

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

**Sprint**

2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**

TECTONIC Engineering & Surveying Consultants P.C.

1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703

www.tectonicengineering.com

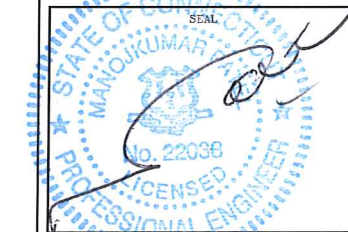
THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE: 10/13/14  
REVIEWED BY: SMQ



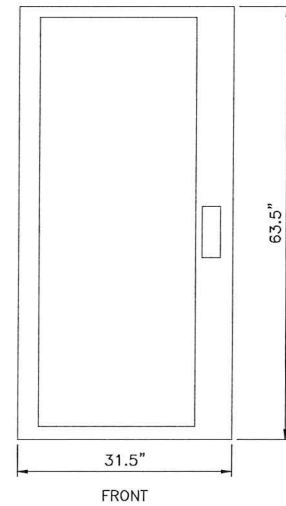
SITE NUMBER:  
CT33XC603

SITE NAME:  
THOMASTON/VOICESTREAM

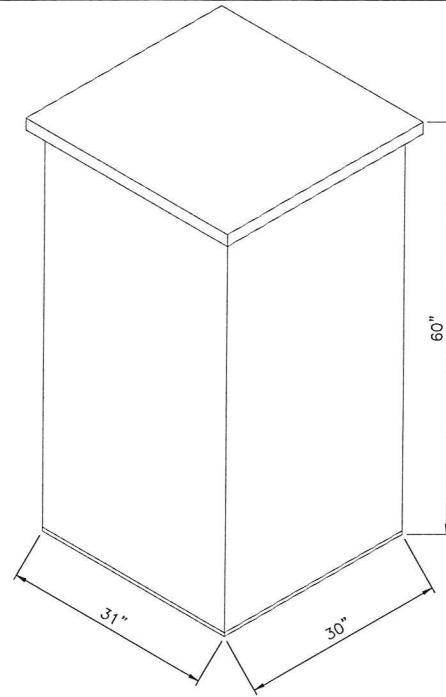
SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
CABLE DETAILS

SHEET NO:  
A-6



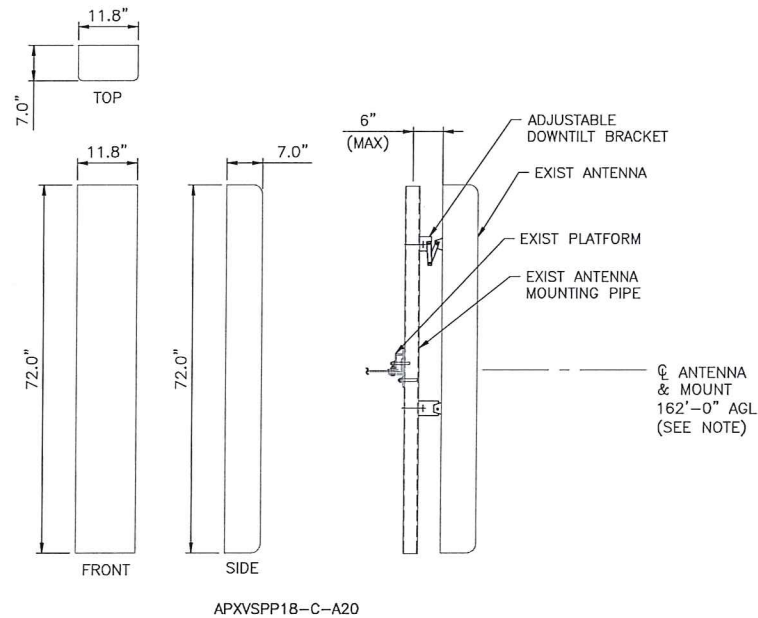
9927 MMBTS MODULAR CELL	
SPECIFICATIONS:	
HEIGHT:	63.5"
WIDTH:	31.5"
DEPTH:	38.0"



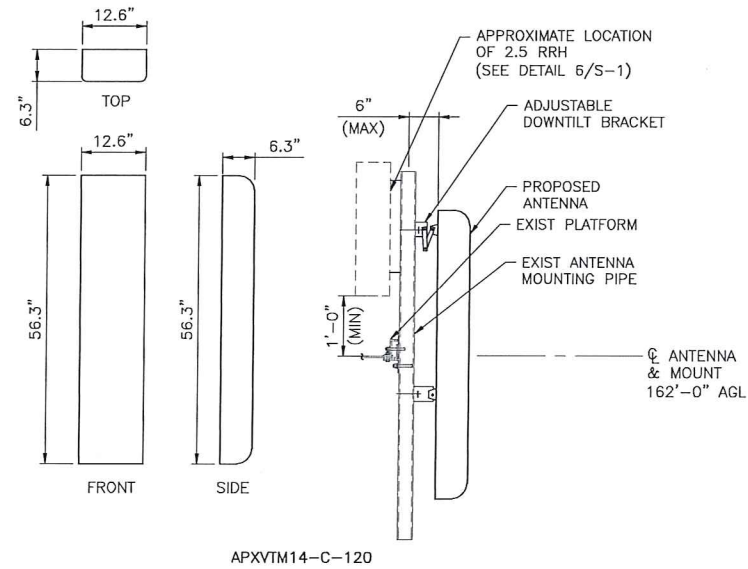
ANDREW 60ECv2	
SPECIFICATIONS:	
HEIGHT:	60"
WIDTH:	31"
DEPTH:	30"
WEIGHT:	2430 LBS.

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

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

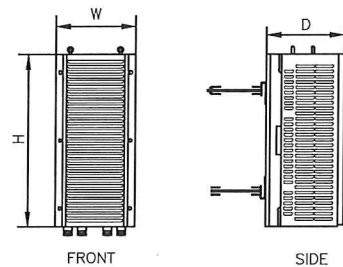


NOTE:  
THE CENTERLINE OF THE EXISTING ANTENNAS IS TO BE LOWERED TO MATCH THE CENTERLINE OF THE LOW PROFILE PLATFORM AS PER THE MOUNT ANALYSIS BY TECTONIC ENGINEERING DATED 10/13/14.

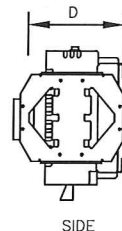
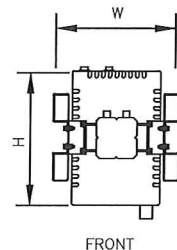


3 (EXIST) ANTENNA DETAIL  
S-1 SCALE: 3/4" = 1'-0"

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

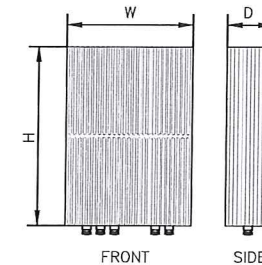


TYPE:	1900 MHz 4x45W
MODEL #:	RRH 1900 4X45 65MHz
HEIGHT:	25.0"
WIDTH:	11.1"
DEPTH:	11.4"
WEIGHT:	±60 LBS.



5 (EXIST) RRH DETAILS  
S-1 SCALE: 1 1/2" = 1'-0"

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



TYPE:	2.5 RRH
MODEL #:	TD-RRHx20-25
HEIGHT:	26.1"
WIDTH:	18.6"
DEPTH:	6.7"
WEIGHT:	±70 LBS

6 (PROPOSED) RRH DETAIL  
S-1 SCALE: 1" = 1'-0"

**Sprint**  
2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**  
• PLANNING  
• ENGINEERING  
• SURVEYING  
• CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Surveying  
Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE	REVIEWED BY
10/13/14	JMQ



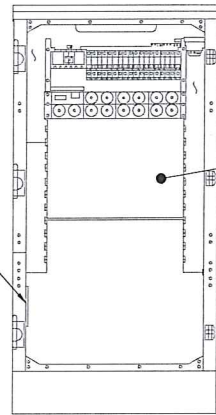
SITE NUMBER:  
CT33XC603  
SITE NAME:  
THOMASTON/VOICESTREAM  
SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
EQUIPMENT DETAILS

SHEET NO:  
S-1



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



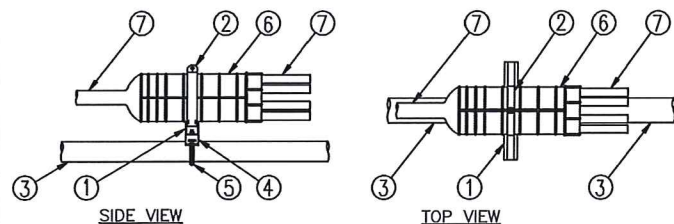
EXIST GROUND  
BAR TO BE UTILIZED

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

FRONT ELEVATION  
(CABINET INTERIOR)

1 MMBTS INTERIOR DETAIL  
S-2 SCALE: N.T.S.

- LEGEND:
1. P1000T-HG UNISTRUT, 12" LONG.
  2. 6" PIPE HANGER.
  3. EXISTING SUPPORT PIPE.
  4. NEW STANDOFF BRACKET, ANDREW PART# 30848-4.
  5. NEW ROUND MEMBER ADAPTER SIZED FOR EXISTING PIPE SUPPORT.
  6. BREAKOUT UNIT.
  7. CABLE.



3 MEDUSA HEAD DETAIL  
S-2 SCALE: NTS

RFS HYBRIFLEX RISER CABLES SCHEDULE

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

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

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

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

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

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

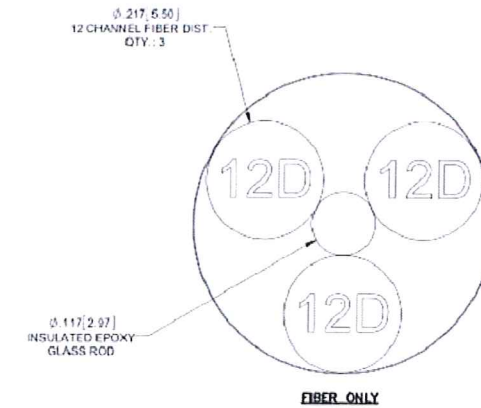
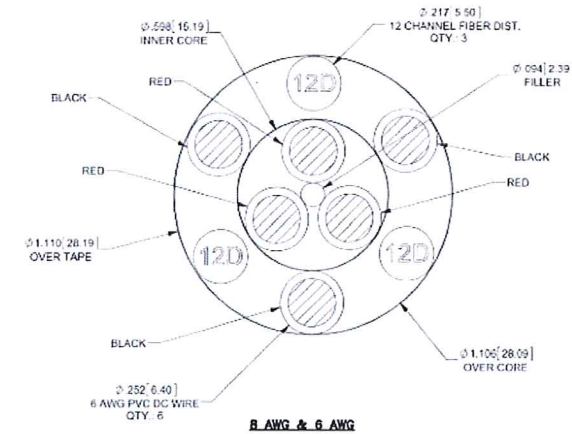
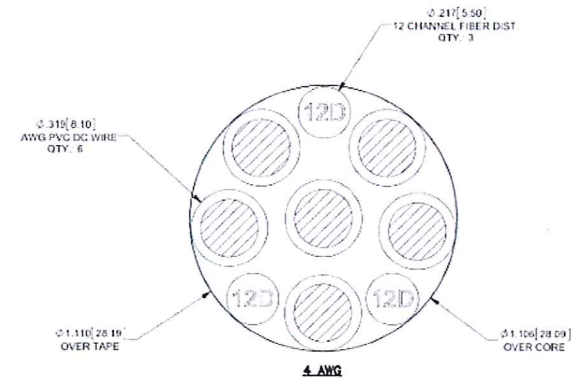
8 AWG Power	Hybrid Jumper cable MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft

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

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

HYBRID CABLE DC CONDUCTOR SIZE GUIDELINE

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



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

**Sprint**  
2.5 EQUIPMENT DEPLOYMENT  
6850 SPRINT PARKWAY  
OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**  
Engineering & Surveying  
Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

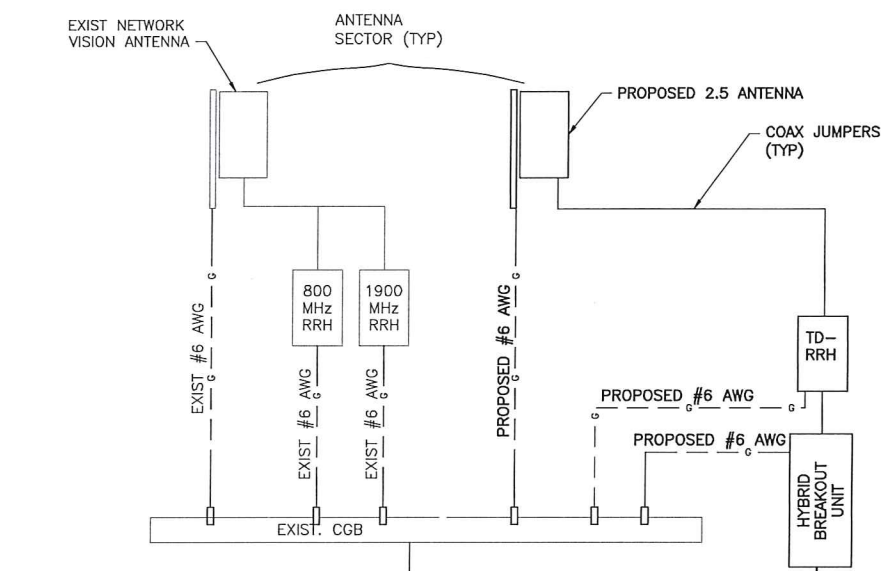
DATE	REVIEWED BY
10/13/14	JMG

STATE OF CONNECTICUT  
JANOUKUMAR SINGH  
No. 22038  
LICENSED PROFESSIONAL ENGINEER

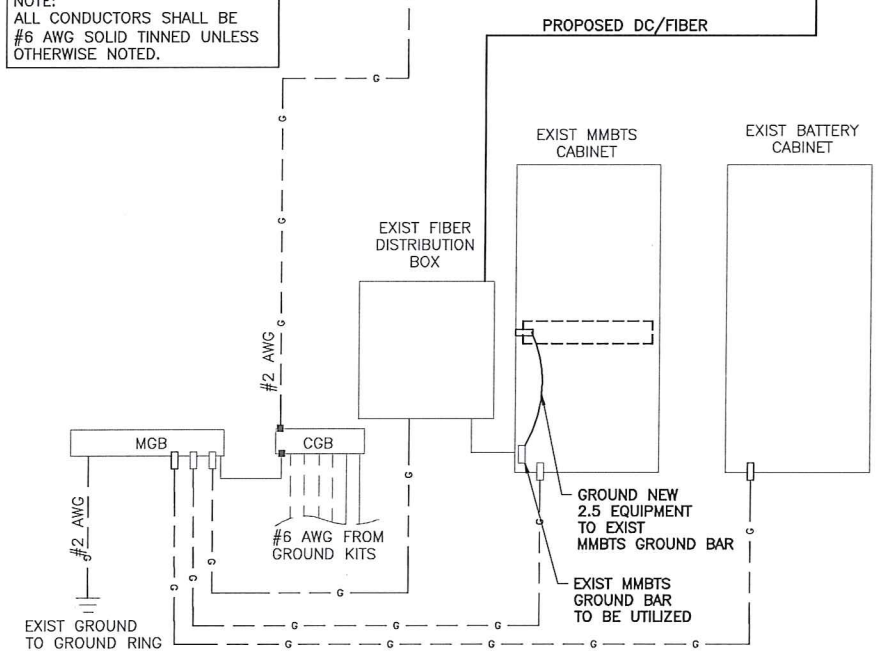
SITE NUMBER:  
CT33XC603  
SITE NAME:  
THOMASTON/VOICESTREAM  
SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
EQUIPMENT  
SCHEMATIC DETAILS

SHEET NO:  
S-2

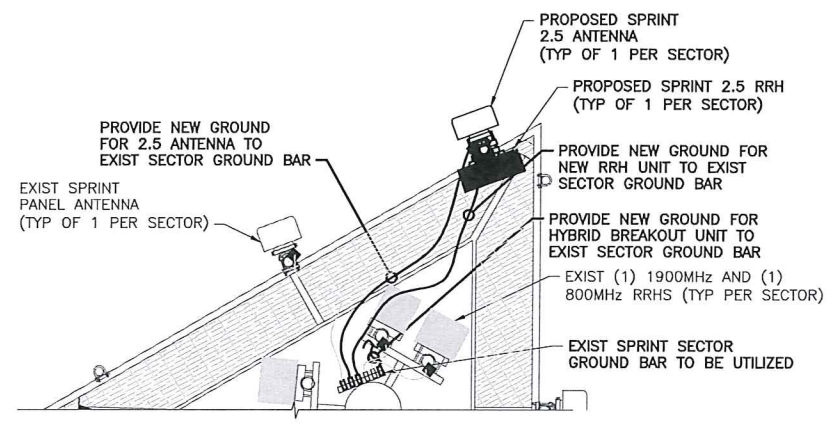


NOTE:  
ALL CONDUCTORS SHALL BE #6 AWG SOLID TINNED UNLESS OTHERWISE NOTED.

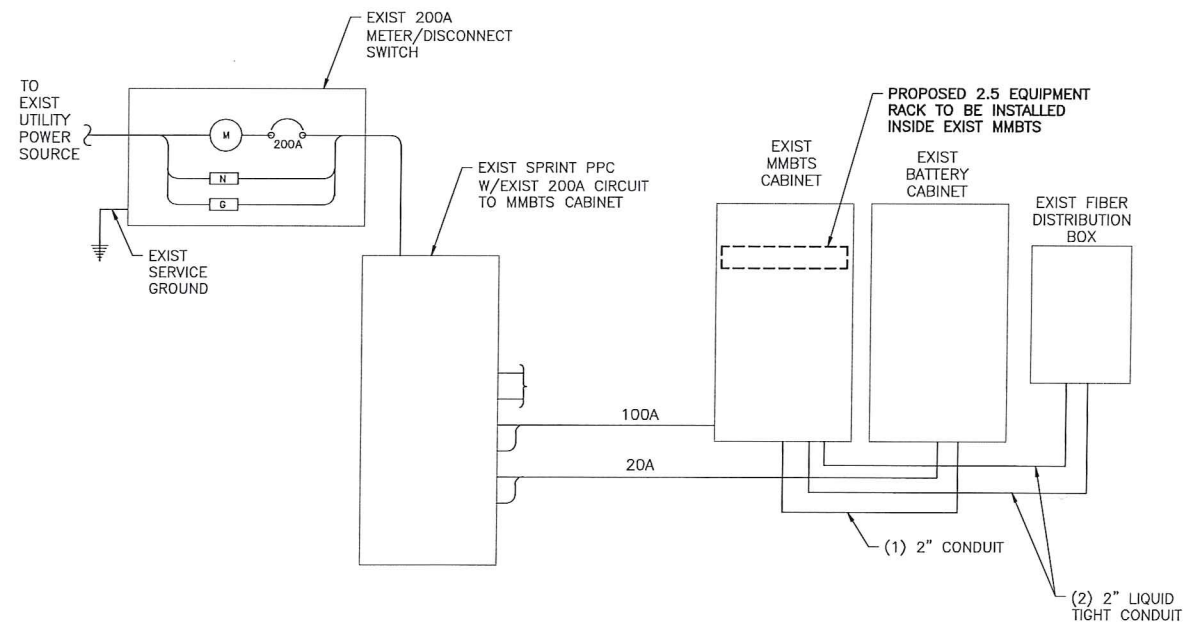


**LEGEND**  
 ■ CADWELD CONNECTION  
 □ MECHANICAL CONNECTION  
 ● COMPRESSION CONNECTION

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



2 TYPICAL ANTENNA GROUNDING PLAN  
E-1 SCALE: NTS



3 TYPICAL ELECTRICAL & TELCO PLAN  
E-1 SCALE: NTS

**Sprint**  
 2.5 EQUIPMENT DEPLOYMENT  
 6850 SPRINT PARKWAY  
 OVERLAND PARK, KANSAS 66251

**CROWN CASTLE**

**TECTONIC**  
 • PLANNING  
 • ENGINEERING  
 • SURVEYING  
 • CONSTRUCTION MANAGEMENT  
**TECTONIC** Engineering & Surveying Consultants P.C.  
 1279 Route 300  
 Newburgh, NY 12550  
 Phone: (845) 567-6656  
 Fax: (845) 567-8703  
 www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

**SUBMITTALS**

PROJECT NO: 7225.CT33XC603

NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE: 10/13/14  
 REVIEWED BY: JMQ

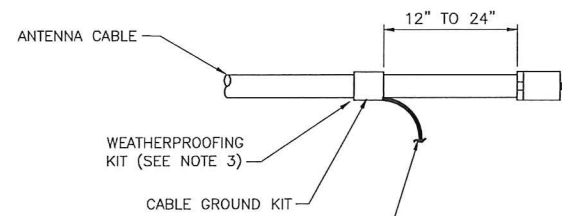


SITE NUMBER:  
CT33XC603  
 SITE NAME:  
THOMASTON/VOICESTREAM  
 SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
ELECTRICAL & GROUNDING PLANS

SHEET NO:  
E-1





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

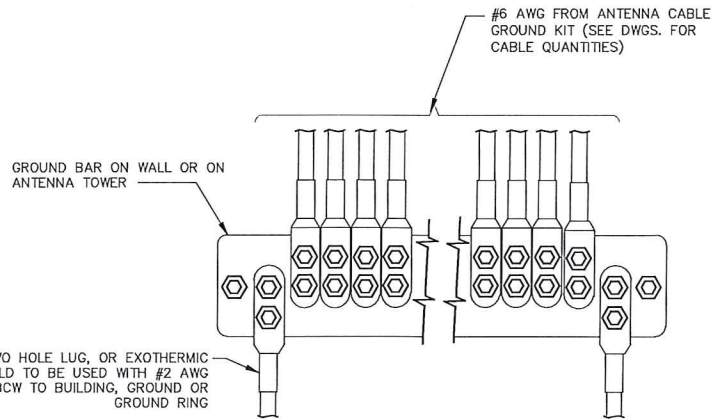
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:

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

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

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



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

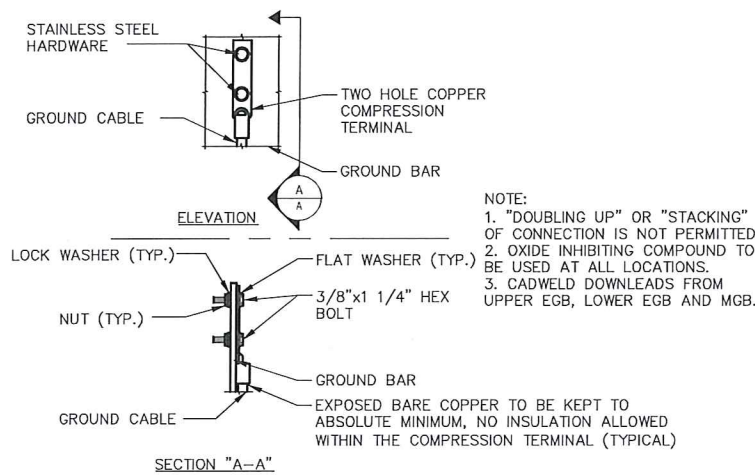
\* - GROUND BARS AT THE BOTTOM OF TOWERS/MONOPOLES SHALL ONLY USE EXOTHERMIC WELDS.

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

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

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

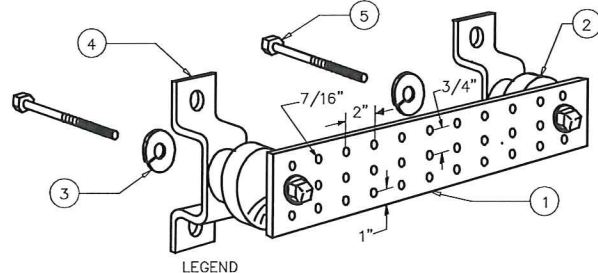
4 ANTENNA GROUND BAR DETAIL  
E-2 SCALE: NTS



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

SECTION "A-A"

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



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

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

3 GROUNDING BAR DETAIL  
E-2 SCALE: NTS

GROUNDING NOTES:

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

PROTECTIVE GROUNDING SYSTEM GENERAL NOTES:

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

ELECTRICAL AND GROUNDING NOTES

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



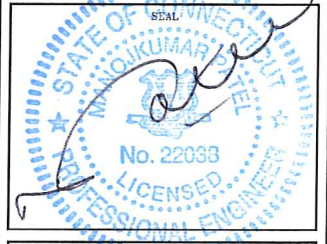
**TECTONIC**  
PLANNING  
ENGINEERING  
SURVEYING  
CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Surveying Consultants P.C.  
1279 Route 300  
Newburgh, NY 12550  
Phone: (845) 567-6656  
Fax: (845) 567-8703  
www.tectonicengineering.com

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF SPRINT COMMUNICATIONS, INC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS			
PROJECT NO: 7225.CT33XC603			
NO	DATE	DESCRIPTION	BY
0	07/11/14	FOR COMMENT	MP
1	10/13/14	FOR CONSTRUCTION	MP

DATE	REVIEWED BY
10/13/14	JMQ



SITE NUMBER:  
CT33XC603

SITE NAME:  
THOMASTON/VOICESTREAM

SITE ADDRESS:  
583 CHAPEL STREET  
THOMASTON, CT 06787

SHEET TITLE:  
GROUNDING DETAILS & NOTES

SHEET NO:  
E-2

Date: **August 08, 2017**

Marianne Dunst  
Crown Castle  
3530 Toringdon Way Suite 300  
Charlotte, NC 28277



Black & Veatch Corp.  
6800 W. 115th Street Suite 2292  
Overland Park, KS 66211  
(913) 458-8145

**Subject:** **Structural Analysis Report**

**Carrier Designation:** **Sprint PCS Co-Locate**  
**Carrier Site Number:** CT33XC603  
**Carrier Site Name:** CT33XC603

**Crown Castle Designation:** **Crown Castle BU Number:** 823530  
**Crown Castle Site Name:** CT364/Chapel St.  
Monopole  
**Crown Castle JDE Job Number:** 450831  
**Crown Castle Work Order Number:** 1440405  
**Crown Castle Application Number:** 399474 Rev. 0

**Engineering Firm Designation:** **Black & Veatch Corp. Project Number:** 194393

**Site Data:** **580 Chapel Street, Thomaston, Litchfield County, CT**  
**Latitude 41° 39' 48.48", Longitude -73° 4' 27.41"**  
**175 Foot - Monopole Tower**

Dear Marianne Dunst,

*Black & Veatch Corp.* is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural ‘Statement of Work’ and the terms of Crown Castle Purchase Order Number 1066673, in accordance with application 399474, revision 0.

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

LC7: Existing + Reserved + Proposed Equipment

**Sufficient Capacity**

Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

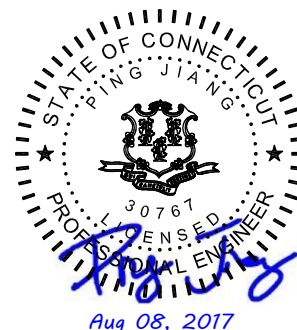
This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor,  $K_{zt}$ , of 1.0 and Risk Category II were used in this analysis. Seismic forces have been evaluated based on site class D with spectral response factors  $S_s$  of 0.186g and  $S_1$  of 0.064g.

We at *Black & Veatch Corp.* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Josh Riley

Respectfully submitted by:

Ping Jiang, P.E.  
Professional Engineer





## TABLE OF CONTENTS

### 1) INTRODUCTION

### 2) ANALYSIS CRITERIA

Table 1 - Proposed Antenna and Cable Information

Table 2 - Existing and Reserved Antenna and Cable Information

Table 3 - Design Antenna and Cable Information

### 3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

3.1) Analysis Method

3.2) Assumptions

### 4) ANALYSIS RESULTS

4.1) Wind Results

Table 5 - Section Capacity (Summary)

Table 6 – Tower Components vs. Capacity

4.2) Seismic Results

4.3) Recommendations

### 5) APPENDIX A

tnxTower Output

### 6) APPENDIX B

Base Level Drawing

### 7) APPENDIX C

Additional Calculations

## 1) INTRODUCTION

This tower is a 175 ft Monopole tower designed by PiRod Inc. in October of 2002. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F.

## 2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Antenna Supporting Structures and Antennas using a 3-second gust wind speed of 93 mph with no ice, 40 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category B with topographic category 1 and crest height of 0 feet. Seismic forces have been evaluated based on site class D with spectral response factors  $S_s$  of 0.186g and  $S_1$  of 0.064g.

**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
162.0	162.0	3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe	1	1-1/4	1
		3	alcatel lucent	TD-RRH8x20-25			

Notes:

- 1) Refer to Appendix B for the proposed feed line layout

**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
172.0	175.0	2	andrew	VHLP2.6	12 3	1 5/8 7/8	1
		1	andrew	ATJB200-A01-007			
	172.0	2	andrew	ETW190VS12UB			
		1	cci tower mounts	Platform Mount [LP 701-1]			
		3	commscope	ATBT-BOTTOM-24V			
		3	commscope	LNx-6515DS-VTM w/ Mount Pipe			
		3	ems wireless	RR90-17-02DP w/ Mount Pipe			
		168.0	1	bird technologies group			
1	lone star electronics		LS-230C				
168.0	171.0	1	lone star electronics	LS-230C	6	7/8	1
	168.0	1	cci tower mounts	Side Arm Mount [SO 701-1]			
162.0	162.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	3	1 1/4	1
		3	alcatel lucent	PCS 1900MHz 2x40W			
		1	cci tower mounts	Platform Mount [LP 712-1]			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
152.0	152.0	3	antel	BXA-171085-12BF w/ Mount Pipe	18	1 5/8	1
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe			
		6	antel	LPA-80080/4CF w/ Mount Pipe			
		1	cci tower mounts	Platform Mount [LP 403-1]			
		3	kathrein	742 213 w/ Mount Pipe	1	1 5/8	2
		3	alcatel lucent	RRH2x40-AWS			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
142.0	143.0	1	andrew	APTDC-BDFDM-DB	12	1 5/8 3/8 5/8	1
		3	ericsson	RRUS 11 B12			
		3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		6	powerwave technologies	7770.00 w/ Mount Pipe			
		6	powerwave technologies	LGP2140X			
		3	ericsson	RRUS 11			
		1	raycap	DC6-48-60-18-8F			
	142.0	1	cci tower mounts	Miscellaneous [NA 507-1]			
	1	crown mounts	Platform Mount [LP 303-1]				
115.0	115.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1 5/8	3
50.0	50.0	1	crown mounts	Side Arm Mount [SO 701-1]	1	1/2	1
		1	pctel	GPS-TMG-HR-26NCM			

- Notes:  
 1) Existing Equipment  
 2) Reserved Equipment  
 3) Abandoned equipment; 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)
172	172	12	andrew	RR65-19-00XP	12	1-5/8
162	162	12	andrew	RR65-19-00XP	12	1-5/8
152	152	12	andrew	RR65-19-00XP	12	1-5/8
142	142	12	andrew	RR65-19-00XP	12	1-5/8
125	125	3	unknown	Whip Antennas	3	1-5/8



### 3) ANALYSIS PROCEDURE

**Table 4 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Engineering, Inc.	3462674	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	PiRod, Inc.	3464631	CCISITES
4-TOWER MANUFACTURER DRAWINGS	PiRod, Inc.	3462695	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Black & Veatch Corp.	6522290	CCISITES

#### 3.1) Analysis Method

tnxTower (version 7.0.5.1), 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 wind loading Exposure Category/Topographic Category for this site have been analyzed and determined by the tower owner. Black & Veatch does not assume any responsibility for its accuracy.
- 5) This analysis was performed under the assumption that all information provided to Black & Veatch is current and correct. This is to include site data, existing/proposed appurtenance loading, tower/foundation details, and geotechnical data. The existing/proposed loading on the structure is based on CAD level drawings and carrier applications provided by the owner. If any of this information is not current and correct, this report should be considered obsolete and further analysis will be required.

This analysis may be affected if any assumptions are not valid or have been made in error. Black & Veatch Corp. should be notified to determine the effect on the structural integrity of the tower.

### 4) ANALYSIS RESULTS

#### 4.1) Wind Results

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

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	175 - 164.25	Pole	TP26x22x0.25	1	-4.16	1453.99	4.4	Pass
L2	164.25 - 129.67	Pole	TP34.0625x24.4135x0.3125	2	-17.50	2385.49	31.7	Pass
L3	129.67 - 96	Pole	TP41.75x32.452x0.375	3	-25.92	3492.32	42.5	Pass
L4	96 - 63.17	Pole	TP49.0625x39.8421x0.375	4	-35.79	3911.19	53.2	Pass
L5	63.17 - 31.17	Pole	TP56.125x46.9602x0.375	5	-47.03	4259.45	60.6	Pass
L6	31.17 - 0	Pole	TP62.9375x53.8475x0.375	6	-61.53	4606.06	67.4	Pass
							Summary	

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						Pole (L6)	67.4	Pass
						Rating =	67.4	Pass

**Table 6 - Tower Component Stresses vs. Capacity – LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	55.2	Pass
2	Base Plate	0	-	Pass
1	Base Foundation	0	65.7	Pass
1	Base Foundation Soil Interaction		59.4	Pass

**4.2) Seismic Results**

Tower and foundation have been analyzed based on the seismic criteria outlined in section 2 of this report. Based on the analysis, seismic loading is not governing the tower and foundation stress. Wind loading governing the tower and foundation stress.

<b>Structure Rating (max from all components) =</b>	<b>67.4%</b>
---	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) For a PiRod monopole, the governing stress of the connection will be the connection bolts unless the tower section or connection bolts fail.

**4.3) Recommendations**

The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. 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: CT33XC603

Thomaston/Voicestream  
583 Chapel Street  
Thomaston, CT 06787

**September 15, 2017**

**EBI Project Number: 6217004101**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>7.39 %</b>



September 15, 2017

SPRINT

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

## Emissions Analysis for Site: **CT33XC603 – Thomaston/Voicestream**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **583 Chapel Street, Thomaston, 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.

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



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **583 Chapel Street, Thomaston, 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, 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) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **RFS APXVSP18-C-A20** and the **RFS APXVTM14-C-120** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antenna mounting height centerlines of the proposed antennas are **162 feet** above ground level (AGL) for **Sector A**, **162 feet** above ground level (AGL) for **Sector B** and **162 feet** above ground level (AGL) for Sector C.
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



## SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
Make / Model:	RFS APXVSPPI8-C-A20	Make / Model:	RFS APXVSPPI8-C-A20	Make / Model:	RFS APXVSPPI8-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	<b>162 feet</b>	Height (AGL):	<b>162 feet</b>	Height (AGL):	<b>162 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):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	7,537.38	ERP (W):	7,537.38	ERP (W):	7,537.38
Antenna A1 MPE%	<b>1.26 %</b>	Antenna B1 MPE%	<b>1.26 %</b>	Antenna C1 MPE%	<b>1.26 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
Make / Model:	RFS APXVTM14-C-120	Make / Model:	RFS APXVTM14-C-120	Make / Model:	RFS APXVTM14-C-120
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	<b>162 feet</b>	Height (AGL):	<b>162 feet</b>	Height (AGL):	<b>162 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):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	<b>0.92 %</b>	Antenna B2 MPE%	<b>0.92 %</b>	Antenna C2 MPE%	<b>0.92 %</b>

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	<b>2.18 %</b>
Thomaston FD	0.18 %
Thomaston PD	0.03 %
Litch. Co. FD	0.18 %
CT State Police	0.06 %
T-Mobile	0.58 %
MetroPCS	0.57 %
Verizon Wireless	2.44 %
AT&T	1.17 %
<b>Site Total MPE %:</b>	<b>7.39 %</b>

SPRINT Sector A Total:	2.18 %
SPRINT Sector B Total:	2.18 %
SPRINT Sector C Total:	2.18 %
<b>Site Total:</b>	<b>7.39 %</b>

SPRINT _ Max Values per Frequency Band / Technology Per Sector	# 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	437.55	162	0.65	850 MHz	567	0.11%
Sprint 850 MHz LTE	2	437.55	162	1.29	850 MHz	567	0.23%
Sprint 1900 MHz (PCS) CDMA	5	622.47	162	4.60	1900 MHz (PCS)	1000	0.46%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	162	4.60	1900 MHz (PCS)	1000	0.46%
Sprint 2500 MHz (BRS) LTE	8	778.09	162	9.20	2500 MHz (BRS)	1000	0.92%
						<b>Total:</b>	<b>2.18%</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:	2.18 %
Sector B:	2.18 %
Sector C:	2.18 %
SPRINT Maximum Total (per sector):	2.18 %
Site Total:	7.39 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **7.39 %** 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.