



2255 Sewell Mill Road, Suite 130
Marietta, Georgia 30062
Phone: (678) 444-4463
Fax: (678) 444-4472
www.infinigy.com

May 19, 2013

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Attn: Ms. Melanie Bachman, Executive Director

Re: 525 Orange Center Road, Orange, CT

Dear Ms. Bachman,

On behalf of Sprint Nextel Corporation ("Sprint"), enclosed for filing are an original and two (2) copies of Sprint's Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site.

I also enclose herewith a check in the amount of \$625.00 representing the fee for the Notice of Exempt Modification.

If you have any questions, please feel free to contact me.

Thank you,

By: _____

Name: David Weisman
Vertical Development LLC, an authorized representative of Sprint Nextel
Vertical Development LLC
20 Commercial Street
Branford, CT 06405
Phone – 401-743-9011
Fax – 401-633-6202
DWeisman@verticaldevelopmentllc.com

CC: Mr. James Zeoli, First Selectman
Orange Town Hall
617 Orange Center Road
Orange, CT 06477

Notice of Exempt Modification

525 Orange Center Road, Orange, CT

Sprint Nextel Corporation ("Sprint") submits this Notice of Exempt Modification to the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-73 and 16-50j-72(b) of the Regulations of Connecticut State Agencies ("Regulations") in connection with Sprint's planned modification of antennas and associated equipment on an existing 160' monopole tower located at 525 Orange Center Road in the Town of Orange. More particularly, Sprint plans to upgrade this site by adding 4G LTE technology to its facilities. The proposed modifications will not increase the tower height, extend the boundaries of the tower site, cause a significant adverse change or alteration in the physical or environmental characteristics of the site, increase noise levels at the tower site boundary by six (6) decibels, add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes, or impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

To better meet the growing voice and data demands of its wireless customers, Sprint is upgrading their network nationwide to include 4G technology, which will provide faster service and better overall performance. Pursuant to the 4G upgrade at this site, Sprint will add antennas and install RRHs and notch filters on the tower, and install related equipment within its equipment shelter in the fenced tower compound.

The 160' monopole located 525 Orange Center Road in the Town of Orange (lat. 41° 15' 25", long. 73° 01' 07.7") is owned by the Town of Orange. It is in an approximately 6,500+ square foot fenced compound. Sprint currently has six (6) antennas (two (2) per sector) with a centerline of 136' installed on the tower. Sprint's

base station equipment is located within its equipment shelter in the fenced tower compound. A site plan depicting this is attached.

Sprint plans to add three (3) RFS APXVSPP18-C-A20 antennas, one (1) per sector, and (3) RFS APXVTM14-C-120 antennas, one (1) per sector, all with a centerline of 136'. Connected to each new RFS APXVSPP18-C-A20 antenna will be one (1) ALU 800 MHz RRH with one (1) ALU 800 MHz notch filter attached to it and one (1) ALU 1900 MHz RRH, all of which will be located behind the antenna on a new ring mount, and connected to each new RFS APXVTM14-C-120 will be (1) Alcatel Lucent TD-RRH8X20 RRH, all of which will be located behind the antenna. After the new antennas have been tested and are deployed on-air, the six (6) previously existing antennas will be removed. The height of the monopole will not need to be increased. Sprint also plans to install a new fiber junction box and a new Ciena equipment enclosure, add batteries to its battery cabinet and to replace the existing BTS cabinet, within its equipment shelter within the tower compound's fenced border. The compound's boundaries will not need to be extended. The proposed modifications will not cause a significant adverse change or alteration in the physical or environmental characteristics of the site, since it is already a telecommunications installation and the modifications will be compatible with this. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

The proposed modifications will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Connecticut General Statutes § 22a-162. A radio frequency emissions analysis prepared by EBI Consulting indicates that the proposed final configuration (including other carriers on the tower) will emit 49.192% of the allowable FCC established general public limit sampled at the ground level (see the 5th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, May 13, 2014). Emission values for the Sprint antennas have been calculated from the sample point, which is the top of a six foot person standing at the base of the tower. Emissions values

for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 3rd and 4th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, May 13, 2014). The information used in the 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 (see the second page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, May 13, 2014).

The proposed modifications will not impair the structural integrity of the facility. Sprint commissioned Infinigy Engineering to perform a structural analysis of the tower to verify that it can support Sprint's proposed loading. The results of the analysis show that the tower passed at 90.7% (see the first page of Structural Analysis Report, May 7, 2014).

In conclusion, Sprint's proposed modifications do not constitute a modification subject to the Council's review because Sprint will not change the height of the tower, will not extend the boundaries of the compound, will not cause a significant adverse change or alteration in the physical or environmental characteristics of the site, will not increase the noise levels at the site, will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards, and will not impair the structural integrity of the facility. Therefore, Sprint respectfully requests that the Council acknowledge that this Notice of Exempt Modification meets the Council's exemption criteria.

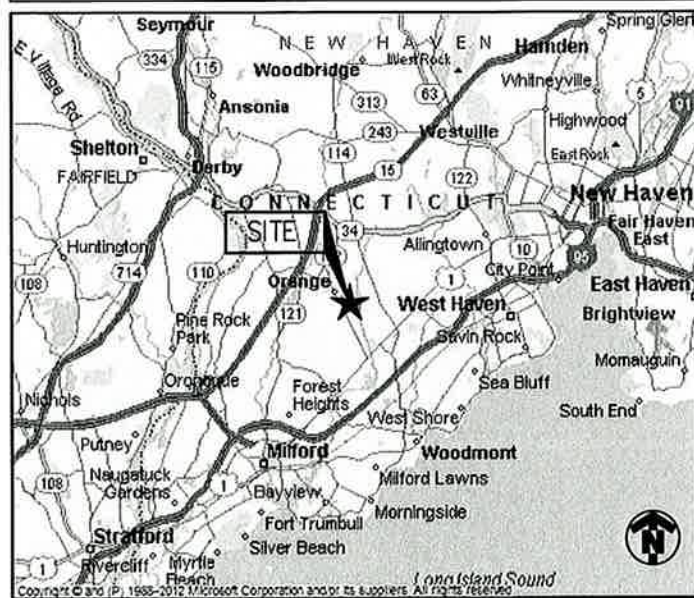
SHEET INDEX	
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	COMPOUND SITE PLAN & ELEVATION
C3	EQUIPMENT SITE PLANS
C4	EQUIPMENT DETAILS
C5	ANTENNA PLANS
C6	ANTENNA CABLE RISER & GPS DETAILS
C7	RFDS
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C9	FIBER DISTRIBUTION BOX DETAILS
C10	DETAILS
E1	UTILITY SITE PLAN
E2	ELECTRICAL & GROUNDING DETAILS
E3	DETAILS
E4	GROUNDING PLAN AND DETAILS

DRIVING DIRECTIONS

DEPART FROM SPRINT:
1 INTERNATIONAL BLVD MAHWAH, NJ 07430

1. DEPART INTERNATIONAL BLVD TOWARD CHURCHHILL RD.
2. EXIT ROUNDABOUT AT 3RD EXIT ONTO LEISURE LN.
3. TAKE RAMP RIGHT ON TO RT-17 NORTH.
4. BEAR RIGHT ONTO I-287 NORTH/RT-17 NORTH.
5. TAKE RAMP RIGHT FOR I-87 SOUTH/I-287 TOWARD NEW YORK CITY/TAPPAN ZEE BRIDGE.
6. KEEP LEFT ONTO I-87 EAST/CROSS WESTCHESTER EXPY.
7. TAKE RAMP AND FOLLOW SIGNS FOR I-95 NORTH.
8. AT EXIT #38, TAKE RAMP RIGHT FOR MILFORD PKWY TOWARD MERRITT AND W. CROSS PKWYS.
9. AT EXIT #59B/US-1 NORTH ONTO BOSTON POST RD (US-1) - GO 2.5 mi.
10. BEAR LEFT ONTO ORANGE CENTER ROAD (CT-152) - GO 1.2 mi.
11. ARRIVE AT 525 ORANGE CENTER RD. ORANGE (ON RIGHT).

VICINITY MAP



SPRINT SITE NAME
BAM ORANGE CENTER ROAD

SPRINT SITE NAME
BAM ORANGE CENTER ROAD

SPRINT SITE NUMBER
CT23XC122

SITE ADDRESS
ORANGE CENTER RD
ORANGE, CT 06477

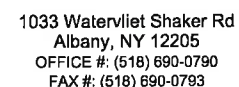
STRUCTURE TYPE
MONOPOLE



PROJECT TEAM	
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Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251



INFINIGY  Design.
Build.
Deliver.

SCOPE OF WORK: • INSTALL NEW ANTENNAS/RRH'S ON EXISTING TOWER

- | | |
|--|---|
| <ul style="list-style-type: none"> ● HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED ● FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION ● FACILITY HAS NO PLUMBING OR REFRIGERANTS ● THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS ● ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. CABINETS, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR | <ul style="list-style-type: none"> ● INSTALL NEW 9929 EQUIPMENT CABINET TO REPLACE EXISTING ● REMOVE EXISTING CDMA ANTENNAS AND COAX CABLES ● INSTALL (4) BATTERIES IN EXISTING BATTERY CABINET ● REPLACE EXISTING GPS IF REQUIRED ● INSTALL (27) JUMPER CABLES ● INSTALL (1) FIBER CABLE |
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PROJECT SUMMARY

<u>SITE NAME:</u>	BAM ORANGE CENTER ROAD	
<u>SITE NO.:</u>	CT23XC122	
<u>SITE ADDRESS:</u>	ORNAGE CENTER RD ORANGE, CT 06477	
<u>COUNTY:</u>	NEW HAVEN	
<u>SITE COORDINATES:</u>		
<u>LATITUDE:</u>	41° 16' 25.31" N	(NAD 83)
<u>LONGITUDE:</u>	73° 1' 7.77" W	(NAD 83)
<u>GROUND ELEV.:</u>	±195'	(AMSL)
<u>JURISDICTION:</u>	CONNECTICUT SITING COUNCIL & THE TOWN OF ORANGE	
<u>TELCO PROVIDER:</u>	VERIZON - (855) 277-5195	
<u>FIBER PROVIDER:</u>	AT&T - (800) 288-2020	
<u>LAND OWNER:</u>	TOWN OF ORANGE 617 ORANGE CENTER ROAD ORANGE, CT 06477	
<u>CONTACT:</u>	PROJECT MANAGER:	JOSH MOSTOW (201) 236-9059
	CONSTRUCTION MANAGER:	MIKE CALLAHAN (860) 919-7278
<u>APPLICANT:</u>	SPRINT 1 INTERNATIONAL BLVD. MAHWAH, NJ 07495	
<u>CONSTRUCTION MANAGER:</u>	GARY WOOD (860) 940-9168 GARY.WOOD@SPRINT.COM	
<u>OEM:</u>	ALCATEL LUCENT 1 ROBBINS ROAD WESTFORD, MA 01886	
<u>CONTACT:</u>	ISAM ELHALWANI (617) 851-6133	
<u>ENGINEER:</u>	INFINIGY 1033 WATERVLJET SHAKER RD ALBANY, NY 12205	
<u>CONTACT:</u>	PAUL FANOS - (518) 690-0790	
<u>BUILDING CODE:</u>	2003 INTERNATIONAL BUILDING CODE 2005 CONNECTICUT BUILDING CODE W/ 2009 AMENDMENT UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE LOCAL BUILDING CODE CITY/COUNTY ORDINANCES	
<u>ELECTRICAL CODE:</u>	NATIONAL ELECTRICAL CODE (LATEST EDITION)	

ENGINEER'S LICENSE

CERTIFICATION STATEMENT:

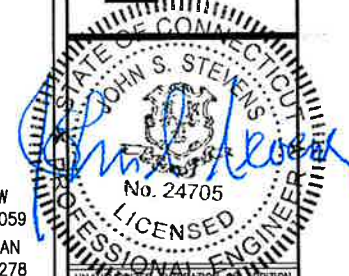
CERTIFICATION STATEMENT:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

APPROVALS

CONST. MANAGER	DATE
RF	DATE
LEASING/SITE ACQ.	DATE
IN-MARKET CONSTRUCTION LEAD	DATE
SITE OWNER	NAME/COMPANY: TITLE: DATE

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793



UNCLASSIFIED//FOR OFFICIAL USE ONLY					
TO THIS DOCUMENT IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS					
1	REVISED PER COMMENTS	SKB	5/14/11		
0	ISSUED FOR REVIEW	AHS	4/17/11		
No.	Submittal / Revision	App'd	Date		

Drawn: AHS Date: 4/17/14
Designed: AGF Date: 4/17/14
Checked: AGF Date: 4/17/14

Project Number 294-036

Project Title

**BAM ORANGE
CENTER ROAD
CT23XC122**

ORANGE CENTER RD
ORANGE, CT 06477

Prepared For _____



Drawing Scale:	
AS NOTED	

Date:
5/14/14

Drawing Title

TITLE SHEET

Drawing Number

Drawing Number

GENERAL NOTES		PROJECT INFORMATION																																											
PART 1 – GENERAL REQUIREMENTS 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING: A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT. C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC"). D. AND NFPA 101 (LIFE SAFETY CODE). E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM). F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).		THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT FACILITY AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS COMMUNICATIONS SERVICE. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION. SPRINT MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.																																											
1.2 DEFINITIONS: A: WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS. B: COMPANY: SPRINT NEXTEL CORPORATION C: ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT. D: CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK. E: THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.		LEGEND <table><tr><th>SYMBOL</th><th>DESCRIPTION</th></tr><tr><td></td><td>CIRCUIT BREAKER</td></tr><tr><td></td><td>NON-FUSIBLE DISCONNECT SWITCH</td></tr><tr><td></td><td>FUSIBLE DISCONNECT SWITCH</td></tr><tr><td></td><td>SURFACE MOUNTED PANEL BOARD</td></tr><tr><td></td><td>TRANSFORMER</td></tr><tr><td></td><td>KILOWATT HOUR METER</td></tr><tr><td></td><td>JUNCTION BOX</td></tr><tr><td></td><td>PULL BOX TO NEC/TELCO STANDARDS</td></tr><tr><td></td><td>UNDERGROUND UTILITIES</td></tr><tr><td></td><td>DENOTES REFERENCE NOTE</td></tr><tr><td></td><td>EXOTHERMIC WELD CONNECTION</td></tr><tr><td></td><td>MECHANICAL CONNECTION</td></tr><tr><td></td><td>GROUND ROD</td></tr><tr><td></td><td>GROUND ROD WITH INSPECTION SLEEVE</td></tr><tr><td></td><td>GROUND BAR</td></tr><tr><td></td><td>PIN AND SLEEVE RECEPTACLE</td></tr><tr><td></td><td>120AC DUPLEX RECEPTACLE</td></tr><tr><td></td><td>GROUND CONDUCTOR</td></tr><tr><td></td><td>REPRESENTS DETAIL NUMBER</td></tr><tr><td></td><td>REF. DRAWING NUMBER</td></tr></table>		SYMBOL	DESCRIPTION		CIRCUIT BREAKER		NON-FUSIBLE DISCONNECT SWITCH		FUSIBLE DISCONNECT SWITCH		SURFACE MOUNTED PANEL BOARD		TRANSFORMER		KILOWATT HOUR METER		JUNCTION BOX		PULL BOX TO NEC/TELCO STANDARDS		UNDERGROUND UTILITIES		DENOTES REFERENCE NOTE		EXOTHERMIC WELD CONNECTION		MECHANICAL CONNECTION		GROUND ROD		GROUND ROD WITH INSPECTION SLEEVE		GROUND BAR		PIN AND SLEEVE RECEPTACLE		120AC DUPLEX RECEPTACLE		GROUND CONDUCTOR		REPRESENTS DETAIL NUMBER		REF. DRAWING NUMBER
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1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.																																													
1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.																																													
1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION. A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.																																													
1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.																																													
1.7 NOTICE TO PROCEED: A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED. B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT NEXTEL WITH AN OPERATIONAL WIRELESS FACILITY.																																													
PART 2 – EXECUTION 2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.																																													
2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.																																													
2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HERewith, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.																																													
2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY SPRINT NEXTEL TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.		PART 6 – TRENCHING AND BACKFILLING 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED. A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY. B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND. C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE. D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD. E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE. F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED. G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ICE, SNOW, ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ICE, SNOW ROOTS, SOD, RUBBISH, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTILING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.																																											
2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.																																													
2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.																																													
PART 3 – RECEIPT OF MATERIAL & EQUIPMENT 3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR SPRINT NEXTEL PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL: A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT. B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES. C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT. D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT NEXTEL OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH. E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING. F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.																																													
PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION 4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.																																													
4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.																																													
4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION. A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY. B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.																																													
4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.																																													
4.5 CONDUCT TESTING AS REQUIRED HEREIN.																																													
PART 5 – TESTS AND INSPECTIONS 5.1 TESTS AND INSPECTIONS: A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION. B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS. C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS. D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES. E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN. F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS. HYBRIFLEX TESTING NOT LIMITED TO COAX SWEEPS. G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.																																													

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Deliver.

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Albany, NY 12205
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Fax # (518) 690-0793

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

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Drawn: _____ AHS _____ Date: 4/17/14			
Designed: _____ AGF _____ Date: 4/17/14			
Checked: _____ AGF _____ Date: 4/17/14			
Project Number 294-036			
Project Title BAM ORANGE CENTER ROAD CT23XC122			
ORANGE CENTER RD ORANGE, CT 06477			
Prepared For 			
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Drawing Title GENERAL NOTES			
Drawing Number C1			

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CENTER ROAD
CT23XC122

ORANGE CENTER RD
ORANGE, CT 06477

Prepared For

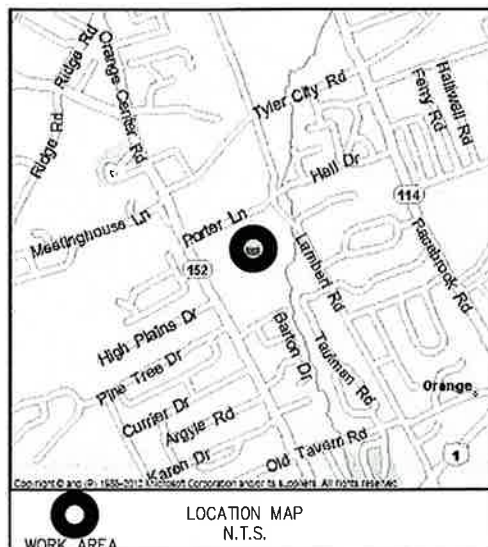
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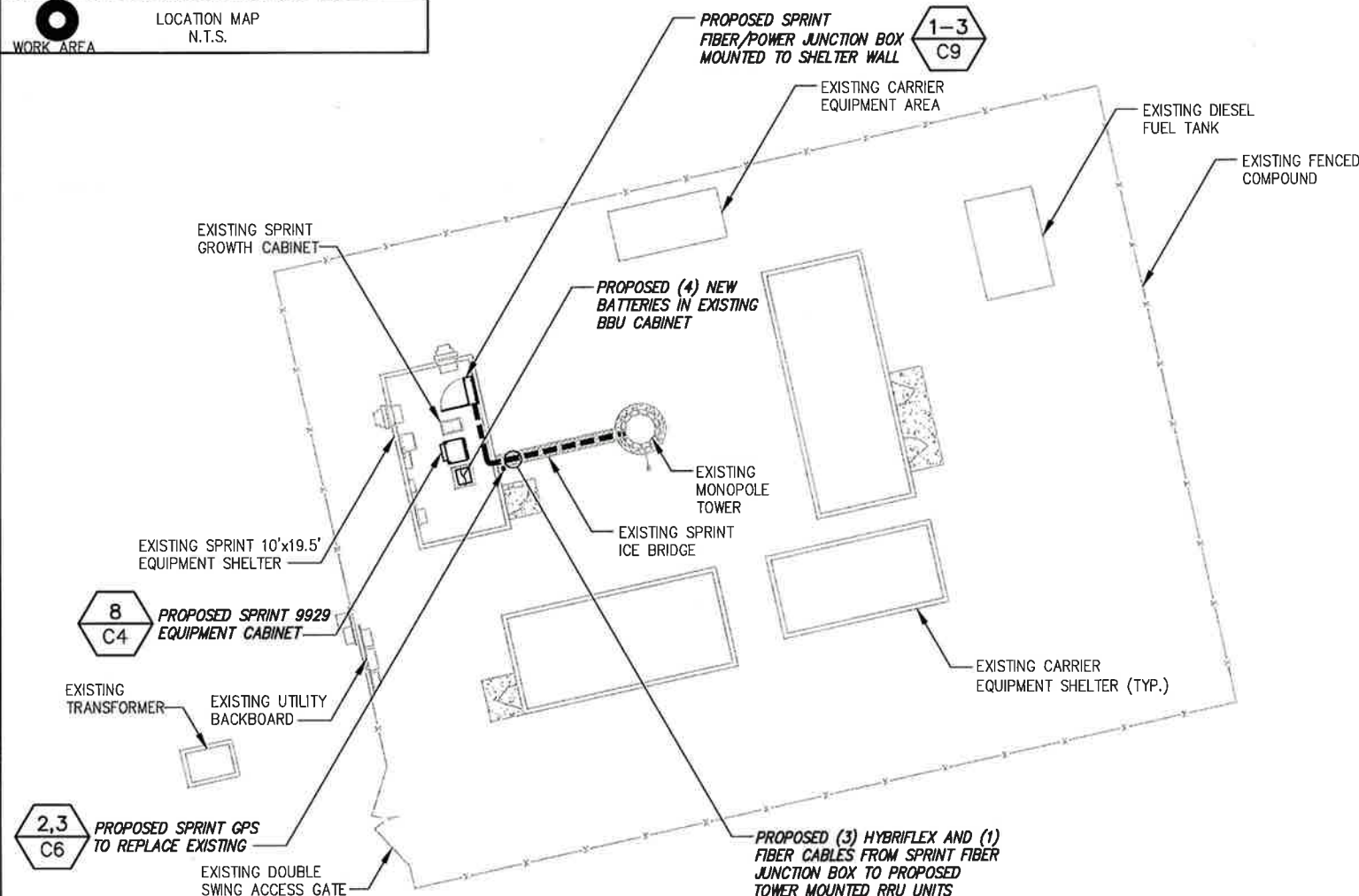
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C1



INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION.

WORK AREA

LOCATION MAP
N.T.S.

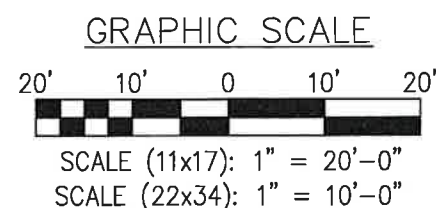


NOTE:
CONTRACTOR SHALL NOT STACK THE HYBRIFLEX CABLES ON TOP OF THE EXISTING COAXIAL CABLES AS TO PREVENT THE COAXIAL CABLES FROM BEING REMOVED.

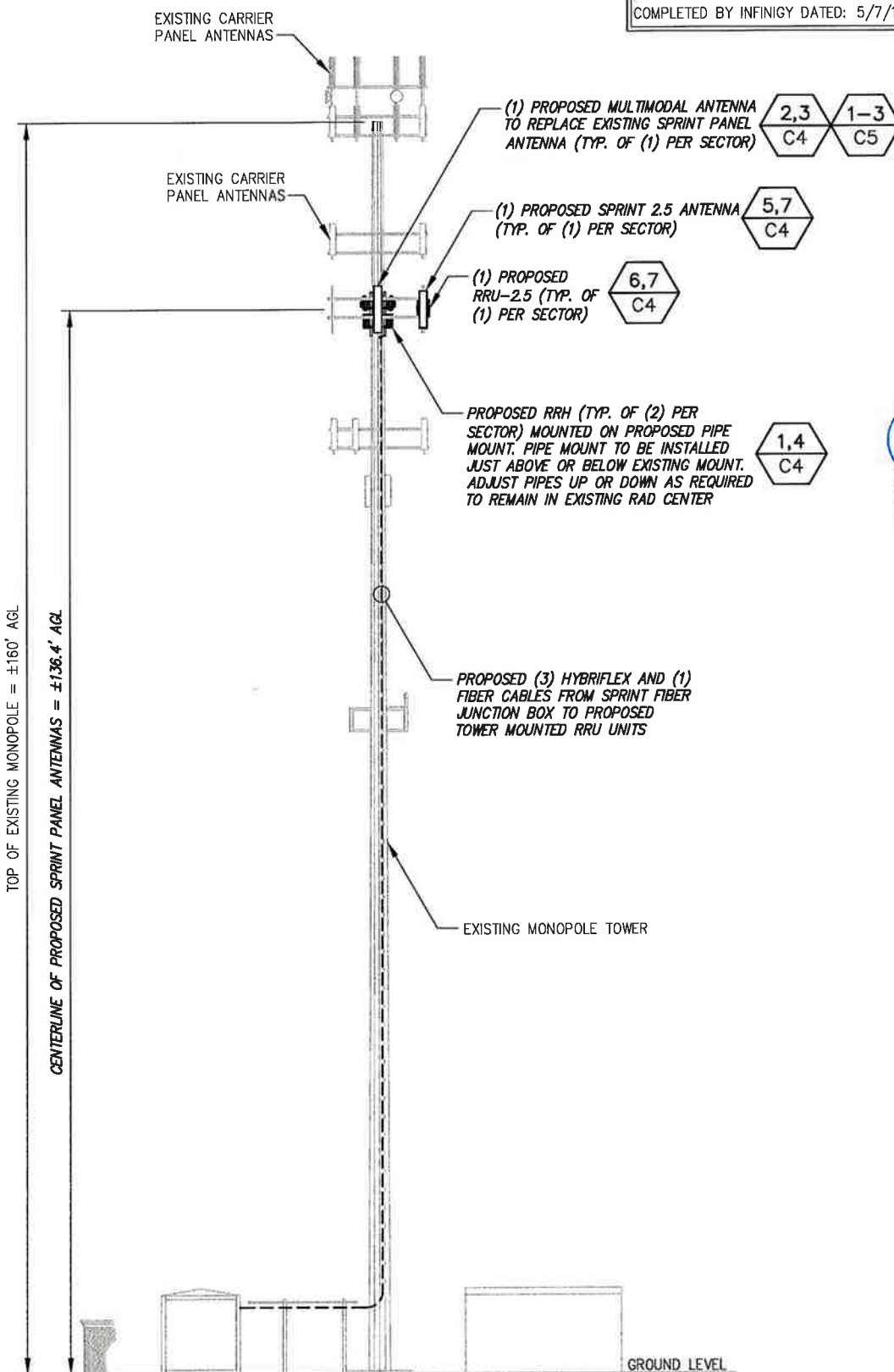
- NOTE:
- REFER TO: CONSTRUCTION STANDARDS-SPRINT DOCUMENT: "EXHIBIT A - STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES REV 4.0 - 02.15.2011.DOCM"
 - REFER TO: "WEATHERPROOFING SPECS: EXCERPT EXH A - WTHRPRF - STD CONSTR SPECS._157201110421855429.DOCM"
 - REFER TO: "COLOR CODING-SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF"
 - CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.



1 COMPOUND SITE PLAN
SCALE: AS NOTED



TOP OF EXISTING MONOPOLE = ±160' AGL
CENTERLINE OF PROPOSED SPRINT PANEL ANTENNAS = ±136.4' AGL



2 SITE ELEVATION
NOT TO SCALE

FOR ADDITIONAL STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY INFINIGY DATED: 5/7/14

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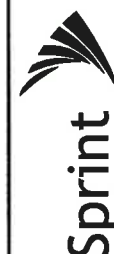
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294-036

Project Title

BAM ORANGE
CENTER ROAD
CT23XC122

ORANGE CENTER RD
ORANGE, CT 06477

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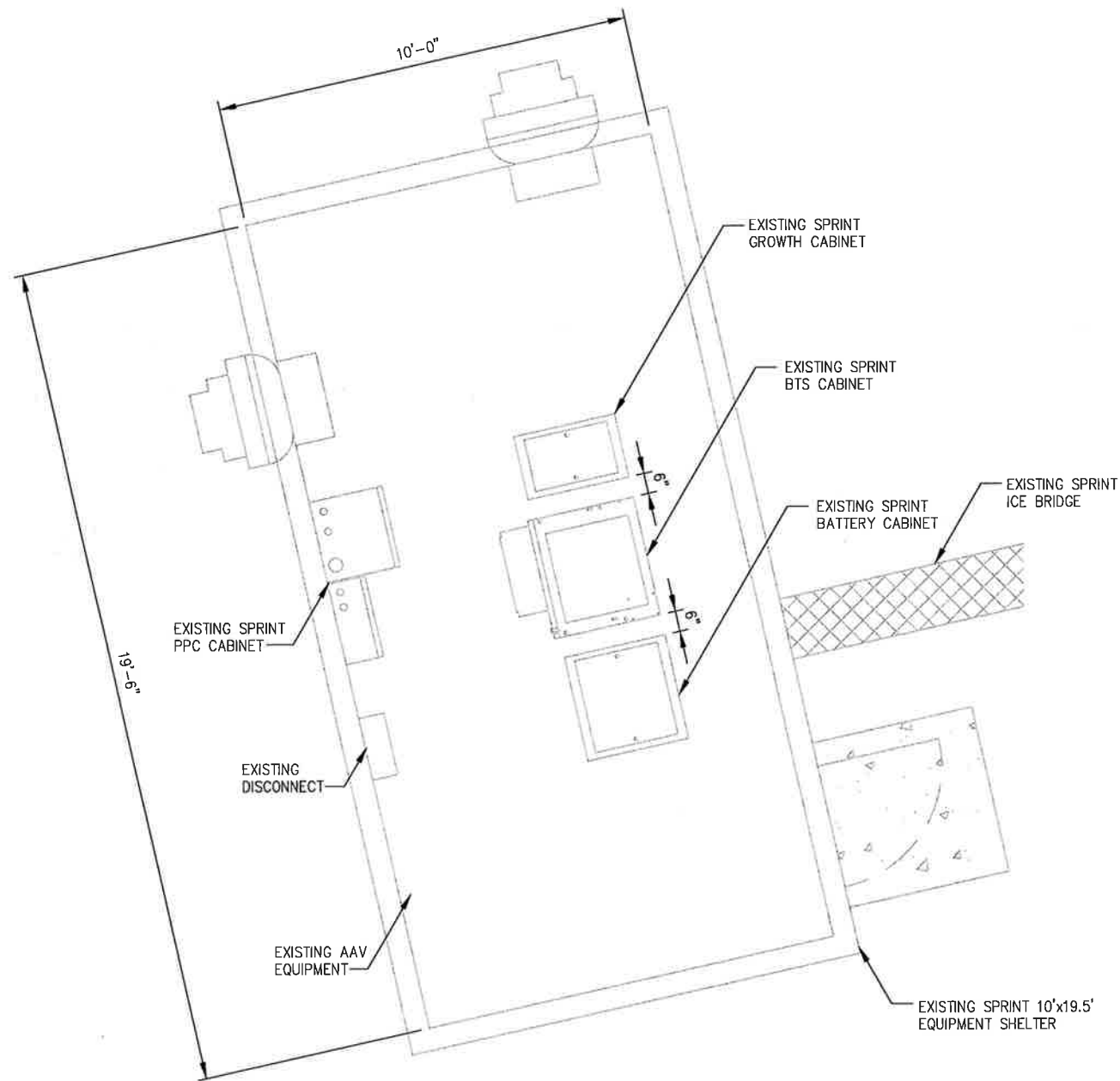
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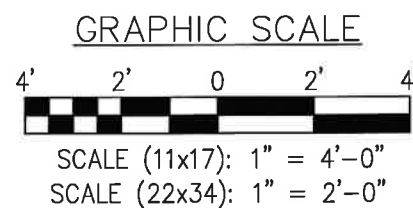
**COMPOUND
SITE PLAN &
ELEVATION**

Drawing Number

C2

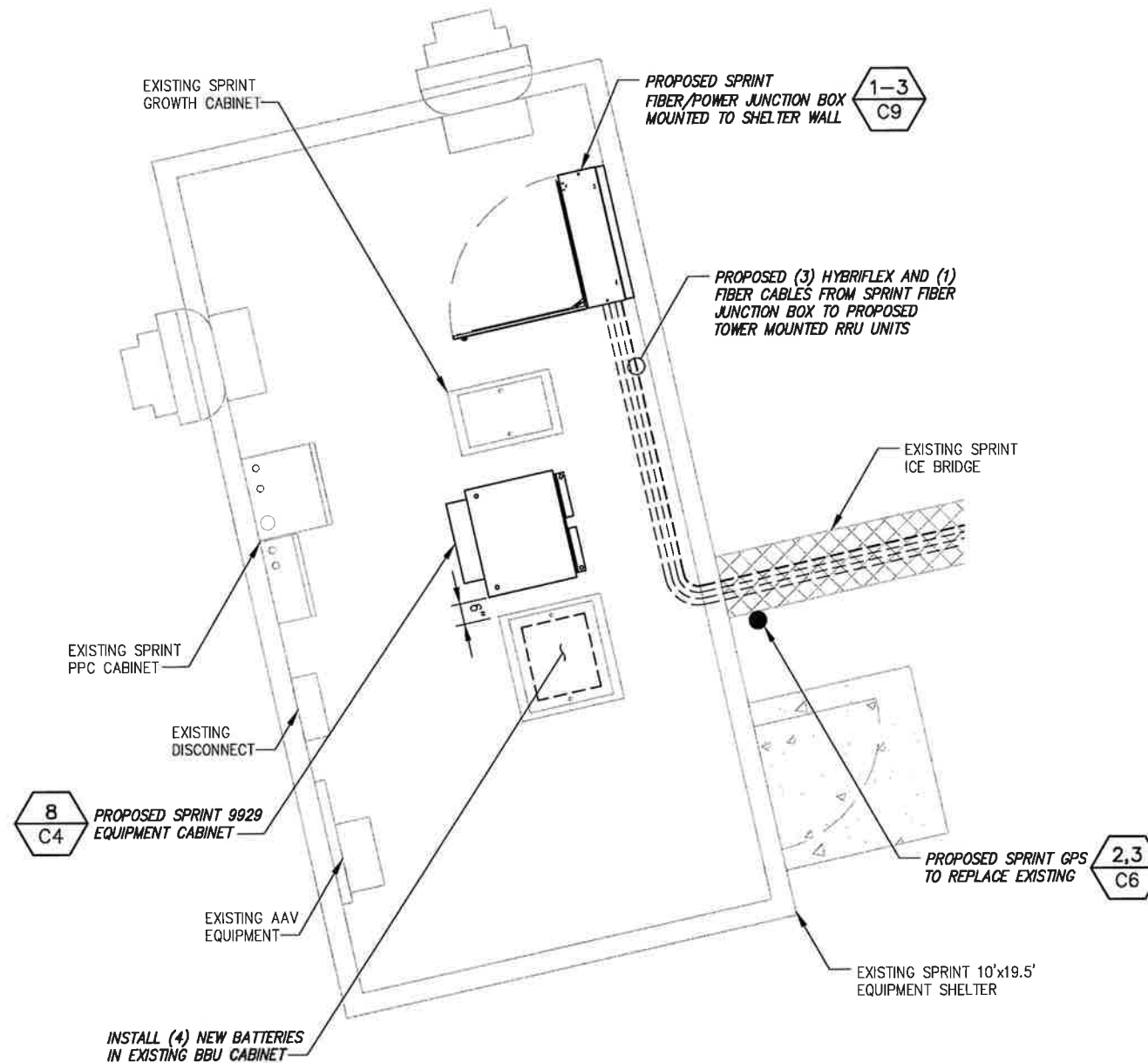


1 EQUIPMENT SITE PLAN (EXISTING)
SCALE: AS NOTED

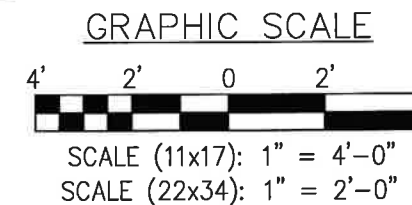


NOTE:
CONTRACTOR SHALL NOT STACK THE HYBRIFLEX CABLES ON TOP OF THE EXISTING COAXIAL CABLES AS TO PREVENT THE COAXIAL CABLES FROM BEING REMOVED.

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 3. REFER TO: "COLOR CODING-SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF"
 4. CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.



2 EQUIPMENT SITE PLAN (FINAL/PERMANENT)
SCALE: AS NOTED



CALLLED NORTH



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Albany, NY 12205
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Fax # (518) 890-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
14 P.S. SEALS ARE A CONDITION OF APPLICATION UNDER LOCAL LAWS

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294-036

Project Title
**BAM ORANGE
CENTER ROAD
CT23XC122**

ORANGE CENTER RD
ORANGE, CT 06477

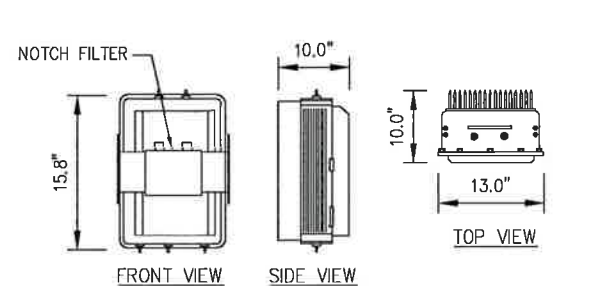
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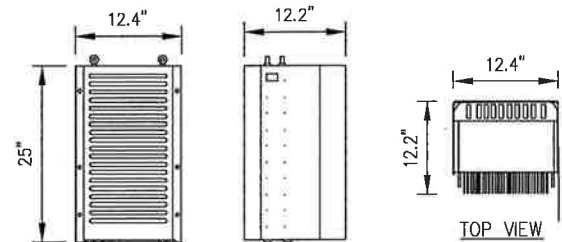
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**EQUIPMENT
SITE PLANS**

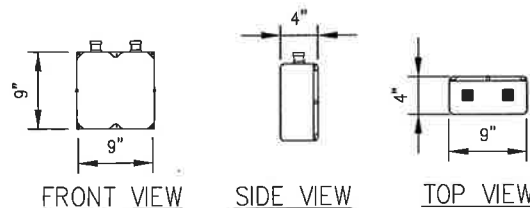
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C3



800 MHz RRH
(ALU)
WEIGHT = 53 LBS.



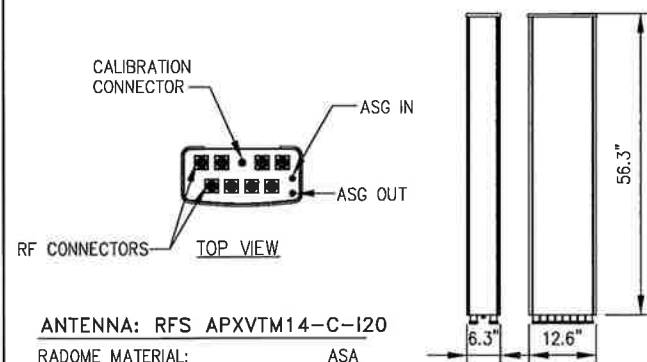
1900 MHz RRH
(ALU)
WEIGHT = 60 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)



850 MHz NOTCH FILTERS
WEIGHT = 11 LBS.

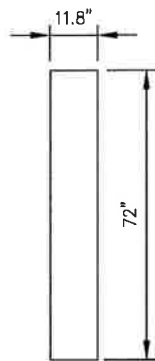
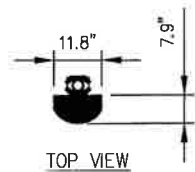
NOTE:
REFER TO R.F. SYSTEM SCHEDULE FOR
EXACT RRH SPECIFICATIONS AND QUANTITIES.

1 RRH EQUIPMENT DETAILS
NOT TO SCALE



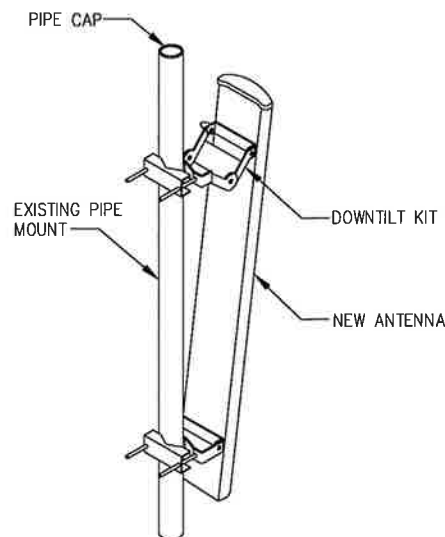
ANTENNA: RFS APXVTM14-C-I20
RADOME MATERIAL:
RADOME COLOR: ASA
DIMENSIONS, HxWxD in. (mm): 56.3"x12.6"x6.3" (1430x320x160mm)
WEIGHT: 52.9 lbs
CONNECTORS: (8) 4.1/9.5 DIN FEMALE
(1) NF - CALIBRATION CONNECTOR

5 2.5 ANTENNA DETAILS
NOT TO SCALE



RFS ANTENNA
P/N: APXV9ERR18-C-A20

2 ANTENNA DETAILS
NOT TO SCALE

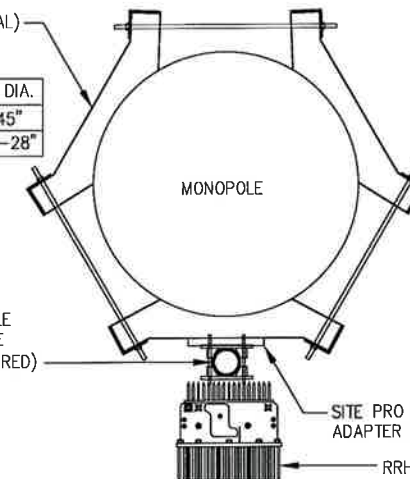


3 PANEL ANTENNA
MOUNT DETAIL
NOT TO SCALE

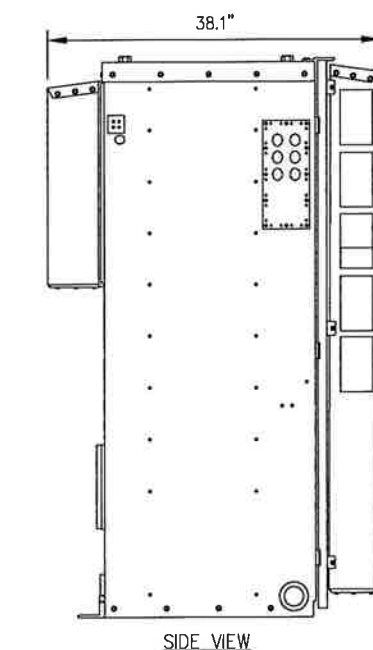
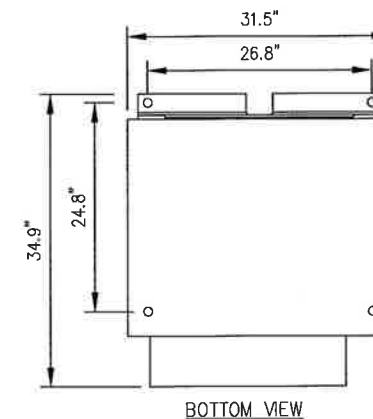
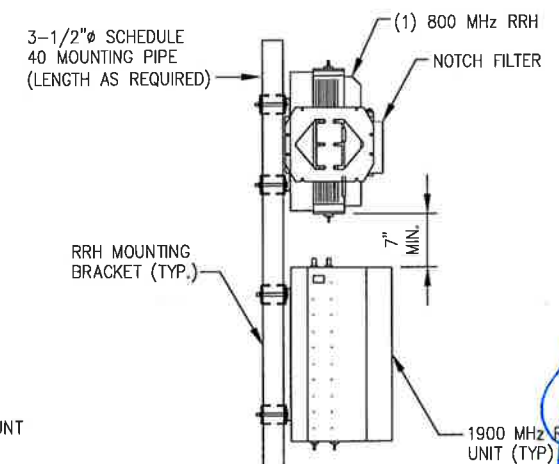
SITE PRO UNIVERSAL RING
MOUNT (OR APPROVED EQUAL)

PART #	POLE DIA.
LWRM	12"-45"
UGLM	10.5"-28"

3-1/2" SCHEDULE
40 MOUNTING PIPE
(LENGTH AS REQUIRED)

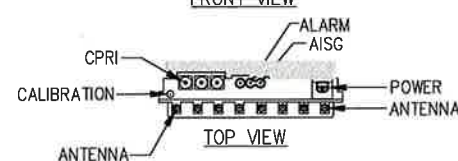
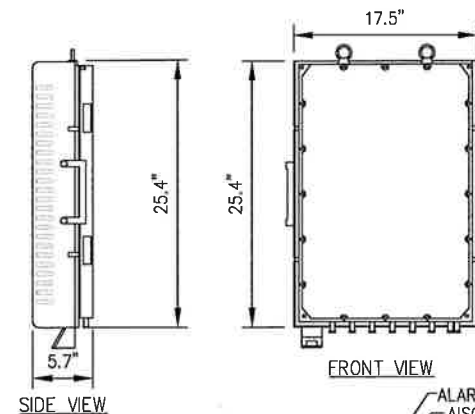


4 RRH MOUNTING DETAIL (TYP.)
NOT TO SCALE



8 9929 EQUIPMENT DETAIL
NOT TO SCALE

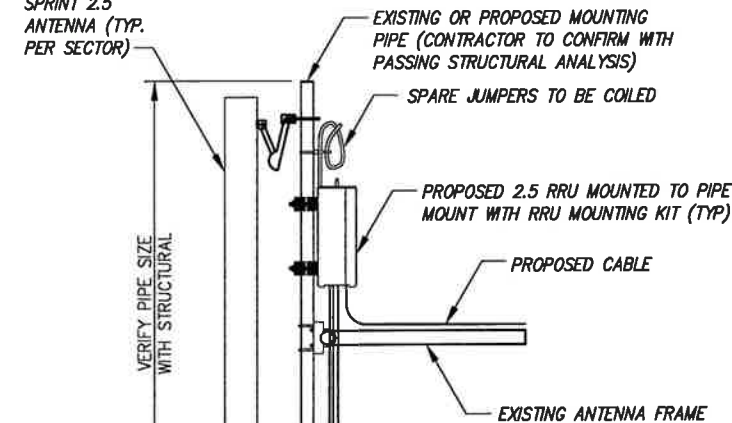
RRU: ALCATEL LUCENT TD-RRH8X20
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



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

6 2.5 RRU EQUIPMENT DETAILS
NOT TO SCALE

PROPOSED
SPRINT 2.5
ANTENNA (TYP.
PER SECTOR)



- NOTES:
1. CUT DC CONDUCTORS TO LENGTH.
 2. COIL FIBER CABLE AND SECURE AT SIDE OF RRU.
 3. DO NOT EXCEED BEND RADIUS.

PROPOSED RET CABLE
PROPOSED 1/2" COAX
JUMPER FROM RRU (TYP.)

7 MOUNTING DETAIL
NOT TO SCALE

Design.
Build.
Deliver.

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UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE TO THE CENTERLINE OF THE MEMBER UNLESS OTHERWISE NOTED.

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ORANGE CENTER RD
ORANGE, CT 06477

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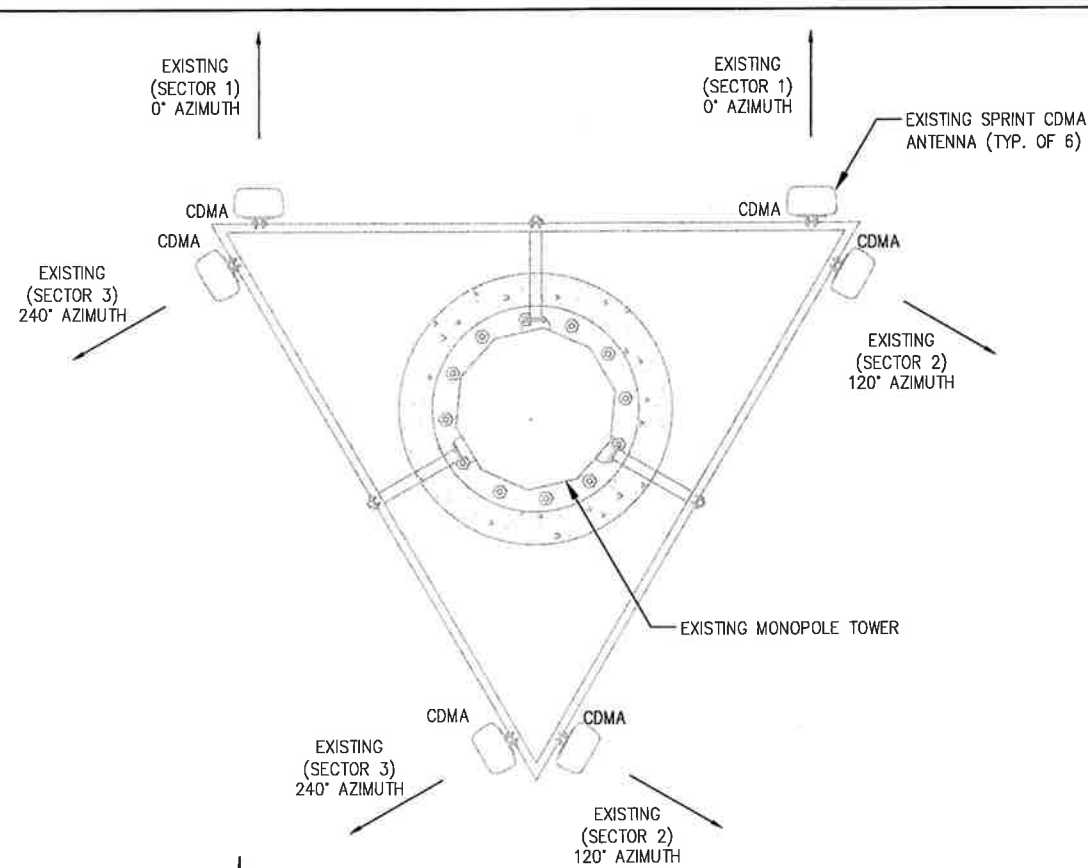
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Date:
5/14/14

Drawing Title
EQUIPMENT
DETAILS

Drawing Number

C4



EXISTING (SECTOR 1)
0° AZIMUTH

EXISTING (SECTOR 1)
0° AZIMUTH

EXISTING SPRINT CDMA
ANTENNA (TYP. OF 6)

EXISTING (SECTOR 2)
120° AZIMUTH

EXISTING (SECTOR 3)
240° AZIMUTH

EXISTING MONOPOLE TOWER

EXISTING (SECTOR 3)
240° AZIMUTH

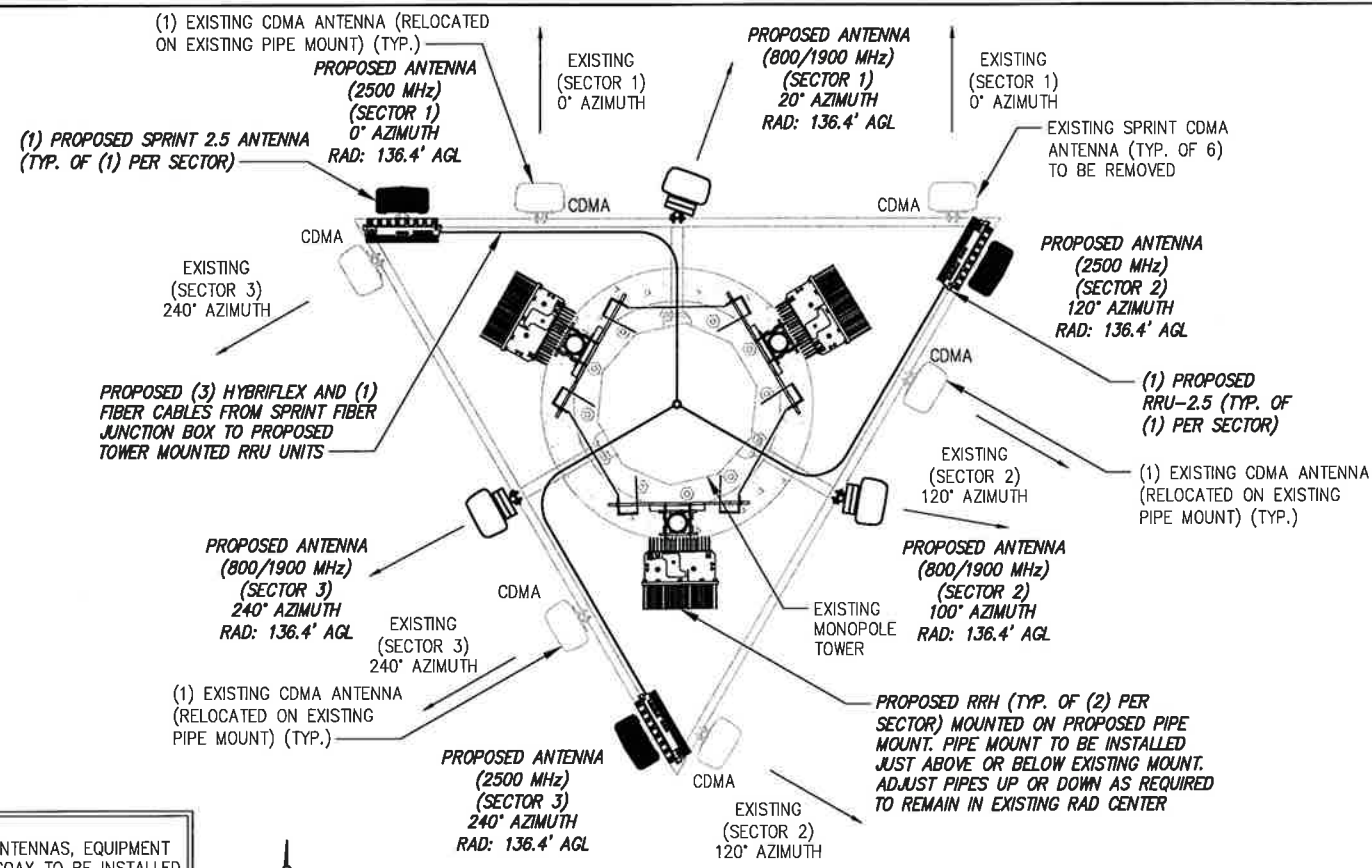
EXISTING (SECTOR 2)
120° AZIMUTH

1 ANTENNA CONFIGURATION (EXISTING)

NOT TO SCALE

CALLLED NORTH

NOTE:
ALL ANTENNAS, EQUIPMENT
AND COAX TO BE INSTALLED
IN ACCORDANCE WITH THE
STRUCTURAL ANALYSIS
PROVIDED BY CROWN CASTLE



EXISTING (SECTOR 1)
0° AZIMUTH

EXISTING (SECTOR 1)
0° AZIMUTH

EXISTING SPRINT CDMA
ANTENNA (TYP. OF 6)
TO BE REMOVED

EXISTING (SECTOR 2)
120° AZIMUTH

EXISTING (SECTOR 3)
240° AZIMUTH

EXISTING MONOPOLE TOWER

EXISTING (SECTOR 2)
120° AZIMUTH

EXISTING (SECTOR 3)
240° AZIMUTH

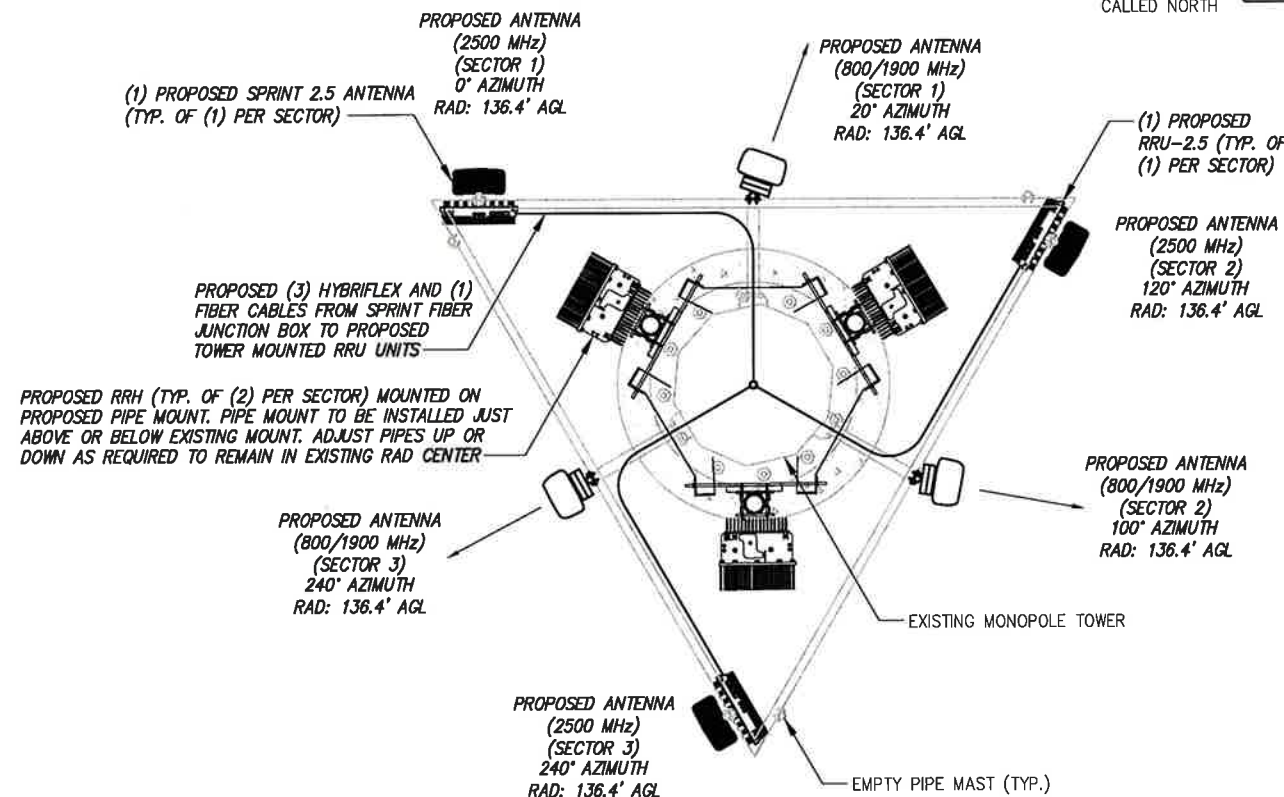
EXISTING (SECTOR 3)
240° AZIMUTH

EXISTING (SECTOR 2)
120° AZIMUTH

2 ANTENNA CONFIGURATION (INTERIM/TEMPORARY)

NOT TO SCALE

CALLLED NORTH



EXISTING (SECTOR 1)
0° AZIMUTH

EXISTING (SECTOR 1)
0° AZIMUTH

EXISTING SPRINT CDMA
ANTENNA (TYP. OF 6)

EXISTING (SECTOR 2)
120° AZIMUTH

EXISTING (SECTOR 3)
240° AZIMUTH

EXISTING MONOPOLE TOWER

EXISTING (SECTOR 3)
240° AZIMUTH

EXISTING (SECTOR 2)
120° AZIMUTH

3 ANTENNA CONFIGURATION (FINAL/PERMANENT)

NOT TO SCALE

CALLLED NORTH

NOTE:
REQUIRED PIPE MOUNTS TO BE
SUPPLIED BY CONTRACTOR.

FOR ADDITIONAL STRUCTURAL
INFORMATION SEE STRUCTURAL ANALYSIS
COMPLETED BY INFINIGY DATED: 5/7/14

GENERAL NOTES:

1. NEW SPRINT PANEL ANTENNAS TO MEET RF DESIGN REQUIREMENTS PER EBTS, PER APPROVED STRUCTURAL ANALYSIS.
2. CONTRACTOR TO PROVIDE EXISTING ANTENNA VERIFICATION AND TO INCLUDE MOUNTING HEIGHT, RAD CENTER, TOP AND BOTTOM OF ANTENNAS.
3. THE CONFIGURATION PLANS ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS.
4. THE ANTENNA INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE STRUCTURAL ANALYSIS AND ASSOCIATED DETAILS THEREIN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO WORK ON THE STRUCTURE.
5. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
6. REFER TO SHEET C4 & C7 FOR ANTENNA SPECS.
7. CONTRACTOR TO USE PROPER TORQUE WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
8. ALL HYBRID CABLES SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE. THIS INCLUDES ALL JUMPERS AND MAIN LINE HYBRID CABLES.
9. CDMA ANTENNAS SHALL NOT BE REMOVED UNTIL ALL NEW MULTI-MODE ANTENNAS ARE INSTALLED AND ON-AIR.

RRH NOTES:

- SEE PAGE C4 FOR RRH MOUNTING INFORMATION (TYP. ALL SECTORS).
- REFER TO RF SCHEDULE ON SHEET C7 FOR RRH UNIT SPECS AND QUANTITIES.



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Designed: AGF Date: 4/17/14
Checked: AGF Date: 4/17/14

Project Number
294-036

Project Title

**BAM ORANGE
CENTER ROAD
CT23XC122**

ORANGE CENTER RD
ORANGE, CT 06477

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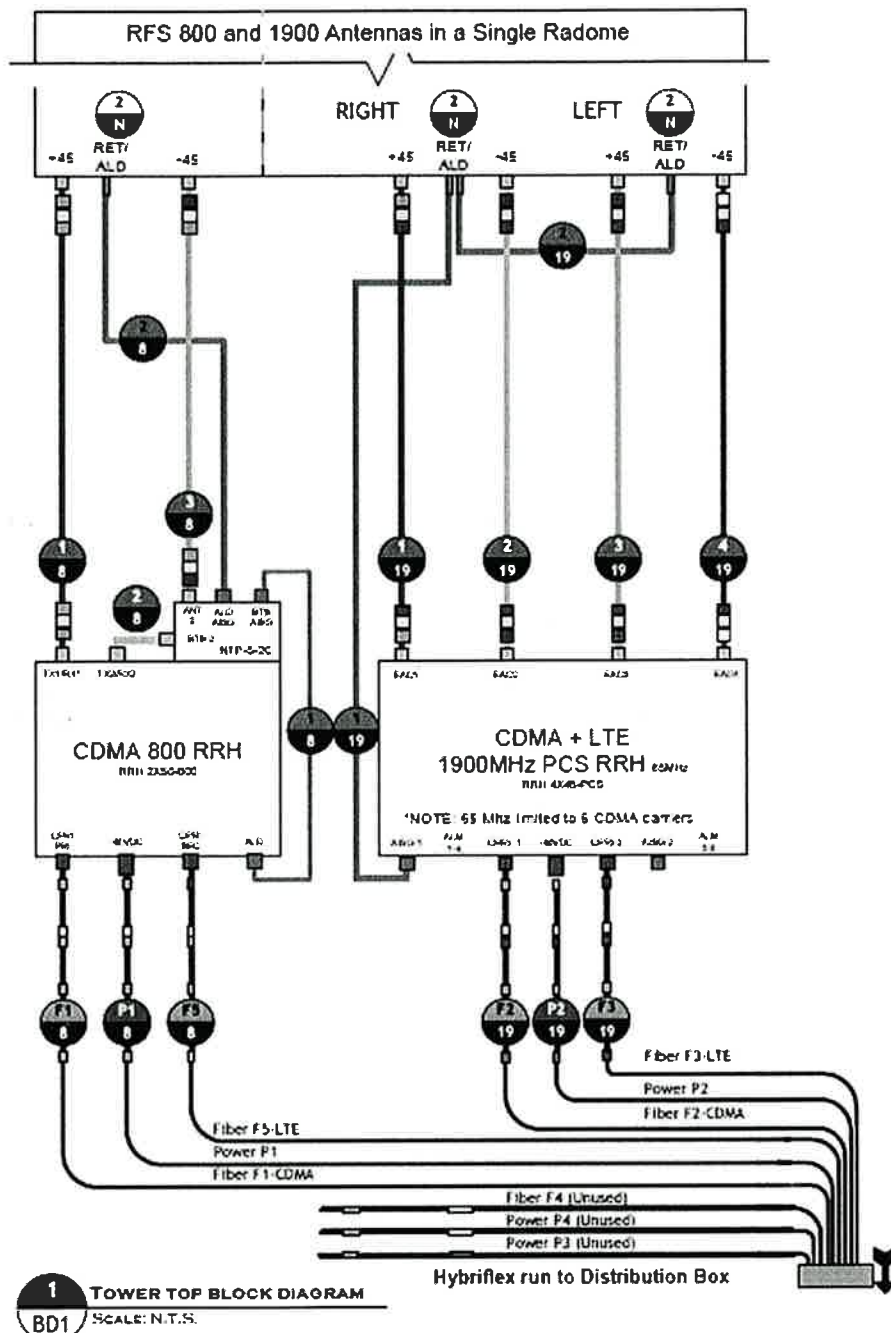
**ANTENNA
PLANS**

Drawing Number

C5

Design.
Build.
Deliver.

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Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793



1 ANTENNA CABLE RISER DIAGRAM
 NOT TO SCALE

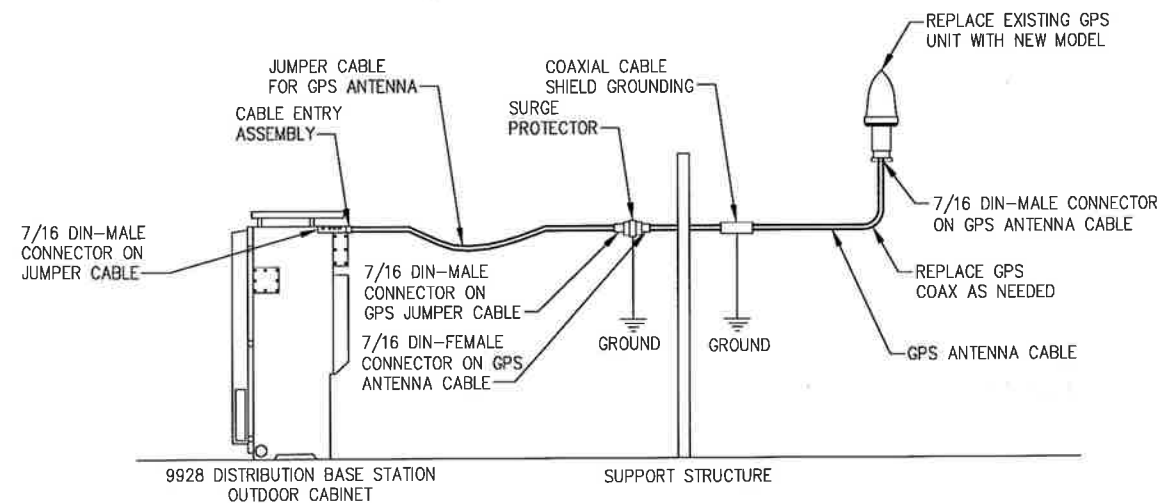
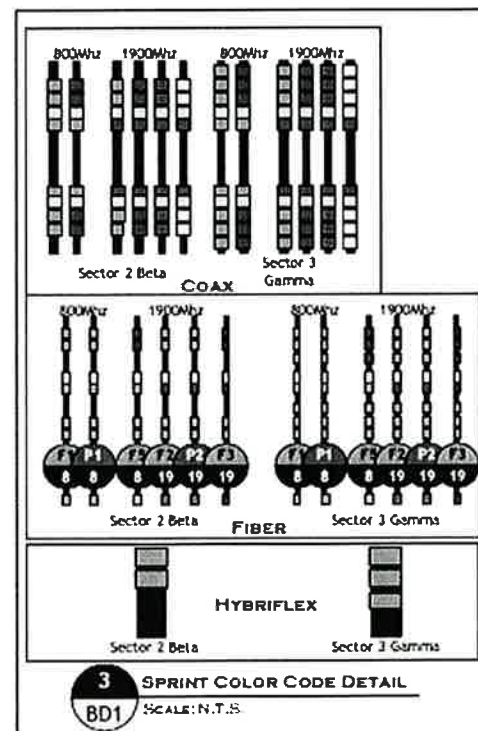
INSTALLER VERIFY LATEST PLUMBING/WIRING DIAGRAMS, PRIOR TO INSTALLATION.

WEATHERPROOFING CONNECTORS AND GROUND KIT NOTES:

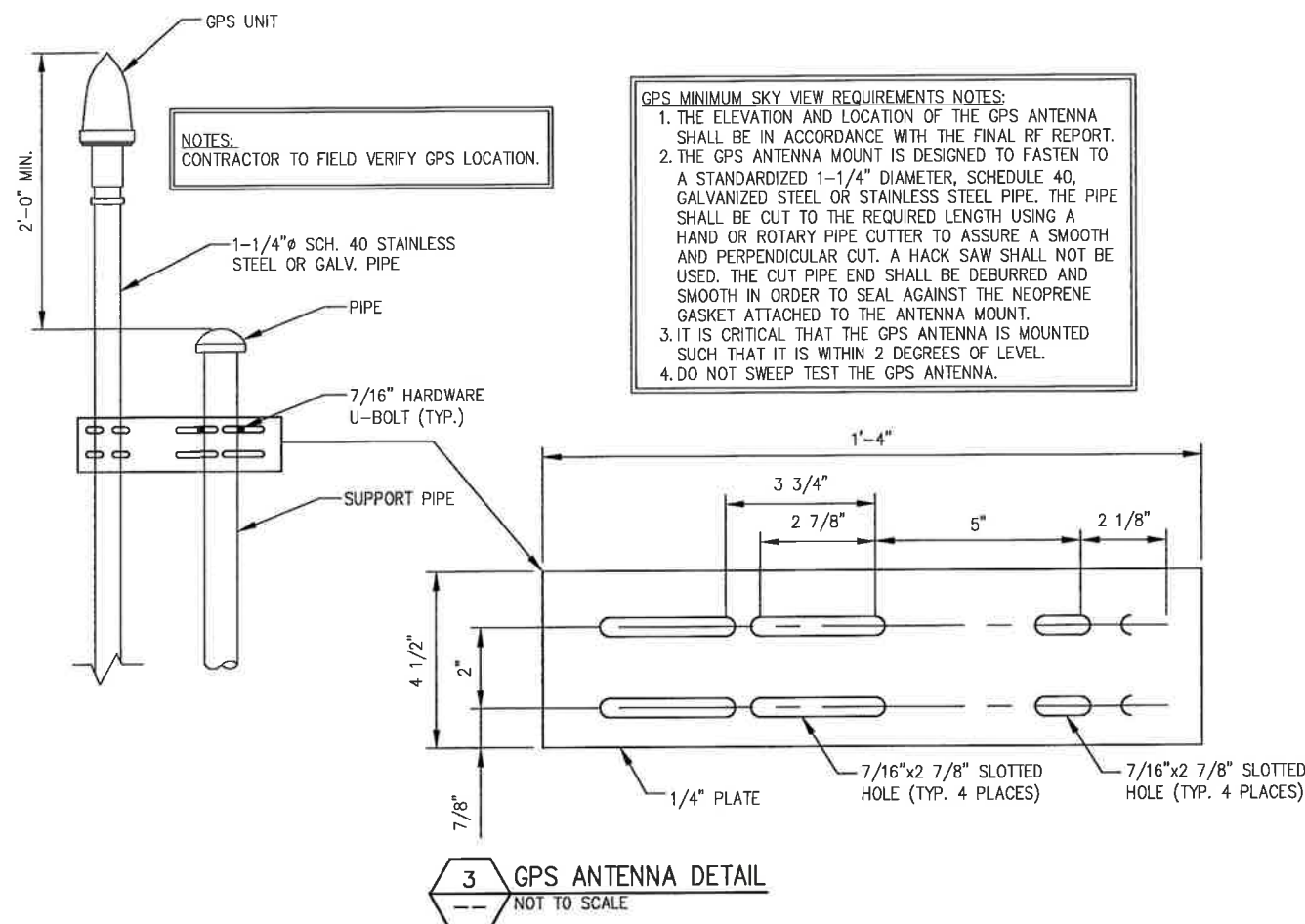
- ALL CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED USING BUTYL RUBBER WEATHERPROOFING AND TAPE, THIS INSTALLATION MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION OR PER THE FOLLOWING INSTRUCTIONS (WHICHEVER IS GREATER).
- THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE ENCOMPASSED INTO COLD SHRINK AND COMPLETELY WRAPPED WITH 2 IN. WIDE ELECTRICAL TAPE OVERLAPPING EACH ROW BY APPROXIMATELY 1/2" AND EXTENDING PAST THE CONNECTION BY TWO INCHES AND DISCUSSED BELOW; OR
- THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OF ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW OR;
- THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH TWO LAYERS OF 1.5 INCH WIDE SELF-AMALGAMATING TAPE COVERED WITH TWO LAYERS OF ELECTRICAL TAPE.

RRH JUMPER NOTES:

- FOR DISTANCES BETWEEN RRH'S AND ANTENNAS LESS THAN 10'-0" USE A 1/2" JUMPER.
- FOR DISTANCES BETWEEN RRH'S AND ANTENNAS GREATER THAN 10'-0" USE A 7/8" JUMPER.



NOTE:
 THE GPS SURGE NEEDS TO BE INSTALLED AWAY FROM AND SEPARATE FROM THE MMBTS CABINET (PER THE SITE PREP GUIDE)
 • THE JUMPERS ARE DESIGNED TO BE INSTALLED BEFORE/AFTER THE GPS SURGE.
 • THE GPS SURGE NEED TO BE CONNECTED TO THE GROUND SYSTEM, VIA A GROUND LEAD.



GPS MINIMUM SKY VIEW REQUIREMENTS NOTES:

- THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
- THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARDIZED 1-1/4" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
- IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF LEVEL.
- DO NOT SWEEP TEST THE GPS ANTENNA.



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 Checked: AGF Date: 4/17/14

Project Number 294-036

Project Title

BAM ORANGE CENTER ROAD CT23XC122

ORANGE CENTER RD
 ORANGE, CT 06477

Prepared For



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ANTENNA CABLE RISER AND GPS DETAILS

Drawing Number

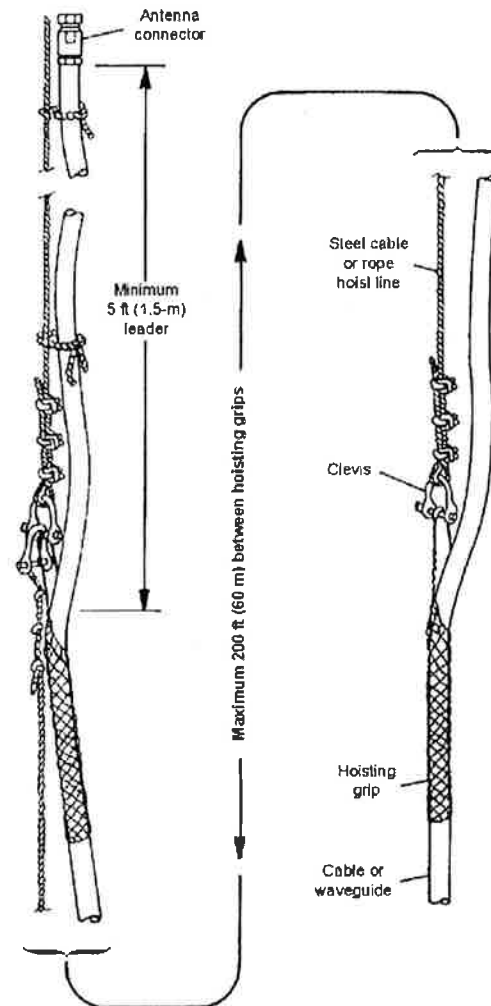
C6

Market	Southern Connecticut		
	CT23XC122		
Cascade ID	Sector 1	Sector 2	Sector 3
1900MHz_Azimuth	20	100	240
1900MHz_No_of_Antennas	1	1	1
1900MHz_RADCenter(ft)	136.4	136.4	136.4
1900MHz_Antenna Make	RFS	RFS	RFS
1900MHz_Antenna Model	APXVSP18-C-A20	APXVSP18-C-A20	APXVSP18-C-A20
1900MHz_Horizontal_Beamwidth	65	65	65
1900MHz_Vertical_Beamwidth	5.5	5.5	5.5
1900MHz_AntennaHeight (ft)	6	6	6
1900MHz_AntennaGain(dBd)	15.9	15.9	15.9
1900MHz_E_Tilt	0	-1	-1
1900MHz_M_Tilt	0	0	0
1900_Effective_Tilt	0	-1	-1
1900MHz_Carrier_Forecast_Year_2013	4	4	4
1900MHz_RRH Manufacturer	ALU	ALU	ALU
1900MHz_RRH Model	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz
1900MHz_RRH Count	1	1	1
1900MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
1900MHz Combiner Model	No Combiner Required	No Combiner Required	No Combiner Required
1900MHz Power Split Ratio (Main/Split)			
1900MHz Splitter Manufacturer			
1900MHz Splitter Model			
1900MHz Number of Splitters	0	0	0
1900MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna for TT or Main Coax to Antenna for Ground Mount, ft)	10	10	10
1900MHz_Top_Jumper #1_Cable_Model (RRH or Combiner-to-Antenna for TT or Main Coax to Antenna for Ground Mount)	LCF12-50J	LCF12-50J	LCF12-50J
1900MHz_Top_Jumper #2_Length (RRH to Combiner for TT if applicable, ft)	N/A	N/A	N/A
1900MHz_Top_Jumper #2_Cable_Model (RRH to Combiner for TT if applicable)	N/A	N/A	N/A
1900MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
1900MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
1900MHz_Bottom_Jumper #1_Length (Ground based RRH to Combiner-OR-Main Coax, ft)	N/A	N/A	N/A
1900MHz_Bottom_Jumper #1_Cable_Model (Ground based RRH to Combiner-OR-Main Coax)	N/A	N/A	N/A
1900MHz_Bottom_Jumper #2_Length (Ground based-Combiner to Main Coax, ft)	N/A	N/A	N/A
1900MHz_Bottom_Jumper #2_Cable_Model (Ground based-Combiner to Main Coax)	N/A	N/A	N/A
800MHz_Azimuth	20	100	240
800MHz_No_of_Antennas	0	0	0
800MHz_RADCenter(ft)	136.4	136.4	136.4
800MHz_AntennaMake	RFS	RFS	RFS
800MHz_AntennaModel	APXVSP18-C-A20 (Shared w/1900)	APXVSP18-C-A20 (Shared w/1900)	APXVSP18-C-A20 (Shared w/1900)
800MHz_Horizontal_Beamwidth	65	65	65
800MHz_Vertical_Beamwidth	11.5	11.5	11.5
800MHz_AntennaHeight (ft)	6	6	6
800MHz_AntennaGain (dBd)	13.4	13.4	13.4
800MHz_E_Tilt	-8	0	-7
800MHz_M_Tilt	0	0	0
800 MHz_Effective Tilt (degrees)	-8	0	-7
800MHz_RRH Manufacturer	ALU	ALU	ALU
800 Combiner_Model			
800MHz_RRH Model	RRH 800 MHz 2x50W	RRH 800 MHz 2x50W	RRH 800 MHz 2x50W
800MHz_RRH Count	1	1	1
800MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
800MHz Power Split Ratio (Main/Split)			
800MHz Splitter Manufacturer			
800MHz Splitter Model			
800MHz Number of Splitters	0	0	0
800_Top_Jumper #1_Length (RRH to Antenna for TT or Main Coax to Antenna for GM)	10	10	10
800_Top_Jumper_Cable_Model (RRH to Antenna for TT or Main Coax to Antenna for GM)	LCF12-50J	LCF12-50J	LCF12-50J
800MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
800MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
800_Bottom_Jumper #1_Length (Ground based RRH to Main Coax)	N/A	N/A	N/A
800_Bottom_Jumper #1_Cable_Model (Ground based RRH to Main Coax)	N/A	N/A	N/A
Has_Split	No	No	No
Plumbing_Scenario	124	124	124
Date_Updated	10/29/2013	10/29/2013	10/29/2013
Update_Description	Convert to Temp GM2	Convert to Temp GM2	Convert to Temp GM2
Site_Type	TT6 Jumper With 800 with LTE (TempGroundMount)	TT6 Jumper With 800 with LTE (TempGroundMount)	TT6 Jumper With 800 with LTE (TempGroundMount)
Deployment_Forecast	11.3	11.3	11.3
Comments			
This RFDS is Deployment View RFDS Generated on 1/11/2014			

NOTE:

1. REFER TO: CONSTRUCTION STANDARDS-SPRINT DOCUMENT: "EXHIBIT A - STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES REV 4.0 - 02.15.2011.DOCM"
2. REFER TO: "WEATHERPROOFING SPECS: EXCERPT EXH A - WTHRPRF - STD CONSTR SPECS_157201110421855429.DOCM"
3. REFER TO: "COLOR CODING-SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF"
4. CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.

1. DO NOT USE ONE HOISTING GRIP FOR HOISTING TWO OR MORE CABLES OR CABLE TRAYS. THIS CAN CAUSE THE HOISTING GRIP TO BREAK OR THE CABLES OR WAVE- GUIDES TO FALL.
2. DO NOT USE THE HOISTING GRIP FOR LOWERING CABLE OR CABLE TRAY. SNAGGING OF THE CABLE OR CABLE TRAY MAY LOOSEN THE GRIP AND POSSIBLY CAUSE THE CABLE TO CABLE TRAY TO SWAY OR FALL.
3. DO NOT REUSE HOISTING GRIPS. USED GRIPS MAY HAVE LOST ELASTICITY, STRETCHED, OR BECOME WEAKENED. REUSING A GRIP CAN CAUSE THE CABLE OR CABLE TRAY TO SLIP, BREAK, OR FALL.
4. USE HOISTING GRIPS AT INTERVALS OF NO MORE THAN 200 FT (60 M).
5. MAKE SURE THAT THE PROPER HOISTING GRIP IS USED FOR THE CABLE OR CABLE TRAY BEING INSTALLED. SLIPPAGE OR INSUFFICIENT GRIPPING STRENGTH WILL RESULT IF YOU ARE USING THE WRONG HOISTING GRIP.



2 HOIST GRIP DETAIL
-- NOT TO SCALE

NOTE:
RFDS SHOWN PROVIDED BY
SPRINT DATED 1/11/14.

NOTE:
COORDINATE RF ANTENNA INSTALLATION WITH FINAL
SPRINT RFDS. COORDINATE RF MW DISH (IF
APPLICABLE) INSTALLATION WITH FINAL SPRINT RFDS.

1 SPRINT RFDS
-- NOT TO SCALE

CHECK FST FOR LATEST
VERSION OF RFDS

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Project Number
294-036

Project Title
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CENTER ROAD
CT23XC122

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ORANGE, CT 06477

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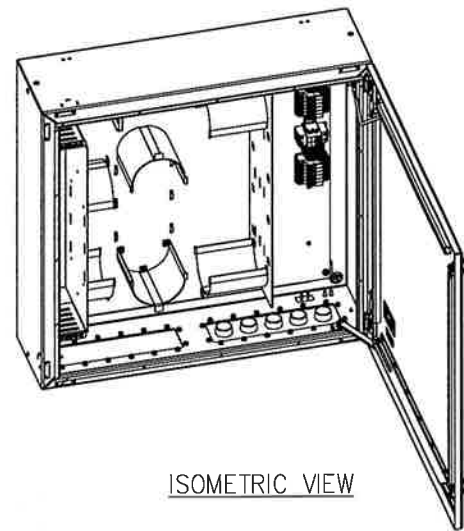
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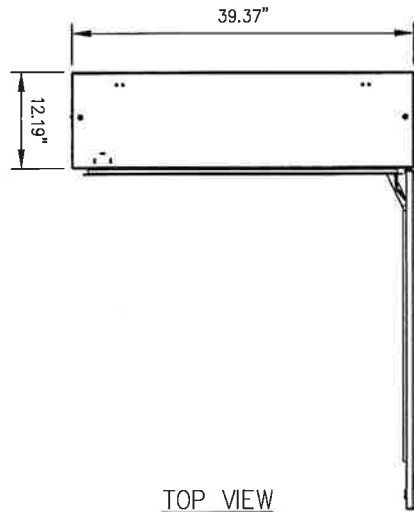
Date:
5/14/14

Drawing Title
RFDS

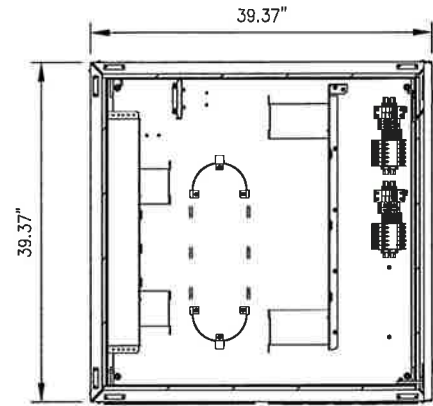
Drawing Number
C7



ISOMETRIC VIEW



TOP VIEW

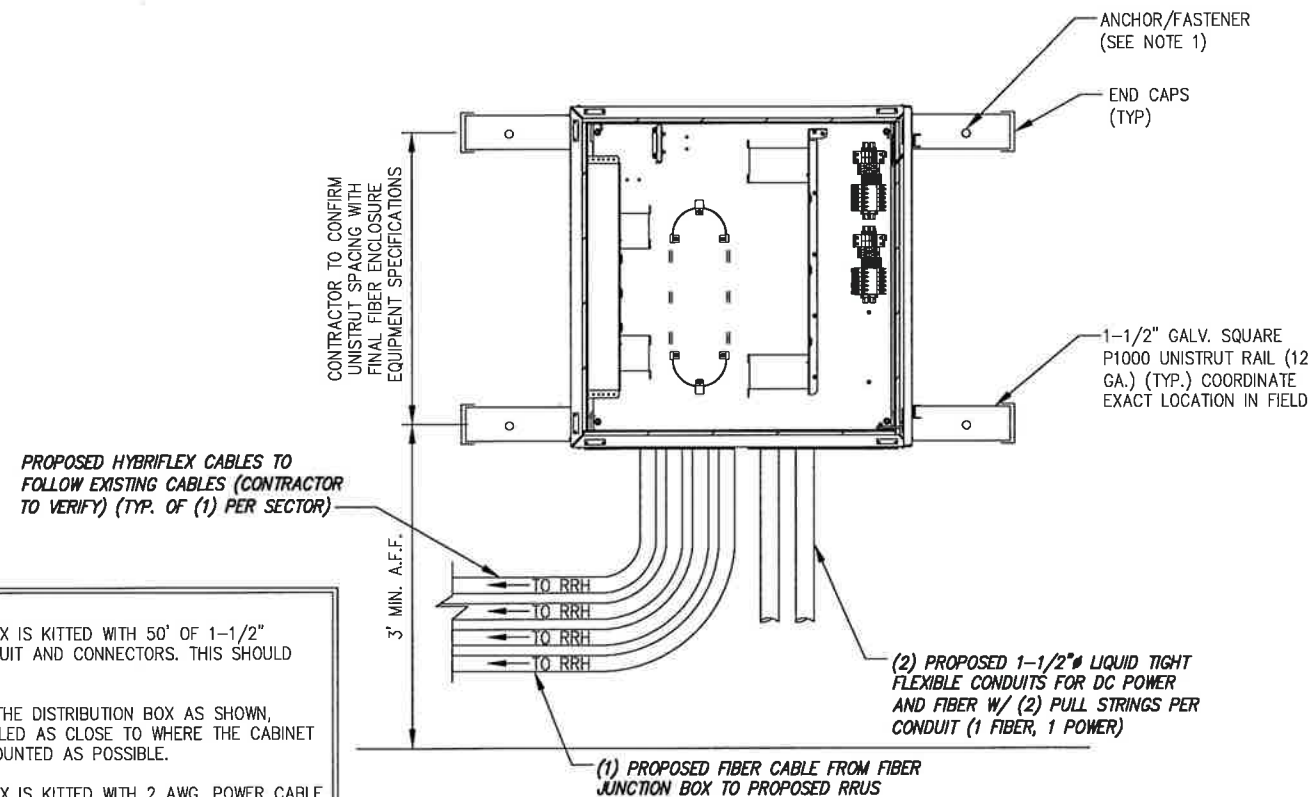


FRONT VIEW



SIDE VIEW

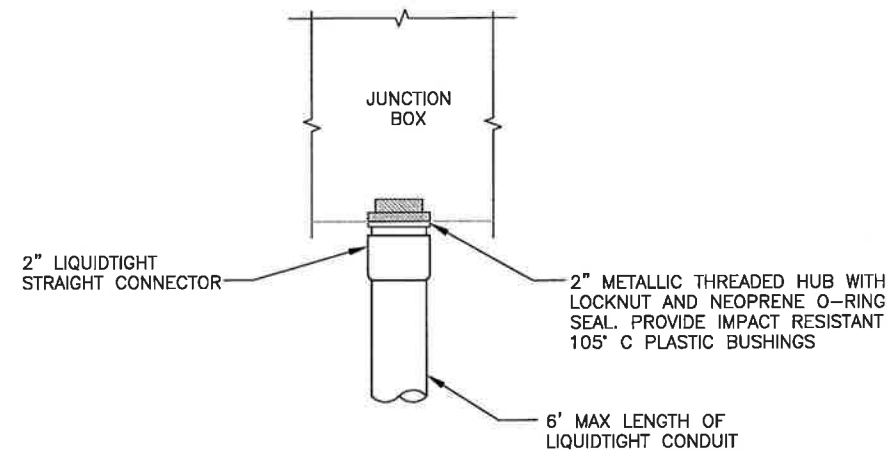
1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



NOTE:
- DISTRIBUTION BOX IS KITTED WITH 50' OF 1-1/2" LIQUID-TIGHT CONDUIT AND CONNECTORS. THIS SHOULD BE:
* SPLIT IN HALF,
* TERMINATED TO THE DISTRIBUTION BOX AS SHOWN,
* RAN TO AND COILED AS CLOSE TO WHERE THE CABINET IS GOING TO BE MOUNTED AS POSSIBLE.
- DISTRIBUTION BOX IS KITTED WITH 2 AWG, POWER CABLE 35' x 2EA. RUNS RED AND 2EA. RUNS BLACK. THIS SHOULD BE COILED AND LEFT INSIDE DISTRIBUTION BOX.
- BTS INSTALLATION TEAM WILL TERMINATE LIQUID-TIGHT, RUN THE FIBER JUMPERS AND POWER CABLES FROM BTS CABINET TO DISTRIBUTION BOX.

1. INSTALL ANCHORS/FASTENERS A MAXIMUM OF 2'-0" ON CENTERS.
 - WOOD STUDS - 1/4"Ø LAG BOLT W/ 1" EMBEDMENT IN WOOD
 - CONCRETE - 1/4"Ø HILTI KWIK BOLT III W/ 1-1/2" EMBEDMENT OR EQUIVALENT
 - THROUGH BOLT - 1/4"Ø A36/A307 THREADED ROD W/ NUTS AND WASHERS
2. ANCHORS AND UNISTRUT CHANNEL SHALL HAVE HOT-DIPPED GALVANIZED FINISH.
3. MOUNT FIBER AND POWER DISTRIBUTION BOX WITH FOUR (4) 1/4"Ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS.

2 DISTRIBUTION BOX ON EXISTING WALL
NOT TO SCALE



3 FIBER JUNCTION BOX PENETRATION
NOT TO SCALE

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

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Drawing Title
FIBER
DISTRIBUTION
BOX DETAILS

Drawing Number
C9

RFS HYBRIFLEX RISER CABLE SCHEDULE

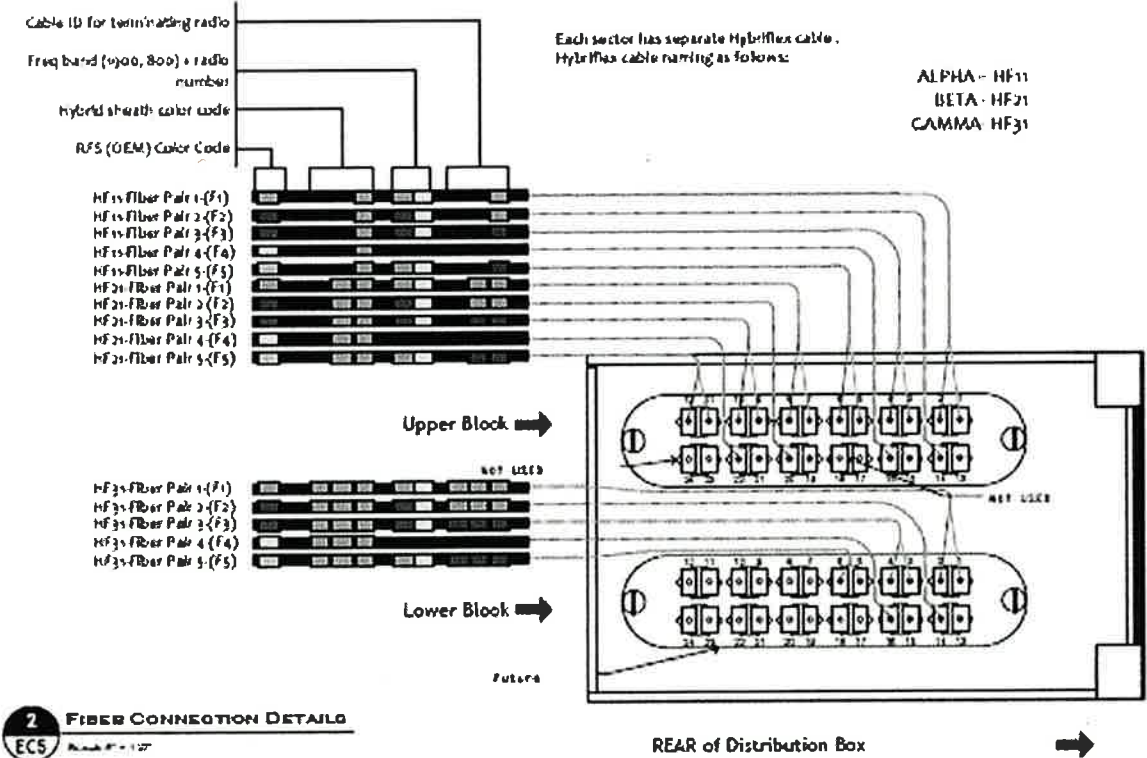
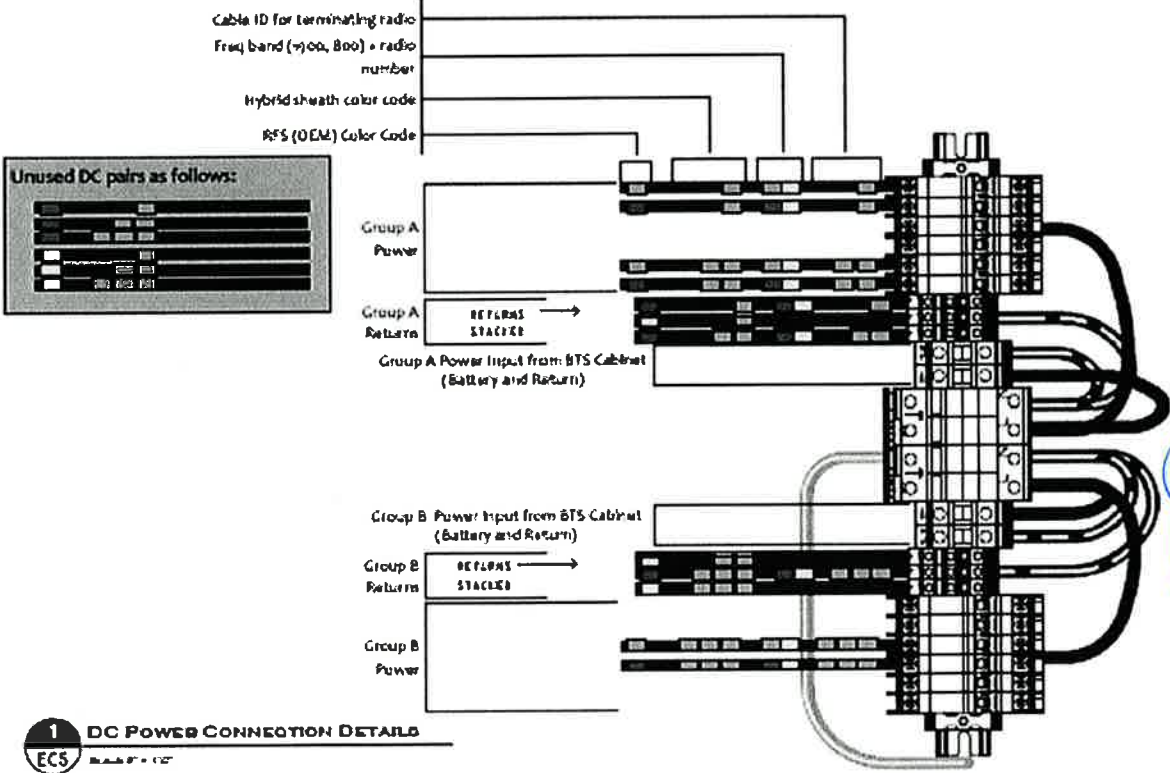
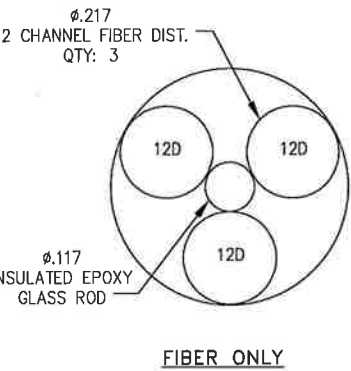
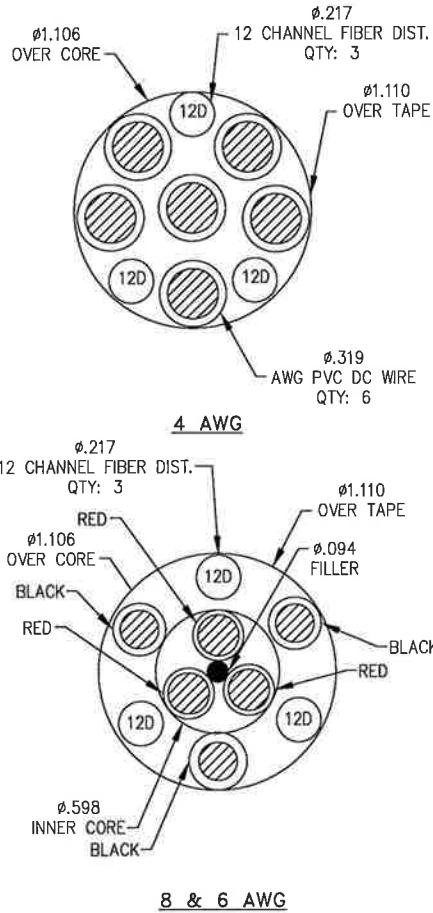
Fiber Only (Existing DC Power)	Hybrid cable MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
8 AWG Power	Hybrid cable MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
6 AWG Power	Hybrid cable MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 3/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	Hybrid cable MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

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

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

1 2.5 CABLE CROSS SECTION DATA
NOT TO SCALE



SCENARIO 124 v2.5

2 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

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Project Number 294-036

Project Title

BAM ORANGE
CENTER ROAD
CT23XC122

ORANGE CENTER RD
ORANGE, CT 06477

Prepared For



Drawing Scale:
AS NOTED
Date:
5/14/14

Drawing Title

DETAILS

Drawing Number

C10

CODED NOTES:

- 1 PROPOSED SPRINT
FIBER/POWER JUNCTION BOX
MOUNTED TO SHELTER WALL
- 2 PROPOSED SPRINT GPS
TO REPLACE EXISTING
- 3 PROPOSED SPRINT 9929
EQUIPMENT CABINET
- 4 PROPOSED (3) HYBRIFLEX AND (1) FIBER
CABLES FROM SPRINT FIBER JUNCTION BOX
TO PROPOSED TOWER MOUNTED RRU UNITS
- 5 PROPOSED (4) NEW BATTERIES
IN EXISTING BBU CABINET
- 6 (1) PROPOSED 2" FLEXIBLE METALLIC LIQUID
TIGHT CONDUITS FOR DC POWER FLOW
- 7 PROPOSED A/C POWER TO 100A BREAKER
FOR POWER CABINET IN 2" FLEXIBLE METALLIC
LIQUID TIGHT CONDUIT (6" MAX.). TRANSITION
TO SCH 40 PVC CONDUIT UNDERGROUND
- 8 PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH
PULL-STRING FOR TELCO FROM FIBER JUNCTION
BOX TO RADIO EQUIPMENT CABINET, 7'
- 9 PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH
PULL-STRING FOR DC POWER FROM FIBER
JUNCTION BOX TO RADIO EQUIPMENT CABINET, 6'

NOTE:
CONTRACTOR SHALL NOT STACK THE
HYBRIFLEX CABLES ON TOP OF THE EXISTING
COAXIAL CABLES AS TO PREVENT THE
COAXIAL CABLES FROM BEING REMOVED.

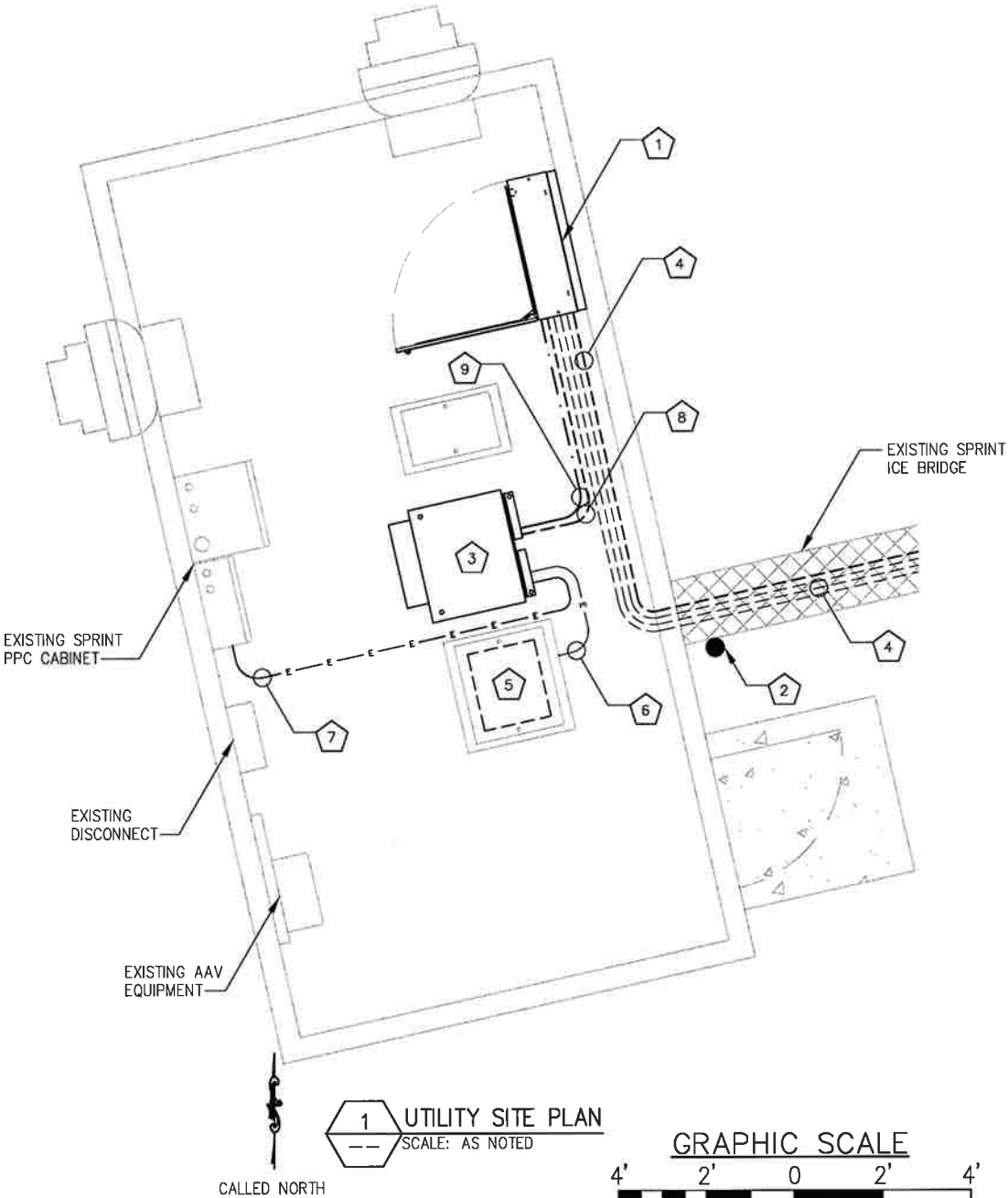


**UNDERGROUND
SERVICE ALERT**
CALL TOLL FREE
1-800-922-4455

THREE WORKING DAYS BEFORE YOU DIG

NOTES:

- CONTRACTOR TO USE EXISTING SPARE CONDUITS, IF AVAILABLE.
CONDUIT SIZES MUST BE EQUAL TO OR GREATER THAN THAT ALLOWED
BY CODE.
- EXISTING ALARMS NEED TO BE RE-ROUTED AND VERIFIED IN PROPER
WORKING CONDITION WHEN NEW MMBTS EQUIPMENT IS INSTALLED.
- REMAINING GROUND LEADS FROM REMOVED CABINETS TO BE COILED
(NOT ON WALKING SURFACE).
- REMAINING UNUSED CONDUITS FROM EXISTING CABINETS TO BE
COVERED WITH WATERPROOF CAPS (NOT DUCT TAPE).



120/240V, 1 PHASE, 3W 200A BUS, 10 KAC																
PANEL SCHEDULE																
CKT NO.	CKT BKR		DESCRIPTION	LOAD (WATTS)					DESCRIPTION	CKT	BKR	CKT NO.				
	AMPS	POLES		L1	L2	LCL	L2	L1		POLES	AMPS					
1	100	2	BTS	6000			100		SURGE ARRESTOR	2	60	2				
3					6000			100					4			
5	20	2	TELCO FAN	180			TBD		INDOOR PLUGS	1	20	6				
7					7150			TBD	OUTDOOR GFCI	1	20	8				
9	20	1	SMOKE ALARM	TBD			TBD		LIGHTING	1	—	10				
11	15	1	TELCO GFI		180			TBD	OUTDOOR LIGHT	1	10	12				
PHASE TOTALS (WATTS)				TBD*	TBD*		TBD*	TBD*	* — INSUFFICIENT FIELD DATA TO SHOW SITE-SPECIFIC INFORMATION							
TOTAL CONNECTED (WATTS)				TBD*	TBD*											
PHASE BALANCE				TBD*	TBD*											
TOTAL AMPS PER PHASE (AMPS)				TBD*	TBD*											
TOTAL LOAD (AMPS)				TBD*												

2 EXISTING PANELBOARD SCHEDULE
NOT TO SCALE

NOTE:
THERE ARE NO EXISTING DUAL POLE BREAKER POSITIONS
AVAILABLE FOR THE MM BTS BREAKER. CONTRACTOR
TO VERIFY IF THERE ARE EXISTING SPARE OR UNUSED
BREAKERS INSIDE THE PANEL AND REPLACE WITH THE
NEW 2P 100A BREAKER FOR THE MM BTS CABINET.

ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES
- GROUNDING SHALL COMPLY WITH THE ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
- ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
- CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
- LABEL SPRINT SERVICE DISCONNECTS WITH SWITCH AND PPC CABINET WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
- ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 10 OHMS TO GROUND. TEST GROUND RING RESISTANCE PRIOR TO MAKING FINAL GROUND CONNECTIONS TO INFRASTRUCTURE AND EQUIPMENT. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY SPRINTS REPRESENTATIVE.
- PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360 DEGREES.
- OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO SPRINT REPRESENTATIVE.
- SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
- REDLINED AS-BUILTS ARE TO BE DELIVERED TO A SPRINT REPRESENTATIVE.
- PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
- FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, AND THE COMPLETE GROUNDING SYSTEM.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER AND SHALL BE SUBJECT TO APPROVAL BY A SPRINT REPRESENTATIVE.
- CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
- PROTECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE, REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
- REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY.
- UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
- PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
- DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE A SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.

NOTE:
INFINIGY ENGINEERING HAS NOT CONDUCTED AN
ELECTRICAL LOAD STUDY FOR THIS SITE.
CONTRACTOR IS TO VERIFY EXISTING ELECTRICAL
LOADS PRIOR TO CONSTRUCTION TO ENSURE THERE
IS AMPLE SERVICE AVAILABLE TO ACCOMMODATE
THE EXISTING AND PROPOSED EQUIPMENT.

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294-036

Project Title

**BAM ORANGE
CENTER ROAD
CT23XC122**

ORANGE CENTER RD
ORANGE, CT 06477

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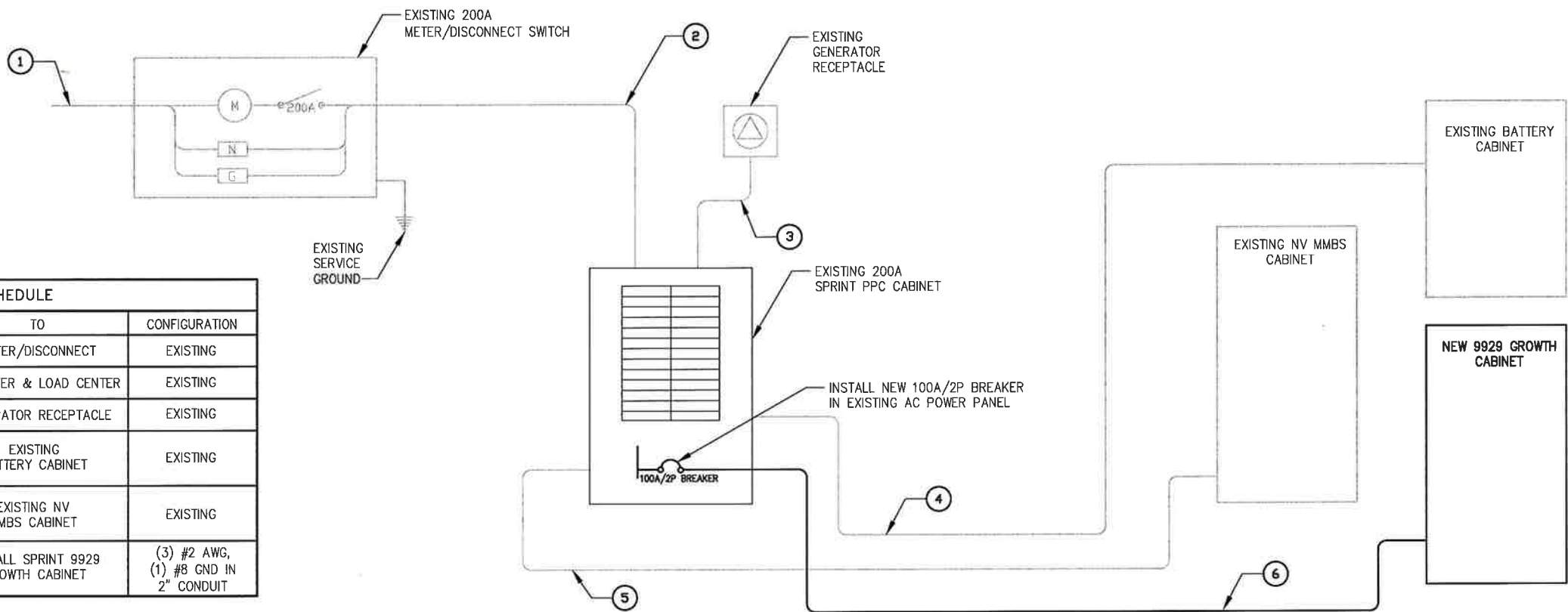
**UTILITY
SITE PLAN**

Drawing Number

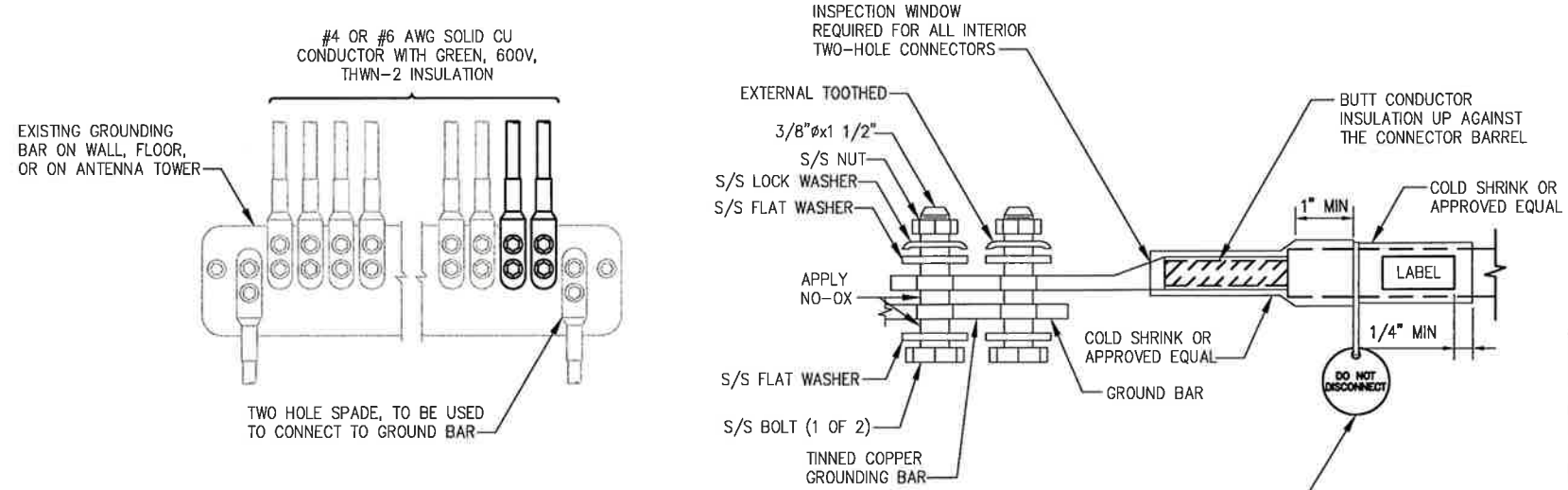
E1

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

CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	EXISTING BATTERY CABINET	EXISTING
5	TRANSFER & LOAD CENTER	EXISTING NV MMBS CABINET	EXISTING
6	TRANSFER & LOAD CENTER	INSTALL SPRINT 9929 GROWTH CABINET	(3) #2 AWG, (1) #8 GND IN 2" CONDUIT



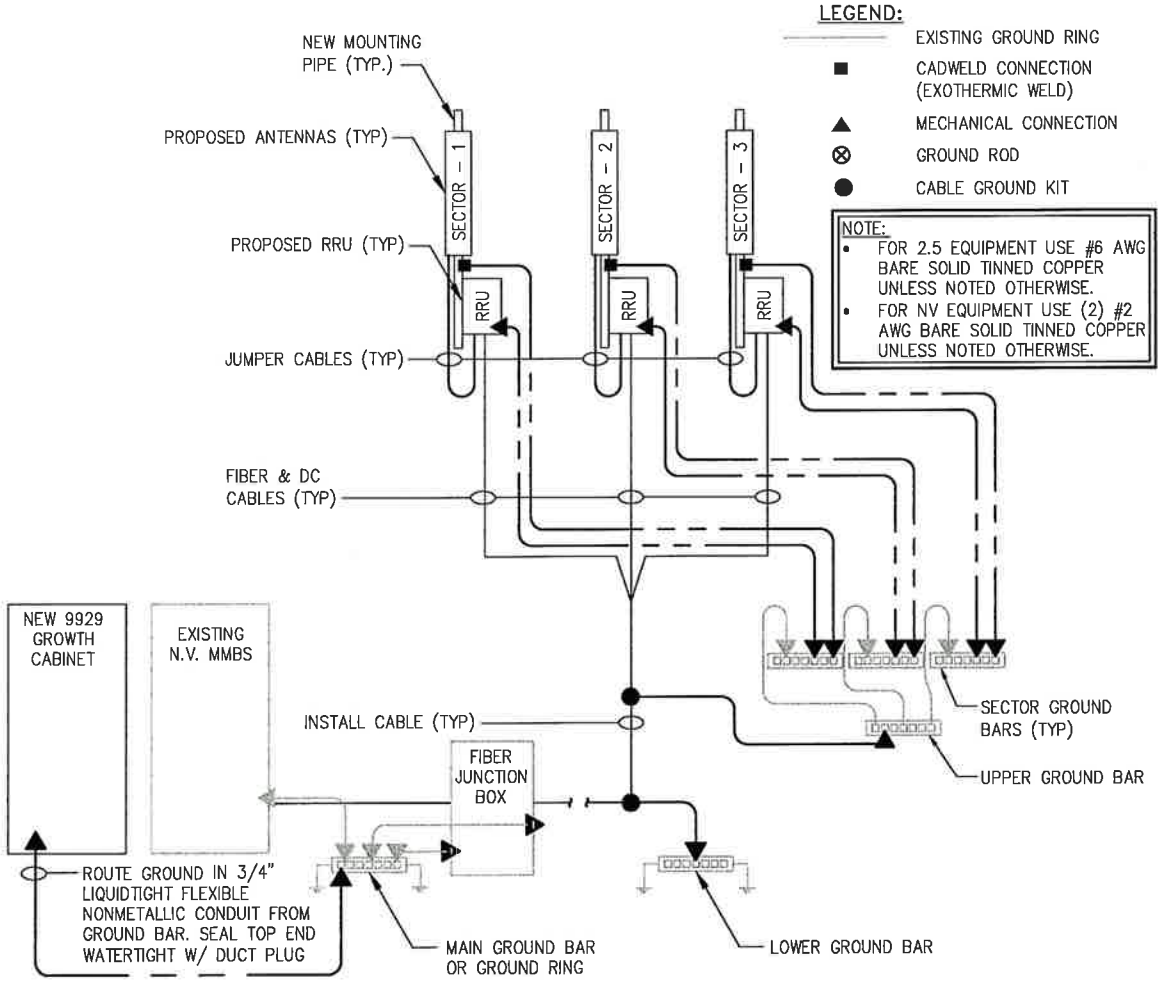
1 ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE



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

2 INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR
NOT TO SCALE

3 TWO HOLE LUG
NOT TO SCALE



4 GROUNDING RISER DIAGRAM
NOT TO SCALE

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ORANGE CENTER RD
ORANGE, CT 06477

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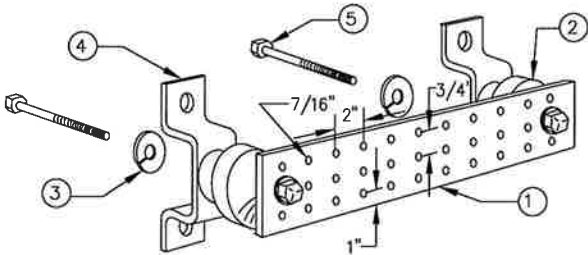
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Drawing Title
ELECTRICAL & GROUNDING DETAILS

Drawing Number

E2

GROUNDING NOTES:
IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC, CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT.



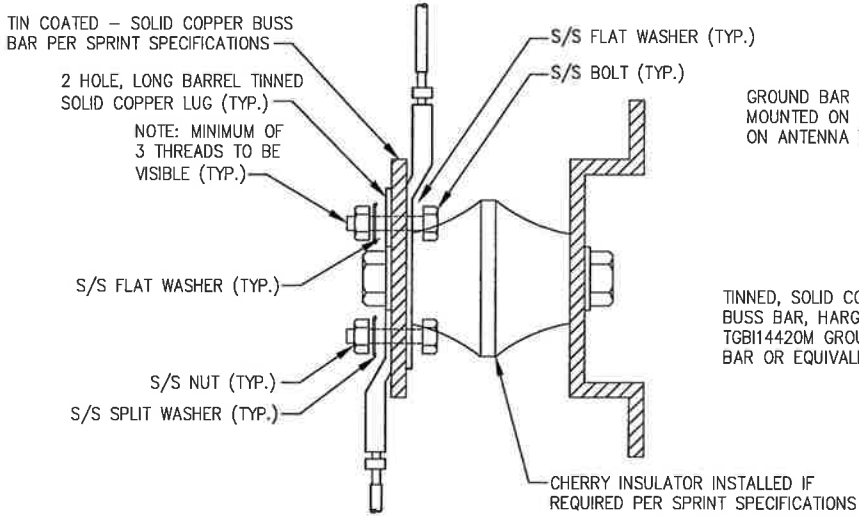
LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO., HARGER TGB114420M, OR EQUIVALENT. HOLE CENTERS TO MATCH
2. NEMA DOUBLE LUG CONFIGURATION.
3. INSULATORS, NEWTON INSTRUMENT CO. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
4. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT.
5. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
6. 5/8-11"x1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

NOTE:

- 1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 6", 12", 18", ETC. GROUND BARS.
- 2) ENTIRE ESSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGB114420M.

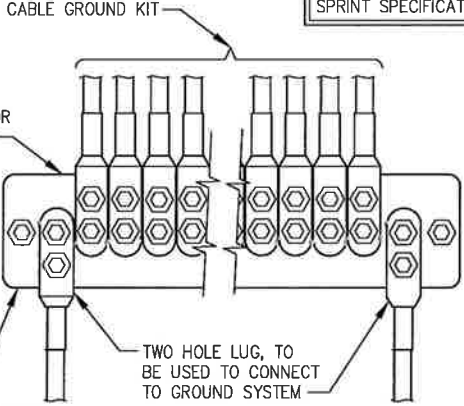
GROUND BAR



NOTE:

- 1) ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
- 2) COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
- 3) APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

GROUND LUG



NOTE:
CONTRACTOR TO UTILIZE KORP-SHIELD (THOMAS & BETTS) OR EQUIVALENT ON ALL LUG CONNECTIONS

ANTENNA GROUND BAR

NOTE:
HEAT SHRINK PER SPRINT SPECIFICATIONS

1 GROUND BAR DETAILS
NOT TO SCALE

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CT23XC122**

ORANGE CENTER RD
ORANGE, CT 06477

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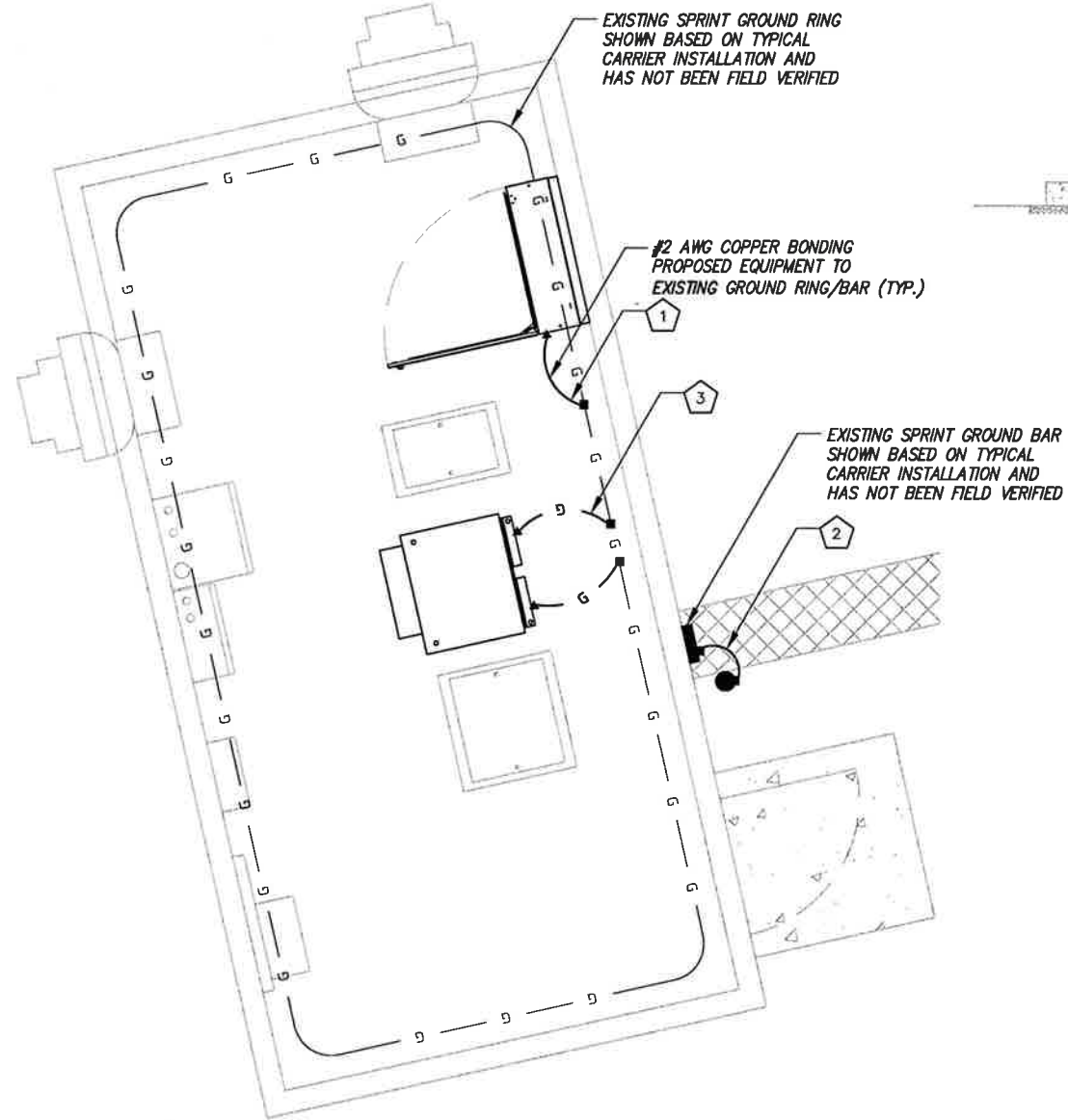
Drawing Number

E3

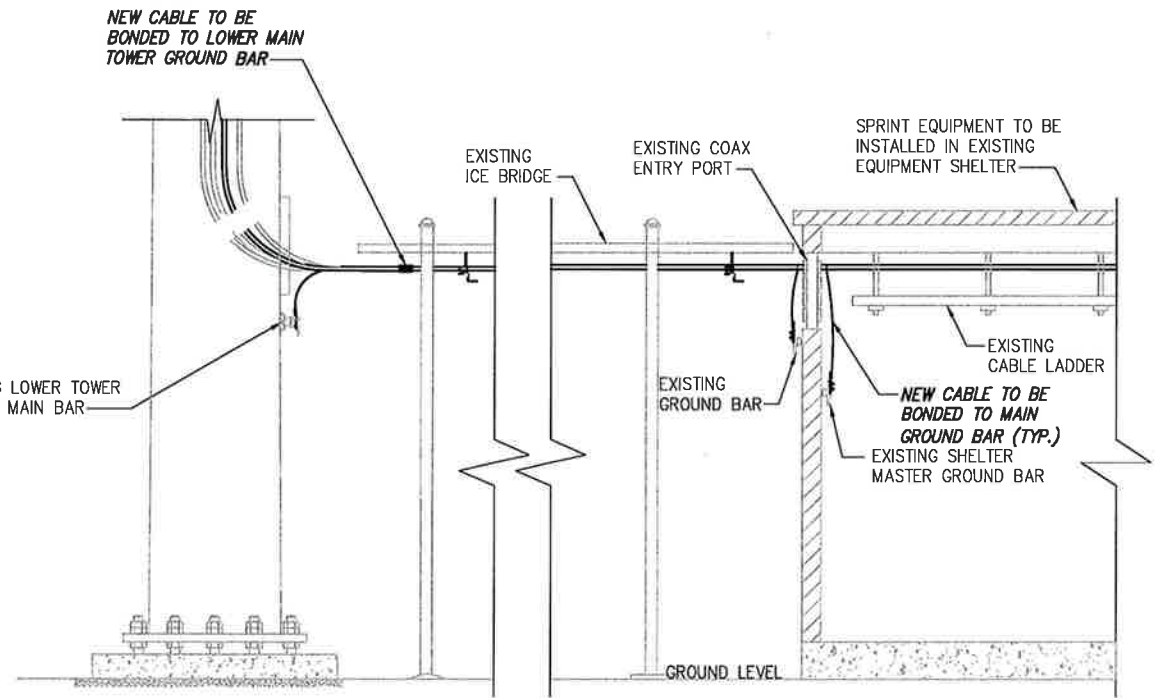
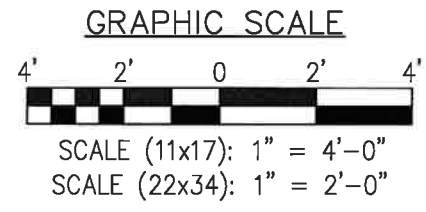
CODED NOTES:

- 1 PROPOSED SPRINT FIBER/POWER JUNCTION BOX MOUNTED TO NEW H-FRAME
- 2 PROPOSED SPRINT GPS TO REPLACE EXISTING
- 3 PROPOSED SPRINT 9929 EQUIPMENT CABINET

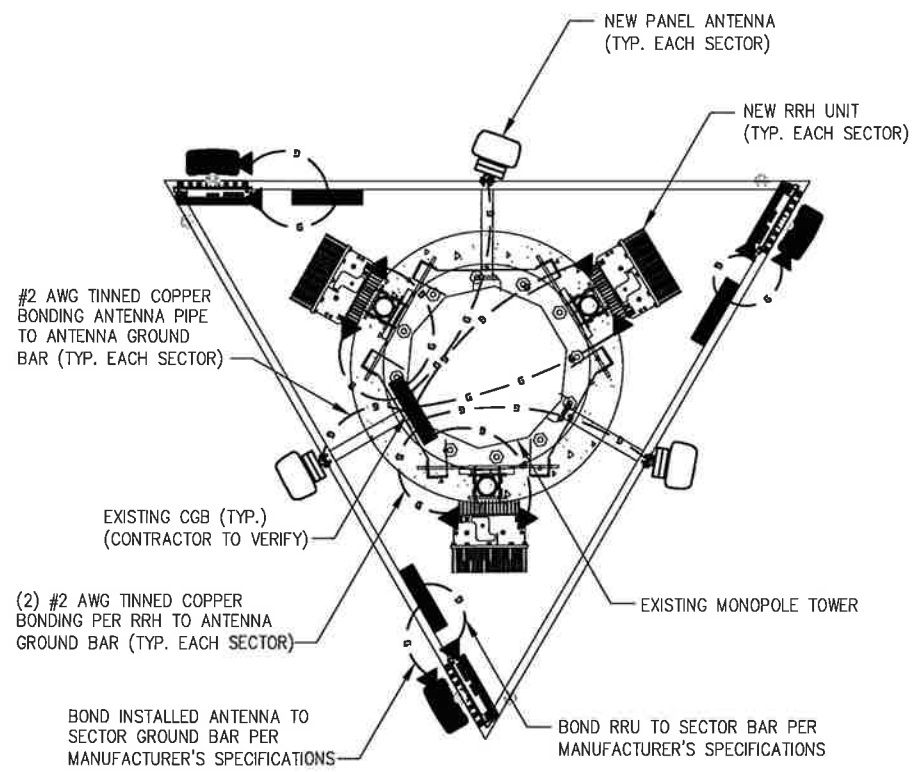
SYMBOL	
⊗	COPPER GROUND ROD
▶	CONNECT PER MANUFACTURER SPECS
■	CADWELD CONNECTION
●	MECHANICAL CONNECTION
—	GROUND BAR



1 EQUIPMENT GROUNDING PLAN
SCALE: AS NOTED



2 EQUIPMENT GROUNDING PLAN
SCALE: AS NOTED



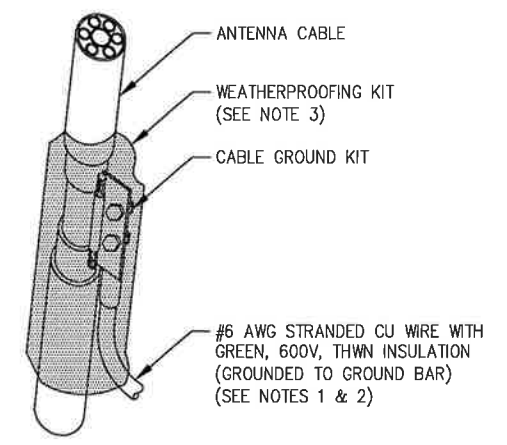
- NOTES:
1. CONTRACTOR TO VERIFY EXISTING LUG SPACES ARE AVAILABLE ON GROUND BAR. ADD ADDITIONAL BUS BAR IF NO LUG SPACES ARE AVAILABLE.
 2. ANTENNA GROUNDING CONNECTIONS SHOWN ARE NOT EXACT TO THIS SITE. FOR EXACT ANTENNA LAYOUT REFER TO ANTENNA CONFIGURATION SHEET.

3 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

GROUNDING NOTES:

1. ALL DOWN CONDUCTORS AND GROUND RING AND CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNO. ALL CONNECTIONS TO GROUND RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE A MINIMUM DEPTH BELOW GRADE OF 30 INCHES OR TO THE LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNO.
2. WHERE MECHANICAL CONDUCTOR CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
3. GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6 INCHES ABOVE GRADE R FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO THE GROUND.
4. GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN PVC CONDUIT TO GRADE. MOUNT PVC WITH GALVANIZED "C" CLAMPS. SEAL TOP ENDS.
5. FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST. SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
6. ALL GROUNDING WORK SHALL COMPLY WITH CARRIER(S) STANDARDS.
7. GROUNDING REQUIREMENTS SHOWN ON THIS PLAN ARE FOR ITEMS THAT ARE LOCATED NEAR GRADE LEVEL AND THAT NEED TO BE TIED TO THE BELOW GRADE GROUND RING.
8. UNLESS NOTED OTHERWISE, ALL GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT'S SSEQ DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES", AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING". ALL GROUNDING SHALL ALSO COMPLY WITH ALL STATE AND LOCAL CODES, AND THE NATIONAL ELECTRICAL CODE (NEC).
9. UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
10. RESISTANCE TO EARTH TESTING IS REQUIRED PER SPRINT STANDARDS ON ALL NEW SITES.
11. REFER TO "ANTI-THEFT UPDATE TO SPRINT GROUNDING 082412.PDF" FOR GUIDELINE TO SUSPECTED OR ACTUAL THEFT OF GROUND RING.

- NOTES:
- 1) DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 - 2) GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 - 3) WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.



4 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE

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Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

STATE OF CONNECTICUT

JOHN S. STEVENS

No. 24705

PROFESSIONAL ENGINEER

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GROUNDING PLAN AND DETAILS

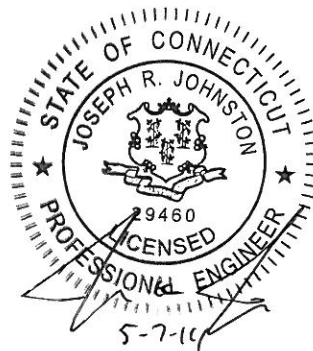
Drawing Number
E4

Tower Analysis Report

May 7, 2014

Site Name	High Plains CT23XC122
Infinigy Job Number	286-036
Client	Sprint
Proposed Carrier	Sprint
Site Location	525 Orange Center Road, Orange, CT 06477 New Haven County 41° 16' 25.31" N NAD83 73° 01' 07.77" W NAD83
Structure Type	160' Monopole tower
Structural Usage Ratio	90.7%
Overall Result	Pass

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The tower and foundations are therefore deemed adequate to support the existing and proposed loading as listed in this report.



Maxwell R. Becker, E.I.T.
Structural Engineer I

Contents

Introduction.....	3
Supporting Documentation.....	3
Analysis Code Requirements.....	3
Conclusion.....	3
Existing and Reserved Loading.....	4
Proposed Loading.....	4
Structure Usages.....	4
Foundation Reactions.....	4
Deflection, Twist, and Sway.....	4
Assumptions and Limitations.....	5
Calculations.....	Appended

Introduction

Infinigy Engineering has been requested to perform a structural analysis on the existing 160' Monopole tower. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The tower was analyzed using tnxTower version 6.1.3.1 tower analysis software.

Supporting Documentation

Construction Drawings	Infinigy Engineering, Job # 238-036, dated April 17, 2014
Previous Analysis	Paul J. Ford and Company, Project # 44512-0002, dated December 17, 2012

Analysis Code Requirements

Wind Speed	110 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 0.75" ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2003 IBC w/ 2005 CT Supplements + 2009 CT Amendments
Structure Class	2
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The tower and foundations are therefore deemed adequate to support the existing and proposed loading as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Maxwell R. Becker, E.I.T.
Structural Engineer I | Infinigy
1033 Watervliet Shaker Road, Albany, NY 12205
(O) (518) 690-0790 | (M) (518) 221-4665
mbecker@infinigy.com | www.infinigy.com

Existing and Reserved Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax& Lines	Carrier
168.0	9	48"x7"x6" Panels*	Platform w/ Handrails	(9) 1-5/8"* (6) 5/8"	--
	3	48"x12" Panels			
	3	RRH			
165.0	1	Andrew VHL P2-11-DW1		(2) 5/8"	
160.0	3	Antel BXA-70063/6CF		(12) 2"	
	6	Antel LPA-80060-6CF-EDIN-4			
156.5	3	17"x16"x7" TMA	Platform w/ Handrails	(2) ¾"	
148.5	1	12"OD x 24" Tall Cylinder		(1) 3/8" Fiber	
147.5	6	Powerwave RA21-7770.00		(12) 1-5/8"	
	3	Powerwave P65-16-XLH-RR			
	6	14"x9"x2 ¾" TMAs			
136.0	6	Decibel DB980H90E-M*	Platform w/ Handrails	(6) 2"*	
122.0	6	Andrew RR90-17-02DP	Platform w/ Handrails	(18) 2"	
	6	RFS APX16DWV-16DWVS-C			
	6	13"x6.5"x3" TMA			
	6	Ericsson TMA 17-21-M			
115.5	--	Exalt FCC10	--	(2) ½"	
113.0	3	72"x7" Panels	Pipe	(6) 2"	
83.5	1	GPS	Side Arm	(1) 5/8"	

* Existing equipment to be removed.

Proposed Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax& Lines	Carrier
136.0	3	APXVSP18-C-A20	Platform w/ Handrails	(3) 1-1/4" Hybriflex (1) 1-1/4" Fiber	Sprint
	3	800 MHz RRH w/ Notch Filter			
	3	1900 MHz RRH			
	3	RFS APXVTM14-C-120			
	3	Alcatel Lucent TD-RRH8X20			

Structure Usages

Pole (L3)	90.7	Pass
Base Plate	71.7	Pass
RATING =	90.7	Pass

Foundation Reactions

Reaction Data	Design Reactions	Analysis Reactions	Result
Moment (kip-ft)	--	5121.8	--
Shear (kip)	--	47.2	--
Axial (kip)	--	55.2	--

Tower base reactions are acceptable per rigorous structural analysis

Deflection, Twist, and Sway

Antenna Elevation (ft)	Deflection (in)	Twist (°)	Sway (°)
136.0	14.6	0.05	1.14

*Per ANSI/TIA-222-G Section 2.8.2 maximum serviceability structural deflection limit is 3% of structure height.

*Per ANSI/TIA-222-G Section 2.8.2 maximum serviceability structural twist and sway limit is 4 degrees.

*Per ANSI/TIA-222-G Section 2.8.3 deflection, Twist, and sway values were calculated using a basic 3-second gust wind speed of 60 mph.

*It is the responsibility of the client to ensure their proposed and/or existing equipment will meet ANSI/TIA-222-G Annex D or other appropriate microwave signal degradation limits based on the provided values above.

Assumptions and Limitations

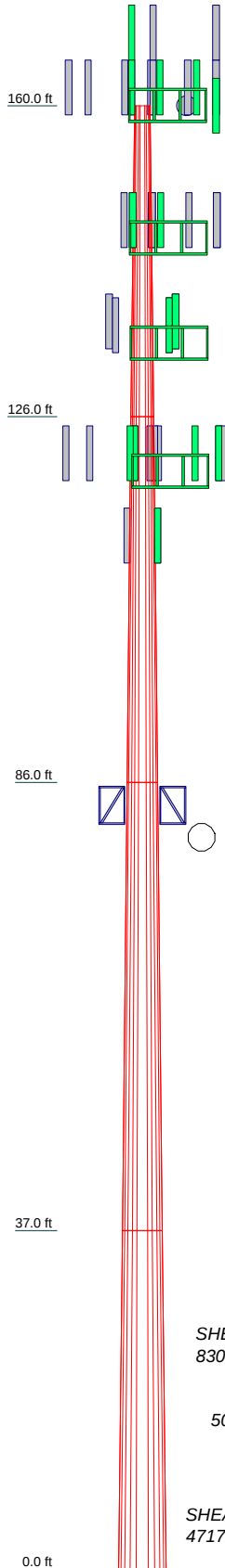
All engineering services are completed assuming all information provided to Infinigy Engineering is current and correct. If actual conditions differ from those described in this report we should be notified immediately to complete a revised evaluation.

It is the responsibility of the client to ensure that the information provided to Infinigy Engineering is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the design drawings and specifications that have been supplied.

All calculations are completed in accordance with generally accepted engineering principles and practices. Infinigy Engineering is not responsible the conclusions, opinions, and recommendations made by others based on the information we supply.

This report is an evaluation of the tower structure only and does not reflect adequacy of any existing antenna mounts, mount connections, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

Section	1	2	3	4	
Length (ft)	34.00	40.00	49.00	37.00	
Number of Sides	12	12	12	12	
Thickness (in)	0.1875	0.3125	0.3750	0.5000	
Top Dia (in)	20.5300	29.5310	39.5156	52.0872	
Bot Dia (in)	29.5310	39.5156	52.0872	61.5800	
Grade					
Weight (lb)	1735.3	4685.6	9145.9	11419.1	26985.9



DESIGNED APPURTENANCE LOADING

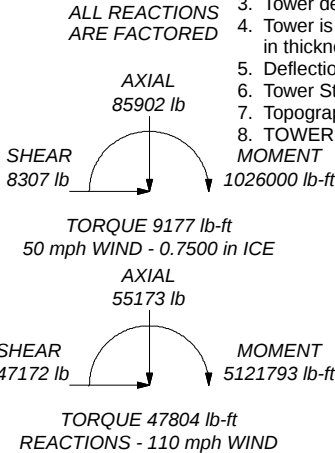
TYPE	ELEVATION	TYPE	ELEVATION
Angle Platform w/ Handrails	160	APXVTM14-C-120	136
48"x12"x4" Panel	160	TD-RRH8X20	136
48"x12"x4" Panel	160	TD-RRH8X20	136
48"x12"x4" Panel	160	TD-RRH8X20	136
RRH	160	1900 MHz RRH	135
RRH	160	1900 MHz RRH	135
RRH	160	1900 MHz RRH	135
BXA-70063/6CF	160	APXVSP18-C-A20	134
BXA-70063/6CF	160	APXVSP18-C-A20	134
BXA-70063/6CF	160	APXVSP18-C-A20	134
LPA-80060-6CF-EDIN-4	160	Angle Platform w/ Handrails	134
LPA-80060-6CF-EDIN-4	160	(2) APX16DWV-16DWVS-C	120
LPA-80060-6CF-EDIN-4	160	(2) APX16DWV-16DWVS-C	120
LPA-80060-6CF-EDIN-4	160	13"x6.5"x3 TMAs	120
LPA-80060-6CF-EDIN-4	160	13"x6.5"x3 TMAs	120
LPA-80060-6CF-EDIN-4	160	(2) Ericsson TMA 17-21-M	120
17"x16"x7" TMA	160	13"x6.5"x3 TMAs	120
17"x16"x7" TMA	160	13"x6.5"x3 TMAs	120
17"x16"x7" TMA	160	(2) Ericsson TMA 17-21-M	120
VHLP2-11-2WH	160	13"x6.5"x3 TMAs	120
14"x9"x2.75" TMA	156	13"x6.5"x3 TMAs	120
14"x9"x2.75" TMA	156	(2) Ericsson TMA 17-21-M	120
14"x9"x2.75" TMA	156	Angle Platform w/ Handrails	120
14"x9"x2.75" TMA	156	RR90-17-02DP	120
14"x9"x2.75" TMA	156	RR90-17-02DP	120
14"x9"x2.75" TMA	156	RR90-17-02DP	120
12"ODx24" Tall Cylinder	148.5	RR90-17-02DP	120
RA21-7770.00	145.5	RR90-17-02DP	120
RA21-7770.00	145.5	RR90-17-02DP	120
RA21-7770.00	145.5	(2) APX16DWV-16DWVS-C	120
RA21-7770.00	145.5	ExploreAir rc1xxxFCC	115.5
RA21-7770.00	145.5	Antenna Pipe Mount	115.5
P65-16-XLH-RR	145.5	72"x7" Panel	113
P65-16-XLH-RR	145.5	Antenna Pipe Mount	113
P65-16-XLH-RR	145.5	Antenna Pipe Mount	113
RA21-7770.00	145.5	Antenna Pipe Mount	113
Angle Platform w/ Handrails	145.5	72"x7" Panel	113
800 MHz w/ Notch Filter	137	72"x7" Panel	113
800 MHz w/ Notch Filter	137	GPS	83.5
800 MHz w/ Notch Filter	137	Pipe Side Arm	83.5
APXVTM14-C-120	136	Pipe Side Arm	83.5
APXVTM14-C-120	136		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 110 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 90.7%



Infinigy Engineering 1033 Watervliet Shaker Road. Albany, NY 12205 Phone: (518) 690-0790 FAX: (518) 690-0793			Job: 286-036 Project: High Plains CT23XC122 Client: Sprint Code: TIA-222-G Path: C:\Users\jjohnston\Desktop\New folder\CT23XC112.eri	Drawn by: JJohnston Date: 05/07/14 Scale: NTS Dwg No. E-1
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Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 110 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	✓ Assume Rigid Index Plate	✓ Calculate Redundant Bracing Forces
Use Moment Magnification	✓ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
✓ Use Code Stress Ratios	✓ Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
✓ Use Code Safety Factors - Guys	✓ Retension Guys To Initial Tension	✓ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	✓ Use Azimuth Dish Coefficients	✓ Consider Feedline Torque
Use Special Wind Profile	✓ Project Wind Area of Appurt.	✓ Include Angle Block Shear Check
✓ Include Bolts In Member Capacity	✓ Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	Include Shear-Torsion Interaction
✓ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	✓ Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination	Use TIA-222-G Tension Splice Capacity	
	Exemption	

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	160.00-126.00	34.00	0.00	12	20.5300	29.5310	0.1875	0.7500	A572-65 (65 ksi)
L2	126.00-86.00	40.00	0.00	12	29.5310	39.5156	0.3125	1.2500	A572-65 (65 ksi)

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	86.00-37.00	49.00	0.00	12	39.5156	52.0872	0.3750	1.5000	A572-65 (65 ksi)
L4	37.00-0.00	37.00		12	52.0872	61.5800	0.5000	2.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	21.2542	12.2818	648.7182	7.2826	10.6345	61.0011	1314.4789	6.0447	4.9995	26.664
	30.5727	17.7161	1947.0578	10.5050	15.2971	127.2832	3945.2669	8.7193	7.4118	39.53
L2	30.5727	29.4011	3203.8014	10.4602	15.2971	209.4391	6491.7703	14.4703	7.0768	22.646
	40.9096	39.4481	7738.4339	14.0347	20.4691	378.0548	15680.1650	19.4152	9.7527	31.209
L3	40.9096	47.2623	9241.7779	14.0123	20.4691	451.4994	18726.3475	23.2611	9.5852	25.56
	53.9246	62.4425	21313.3704	18.5130	26.9812	789.9350	43186.6668	30.7323	12.9544	34.545
L4	53.9246	83.0554	28212.2481	18.4682	26.9812	1045.6273	57165.6635	40.8773	12.6194	25.239
	63.7523	98.3388	46828.3560	21.8666	31.8984	1468.0453	94886.9451	48.3994	15.1634	30.327

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
ft	ft ²	in						
L1 160.00-126.00				1	1	1		
L2 126.00-86.00				1	1	1		
L3 86.00-37.00				1	1	1		
L4 37.00-0.00				1	1	1		

Monopole Base Plate Data

Base Plate Data	
Base plate is square	
Base plate is grouted	
Anchor bolt grade	A615
Anchor bolt size	2.2500 in
Number of bolts	24
Embedment length	24.0000 in
f _c	4 ksi
Grout space	2.0000 in
Base plate grade	A572-60
Base plate thickness	3.2500 in
Bolt circle diameter	69.8300 in
Outer diameter	75.8300 in
Inner diameter	60.0000 in
Base plate type	Plain Plate

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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Description	Sector	Component Type	Placement	Total Number	Number Per Row	Start/End Position	Width or Diameter	Perimeter	Weight
			ft				in	in	plf
2" Coax	C	Surface Ar (CaAa)	122.00 - 0.00	1	1	0.000 0.000	2.0000		1.04
1/2	C	Surface Ar (CaAa)	115.50 - 0.00	2	2	0.000 0.000	0.5800		0.25

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number		CAAA	Weight
				ft			ft ² /ft	plf
5/8	C	No	Inside Pole	160.00 - 0.00	8	No Ice	0.00	0.40
						1/2" Ice	0.00	0.40
						1" Ice	0.00	0.40
2" Coax	C	No	Inside Pole	160.00 - 0.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
3/4"	C	No	Inside Pole	148.00 - 0.00	2	No Ice	0.00	0.38
						1/2" Ice	0.00	0.38
						1" Ice	0.00	0.38
3/8	C	No	Inside Pole	148.00 - 0.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
1 5/8	C	No	Inside Pole	148.00 - 0.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
2" Coax	C	No	Inside Pole	122.00 - 0.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
2" Coax	C	No	Inside Pole	122.00 - 0.00	5	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
2" Coax	C	No	Inside Pole	113.00 - 0.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
5/8	C	No	Inside Pole	83.50 - 0.00	1	No Ice	0.00	0.40
						1/2" Ice	0.00	0.40
						1" Ice	0.00	0.40

1-1/4" Hybrid	C	No	Inside Pole	136.00 - 0.00	3	No Ice	0.00	0.83
						1/2" Ice	0.00	0.83
						1" Ice	0.00	0.83
1 1/4	C	No	Inside Pole	136.00 - 0.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation	Face	A _R	A _F	CAAA In Face	CAAA Out Face	Weight
	ft		ft ²	ft ²	ft ²	ft ²	lb
L1	160.00-126.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	857.53
		D	0.000	0.000	0.000	0.000	0.00

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L2	126.00-86.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	10.622	0.000	2143.11
		D	0.000	0.000	0.000	0.000	0.00
L3	86.00-37.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	15.484	0.000	2841.44
		D	0.000	0.000	0.000	0.000	0.00
L4	37.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	11.692	0.000	2146.33
		D	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
L1	160.00-126.00	A	1.736	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	857.53
		D		0.000	0.000	0.000	0.000	0.00
L2	126.00-86.00	A	1.685	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	36.030	0.000	2576.83
		D		0.000	0.000	0.000	0.000	0.00
L3	86.00-37.00	A	1.595	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	52.081	0.000	3429.17
		D		0.000	0.000	0.000	0.000	0.00
L4	37.00-0.00	A	1.412	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	36.269	0.000	2515.74
		D		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	160.00-126.00	0.0000	0.0000	0.0000	0.0000
L2	126.00-86.00	0.3768	0.0000	0.9144	0.0000
L3	86.00-37.00	0.4376	0.0000	1.0874	0.0000
L4	37.00-0.00	0.4413	0.0000	1.0881	0.0000

Shielding Factor Ka

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _o No Ice	K _o Ice
L2	11	2" Coax	86.00 - 122.00	1.0000	1.0000
L2	12	1/2	86.00 - 115.50	1.0000	1.0000
L3	11	2" Coax	37.00 - 86.00	1.0000	1.0000
L3	12	1/2	37.00 - 86.00	1.0000	1.0000
L4	11	2" Coax	0.00 - 37.00	1.0000	1.0000
L4	12	1/2	0.00 - 37.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
Angle Platform w/ Handrails	C	From Leg	3.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	36.00 41.50 54.40	42.40 48.40 54.40	2000.00 2450.00 2900.00
48"x12"x4" Panel	A	From Leg	4.00 6.50 8.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	5.60 5.99 6.40	2.09 2.39 2.70	60.00 88.55 121.44
48"x12"x4" Panel	B	From Leg	4.00 6.50 8.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	5.60 5.99 6.40	2.09 2.39 2.70	60.00 88.55 121.44
48"x12"x4" Panel	C	From Leg	4.00 6.50 8.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	5.60 5.99 6.40	2.09 2.39 2.70	60.00 88.55 121.44
RRH	A	From Leg	4.00 6.50 8.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.73 2.96 3.20	1.45 1.64 1.84	64.00 82.23 103.34
RRH	B	From Leg	4.00 6.50 8.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.73 2.96 3.20	1.45 1.64 1.84	64.00 82.23 103.34
RRH	C	From Leg	4.00 6.50 8.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.73 2.96 3.20	1.45 1.64 1.84	64.00 82.23 103.34
BXA-70063/6CF	A	From Leg	4.00 2.17 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	7.73 8.27 8.81	4.04 4.48 4.92	14.90 56.85 104.64
BXA-70063/6CF	B	From Leg	4.00 2.17 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	7.73 8.27 8.81	4.04 4.48 4.92	14.90 56.85 104.64
BXA-70063/6CF	C	From Leg	4.00 2.17 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	7.73 8.27 8.81	4.04 4.48 4.92	14.90 56.85 104.64
LPA-80060-6CF-EDIN-4	A	From Leg	4.00 6.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	6.52 6.98 7.48	6.75 7.23 7.76	22.50 72.12 127.78
LPA-80060-6CF-EDIN-4	A	From Leg	4.00 -6.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	6.52 6.98 7.48	6.75 7.23 7.76	22.50 72.12 127.78
LPA-80060-6CF-EDIN-4	B	From Leg	4.00 6.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	6.52 6.98 7.48	6.75 7.23 7.76	22.50 72.12 127.78

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
LPA-80060-6CF-EDIN-4	B	From Leg	4.00 -6.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	6.52 6.98 7.48	6.75 7.23 7.76	22.50 72.12 127.78
LPA-80060-6CF-EDIN-4	C	From Leg	4.00 6.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	6.52 6.98 7.48	6.75 7.23 7.76	22.50 72.12 127.78
LPA-80060-6CF-EDIN-4	C	From Leg	4.00 -6.50 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	6.52 6.98 7.48	6.75 7.23 7.76	22.50 72.12 127.78
17"x16"x7" TMA	A	From Leg	4.00 -3.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.64 2.86 3.09	1.16 1.32 1.49	30.00 47.63 68.05
17"x16"x7" TMA	B	From Leg	4.00 -3.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.64 2.86 3.09	1.16 1.32 1.49	30.00 47.63 68.05
17"x16"x7" TMA	C	From Leg	4.00 -3.50 2.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice	2.64 2.86 3.09	1.16 1.32 1.49	30.00 47.63 68.05

Angle Platform w/ Handrails	C	From Leg	3.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	36.00 41.50 54.40	42.40 48.40 54.40	2000.00 2450.00 2900.00
14"x9"x2.75" TMA	A	From Leg	4.00 2.17 2.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	1.23 1.38 1.54	0.37 0.49 0.61	15.00 22.00 30.86
14"x9"x2.75" TMA	A	From Leg	4.00 6.50 2.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	1.23 1.38 1.54	0.37 0.49 0.61	15.00 22.00 30.86
14"x9"x2.75" TMA	B	From Leg	4.00 2.17 2.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	1.23 1.38 1.54	0.37 0.49 0.61	15.00 22.00 30.86
14"x9"x2.75" TMA	B	From Leg	4.00 6.50 2.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	1.23 1.38 1.54	0.37 0.49 0.61	15.00 22.00 30.86
14"x9"x2.75" TMA	C	From Leg	4.00 2.17 2.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	1.23 1.38 1.54	0.37 0.49 0.61	15.00 22.00 30.86
14"x9"x2.75" TMA	C	From Leg	4.00 6.50 2.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	1.23 1.38 1.54	0.37 0.49 0.61	15.00 22.00 30.86
RA21-7770.00	A	From Leg	4.00 2.17 2.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	6.79 7.28 7.77	3.51 3.90 4.30	37.20 74.52 117.18
RA21-7770.00	A	From Leg	4.00 6.50 2.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	6.79 7.28 7.77	3.51 3.90 4.30	37.20 74.52 117.18
RA21-7770.00	B	From Leg	4.00 2.17 2.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	6.79 7.28 7.77	3.51 3.90 4.30	37.20 74.52 117.18
RA21-7770.00	B	From Leg	4.00 6.50 2.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	6.79 7.28 7.77	3.51 3.90 4.30	37.20 74.52 117.18
RA21-7770.00	C	From Leg	4.00 2.17 2.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	6.79 7.28 7.77	3.51 3.90 4.30	37.20 74.52 117.18
RA21-7770.00	C	From Leg	4.00 6.50 2.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice	6.79 7.28 7.77	3.51 3.90 4.30	37.20 74.52 117.18

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
P65-16-XLH-RR	A	From Leg	2.00 4.00 6.50	0.0000	145.50	1" Ice No Ice 1/2" Ice	7.77 8.40 8.95	4.30 4.70 5.15	117.18 53.00 100.28
P65-16-XLH-RR	B	From Leg	2.00 4.00 6.50	0.0000	145.50	1" Ice No Ice 1/2" Ice	9.51 8.40 8.95	5.60 4.70 5.15	153.59 53.00 100.28
P65-16-XLH-RR	C	From Leg	2.00 4.00 6.50	0.0000	145.50	1" Ice No Ice 1/2" Ice	9.51 8.40 8.95	5.60 4.70 5.15	153.59 53.00 100.28
12"ODx24"Tall Cylinder	A	From Leg	2.00 0.00 0.00 0.00	0.0000	148.50	1" Ice No Ice 1/2" Ice 1" Ice	9.51 1.60 1.81 2.02	5.60 1.60 1.81 2.02	153.59 20.00 39.57 61.74

Angle Platform w/ Handrails	C	From Leg	3.00 0.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	36.00 41.50 54.40	42.40 48.40 54.40	2000.00 2450.00 2900.00
APXVSPPI8-C-A20	A	From Leg	4.00 0.00 2.40	0.0000	134.00	No Ice 1/2" Ice 1" Ice	8.26 8.81 9.36	5.28 5.74 6.20	57.00 106.52 162.12
APXVSPPI8-C-A20	B	From Leg	4.00 0.00 2.40	0.0000	134.00	No Ice 1/2" Ice 1" Ice	8.26 8.81 9.36	5.28 5.74 6.20	57.00 106.52 162.12
APXVSPPI8-C-A20	C	From Leg	4.00 0.00 2.40	0.0000	134.00	No Ice 1/2" Ice 1" Ice	8.26 8.81 9.36	5.28 5.74 6.20	57.00 106.52 162.12
800 MHz w/ Notch Filter	A	From Leg	1.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice	2.49 2.71 2.93	2.91 3.14 3.38	61.80 87.79 117.08
800 MHz w/ Notch Filter	B	From Leg	1.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice	2.49 2.71 2.93	2.91 3.14 3.38	61.80 87.79 117.08
800 MHz w/ Notch Filter	C	From Leg	1.00 0.00 0.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice	2.49 2.71 2.93	2.91 3.14 3.38	61.80 87.79 117.08
1900 MHz RRH	A	From Leg	1.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice	2.73 2.96 3.20	1.45 1.64 1.84	44.09 62.32 83.43
1900 MHz RRH	B	From Leg	1.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice	2.73 2.96 3.20	1.45 1.64 1.84	44.09 62.32 83.43
1900 MHz RRH	C	From Leg	1.00 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice	2.73 2.96 3.20	1.45 1.64 1.84	44.09 62.32 83.43

RR90-17-02DP	A	From Leg	4.00 6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	4.36 4.77 5.20	2.00 2.33 2.68	13.50 36.02 63.07
RR90-17-02DP	A	From Leg	4.00 -6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	4.36 4.77 5.20	2.00 2.33 2.68	13.50 36.02 63.07
RR90-17-02DP	B	From Leg	4.00 6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	4.36 4.77 5.20	2.00 2.33 2.68	13.50 36.02 63.07
RR90-17-02DP	B	From Leg	4.00 -6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	4.36 4.77 5.20	2.00 2.33 2.68	13.50 36.02 63.07

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
RR90-17-02DP	C	From Leg	4.00 6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	4.36 4.77 5.20	2.00 2.33 2.68	13.50 36.02 63.07
RR90-17-02DP	C	From Leg	4.00 -6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	4.36 4.77 5.20	2.00 2.33 2.68	13.50 36.02 63.07
(2) APX16DWV-16DWVS-C	A	From Leg	4.00 2.17 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	9.79 10.29 10.81	4.96 5.38 5.84	40.70 96.98 159.01
(2) APX16DWV-16DWVS-C	B	From Leg	4.00 2.17 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	9.79 10.29 10.81	4.96 5.38 5.84	40.70 96.98 159.01
(2) APX16DWV-16DWVS-C	C	From Leg	4.00 2.17 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	9.79 10.29 10.81	4.96 5.38 5.84	40.70 96.98 159.01
13"x6.5"x3 TMAs	A	From Leg	4.00 6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
13"x6.5"x3 TMAs	A	From Leg	4.00 2.17 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
(2) Ericsson TMA 17-21-M	A	From Leg	4.00 -6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.40 1.56 1.73	0.70 0.82 0.95	10.00 20.34 32.81
13"x6.5"x3 TMAs	B	From Leg	4.00 6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
13"x6.5"x3 TMAs	B	From Leg	4.00 2.17 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
(2) Ericsson TMA 17-21-M	B	From Leg	4.00 -6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.40 1.56 1.73	0.70 0.82 0.95	10.00 20.34 32.81
13"x6.5"x3 TMAs	C	From Leg	4.00 6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
13"x6.5"x3 TMAs	C	From Leg	4.00 2.17 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
(2) Ericsson TMA 17-21-M	C	From Leg	4.00 -6.50 2.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.40 1.56 1.73	0.70 0.82 0.95	10.00 20.34 32.81
Angle Platform w/ Handrails	C	From Leg	3.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	36.00 41.50 54.40	42.40 48.40 54.40	2000.00 2450.00 2900.00

ExploreAir rc1xxxFCC	A	From Leg	0.00 0.00 0.00	0.0000	115.50	No Ice 1/2" Ice 1" Ice	0.82 0.95 1.09	0.38 0.49 0.60	15.00 20.40 27.44
Antenna Pipe Mount	A	From Leg	0.00 0.00 0.00	0.0000	115.50	No Ice 1/2" Ice 1" Ice	0.87 1.12 1.39	0.87 1.12 1.39	14.60 25.30 37.43

Antenna Pipe Mount	A	From Leg	1.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice	0.87 1.12 1.39	0.87 1.12 1.39	14.60 25.30 37.43
Antenna Pipe Mount	B	From Leg	1.00	0.0000	113.00	No Ice	0.87	0.87	14.60

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
Antenna Pipe Mount	C	From Leg	0.00	0.0000	113.00	1/2" Ice	1.12	1.12	25.30
			0.00			1" Ice	1.39	1.39	37.43
			1.00			No Ice	0.87	0.87	14.60
			0.00			1/2" Ice	1.12	1.12	25.30
72"x7" Panel	A	From Leg	0.00	0.0000	113.00	1" Ice	1.39	1.39	37.43
			1.00			No Ice	5.28	2.95	45.00
			0.00			1/2" Ice	5.74	3.38	71.70
			0.00			1" Ice	6.20	3.82	103.92
72"x7" Panel	B	From Leg	1.00	0.0000	113.00	No Ice	5.28	2.95	45.00
			0.00			1/2" Ice	5.74	3.38	71.70
			0.00			1" Ice	6.20	3.82	103.92
			1.00			No Ice	5.28	2.95	45.00
72"x7" Panel	C	From Leg	0.00	0.0000	113.00	1/2" Ice	5.74	3.38	71.70
			0.00			1" Ice	6.20	3.82	103.92
			1.00			No Ice	5.28	2.95	45.00
			0.00			1/2" Ice	5.74	3.38	71.70
***			0.00			1" Ice	6.20	3.82	103.92
GPS	A	From Leg	3.00	0.0000	83.50	No Ice	0.50	0.50	10.00
			0.00			1/2" Ice	0.63	0.63	15.96
			0.00			1" Ice	0.78	0.78	23.49
			3.00			No Ice	1.77	5.20	150.00
Pipe Side Arm	A	From Leg	0.00	0.0000	83.50	1/2" Ice	2.00	5.50	175.00
			0.00			1" Ice	2.50	6.00	200.00
			3.00			No Ice	1.77	5.20	150.00
			0.00			1/2" Ice	2.00	5.50	175.00
Pipe Side Arm	B	From Leg	0.00	0.0000	83.50	1" Ice	2.50	6.00	200.00
			3.00			No Ice	1.77	5.20	150.00
			0.00			1/2" Ice	2.00	5.50	175.00
			0.00			1" Ice	2.50	6.00	200.00

APXVTM14-C-120	A	From Leg	3.00	0.0000	136.00	No Ice	6.53	3.38	52.90
			0.00			1/2" Ice	6.96	3.72	90.49
			0.00			1" Ice	7.40	4.07	132.96
			3.00			No Ice	6.53	3.38	52.90
APXVTM14-C-120	B	From Leg	0.00	0.0000	136.00	1/2" Ice	6.96	3.72	90.49
			0.00			1" Ice	7.40	4.07	132.96
			3.00			No Ice	6.53	3.38	52.90
			0.00			1/2" Ice	6.96	3.72	90.49
APXVTM14-C-120	C	From Leg	0.00	0.0000	136.00	1" Ice	7.40	4.07	132.96
			3.00			No Ice	6.53	3.38	52.90
			0.00			1/2" Ice	6.96	3.72	90.49
			0.00			1" Ice	7.40	4.07	132.96
TD-RRH8X20	A	From Leg	3.00	0.0000	136.00	No Ice	4.32	1.41	66.14
			0.00			1/2" Ice	4.60	1.61	90.08
			0.00			1" Ice	4.89	1.83	117.36
			3.00			No Ice	4.32	1.41	66.14
TD-RRH8X20	B	From Leg	0.00	0.0000	136.00	1/2" Ice	4.60	1.61	90.08
			0.00			1" Ice	4.89	1.83	117.36
			3.00			No Ice	4.32	1.41	66.14
			0.00			1/2" Ice	4.60	1.61	90.08
TD-RRH8X20	C	From Leg	0.00	0.0000	136.00	1" Ice	4.89	1.83	117.36
			3.00			No Ice	4.32	1.41	66.14
			0.00			1/2" Ice	4.60	1.61	90.08
			0.00			1" Ice	4.89	1.83	117.36

Dishes

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight lb
VHLP2-11-2WH	C	Paraboloid w/o Radome	From Face	4.00 0.00 0.00	0.0000		160.00	2.17	No Ice 3.70 1/2" Ice 3.99 1" Ice 4.28	30.00 50.48 70.96

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 45 deg - No Ice
5	0.9 Dead+1.6 Wind 45 deg - No Ice
6	1.2 Dead+1.6 Wind 90 deg - No Ice
7	0.9 Dead+1.6 Wind 90 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 45 deg - Service
14	Dead+Wind 90 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 126	20.930	14	1.3582	0.0746
L2	126 - 86	12.160	14	1.0447	0.0358
L3	86 - 37	5.072	14	0.6328	0.0132
L4	37 - 0	0.795	14	0.2098	0.0030

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
160.00	VHLP2-11-2WH	14	20.930	1.3582	0.0746	29700
156.00	14"x9"x2.75" TMA	14	19.837	1.3226	0.0696	29700
148.50	12"ODx24" Tall Cylinder	14	17.805	1.2554	0.0602	12913
145.50	Angle Platform w/ Handrails	14	17.005	1.2282	0.0566	10241
137.00	800 MHz w/ Notch Filter	14	14.803	1.1500	0.0468	6456
136.00	APXVTM14-C-120	14	14.552	1.1407	0.0457	6187
135.00	1900 MHz RRH	14	14.303	1.1313	0.0446	5939
134.00	Angle Platform w/ Handrails	14	14.055	1.1219	0.0436	5711
120.00	RR90-17-02DP	14	10.848	0.9847	0.0308	4570
115.50	ExploreAir rc1xxx FCC	14	9.927	0.9387	0.0275	4735
113.00	Antenna Pipe Mount	14	9.437	0.9129	0.0258	4832

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
83.50	GPS	14	4.745	0.6078	0.0124	6233

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	160 - 126	116.989	6	7.2042	0.4443
L2	126 - 86	69.500	6	5.8173	0.2124
L3	86 - 37	29.420	6	3.6393	0.0786
L4	37 - 0	4.652	6	1.2254	0.0177

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
160.00	VHLP2-11-2WH	6	116.989	7.2042	0.4443	6407
156.00	14"x9"x2.75" TMA	6	111.111	7.0544	0.4141	6407
148.50	12"ODx24"Tall Cylinder	6	100.175	6.7697	0.3584	2784
145.50	Angle Platform w/ Handrails	6	95.861	6.6530	0.3367	2207
137.00	800 MHz w/ Notch Filter	6	83.944	6.3084	0.2782	1389
136.00	APXVTM14-C-120	6	82.579	6.2661	0.2717	1331
135.00	1900 MHz RRH	6	81.223	6.2234	0.2653	1277
134.00	Angle Platform w/ Handrails	6	79.877	6.1803	0.2590	1228
120.00	RR90-17-02DP	6	62.238	5.5217	0.1827	957
115.50	ExploreAir rc1xxxFCC	6	57.092	5.2884	0.1632	973
113.00	Antenna Pipe Mount	6	54.343	5.1552	0.1533	982
83.50	GPS	6	27.534	3.4993	0.0737	1099

Base Plate Design Data

Plate Thickness	Number of Anchor Bolts	Anchor Bolt Size	Actual Allowable Ratio Bolt Tension lb	Actual Allowable Ratio Bolt Compression lb	Actual Allowable Ratio Plate Stress ksi	Actual Allowable Ratio Stiffener Stress ksi	Controlling Condition	Ratio
in		in						
3.2500	24	2.2500	144395.31	148991.08	28.873		Bolt T	0.72
			201288.96	334139.67	54.000			✓
			0.72	0.45	0.53			

Compression Checks

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Pole Design Data

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	lb	lb	
L1	160 - 126 (1)	TP29.531x20.53x0.1875	34.00	160.00	182.8	17.7161	-10654.90	119811.00	0.089
L2	126 - 86 (2)	TP39.5156x29.531x0.3125	40.00	160.00	136.8	39.4481	-22042.50	476179.00	0.046
L3	86 - 37 (3)	TP52.0872x39.5156x0.375	49.00	160.00	103.7	62.4425	-37976.00	1311500.00	0.029
L4	37 - 0 (4)	TP61.58x52.0872x0.5	37.00	160.00	87.8	98.3388	-55149.20	2827140.00	0.020

Pole Bending Design Data

Section No.	Elevation	Size	M _{ux}	φM _{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy}	φM _{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		lb-ft	lb-ft		lb-ft	lb-ft	
L1	160 - 126 (1)	TP29.531x20.53x0.1875	476389.17	588063.33	0.810	0.00	588063.33	0.000
L2	126 - 86 (2)	TP39.5156x29.531x0.3125	1648241.67	2003983.33	0.822	0.00	2003983.33	0.000
L3	86 - 37 (3)	TP52.0872x39.5156x0.375	3484383.33	3971683.33	0.877	0.00	3971683.33	0.000
L4	37 - 0 (4)	TP61.58x52.0872x0.5	5121791.67	7887666.67	0.649	0.00	7887666.67	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _u	φV _n	Ratio $\frac{V_u}{\phi V_n}$	Actual T _u	φT _n	Ratio $\frac{T_u}{\phi T_n}$
	ft		lb	lb		lb-ft	lb-ft	
L1	160 - 126 (1)	TP29.531x20.53x0.1875	20750.60	491104.00	0.042	19336.75	1192408.33	0.016
L2	126 - 86 (2)	TP39.5156x29.531x0.3125	33180.80	1254630.00	0.026	24889.42	4063458.33	0.006
L3	86 - 37 (3)	TP52.0872x39.5156x0.375	41456.10	1883710.00	0.022	22993.67	8053333.33	0.003
L4	37 - 0 (4)	TP61.58x52.0872x0.5	47200.40	3170190.00	0.015	22980.58	15993749.33	0.001

Pole Interaction Design Data

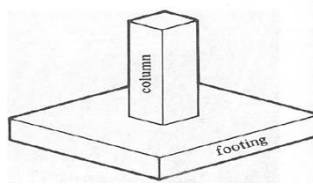
Section No.	Elevation	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	ft								
L1	160 - 126 (1)	0.089	0.810	0.000	0.042	0.016	0.902	1.000	4.8.2 ✓
L2	126 - 86 (2)	0.046	0.822	0.000	0.026	0.006	0.870	1.000	4.8.2 ✓
L3	86 - 37 (3)	0.029	0.877	0.000	0.022	0.003	0.907	1.000	4.8.2 ✓
L4	37 - 0 (4)	0.020	0.649	0.000	0.015	0.001	0.669	1.000	4.8.2 ✓

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	Sprint	JJohnston

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$\emptyset P_{allow}$ lb	% Capacity	Pass Fail
L1	160 - 126	Pole	TP29.531x20.53x0.1875	1	-10654.90	119811.00	90.2	Pass
L2	126 - 86	Pole	TP39.5156x29.531x0.3125	2	-22042.50	476179.00	87.0	Pass
L3	86 - 37	Pole	TP52.0872x39.5156x0.375	3	-37976.00	1311500.00	90.7	Pass
L4	37 - 0	Pole	TP61.58x52.0872x0.5	4	-55149.20	2827140.00	66.9	Pass
Summary								
Pole (L3)							90.7	Pass
Base Plate							71.7	Pass
RATING =							90.7	Pass

Date: 5/7/2014
 Site Name: High Plains CT23XC122
 Client: Sprint
 Infinigy Job #: 286-036
 Analysis/Design: Analysis
 Column Shape: Square
 Footing Shape: Square
 Tower Type: Monopole



Infinigy Engineering PLLC
 Pad + Pier Calculations
 ACI 318-11

Loading Data			
TIA Code Revision:	ANSI/TIA-222-G		
Uplift:	0	kips	
Axial:	55.9	kips	
Shear:	47.2	kips	
Moment:	5121.8	k-ft	

Soil Data			
Soil Type:	Sand		
Water Table Depth:	17.5	ft	
Soil Dry Unit Weight:	125	pcf	
ø Angle:	32	deg	
Cohesion:	0	psf	
Ultimate Skin Friction:	0	psf	
Friction Coefficient:	0.4		
Ultimate Bearing Pressure:	16000	psf	

Column Data			
Concrete Strength:	3000	psi	
Column Side Width:	8	ft	
Column Total Length:	11.5	ft	
Column Height above ground:	1	ft	
Vertical Rebar Strength:	60000	psi	
Vertical Rebar Size:	#11	(#10) max.	
Vertical Rebar Quantity:	24	(4) min.	
Tie Rebar Strength:	60000	psi	
Tie Rebar Size:	#4	(#3) max.	
Tie Rebar Spacing:	12	in	
Rebar Clear Distance:	3	in	

Footing Data			
Concrete Strength:	3000	psi	
Footing Length:	25	ft	
Footing Width:	25	ft	
Footing Thickness:	2.5	ft	
Horizontal Rebar Strength:	60000	psi	
Horizontal Rebar Size:	#9		
Horizontal Rebar Quantity:	22		
Rebar Clear Distance:	3	in	
Dowel Strength:		psi	
Dowel Size:		(#11) max.	
Dowel Development Length:		in	
Dowel Quantity:			

Concrete Strength Check		
Footing One-Way Shear Ratio:	53.86	%
Footing Two-Way Shear Ratio:	2.13	%
Footing Moment Ratio:	80.4	%
Column Buckling Ratio:	0.42	%
Column Moment Ratio:	80.05	%
Column Interaction Equation:	80.47	%

Soil Stability Check		
φs Bearing:	0.75	
φs Uplift:	0.75	
Uplift Ratio:	0.00	%
Bearing Ratio:	50.22	%
Toe Pressure Ratio:	25.56	%
Overturning Ratio:	45.58	%

RADIO FREQUENCY FCC REGULATORY COMPLIANCE
MAXIMUM PERMISSIBLE EXPOSURE (MPE) ASSESSMENT

Sprint Existing Facility

Site ID: CT23XC122

BAM Orange Center Road

525 Orange Center Road
Orange, CT 06477

May 13, 2014

EBI Project Number: 62142878

May 13, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT23XC122 - BAM Orange Center Road

Site Total: 49.192% - MPE % in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 525 Orange Center Road, Orange, CT, for the purpose of determining whether the radio frequency (RF) exposure levels from the proposed Sprint equipment upgrades 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 public 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 public 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.

Public 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 limit for the cellular band (850 MHz Band) is approximately $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the 1900 MHz and 2500 MHz 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 upgrades to the existing Sprint Wireless antenna facility located at 525 Orange Center Road, Orange, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. 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 emissions were calculated using the following assumptions:

- 1) 4 channels in the 1900 MHz Band were considered for each sector of the proposed installation.
- 2) 1 channel in the 800 MHz Band was considered for each sector of the proposed installation
- 3) 2 channels in the 2500 MHz Band were considered for each sector of the proposed installation.
- 4) 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.
- 5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications was used in this direction.

- 6) The antennas used in this modeling are the RFS APXVSPP18-C-A20 and the RFS APXVTMM-C-120. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. The RFS APXVTMM-C-120 has a 15.9 dBd gain value at its main lobe at 2500 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.
- 7) The antenna mounting height centerline for the proposed antennas is 136 **feet** above ground level (AGL).
- 8) 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 calculation were done with respect to uncontrolled / general public threshold limits

Site ID		CT23XC122 - BAM Orange Center Road														
Site Addresss		525 Orange Center Road, Orange, CT 06477														
Site Type		Monopole														
Sector 1																
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
1a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	136	130	1/2 "	0.5	3	1390.2407	2.95739%
1a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	136	130	1/2 "	0.5	3	195.44744	0.73327%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	136	130	1/2 "	0.5	3	390.89489	1.46655%
Sector total Power Density Value:															5.157%	
Sector 2																
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
2a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	136	130	1/2 "	0.5	3	1390.2407	2.95739%
2a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	136	130	1/2 "	0.5	3	195.44744	0.73327%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	136	130	1/2 "	0.5	3	390.89489	1.46655%
Sector total Power Density Value:															5.157%	
Sector 3																
Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
3a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	136	130	1/2 "	0.5	3	1390.2407	2.95739%
3a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	136	130	1/2 "	0.5	3	195.44744	0.73327%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	136	130	1/2 "	0.5	3	390.89489	1.46655%
Sector total Power Density Value:															5.157%	

Site Composite MPE %	
Carrier	MPE %
Sprint	15.472%
AT&T	8.710%
MetroPCS	4.470%
Verizon Wireless	17.630%
Clearwire	0.670%
Nextel	2.000%
T-Mobile	0.240%
Total Site MPE %	49.192%

Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public Maximum Permissible Exposure (MPE) to radio frequency energy.

The anticipated Maximum Composite contributions from the Sprint facility are **15.472% (5.157% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **49.192%** of the allowable FCC established general public limit sampled at 6 feet above ground level. This total composite site value is based upon MPE 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.



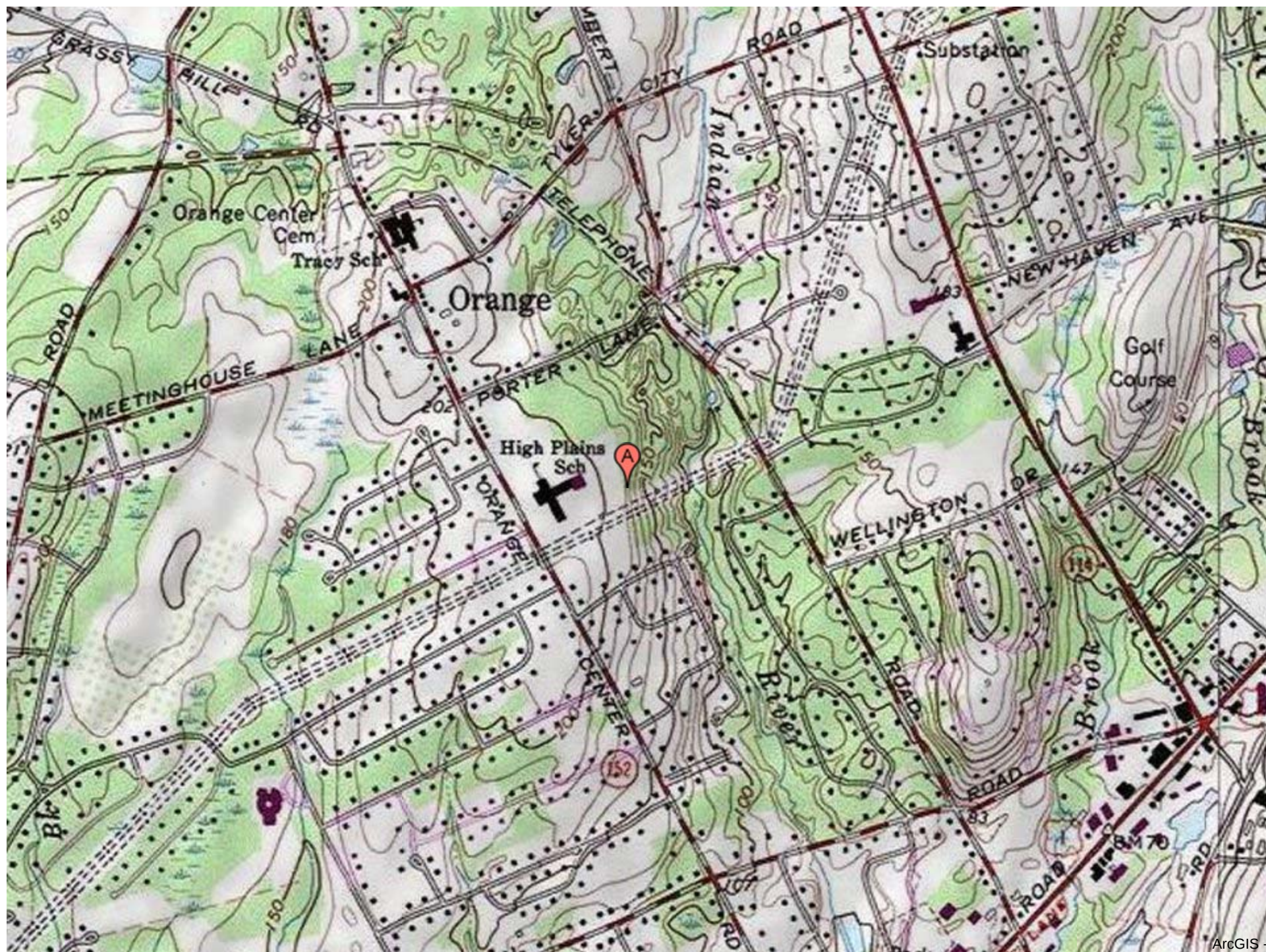
Scott Heffernan
RF Engineering Director

EBI Consulting

21 B Street
Burlington, MA 01803



525 Orange Center Road, Orange, CT



525 Orange Center Road, Orange, CT