STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 14, 2012

David Weisman
Vertical Development LLC
7 Sycamore Way, Unit 1
Branford, CT 06405

RE: **EM-SPRINT-060-121126** –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 2831 Long Hill Road, Guilford, Connecticut.

Dear Mr. Weisman:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not more than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated November 19, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies 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 General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the

closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Joseph S. Mazza, First Selectman, Town of Guilford
Regina Reid, Zoning Enforcement Officer, Town of Guilford

infinigy
engineering & surveying

EM-SPRINT-060-121126

ORIGINAL

RECEIVED
NOV 26 2012
CONNECTICUT
SITING COUNCIL

November 19, 2012

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

Re: Notice of Exempt Modification for 2381 Long Hill Road, Guilford, CT

Dear Ms. Roberts,

On behalf of Sprint Nextel Corporation ("Sprint"), enclosed for filing are an original and five (5) 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
7 Sycamore Way, Unit 1
Branford, CT 06405
Phone – 401-743-9011
Fax – 401-633-6202

CC: Mr. Joseph S. Mazza, First Selectman
Town of Guilford
Town Hall
31 Park Street
Guilford, CT 06437

Notice of Exempt Modification
2381 Long Hill Road, Guilford, 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 180' (176') monopole tower located at 2381 Long Hill Road in the Town of Guilford. 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, increase noise levels at the tower site boundary by six (6) decibels, or 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.

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, install RRHs and notch filters, and install related equipment to its equipment area within the fenced compound at the base of the tower.

The 180' (176') monopole tower located at 2381 Long Hill Road in the Town of Guilford (lat. 41° 20' 47.32", long. 72° 43' 23.2") is owned by Global Signal Acquisitions III LLC. It is in a fenced compound within a 10,000 square foot area. Sprint currently has six (6) antennas (two (2) per sector) with a centerline of 178' installed on the tower. Sprint's base station equipment is located adjacent to the base of the tower within the fenced compound. A site plan depicting this is attached.

Sprint plans to add three (3) RFS APXVSPP18-C-A20 antennas (one (1) per sector), all with a centerline of 178'. Connected to each new RFS 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

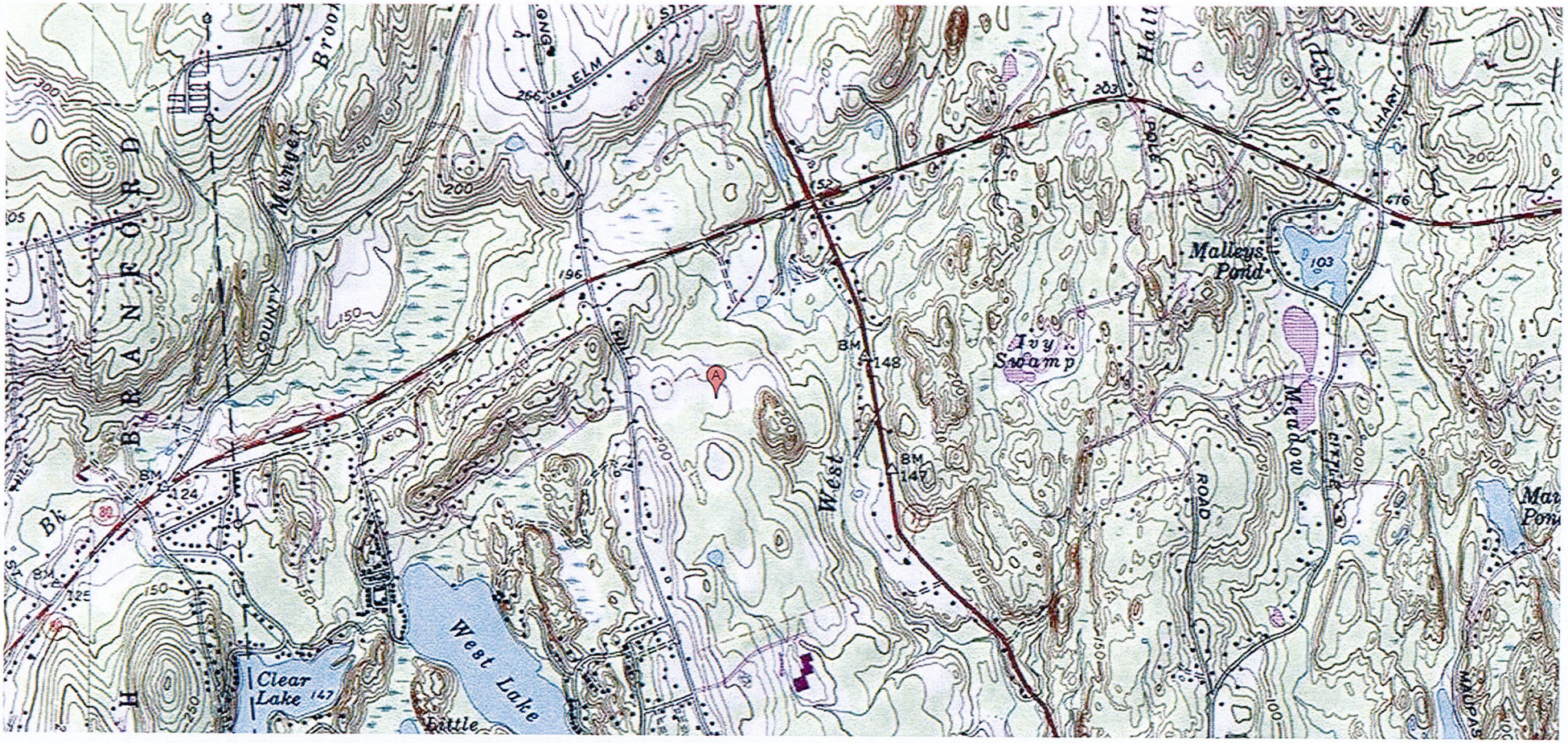
mount +/- 4' from the existing platform. After the new antennas have been tested and are deployed on-air, the six (6) previously existing antennas will be removed. The height of the monopole will not need to be increased. Sprint also plans to install a new fiber junction box on a new H-frame and a new Ciena equipment enclosure into their equipment space within the tower compound's fenced border, and to retrofit or replace the existing BTS cabinet. The compound's boundaries will not need to be extended. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

Sprint commissioned Crown Castle to perform a structural analysis of the tower and foundation to verify that they can support the proposed loading. The tower and foundation were found to be of "Sufficient Capacity" (see the first page of Structural Analysis Report, October 11, 2012). The tower is rated at 99.1% of its capacity (see Page 5 of Structural Analysis Report, October 11, 2012). Sprint commissioned EBI Consulting to perform a structural assessment of the existing mounting system. They concluded that the existing mounting system is "[C]apable of supporting the existing and proposed equipment without causing an overstress condition in the mounting system" (see the second page of Structural Assessment Letter, August 31, 2012).

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 16.514% 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, September 5, 2012). 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,

September 5, 2012). 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 97-01and ANSI/IEEE Std C95.1 (see the second page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, September 5, 2012).

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 increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards. Therefore, Sprint respectfully requests that the Council acknowledge that this Notice of Exempt Modification meets the Council's exemption criteria.



2381 Long Hill Road, Guilford, CT

2381 Long Hill Road, Guilford, CT

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

Sprint Existing Facility

Site ID: CT33XC535

Ward
2381 Long Hill Road
Guilford, CT 06437

September 05, 2012

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

EBI Consulting
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September 05, 2012

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

Re: Emissions Values for Site **CT33XC535 – Ward**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 2381 Long Hill Road, Guilford, CT, for the purpose of determining whether the emissions 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 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 ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 2381 Long Hill Road, Guilford, 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) 2 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) 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.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antenna used in this modeling is the RFS APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna 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. 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.

6) The antenna mounting height centerline of the proposed antennas is **178 feet** above ground level (AGL)
7) 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	CT33XC535 - Ward
Site Addresss	2381 Long Hill Road, Guilford, CT 06437
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	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	178	172	1/2 "	0.5	0	1386.9474	16.85424	1.68542%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	178	172	1/2 "	0.5	0	389.96892	4.738917	0.83579%
														Sector total Power Density Value:		2.521%	

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	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	178	172	1/2 "	0.5	0	1386.9474	16.85424	1.68542%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	178	172	1/2 "	0.5	0	389.96892	4.738917	0.83579%
														Sector total Power Density Value:		2.521%	

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	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	178	172	1/2 "	0.5	0	1386.9474	16.85424	1.68542%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	178	172	1/2 "	0.5	0	389.96892	4.738917	0.83579%
														Sector total Power Density Value:		2.521%	

Site Composite MPE %	
Carrier	MPE %
Sprint	7.564%
AT&T	4.810%
T-Mobile	4.140%
Total Site MPE %	**16.514%**

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Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **7.564% (2.521% 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 **16.514%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

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STRUCTURAL ASSESSMENT LETTER

August 31, 2012

Site Number: CT33XC535
Site Name: Ward
Site Address: 2381 Long Hill Road, Guilford, CT 06437

Project Number: 81121627
Project Name: Sprint Network Vision – Southern Connecticut Market

This letter is to confirm EBI's structural assessment of the existing Sprint antenna mounting system on the above listed site located in the Sprint Network Vision – Region 1, Southern Connecticut market. The intent of this review is to determine if the proposed modification of antennas and equipment will exceed the structural capacity of the existing mounting system.

The existing antenna mounting system has been categorized as a *Flat Low Profile Platform.* Currently, Sprint has (6) panel antennas and (6) 1 5/8" coax mounted to the platform at a centerline elevation of 178'-0" above ground level. Sprint is proposing the following two steps to complete the equipment upgrade:

- Step 1 – Interim Configuration
  Sprint is proposing install (3) APXVSPP18-C-A20 panel antennas, (3) 800 MHz RRHs, (3) 1900 MHz RRHs, (3) 800 MHz Filters, and (3) hybrid fiber cables. The proposed panel antennas are to be installed on proposed 2-7/8" O.D. pipe masts attached to the platform face, with only <u>one</u> antenna located near each corner of the platform. The proposed RRHs and filters are to be installed on proposed mast pipes mounted to a proposed ring mount approximately 4 ft +/- from the platform. The interim configuration is to be in place for less than 1 year.

- Step 2 – Final Configuration
  After interim configuration is completed, Sprint is proposing to remove the (6) existing Sprint panel antennas and (6) 1-5/8" coax.

The generic *Flat Low Profile Platform* antenna mounting system has the following assumed characteristics:

- Triangular in plan with a nominal face width of between 12'-0" and 14'-0", and is designed to support (4) antennas per sector.
- Horizontal platform perimeter members are made from HSS3.5x3.5x1/4" minimum or HSS4x4x3/16" minimum.
- Main supporting members, spanning from the tower connection point to each of the triangular plan apexes, are square hollow structural sections, HSS3.5x3.5x1/4" minimum or HSS4x4x3/16" minimum.
- HSS sections listed above are ASTM A500 Grade B or better steel.
- Platform walking/standing surface consists of either 3/4" x 1/8" steel bar or expanded metal grating.

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21 B Street
Burlington, MA 01803
Tel: (781) 273- 2500
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- Connection plate at the top of the tower is at least 1" thick and connects to the tower with at least (12) ¾" minimum diameter ASTM A325 bolts.

This analysis of the existing mounting system is in compliance with ANSI/TIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, using a basic design wind speed of 85 mph with no ice and 50 mph with 0.75" of escalating ice.

By engineering analysis and/or comparison, the existing antenna mounting system is capable of supporting the existing and proposed equipment without causing an overstress condition in the mounting system.

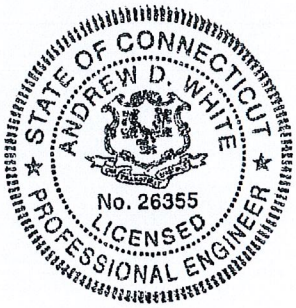
This certification is based on the physical platform characteristics as described above and as determined through site specific photos, proposed CDs, and existing structural analysis. This certification also assumes that all structural members and connections have been properly designed and remain in good condition. Prior to installation of any new antennas and/or RRHs, contractor shall inspect the condition of all relevant members and connectors. The contractor shall be responsible for the means and methods of construction and reporting to EBI Consulting if mount members are found to be smaller than assumed above, prior to placement of proposed appurtenances.

Analysis and certification of the existing tower structure may be performed by others and will be submitted separately.

Please contact us at 781-273-2500 if you have any questions.

Sincerely yours,
EBI Consulting

Andrew White, P.E., SECB
Structural Engineer



Date: **October 11, 2012**

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

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT33XC535
	Carrier Site Name:	N/A
Crown Castle Designation:	**Crown Castle BU Number:**	876381
	Crown Castle Site Name:	WARD
	Crown Castle JDE Job Number:	206216
	Crown Castle Work Order Number:	537423
	Crown Castle Application Number:	164079 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	537423
Site Data:	**2365 Long Hill Rd, GUILFORD, New Haven County, CT** **Latitude *41° 20' 47.34"*, Longitude *-72° 43' 23.15"*** **176 Foot - Monopole Tower**	

Dear Marianne Dunst,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 537423, in accordance with application 164079, revision 1.

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

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 85 mph fastest mile.

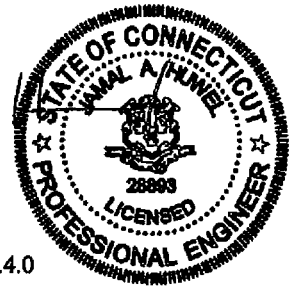
All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

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

Structural analysis prepared by: Sanjeeva Kamath M. / Calvin Straub, E.I.T.

Respectfully submitted by:

Jamal A. Huwel, P.E.
Manger Engineering



tnxTower Report - version 6.0.4.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 176 ft. Monopole tower designed by Engineered Endeavors, Inc. in July of 2003. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 38 mph with 0.75 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
176.0	178.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	3	1/2	--
		9	rfs celwave	ACU-A20-N			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
174.0	176.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz	--	--	--
		3	alcatel lucent	TME-800MHZ RRH			
	174.0	1	tower mounts	Side Arm Mount [SO 102-3]			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
176.0	178.0	6	decibel	DB950G40E-M w/ Mount Pipe	6	1 5/8	3
	176.0	1	tower mounts	Platform Mount [LP 712-1]	--	--	1
169.0	169.0	6	ericsson	RRUS-11	--	--	2
		1	tower mounts	Side Arm Mount [SO 102-3]			
167.0	167.0	3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe	3	3/8	2
		1	raycap	DC6-48-60-18-8F			
		6	powerwave technologies	7770.00 w/ Mount Pipe	12	1 5/8	1
		6	powerwave technologies	LGP21401			
		6	powerwave technologies	LGP21901			
		1	tower mounts	Platform Mount [LP 303-1]			
155.0	157.0	3	rfs celwave	APX16DWV-16DWV-S-E-A20	--	--	2
		3	rfs celwave	ATMAA1412D-1A20			
		3	rfs celwave	ATMPP1412D-1CWA			
	155.0	1	tower mounts	Platform Mount [LP 301-1]	12	1 5/8	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
50.0	51.0	1	lucent	KS24019-L112A	1	1/2	1
	50.0	1	tower mounts	Side Arm Mount [SO 701-1]			
10.0	12.0	1	kathrein	OG-860/1920/GPS-A	1	1/2	1
	10.0	1	tower mounts	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
177.5	177.5	12	dapa	48000	--	--
167.5	167.5	12	dapa	48000	--	--
157.5	157.5	12	dapa	48000	--	--

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Jaworski Geotech, Inc.	1532993	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors, Inc.	1614617	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors, Inc.	1613550	CCISITES

3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	176 - 144.27	Pole	TP23.625x16.5x0.188	1	-6.047	701.159	84.7	Pass
L2	144.27 - 94.6	Pole	TP34.344x22.475x0.313	2	-12.115	1699.628	90.7	Pass
L3	94.6 - 46.97	Pole	TP44.313x32.649x0.375	3	-21.193	2635.607	84.9	Pass
L4	46.97 - 0	Pole	TP54x42.219x0.375	4	-26.797	2876.241	88.3	Pass
							Summary	
						Pole (L2)	90.7	Pass
						Rating =	90.7	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	76.4	Pass
1	Base Plate	0	99.1	Pass
1	Base Foundation	0	72.8	Pass

Structure Rating (max from all components) =	99.1%

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

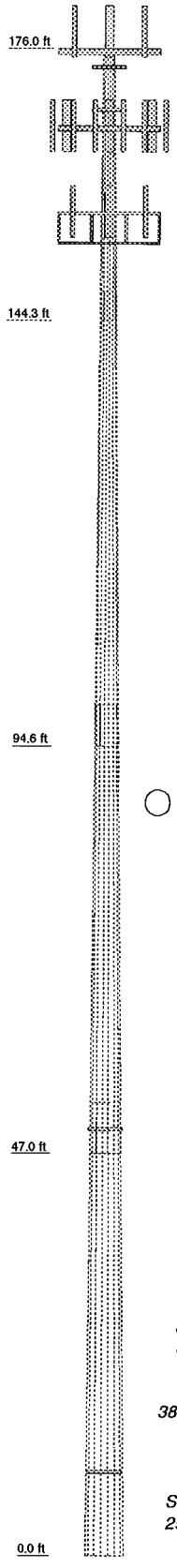
4.1) Recommendations

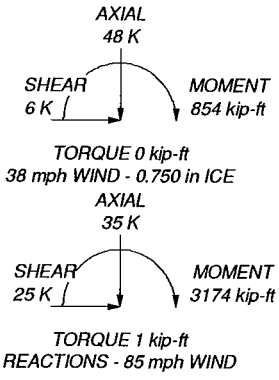
The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT

Section	1	2	3	4
Length (ft)	31.730	53.120	52.420	53.010
Number of Sides	18	18	18	18
Thickness (in)	0.188	0.313	0.375	0.375
Socket Length (ft)	3.450	4.790	6.040	
Top Dia (in)	16.500	22.475	32.649	42.219
Bot Dia (in)	23.625	34.344	44.313	54.000
Grade	A572-65			
Weight (K)	1.3	5.0	8.1	10.2

24.7





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVSPP18-C-A20 w/ Mount Pipe	176	(2) 7770.00 w/ Mount Pipe	167
APXVSPP18-C-A20 w/ Mount Pipe	176	(2) 7770.00 w/ Mount Pipe	167
APXVSPP18-C-A20 w/ Mount Pipe	176	(2) LGP21401	167
800 EXTERNAL NOTCH FILTER	176	(2) LGP21401	167
800 EXTERNAL NOTCH FILTER	176	(2) LGP21401	167
800 EXTERNAL NOTCH FILTER	176	(2) LGP21901	167
(3) ACU-A20-N	176	(2) LGP21901	167
(3) ACU-A20-N	176	(2) LGP21901	167
(3) ACU-A20-N	176	AM-X-CD-16-65-00T-RET w/ Mount Pipe	167
6' x 2" Mount Pipe	176		
6' x 2" Mount Pipe	176	AM-X-CD-16-65-00T-RET w/ Mount Pipe	167
6' x 2" Mount Pipe	176		
Platform Mount [LP 712-1]	176	AM-X-CD-16-65-00T-RET w/ Mount Pipe	167
PCS 1900MHz 4x45W-65MHz	174		
PCS 1900MHz 4x45W-65MHz	174	DC6-48-60-18-8F	167
PCS 1900MHz 4x45W-65MHz	174	Platform Mount [LP 303-1]	167
TME-800MHZ RRH	174	APX16DWV-16DWV-S-E-A20	155
TME-800MHZ RRH	174	APX16DWV-16DWV-S-E-A20	155
TME-800MHZ RRH	174	APX16DWV-16DWV-S-E-A20	155
(2) 4' x 2" Pipe Mount	174	ATMAA1412D-1A20	155
(2) 4' x 2" Pipe Mount	174	ATMAA1412D-1A20	155
(2) 4' x 2" Pipe Mount	174	ATMAA1412D-1A20	155
Side Arm Mount [SO 102-3]	174	ATMPP1412D-1CWA	155
(2) RRUS-11	169	ATMPP1412D-1CWA	155
(2) RRUS-11	169	ATMPP1412D-1CWA	155
(2) RRUS-11	169	Platform Mount [LP 301-1]	155
(2) 4' x 2" Pipe Mount	169	KS24019-L112A	50
(2) 4' x 2" Pipe Mount	169	Side Arm Mount [SO 701-1]	50
(2) 4' x 2" Pipe Mount	169	OG-860/1920/GPS-A	10
Side Arm Mount [SO 102-3]	169	Side Arm Mount [SO 701-1]	10
(2) 7770.00 w/ Mount Pipe	167		

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 a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 90.7%

CROWN CASTLE
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Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone; (724) 416-2000
FAX:

Job: **BU# 876381**			
Project:			
Client: Crown Castle	Drawn by: Sanjiv Kamath	App'd:	
Code: TIA/EIA-222-F	Date: 10/11/12	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

1) Tower is located in New Haven County, Connecticut.
2) Basic wind speed of 85 mph.
3) Nominal ice thickness of 0.750 in.
4) Ice thickness is considered to increase with height.
5) Ice density of 56.000 pcf.
6) A wind speed of 38 mph is used in combination with ice.
7) Temperature drop of 50.000 °F.
8) Deflections calculated using a wind speed of 50 mph.
9) A non-linear (P-delta) analysis was used.
10) Pressures are calculated at each section.
11) Stress ratio used in pole design is 1.333.
12) Local bending stresses due to climbing loads, feedline 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		

Tapered Pole Section Geometry

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
L1	176.000-144.270	31.730	3.450	18	16.500	23.625	0.188	0.750	A572-65 (65 ksi)
L2	144.270-94.600	53.120	4.790	18	22.475	34.344	0.313	1.250	A572-65 (65 ksi)
L3	94.600-46.970	52.420	6.040	18	32.649	44.313	0.375	1.500	A572-65 (65 ksi)
L4	46.970-0.000	53.010		18	42.219	54.000	0.375	1.500	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	16.755	9.708	326.368	5.791	8.382	38.937	653.165	4.855	2.574	13.728
	23.989	13.948	968.009	8.320	12.002	80.657	1937.292	6.975	3.828	20.416
L2	23.605	21.983	1364.169	7.868	11.417	119.481	2730.133	10.993	3.406	10.898

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
	34.874	33.755	4938.985	12.081	17.447	283.089	9884.468	16.881	5.495	17.583
L3	34.235	38.414	5055.038	11.457	16.586	304.785	10116.727	19.211	5.086	13.563
	44.997	52.297	12755.471	15.598	22.511	566.633	25527.726	26.154	7.139	19.038
L4	44.233	49.805	11017.308	14.855	21.447	513.693	22049.114	24.907	6.771	18.055
	54.833	63.827	23188.762	19.037	27.432	845.318	46408.036	31.920	8.844	23.584

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	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
L1 176.000-144.270				1	1	1		
L2 144.270-94.600				1	1	1		
L3 94.600-46.970				1	1	1		
L4 46.970-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
///										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
HYBRIFLEX RRH 1-SECTOR(1/2")	C	No	CaAa (Out Of Face)	176.000 - 0.000	1	No Ice	0.062	0.000
						1/2" Ice	0.162	0.001
						1" Ice	0.262	0.002
						2" Ice	0.462	0.007
						4" Ice	0.862	0.023
HYBRIFLEX RRH 1-SECTOR(1/2")	C	No	CaAa (Out Of Face)	176.000 - 0.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.002
						2" Ice	0.000	0.007
						4" Ice	0.000	0.023
///								
LDF7-50A(1-5/8")	B	No	Inside Pole	167.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
FB-L98B-002-75000(3/8")	B	No	CaAa (Out Of Face)	167.000 - 0.000	1	No Ice	0.039	0.000
						1/2" Ice	0.139	0.001
						1" Ice	0.239	0.002
						2" Ice	0.439	0.006
						4" Ice	0.839	0.022
WR-VG122ST-BRDA(3/8)	B	No	CaAa (Out Of Face)	167.000 - 0.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.002
						2" Ice	0.000	0.006
						4" Ice	0.000	0.022
///								
LDF7-50A(1-5/8")	C	No	Inside Pole	155.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
///								
LDF4-50A(1/2")	C	No	Inside Pole	50.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
///								
LDF4-50A(1/2")	C	No	Inside Pole	10.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
///								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	176.000-144.270	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.895	0.234
		C	0.000	0.000	0.000	1.967	0.120
L2	144.270-94.600	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	1.955	0.512
		C	0.000	0.000	0.000	3.080	0.511
L3	94.600-46.970	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	1.875	0.491
		C	0.000	0.000	0.000	2.953	0.491
L4	46.970-0.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	1.849	0.484
		C	0.000	0.000	0.000	2.912	0.492

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_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	176.000-144.270	A	0.906	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	5.013	0.335
		C		0.000	0.000	0.000	7.716	0.285
L2	144.270-94.600	A	0.874	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	10.955	0.732
		C		0.000	0.000	0.000	12.079	0.770
L3	94.600-46.970	A	0.821	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	10.202	0.691
		C		0.000	0.000	0.000	11.280	0.727
L4	46.970-0.000	A	0.750	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	9.564	0.665
		C		0.000	0.000	0.000	10.627	0.705

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	176.000-144.270	-0.040	0.065	-0.075	0.231
L2	144.270-94.600	-0.028	0.073	-0.023	0.277

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L3	94.600-46.970	-0.029	0.074	-0.025	0.286
L4	46.970-0.000	-0.029	0.074	-0.026	0.283

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
800 EXTERNAL NOTCH FILTER	A	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.011 0.017 0.024 0.045 0.114
800 EXTERNAL NOTCH FILTER	B	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.011 0.017 0.024 0.045 0.114
800 EXTERNAL NOTCH FILTER	C	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.770 0.890 1.018 1.301 1.970	0.375 0.465 0.563 0.787 1.337	0.011 0.017 0.024 0.045 0.114
(3) ACU-A20-N	A	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.078 0.121 0.173 0.302 0.665	0.136 0.189 0.251 0.400 0.802	0.001 0.002 0.004 0.012 0.045
(3) ACU-A20-N	B	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.078 0.121 0.173 0.302 0.665	0.136 0.189 0.251 0.400 0.802	0.001 0.002 0.004 0.012 0.045
(3) ACU-A20-N	C	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.078 0.121 0.173 0.302 0.665	0.136 0.189 0.251 0.400 0.802	0.001 0.002 0.004 0.012 0.045

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice			
6' x 2" Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
6' x 2" Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
6' x 2" Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.425 1.925 2.294 3.060 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
Platform Mount [LP 712-1]	C	None		0.000	176.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	24.530 29.940 35.350 46.170 67.810	24.530 29.940 35.350 46.170 67.810	1.335 1.646 1.956 2.577 3.820
//*/*/*									
PCS 1900MHz 4x45W-65MHz	A	From Leg	2.000 0.000 2.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.709 2.948 3.195 3.716 4.862	2.611 2.847 3.092 3.608 4.744	0.060 0.083 0.110 0.173 0.347
PCS 1900MHz 4x45W-65MHz	B	From Leg	2.000 0.000 2.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.709 2.948 3.195 3.716 4.862	2.611 2.847 3.092 3.608 4.744	0.060 0.083 0.110 0.173 0.347
PCS 1900MHz 4x45W-65MHz	C	From Leg	2.000 0.000 2.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.709 2.948 3.195 3.716 4.862	2.611 2.847 3.092 3.608 4.744	0.060 0.083 0.110 0.173 0.347
TME-800MHZ RRH	A	From Leg	2.000 0.000 2.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
TME-800MHZ RRH	B	From Leg	2.000 0.000 2.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
TME-800MHZ RRH	C	From Leg	2.000 0.000 2.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.490 2.706 2.931 3.407 4.462	2.068 2.271 2.481 2.928 3.927	0.053 0.074 0.098 0.157 0.318
(2) 4' x 2" Pipe Mount	C	From Leg	2.000 0.000 0.000	0.000	174.000	No Ice 1/2" Ice	0.866 1.111 1.365	0.866 1.111 1.365	0.015 0.022 0.032

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	1.901	1.901	0.062
						2" Ice	3.228	3.228	0.161
						4" Ice			
(2) 4' x 2" Pipe Mount	B	From Leg	2.000 0.000 0.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.866 1.111 1.365 1.901 3.228	0.866 1.111 1.365 1.901 3.228	0.015 0.022 0.032 0.062 0.161
(2) 4' x 2" Pipe Mount	A	From Leg	2.000 0.000 0.000	0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.866 1.111 1.365 1.901 3.228	0.866 1.111 1.365 1.901 3.228	0.015 0.022 0.032 0.062 0.161
Side Arm Mount [SO 102-3]	C	None		0.000	174.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.000 3.480 3.960 4.920 6.840	3.000 3.480 3.960 4.920 6.840	0.081 0.111 0.141 0.201 0.321
///									
(2) RRUS-11	A	From Leg	2.000 0.000 0.000	0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.424 4.708 5.001 5.613 6.940	1.186 1.351 1.526 1.900 2.753	0.055 0.081 0.110 0.179 0.368
(2) RRUS-11	B	From Leg	2.000 0.000 0.000	0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.424 4.708 5.001 5.613 6.940	1.186 1.351 1.526 1.900 2.753	0.055 0.081 0.110 0.179 0.368
(2) RRUS-11	C	From Leg	2.000 0.000 0.000	0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.424 4.708 5.001 5.613 6.940	1.186 1.351 1.526 1.900 2.753	0.055 0.081 0.110 0.179 0.368
(2) 4' x 2" Pipe Mount	C	From Leg	2.000 0.000 0.000	0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.866 1.111 1.365 1.901 3.228	0.866 1.111 1.365 1.901 3.228	0.015 0.022 0.032 0.062 0.161
(2) 4' x 2" Pipe Mount	B	From Leg	2.000 0.000 0.000	0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.866 1.111 1.365 1.901 3.228	0.866 1.111 1.365 1.901 3.228	0.015 0.022 0.032 0.062 0.161
(2) 4' x 2" Pipe Mount	A	From Leg	2.000 0.000 0.000	0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.866 1.111 1.365 1.901 3.228	0.866 1.111 1.365 1.901 3.228	0.015 0.022 0.032 0.062 0.161
Side Arm Mount [SO 102-3]	C	None		0.000	169.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.000 3.480 3.960 4.920 6.840	3.000 3.480 3.960 4.920 6.840	0.081 0.111 0.141 0.201 0.321
///									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	167.000	No Ice	6.119	4.254	0.055
			0.000				1/2"	6.626	5.014	0.101
			0.000				Ice	7.128	5.711	0.155
							1" Ice	8.164	7.155	0.287
							2" Ice	10.360	10.412	0.665
							4" Ice			
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	167.000	No Ice	6.119	4.254	0.055
			0.000				1/2"	6.626	5.014	0.101
			0.000				Ice	7.128	5.711	0.155
							1" Ice	8.164	7.155	0.287
							2" Ice	10.360	10.412	0.665
							4" Ice			
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	167.000	No Ice	6.119	4.254	0.055
			0.000				1/2"	6.626	5.014	0.101
			0.000				Ice	7.128	5.711	0.155
							1" Ice	8.164	7.155	0.287
							2" Ice	10.360	10.412	0.665
							4" Ice			
(2) LGP21401	A	From Leg	4.000	0.000	0.000	167.000	No Ice	1.288	0.233	0.014
			0.000				1/2"	1.445	0.313	0.021
			0.000				Ice	1.611	0.403	0.030
							1" Ice	1.969	0.608	0.055
							2" Ice	2.788	1.121	0.135
							4" Ice			
(2) LGP21401	B	From Leg	4.000	0.000	0.000	167.000	No Ice	1.288	0.233	0.014
			0.000				1/2"	1.445	0.313	0.021
			0.000				Ice	1.611	0.403	0.030
							1" Ice	1.969	0.608	0.055
							2" Ice	2.788	1.121	0.135
							4" Ice			
(2) LGP21401	C	From Leg	4.000	0.000	0.000	167.000	No Ice	1.288	0.233	0.014
			0.000				1/2"	1.445	0.313	0.021
			0.000				Ice	1.611	0.403	0.030
							1" Ice	1.969	0.608	0.055
							2" Ice	2.788	1.121	0.135
							4" Ice			
(2) LGP21901	A	From Leg	4.000	0.000	0.000	167.000	No Ice	0.270	0.184	0.006
			0.000				1/2"	0.343	0.248	0.008
			0.000				Ice	0.425	0.322	0.011
							1" Ice	0.616	0.494	0.022
							2" Ice	1.101	0.943	0.066
							4" Ice			
(2) LGP21901	B	From Leg	4.000	0.000	0.000	167.000	No Ice	0.270	0.184	0.006
			0.000				1/2"	0.343	0.248	0.008
			0.000				Ice	0.425	0.322	0.011
							1" Ice	0.616	0.494	0.022
							2" Ice	1.101	0.943	0.066
							4" Ice			
(2) LGP21901	C	From Leg	4.000	0.000	0.000	167.000	No Ice	0.270	0.184	0.006
			0.000				1/2"	0.343	0.248	0.008
			0.000				Ice	0.425	0.322	0.011
							1" Ice	0.616	0.494	0.022
							2" Ice	1.101	0.943	0.066
							4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	167.000	No Ice	8.498	6.304	0.074
			0.000				1/2"	9.149	7.479	0.136
			0.000				Ice	9.767	8.368	0.210
							1" Ice	11.031	10.179	0.385
							2" Ice	13.679	14.024	0.874
							4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	167.000	No Ice	8.498	6.304	0.074
			0.000				1/2"	9.149	7.479	0.136
			0.000				Ice	9.767	8.368	0.210
							1" Ice	11.031	10.179	0.385
							2" Ice	13.679	14.024	0.874

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	167.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
DC6-48-60-18-8F	B	From Leg	4.000 0.000 0.000	0.000	167.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.567 2.798 3.038 3.543 4.658	4.317 4.596 4.885 5.488 6.797	0.019 0.050 0.085 0.167 0.383
Platform Mount [LP 303-1]	C	None		0.000	167.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.660 18.870 23.080 31.500 48.340	14.660 18.870 23.080 31.500 48.340	1.250 1.481 1.713 2.175 3.101
///									
APX16DWV-16DWV-S-E-A20	A	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.228 7.681 8.143 9.091 11.093	2.150 2.490 2.837 3.554 5.077	0.041 0.074 0.113 0.205 0.457
APX16DWV-16DWV-S-E-A20	B	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.228 7.681 8.143 9.091 11.093	2.150 2.490 2.837 3.554 5.077	0.041 0.074 0.113 0.205 0.457
APX16DWV-16DWV-S-E-A20	C	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.228 7.681 8.143 9.091 11.093	2.150 2.490 2.837 3.554 5.077	0.041 0.074 0.113 0.205 0.457
ATMAA1412D-1A20	A	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.167 1.314 1.469 1.806 2.584	0.467 0.575 0.691 0.951 1.573	0.013 0.021 0.030 0.056 0.137
ATMAA1412D-1A20	B	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.167 1.314 1.469 1.806 2.584	0.467 0.575 0.691 0.951 1.573	0.013 0.021 0.030 0.056 0.137
ATMAA1412D-1A20	C	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.167 1.314 1.469 1.806 2.584	0.467 0.575 0.691 0.951 1.573	0.013 0.021 0.030 0.056 0.137
ATMPP1412D-1CWA	A	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.167 1.317 1.476 1.820 2.610	0.416 0.530 0.652 0.923 1.569	0.013 0.020 0.028 0.052 0.131
ATMPP1412D-1CWA	B	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice 1/2" Ice	1.167 1.317 1.476	0.416 0.530 0.652	0.013 0.020 0.028

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	1.820	0.923	0.052
						2" Ice	2.610	1.569	0.131
						4" Ice			
ATMPP1412D-1CWA	C	From Leg	4.000 0.000 2.000	0.000	155.000	No Ice	1.167	0.416	0.013
						1/2" Ice	1.317	0.530	0.020
						1" Ice	1.476	0.652	0.028
						2" Ice	1.820	0.923	0.052
						4" Ice	2.610	1.569	0.131
Platform Mount [LP 301-1]	C	None		0.000	155.000	No Ice	30.100	30.100	1.589
						1/2" Ice	40.800	40.800	2.029
						1" Ice	51.500	51.500	2.470
						2" Ice	72.900	72.900	3.351
						4" Ice	115.700	115.700	5.114
///									
KS24019-L112A	A	From Leg	3.000 0.000 1.000	0.000	50.000	No Ice	0.156	0.156	0.005
						1/2" Ice	0.225	0.225	0.007
						1" Ice	0.302	0.302	0.009
						2" Ice	0.484	0.484	0.018
						4" Ice	0.951	0.951	0.056
Side Arm Mount [SO 701-1]	A	From Leg	1.000 0.000 0.000	0.000	50.000	No Ice	0.850	1.670	0.065
						1/2" Ice	1.140	2.340	0.079
						1" Ice	1.430	3.010	0.093
						2" Ice	2.010	4.350	0.121
						4" Ice	3.170	7.030	0.177
///									
OG-860/1920/GPS-A	A	From Leg	3.000 0.000 2.000	0.000	10.000	No Ice	0.329	0.404	0.002
						1/2" Ice	0.434	0.514	0.005
						1" Ice	0.548	0.632	0.010
						2" Ice	0.802	0.894	0.024
						4" Ice	1.414	1.521	0.079
Side Arm Mount [SO 701-1]	A	From Leg	1.000 0.000 0.000	0.000	10.000	No Ice	0.850	1.670	0.065
						1/2" Ice	1.140	2.340	0.079
						1" Ice	1.430	3.010	0.093
						2" Ice	2.010	4.350	0.121
						4" Ice	3.170	7.030	0.177
///									

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice

Comb. No.	Description
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	176 - 144.27	Pole	Max Tension	33	0.000	0.000	0.000
			Max. Compression	14	-13.294	-0.297	-0.316
			Max. Mx	5	-6.063	-272.047	0.762
			Max. My	8	-6.052	0.773	-272.896
			Max. Vy	5	13.910	-272.047	0.762
			Max. Vx	8	13.955	0.773	-272.896
			Max. Torque	9			1.021
L2	144.27 - 94.6	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-21.003	-0.256	-0.614
			Max. Mx	5	-12.125	-1029.648	2.648
			Max. My	8	-12.118	2.659	-1032.731
			Max. Vy	5	17.527	-1029.648	2.648
			Max. Vx	8	17.573	2.659	-1032.731
			Max. Torque	9			1.018
L3	94.6 - 46.97	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-31.985	-0.210	-0.985
			Max. Mx	5	-21.199	-1930.462	4.461
			Max. My	8	-21.195	4.492	-1935.695
			Max. Vy	5	21.279	-1930.462	4.461
			Max. Vx	2	-21.324	-4.628	1935.464
			Max. Torque	9			1.013
L4	46.97 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-47.705	-0.146	-0.885
			Max. Mx	5	-34.536	-3164.182	6.884
			Max. My	2	-34.536	-6.684	3170.191
			Max. Vy	5	25.199	-3164.182	6.884
			Max. Vx	2	-25.186	-6.684	3170.191
			Max. Torque	9			0.920

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	21	47.705	0.008	-6.401
	Max. H_x	11	34.557	25.170	-0.038
	Max. H_z	2	34.557	-0.038	25.156
	Max. M_x	2	3170.191	-0.038	25.156
	Max. M_z	5	3164.182	-25.170	0.038
	Max. Torsion	8	0.836	0.038	-25.156
	Min. Vert	1	34.557	0.000	0.000
	Min. H_x	5	34.557	-25.170	0.038
	Min. H_z	8	34.557	0.038	-25.156
	Min. M_x	8	-3169.671	0.038	-25.156
	Min. M_z	11	-3164.012	25.170	-0.038
	Min. Torsion	2	-0.834	-0.038	25.156

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	34.557	0.000	0.000	-0.261	-0.078	0.000
Dead+Wind 0 deg - No Ice	34.557	0.038	-25.156	-3170.191	-6.684	0.834
Dead+Wind 30 deg - No Ice	34.557	12.617	-21.805	-2748.795	-1587.807	0.805
Dead+Wind 60 deg - No Ice	34.557	21.816	-12.611	-1590.967	-2743.528	0.561
Dead+Wind 90 deg - No Ice	34.557	25.170	-0.038	-6.884	-3164.182	0.166
Dead+Wind 120 deg - No Ice	34.557	21.779	12.546	1579.016	-2736.990	-0.275
Dead+Wind 150 deg - No Ice	34.557	12.552	21.767	2741.724	-1576.398	-0.642
Dead+Wind 180 deg - No Ice	34.557	-0.038	25.156	3169.671	6.546	-0.836
Dead+Wind 210 deg - No Ice	34.557	-12.617	21.805	2748.256	1587.669	-0.806
Dead+Wind 240 deg - No Ice	34.557	-21.816	12.611	1590.420	2743.374	-0.559
Dead+Wind 270 deg - No Ice	34.557	-25.170	0.038	6.346	3164.012	-0.164
Dead+Wind 300 deg - No Ice	34.557	-21.779	-12.546	-1579.537	2736.821	0.275
Dead+Wind 330 deg - No Ice	34.557	-12.552	-21.767	-2742.235	1576.245	0.640
Dead+Ice+Temp	47.705	0.000	0.000	0.885	-0.146	-0.000
Dead+Wind 0 deg+Ice+Temp	47.705	0.008	-6.401	-851.586	-1.616	0.199
Dead+Wind 30 deg+Ice+Temp	47.705	3.213	-5.548	-738.083	-427.181	0.204
Dead+Wind 60 deg+Ice+Temp	47.705	5.556	-3.208	-426.548	-738.331	0.154
Dead+Wind 90 deg+Ice+Temp	47.705	6.411	-0.008	-0.454	-851.694	0.063
Dead+Wind 120 deg+Ice+Temp	47.705	5.549	3.194	426.027	-736.893	-0.045
Dead+Wind 150 deg+Ice+Temp	47.705	3.199	5.540	738.618	-424.688	-0.141
Dead+Wind 180 deg+Ice+Temp	47.705	-0.008	6.401	853.560	1.264	-0.199
Dead+Wind 210 deg+Ice+Temp	47.705	-3.213	5.548	740.056	426.829	-0.204
Dead+Wind 240 deg+Ice+Temp	47.705	-5.556	3.208	428.520	737.977	-0.154
Dead+Wind 270 deg+Ice+Temp	47.705	-6.411	0.008	2.427	851.339	-0.063
Dead+Wind 300 deg+Ice+Temp	47.705	-5.549	-3.194	-424.053	736.538	0.045
Dead+Wind 330 deg+Ice+Temp	47.705	-3.199	-5.540	-736.643	424.335	0.141
Dead+Wind 0 deg - Service	34.557	0.013	-8.705	-1100.000	-2.380	0.297
Dead+Wind 30 deg - Service	34.557	4.366	-7.545	-953.821	-550.926	0.288
Dead+Wind 60 deg - Service	34.557	7.549	-4.364	-552.125	-951.876	0.202
Dead+Wind 90 deg - Service	34.557	8.709	-0.013	-2.556	-1097.784	0.062
Dead+Wind 120 deg - Service	34.557	7.536	4.341	547.630	-949.583	-0.095
Dead+Wind 150 deg - Service	34.557	4.343	7.532	951.008	-546.952	-0.226
Dead+Wind 180 deg -	34.557	-0.013	8.705	1099.482	2.212	-0.297

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Service						
Dead+Wind 210 deg - Service	34.557	-4.366	7.545	953.300	550.757	-0.288
Dead+Wind 240 deg - Service	34.557	-7.549	4.364	551.604	951.705	-0.202
Dead+Wind 270 deg - Service	34.557	-8.709	0.013	2.036	1097.612	-0.061
Dead+Wind 300 deg - Service	34.557	-7.536	-4.341	-548.148	949.411	0.095
Dead+Wind 330 deg - Service	34.557	-4.343	-7.532	-951.526	546.781	0.226

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.000	-34.557	0.000	0.000	34.557	0.000	0.000%
2	0.038	-34.557	-25.156	-0.038	34.557	25.156	0.000%
3	12.617	-34.557	-21.805	-12.617	34.557	21.805	0.000%
4	21.816	-34.557	-12.611	-21.816	34.557	12.611	0.000%
5	25.170	-34.557	-0.038	-25.170	34.557	0.038	0.000%
6	21.779	-34.557	12.546	-21.779	34.557	-12.546	0.000%
7	12.552	-34.557	21.767	-12.552	34.557	-21.767	0.000%
8	-0.038	-34.557	25.156	0.038	34.557	-25.156	0.000%
9	-12.617	-34.557	21.805	12.617	34.557	-21.805	0.000%
10	-21.816	-34.557	12.611	21.816	34.557	-12.611	0.000%
11	-25.170	-34.557	0.038	25.170	34.557	-0.038	0.000%
12	-21.779	-34.557	-12.546	21.779	34.557	12.546	0.000%
13	-12.552	-34.557	-21.767	12.552	34.557	21.767	0.000%
14	0.000	-47.705	0.000	-0.000	47.705	-0.000	0.000%
15	0.008	-47.705	-6.401	-0.008	47.705	6.401	0.000%
16	3.213	-47.705	-5.548	-3.213	47.705	5.548	0.000%
17	5.556	-47.705	-3.208	-5.556	47.705	3.208	0.000%
18	6.411	-47.705	-0.008	-6.411	47.705	0.008	0.000%
19	5.548	-47.705	3.194	-5.549	47.705	-3.194	0.000%
20	3.199	-47.705	5.540	-3.199	47.705	-5.540	0.000%
21	-0.008	-47.705	6.401	0.008	47.705	-6.401	0.000%
22	-3.213	-47.705	5.548	3.213	47.705	-5.548	0.000%
23	-5.556	-47.705	3.208	5.556	47.705	-3.208	0.000%
24	-6.411	-47.705	0.008	6.411	47.705	-0.008	0.000%
25	-5.548	-47.705	-3.194	5.549	47.705	3.194	0.000%
26	-3.199	-47.705	-5.540	3.199	47.705	5.540	0.000%
27	0.013	-34.557	-8.705	-0.013	34.557	8.705	0.000%
28	4.366	-34.557	-7.545	-4.366	34.557	7.545	0.000%
29	7.549	-34.557	-4.364	-7.549	34.557	4.364	0.000%
30	8.709	-34.557	-0.013	-8.709	34.557	0.013	0.000%
31	7.536	-34.557	4.341	-7.536	34.557	-4.341	0.000%
32	4.343	-34.557	7.532	-4.343	34.557	-7.532	0.000%
33	-0.013	-34.557	8.705	0.013	34.557	-8.705	0.000%
34	-4.366	-34.557	7.545	4.366	34.557	-7.545	0.000%
35	-7.549	-34.557	4.364	7.549	34.557	-4.364	0.000%
36	-8.709	-34.557	0.013	8.709	34.557	-0.013	0.000%
37	-7.536	-34.557	-4.341	7.536	34.557	4.341	0.000%
38	-4.343	-34.557	-7.532	4.343	34.557	7.532	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00010001

3	Yes	6	0.00000001	0.00014109
4	Yes	6	0.00000001	0.00013448
5	Yes	5	0.00000001	0.00003094
6	Yes	6	0.00000001	0.00013693
7	Yes	6	0.00000001	0.00013879
8	Yes	5	0.00000001	0.00006406
9	Yes	6	0.00000001	0.00013411
10	Yes	6	0.00000001	0.00014047
11	Yes	5	0.00000001	0.00006628
12	Yes	6	0.00000001	0.00013687
13	Yes	6	0.00000001	0.00013526
14	Yes	4	0.00000001	0.00000001
15	Yes	5	0.00000001	0.00036857
16	Yes	5	0.00000001	0.00068130
17	Yes	5	0.00000001	0.00066220
18	Yes	5	0.00000001	0.00036809
19	Yes	5	0.00000001	0.00067007
20	Yes	5	0.00000001	0.00067404
21	Yes	5	0.00000001	0.00036982
22	Yes	5	0.00000001	0.00066411
23	Yes	5	0.00000001	0.00068205
24	Yes	5	0.00000001	0.00036766
25	Yes	5	0.00000001	0.00066209
26	Yes	5	0.00000001	0.00065938
27	Yes	4	0.00000001	0.00042486
28	Yes	5	0.00000001	0.00027332
29	Yes	5	0.00000001	0.00025270
30	Yes	4	0.00000001	0.00031499
31	Yes	5	0.00000001	0.00025793
32	Yes	5	0.00000001	0.00026381
33	Yes	4	0.00000001	0.00039188
34	Yes	5	0.00000001	0.00025162
35	Yes	5	0.00000001	0.00027117
36	Yes	4	0.00000001	0.00033872
37	Yes	5	0.00000001	0.00025737
38	Yes	5	0.00000001	0.00025256

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	176 - 144.27	54.784	28	3.126	0.008
L2	147.72 - 94.6	37.228	28	2.656	0.004
L3	99.39 - 46.97	15.650	28	1.567	0.001
L4	53.01 - 0	4.293	28	0.760	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
176.000	APXVSPP18-C-A20 w/ Mount Pipe	28	54.784	3.126	0.008	12231
174.000	PCS 1900MHz 4x45W-65MHz	28	53.490	3.096	0.007	12231
169.000	(2) RRUS-11	28	50.266	3.019	0.006	8736
167.000	(2) 7770.00 w/ Mount Pipe	28	48.984	2.988	0.006	6795
155.000	APX16DWV-16DWV-S-E-A20	28	41.500	2.791	0.004	2911
50.000	KS24019-L112A	28	3.853	0.715	0.000	3170
10.000	OG-860/1920/GPS-A	28	0.467	0.140	0.000	15831

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	176 - 144.27	157.060	8	8.977	0.022
L2	147.72 - 94.6	106.880	3	7.634	0.010
L3	99.39 - 46.97	45.027	3	4.510	0.003
L4	53.01 - 0	12.364	3	2.190	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
176.000	APXVSPP18-C-A20 w/ Mount Pipe	8	157.060	8.977	0.022	4443
174.000	PCS 1900MHz 4x45W-65MHz	8	153.360	8.890	0.021	4443
169.000	(2) RRUS-11	8	144.140	8.672	0.018	3173
167.000	(2) 7770.00 w/ Mount Pipe	8	140.476	8.583	0.018	2467
155.000	APX16DWV-16DWV-S-E-A20	3	119.090	8.018	0.013	1053
50.000	KS24019-L112A	3	11.099	2.060	0.001	1104
10.000	OG-860/1920/GPS-A	3	1.347	0.404	0.000	5504

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	176 - 144.27 (1)	TP23.625x16.5x0.188	31.730	0.000	0.0	39.000	13.487	-6.047	526.001	0.011
L2	144.27 - 94.6 (2)	TP34.344x22.475x0.313	53.120	0.000	0.0	39.000	32.694	-12.115	1275.040	0.010
L3	94.6 - 46.97 (3)	TP44.313x32.649x0.375	52.420	0.000	0.0	39.000	50.697	-21.193	1977.200	0.011
L4	46.97 - 0 (4)	TP54x42.219x0.375	53.010	0.000	0.0	39.000	55.326	-26.797	2157.720	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	176 - 144.27 (1)	TP23.625x16.5x0.188	273.287	43.498	39.000	1.115	0.000	0.000	39.000	0.000
L2	144.27 - 94.6 (2)	TP34.344x22.475x0.313	1034.225	46.747	39.000	1.199	0.000	0.000	39.000	0.000
L3	94.6 - 46.97 (3)	TP44.313x32.649x0.375	1938.250	43.691	39.000	1.120	0.000	0.000	39.000	0.000
L4	46.97 - 0 (4)	TP54x42.219x0.375	2401.683	45.425	39.000	1.165	0.000	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	176 - 144.27 (1)	TP23.625x16.5x0.188	13.978	1.036	26.000	0.080	1.018	0.079	26.000	0.003
L2	144.27 - 94.6 (2)	TP34.344x22.475x0.313	17.596	0.538	26.000	0.041	1.013	0.022	26.000	0.001
L3	94.6 - 46.97 (3)	TP44.313x32.649x0.375	21.347	0.421	26.000	0.032	1.012	0.011	26.000	0.000
L4	46.97 - 0 (4)	TP54x42.219x0.375	23.117	0.418	26.000	0.032	0.919	0.008	26.000	0.000

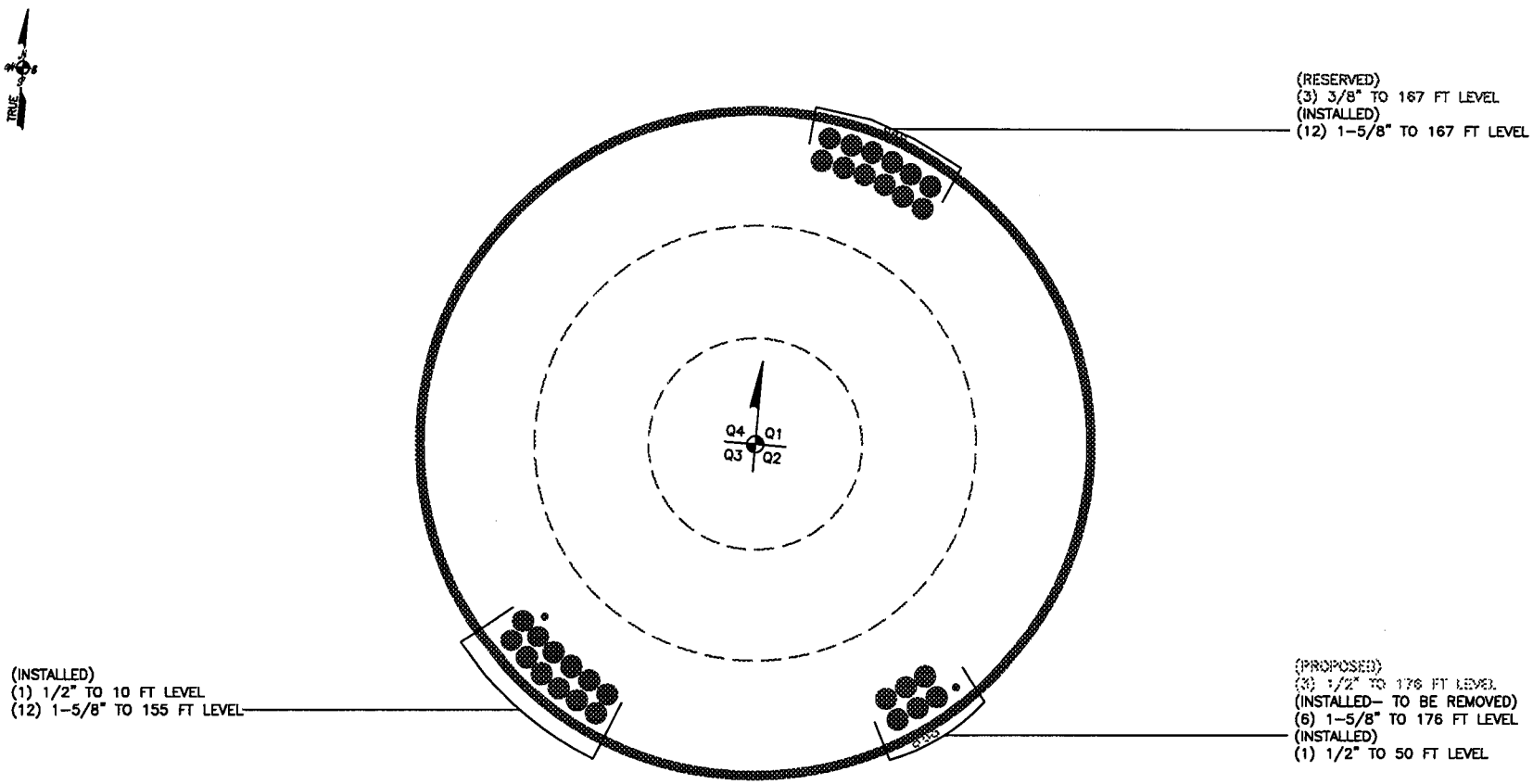
Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	176 - 144.27 (1)	0.011	1.115	0.000	0.080	0.003	1.129	1.333	H1-3+VT
L2	144.27 - 94.6 (2)	0.010	1.199	0.000	0.041	0.001	1.209	1.333	H1-3+VT
L3	94.6 - 46.97 (3)	0.011	1.120	0.000	0.032	0.000	1.131	1.333	H1-3+VT
L4	46.97 - 0 (4)	0.012	1.165	0.000	0.032	0.000	1.177	1.333	H1-3+VT

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	176 - 144.27	Pole	TP23.625x16.5x0.188	1	-6.047	701.159	84.7	Pass
L2	144.27 - 94.6	Pole	TP34.344x22.475x0.313	2	-12.115	1699.628	90.7	Pass
L3	94.6 - 46.97	Pole	TP44.313x32.649x0.375	3	-21.193	2635.607	84.9	Pass
L4	46.97 - 0	Pole	TP54x42.219x0.375	4	-26.797	2876.241	88.3	Pass
						Summary	ELC:	LC7
						Pole (L2)	90.7	Pass
						Rating =	90.7	Pass

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876381 TOWER ID: C_BASELEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

BU#: *876381*
Site Name: *WARD*
App #: *164079; Rev: 1*

Enter Load Factors Below:		
For M (WL)	1.3	<---- Enter Factor
For P (DL)	1.3	<---- Enter Factor

Maximum Shaft Superimposed Forces		
TIA Revision:	F	
Max. Service Shaft M:	3336.735	ft-kips **(* Note)**
Max. Service Shaft P:	35	kips
Max Axial Force Type:	Comp.	

(*) Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Load Factor	Shaft Factored Loads		
1.30	Mu:	4337.755	ft-kips
1.30	Pu:	45.5	kips

Pier Properties		
Concrete:		
Pier Diameter =	7.0	ft
Concrete Area =	5541.8	in^2
Reinforcement:		
Clear Cover to **Tie**=	4.00	in
Horiz. **Tie** Bar Size=	5	
Vert. Cage Diameter =	6.11	ft
Vert. Cage Diameter =	73.34	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	24	
As Total=	37.44	in^2
A s/ Aconc, Rho:	0.0068	0.68%

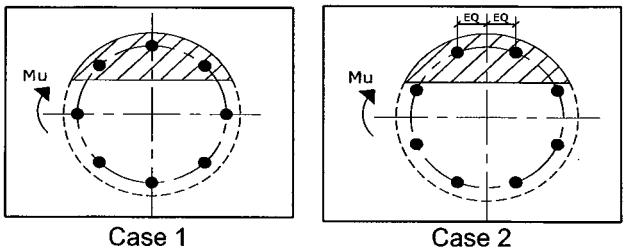
Material Properties		
Concrete Comp. strength, f'c =	4000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	
ACI 318 Code		
Select Analysis ACI Code=	2008	
Seismic Properties		
Seismic Design Category =	B	
Seismic Risk =	**Low**	

Solve (Run) <-- Press Upon Completing All Input

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:
(3)*(Sqrt(f'c)/Fy: 0.0032
200 / Fy: 0.0033

Results:

Governing Orientation Case: **2**



Case 1 Case 2

Dist. From Edge to Neutral Axis: **12.95** in
Extreme Steel Strain, εt: **0.0152**
εt > 0.0050, Tension Controlled
Reduction Factor,φ: **0.900**

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.68%	OK

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	10899.78	kips
at Mu=(ϕ=0.65)Mn=	6617.89	ft-kips
Max Tu, (φ=0.9) Tn =	2021.76	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	45.50	kips
Drilled Shaft Moment Capacity, φMn:	**5961.88**	ft-kips
Drilled Shaft Superimposed Mu:	**4337.76**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**72.8%**

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#: *876381*
Site Name: *WARD*
App #: *164079; Rev: 1*

Pole Manufacturer:	*Other*

Reactions		
Moment:	3174	ft-kips
Axial:	35	kips
Shear:	25	kips

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	63	in

Anchor Rod Results

Maximum Rod Tension:	149.0 Kips	Rigid
Allowable Tension:	195.0 Kips	Service, ASD
Anchor Rod Stress Ratio:	76.4% Pass	Fty*ASIF

Plate Data		
Diam:	69	in
Thick:	2	in
Grade:	60	ksi
Single-Rod B-eff:	10.71	in

Base Plate Results

	Flexural Check	Rigid
Base Plate Stress:	59.5 ksi	Service ASD
Allowable Plate Stress:	60.0 ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	99.1% Pass	Y.L. Length:
		32.45

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

Stiffener Results

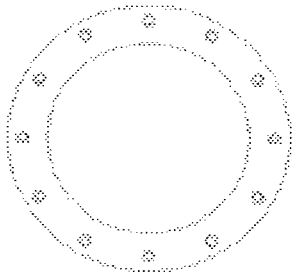
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

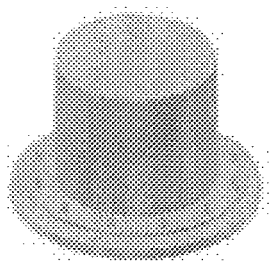
Pole Results

Pole Punching Shear Check:	n/a

Pole Data		
Diam:	54	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Monopole Drilled Pier

Checks capacity of a single drilled shaft foundation for a monopole

BU#: 876381
Site Name: *WARD*
App Number: *164079; Rev: 1*

CROWN CASTLE

ACI 318 Version: 2008

Design Reactions		
Shear, S:	25.00	kips
Moment, Mt:	3174.00	ft-kips
Tower Weight, Wt:	35.00	kips
Tower Height, H:	176	ft
Base Diameter, BD:	54.0	in

Foundation Dimensions		
Caisson Diameter, CD:	7.0	ft
Ext. Above Grade, E:	1.0	ft
Depth Below Grade, L:	29.0	ft
Neglected Depth, N:	3.5	ft
Rebar Size, Sp:	11	
Rebar Quantity, mp:	24	
Tie Size, tp:	5	

Material Properties		
Rebar Tensile, Fy:	60	ksi
Concrete Strength, F'c:	4000	psi
Concrete Density, δx:	108	pcf
Clear Cover, cc:	4	in

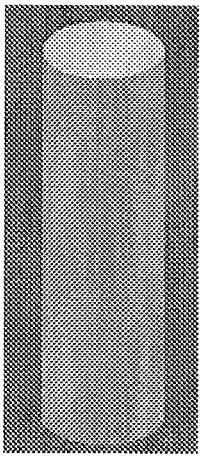
Soil Properties		
Soil Unit Weight, γ:	87	pcf
Allowable Bearing, Bc:	10.000	ksf
Seismic Design Cat, z:	B	

Caisson Analysis		
Depth to Zero Shear:	6.9	ft
Max Factored Moment:	4337.76	ft-kips
Overturning FOS:	5.01	

Depth		Shear		Moment	
3	ft	25.1	kips	3249.5	ft-kips
6	ft	12.3	kips	3315.9	ft-kips
9	ft	-26.9	kips	3298.5	ft-kips

Design Checks	Capacity/ Availability	Demand/ Limits	Check
Minimum Req'd Dia. 1 (ft):	7.00	2.11	OK
Minimum Req'd Dia. 2 (ft):	7.00	6.00	OK
Bearing (ksf):	10.00	0.91	OK
Rebar Area (in²):	37.44	18.47	OK
Pier moment capacity (k-ft):	5961.88	4337.76	OK
Rebar spacing (in):	8.54	2 < Bs <18	OK
Development Length (in):	260.70	12.00	OK
Soil moment capacity (FOS):	5.01	2.00	OK

☐ **Assume 0.33% Minimum Steel?**



Bearing: 9.1%

Steel: 72.8%

Soil: 39.9%

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* CAISSON - Pier Foundations Analysis and Design - Copyright Power Line Systems, Inc. 1993-2010 *

Project Title: BU# 876381
Project Notes:

Calculation Method: Full 8CD

******* I N P U T D A T A

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
7.00	1.00	4.00	60.00

Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	3.50	0.00	130.0			
2	Sand	5.50	3.50	130.0		3.690	35.00
3	Sand	21.00	9.00	67.6		3.690	35.00

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure
3174.0	35.0	25.00	5.01

******* R E S U L T S

Calculated Pier Properties

Length (ft)	Weight (kips)	End Bearing Pressure (psf)
30.000	173.180	909.5

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	1.00	3.50	130.0			0.00	2.75
Sand	4.50	5.50	130.0		3.690	346.28	7.65
Sand	10.00	11.04	67.6		3.690	1320.30	15.97
Sand	21.04	8.96	67.6		3.690	-1540.63	25.72

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	126.0	15902.0	25.1	3174.1
3.00	126.0	16279.9	25.1	3249.5
6.00	61.7	16612.4	12.3	3315.9
9.00	-134.7	16525.7	-26.9	3298.5
12.00	-412.1	15720.0	-82.3	3137.7
15.00	-739.1	14004.9	-147.5	2795.4
18.00	-1113.3	11238.1	-222.2	2243.1
21.00	-1534.5	7278.2	-306.3	1452.7
24.00	-1078.3	3329.2	-215.2	664.5
27.00	-562.7	855.9	-112.3	170.8
30.00	0.0	0.0	0.0	0.0

SHEET INDEX

NO.	DESCRIPTION
T1	TITLE SHEET
AAV1	OVERALL AND ENLARGED SITE PLANS
AAV2	NOTES AND DETAILS
C1	GENERAL NOTES
C2	COMPOUND SITE PLAN / SITE ELEVATION
C3	EQUIPMENT SITE PLANS
C4	ANTENNA/RRH DETAILS
C5	ANTENNA PLANS
C6	ANTENNA CABLE RISER DETAILS
C7	RF AND CABLE DETAILS
C8	JUNCTION BOX DETAILS
C9	DETAILS
E1	UTILITY SITE PLAN
E2	ONE-LINE DIAGRAMS AND DETAILS
E3	GROUNDING PLAN AND DETAILS

DRIVING DIRECTIONS

DEPART FROM SPRINT:
1 INTERNATIONAL BLVD, MAHWAH, NJ 07495

1. DEPART INTERNATIONAL BLVD TOWARD CHURCHHILL RD
2. EXIT ROUNDABOUT AT 3RD EXIT ONTO LEISURE LN
3. TAKE RAMP RIGHT ONTORT-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-287 EAST/CROSS WESTCHESTER EXPY
7. TAKE RAMP AND FOLLOW SIGNS FOR I-95 NORTH
8. AT EXIT #48, TAKE RAMP RIGHT FOR I-91 NORTH TOWARD HARTFORD
9. AT EXIT #8, TAKE RAMP RIGHT FOR CT-80/CT-17 TOWARD NORTH BRANFORD
10. BEAR RIGHT ONTO CT-80/FOXON BLVD - GO 4.8 MI
11. KEEP STRAIGHT ONTO CT-22/CT-80/FOXON RD - GO 1.3 MI
12. KEEP STRAIGHT ONTO CT-80/FOXON RD - GO 2.9 MI
13. TURN RIGHT ONTO LONG HILL RD - GO 0.3 MI
14. ARRIVE AT SITE (ON LEFT) BEHIND 2365 LONG HILL ROAD

Sprint™

NETWORK VISION MMBTS LAUNCH
CONNECTICUT MARKET

SITE NAME

WARD

SITE NUMBER

CT33XC535

SITE ADDRESS

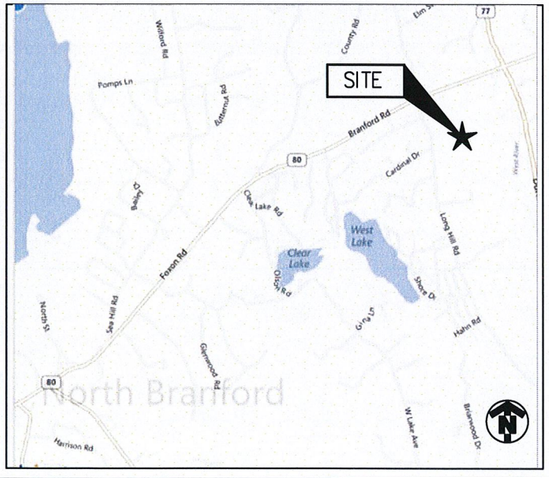
2381 LONG HILL ROAD
GUILFORD, CT 06437

STRUCTURE TYPE

176' MONOPOLE TOWER
CC SITE# 876381

UNDERGROUND SERVICE ALERT
CALL TOLL FREE 1-800-922-4455
THREE WORKING DAYS BEFORE YOU DIG

VICINITY MAP



PROJECT TEAM

ALCATEL·LUCENT

808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

PROJECT MANAGER

infinigy engineering

11 Herbert Drive
Latham, NY 12110
OFFICE #: (518) 690-0790
FAX #: (518) 690-0793

ENGINEER

SCOPE OF WORK:

- 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
- INSTALL NEW ANTENNAS/RRH'S ON EXISTING TOWER
- INSTALL NEW BTS OR RETROFIT EXISTING BTS IN EXISTING EQUIPMENT AREA
- REMOVE EXISTING CDMA ANTENNAS AND COAX CABLES
- SPRINT TO REPLACE EXISTING POWER CABINET WITH NEW SECOND BATTERY CABINET OR INSTALL NEW SECOND BATTERY CABINET IF THERE IS AVAILABLE SPACE IN EXISTING SPRINT LEASE AREA.

PROJECT SUMMARY

SITE NAME:	WARD
SITE NO.:	CT33XC535
SITE ADDRESS:	2381 LONG HILL ROAD GUILFORD, CT 06437
COUNTY:	NEW HAVEN
SITE COORDINATES:	
LATITUDE:	41.346622 N (NAD 83)
LONGITUDE:	72.721600 W (NAD 83)
GROUND ELEV.:	±182' (AMSL)
JURISDICTION:	CONNECTICUT SITING COUNCIL & TOWN OF GUILFORD
APPLICANT:	SPRINT 1 INTERNATIONAL BLVD. MAHWAH, NJ 07495
LAND OWNER:	GLOBAL SIGNAL 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CONSTRUCTION MANAGER:	TODD AMANN 914-715-9363
BUILDING CODE:	2003 INTERNATIONAL BUILDING CODE 2005 CONNECTICUT BUILDING CODE W/ 2009 AMENDMENT
ELECTRICAL CODE:	2005 NATIONAL ELECTRIC CODE

ENGINEER'S LICENSE

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.

LICENSED ENGINEER - STATE OF CONNECTICUT

APPROVALS

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

A/E Consultant:

infinigy engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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

No.	Submittal / Revision	App'd	Date
1	FINAL CD'S	·	11/12/12
0	ISSUED FOR CONSTRUCTION	·	11/9/12
B	ISSUED FOR REVIEW	·	8/2/12
A	ISSUED FOR REVIEW	·	4/11/12

Drawn: SEP Date: 4/11/12
Designed: · Date: ·
Checked: · Date: ·

Project Number 286-049

Project Title
CT33XC535
WARD
2381 LONG HILL ROAD
GUILFORD, CT 06437

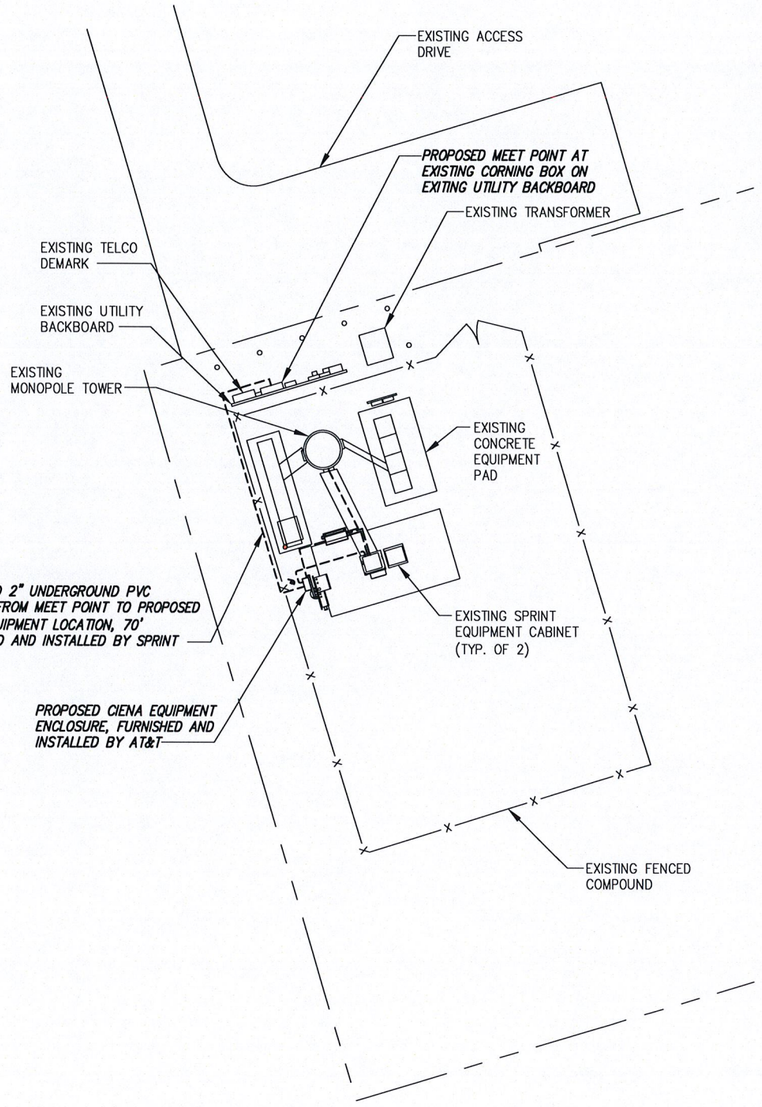
Client: Sprint, 3401 INTERNATIONAL AIRPORT DRIVE, CHARLOTTE, NC 28208

Implementation Team: ALCATEL·LUCENT, 808 AVIATION PARKWAY, SUITE 700, MORRISVILLE, NC 27650

Drawing Scale: AS NOTED
Date: 11/12/12

Drawing Title
TITLE SHEET

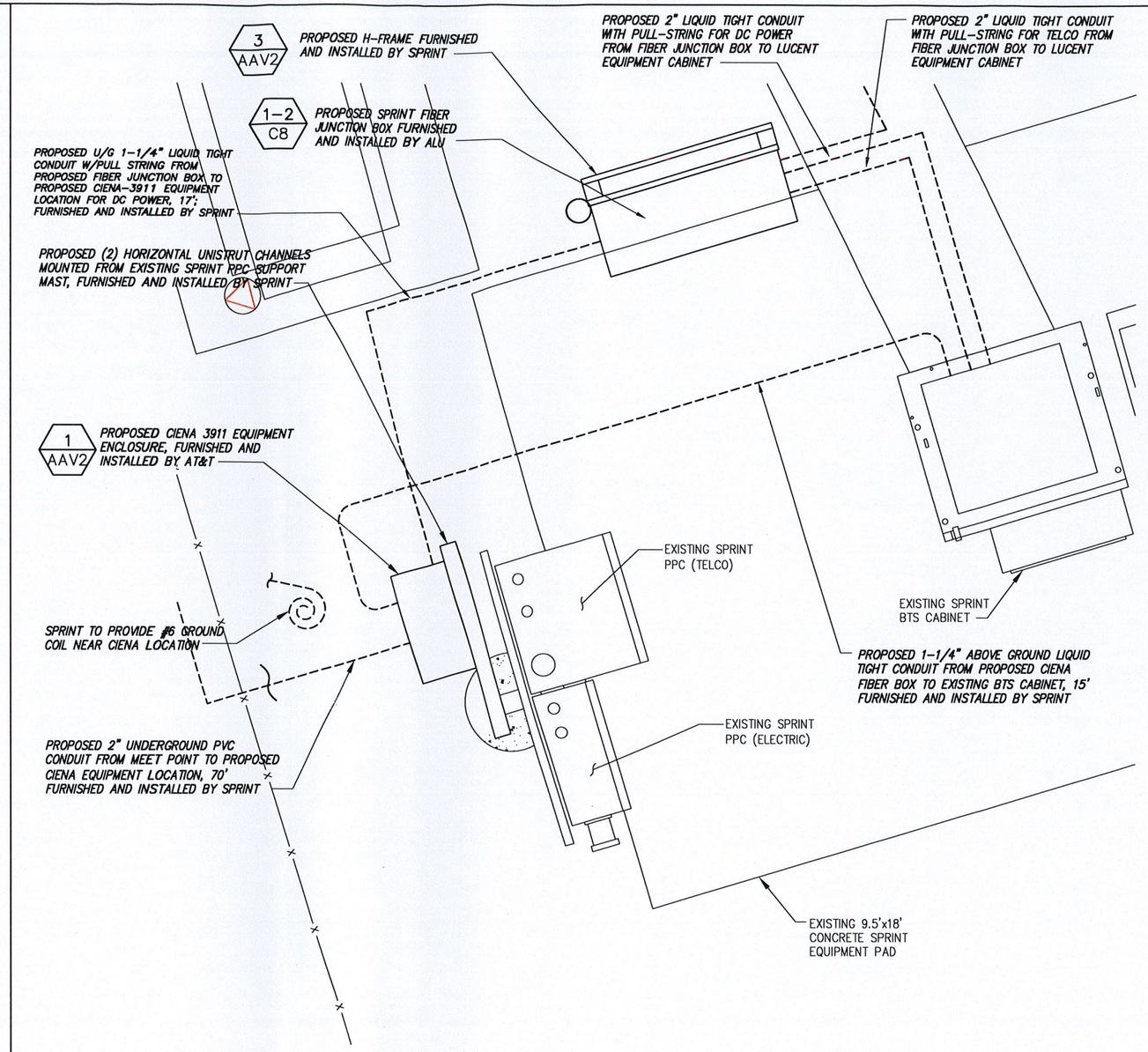
Drawing Number
T1



CALLED NORTH

1 / -- OVERALL SITE PLAN
SCALE: 5' 0 5' 10' 20'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 10'
SCALE: 11"X 17" SHEET 1"= 20'

BASEMAPPING PREPARED FROM A SITE VISIT PERFORMED BY INFINIGY ENGINEERING, AND INFORMATION PROVIDED BY SPRINT NEXTEL, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.



CALLED NORTH

1 / -- EQUIPMENT AREA
SCALE: 0.5' 0 0.5' 1' 2'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 1'
SCALE: 11"X 17" SHEET 1"= 2'

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STATE OF CONNECTICUT
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CT33XC535
WARD

2381 LONG HILL ROAD
GUILFORD, CT 06437

Client:
Sprint
3401 INTERNATIONAL AIRPORT DRIVE
CHARLOTTE, NC 28208

Implementation Team:
ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27560

Drawing Scale: AS NOTED
Date: 11/12/12

Drawing Title:
OVERALL & ENLARGED SITE PLANS

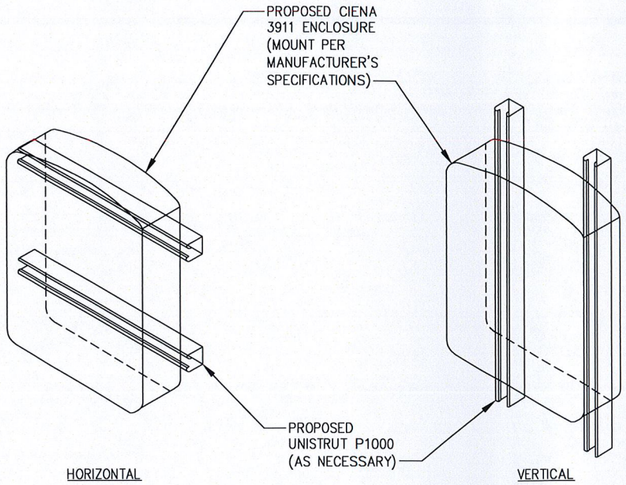
Drawing Number:
AAV1

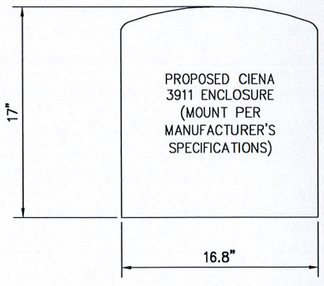
GENERAL NOTES:

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
4. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OF PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDORS SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
10. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
11. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
12. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
13. THE CONTRACTOR SHALL NOTIFY THE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE REPRESENTATIVE.
14. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
15. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD OR VIA A REPRESENTATIVE. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. SEE UNDERGROUND UTILITY COMPANY SHEET T-1 (DIG SAFE, MISS UTILITY, ETC.)
16. IF ASSUMED EXISTING CONDITION DIFFERS, ENGINEER MUST BE INFORMED OF ACTUAL FIELD CONDITION.
17. REFER TO THE SITE PLAN FOR APPROXIMATE LENGTH OF ALL U/G WORK AND LOCATION. FINAL LOCATION TO BE DETERMINED BY CLIENT. ALL MATERIALS TO BE USED AS ACCORDING TO DETAIL INSTRUCTIONS. ALL MATERIALS NOT INCLUDED IN THE DETAILS SHALL BE USED ACCORDING TO CODE AND/OR LOCAL JURISDICTION REGULATIONS INCLUDING MATERIALS, PREPARATION, EXACERBATION, EQUIPMENT AND INSTALLATION FOR UNDERGROUND WORK.
18. CONTRACTOR TO COORDINATE WITH SPRINT & PROVIDE GROUND BOND PER NE-250 & SPRINT STANDARDS FOR CLIENT EQUIPMENT AS REQUIRED.
19. ALL ELECTRICAL SPECIFICATIONS SHALL BE IN STRICT ACCORDANCE TO SECTIONS 16010, 16075, 16110, 16120, 16410 AND 16450 OF THE N.E.C.

ELECTRICAL AND GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AN PROCURED PER SPECIFICATION REQUIREMENTS. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
3. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIREMENT IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS
4. PROVISION OF AC/DC POWER IS UNDER SEPARATE SCOPE OF WORK
5. GROUNDING SHALL COMPLY WITH NEC ART. 250. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION FITTINGS. TEST COMPLETED GROUND SYSTEM AND ENSURE ADEQUACY.
6. CONTRACTOR TO PROVIDE GALV. P1000 UNISTRUT FRAMING AND 3/8" GALV. U-BOLTS/BOLTS AS NECESSARY FOR EXISTING CONDITIONS AND TO VERIFY SPACE IS APPROVED BY ALL NECESSARY PARTIES.





1 TYPICAL CIENA 3911 MOUNTING DETAIL
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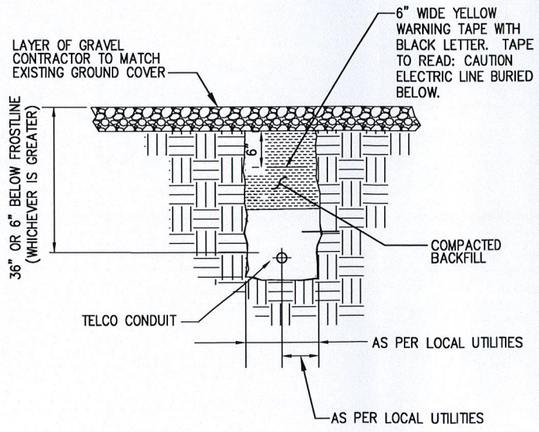
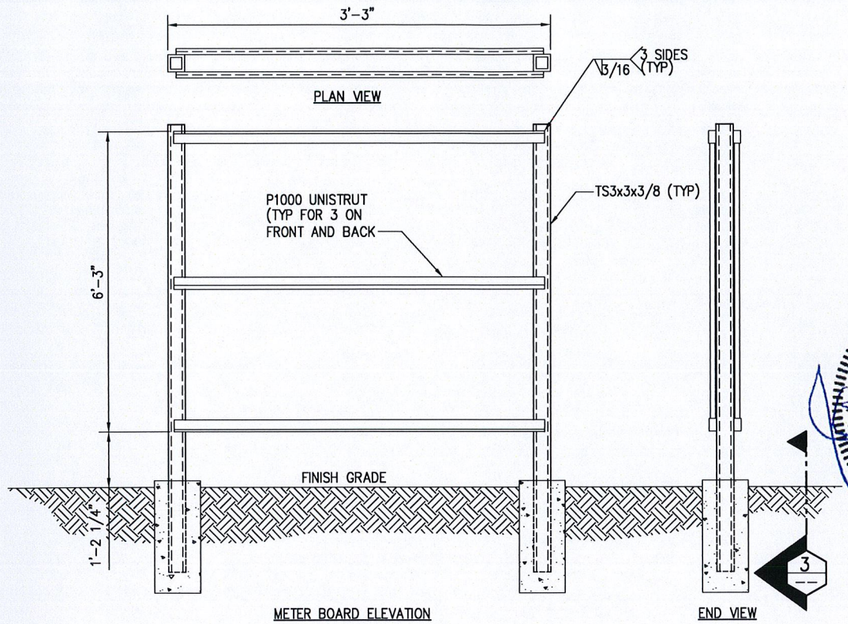
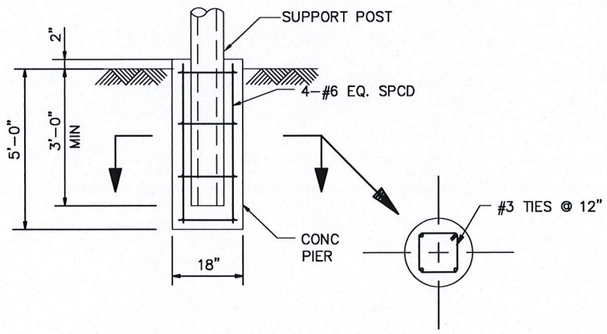


NOTE:
NUMBER AND SIZE OF CONDUITS MAY VARY. SEE DWG FOR CONDUIT SIZE AND LOCATION. CONFIRM CONDUIT SEPARATION AND DIMENSIONS SHOWN WITH LOCAL UTILITY COMPANY.

2 CONDUIT TRENCH DETAIL
NO SCALE



3 3'-0" WIDE H-FRAME FABRICATION DETAIL
NOT TO SCALE



4 SUPPORT PIER
NOT TO SCALE

A/E Consultant:
infinigy engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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

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Project Number 286-049

Project Title

CT33XC535
WARD

2381 LONG HILL ROAD
GUILFORD, CT 06437

Client: Sprint, 3401 INTERNATIONAL AIRPORT DRIVE CHARLOTTE, NC 28208

Implementation Team: ALCATEL-LUCENT, 808 AVIATION PARKWAY SUITE 700 MORRISVILLE, NC 27560

Drawing Scale: AS NOTED

Date: 11/12/12

Drawing Title

NOTES & DETAILS

Drawing Number

AAV2

GENERAL NOTES

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).

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.

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.

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.

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 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 ROOTS, SOD, RUBBING, 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. SETTLING 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.

PROJECT INFORMATION

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.

LEGEND

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
T	TRANSFORMER
M	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
	UNDERGROUND UTILITIES
#	DENOTES REFERENCE NOTE
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
OR	GROUND ROD
OR	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	PIN AND SLEEVE RECEPTACLE
	120AC DUPLEX RECEPTACLE
G OR	GROUND CONDUCTOR
#	REPRESENTS DETAIL NUMBER
#	REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL
PVC	POLYVINYL CHLORIDE

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JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

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A	ISSUED FOR REVIEW	-	4/11/12

Drawn: SEP Date: 4/11/12
Designed: - Date: -
Checked: - Date: -

Project Number: 286-049

Project Title:
CT33XC535
WARD

2381 LONG HILL ROAD
GUILFORD, CT 06437

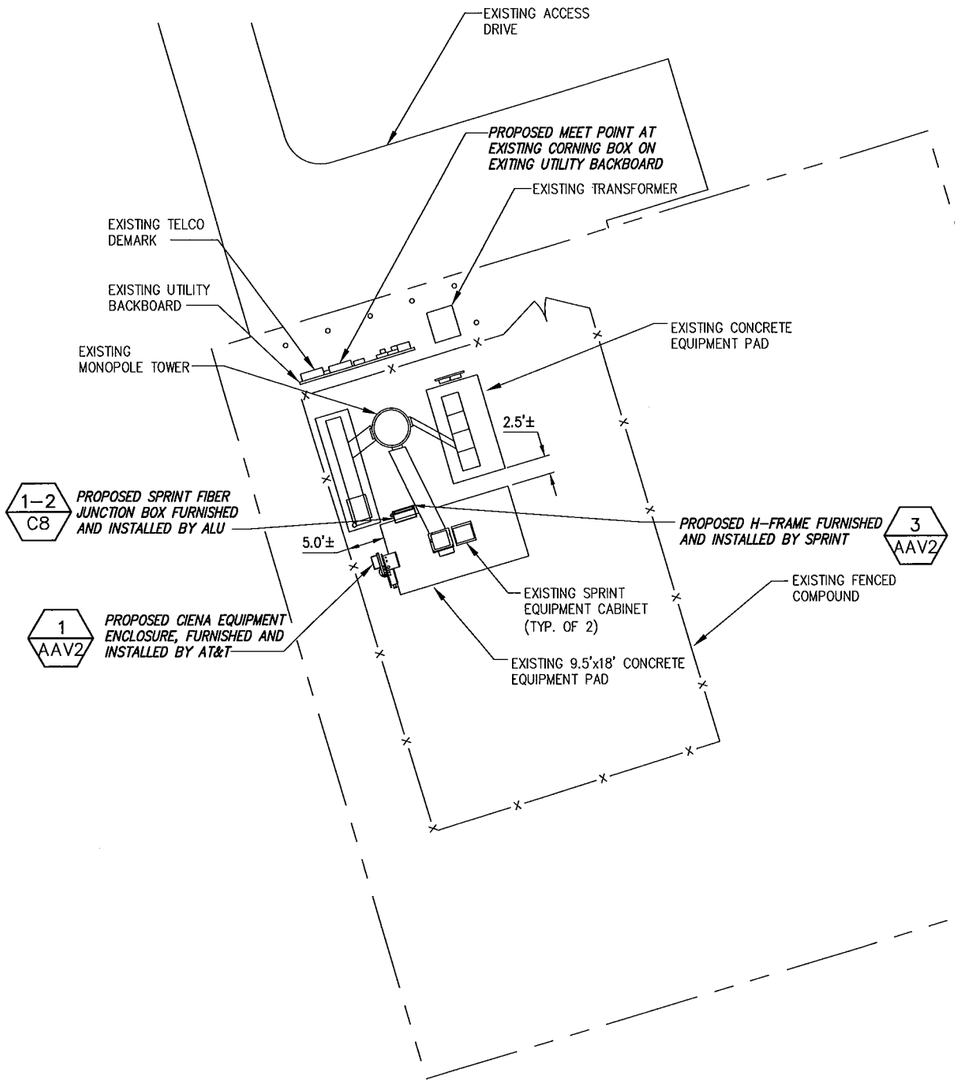
Client: Sprint
3401 INTERNATIONAL AIRPORT DRIVE CHARLOTTE, NC 28208

Implementation Team:
ALCATEL-LUCENT
808 AQUATION PARKWAY
SUITE 100
MORRISVILLE, NC 27650

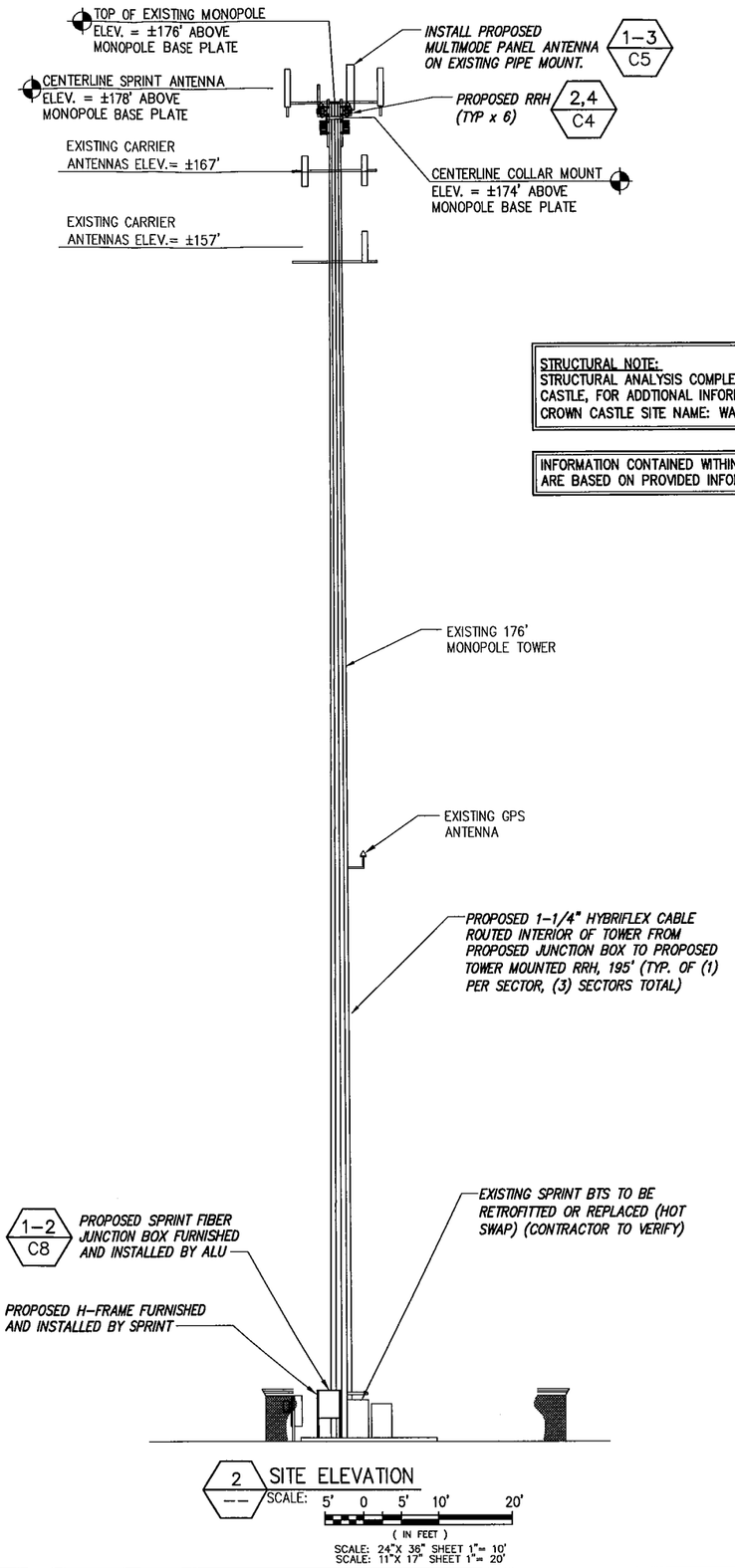
Drawing Scale: AS NOTED
Date: 11/12/12

Drawing Title:
GENERAL NOTES

Drawing Number:
C1



1 COMPOUND SITE PLAN
SCALE: 5' 0 5' 10' 20'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 10'
SCALE: 11"X 17" SHEET 1"= 20'



2 SITE ELEVATION
SCALE: 5' 0 5' 10' 20'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 10'
SCALE: 11"X 17" SHEET 1"= 20'

STRUCTURAL NOTE:
STRUCTURAL ANALYSIS COMPLETED BY CROWN CASTLE, FOR ADDTIONAL INFORMATION, SEE REPORT; CROWN CASTLE SITE NAME: WARD, DATED; 10/11/12.

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION.

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Implementation Team:
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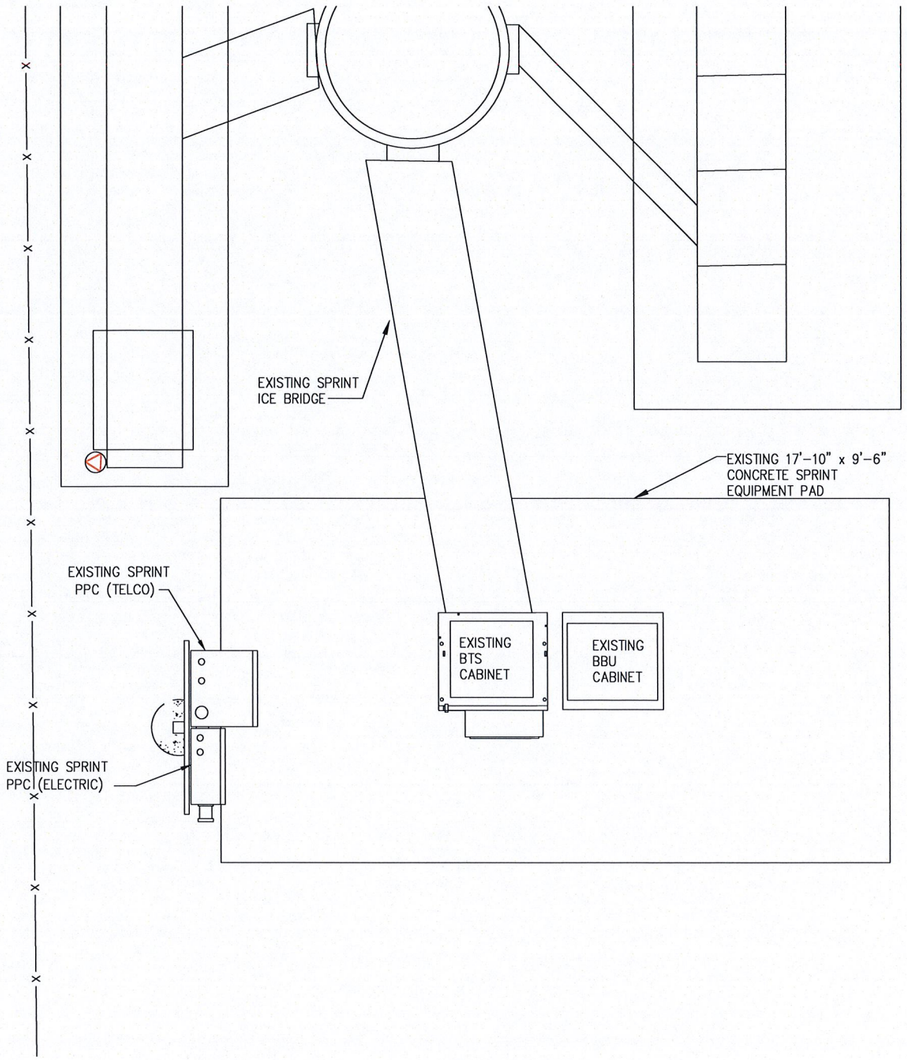
Drawing Scale:
AS NOTED

Date:
11/12/12

Drawing Title
COMPOUND SITE PLAN

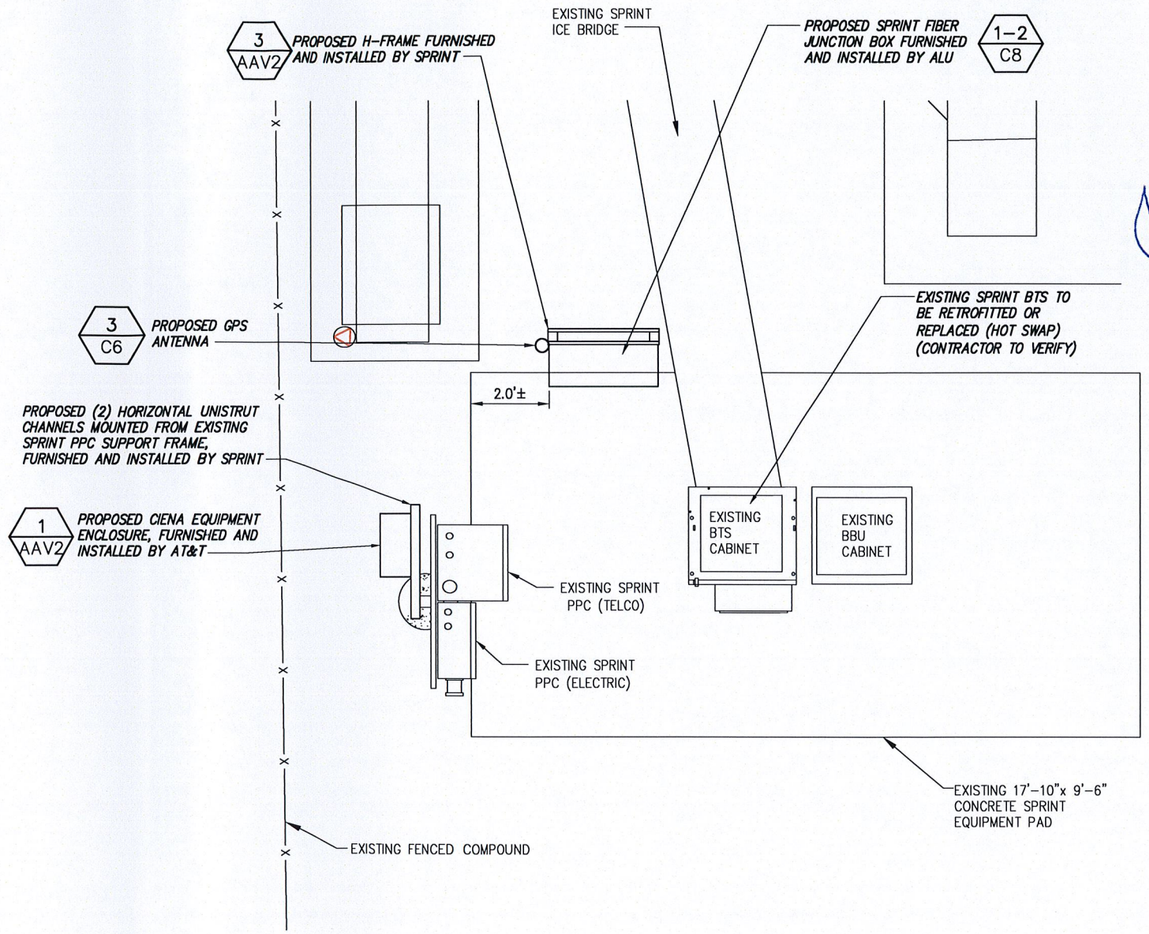
Drawing Number
C2



1 / -- EQUIPMENT SITE PLAN (EXISTING)
SCALE:

CALLED NORTH

1' 0 1' 2' 4'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 2'
SCALE: 11"X 17" SHEET 1"= 4'



2 / -- EQUIPMENT SITE PLAN (FINAL/PERMANENT)
SCALE:

CALLED NORTH

1' 0 1' 2' 4'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 2'
SCALE: 11"X 17" SHEET 1"= 4'

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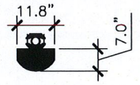
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED

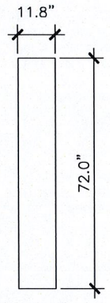
Date:
11/12/12

Drawing Title
EQUIPMENT SITE PLANS

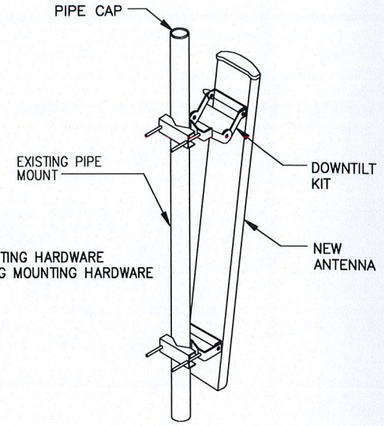
Drawing Number
C3



TOP VIEW

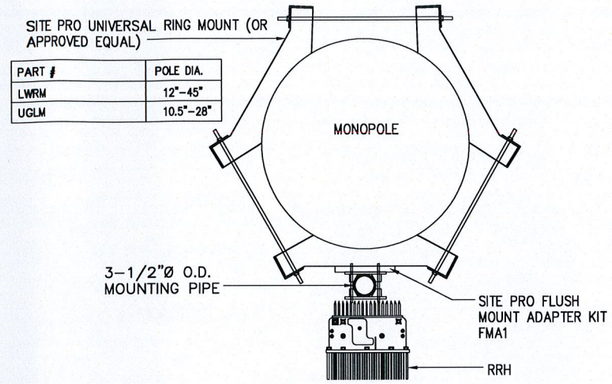


FRONT VIEW
800/1900
MULTI-MODE



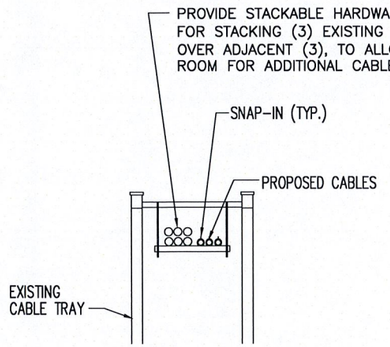
WEIGHT:
57 LBS W/O MOUNTING HARDWARE
64.5 LBS INCLUDING MOUNTING HARDWARE

2 ANTENNA DETAILS
NOT TO SCALE

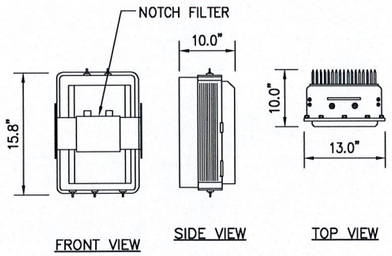


PART #	POLE DIA.
LWRM	12"-45"
UGLM	10.5"-28"

4 PANEL ANTENNA MOUNT DETAIL
NOT TO SCALE

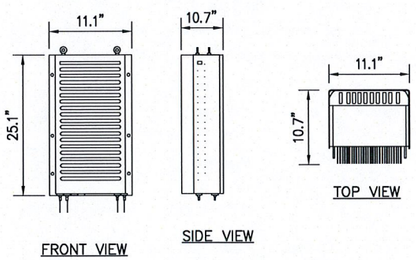


6 EXISTING CABLE TRAY DETAIL
NOT TO SCALE



FRONT VIEW SIDE VIEW TOP VIEW

800 MHz RRH
(ALU)
WEIGHT = 50.6 LBS.

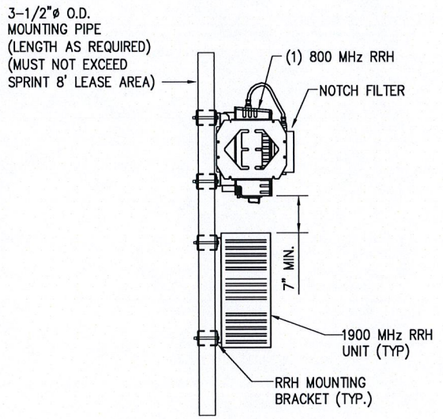


FRONT VIEW SIDE VIEW TOP VIEW

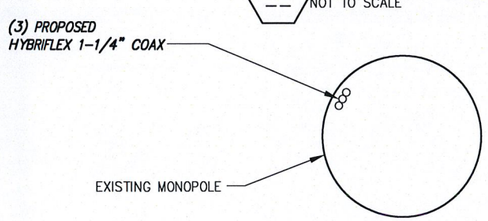
1900 MHZ RRH
(ALU)
WEIGHT = 60 LBS.

2 RRH EQUIPMENT DETAILS
NOT TO SCALE

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



4 RRH MOUNTING DETAIL (TYP.)
NOT TO SCALE



5 COAX ROUTING DETAIL
NOT TO SCALE

NOTE:
1. SUBCONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.

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Client:
Sprint
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CHARLOTTE, NC 28208

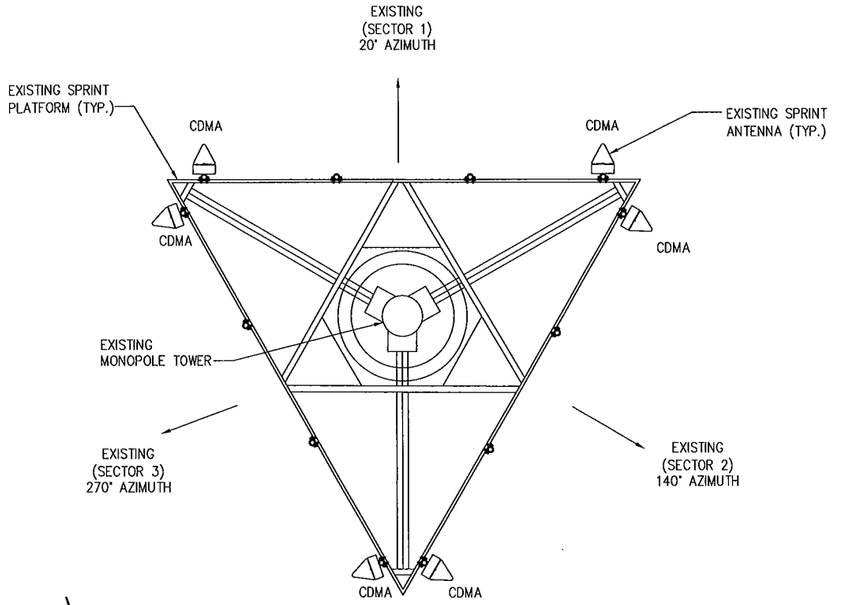
Implementation Team:
ALCATEL-LUCENT
805 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED

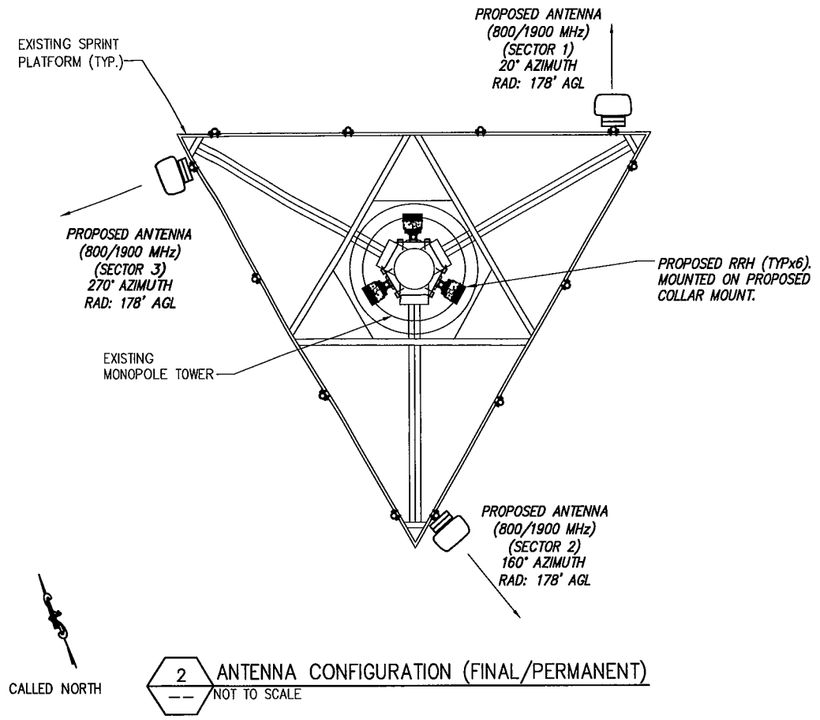
Date:
11/12/12

Drawing Title
SITE ELEVATION & ANTENNA/RRH DETAILS

Drawing Number
C4



1 ANTENNA CONFIGURATION (EXISTING)
NOT TO SCALE



2 ANTENNA CONFIGURATION (FINAL/PERMANENT)
NOT TO SCALE

NOTE:
REQUIRED PIPE MOUNTS TO BE SUPPLIED BY CONTRACTOR.

NOTES:

EXISTING RF DATA PROVIDED BY SPRINT SITERRA, SPRINT DRAWINGS TITLED, SITE NO.:CT33XC535 GUILFORD, DATED 9/10/03.

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.

GENERAL NOTES:

1. NEW SPRINT PANEL ANTENNAS TO MEET RF DESIGN REQUIREMENTS PER EBTS, PER APPROVED TOWER STRUCTURAL ANALYSIS.
2. CONTRACTOR TO PROVIDE EXISTING ANTENNA VERIFICATION AND TO INCLUDE MOUNTING HEIGHT, RAD CENTER, TOP AND BOTTOM OF ANTENNA AND AZIMUTHS FOR ALL ANTENNAS.
3. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
4. REFER TO SHEET C7 FOR ANTENNAS SPECS.
5. CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
6. 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 CABLE.
7. WHERE APPLICABLE, NEW PIPES TO BE 2-1/2" ø SCHEDULE 40, GALVANIZED MOUNTING PIPES (TYP.). COORDINATE PIPE LENGTH IN FIELD AS REQUIRED (MIN. LENGTH: 72")

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AS NOTED

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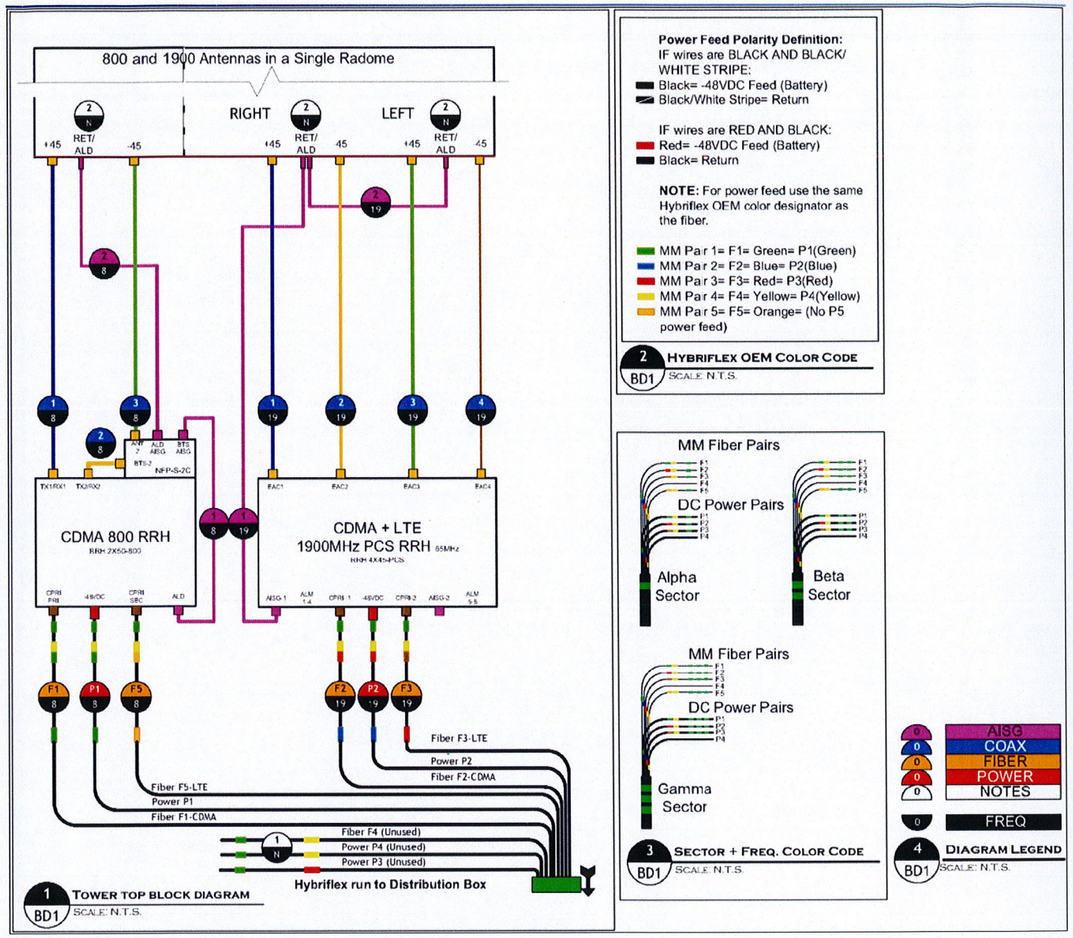
Drawing Title

ANTENNA PLANS

Drawing Number

C5



1 BD1 TOWER TOP BLOCK DIAGRAM
SCALE: N.T.S.

Power Feed Polarity Definition:
IF wires are BLACK AND BLACK/ WHITE STRIPE:
Black= -48VDC Feed (Battery)
Black/White Stripe= Return

IF wires are RED AND BLACK:
Red= -48VDC Feed (Battery)
Black= Return

NOTE: For power feed use the same Hybriflex OEM color designator as the fiber.

MM Par 1= F1= Green= P1(Green)
MM Par 2= F2= Blue= P2(Blue)
MM Par 3= F3= Red= P3(Red)
MM Par 4= F4= Yellow= P4(Yellow)
MM Par 5= F5= Orange= (No P5 power feed)

2 BD1 HYBRIFLEX OEM COLOR CODE
SCALE: N.T.S.

3 BD1 SECTOR + FREQ. COLOR CODE
SCALE: N.T.S.

0 AISG
0 COAX
0 FIBER
0 POWER
0 NOTES
0 FREQ

4 BD1 DIAGRAM LEGEND
SCALE: N.T.S.

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

PLUMBING DIAGRAM VERSION 1.7

WEATHERPROOFING CONNECTORS AND GROUND KITS NOTE:

A. 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):

1. 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 AS DISCUSSED BELOW; OR
2. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OR ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW; OR
3. 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.

1 — TOWER TOP SCENARIO 124
NOT TO SCALE

RRH JUMPERS NOTES:

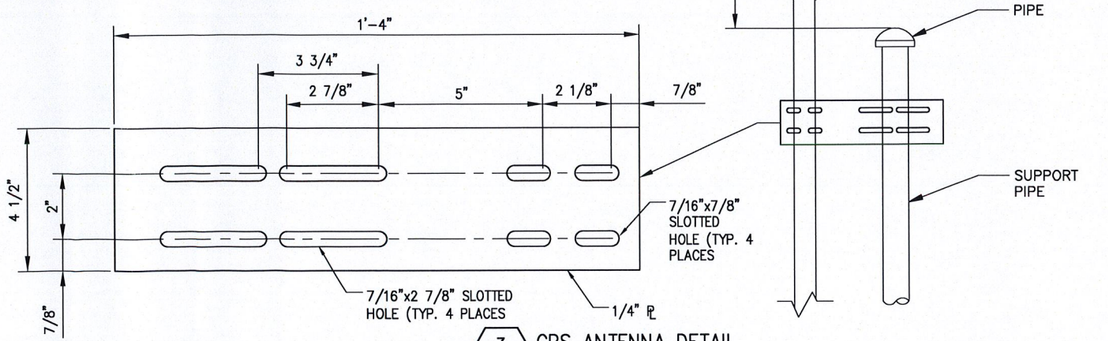
1. FOR DISTANCES BETWEEN RRH'S AND ANTENNAS LESS THAN 10'-0" USE A 1/2" JUMPER.
2. FOR DISTANCES BETWEEN RRH'S AND ANTENNAS GREATER THAN 10'-0" USE A 7/8" JUMPER.

GPS MINIMUM SKY VIEW REQUIREMENTS

NOTES:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 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 DEBARRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
3. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF LEVEL.
4. DO NOT SWEEP TEST GPS ANTENNA.

NOTES:
CONTRACTOR TO FIELD VERIFY GPS LOCATION.



3 — GPS ANTENNA DETAIL
NOT TO SCALE

A/E Consultant:
infinigy engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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

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Drawn: SEP Date: 4/11/12
Designed: - Date: -
Checked: - Date: -

Project Number 286-049

Project Title
CT33XC535
WARD

2381 LONG HILL ROAD
GUILFORD, CT 06437

Client: Sprint
3401 INTERNATIONAL AIRPORT DRIVE CHARLOTTE, NC 28208

Implementation Team: ALCATEL•LUCENT
808 AVIATION PARKWAY
SUITE 1400
MORRISVILLE, NC 27560

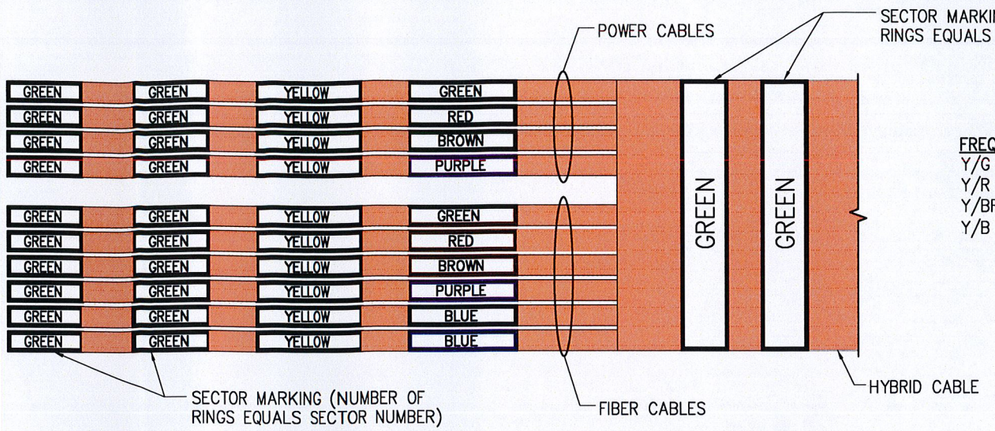
Drawing Scale: AS NOTED
Date: 11/12/12

Drawing Title
ANTENNA CABLE RISER AND H-FRAME DETAILS

Drawing Number
C6

Market	Southern Connecticut		
Cascade ID	CT33XC535		
	SECTOR 1	SECTOR 2	SECTOR 3
Split sector present	No	No	No
1900MHz_Azimuth	20	160	270
1900MHz_No_of_Antennas	1	1	1
1900MHz_RADCenter(ft)	178	178	178
1900MHz_Antenna Make	RFS	RFS	RFS
1900MHz_Antenna Model	APXVSPP18-C-A20	APXVSPP18-C-A20	APXVSPP18-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	0
1900MHz _M_Tilt	0	0	0
1900MHz_Carrier_Forecast_Year_2013	2	2	2
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 Tower/Pole	Top of the Tower/Pole	Top of the Tower/Pole
1900MHz Combiner Model	No Combiner needed	No Combiner needed	No Combiner needed
1900MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10
1900MHz_Top_Jumper #1_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J
1900MHz_Top_Jumper #2_Length (RRH-to-Combiner, ft)	N/A	N/A	N/A
1900MHz_Top_Jumper #2_Cable_Model (RRH-to-Combiner)	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-OR_Combiner-to-Main-Coax, ft)	N/A	N/A	N/A
1900MHz_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A
1900MHz_Bottom_Jumper #2_Length (Ground-based-Combiner-to-Main-	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	160	270
800MHz_No_of_Antennas	0	0	0
800MHz_RADCenter(ft)	178	178	178
800MHz_AntennaMake	RFS	RFS	RFS
800MHz_AntennaModel	APXVSPP18-C-A20 (Shared w/1900)	APXVSPP18-C-A20 (Shared w/1900)	APXVSPP18-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	0	-6	0
800MHz_M_Tilt	0	0	0
800MHz_RRH Manufacturer	ALU	ALU	ALU
800MHz_RRH Model	TBD	TBD	TBD
800MHz_RRH Count	1	1	1
800MHz_RRH Location	Top of the Tower/Pole	Top of the Tower/Pole	Top of the Tower/Pole
800MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10
800MHz_Top_Jumper_Cable_Model (RRH or Combiner-to-Antenna)	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
800MHz_Bottom_Jumper #1_Length (Ground-based-RRH-Main-Coax, ft)	N/A	N/A	N/A
800MHz_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A

1 SPRINT RFDS
NOT TO SCALE

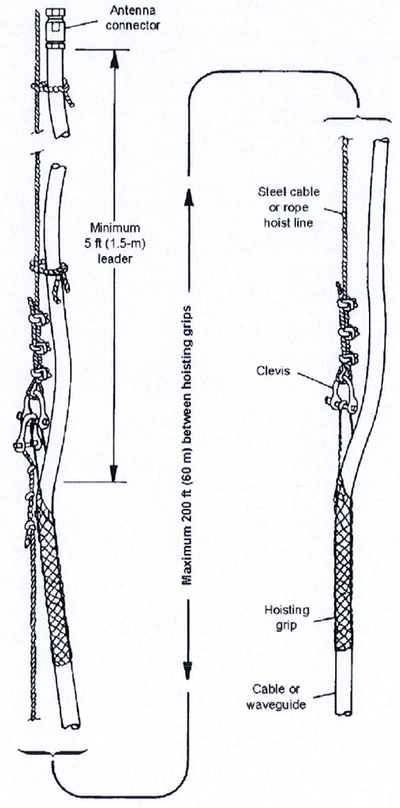


FREQUENCY LEGEND

Y/G	800
Y/R	1900 #1
Y/BR	1900 #2
Y/B	SPARE

HYBRID CABLE WILL BE MARKED IN A SIMILAR MANNER AS COAX CABLES. THE MAIN TRUNK OF THE HYBRID CABLE IS TO BE MARKED WITH THE SECTOR MARKINGS ONLY. THE INDIVIDUAL POWER PAIRS AND FIBER CABLES WILL BE LABELED WITH BOTH THE SECTOR CABLE MARKINGS AND FREQUENCY (EXAMPLE ABOVE IS FOR SECTOR 2)

2 COLOR CODING
NOT TO SCALE



1. DO NOT USE ONE HOISTING GRIP FOR HOISTING TWO OR MORE CABLES OR ICE BRIDGES. 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 ICE BRIDGE. SNAGGING OF THE CABLE OR ICE BRIDGE MAY LOOSEN THE GRIP AND POSSIBLY CAUSE THE CABLE TO ICE BRIDGE TO SWAY OR FALL.
3. DO NOT REUSE HOISTING GRIPS. USED GRIPS MAY HAVE LOST ELASTICITY, STRETCHED, OR BECOME WEAK-ENED. REUSING A GRIP CAN CAUSE THE CABLE OR ICE BRIDGE 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 ICE BRIDGE BEING INSTALLED. SLIPPAGE OR INSUFFICIENT GRIPPING STRENGTH WILL RESULT IF YOU ARE USING THE WRONG HOISTING GRIP.

2 HOIST GRIB DETAIL
NOT TO SCALE

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

NOTE:
RFDS SHOWN PROVIDED BY SPRINT DATED 05/22/12.

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GUILFORD, CT 06437

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3401 INTERNATIONAL AIRPORT DRIVE
CHARLOTTE, NC 28208

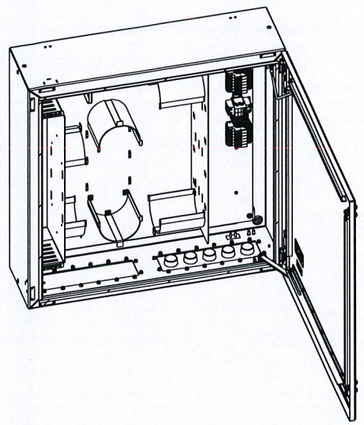
Implementation Team:
ALCATEL·LUCENT
808 AVIATION PARKWAY
SUITE 1700
MORRISVILLE, NC 27650

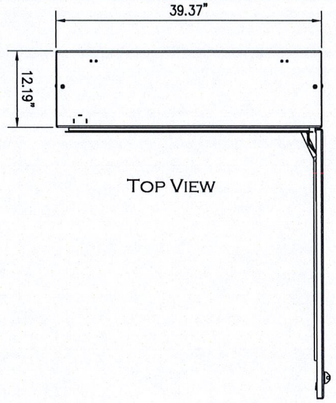
Drawing Scale:
AS NOTED

Date:
11/12/12

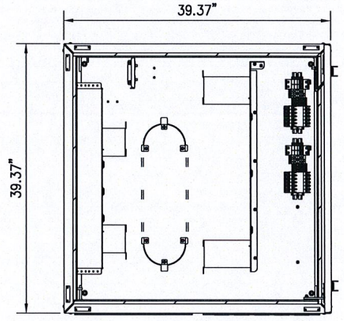
Drawing Title
RF AND CABLE DETAILS

Drawing Number
C7

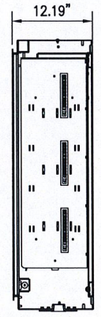




TOP VIEW

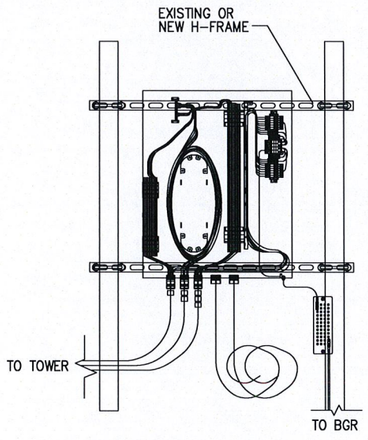


FRONT VIEW



SIDE VIEW

1 EC5 DISTRIBUTION BOX DETAIL
NOT TO SCALE



FRONT VIEW WITH DOOR REMOVED TO SHOW DETAIL

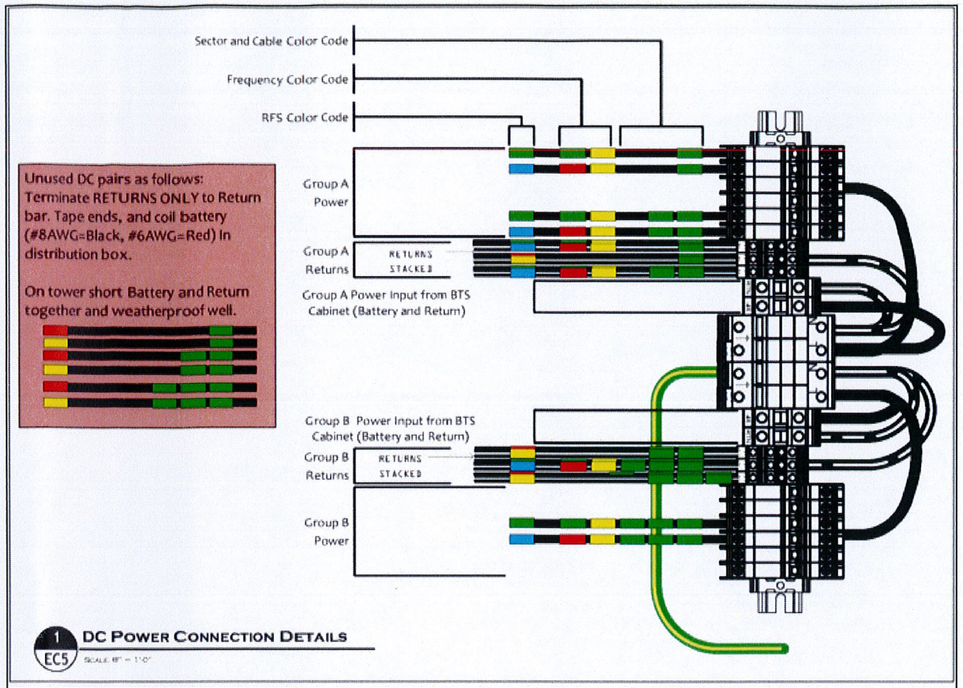
NOTES:

– DISTRIBUTION BOX IS KITTED WITH 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.

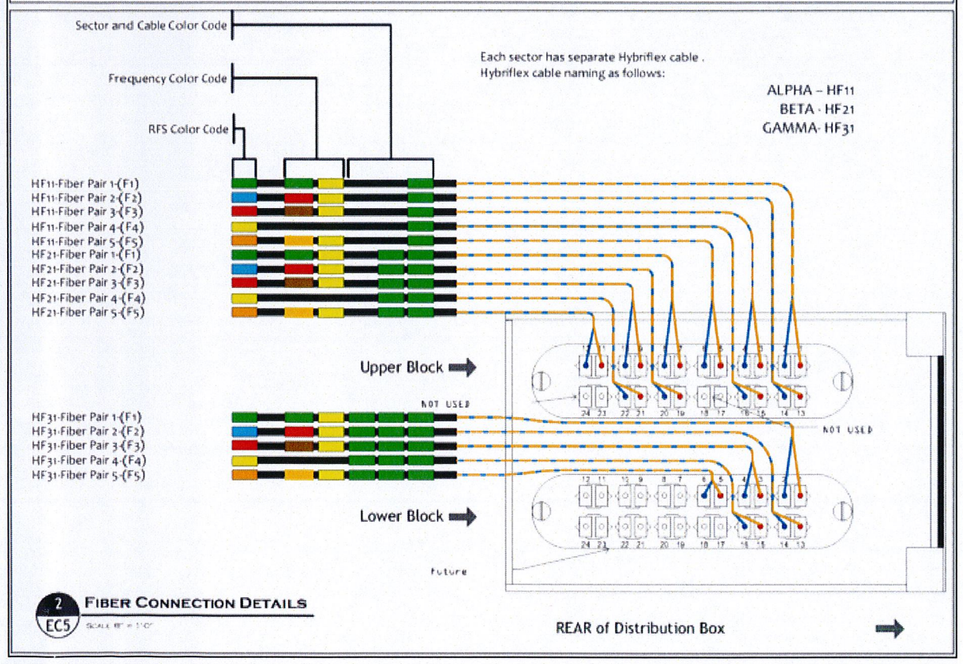
– DISTRIBUTION BOX IS KITTED WITH 24AWG, POWER CABLE 27' x 2EA. RUNS RED AND 2EA. RUNS BLACK. THIS SHOULD BE COILED AND LEFT INSIDE DISTRIBUTION BOX.

– BTS INSTALLATION TEAM WILL TERMINATE LIQUID–TIGHT, RUN THE FIBER JUMPERS AND POWER CABLES FROM BTS CABINET TO DISTRIBUTION BOX.

2 EC5 DISTRIBUTION BOX INSTALL COMPLETE VIEW
NOT TO SCALE



1 EC5 DC POWER CONNECTION DETAILS



2 EC5 FIBER CONNECTION DETAILS

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

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

PLUMBING DIAGRAM VERSION 1.7

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CT33XC535
WARD

2381 LONG HILL ROAD
GUILFORD, CT 06437

Client:
Sprint
3401 INTERNATIONAL AIRPORT DRIVE CHARLOTTE, NC 28208

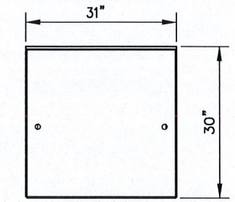
Implementation Team:
ALCATEL•LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED

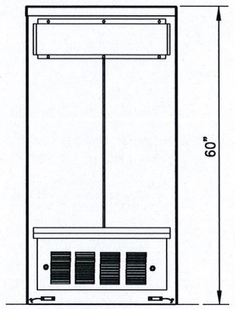
Date:
11/12/12

Drawing Title
JUNCTION BOX DETAILS

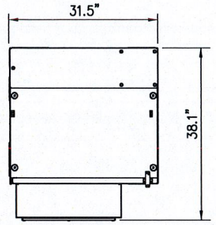
Drawing Number
C8



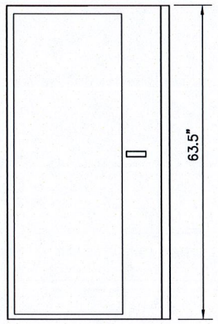
TOP VIEW



REAR VIEW



TOP VIEW



FRONT VIEW

1 BATTERY CABINET PROFILE
NOT TO SCALE

2 CABINET PROFILE
NOT TO SCALE

DESIGN CRITERIA:

2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION	
WIND SPEED (ASCE-7-05)	90 MPH
EXPOSURE B	
IMPORTANCE FACTOR	1.0
SEISMIC SITE CLASS	D
Ss=0.152 S¹ = 0.050	
SEISMIC IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	B
CABINET WEIGHT:	
9927 MM BTS CABINET	594 lbs.
60EC V2 BATTERY CABINET	2830 lbs.

MATERIAL SPECIFICATIONS

C-, M-, AND ANGLE SHAPES:	ASTM A36
HIGH-STRENGTH BOLTS:	ASTM A325SC OR (A325N
STRUCTURAL WF SHAPES:	ASTM A572-GR50
TUBE STEEL & PIPE COLUMNS:	ASTM A500, GRADE B
WELDING ELECTRODES:	E70XX
W - SHAPES:	ASTM A992, GRADE 50
U-BOLTS:	ASTM A36

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Implementation Team:
ALCATEL·LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED

Date:
11/12/12

Drawing Title

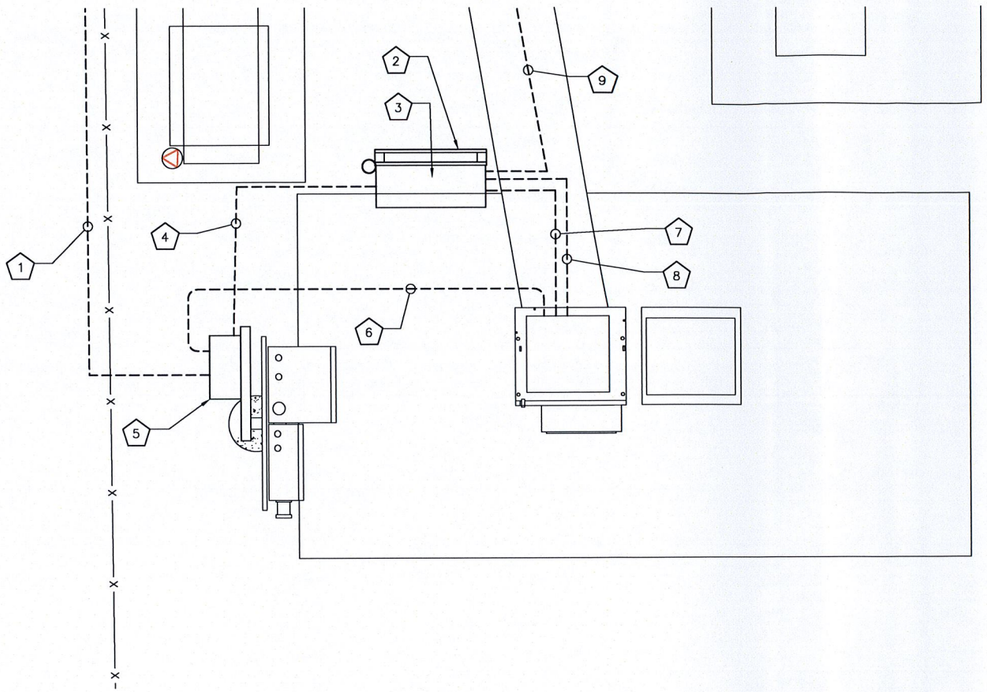
DETAILS

Drawing Number

C9

CODED NOTES:

1. PROPOSED 2" UNDERGROUND PVC CONDUIT FROM MEET POINT TO PROPOSED CIENA EQUIPMENT LOCATION, 70' FURNISHED AND INSTALLED BY SPRINT
2. PROPOSED H-FRAME FURNISHED AND INSTALLED BY SPRINT
3. PROPOSED SPRINT FIBER JUNCTION BOX FURNISHED AND INSTALLED BY ALU
4. PROPOSED 1-1/4" UNDERGROUND PVC CONDUIT WITH PULL-STRING FROM PROPOSED JUNCTION BOX TO PROPOSED CIENA EQUIPMENT LOCATION FOR DC POWER, 17'; FURNISHED AND INSTALLED BY SPRINT
5. PROPOSED CIENA EQUIPMENT ENCLOSURE, FURNISHED AND INSTALLED BY AT&T
6. PROPOSED 1-1/4"" ABOVE GROUND LIQUID TIGHT CONDUIT FROM PROPOSED CIENA FIBER BOX TO EXISTING BTS CABINET, 15' FURNISHED AND INSTALLED BY SPRINT
7. PROPOSED 2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER JUNCTION BOX TO LUCENT EQUIPMENT CABINET; 5'
8. PROPOSED 2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR TELCO FROM FIBER JUNCTION BOX TO LUCENT EQUIPMENT CABINET; 5'
9. PROPOSED 1-1/4" HYBRIFLEX CABLE ROUTED FROM PROPOSED JUNCTION BOX TO PROPOSED TOWER MOUNTED RRH, 195' (TYP. OF (1) PER SECTOR, (3) SECTORS TOTAL)



CALLED NORTH

1 UTILITY SITE PLAN
SCALE:

1' 0 1' 2' 4'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 2'
SCALE: 11"X 17" SHEET 1"= 4'

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES
2. GROUNDING SHALL COMPLY WITH ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
5. CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
6. LABEL SPRINT SERVICE DISCONNECT SWITCH AND PPC CABINET WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
7. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
8. ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 5 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.
9. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360'.
10. OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO SPRINT REPRESENTATIVE.
11. 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.
12. REDLINED AS-BUILTS ARE TO BE DELIVERED TO SPRINT REPRESENTATIVE.
13. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
14. FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, AND THE COMPLETE GROUNDING SYSTEM.
15. 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 SPRINT REPRESENTATIVE.
16. 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.
17. PROJECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE. REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
18. 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.
19. UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
20. PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
21. DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE AT SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.
22. ALL ABOVE GRADE CONDUIT TO BE RIGID METALLIC.

NOTES:

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

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-922-4455
THREE WORKING DAYS BEFORE YOU DIG

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Implementation Team: ALCATEL-LUCENT, 808 AVIATION PARKWAY SUITE 700 MORRISVILLE, NC 27650

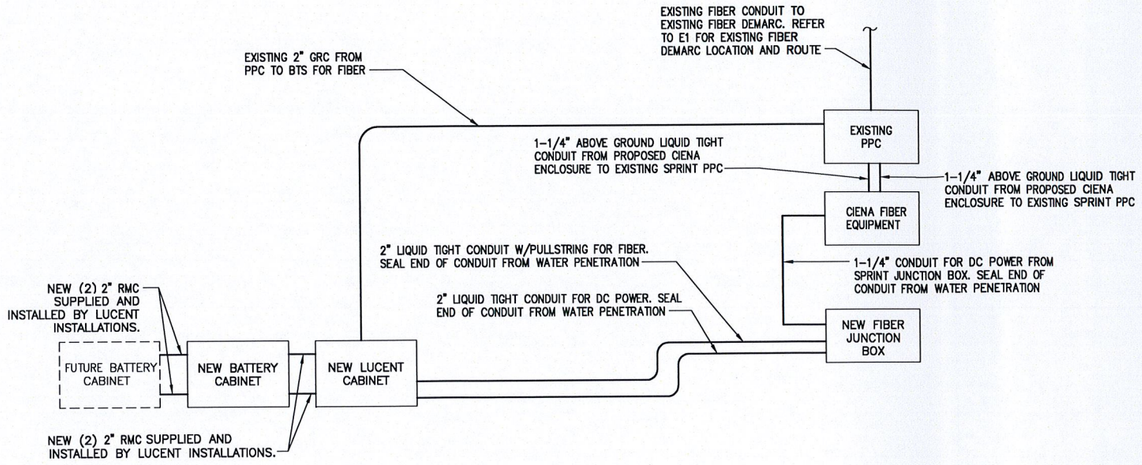
Drawing Scale: AS NOTED
Date: 11/12/12

Drawing Title:
UTILITY SITE PLAN

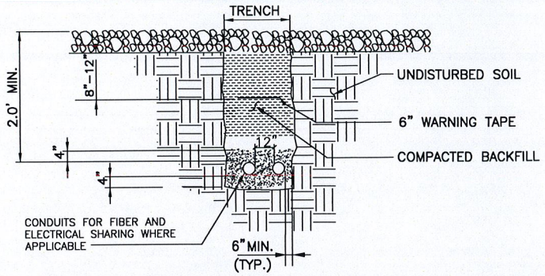
Drawing Number:
E1

GROUNDING NOTE:

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



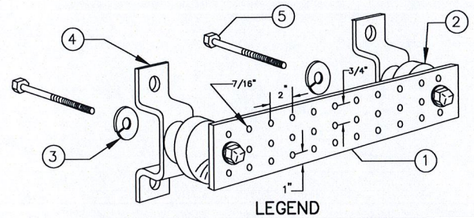
1 ONE-LINE DIAGRAM
NOT TO SCALE



– SEPARATION DIMENSIONS MUST BE VERIFIED WITH LOCAL UTILITY CO. REQUIREMENTS.

*HAND DIG INSIDE COMPOUND

2 UTILITY TRENCH DETAIL
NOT TO SCALE

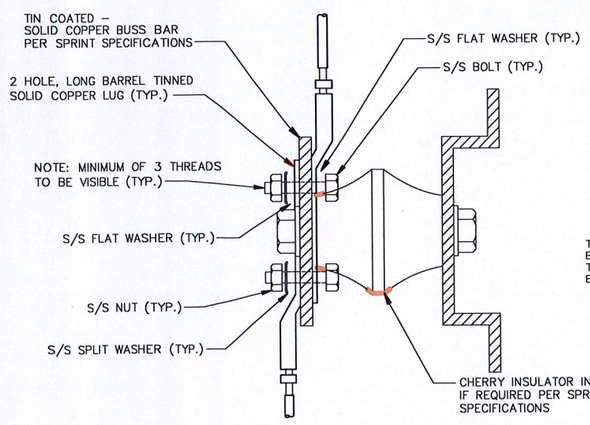


LEGEND

1. TINNED COPPER GROUND BAR, ¼" x 4" x 20", NEWTON INSTRUMENT Co., HARGER TGBI14420M, 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.
   WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
   5/8-11 x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

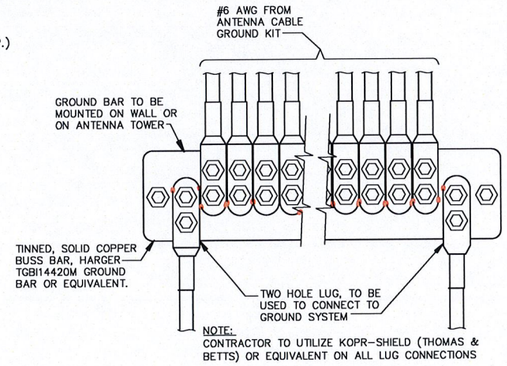
NOTE:
1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 6", 12", 18", ETC. GROUND BARS.
2) ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGBI14420M.

GROUND BAR



NOTES:
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 KOPR-SHIELD (THOMAS & BETTS) OR EQUIVALENT ON ALL LUG CONNECTIONS

ANTENNA GROUND BAR

3 GROUND BAR DETAILS
NOT TO SCALE

A/E Consultant:
infinigy engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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

ENVIRONMENTAL ALTERATIONS OR ADDITION TO THIS DRAWING IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS

No	Submittal / Revision	App'd	Date
1	FINAL CD'S	·	11/12/12
0	ISSUED FOR CONSTRUCTION	·	11/9/12
B	ISSUED FOR REVIEW	·	8/2/12
A	ISSUED FOR REVIEW	·	4/11/12

Drawn: SEP Date: 4/11/12
Designed: · Date: ·
Checked: · Date: ·

Project Number 286-049

Project Title

CT33XC535
WARD

2381 LONG HILL ROAD
GUILFORD, CT 06437

Client:
Sprint
3401 INTERNATIONAL AIRPORT DRIVE CHARLOTTE, NC 28208

Implementation Team:
ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale: AS NOTED

Date: 11/12/12

Drawing Title

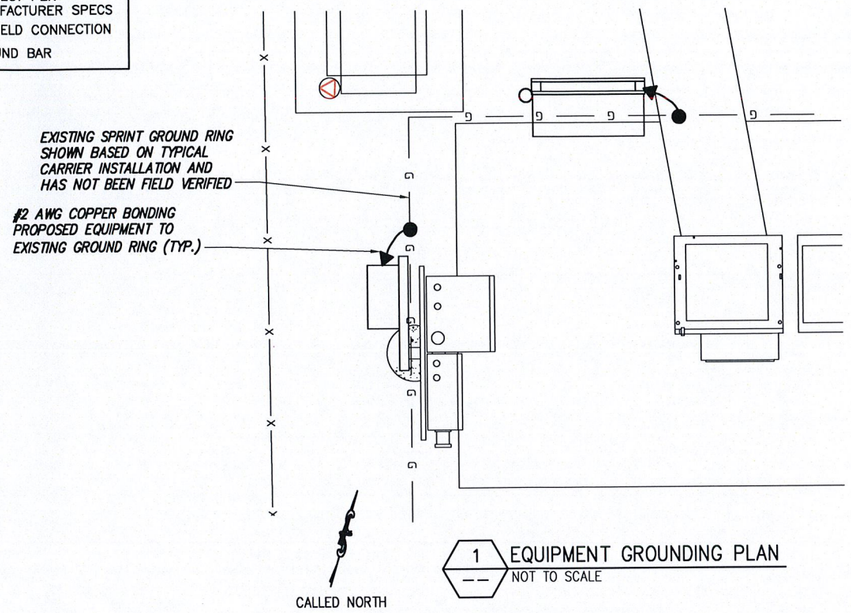
ONE-LINE DIAGRAM AND DETAILS

Drawing Number

E2

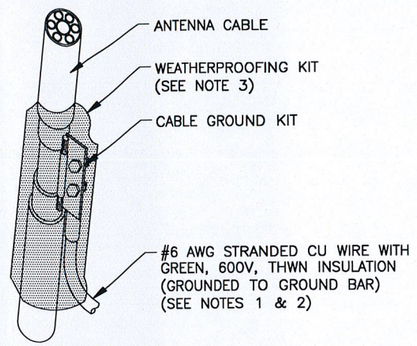
SYMBOL

- COPPER GROUND ROD
- CONNECT PER MANUFACTURER SPECS
- CADWELD CONNECTION
- GROUND BAR



1 EQUIPMENT GROUNDING PLAN
NOT TO SCALE

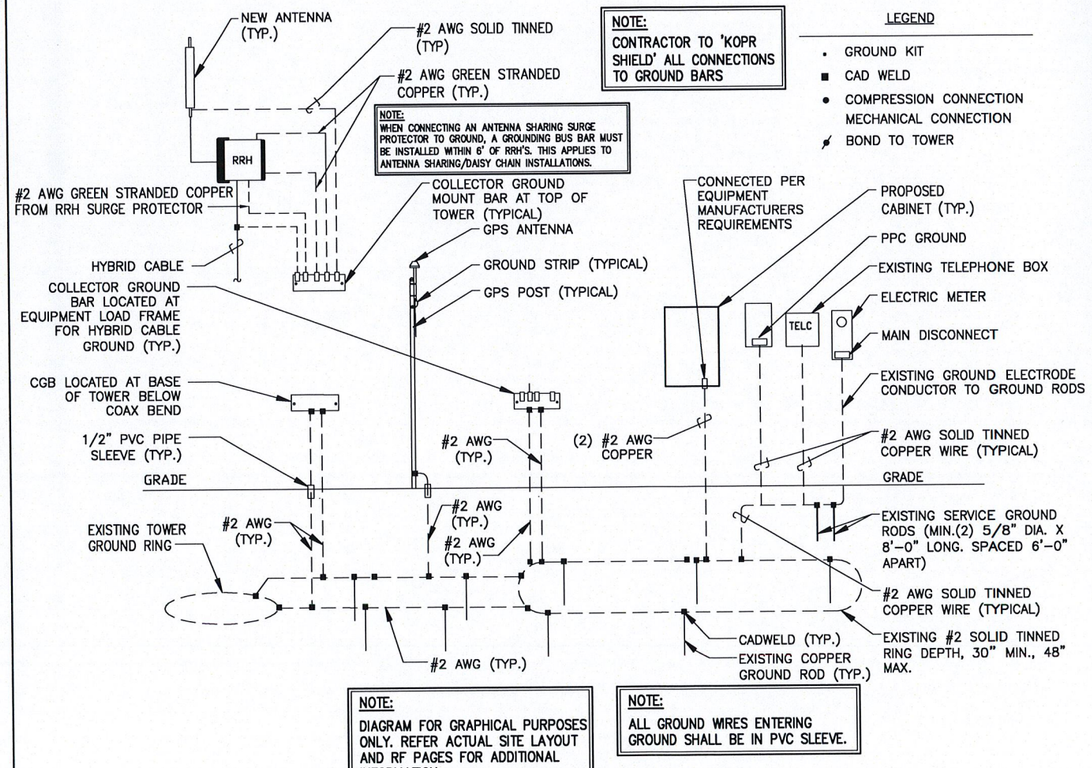
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.



3 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE

GROUNDING NOTES:

1. ALL DOWN CONDUCTORS AND GROUND RING 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 OR FOUNDATION, WHICHEVER IS HIGHER. COLD–GALV AFTER. EXOTHERMICALLY WELD OTHER END TO GROUND.
4. GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN 3/4" 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 SSEO 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.



NOTE:
CONTRACTOR TO 'KOPR SHIELD' ALL CONNECTIONS TO GROUND BARS

NOTE:
WHEN CONNECTING AN ANTENNA SHARING SURGE PROTECTOR TO GROUND, A GROUNDING BUS BAR MUST BE INSTALLED WITHIN 6' OF RRH'S. THIS APPLIES TO ANTENNA SHARING/DAISY CHAIN INSTALLATIONS.

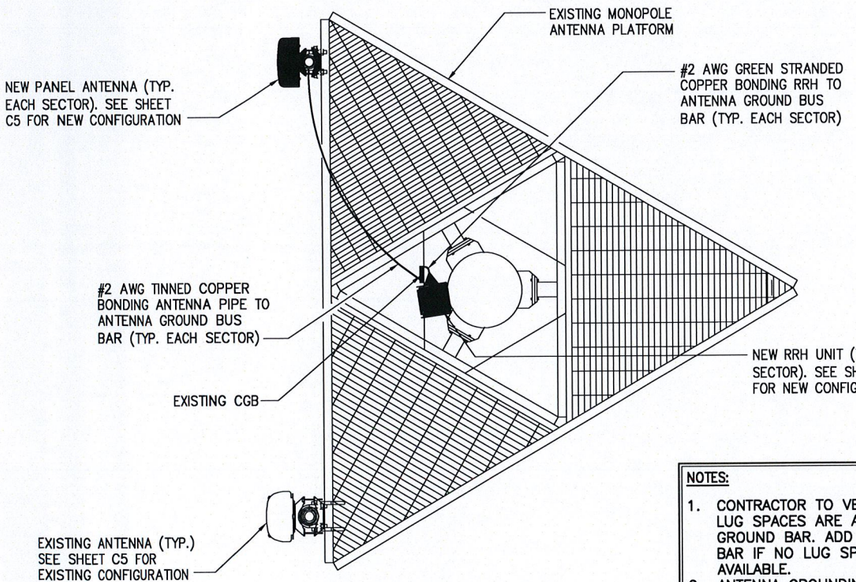
NOTE:
DIAGRAM FOR GRAPHICAL PURPOSES ONLY. REFER ACTUAL SITE LAYOUT AND RF PAGES FOR ADDITIONAL INFORMATION

NOTE:
ALL GROUND WIRES ENTERING GROUND SHALL BE IN PVC SLEEVE.

2 GROUNDING RISER DIAGRAM
NOT TO SCALE

LEGEND

- GROUND KIT
- CAD WELD
- COMPRESSION CONNECTION MECHANICAL CONNECTION
- BOND TO TOWER



4 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

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 SHEET C5.

A/E Consultant:
infinigy engineering
11 Herbert Drive
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STATE OF CONNECTICUT · JOHN S. STEVENS · No. 24705 · LICENSED PROFESSIONAL ENGINEER

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AS NOTED

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11/12/12

Drawing Title

GROUNDING PLAN AND DETAILS

Drawing Number

E3

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

November 27, 2012

The Honorable Joseph S. Mazza
First Selectman
Town of Guilford
31 Park Street
Guilford, CT 06437

RE: **EM-SPRINT-060-121126** –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 2831 Long Hill Road, Guilford, Connecticut.

Dear First Selectman Mazza:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72. A copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by December 11, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts LRB

Linda Roberts
Executive Director

LR/cm

c: Regina Reid, Zoning Enforcement Officer, Town of Guilford