Notice of Exempt Modification

617 South Orange Center Road, Orange, CT

Sprint Nextel Corporation ("Sprint") submits this Notice of Exempt Modification to the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-73 and 16-50j-72(b) of the Regulations of Connecticut State Agencies ("Regulations") in connection with Sprint's planned modification of antennas and associated equipment on an existing 180' monopole tower located at 617 South Orange Center Road in the Town of Orange. More particularly, Sprint plans to upgrade this site by adding 4G LTE technology to its facilities. The proposed modifications will not increase the tower height, extend the boundaries of the tower site, cause a significant adverse change or alteration in the physical or environmental characteristics of the site, increase noise levels at the tower site boundary by six (6) decibels, add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes, or impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

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

The 180' monopole tower located at 617 South Orange Center Road in the Town of Orange (lat. 41° 15' 19.91", long. 72° 00' 39.17" is owned by the Town of Orange and managed by Crown Castle. It is in an approximately 4,500+ square foot fenced compound. Sprint currently has nine (9) antennas (3 per sector) and one and one microwave dish with a centerline of 127' installed on the tower. Sprint's base station

equipment is located within the fenced compound at the base of the tower. A site plan depicting this is attached.

Sprint plans to remove three antennas and replace them with three (3) RFS APXVTW14-C-120 antennas, one (1) per sector, all with a centerline of 127'. Connected to each new RFS antenna will be one (1) ALU TD-RRH8X20 RRH, which will be located behind the antenna. The height of the tower will not need to be increased. Sprint also plans to install a four (4) batteries in the existing BBU cabinet, equipment within the existing equipment cabinet, and one fiber transmission cable on the existing Ice Bridge all within Sprint's leased premises. The compound's boundaries will not need to be extended. The proposed modifications will not cause a significant adverse change or alteration in the physical or environmental characteristics of the site, since it is already a telecommunications installation and the modifications will be compatible with this. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

The proposed modifications will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes. A radio frequency emissions analysis prepared by EBI Consulting indicates that the proposed final configuration (including other carriers on the tower) will emit 26.916% of the allowable FCC established general public limit sampled at the ground level (see the 2nd and 5th page of Radio Frequency FCC Regulatory Compliance Maximum Permissible Exposure (MPE) Assessment dated March 24, 2014). Emission values for the Sprint antennas have been calculated from the sample point, which is the top of a six foot person standing at the base of the tower. Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 3rd and 4th page of Radio Frequency FCC Regulatory Compliance Maximum Permissible Exposure (MPE) Assessment dated March 24, 2014). The information used in the report was analyzed as a percentage of current Maximum

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

Sprint Existing Facility

Site ID: CT13XC263

Orange Transfer Station

South Orange Center Road
Orange, CT 06477

March 24, 2014

EBI Project Number: 62141416

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

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March 24, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT13XC263 - Orange Transfer Station

Site Total: 62.439% - MPE% in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at South Orange Center Road, Orange, CT, for the purpose of determining whether the radio frequency (RF) exposure levels from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and 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 (850 MHz Band) is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the 1900 MHz and 2500 MHz bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at South Orange Center Road, Orange, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 4 channels in the 1900 MHz Band were considered for each sector of the proposed installation.
2) 1 channel in the 800 MHz Band was considered for each sector of the proposed installation
3) 2 channels in the 2500 MHz Band were considered for each sector of the proposed installation.
4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications was used in this direction.

6) The antennas used in this modeling are the RFS APXVSPP18-C-A20 and the RFS APXVTMM-C-120. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. The RFS APXVTMM-C-120 has a 15.9 dBd gain value at its main lobe at 2500 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.
7) The antenna mounting height centerline for the proposed antennas is **127 feet** above ground level (AGL).
8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT13XC263 - Orange Transfer Station
Site Addresss	South Orange Center Road, Orange, CT 06477
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	127	121	1/2 "	0.5	3	1390.2407	3.41370%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	127	121	1/2 "	0.5	3	195.44744	0.84641%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	127	121	1/2 "	0.5	3	390.89489	1.69283%
														Sector total Power Density Value:		5.953%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	127	121	1/2 "	0.5	3	1390.2407	3.41370%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	127	121	1/2 "	0.5	3	195.44744	0.84641%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	127	121	1/2 "	0.5	3	390.89489	1.69283%
														Sector total Power Density Value:		5.953%

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	127	121	1/2 "	0.5	3	1390.2407	3.41370%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	127	121	1/2 "	0.5	3	195.44744	0.84641%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	13.4	127	121	1/2 "	0.5	3	390.89489	1.69283%
														Sector total Power Density Value:		5.953%

Site Composite MPE %	
Carrier	MPE %
Sprint	17.859%
Clearwire	1.150%
MetroPCS	2.500%
AT&T	6.680%
Verizon Wireless	30.050%
Nextel	4.050%
T-Mobile	0.150%
Total Site MPE %	**62.439%**

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Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **17.859% (5.953% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

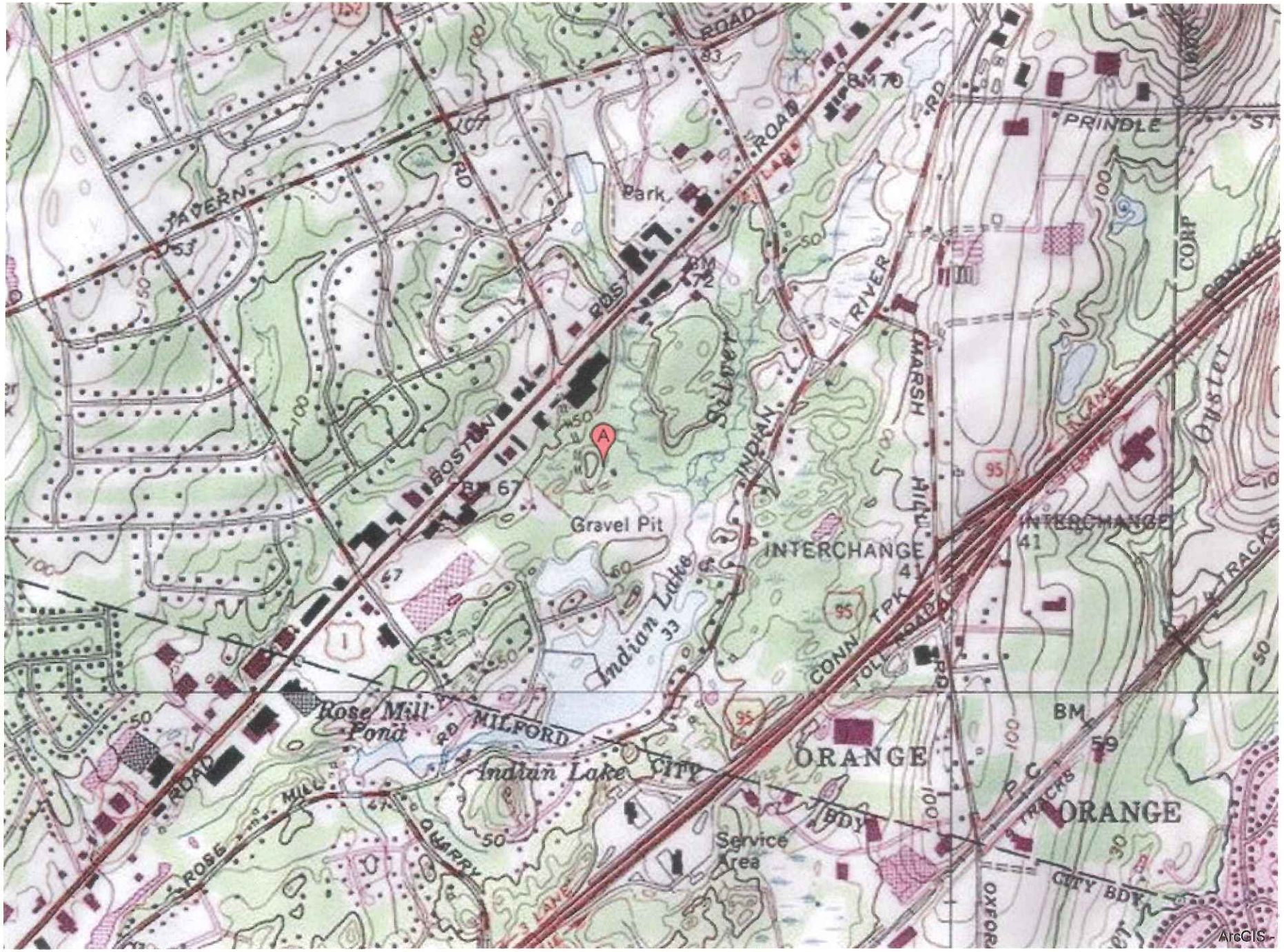
The anticipated composite MPE value for this site assuming all carriers present is **62.439%** of the allowable FCC established general public limit sampled at 6 feet above ground level. This total composite site value is based upon MPE values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803


S Orange Center Rd
Garden Center
S Orange Center Rd
A
Imagery ©2013 DigitalGlobe, GeoEye, New York GIS, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2013 Google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Indian Lake CITY
ORANGE
Service Area
CITY BDY
ROSE
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MILL
RIVER
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Oyster
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59
ArcGIS

Date: **July 8th, 2014**

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Subject:	**Structural Analysis Report**	
Carrier Designation:	**Sprint PCS Co-Locate**	Scenario 2.5A
	Carrier Site Number:	CT13XC263
	Carrier Site Name:	Orange Transfer Station
Crown Castle Designation:	**Crown Castle BU Number:**	842871
	Crown Castle Site Name:	ORANGE TRANSFER STATION
	Crown Castle JDE Job Number:	290538
	Crown Castle Work Order Number:	780435
	Crown Castle Application Number:	242850, Rev. 2
Engineering Firm Designation:	**GPD Group Project Number:**	2014777.842871.01
Site Data:	**617 South Orange Center Road, Orange, CT 06477, New Haven County** **Latitude 41° 15' 20.0", Longitude -73° 0' 39.2"** **180 Foot - Rohn Monopole Tower**	

Dear Sean Dempsey,

GPD Group 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 662897, in accordance with application 242850, revision 2.

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

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

The analysis has been performed in accordance with the TIA/EIA-222-F standard and the 2005 Connecticut (CT) State Building Code with the 2013 amendment based upon a wind speed of 85 mph fastest mile.

We at GPD Group 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: Steven Armstrong, E.I.

Respectfully submitted by:

John N. Kabak, P.E.
Connecticut #: PEN.0028336

TABLE OF CONTENTS

1) INTRODUCTION

The existing 180' monopole consists of five major sections that are connected with slip joints. It has an 18-sided cross section and is evenly tapered from 64.750" (flat-flat) at the base to 24.000" (flat-flat) at the top. The structure is galvanized and does not have aviation lighting.

The tower was designed for AT&T by Paul J. Ford and Company Structural Engineers of Columbus, Ohio in August of 2001. The tower was also designed for a basic wind speed of 85 mph with ½" radial ice (with a reduced wind speed of 74 mph when wind and ice loads were considered simultaneously) in accordance with the TIA/EIA-222-F 1996 standard. The tower was later manufactured by Rohn Industries, Inc. of Peoria, Illinois.

Information on the steel reinforcement in the tower's base foundation was unavailable at the time of the analysis. Therefore, the quantity and size of the steel reinforcement has been assumed based on minimum requirements.

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 and the 2005 Connecticut (CT) State Building Code with the 2013 amendment using a fastest mile wind speed of 85 mph with no ice, 38 mph with a ¾" ice thickness (in accordance with ASCE 7-05 ice conditions), 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
125	127	3	Alcatel Lucent	TD-RRH8x20-25	3	1-1/4	1
		3	RFS/Celwave	APXVTM14-C-120			

Notes:
1) Refer to Appendix B for the proposed coax layout.

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
177	177	9	Andrew	SBNHH-1D65A	4	3/4	1
		3	Comm. Comp. Inc.	DTMABP7819VG12A			
		6	Ericsson	KRC 161 290/1-A			
		6	Ericsson	RRUS 11			
		6	Ericsson	RRUS 12			
		3	Ericsson	RRUS E2 B29			
		3	Ericsson	RRUS-32 B30			
		2	Raycap	DC6-48-60-18-8F			
		3	Powerwave Tech.	7770.00	6 2 1	1-5/8 3/4 3/8	
		1	Raycap	DC6-48-60-18-8F			
		1		Platform Mount [LP 303-1]			
	175	1		Collar Mount [SO 102-3]			
165	165	3	EMS Wireless	RR33-20-02DP	6	1-5/8	
		1		18" Square Panel			
		1		Side Arm Mount [SO 201-1]			
148	148	6	Powerwave Tech.	LGP21401	12 1	1-5/8 1-1/4	
		6	RFS/Celwave	APX16PV-16PVL			
		1		Platform Mount [LP 303-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
137	137	12	Decibel	844G45VTZASX	12	1-5/8	
		1		Platform Mount [LP 303-1]			
135	135	3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz			
		1		Collar Mount [SO 102-3]			
	132	3	Alcatel Lucent	800 EXTERNAL NOTCH FILTER			
		3	Alcatel Lucent	TME-800MHZ RRH			
125	127	3	Argus Tech.	LLPX310R	3 1 6 3	1-1/4 1/2 5/16 1/4	
		1	Dragonwave	A-ANT-23G-2-C			
		1	Dragonwave	Horizon DUO			
		9	RFS/Celwave	ACU-A20-N			
		3	RFS/Celwave	APXVSPP18-C-A20			
	125	1		Platform Mount [LP 712-1]			
					6	1-5/8	2
	124	3	Samsung Telecom.	FDD_R6_RRH			
115	117	3	Alcatel Lucent	RRH2X40-AWS	1	1-5/8	1
		3	Antel	BXA-171063-12BF			
		3	Antel	BXA-70063/4CF			
		1	RFS/Celwave	DB-T1-6Z-8AB-0Z			
		3	Antel	BXA-171063-12BF	18 1	1-5/8 1/2	
		3	Swedcom	SLCP 2x6015			
	115	1	GPS	GPS_A			
		1		Platform Mount [LP 1201-1]			
60	60	1	PCTEL	GPS-TMG-HR-26NCM	1	1/2	
		1		1' Standoff			

Notes:
1) Reserved Equipment
2) Existing equipment to be removed prior to the installation of the proposed equipment listed in Table 1.

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180	180	1		3/4" Lightning Rod	16	1-5/8
		4	Celwave	PD220		
		12	Swedcom	ALP-9212-N		
		1		12' Low Profile Platform		
168	168	12	Swedcom	ALP-9212-N	12	1-5/8
		1		12' Low Profile Platform		
158	158	12	Swedcom	ALP-9212-N	12	1-5/8
		1		12' Low Profile Platform		
148	148	12	Swedcom	ALP-9212-N	12	1-5/8
		1		12' Low Profile Platform		
138	138	12	Swedcom	ALP-9212-N	12	1-5/8
		1		12' Low Profile Platform		
128	128	12	Swedcom	ALP-9212-N	12	1-5/8
		1		12' Low Profile Platform		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Tower Drawings / Specifications	PJF Job #: 20501-0701, Dated 08/07/2001	Doc ID #: 4705360	CCIsites
Foundation Exploration Report	WEI Project #: 2010-1056, Dated 03/31/2010	Doc ID #: 4529422	CCIsites
Geotechnical Report	WEI Project #: 2010-1056, Dated 03/31/2010	Doc ID #: 4529423	CCIsites

3.1) Analysis Method

tnxTower (version 6.1.4.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) The tower and structures were built and have been maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts, and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) 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. GPD Group 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	180 - 170.583	Pole	TP26.25x24x0.1875	1	-3.18	781.08	6.5	Pass
L2	170.583 - 126	Pole	TP36.525x25.0586x0.25	2	-10.96	1449.60	57.2	Pass
L3	126 - 82.75	Pole	TP46.357x34.8903x0.3125	3	-24.16	2300.36	92.4	Pass
L4	82.75 - 40.75	Pole	TP55.765x44.2987x0.375	4	-36.48	3320.24	97.0	Pass
L5	40.75 - 0	Pole	TP64.75x53.2831x0.4375	5	-54.94	4642.75	92.3	Pass
							Summary	
						Pole (L4)	97.0	Pass
						Rating =	97.0	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	94.3	Pass
1	Base Plate	0	Adequate	Pass
1	Base Foundation (Reinforcement)	0	27.9	Pass
1	Base Foundation (Soil Interaction)	0	15.4	Pass

Structure Rating (Maximum From All Components) =	97.0%

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

4.1) Recommendations

The existing tower and its foundation are sufficient for the proposed loading configuration and do not require modifications.

5) DISCLAIMER OF WARRANTIES

GPD Group has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD Group in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD Group does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD Group provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD Group, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

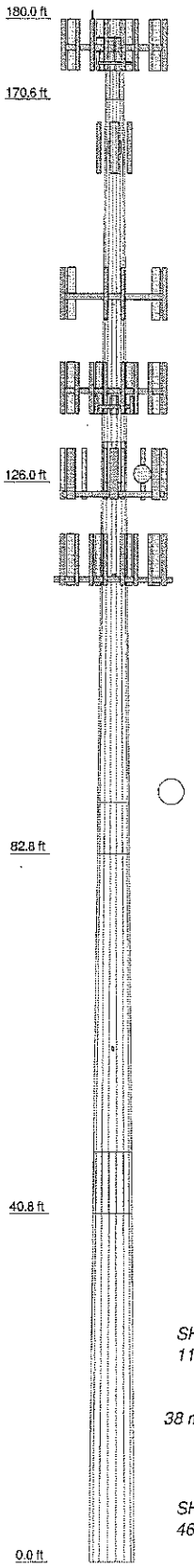
Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD Group makes no warranties, expressed and/or implied, in connection with this report, and disclaims any liability arising from material, fabrication, and erection of this tower. GPD Group will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD Group pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5
Length (ft)	9.42	48.00	48.00	48.00	48.00
Number of Sides	18	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3125	0.3750	0.4375
Socket Length (ft)	3.42	4.75	6.00	7.25	
Top Dia (in)	24.0000	25.0586	34.8903	44.2987	53.2831
Bot Dia (in)	26.2500	36.5250	46.3570	55.7650	64.7500
Grade	A572-65				
Weight (K) 33.9	0.5	4.0	6.5	9.7	13.3



AXIAL
81 K
SHEAR
11 K
MOM
1447 k

TORQUE 0 kip-ft
38 mph WIND - 0.7500 in ICE

AXIAL
55 K
SHEAR
46 K
MOMi
5599 k

TORQUE 1 kip-ft
REACTIONS - 85 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4' Lightning Rod	177	Collar Mount [SO 102-3]	135
Platform Mount [LP 303-1]	177	PCS 1900MHz 4x45W-65MHz	135
(3) SBNHH-1D65A w/ 5' x 2" Mount Pipe	177	PCS 1900MHz 4x45W-65MHz	135
(3) SBNHH-1D65A w/ 5' x 2" Mount Pipe	177	PCS 1900MHz 4x45W-65MHz	135
(3) SBNHH-1D65A w/ 5' x 2" Mount Pipe	177	TME-800MHZ RRH	135
7770.00 w/ 5' x 2" Mount Pipe	177	TME-800MHZ RRH	135
7770.00 w/ 5' x 2" Mount Pipe	177	TME-800MHZ RRH	135
7770.00 w/ 5' x 2" Mount Pipe	177	800 EXTERNAL NOTCH FILTER	135
DTMABP7819VG12A	177	800 EXTERNAL NOTCH FILTER	135
DTMABP7819VG12A	177	800 EXTERNAL NOTCH FILTER	135
DTMABP7819VG12A	177	4' x 2" Mount Pipe	135
(2) RRUS 11	177	4' x 2" Mount Pipe	135
(2) RRUS 11	177	4' x 2" Mount Pipe	135
(2) RRUS 11	177	Platform Mount [LP 712-1]	125
(2) RRUS 12	177	LLPX310R w/ 8' x 2" Mount Pipe	125
(2) RRUS 12	177	LLPX310R w/ 8' x 2" Mount Pipe	125
(2) RRUS 12	177	LLPX310R w/ 8' x 2" Mount Pipe	125
RRUS E2 B29	177	APXVSPP18-C-A20 w/ 6' x 2" Mount Pipe	125
RRUS E2 B29	177	APXVSPP18-C-A20 w/ 6' x 2" Mount Pipe	125
RRUS E2 B29	177	APXVSPP18-C-A20 w/ 6' x 2" Mount Pipe	125
RRUS-32 B30	177	APXVTM14-C-120 w/ 6' x 2" Mount Pipe	125
RRUS-32 B30	177	APXVTM14-C-120 w/ 6' x 2" Mount Pipe	125
RRUS-32 B30	177	APXVTM14-C-120 w/ 6' x 2" Mount Pipe	125
(2) KRC 161 290/1-A	177	TD-RRH8x20-25	125
(2) KRC 161 290/1-A	177	TD-RRH8x20-25	125
(2) KRC 161 290/1-A	177	TD-RRH8x20-25	125
DC6-48-60-18-8F Surge Suppression Unit	177	Horizon DUO	125
DC6-48-60-18-8F Surge Suppression Unit	177	(3) ACU-A20-N	125
DC6-48-60-18-8F Surge Suppression Unit	177	(3) ACU-A20-N	125
4' x 2" Mount Pipe	177	(3) ACU-A20-N	125
4' x 2" Mount Pipe	177	FDD_R6_RRH	125
4' x 2" Mount Pipe	177	FDD_R6_RRH	125
Collar Mount [SO 102-3]	175	FDD_R6_RRH	125
Side Arm Mount [SO 201-1]	165	6' x 2" Mount Pipe	125
18" Square Panel	165	A-ANT-23G-2-C	125
RR33-20-02DP w/ 5' x 2" Mount Pipe	165	(2) BXA-171063-12BF w/ 6' x 2" Mount Pipe	115
RR33-20-02DP w/ 5' x 2" Mount Pipe	165	(2) BXA-171063-12BF w/ 6' x 2" Mount Pipe	115
RR33-20-02DP w/ 5' x 2" Mount Pipe	165	(2) BXA-171063-12BF w/ 6' x 2" Mount Pipe	115
Platform Mount [LP 303-1]	148	BXA-70063/4CF w/ 6' x 2" Mount Pipe	115
(2) APX16PV-16PVL w/ 5' x 2" Mount Pipe	148	BXA-70063/4CF w/ 6' x 2" Mount Pipe	115
(2) APX16PV-16PVL w/ 5' x 2" Mount Pipe	148	BXA-70063/4CF w/ 6' x 2" Mount Pipe	115
(2) APX16PV-16PVL w/ 5' x 2" Mount Pipe	148	GPS_A	115
(2) LGP21401	148	SLCP 2x6015 w/ 6' x 2" Mount Pipe	115
(2) LGP21401	148	SLCP 2x6015 w/ 6' x 2" Mount Pipe	115
(2) LGP21401	148	SLCP 2x6015 w/ 6' x 2" Mount Pipe	115
5' x 2" Mount Pipe	148	RRH2X40-AWS	115
5' x 2" Mount Pipe	148	RRH2X40-AWS	115
5' x 2" Mount Pipe	148	RRH2X40-AWS	115
Platform Mount [LP 303-1]	137	DB-T1-6Z-8AB-0Z	115
(4) 844G45VTZASX w/ 5' x 2" Mount Pipe	137	6' x 2" Mount Pipe	115
(4) 844G45VTZASX w/ 5' x 2" Mount Pipe	137	6' x 2" Mount Pipe	115
(4) 844G45VTZASX w/ 5' x 2" Mount Pipe	137	6' x 2" Mount Pipe	115
		Platform Mount [LP 1201-1]	115
		GPS-TMG-HR-26NCM	60
		1' Standoff	60

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

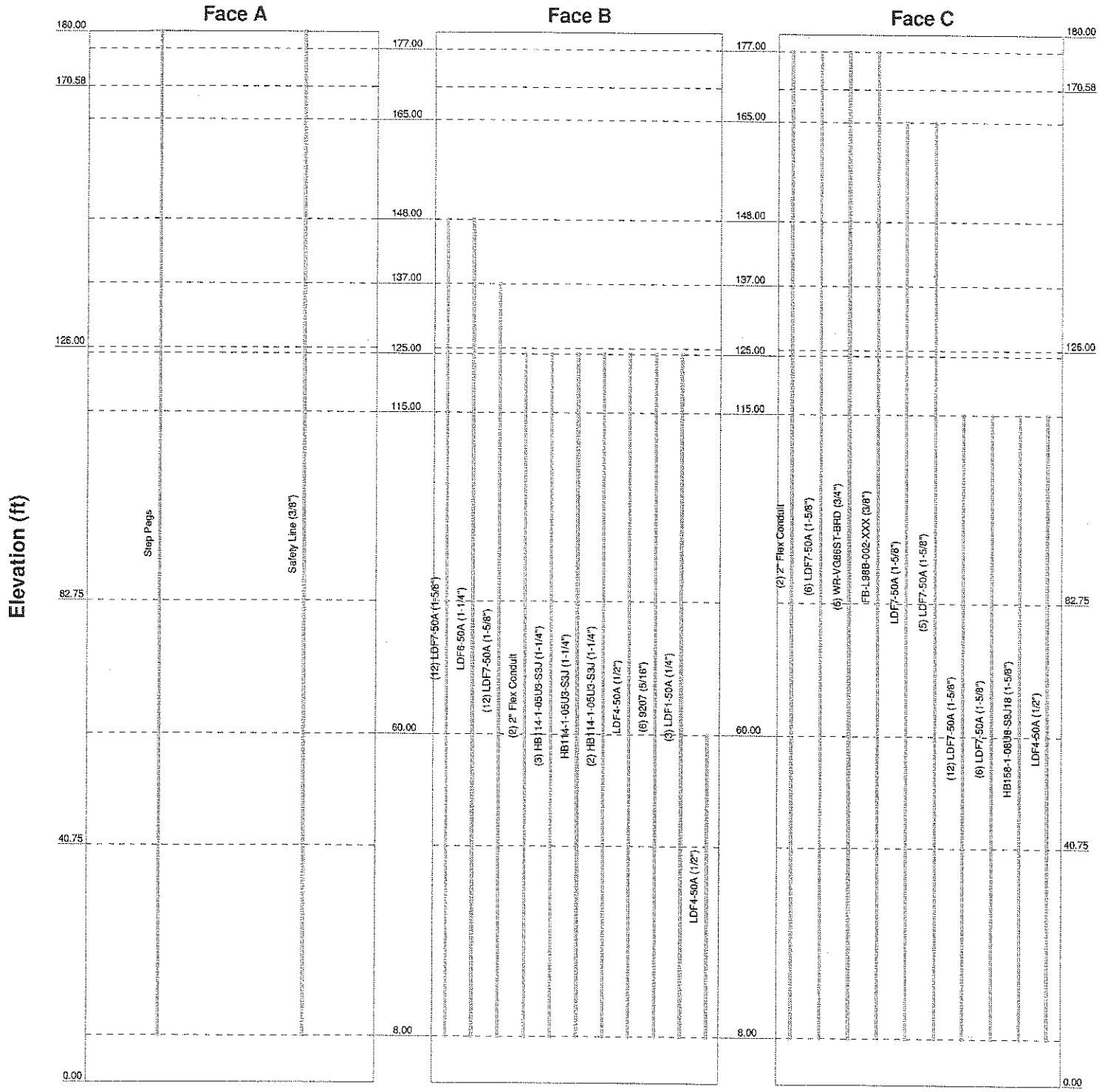
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

GPD GROUP
Consulting Engineers
GPD Group
520 South Main Street, Suite 2531
Akron, OH 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job: *ORANGE TRANSFER STATION (BU #: 84287*			
Project: *2014777.842871.01*			
Client: Crown Castle USA, Inc.	Drawn by: sarmstrong	App'd:	
Code: TIA/EIA-222-F	Date: 07/08/14	Scale: NTS	
Path: T:\Crown\842871\01\tnxTower\842871.eri		Dwg No. E-1	

Feed Line Distribution Chart
0° - 180°

Round Flat App In Face App Out Face Truss Leg



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Client: Crown Castle USA, Inc.	Drawn by: sarmstrong	App'd:	
Code: TIA/EIA-222-F	Date: 07/08/14	Scale: NTS	
Path: T:\Crown\842871\01\InxTower\842871.eri		Dwg No. E-7	

tnxTower	Job	Page
	ORANGE TRANSFER STATION (BU #: 842871)	1 of 18
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 Fax: (330) 572-2101	Project 2014777.842871.01	Date 12:17:46 07/08/14
	Client Crown Castle USA, Inc.	Designed By sarmstrong

Tower Input Data

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

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation 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	180.00-170.58	9.42	3.42	18	24.0000	26.2500	0.1875	0.7500	A572-65 (65 ksi)
L2	170.58-126.00	48.00	4.75	18	25.0586	36.5250	0.2500	1.0000	A572-65 (65 ksi)
L3	126.00-82.75	48.00	6.00	18	34.8903	46.3570	0.3125	1.2500	A572-65 (65 ksi)
L4	82.75-40.75	48.00	7.25	18	44.2987	55.7650	0.3750	1.5000	A572-65 (65 ksi)
L5	40.75-0.00	48.00		18	53.2831	64.7500	0.4375	1.7500	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	24.3702	14.1714	1015.2211	8.4534	12.1920	83.2694	2031.7780	7.0871	3.8940	20.768
	26.6549	15.5104	1331.0484	9.2522	13.3350	99.8162	2663.8483	7.7567	4.2900	22.88
L2	26.2740	19.6856	1530.7090	8.8071	12.7298	120.2463	3063.4321	9.8447	3.9703	15.881
	37.0885	28.7842	4785.2722	12.8776	18.5547	257.9008	9576.8409	14.3948	5.9884	23.954

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
L3	36.5808	34.2969	5180.6796	12.2751	17.7243	292.2929	10368.1760	17.1517	5.5907	17.89
	47.0721	45.6704	12232.8508	16.3458	23.5494	519.4559	24481.7979	22.8395	7.6088	24.348
L4	46.4374	52.2801	12742.9885	15.5929	22.5037	566.2614	25502.7446	26.1450	7.1366	19.031
	56.6253	65.9279	25554.6382	19.6635	28.3286	902.0785	51142.9018	32.9702	9.1546	24.412
L5	55.8638	73.3827	25891.0136	18.7602	27.0678	956.5239	51816.0953	36.6983	8.6078	19.675
	65.7489	89.3059	46666.8628	22.8309	32.8930	1418.7475	93395.1311	44.6615	10.6260	24.288

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 180.00-170.58				1	1	1		
L2 170.58-126.00				1	1	1		
L3 126.00-82.75				1	1	1		
L4 82.75-40.75				1	1	1		
L5 40.75-0.00				1	1	1		

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 plf
Step Pegs	A	No	CaAa (Out Of Face)	180.00 - 8.00	1	No Ice	0.08	2.72
						1/2" Ice	0.18	3.51
						1" Ice	0.28	4.92
						2" Ice	0.48	9.56
						4" Ice	0.88	26.18
Safety Line (3/8")	A	No	CaAa (Out Of Face)	180.00 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46
2" Flex Conduit	C	No	Inside Pole	177.00 - 8.00	2	No Ice	0.00	0.32
						1/2" Ice	0.00	0.32
						1" Ice	0.00	0.32
						2" Ice	0.00	0.32
						4" Ice	0.00	0.32
LDF7-50A (1-5/8")	C	No	Inside Pole	177.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
WR-VG86ST-BRD (3/4")	C	No	Inside Pole	177.00 - 8.00	6	No Ice	0.00	0.60
						1/2" Ice	0.00	0.60
						1" Ice	0.00	0.60
						2" Ice	0.00	0.60
						4" Ice	0.00	0.60
FB-L98B-002-XXX (3/8")	C	No	Inside Pole	177.00 - 8.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
						2" Ice	0.00	0.06
						4" Ice	0.00	0.06
LDF7-50A (1-5/8")	C	No	CaAa (Out Of Face)	165.00 - 8.00	1	No Ice	0.20	0.82
						1/2" Ice	0.30	2.33
						1" Ice	0.40	4.46
						2" Ice	0.60	10.54
						4" Ice	1.00	30.04

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight plf
LDF7-50A (1-5/8")	C	No	CaAa (Out Of Face)	165.00 - 8.00	5	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
LDF7-50A (1-5/8")	B	No	Inside Pole	148.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF6-50A (1-1/4")	B	No	Inside Pole	148.00 - 8.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
LDF7-50A (1-5/8")	B	No	Inside Pole	137.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
2" Flex Conduit	B	No	Inside Pole	125.00 - 8.00	2	No Ice	0.00	0.32
						1/2" Ice	0.00	0.32
						1" Ice	0.00	0.32
						2" Ice	0.00	0.32
						4" Ice	0.00	0.32
HB114-1-05U3-S3J (1-1/4")	B	No	Inside Pole	125.00 - 8.00	3	No Ice	0.00	0.90
						1/2" Ice	0.00	0.90
						1" Ice	0.00	0.90
						2" Ice	0.00	0.90
						4" Ice	0.00	0.90
HB114-1-05U3-S3J (1-1/4")	B	No	CaAa (Out Of Face)	125.00 - 8.00	1	No Ice	0.15	0.90
						1/2" Ice	0.25	2.15
						1" Ice	0.35	4.00
						2" Ice	0.55	9.55
						4" Ice	0.95	27.97
HB114-1-05U3-S3J (1-1/4")	B	No	CaAa (Out Of Face)	125.00 - 8.00	2	No Ice	0.00	0.90
						1/2" Ice	0.00	2.15
						1" Ice	0.00	4.00
						2" Ice	0.00	9.55
						4" Ice	0.00	27.97
LDF4-50A (1/2")	B	No	Inside Pole	125.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
9207 (5/16")	B	No	Inside Pole	125.00 - 8.00	6	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
						2" Ice	0.00	0.06
						4" Ice	0.00	0.06
LDF1-50A (1/4")	B	No	Inside Pole	125.00 - 8.00	3	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
						2" Ice	0.00	0.06
						4" Ice	0.00	0.06
LDF7-50A (1-5/8")	C	No	Inside Pole	115.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A (1-5/8")	C	No	CaAa (Out Of Face)	115.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.46
						2" Ice	0.00	10.54
						4" Ice	0.00	30.04
HB158-1-08U8-S8J18 (1-5/8")	C	No	CaAa (Out Of Face)	115.00 - 8.00	1	No Ice	0.00	1.30
						1/2" Ice	0.00	2.81
						1" Ice	0.00	4.94
						2" Ice	0.00	11.02
						4" Ice	0.00	30.52
LDF4-50A (1/2")	C	No	Inside Pole	115.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
LDF4-50A (1/2")	B	No	Inside Pole	60.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15

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	180.00-170.58	A	0.000	0.000	0.000	1.106	0.03
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.06
L2	170.58-126.00	A	0.000	0.000	0.000	5.239	0.13
		B	0.000	0.000	0.000	0.000	0.34
		C	0.000	0.000	0.000	7.722	0.60
L3	126.00-82.75	A	0.000	0.000	0.000	5.082	0.13
		B	0.000	0.000	0.000	6.506	1.16
		C	0.000	0.000	0.000	8.563	1.13
L4	82.75-40.75	A	0.000	0.000	0.000	4.935	0.12
		B	0.000	0.000	0.000	6.468	1.14
		C	0.000	0.000	0.000	8.316	1.27
L5	40.75-0.00	A	0.000	0.000	0.000	3.848	0.10
		B	0.000	0.000	0.000	5.043	0.89
		C	0.000	0.000	0.000	6.484	0.99

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	180.00-170.58	A	0.916	0.000	0.000	0.000	4.558	0.06
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.06
L2	170.58-126.00	A	0.897	0.000	0.000	0.000	21.580	0.26
		B		0.000	0.000	0.000	0.000	0.34
		C		0.000	0.000	0.000	14.870	1.37
L3	126.00-82.75	A	0.861	0.000	0.000	0.000	20.608	0.25
		B		0.000	0.000	0.000	14.090	1.51
		C		0.000	0.000	0.000	16.327	2.69

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L4	82.75-40.75	A	0.808	0.000	0.000	0.000	19.392	0.24
		B		0.000	0.000	0.000	13.697	1.47
		C		0.000	0.000	0.000	15.545	2.94
L5	40.75-0.00	A	0.750	0.000	0.000	0.000	14.437	0.18
		B		0.000	0.000	0.000	10.338	1.13
		C		0.000	0.000	0.000	11.779	2.20

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	180.00-170.58	0.0000	-0.1669	0.0000	-0.5567
L2	170.58-126.00	-0.2067	-0.0392	-0.3223	-0.3427
L3	126.00-82.75	-0.0539	0.0752	-0.0475	-0.1345
L4	82.75-40.75	-0.0515	0.0790	-0.0437	-0.1303
L5	40.75-0.00	-0.0420	0.0645	-0.0375	-0.1014

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
4' Lightning Rod	A	From Centroid-Face	3.00 0.00 2.00	0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.10 0.51 0.89 1.41 2.57	0.10 0.51 0.89 1.41 2.57	0.01 0.01 0.02 0.03 0.11
Platform Mount [LP 303-1]	C	None		0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.66 18.87 23.08 31.50 48.34	14.66 18.87 23.08 31.50 48.34	1.25 1.48 1.71 2.18 3.10
(3) SBNHH-1D65A w/ 5' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.25 6.71 7.18 8.15 10.20	5.05 5.72 6.43 7.93 11.21	0.06 0.11 0.17 0.31 0.70
(3) SBNHH-1D65A w/ 5' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.25 6.71 7.18 8.15 10.20	5.05 5.72 6.43 7.93 11.21	0.06 0.11 0.17 0.31 0.70
(3) SBNHH-1D65A w/ 5' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.25 6.71 7.18 8.15 10.20	5.05 5.72 6.43 7.93 11.21	0.06 0.11 0.17 0.31 0.70
7770.00 w/ 5' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.98 6.44 6.91 7.87 9.91	4.12 4.77 5.43 6.81 9.98	0.05 0.10 0.15 0.28 0.64

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: Horz ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7770.00 w/ 5' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.98 6.44 6.91 7.87 9.91	4.12 4.77 5.43 6.81 9.98	0.05 0.10 0.15 0.28 0.64
7770.00 w/ 5' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.98 6.44 6.91 7.87 9.91	4.12 4.77 5.43 6.81 9.98	0.05 0.10 0.15 0.28 0.64
DTMABP7819VG12A	A	From Centroid-Leg	4.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.14 1.28 1.44 1.77 2.54	0.39 0.49 0.59 0.83 1.41	0.02 0.03 0.04 0.06 0.14
DTMABP7819VG12A	B	From Centroid-Leg	4.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.14 1.28 1.44 1.77 2.54	0.39 0.49 0.59 0.83 1.41	0.02 0.03 0.04 0.06 0.14
DTMABP7819VG12A	C	From Centroid-Leg	4.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.14 1.28 1.44 1.77 2.54	0.39 0.49 0.59 0.83 1.41	0.02 0.03 0.04 0.06 0.14
(2) RRUS 11	A	From Face	1.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.49 3.74 4.27 5.43	1.37 1.55 1.74 2.14 3.04	0.05 0.07 0.10 0.15 0.31
(2) RRUS 11	B	From Face	1.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.49 3.74 4.27 5.43	1.37 1.55 1.74 2.14 3.04	0.05 0.07 0.10 0.15 0.31
(2) RRUS 11	C	From Face	1.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.49 3.74 4.27 5.43	1.37 1.55 1.74 2.14 3.04	0.05 0.07 0.10 0.15 0.31
(2) RRUS 12	A	From Face	1.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.67 3.93 4.19 4.75 5.96	1.49 1.67 1.87 2.28 3.21	0.06 0.08 0.11 0.17 0.34
(2) RRUS 12	B	From Face	1.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.67 3.93 4.19 4.75 5.96	1.49 1.67 1.87 2.28 3.21	0.06 0.08 0.11 0.17 0.34
(2) RRUS 12	C	From Face	1.00 0.00 0.00			0.000	177.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.67 3.93 4.19 4.75 5.96	1.49 1.67 1.87 2.28 3.21	0.06 0.08 0.11 0.17 0.34

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Offsets: Horz ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRUS E2 B29	A	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	3.67	1.49	0.06
								1/2" Ice	3.93	1.67	0.08
								1" Ice	4.19	1.87	0.11
								2" Ice	4.75	2.28	0.17
								4" Ice	5.96	3.21	0.35
RRUS E2 B29	B	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	3.67	1.49	0.06
								1/2" Ice	3.93	1.67	0.08
								1" Ice	4.19	1.87	0.11
								2" Ice	4.75	2.28	0.17
								4" Ice	5.96	3.21	0.35
RRUS E2 B29	C	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	3.67	1.49	0.06
								1/2" Ice	3.93	1.67	0.08
								1" Ice	4.19	1.87	0.11
								2" Ice	4.75	2.28	0.17
								4" Ice	5.96	3.21	0.35
RRUS-32 B30	A	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	3.87	2.76	0.08
								1/2" Ice	4.15	3.02	0.10
								1" Ice	4.44	3.29	0.14
								2" Ice	5.06	3.85	0.21
								4" Ice	6.38	5.08	0.41
RRUS-32 B30	B	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	3.87	2.76	0.08
								1/2" Ice	4.15	3.02	0.10
								1" Ice	4.44	3.29	0.14
								2" Ice	5.06	3.85	0.21
								4" Ice	6.38	5.08	0.41
RRUS-32 B30	C	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	3.87	2.76	0.08
								1/2" Ice	4.15	3.02	0.10
								1" Ice	4.44	3.29	0.14
								2" Ice	5.06	3.85	0.21
								4" Ice	6.38	5.08	0.41
(2) KRC 161 290/1-A	A	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	2.29	0.64	0.06
								1/2" Ice	2.50	0.77	0.07
								1" Ice	2.71	0.90	0.09
								2" Ice	3.16	1.20	0.13
								4" Ice	4.17	1.90	0.25
(2) KRC 161 290/1-A	B	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	2.29	0.64	0.06
								1/2" Ice	2.50	0.77	0.07
								1" Ice	2.71	0.90	0.09
								2" Ice	3.16	1.20	0.13
								4" Ice	4.17	1.90	0.25
(2) KRC 161 290/1-A	C	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	2.29	0.64	0.06
								1/2" Ice	2.50	0.77	0.07
								1" Ice	2.71	0.90	0.09
								2" Ice	3.16	1.20	0.13
								4" Ice	4.17	1.90	0.25
DC6-48-60-18-8F Surge Suppression Unit	A	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	1.47	1.47	0.02
								1/2" Ice	1.67	1.67	0.04
								1" Ice	1.88	1.88	0.06
								2" Ice	2.33	2.33	0.11
								4" Ice	3.38	3.38	0.24
DC6-48-60-18-8F Surge Suppression Unit	B	From Face	1.00	0.00	0.00	0.000	177.00	No Ice	1.47	1.47	0.02
								1/2" Ice	1.67	1.67	0.04
								1" Ice	1.88	1.88	0.06
								2" Ice	2.33	2.33	0.11
								4" Ice	3.38	3.38	0.24

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DC6-48-60-18-8F Surge Suppression Unit	C	From Face	1.00	0.00	0.000	177.00	No Ice	1.47	1.47	0.02
			0.00				1/2" Ice	1.67	1.67	0.04
							1" Ice	1.88	1.88	0.06
							2" Ice	2.33	2.33	0.11
							4" Ice	3.38	3.38	0.24
4' x 2" Mount Pipe	A	From Face	1.00	0.00	0.000	177.00	No Ice	0.79	0.79	0.03
			0.00				1/2" Ice	1.03	1.03	0.04
			-1.00				1" Ice	1.28	1.28	0.04
							2" Ice	1.81	1.81	0.07
							4" Ice	3.11	3.11	0.17
4' x 2" Mount Pipe	B	From Face	1.00	0.00	0.000	177.00	No Ice	0.79	0.79	0.03
			0.00				1/2" Ice	1.03	1.03	0.04
			-1.00				1" Ice	1.28	1.28	0.04
							2" Ice	1.81	1.81	0.07
							4" Ice	3.11	3.11	0.17
4' x 2" Mount Pipe	C	From Face	1.00	0.00	0.000	177.00	No Ice	0.79	0.79	0.03
			0.00				1/2" Ice	1.03	1.03	0.04
			-1.00				1" Ice	1.28	1.28	0.04
							2" Ice	1.81	1.81	0.07
							4" Ice	3.11	3.11	0.17
Collar Mount [SO 102-3]	C	None			0.000	175.00	No Ice	3.00	3.00	0.08
							1/2" Ice	3.48	3.48	0.11
							1" Ice	3.96	3.96	0.14
							2" Ice	4.92	4.92	0.20
							4" Ice	6.84	6.84	0.32
Side Arm Mount [SO 201-1]	A	From Leg	0.50	0.00	0.000	165.00	No Ice	2.96	2.11	0.10
			0.00				1/2" Ice	4.10	2.93	0.12
							1" Ice	5.24	3.75	0.14
							2" Ice	7.52	5.39	0.18
							4" Ice	12.08	8.67	0.26
18" Square Panel	A	From Leg	1.00	0.00	0.000	165.00	No Ice	3.15	0.37	0.03
			0.00				1/2" Ice	3.39	0.48	0.04
							1" Ice	3.63	0.63	0.06
							2" Ice	4.15	0.94	0.10
							4" Ice	5.29	1.66	0.22
RR33-20-02DP w/ 5' x 2" Mount Pipe	A	From Leg	1.00	0.00	0.000	165.00	No Ice	7.00	5.42	0.04
			0.00				1/2" Ice	7.47	6.12	0.10
							1" Ice	7.95	6.82	0.16
							2" Ice	8.94	8.35	0.31
							4" Ice	11.01	11.75	0.72
RR33-20-02DP w/ 5' x 2" Mount Pipe	B	From Leg	1.00	0.00	0.000	165.00	No Ice	7.00	5.42	0.04
			0.00				1/2" Ice	7.47	6.12	0.10
							1" Ice	7.95	6.82	0.16
							2" Ice	8.94	8.35	0.31
							4" Ice	11.01	11.75	0.72
RR33-20-02DP w/ 5' x 2" Mount Pipe	C	From Leg	1.00	0.00	0.000	165.00	No Ice	7.00	5.42	0.04
			0.00				1/2" Ice	7.47	6.12	0.10
							1" Ice	7.95	6.82	0.16
							2" Ice	8.94	8.35	0.31
							4" Ice	11.01	11.75	0.72
Platform Mount [LP 303-1]	C	None			0.000	148.00	No Ice	14.66	14.66	1.25
							1/2" Ice	18.87	18.87	1.48
							1" Ice	23.08	23.08	1.71
							2" Ice	31.50	31.50	2.18
							4" Ice	48.34	48.34	3.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) APX16PV-16PVL w/ 5' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.79 7.25 7.73 8.71 10.80	3.17 3.80 4.44 5.78 8.70	0.06 0.10 0.15 0.27 0.63
(2) APX16PV-16PVL w/ 5' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.79 7.25 7.73 8.71 10.80	3.17 3.80 4.44 5.78 8.70	0.06 0.10 0.15 0.27 0.63
(2) APX16PV-16PVL w/ 5' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.79 7.25 7.73 8.71 10.80	3.17 3.80 4.44 5.78 8.70	0.06 0.10 0.15 0.27 0.63
(2) LGP21401	A	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	0.01 0.02 0.03 0.05 0.14
(2) LGP21401	B	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	0.01 0.02 0.03 0.05 0.14
(2) LGP21401	C	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.23 0.31 0.40 0.61 1.12	0.01 0.02 0.03 0.05 0.14
5' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.19 1.50 1.81 2.46 3.92	1.19 1.50 1.81 2.46 3.92	0.02 0.03 0.04 0.08 0.20
5' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.19 1.50 1.81 2.46 3.92	1.19 1.50 1.81 2.46 3.92	0.02 0.03 0.04 0.08 0.20
5' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00		0.000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.19 1.50 1.81 2.46 3.92	1.19 1.50 1.81 2.46 3.92	0.02 0.03 0.04 0.08 0.20
Platform Mount [LP 303-1]	C	None			0.000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	14.66 18.87 23.08 31.50 48.34	14.66 18.87 23.08 31.50 48.34	1.25 1.48 1.71 2.18 3.10
(4) 844G45VTZASX w/ 5' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00		0.000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.24 7.71 8.20 9.19 11.33	5.15 5.83 6.52 7.96 11.09	0.03 0.09 0.15 0.30 0.71

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(4) 844G45VTZASX w/ 5' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.24 7.71 8.20 9.19 11.33	5.15 5.83 6.52 7.96 11.09	0.03 0.09 0.15 0.30 0.71
(4) 844G45VTZASX w/ 5' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.24 7.71 8.20 9.19 11.33	5.15 5.83 6.52 7.96 11.09	0.03 0.09 0.15 0.30 0.71
Collar Mount [SO 102-3]	C	None		0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 3.48 3.96 4.92 6.84	3.00 3.48 3.96 4.92 6.84	0.08 0.11 0.14 0.20 0.32
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.00 0.00 0.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.85 3.09 3.61 4.74	0.06 0.08 0.11 0.17 0.35
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.00 0.00 0.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.85 3.09 3.61 4.74	0.06 0.08 0.11 0.17 0.35
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.00 0.00 0.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.85 3.09 3.61 4.74	0.06 0.08 0.11 0.17 0.35
TME-800MHZ RRH	A	From Leg	1.00 0.00 -3.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
TME-800MHZ RRH	B	From Leg	1.00 0.00 -3.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
TME-800MHZ RRH	C	From Leg	1.00 0.00 -3.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
800 EXTERNAL NOTCH FILTER	A	From Leg	1.00 0.00 -3.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
800 EXTERNAL NOTCH FILTER	B	From Leg	1.00 0.00 -3.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
800 EXTERNAL NOTCH FILTER	C	From Leg	1.00 0.00 -3.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
4' x 2" Mount Pipe	A	From Leg	1.00 0.00 -1.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.79 1.03 1.28 1.81 3.11	0.79 1.03 1.28 1.81 3.11	0.03 0.04 0.04 0.07 0.17
4' x 2" Mount Pipe	B	From Leg	1.00 0.00 -1.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.79 1.03 1.28 1.81 3.11	0.79 1.03 1.28 1.81 3.11	0.03 0.04 0.04 0.07 0.17
4' x 2" Mount Pipe	C	From Leg	1.00 0.00 -1.00	0.000	135.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.79 1.03 1.28 1.81 3.11	0.79 1.03 1.28 1.81 3.11	0.03 0.04 0.04 0.07 0.17
Platform Mount [LP 712-1]	C	None		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	24.53 29.94 35.35 46.17 67.81	24.53 29.94 35.35 46.17 67.81	1.34 1.65 1.96 2.58 3.82
LLPX310R w/ 8' x 2" Mount Pipe	A	From Centroid-Face	4.00 0.00 2.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.90 6.72 7.46 8.77 11.56	3.86 4.95 5.90 7.53 11.05	0.06 0.10 0.16 0.29 0.67
LLPX310R w/ 8' x 2" Mount Pipe	B	From Centroid-Face	4.00 0.00 2.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.90 6.72 7.46 8.77 11.56	3.86 4.95 5.90 7.53 11.05	0.06 0.10 0.16 0.29 0.67
LLPX310R w/ 8' x 2" Mount Pipe	C	From Centroid-Face	4.00 0.00 2.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.90 6.72 7.46 8.77 11.56	3.86 4.95 5.90 7.53 11.05	0.06 0.10 0.16 0.29 0.67
APXVSPP18-C-A20 w/ 6' x 2" Mount Pipe	A	From Centroid-Face	4.00 0.00 2.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	6.71 7.66 8.49 10.20 13.98	0.08 0.14 0.22 0.39 0.87
APXVSPP18-C-A20 w/ 6' x 2" Mount Pipe	B	From Centroid-Face	4.00 0.00 2.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	6.71 7.66 8.49 10.20 13.98	0.08 0.14 0.22 0.39 0.87
APXVSPP18-C-A20 w/ 6' x 2" Mount Pipe	C	From Centroid-Face	4.00 0.00 2.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.26 8.81 9.36 10.50 12.88	6.71 7.66 8.49 10.20 13.98	0.08 0.14 0.22 0.39 0.87

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVTM14-C-120 w/ 6' x 2" Mount Pipe	A	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.21 7.77 8.31 9.42 11.77	5.03 5.89 6.63 8.20 11.67	0.08 0.13 0.20 0.34 0.76
APXVTM14-C-120 w/ 6' x 2" Mount Pipe	B	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.21 7.77 8.31 9.42 11.77	5.03 5.89 6.63 8.20 11.67	0.08 0.13 0.20 0.34 0.76
APXVTM14-C-120 w/ 6' x 2" Mount Pipe	C	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.21 7.77 8.31 9.42 11.77	5.03 5.89 6.63 8.20 11.67	0.08 0.13 0.20 0.34 0.76
TD-RRH8x20-25	A	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.72 5.01 5.32 5.95 7.31	1.70 1.92 2.15 2.62 3.68	0.07 0.10 0.13 0.20 0.40
TD-RRH8x20-25	B	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.72 5.01 5.32 5.95 7.31	1.70 1.92 2.15 2.62 3.68	0.07 0.10 0.13 0.20 0.40
TD-RRH8x20-25	C	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.72 5.01 5.32 5.95 7.31	1.70 1.92 2.15 2.62 3.68	0.07 0.10 0.13 0.20 0.40
Horizon DUO	B	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.34 0.43 0.52 0.73 1.25	0.01 0.01 0.02 0.04 0.10
(3) ACU-A20-N	A	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
(3) ACU-A20-N	B	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
(3) ACU-A20-N	C	From Centroid-Face	4.00 0.00 2.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.00 0.00 0.00 0.00 0.00	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
FDD_R6_RRH	A	From Centroid-Face	4.00 0.00 -1.00		0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.79 1.97 2.16 2.57 3.49	0.78 0.92 1.07 1.39 2.14	0.03 0.04 0.06 0.09 0.20

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
FDD_R6_RRH	B	From Centroid-Face	4.00 0.00 -1.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.79 1.97 2.16 2.57 3.49	0.78 0.92 1.07 1.39 2.14	0.03 0.04 0.06 0.09 0.20
FDD_R6_RRH	C	From Centroid-Face	4.00 0.00 -1.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.79 1.97 2.16 2.57 3.49	0.78 0.92 1.07 1.39 2.14	0.03 0.04 0.06 0.09 0.20
6' x 2" Mount Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.000	125.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
Platform Mount [LP 1201-1]	C	None		0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	23.10 26.80 30.50 37.90 52.70	23.10 26.80 30.50 37.90 52.70	2.10 2.50 2.90 3.70 5.30
(2) BXA-171063-12BF w/ 6' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.74 5.19 5.64 6.57 8.58	5.00 5.93 6.74 8.42 11.96	0.04 0.08 0.13 0.26 0.64
(2) BXA-171063-12BF w/ 6' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.74 5.19 5.64 6.57 8.58	5.00 5.93 6.74 8.42 11.96	0.04 0.08 0.13 0.26 0.64
(2) BXA-171063-12BF w/ 6' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.74 5.19 5.64 6.57 8.58	5.00 5.93 6.74 8.42 11.96	0.04 0.08 0.13 0.26 0.64
BXA-70063/4CF w/ 6' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.65 6.20 6.72 7.80 10.08	3.87 4.67 5.34 6.79 10.00	0.03 0.08 0.13 0.25 0.61
BXA-70063/4CF w/ 6' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.65 6.20 6.72 7.80 10.08	3.87 4.67 5.34 6.79 10.00	0.03 0.08 0.13 0.25 0.61
BXA-70063/4CF w/ 6' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.65 6.20 6.72 7.80 10.08	3.87 4.67 5.34 6.79 10.00	0.03 0.08 0.13 0.25 0.61
GPS_A	A	From Centroid-Leg	4.00 0.00 0.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.30 0.37 0.46 0.65 1.15	0.30 0.37 0.46 0.65 1.15	0.00 0.00 0.01 0.02 0.08

tnxTower	Job: ORANGE TRANSFER STATION (BU #: 842871)	Page: 14 of 18
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 Fax: (330) 572-2101	Project: 2014777.842871.01	Date: 12:17:46 07/08/14
	Client: Crown Castle USA, Inc.	Designed By: sarmstrong

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
SLCP 2x6015 w/ 6' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.48 11.07 11.68 12.91 15.48	9.66 10.73 11.69 13.64 17.78	0.05 0.14 0.23 0.45 1.04
SLCP 2x6015 w/ 6' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.48 11.07 11.68 12.91 15.48	9.66 10.73 11.69 13.64 17.78	0.05 0.14 0.23 0.45 1.04
SLCP 2x6015 w/ 6' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.48 11.07 11.68 12.91 15.48	9.66 10.73 11.69 13.64 17.78	0.05 0.14 0.23 0.45 1.04
RRH2X40-AWS	A	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.52 2.75 2.99 3.50 4.61	1.59 1.80 2.01 2.46 3.48	0.04 0.06 0.08 0.13 0.28
RRH2X40-AWS	B	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.52 2.75 2.99 3.50 4.61	1.59 1.80 2.01 2.46 3.48	0.04 0.06 0.08 0.13 0.28
RRH2X40-AWS	C	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.52 2.75 2.99 3.50 4.61	1.59 1.80 2.01 2.46 3.48	0.04 0.06 0.08 0.13 0.28
DB-T1-6Z-8AB-0Z	A	From Centroid-Leg	4.00 0.00 2.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.60 5.92 6.24 6.91 8.37	2.33 2.56 2.79 3.28 4.37	0.04 0.08 0.12 0.21 0.45
6' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
6' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
6' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.000	115.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.02 0.03 0.05 0.09 0.23
1' Standoff	C	From Face	0.50 0.00 0.00	0.000	60.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.68 1.22 1.76 2.84 5.00	0.68 1.22 1.76 2.84 5.00	0.01 0.02 0.00 0.00 0.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
GPS-TMG-HR-26NCM	C	From Face	1.00 0.00 0.00	0.000	60.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.16 0.21 0.28 0.44 0.86	0.16 0.21 0.28 0.44 0.86	0.00 0.00 0.01 0.01 0.05

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
A-ANT-23G-2-C	B	Paraboloid w/Shroud (HP)	From Centroid-Face	4.00 0.00 2.00	-10.000		125.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.30 4.88 6.04	0.01 0.02 0.03 0.05 0.08

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
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

Comb. No.	Description
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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180 - 170.583	43.539	27	2.093	0.001
L2	174 - 126	40.911	27	2.090	0.001
L3	130.75 - 82.75	23.242	33	1.730	0.001
L4	88.75 - 40.75	10.352	33	1.137	0.001
L5	48 - 0	2.955	33	0.562	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
177.00	4' Lightning Rod	27	42.224	2.092	0.002	24149
175.00	Collar Mount [SO 102-3]	27	41.348	2.091	0.002	24149
165.00	Side Arm Mount [SO 201-1]	27	37.010	2.061	0.001	11436
148.00	Platform Mount [LP 303-1]	27	29.903	1.930	0.001	6487
137.00	Platform Mount [LP 303-1]	33	25.576	1.808	0.001	5067
135.00	Collar Mount [SO 102-3]	33	24.818	1.783	0.001	4873
127.00	A-ANT-23G-2-C	33	21.890	1.681	0.001	4450
125.00	Platform Mount [LP 712-1]	33	21.185	1.654	0.001	4420
115.00	Platform Mount [LP 1201-1]	33	17.822	1.517	0.001	4276
60.00	1' Standoff	33	4.577	0.723	0.000	3677

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180 - 170.583	125.387	8	6.027	0.004
L2	174 - 126	117.831	8	6.018	0.004
L3	130.75 - 82.75	67.001	8	4.985	0.003
L4	88.75 - 40.75	29.859	8	3.278	0.001
L5	48 - 0	8.525	8	1.620	0.001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
177.00	4' Lightning Rod	8	121.605	6.025	0.004	8608
175.00	Collar Mount [SO 102-3]	8	119.087	6.022	0.004	8608
165.00	Side Arm Mount [SO 201-1]	8	106.617	5.935	0.004	4062

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
148.00	Platform Mount [LP 303-1]	8	86.176	5.560	0.004	2295
137.00	Platform Mount [LP 303-1]	8	73.723	5.209	0.004	1789
135.00	Collar Mount [SO 102-3]	8	71.542	5.139	0.004	1720
127.00	A-ANT-23G-2-C	8	63.108	4.845	0.004	1568
125.00	Platform Mount [LP 712-1]	8	61.077	4.769	0.003	1556
115.00	Platform Mount [LP 1201-1]	8	51.389	4.375	0.003	1502
60.00	1' Standoff	8	13.206	2.085	0.001	1278

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	K	K	
L1	180 - 170.583	TP26.25x24x0.1875	9.42	0.00	0.0	39.000	15.0246	-3.18	585.96	0.005
L2	170.583 - 126	TP36.525x25.0586x0.25	48.00	0.00	0.0	39.000	27.8838	-10.96	1087.47	0.010
L3	126 - 82.75	TP46.357x34.8903x0.3125	48.00	0.00	0.0	39.000	44.2487	-24.16	1725.70	0.014
L4	82.75 - 40.75	TP55.765x44.2987x0.375	48.00	0.00	0.0	39.000	63.8666	-36.48	2490.80	0.015
L5	40.75 - 0	TP64.75x53.2831x0.4375	48.00	0.00	0.0	39.000	89.3059	-54.94	3482.93	0.016

Pole Bending Design Data

Section No.	Elevation	Size	Actual M_x	Actual f_{bx}	Allow. F_{bx}	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y	Actual f_{by}	Allow. F_{by}	Ratio $\frac{f_{by}}{F_{by}}$
	ft		kip-ft	ksi	ksi		kip-ft	ksi	ksi	
L1	180 - 170.583	TP26.25x24x0.1875	24.58	3.149	39.000	0.081	0.00	0.000	39.000	0.000
L2	170.583 - 126	TP36.525x25.0586x0.25	590.48	29.284	39.000	0.751	0.00	0.000	39.000	0.000
L3	126 - 82.75	TP46.357x34.8903x0.3125	1928.43	47.468	39.000	1.217	0.00	0.000	39.000	0.000
L4	82.75 - 40.75	TP55.765x44.2987x0.375	3514.66	49.832	39.000	1.278	0.00	0.000	39.000	0.000
L5	40.75 - 0	TP64.75x53.2831x0.4375	5598.67	47.355	39.000	1.214	0.00	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V	Actual f_v	Allow. F_v	Ratio $\frac{f_v}{F_v}$	Actual T	Actual f_{vt}	Allow. F_{vt}	Ratio $\frac{f_{vt}}{F_{vt}}$
	ft		K	ksi	ksi		kip-ft	ksi	ksi	
L1	180 - 170.583	TP26.25x24x0.1875	8.33	0.554	26.000	0.043	0.01	0.000	26.000	0.000
L2	170.583 - 126	TP36.525x25.0586x0.25	21.74	0.780	26.000	0.060	0.08	0.002	26.000	0.000
L3	126 - 82.75	TP46.357x34.8903x0.3125	36.56	0.826	26.000	0.064	0.30	0.004	26.000	0.000
L4	82.75 - 40.75	TP55.765x44.2987x0.375	41.12	0.644	26.000	0.050	0.24	0.002	26.000	0.000
L5	40.75 - 0	TP64.75x53.2831x0.4375	45.57	0.510	26.000	0.039	0.22	0.001	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation	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
	ft								
L1	180 - 170.583	0.005	0.081	0.000	0.043	0.000	0.087 ✓	1.333	H1-3+VT ✓
L2	170.583 - 126	0.010	0.751	0.000	0.060	0.000	0.762 ✓	1.333	H1-3+VT ✓
L3	126 - 82.75	0.014	1.217	0.000	0.064	0.000	1.232 ✓	1.333	H1-3+VT ✓

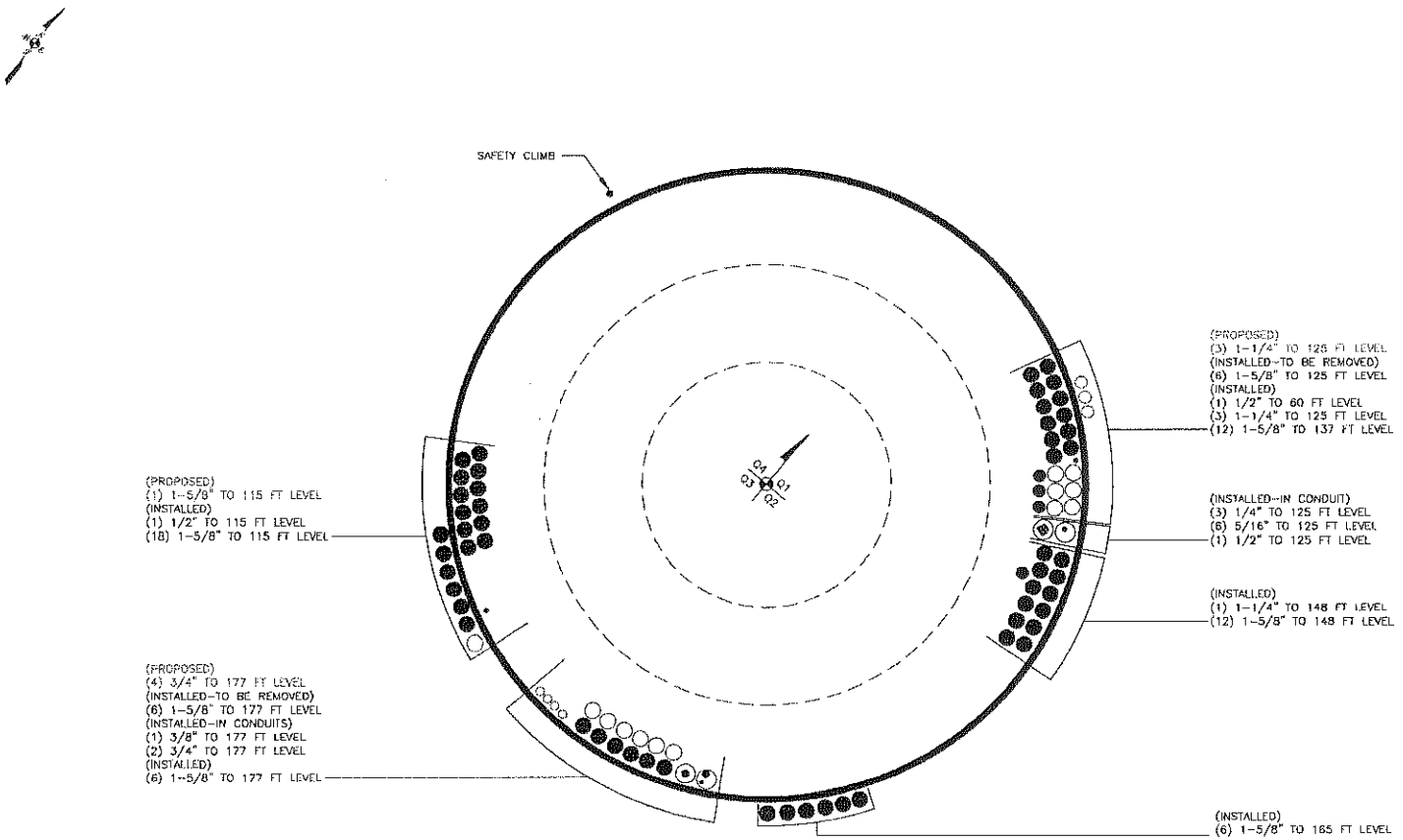
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L4	82.75 - 40.75	0.015	1.278	0.000	0.050	0.000	1.293 ✓	1.333	H1-3+VT ✓
L5	40.75 - 0	0.016	1.214	0.000	0.039	0.000	1.230 ✓	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	180 - 170.583	Pole	TP26.25x24x0.1875	1	-3.18	781.08	6.5	Pass
L2	170.583 - 126	Pole	TP36.525x25.0586x0.25	2	-10.96	1449.60	57.2	Pass
L3	126 - 82.75	Pole	TP46.357x34.8903x0.3125	3	-24.16	2300.36	92.4	Pass
L4	82.75 - 40.75	Pole	TP55.765x44.2987x0.375	4	-36.48	3320.24	97.0	Pass
L5	40.75 - 0	Pole	TP64.75x53.2831x0.4375	5	-54.94	4642.75	92.3	Pass
						Summary	ELC:	Load Case 7
						Pole (L4)	97.0	Pass
						Rating =	97.0	Pass

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842871 TOWER ID: C_BASELEVEL

BASE LEVEL DRAWING | 1" = 1'-0" | 1

PLOT DATE: 9/17/2014 FILE NAME: 842871_BASELEVEL.DWG

CROWN REGION ADDRESS

USA

2	21/03/14	NEW BUILD PER WORK ORDER # 731089	CM
1	10/09/14	UPDATED PER WORK ORDER # 781157	ARR

DRAWN BY: MH
CHECKED BY:
DRAWING DATE: 20/03/14

SITE NUMBER:
SITE NAME:

SITE NAME

ORANGE TRANSFER STATION

BUSINESS UNIT NUMBER

842871

SITE ADDRESS

617 SOUTH ORANGE CENTER ROAD
ORANGE, CT 06477
NEW HAVEN COUNTY
USA

SHEET TITLE

BASE LEVEL

SHEET NUMBER

A1-0

APPENDIX C

ADDITIONAL CALCULATIONS

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

TIA Rev F

Site Data		
BU #:	*842871*	
Site Name:	*ORANGE TRANSFER STATION*	
Application #:	*242850, Rev. 2*	
Pole Manufacturer:	*Rohn*	

Anchor Rod Data		
Quantity:	20	
Diameter:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	72	in

Base Plate Data		
Diameter:	77.25	in
Thickness:	2.75	in
Grade:	60	ksi
Single-Rod B-eff:	10.28	in

Stiffener Data (Welding on Both Sides)		
Configuration:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<--- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thickness:		in
Notch:		in
Grade:		ksi
Weld Strength:		ksi

Pole Data		
Diameter:	64.75	in
Thickness:	0.4375	in
Grade:	65	ksi
# of Sides:	18	"0" if Round
Strength (Fu):	80	ksi
Reinf. Fillet Weld:	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

Reactions		
Moment:	5598.68	ft-kips
Axial:	54.96	kips
Shear:	45.54	kips

If No Stiffeners, Criteria: AISC ASD <--- Only Applicable to Unstiffened Cases

Anchor Rod Results

Maximum Rod Tension:	183.9 kips	Rigid
Allowable Tension:	195.0 kips	Service, ASD
Anchor Rod Stress Ratio:	94.3% Pass	Fty*ASIF

Base Plate Results

Base Plate Stress:	Flexural Check	Rigid
Allowable Plate Stress:	Rohn/Pirod, OK	Service ASD
Base Plate Stress Ratio:	60.0 ksi	0.75*Fy*ASIF
	Rohn/Pirod, OK	Y.L. Length: 31.49

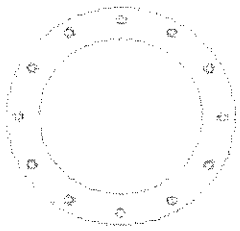
n/a

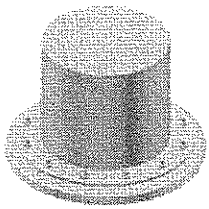
Stiffener Results N/A for Rohn / Pirod

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





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

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

GPD GROUP

Mat Foundation Analysis
ORANGE TRANSFER STATION (BU #: 842871)
2014777.842871.01 - Bearing & Overturning

General Info	
Code	TIA/EIA-222-F (LRFD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Round
Reinforcing Known	Yes
Max Capacity	1

Tower Reactions		
Moment, M	5598.68	k-ft
Axial, P	54.96	k
Shear, V	45.54	k

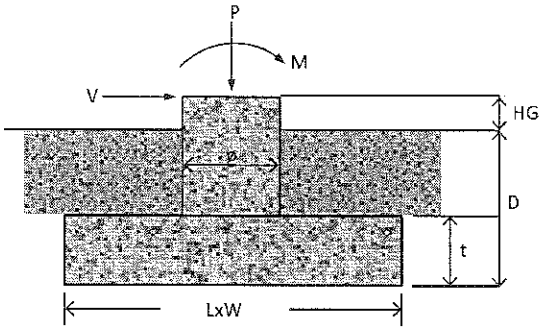
Pad & Pier Geometry		
Pier Diameter, ø	8	ft
Pad Length, L	48	ft
Pad Width, W	48	ft
Pad Thickness, t	6	ft
Depth, D	7	ft
Height Above Grade, HG	1	ft

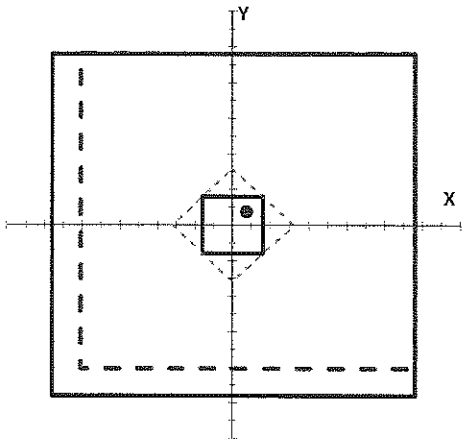
Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	3	ksi
Clear Cover	3	in
Reinforced Top & Bottom?	Yes	
Pad Reinforcing Size	# 11	
Pad Quantity Per Layer	48	
Pier Rebar Size	# 11	
Pier Quantity of Rebar	24	

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	120	pcf
Angle of Friction, ø	32	°
Bearing Type	Net	
Ultimate Bearing	12	ksf
Water Table Depth	7	ft
Frost Depth	3	ft

Bearing Summary			Load Case
Qxmax	1.42	ksf	1.2D+1.6W
Qymax	1.42	ksf	1.2D+1.6W
Qmax @ 45°	1.48	ksf	1.2D+1.6W
$Q_{(all)\ Gross}$	9.63	ksf	
Controlling Capacity	**15.4%**	**Pass**	

Overturning Summary (Required FS=1.0)			Load Case
FS(ot)x	6.62	≥1.0	0.9D+1.6W
FS(ot)y	6.62	≥1.0	0.9D+1.6W
Controlling Capacity	**15.1%**	**Pass**	





GPD GROUP

Mat Foundation Analysis
ORANGE TRANSFER STATION (BU #: 842871)
2014777.842871.01 - Reinforcement

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Soil
Foundation Type	Mono Pad
Pier Type	Round
Reinforcing Known	Yes
Max Capacity	1

Tower Reactions		
Moment, M	7278.28	k-ft
Axial, P	71.45	k
Shear, V	59.21	k

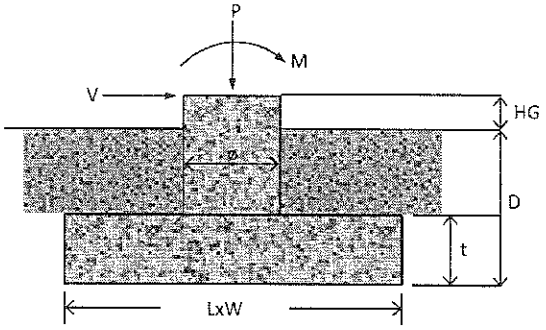
Pad & Pier Geometry		
Pier Diameter, ø	8	ft
Pad Length, L	48	ft
Pad Width, W	48	ft
Pad Thickness, t	6	ft
Depth, D	7	ft
Height Above Grade, HG	1	ft

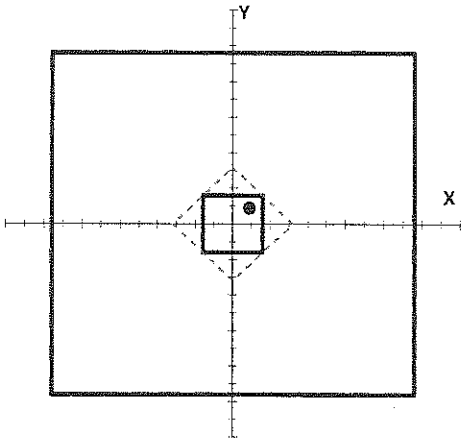
Pad & Pier Reinforcing		
Rebar Fy	60	ksi
Concrete Fc'	3	ksi
Clear Cover	3	in
Reinforced Top & Bottom?	Yes	
Pad Reinforcing Size	# 11	
Pad Quantity Per Layer	48	
Pier Rebar Size	# 11	
Pier Quantity of Rebar	24	

Soil Properties		
Soil Type	Granular	
Soil Unit Weight	120	pcf
Angle of Friction, ø	32	°
Bearing Type	Net	
Ultimate Bearing	12	ksf
Water Table Depth	7	ft
Frost Depth	3	ft

Bearing Summary			Load Case
Qxmax	1.47	ksf	1D+1W
Qymax	1.47	ksf	1D+1W
Qmax @ 45°	1.64	ksf	1D+1W
$Q_{(all)\ Gross}$	6.42	ksf	
Controlling Capacity	**25.6%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	7.62	≥1.5	1D+1W
FS(ot)y	7.62	≥1.5	1D+1W
Controlling Capacity	**19.7%**	**Pass**	





Sprint

PROJECT:	2.5 EQUIPMENT DEPLOYMENT
SITE NAME:	ORANGE TRANSFER STATION
SITE CASCADE:	CT13XC263
SITE ADDRESS:	S. ORANGE CENTER ROAD ORANGE, CT 06477
SITE TYPE:	MONOPOLE TOWER
MARKET:	SOUTHERN CONNECTICUT

SITE INFORMATION

PROPERTY OWNER:
TOWN OF ORANGE
617 ORANGE CENTER ROD
ORANGE, CT 06477

LATITUDE (NAD83):
41° 15' 19.296" N
41.25536°

LONGITUDE (NAD83):
-73° 0' 39.996" W
-73.01111°

COUNTY:
NEW HAVEN

ZONING JURISDICTION:
TOWN OF ORANGE

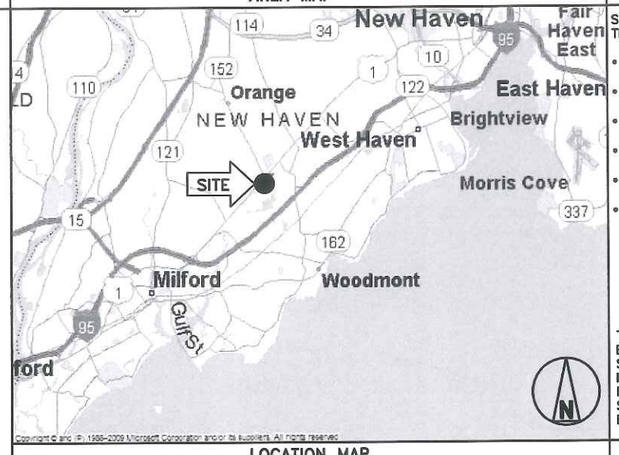
ZONING DISTRICT:
RES

POWER COMPANY:
CL&P
(860) 947-2000

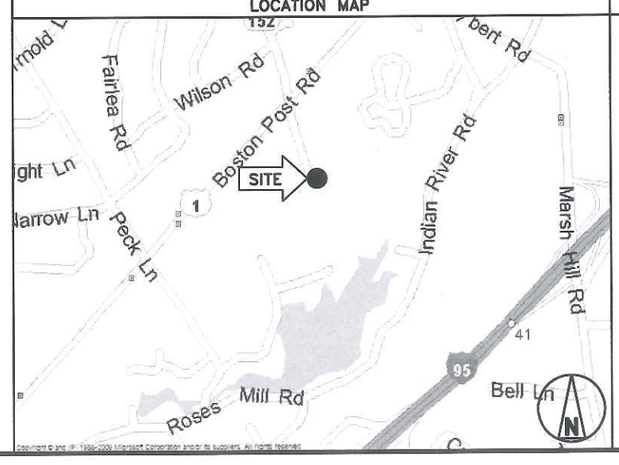
AAV PROVIDER:
AT&T
PHONE: (800) 288-2020

SPRINT CM:
GARY WOOD
PHONE: (860) 940-9168
gary.wood@sprint.com

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL 2.5 EQUIPMENT IN EXISTING SPRINT N.V. MMBS CABINET
- INSTALL (4) BATTERIES IN EXISTING BBU CABINET
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) RRU'S TO TOWER
- INSTALL (27) JUMPER CABLES
- INSTALL (1) FIBER CABLE

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

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2012 IBC)
2. TIA-EIA-222-F OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

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

DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.
T-1	TITLE SHEET & PROJECT DATA	0
SP-1	SPRINT SPECIFICATIONS	0
SP-2	SPRINT SPECIFICATIONS	0
SP-3	SPRINT SPECIFICATIONS	0
A-1	SITE PLAN	0
A-2	TOWER ELEVATION & CABLE PLAN	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	COLOR CODING & NOTES	0
A-5	EQUIPMENT & MOUNTING DETAILS	0
A-6	CIVIL DETAILS	0
A-7	PLUMBING DIAGRAM	0
E-1	ELECTRICAL & GROUNDING PLAN	0
E-2	ELECTRICAL & GROUNDING DETAILS	0

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

PLANS PREPARED BY:
INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 333-XXXX

MLA PARTNER:

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

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	2/24/14	AHS	0

SITE NAME:
ORANGE TRANSFER STATION

SITE CASCADE:
CT13XC263

SITE ADDRESS:
S. ORANGE CENTER RD
ORANGE, CT 06477

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

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

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

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

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

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

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

1.5 DEFINITIONS:

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

B. COMPANY: SPRINT CORPORATION

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

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

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

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

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

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

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

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

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

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

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

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.

4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY–FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF–LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

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

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

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

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 NOTICE TO PROCEED

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

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

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

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

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

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 333–XXXX

MLA PARTNER:

ENGINEERING LICENSE:

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

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	2/24/14	AHS	0

SITE NAME:

ORANGE TRANSFER STATION

SITE CASCADE:

CT13XC263

SITE ADDRESS:

S. ORANGE CENTER RD
ORANGE, CT 06477

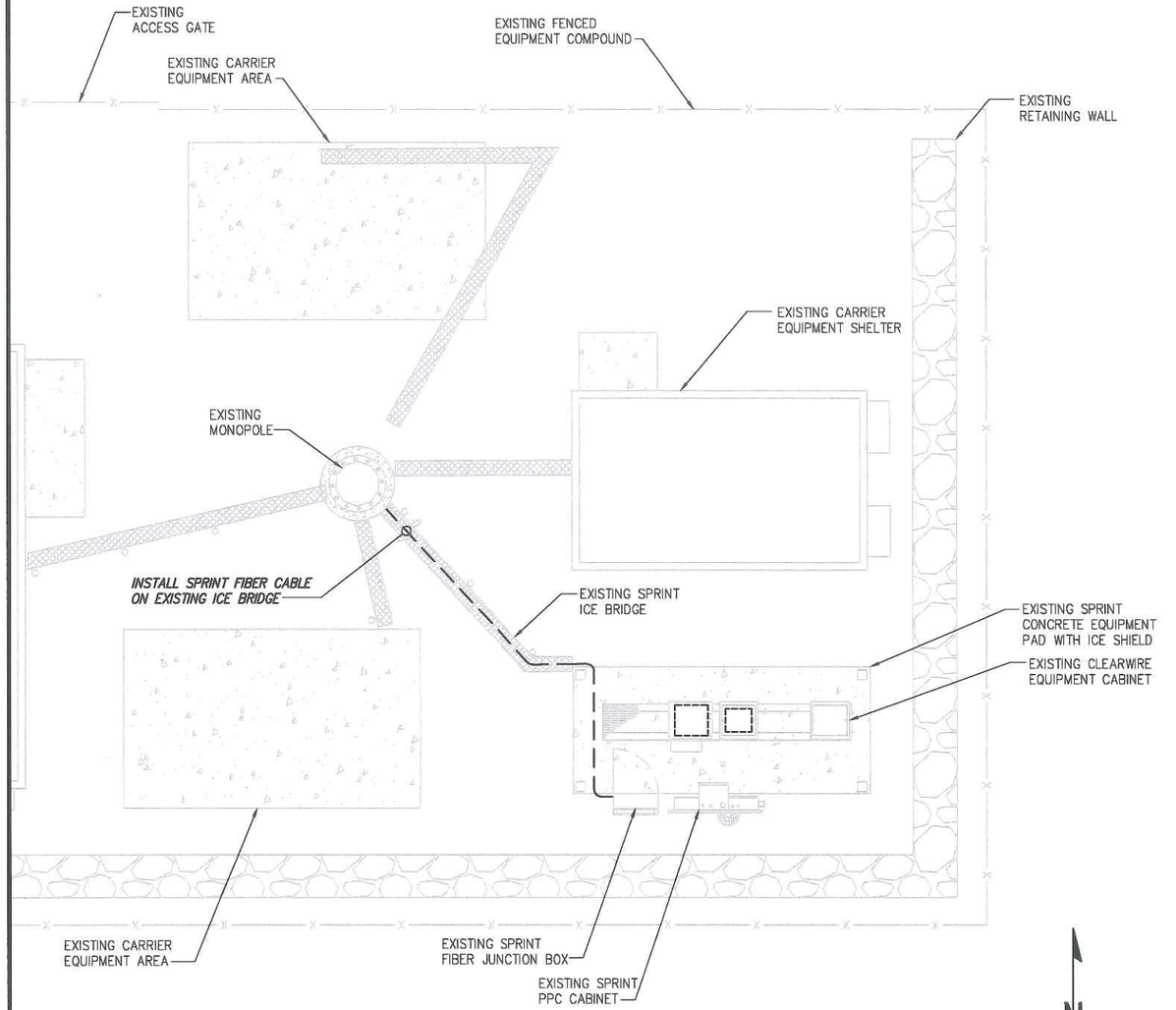
SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

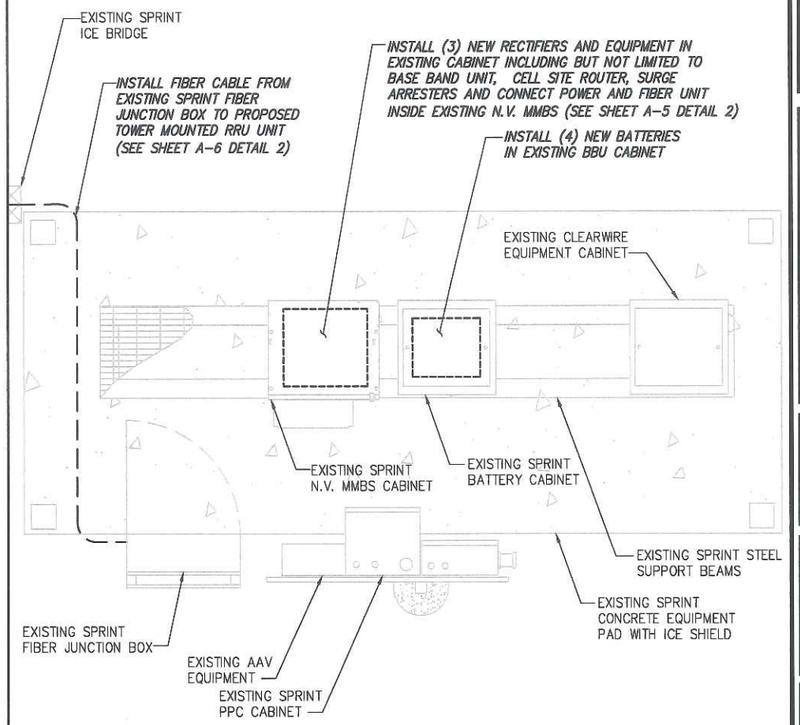
SHEET NUMBER:

SP-1

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



OVERALL SITE PLAN | SCALE AS NOTED | 1



SPRINT EQUIPMENT PLAN | SCALE AS NOTED | 2

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 333-XXXX

MLA PARTNER:

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No. 24705
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ORANGE TRANSFER STATION

SITE CASCADE:

CT13XC263

SITE ADDRESS:

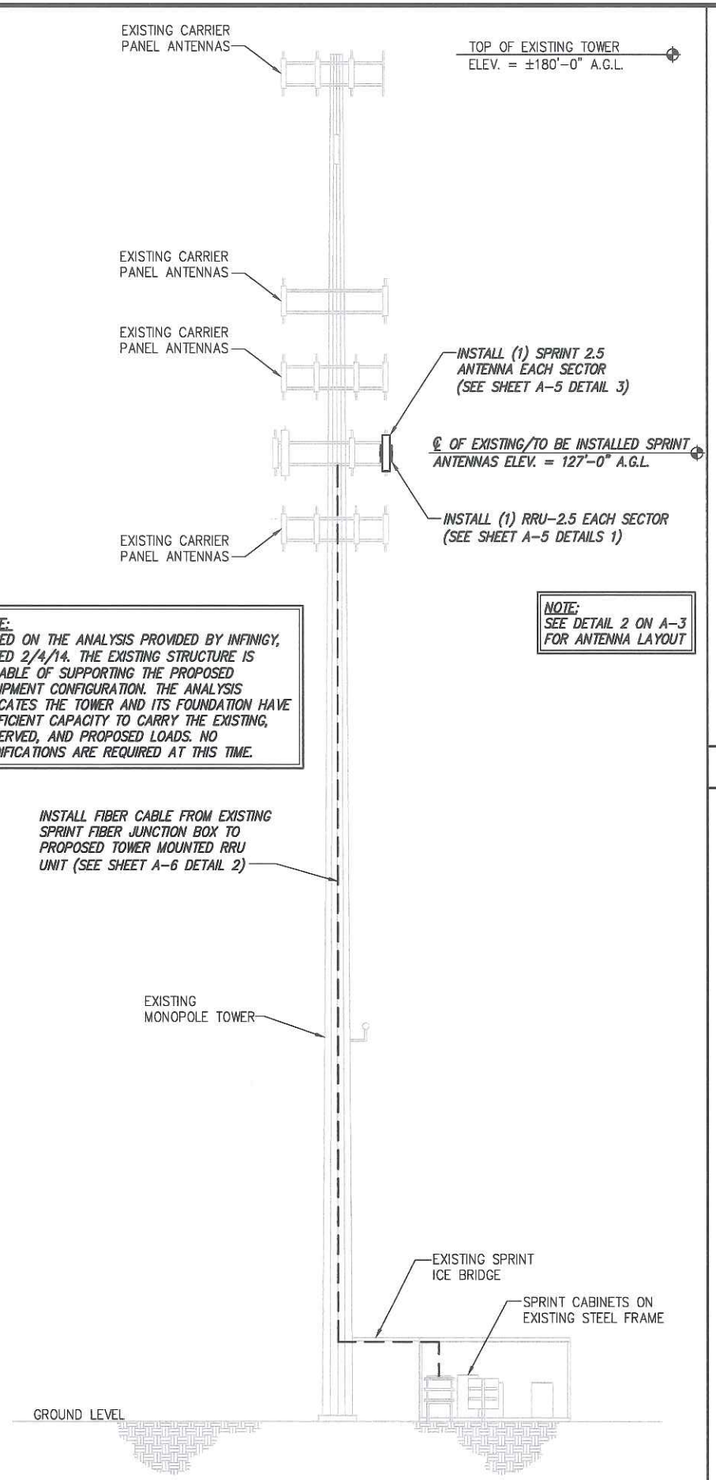
S. ORANGE CENTER RD
ORANGE, CT 06477

SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

A-1



NOTE:
BASED ON THE ANALYSIS PROVIDED BY INFINIGY, DATED 2/4/14. THE EXISTING STRUCTURE IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION. THE ANALYSIS INDICATES THE TOWER AND ITS FOUNDATION HAVE SUFFICIENT CAPACITY TO CARRY THE EXISTING, RESERVED, AND PROPOSED LOADS. NO MODIFICATIONS ARE REQUIRED AT THIS TIME.

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

TOWER ELEVATION | NO SCALE | 1

DETAIL NOT USED | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

DETAIL NOT USED | NO SCALE | 4

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CT13XC263

SITE ADDRESS:

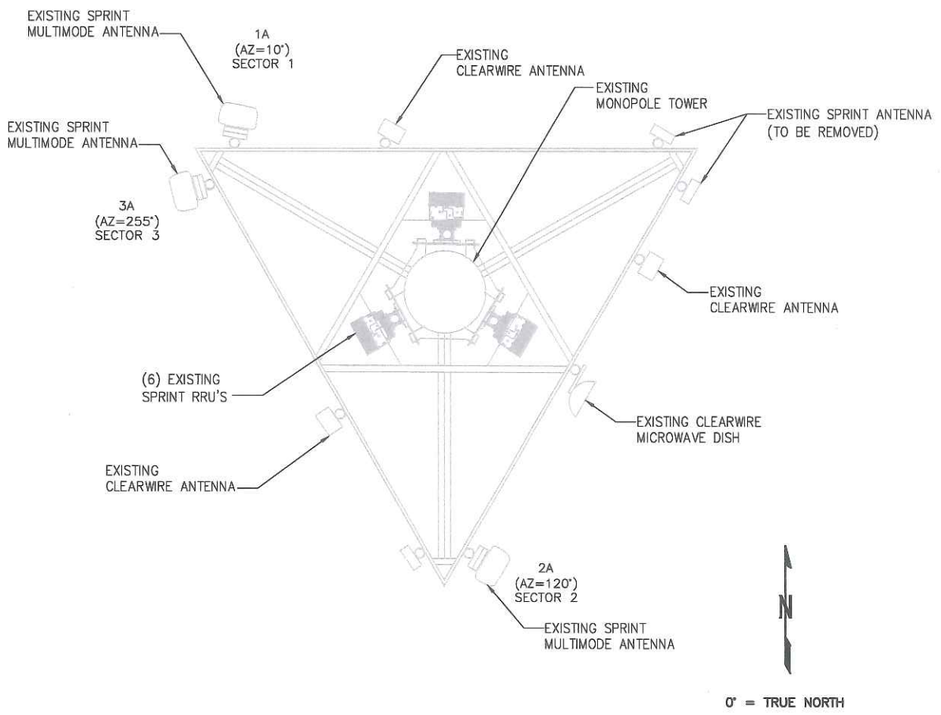
S. ORANGE CENTER RD
ORANGE, CT 06477

SHEET DESCRIPTION:

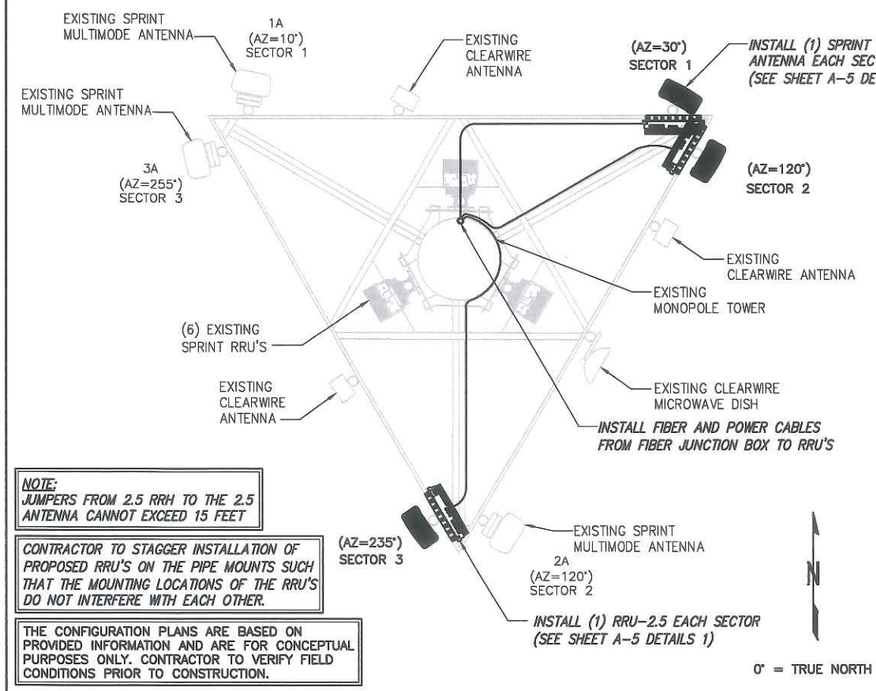
TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:

A-2

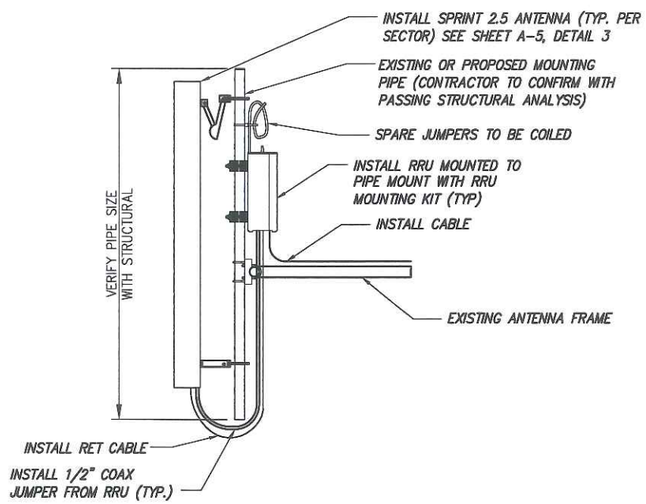


EXISTING ANTENNA & RRU LAYOUT | NO SCALE | 1



FINAL ANTENNA LAYOUT | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3



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

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

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

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

TYPICAL ANTENNA & RRU MOUNTING DETAILS | NO SCALE | 4

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Fax # (518) 690-0793
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MLA PARTNER:

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

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ORANGE TRANSFER STATION

SITE CASCADE:
CT13XC263

SITE ADDRESS:
S. ORANGE CENTER RD
ORANGE, CT 06477

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

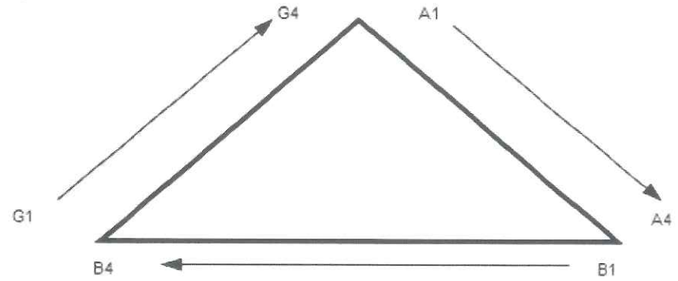
SHEET NUMBER:
A-3

NV CABLES			
BAND	INDICATOR	PORT	COLOR
800-1	YEL GRN	NV-1	GRN
1900-1	YEL RED	NV-2	BLU
1900-2	YEL BRN	NV-3	BRN
1900-3	YEL BLU	NV-4	WHT
1900-4	YEL SLT	NV-5	RED
800-2	YEL ORG	NV-6	SLT
SPARE	YEL WHT	NV-7	PPL
2500	YEL PPL	NV-8	ORG

HYBRID	
HYBRID	COLOR
1	GRN
2	BLU
3	BRN
4	WHT
5	RED
6	SLT
7	PPL
8	ORG

2.5 Band		
2500 Radio 1		COLOR
YEL	WHT	GRN
YEL	WHT	BLU
YEL	WHT	BRN
YEL	WHT	WHT
YEL	WHT	RED
YEL	WHT	SLT
YEL	WHT	PPL
YEL	WHT	ORG

Figure 1: Antenna Orientation



NOTES:

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.

2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.

3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.

4. THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.

5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.

6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.

7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.

8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
1	2	Blue	No Tape	No Tape
1	3	Brown	No Tape	No Tape
1	4	White	No Tape	No Tape
1	5	Red	No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7	Purple	No Tape	No Tape
1	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
2	2	Blue	Blue	No Tape
2	3	Brown	Brown	No Tape
2	4	White	White	No Tape
2	5	Red	Red	No Tape
2	6	Grey	Grey	No Tape
2	7	Purple	Purple	No Tape
2	8	Orange	Orange	No Tape
3 Gamma	1	Green	Green	Green
3	2	Blue	Blue	Blue
3	3	Brown	Brown	Brown
3	4	White	White	White
3	5	Red	Red	Red
3	6	Grey	Grey	Grey
3	7	Purple	Purple	Purple
3	8	Orange	Orange	Orange

NV FREQUENCY	INDICATOR	ID
800-1	YEL	GRN
1900-1	YEL	RED
1900-2	YEL	BRN
1900-3	YEL	BLU
1900-4	YEL	SLT
800-1	YEL	ORG
RESERVED	YEL	WHT
RESERVED	YEL	PPL

2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	GRN
2500 -2	YEL	WHT	RED
2500 -3	YEL	WHT	BRN
2500 -4	YEL	WHT	BLU
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	PPL

Example – Sector 2, Cable 2, 800mhz Radio #1

Example – Sector 3, Cable 1, 1900mhz Radio #1

Example – Sector 1, Cable 4, 800 mhz Radio #1 and 1900mhz Radio #1

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JOB NUMBER 333-XXXX

MLA PARTNER:

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

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CT13XC263

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S. ORANGE CENTER RD
ORANGE, CT 06477

SHEET DESCRIPTION:

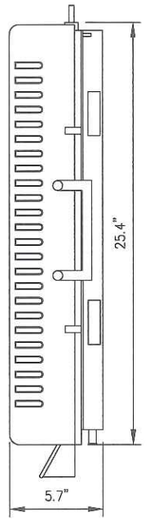
COLOR CODINT & NOTES

SHEET NUMBER:

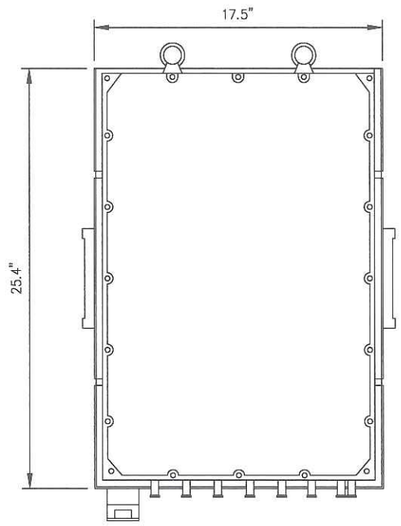
A-4

RRU: ALCATEL LUCENT TD-RRH8X20

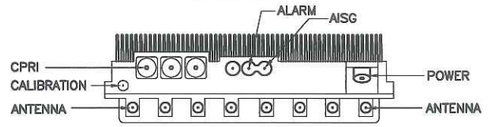
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW

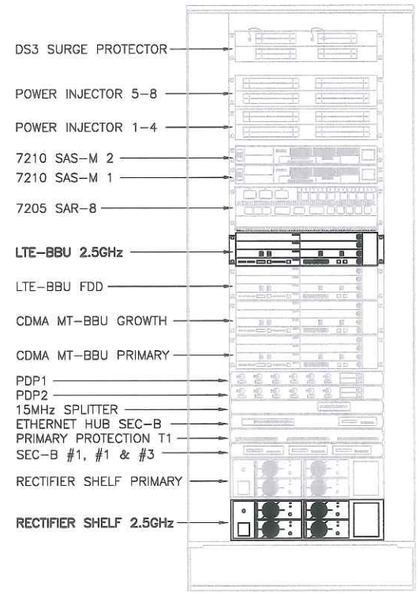


PLAN VIEW

NOTES

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

2.5 RRU'S	NO SCALE	1

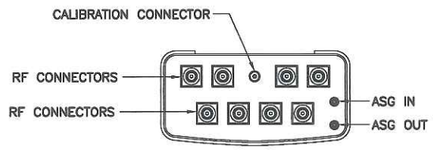


FRONT VIEW

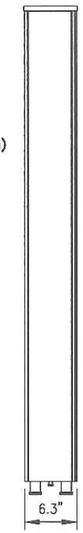
2.5 EQUIPMENT IN EXISTING CABINET	NO SCALE	2

ANTENNA RFS APXVTM14-C-I20

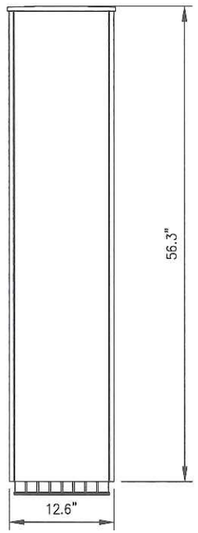
RADOME MATERIAL:	ASA
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD.in(mim):	56.3"x12.6"x6.3" (1430x320x160mm)
WEIGHT:	52.9 lbs
CONNECTORS:	(8) 4.1/9.5 DIN FEMALE (1) NF - CALIBRATION CONNECTOR



PLAN VIEW



SIDE VIEW



FRONT VIEW

2.5 ANTENNA	NO SCALE	3

DETAIL NOT USED	NO SCALE	4

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ORANGE TRANSFER STATION

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CT13XC263

SITE ADDRESS:

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ORANGE, CT 06477

SHEET DESCRIPTION:

EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:

A-5

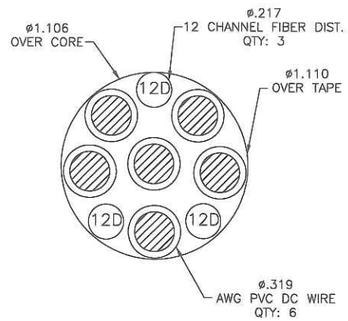
RFS HYBRIFLEX RISER CABLE SCHEDULE

Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft
8 AWG Power	**Hybrid cable** MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
	MN: HB114-08U3M12-200F	200 ft
6 AWG Power	**Hybrid cable** MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	**Hybrid cable** MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

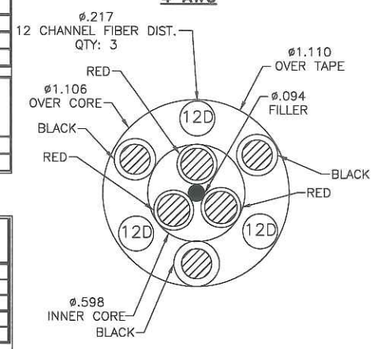
RFS HYBRIFLEX JUMPER CABLE SCHEDULE

Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	**Hybrid Jumper cable** MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft
4 AWG Power	**Hybrid Jumper cable** MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

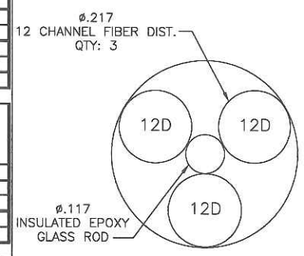
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG

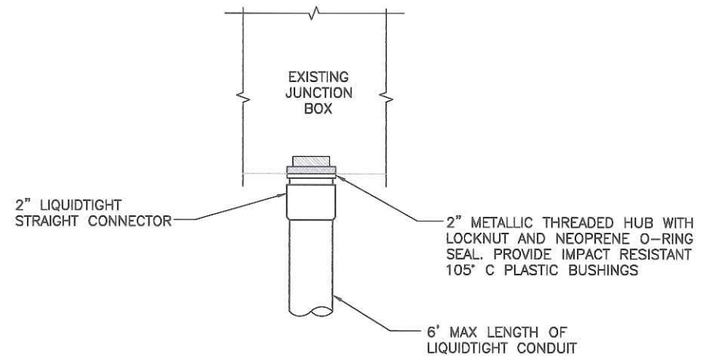


8 & 6 AWG



FIBER ONLY

2.5 CABLE CROSS SECTION DATA | NO SCALE | 1



FIBER JUNCTION BOX PENETRATION | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

PLANS PREPARED FOR:

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY Design. Build. Deliver.
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

JOB NUMBER 333-XXXX

MLA PARTNER:

ENGINEERING LICENSE:

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

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	2/24/14	AHS	0

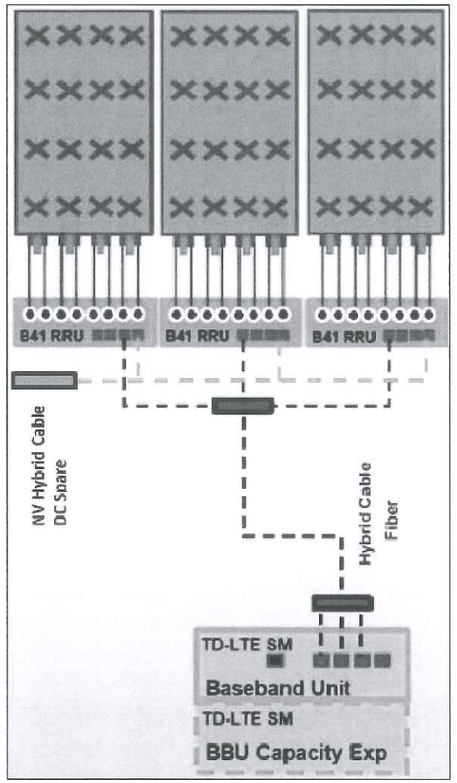
SITE NAME:
ORANGE TRANSFER STATION

SITE CASCADE:
CT13XC263

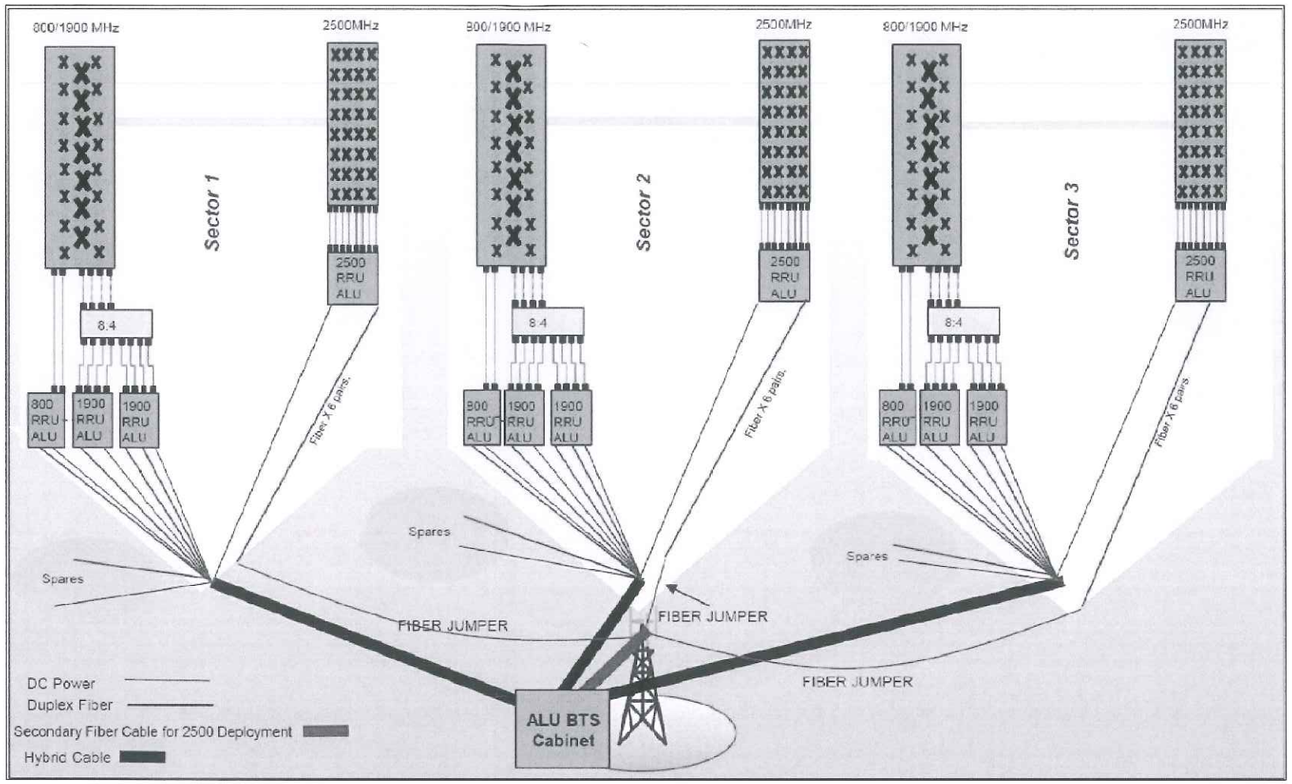
SITE ADDRESS:
S. ORANGE CENTER RD
ORANGE, CT 06477

SHEET DESCRIPTION:
CIVIL DETAILS

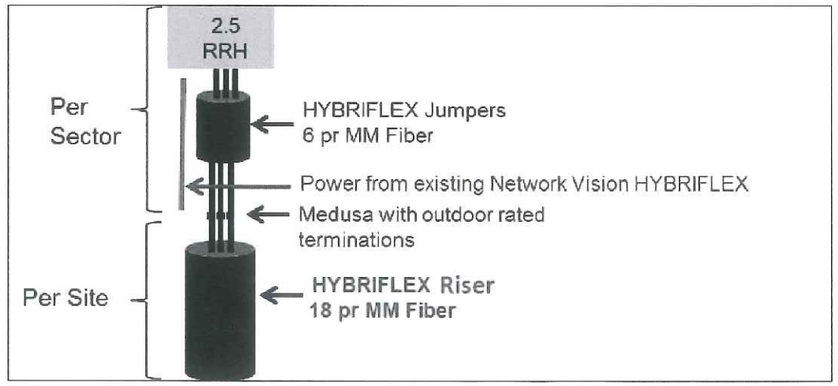
SHEET NUMBER:
A-6



ALU 2.5 ALU SCENARIO 1



RAN WIRING DIAGRAM



RF 2.5 ALU SCENARIO 1

PLUMBING DIAGRAM | NO SCALE | 1

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DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
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ORANGE, CT 06477

SHEET DESCRIPTION:

PLUMBING DIAGRAM

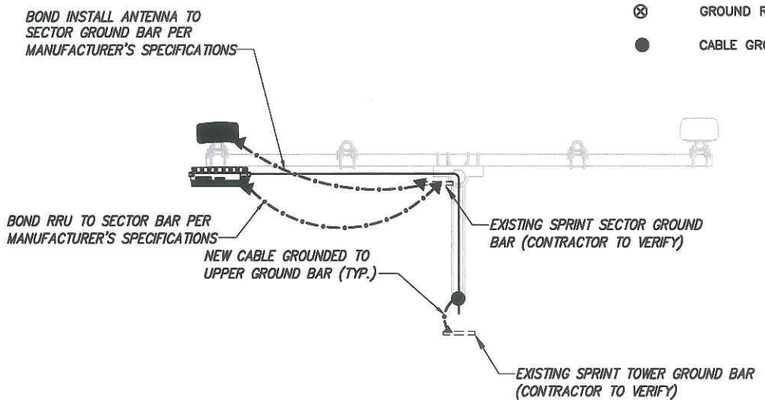
SHEET NUMBER:

A-7

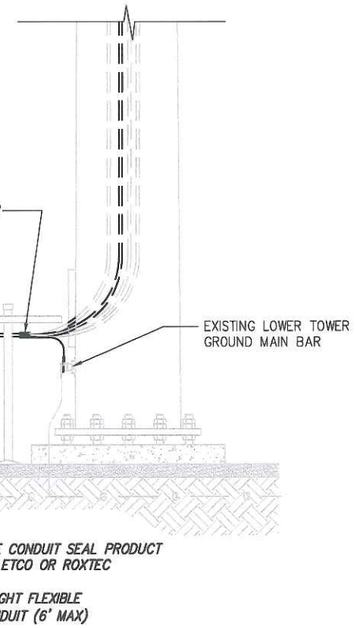
PLAN NOT USED | NO SCALE | 1

LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2



NOTE:
DEPICTION IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO FIELD VERIFY PRIOR TO CONSTRUCTION

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

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JOB NUMBER 333-XXXX

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SITE NAME:

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SITE ADDRESS:

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ORANGE, CT 06477

SHEET DESCRIPTION:

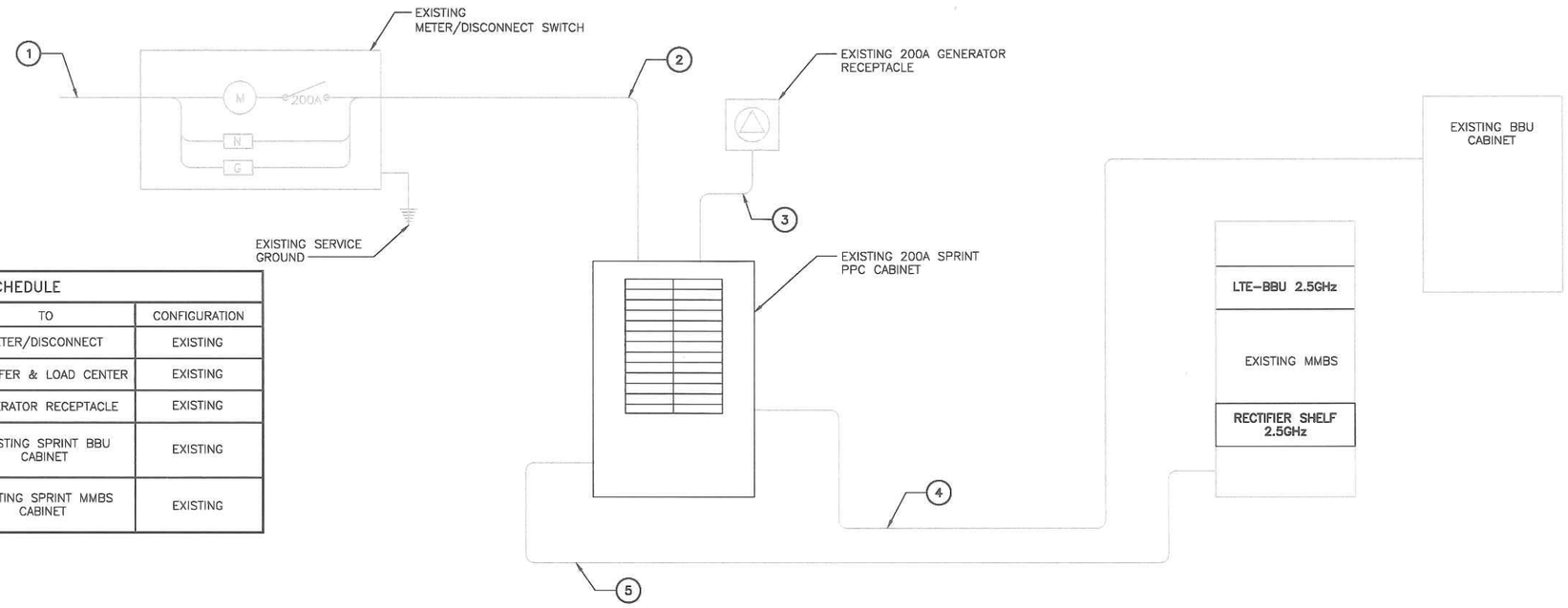
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

NOTES

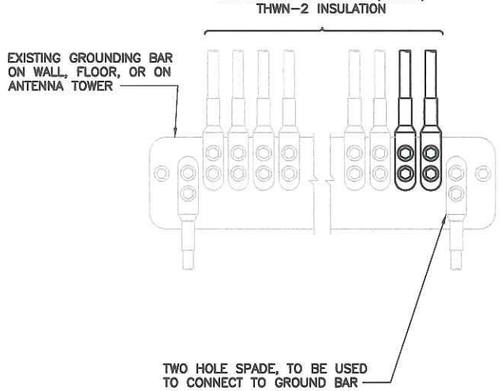
CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



CIRCUIT SCHEDULE

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

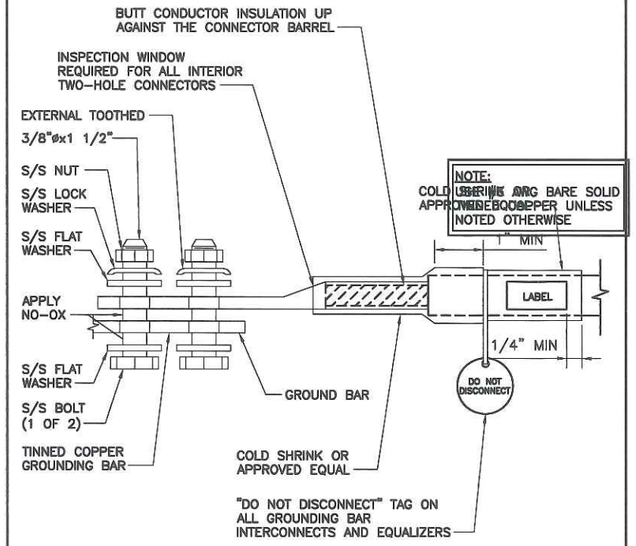
ELECTRICAL ONE–LINE DIAGRAM — NO SCALE — 1



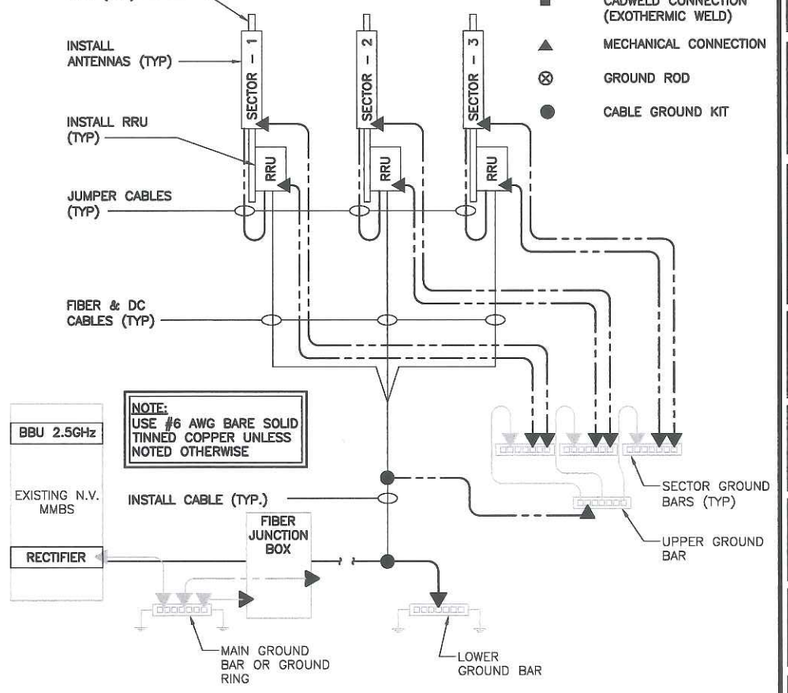
NOTES

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

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR — NO SCALE — 2



TWO HOLE LUG — NO SCALE — 3



GROUNDING RISER DIAGRAM — NO SCALE — 4

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ORANGE, CT 06477

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2