AIROSMITH DEVELOPMENT
We do it right the first time.

January 30th, 2018

Melanie Bachman, Executive Director
Connecticut Siting Council
10 FranklinSquare
New Britain, CT 06051

RE: Notice of Exempt Modification – Antenna Swap for wireless facility located at 20 POST OFFICE LANE, WESTPORT, CT, 06880 – CT03XC336 (lat. 41° 07' 24.27" N, long. -73° 18' 46.93" W)

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (120-foot level) on an existing (142-foot monopole tower) at the above-referenced address. The property is owned by JAY SHERWOOD, and the tower is owned by American Tower Corporation.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace three (3) antennas and add six (6) new RRHs onto the tower. All the proposed work is contained within the existing fenced area. Please refer to the attached drawings for site plans prepared by Infinigy Engineering.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to JIM MARPE, FIRST SELECTMAN, and MARY YOUNG, PLANNING AND ZONING DIRECTOR of the Town of WESTPORT. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the site and to JAY SHERWOOD who owns the land.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b).

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The antennas work is a one-for-one replacement of facility components.
3. The proposed modifications will include the addition of ground base equipment as depicted on the attached drawings; however, the proposed equipment will not require

32 Clinton Street, Saratoga Springs, NY 12866
Office 518-306-1733 – Fax 518-306-1711
www.airosmithdevelopment.com

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an extension of the site boundaries.

4. The proposed modifications will not increase noise levels at the facility by six decibels or more.

5. The additional ground based equipment will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard.

For the foregoing reasons, Sprint respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b).

If you have any questions or require any additional information regarding this request, please do not hesitate to give me a call at (518) 350-4222 or email me to aperkowski@airosmithdevelopment.com

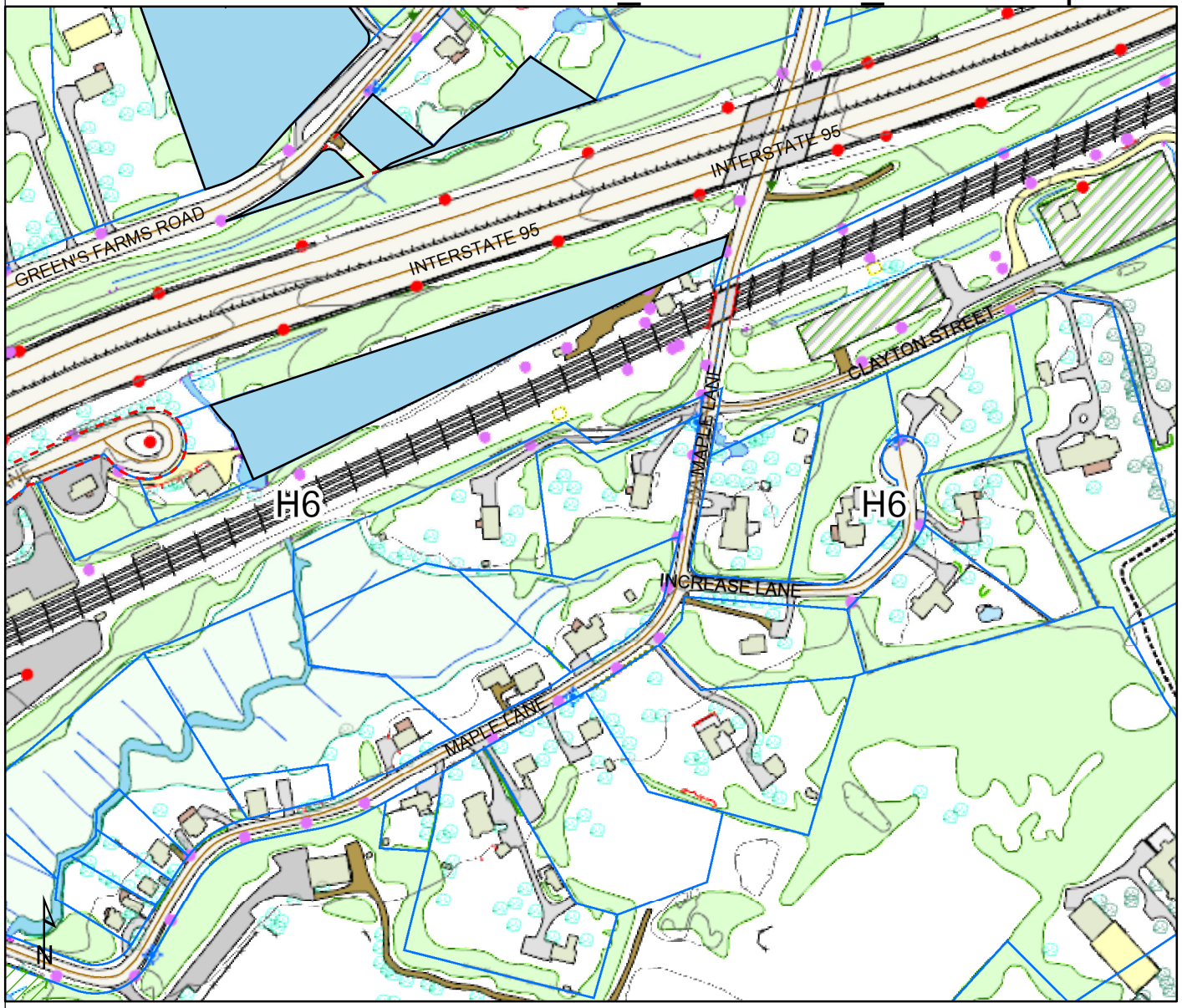
Kind Regards,

Arthur Perkowski
Airosmith Development Inc.
32 Clinton Street
Saratoga Springs, NY 12866
518-306-1711 desk & fax
518-871-3707 cell
aperkowski@airosmithdevelopment.com

Attachment

CC: JIM MARPE (FIRST SELECTMAN, WESTPORT, CT)
JUSTINE PAUL (Manager, AMERICAN TOWER CORPORATION)
MARY YOUNG (Director of Planning & Development / TOLLAND, CT)
JAY SHERWOOD (Land Owner)

CT03XC336_DO MACRO_Parcel Map



Westport CT Web GIS Map Legend

CAM_line	Culvert	Golf Path
Deleted_Wetland	Dam	Paved Parking
Amended_Wetland	Ditch	Unpaved Parking
dot_line	Rip Rap	Paved Driveway
Tidal_Wetland	Elevation Well	Unpaved Driveway
Waterbody_Watercourse	Fence	Public Sidewalk
wet_text_line	Guardrail	Treeline
Wetland	Hedge	Wet Area
100 Year Flood Zone	Retaining Wall	Sound, Lake, Pond, or River
500 Year Flood Zone	Stone Wall	Pool
Floodway in Zone AE	Trails	Golf Green
Basins	Abandoned Railroad Tracks	Golf Bunker
Spot Elevation	Railroad Tracks	Tennis Court
Water Spot Elevation	Paved Road Centerline	Golf Tee
bulkhead_polylines	Unpaved Road Centerline	Wharf, Dock, or Pier
landhook_polylines	Stream	Park
original_parcel_polylines	Coast Line	Athletic Field
Index	Easement	Golf Course
Index Depression	Utility Right of Way	index_polygon
Index Obscured	Private Right of Way	HYDRIC SOILS
Index Depression Obscured	Proposed Right of Way	NON-HYDRIC SOILS
Intermediate	Public Right of Way	WATER
Intermediate Depression	Parcel	A
Intermediate Obscured	Fuel Tank	AA
Intermediate Depression (Obs)	Water Tank	AAA
Tree	Quarry or Pit	B
Pipe	Building	BCD
Outfall	Building Construction	BPD
Catchbasin	Cement Pad	CPD
Manhole	Deck	DDD4
Electrical Box	Foundation	GBD
Hydrant	Greenhouse	GBD/S
Light Pole	Mobile Home	HDD
Utility Pole	Ruins	HSD
Sign	Silo	MHP
Unknown	Somkestack	OSRD
Billboard	Substation	PRD
Pipeline Above Ground	Bridge	RBD
Tower	Paved Road	RORD
townline_polyline	Runway	RPOD
Unknown Lines	Unpaved Road	

1 inch = 283 feet

MAPLE LN

Location	MAPLE LN	**Mblu**	H06/ / 017/000 /
Acct#	5452217-C	**Owner**	SHERWOOD JAY
Assessment	$919,330	**Appraisal**	$1,313,300
PID	7785	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$1,253,900	$59,400	$1,313,300

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$877,730	$41,600	$919,330

Owner of Record

Owner	SHERWOOD JAY
Co-Owner	
Address	P O BOX 48 WESTPORT, CT 06881

Sale Price	$0
Certificate	1
Book & Page	469/ 137
Sale Date	12/08/1977
Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SHERWOOD JAY	$0	1	469/ 137	29	12/08/1977

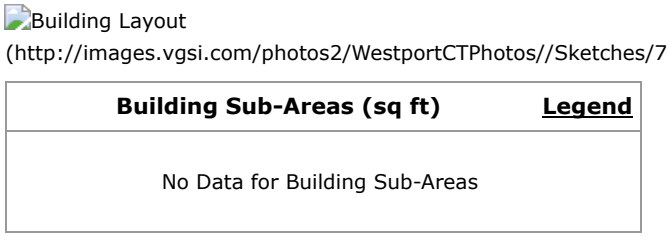
Building Information

Building 1 : Section 1

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

Building Attributes	
Field	**Description**

Building Layout



Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Kitchens	
Whirlpool Tubs	
Hot Tubs	
Sauna (SF Area)	
Fin Basement	
Fin Bsmt Qual	
Bsmt. Garages	
Interior Cond	
Fireplaces	
Ceiling Height	
Sprinklers	
Acc Apts	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	100
Description	Res Vacant Lnd
Zone	AAA
Neighborhood	140
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	2.07
Frontage	0
Depth	0
Assessed Value	$41,600
Appraised Value	$59,400

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CELL	Cell on TWR	TW		5 Sites	$1,253,900	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$1,253,900	$59,400	$1,313,300
2014	$818,000	$54,625	$872,625
2012	$818,000	$54,625	$872,625

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$877,730	$41,600	$919,330
2014	$572,600	$38,200	$610,800
2012	$572,600	$38,200	$610,800

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT03XC336

Turkey Hill
20 Post Office Lane
Westford, CT 06880

February 2, 2018

EBI Project Number: 6218000594

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	20.29 %

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

EBI Consulting
environmental | engineering | due diligence

February 2, 2018

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

Emissions Analysis for Site: **CT03XC336 – Turkey Hill**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **20 Post Office Lane, Westford, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) 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 SPRINT Wireless antenna facility located at **20 Post Office Lane, Westford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **RFS APXVSPP18-C-A20 and the Commscope DT465B-2XR** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed antennas are **120 feet** above ground level (AGL) for **Sector A**, **120 feet** above ground level (AGL) for **Sector B** and **120 feet** above ground level (AGL) for Sector C.

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**120 feet**	Height (AGL):	**120 feet**	Height (AGL):	**120 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	7,537.38	ERP (W):	7,537.38	ERP (W):	7,537.38
Antenna A1 MPE%	**2.36 %**	Antenna B1 MPE%	**2.36 %**	Antenna C1 MPE%	**2.36 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**120 feet**	Height (AGL):	**120 feet**	Height (AGL):	**120 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**1.42 %**	Antenna B2 MPE%	**1.42 %**	Antenna C2 MPE%	**1.42 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**3.78 %**
AT&T	2.73 %
Verizon Wireless	6.23 %
MetroPCS	1.24 %
T-Mobile	5.70 %
Clearwire	0.08 %
Nextel	0.53 %
Enertrac	0.00 %
Site Total MPE %:	**20.29 %**

SPRINT Sector A Total:	3.78 %
SPRINT Sector B Total:	3.78 %
SPRINT Sector C Total:	3.78 %
Site Total:	20.29 %

SPRINT _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	437.55	120	1.21	850 MHz	567	0.21%
Sprint 850 MHz LTE	2	437.55	120	2.42	850 MHz	567	0.43%
Sprint 1900 MHz (PCS) CDMA	5	622.47	120	8.61	1900 MHz (PCS)	1000	0.86%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	120	8.61	1900 MHz (PCS)	1000	0.86%
Sprint 2500 MHz (BRS) LTE	8	639.78	120	14.16	2500 MHz (BRS)	1000	1.42%
						Total:	**3.78%**

Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	3.78 %
Sector B:	3.78 %
Sector C:	3.78 %
SPRINT Maximum Total (per sector):	3.78 %
Site Total:	20.29 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **20.29 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**142 ft Monopole**
ATC Site Name	:	**WSPT - South, CT**
ATC Site Number	:	**302511**
Engineering Number	:	**OAA713869_C3_01**
Proposed Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**Turkey Hill**
Carrier Site Number	:	**CT03XC336**
Site Location	:	**20 Post Office Lane** **Westport, CT 06880-6226** **41.123400,-73.313100**
County	:	**Fairfield**
Date	:	**November 2, 2017**
Max Usage	:	**86%**
Result	:	**Pass**

Prepared By:
Charles Cages, E.I.
TEP

Charles Cages

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER

11/02/2017

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 142 ft monopole to reflect the change in loading by Sprint Nextel.

Supporting Documents

Tower Drawings	EEI Drawing #GS50841, dated March 2, 1998
Foundation Drawing	Mapping by TEP Project #65218-72422, dated December 28, 2015
Geotechnical Report	MB&A Project #011105, dated July 17, 2001
Modifications	ATC Job #42046633, dated October 16, 2008 ATC Job #46844332/46993332, dated April 15, 2011

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	93 mph (3-Second Gust, V_{ASD}) / 120 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Spectral Response:	Ss = 0.22, S_1 = 0.07
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
136.0	140.0	3	Kathrein 742-218 / AP20-1940/045D/ADT/XP	Flush	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS
	136.0	3	RCU (Remote Control Unit)			
131.0	132.0	3	Ericsson RRUS A2 Module	Platform w/ Handrails	(12) 1 1/4" Coax (2) 0.65" 8 AWG 2C (1) 0.39" Fiber Trunk (1) 0.28" RG-6	AT&T Mobility
		3	Ericsson RRUS-11 (50 lbs.)			
		3	Ericsson RRUS 12 w/ Solar Shield			
	131.0	12	Powerwave 7020.00 Dual Band RET			
	128.0	12	Powerwave LGP21401			
		1	Raycap DC6-48-60-18-8F ("Squid")			
		6	Powerwave 7770.00			
		3	CCI HPA-65R-BUU-H6			
120.0	120.0	2	DragonWave Horizon Compact	Platform w/ Handrails	(6) 5/16" Coax (2) 1/2" Coax (1) 2" Conduit	Clearwire
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		2	DragonWave A-ANT-18G-2-C			
		3	Alcatel-Lucent 800MHz 2X50W RRh w/ Filter		(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz 4x45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVSPP18-C-A20			
111.0	111.0	9	48" x 8" Panel	Platform w/ Handrails	(12) 7/8" Coax (1) 1/2" Coax	
100.0	100.0	6	RFS FD9R6004/1C-3L	Platform w/ Handrails	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x40-AWS			
		3	Rymsa MGD3-800TX			
		3	Antel BXA-171063/12CF__2 FP			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70080/6CF__			
		3	Powerwave P65-16-XL-2			
90.0	90.0	4	RFS ATMAA1412D-1A20	Platform w/ Handrails	(14) 1 5/8" Coax (1) 1 1/4" Fiber	T-Mobile
		3	Ericsson RRUS 11 B12			
		4	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Andrew LNX-6515DS-VTM			
80.0	80.0	2	Diamond X50A	Stand-Offs	(2) 1/2" Coax	Senet

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
120.0	120.0	3	RFS RFS APXV9TM14-ALU-I20	-	-	Sprint Nextel
70.0	70.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
120.0	120.0	3	Alcatel-Lucent RRH2x50-08	Platform w/ Handrails	-	Sprint Nextel
		3	Commscope DT465B-2XR			
63.0	63.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	57%	Pass
Shaft	86%	Pass
Base Plate	44%	Pass
Flanges	33%	Pass
Reinforcement	78%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,733.2	45%
Axial (Kips)	49.7	14%
Shear (Kips)	42.0	20%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
120.0	Alcatel-Lucent RRH2x50-08	Sprint Nextel	1.246	1.257
	DragonWave A-ANT-18G-2-C	Clearwire		
	Commscope DT465B-2XR	Sprint Nextel		

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

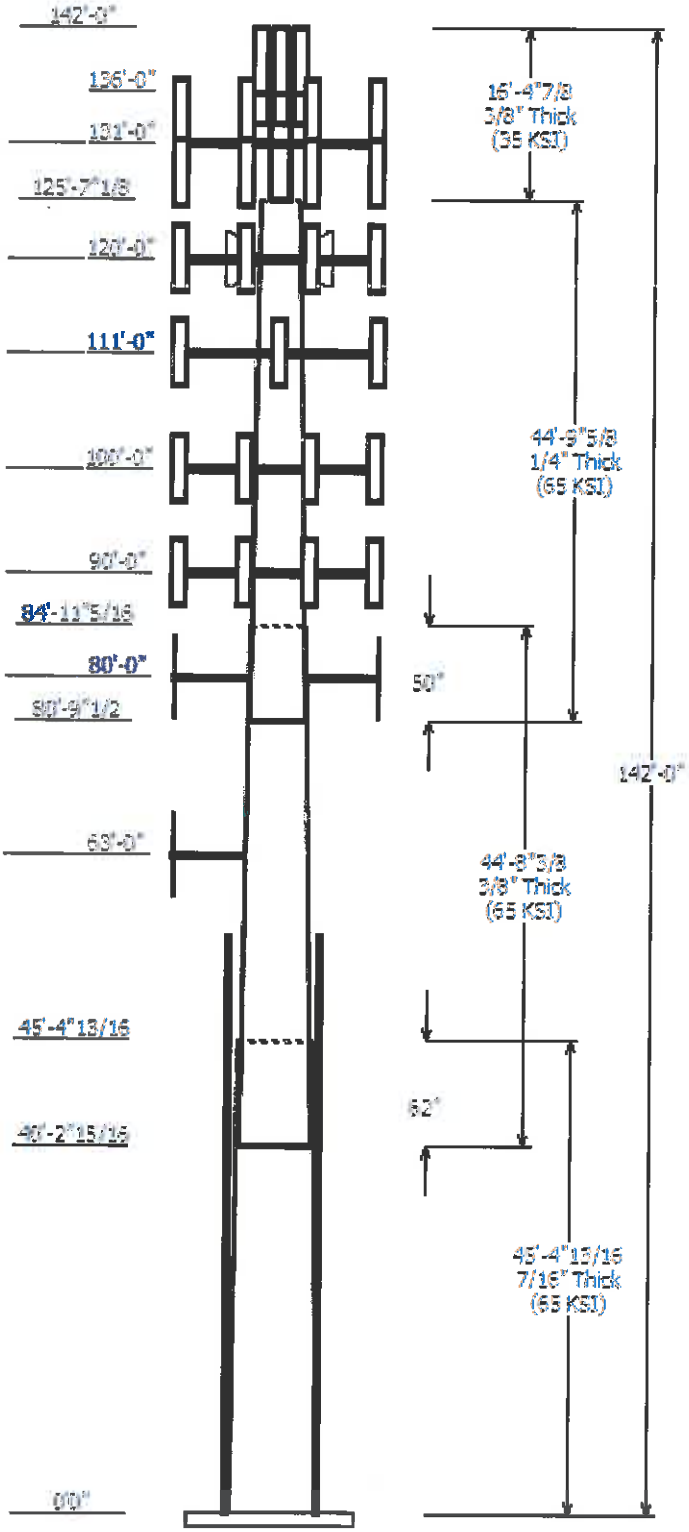
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Job Information

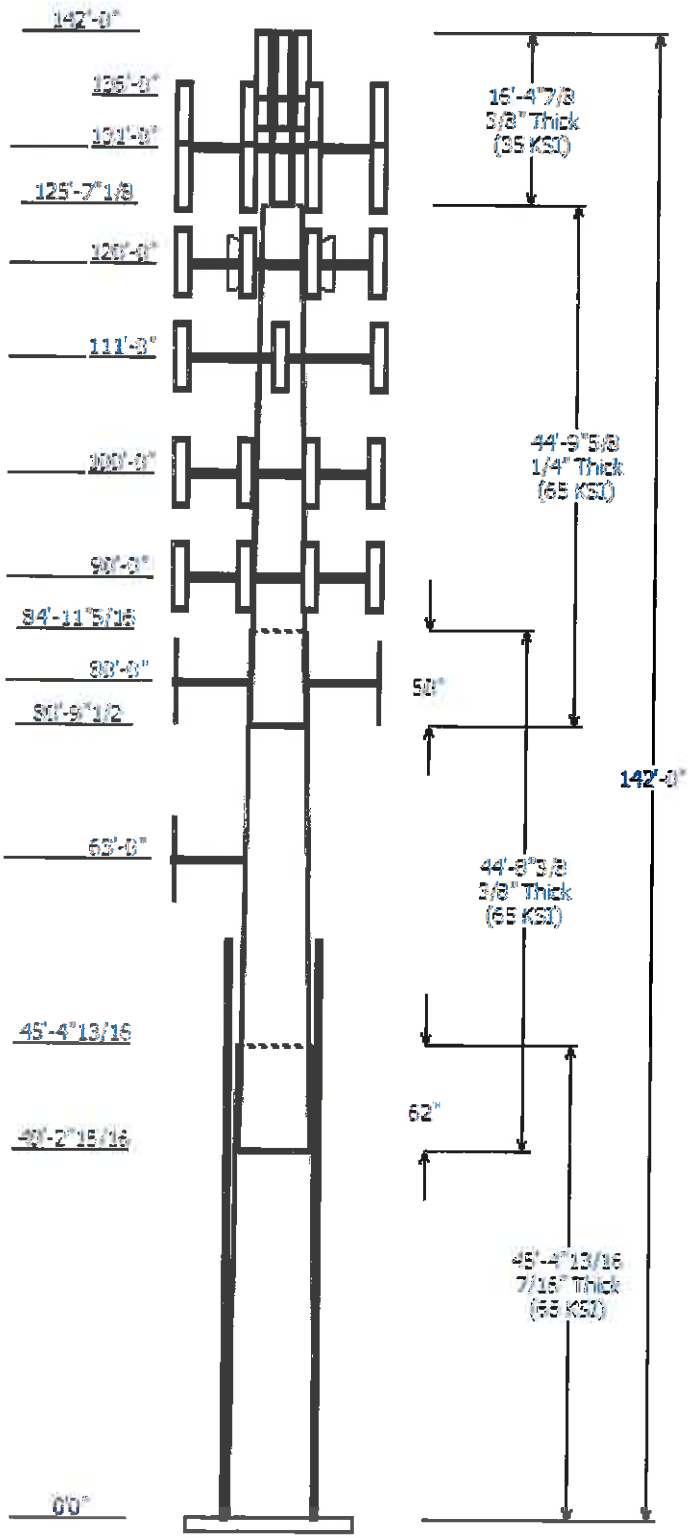
Pole :	302511	Code:	ANSI/TIA-222-G
Description :	142 ft EEI Monopole		
Client :	SPRINT NEXTEL	Struct Class :	II
Location :	WSPT - South, CT		
Shape :	12 Sides	Exposure :	C
Height :	142.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.212638 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	45.400	35.34	45.00	0.438		0.000	0.212600	65
2	44.700	27.68	37.19	0.375	Slip Joint	61.875	0.212600	65
3	44.800	19.54	29.07	0.250	Slip Joint	49.813	0.212600	65
4	16.407	10.75	10.75	0.375	Butt Joint	0.000	0.000000	35

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
136.000	136.000	3	RCU (Remote Control Unit)
136.000	140.000	3	Kathrein Scala 742-218 / AP20-
131.000	132.000	3	Ericsson RRUS A2 Module
131.000	128.000	3	CCI HPA-65R-BUU-H6
131.000	132.000	3	Ericsson RRUS 12 w/ Solar Shie
131.000	128.000	12	Powerwave Allgon LGP21401
131.000	128.000	1	Raycap DC6-48-60-18-8F
131.000	132.000	3	Ericsson RRUS-11 (50 lbs.)
131.000	131.000	12	Powerwave Allgon 7020.00
131.000	128.000	6	Powerwave Allgon 7770.00
131.000	131.000	1	Flat Platform w/ Handrails
120.000	120.000	3	Commscope DT465B-2XR
120.000	120.000	3	Alcatel-Lucent RRH2x50-08
120.000	120.000	3	Alcatel-Lucent TD-RRH8x20-25
120.000	120.000	3	Alcatel-Lucent 800 MHz 2X50W
120.000	120.000	3	Alcatel-Lucent 1900 MHz 4x45
120.000	120.000	3	RFS APXVSPP18-C-A20
120.000	120.000	3	Argus LLPX310R
120.000	120.000	2	DragonWave Horizon Compact
120.000	120.000	2	DragonWave A-ANT-18G-2-C
120.000	120.000	3	NextNet BTS-2500
120.000	120.000	1	Flat Platform w/ Handrails
111.000	111.000	1	Flat Platform w/ Handrails
111.000	111.000	9	48" x 8" Panel
100.000	100.000	3	Antel BXA-171063/12CF__2 FP
100.000	100.000	3	Antel BXA-70080/6CF__
100.000	100.000	1	RFS DB-T1-6Z-8AB-0Z
100.000	100.000	3	Alcatel-Lucent RRH2x40-AWS
100.000	100.000	6	RFS FD9R6004/1C-3L
100.000	100.000	3	Powerwave Allgon P65-16-XL-
100.000	100.000	3	Rymsa MGD3-800TX
100.000	100.000	1	Flat Platform w/ Handrails
90.000	90.000	3	Andrew LNX-6515DS-VTM
90.000	90.000	3	Ericsson RRUS 11 B12
90.000	90.000	3	Ericsson AIR 21, 1.3M, B4A B2P
90.000	90.000	4	Ericsson AIR 21, 1.3 M, B2A B4
90.000	90.000	4	RFS ATMAA1412D-1A20
90.000	90.000	1	Flat Platform w/ Handrails
80.000	80.000	2	Stand-Offs
80.000	80.000	2	Diamond X50A
63.000	63.000	1	Stand-Off
63.000	63.000	1	PCTEL GPS-TMG-HR-26N



Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	63.000	1/2" Coax	No
0.000	63.000	DYWIDAG	Yes
0.000	80.000	1/2" Coax	Yes
0.000	90.000	1 1/4" Fiber	No
0.000	90.000	1 5/8" Coax	Yes
0.000	100.0	1 5/8" Coax	No
0.000	100.0	1 5/8" Hybriflex	No
0.000	111.0	1/2" Coax	No
0.000	111.0	7/8" Coax	No
0.000	120.0	1 1/4" Hybriflex	No
0.000	120.0	1/2" Coax	Yes
0.000	120.0	2" Conduit	Yes
0.000	120.0	5/16" Coax	Yes
0.000	131.0	0.28" RG-6	No
0.000	131.0	0.39" Fiber Trunk	No
0.000	131.0	0.65" 8 AWG 2C	No
0.000	131.0	1 1/4" Coax	No
0.000	136.0	1 5/8" Coax	Yes
0.000	136.0	3/8" Coax	No

Load Cases

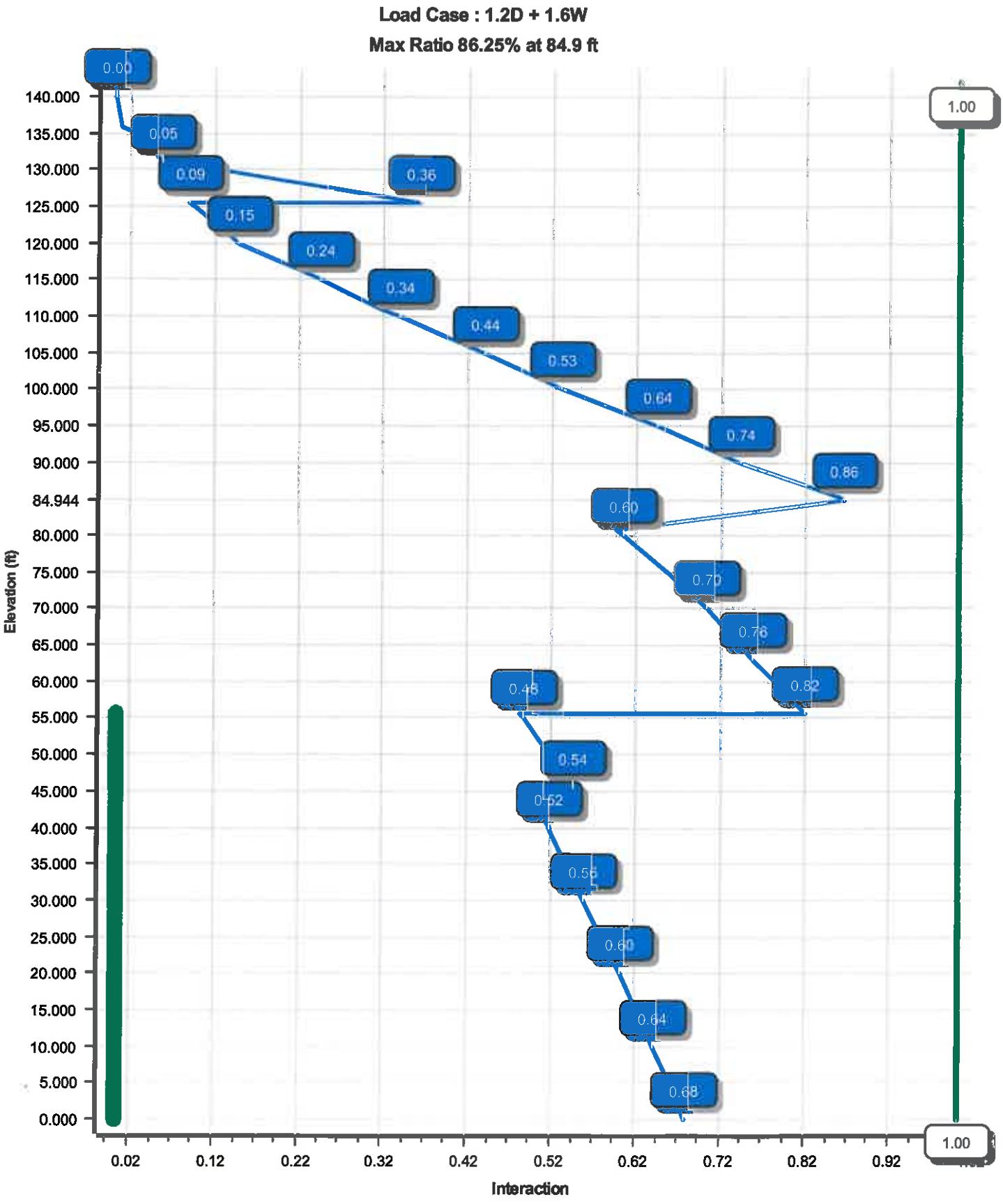
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3733.21	42.04	49.67
0.9D + 1.6W	3612.18	41.27	37.23
1.2D + 1.0Di + 1.0Wi	958.24	10.31	84.98
(1.2 + 0.2Sds) * DL + E ELFM	189.11	1.75	49.67
(1.2 + 0.2Sds) * DL + E EMAM	151.31	1.69	49.67
(0.9 - 0.2Sds) * DL + E ELFM	186.44	1.75	33.97
(0.9 - 0.2Sds) * DL + E EMAM	148.97	1.69	33.97
1.0D + 1.0W	945.26	10.75	41.46

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	120.00	19.724	1.642


Load Case : 1.2D + 1.6W
Max Ratio 86.25% at 84.9 ft
Elevation (ft)
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
84.944
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.00
0.05
0.09
0.15
0.24
0.34
0.36
0.44
0.53
0.64
0.74
0.86
0.60
0.70
0.76
0.82
0.46
0.54
0.52
0.56
0.60
0.64
0.68
1.00
1.00
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	**302511**	**Code: ANSI/TIA-222-G**	
Site Name:	**WSPT - South, CT**	**Engineering Number:OAA713869_C3_01**	**11/2/2017 9:03:28 AM**
Customer:	**SPRINT NEXTEL**		

Analysis Parameters

Location:	**FAIRFIELD County, CT**	**Height (ft):**	**142**
Code:	**ANSI/TIA-222-G**	**Base Diameter (in):**	**45.00**
Shape:	**12 Sides. Sect 4: Round**	**Top Diameter (in):**	**10.75**
Pole Type:	**Custom**	**Taper (in/ft) :**	**0.213**
Pole Manfacturer:	**EEI**	**Rotation (deg) :**	**0.00**

Ice & Wind Parameters

Structure Class:	**II**	**Design Wind Speed Without Ice:**	**93 mph**
Exposure Category:	**C**	**Design Wind Speed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Wind Speed:**	**60 mph**
Crest Height:	**0.0 ft**	**Design Ice Thickness:**	**0.75 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**2.17**				
T_L (sec):	**6**	**p:**	**1.3**	**C_s:**	**0.032**
S_s:	**0.221**	**S_1:**	**0.066**	**C_s Max:**	**0.032**
F_a:	**1.600**	**F_v:**	**2.400**	**C_s Min:**	**0.030**
S_{ds}:	**0.236**	**S_{d1}:**	**0.106**		

Load Cases

1.2D + 1.6W	**93 mph with No Ice**
0.9D + 1.6W	**93 mph with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi	**50 mph with 0.75 in Radial Ice**
(1.2 + 0.2Sds) * DL + E ELFM	**Seismic Equivalent Lateral Forces Method**
(1.2 + 0.2Sds) * DL + E EMAM	**Seismic Equivalent Modal Analysis Method**
(0.9 - 0.2Sds) * DL + E ELFM	**Seismic (Reduced DL) Equivalent Lateral Forces Method**
(0.9 - 0.2Sds) * DL + E EMAM	**Seismic (Reduced DL) Equivalent Modal Analysis Method**
1.0D + 1.0W	**Serviceability 60 mph**

Site Number: 302511 | Code: ANSI/TIA-222-G |

Site Name: WSPT - South, CT | Engineering Number:OAA713869_C3_01 | 11/2/2017 9:03:28 AM

Customer: SPRINT NEXTEL

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	45.400	0.4375	65		0.00	8,648	45.00	0.00	62.78	15912.1	25.42	102.86	35.34	45.40	49.18	7649.3	19.50	80.79	0.212638
2-12	44.700	0.3750	65	Slip	61.88	5,889	37.19	40.24	44.46	7692.0	24.43	99.18	27.68	84.94	32.98	3140.3	17.64	73.83	0.212638
3-12	44.800	0.2500	65	Slip	49.81	2,952	29.07	80.79	23.20	2459.7	29.01	116.28	19.54	125.59	15.53	738.0	18.80	78.18	0.212638
4-R	16.407	0.3750	35	Butt	0.00	682	10.75	125.59	12.22	164.6	0.00	28.67	10.75	142.00	12.22	164.6	0.00	28.67	0.000000
				Shaft Weight		18,172													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
136.00	Kathrein Scala 742-218 /	3	22.50	3.850	0.63	110.51	4.762	0.63	0.000	4.000
136.00	RCU (Remote Control Unit)	3	1.00	0.160	0.50	11.01	0.359	0.50	0.000	0.000
131.00	CCI HPA-65R-BUU-H6	3	51.00	9.660	0.69	295.12	11.006	0.69	0.000	-3.000
131.00	Ericsson RRUS 12 w/ Solar	3	57.90	3.150	0.67	167.27	3.853	0.67	0.000	1.000
131.00	Ericsson RRUS A2 Module	3	21.20	1.600	0.50	66.47	2.123	0.50	0.000	1.000
131.00	Ericsson RRUS-11 (50 lbs.)	3	50.00	2.570	0.67	129.98	3.205	0.67	0.000	1.000
131.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,404.39	63.124	1.00	0.000	0.000
131.00	Powerwave Allgon 7020.00	12	2.20	0.400	0.50	17.61	0.619	0.50	0.000	0.000
131.00	Powerwave Allgon 7770.00	6	35.00	5.510	0.65	167.80	6.544	0.65	0.000	-3.000
131.00	Powerwave Allgon LGP21401	12	14.10	1.100	0.50	47.10	1.556	0.50	0.000	-3.000
131.00	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	123.18	2.843	1.00	0.000	-3.000
120.00	Alcatel-Lucent 1900 MHz	3	60.00	2.320	0.67	152.37	2.975	0.67	0.000	0.000
120.00	Alcatel-Lucent 800 MHz	3	64.00	2.060	0.67	152.13	2.640	0.67	0.000	0.000
120.00	Alcatel-Lucent RRH2x50-08	3	52.90	1.700	0.50	122.29	2.235	0.50	0.000	0.000
120.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.050	0.67	159.37	5.675	0.67	0.000	0.000
120.00	Argus LLPX310R	3	28.60	4.290	0.63	133.23	5.166	0.63	0.000	0.000
120.00	Commscope DT465B-2XR	3	58.00	9.100	0.69	281.63	10.403	0.69	0.000	0.000
120.00	DragonWave A-ANT-18G-2-C	2	27.10	4.690	1.00	122.53	5.936	1.00	0.000	0.000
120.00	DragonWave Horizon	2	10.60	0.430	0.50	39.85	0.653	0.50	0.000	0.000
120.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,389.73	62.908	1.00	0.000	0.000
120.00	NextNet BTS-2500	3	35.00	1.820	0.50	91.05	2.383	0.50	0.000	0.000
120.00	RFS APXVSPP18-C-A20	3	57.00	8.020	0.69	250.96	9.281	0.69	0.000	0.000
111.00	48" x 8" Panel	9	20.00	3.610	0.73	148.46	6.020	0.73	0.000	0.000
111.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,381.22	62.783	1.00	0.000	0.000
100.00	Alcatel-Lucent RRH2x40-AWS	3	44.00	2.160	0.67	113.66	2.774	0.67	0.000	0.000
100.00	Antel BXA-171063/12CF__2	3	15.00	4.790	0.72	128.79	5.957	0.72	0.000	0.000
100.00	Antel BXA-70080/6CF__	3	18.00	5.840	0.72	161.39	7.030	0.72	0.000	0.000
100.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,364.04	62.529	1.00	0.000	0.000
100.00	Powerwave Allgon P65-16-	3	33.00	8.130	0.65	205.57	9.371	0.65	0.000	0.000
100.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	4.800	0.67	175.07	5.634	0.67	0.000	0.000
100.00	RFS FD9R6004/1C-3L	6	3.10	0.370	0.50	15.39	0.568	0.50	0.000	0.000
100.00	Rymsa MGD3-800TX	3	15.40	3.340	0.69	97.74	4.235	0.69	0.000	0.000
90.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.70	298.51	13.005	0.70	0.000	0.000
90.00	Ericsson AIR 21, 1.3 M, B2A	4	83.00	6.050	0.71	241.54	7.087	0.71	0.000	0.000
90.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.090	0.70	240.00	7.132	0.70	0.000	0.000
90.00	Ericsson RRUS 11 B12	3	50.70	2.790	0.67	131.59	3.431	0.67	0.000	0.000
90.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,349.36	62.312	1.00	0.000	0.000
90.00	RFS ATMAA1412D-1A20	4	13.00	1.000	0.50	45.68	1.407	0.50	0.000	0.000
80.00	Diamond X50A	2	2.30	1.120	1.00	56.95	2.427	1.00	0.000	0.000
80.00	Stand-Offs	2	50.00	3.000	1.00	72.87	4.470	1.00	0.000	0.000
63.00	PCTEL GPS-TMG-HR-26N	1	0.60	0.090	1.00	9.79	0.255	1.00	0.000	0.000
63.00	Stand-Off	1	30.00	1.000	1.00	43.41	1.479	1.00	0.000	0.000
	Totals	136	14088.60			32,687.30			Number of Loadings :	42

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	136.00	6	1 5/8" Coax	1.98	0.82	N	1.98	Y	Metro PCS
0.00	136.00	1	3/8" Coax	0.44	0.08	N	0.44	N	Metro PCS
0.00	131.00	1	0.28" RG-6	0.28	0.03	N	0.00	N	AT&T Mobility
0.00	131.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	131.00	2	0.65" 8 AWG 2C	0.65	0.31	N	0.00	N	AT&T Mobility
0.00	131.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	AT&T Mobility
0.00	120.00	4	1 1/4" Hybriflex	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	120.00	2	1/2" Coax	0.63	0.15	N	0.00	Y	Clearwire
0.00	120.00	1	2" Condult	2.38	3.65	N	2.38	Y	Clearwire
0.00	120.00	6	5/16" Coax	0.31	0.05	N	0.00	Y	Clearwire
0.00	111.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel
0.00	111.00	12	7/8" Coax	1.09	0.33	N	0.00	N	Sprint Nextel
0.00	100.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	100.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon
0.00	90.00	1	1 1/4" Fiber	1.25	1.05	N	1.25	N	T-Mobile
0.00	90.00	14	1 5/8" Coax	1.98	0.82	N	3.96	Y	T-Mobile
0.00	80.00	2	1/2" Coax	0.63	0.15	N	0.63	Y	Senet, Inc.
0.00	63.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel
0.00	63.00	4	DYWIDAG	4.00	0.00	N	4.00	Y	--

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections			Connectors	Continuation?
						Description	Spacing (in)	Len (in)		
0.00	55.68	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	45.000	62.777	15,912.1	25.42	102.86	77.0	683.1	0.0	0.0	19.64	6,615	0.0
5.00		0.4375	43.937	61.280	14,800.2	24.77	100.43	77.7	650.7	0.0	1,055.3	19.64	6,347	334.0
10.00		0.4375	42.874	59.782	13,741.3	24.11	98.00	78.4	619.2	0.0	1,029.9	19.64	6,084	334.0
15.00		0.4375	41.810	58.284	12,734.1	23.46	95.57	79.1	588.4	0.0	1,004.4	19.64	5,827	334.0
20.00		0.4375	40.747	56.786	11,777.4	22.81	93.14	79.8	558.4	0.0	978.9	19.64	5,576	334.0
25.00		0.4375	39.684	55.289	10,869.9	22.16	90.71	80.5	529.2	0.0	953.4	19.64	5,330	334.0
30.00		0.4375	38.621	53.791	10,010.2	21.51	88.28	81.3	500.7	0.0	927.9	19.64	5,090	334.0
35.00		0.4375	37.558	52.293	9,197.1	20.86	85.85	81.9	473.1	0.0	902.4	19.64	4,855	334.0
40.00		0.4375	36.494	50.795	8,429.2	20.21	83.42	81.9	446.2	0.0	877.0	19.64	4,626	334.0
40.24	Bot - Section 2	0.4375	36.443	50.722	8,392.9	20.18	83.30	81.9	444.9	0.0	42.1	19.64	4,615	16.3
45.00		0.4375	35.431	49.297	7,705.4	19.56	80.99	81.9	420.1	0.0	1,519.0	19.64	4,559	317.7
45.40	Top - Section 1	0.3750	36.096	43.133	7,025.1	23.65	96.26	78.9	376.0	0.0	125.8	19.64	4,541	26.7
50.00		0.3750	35.118	41.952	6,463.7	22.95	93.65	79.7	355.6	0.0	665.9	19.64	4,337	307.3
55.00		0.3750	34.055	40.668	5,888.2	22.19	90.81	80.5	334.0	0.0	702.9	19.64	4,121	334.0
55.68	Reinf. Top	0.3750	33.911	40.495	5,813.1	22.09	90.43	80.6	331.2	0.0	93.5	19.64	4,092	45.2
60.00		0.3750	32.992	39.385	5,348.0	21.43	87.98	81.3	313.2	0.0	587.5			
63.00		0.3750	32.354	38.614	5,040.3	20.97	86.28	81.8	301.0	0.0	398.1			
65.00		0.3750	31.929	38.101	4,841.9	20.67	85.14	81.9	293.0	0.0	261.0			
70.00		0.3750	30.865	36.817	4,368.8	19.91	82.31	81.9	273.4	0.0	637.3			
75.00		0.3750	29.802	35.533	3,927.5	19.15	79.47	81.9	254.6	0.0	615.5			
80.00		0.3750	28.739	34.249	3,517.0	18.39	76.64	81.9	236.4	0.0	593.6			
80.79	Bot - Section 3	0.3750	28.570	34.046	3,454.7	18.27	76.19	81.9	233.6	0.0	92.1			
84.94	Top - Section 2	0.2500	28.188	22.490	2,240.5	28.07	112.75	74.1	153.6	0.0	796.1			
85.00		0.2500	28.176	22.480	2,237.7	28.06	112.70	74.1	153.4	0.0	4.3			
90.00		0.2500	27.113	21.624	1,991.7	26.92	108.45	75.4	141.9	0.0	375.2			
95.00		0.2500	26.049	20.768	1,764.4	25.78	104.20	76.6	130.9	0.0	360.6			
100.0		0.2500	24.986	19.913	1,555.2	24.64	99.94	77.8	120.2	0.0	346.1			
105.0		0.2500	23.923	19.057	1,363.1	23.50	95.69	79.1	110.1	0.0	331.5			
110.0		0.2500	22.860	18.201	1,187.6	22.36	91.44	80.3	100.4	0.0	316.9			
111.0		0.2500	22.647	18.030	1,154.4	22.13	90.59	80.6	98.5	0.0	61.6			
115.0		0.2500	21.797	17.345	1,027.8	21.22	87.19	81.6	91.1	0.0	240.7			
120.0		0.2500	20.733	16.489	883.1	20.08	82.93	81.9	82.3	0.0	287.8			
125.0		0.2500	19.670	15.633	752.6	18.94	78.68	81.9	73.9	0.0	273.3			
125.5	Top - Section 3	0.2500	19.544	15.532	738.0	18.80	78.18	81.9	72.9	0.0	31.4			
125.5	Bot - Section 4	0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4				
130.0		0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4	183.3			
131.0		0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4	41.6			
135.0		0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4	166.4			
136.0		0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4	41.6			
140.0		0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4	166.4			
142.0		0.3750	10.750	12.223	164.6	0.00	28.67	35.0	30.6	40.4	83.2			
											18,171.7			3,719.2

Load Case: 1.2D + 1.6W — 93 mph with No Ice — 25 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		362.2	0.0					0.0	0.0	362.2	0.0	0.0	0.0
5.00		715.7	1,266.4					203.8	699.3	919.4	1,965.7	0.0	0.0
10.00		698.4	1,235.8					203.8	699.3	902.1	1,935.1	0.0	0.0
15.00		691.7	1,205.3					203.8	699.3	895.4	1,904.5	0.0	0.0
20.00		703.1	1,174.7					210.2	699.3	913.3	1,873.9	0.0	0.0
25.00		718.0	1,144.1					221.6	699.3	939.7	1,843.4	0.0	0.0
30.00		726.4	1,113.5					231.2	699.3	957.5	1,812.8	0.0	0.0
35.00		729.8	1,082.9					239.5	699.3	969.3	1,782.2	0.0	0.0
40.00		383.0	1,052.4					246.8	699.3	629.8	1,751.6	0.0	0.0
40.24	Bot - Section 2	371.4	50.5					12.2	34.1	383.6	84.6	0.0	0.0
45.00		383.3	1,822.8					241.2	665.2	624.5	2,488.0	0.0	0.0
45.40	Top - Section 1	369.6	151.0					20.5	55.9	390.1	206.9	0.0	0.0
50.00		706.1	799.1					238.2	643.3	944.4	1,442.4	0.0	0.0
55.00		415.5	843.4					262.8	699.3	678.2	1,542.7	0.0	0.0
55.68	Reinf. Top	361.8	112.2					35.9	94.7	397.7	206.9	0.0	0.0
60.00		527.1	705.0					230.4	258.1	757.6	963.1	0.0	0.0
63.00	Appertunance(s)	356.5	477.7	46.3	0.0	0.0	36.7	161.3	179.1	564.2	693.5	0.0	0.0
65.00		492.4	313.3					75.4	119.0	567.8	432.3	0.0	0.0
70.00		694.3	764.8					190.1	297.6	884.4	1,062.4	0.0	0.0
75.00		680.2	738.6					192.4	297.6	872.5	1,036.1	0.0	0.0
80.00	Appertunance(s)	389.0	712.4	368.4	0.0	0.0	125.5	194.5	297.6	951.9	1,135.5	0.0	0.0
80.79	Bot - Section 3	329.7	110.5					28.8	46.9	358.5	157.4	0.0	0.0
84.94	Top - Section 2	280.8	955.3					151.5	245.6	432.3	1,200.8	0.0	0.0
85.00		329.7	5.2					2.1	3.3	331.7	8.5	0.0	0.0
90.00	Appertunance(s)	636.5	450.2	4,059.6	0.0	0.0	3,521.4	184.1	295.8	4,880.2	4,267.4	0.0	0.0
95.00		617.1	432.8					0.0	220.6	617.1	653.4	0.0	0.0
100.00	Appertunance(s)	608.8	415.3	3,898.1	0.0	0.0	2,926.6	0.0	220.6	4,506.9	3,562.4	0.0	0.0
105.00		599.9	397.8					0.0	153.8	599.9	551.6	0.0	0.0
110.00		356.6	380.3					0.0	153.8	356.6	534.1	0.0	0.0
111.00	Appertunance(s)	292.8	74.0	2,882.7	0.0	0.0	2,616.0	0.0	30.8	3,175.5	2,720.7	0.0	0.0
115.00		521.5	288.9					0.0	103.3	521.5	392.2	0.0	0.0
120.00	Appertunance(s)	500.8	345.4	4,824.2	0.0	0.0	4,022.3	0.0	129.1	5,325.0	4,496.8	0.0	0.0
125.00		237.7	327.9					0.0	79.6	237.7	407.5	0.0	0.0
125.59	Top - Section 3	97.8	37.7					0.0	9.4	97.8	47.1	0.0	0.0
130.00		89.9	220.0					0.0	70.2	89.9	290.1	0.0	0.0
131.00	Appertunance(s)	83.7	49.9	4,537.1	0.0	-4,964.0	3,573.2	0.0	15.9	4,620.7	3,639.1	0.0	0.0
135.00		83.8	199.6					0.0	24.0	83.8	223.6	0.0	0.0
136.00	Appertunance(s)	70.7	49.9	378.0	0.0	1,463.8	84.6	0.0	6.0	448.7	140.5	0.0	0.0
140.00		81.0	199.6					0.0	0.0	81.0	199.6	0.0	0.0
142.00		27.1	99.8					0.0	0.0	27.1	99.8	0.0	0.0
								Totals:		42,297.2	49,756.3	0.00	0.00

Site Number: 302511
Site Name: WSPT - South, CT
Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G
Engineering Number:OAA713869_C3_01

11/2/2017 9:03:31 AM

Load Case: 1.2D + 1.6W

93 mph with No Ice

25 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.60

Wind Importance Factor 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.67	-42.04	0.00	-3,733.21	0.00	3,733.21	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.678
5.00	-47.54	-41.30	0.00	-3,523.03	0.00	3,523.03	4,285.51	2,142.75	7,679.11	3,792.42	0.12	-0.23	0.659
10.00	-45.45	-40.57	0.00	-3,316.51	0.00	3,316.51	4,218.97	2,109.49	7,373.27	3,641.38	0.49	-0.46	0.640
15.00	-43.39	-39.83	0.00	-3,113.65	0.00	3,113.65	4,150.52	2,075.26	7,070.06	3,491.64	1.09	-0.69	0.620
20.00	-41.37	-39.06	0.00	-2,914.48	0.00	2,914.48	4,080.16	2,040.08	6,769.73	3,343.32	1.94	-0.92	0.600
25.00	-39.39	-38.25	0.00	-2,719.17	0.00	2,719.17	4,007.88	2,003.94	6,472.54	3,196.54	3.03	-1.15	0.578
30.00	-37.45	-37.40	0.00	-2,527.94	0.00	2,527.94	3,933.69	1,966.85	6,178.73	3,051.44	4.36	-1.38	0.557
35.00	-35.55	-36.53	0.00	-2,340.94	0.00	2,340.94	3,854.52	1,927.26	5,883.88	2,905.83	5.93	-1.61	0.534
40.00	-33.75	-35.91	0.00	-2,158.30	0.00	2,158.30	3,744.12	1,872.06	5,549.75	2,740.81	7.74	-1.84	0.515
40.24	-33.60	-35.60	0.00	-2,149.55	0.00	2,149.55	3,738.74	1,869.37	5,533.71	2,732.89	7.84	-1.85	0.514
45.00	-31.07	-34.95	0.00	-1,980.25	0.00	1,980.25	3,633.72	1,816.86	5,225.39	2,580.62	9.79	-2.07	0.489
45.40	-30.81	-34.61	0.00	-1,966.27	0.00	1,966.27	3,063.79	1,531.89	4,506.32	2,225.50	9.97	-2.08	0.544
50.00	-29.28	-33.72	0.00	-1,807.06	0.00	1,807.06	3,008.67	1,504.34	4,302.82	2,125.00	12.08	-2.29	0.516
55.00	-27.69	-33.04	0.00	-1,638.44	0.00	1,638.44	2,946.93	1,473.46	4,084.17	2,017.02	14.59	-2.51	0.485
55.68	-27.44	-32.69	0.00	-1,616.07	0.00	1,616.07	2,938.42	1,469.21	4,054.78	2,002.51	14.95	-2.54	0.480
55.68	-27.44	-32.69	0.00	-1,616.07	0.00	1,616.07	2,938.42	1,469.21	4,054.78	2,002.51	14.95	-2.54	0.817
60.00	-26.39	-31.99	0.00	-1,474.76	0.00	1,474.76	2,883.27	1,441.64	3,868.42	1,910.47	17.35	-2.74	0.782
63.00	-25.62	-31.47	0.00	-1,378.80	0.00	1,378.80	2,844.16	1,422.08	3,740.46	1,847.27	19.14	-2.96	0.756
65.00	-25.08	-31.00	0.00	-1,315.86	0.00	1,315.86	2,808.42	1,404.21	3,643.77	1,799.52	20.41	-3.12	0.741
70.00	-23.88	-30.20	0.00	-1,160.87	0.00	1,160.87	2,713.79	1,356.89	3,400.96	1,679.61	23.87	-3.48	0.700
75.00	-22.73	-29.40	0.00	-1,009.86	0.00	1,009.86	2,619.16	1,309.58	3,166.52	1,563.83	27.71	-3.83	0.655
80.00	-21.57	-28.45	0.00	-862.84	0.00	862.84	2,524.53	1,262.26	2,940.46	1,452.18	31.90	-4.17	0.603
80.79	-21.35	-28.14	0.00	-840.29	0.00	840.29	2,509.53	1,254.76	2,905.39	1,434.86	32.60	-4.23	0.595
84.94	-20.13	-27.66	0.00	-723.48	0.00	723.48	1,499.90	749.95	1,728.05	853.42	36.39	-4.49	0.863
85.00	-20.04	-27.41	0.00	-721.92	0.00	721.92	1,499.54	749.77	1,726.89	852.85	36.45	-4.50	0.861
90.00	-16.03	-22.31	0.00	-584.87	0.00	584.87	1,466.64	733.32	1,624.12	802.09	41.38	-4.91	0.741
95.00	-15.30	-21.73	0.00	-473.35	0.00	473.35	1,431.82	715.91	1,522.23	751.77	46.73	-5.29	0.641
100.00	-12.09	-16.97	0.00	-364.70	0.00	364.70	1,395.09	697.54	1,421.47	702.01	52.45	-5.63	0.529
105.00	-11.53	-16.37	0.00	-279.85	0.00	279.85	1,356.44	678.22	1,322.10	652.93	58.50	-5.92	0.438
110.00	-10.99	-15.99	0.00	-197.99	0.00	197.99	1,315.88	657.94	1,224.36	604.67	64.83	-6.17	0.336
111.00	-8.61	-12.55	0.00	-182.00	0.00	182.00	1,307.54	653.77	1,205.03	595.12	66.13	-6.22	0.313
115.00	-8.25	-12.01	0.00	-131.78	0.00	131.78	1,273.40	636.70	1,128.51	557.33	71.40	-6.37	0.243
120.00	-4.36	-6.23	0.00	-71.71	0.00	71.71	1,215.41	607.71	1,023.37	505.40	78.14	-6.51	0.146
125.00	-3.98	-5.95	0.00	-40.58	0.00	40.58	1,152.33	576.16	919.28	454.00	85.00	-6.60	0.093
125.59	-3.94	-5.85	0.00	-37.06	0.00	37.06	1,144.85	572.43	907.31	448.09	85.82	-6.61	0.086
125.59	-3.94	-5.85	0.00	-37.06	0.00	37.06	385.02	192.51	160.54	106.00	85.82	-6.61	0.361
130.00	-3.66	-5.72	0.00	-11.29	0.00	11.29	385.02	192.51	160.54	106.00	91.93	-6.65	0.117
131.00	-0.58	-0.71	0.00	-5.57	0.00	5.57	385.02	192.51	160.54	106.00	93.33	-6.67	0.054
135.00	-0.37	-0.60	0.00	-2.71	0.00	2.71	385.02	192.51	160.54	106.00	98.91	-6.70	0.027
136.00	-0.28	-0.14	0.00	-0.65	0.00	0.65	385.02	192.51	160.54	106.00	100.31	-6.70	0.007
140.00	-0.10	-0.04	0.00	-0.08	0.00	0.08	385.02	192.51	160.54	106.00	105.92	-6.70	0.001
142.00	0.00	-0.03	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	108.72	-6.70	0.000

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 25 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		362.2	0.0					0.0	0.0	362.2	0.0	0.0	0.0
5.00		715.7	949.8					203.8	524.4	919.4	1,474.3	0.0	0.0
10.00		698.4	926.9					203.8	524.4	902.1	1,451.3	0.0	0.0
15.00		691.7	903.9					203.8	524.4	895.4	1,428.4	0.0	0.0
20.00		703.1	881.0					210.2	524.4	913.3	1,405.5	0.0	0.0
25.00		718.0	858.1					221.6	524.4	939.7	1,382.5	0.0	0.0
30.00		726.4	835.1					231.2	524.4	957.5	1,359.6	0.0	0.0
35.00		729.8	812.2					239.5	524.4	969.3	1,336.7	0.0	0.0
40.00		383.0	789.3					246.8	524.4	629.8	1,313.7	0.0	0.0
40.24	Bot - Section 2	371.4	37.9					12.2	25.6	383.6	63.5	0.0	0.0
45.00		383.3	1,367.1					241.2	498.9	624.5	1,866.0	0.0	0.0
45.40	Top - Section 1	369.6	113.2					20.5	42.0	390.1	155.2	0.0	0.0
50.00		706.1	599.3					238.2	482.5	944.4	1,081.8	0.0	0.0
55.00		415.5	632.6					262.8	524.4	678.2	1,157.0	0.0	0.0
55.68	Reinf. Top	361.8	84.1					35.9	71.0	397.7	155.1	0.0	0.0
60.00		527.1	528.8					230.4	193.5	757.6	722.3	0.0	0.0
63.00	Appertunance(s)	356.5	358.3	46.3	0.0	0.0	27.5	161.3	134.3	564.2	520.2	0.0	0.0
65.00		492.4	234.9					75.4	89.3	567.8	324.2	0.0	0.0
70.00		694.3	573.6					190.1	223.2	884.4	796.8	0.0	0.0
75.00		680.2	553.9					192.4	223.2	872.5	777.1	0.0	0.0
80.00	Appertunance(s)	389.0	534.3	368.4	0.0	0.0	94.1	194.5	223.2	951.9	851.6	0.0	0.0
80.79	Bot - Section 3	329.7	82.9					28.8	35.2	358.5	118.1	0.0	0.0
84.94	Top - Section 2	280.8	716.5					151.5	184.2	432.3	900.6	0.0	0.0
85.00		329.7	3.9					2.1	2.5	331.7	6.4	0.0	0.0
90.00	Appertunance(s)	590.2	337.7	4,059.6	0.0	0.0	2,641.0	184.1	221.8	4,833.8	3,200.6	0.0	0.0
95.00		520.7	324.6					0.0	165.4	520.7	490.0	0.0	0.0
100.00	Appertunance(s)	504.9	311.5	3,898.1	0.0	0.0	2,194.9	0.0	165.4	4,403.0	2,671.8	0.0	0.0
105.00		488.4	298.4					0.0	115.3	488.4	413.7	0.0	0.0
110.00		287.0	285.3					0.0	115.3	287.0	400.6	0.0	0.0
111.00	Appertunance(s)	231.3	55.5	2,882.7	0.0	0.0	1,962.0	0.0	23.1	3,114.0	2,040.5	0.0	0.0
115.00		406.6	216.7					0.0	77.5	406.6	294.1	0.0	0.0
120.00	Appertunance(s)	435.4	259.0	4,824.2	0.0	0.0	3,016.7	0.0	96.8	5,259.6	3,372.6	0.0	0.0
125.00		237.7	245.9					0.0	59.7	237.7	305.6	0.0	0.0
125.59	Top - Section 3	83.1	28.3					0.0	7.1	83.1	35.4	0.0	0.0
130.00		71.8	165.0					0.0	52.6	71.8	217.6	0.0	0.0
131.00	Appertunance(s)	66.8	37.4	4,537.1	0.0	-4,964.0	2,679.9	0.0	11.9	4,603.9	2,729.3	0.0	0.0
135.00		66.9	149.7					0.0	18.0	66.9	167.7	0.0	0.0
136.00	Appertunance(s)	67.3	37.4	378.0	0.0	1,463.8	63.4	0.0	4.5	445.3	105.4	0.0	0.0
140.00		81.0	149.7					0.0	0.0	81.0	149.7	0.0	0.0
142.00		27.1	74.9					0.0	0.0	27.1	74.9	0.0	0.0
								Totals:		41,557.7	37,317.2	0.00	0.00

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 25 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60
Wind Importance Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.23	-41.27	0.00	-3,612.18	0.00	3,612.18	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.654
5.00	-35.61	-40.49	0.00	-3,405.83	0.00	3,405.83	4,285.51	2,142.75	7,679.11	3,792.42	0.12	-0.22	0.635
10.00	-34.01	-39.71	0.00	-3,203.41	0.00	3,203.41	4,218.97	2,109.49	7,373.27	3,641.38	0.47	-0.44	0.616
15.00	-32.44	-38.92	0.00	-3,004.88	0.00	3,004.88	4,150.52	2,075.26	7,070.06	3,491.64	1.06	-0.67	0.597
20.00	-30.89	-38.11	0.00	-2,810.26	0.00	2,810.26	4,080.16	2,040.08	6,769.73	3,343.32	1.88	-0.89	0.576
25.00	-29.38	-37.26	0.00	-2,619.70	0.00	2,619.70	4,007.88	2,003.94	6,472.54	3,196.54	2.93	-1.11	0.556
30.00	-27.91	-36.38	0.00	-2,433.39	0.00	2,433.39	3,933.69	1,966.85	6,178.73	3,051.44	4.21	-1.33	0.534
35.00	-26.46	-35.48	0.00	-2,251.46	0.00	2,251.46	3,854.52	1,927.26	5,883.88	2,905.83	5.73	-1.55	0.512
40.00	-25.09	-34.87	0.00	-2,074.05	0.00	2,074.05	3,744.12	1,872.06	5,549.75	2,740.81	7.48	-1.77	0.494
40.24	-24.98	-34.53	0.00	-2,065.55	0.00	2,065.55	3,738.74	1,869.37	5,533.71	2,732.89	7.57	-1.78	0.493
45.00	-23.07	-33.89	0.00	-1,901.33	0.00	1,901.33	3,633.72	1,816.86	5,225.39	2,580.62	9.45	-1.99	0.468
45.40	-22.86	-33.53	0.00	-1,887.77	0.00	1,887.77	3,063.79	1,531.89	4,506.32	2,225.50	9.62	-2.01	0.521
50.00	-21.70	-32.63	0.00	-1,733.51	0.00	1,733.51	3,008.67	1,504.34	4,302.82	2,125.00	11.65	-2.20	0.494
55.00	-20.50	-31.95	0.00	-1,570.37	0.00	1,570.37	2,946.93	1,473.46	4,084.17	2,017.02	14.08	-2.42	0.463
55.68	-20.30	-31.58	0.00	-1,548.74	0.00	1,548.74	2,938.42	1,469.21	4,054.78	2,002.51	14.42	-2.45	0.459
55.68	-20.30	-31.58	0.00	-1,548.74	0.00	1,548.74	2,938.42	1,469.21	4,054.78	2,002.51	14.42	-2.45	0.781
60.00	-19.51	-30.86	0.00	-1,412.21	0.00	1,412.21	2,883.27	1,441.64	3,868.42	1,910.47	16.73	-2.63	0.746
63.00	-18.92	-30.33	0.00	-1,319.62	0.00	1,319.62	2,844.16	1,422.08	3,740.46	1,847.27	18.45	-2.85	0.721
65.00	-18.49	-29.83	0.00	-1,258.95	0.00	1,258.95	2,808.42	1,404.21	3,643.77	1,799.52	19.68	-3.00	0.707
70.00	-17.57	-29.01	0.00	-1,109.79	0.00	1,109.79	2,713.79	1,356.89	3,400.96	1,679.61	23.00	-3.35	0.668
75.00	-16.69	-28.19	0.00	-964.74	0.00	964.74	2,619.16	1,309.58	3,166.52	1,563.83	26.69	-3.68	0.624
80.00	-15.82	-27.23	0.00	-823.80	0.00	823.80	2,524.53	1,262.26	2,940.46	1,452.18	30.72	-4.01	0.574
80.79	-15.65	-26.91	0.00	-802.22	0.00	802.22	2,509.53	1,254.76	2,905.39	1,434.86	31.39	-4.06	0.566
84.94	-14.73	-26.45	0.00	-690.51	0.00	690.51	1,499.90	749.95	1,728.05	853.42	35.03	-4.31	0.820
85.00	-14.65	-26.17	0.00	-689.03	0.00	689.03	1,499.54	749.77	1,726.89	852.85	35.08	-4.32	0.819
90.00	-11.70	-21.17	0.00	-558.19	0.00	558.19	1,466.64	733.32	1,624.12	802.09	39.82	-4.71	0.705
95.00	-11.13	-20.68	0.00	-452.32	0.00	452.32	1,431.82	715.91	1,522.23	751.77	44.95	-5.08	0.610
100.00	-8.79	-16.10	0.00	-348.93	0.00	348.93	1,395.09	697.54	1,421.47	702.01	50.44	-5.40	0.504
105.00	-8.36	-15.61	0.00	-268.44	0.00	268.44	1,356.44	678.22	1,322.10	652.93	56.24	-5.68	0.418
110.00	-7.95	-15.30	0.00	-190.39	0.00	190.39	1,315.88	657.94	1,224.36	604.67	62.31	-5.92	0.321
111.00	-6.22	-12.00	0.00	-175.09	0.00	175.09	1,307.54	653.77	1,205.03	595.12	63.56	-5.96	0.299
115.00	-5.94	-11.58	0.00	-127.07	0.00	127.07	1,273.40	636.70	1,128.51	557.33	68.61	-6.11	0.233
120.00	-3.15	-6.00	0.00	-69.15	0.00	69.15	1,215.41	607.71	1,023.37	505.40	75.08	-6.25	0.140
125.00	-2.86	-5.73	0.00	-39.16	0.00	39.16	1,152.33	576.16	919.28	454.00	81.66	-6.34	0.089
125.59	-2.84	-5.65	0.00	-35.77	0.00	35.77	1,144.85	572.43	907.31	448.09	82.45	-6.34	0.082
125.59	-2.84	-5.65	0.00	-35.77	0.00	35.77	385.02	192.51	160.54	106.00	82.45	-6.34	0.346
130.00	-2.63	-5.55	0.00	-10.89	0.00	10.89	385.02	192.51	160.54	106.00	88.31	-6.38	0.110
131.00	-0.43	-0.67	0.00	-5.34	0.00	5.34	385.02	192.51	160.54	106.00	89.65	-6.40	0.051
135.00	-0.27	-0.59	0.00	-2.65	0.00	2.65	385.02	192.51	160.54	106.00	95.01	-6.43	0.026
136.00	-0.21	-0.13	0.00	-0.60	0.00	0.60	385.02	192.51	160.54	106.00	96.36	-6.43	0.006
140.00	-0.07	-0.04	0.00	-0.07	0.00	0.07	385.02	192.51	160.54	106.00	101.73	-6.43	0.001
142.00	0.00	-0.03	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	104.42	-6.43	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 24 Iterations

Gust Response Factor :1.10 — Ice Dead Load Factor :1.00 — Wind Importance Factor :1.00
Dead Load Factor :1.20 — Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		68.7	0.0					0.0	0.0	68.7	0.0	0.0	0.0
5.00		136.3	1,604.9					69.7	1,100.6	206.0	2,705.4	0.0	0.0
10.00		133.7	1,605.8					73.6	1,147.3	207.3	2,753.1	0.0	0.0
15.00		133.0	1,585.8					75.5	1,171.5	208.5	2,757.2	0.0	0.0
20.00		135.6	1,558.9					79.3	1,188.3	214.9	2,747.2	0.0	0.0
25.00		138.9	1,528.5					84.7	1,201.3	223.6	2,729.8	0.0	0.0
30.00		141.0	1,495.8					89.3	1,212.1	230.2	2,707.9	0.0	0.0
35.00		142.1	1,461.6					93.3	1,221.3	235.4	2,682.9	0.0	0.0
40.00		74.7	1,426.2					96.9	1,229.3	171.6	2,655.5	0.0	0.0
40.24	Bot - Section 2	72.5	68.9					4.8	60.1	77.3	129.0	0.0	0.0
45.00		74.9	2,180.2					95.3	1,176.3	170.2	3,356.5	0.0	0.0
45.40	Top - Section 1	72.4	181.1					8.1	99.2	80.5	280.3	0.0	0.0
50.00		138.6	1,139.0					95.0	1,143.7	233.6	2,282.7	0.0	0.0
55.00		81.7	1,205.7					105.9	1,248.8	187.6	2,454.5	0.0	0.0
55.68	Reinf. Top	71.3	161.3					14.5	169.5	85.9	330.8	0.0	0.0
60.00		104.1	1,012.0					94.0	738.2	198.0	1,750.2	0.0	0.0
63.00	Appertunance(s)	70.5	688.2	13.3	0.0	0.0	39.3	66.3	514.5	150.1	1,242.0	0.0	0.0
65.00		97.7	452.4					33.6	286.7	131.3	739.1	0.0	0.0
70.00		138.1	1,103.4					85.1	719.4	223.2	1,822.8	0.0	0.0
75.00		135.8	1,068.6					86.7	722.9	222.6	1,791.4	0.0	0.0
80.00	Appertunance(s)	77.9	1,033.4	111.4	0.0	0.0	380.6	88.3	726.1	277.6	2,140.1	0.0	0.0
80.79	Bot - Section 3	66.2	161.3					11.6	111.2	77.8	272.5	0.0	0.0
84.94	Top - Section 2	56.4	1,218.8					61.4	583.4	117.8	1,802.2	0.0	0.0
85.00		66.4	8.7					0.8	7.9	67.3	16.7	0.0	0.0
90.00	Appertunance(s)	129.9	758.0	963.7	0.0	0.0	6,645.5	75.1	705.2	1,168.7	8,108.6	0.0	0.0
95.00		126.9	730.8					0.0	413.5	126.9	1,144.3	0.0	0.0
100.00	Appertunance(s)	123.6	703.5	949.2	0.0	0.0	5,790.6	0.0	414.8	1,072.9	6,909.0	0.0	0.0
105.00		120.3	676.0					0.0	349.2	120.3	1,025.2	0.0	0.0
110.00		70.9	648.3					0.0	350.4	70.9	998.7	0.0	0.0
111.00	Appertunance(s)	57.5	127.3	799.9	0.0	0.0	4,703.4	0.0	70.2	857.4	4,900.8	0.0	0.0
115.00		101.5	495.1					0.0	261.6	101.5	756.7	0.0	0.0
120.00	Appertunance(s)	109.4	592.4	1,164.5	0.0	0.0	7,829.4	0.0	328.0	1,273.9	8,749.9	0.0	0.0
125.00		60.0	564.3					0.0	186.3	60.0	750.6	0.0	0.0
125.59	Top - Section 3	34.1	65.6					0.0	22.1	34.1	87.7	0.0	0.0
130.00		34.2	335.2					0.0	164.6	34.2	499.9	0.0	0.0
131.00	Appertunance(s)	31.9	76.1	1,111.9	0.0	-1,096.5	7,433.1	0.0	37.4	1,143.8	7,546.6	0.0	0.0
135.00		31.9	304.7					0.0	110.1	31.9	414.8	0.0	0.0
136.00	Appertunance(s)	32.2	76.2	86.6	0.0	327.1	378.7	0.0	27.6	118.8	482.5	0.0	0.0
140.00		38.7	305.1					0.0	0.0	38.7	305.1	0.0	0.0
142.00		12.9	152.7					0.0	0.0	12.9	152.7	0.0	0.0
								Totals:		10,333.8	84,983.0	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 24 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (klps)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (klps)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-84.98	-10.31	0.00	-958.24	0.00	958.24	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.186
5.00	-82.26	-10.19	0.00	-906.69	0.00	906.69	4,285.51	2,142.75	7,679.11	3,792.42	0.03	-0.06	0.182
10.00	-79.50	-10.06	0.00	-855.76	0.00	855.76	4,218.97	2,109.49	7,373.27	3,641.38	0.13	-0.12	0.177
15.00	-76.73	-9.92	0.00	-805.47	0.00	805.47	4,150.52	2,075.26	7,070.06	3,491.64	0.28	-0.18	0.172
20.00	-73.97	-9.77	0.00	-755.86	0.00	755.86	4,080.16	2,040.08	6,769.73	3,343.32	0.50	-0.24	0.167
25.00	-71.24	-9.61	0.00	-706.99	0.00	706.99	4,007.88	2,003.94	6,472.54	3,196.54	0.78	-0.30	0.162
30.00	-68.52	-9.44	0.00	-658.93	0.00	658.93	3,933.69	1,966.85	6,178.73	3,051.44	1.13	-0.36	0.156
35.00	-65.83	-9.25	0.00	-611.73	0.00	611.73	3,854.52	1,927.26	5,883.88	2,905.83	1.53	-0.42	0.150
40.00	-63.17	-9.10	0.00	-565.47	0.00	565.47	3,744.12	1,872.06	5,549.75	2,740.81	2.00	-0.48	0.145
40.24	-63.04	-9.05	0.00	-563.25	0.00	563.25	3,738.74	1,869.37	5,533.71	2,732.89	2.03	-0.48	0.145
45.00	-59.68	-8.88	0.00	-520.21	0.00	520.21	3,633.72	1,816.86	5,225.39	2,580.62	2.53	-0.54	0.138
45.40	-59.39	-8.83	0.00	-516.65	0.00	516.65	3,063.79	1,531.89	4,506.32	2,225.50	2.58	-0.54	0.154
50.00	-57.10	-8.63	0.00	-476.04	0.00	476.04	3,008.67	1,504.34	4,302.82	2,125.00	3.13	-0.59	0.147
55.00	-54.65	-8.45	0.00	-432.90	0.00	432.90	2,946.93	1,473.46	4,084.17	2,017.02	3.78	-0.65	0.139
55.68	-54.31	-8.39	0.00	-427.18	0.00	427.18	2,938.42	1,469.21	4,054.78	2,002.51	3.87	-0.66	0.138
55.68	-54.31	-8.39	0.00	-427.18	0.00	427.18	2,938.42	1,469.21	4,054.78	2,002.51	3.87	-0.66	0.232
60.00	-52.56	-8.22	0.00	-390.93	0.00	390.93	2,883.27	1,441.64	3,868.42	1,910.47	4.50	-0.71	0.223
63.00	-51.31	-8.10	0.00	-366.27	0.00	366.27	2,844.16	1,422.08	3,740.46	1,847.27	4.97	-0.77	0.216
65.00	-50.56	-8.02	0.00	-350.08	0.00	350.08	2,808.42	1,404.21	3,643.77	1,799.52	5.30	-0.81	0.213
70.00	-48.73	-7.85	0.00	-310.00	0.00	310.00	2,713.79	1,356.89	3,400.96	1,679.61	6.20	-0.91	0.203
75.00	-46.93	-7.67	0.00	-270.77	0.00	270.77	2,619.16	1,309.58	3,166.52	1,563.83	7.21	-1.01	0.191
80.00	-44.79	-7.39	0.00	-232.42	0.00	232.42	2,524.53	1,262.26	2,940.46	1,452.18	8.31	-1.10	0.178
80.79	-44.51	-7.35	0.00	-226.56	0.00	226.56	2,509.53	1,254.76	2,905.39	1,434.86	8.50	-1.11	0.176
84.94	-42.71	-7.22	0.00	-196.06	0.00	196.06	1,499.90	749.95	1,728.05	853.42	9.50	-1.18	0.258
85.00	-42.69	-7.20	0.00	-195.66	0.00	195.66	1,499.54	749.77	1,726.89	852.85	9.51	-1.18	0.258
90.00	-34.59	-5.92	0.00	-159.68	0.00	159.68	1,466.64	733.32	1,624.12	802.09	10.81	-1.30	0.223
95.00	-33.44	-5.82	0.00	-130.11	0.00	130.11	1,431.82	715.91	1,522.23	751.77	12.23	-1.40	0.196
100.00	-26.56	-4.61	0.00	-101.01	0.00	101.01	1,395.09	697.54	1,421.47	702.01	13.75	-1.49	0.163
105.00	-25.53	-4.50	0.00	-77.95	0.00	77.95	1,356.44	678.22	1,322.10	652.93	15.36	-1.58	0.138
110.00	-24.53	-4.42	0.00	-55.46	0.00	55.46	1,315.88	657.94	1,224.36	604.67	17.05	-1.65	0.110
111.00	-19.65	-3.43	0.00	-51.04	0.00	51.04	1,307.54	653.77	1,205.03	595.12	17.39	-1.66	0.101
115.00	-18.90	-3.32	0.00	-37.33	0.00	37.33	1,273.40	636.70	1,128.51	557.33	18.80	-1.70	0.082
120.00	-10.19	-1.79	0.00	-20.74	0.00	20.74	1,215.41	607.71	1,023.37	505.40	20.61	-1.74	0.049
125.00	-9.44	-1.71	0.00	-11.80	0.00	11.80	1,152.33	576.16	919.28	454.00	22.45	-1.77	0.034
125.59	-9.35	-1.67	0.00	-10.79	0.00	10.79	1,144.85	572.43	907.31	448.09	22.67	-1.77	0.032
125.59	-9.35	-1.67	0.00	-10.79	0.00	10.79	385.02	192.51	160.54	106.00	22.67	-1.77	0.126
130.00	-8.86	-1.62	0.00	-3.43	0.00	3.43	385.02	192.51	160.54	106.00	24.31	-1.78	0.055
131.00	-1.35	-0.24	0.00	-1.80	0.00	1.80	385.02	192.51	160.54	106.00	24.68	-1.79	0.021
135.00	-0.93	-0.20	0.00	-0.83	0.00	0.83	385.02	192.51	160.54	106.00	26.19	-1.80	0.010
136.00	-0.46	-0.07	0.00	-0.30	0.00	0.30	385.02	192.51	160.54	106.00	26.56	-1.80	0.004
140.00	-0.15	-0.02	0.00	-0.04	0.00	0.04	385.02	192.51	160.54	106.00	28.07	-1.80	0.001
142.00	0.00	-0.01	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	28.82	-1.80	0.000

Load Case: 1.0D + 1.0W — Serviceability 60 mph — 24 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00
Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		94.2	0.0					0.0	0.0	94.2	0.0	0.0	0.0
5.00		186.2	1,055.3					53.0	582.7	239.2	1,638.1	0.0	0.0
10.00		181.7	1,029.9					53.0	582.7	234.7	1,612.6	0.0	0.0
15.00		179.9	1,004.4					53.0	582.7	232.9	1,587.1	0.0	0.0
20.00		182.9	978.9					54.7	582.7	237.6	1,561.6	0.0	0.0
25.00		186.8	953.4					57.7	582.7	244.4	1,536.1	0.0	0.0
30.00		189.0	927.9					60.1	582.7	249.1	1,510.7	0.0	0.0
35.00		189.9	902.4					62.3	582.7	252.1	1,485.2	0.0	0.0
40.00		99.6	877.0					64.2	582.7	163.8	1,459.7	0.0	0.0
40.24	Bot - Section 2	96.6	42.1					3.2	28.4	99.8	70.5	0.0	0.0
45.00		99.7	1,519.0					62.7	554.3	162.5	2,073.3	0.0	0.0
45.40	Top - Section 1	96.1	125.8					5.3	46.6	101.5	172.4	0.0	0.0
50.00		183.7	665.9					62.1	536.1	245.8	1,202.0	0.0	0.0
55.00		108.1	702.9					68.9	582.7	177.0	1,285.6	0.0	0.0
55.68	Reinf. Top	94.1	93.5					9.4	78.9	103.6	172.4	0.0	0.0
60.00		137.1	587.5					60.8	215.0	197.9	802.6	0.0	0.0
63.00	Appertunance(s)	92.7	398.1	12.1	0.0	0.0	30.6	42.7	149.2	147.5	578.0	0.0	0.0
65.00		128.1	261.0					19.9	99.2	148.0	360.2	0.0	0.0
70.00		180.6	637.3					50.2	248.0	230.8	885.3	0.0	0.0
75.00		176.9	615.5					51.0	248.0	227.9	863.5	0.0	0.0
80.00	Appertunance(s)	101.2	593.6	95.8	0.0	0.0	104.6	51.7	248.0	248.7	946.2	0.0	0.0
80.79	Bot - Section 3	85.8	92.1					7.7	39.1	93.4	131.2	0.0	0.0
84.94	Top - Section 2	73.0	796.1					40.5	204.6	113.5	1,000.7	0.0	0.0
85.00		85.8	4.3					0.6	2.8	86.3	7.1	0.0	0.0
90.00	Appertunance(s)	153.5	375.2	1,056.1	0.0	0.0	2,934.5	49.3	246.5	1,258.9	3,556.2	0.0	0.0
95.00		135.5	360.6					0.0	183.8	135.5	544.5	0.0	0.0
100.00	Appertunance(s)	131.4	346.1	1,014.1	0.0	0.0	2,438.8	0.0	183.8	1,145.4	2,968.7	0.0	0.0
105.00		127.1	331.5					0.0	128.1	127.1	459.6	0.0	0.0
110.00		74.7	316.9					0.0	128.1	74.7	445.1	0.0	0.0
111.00	Appertunance(s)	60.2	61.6	749.9	0.0	0.0	2,180.0	0.0	25.6	810.1	2,267.3	0.0	0.0
115.00		105.8	240.7					0.0	86.1	105.8	326.8	0.0	0.0
120.00	Appertunance(s)	113.3	287.8	1,255.0	0.0	0.0	3,351.9	0.0	107.6	1,368.3	3,747.3	0.0	0.0
125.00		61.8	273.3					0.0	66.3	61.8	339.6	0.0	0.0
125.59	Top - Section 3	22.1	31.4					0.0	7.9	22.1	39.3	0.0	0.0
130.00		19.2	183.3					0.0	58.5	19.2	241.8	0.0	0.0
131.00	Appertunance(s)	17.9	41.6	1,180.3	0.0	-1,291.4	2,977.7	0.0	13.3	1,198.2	3,032.6	0.0	0.0
135.00		17.9	166.4					0.0	20.0	17.9	186.4	0.0	0.0
136.00	Appertunance(s)	17.9	41.6	98.3	0.0	380.8	70.5	0.0	5.0	116.2	117.1	0.0	0.0
140.00		21.5	166.4					0.0	0.0	21.5	166.4	0.0	0.0
142.00		7.2	83.2					0.0	0.0	7.2	83.2	0.0	0.0
								Totals:		10,822.2	41,463.5	0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Wind Importance Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.46	-10.75	0.00	-945.26	0.00	945.26	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.177
5.00	-39.81	-10.55	0.00	-891.51	0.00	891.51	4,285.51	2,142.75	7,679.11	3,792.42	0.03	-0.06	0.172
10.00	-38.19	-10.35	0.00	-838.76	0.00	838.76	4,218.97	2,109.49	7,373.27	3,641.38	0.12	-0.12	0.166
15.00	-36.59	-10.15	0.00	-787.01	0.00	787.01	4,150.52	2,075.26	7,070.06	3,491.64	0.28	-0.17	0.161
20.00	-35.02	-9.94	0.00	-736.25	0.00	736.25	4,080.16	2,040.08	6,769.73	3,343.32	0.49	-0.23	0.156
25.00	-33.47	-9.73	0.00	-686.53	0.00	686.53	4,007.88	2,003.94	6,472.54	3,196.54	0.77	-0.29	0.150
30.00	-31.96	-9.50	0.00	-637.90	0.00	637.90	3,933.69	1,966.85	6,178.73	3,051.44	1.10	-0.35	0.145
35.00	-30.46	-9.27	0.00	-590.39	0.00	590.39	3,854.52	1,927.26	5,883.88	2,905.83	1.50	-0.41	0.139
40.00	-29.00	-9.11	0.00	-544.04	0.00	544.04	3,744.12	1,872.06	5,549.75	2,740.81	1.96	-0.46	0.134
40.24	-28.93	-9.02	0.00	-541.82	0.00	541.82	3,738.74	1,869.37	5,533.71	2,732.89	1.98	-0.47	0.134
45.00	-26.85	-8.86	0.00	-498.90	0.00	498.90	3,633.72	1,816.86	5,225.39	2,580.62	2.48	-0.52	0.127
45.40	-26.67	-8.77	0.00	-495.35	0.00	495.35	3,063.79	1,531.89	4,506.32	2,225.50	2.52	-0.53	0.141
50.00	-25.47	-8.53	0.00	-455.02	0.00	455.02	3,008.67	1,504.34	4,302.82	2,125.00	3.05	-0.58	0.134
55.00	-24.18	-8.36	0.00	-412.35	0.00	412.35	2,946.93	1,473.46	4,084.17	2,017.02	3.69	-0.63	0.126
55.68	-24.00	-8.26	0.00	-406.69	0.00	406.69	2,938.42	1,469.21	4,054.78	2,002.51	3.78	-0.64	0.125
55.68	-24.00	-8.26	0.00	-406.69	0.00	406.69	2,938.42	1,469.21	4,054.78	2,002.51	3.78	-0.64	0.211
60.00	-23.19	-8.08	0.00	-370.97	0.00	370.97	2,883.27	1,441.64	3,868.42	1,910.47	4.38	-0.69	0.202
63.00	-22.61	-7.94	0.00	-346.74	0.00	346.74	2,844.16	1,422.08	3,740.46	1,847.27	4.84	-0.75	0.196
65.00	-22.24	-7.81	0.00	-330.85	0.00	330.85	2,808.42	1,404.21	3,643.77	1,799.52	5.16	-0.79	0.192
70.00	-21.35	-7.60	0.00	-291.78	0.00	291.78	2,713.79	1,356.89	3,400.96	1,679.61	6.03	-0.88	0.182
75.00	-20.48	-7.39	0.00	-253.76	0.00	253.76	2,619.16	1,309.58	3,166.52	1,563.83	7.00	-0.97	0.170
80.00	-19.53	-7.15	0.00	-216.79	0.00	216.79	2,524.53	1,262.26	2,940.46	1,452.18	8.06	-1.05	0.157
80.79	-19.40	-7.06	0.00	-211.13	0.00	211.13	2,509.53	1,254.76	2,905.39	1,434.86	8.23	-1.07	0.155
84.94	-18.40	-6.94	0.00	-181.81	0.00	181.81	1,499.90	749.95	1,728.05	853.42	9.19	-1.13	0.225
85.00	-18.38	-6.87	0.00	-181.42	0.00	181.42	1,499.54	749.77	1,726.89	852.85	9.20	-1.13	0.225
90.00	-14.84	-5.57	0.00	-147.06	0.00	147.06	1,466.64	733.32	1,624.12	802.09	10.45	-1.24	0.194
95.00	-14.29	-5.44	0.00	-119.23	0.00	119.23	1,431.82	715.91	1,522.23	751.77	11.79	-1.33	0.169
100.00	-11.35	-4.24	0.00	-92.03	0.00	92.03	1,395.09	697.54	1,421.47	702.01	13.24	-1.42	0.139
105.00	-10.89	-4.11	0.00	-70.83	0.00	70.83	1,356.44	678.22	1,322.10	652.93	14.76	-1.49	0.117
110.00	-10.44	-4.03	0.00	-50.26	0.00	50.26	1,315.88	657.94	1,224.36	604.67	16.36	-1.56	0.091
111.00	-8.20	-3.17	0.00	-46.22	0.00	46.22	1,307.54	653.77	1,205.03	595.12	16.69	-1.57	0.084
115.00	-7.87	-3.06	0.00	-33.56	0.00	33.56	1,273.40	636.70	1,128.51	557.33	18.02	-1.61	0.066
120.00	-4.16	-1.58	0.00	-18.28	0.00	18.28	1,215.41	607.71	1,023.37	505.40	19.72	-1.64	0.040
125.00	-3.82	-1.51	0.00	-10.35	0.00	10.35	1,152.33	576.16	919.28	454.00	21.46	-1.67	0.026
125.59	-3.79	-1.49	0.00	-9.45	0.00	9.45	1,144.85	572.43	907.31	448.09	21.66	-1.67	0.024
125.59	-3.79	-1.49	0.00	-9.45	0.00	9.45	385.02	192.51	160.54	106.00	21.66	-1.67	0.099
130.00	-3.54	-1.47	0.00	-2.88	0.00	2.88	385.02	192.51	160.54	106.00	23.21	-1.68	0.036
131.00	-0.55	-0.18	0.00	-1.42	0.00	1.42	385.02	192.51	160.54	106.00	23.56	-1.68	0.015
135.00	-0.36	-0.16	0.00	-0.70	0.00	0.70	385.02	192.51	160.54	106.00	24.97	-1.69	0.008
136.00	-0.25	-0.04	0.00	-0.16	0.00	0.16	385.02	192.51	160.54	106.00	25.33	-1.69	0.002
140.00	-0.08	-0.01	0.00	-0.02	0.00	0.02	385.02	192.51	160.54	106.00	26.74	-1.69	0.000
142.00	0.00	-0.01	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	27.45	-1.69	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.24
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.17
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.83
Total Unfactored Dead Load:	41.46 k
Seismic Base Shear (E):	1.75 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM **Seismic Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	141.00	83	728	0.006	10	104
38	138.00	166	1,400	0.011	19	207
37	135.50	47	379	0.003	5	58
36	133.00	186	1,466	0.011	20	232
35	130.50	55	417	0.003	6	68
34	127.80	242	1,767	0.014	24	302
33	125.30	39	277	0.002	4	49
32	122.50	340	2,297	0.018	31	424
31	117.50	395	2,478	0.019	34	493
30	113.00	327	1,906	0.015	26	408
29	110.50	87	489	0.004	7	109
28	107.50	445	2,369	0.018	32	555
27	102.50	460	2,242	0.017	30	573
26	97.50	530	2,358	0.018	32	661
25	92.50	544	2,200	0.017	30	679
24	87.50	622	2,268	0.018	31	775
23	84.97	7	24	0.000	0	9
22	82.87	1,001	3,305	0.026	45	1,248
21	80.40	131	410	0.003	6	164
20	77.50	842	2,458	0.019	33	1,050
19	72.50	863	2,231	0.017	30	1,077
18	67.50	885	2,007	0.016	27	1,104
17	64.00	360	741	0.006	10	449

16	61.50	547	1,046	0.008	14	683
15	57.84	803	1,370	0.011	19	1,001
14	55.34	172	271	0.002	4	215
13	52.50	1,286	1,838	0.014	25	1,603
12	47.70	1,202	1,441	0.011	20	1,499
11	45.20	172	187	0.001	3	215
10	42.62	2,073	2,022	0.016	28	2,586
9	40.12	71	62	0.000	1	88
8	37.50	1,460	1,126	0.009	15	1,820
7	32.50	1,485	881	0.007	12	1,852
6	27.50	1,511	660	0.005	9	1,884
5	22.50	1,536	464	0.004	6	1,916
4	17.50	1,562	298	0.002	4	1,948
3	12.50	1,587	163	0.001	2	1,979
2	7.50	1,613	65	0.001	1	2,011
1	2.50	1,638	9	0.000	0	2,043
RCU (Remote Control	136.00	3	25	0.000	0	4
Kathrein Scala 742-2	136.00	68	553	0.004	8	84
Powerwave Allgon 702	131.00	26	202	0.002	3	33
Powerwave Allgon LGP	131.00	169	1,294	0.010	18	211
Raycap DC6-48-60-18-	131.00	32	243	0.002	3	40
Ericsson RRUS A2 Mod	131.00	64	486	0.004	7	79
Ericsson RRUS-11 (50	131.00	150	1,147	0.009	16	187
Ericsson RRUS 12 w/	131.00	174	1,329	0.010	18	217
Powerwave Allgon 777	131.00	210	1,606	0.012	22	262
CCI HPA-65R-BUU-H6	131.00	153	1,170	0.009	16	191
Flat Platform w/ Han	131.00	2,000	15,298	0.119	208	2,494
DragonWave Horizon C	120.00	21	138	0.001	2	26
Alcatel-Lucent RRH2x	120.00	159	1,034	0.008	14	198
NextNet BTS-2500	120.00	105	684	0.005	9	131
Alcatel-Lucent 800 M	120.00	192	1,250	0.010	17	239
Alcatel-Lucent 1900	120.00	180	1,172	0.009	16	224
Alcatel-Lucent TD-RR	120.00	210	1,368	0.011	19	262
Argus LLPX310R	120.00	86	559	0.004	8	107
DragonWave A-ANT-18G	120.00	54	353	0.003	5	68
RFS APXVSPP18-C-A20	120.00	171	1,114	0.009	15	213
Commscope DT465B-2XR	120.00	174	1,133	0.009	15	217
Flat Platform w/ Han	120.00	2,000	13,025	0.101	177	2,494
48" x 8" Panel	111.00	180	1,016	0.008	14	224
Flat Platform w/ Han	111.00	2,000	11,290	0.088	154	2,494
RFS FD9R6004/1C-3L	100.00	19	87	0.001	1	23
Alcatel-Lucent RRH2x	100.00	132	615	0.005	8	165
Rymsa MGD3-800TX	100.00	46	215	0.002	3	58
Antel BXA-171063/12C	100.00	45	210	0.002	3	56
RFS DB-T1-6Z-8AB-0Z	100.00	44	205	0.002	3	55
Antel BXA-70080/6CF_	100.00	54	252	0.002	3	67
Powerwave Allgon P65	100.00	99	461	0.004	6	123
Flat Platform w/ Han	100.00	2,000	9,323	0.072	127	2,494
RFS ATMAA1412D-1A20	90.00	52	200	0.002	3	65
Ericsson RRUS 11 B12	90.00	152	584	0.005	8	190
Ericsson AIR 21, 1.3	90.00	332	1,276	0.010	17	414
Ericsson AIR 21, 1.3	90.00	244	939	0.007	13	305
Andrew LNX-6515DS-VT	90.00	154	591	0.005	8	192
Flat Platform w/ Han	90.00	2,000	7,684	0.060	105	2,494
Diamond X50A	80.00	5	14	0.000	0	6
Stand-Offs	80.00	100	310	0.002	4	125
PCTEL GPS-TMG-HR-26N	63.00	1	1	0.000	0	1
Stand-Off	63.00	30	60	0.000	1	37
		41,464	128,637	1.000	1,750	51,711

Load Case (0.9 - 0.2Sds) * DL + E ELFM **Seismic (Reduced DL) Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	141.00	83	728	0.006	10	71
38	138.00	166	1,400	0.011	19	142
37	135.50	47	379	0.003	5	40
36	133.00	186	1,466	0.011	20	159
35	130.50	55	417	0.003	6	47
34	127.80	242	1,767	0.014	24	206
33	125.30	39	277	0.002	4	34
32	122.50	340	2,297	0.018	31	290
31	117.50	395	2,478	0.019	34	337
30	113.00	327	1,906	0.015	26	279
29	110.50	87	489	0.004	7	74
28	107.50	445	2,369	0.018	32	380
27	102.50	460	2,242	0.017	30	392
26	97.50	530	2,358	0.018	32	452
25	92.50	544	2,200	0.017	30	464
24	87.50	622	2,268	0.018	31	530
23	84.97	7	24	0.000	0	6
22	82.87	1,001	3,305	0.026	45	853
21	80.40	131	410	0.003	6	112
20	77.50	842	2,458	0.019	33	718
19	72.50	863	2,231	0.017	30	736
18	67.50	885	2,007	0.016	27	755
17	64.00	360	741	0.006	10	307
16	61.50	547	1,046	0.008	14	467
15	57.84	803	1,370	0.011	19	684
14	55.34	172	271	0.002	4	147
13	52.50	1,286	1,838	0.014	25	1,096
12	47.70	1,202	1,441	0.011	20	1,025
11	45.20	172	187	0.001	3	147
10	42.62	2,073	2,022	0.016	28	1,768
9	40.12	71	62	0.000	1	60
8	37.50	1,460	1,126	0.009	15	1,245
7	32.50	1,485	881	0.007	12	1,267
6	27.50	1,511	660	0.005	9	1,288
5	22.50	1,536	464	0.004	6	1,310
4	17.50	1,562	298	0.002	4	1,332
3	12.50	1,587	163	0.001	2	1,354
2	7.50	1,613	65	0.001	1	1,375
1	2.50	1,638	9	0.000	0	1,397
RCU (Remote Control	136.00	3	25	0.000	0	3
Kathrein Scala 742-2	136.00	68	553	0.004	8	58
Powerwave Allgon 702	131.00	26	202	0.002	3	23
Powerwave Allgon LGP	131.00	169	1,294	0.010	18	144
Raycap DC6-48-60-18-	131.00	32	243	0.002	3	27
Ericsson RRUS A2 Mod	131.00	64	486	0.004	7	54
Ericsson RRUS-11 (50	131.00	150	1,147	0.009	16	128
Ericsson RRUS 12 w/	131.00	174	1,329	0.010	18	148
Powerwave Allgon 777	131.00	210	1,606	0.012	22	179
CCI HPA-65R-BUU-H6	131.00	153	1,170	0.009	16	130
Flat Platform w/ Han	131.00	2,000	15,298	0.119	208	1,706
DragonWave Horizon C	120.00	21	138	0.001	2	18
Alcatel-Lucent RRH2x	120.00	159	1,034	0.008	14	135
NextNet BTS-2500	120.00	105	684	0.005	9	90
Alcatel-Lucent 800 M	120.00	192	1,250	0.010	17	164
Alcatel-Lucent 1900	120.00	180	1,172	0.009	16	154
Alcatel-Lucent TD-RR	120.00	210	1,368	0.011	19	179
Argus LLPX310R	120.00	86	559	0.004	8	73

DragonWave A-ANT-18G	120.00	54	353	0.003	5	46
RFS APXVSPP18-C-A20	120.00	171	1,114	0.009	15	146
Commscope DT465B-2XR	120.00	174	1,133	0.009	15	148
Flat Platform w/ Han	120.00	2,000	13,025	0.101	177	1,706
48" x 8" Panel	111.00	180	1,016	0.008	14	154
Flat Platform w/ Han	111.00	2,000	11,290	0.088	154	1,706
RFS FD9R6004/1C-3L	100.00	19	87	0.001	1	16
Alcatel-Lucent RRH2x	100.00	132	615	0.005	8	113
Rymsa MGD3-800TX	100.00	46	215	0.002	3	39
Antel BXA-171063/12C	100.00	45	210	0.002	3	38
RFS DB-T1-6Z-8AB-0Z	100.00	44	205	0.002	3	38
Antel BXA-70080/6CF_	100.00	54	252	0.002	3	46
Powerwave Allgon P65	100.00	99	461	0.004	6	84
Flat Platform w/ Han	100.00	2,000	9,323	0.072	127	1,706
RFS ATMAA1412D-1A20	90.00	52	200	0.002	3	44
Ericsson RRUS 11 B12	90.00	152	584	0.005	8	130
Ericsson AIR 21, 1.3	90.00	332	1,276	0.010	17	283
Ericsson AIR 21, 1.3	90.00	244	939	0.007	13	209
Andrew LNX-6515DS-VT	90.00	154	591	0.005	8	131
Flat Platform w/ Han	90.00	2,000	7,684	0.060	105	1,706
Diamond X50A	80.00	5	14	0.000	0	4
Stand-Offs	80.00	100	310	0.002	4	85
PCTEL GPS-TMG-HR-26N	63.00	1	1	0.000	0	1
Stand-Off	63.00	30	60	0.000	1	26
		41,464	128,637	1.000	1,750	35,362

Load Case (1.2 + 0.2Sds) * DL + E ELFM **Seismic Equivalent Lateral Forces Method**

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.67	-1.75	0.00	-189.11	0.00	189.11	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.043
5.00	-47.66	-1.76	0.00	-180.34	0.00	180.34	4,285.51	2,142.75	7,679.11	3,792.42	0.01	-0.01	0.042
10.00	-45.68	-1.77	0.00	-171.53	0.00	171.53	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.041
15.00	-43.73	-1.77	0.00	-162.68	0.00	162.68	4,150.52	2,075.26	7,070.06	3,491.64	0.06	-0.04	0.040
20.00	-41.81	-1.77	0.00	-153.82	0.00	153.82	4,080.16	2,040.08	6,769.73	3,343.32	0.10	-0.05	0.039
25.00	-39.93	-1.77	0.00	-144.94	0.00	144.94	4,007.88	2,003.94	6,472.54	3,196.54	0.16	-0.06	0.038
30.00	-38.08	-1.77	0.00	-136.08	0.00	136.08	3,933.69	1,966.85	6,178.73	3,051.44	0.23	-0.07	0.037
35.00	-36.26	-1.76	0.00	-127.25	0.00	127.25	3,854.52	1,927.26	5,883.88	2,905.83	0.31	-0.08	0.035
40.00	-36.17	-1.76	0.00	-118.46	0.00	118.46	3,744.12	1,872.06	5,549.75	2,740.81	0.40	-0.10	0.035
40.24	-33.58	-1.73	0.00	-118.03	0.00	118.03	3,738.74	1,869.37	5,533.71	2,732.89	0.41	-0.10	0.034
45.00	-33.37	-1.73	0.00	-109.80	0.00	109.80	3,633.72	1,816.86	5,225.39	2,580.62	0.51	-0.11	0.033
45.40	-31.87	-1.71	0.00	-109.11	0.00	109.11	3,063.79	1,531.89	4,506.32	2,225.50	0.52	-0.11	0.037
50.00	-30.26	-1.69	0.00	-101.22	0.00	101.22	3,008.67	1,504.34	4,302.82	2,125.00	0.63	-0.12	0.035
55.00	-30.05	-1.69	0.00	-92.77	0.00	92.77	2,946.93	1,473.46	4,084.17	2,017.02	0.77	-0.13	0.034
55.68	-29.05	-1.67	0.00	-91.62	0.00	91.62	2,938.42	1,469.21	4,054.78	2,002.51	0.79	-0.14	0.034
55.68	-29.05	-1.67	0.00	-91.62	0.00	91.62	2,938.42	1,469.21	4,054.78	2,002.51	0.79	-0.14	0.056
60.00	-28.36	-1.66	0.00	-84.39	0.00	84.39	2,883.27	1,441.64	3,868.42	1,910.47	0.92	-0.15	0.054
63.00	-27.88	-1.66	0.00	-79.40	0.00	79.40	2,844.16	1,422.08	3,740.46	1,847.27	1.01	-0.16	0.053
65.00	-26.77	-1.63	0.00	-76.09	0.00	76.09	2,808.42	1,404.21	3,643.77	1,799.52	1.08	-0.17	0.052
70.00	-25.69	-1.61	0.00	-67.92	0.00	67.92	2,713.79	1,356.89	3,400.96	1,679.61	1.27	-0.19	0.050
75.00	-24.64	-1.58	0.00	-59.88	0.00	59.88	2,619.16	1,309.58	3,166.52	1,563.83	1.48	-0.21	0.048
80.00	-24.35	-1.57	0.00	-51.98	0.00	51.98	2,524.53	1,262.26	2,940.46	1,452.18	1.71	-0.23	0.045
80.79	-23.10	-1.53	0.00	-50.73	0.00	50.73	2,509.53	1,254.76	2,905.39	1,434.86	1.75	-0.23	0.045
84.94	-23.09	-1.53	0.00	-44.38	0.00	44.38	1,499.90	749.95	1,728.05	853.42	1.96	-0.25	0.067
85.00	-22.32	-1.50	0.00	-44.30	0.00	44.30	1,499.54	749.77	1,726.89	852.85	1.97	-0.25	0.067
90.00	-17.98	-1.31	0.00	-36.79	0.00	36.79	1,466.64	733.32	1,624.12	802.09	2.24	-0.28	0.058
95.00	-17.32	-1.28	0.00	-30.25	0.00	30.25	1,431.82	715.91	1,522.23	751.77	2.55	-0.30	0.052
100.00	-13.70	-1.08	0.00	-23.86	0.00	23.86	1,395.09	697.54	1,421.47	702.01	2.87	-0.32	0.044
105.00	-13.15	-1.05	0.00	-18.47	0.00	18.47	1,356.44	678.22	1,322.10	652.93	3.22	-0.34	0.038
110.00	-13.04	-1.04	0.00	-13.24	0.00	13.24	1,315.88	657.94	1,224.36	604.67	3.59	-0.36	0.032
111.00	-9.91	-0.83	0.00	-12.20	0.00	12.20	1,307.54	653.77	1,205.03	595.12	3.66	-0.36	0.028
115.00	-9.42	-0.79	0.00	-8.87	0.00	8.87	1,273.40	636.70	1,128.51	557.33	3.97	-0.37	0.023
120.00	-4.82	-0.44	0.00	-4.90	0.00	4.90	1,215.41	607.71	1,023.37	505.40	4.37	-0.38	0.014
125.00	-4.77	-0.43	0.00	-2.71	0.00	2.71	1,152.33	576.16	919.28	454.00	4.77	-0.39	0.010
125.59	-4.47	-0.41	0.00	-2.46	0.00	2.46	1,144.85	572.43	907.31	448.09	4.82	-0.39	0.009
125.59	-4.47	-0.41	0.00	-2.46	0.00	2.46	385.02	192.51	160.54	106.00	4.82	-0.39	0.035
130.00	-4.40	-0.40	0.00	-0.66	0.00	0.66	385.02	192.51	160.54	106.00	5.18	-0.39	0.018
131.00	-0.46	-0.04	0.00	-0.26	0.00	0.26	385.02	192.51	160.54	106.00	5.26	-0.39	0.004
135.00	-0.40	-0.04	0.00	-0.08	0.00	0.08	385.02	192.51	160.54	106.00	5.59	-0.39	0.002
136.00	-0.10	-0.01	0.00	-0.04	0.00	0.04	385.02	192.51	160.54	106.00	5.67	-0.39	0.001
140.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	6.00	-0.39	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	6.17	-0.39	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM **Seismic (Reduced DL) Equivalent Lateral Forces Method**

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.97	-1.75	0.00	-186.44	0.00	186.44	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.039
5.00	-32.59	-1.76	0.00	-177.68	0.00	177.68	4,285.51	2,142.75	7,679.11	3,792.42	0.01	-0.01	0.039
10.00	-31.24	-1.76	0.00	-168.89	0.00	168.89	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.038
15.00	-29.90	-1.76	0.00	-160.08	0.00	160.08	4,150.52	2,075.26	7,070.06	3,491.64	0.06	-0.03	0.037
20.00	-28.59	-1.76	0.00	-151.26	0.00	151.26	4,080.16	2,040.08	6,769.73	3,343.32	0.10	-0.05	0.036
25.00	-27.30	-1.76	0.00	-142.45	0.00	142.45	4,007.88	2,003.94	6,472.54	3,196.54	0.15	-0.06	0.035
30.00	-26.04	-1.75	0.00	-133.67	0.00	133.67	3,933.69	1,966.85	6,178.73	3,051.44	0.22	-0.07	0.034
35.00	-24.79	-1.74	0.00	-124.92	0.00	124.92	3,854.52	1,927.26	5,883.88	2,905.83	0.30	-0.08	0.033
40.00	-24.73	-1.74	0.00	-116.23	0.00	116.23	3,744.12	1,872.06	5,549.75	2,740.81	0.40	-0.10	0.032
40.24	-22.96	-1.71	0.00	-115.80	0.00	115.80	3,738.74	1,869.37	5,533.71	2,732.89	0.40	-0.10	0.032
45.00	-22.82	-1.71	0.00	-107.66	0.00	107.66	3,633.72	1,816.86	5,225.39	2,580.62	0.50	-0.11	0.031
45.40	-21.79	-1.69	0.00	-106.98	0.00	106.98	3,063.79	1,531.89	4,506.32	2,225.50	0.51	-0.11	0.034
50.00	-20.69	-1.67	0.00	-99.19	0.00	99.19	3,008.67	1,504.34	4,302.82	2,125.00	0.62	-0.12	0.033
55.00	-20.55	-1.67	0.00	-90.85	0.00	90.85	2,946.93	1,473.46	4,084.17	2,017.02	0.75	-0.13	0.031
55.68	-19.86	-1.65	0.00	-89.72	0.00	89.72	2,938.42	1,469.21	4,054.78	2,002.51	0.77	-0.13	0.031
55.68	-19.86	-1.65	0.00	-89.72	0.00	89.72	2,938.42	1,469.21	4,054.78	2,002.51	0.77	-0.13	0.052
60.00	-19.40	-1.64	0.00	-82.59	0.00	82.59	2,883.27	1,441.64	3,868.42	1,910.47	0.90	-0.14	0.050
63.00	-19.06	-1.63	0.00	-77.67	0.00	77.67	2,844.16	1,422.08	3,740.46	1,847.27	1.00	-0.16	0.049
65.00	-18.31	-1.61	0.00	-74.41	0.00	74.41	2,808.42	1,404.21	3,643.77	1,799.52	1.06	-0.17	0.048
70.00	-17.57	-1.58	0.00	-66.38	0.00	66.38	2,713.79	1,356.89	3,400.96	1,679.61	1.25	-0.19	0.046
75.00	-16.85	-1.55	0.00	-58.49	0.00	58.49	2,619.16	1,309.58	3,166.52	1,563.83	1.45	-0.21	0.044
80.00	-16.65	-1.54	0.00	-50.74	0.00	50.74	2,524.53	1,262.26	2,940.46	1,452.18	1.68	-0.23	0.042
80.79	-15.80	-1.50	0.00	-49.52	0.00	49.52	2,509.53	1,254.76	2,905.39	1,434.86	1.72	-0.23	0.041
84.94	-15.79	-1.50	0.00	-43.31	0.00	43.31	1,499.90	749.95	1,728.05	853.42	1.93	-0.25	0.061
85.00	-15.26	-1.47	0.00	-43.23	0.00	43.23	1,499.54	749.77	1,726.89	852.85	1.93	-0.25	0.061
90.00	-12.29	-1.28	0.00	-35.88	0.00	35.88	1,466.64	733.32	1,624.12	802.09	2.20	-0.27	0.053
95.00	-11.84	-1.25	0.00	-29.50	0.00	29.50	1,431.82	715.91	1,522.23	751.77	2.50	-0.29	0.048
100.00	-9.37	-1.05	0.00	-23.27	0.00	23.27	1,395.09	697.54	1,421.47	702.01	2.82	-0.32	0.040
105.00	-8.99	-1.02	0.00	-18.01	0.00	18.01	1,356.44	678.22	1,322.10	652.93	3.16	-0.33	0.034
110.00	-8.92	-1.01	0.00	-12.90	0.00	12.90	1,315.88	657.94	1,224.36	604.67	3.52	-0.35	0.028
111.00	-6.78	-0.81	0.00	-11.89	0.00	11.89	1,307.54	653.77	1,205.03	595.12	3.59	-0.35	0.025
115.00	-6.44	-0.77	0.00	-8.65	0.00	8.65	1,273.40	636.70	1,128.51	557.33	3.90	-0.36	0.021
120.00	-3.29	-0.43	0.00	-4.78	0.00	4.78	1,215.41	607.71	1,023.37	505.40	4.28	-0.37	0.012
125.00	-3.26	-0.42	0.00	-2.65	0.00	2.65	1,152.33	576.16	919.28	454.00	4.68	-0.38	0.009
125.59	-3.06	-0.40	0.00	-2.40	0.00	2.40	1,144.85	572.43	907.31	448.09	4.72	-0.38	0.008
125.59	-3.06	-0.40	0.00	-2.40	0.00	2.40	385.02	192.51	160.54	106.00	4.72	-0.38	0.031
130.00	-3.01	-0.39	0.00	-0.65	0.00	0.65	385.02	192.51	160.54	106.00	5.08	-0.38	0.014
131.00	-0.31	-0.04	0.00	-0.25	0.00	0.25	385.02	192.51	160.54	106.00	5.16	-0.38	0.003
135.00	-0.27	-0.04	0.00	-0.08	0.00	0.08	385.02	192.51	160.54	106.00	5.48	-0.38	0.001
136.00	-0.07	-0.01	0.00	-0.04	0.00	0.04	385.02	192.51	160.54	106.00	5.56	-0.38	0.001
140.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	5.88	-0.38	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	6.04	-0.38	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.24
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	2.17
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	141.00	83	1.863	1.843	1.090	0.426	31	104
38	138.00	166	1.785	1.471	0.952	0.366	53	207
37	135.50	47	1.721	1.203	0.847	0.319	13	58
36	133.00	186	1.658	0.969	0.752	0.275	44	232
35	130.50	55	1.596	0.767	0.665	0.234	11	68
34	127.80	242	1.531	0.580	0.580	0.193	40	302
33	125.30	39	1.472	0.433	0.510	0.157	5	49
32	122.50	340	1.407	0.296	0.439	0.121	36	424
31	117.50	395	1.294	0.112	0.331	0.065	22	493
30	113.00	327	1.197	0.002	0.252	0.023	6	408
29	110.50	87	1.144	-0.041	0.215	0.003	0	109
28	107.50	445	1.083	-0.079	0.177	-0.016	-6	555
27	102.50	460	0.985	-0.113	0.124	-0.041	-16	573
26	97.50	530	0.891	-0.122	0.084	-0.055	-25	661
25	92.50	544	0.802	-0.112	0.054	-0.059	-28	679
24	87.50	622	0.718	-0.092	0.033	-0.053	-28	775
23	84.97	7	0.677	-0.080	0.026	-0.046	0	9
22	82.87	1,001	0.644	-0.068	0.020	-0.039	-33	1,248
21	80.40	131	0.606	-0.055	0.015	-0.029	-3	164
20	77.50	842	0.563	-0.039	0.011	-0.016	-11	1,050
19	72.50	863	0.493	-0.013	0.007	0.008	6	1,077
18	67.50	885	0.427	0.009	0.006	0.029	23	1,104
17	64.00	360	0.384	0.023	0.007	0.042	13	449
16	61.50	547	0.355	0.032	0.008	0.049	23	683
15	57.84	803	0.314	0.042	0.011	0.056	39	1,001
14	55.34	172	0.287	0.048	0.013	0.060	9	215
13	52.50	1,286	0.258	0.054	0.016	0.063	70	1,603
12	47.70	1,202	0.213	0.061	0.021	0.065	68	1,499
11	45.20	172	0.191	0.064	0.024	0.066	10	215
10	42.62	2,073	0.170	0.066	0.027	0.065	118	2,586
9	40.12	71	0.151	0.068	0.030	0.065	4	88
8	37.50	1,460	0.132	0.069	0.033	0.064	81	1,820
7	32.50	1,485	0.099	0.071	0.037	0.063	81	1,852
6	27.50	1,511	0.071	0.072	0.041	0.061	80	1,884

5	22.50	1,536	0.047	0.071	0.042	0.059	79	1,916
4	17.50	1,562	0.029	0.068	0.040	0.056	76	1,948
3	12.50	1,587	0.015	0.060	0.035	0.051	71	1,979
2	7.50	1,613	0.005	0.045	0.026	0.041	57	2,011
1	2.50	1,638	0.001	0.019	0.010	0.020	28	2,043
RCU (Remote Control	136.00	3	1.734	1.254	0.867	0.328	1	4
Kathrein Scala 742-2	136.00	68	1.734	1.254	0.867	0.328	19	84
Powerwave Allgon 702	131.00	26	1.609	0.805	0.682	0.242	6	33
Powerwave Allgon LGP	131.00	169	1.609	0.805	0.682	0.242	35	211
Raycap DC6-48-60-18-	131.00	32	1.609	0.805	0.682	0.242	7	40
Ericsson RRUS A2 Mod	131.00	64	1.609	0.805	0.682	0.242	13	79
Ericsson RRUS-11 (50	131.00	150	1.609	0.805	0.682	0.242	31	187
Ericsson RRUS 12 w/	131.00	174	1.609	0.805	0.682	0.242	36	217
Powerwave Allgon 777	131.00	210	1.609	0.805	0.682	0.242	44	262
CCI HPA-65R-BUU-H6	131.00	153	1.609	0.805	0.682	0.242	32	191
Flat Platform w/ Han	131.00	2,000	1.609	0.805	0.682	0.242	419	2,494
DragonWave Horizon C	120.00	21	1.350	0.195	0.382	0.092	2	26
Alcatel-Lucent RRH2x	120.00	159	1.350	0.195	0.382	0.092	13	198
NextNet BTS-2500	120.00	105	1.350	0.195	0.382	0.092	8	131
Alcatel-Lucent 800 M	120.00	192	1.350	0.195	0.382	0.092	15	239
Alcatel-Lucent 1900	120.00	180	1.350	0.195	0.382	0.092	14	224
Alcatel-Lucent TD-RR	120.00	210	1.350	0.195	0.382	0.092	17	262
Argus LLPX310R	120.00	86	1.350	0.195	0.382	0.092	7	107
DragonWave A-ANT-18G	120.00	54	1.350	0.195	0.382	0.092	4	68
RFS APXVSPP18-C-A20	120.00	171	1.350	0.195	0.382	0.092	14	213
Commscope DT465B-	120.00	174	1.350	0.195	0.382	0.092	14	217
Flat Platform w/ Han	120.00	2,000	1.350	0.195	0.382	0.092	159	2,494
48" x 8" Panel	111.00	180	1.155	-0.034	0.223	0.007	1	224
Flat Platform w/ Han	111.00	2,000	1.155	-0.034	0.223	0.007	12	2,494
RFS FD9R6004/1C-3L	100.00	19	0.937	-0.120	0.102	-0.050	-1	23
Alcatel-Lucent RRH2x	100.00	132	0.937	-0.120	0.102	-0.050	-6	165
Rymsa MGD3-800TX	100.00	46	0.937	-0.120	0.102	-0.050	-2	58
Antel BXA-171063/12C	100.00	45	0.937	-0.120	0.102	-0.050	-2	56
RFS DB-T1-6Z-8AB-0Z	100.00	44	0.937	-0.120	0.102	-0.050	-2	55
Antel BXA-70080/6CF_	100.00	54	0.937	-0.120	0.102	-0.050	-2	67
Powerwave Allgon P65	100.00	99	0.937	-0.120	0.102	-0.050	-4	123
Flat Platform w/ Han	100.00	2,000	0.937	-0.120	0.102	-0.050	-86	2,494
RFS ATMAA1412D-1A20	90.00	52	0.759	-0.103	0.043	-0.057	-3	65
Ericsson RRUS 11 B12	90.00	152	0.759	-0.103	0.043	-0.057	-8	190
Ericsson AIR 21, 1.3	90.00	332	0.759	-0.103	0.043	-0.057	-16	414
Ericsson AIR 21, 1.3	90.00	244	0.759	-0.103	0.043	-0.057	-12	305
Andrew LNX-6515DS-VT	90.00	154	0.759	-0.103	0.043	-0.057	-8	192
Flat Platform w/ Han	90.00	2,000	0.759	-0.103	0.043	-0.057	-99	2,494
Diamond X50A	80.00	5	0.600	-0.053	0.015	-0.027	0	6
Stand-Offs	80.00	100	0.600	-0.053	0.015	-0.027	-2	125
PCTEL GPS-TMG-HR-	63.00	1	0.372	0.027	0.008	0.045	0	1
Stand-Off	63.00	30	0.372	0.027	0.008	0.045	1	37
		41,464	76.376	18.007	21.249	5.965	1,718	51,711

Load Case (0.9 - 0.2Sds) * DL + E EMAM **Seismic (Reduced DL) Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	141.00	83	1.863	1.843	1.090	0.426	31	71
38	138.00	166	1.785	1.471	0.952	0.366	53	142
37	135.50	47	1.721	1.203	0.847	0.319	13	40
36	133.00	186	1.658	0.969	0.752	0.275	44	159
35	130.50	55	1.596	0.767	0.665	0.234	11	47
34	127.80	242	1.531	0.580	0.580	0.193	40	206

33	125.30	39	1.472	0.433	0.510	0.157	5	34
32	122.50	340	1.407	0.296	0.439	0.121	36	290
31	117.50	395	1.294	0.112	0.331	0.065	22	337
30	113.00	327	1.197	0.002	0.252	0.023	6	279
29	110.50	87	1.144	-0.041	0.215	0.003	0	74
28	107.50	445	1.083	-0.079	0.177	-0.016	-6	380
27	102.50	460	0.985	-0.113	0.124	-0.041	-16	392
26	97.50	530	0.891	-0.122	0.084	-0.055	-25	452
25	92.50	544	0.802	-0.112	0.054	-0.059	-28	464
24	87.50	622	0.718	-0.092	0.033	-0.053	-28	530
23	84.97	7	0.677	-0.080	0.026	-0.046	0	6
22	82.87	1,001	0.644	-0.068	0.020	-0.039	-33	853
21	80.40	131	0.606	-0.055	0.015	-0.029	-3	112
20	77.50	842	0.563	-0.039	0.011	-0.016	-11	718
19	72.50	863	0.493	-0.013	0.007	0.008	6	736
18	67.50	885	0.427	0.009	0.006	0.029	23	755
17	64.00	360	0.384	0.023	0.007	0.042	13	307
16	61.50	547	0.355	0.032	0.008	0.049	23	467
15	57.84	803	0.314	0.042	0.011	0.056	39	684
14	55.34	172	0.287	0.048	0.013	0.060	9	147
13	52.50	1,286	0.258	0.054	0.016	0.063	70	1,096
12	47.70	1,202	0.213	0.061	0.021	0.065	68	1,025
11	45.20	172	0.191	0.064	0.024	0.066	10	147
10	42.62	2,073	0.170	0.066	0.027	0.065	118	1,768
9	40.12	71	0.151	0.068	0.030	0.065	4	60
8	37.50	1,460	0.132	0.069	0.033	0.064	81	1,245
7	32.50	1,485	0.099	0.071	0.037	0.063	81	1,267
6	27.50	1,511	0.071	0.072	0.041	0.061	80	1,288
5	22.50	1,536	0.047	0.071	0.042	0.059	79	1,310
4	17.50	1,562	0.029	0.068	0.040	0.056	76	1,332
3	12.50	1,587	0.015	0.060	0.035	0.051	71	1,354
2	7.50	1,613	0.005	0.045	0.026	0.041	57	1,375
1	2.50	1,638	0.001	0.019	0.010	0.020	28	1,397
RCU (Remote Control	136.00	3	1.734	1.254	0.867	0.328	1	3
Kathrein Scala 742-2	136.00	68	1.734	1.254	0.867	0.328	19	58
Powerwave Allgon 702	131.00	26	1.609	0.805	0.682	0.242	6	23
Powerwave Allgon LGP	131.00	169	1.609	0.805	0.682	0.242	35	144
Raycap DC6-48-60-18-	131.00	32	1.609	0.805	0.682	0.242	7	27
Ericsson RRUS A2 Mod	131.00	64	1.609	0.805	0.682	0.242	13	54
Ericsson RRUS-11 (50	131.00	150	1.609	0.805	0.682	0.242	31	128
Ericsson RRUS 12 w/	131.00	174	1.609	0.805	0.682	0.242	36	148
Powerwave Allgon 777	131.00	210	1.609	0.805	0.682	0.242	44	179
CCI HPA-65R-BUU-H6	131.00	153	1.609	0.805	0.682	0.242	32	130
Flat Platform w/ Han	131.00	2,000	1.609	0.805	0.682	0.242	419	1,706
DragonWave Horizon C	120.00	21	1.350	0.195	0.382	0.092	2	18
Alcatel-Lucent RRH2x	120.00	159	1.350	0.195	0.382	0.092	13	135
NextNet BTS-2500	120.00	105	1.350	0.195	0.382	0.092	8	90
Alcatel-Lucent 800 M	120.00	192	1.350	0.195	0.382	0.092	15	164
Alcatel-Lucent 1900	120.00	180	1.350	0.195	0.382	0.092	14	154
Alcatel-Lucent TD-RR	120.00	210	1.350	0.195	0.382	0.092	17	179
Argus LLPX310R	120.00	86	1.350	0.195	0.382	0.092	7	73
DragonWave A-ANT-18G	120.00	54	1.350	0.195	0.382	0.092	4	46
RFS APXVSPP18-C-A20	120.00	171	1.350	0.195	0.382	0.092	14	146
Commscope DT465B-	120.00	174	1.350	0.195	0.382	0.092	14	148
Flat Platform w/ Han	120.00	2,000	1.350	0.195	0.382	0.092	159	1,706
48" x 8" Panel	111.00	180	1.155	-0.034	0.223	0.007	1	154
Flat Platform w/ Han	111.00	2,000	1.155	-0.034	0.223	0.007	12	1,706
RFS FD9R6004/1C-3L	100.00	19	0.937	-0.120	0.102	-0.050	-1	16
Alcatel-Lucent RRH2x	100.00	132	0.937	-0.120	0.102	-0.050	-6	113
Rymsa MGD3-800TX	100.00	46	0.937	-0.120	0.102	-0.050	-2	39
Antel BXA-171063/12C	100.00	45	0.937	-0.120	0.102	-0.050	-2	38
RFS DB-T1-6Z-8AB-0Z	100.00	44	0.937	-0.120	0.102	-0.050	-2	38
Antel BXA-70080/6CF_	100.00	54	0.937	-0.120	0.102	-0.050	-2	46
Powerwave Allgon P65	100.00	99	0.937	-0.120	0.102	-0.050	-4	84

Flat Platform w/ Han	100.00	2,000	0.937	-0.120	0.102	-0.050	-86	1,706
RFS ATMAA1412D-1A20	90.00	52	0.759	-0.103	0.043	-0.057	-3	44
Ericsson RRUS 11 B12	90.00	152	0.759	-0.103	0.043	-0.057	-8	130
Ericsson AIR 21, 1.3	90.00	332	0.759	-0.103	0.043	-0.057	-16	283
Ericsson AIR 21, 1.3	90.00	244	0.759	-0.103	0.043	-0.057	-12	209
Andrew LNX-6515DS-VT	90.00	154	0.759	-0.103	0.043	-0.057	-8	131
Flat Platform w/ Han	90.00	2,000	0.759	-0.103	0.043	-0.057	-99	1,706
Diamond X50A	80.00	5	0.600	-0.053	0.015	-0.027	0	4
Stand-Offs	80.00	100	0.600	-0.053	0.015	-0.027	-2	85
PCTEL GPS-TMG-HR-	63.00	1	0.372	0.027	0.008	0.045	0	1
Stand-Off	63.00	30	0.372	0.027	0.008	0.045	1	26
		41,464	76.376	18.007	21.249	5.965	1,718	35,362

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.67	-1.69	0.00	-151.31	0.00	151.31	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.036
5.00	-47.66	-1.64	0.00	-142.85	0.00	142.85	4,285.51	2,142.75	7,679.11	3,792.42	0.01	-0.01	0.035
10.00	-45.68	-1.58	0.00	-134.63	0.00	134.63	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.034
15.00	-43.73	-1.51	0.00	-126.73	0.00	126.73	4,150.52	2,075.26	7,070.06	3,491.64	0.04	-0.03	0.033
20.00	-41.81	-1.44	0.00	-119.19	0.00	119.19	4,080.16	2,040.08	6,769.73	3,343.32	0.08	-0.04	0.032
25.00	-39.93	-1.36	0.00	-112.00	0.00	112.00	4,007.88	2,003.94	6,472.54	3,196.54	0.12	-0.05	0.031
30.00	-38.08	-1.29	0.00	-105.19	0.00	105.19	3,933.69	1,966.85	6,178.73	3,051.44	0.18	-0.06	0.030
35.00	-36.26	-1.21	0.00	-98.77	0.00	98.77	3,854.52	1,927.26	5,883.88	2,905.83	0.24	-0.07	0.029
40.00	-36.17	-1.21	0.00	-92.72	0.00	92.72	3,744.12	1,872.06	5,549.75	2,740.81	0.32	-0.08	0.029
40.24	-33.58	-1.09	0.00	-92.43	0.00	92.43	3,738.74	1,869.37	5,533.71	2,732.89	0.32	-0.08	0.028
45.00	-33.37	-1.08	0.00	-87.24	0.00	87.24	3,633.72	1,816.86	5,225.39	2,580.62	0.40	-0.09	0.028
45.40	-31.87	-1.02	0.00	-86.81	0.00	86.81	3,063.79	1,531.89	4,506.32	2,225.50	0.41	-0.09	0.031
50.00	-30.27	-0.95	0.00	-82.14	0.00	82.14	3,008.67	1,504.34	4,302.82	2,125.00	0.50	-0.10	0.030
55.00	-30.05	-0.94	0.00	-77.40	0.00	77.40	2,946.93	1,473.46	4,084.17	2,017.02	0.60	-0.11	0.029
55.68	-29.05	-0.90	0.00	-76.77	0.00	76.77	2,938.42	1,469.21	4,054.78	2,002.51	0.62	-0.11	0.029
55.68	-29.05	-0.90	0.00	-76.77	0.00	76.77	2,938.42	1,469.21	4,054.78	2,002.51	0.62	-0.11	0.048
60.00	-28.37	-0.88	0.00	-72.86	0.00	72.86	2,883.27	1,441.64	3,868.42	1,910.47	0.72	-0.12	0.048
63.00	-27.88	-0.87	0.00	-70.21	0.00	70.21	2,844.16	1,422.08	3,740.46	1,847.27	0.79	-0.13	0.048
65.00	-26.77	-0.85	0.00	-68.47	0.00	68.47	2,808.42	1,404.21	3,643.77	1,799.52	0.85	-0.14	0.048
70.00	-25.70	-0.85	0.00	-64.19	0.00	64.19	2,713.79	1,356.89	3,400.96	1,679.61	1.00	-0.16	0.048
75.00	-24.65	-0.87	0.00	-59.92	0.00	59.92	2,619.16	1,309.58	3,166.52	1,563.83	1.18	-0.18	0.048
80.00	-24.35	-0.88	0.00	-55.56	0.00	55.56	2,524.53	1,262.26	2,940.46	1,452.18	1.37	-0.20	0.048
80.79	-23.10	-0.92	0.00	-54.86	0.00	54.86	2,509.53	1,254.76	2,905.39	1,434.86	1.40	-0.20	0.047
84.94	-23.10	-0.92	0.00	-51.06	0.00	51.06	1,499.90	749.95	1,728.05	853.42	1.59	-0.22	0.075
85.00	-22.32	-0.95	0.00	-51.01	0.00	51.01	1,499.54	749.77	1,726.89	852.85	1.59	-0.22	0.075
90.00	-17.98	-1.12	0.00	-46.26	0.00	46.26	1,466.64	733.32	1,624.12	802.09	1.83	-0.25	0.070
95.00	-17.32	-1.15	0.00	-40.68	0.00	40.68	1,431.82	715.91	1,522.23	751.77	2.11	-0.28	0.066
100.00	-13.70	-1.26	0.00	-34.94	0.00	34.94	1,395.09	697.54	1,421.47	702.01	2.42	-0.31	0.060
105.00	-13.15	-1.27	0.00	-28.66	0.00	28.66	1,356.44	678.22	1,322.10	652.93	2.76	-0.34	0.054
110.00	-13.04	-1.27	0.00	-22.32	0.00	22.32	1,315.88	657.94	1,224.36	604.67	3.14	-0.37	0.047
111.00	-9.91	-1.23	0.00	-21.05	0.00	21.05	1,307.54	653.77	1,205.03	595.12	3.21	-0.37	0.043
115.00	-9.42	-1.21	0.00	-16.13	0.00	16.13	1,273.40	636.70	1,128.51	557.33	3.53	-0.39	0.036
120.00	-4.82	-0.88	0.00	-10.08	0.00	10.08	1,215.41	607.71	1,023.37	505.40	3.95	-0.41	0.024
125.00	-4.77	-0.87	0.00	-5.70	0.00	5.70	1,152.33	576.16	919.28	454.00	4.39	-0.42	0.017
125.59	-4.47	-0.83	0.00	-5.18	0.00	5.18	1,144.85	572.43	907.31	448.09	4.44	-0.42	0.015
125.59	-4.47	-0.83	0.00	-5.18	0.00	5.18	385.02	192.51	160.54	106.00	4.44	-0.42	0.061
130.00	-4.40	-0.82	0.00	-1.53	0.00	1.53	385.02	192.51	160.54	106.00	4.83	-0.43	0.026
131.00	-0.46	-0.12	0.00	-0.71	0.00	0.71	385.02	192.51	160.54	106.00	4.92	-0.43	0.008
135.00	-0.40	-0.11	0.00	-0.23	0.00	0.23	385.02	192.51	160.54	106.00	5.28	-0.43	0.003
136.00	-0.10	-0.03	0.00	-0.13	0.00	0.13	385.02	192.51	160.54	106.00	5.37	-0.43	0.001
140.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	5.74	-0.43	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	5.92	-0.43	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM **Seismic (Reduced DL) Equivalent Modal Analysis Method**

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.97	-1.69	0.00	-148.97	0.00	148.97	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.033
5.00	-32.59	-1.64	0.00	-140.51	0.00	140.51	4,285.51	2,142.75	7,679.11	3,792.42	0.00	-0.01	0.032
10.00	-31.24	-1.57	0.00	-132.32	0.00	132.32	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.031
15.00	-29.90	-1.50	0.00	-124.45	0.00	124.45	4,150.52	2,075.26	7,070.06	3,491.64	0.04	-0.03	0.030
20.00	-28.59	-1.43	0.00	-116.94	0.00	116.94	4,080.16	2,040.08	6,769.73	3,343.32	0.08	-0.04	0.029
25.00	-27.30	-1.35	0.00	-109.81	0.00	109.81	4,007.88	2,003.94	6,472.54	3,196.54	0.12	-0.05	0.028
30.00	-26.04	-1.27	0.00	-103.06	0.00	103.06	3,933.69	1,966.85	6,178.73	3,051.44	0.17	-0.06	0.027
35.00	-24.79	-1.19	0.00	-96.69	0.00	96.69	3,854.52	1,927.26	5,883.88	2,905.83	0.24	-0.06	0.026
40.00	-24.73	-1.19	0.00	-90.72	0.00	90.72	3,744.12	1,872.06	5,549.75	2,740.81	0.31	-0.07	0.026
40.24	-22.96	-1.07	0.00	-90.43	0.00	90.43	3,738.74	1,869.37	5,533.71	2,732.89	0.31	-0.07	0.026
45.00	-22.82	-1.07	0.00	-85.32	0.00	85.32	3,633.72	1,816.86	5,225.39	2,580.62	0.39	-0.08	0.025
45.40	-21.79	-1.00	0.00	-84.90	0.00	84.90	3,063.79	1,531.89	4,506.32	2,225.50	0.40	-0.08	0.028
50.00	-20.70	-0.93	0.00	-80.30	0.00	80.30	3,008.67	1,504.34	4,302.82	2,125.00	0.49	-0.09	0.027
55.00	-20.55	-0.92	0.00	-75.65	0.00	75.65	2,946.93	1,473.46	4,084.17	2,017.02	0.59	-0.10	0.027
55.68	-19.86	-0.88	0.00	-75.03	0.00	75.03	2,938.42	1,469.21	4,054.78	2,002.51	0.60	-0.11	0.027
55.68	-19.86	-0.88	0.00	-75.03	0.00	75.03	2,938.42	1,469.21	4,054.78	2,002.51	0.60	-0.11	0.044
60.00	-19.40	-0.86	0.00	-71.21	0.00	71.21	2,883.27	1,441.64	3,868.42	1,910.47	0.70	-0.11	0.044
63.00	-19.06	-0.85	0.00	-68.62	0.00	68.62	2,844.16	1,422.08	3,740.46	1,847.27	0.78	-0.13	0.044
65.00	-18.31	-0.83	0.00	-66.91	0.00	66.91	2,808.42	1,404.21	3,643.77	1,799.52	0.83	-0.13	0.044
70.00	-17.57	-0.83	0.00	-62.75	0.00	62.75	2,713.79	1,356.89	3,400.96	1,679.61	0.98	-0.15	0.044
75.00	-16.85	-0.85	0.00	-58.60	0.00	58.60	2,619.16	1,309.58	3,166.52	1,563.83	1.15	-0.17	0.044
80.00	-16.65	-0.85	0.00	-54.37	0.00	54.37	2,524.53	1,262.26	2,940.46	1,452.18	1.34	-0.19	0.044
80.79	-15.80	-0.89	0.00	-53.70	0.00	53.70	2,509.53	1,254.76	2,905.39	1,434.86	1.38	-0.20	0.044
84.94	-15.79	-0.89	0.00	-50.01	0.00	50.01	1,499.90	749.95	1,728.05	853.42	1.56	-0.21	0.069
85.00	-15.26	-0.92	0.00	-49.96	0.00	49.96	1,499.54	749.77	1,726.89	852.85	1.56	-0.21	0.069
90.00	-12.29	-1.09	0.00	-45.36	0.00	45.36	1,466.64	733.32	1,624.12	802.09	1.80	-0.24	0.065
95.00	-11.84	-1.12	0.00	-39.92	0.00	39.92	1,431.82	715.91	1,522.23	751.77	2.07	-0.27	0.061
100.00	-9.37	-1.23	0.00	-34.33	0.00	34.33	1,395.09	697.54	1,421.47	702.01	2.37	-0.30	0.056
105.00	-8.99	-1.24	0.00	-28.17	0.00	28.17	1,356.44	678.22	1,322.10	652.93	2.71	-0.33	0.050
110.00	-8.91	-1.24	0.00	-21.97	0.00	21.97	1,315.88	657.94	1,224.36	604.67	3.07	-0.36	0.043
111.00	-6.78	-1.21	0.00	-20.73	0.00	20.73	1,307.54	653.77	1,205.03	595.12	3.15	-0.36	0.040
115.00	-6.44	-1.19	0.00	-15.89	0.00	15.89	1,273.40	636.70	1,128.51	557.33	3.46	-0.38	0.034
120.00	-3.29	-0.87	0.00	-9.95	0.00	9.95	1,215.41	607.71	1,023.37	505.40	3.87	-0.40	0.022
125.00	-3.26	-0.86	0.00	-5.63	0.00	5.63	1,152.33	576.16	919.28	454.00	4.30	-0.41	0.015
125.59	-3.05	-0.82	0.00	-5.12	0.00	5.12	1,144.85	572.43	907.31	448.09	4.35	-0.41	0.014
125.59	-3.05	-0.82	0.00	-5.12	0.00	5.12	385.02	192.51	160.54	106.00	4.35	-0.41	0.056
130.00	-3.01	-0.81	0.00	-1.51	0.00	1.51	385.02	192.51	160.54	106.00	4.74	-0.42	0.022
131.00	-0.31	-0.12	0.00	-0.70	0.00	0.70	385.02	192.51	160.54	106.00	4.82	-0.42	0.007
135.00	-0.27	-0.11	0.00	-0.23	0.00	0.23	385.02	192.51	160.54	106.00	5.18	-0.42	0.003
136.00	-0.07	-0.03	0.00	-0.12	0.00	0.12	385.02	192.51	160.54	106.00	5.27	-0.43	0.001
140.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	5.62	-0.43	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	385.02	192.51	160.54	106.00	5.80	-0.43	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	42.04	0.00	49.67	0.00	0.00	3733.21	84.94	0.86
0.9D + 1.6W	41.27	0.00	37.23	0.00	0.00	3612.18	84.94	0.82
1.2D + 1.0Di + 1.0Wi	10.31	0.00	84.98	0.00	0.00	958.24	84.94	0.26
(1.2 + 0.2Sds) * DL + E ELFM	1.75	0.00	49.67	0.00	0.00	189.11	84.94	0.07
(1.2 + 0.2Sds) * DL + E EMAM	1.69	0.00	49.67	0.00	0.00	151.31	84.94	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.75	0.00	33.97	0.00	0.00	186.44	84.94	0.06
(0.9 - 0.2Sds) * DL + E EMAM	1.69	0.00	33.97	0.00	0.00	148.97	84.94	0.07
1.0D + 1.0W	10.75	0.00	41.46	0.00	0.00	945.26	84.94	0.23

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	55.6	(4) SOL-#20 All Thre	331.7	10.0	16.8	196.1	12.0	17	22	0.0	12.0	0	0	256.2	330.5	0.775

Base/Flange Plate	Plate Type	*Baseplate*	
	Pole Diameter	45	in
	Pole Thickness	0.4375	in
	Plate Diameter	60	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	942.65	k-in
	Applied	414.37	k-in
Stiffeners	#	*16*	*Show*
	Thickness	0.5	in
	Length	4	in
	Height	10	in
	Chamfer	0	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts	#	*16*	
	Bolt Circle	54	in
	(R)adial / (S)quare	R	
●	Diameter	2.25	in
	Hole Diameter	2.75	in
	Type	18J	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	147.33	k
Reinforcement	#	*4*	
●	DYW. Circle	52	in
	Offset Angle	11.25	°
	Type	#20	
	Diameter	2.5	in
	Fu	100	ksi
	ϕ_s Resistance	392.70	k
	Applied	256.65	k
Extra Bolts O	#	*0*	

Code Rev. *G*

Moment 3733.2 k-ft
Axial 49.7 k

Date	11/2/2017
Engineer	Charles.Cages
Site #	302511
Carrier	SPRINT NEXTEL

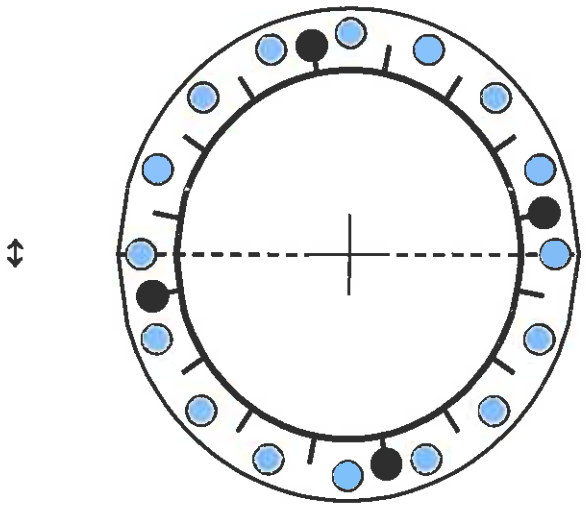


Plate Stress Ratio:
0.44 (Pass)

Bolt Stress Ratio:
0.57 (Pass)

Reinforcement Stress Ratio:
0.65 (Pass)

Code Rev.	G	
Moment	37.1 k-ft	
Axial	3.9 k	

Date	11/2/2017
Engineer	Charles.Cages
Site #	302511
Carrier	SPRINT NEXTEL

Base/Flange Plate	Plate Type	*Flange @ 125.6 ft*	
	Pole Diameter	10.75	in
	Pole Thickness	0.375	in
	Plate Diameter	28.5	in
	Plate Thickness	1	in
	Plate Fy	36	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	85.53	k-in
	Applied	28.62	k-in
Stiffeners	#	*9*	*Show*
	Thickness	0.25	in
	Length	4	in
	Height	6	in
	Chamfer	0	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts	#	*15*	
	Bolt Circle	25.75	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1.1875	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	4.34	k
Reinforcement ●	#		
Extra Bolts O	#	*0*	

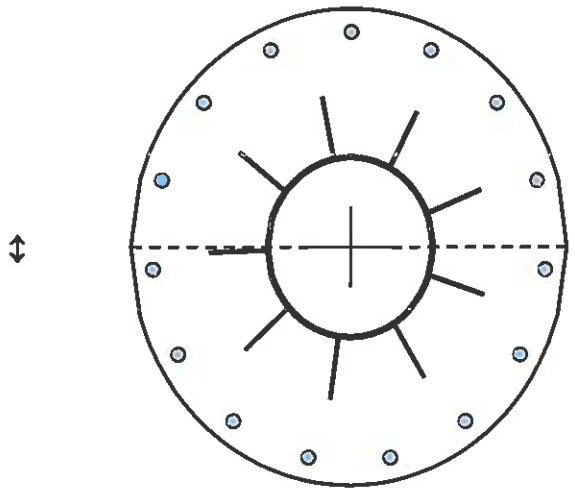
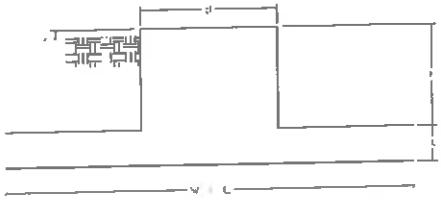


Plate Stress Ratio:
0.33 (Pass)

Bolt Stress Ratio:
0.08 (Pass)

Site Name:	WSPT - South, CT
Site Number:	302511
Engineering Number:	OAA713869
Engineer:	Charles.Cages
Date:	11/02/17
Tower Type:	MP

Program Last Updated: *#REF!*



Design Loads (Factored) - Analysis per TIA-222-G Standards

Design / Analysis / Mapping:	Mapping	
Compression/Leg:	49.7	k
Uplift/Leg:	0.0	k
Total Shear:	42.0	k
Moment:	3733.2	k-ft
Tower + Appurtenance Weight:	49.7	k
Depth to Base of Foundation (l + t - h):	7.00	ft
Diameter of Pier (d):	6.50	ft
Height of Pier above Ground (h):	0.50	
Width of Pad (W):	26.50	ft
Length of Pad (L):	26.50	ft
Thickness of Pad (t):	3.00	ft
Tower Leg Center to Center:	0.00	ft
Number of Tower Legs:	1.0	(1 if MP or GT)
Tower Center from Mat Center:	0.00	ft
Depth Below Ground Surface to Water Table:	9.50	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil Above Water Table:	120.0	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	60.0	pcf
Friction Angle of Uplift:	15.0	Degrees
Ultimate Coefficient of Shear Friction:	0.35	
Ultimate Compressive Bearing Pressure:	20000.0	psf
Ultimate Passive Pressure on Pad Face:	500.0	psf
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9	
ϕ_{Soil}:	0.75	

Overturning Moment Usage

Design OTM:	4048.5	k-ft
OTM Resistance:	8916.8	k-ft
Design OTM / OTM Resistance:	0.45	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	2087	psf
Factored Nominal Bearing Pressure:	15000	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.14	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety

Total Factored Sliding Resistance:	210.8	k
Sliding Design / Sliding Resistance:	0.20	Result: OK

Sprint

PROJECT:	DO MACRO UPGRADE
SITE NAME:	TURKEY HILL
SITE CASCADE:	CT03XC336
SITE ADDRESS:	20 POST OFFICE LANE WESTPORT, CT 06880
SITE TYPE:	MONOPOLE TOWER
MARKET:	SOUTHERN CONNECTICUT

SITE INFORMATION

TOWER OWNER:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801

LATITUDE (NAD83):
41° 7' 24.27" N
41.12340833

LONGITUDE (NAD83):
73° 18' 46.93" W
-73.3131

COUNTY:
FAIRFIELD

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

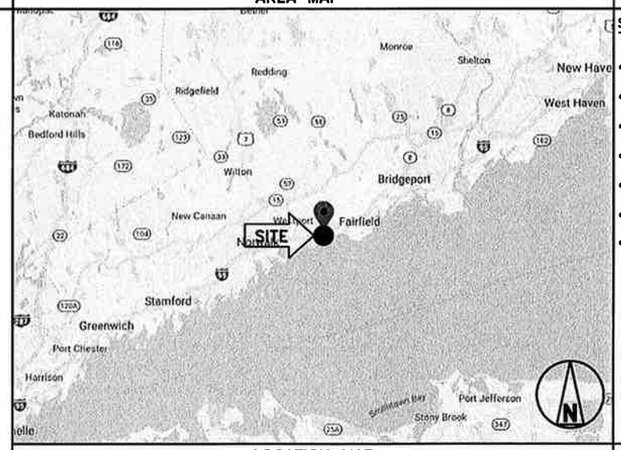
ZONING DISTRICT:
RESIDENTIAL AAA

POWER COMPANY:
CONNECTICUT LIGHT & POWER
PHONE: (800) 322-3223

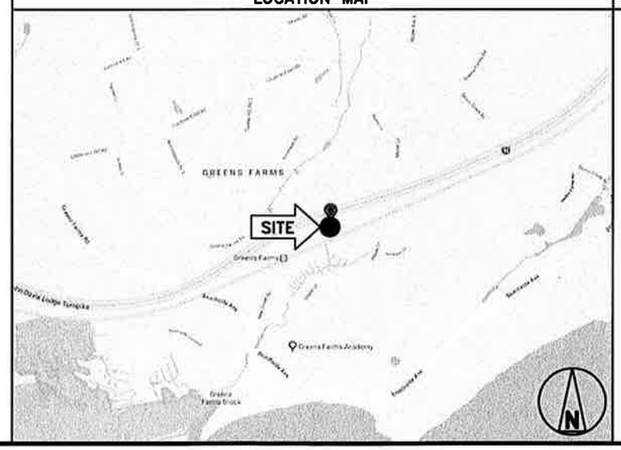
AAV PROVIDER:
AT&T
PHONE: (210) 821-4105

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
TERRI BURKHOLDER
(315) 719-2928
TBURKHOLDER@AIROSMITHDEVELOPMENT.COM

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE (3) EXISTING PANEL ANTENNAS
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) 2.5 GHz RRH'S BEHIND ANTENNAS
- INSTALL (3) 800 MHz RRH'S BEHIND ANTENNAS
- INSTALL (30) JUMPER CABLES
- INSTALL (1) HYBRID CABLE
- INSTALL 2.5 EQUIPMENT INSIDE EXISTING N.V. MMBS CABINET

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 (2015 IBC)
2. TIA-222-G 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

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www.infinigy.com

JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
JAN 25 2018
No. 24170
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:
TURKEY HILL

SITE NUMBER:
CT03XC336

SITE ADDRESS:
20 POST OFFICE LANE
WESTPORT, CT 06880

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:

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JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:

TURKEY HILL

SITE NUMBER:

CT03XC336

SITE ADDRESS:

20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.

1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.

1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)

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ENGINEERING LICENSE:

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:
TURKEY HILL

SITE NUMBER:
CT03XC336

SITE ADDRESS:
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.

6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.

2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;

3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.

4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;

6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.

7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.

8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.

9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

1. 1SHELTER AND TOWER OVERVIEW.

2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).

3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).

4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.

9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.

14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.

18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.

19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING – WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

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PROJECT MANAGER:

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OFFICE#. (518) 306-3740

ENGINEERING LICENSE:

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:

TURKEY HILL

SITE NUMBER:

CT03XC336

SITE ADDRESS:

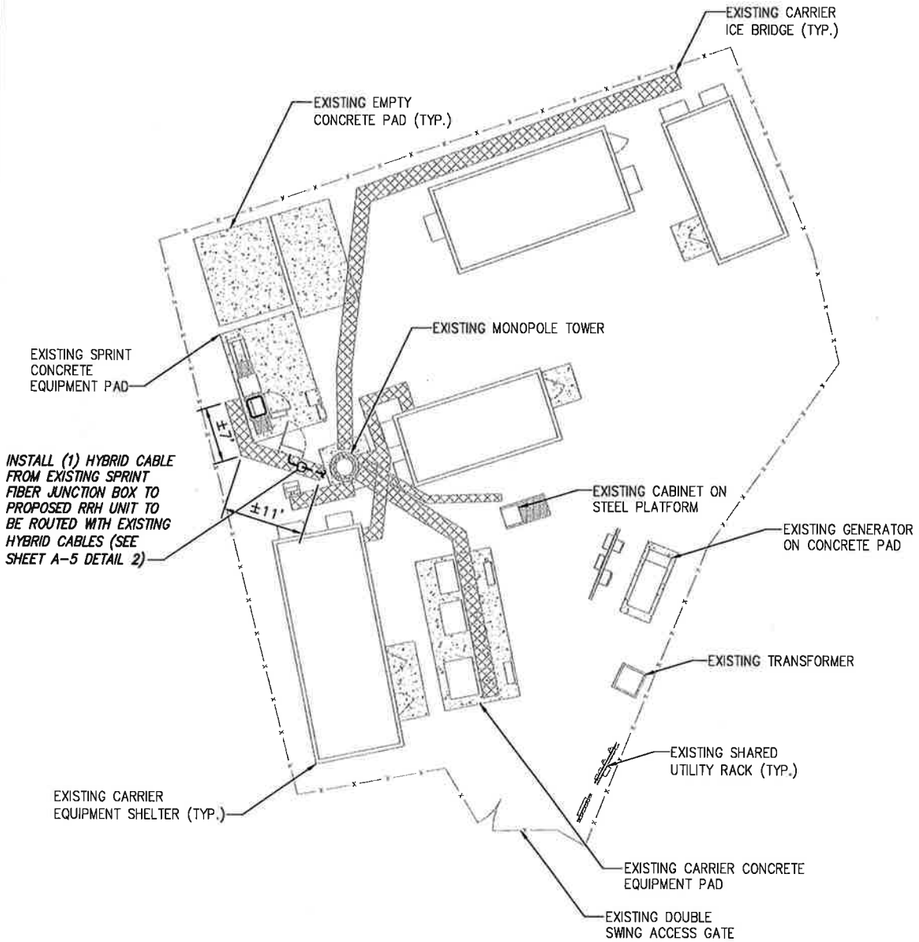
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

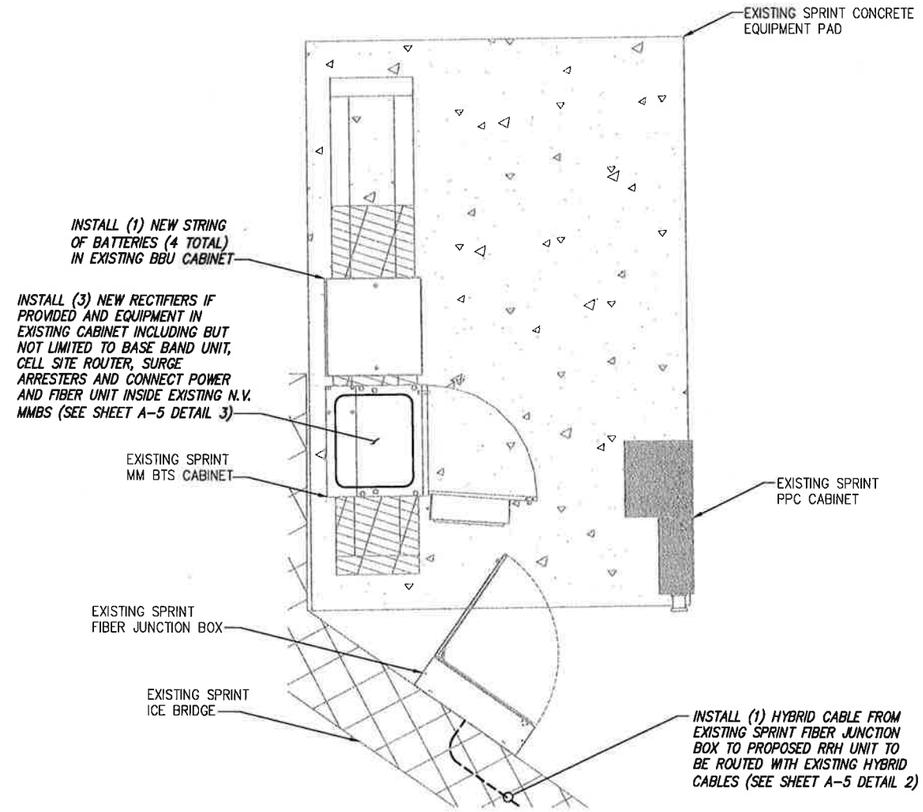
SP-3



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

GRAPHIC SCALE:
20' 10' 0 10' 20'
SCALE (11x17): 1" = 20'-0"
SCALE (22x34): 1" = 10'-0"

OVERALL SITE PLAN | SCALE: AS NOTED | 1



GRAPHIC SCALE:
4' 2' 0 2' 4'
SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

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OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTION
JOHN S. STEVENS
JAN 26 2018
NO. 24705
LICENSED PROFESSIONAL ENGINEER

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DESCRIPTION	DATE	BY	REV.
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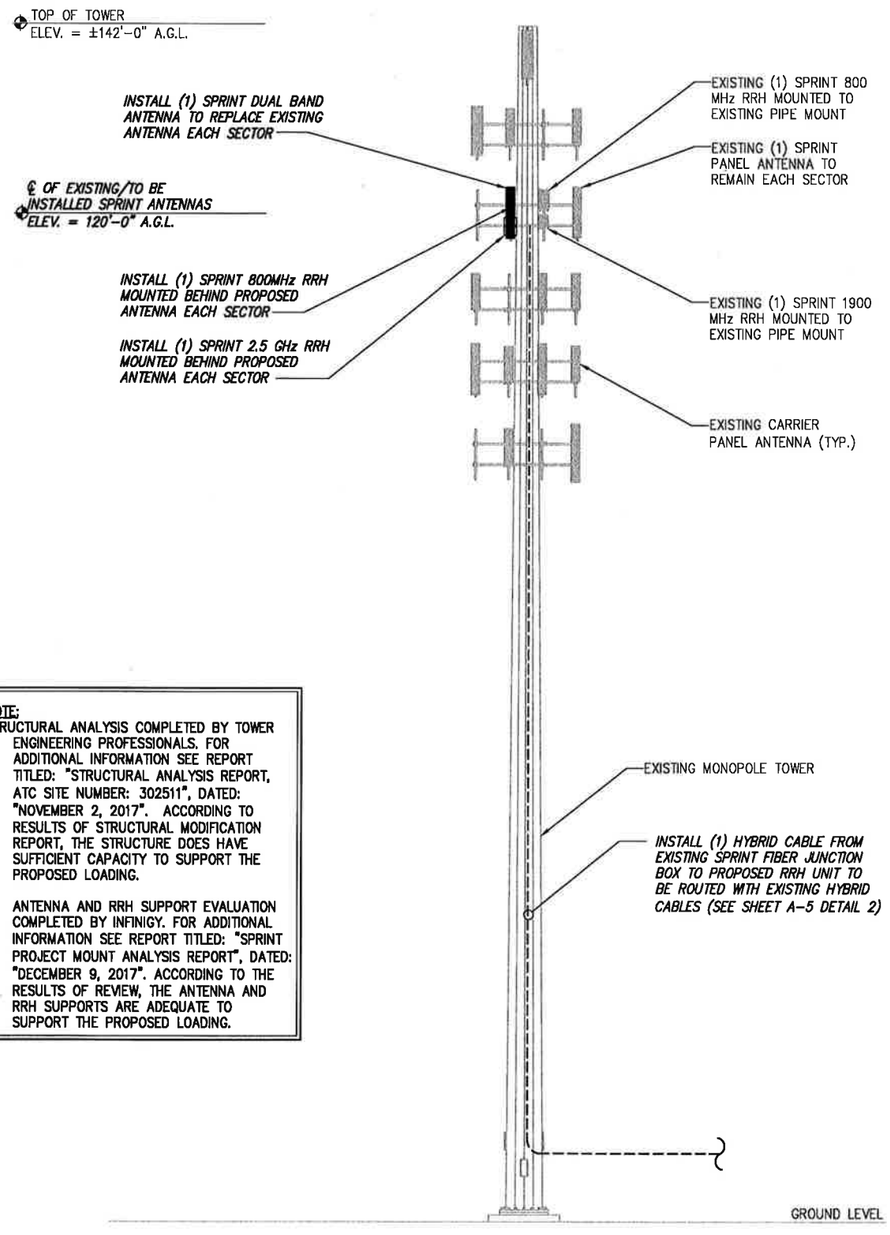
SITE ADDRESS:
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:
SITE PLAN

SHEET NUMBER:
A-1

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

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



NOTE:
STRUCTURAL ANALYSIS COMPLETED BY TOWER ENGINEERING PROFESSIONALS. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, ATC SITE NUMBER: 302511", DATED: "NOVEMBER 2, 2017". ACCORDING TO RESULTS OF STRUCTURAL MODIFICATION REPORT, THE STRUCTURE DOES HAVE SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.

- ANTENNA AND RRH SUPPORT EVALUATION COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "SPRINT PROJECT MOUNT ANALYSIS REPORT", DATED: "DECEMBER 9, 2017". ACCORDING TO THE RESULTS OF REVIEW, THE ANTENNA AND RRH SUPPORTS ARE ADEQUATE TO SUPPORT THE PROPOSED LOADING.

TOWER ELEVATION | NO SCALE | 1

SITE LOADING CHART

SECTOR	EXISTING/ PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/ REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	*PROPOSED*	*DT465B-2XR*	*COMMSCOPE*	*50°*	1	–	*(2) 800 MHZ 2X50W RRH W/ FILTER*	*SEE SHEET A-5 DETAIL 1*	*±146'**	*±120' AGL*
	EXISTING	*APXV9TM14-ALU-I20*	*RFS*	*50°*	1	*REMOVE*	*(1) TD-RRHBX20-25 W/ SOLAR SHIELD*	*EXISTING HYBRID*		
	EXISTING	*APXVSSP18-C-A20*	*RFS*	*50°*	1	*REMAIN*	*(1) 1900 MHz 4X45 RRH*	*EXISTING HYBRID*		
BETA	*PROPOSED*	*DT465B-2XR*	*COMMSCOPE*	*130°*	1	–	*(2) 800 MHZ 2X50W RRH W/ FILTER*	*SEE SHEET A-5 DETAIL 1*		*±120' AGL*
	EXISTING	*APXV9TM14-ALU-I20*	*RFS*	*130°*	1	*REMOVE*	*(1) TD-RRHBX20-25 W/ SOLAR SHIELD*	*EXISTING HYBRID*		
	EXISTING	*APXVSPP18-C-A20*	*RFS*	*130°*	1	*REMAIN*	*(1) 1900 MHz 4X45 RRH*	*EXISTING HYBRID*		
GAMMA	*PROPOSED*	*DT465B-2XR*	*COMMSCOPE*	*270°*	1	–	*(2) 800 MHZ 2X50W RRH W/ FILTER*	*SEE SHEET A-5 DETAIL 1*		*±120' AGL*
	EXISTING	*APXV9TM14-ALU-I20*	*RFS*	*270°*	1	*REMOVE*	*(1) TD-RRHBX20-25 W/ SOLAR SHIELD*	*EXISTING HYBRID*		
	EXISTING	*APXVSPP18-C-A20*	*RFS*	*270°*	1	*REMAIN*	*(1) 1900 MHz 4X45 RRH*	*EXISTING HYBRID*		

PROJECT SCOPE:

REMOVE: (3) PANEL ANTENNAS; INSTALL: (3) PANEL ANTENNAS AND (6) RRH'S

* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

SITE LOADING CHART | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

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ENGINEERING LICENSE:
STATE OF CONNECTICUT
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JAN 29 2018
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REVISIONS:

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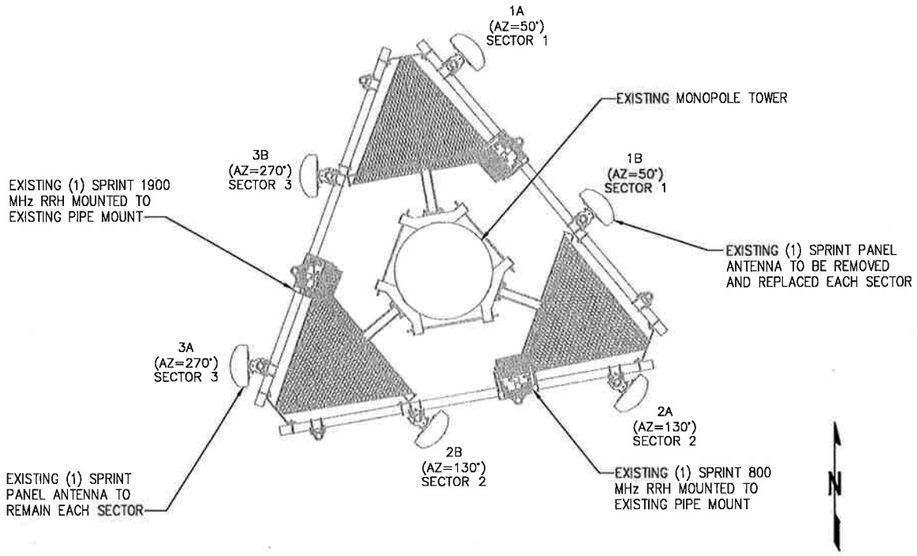
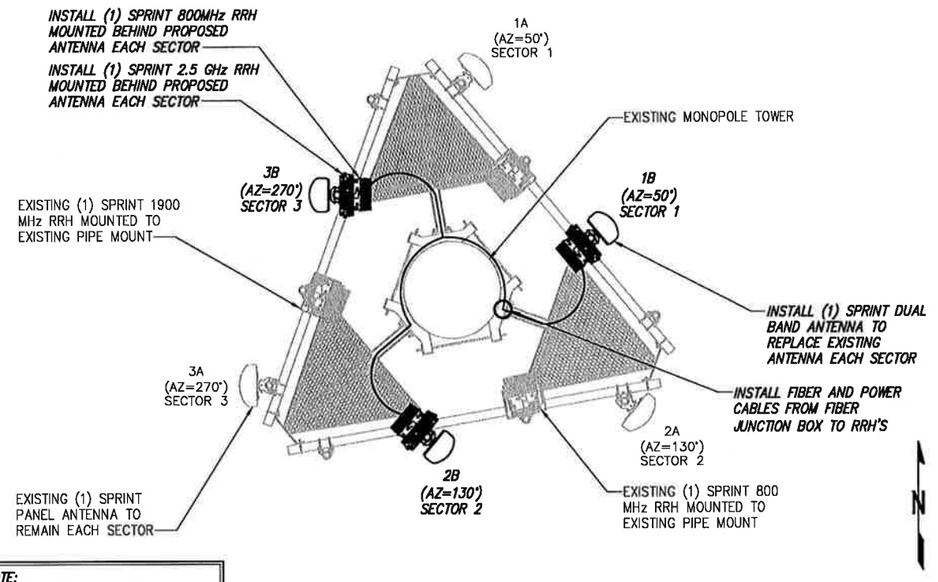
SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



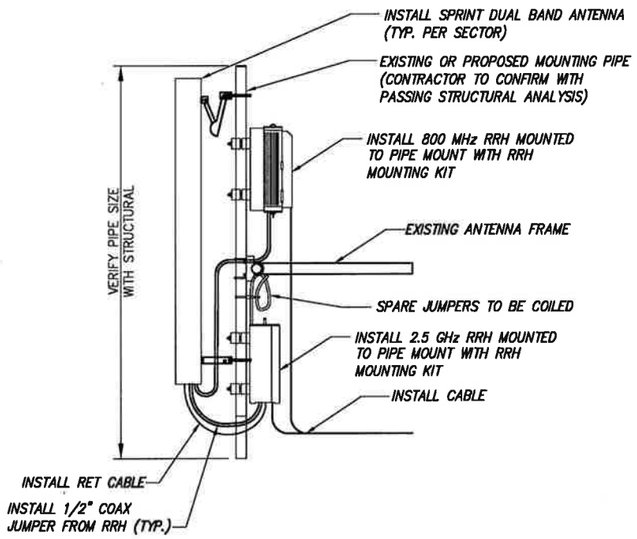
EXISTING ANTENNA & RRH LAYOUT | NO SCALE | 1

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



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

FINAL ANTENNA & RRH LAYOUT | NO SCALE | 2



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

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

NOTES:

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

TYPICAL ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 3

DETAIL NOT USED | NO SCALE | 4

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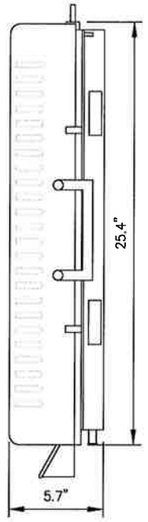
WESTPORT, CT 06880

SHEET DESCRIPTION:
ANTENNA LAYOUT
& MOUNTING DETAILS

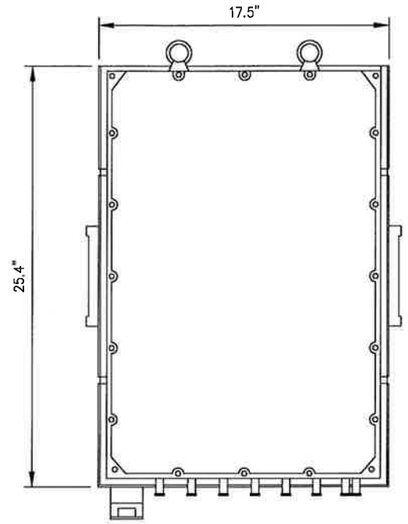
SHEET NUMBER:
A-3

RRH: ALCATEL LUCENT TD-RRH8X20

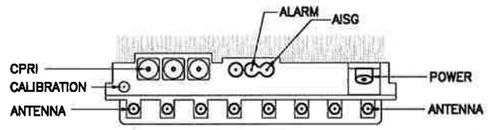
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW



PLAN VIEW

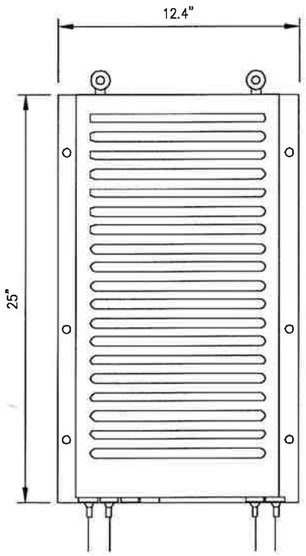
NOTES

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

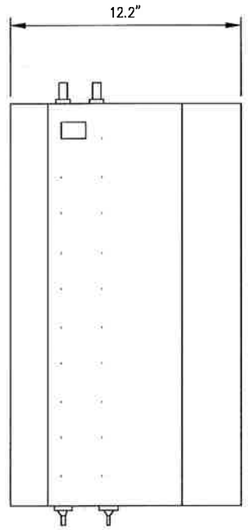
2.5 GHz RRH'S | NO SCALE | 1

RRH: ALCATEL LUCENT 1900 MHz

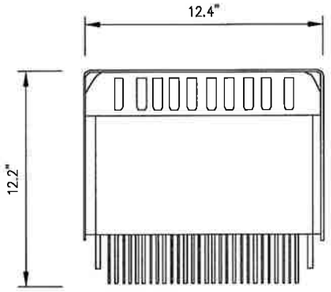
COLOR: LIGHT GREY
WEIGHT: 70 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)



FRONT VIEW



SIDE VIEW

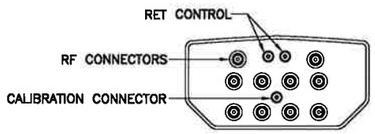


TOP VIEW

EXISTING 1900 MHz RRH | NO SCALE | 2

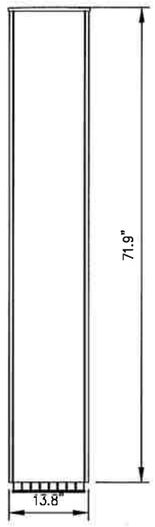
ANTENNA COMMSCOPE DT465B-2XR

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in(mim):	71.9"x13.8"x8.2" (1825x350x209mm)
WEIGHT:	58 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE
	(8) 4.1/9.5 DIN FEMALE



PLAN VIEW

SIDE VIEW



FRONT VIEW

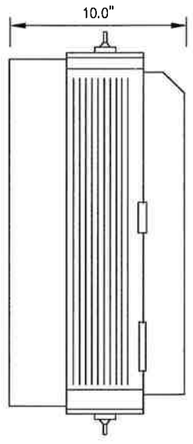
TRIBAND ANTENNA | NO SCALE | 3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

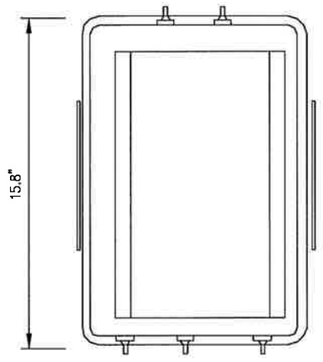
COLOR: LIGHT GREY
WEIGHT: 53 LBS.

NOTES

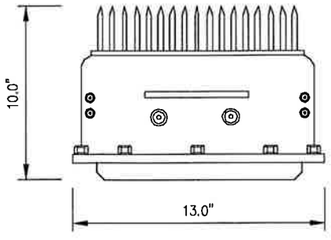
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.



SIDE VIEW



FRONT VIEW



PLAN VIEW

800 MHz RRH | NO SCALE | 4

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
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Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING FIRM:


DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:
TURKEY HILL

SITE NUMBER:
CT03XC336

SITE ADDRESS:
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-4

RFS HYBRIFLEX RISER CABLE SCHEDULE

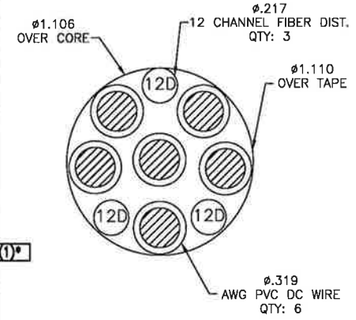
Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	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 (1)*
	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

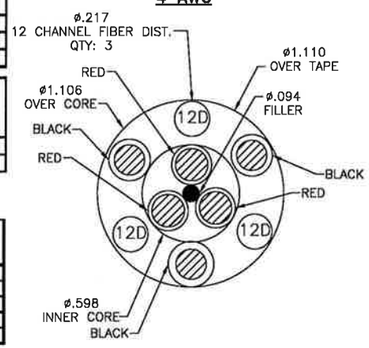
Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1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

* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

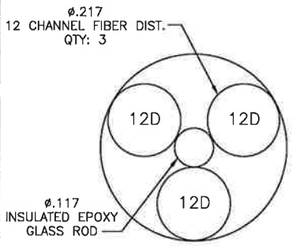
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG



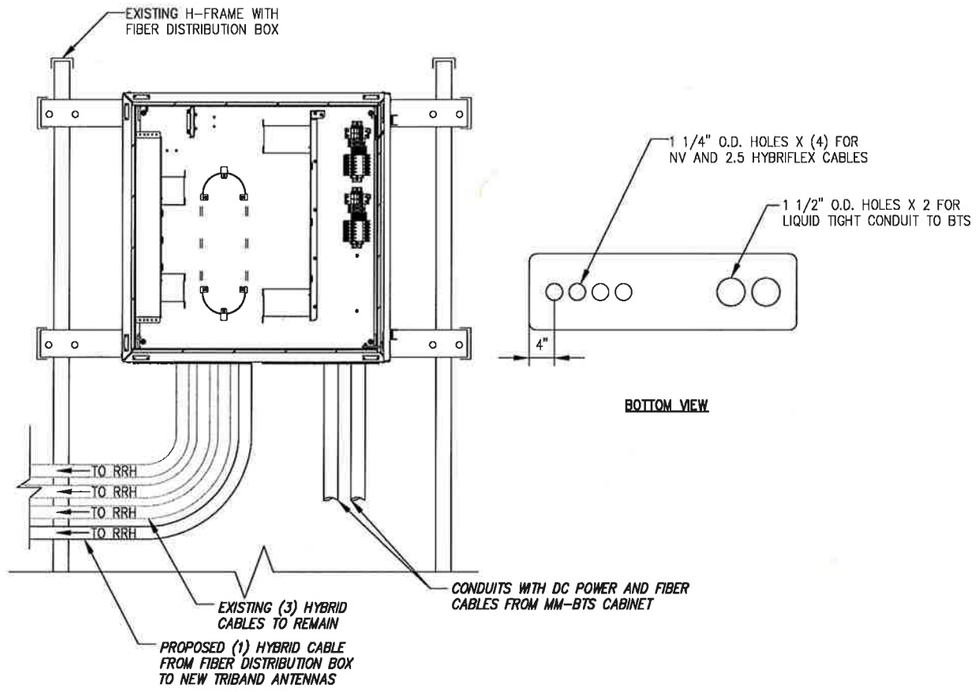
8 & 6 AWG



FIBER ONLY

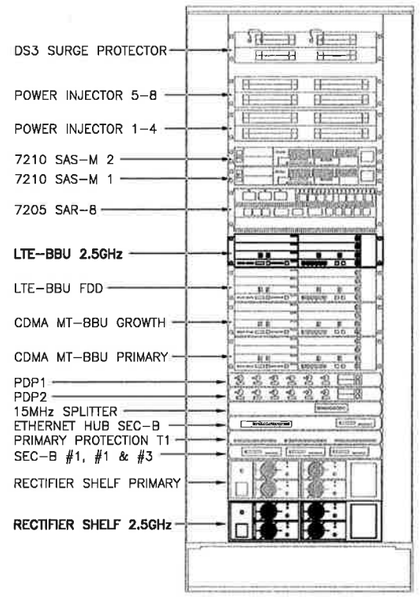
2.5 CABLE CROSS SECTION DATA

NO SCALE | 1



FIBER JUNCTION BOX PENETRATION

NO SCALE | 2



FRONT VIEW

NEW EQUIPMENT IN EXISTING CABINET

NO SCALE | 3

PLANS PREPARED FOR:
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PLANS PREPARED BY:
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www.infinigy.com
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
JAN 26 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:
TURKEY HILL

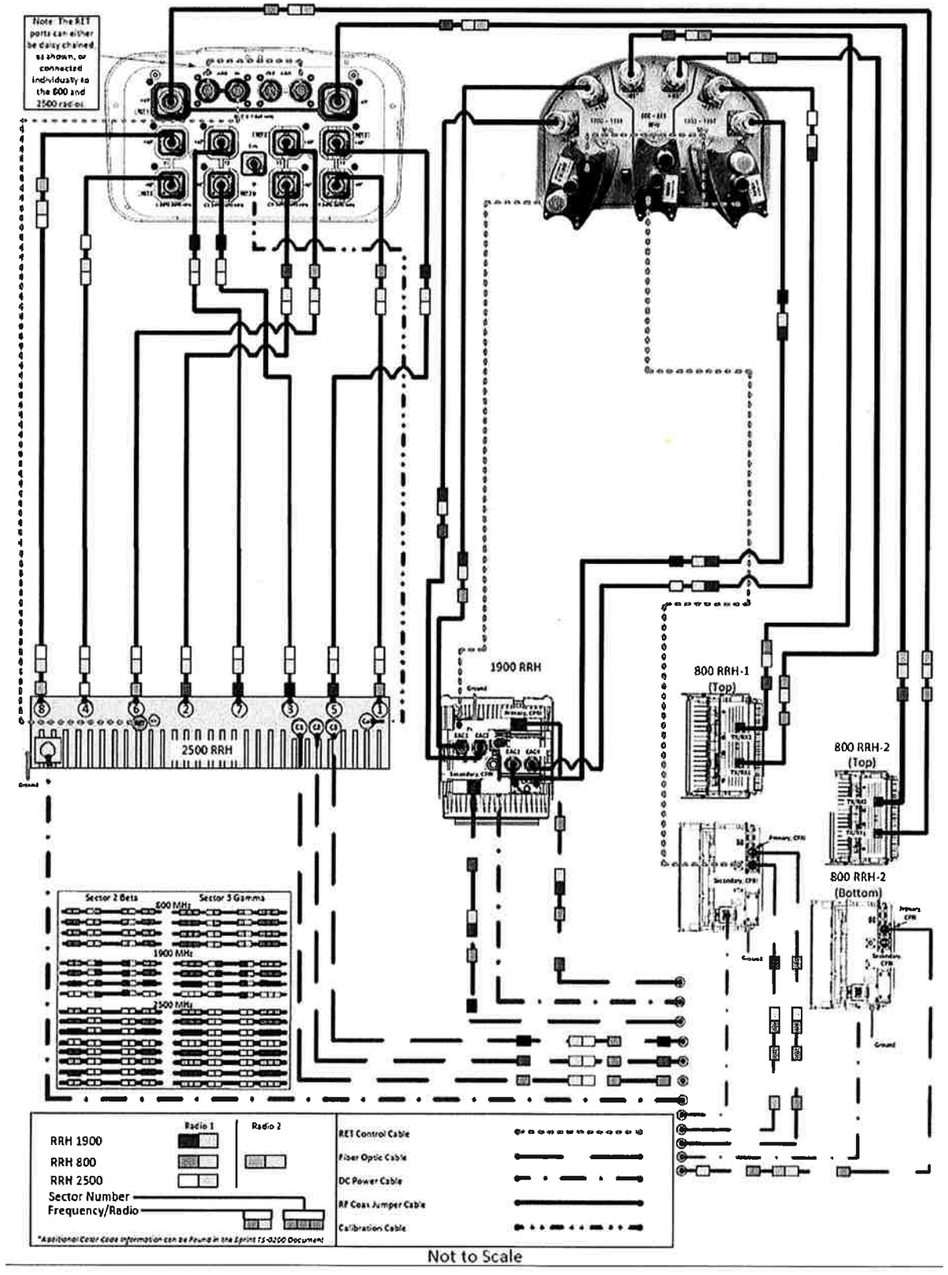
SITE NUMBER:
CT03XC336

SITE ADDRESS:
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-5

ALU 211 DT465B-2XR & APXVSPP18-C-A20 wo Filters



Not to Scale

PLUMBING DIAGRAM | NO SCALE | 1

PLANS PREPARED FOR:

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JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (516) 308-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
JAN 25 2018
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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:

TURKEY HILL

SITE NUMBER:

CT03XC336

SITE ADDRESS:

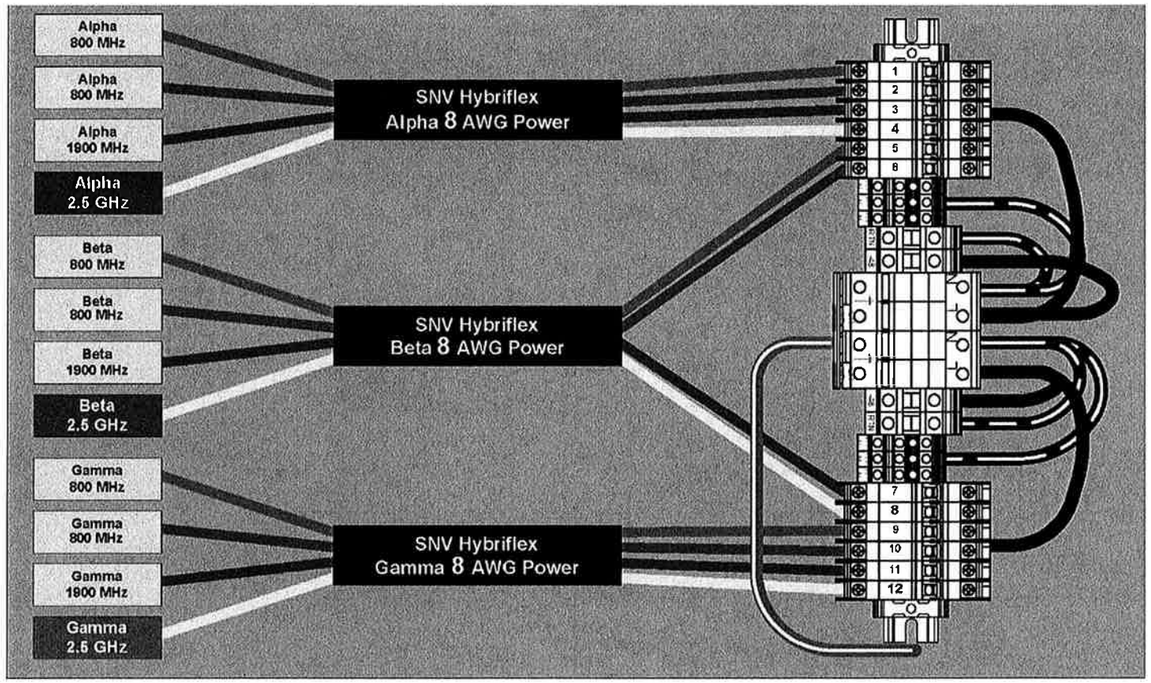
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

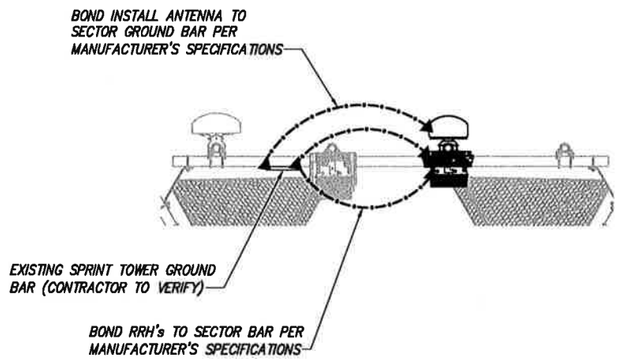
A-6



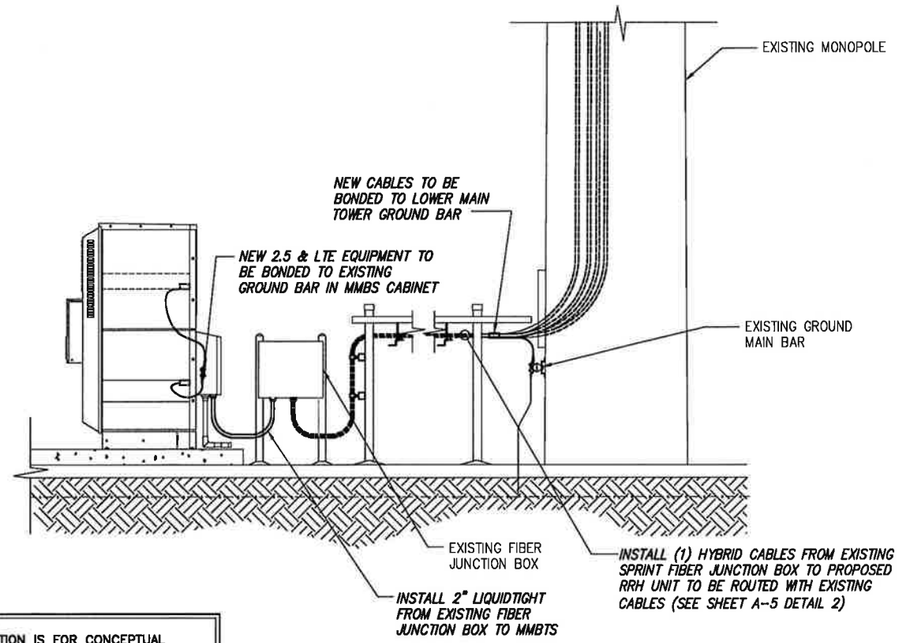
RRH TO DISTRIBUTION BOX POWER CONNECTIVITY | NO SCALE | 1

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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SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING LICENSE:


DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	1/25/18	ETC	0

SITE NAME:
TURKEY HILL

SITE NUMBER:
CT03XC336

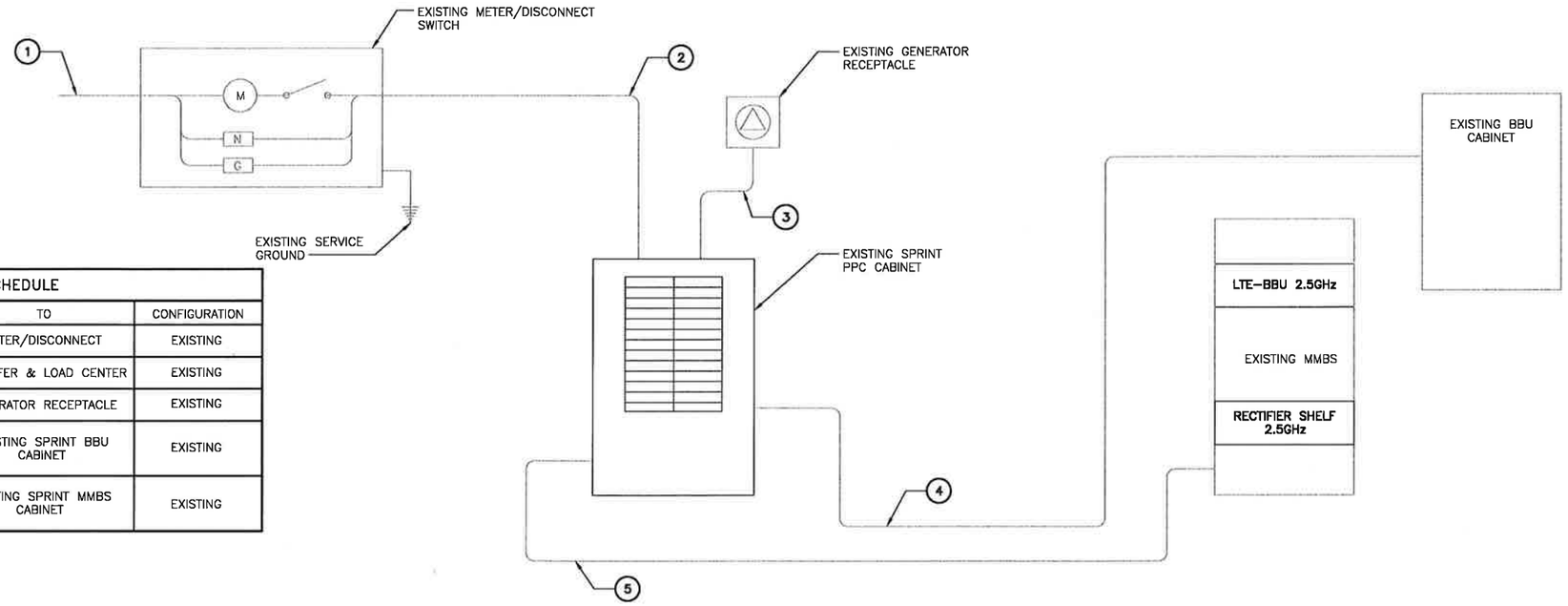
SITE ADDRESS:
20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:
E-1

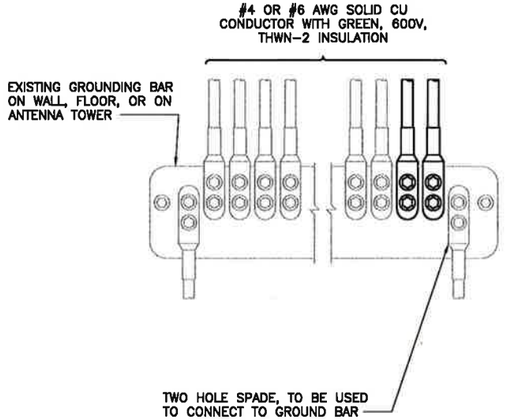
NOTES

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

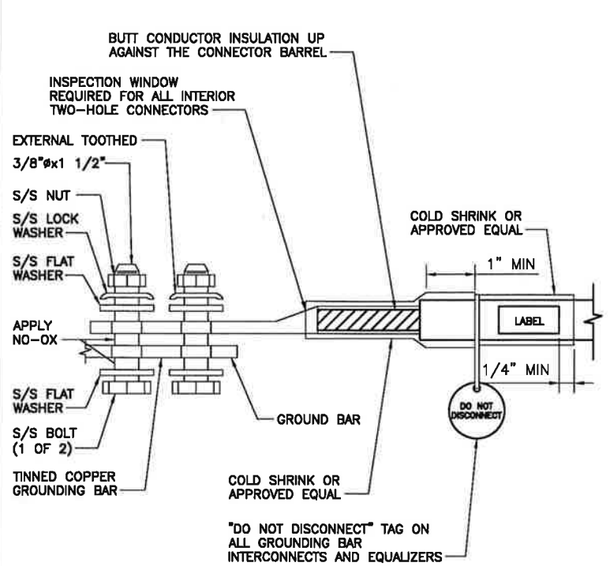
ELECTRICAL ONE–LINE DIAGRAM | NO SCALE | 1



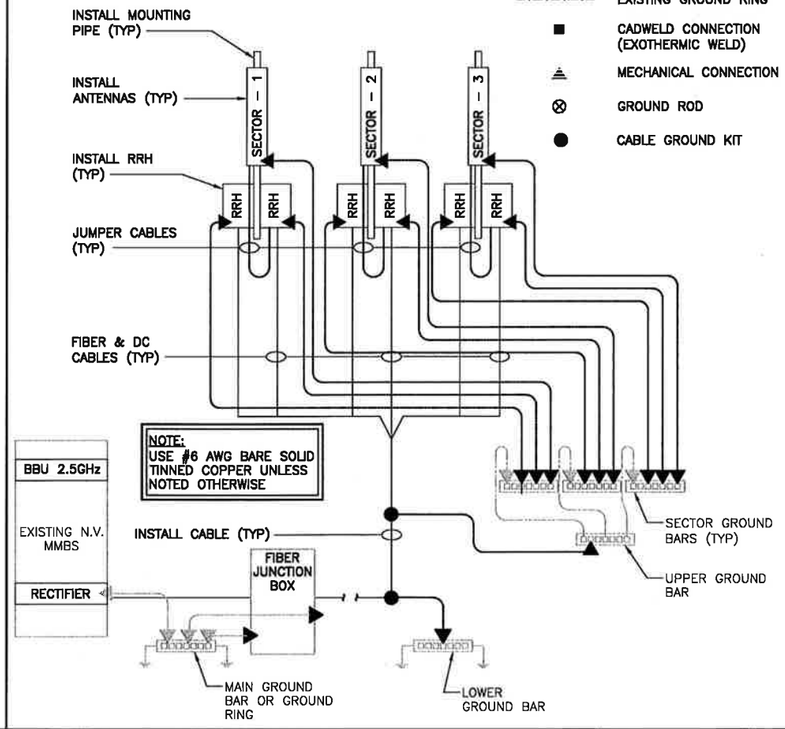
NOTES

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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PLANS PREPARED BY:

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PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
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TURKEY HILL

SITE NUMBER:

CT03XC336

SITE ADDRESS:

20 POST OFFICE LANE
WESTPORT, CT 06880

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2