AIROSMITH DEVELOPMENT
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June 28th, 2018

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

RE: Notice of Exempt Modification – Antenna Swap for wireless facility located at 125 Mile Creek Road, Old Lyme, CONNECTICUT – CT54XC701 (lat. 41° 18' 19.98" N, long. -72° 17' 50.46" W)

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (147.5-foot level) on an existing (170-foot monopole tower) at the above-referenced address. The property is owned by TODD & REBECCA MACHNIK and the tower is owned by American Tower Corporation.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace six (6) antennas, relocate three (3) RRHs, and add nine (9) 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 BONNIE REEMSNYDER, FIRST SELECTWOMAN, and KIM GROVES, PLANNING /ZONING of the Town of OLD LYME. A copy of this letter is also being sent to TODD & REBECCA MACHNIK the owner of the property on which the tower is located, and JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the site.

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

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

depicted on the attached drawings; however, the proposed equipment will not require 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: MACHNIK TODD & REBECCA L Q/C/S (Land Owner)
BONNIE REEMSNYDER (1st Selectman, OLD LYME, CT)
JUSTINE PAUL (Manager/American Tower Corporation)
KIM GROVES (Planning/Zoning, OLD LYME, CT)


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16 Mile Creek Rd
City, State, ZIP+4®
Old Lyme CT 06371
PS Form 3800, April 2015 PSN 7530-02-000-9047
See Reverse for Instructions
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JUN 28 2018
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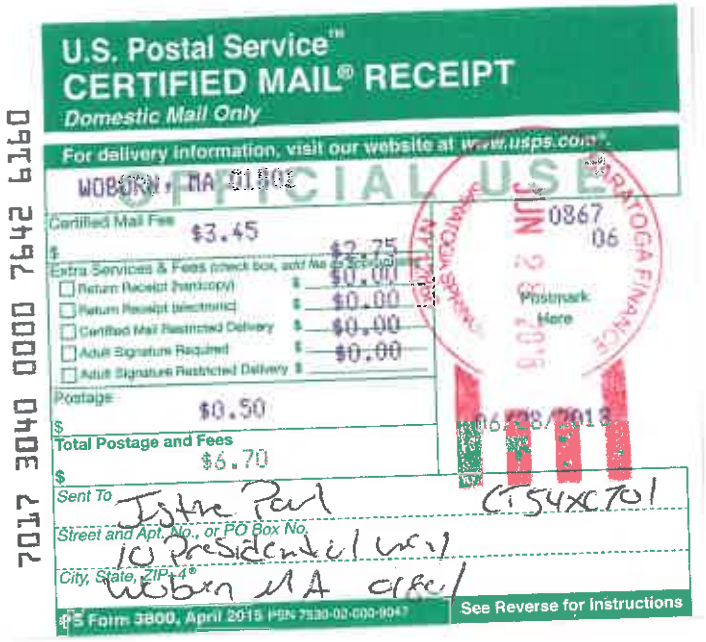
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125 MILE CREEK RD

Location	125 MILE CREEK RD	**Mblu**	13/ / 93/ /
Acct#	00044800	**Owner**	MACHNIK TODD & REBECCA L Q/C/S
Assessment	$407,000	**Appraisal**	$813,400
PID	474	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$402,800	$410,600	$813,400
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$282,100	$124,900	$407,000

Owner of Record

Owner	MACHNIK TODD & REBECCA L Q/C/S	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	126 MILE CREEK RD OLD LYME, CT 06371	**Book & Page**	309/ 432
		Sale Date	01/06/2004

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
MACHNIK TODD & REBECCA L Q/C/S	$0		309/ 432	01/06/2004
MACHNIK LEON & TODD H & REBECCCA L Q/	$0		291/ 852	01/06/2003
MACHNIK LEON & TODD & REBECCA Q/C/S T	$0		284/ 764	07/22/2002
MACHNIK LEON & Q/C/S	$0		267/ 227	01/02/2001
MACHNIK LEON ET AL	$0		261/ 299	01/19/2000

Building Information

Building 1 : Section 1

Year Built:	1975
Living Area:	678
Replacement Cost:	$75,048

Building Percent Good: 74

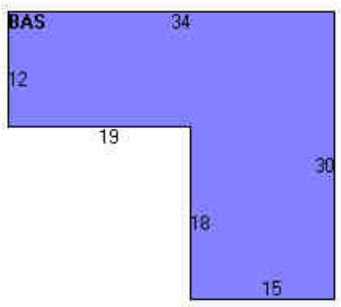
Replacement Cost Less Depreciation: $55,500

Building Attributes	
Field	**Description**
STYLE	Commercial
MODEL	Commercial
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Inlaid Sht Gds
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	OFFICE BLD MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3400
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\43/4

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	678	678
		678	678

Building 2 : Section 1

Year Built: 1994

Living Area: 1,512

Replacement Cost: $62,842

Building Percent Good: 87

Replacement Cost Less Depreciation: $54,700

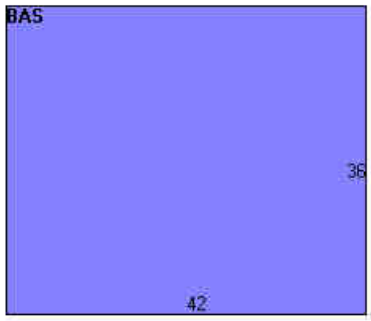
Building Attributes : Bldg 2 of 3

Field	Description
STYLE	Pre-Eng Gar
MODEL	Ind/Comm
Grade	Below Average
Stories:	1
Occupancy	0
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Air-no Duc
AC Type	None
Bldg Use	COM WHS/GAR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	316I
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\51/0

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,512	1,512
		1,512	1,512

Building 3 : Section 1

Year Built: 1975
Living Area: 7,500
Replacement Cost: $307,125
Building Percent Good: 74
Replacement Cost Less Depreciation: $227,300

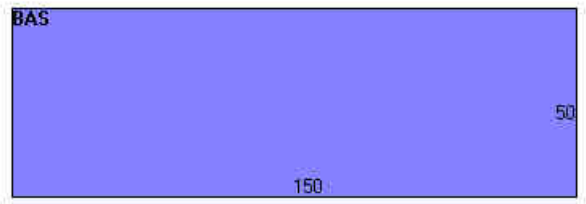
Building Attributes : Bldg 3 of 3	
Field	Description
STYLE	Pre-Eng Gar
MODEL	Ind/Comm

Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	AUTO REPR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3320
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	LIGHT
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\51/1(

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	7,500	7,500
		7,500	7,500

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	3400
Description	OFFICE BLD MDL-94
Zone	RU40
Neighborhood	0060

Land Line Valuation

Size (Acres)	62.00
Frontage	0
Depth	0
Assessed Value	$124,900

Alt Land Appr Category No

Appraised Value $410,600

Outbuildings

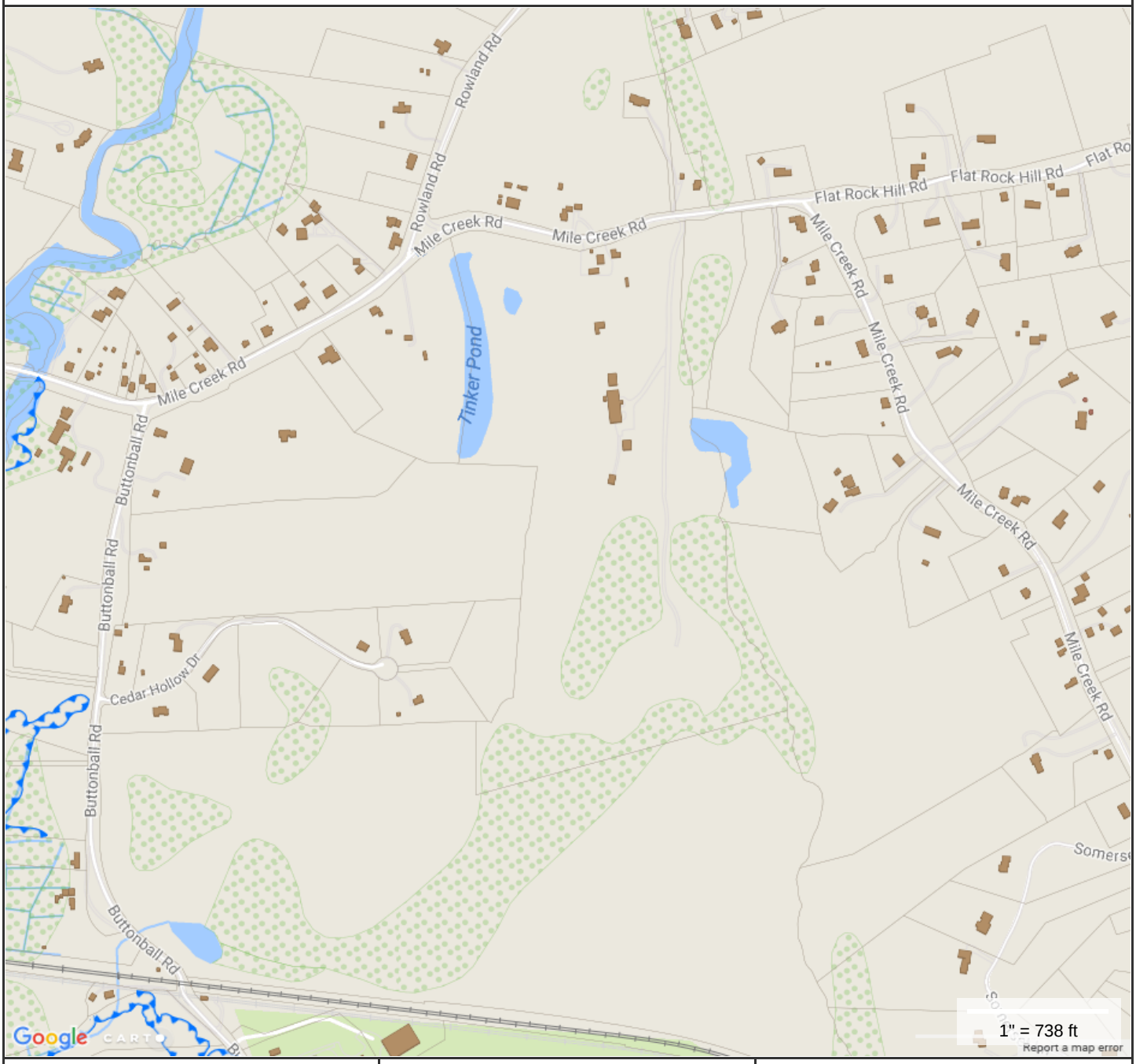
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FGR2	GARAGE-GOOD			864 S.F.	$10,800	1
PAV1	PAVING-ASPHALT			1008 S.F.	$1,000	2
PAV1	PAVING-ASPHALT			792 S.F.	$600	3
BRN8	POLE BARN			1092 S.F.	$7,600	3
BRN8	POLE BARN			792 S.F.	$4,000	2
SHD2	W/LIGHTS ETC			600 S.F.	$5,400	1
SHD1	SHED FRAME			100 S.F.	$800	3
SHD2	W/LIGHTS ETC			572 S.F.	$5,100	1
PAV1	PAVING-ASPHALT			100 S.F.	$100	3
LNT	LEAN-TO			300 S.F.	$600	3
	TOWER			50	$29,300	3

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2011	$285,600	$410,600	$696,200
2010	$285,600	$410,600	$696,200
2009	$285,600	$410,600	$696,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2011	$200,000	$122,790	$322,790
2010	$200,000	$125,950	$325,950
2009	$200,000	$125,950	$325,950

125 Mile Creek Road, Old Lyme CT (CT54XC701)



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Old Lyme, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 10/1/2016
Properties updated 12/08/2017

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

SPRINT Existing Facility

Site ID: CT54XC701

South Old Lyme - Verizon
125 Mile Creek Road
Old Lyme, CT 06070

June 27, 2018

EBI Project Number: 6218004706

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	6.26 %

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

EBI Consulting
environmental | engineering | due diligence

June 27, 2018

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

Emissions Analysis for Site: **CT54XC701 – South Old Lyme - Verizon**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **125 Mile Creek Road, Old Lyme, 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 **125 Mile Creek Road, Old Lyme, 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 50 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 **Commscope NNVV-65B-R4 and the RFS APXVTM14-ALU-I20** 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 **149 feet** above ground level (AGL) for **Sector A**, **149 feet** above ground level (AGL) for **Sector B** and **149 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:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	**149 feet**	Height (AGL):	**149 feet**	Height (AGL):	**149 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):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	**1.61 %**	Antenna B1 MPE%	**1.61 %**	Antenna C1 MPE%	**1.61 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVTM14-ALU-I20	Make / Model:	RFS APXVTM14-ALU-I20	Make / Model:	RFS APXVTM14-ALU-I20
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	**149 feet**	Height (AGL):	**149 feet**	Height (AGL):	**149 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):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	**1.09 %**	Antenna B2 MPE%	**1.09 %**	Antenna C2 MPE%	**1.09 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.70 %**
Verizon Wireless	2.80 %
T-Mobile	0.01 %
AT&T	0.75 %
Site Total MPE %:	**6.26 %**

SPRINT Sector A Total:	2.70 %
SPRINT Sector B Total:	2.70 %
SPRINT Sector C Total:	2.70 %
Site Total:	6.26 %

SPRINT _ Frequency Band / Technology Max Power Values (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	376.73	149	0.66	850 MHz	567	0.12%
Sprint 850 MHz LTE	2	941.82	149	3.31	850 MHz	567	0.59%
Sprint 1900 MHz (PCS) CDMA	5	511.82	149	4.50	1900 MHz (PCS)	1000	0.45%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	149	4.50	1900 MHz (PCS)	1000	0.45%
Sprint 2500 MHz (BRS) LTE	8	778.09	149	10.94	2500 MHz (BRS)	1000	1.09%
						Total:	**2.70%**

Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	2.70 %
Sector B:	2.70 %
Sector C:	2.70 %
SPRINT Maximum Total (per sector):	2.70 %
Site Total:	6.26 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.26 %** 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.

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the solutions are endless

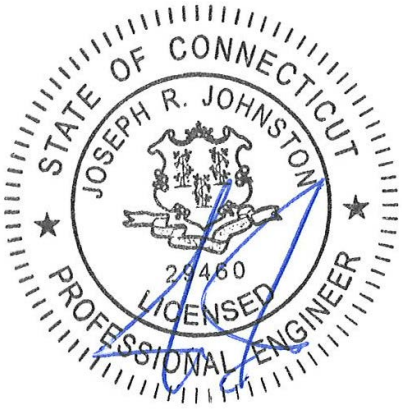
1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Mount Analysis Report

April 15, 2018

Sprint Site #	CT54XC701
Infinigy Job Number	526-104
Client	Airosmith
Proposed Carrier	Sprint
Site Location	129 Mile Creek Road Old Lyme, CT 06371 41.30570˚ N NAD83 72.29740˚ W NAD83
Mount Centerline EL.	148.0’
Mount Classification	Low Profile Platform
Passing Structural Usage	**80.4%**
Overall Result	**Pass**

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



04-16-18

Nathaniel R. Ober, E.I.T.
Northeast Structural Region Lead

Contents

Introduction

Infinigy Engineering has been requested to perform a mount analysis on the existing Sprint mounts. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 16.0.2 structural analysis software.

Supporting Documentation

Structural Analysis	ATC Eng #OAA710430_C3_03, dated March 23, 2018

Analysis Code Requirements

Wind Speed	105 mph (3-Second Gust, V_{asd}) / 135 mph (3-Second Gust V_{ult})
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 3/4" ice
TIA Revision	ANSI/TIA222-G
Adopted IBC	2012 IBC / 2016 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The mount for the proposed carrier is therefore deemed adequate to support the final loading configuration as listed in this report.

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

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Final Configuration Loading

Mount Centerline (ft)	RAD Height (ft)	Horizontal Offset (ft)*	Qty.	Appurtenance	Carrier
148.0	149.0	12.0	3	Commscope NNVV-65B-R4	Sprint
		0.0	3	RFS APXVTM14-ALU-I20	
		12.0	3	Alcatel-Lucent TD-RRH8x20-25	
		0.0,12.0	6	Alcatel-Lucent RRH2x50-08	
		0.0	3	Alcatel-Lucent 1900 MHz 4X45 RRH	

*** Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower**

Structure Usages

Stand off	74.7	Pass
Face Horizontal	29.2	Pass
Mount Pipe	80.4	Pass
RATING =	**80.4**	**Pass**

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

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

Site Name:	CT54XC701
Client:	Airosmith
Carrier:	Sprint
Engineer:	NRO
Date:	4/15/2018

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:

Adopted Building Code:	2012 IBC
Structure Load Standard:	TIA-222-G
Antenna Load Standard:	TIA-222-G
Structure Risk Category:	II
Structure Type:	Mount - Platform
Number of Sectors:	3
Structure Shape 1:	Flat

Rooftop Inputs:

Rooftop Wind Speed-Up?:	No

Wind Loading Inputs:

Design Wind Velocity:	105	mph (nominal 3-second gust)
Wind Centerline 1 (z_1):	147.5	ft
Side Face Angle (θ):	60	degrees
Exposure Category:	B	
Topographic Category:	1	

Wind with No Ice		
q_z (psf)	Gh	F_{ST} (psf)
29.61	1.00	**59.22**

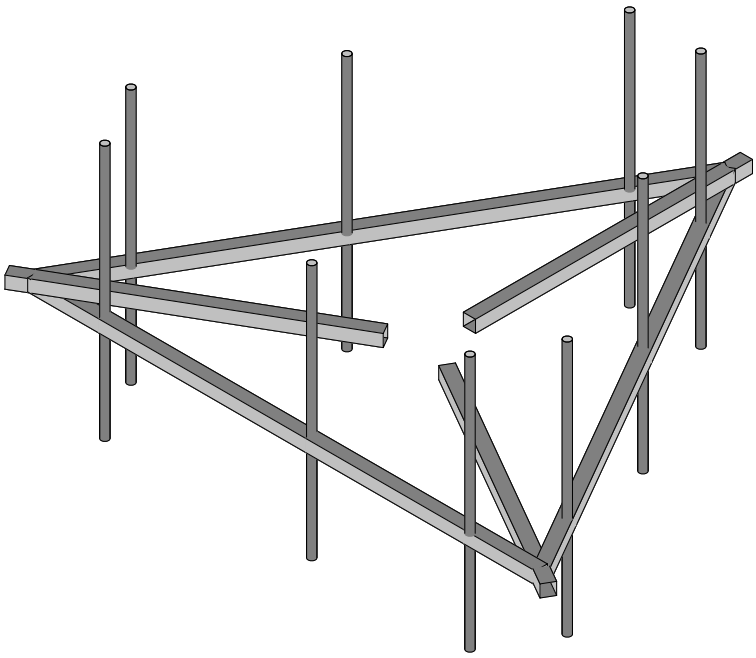
Wind with Ice		
q_z (psf)	Gh	F_{ST} (psf)
6.71	1.00	**17.33**

Ice Loading Inputs:

Is Ice Loading Needed?:	Yes	
Ice Wind Velocity:	50	mph (nominal 3-second gust)
Base Ice Thickness:	0.75	in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	Ka	Front Shape	Side Shape	q_z (psf)	EPA (ft^2)	Fz (lbs)	Fx (lbs)	Fz(60) (lbs)	Fx(30) (lbs)
RFS APXTM14-ALU-I20	147.5	3	1.00	Flat	Flat	29.61	6.34	187.79	106.81	127.06	167.55
Commscope NNVV-65B-R4	147.5	3	1.00	Flat	Flat	29.61	12.27	363.34	170.25	218.52	315.07
Alcatel-Lucent 1900 MHz 4x45 RRH	147.5	3	1.00	Flat	Flat	29.61	2.31	68.47	70.32	69.86	68.93
Alcatel-Lucent TD-RRH8x20-25	147.5	3	1.00	Flat	Flat	29.61	4.05	119.78	45.38	63.98	101.18
Alcatel-Lucent RRH2x50-08	147.5	6	1.00	Flat	Flat	29.61	1.70	50.36	37.96	41.06	47.26



Envelope Only Solution

Infinigy Engineering PLLC	CT54XC701	
NRO		Apr 15, 2018 at 11:36 AM
526-104		CT54XC701.r3d

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N6	N3			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical
2	M2	N3	N7			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical
3	M3	N7	N6			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical
4	MP4	N29	N25			2" STD Pipe	Beam	None	A53 Gr.B	Typical
5	MP3	N30	N26			2" STD Pipe	Beam	None	A53 Gr.B	Typical
6	MP1	N31	N27			2" STD Pipe	Beam	None	A53 Gr.B	Typical
7	MP8	N39	N35			2" STD Pipe	Beam	None	A53 Gr.B	Typical
8	MP7	N40	N36			2" STD Pipe	Beam	None	A53 Gr.B	Typical
9	MP5	N41	N37			2" STD Pipe	Beam	None	A53 Gr.B	Typical
10	MP12	N50	N46			2" STD Pipe	Beam	None	A53 Gr.B	Typical
11	MP11	N51	N47			2" STD Pipe	Beam	None	A53 Gr.B	Typical
12	MP9	N52	N48			2" STD Pipe	Beam	None	A53 Gr.B	Typical
13	M16	N1	N86			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical
14	M17	N87	N88			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical
15	M18	N89	N90			HSS 4"x4"x1/4"	Beam	None	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	Hot Rolled Steel				
2	A53 Gr.B	HSS4x4x4	6	773.5	.7
3	A53 Gr.B	PIPE 2.0	9	756	.2
4	Total HR Steel		15	1529.5	1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut..	Area(M...	Surface...
1	Self Weight	DL		-1			22			
2	Wind Load AZI 000	WLZ					22		1	
3	Wind Load AZI 090	WLX					22		1	
4	Ice Weight	OL1					22	15		
5	Wind + Ice Load AZI 000	OL2					22		1	
6	Wind + Ice Load AZI 090	OL3					22		1	
7	Service Live 1	LL				6				
8	BLC 2 Transient Area Loads	None						14		
9	BLC 3 Transient Area Loads	None						14		
10	BLC 5 Transient Area Loads	None						14		
11	BLC 6 Transient Area Loads	None						14		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
1	1.4D	Yes	Y		DL	1.4																		
2	1.2D + 1.6W AZI 000	Yes	Y		DL	1.2	W...	1.6																
3	1.2D + 1.6W AZI 030	Yes	Y		DL	1.2	W...	1.3...	W...	.8														
4	1.2D + 1.6W AZI 060	Yes	Y		DL	1.2	W...	.8	W...	1.3...														
5	1.2D + 1.6W AZI 090	Yes	Y		DL	1.2			W...	1.6														
6	1.2D + 1.6W AZI 120	Yes	Y		DL	1.2	W...	-.8	W...	1.3...														
7	1.2D + 1.6W AZI 150	Yes	Y		DL	1.2	W...	-1.3...	W...	.8														
8	1.2D + 1.6W AZI 180	Yes	Y		DL	1.2	W...	-1.6																
9	1.2D + 1.6W AZI 210	Yes	Y		DL	1.2	W...	-1.3...	W...	-.8														
10	1.2D + 1.6W AZI 240	Yes	Y		DL	1.2	W...	-.8	W...	-1.3...														
11	1.2D + 1.6W AZI 270	Yes	Y		DL	1.2			W...	-1.6														
12	1.2D + 1.6W AZI 300	Yes	Y		DL	1.2	W...	.8	W...	-1.3...														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
13	1.2D + 1.6W AZI 330	Yes	Y		DL	1.2	W...	1.3...	W...	-.8																
14	0.9D + 1.6W AZI 000	Yes	Y		DL	.9	W...	1.6																		
15	0.9D + 1.6W AZI 030	Yes	Y		DL	.9	W...	1.3...	W...	.8																
16	0.9D + 1.6W AZI 060	Yes	Y		DL	.9	W...	.8	W...	1.3...																
17	0.9D + 1.6W AZI 090	Yes	Y		DL	.9			W...	1.6																
18	0.9D + 1.6W AZI 120	Yes	Y		DL	.9	W...	-.8	W...	1.3...																
19	0.9D + 1.6W AZI 150	Yes	Y		DL	.9	W...	-1.3...	W...	.8																
20	0.9D + 1.6W AZI 180	Yes	Y		DL	.9	W...	-1.6																		
21	0.9D + 1.6W AZI 210	Yes	Y		DL	.9	W...	-1.3...	W...	-.8																
22	0.9D + 1.6W AZI 240	Yes	Y		DL	.9	W...	-.8	W...	-1.3...																
23	0.9D + 1.6W AZI 270	Yes	Y		DL	.9			W...	-1.6																
24	0.9D + 1.6W AZI 300	Yes	Y		DL	.9	W...	.8	W...	-1.3...																
25	0.9D + 1.6W AZI 330	Yes	Y		DL	.9	W...	1.3...	W...	-.8																
26	1.2D + 1.0Di	Yes	Y		DL	1.2	OL1	1																		
27	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	1																
28	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	.5														
29	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	.866														
30	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1			OL3	1														
31	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	.866														
32	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	.5														
33	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-1																
34	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	-.5														
35	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	-.866														
36	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1			OL3	-1														
37	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	-.866														
38	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	-.5														
39	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.111																
40	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.096	W...	.056														
41	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.056	W...	.096														
42	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5			W...	.111														
43	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.056	W...	.096														
44	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.096	W...	.056														
45	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.111																
46	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.096	W...	-.056														
47	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.056	W...	-.096														
48	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5			W...	-.111														
49	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.056	W...	-.096														
50	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.096	W...	-.056														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	676.57	5	1983.349	27	2839.715	14	8211.055	27	1991.946	10	695.023	11
2		min	-676.837	23	269.478	20	-2836.797	20	682.092	20	-1996.813	4	-633.446	17
3	N87	max	2444.954	6	1902.917	31	1546.618	12	-148.286	25	536.122	24	-331.753	24
4		min	-2444.375	12	248.122	24	-1551.296	6	-3995.568	32	-534.171	6	-6751.319	31
5	N89	max	2411.265	4	2132.655	35	1720.795	3	-265.484	15	1615.271	9	7714.26	35
6		min	-2409.179	10	298.967	16	-1730.928	21	-4502.095	34	-1615.268	15	758.832	16
7	Totals:	max	4966.451	5	5853.203	30	5129.578	14						
8		min	-4966.451	23	1682.9	23	-5129.578	20						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Lo...	...	Shear C...	Loc[in]	...	LC	phi*Pnc...	phi*Pnt ...	phi*...	phi*...	...	Eqn
1	MP4	PIPE_2.0	.804	33....	8	.058	33.25		8	17855....	32130	1871...	1871...	...	H1-...
2	M18	HSS4x...	.747	0	...	.083	0	y	32	88391....	106155	1231...	1231...	...	H1-...
3	MP12	PIPE_2.0	.707	33....	5	.051	33.25		5	17855....	32130	1871...	1871...	...	H1-...
4	MP8	PIPE_2.0	.707	33....	...	.051	33.25		11	17855....	32130	1871...	1871...	...	H1-...
5	M16	HSS4x...	.687	0	...	.092	0	y	11	88391....	106155	1231...	1231...	...	H1-...
6	M17	HSS4x...	.645	0	...	.090	0	y	9	88391....	106155	1231...	1231...	...	H1-...
7	MP1	PIPE_2.0	.467	33....	8	.035	33.25		8	17855....	32130	1871...	1871...	...	H1-...
8	MP9	PIPE_2.0	.435	33....	5	.034	33.25		5	17855....	32130	1871...	1871...	...	H1-...
9	MP5	PIPE_2.0	.435	33....	...	.034	33.25		11	17855....	32130	1871...	1871...	...	H1-...
10	M2	HSS4x...	.292	16...	9	.120	166....	z	2	57370....	106155	1231...	1231...	...	H1-...
11	M3	HSS4x...	.274	16...	...	.094	166....	z	6	57370....	106155	1231...	1231...	...	H1-...
12	M1	HSS4x...	.246	16...	...	.128	166....	z	10	57368....	106155	1231...	1231...	...	H1-...
13	MP11	PIPE_2.0	.091	33....	4	.008	33.25		4	17855....	32130	1871...	1871...	...	H1-...
14	MP7	PIPE_2.0	.090	33....	...	.008	33.25		12	17855....	32130	1871...	1871...	...	H1-...
15	MP3	PIPE_2.0	.090	33....	8	.008	33.25		9	17855....	32130	1871...	1871...	...	H1-...

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**170.5 ft Monopole**
ATC Site Name	:	**Old Lyme South CT, CT**
ATC Site Number	:	**411178**
Engineering Number	:	**OAA710430_C3_03**
Proposed Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**South Old Lyme**
Carrier Site Number	:	**CT54XC701**
Site Location	:	**129 Mile Creek Road** **Old Lyme, CT 06371-1718** **41.305700,-72.297400**
County	:	**New London**
Date	:	**March 23, 2018**
Max Usage	:	**57%**
Result	:	**Pass**

Prepared By:
Christiana Lancaster
Structural Engineer I

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 170.5 ft monopole to reflect the change in loading by Sprint Nextel.

Supporting Documents

Tower Drawings	EEI Project #11723 Rev 1, dated September 19, 2003 Mapping by TEP Job #68269-80551, dated April 25, 2016
Foundation Drawing	EEI Project #11723 Rev 1, dated October 21, 2003
Geotechnical Report	Clarence Welti Site #CT54XC701, dated October 17, 2003

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:	105 mph (3-Second Gust, V_{asd})/ 135 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:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.16, S_1 = 0.06
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					
171.0	177.0	1	12' Dipole	T-Arms	(12) 1 5/8" Coax (8) 1/2" Coax (1) 1 5/8" Fiber	Town Of Old Lyme, CT
	176.0	1	Decibel DB201-A			
	171.0	3	Andrew ETW200VS12UB			T-Mobile
		1	E-911 GPS			
		6	Ericsson AIR 21			
		3	RFS APX16DWV-16DWVS-E-A20			
160.0	161.0	2	ADC CG-1900/800-DB-FB-DIN	Low Profile Platform	(18) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		1	VZW Unused Reserve: 203 sq in			
		3	Alcatel-Lucent RRH2X60-1900			
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent B66 RRH4x45			
		4	RFS APL866513-42T0			
		1	Antel BXA-70063-4CF-EDIN-10			
		2	RFS DB-T1-6Z-8AB-0Z			
		2	Antel BXA-70063/6CF_			
		6	Commscope SBNHH-1D65B			
		2	Antel LPA-80080-6CF-EDIN-2			
148.0	-	-	-	Low Profile Platform	(6) 1 5/8" Coax	Sprint Nextel
143.0	143.0	6	Ericsson RRUS-11	Flush	-	AT&T Mobility
138.0		1	Raycap DC6-48-60-18-8F ("Squid")	Low Profile Platform	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 3" Conduit (1) 0.39" Fiber Trunk	
		6	KMW AM-X-CD-14-65-00T-RET			
		3	Powerwave 7770.00			
	140.0	6	Powerwave TT19-08BP111-001			
111.0	111.0	1	12' Dipole	Flush	(2) 1/2" Coax	Town Of Old Lyme, CT
74.0	74.0	1	GPS	Flush	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
147.5	147.5	12	Andrew DB980F90E-M	-	(6) 1 5/8" Coax	Sprint Nextel

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
148.0	149.0	6	Alcatel-Lucent RRH2x50-08	Low Profile Platform	(4) 1 1/4" Hybriflex (1) 1/2" Coax	Sprint Nextel
		3	Alcatel-Lucent 1900MHz 4x45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-ALU-I20			
		3	Commscope NNVV-65B-R4			
		1	GPS			

[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).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	42%	Pass
Shaft	50%	Pass
Base Plate	57%	Pass
Flanges	9%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,150.9	40%
Axial (Kips)	67.5	16%
Shear (Kips)	34.8	8%

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) (°)
148.0	GPS	Sprint Nextel	0.866	0.669
	Alcatel-Lucent RRH2x50-08			
	Alcatel-Lucent 1900 MHz 4x45 RRH			
	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	RFS APXVTM14-ALU-I20			
	Commscope NNVV-65B-R4			

***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 performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

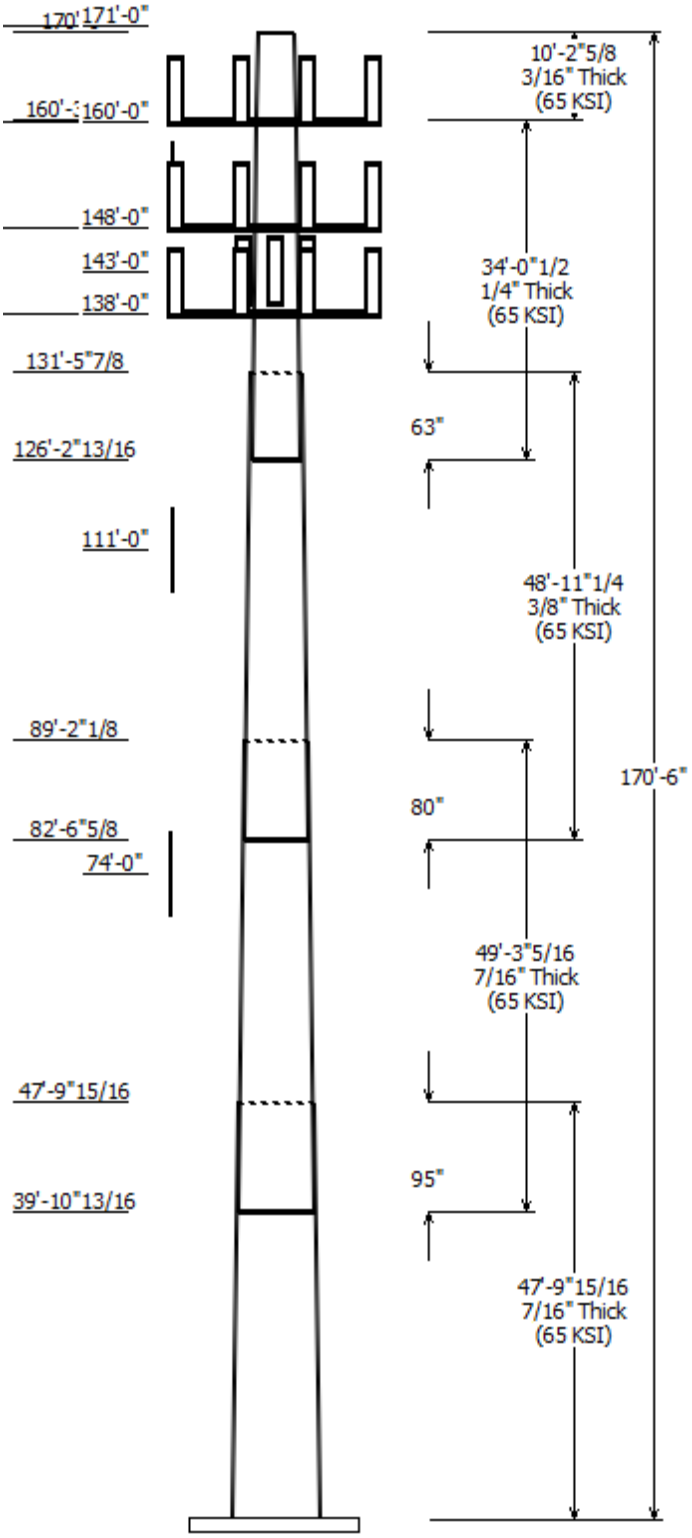
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 supplied herein.



Job Information

Pole :	411178	Code:	ANSI/TIA-222-G
Location :	Old Lyme South CT, CT		
Description :	170.5 ft Monopole		
Client :	SPRINT NEXTEL	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	170.50 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.265007 (in/ft)		

Sections Properties

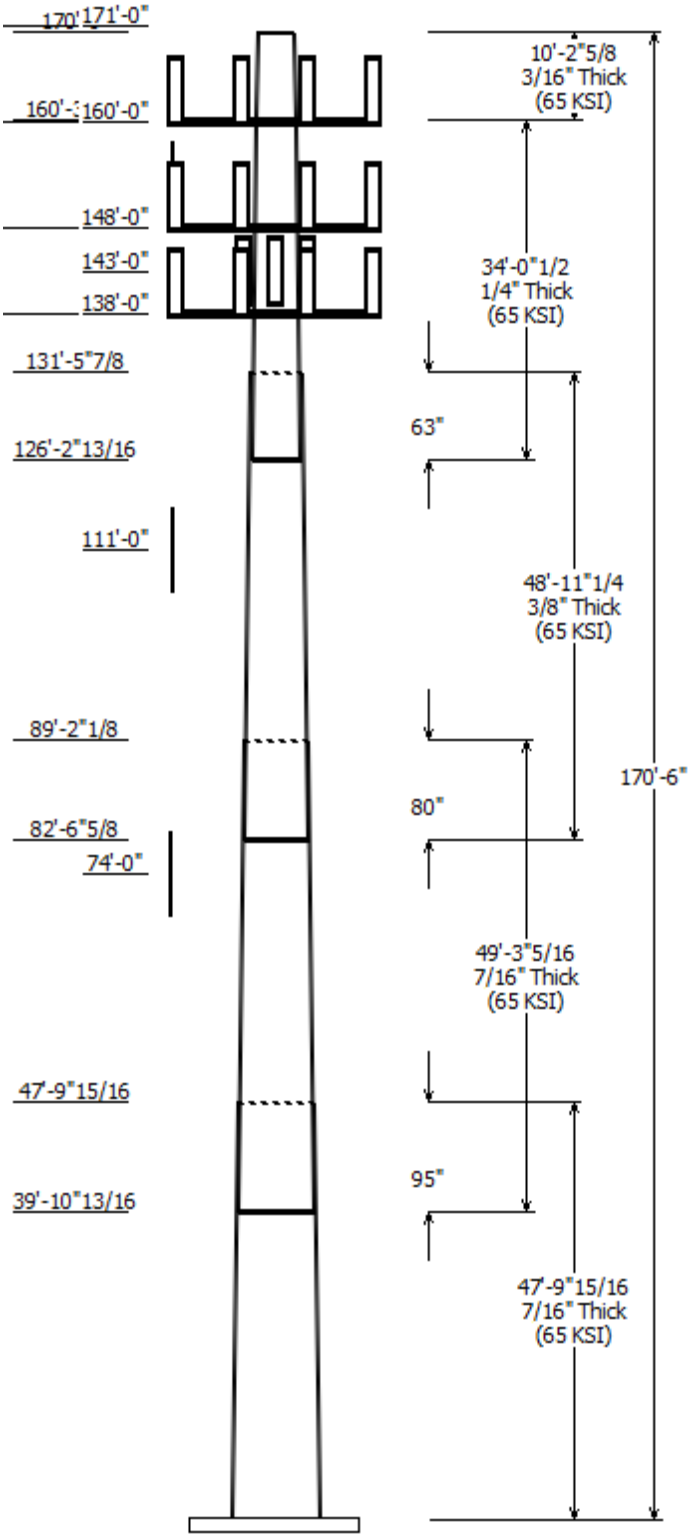
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	47.828	56.32	69.00	0.438		0.000	18 Sides	65
2	49.276	46.24	59.30	0.438	Slip Joint	95.156	18 Sides	65
3	48.940	35.77	48.74	0.375	Slip Joint	79.500	18 Sides	65
4	34.044	28.65	37.67	0.250	Slip Joint	63.063	18 Sides	65
5	10.221	25.94	28.65	0.188	Butt Joint	0.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
171.000	171.000	3	Round T-Arm
171.000	171.000	3	RFS APX16DWV-16DWVS-E-A20
171.000	171.000	6	Ericsson AIR 21
171.000	177.000	1	12' Dipole
171.000	176.000	1	Decibel DB201-A
171.000	171.000	1	E-911 GPS
171.000	171.000	3	Andrew ETW200VS12UB
160.000	161.000	1	VZW Unused Reserve: 203 sq
160.000	161.000	6	Commscope SBNHH-1D65B
160.000	161.000	2	Antel BXA-70063/6CF_
160.000	161.000	2	RFS DB-T1-6Z-8AB-0Z
160.000	161.000	4	RFS APL866513-42T0
160.000	161.000	3	Alcatel-Lucent B66 RRH4x45
160.000	161.000	3	Alcatel-Lucent RRH2x60 700
160.000	161.000	3	Alcatel-Lucent RRH2X60-1900
160.000	160.000	1	Flat Low Profile Platform
160.000	161.000	2	Antel LPA-80080-6CF-EDIN-2
160.000	161.000	1	Antel BXA-70063-4CF-EDIN-10
160.000	161.000	2	ADC CG-1900/800-DB-FB-DIN
148.000	149.000	3	Commscope NNVV-65B-R4
148.000	148.000	1	Flat Low Profile Platform
148.000	149.000	3	RFS APXVTM14-ALU-I20
148.000	149.000	3	Alcatel-Lucent TD-RRH8x20-25
148.000	149.000	3	Alcatel-Lucent 1900 MHz 4x45
148.000	149.000	6	Alcatel-Lucent RRH2x50-08
148.000	149.000	1	GPS
143.000	143.000	6	Ericsson RRUS-11
138.000	138.000	1	Flat Low Profile Platform
138.000	143.000	3	Powerwave Allgon 7770.00
138.000	143.000	6	KMW AM-X-CD-14-65-00T-RET
138.000	143.000	1	Raycap DC6-48-60-18-8F
138.000	140.000	6	Powerwave TT19-08BP111-001
111.000	111.000	1	12' Dipole
74.000	74.000	1	GPS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	74.000	1/2" Coax	No
0.000	111.0	1/2" Coax	No
0.000	138.0	0.39" Fiber Trunk	No



0.000	138.0	0.78" 8 AWG 6	No
0.000	138.0	1 5/8" Coax	No
0.000	138.0	3" Conduit	No
0.000	148.0	1 1/4" Hybriflex	No
0.000	148.0	1 5/8" Coax	No
0.000	148.0	1/2" Coax	No
0.000	160.0	1 5/8" Coax	Yes
0.000	160.0	1 5/8" Coax	No
0.000	160.0	1 5/8" Hybriflex	No
0.000	171.0	1 5/8" Coax	No
0.000	171.0	1 5/8" Fiber	No
0.000	171.0	1/2" Coax	No
0.000	171.0	1/2" Coax	No
0.000	171.0	1/2" Coax	No

Load Cases

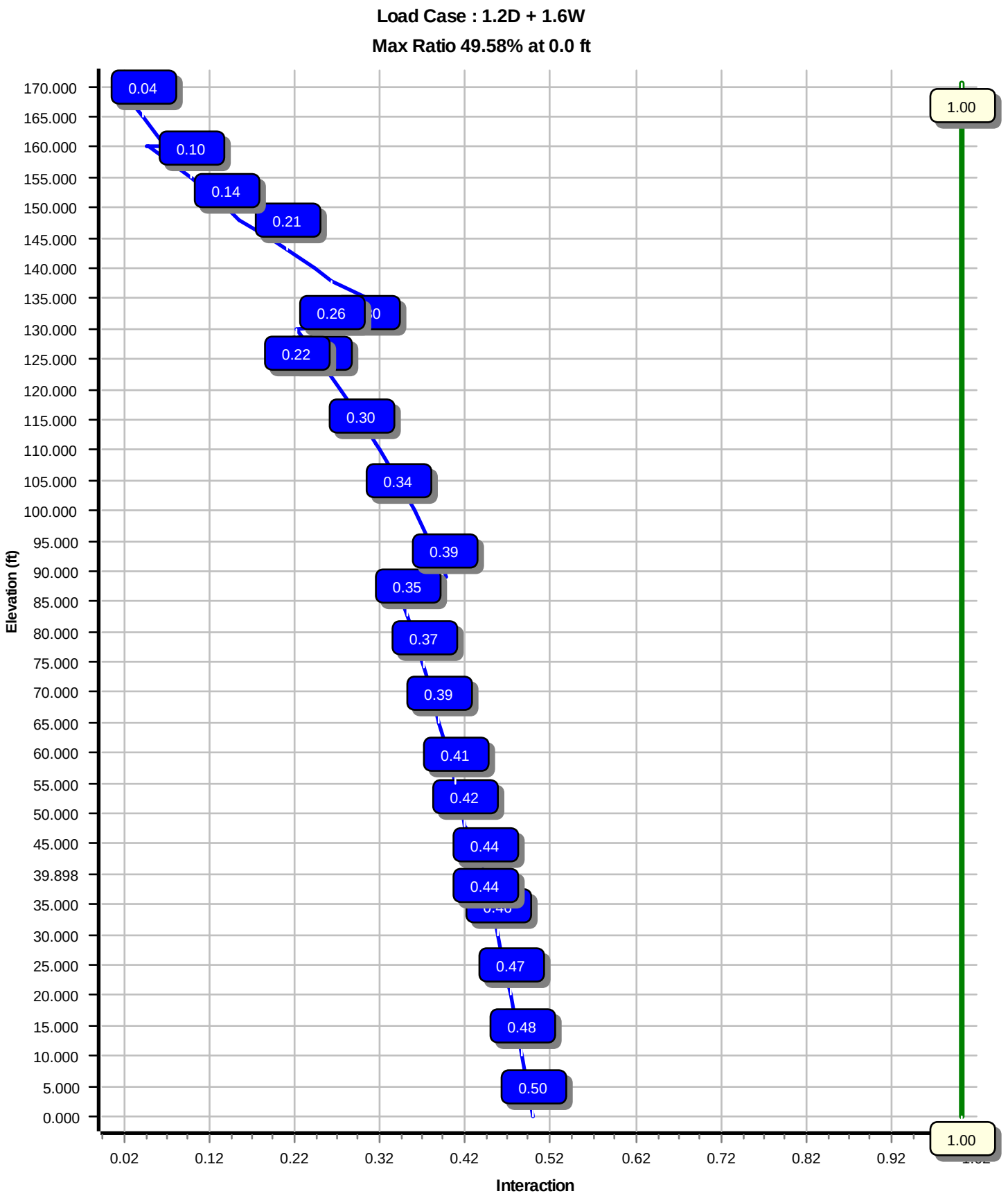
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	4150.89	34.75	67.47
0.9D + 1.6W	4092.60	34.56	50.60
1.2D + 1.0Di + 1.0Wi	984.76	8.45	98.74
(1.2 + 0.2Sds) * DL + E ELFM	201.36	1.62	65.24
(1.2 + 0.2Sds) * DL + E EMAM	176.37	1.61	65.24
(0.9 - 0.2Sds) * DL + E ELFM	199.77	1.62	45.72
(0.9 - 0.2Sds) * DL + E EMAM	174.93	1.61	45.72
1.0D + 1.0W	837.59	7.05	56.25

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 49.58% at 0.0 ft
Elevation (ft)
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
39.898
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
0.04
0.10
0.14
0.21
0.26
0.22
0.30
0.34
0.39
0.35
0.37
0.39
0.41
0.42
0.44
0.44
0.47
0.48
0.50
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:	411178	Code: ANSI/TIA-222-G	
Site Name:	Old Lyme South CT, CT	Engineering Number:OAA710430_C3_03	3/23/2018 1:44:12 PM
Customer:	SPRINT NEXTEL		

Analysis Parameters

Location :	NEW LONDON County, CT	Height (ft) :	170.5
Code :	ANSI/TIA-222-G	Base Diameter (in) :	69.00
Shape :	18 Sides	Top Diameter (in) :	25.94
Pole Type :	Taper	Taper (in/ft) :	0.265
Pole Manfacturer :		Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	105 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	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):	1.98				
T_L (sec):	6	p:	1	C_s:	0.031
S_s:	0.163	S_1:	0.058	C_s Max:	0.031
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.174	S_{d1}:	0.093		

Load Cases

1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 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: 411178 Code: ANSI/TIA-222-G

Site Name: Old Lyme South CT, CT Engineering Number:OAA710430_C3_03 3/23/2018 1:44:12 PM

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)
1-18	47.828	0.4375	65		0.00	14,062	69.00	0.00	95.20	56543.5	26.05	157.71	56.32	47.83	77.60	30624.7	20.94	128.74	0.265007
2-18	49.276	0.4375	65	Slip	95.16	12,185	59.30	39.90	81.74	35782.8	22.14	135.55	46.24	89.17	63.60	16860.9	16.87	105.70	0.265007
3-18	48.940	0.3750	65	Slip	79.50	8,303	48.74	82.55	57.57	17021.9	21.16	130.00	35.77	131.49	42.14	6673.4	15.06	95.41	0.265007
4-18	34.044	0.2500	65	Slip	63.06	3,025	37.67	126.23	29.69	5253.7	24.81	150.69	28.65	160.28	22.53	2296.4	18.44	114.60	0.265007
5-18	10.221	0.1875	65	Butt	0.00	561	28.65	160.28	16.94	1733.7	25.18	152.80	25.94	170.50	15.33	1284.3	22.63	138.35	0.265007
				Shaft Weight		38,136													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
171.00	12' Dipole	1	0.000	6.000	40.00	4.510	1.00
171.00	Andrew ETW200VS12UB	3	0.000	0.000	11.00	0.470	0.50
171.00	Decibel DB201-A	1	0.000	5.000	25.00	3.130	1.00
171.00	E-911 GPS	1	0.000	0.000	5.00	0.580	1.00
171.00	Ericsson AIR 21	6	0.000	0.000	91.00	6.050	0.70
171.00	RFS APX16DWV-16DWVS-E-A20	3	0.000	0.000	40.70	6.590	0.60
171.00	Round T-Arm	3	0.000	0.000	250.00	9.700	0.67
160.00	ADC CG-1900/800-DB-FB-DIN	2	0.000	1.000	28.70	1.320	0.50
160.00	Alcatel-Lucent B66 RRH4x45	3	0.000	1.000	67.00	2.580	0.67
160.00	Alcatel-Lucent RRH2x60 700	3	0.000	1.000	56.70	2.150	0.67
160.00	Alcatel-Lucent RRH2X60-1900	3	0.000	1.000	43.00	1.880	0.50
160.00	Antel BXA-70063-4CF-EDIN-10	1	0.000	1.000	9.90	4.710	0.65
160.00	Antel BXA-70063/6CF_	2	0.000	1.000	17.00	7.570	0.65
160.00	Antel LPA-80080-6CF-EDIN-2	2	0.000	1.000	21.00	8.630	0.65
160.00	Commscope SBNHH-1D65B	6	0.000	1.000	50.70	8.170	0.69
160.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
160.00	RFS APL866513-42T0	4	0.000	1.000	15.70	4.050	0.76
160.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	1.000	44.00	4.800	0.67
160.00	VZW Unused Reserve: 203 sq in	1	0.000	1.000	151.60	1.410	1.00
148.00	Alcatel-Lucent 1900 MHz 4x45 R	3	0.000	1.000	60.00	2.320	0.67
148.00	Alcatel-Lucent RRH2x50-08	6	0.000	1.000	52.90	1.700	0.50
148.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.000	1.000	70.00	4.050	0.67
148.00	Commscope NNVV-65B-R4	3	0.000	1.000	77.40	12.270	0.64
148.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
148.00	GPS	1	0.000	1.000	10.00	1.000	1.00
148.00	RFS APXVTM14-ALU-I20	3	0.000	1.000	56.20	6.340	0.66
143.00	Ericsson RRUS-11	6	0.000	0.000	55.00	3.790	1.00
138.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
138.00	KMW AM-X-CD-14-65-00T-RET	6	0.000	5.000	36.40	4.990	0.66
138.00	Powerwave Allgon 7770.00	3	0.000	5.000	35.00	5.510	0.65
138.00	Powerwave TT19-08BP111-001	6	0.000	2.000	16.00	0.640	0.50
138.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	5.000	31.80	1.280	1.00
111.00	12' Dipole	1	0.000	0.000	40.00	4.510	1.00
74.00	GPS	1	0.000	0.000	10.00	1.000	1.00
Totals	Num Loadings:34	93			9220.50		

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	171.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	171.00	1	1 5/8" Fiber	1.63	1.61	N	0.00	N	T-Mobile

0.00	171.00	1	1/2" Coax	0.63	0.15	N	0.00	N	T-Mobile
0.00	171.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Town of Old Lyme, CT
0.00	171.00	6	1/2" Coax	0.63	0.15	N	0.00	N	Town of Old Lyme, CT
0.00	160.00	6	1 5/8" Coax	1.98	0.82	N	3.96	Y	Verizon
0.00	160.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	160.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	Verizon
0.00	148.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	148.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Sprint Nextel
0.00	148.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel
0.00	138.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	138.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	138.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	138.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	111.00	2	1/2" Coax	0.63	0.15	N	0.00	N	Town of Old Lyme, CT
0.00	74.00	1	1/2" Coax	0.63	0.15	N	0.00	N	Sprint Nextel

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)
0.00		0.4375	69.000	95.204	56,543.5	26.05	157.71	70.8	1614.	0.0	0.0
5.00		0.4375	67.675	93.364	53,328.1	25.51	154.69	71.4	1552.	0.0	1,604.1
10.00		0.4375	66.350	91.524	50,237.1	24.98	151.66	72.0	1491.	0.0	1,572.8
15.00		0.4375	65.025	89.684	47,267.8	24.44	148.63	72.7	1431.	0.0	1,541.5
20.00		0.4375	63.700	87.845	44,418.0	23.91	145.60	73.3	1373.	0.0	1,510.2
25.00		0.4375	62.375	86.005	41,685.0	23.38	142.57	73.9	1316.	0.0	1,478.9
30.00		0.4375	61.050	84.165	39,066.5	22.84	139.54	74.5	1260.	0.0	1,447.6
35.00		0.4375	59.725	82.325	36,560.0	22.31	136.51	75.2	1205.	0.0	1,416.3
39.90	Bot - Section 2	0.4375	58.427	80.522	34,210.7	21.78	133.55	75.8	1153.	0.0	1,357.2
40.00		0.4375	58.400	80.485	34,163.1	21.77	133.49	75.8	1152.	0.0	56.1
45.00		0.4375	57.075	78.645	31,873.3	21.24	130.46	76.4	1099.	0.0	2,728.1
47.83	Top - Section 1	0.4375	57.200	78.819	32,085.7	21.29	130.74	76.4	1104.	0.0	1,515.4
50.00		0.4375	56.625	78.020	31,119.6	21.06	129.43	76.6	1082.	0.0	579.6
55.00		0.4375	55.300	76.180	28,969.5	20.52	126.40	77.3	1031.	0.0	1,311.8
60.00		0.4375	53.975	74.340	26,920.7	19.99	123.37	77.9	982.4	0.0	1,280.5
65.00		0.4375	52.650	72.500	24,970.9	19.46	120.34	78.5	934.2	0.0	1,249.2
70.00		0.4375	51.325	70.660	23,117.7	18.92	117.31	79.1	887.2	0.0	1,217.9
74.00		0.4375	50.264	69.189	21,702.8	18.49	114.89	79.6	850.4	0.0	951.8
75.00		0.4375	49.999	68.821	21,358.4	18.39	114.28	79.8	841.4	0.0	234.8
80.00		0.4375	48.674	66.981	19,690.7	17.85	111.26	80.4	796.8	0.0	1,155.3
82.55	Bot - Section 3	0.4375	47.999	66.042	18,874.9	17.58	109.71	80.7	774.5	0.0	577.0
85.00		0.4375	47.349	65.141	18,112.2	17.32	108.23	81.0	753.4	0.0	1,023.8
89.17	Top - Section 2	0.3750	46.993	55.485	15,234.9	20.33	125.32	77.5	638.5	0.0	1,711.9
90.00		0.3750	46.774	55.225	15,021.5	20.23	124.73	77.6	632.5	0.0	155.5
95.00		0.3750	45.449	53.648	13,771.0	19.61	121.20	78.3	596.8	0.0	926.2
100.0		0.3750	44.124	52.071	12,591.9	18.98	117.66	79.1	562.1	0.0	899.3
105.0		0.3750	42.799	50.494	11,482.0	18.36	114.13	79.8	528.4	0.0	872.5
110.0		0.3750	41.474	48.917	10,439.4	17.74	110.60	80.5	495.8	0.0	845.7
111.0		0.3750	41.209	48.601	10,238.8	17.61	109.89	80.7	489.4	0.0	165.9
115.0		0.3750	40.149	47.340	9,462.0	17.12	107.06	81.3	464.2	0.0	652.9
120.0		0.3750	38.824	45.762	8,547.5	16.49	103.53	82.0	433.6	0.0	792.0
125.0		0.3750	37.499	44.185	7,693.9	15.87	100.00	82.6	404.1	0.0	765.2
126.2	Bot - Section 4	0.3750	37.172	43.796	7,492.3	15.72	99.13	82.6	397.0	0.0	184.8
130.0		0.3750	36.174	42.608	6,899.1	15.25	96.46	82.6	375.6	0.0	929.0
131.4	Top - Section 3	0.2500	36.279	28.588	4,688.7	23.82	145.12	73.4	254.6	0.0	360.5
135.0		0.2500	35.349	27.850	4,334.8	23.17	141.40	74.2	241.5	0.0	337.1
138.0		0.2500	34.554	27.219	4,046.9	22.61	138.22	74.8	230.7	0.0	281.1
140.0		0.2500	34.024	26.799	3,862.2	22.23	136.10	75.2	223.6	0.0	183.8
143.0		0.2500	33.229	26.168	3,595.8	21.67	132.92	75.9	213.1	0.0	270.4
145.0		0.2500	32.699	25.747	3,425.2	21.30	130.80	76.3	206.3	0.0	176.7
148.0		0.2500	31.904	25.117	3,179.6	20.74	127.62	77.0	196.3	0.0	259.6
150.0		0.2500	31.374	24.696	3,022.5	20.37	125.50	77.4	189.7	0.0	169.5
155.0		0.2500	30.049	23.645	2,652.7	19.43	120.20	78.5	173.9	0.0	411.2
160.0		0.2500	28.724	22.593	2,314.3	18.50	114.90	79.6	158.7	0.0	393.3
160.2	Top - Section 4	0.2500	28.650	22.535	2,296.4	18.44	114.60	79.7	157.9	0.0	21.4
160.2	Bot - Section 5	0.1875	28.650	16.938	1,733.7	25.18	152.80	71.8	119.2	0.0	
165.0		0.1875	27.399	16.194	1,514.9	24.00	146.13	73.2	108.9	0.0	266.1
170.0		0.1875	26.074	15.405	1,304.2	22.76	139.06	74.6	98.5	0.0	268.8
170.5		0.1875	25.941	15.326	1,284.3	22.63	138.35	74.8	97.5	0.0	26.1
											38,136.3

Site Number: 411178 Code: ANSI/TIA-222-G

Site Name: Old Lyme South CT, CT Engineering Number:OAA710430_C3_03 3/23/2018 1:44:12 PM

Customer: SPRINT NEXTEL

Load Case: 1.2D + 1.6W 105 mph with No Ice 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

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		310.4	0.0					0.0	0.0	310.4	0.0	0.0	0.0
5.00		614.8	1,925.0					0.0	349.1	614.8	2,274.1	0.0	0.0
10.00		602.8	1,887.4					0.0	349.1	602.8	2,236.5	0.0	0.0
15.00		590.7	1,849.8					0.0	349.1	590.7	2,199.0	0.0	0.0
20.00		578.7	1,812.3					0.0	349.1	578.7	2,161.4	0.0	0.0
25.00		566.6	1,774.7					0.0	349.1	566.6	2,123.9	0.0	0.0
30.00		561.2	1,737.1					0.0	349.1	561.2	2,086.3	0.0	0.0
35.00		561.2	1,699.6					0.0	349.1	561.2	2,048.7	0.0	0.0
39.90	Bot - Section 2	286.3	1,628.6					0.0	342.0	286.3	1,970.7	0.0	0.0
40.00		300.3	67.3					0.0	7.1	300.3	74.4	0.0	0.0
45.00		462.0	3,273.7					0.0	349.1	462.0	3,622.8	0.0	0.0
47.83	Top - Section 1	296.9	1,818.4					0.0	197.5	296.9	2,015.9	0.0	0.0
50.00		427.8	695.5					0.0	151.7	427.8	847.1	0.0	0.0
55.00		597.6	1,574.1					0.0	349.1	597.6	1,923.3	0.0	0.0
60.00		598.0	1,536.6					0.0	349.1	598.0	1,885.7	0.0	0.0
65.00		596.9	1,499.0					0.0	349.1	596.9	1,848.1	0.0	0.0
70.00		535.2	1,461.4					0.0	349.1	535.2	1,810.6	0.0	0.0
74.00	Appurtenance(s)	296.3	1,142.1	42.8	0.0	0.0	12.0	0.0	279.3	339.1	1,433.4	0.0	0.0
75.00		353.3	281.8					0.0	69.6	353.3	351.4	0.0	0.0
80.00		443.1	1,386.3					0.0	348.2	443.1	1,734.5	0.0	0.0
82.55	Bot - Section 3	293.6	692.4					0.0	177.6	293.6	870.0	0.0	0.0
85.00		389.4	1,228.6					0.0	170.7	389.4	1,399.2	0.0	0.0
89.17	Top - Section 2	292.8	2,054.3					0.0	290.7	292.8	2,345.0	0.0	0.0
90.00		337.3	186.6					0.0	57.5	337.3	244.1	0.0	0.0
95.00		574.3	1,111.4					0.0	348.2	574.3	1,459.6	0.0	0.0
100.00		565.8	1,079.2					0.0	348.2	565.8	1,427.5	0.0	0.0
105.00		556.5	1,047.0					0.0	348.2	556.5	1,395.3	0.0	0.0
110.00		330.4	1,014.8					0.0	348.2	330.4	1,363.1	0.0	0.0
111.00	Appurtenance(s)	270.7	199.1	216.7	0.0	0.0	48.0	0.0	69.6	487.3	316.7	0.0	0.0
115.00		481.3	783.5					0.0	277.2	481.3	1,060.7	0.0	0.0
120.00		526.2	950.4					0.0	346.4	526.2	1,296.9	0.0	0.0
125.00		325.0	918.2					0.0	346.4	325.0	1,264.7	0.0	0.0
126.23	Bot - Section 4	260.3	221.7					0.0	85.5	260.3	307.3	0.0	0.0
130.00		273.5	1,114.8					0.0	260.9	273.5	1,375.7	0.0	0.0
131.49	Top - Section 3	256.8	432.6					0.0	103.2	256.8	535.8	0.0	0.0
135.00		331.8	404.5					0.0	243.2	331.8	647.7	0.0	0.0
138.00	Appurtenance(s)	252.7	337.3	2,726.8	0.0	6,724.9	2,341.4	0.0	207.9	2,979.5	2,886.6	0.0	0.0
140.00		250.3	220.6					0.0	93.8	250.3	314.4	0.0	0.0
143.00	Appurtenance(s)	248.7	324.4	1,174.6	0.0	0.0	396.0	0.0	140.7	1,423.3	861.1	0.0	0.0
145.00		246.2	212.0					0.0	93.8	246.2	305.8	0.0	0.0
148.00	Appurtenance(s)	244.5	311.5	3,661.7	0.0	2,300.2	3,141.8	0.0	140.7	3,906.2	3,594.1	0.0	0.0
150.00		337.5	203.4					0.0	72.0	337.5	275.4	0.0	0.0
155.00		475.8	493.5					0.0	180.1	475.8	673.5	0.0	0.0
160.00	Appurtenance(s)	247.3	472.0	5,329.0	0.0	3,936.9	3,300.0	0.0	180.1	5,576.3	3,952.1	0.0	0.0
160.28	Top - Section 4	206.7	25.7					0.0	4.2	206.7	29.9	0.0	0.0
165.00		393.7	319.4					0.0	71.7	393.7	391.0	0.0	0.0
170.00		218.1	322.6					0.0	75.9	218.1	398.5	0.0	0.0
170.50		19.4	31.4					0.0	7.6	19.4	39.0	0.0	0.0

Site Number:	411178	Code: ANSI/TIA-222-G	
Site Name:	Old Lyme South CT, CT	Engineering Number:OAA710430_C3_03	3/23/2018 1:44:20 PM
Customer:	SPRINT NEXTEL		

Load Case: 1.2D + 1.6W — 105 mph with No Ice — 23 Iterations

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

Wind Importance Factor 1.00

Totals:	31,938.2	65,678.3	0.00	0.00

Site Number: 411178 Code: ANSI/TIA-222-G

Site Name: Old Lyme South CT, CT Engineering Number:OAA710430_C3_03 3/23/2018 1:44:20 PM

Customer: SPRINT NEXTEL

Load Case: 1.2D + 1.6W 105 mph with No Ice 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

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	-67.47	-34.75	0.00	-4,150.89	0.00	4,150.89	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.496
5.00	-65.14	-34.25	0.00	-3,977.16	0.00	3,977.16	5,999.10	2,999.55	16,596.5	8,310.63	0.06	-0.10	0.490
10.00	-62.84	-33.75	0.00	-3,805.92	0.00	3,805.92	5,932.61	2,966.31	16,087.1	8,055.52	0.22	-0.21	0.483
15.00	-60.58	-33.27	0.00	-3,637.15	0.00	3,637.15	5,864.05	2,932.02	15,579.4	7,801.29	0.49	-0.31	0.477
20.00	-58.36	-32.78	0.00	-3,470.82	0.00	3,470.82	5,793.40	2,896.70	15,073.8	7,548.13	0.88	-0.42	0.470
25.00	-56.18	-32.31	0.00	-3,306.91	0.00	3,306.91	5,720.67	2,860.34	14,570.7	7,296.19	1.37	-0.53	0.463
30.00	-54.04	-31.83	0.00	-3,145.38	0.00	3,145.38	5,645.87	2,822.93	14,070.4	7,045.66	1.98	-0.64	0.456
35.00	-51.94	-31.34	0.00	-2,986.24	0.00	2,986.24	5,568.98	2,784.49	13,573.2	6,796.69	2.71	-0.75	0.449
39.90	-49.94	-31.08	0.00	-2,832.71	0.00	2,832.71	5,491.64	2,745.82	13,089.4	6,554.48	3.54	-0.86	0.441
40.00	-49.84	-30.83	0.00	-2,829.55	0.00	2,829.55	5,490.02	2,745.01	13,079.5	6,549.47	3.56	-0.86	0.441
45.00	-46.18	-30.38	0.00	-2,675.41	0.00	2,675.41	5,408.97	2,704.49	12,589.6	6,304.17	4.52	-0.98	0.433
47.83	-44.14	-30.09	0.00	-2,589.49	0.00	2,589.49	5,416.74	2,708.37	12,635.8	6,327.32	5.12	-1.04	0.418
50.00	-43.25	-29.71	0.00	-2,524.14	0.00	2,524.14	5,380.97	2,690.49	12,424.1	6,221.32	5.61	-1.09	0.414
55.00	-41.29	-29.16	0.00	-2,375.57	0.00	2,375.57	5,297.14	2,648.57	11,939.9	5,978.85	6.81	-1.21	0.405
60.00	-39.36	-28.60	0.00	-2,229.79	0.00	2,229.79	5,211.23	2,605.61	11,460.3	5,738.70	8.14	-1.32	0.396
65.00	-37.47	-28.03	0.00	-2,086.81	0.00	2,086.81	5,123.23	2,561.62	10,985.7	5,501.03	9.58	-1.43	0.387
70.00	-35.62	-27.51	0.00	-1,946.66	0.00	1,946.66	5,033.16	2,516.58	10,516.4	5,266.03	11.15	-1.55	0.377
74.00	-34.17	-27.17	0.00	-1,836.62	0.00	1,836.62	4,959.60	2,479.80	10,145.0	5,080.05	12.48	-1.64	0.369
75.00	-33.80	-26.85	0.00	-1,809.45	0.00	1,809.45	4,941.01	2,470.50	10,052.7	5,033.85	12.83	-1.67	0.366
80.00	-32.04	-26.40	0.00	-1,675.22	0.00	1,675.22	4,846.77	2,423.39	9,595.10	4,804.68	14.64	-1.78	0.355
82.55	-31.15	-26.11	0.00	-1,607.91	0.00	1,607.91	4,797.92	2,398.96	9,364.16	4,689.04	15.61	-1.84	0.350
85.00	-29.73	-25.72	0.00	-1,543.93	0.00	1,543.93	4,750.46	2,375.23	9,143.77	4,578.68	16.57	-1.90	0.344
89.17	-27.37	-25.37	0.00	-1,436.57	0.00	1,436.57	3,869.36	1,934.68	7,410.59	3,710.80	18.27	-2.00	0.394
90.00	-27.10	-25.06	0.00	-1,415.63	0.00	1,415.63	3,857.21	1,928.61	7,352.39	3,681.66	18.62	-2.02	0.392
95.00	-25.61	-24.49	0.00	-1,290.31	0.00	1,290.31	3,782.44	1,891.22	7,002.32	3,506.37	20.80	-2.15	0.375
100.00	-24.15	-23.93	0.00	-1,167.85	0.00	1,167.85	3,705.59	1,852.80	6,656.72	3,333.31	23.12	-2.27	0.357
105.00	-22.73	-23.36	0.00	-1,048.23	0.00	1,048.23	3,626.66	1,813.33	6,315.94	3,162.66	25.57	-2.40	0.338
110.00	-21.36	-23.00	0.00	-931.42	0.00	931.42	3,545.65	1,772.83	5,980.31	2,994.60	28.15	-2.52	0.317
111.00	-21.04	-22.52	0.00	-908.42	0.00	908.42	3,529.20	1,764.60	5,913.83	2,961.31	28.68	-2.55	0.313
115.00	-19.96	-22.03	0.00	-818.33	0.00	818.33	3,462.56	1,731.28	5,650.18	2,829.29	30.85	-2.64	0.295
120.00	-18.65	-21.48	0.00	-708.18	0.00	708.18	3,377.39	1,688.70	5,325.88	2,666.90	33.68	-2.76	0.271
125.00	-17.37	-21.11	0.00	-600.78	0.00	600.78	3,282.76	1,641.38	4,996.53	2,501.98	36.63	-2.87	0.246
126.23	-17.06	-20.85	0.00	-574.72	0.00	574.72	3,253.83	1,626.92	4,908.43	2,457.86	37.37	-2.89	0.239
130.00	-15.68	-20.52	0.00	-496.20	0.00	496.20	3,165.59	1,582.79	4,644.50	2,325.70	39.68	-2.97	0.218
131.49	-15.14	-20.25	0.00	-465.62	0.00	465.62	1,887.99	943.99	2,797.63	1,400.90	40.61	-3.00	0.341
135.00	-14.49	-19.90	0.00	-394.53	0.00	394.53	1,858.58	929.29	2,682.46	1,343.22	42.84	-3.06	0.302
138.00	-11.75	-16.78	0.00	-328.09	0.00	328.09	1,832.64	916.32	2,584.68	1,294.26	44.79	-3.13	0.260
140.00	-11.44	-16.53	0.00	-294.52	0.00	294.52	1,814.93	907.46	2,519.87	1,261.81	46.11	-3.18	0.240
143.00	-10.65	-15.07	0.00	-244.94	0.00	244.94	1,787.74	893.87	2,423.26	1,213.43	48.13	-3.24	0.208
145.00	-10.34	-14.81	0.00	-214.80	0.00	214.80	1,769.20	884.60	2,359.30	1,181.40	49.49	-3.27	0.188
148.00	-6.97	-10.71	0.00	-168.07	0.00	168.07	1,740.76	870.38	2,264.06	1,133.71	51.57	-3.32	0.152
150.00	-6.71	-10.36	0.00	-146.65	0.00	146.65	1,721.38	860.69	2,201.08	1,102.18	52.97	-3.35	0.137
155.00	-6.06	-9.85	0.00	-94.84	0.00	94.84	1,671.49	835.74	2,045.57	1,024.31	56.51	-3.41	0.096
160.00	-2.44	-4.05	0.00	-41.64	0.00	41.64	1,619.52	809.76	1,893.10	947.96	60.10	-3.44	0.045
160.28	-2.43	-3.84	0.00	-40.51	0.00	40.51	1,616.56	808.28	1,884.70	943.75	60.30	-3.45	0.044
160.28	-2.43	-3.84	0.00	-40.51	0.00	40.51	1,094.32	547.16	1,281.46	641.68	60.30	-3.45	0.065
165.00	-2.06	-3.43	0.00	-22.37	0.00	22.37	1,066.38	533.19	1,193.49	597.63	63.71	-3.46	0.039
170.00	-1.67	-3.19	0.00	-5.23	0.00	5.23	1,034.78	517.39	1,101.34	551.49	67.35	-3.48	0.011
170.50	0.00	-3.08	0.00	-3.64	0.00	3.64	1,031.50	515.75	1,092.19	546.91	67.71	-3.48	0.007

Site Number: 411178 Code: ANSI/TIA-222-G

Site Name: Old Lyme South CT, CT Engineering Number:OAA710430_C3_03 3/23/2018 1:44:20 PM

Customer: SPRINT NEXTEL

Load Case: 0.9D + 1.6W 105 mph with No Ice (Reduced DL) 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

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		310.4	0.0					0.0	0.0	310.4	0.0	0.0	0.0
5.00		614.8	1,443.7					0.0	261.9	614.8	1,705.6	0.0	0.0
10.00		602.8	1,415.6					0.0	261.9	602.8	1,677.4	0.0	0.0
15.00		590.7	1,387.4					0.0	261.9	590.7	1,649.2	0.0	0.0
20.00		578.7	1,359.2					0.0	261.9	578.7	1,621.1	0.0	0.0
25.00		566.6	1,331.0					0.0	261.9	566.6	1,592.9	0.0	0.0
30.00		561.2	1,302.9					0.0	261.9	561.2	1,564.7	0.0	0.0
35.00		561.2	1,274.7					0.0	261.9	561.2	1,536.5	0.0	0.0
39.90	Bot - Section 2	286.3	1,221.5					0.0	256.5	286.3	1,478.0	0.0	0.0
40.00		300.3	50.5					0.0	5.3	300.3	55.8	0.0	0.0
45.00		462.0	2,455.3					0.0	261.9	462.0	2,717.1	0.0	0.0
47.83	Top - Section 1	296.9	1,363.8					0.0	148.1	296.9	1,511.9	0.0	0.0
50.00		427.8	521.6					0.0	113.7	427.8	635.3	0.0	0.0
55.00		597.6	1,180.6					0.0	261.9	597.6	1,442.5	0.0	0.0
60.00		598.0	1,152.4					0.0	261.9	598.0	1,414.3	0.0	0.0
65.00		596.9	1,124.2					0.0	261.9	596.9	1,386.1	0.0	0.0
70.00		535.2	1,096.1					0.0	261.9	535.2	1,357.9	0.0	0.0
74.00	Appurtenance(s)	296.3	856.6	42.8	0.0	0.0	9.0	0.0	209.5	339.1	1,075.1	0.0	0.0
75.00		353.3	211.3					0.0	52.2	353.3	263.6	0.0	0.0
80.00		443.1	1,039.7					0.0	261.2	443.1	1,300.9	0.0	0.0
82.55	Bot - Section 3	293.6	519.3					0.0	133.2	293.6	652.5	0.0	0.0
85.00		389.4	921.4					0.0	128.0	389.4	1,049.4	0.0	0.0
89.17	Top - Section 2	292.8	1,540.7					0.0	218.1	292.8	1,758.8	0.0	0.0
90.00		337.3	139.9					0.0	43.1	337.3	183.1	0.0	0.0
95.00		574.3	833.6					0.0	261.2	574.3	1,094.7	0.0	0.0
100.00		565.8	809.4					0.0	261.2	565.8	1,070.6	0.0	0.0
105.00		556.5	785.3					0.0	261.2	556.5	1,046.4	0.0	0.0
110.00		330.4	761.1					0.0	261.2	330.4	1,022.3	0.0	0.0
111.00	Appurtenance(s)	270.7	149.3	216.7	0.0	0.0	36.0	0.0	52.2	487.3	237.6	0.0	0.0
115.00		481.3	587.6					0.0	207.9	481.3	795.5	0.0	0.0
120.00		524.5	712.8					0.0	259.8	524.5	972.6	0.0	0.0
125.00		322.4	688.7					0.0	259.8	322.4	948.5	0.0	0.0
126.23	Bot - Section 4	255.8	166.3					0.0	64.1	255.8	230.4	0.0	0.0
130.00		267.9	836.1					0.0	195.7	267.9	1,031.8	0.0	0.0
131.49	Top - Section 3	250.3	324.4					0.0	77.4	250.3	401.8	0.0	0.0
135.00		322.0	303.4					0.0	182.4	322.0	485.8	0.0	0.0
138.00	Appurtenance(s)	243.6	253.0	2,726.8	0.0	6,724.9	1,756.1	0.0	155.9	2,970.4	2,165.0	0.0	0.0
140.00		239.5	165.4					0.0	70.3	239.5	235.8	0.0	0.0
143.00	Appurtenance(s)	236.7	243.3	1,174.6	0.0	0.0	297.0	0.0	105.5	1,411.3	645.8	0.0	0.0
145.00		232.4	159.0					0.0	70.3	232.4	229.3	0.0	0.0
148.00	Appurtenance(s)	229.6	233.7	3,661.7	0.0	2,300.2	2,356.4	0.0	105.5	3,891.2	2,695.6	0.0	0.0
150.00		313.1	152.6					0.0	54.0	313.1	206.6	0.0	0.0
155.00		436.7	370.1					0.0	135.0	436.7	505.2	0.0	0.0
160.00	Appurtenance(s)	226.3	354.0	5,329.0	0.0	3,936.9	2,475.0	0.0	135.0	5,555.3	2,964.1	0.0	0.0
160.28	Top - Section 4	206.7	19.3					0.0	3.2	206.7	22.4	0.0	0.0
165.00		393.7	239.5					0.0	53.8	393.7	293.3	0.0	0.0
170.00		218.1	241.9					0.0	56.9	218.1	298.9	0.0	0.0
170.50		19.4	23.5					0.0	5.7	19.4	29.2	0.0	0.0

Load Case: 0.9D + 1.6W 105 mph with No Ice (Reduced DL) 23 Iterations

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

Totals:	31,762.4	49,258.7	0.00	0.00

Load Case: 0.9D + 1.6W 105 mph with No Ice (Reduced DL) 23 Iterations

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

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	-50.60	-34.56	0.00	-4,092.60	0.00	4,092.60	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.486
5.00	-48.83	-34.03	0.00	-3,919.82	0.00	3,919.82	5,999.10	2,999.55	16,596.5	8,310.63	0.05	-0.10	0.480
10.00	-47.10	-33.50	0.00	-3,749.69	0.00	3,749.69	5,932.61	2,966.31	16,087.1	8,055.52	0.22	-0.20	0.474
15.00	-45.39	-32.99	0.00	-3,582.17	0.00	3,582.17	5,864.05	2,932.02	15,579.4	7,801.29	0.48	-0.31	0.467
20.00	-43.71	-32.48	0.00	-3,417.23	0.00	3,417.23	5,793.40	2,896.70	15,073.8	7,548.13	0.86	-0.41	0.460
25.00	-42.06	-31.98	0.00	-3,254.83	0.00	3,254.83	5,720.67	2,860.34	14,570.7	7,296.19	1.35	-0.52	0.454
30.00	-40.44	-31.48	0.00	-3,094.93	0.00	3,094.93	5,645.87	2,822.93	14,070.4	7,045.66	1.95	-0.63	0.447
35.00	-38.85	-30.98	0.00	-2,937.53	0.00	2,937.53	5,568.98	2,784.49	13,573.2	6,796.69	2.67	-0.74	0.439
39.90	-37.35	-30.70	0.00	-2,785.80	0.00	2,785.80	5,491.64	2,745.82	13,089.4	6,554.48	3.49	-0.85	0.432
40.00	-37.27	-30.44	0.00	-2,782.68	0.00	2,782.68	5,490.02	2,745.01	13,079.5	6,549.47	3.50	-0.85	0.432
45.00	-34.51	-29.99	0.00	-2,630.48	0.00	2,630.48	5,408.97	2,704.49	12,589.6	6,304.17	4.45	-0.96	0.424
47.83	-32.98	-29.70	0.00	-2,545.67	0.00	2,545.67	5,416.74	2,708.37	12,635.8	6,327.32	5.04	-1.03	0.409
50.00	-32.31	-29.31	0.00	-2,481.16	0.00	2,481.16	5,380.97	2,690.49	12,424.1	6,221.32	5.52	-1.08	0.405
55.00	-30.82	-28.74	0.00	-2,334.63	0.00	2,334.63	5,297.14	2,648.57	11,939.9	5,978.85	6.71	-1.19	0.396
60.00	-29.37	-28.17	0.00	-2,190.94	0.00	2,190.94	5,211.23	2,605.61	11,460.3	5,738.70	8.01	-1.30	0.388
65.00	-27.94	-27.59	0.00	-2,050.10	0.00	2,050.10	5,123.23	2,561.62	10,985.7	5,501.03	9.43	-1.41	0.378
70.00	-26.55	-27.07	0.00	-1,912.13	0.00	1,912.13	5,033.16	2,516.58	10,516.4	5,266.03	10.97	-1.52	0.368
74.00	-25.46	-26.73	0.00	-1,803.85	0.00	1,803.85	4,959.60	2,479.80	10,145.0	5,080.05	12.29	-1.61	0.360
75.00	-25.17	-26.40	0.00	-1,777.12	0.00	1,777.12	4,941.01	2,470.50	10,052.7	5,033.85	12.63	-1.64	0.358
80.00	-23.85	-25.95	0.00	-1,645.13	0.00	1,645.13	4,846.77	2,423.39	9,595.10	4,804.68	14.41	-1.75	0.347
82.55	-23.18	-25.66	0.00	-1,578.96	0.00	1,578.96	4,797.92	2,398.96	9,364.16	4,689.04	15.36	-1.81	0.342
85.00	-22.11	-25.27	0.00	-1,516.08	0.00	1,516.08	4,750.46	2,375.23	9,143.77	4,578.68	16.31	-1.87	0.336
89.17	-20.33	-24.94	0.00	-1,410.60	0.00	1,410.60	3,869.36	1,934.68	7,410.59	3,710.80	17.98	-1.96	0.386
90.00	-20.13	-24.62	0.00	-1,390.01	0.00	1,390.01	3,857.21	1,928.61	7,352.39	3,681.66	18.32	-1.98	0.383
95.00	-19.00	-24.05	0.00	-1,266.91	0.00	1,266.91	3,782.44	1,891.22	7,002.32	3,506.37	20.47	-2.11	0.367
100.00	-17.91	-23.48	0.00	-1,146.67	0.00	1,146.67	3,705.59	1,852.80	6,656.72	3,333.31	22.75	-2.23	0.349
105.00	-16.83	-22.92	0.00	-1,029.26	0.00	1,029.26	3,626.66	1,813.33	6,315.94	3,162.66	25.16	-2.36	0.330
110.00	-15.80	-22.57	0.00	-914.66	0.00	914.66	3,545.65	1,772.83	5,980.31	2,994.60	27.69	-2.48	0.310
111.00	-15.56	-22.08	0.00	-892.10	0.00	892.10	3,529.20	1,764.60	5,913.83	2,961.31	28.21	-2.50	0.306
115.00	-14.75	-21.60	0.00	-803.76	0.00	803.76	3,462.56	1,731.28	5,650.18	2,829.29	30.35	-2.60	0.288
120.00	-13.76	-21.05	0.00	-695.78	0.00	695.78	3,377.39	1,688.70	5,325.88	2,666.90	33.13	-2.71	0.265
125.00	-12.80	-20.70	0.00	-590.52	0.00	590.52	3,282.76	1,641.38	4,996.53	2,501.98	36.03	-2.82	0.240
126.23	-12.57	-20.44	0.00	-564.97	0.00	564.97	3,253.83	1,626.92	4,908.43	2,457.86	36.76	-2.84	0.234
130.00	-11.53	-20.14	0.00	-487.98	0.00	487.98	3,165.59	1,582.79	4,644.50	2,325.70	39.03	-2.92	0.214
131.49	-11.13	-19.87	0.00	-457.99	0.00	457.99	1,887.99	943.99	2,797.63	1,400.90	39.95	-2.95	0.333
135.00	-10.64	-19.54	0.00	-388.22	0.00	388.22	1,858.58	929.29	2,682.46	1,343.22	42.14	-3.01	0.295
138.00	-8.62	-16.47	0.00	-322.88	0.00	322.88	1,832.64	916.32	2,584.68	1,294.26	44.05	-3.08	0.254
140.00	-8.38	-16.22	0.00	-289.95	0.00	289.95	1,814.93	907.46	2,519.87	1,261.81	45.35	-3.12	0.235
143.00	-7.80	-14.78	0.00	-241.28	0.00	241.28	1,787.74	893.87	2,423.26	1,213.43	47.34	-3.18	0.203
145.00	-7.57	-14.54	0.00	-211.71	0.00	211.71	1,769.20	884.60	2,359.30	1,181.40	48.68	-3.22	0.184
148.00	-5.10	-10.51	0.00	-165.78	0.00	165.78	1,740.76	870.38	2,264.06	1,133.71	50.72	-3.27	0.149
150.00	-4.90	-10.19	0.00	-144.76	0.00	144.76	1,721.38	860.69	2,201.08	1,102.18	52.09	-3.29	0.134
155.00	-4.41	-9.73	0.00	-93.81	0.00	93.81	1,671.49	835.74	2,045.57	1,024.31	55.57	-3.35	0.094
160.00	-1.78	-4.01	0.00	-41.24	0.00	41.24	1,619.52	809.76	1,893.10	947.96	59.10	-3.39	0.045
160.28	-1.77	-3.80	0.00	-40.12	0.00	40.12	1,616.56	808.28	1,884.70	943.75	59.30	-3.39	0.044
160.28	-1.77	-3.80	0.00	-40.12	0.00	40.12	1,094.32	547.16	1,281.46	641.68	59.30	-3.39	0.064
165.00	-1.50	-3.39	0.00	-22.17	0.00	22.17	1,066.38	533.19	1,193.49	597.63	62.66	-3.41	0.039
170.00	-1.21	-3.16	0.00	-5.22	0.00	5.22	1,034.78	517.39	1,101.34	551.49	66.23	-3.42	0.011
170.50	0.00	-3.08	0.00	-3.64	0.00	3.64	1,031.50	515.75	1,092.19	546.91	66.59	-3.42	0.007

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 22 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		83.9	0.0					0.0	0.0	83.9	0.0	0.0	0.0
5.00		166.6	2,424.7					0.0	420.7	166.6	2,845.4	0.0	0.0
10.00		163.9	2,435.5					0.0	428.9	163.9	2,864.5	0.0	0.0
15.00		161.0	2,416.0					0.0	433.2	161.0	2,849.1	0.0	0.0
20.00		158.1	2,386.5					0.0	436.1	158.1	2,822.6	0.0	0.0
25.00		155.1	2,351.9					0.0	438.4	155.1	2,790.2	0.0	0.0
30.00		153.9	2,314.0					0.0	440.3	153.9	2,754.3	0.0	0.0
35.00		154.1	2,274.0					0.0	441.9	154.1	2,715.8	0.0	0.0
39.90	Bot - Section 2	78.7	2,187.5					0.0	434.2	78.7	2,621.7	0.0	0.0
40.00		82.6	79.1					0.0	9.0	82.6	88.1	0.0	0.0
45.00		127.2	3,847.0					0.0	444.5	127.2	4,291.5	0.0	0.0
47.83	Top - Section 1	81.8	2,141.5					0.0	251.9	81.8	2,393.4	0.0	0.0
50.00		118.1	942.5					0.0	193.7	118.1	1,136.2	0.0	0.0
55.00		165.2	2,133.9					0.0	446.6	165.2	2,580.5	0.0	0.0
60.00		165.6	2,088.4					0.0	447.6	165.6	2,536.0	0.0	0.0
65.00		165.5	2,042.3					0.0	448.4	165.5	2,490.8	0.0	0.0
70.00		148.7	1,995.7					0.0	449.3	148.7	2,445.0	0.0	0.0
74.00	Appurtenance(s)	82.4	1,563.7	5.5	0.0	0.0	46.9	0.0	360.0	87.9	1,970.6	0.0	0.0
75.00		98.4	387.0					0.0	89.9	98.4	476.9	0.0	0.0
80.00		123.6	1,901.1					0.0	449.8	123.6	2,350.9	0.0	0.0
82.55	Bot - Section 3	82.0	952.7					0.0	229.6	82.0	1,182.3	0.0	0.0
85.00		108.8	1,480.0					0.0	220.9	108.8	1,700.9	0.0	0.0
89.17	Top - Section 2	81.9	2,474.8					0.0	376.6	81.9	2,851.4	0.0	0.0
90.00		94.5	269.6					0.0	74.5	94.5	344.1	0.0	0.0
95.00		161.1	1,602.1					0.0	451.8	161.1	2,053.8	0.0	0.0
100.00		159.1	1,558.7					0.0	452.4	159.1	2,011.0	0.0	0.0
105.00		156.9	1,515.0					0.0	452.9	156.9	1,967.9	0.0	0.0
110.00		93.3	1,471.1					0.0	453.4	93.3	1,924.6	0.0	0.0
111.00	Appurtenance(s)	76.6	290.1	78.1	0.0	0.0	139.4	0.0	90.8	154.7	520.2	0.0	0.0
115.00		136.5	1,139.2					0.0	361.8	136.5	1,501.0	0.0	0.0
120.00		149.1	1,382.7					0.0	452.7	149.1	1,835.3	0.0	0.0
125.00		91.8	1,338.2					0.0	453.1	91.8	1,791.3	0.0	0.0
126.23	Bot - Section 4	73.0	324.8					0.0	111.9	73.0	436.8	0.0	0.0
130.00		76.5	1,425.8					0.0	341.7	76.5	1,767.5	0.0	0.0
131.49	Top - Section 3	71.7	554.6					0.0	135.2	71.7	689.8	0.0	0.0
135.00		92.3	685.6					0.0	318.8	92.3	1,004.4	0.0	0.0
138.00	Appurtenance(s)	70.0	573.0	571.9	0.0	1,180.2	4,220.5	0.0	272.6	641.9	5,066.1	0.0	0.0
140.00		69.0	375.7					0.0	137.1	69.0	512.7	0.0	0.0
143.00	Appurtenance(s)	68.3	552.3	201.1	0.0	0.0	1,023.2	0.0	205.7	269.4	1,781.2	0.0	0.0
145.00		67.2	361.9					0.0	137.2	67.2	499.1	0.0	0.0
148.00	Appurtenance(s)	66.5	531.6	717.0	0.0	382.9	5,992.2	0.0	206.0	783.5	6,729.8	0.0	0.0
150.00		91.0	348.1					0.0	115.6	91.0	463.7	0.0	0.0
155.00		127.4	841.5					0.0	289.3	127.4	1,130.8	0.0	0.0
160.00	Appurtenance(s)	66.2	806.7	1,014.1	0.0	671.5	7,441.2	0.0	289.7	1,080.3	8,537.6	0.0	0.0
160.28	Top - Section 4	60.8	44.3					0.0	4.2	60.8	48.5	0.0	0.0
165.00		116.1	622.7					0.0	71.7	116.1	694.3	0.0	0.0
170.00		64.5	630.1					0.0	75.9	64.5	706.0	0.0	0.0
170.50		5.8	62.0					0.0	7.6	5.8	69.6	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 22 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

Totals:	7,799.87	94,845.5	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 22 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 (-) (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	-98.74	-8.45	0.00	-984.76	0.00	984.76	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.131
5.00	-95.89	-8.32	0.00	-942.52	0.00	942.52	5,999.10	2,999.55	16,596.5	8,310.63	0.01	-0.02	0.129
10.00	-93.03	-8.20	0.00	-900.91	0.00	900.91	5,932.61	2,966.31	16,087.1	8,055.52	0.05	-0.05	0.128
15.00	-90.17	-8.07	0.00	-859.93	0.00	859.93	5,864.05	2,932.02	15,579.4	7,801.29	0.12	-0.07	0.126
20.00	-87.35	-7.95	0.00	-819.58	0.00	819.58	5,793.40	2,896.70	15,073.8	7,548.13	0.21	-0.10	0.124
25.00	-84.55	-7.83	0.00	-779.84	0.00	779.84	5,720.67	2,860.34	14,570.7	7,296.19	0.33	-0.12	0.122
30.00	-81.80	-7.70	0.00	-740.71	0.00	740.71	5,645.87	2,822.93	14,070.4	7,045.66	0.47	-0.15	0.120
35.00	-79.08	-7.58	0.00	-702.20	0.00	702.20	5,568.98	2,784.49	13,573.2	6,796.69	0.64	-0.18	0.118
39.90	-76.45	-7.51	0.00	-665.09	0.00	665.09	5,491.64	2,745.82	13,089.4	6,554.48	0.84	-0.20	0.115
40.00	-76.36	-7.44	0.00	-664.33	0.00	664.33	5,490.02	2,745.01	13,079.5	6,549.47	0.84	-0.20	0.115
45.00	-72.07	-7.33	0.00	-627.11	0.00	627.11	5,408.97	2,704.49	12,589.6	6,304.17	1.07	-0.23	0.113
47.83	-69.68	-7.25	0.00	-606.40	0.00	606.40	5,416.74	2,708.37	12,635.8	6,327.32	1.21	-0.25	0.109
50.00	-68.54	-7.15	0.00	-590.65	0.00	590.65	5,380.97	2,690.49	12,424.1	6,221.32	1.33	-0.26	0.108
55.00	-65.96	-7.00	0.00	-554.90	0.00	554.90	5,297.14	2,648.57	11,939.9	5,978.85	1.61	-0.28	0.105
60.00	-63.42	-6.85	0.00	-519.88	0.00	519.88	5,211.23	2,605.61	11,460.3	5,738.70	1.92	-0.31	0.103
65.00	-60.92	-6.70	0.00	-485.62	0.00	485.62	5,123.23	2,561.62	10,985.7	5,501.03	2.26	-0.34	0.100
70.00	-58.48	-6.56	0.00	-452.10	0.00	452.10	5,033.16	2,516.58	10,516.4	5,266.03	2.63	-0.36	0.097
74.00	-56.51	-6.48	0.00	-425.85	0.00	425.85	4,959.60	2,479.80	10,145.0	5,080.05	2.94	-0.39	0.095
75.00	-56.03	-6.39	0.00	-419.38	0.00	419.38	4,941.01	2,470.50	10,052.7	5,033.85	3.02	-0.39	0.095
80.00	-53.68	-6.27	0.00	-387.43	0.00	387.43	4,846.77	2,423.39	9,595.10	4,804.68	3.45	-0.42	0.092
82.55	-52.49	-6.19	0.00	-371.44	0.00	371.44	4,797.92	2,398.96	9,364.16	4,689.04	3.68	-0.43	0.090
85.00	-50.79	-6.09	0.00	-356.27	0.00	356.27	4,750.46	2,375.23	9,143.77	4,578.68	3.90	-0.45	0.089
89.17	-47.94	-5.99	0.00	-330.87	0.00	330.87	3,869.36	1,934.68	7,410.59	3,710.80	4.30	-0.47	0.102
90.00	-47.59	-5.91	0.00	-325.92	0.00	325.92	3,857.21	1,928.61	7,352.39	3,681.66	4.38	-0.47	0.101
95.00	-45.54	-5.75	0.00	-296.38	0.00	296.38	3,782.44	1,891.22	7,002.32	3,506.37	4.89	-0.50	0.097
100.00	-43.53	-5.60	0.00	-267.61	0.00	267.61	3,705.59	1,852.80	6,656.72	3,333.31	5.43	-0.53	0.092
105.00	-41.56	-5.44	0.00	-239.62	0.00	239.62	3,626.66	1,813.33	6,315.94	3,162.66	6.01	-0.56	0.087
110.00	-39.63	-5.34	0.00	-212.41	0.00	212.41	3,545.65	1,772.83	5,980.31	2,994.60	6.61	-0.59	0.082
111.00	-39.11	-5.19	0.00	-207.07	0.00	207.07	3,529.20	1,764.60	5,913.83	2,961.31	6.73	-0.59	0.081
115.00	-37.61	-5.06	0.00	-186.30	0.00	186.30	3,462.56	1,731.28	5,650.18	2,829.29	7.24	-0.62	0.077
120.00	-35.77	-4.90	0.00	-161.02	0.00	161.02	3,377.39	1,688.70	5,325.88	2,666.90	7.90	-0.64	0.071
125.00	-33.98	-4.80	0.00	-136.52	0.00	136.52	3,282.76	1,641.38	4,996.53	2,501.98	8.58	-0.67	0.065
126.23	-33.55	-4.73	0.00	-130.59	0.00	130.59	3,253.83	1,626.92	4,908.43	2,457.86	8.75	-0.67	0.063
130.00	-31.78	-4.64	0.00	-112.79	0.00	112.79	3,165.59	1,582.79	4,644.50	2,325.70	9.29	-0.69	0.059
131.49	-31.09	-4.56	0.00	-105.89	0.00	105.89	1,887.99	943.99	2,797.63	1,400.90	9.51	-0.70	0.092
135.00	-30.08	-4.47	0.00	-89.87	0.00	89.87	1,858.58	929.29	2,682.46	1,343.22	10.03	-0.71	0.083
138.00	-25.03	-3.77	0.00	-75.29	0.00	75.29	1,832.64	916.32	2,584.68	1,294.26	10.48	-0.73	0.072
140.00	-24.51	-3.70	0.00	-67.76	0.00	67.76	1,814.93	907.46	2,519.87	1,261.81	10.79	-0.74	0.067
143.00	-22.74	-3.41	0.00	-56.67	0.00	56.67	1,787.74	893.87	2,423.26	1,213.43	11.25	-0.75	0.059
145.00	-22.24	-3.34	0.00	-49.86	0.00	49.86	1,769.20	884.60	2,359.30	1,181.40	11.57	-0.76	0.055
148.00	-15.52	-2.47	0.00	-39.46	0.00	39.46	1,740.76	870.38	2,264.06	1,133.71	12.05	-0.77	0.044
150.00	-15.05	-2.37	0.00	-34.53	0.00	34.53	1,721.38	860.69	2,201.08	1,102.18	12.38	-0.78	0.040
155.00	-13.93	-2.23	0.00	-22.67	0.00	22.67	1,671.49	835.74	2,045.57	1,024.31	13.20	-0.79	0.030
160.00	-5.40	-1.03	0.00	-10.84	0.00	10.84	1,619.52	809.76	1,893.10	947.96	14.03	-0.80	0.015
160.28	-5.36	-0.97	0.00	-10.55	0.00	10.55	1,616.56	808.28	1,884.70	943.75	14.08	-0.80	0.014
160.28	-5.36	-0.97	0.00	-10.55	0.00	10.55	1,094.32	547.16	1,281.46	641.68	14.08	-0.80	0.021
165.00	-4.66	-0.85	0.00	-5.96	0.00	5.96	1,066.38	533.19	1,193.49	597.63	14.87	-0.81	0.014
170.00	-3.96	-0.77	0.00	-1.72	0.00	1.72	1,034.78	517.39	1,101.34	551.49	15.72	-0.81	0.007
170.50	0.00	-0.72	0.00	-1.33	0.00	1.33	1,031.50	515.75	1,092.19	546.91	15.80	-0.81	0.002

Load Case: 1.0D + 1.0W Serviceability 60 mph 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load 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		63.3	0.0					0.0	0.0	63.3	0.0	0.0	0.0
5.00		125.5	1,604.1					0.0	291.0	125.5	1,895.1	0.0	0.0
10.00		123.0	1,572.8					0.0	291.0	123.0	1,863.8	0.0	0.0
15.00		120.6	1,541.5					0.0	291.0	120.6	1,832.5	0.0	0.0
20.00		118.1	1,510.2					0.0	291.0	118.1	1,801.2	0.0	0.0
25.00		115.6	1,478.9					0.0	291.0	115.6	1,769.9	0.0	0.0
30.00		114.5	1,447.6					0.0	291.0	114.5	1,738.6	0.0	0.0
35.00		114.5	1,416.3					0.0	291.0	114.5	1,707.3	0.0	0.0
39.90	Bot - Section 2	58.4	1,357.2					0.0	285.0	58.4	1,642.2	0.0	0.0
40.00		61.3	56.1					0.0	5.9	61.3	62.0	0.0	0.0
45.00		94.3	2,728.1					0.0	291.0	94.3	3,019.0	0.0	0.0
47.83	Top - Section 1	60.6	1,515.4					0.0	164.6	60.6	1,679.9	0.0	0.0
50.00		87.3	579.6					0.0	126.4	87.3	705.9	0.0	0.0
55.00		122.0	1,311.8					0.0	291.0	122.0	1,602.7	0.0	0.0
60.00		122.0	1,280.5					0.0	291.0	122.0	1,571.4	0.0	0.0
65.00		121.8	1,249.2					0.0	291.0	121.8	1,540.1	0.0	0.0
70.00		109.2	1,217.9					0.0	291.0	109.2	1,508.8	0.0	0.0
74.00	Appurtenance(s)	60.5	951.8	8.7	0.0	0.0	10.0	0.0	232.8	69.2	1,194.5	0.0	0.0
75.00		72.1	234.8					0.0	58.0	72.1	292.8	0.0	0.0
80.00		90.4	1,155.3					0.0	290.2	90.4	1,445.5	0.0	0.0
82.55	Bot - Section 3	59.9	577.0					0.0	148.0	59.9	725.0	0.0	0.0
85.00		79.5	1,023.8					0.0	142.2	79.5	1,166.0	0.0	0.0
89.17	Top - Section 2	59.8	1,711.9					0.0	242.3	59.8	1,954.2	0.0	0.0
90.00		68.8	155.5					0.0	47.9	68.8	203.4	0.0	0.0
95.00		117.2	926.2					0.0	290.2	117.2	1,216.4	0.0	0.0
100.00		115.5	899.3					0.0	290.2	115.5	1,189.5	0.0	0.0
105.00		113.6	872.5					0.0	290.2	113.6	1,162.7	0.0	0.0
110.00		67.4	845.7					0.0	290.2	67.4	1,135.9	0.0	0.0
111.00	Appurtenance(s)	55.2	165.9	44.2	0.0	0.0	40.0	0.0	58.0	99.5	264.0	0.0	0.0
115.00		98.2	652.9					0.0	231.0	98.2	883.9	0.0	0.0
120.00		107.0	792.0					0.0	288.7	107.0	1,080.7	0.0	0.0
125.00		65.8	765.2					0.0	288.7	65.8	1,053.9	0.0	0.0
126.23	Bot - Section 4	52.2	184.8					0.0	71.3	52.2	256.1	0.0	0.0
130.00		54.7	929.0					0.0	217.4	54.7	1,146.4	0.0	0.0
131.49	Top - Section 3	51.1	360.5					0.0	86.0	51.1	446.5	0.0	0.0
135.00		65.7	337.1					0.0	202.7	65.7	539.8	0.0	0.0
138.00	Appurtenance(s)	49.7	281.1	556.5	0.0	1,372.4	1,951.2	0.0	173.2	606.2	2,405.5	0.0	0.0
140.00		48.9	183.8					0.0	78.2	48.9	262.0	0.0	0.0
143.00	Appurtenance(s)	48.3	270.4	239.7	0.0	0.0	330.0	0.0	117.2	288.0	717.6	0.0	0.0
145.00		47.4	176.7					0.0	78.2	47.4	254.8	0.0	0.0
148.00	Appurtenance(s)	46.8	259.6	747.3	0.0	469.4	2,618.2	0.0	117.2	794.1	2,995.1	0.0	0.0
150.00		63.9	169.5					0.0	60.0	63.9	229.5	0.0	0.0
155.00		89.1	411.2					0.0	150.1	89.1	561.3	0.0	0.0
160.00	Appurtenance(s)	46.2	393.3	1,087.5	0.0	803.4	2,750.0	0.0	150.1	1,133.7	3,293.4	0.0	0.0
160.28	Top - Section 4	42.2	21.4					0.0	3.5	42.2	24.9	0.0	0.0
165.00		80.3	266.1					0.0	59.7	80.3	325.9	0.0	0.0
170.00		44.5	268.8					0.0	63.3	44.5	332.1	0.0	0.0
170.50		4.0	26.1					0.0	6.3	4.0	32.5	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 21 Iterations

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

Totals:	6,482.14	54,731.9	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load 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	-56.25	-7.05	0.00	-837.59	0.00	837.59	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.107
5.00	-54.35	-6.95	0.00	-802.33	0.00	802.33	5,999.10	2,999.55	16,596.5	8,310.63	0.01	-0.02	0.106
10.00	-52.49	-6.84	0.00	-767.60	0.00	767.60	5,932.61	2,966.31	16,087.1	8,055.52	0.04	-0.04	0.104
15.00	-50.65	-6.74	0.00	-733.40	0.00	733.40	5,864.05	2,932.02	15,579.4	7,801.29	0.10	-0.06	0.103
20.00	-48.85	-6.64	0.00	-699.71	0.00	699.71	5,793.40	2,896.70	15,073.8	7,548.13	0.18	-0.08	0.101
25.00	-47.08	-6.54	0.00	-666.53	0.00	666.53	5,720.67	2,860.34	14,570.7	7,296.19	0.28	-0.11	0.100
30.00	-45.34	-6.44	0.00	-633.85	0.00	633.85	5,645.87	2,822.93	14,070.4	7,045.66	0.40	-0.13	0.098
35.00	-43.63	-6.33	0.00	-601.68	0.00	601.68	5,568.98	2,784.49	13,573.2	6,796.69	0.55	-0.15	0.096
39.90	-41.98	-6.28	0.00	-570.65	0.00	570.65	5,491.64	2,745.82	13,089.4	6,554.48	0.71	-0.17	0.095
40.00	-41.92	-6.23	0.00	-570.02	0.00	570.02	5,490.02	2,745.01	13,079.5	6,549.47	0.72	-0.17	0.095
45.00	-38.90	-6.13	0.00	-538.89	0.00	538.89	5,408.97	2,704.49	12,589.6	6,304.17	0.91	-0.20	0.093
47.83	-37.22	-6.08	0.00	-521.54	0.00	521.54	5,416.74	2,708.37	12,635.8	6,327.32	1.03	-0.21	0.089
50.00	-36.51	-6.00	0.00	-508.35	0.00	508.35	5,380.97	2,690.49	12,424.1	6,221.32	1.13	-0.22	0.089
55.00	-34.91	-5.88	0.00	-478.37	0.00	478.37	5,297.14	2,648.57	11,939.9	5,978.85	1.37	-0.24	0.087
60.00	-33.33	-5.77	0.00	-448.96	0.00	448.96	5,211.23	2,605.61	11,460.3	5,738.70	1.64	-0.27	0.085
65.00	-31.79	-5.65	0.00	-420.13	0.00	420.13	5,123.23	2,561.62	10,985.7	5,501.03	1.93	-0.29	0.083
70.00	-30.28	-5.54	0.00	-391.89	0.00	391.89	5,033.16	2,516.58	10,516.4	5,266.03	2.25	-0.31	0.080
74.00	-29.09	-5.47	0.00	-369.72	0.00	369.72	4,959.60	2,479.80	10,145.0	5,080.05	2.52	-0.33	0.079
75.00	-28.79	-5.41	0.00	-364.24	0.00	364.24	4,941.01	2,470.50	10,052.7	5,033.85	2.59	-0.34	0.078
80.00	-27.35	-5.32	0.00	-337.21	0.00	337.21	4,846.77	2,423.39	9,595.10	4,804.68	2.95	-0.36	0.076
82.55	-26.62	-5.26	0.00	-323.66	0.00	323.66	4,797.92	2,398.96	9,364.16	4,689.04	3.15	-0.37	0.075
85.00	-25.45	-5.18	0.00	-310.78	0.00	310.78	4,750.46	2,375.23	9,143.77	4,578.68	3.34	-0.38	0.073
89.17	-23.50	-5.11	0.00	-289.17	0.00	289.17	3,869.36	1,934.68	7,410.59	3,710.80	3.68	-0.40	0.084
90.00	-23.29	-5.04	0.00	-284.95	0.00	284.95	3,857.21	1,928.61	7,352.39	3,681.66	3.75	-0.41	0.083
95.00	-22.08	-4.93	0.00	-259.73	0.00	259.73	3,782.44	1,891.22	7,002.32	3,506.37	4.19	-0.43	0.080
100.00	-20.89	-4.81	0.00	-235.10	0.00	235.10	3,705.59	1,852.80	6,656.72	3,333.31	4.66	-0.46	0.076
105.00	-19.72	-4.70	0.00	-211.03	0.00	211.03	3,626.66	1,813.33	6,315.94	3,162.66	5.15	-0.48	0.072
110.00	-18.59	-4.63	0.00	-187.54	0.00	187.54	3,545.65	1,772.83	5,980.31	2,994.60	5.67	-0.51	0.068
111.00	-18.32	-4.53	0.00	-182.92	0.00	182.92	3,529.20	1,764.60	5,913.83	2,961.31	5.78	-0.51	0.067
115.00	-17.44	-4.43	0.00	-164.81	0.00	164.81	3,462.56	1,731.28	5,650.18	2,829.29	6.22	-0.53	0.063
120.00	-16.36	-4.32	0.00	-142.67	0.00	142.67	3,377.39	1,688.70	5,325.88	2,666.90	6.79	-0.56	0.058
125.00	-15.30	-4.24	0.00	-121.08	0.00	121.08	3,282.76	1,641.38	4,996.53	2,501.98	7.38	-0.58	0.053
126.23	-15.05	-4.19	0.00	-115.85	0.00	115.85	3,253.83	1,626.92	4,908.43	2,457.86	7.53	-0.58	0.052
130.00	-13.90	-4.13	0.00	-100.06	0.00	100.06	3,165.59	1,582.79	4,644.50	2,325.70	8.00	-0.60	0.047
131.49	-13.45	-4.08	0.00	-93.91	0.00	93.91	1,887.99	943.99	2,797.63	1,400.90	8.18	-0.60	0.074
135.00	-12.91	-4.01	0.00	-79.60	0.00	79.60	1,858.58	929.29	2,682.46	1,343.22	8.63	-0.62	0.066
138.00	-10.51	-3.38	0.00	-66.21	0.00	66.21	1,832.64	916.32	2,584.68	1,294.26	9.03	-0.63	0.057
140.00	-10.25	-3.33	0.00	-59.46	0.00	59.46	1,814.93	907.46	2,519.87	1,261.81	9.29	-0.64	0.053
143.00	-9.54	-3.03	0.00	-49.48	0.00	49.48	1,787.74	893.87	2,423.26	1,213.43	9.70	-0.65	0.046
145.00	-9.28	-2.98	0.00	-43.41	0.00	43.41	1,769.20	884.60	2,359.30	1,181.40	9.97	-0.66	0.042
148.00	-6.30	-2.16	0.00	-33.99	0.00	33.99	1,740.76	870.38	2,264.06	1,133.71	10.39	-0.67	0.034
150.00	-6.07	-2.09	0.00	-29.68	0.00	29.68	1,721.38	860.69	2,201.08	1,102.18	10.67	-0.68	0.030
155.00	-5.51	-2.00	0.00	-19.23	0.00	19.23	1,671.49	835.74	2,045.57	1,024.31	11.39	-0.69	0.022
160.00	-2.23	-0.82	0.00	-8.45	0.00	8.45	1,619.52	809.76	1,893.10	947.96	12.11	-0.69	0.010
160.28	-2.20	-0.78	0.00	-8.22	0.00	8.22	1,616.56	808.28	1,884.70	943.75	12.15	-0.69	0.010
160.28	-2.20	-0.78	0.00	-8.22	0.00	8.22	1,094.32	547.16	1,281.46	641.68	12.15	-0.69	0.015
165.00	-1.88	-0.70	0.00	-4.54	0.00	4.54	1,066.38	533.19	1,193.49	597.63	12.84	-0.70	0.009
170.00	-1.55	-0.65	0.00	-1.07	0.00	1.07	1,034.78	517.39	1,101.34	551.49	13.57	-0.70	0.003
170.50	0.00	-0.63	0.00	-0.74	0.00	0.74	1,031.50	515.75	1,092.19	546.91	13.65	-0.70	0.001

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.16	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
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}):	0.17	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09	
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):	1.98	
Redundancy Factor (p):	1.00	
Seismic Force Distribution Exponent (k):	1.74	
Total Unfactored Dead Load:	56.25	k
Seismic Base Shear (E):	1.76	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)
47	170.25	32	248	0.002	3	40
46	167.50	332	2,461	0.016	29	410
45	162.64	326	2,294	0.015	27	402
44	160.14	25	171	0.001	2	31
43	157.50	543	3,618	0.024	42	671
42	152.50	561	3,533	0.024	41	693
41	149.00	230	1,388	0.009	16	283
40	146.50	377	2,212	0.015	26	465
39	144.00	255	1,452	0.010	17	315
38	141.50	388	2,142	0.014	25	479
37	139.00	262	1,403	0.009	16	323
36	136.50	454	2,358	0.016	28	561
35	133.24	540	2,686	0.018	32	666
34	130.74	446	2,150	0.014	25	551
33	128.12	1,146	5,329	0.036	63	1,416
32	125.62	256	1,150	0.008	14	316
31	122.50	1,054	4,531	0.030	53	1,301
30	117.50	1,081	4,322	0.029	51	1,334
29	113.00	884	3,302	0.022	39	1,091
28	110.50	224	805	0.005	9	277
27	107.50	1,136	3,891	0.026	46	1,403
26	102.50	1,163	3,666	0.024	43	1,436
25	97.50	1,190	3,438	0.023	40	1,469

24	92.50	1,216	3,208	0.021	38	1,502
23	89.59	203	507	0.003	6	251
22	87.09	1,954	4,640	0.031	54	2,413
21	83.77	1,166	2,588	0.017	30	1,440
20	81.27	725	1,527	0.010	18	895
19	77.50	1,445	2,802	0.019	33	1,785
18	74.50	293	530	0.004	6	362
17	72.00	1,185	2,020	0.013	24	1,463
16	67.50	1,509	2,300	0.015	27	1,863
15	62.50	1,540	2,053	0.014	24	1,902
14	57.50	1,571	1,812	0.012	21	1,940
13	52.50	1,603	1,578	0.011	19	1,979
12	48.91	706	614	0.004	7	872
11	46.41	1,680	1,335	0.009	16	2,074
10	42.50	3,019	2,057	0.014	24	3,728
9	39.95	62	38	0.000	0	77
8	37.45	1,642	898	0.006	11	2,028
7	32.50	1,707	730	0.005	9	2,108
6	27.50	1,739	556	0.004	7	2,147
5	22.50	1,770	399	0.003	5	2,185
4	17.50	1,801	262	0.002	3	2,224
3	12.50	1,832	148	0.001	2	2,263
2	7.50	1,864	62	0.000	1	2,301
1	2.50	1,895	9	0.000	0	2,340
Andrew ETW200VS12UB	171.00	33	254	0.002	3	41
E-911 GPS	171.00	5	38	0.000	0	6
Decibel DB201-A	171.00	25	192	0.001	2	31
12' Dipole	171.00	40	307	0.002	4	49
Ericsson AIR 21	171.00	546	4,195	0.028	49	674
RFS APX16DWV-16DWVS-	171.00	122	938	0.006	11	151
Round T-Arm	171.00	750	5,762	0.038	68	926
ADC CG-1900/800-DB-F	160.00	57	393	0.003	5	71
VZW Unused Reserve:	160.00	152	1,037	0.007	12	187
Alcatel-Lucent RRH2X	160.00	129	883	0.006	10	159
Alcatel-Lucent RRH2x	160.00	170	1,164	0.008	14	210
Alcatel-Lucent B66 R	160.00	201	1,375	0.009	16	248
RFS APL866513-42T0	160.00	63	430	0.003	5	78
Antel BXA-70063-4CF-	160.00	10	68	0.000	1	12
RFS DB-T1-6Z-8AB-0Z	160.00	88	602	0.004	7	109
Antel BXA-70063/6CF_	160.00	34	233	0.002	3	42
Commscope SBNHH-1D65	160.00	304	2,082	0.014	24	376
Antel LPA-80080-6CF-	160.00	42	287	0.002	3	52
Flat Low Profile Pla	160.00	1,500	10,265	0.069	121	1,852
GPS	148.00	10	60	0.000	1	12
Alcatel-Lucent RRH2x	148.00	317	1,896	0.013	22	392
Alcatel-Lucent 1900	148.00	180	1,075	0.007	13	222
Alcatel-Lucent TD-RR	148.00	210	1,255	0.008	15	259
RFS APXVTM14-ALU-I20	148.00	169	1,007	0.007	12	208
Commscope NNVV-65B-R	148.00	232	1,387	0.009	16	287
Flat Low Profile Pla	148.00	1,500	8,962	0.060	105	1,852
Ericsson RRUS-11	143.00	330	1,857	0.012	22	407
Powerwave TT19-08BP1	138.00	96	508	0.003	6	119
Raycap DC6-48-60-18-	138.00	32	168	0.001	2	39
KMW AM-X-CD-14-65-00	138.00	218	1,155	0.008	14	270
Powerwave Allgon 777	138.00	105	555	0.004	7	130
Flat Low Profile Pla	138.00	1,500	7,935	0.053	93	1,852
12' Dipole	111.00	40	145	0.001	2	49
GPS	74.00	10	18	0.000	0	12
		56,253	149,714	1.000	1,758	69,460

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)
47	170.25	32	248	0.002	3	28
46	167.50	332	2,461	0.016	29	287
45	162.64	326	2,294	0.015	27	282
44	160.14	25	171	0.001	2	22
43	157.50	543	3,618	0.024	42	470
42	152.50	561	3,533	0.024	41	486
41	149.00	230	1,388	0.009	16	199
40	146.50	377	2,212	0.015	26	326
39	144.00	255	1,452	0.010	17	220
38	141.50	388	2,142	0.014	25	335
37	139.00	262	1,403	0.009	16	227
36	136.50	454	2,358	0.016	28	393
35	133.24	540	2,686	0.018	32	467
34	130.74	446	2,150	0.014	25	386
33	128.12	1,146	5,329	0.036	63	992
32	125.62	256	1,150	0.008	14	222
31	122.50	1,054	4,531	0.030	53	912
30	117.50	1,081	4,322	0.029	51	935
29	113.00	884	3,302	0.022	39	765
28	110.50	224	805	0.005	9	194
27	107.50	1,136	3,891	0.026	46	983
26	102.50	1,163	3,666	0.024	43	1,006
25	97.50	1,190	3,438	0.023	40	1,029
24	92.50	1,216	3,208	0.021	38	1,052
23	89.59	203	507	0.003	6	176
22	87.09	1,954	4,640	0.031	54	1,691
21	83.77	1,166	2,588	0.017	30	1,009
20	81.27	725	1,527	0.010	18	627
19	77.50	1,445	2,802	0.019	33	1,251
18	74.50	293	530	0.004	6	253
17	72.00	1,185	2,020	0.013	24	1,025
16	67.50	1,509	2,300	0.015	27	1,305
15	62.50	1,540	2,053	0.014	24	1,333
14	57.50	1,571	1,812	0.012	21	1,360
13	52.50	1,603	1,578	0.011	19	1,387
12	48.91	706	614	0.004	7	611
11	46.41	1,680	1,335	0.009	16	1,454
10	42.50	3,019	2,057	0.014	24	2,612
9	39.95	62	38	0.000	0	54
8	37.45	1,642	898	0.006	11	1,421
7	32.50	1,707	730	0.005	9	1,477
6	27.50	1,739	556	0.004	7	1,504
5	22.50	1,770	399	0.003	5	1,531
4	17.50	1,801	262	0.002	3	1,558
3	12.50	1,832	148	0.001	2	1,586
2	7.50	1,864	62	0.000	1	1,613
1	2.50	1,895	9	0.000	0	1,640
Andrew ETW200VS12UB	171.00	33	254	0.002	3	29
E-911 GPS	171.00	5	38	0.000	0	4
Decibel DB201-A	171.00	25	192	0.001	2	22
12' Dipole	171.00	40	307	0.002	4	35
Ericsson AIR 21	171.00	546	4,195	0.028	49	472
RFS APX16DWV-16DWVS-	171.00	122	938	0.006	11	106
Round T-Arm	171.00	750	5,762	0.038	68	649
ADC CG-1900/800-DB-F	160.00	57	393	0.003	5	50
VZW Unused Reserve:	160.00	152	1,037	0.007	12	131
Alcatel-Lucent RRH2X	160.00	129	883	0.006	10	112

Alcatel-Lucent RRH2x	160.00	170	1,164	0.008	14	147
Alcatel-Lucent B66 R	160.00	201	1,375	0.009	16	174
RFS APL866513-42T0	160.00	63	430	0.003	5	54
Antel BXA-70063-4CF-	160.00	10	68	0.000	1	9
RFS DB-T1-6Z-8AB-0Z	160.00	88	602	0.004	7	76
Antel BXA-70063/6CF_	160.00	34	233	0.002	3	29
Commscope SBNHH-1D65	160.00	304	2,082	0.014	24	263
Antel LPA-80080-6CF-	160.00	42	287	0.002	3	36
Flat Low Profile Pla	160.00	1,500	10,265	0.069	121	1,298
GPS	148.00	10	60	0.000	1	9
Alcatel-Lucent RRH2x	148.00	317	1,896	0.013	22	275
Alcatel-Lucent 1900	148.00	180	1,075	0.007	13	156
Alcatel-Lucent TD-RR	148.00	210	1,255	0.008	15	182
RFS APXVTM14-ALU-I20	148.00	169	1,007	0.007	12	146
Commscope NNVV-65B-R	148.00	232	1,387	0.009	16	201
Flat Low Profile Pla	148.00	1,500	8,962	0.060	105	1,298
Ericsson RRUS-11	143.00	330	1,857	0.012	22	286
Powerwave TT19-08BP1	138.00	96	508	0.003	6	83
Raycap DC6-48-60-18-	138.00	32	168	0.001	2	28
KMW AM-X-CD-14-65-00	138.00	218	1,155	0.008	14	189
Powerwave Allgon 777	138.00	105	555	0.004	7	91
Flat Low Profile Pla	138.00	1,500	7,935	0.053	93	1,298
12' Dipole	111.00	40	145	0.001	2	35
GPS	74.00	10	18	0.000	0	9
		56,253	149,714	1.000	1,758	48,672

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	-65.24	-1.62	0.00	-201.36	0.00	201.36	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.034
5.00	-62.94	-1.63	0.00	-193.25	0.00	193.25	5,999.10	2,999.55	16,596.5	8,310.63	0.00	0.00	0.034
10.00	-60.68	-1.63	0.00	-185.11	0.00	185.11	5,932.61	2,966.31	16,087.1	8,055.52	0.01	-0.01	0.033
15.00	-58.45	-1.63	0.00	-176.96	0.00	176.96	5,864.05	2,932.02	15,579.4	7,801.29	0.02	-0.02	0.033
20.00	-56.27	-1.63	0.00	-168.81	0.00	168.81	5,793.40	2,896.70	15,073.8	7,548.13	0.04	-0.02	0.032
25.00	-54.12	-1.63	0.00	-160.65	0.00	160.65	5,720.67	2,860.34	14,570.7	7,296.19	0.07	-0.03	0.031
30.00	-52.01	-1.62	0.00	-152.50	0.00	152.50	5,645.87	2,822.93	14,070.4	7,045.66	0.10	-0.03	0.031
35.00	-49.98	-1.62	0.00	-144.38	0.00	144.38	5,568.98	2,784.49	13,573.2	6,796.69	0.13	-0.04	0.030
39.90	-49.91	-1.62	0.00	-136.46	0.00	136.46	5,491.64	2,745.82	13,089.4	6,554.48	0.17	-0.04	0.030
40.00	-46.18	-1.59	0.00	-136.29	0.00	136.29	5,490.02	2,745.01	13,079.5	6,549.47	0.17	-0.04	0.029
45.00	-44.11	-1.58	0.00	-128.32	0.00	128.32	5,408.97	2,704.49	12,589.6	6,304.17	0.22	-0.05	0.029
47.83	-43.23	-1.57	0.00	-123.85	0.00	123.85	5,416.74	2,708.37	12,635.8	6,327.32	0.25	-0.05	0.028
50.00	-41.25	-1.56	0.00	-120.43	0.00	120.43	5,380.97	2,690.49	12,424.1	6,221.32	0.27	-0.05	0.027
55.00	-39.31	-1.54	0.00	-112.64	0.00	112.64	5,297.14	2,648.57	11,939.9	5,978.85	0.33	-0.06	0.026
60.00	-37.41	-1.52	0.00	-104.95	0.00	104.95	5,211.23	2,605.61	11,460.3	5,738.70	0.39	-0.06	0.025
65.00	-35.55	-1.49	0.00	-97.38	0.00	97.38	5,123.23	2,561.62	10,985.7	5,501.03	0.46	-0.07	0.025
70.00	-34.09	-1.47	0.00	-89.93	0.00	89.93	5,033.16	2,516.58	10,516.4	5,266.03	0.54	-0.07	0.024
74.00	-33.71	-1.46	0.00	-84.06	0.00	84.06	4,959.60	2,479.80	10,145.0	5,080.05	0.60	-0.08	0.023
75.00	-31.93	-1.43	0.00	-82.60	0.00	82.60	4,941.01	2,470.50	10,052.7	5,033.85	0.62	-0.08	0.023
80.00	-31.03	-1.41	0.00	-75.46	0.00	75.46	4,846.77	2,423.39	9,595.10	4,804.68	0.71	-0.08	0.022
82.55	-29.59	-1.38	0.00	-71.86	0.00	71.86	4,797.92	2,398.96	9,364.16	4,689.04	0.75	-0.09	0.021
85.00	-27.18	-1.32	0.00	-68.48	0.00	68.48	4,750.46	2,375.23	9,143.77	4,578.68	0.80	-0.09	0.021
89.17	-26.93	-1.32	0.00	-62.96	0.00	62.96	3,869.36	1,934.68	7,410.59	3,710.80	0.88	-0.09	0.024
90.00	-25.43	-1.28	0.00	-61.87	0.00	61.87	3,857.21	1,928.61	7,352.39	3,681.66	0.90	-0.10	0.023
95.00	-23.96	-1.24	0.00	-55.47	0.00	55.47	3,782.44	1,891.22	7,002.32	3,506.37	1.00	-0.10	0.022
100.00	-22.52	-1.20	0.00	-49.28	0.00	49.28	3,705.59	1,852.80	6,656.72	3,333.31	1.11	-0.11	0.021
105.00	-21.12	-1.15	0.00	-43.30	0.00	43.30	3,626.66	1,813.33	6,315.94	3,162.66	1.22	-0.11	0.020
110.00	-20.84	-1.14	0.00	-37.56	0.00	37.56	3,545.65	1,772.83	5,980.31	2,994.60	1.34	-0.12	0.018
111.00	-19.70	-1.10	0.00	-36.42	0.00	36.42	3,529.20	1,764.60	5,913.83	2,961.31	1.37	-0.12	0.018
115.00	-18.37	-1.05	0.00	-32.03	0.00	32.03	3,462.56	1,731.28	5,650.18	2,829.29	1.47	-0.12	0.017
120.00	-17.07	-0.99	0.00	-26.80	0.00	26.80	3,377.39	1,688.70	5,325.88	2,666.90	1.60	-0.13	0.015
125.00	-16.75	-0.98	0.00	-21.85	0.00	21.85	3,282.76	1,641.38	4,996.53	2,501.98	1.73	-0.13	0.014
126.23	-15.33	-0.91	0.00	-20.64	0.00	20.64	3,253.83	1,626.92	4,908.43	2,457.86	1.76	-0.13	0.013
130.00	-14.78	-0.89	0.00	-17.20	0.00	17.20	3,165.59	1,582.79	4,644.50	2,325.70	1.87	-0.13	0.012
131.49	-14.12	-0.85	0.00	-15.88	0.00	15.88	1,887.99	943.99	2,797.63	1,400.90	1.91	-0.13	0.019
135.00	-13.56	-0.83	0.00	-12.89	0.00	12.89	1,858.58	929.29	2,682.46	1,343.22	2.01	-0.14	0.017
138.00	-10.82	-0.68	0.00	-10.41	0.00	10.41	1,832.64	916.32	2,584.68	1,294.26	2.10	-0.14	0.014
140.00	-10.35	-0.66	0.00	-9.05	0.00	9.05	1,814.93	907.46	2,519.87	1,261.81	2.16	-0.14	0.013
143.00	-9.62	-0.62	0.00	-7.08	0.00	7.08	1,787.74	893.87	2,423.26	1,213.43	2.24	-0.14	0.011
145.00	-9.16	-0.59	0.00	-5.85	0.00	5.85	1,769.20	884.60	2,359.30	1,181.40	2.30	-0.14	0.010
148.00	-5.64	-0.38	0.00	-4.09	0.00	4.09	1,740.76	870.38	2,264.06	1,133.71	2.39	-0.14	0.007
150.00	-4.95	-0.34	0.00	-3.33	0.00	3.33	1,721.38	860.69	2,201.08	1,102.18	2.46	-0.15	0.006
155.00	-4.28	-0.29	0.00	-1.65	0.00	1.65	1,671.49	835.74	2,045.57	1,024.31	2.61	-0.15	0.004
160.00	-0.85	-0.06	0.00	-0.19	0.00	0.19	1,619.52	809.76	1,893.10	947.96	2.76	-0.15	0.001
160.28	-0.45	-0.03	0.00	-0.17	0.00	0.17	1,616.56	808.28	1,884.70	943.75	2.77	-0.15	0.000
160.28	-0.45	-0.03	0.00	-0.17	0.00	0.17	1,094.32	547.16	1,281.46	641.68	2.77	-0.15	0.001
165.00	-0.04	0.00	0.00	-0.01	0.00	0.01	1,066.38	533.19	1,193.49	597.63	2.92	-0.15	0.000
170.00	0.00	0.00	0.00	0.00	0.00	0.00	1,034.78	517.39	1,101.34	551.49	3.07	-0.15	0.000
170.50	0.00	0.00	0.00	0.00	0.00	0.00	1,031.50	515.75	1,092.19	546.91	3.08	-0.15	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	-45.72	-1.62	0.00	-199.77	0.00	199.77	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.031
5.00	-44.10	-1.62	0.00	-191.66	0.00	191.66	5,999.10	2,999.55	16,596.5	8,310.63	0.00	0.00	0.030
10.00	-42.52	-1.63	0.00	-183.54	0.00	183.54	5,932.61	2,966.31	16,087.1	8,055.52	0.01	-0.01	0.030
15.00	-40.96	-1.63	0.00	-175.41	0.00	175.41	5,864.05	2,932.02	15,579.4	7,801.29	0.02	-0.02	0.029
20.00	-39.43	-1.62	0.00	-167.28	0.00	167.28	5,793.40	2,896.70	15,073.8	7,548.13	0.04	-0.02	0.029
25.00	-37.92	-1.62	0.00	-159.16	0.00	159.16	5,720.67	2,860.34	14,570.7	7,296.19	0.07	-0.03	0.028
30.00	-36.45	-1.62	0.00	-151.05	0.00	151.05	5,645.87	2,822.93	14,070.4	7,045.66	0.10	-0.03	0.028
35.00	-35.02	-1.61	0.00	-142.98	0.00	142.98	5,568.98	2,784.49	13,573.2	6,796.69	0.13	-0.04	0.027
39.90	-34.97	-1.61	0.00	-135.10	0.00	135.10	5,491.64	2,745.82	13,089.4	6,554.48	0.17	-0.04	0.027
40.00	-32.36	-1.58	0.00	-134.94	0.00	134.94	5,490.02	2,745.01	13,079.5	6,549.47	0.17	-0.04	0.026
45.00	-30.91	-1.57	0.00	-127.02	0.00	127.02	5,408.97	2,704.49	12,589.6	6,304.17	0.22	-0.05	0.026
47.83	-30.29	-1.56	0.00	-122.58	0.00	122.58	5,416.74	2,708.37	12,635.8	6,327.32	0.25	-0.05	0.025
50.00	-28.91	-1.55	0.00	-119.19	0.00	119.19	5,380.97	2,690.49	12,424.1	6,221.32	0.27	-0.05	0.025
55.00	-27.55	-1.53	0.00	-111.46	0.00	111.46	5,297.14	2,648.57	11,939.9	5,978.85	0.33	-0.06	0.024
60.00	-26.21	-1.50	0.00	-103.84	0.00	103.84	5,211.23	2,605.61	11,460.3	5,738.70	0.39	-0.06	0.023
65.00	-24.91	-1.48	0.00	-96.33	0.00	96.33	5,123.23	2,561.62	10,985.7	5,501.03	0.46	-0.07	0.022
70.00	-23.88	-1.45	0.00	-88.95	0.00	88.95	5,033.16	2,516.58	10,516.4	5,266.03	0.53	-0.07	0.022
74.00	-23.62	-1.45	0.00	-83.13	0.00	83.13	4,959.60	2,479.80	10,145.0	5,080.05	0.60	-0.08	0.021
75.00	-22.37	-1.41	0.00	-81.69	0.00	81.69	4,941.01	2,470.50	10,052.7	5,033.85	0.61	-0.08	0.021
80.00	-21.74	-1.40	0.00	-74.62	0.00	74.62	4,846.77	2,423.39	9,595.10	4,804.68	0.70	-0.08	0.020
82.55	-20.74	-1.37	0.00	-71.06	0.00	71.06	4,797.92	2,398.96	9,364.16	4,689.04	0.75	-0.09	0.019
85.00	-19.04	-1.31	0.00	-67.71	0.00	67.71	4,750.46	2,375.23	9,143.77	4,578.68	0.79	-0.09	0.019
89.17	-18.87	-1.30	0.00	-62.24	0.00	62.24	3,869.36	1,934.68	7,410.59	3,710.80	0.87	-0.09	0.022
90.00	-17.82	-1.27	0.00	-61.17	0.00	61.17	3,857.21	1,928.61	7,352.39	3,681.66	0.89	-0.09	0.021
95.00	-16.79	-1.23	0.00	-54.84	0.00	54.84	3,782.44	1,891.22	7,002.32	3,506.37	0.99	-0.10	0.020
100.00	-15.78	-1.18	0.00	-48.71	0.00	48.71	3,705.59	1,852.80	6,656.72	3,333.31	1.10	-0.11	0.019
105.00	-14.80	-1.14	0.00	-42.80	0.00	42.80	3,626.66	1,813.33	6,315.94	3,162.66	1.21	-0.11	0.018
110.00	-14.60	-1.13	0.00	-37.12	0.00	37.12	3,545.65	1,772.83	5,980.31	2,994.60	1.33	-0.12	0.017
111.00	-13.80	-1.09	0.00	-35.99	0.00	35.99	3,529.20	1,764.60	5,913.83	2,961.31	1.35	-0.12	0.016
115.00	-12.87	-1.03	0.00	-31.65	0.00	31.65	3,462.56	1,731.28	5,650.18	2,829.29	1.45	-0.12	0.015
120.00	-11.96	-0.98	0.00	-26.48	0.00	26.48	3,377.39	1,688.70	5,325.88	2,666.90	1.58	-0.12	0.013
125.00	-11.74	-0.97	0.00	-21.59	0.00	21.59	3,282.76	1,641.38	4,996.53	2,501.98	1.71	-0.13	0.012
126.23	-10.74	-0.90	0.00	-20.40	0.00	20.40	3,253.83	1,626.92	4,908.43	2,457.86	1.75	-0.13	0.012
130.00	-10.36	-0.88	0.00	-17.00	0.00	17.00	3,165.59	1,582.79	4,644.50	2,325.70	1.85	-0.13	0.011
131.49	-9.89	-0.84	0.00	-15.70	0.00	15.70	1,887.99	943.99	2,797.63	1,400.90	1.89	-0.13	0.016
135.00	-9.50	-0.82	0.00	-12.74	0.00	12.74	1,858.58	929.29	2,682.46	1,343.22	1.99	-0.14	0.015
138.00	-7.58	-0.67	0.00	-10.29	0.00	10.29	1,832.64	916.32	2,584.68	1,294.26	2.08	-0.14	0.012
140.00	-7.25	-0.65	0.00	-8.94	0.00	8.94	1,814.93	907.46	2,519.87	1,261.81	2.13	-0.14	0.011
143.00	-6.74	-0.61	0.00	-7.00	0.00	7.00	1,787.74	893.87	2,423.26	1,213.43	2.22	-0.14	0.010
145.00	-6.42	-0.58	0.00	-5.78	0.00	5.78	1,769.20	884.60	2,359.30	1,181.40	2.28	-0.14	0.009
148.00	-3.95	-0.38	0.00	-4.04	0.00	4.04	1,740.76	870.38	2,264.06	1,133.71	2.37	-0.14	0.006
150.00	-3.47	-0.33	0.00	-3.29	0.00	3.29	1,721.38	860.69	2,201.08	1,102.18	2.43	-0.14	0.005
155.00	-3.00	-0.29	0.00	-1.63	0.00	1.63	1,671.49	835.74	2,045.57	1,024.31	2.58	-0.14	0.003
160.00	-0.60	-0.06	0.00	-0.18	0.00	0.18	1,619.52	809.76	1,893.10	947.96	2.73	-0.15	0.001
160.28	-0.32	-0.03	0.00	-0.17	0.00	0.17	1,616.56	808.28	1,884.70	943.75	2.74	-0.15	0.000
160.28	-0.32	-0.03	0.00	-0.17	0.00	0.17	1,094.32	547.16	1,281.46	641.68	2.74	-0.15	0.001
165.00	-0.03	0.00	0.00	-0.01	0.00	0.01	1,066.38	533.19	1,193.49	597.63	2.89	-0.15	0.000
170.00	0.00	0.00	0.00	0.00	0.00	0.00	1,034.78	517.39	1,101.34	551.49	3.04	-0.15	0.000
170.50	0.00	0.00	0.00	0.00	0.00	0.00	1,031.50	515.75	1,092.19	546.91	3.05	-0.15	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):	0.16
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
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}):	0.17
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Period Based on Rayleigh Method (sec):	1.98
Redundancy Factor (p):	1.00

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)
47	170.25	32	1.884	1.951	1.130	0.331	7	40
46	167.50	332	1.824	1.650	1.019	0.297	66	410
45	162.64	326	1.720	1.199	0.845	0.240	52	402
44	160.14	25	1.667	1.002	0.765	0.213	4	31
43	157.50	543	1.613	0.819	0.688	0.187	68	671
42	152.50	561	1.512	0.531	0.557	0.140	53	693
41	149.00	230	1.443	0.371	0.478	0.112	17	283
40	146.50	377	1.395	0.275	0.427	0.093	23	465
39	144.00	255	1.348	0.193	0.380	0.075	13	315
38	141.50	388	1.302	0.123	0.338	0.059	15	479
37	139.00	262	1.256	0.064	0.299	0.044	8	323
36	136.50	454	1.211	0.016	0.263	0.031	9	561
35	133.24	540	1.154	-0.034	0.222	0.016	6	666
34	130.74	446	1.111	-0.063	0.194	0.006	2	551
33	128.12	1,146	1.067	-0.087	0.167	-0.003	-2	1,416
32	125.62	256	1.026	-0.103	0.145	-0.010	-2	316
31	122.50	1,054	0.976	-0.115	0.120	-0.018	-12	1,301
30	117.50	1,081	0.898	-0.122	0.086	-0.025	-18	1,334
29	113.00	884	0.830	-0.117	0.063	-0.027	-16	1,091
28	110.50	224	0.794	-0.111	0.052	-0.026	-4	277
27	107.50	1,136	0.751	-0.101	0.041	-0.024	-18	1,403
26	102.50	1,163	0.683	-0.082	0.027	-0.018	-14	1,436
25	97.50	1,190	0.618	-0.059	0.017	-0.008	-7	1,469
24	92.50	1,216	0.556	-0.037	0.010	0.002	2	1,502
23	89.59	203	0.522	-0.024	0.008	0.008	1	251
22	87.09	1,954	0.493	-0.014	0.007	0.014	18	2,413
21	83.77	1,166	0.456	-0.001	0.006	0.020	16	1,440
20	81.27	725	0.429	0.009	0.006	0.025	12	895
19	77.50	1,445	0.390	0.021	0.007	0.030	29	1,785
18	74.50	293	0.361	0.030	0.008	0.034	7	362
17	72.00	1,185	0.337	0.036	0.009	0.037	29	1,463
16	67.50	1,509	0.296	0.046	0.013	0.040	41	1,863
15	62.50	1,540	0.254	0.055	0.017	0.042	44	1,902
14	57.50	1,571	0.215	0.061	0.021	0.043	45	1,940

13	52.50	1,603	0.179	0.065	0.026	0.043	46	1,979
12	48.91	706	0.156	0.067	0.029	0.043	20	872
11	46.41	1,680	0.140	0.069	0.032	0.042	48	2,074
10	42.50	3,019	0.117	0.070	0.035	0.042	84	3,728
9	39.95	62	0.104	0.071	0.037	0.041	2	77
8	37.45	1,642	0.091	0.071	0.038	0.041	45	2,028
7	32.50	1,707	0.069	0.072	0.041	0.040	45	2,108
6	27.50	1,739	0.049	0.071	0.042	0.038	44	2,147
5	22.50	1,770	0.033	0.069	0.041	0.037	43	2,185
4	17.50	1,801	0.020	0.064	0.038	0.034	41	2,224
3	12.50	1,832	0.010	0.055	0.032	0.030	37	2,263
2	7.50	1,864	0.004	0.040	0.022	0.023	28	2,301
1	2.50	1,895	0.000	0.016	0.009	0.010	13	2,340
Andrew ETW200VS12UB	171.00	33	1.901	2.039	1.161	0.341	7	41
E-911 GPS	171.00	5	1.901	2.039	1.161	0.341	1	6
Decibel DB201-A	171.00	25	1.901	2.039	1.161	0.341	6	31
12' Dipole	171.00	40	1.901	2.039	1.161	0.341	9	49
Ericsson AIR 21	171.00	546	1.901	2.039	1.161	0.341	124	674
RFS APX16DWV-	171.00	122	1.901	2.039	1.161	0.341	28	151
Round T-Arm	171.00	750	1.901	2.039	1.161	0.341	170	926
ADC CG-1900/800-DB-F	160.00	57	1.664	0.992	0.761	0.212	8	71
VZW Unused Reserve:	160.00	152	1.664	0.992	0.761	0.212	21	187
Alcatel-Lucent RRH2X	160.00	129	1.664	0.992	0.761	0.212	18	159
Alcatel-Lucent RRH2x	160.00	170	1.664	0.992	0.761	0.212	24	210
Alcatel-Lucent B66 R	160.00	201	1.664	0.992	0.761	0.212	28	248
RFS APL866513-42T0	160.00	63	1.664	0.992	0.761	0.212	9	78
Antel BXA-70063-4CF-	160.00	10	1.664	0.992	0.761	0.212	1	12
RFS DB-T1-6Z-8AB-0Z	160.00	88	1.664	0.992	0.761	0.212	12	109
Antel BXA-70063/6CF_	160.00	34	1.664	0.992	0.761	0.212	5	42
Commscope SBNHH-	160.00	304	1.664	0.992	0.761	0.212	43	376
Antel LPA-80080-6CF-	160.00	42	1.664	0.992	0.761	0.212	6	52
Flat Low Profile Pla	160.00	1,500	1.664	0.992	0.761	0.212	212	1,852
GPS	148.00	10	1.424	0.331	0.457	0.104	1	12
Alcatel-Lucent RRH2x	148.00	317	1.424	0.331	0.457	0.104	22	392
Alcatel-Lucent 1900	148.00	180	1.424	0.331	0.457	0.104	12	222
Alcatel-Lucent TD-RR	148.00	210	1.424	0.331	0.457	0.104	15	259
RFS APXVTM14-ALU-I20	148.00	169	1.424	0.331	0.457	0.104	12	208
Commscope NNVV-	148.00	232	1.424	0.331	0.457	0.104	16	287
Flat Low Profile Pla	148.00	1,500	1.424	0.331	0.457	0.104	104	1,852
Ericsson RRUS-11	143.00	330	1.329	0.163	0.363	0.069	15	407
Powerwave TT19-	138.00	96	1.238	0.044	0.284	0.039	2	119
Raycap DC6-48-60-18-	138.00	32	1.238	0.044	0.284	0.039	1	39
KMW AM-X-CD-14-65-00	138.00	218	1.238	0.044	0.284	0.039	6	270
Powerwave Allgon 777	138.00	105	1.238	0.044	0.284	0.039	3	130
Flat Low Profile Pla	138.00	1,500	1.238	0.044	0.284	0.039	39	1,852
12' Dipole	111.00	40	0.801	-0.112	0.054	-0.026	-1	49
GPS	74.00	10	0.356	0.031	0.008	0.035	0	12
		56,253	85.294	36.976	31.162	8.372	1,968	69,460

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)
47	170.25	32	1.884	1.951	1.130	0.331	7	28
46	167.50	332	1.824	1.650	1.019	0.297	66	287
45	162.64	326	1.720	1.199	0.845	0.240	52	282
44	160.14	25	1.667	1.002	0.765	0.213	4	22
43	157.50	543	1.613	0.819	0.688	0.187	68	470
42	152.50	561	1.512	0.531	0.557	0.140	53	486

41	149.00	230	1.443	0.371	0.478	0.112	17	199
40	146.50	377	1.395	0.275	0.427	0.093	23	326
39	144.00	255	1.348	0.193	0.380	0.075	13	220
38	141.50	388	1.302	0.123	0.338	0.059	15	335
37	139.00	262	1.256	0.064	0.299	0.044	8	227
36	136.50	454	1.211	0.016	0.263	0.031	9	393
35	133.24	540	1.154	-0.034	0.222	0.016	6	467
34	130.74	446	1.111	-0.063	0.194	0.006	2	386
33	128.12	1,146	1.067	-0.087	0.167	-0.003	-2	992
32	125.62	256	1.026	-0.103	0.145	-0.010	-2	222
31	122.50	1,054	0.976	-0.115	0.120	-0.018	-12	912
30	117.50	1,081	0.898	-0.122	0.086	-0.025	-18	935
29	113.00	884	0.830	-0.117	0.063	-0.027	-16	765
28	110.50	224	0.794	-0.111	0.052	-0.026	-4	194
27	107.50	1,136	0.751	-0.101	0.041	-0.024	-18	983
26	102.50	1,163	0.683	-0.082	0.027	-0.018	-14	1,006
25	97.50	1,190	0.618	-0.059	0.017	-0.008	-7	1,029
24	92.50	1,216	0.556	-0.037	0.010	0.002	2	1,052
23	89.59	203	0.522	-0.024	0.008	0.008	1	176
22	87.09	1,954	0.493	-0.014	0.007	0.014	18	1,691
21	83.77	1,166	0.456	-0.001	0.006	0.020	16	1,009
20	81.27	725	0.429	0.009	0.006	0.025	12	627
19	77.50	1,445	0.390	0.021	0.007	0.030	29	1,251
18	74.50	293	0.361	0.030	0.008	0.034	7	253
17	72.00	1,185	0.337	0.036	0.009	0.037	29	1,025
16	67.50	1,509	0.296	0.046	0.013	0.040	41	1,305
15	62.50	1,540	0.254	0.055	0.017	0.042	44	1,333
14	57.50	1,571	0.215	0.061	0.021	0.043	45	1,360
13	52.50	1,603	0.179	0.065	0.026	0.043	46	1,387
12	48.91	706	0.156	0.067	0.029	0.043	20	611
11	46.41	1,680	0.140	0.069	0.032	0.042	48	1,454
10	42.50	3,019	0.117	0.070	0.035	0.042	84	2,612
9	39.95	62	0.104	0.071	0.037	0.041	2	54
8	37.45	1,642	0.091	0.071	0.038	0.041	45	1,421
7	32.50	1,707	0.069	0.072	0.041	0.040	45	1,477
6	27.50	1,739	0.049	0.071	0.042	0.038	44	1,504
5	22.50	1,770	0.033	0.069	0.041	0.037	43	1,531
4	17.50	1,801	0.020	0.064	0.038	0.034	41	1,558
3	12.50	1,832	0.010	0.055	0.032	0.030	37	1,586
2	7.50	1,864	0.004	0.040	0.022	0.023	28	1,613
1	2.50	1,895	0.000	0.016	0.009	0.010	13	1,640
Andrew ETW200VS12UB	171.00	33	1.901	2.039	1.161	0.341	7	29
E-911 GPS	171.00	5	1.901	2.039	1.161	0.341	1	4
Decibel DB201-A	171.00	25	1.901	2.039	1.161	0.341	6	22
12' Dipole	171.00	40	1.901	2.039	1.161	0.341	9	35
Ericsson AIR 21	171.00	546	1.901	2.039	1.161	0.341	124	472
RFS APX16DWV-	171.00	122	1.901	2.039	1.161	0.341	28	106
Round T-Arm	171.00	750	1.901	2.039	1.161	0.341	170	649
ADC CG-1900/800-DB-F	160.00	57	1.664	0.992	0.761	0.212	8	50
VZW Unused Reserve:	160.00	152	1.664	0.992	0.761	0.212	21	131
Alcatel-Lucent RRH2X	160.00	129	1.664	0.992	0.761	0.212	18	112
Alcatel-Lucent RRH2x	160.00	170	1.664	0.992	0.761	0.212	24	147
Alcatel-Lucent B66 R	160.00	201	1.664	0.992	0.761	0.212	28	174
RFS APL866513-42T0	160.00	63	1.664	0.992	0.761	0.212	9	54
Antel BXA-70063-4CF-	160.00	10	1.664	0.992	0.761	0.212	1	9
RFS DB-T1-6Z-8AB-0Z	160.00	88	1.664	0.992	0.761	0.212	12	76
Antel BXA-70063/6CF_	160.00	34	1.664	0.992	0.761	0.212	5	29
Commscope SBNHH-	160.00	304	1.664	0.992	0.761	0.212	43	263
Antel LPA-80080-6CF-	160.00	42	1.664	0.992	0.761	0.212	6	36
Flat Low Profile Pla	160.00	1,500	1.664	0.992	0.761	0.212	212	1,298
GPS	148.00	10	1.424	0.331	0.457	0.104	1	9
Alcatel-Lucent RRH2x	148.00	317	1.424	0.331	0.457	0.104	22	275
Alcatel-Lucent 1900	148.00	180	1.424	0.331	0.457	0.104	12	156
Alcatel-Lucent TD-RR	148.00	210	1.424	0.331	0.457	0.104	15	182

RFS APXVTM14-ALU-I20	148.00	169	1.424	0.331	0.457	0.104	12	146
Commscope NNVV-	148.00	232	1.424	0.331	0.457	0.104	16	201
Flat Low Profile Pla	148.00	1,500	1.424	0.331	0.457	0.104	104	1,298
Ericsson RRUS-11	143.00	330	1.329	0.163	0.363	0.069	15	286
Powerwave TT19-	138.00	96	1.238	0.044	0.284	0.039	2	83
Raycap DC6-48-60-18-	138.00	32	1.238	0.044	0.284	0.039	1	28
KMW AM-X-CD-14-65-00	138.00	218	1.238	0.044	0.284	0.039	6	189
Powerwave Allgon 777	138.00	105	1.238	0.044	0.284	0.039	3	91
Flat Low Profile Pla	138.00	1,500	1.238	0.044	0.284	0.039	39	1,298
12' Dipole	111.00	40	0.801	-0.112	0.054	-0.026	-1	35
GPS	74.00	10	0.356	0.031	0.008	0.035	0	9
		56,253	85.294	36.976	31.162	8.372	1,968	48,672

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	-65.24	-1.61	0.00	-176.37	0.00	176.37	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.031
5.00	-62.94	-1.59	0.00	-168.31	0.00	168.31	5,999.10	2,999.55	16,596.5	8,310.63	0.00	0.00	0.031
10.00	-60.68	-1.56	0.00	-160.37	0.00	160.37	5,932.61	2,966.31	16,087.1	8,055.52	0.01	-0.01	0.030
15.00	-58.45	-1.52	0.00	-152.59	0.00	152.59	5,864.05	2,932.02	15,579.4	7,801.29	0.02	-0.01	0.030
20.00	-56.27	-1.48	0.00	-144.99	0.00	144.99	5,793.40	2,896.70	15,073.8	7,548.13	0.04	-0.02	0.029
25.00	-54.12	-1.44	0.00	-137.60	0.00	137.60	5,720.67	2,860.34	14,570.7	7,296.19	0.06	-0.02	0.028
30.00	-52.01	-1.40	0.00	-130.41	0.00	130.41	5,645.87	2,822.93	14,070.4	7,045.66	0.08	-0.03	0.028
35.00	-49.98	-1.36	0.00	-123.42	0.00	123.42	5,568.98	2,784.49	13,573.2	6,796.69	0.11	-0.03	0.027
39.90	-49.91	-1.36	0.00	-116.78	0.00	116.78	5,491.64	2,745.82	13,089.4	6,554.48	0.15	-0.04	0.027
40.00	-46.18	-1.27	0.00	-116.65	0.00	116.65	5,490.02	2,745.01	13,079.5	6,549.47	0.15	-0.04	0.026
45.00	-44.11	-1.23	0.00	-110.29	0.00	110.29	5,408.97	2,704.49	12,589.6	6,304.17	0.19	-0.04	0.026
47.83	-43.23	-1.21	0.00	-106.83	0.00	106.83	5,416.74	2,708.37	12,635.8	6,327.32	0.21	-0.04	0.025
50.00	-41.26	-1.16	0.00	-104.21	0.00	104.21	5,380.97	2,690.49	12,424.1	6,221.32	0.24	-0.05	0.024
55.00	-39.31	-1.12	0.00	-98.40	0.00	98.40	5,297.14	2,648.57	11,939.9	5,978.85	0.29	-0.05	0.024
60.00	-37.41	-1.07	0.00	-92.82	0.00	92.82	5,211.23	2,605.61	11,460.3	5,738.70	0.34	-0.05	0.023
65.00	-35.55	-1.04	0.00	-87.45	0.00	87.45	5,123.23	2,561.62	10,985.7	5,501.03	0.40	-0.06	0.023
70.00	-34.09	-1.01	0.00	-82.27	0.00	82.27	5,033.16	2,516.58	10,516.4	5,266.03	0.47	-0.06	0.022
74.00	-33.71	-1.00	0.00	-78.24	0.00	78.24	4,959.60	2,479.80	10,145.0	5,080.05	0.52	-0.07	0.022
75.00	-31.93	-0.97	0.00	-77.24	0.00	77.24	4,941.01	2,470.50	10,052.7	5,033.85	0.54	-0.07	0.022
80.00	-31.03	-0.96	0.00	-72.39	0.00	72.39	4,846.77	2,423.39	9,595.10	4,804.68	0.61	-0.07	0.021
82.55	-29.59	-0.94	0.00	-69.94	0.00	69.94	4,797.92	2,398.96	9,364.16	4,689.04	0.65	-0.08	0.021
85.00	-27.18	-0.92	0.00	-67.63	0.00	67.63	4,750.46	2,375.23	9,143.77	4,578.68	0.69	-0.08	0.020
89.17	-26.93	-0.92	0.00	-63.77	0.00	63.77	3,869.36	1,934.68	7,410.59	3,710.80	0.76	-0.08	0.024
90.00	-25.43	-0.92	0.00	-63.00	0.00	63.00	3,857.21	1,928.61	7,352.39	3,681.66	0.78	-0.08	0.024
95.00	-23.96	-0.93	0.00	-58.39	0.00	58.39	3,782.44	1,891.22	7,002.32	3,506.37	0.87	-0.09	0.023
100.00	-22.52	-0.94	0.00	-53.75	0.00	53.75	3,705.59	1,852.80	6,656.72	3,333.31	0.97	-0.10	0.022
105.00	-21.12	-0.96	0.00	-49.04	0.00	49.04	3,626.66	1,813.33	6,315.94	3,162.66	1.07	-0.10	0.021
110.00	-20.84	-0.97	0.00	-44.24	0.00	44.24	3,545.65	1,772.83	5,980.31	2,994.60	1.18	-0.11	0.021
111.00	-19.70	-0.98	0.00	-43.27	0.00	43.27	3,529.20	1,764.60	5,913.83	2,961.31	1.21	-0.11	0.020
115.00	-18.37	-1.00	0.00	-39.35	0.00	39.35	3,462.56	1,731.28	5,650.18	2,829.29	1.30	-0.11	0.019
120.00	-17.07	-1.01	0.00	-34.37	0.00	34.37	3,377.39	1,688.70	5,325.88	2,666.90	1.42	-0.12	0.018
125.00	-16.75	-1.01	0.00	-29.32	0.00	29.32	3,282.76	1,641.38	4,996.53	2,501.98	1.55	-0.12	0.017
126.23	-15.33	-1.01	0.00	-28.08	0.00	28.08	3,253.83	1,626.92	4,908.43	2,457.86	1.58	-0.13	0.016
130.00	-14.78	-1.01	0.00	-24.27	0.00	24.27	3,165.59	1,582.79	4,644.50	2,325.70	1.68	-0.13	0.015
131.49	-14.12	-1.00	0.00	-22.77	0.00	22.77	1,887.99	943.99	2,797.63	1,400.90	1.72	-0.13	0.024
135.00	-13.56	-0.99	0.00	-19.25	0.00	19.25	1,858.58	929.29	2,682.46	1,343.22	1.82	-0.13	0.022
138.00	-10.82	-0.93	0.00	-16.28	0.00	16.28	1,832.64	916.32	2,584.68	1,294.26	1.91	-0.14	0.018
140.00	-10.34	-0.91	0.00	-14.42	0.00	14.42	1,814.93	907.46	2,519.87	1,261.81	1.96	-0.14	0.017
143.00	-9.62	-0.88	0.00	-11.69	0.00	11.69	1,787.74	893.87	2,423.26	1,213.43	2.05	-0.14	0.015
145.00	-9.16	-0.86	0.00	-9.92	0.00	9.92	1,769.20	884.60	2,359.30	1,181.40	2.11	-0.14	0.014
148.00	-5.64	-0.65	0.00	-7.35	0.00	7.35	1,740.76	870.38	2,264.06	1,133.71	2.21	-0.15	0.010
150.00	-4.95	-0.60	0.00	-6.05	0.00	6.05	1,721.38	860.69	2,201.08	1,102.18	2.27	-0.15	0.008
155.00	-4.28	-0.53	0.00	-3.06	0.00	3.06	1,671.49	835.74	2,045.57	1,024.31	2.42	-0.15	0.006
160.00	-0.85	-0.13	0.00	-0.42	0.00	0.42	1,619.52	809.76	1,893.10	947.96	2.58	-0.15	0.001
160.28	-0.45	-0.07	0.00	-0.38	0.00	0.38	1,616.56	808.28	1,884.70	943.75	2.59	-0.15	0.001
160.28	-0.45	-0.07	0.00	-0.38	0.00	0.38	1,094.32	547.16	1,281.46	641.68	2.59	-0.15	0.001
165.00	-0.04	-0.01	0.00	-0.04	0.00	0.04	1,066.38	533.19	1,193.49	597.63	2.74	-0.15	0.000
170.00	0.00	0.00	0.00	0.00	0.00	0.00	1,034.78	517.39	1,101.34	551.49	2.90	-0.15	0.000
170.50	0.00	0.00	0.00	0.00	0.00	0.00	1,031.50	515.75	1,092.19	546.91	2.91	-0.15	0.000

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

Calculated Forces

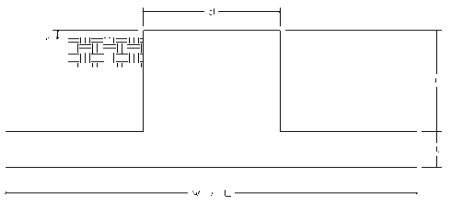
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.72	-1.61	0.00	-174.93	0.00	174.93	6,063.50	3,031.75	17,107.4	8,566.45	0.00	0.00	0.028
5.00	-44.10	-1.59	0.00	-166.88	0.00	166.88	5,999.10	2,999.55	16,596.5	8,310.63	0.00	0.00	0.027
10.00	-42.52	-1.55	0.00	-158.95	0.00	158.95	5,932.61	2,966.31	16,087.1	8,055.52	0.01	-0.01	0.027
15.00	-40.96	-1.51	0.00	-151.18	0.00	151.18	5,864.05	2,932.02	15,579.4	7,801.29	0.02	-0.01	0.026
20.00	-39.43	-1.47	0.00	-143.61	0.00	143.61	5,793.40	2,896.70	15,073.8	7,548.13	0.04	-0.02	0.026
25.00	-37.92	-1.43	0.00	-136.25	0.00	136.25	5,720.67	2,860.34	14,570.7	7,296.19	0.06	-0.02	0.025
30.00	-36.45	-1.39	0.00	-129.09	0.00	129.09	5,645.87	2,822.93	14,070.4	7,045.66	0.08	-0.03	0.025
35.00	-35.02	-1.35	0.00	-122.15	0.00	122.15	5,568.98	2,784.49	13,573.2	6,796.69	0.11	-0.03	0.024
39.90	-34.97	-1.35	0.00	-115.55	0.00	115.55	5,491.64	2,745.82	13,089.4	6,554.48	0.15	-0.04	0.024
40.00	-32.36	-1.26	0.00	-115.42	0.00	115.42	5,490.02	2,745.01	13,079.5	6,549.47	0.15	-0.04	0.024
45.00	-30.91	-1.22	0.00	-109.11	0.00	109.11	5,408.97	2,704.49	12,589.6	6,304.17	0.19	-0.04	0.023
47.83	-30.29	-1.20	0.00	-105.67	0.00	105.67	5,416.74	2,708.37	12,635.8	6,327.32	0.21	-0.04	0.022
50.00	-28.91	-1.15	0.00	-103.08	0.00	103.08	5,380.97	2,690.49	12,424.1	6,221.32	0.23	-0.05	0.022
55.00	-27.55	-1.11	0.00	-97.32	0.00	97.32	5,297.14	2,648.57	11,939.9	5,978.85	0.28	-0.05	0.021
60.00	-26.22	-1.06	0.00	-91.80	0.00	91.80	5,211.23	2,605.61	11,460.3	5,738.70	0.34	-0.05	0.021
65.00	-24.91	-1.02	0.00	-86.48	0.00	86.48	5,123.23	2,561.62	10,985.7	5,501.03	0.40	-0.06	0.021
70.00	-23.89	-0.99	0.00	-81.36	0.00	81.36	5,033.16	2,516.58	10,516.4	5,266.03	0.46	-0.06	0.020
74.00	-23.62	-0.99	0.00	-77.38	0.00	77.38	4,959.60	2,479.80	10,145.0	5,080.05	0.52	-0.07	0.020
75.00	-22.37	-0.96	0.00	-76.39	0.00	76.39	4,941.01	2,470.50	10,052.7	5,033.85	0.53	-0.07	0.020
80.00	-21.75	-0.95	0.00	-71.60	0.00	71.60	4,846.77	2,423.39	9,595.10	4,804.68	0.61	-0.07	0.019
82.55	-20.74	-0.93	0.00	-69.18	0.00	69.18	4,797.92	2,398.96	9,364.16	4,689.04	0.65	-0.08	0.019
85.00	-19.05	-0.91	0.00	-66.90	0.00	66.90	4,750.46	2,375.23	9,143.77	4,578.68	0.69	-0.08	0.019
89.17	-18.87	-0.91	0.00	-63.09	0.00	63.09	3,869.36	1,934.68	7,410.59	3,710.80	0.76	-0.08	0.022
90.00	-17.82	-0.91	0.00	-62.34	0.00	62.34	3,857.21	1,928.61	7,352.39	3,681.66	0.77	-0.08	0.022
95.00	-16.79	-0.92	0.00	-57.79	0.00	57.79	3,782.44	1,891.22	7,002.32	3,506.37	0.86	-0.09	0.021
100.00	-15.78	-0.93	0.00	-53.20	0.00	53.20	3,705.59	1,852.80	6,656.72	3,333.31	0.96	-0.10	0.020
105.00	-14.80	-0.95	0.00	-48.55	0.00	48.55	3,626.66	1,813.33	6,315.94	3,162.66	1.06	-0.10	0.019
110.00	-14.60	-0.95	0.00	-43.81	0.00	43.81	3,545.65	1,772.83	5,980.31	2,994.60	1.17	-0.11	0.019
111.00	-13.81	-0.97	0.00	-42.86	0.00	42.86	3,529.20	1,764.60	5,913.83	2,961.31	1.19	-0.11	0.018
115.00	-12.87	-0.99	0.00	-38.98	0.00	38.98	3,462.56	1,731.28	5,650.18	2,829.29	1.29	-0.11	0.017
120.00	-11.96	-1.00	0.00	-34.05	0.00	34.05	3,377.39	1,688.70	5,325.88	2,666.90	1.41	-0.12	0.016
125.00	-11.74	-1.00	0.00	-29.07	0.00	29.07	3,282.76	1,641.38	4,996.53	2,501.98	1.53	-0.12	0.015
126.23	-10.74	-1.00	0.00	-27.83	0.00	27.83	3,253.83	1,626.92	4,908.43	2,457.86	1.57	-0.12	0.015
130.00	-10.36	-1.00	0.00	-24.07	0.00	24.07	3,165.59	1,582.79	4,644.50	2,325.70	1.67	-0.13	0.014
131.49	-9.89	-0.99	0.00	-22.58	0.00	22.58	1,887.99	943.99	2,797.63	1,400.90	1.71	-0.13	0.021
135.00	-9.50	-0.98	0.00	-19.10	0.00	19.10	1,858.58	929.29	2,682.46	1,343.22	1.80	-0.13	0.019
138.00	-7.58	-0.92	0.00	-16.15	0.00	16.15	1,832.64	916.32	2,584.68	1,294.26	1.89	-0.14	0.017
140.00	-7.25	-0.90	0.00	-14.32	0.00	14.32	1,814.93	907.46	2,519.87	1,261.81	1.94	-0.14	0.015
143.00	-6.74	-0.87	0.00	-11.60	0.00	11.60	1,787.74	893.87	2,423.26	1,213.43	2.03	-0.14	0.013
145.00	-6.42	-0.85	0.00	-9.85	0.00	9.85	1,769.20	884.60	2,359.30	1,181.40	2.09	-0.14	0.012
148.00	-3.95	-0.65	0.00	-7.30	0.00	7.30	1,740.76	870.38	2,264.06	1,133.71	2.18	-0.15	0.009
150.00	-3.47	-0.59	0.00	-6.01	0.00	6.01	1,721.38	860.69	2,201.08	1,102.18	2.24	-0.15	0.007
155.00	-3.00	-0.52	0.00	-3.04	0.00	3.04	1,671.49	835.74	2,045.57	1,024.31	2.40	-0.15	0.005
160.00	-0.60	-0.13	0.00	-0.42	0.00	0.42	1,619.52	809.76	1,893.10	947.96	2.56	-0.15	0.001
160.28	-0.32	-0.07	0.00	-0.38	0.00	0.38	1,616.56	808.28	1,884.70	943.75	2.56	-0.15	0.001
160.28	-0.32	-0.07	0.00	-0.38	0.00	0.38	1,094.32	547.16	1,281.46	641.68	2.56	-0.15	0.001
165.00	-0.03	-0.01	0.00	-0.04	0.00	0.04	1,066.38	533.19	1,193.49	597.63	2.71	-0.15	0.000
170.00	0.00	0.00	0.00	0.00	0.00	0.00	1,034.78	517.39	1,101.34	551.49	2.87	-0.15	0.000
170.50	0.00	0.00	0.00	0.00	0.00	0.00	1,031.50	515.75	1,092.19	546.91	2.88	-0.15	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	34.75	0.00	67.47	0.00	0.00	4150.89	0.00	0.50
0.9D + 1.6W	34.56	0.00	50.60	0.00	0.00	4092.60	0.00	0.49
1.2D + 1.0Di + 1.0Wi	8.45	0.00	98.74	0.00	0.00	984.76	0.00	0.13
(1.2 + 0.2Sds) * DL + E ELFM	1.62	0.00	65.24	0.00	0.00	201.36	0.00	0.03
(1.2 + 0.2Sds) * DL + E EMAM	1.61	0.00	65.24	0.00	0.00	176.37	0.00	0.03
(0.9 - 0.2Sds) * DL + E ELFM	1.62	0.00	45.72	0.00	0.00	199.77	0.00	0.03
(0.9 - 0.2Sds) * DL + E EMAM	1.61	0.00	45.72	0.00	0.00	174.93	0.00	0.03
1.0D + 1.0W	7.05	0.00	56.25	0.00	0.00	837.59	0.00	0.11

Site Name:	Old Lyme South CT, CT
Site Number:	411178
Engineering Number:	OAA710430
Engineer:	Christiana.Lancaster
Date:	03/23/18
Tower Type:	MP

Program Last Updated: *5/13/2014*



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

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	67.5	k	Concrete Strength (f'_c):	4000	psi
Uplift/Leg:	0.0	k	Pad Tension Steel Depth:	38.00	in
Total Shear:	34.8	k	ϕ_{Shear}:	0.75	
Moment:	4150.9	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	62.1	k	$\phi_{Compression:}$	0.65	
Depth to Base of Foundation (l + t - h):	7.00	ft	β:	0.85	
Diameter of Pier (d):	8.50	ft	Bottom Pad Rebar Size #:	9	
Height of Pier above Ground (h):	1.00		# of Bottom Pad Rebar:	54	
Width of Pad (W):	31.00	ft	Pad Bottom Steel Area:	54.00	in^2
Length of Pad (L):	31.00	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3.50	ft	Top Pad Rebar Size #:	9	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	27	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	27.00	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	9	
Depth Below Ground Surface to Water Table:	99.00	ft	Pier Steel Area (Single Bar):	1.00	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	52	
Unit Weight of Soil Above Water Table:	125.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	94.0	in
Unit Weight of Soil Below Water Table:	75.0	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	15.00	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.60		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	12000.0	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	0.0	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

Design OTM:	4429.3	k-ft
OTM Resistance:	14537.7	k-ft
Design OTM / OTM Resistance:	0.30	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	1436	psf
Factored Nominal Bearing Pressure:	9000	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.16	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

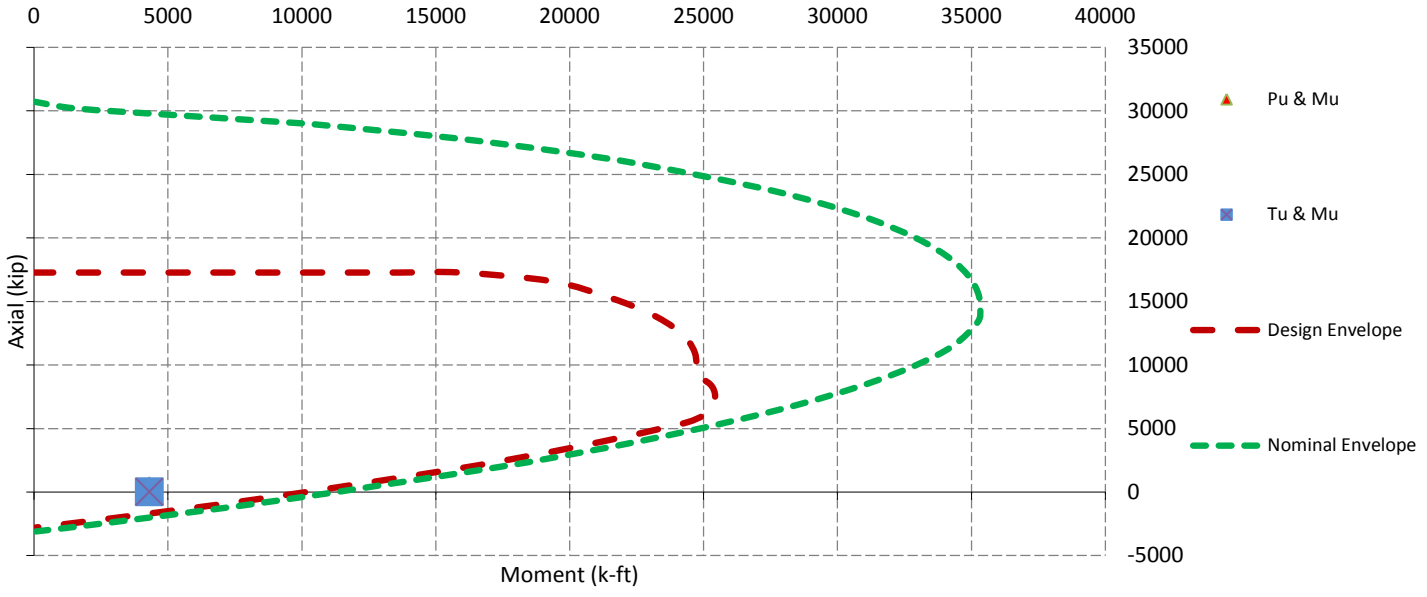
Sliding Factor of Safety

Total Factored Sliding Resistance:	445.6	k
Sliding Design / Sliding Resistance:	0.08	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	227.2	k
One Way Shear Capacity (ϕV_c):	1341.1	k - ACI11.3.1.1
V_u / ϕV_c:	0.17	Result: OK
Load Direction Controling Shear Capacity:	Parallel to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	1811.7	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	8969.4	k-ft - ACI10.3
M_u / ϕM_n:	0.20	Result: OK
Load Direction Controling Flexural Capacity:	Parallel to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	1110.8	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	4550.9	k-ft
M_u / ϕM_n:	0.24	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0038	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0019	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	7	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	14	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	3171.1	k - ACI11.12.2.1
V_u / ϕV_c:	0.00	Result: OK
Factored Moment in Pier (M_u):	4307.5	k-ft
Pier Moment Capacity (ϕM_n):	10755.0	k-ft
M_u / ϕM_n:	0.40	Result: OK
Factored Shear in Pier (V_u):	34.8	k
Pier Shear Capacity (ϕV_n):	778.4	k
V_u / ϕV_c:	0.04	Result: OK
Pier Shear Reinforcement Ratio:	0.0002	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	2808.0	k
T_u / ϕT_n:	0.00	Result: OK
Factored Compression in Pier (P_u):	67.5	k
Pier Compression Capacity (ϕP_n):	14354.9	k - ACI10.3.6.2
P_u / ϕP_n:	0.00	Result: OK
Pier Compression Reinforcement Ratio:	0.006	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.40	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



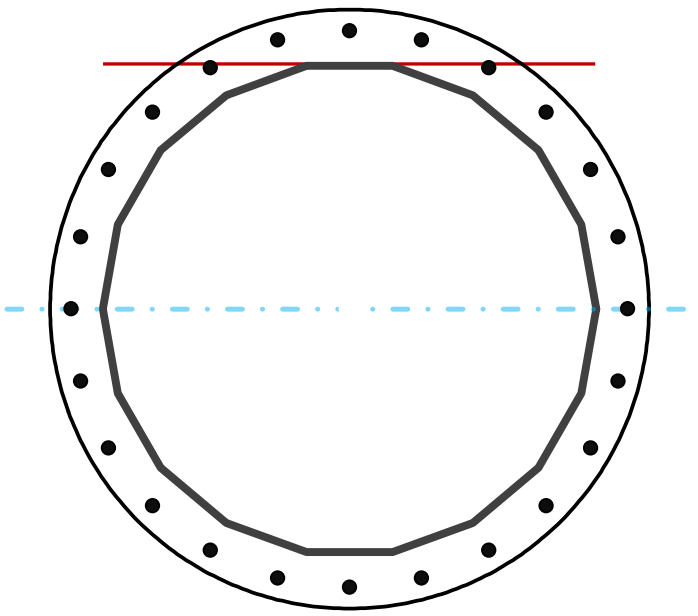
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	69.00	in
Thickness	0.438	in
Orientation Offset		°

Base Reactions		
Moment, Mu	4150.9	k-ft
Axial, Pu	67.5	k
Shear, Vu	34.8	k
Neutral Axis	360	°

Report Capacities		
Component	Capacity	Result
Base Plate	57%	Pass
Anchor Rods	42%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	85	in
Thickness	2 1/4	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1301.4	k
Bending Stress, ϕMn	2282.5	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	24	-
Diameter, ø	2 1/4	in
Bolt Circle	79	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.3	in
Orientation Offset	0	°
Applied Force, Pu	107.9	k
Anchor Rods, ϕPn	259.8	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	34.8	4150.9	1.00
Anchor Rod Forces	34.8	4150.9	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	93.7578	5.2088	0.3334		55098.28
Bolt	3.9761	3.2477	0.8393	4.5	60826.64
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate

Shape	Round	-
Diameter, D	85	in
Thickness, t	2.25	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	49.639	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

External Base Plate

Chord Length AA	43.373	in
Additional AA	4.500	in
Section Modulus, Z	60.590	in^3
Applied Moment, Mu	1301.4	k-ft
Bending Capacity, ϕMn	3271.8	k-ft
Capacity, Mu/ϕMn	0.398	OK
Chord Length AB	41.632	in
Additional AB	4.500	in
Section Modulus, Z	58.386	in^3
Applied Moment, Mu	1133.0	k-ft
Bending Capacity, ϕMn	3152.8	k-ft
Capacity, Mu/ϕMn	0.359	OK
Bend Line Length	33.398	in
Additional Bend Line	0.000	in
Section Modulus, Z	42.269	in^3
Applied Moment, Mu	1301.4	k-ft
Bending Capacity, ϕMn	2282.5	k-ft
Capacity, Mu/ϕMn	0.570	OK

Internal Base Plate

Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Anchor Rods

Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	79	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	107.9	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.415	OK
Interaction Capacity	0.415	OK

Additional Bolt Group 1

Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Additional Bolt Group 2

Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Dywidag Reinforcement

Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	75.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base Plate Stiffeners

Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k

Vertical Weld

Vert.-to-Stiffener a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, ϕPn	#DIV/0!	k
Vert.-to-Plate a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$		

Horizontal Weld

Horz.-to-Stiffener a=e_x/l	0.000	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, ϕPn	#DIV/0!	k
Horz.-to-Pole a=e_x/l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$		

Plate Tension

Gross Cross Section	0.000	in^2
Net Cross Section	0.000	in^2
Tensile Capacity, ϕTn	0.0	k
Capacity, Tu/ϕTn		

Plate Compression

Radius of Gyration	#DIV/0!	in^3
kl/r	#DIV/0!	-
4.71 √(E/Fy)	0.00	-
Buckling Stress(Fe)	0.0	-
Crit. Buckling Stress(Fcr)	0.0	ksi
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base/Flange Plate	Plate Type	***Flange***	***@ 161.4 ft***
	Pole Diameter	27.5	in
	Pole Thickness	0.1875	in
	Plate Diameter	36	in
	Plate Thickness	1.25	in
	Plate Fy	60	ksi
	Weld Length	0.25	in
	ϕ_s Resistance	151.86	k-in
	Applied	9.12	k-in
Stiffeners	#	***0***	

Bolts	#	***12***	
	Bolt Circle	33	in
	(R)adial / (S)quare	R	
●	Diameter	1	in
	Hole Diameter	1.125	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	ϕ_s Resistance	54.52	k
	Applied	4.71	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 40.5 k-ft

Axial 2.4 k

Date	3/23/2018
Engineer	Christiana.Lancaster
Site #	411178
Carrier	SPRINT NEXTEL

Required Flange Thickness:

0.31 in OK

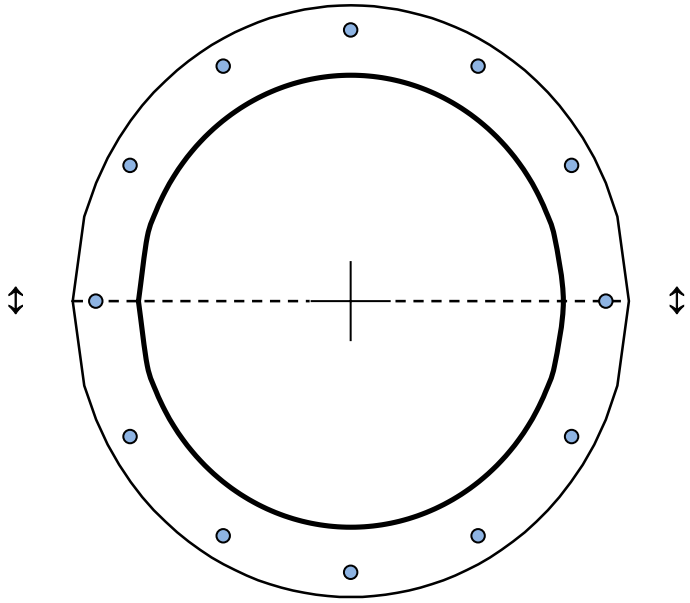


Plate Stress Ratio:

0.06 (Pass)

Bolt Stress Ratio:

0.09 (Pass)

Base/Flange Plate	Plate Type	***Flange*** ***@ 161.5 ft***
	Pole Diameter	29 in
	Pole Thickness	0.25 in
	Plate Diameter	36 in
	Plate Thickness	1 in
	Plate Fy	60 ksi
	Weld Length	0.25 in
	ϕ_s Resistance	81.84 k-in
	Applied	5.59 k-in
Stiffeners	#	***0***

Bolts	#	***12***
	Bolt Circle	33 in
	(R)adial / (S)quare	R
	Diameter	1 in
	Hole Diameter	1.125 in
	Type	A325
	Fy	92 ksi
	Fu	120 ksi
	ϕ_s Resistance	54.52 k
	Applied	4.71 k
Reinforcement ●	#	***0***
Extra Bolts O	#	***0***

Code Rev. ***G***

Moment 40.5 k-ft
Axial 2.4 k

Date	3/23/2018
Engineer	Christiana.Lancaster
Site #	411178
Carrier	SPRINT NEXTEL

Required Flange Thickness:
0.26 in OK

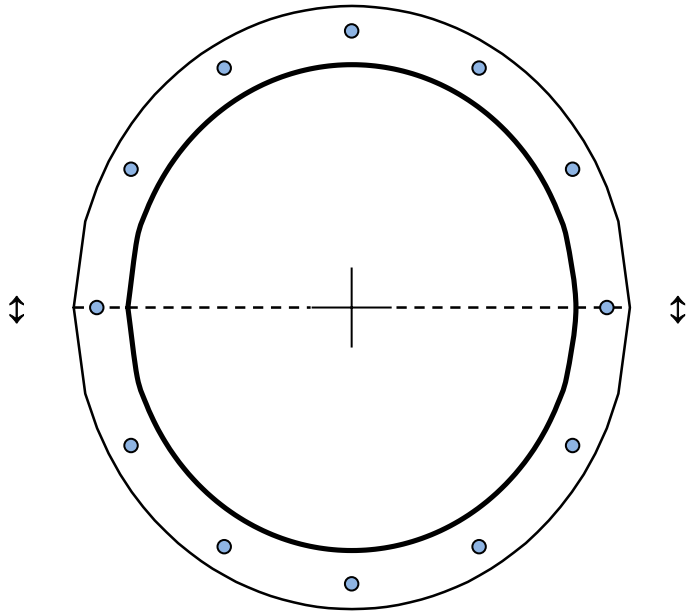


Plate Stress Ratio:
0.07 (Pass)

Bolt Stress Ratio:
0.09 (Pass)

Sprint

PROJECT:	DO MACRO UPGRADE
SITE NAME:	SOUTH OLD LYME - VERIZON
SITE CASCADE:	CT54XC701
SITE ADDRESS:	125 MILE CREEK ROAD OLD LYME, CT 06070
SITE TYPE:	MONOPOLE
MARKET:	NORTHERN CONNECTICUT

SITE INFORMATION

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

LATITUDE (NAD83):
41° 18' 19.98" N
41.30556°

LONGITUDE (NAD83):
72° 17' 50.46" W
-72.29736°

COUNTY:
NEW LONDON COUNTY

ZONING JURISDICTION:
CONNECTICUT SITTING COUNCIL

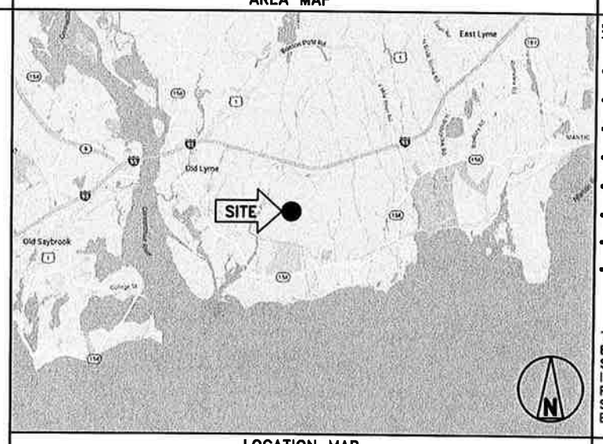
ZONING DISTRICT:
RU-40

POWER COMPANY:
CL&P
PHONE: (800) 286-2000

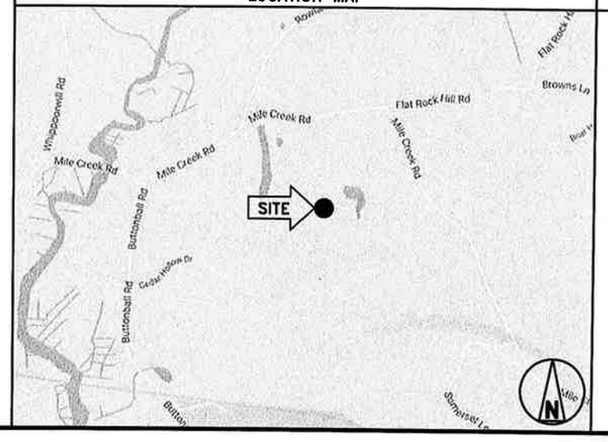
AAV PROVIDER:
FRONTIER COMMUNICATIONS
PHONE: (866) 502-7167

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 (6) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- RELOCATE (3) 1900 MHz RRHS BEHIND ANTENNAS
- INSTALL (3) 2.5 GHz & (6) 800 MHz RRH'S BEHIND ANTENNAS
- INSTALL (48) JUMPER CABLES
- INSTALL (4) HYBRID CABLE
- INSTALL 2.5 EQUIPMENT INSIDE EXISTING N.V. MMBS CABINET
- RETAIN COAX

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

DRAWING INDEX

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

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-103

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

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
MAY 30 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:
SOUTH OLD LYME - VERIZON

SITE NUMBER:
CT54XC701

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

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

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

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

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

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

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

1.5 DEFINITIONS:

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

B. COMPANY: SPRINT CORPORATION

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

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

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

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

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

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

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

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

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

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

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

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

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

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

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

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 NOTICE TO PROCEED

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

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

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

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

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

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-103

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 308-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
MAY 23 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:

SOUTH OLD LYME - VERIZON

SITE NUMBER:

CT54XC701

SITE ADDRESS:

125 MILE CREEK ROAD
OLD LYME, CT 06070

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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PROJECT MANAGER:
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OFFICE#. (518) 306-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
MAY 3 0 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:
SOUTH OLD LYME - VERIZON

SITE NUMBER:
CT54XC701

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

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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JOB NUMBER 526-103

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	05/23/18	ETC	0

SITE NAME:

SOUTH OLD LYME - VERIZON

SITE NUMBER:

CT54XC701

SITE ADDRESS:

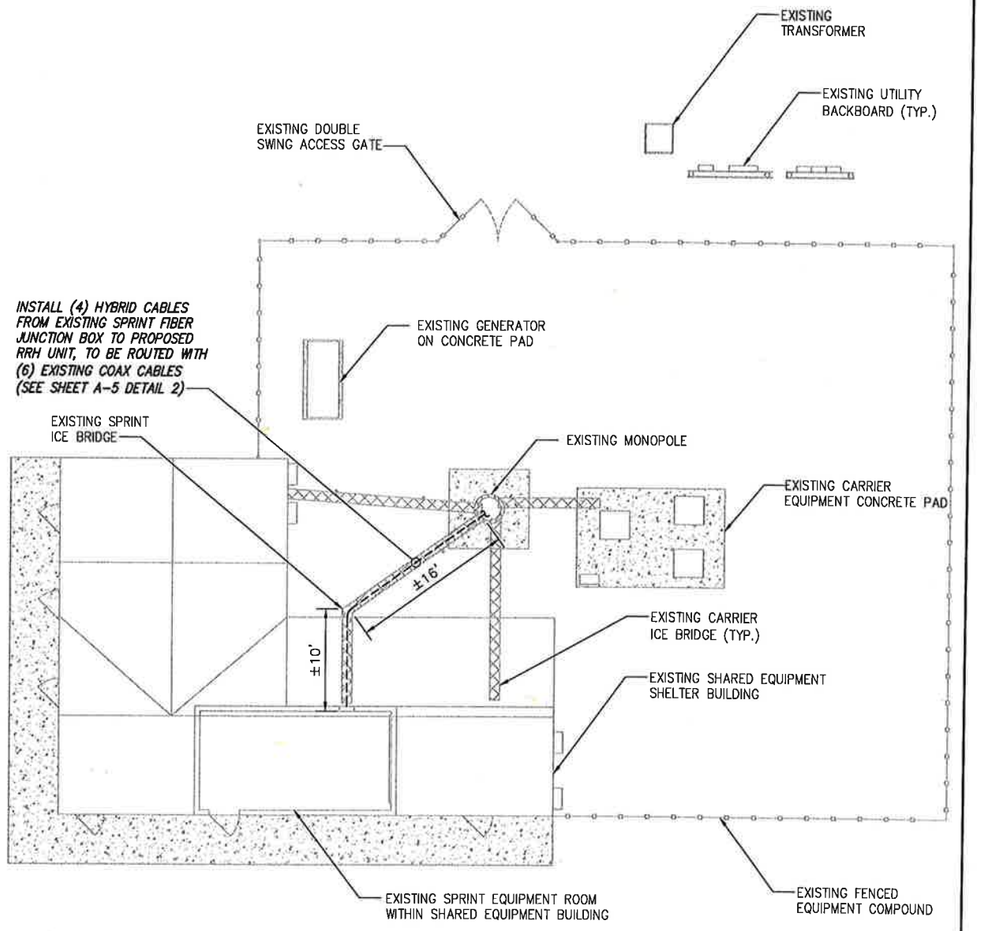
125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

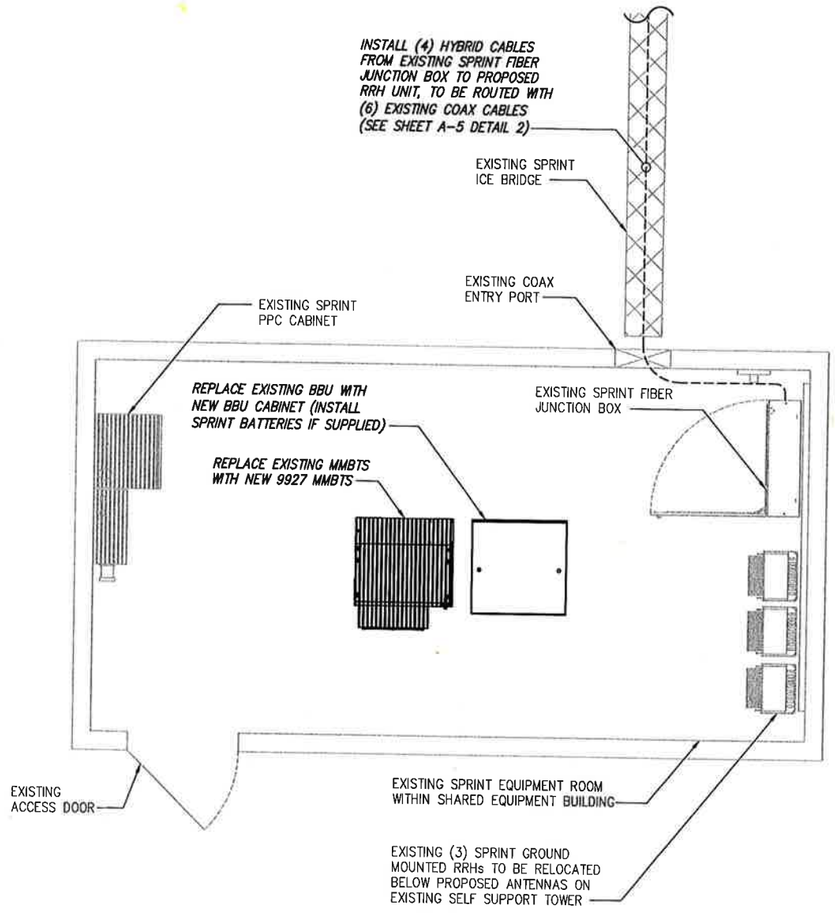
SP-3



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

GRAPHIC SCALE:
15' 7.5' 0 7.5' 15'
SCALE (11x17): 1" = 15'-0"
SCALE (22x34): 1" = 7'-6"

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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JOHN S. STEVENS
REG. NO. 24705
LICENSED PROFESSIONAL ENGINEER
MAY 30 2018

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CT54XC701

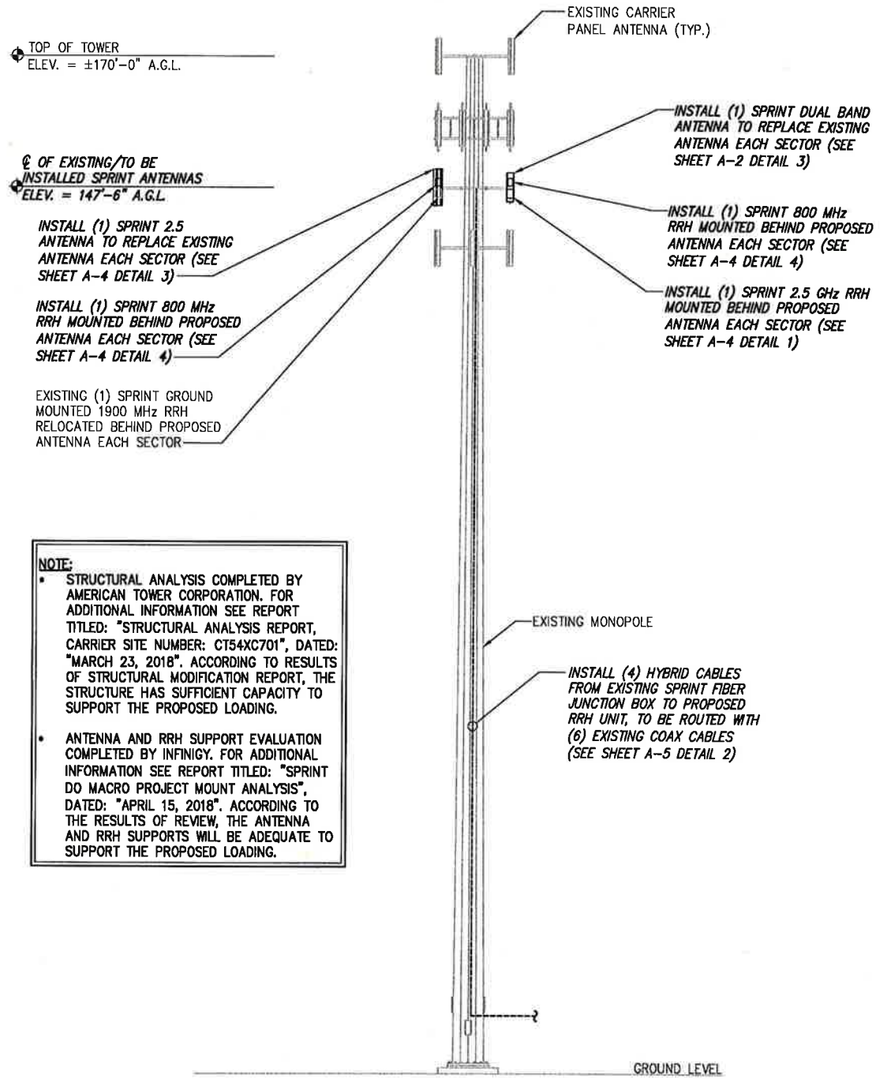
SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

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 AMERICAN TOWER CORPORATION. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, CARRIER SITE NUMBER: CT54XC701", DATED: "MARCH 23, 2018". ACCORDING TO RESULTS OF STRUCTURAL MODIFICATION REPORT, THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.
- ANTENNA AND RRH SUPPORT EVALUATION COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "SPRINT DO MACRO PROJECT MOUNT ANALYSIS", DATED: "APRIL 15, 2018". ACCORDING TO THE RESULTS OF REVIEW, THE ANTENNA AND RRH SUPPORTS WILL BE 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	APXVTM14-ALU-120	RFS	0°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1	±195'*	±147.5'AGL
	PROPOSED	NNVV-65B-R4	COMMSCOPE	0°	1	–	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1		
	EXISTING	DB980F90E-M	ANDREW	0°	2	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
BETA	PROPOSED	APXVTM14-ALU-120	RFS	120°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1		±147.5'AGL
	PROPOSED	NNVV-65B-R4	COMMSCOPE	120°	1	–	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1		
	EXISTING	DB980F90E-M	ANDREW	120°	2	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
GAMMA	PROPOSED	APXVTM14-ALU-120	RFS	240°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1		±147.5'AGL
	PROPOSED	NNVV-65B-R4	COMMSCOPE	240°	1	–	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1		
	EXISTING	DB980F90E-M	ANDREW	240°	2	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		

PROJECT SCOPE:

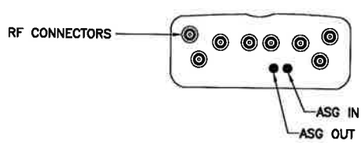
REMOVE: (6) PANEL ANTENNAS INSTALL: (6) PANEL ANTENNAS AND (9) RRH'S RELOCATE: (3) 1900 MHz RRH'S

* 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

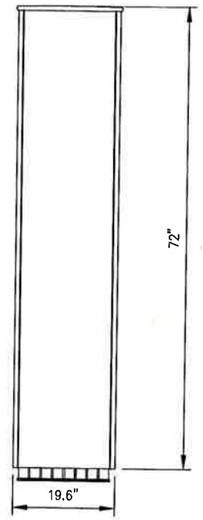
ANTENNA COMMSCOPE NNVV-65B-R4

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.In(mm):	72"x19.6"x7.8" (1829x498x198mm)
WEIGHT:	77.4 lbs
CONNECTORS:	(8) PIN DIN FEMALE (8) 8 PIN DIN MALE



PLAN VIEW

SIDE VIEW



FRONT VIEW

DUAL BAND ANTENNA DETAIL | NO SCALE | 2

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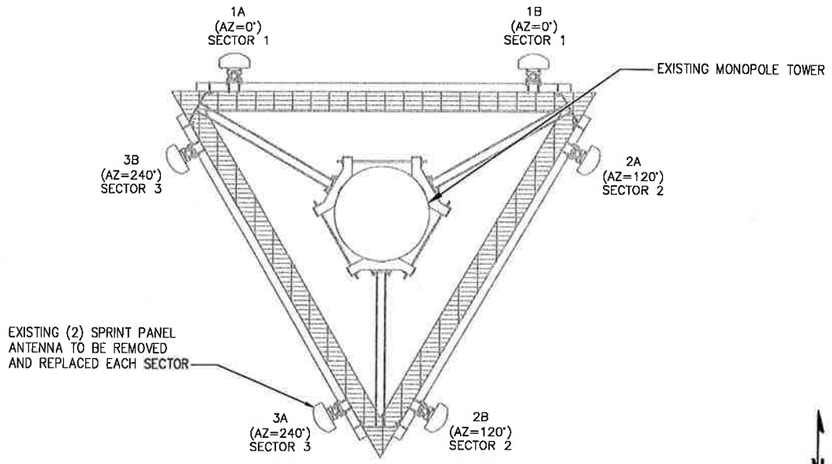
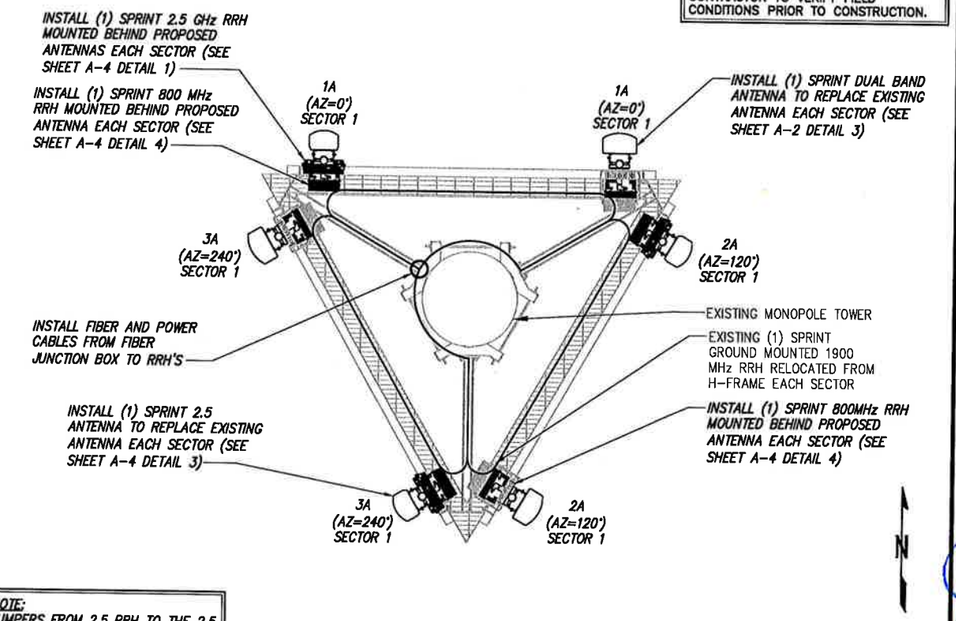
SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



EXISTING ANTENNA 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.

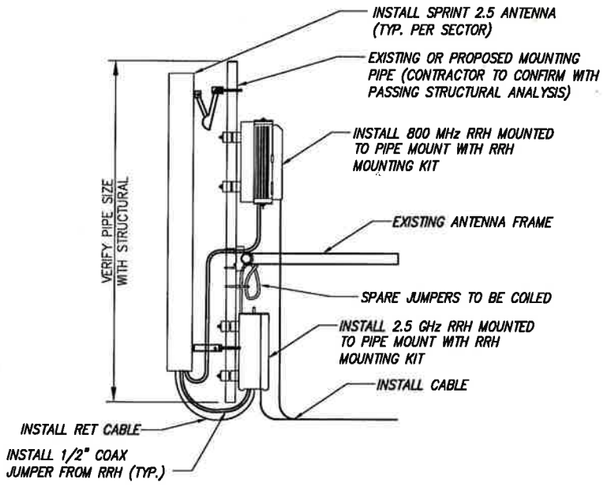


NOTE:
JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET

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



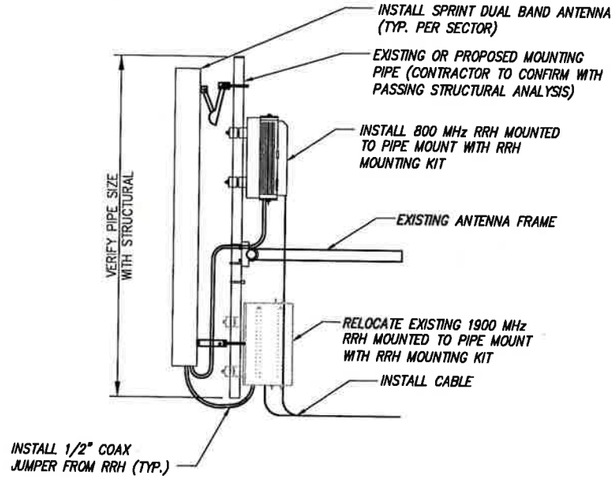
NOTES:

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

TYPICAL 2.5 ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 3

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 DUAL BAND ANTENNA & RRH MOUNTING DETAIL | NO SCALE | 4

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
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FROM ZERO TO INFINIGY
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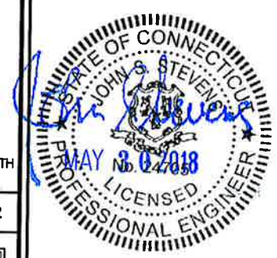
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-103

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

ENGINEERING LICENSE:


MAY 3 0 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:
SOUTH OLD LYME - VERIZON

SITE NUMBER:
CT54XC701

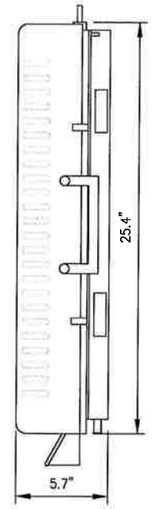
SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

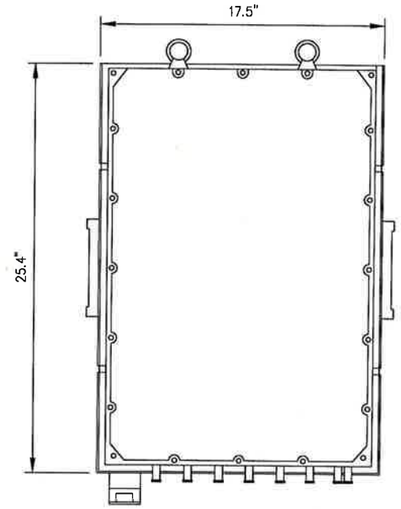
SHEET NUMBER:
A-3

RRH: ALCATEL LUCENT TD-RRH8X20

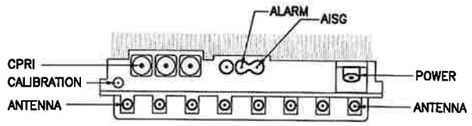
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW



PLAN VIEW

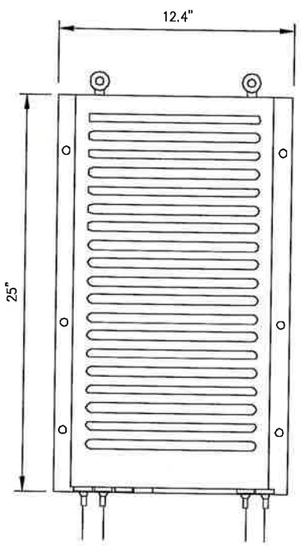
NOTES

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.

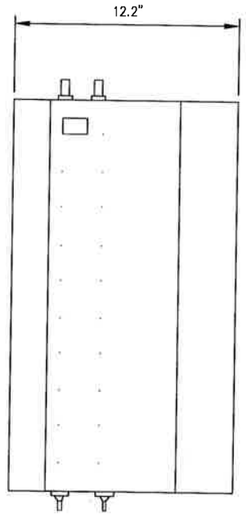
2.5 RRH'S | NO SCALE | 1

RRH: ALCATEL LUCENT 1900 MHz

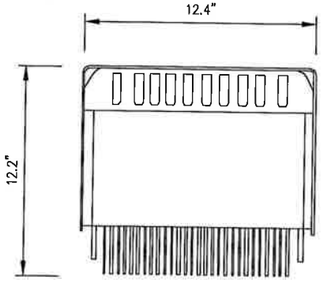
COLOR: LIGHT GREY
WEIGHT: 70 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)



FRONT VIEW



SIDE VIEW

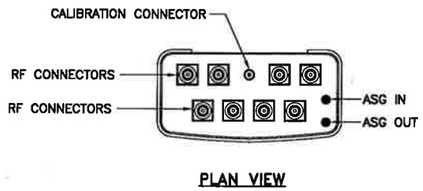


TOP VIEW

EXISTING 1900 MHz RRH | NO SCALE | 2

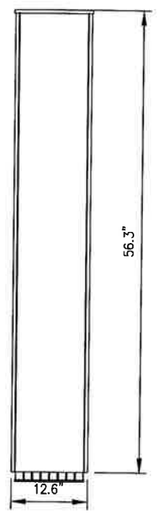
ANTENNA RFS APXVTM14-ALU-I20

RADOME MATERIAL:	ASA
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in(mim):	56.3"x12.6"x6.3" (1549x439x300mm)
WEIGHT:	56.2 lbs
CONNECTORS:	(8) 4.1/9.5 DIN FEMALE (1) NF – CALIBRATION CONNECTOR



PLAN VIEW

SIDE VIEW



FRONT VIEW

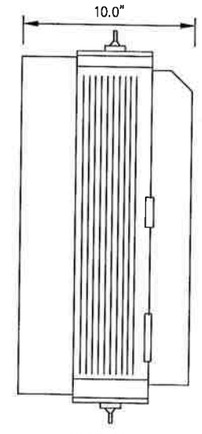
2.5 ANTENNA DETAIL | NO SCALE | 3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

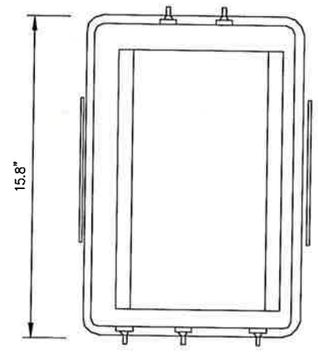
COLOR: LIGHT GREY
WEIGHT: 53 LBS.

NOTES

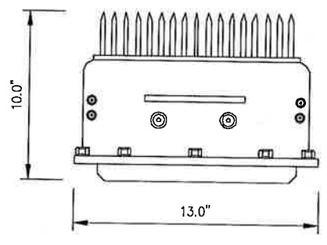
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.



SIDE VIEW



FRONT VIEW



PLAN VIEW

800 MHz RRH | NO SCALE | 4

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www.infinigy.com
JOB NUMBER 526-103

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

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 27078
LICENSED PROFESSIONAL ENGINEER
MAY 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:
SOUTH OLD LYME - VERIZON

SITE NUMBER:
CT54XC701

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-4

RFS HYBRIFLEX RISER CABLE SCHEDULE

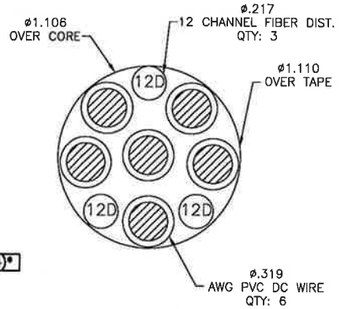
Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F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

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

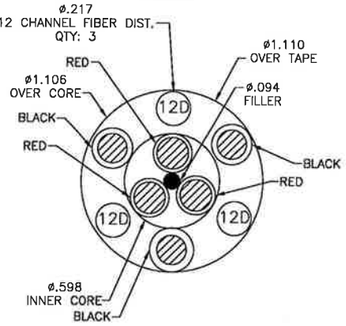
Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1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

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

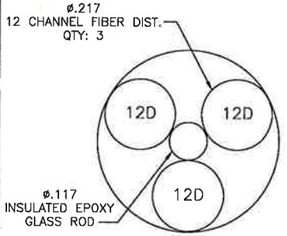
* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.



4 AWG

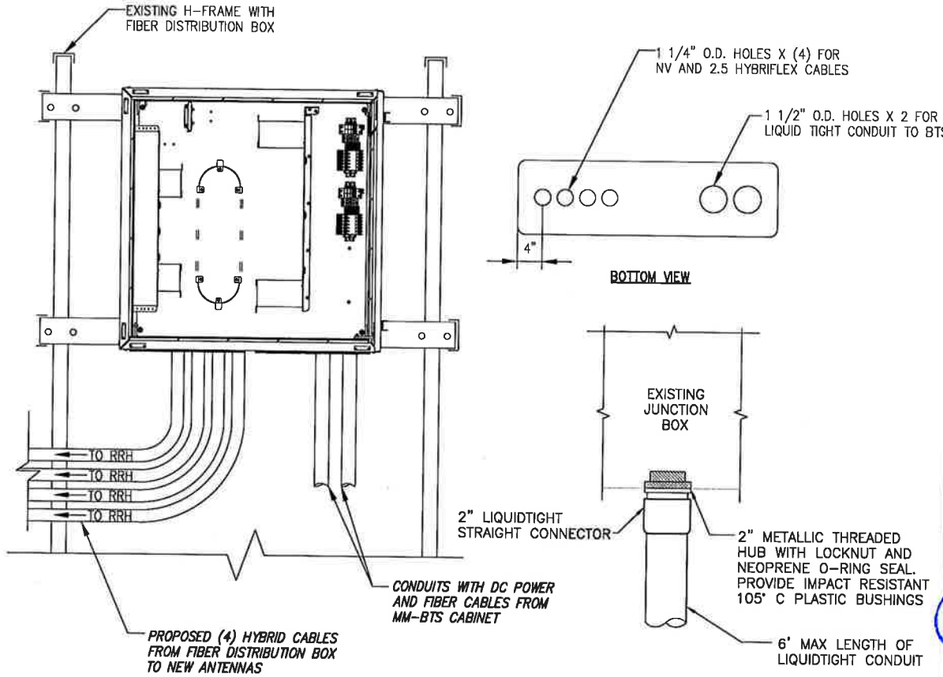


8 & 6 AWG



FIBER ONLY

800/1900/2500 CABLE CROSS SECTION DATA | NO SCALE | 1



FRONT VIEW

BOTTOM VIEW

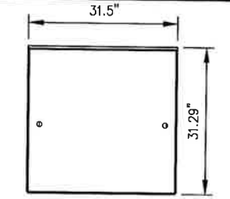
FIBER JUNCTION BOX & PENETRATION | NO SCALE | 2

DESIGN CRITERIA:

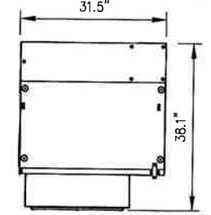
2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION	
WIND SPEED (ASCE-7-05)	90 MPH
EXPOSURE B	
IMPORTANCE FACTOR	1.0
SEISMIC SITE CLASS	D
Ss=0.152 S1=0.050	
SEISMIC IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	B
9927 MM BTS CABINET WEIGHT:	594 LBS.
EMERSON BATTERY CABINET SPECIFICATIONS:	
(31.29"x31.5"x63.65")	
WEIGHTS:	
SHIPPING WEIGHT:	600 LBS.
LIFT WEIGHT:	540 LBS.
TOTAL WEIGHT:	2640 LBS (WITH BATTERIES)
INDIVIDUAL BATTERY WEIGHT:	105 LBS
(DO NOT LIFT WITH BATTERIES IN CABINET)	

MATERIAL SPECIFICATIONS

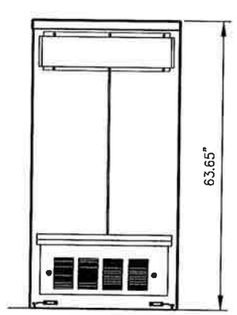
C-, M-, AND ANGLE SHAPES:	ASTM A36
HIGH-STRENGTH BOLTS:	ASTM A325SC OR (A325N)
STRUCTURAL WF SHAPES:	ASTM A572-GR50
TUBE STEEL & PIPE COLUMNS:	ASTM A500, GRADE B
WELDING ELECTRODES:	E70XX
W - SHAPES:	ASTM A992, GRADE 50
U-BOLTS:	ASTM A36



TOP VIEW

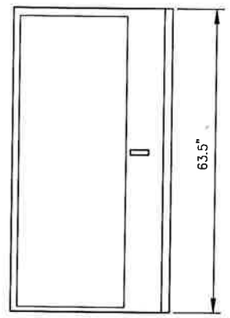


TOP VIEW



REAR VIEW

BATTERY CABINET PROFILE



FRONT VIEW

BTS CABINET PROFILE

NEW CABINET DETAILS | NO SCALE | 3

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
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Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-103

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (616) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
PROFESSIONAL ENGINEER
LICENSED
No. 24708
MAY 3 0 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:
SOUTH OLD LYME - VERIZON

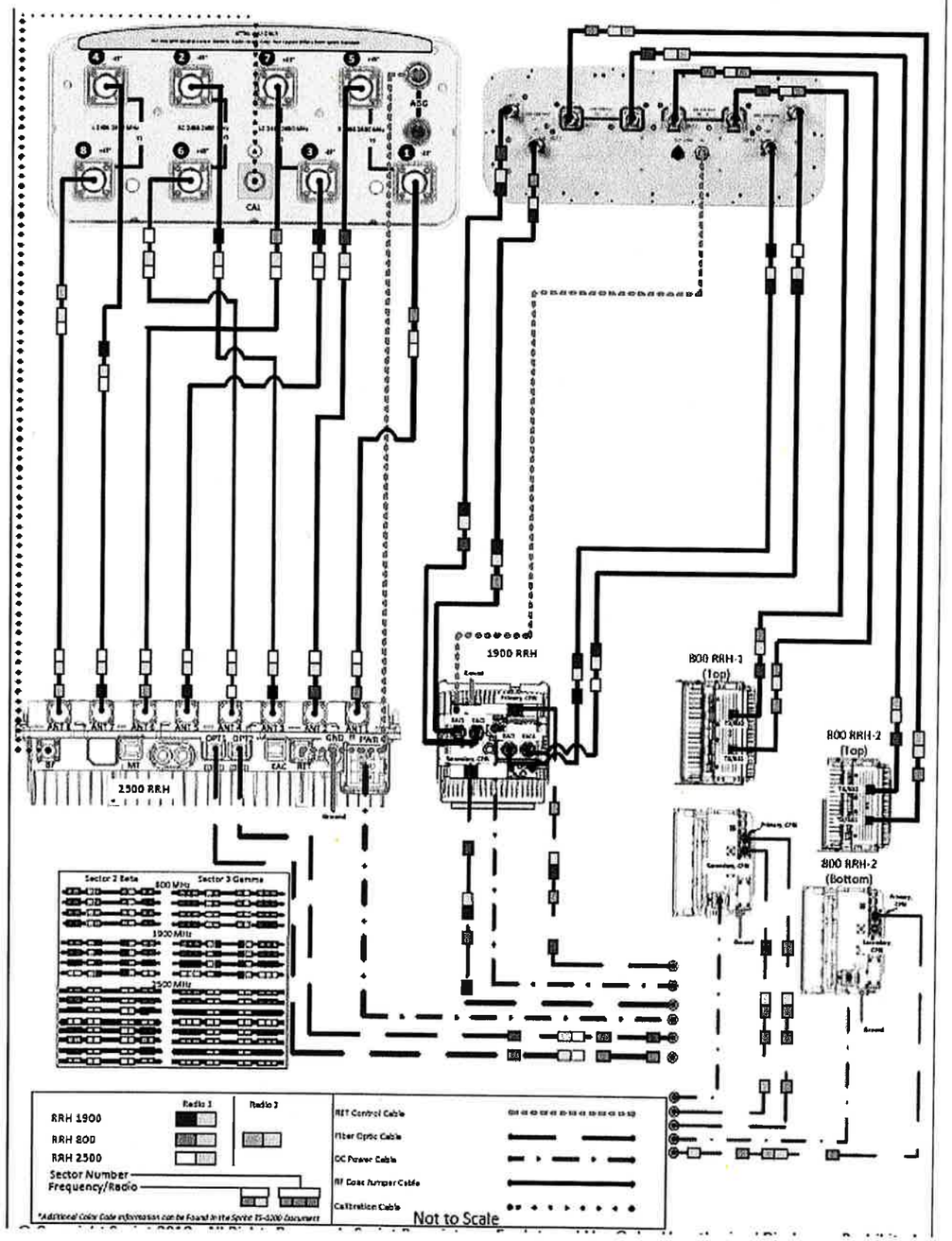
SITE NUMBER:
CT54XC701

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-5

ALU-NSN 211 APXVTM14-ALU-I20 & NNVV-65B-R4 wo Filters



PLUMBING DIAGRAM | NO SCALE | 1

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
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Phone: 518-690-0790 | Fax: 518-690-0793
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PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
LICENSED PROFESSIONAL ENGINEER
No. 24705
MAY 3 0 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

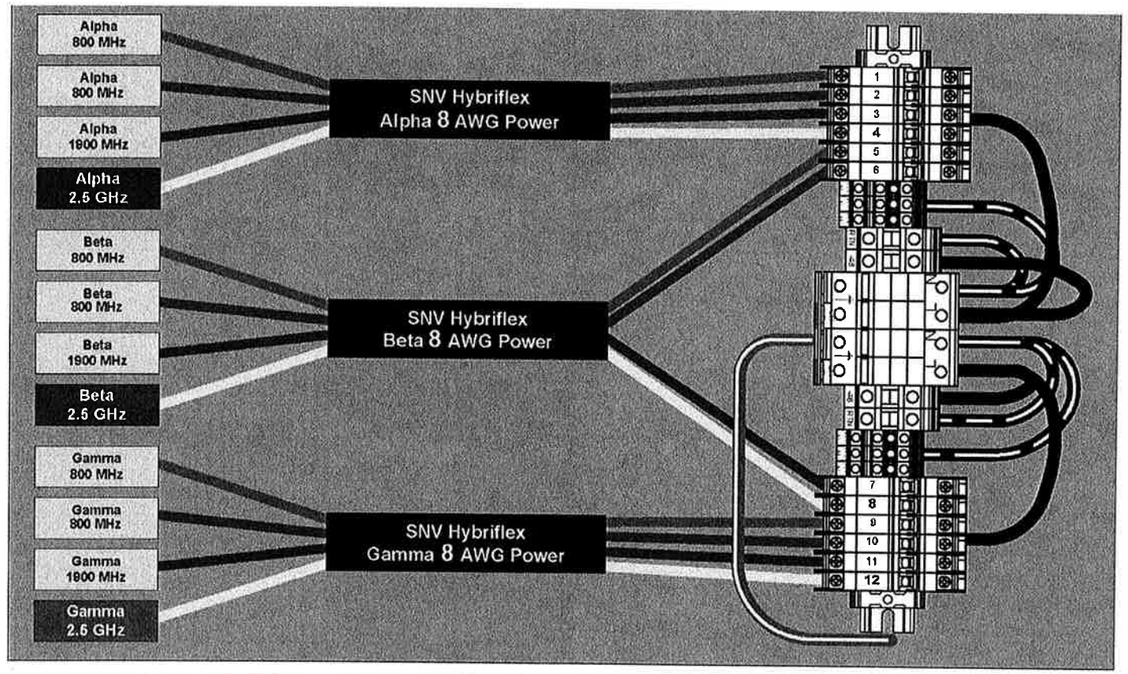
SITE NAME:
SOUTH OLD LYME - VERIZON

SITE NUMBER:
CT54XC701

SITE ADDRESS:
125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:
PLUMBING DIAGRAM

SHEET NUMBER:
A-6

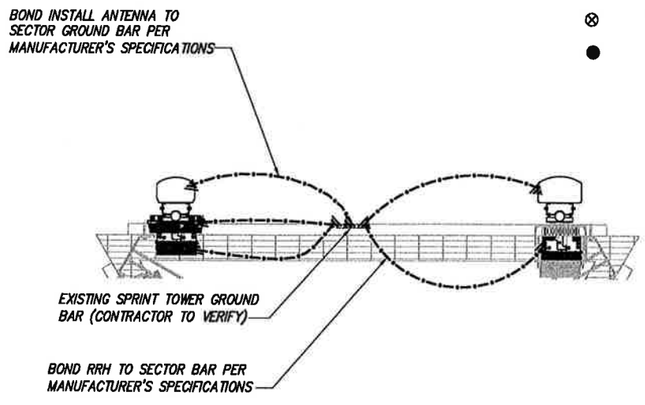


RRH TO DISTRIBUTION BOX POWER CONNECTIVITY

NO SCALE | 1

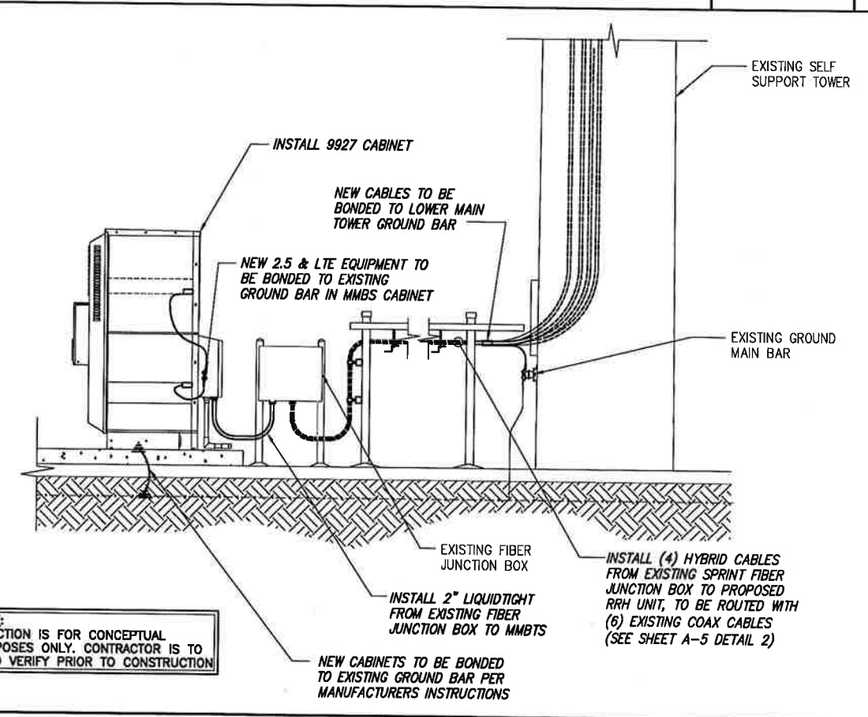
LEGEND:

- 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

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

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

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
PROFESSIONAL ENGINEER
LICENSED
MAY 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	05/23/18	ETC	0

SITE NAME:

SOUTH OLD LYME - VERIZON

SITE NUMBER:

CT54XC701

SITE ADDRESS:

125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:

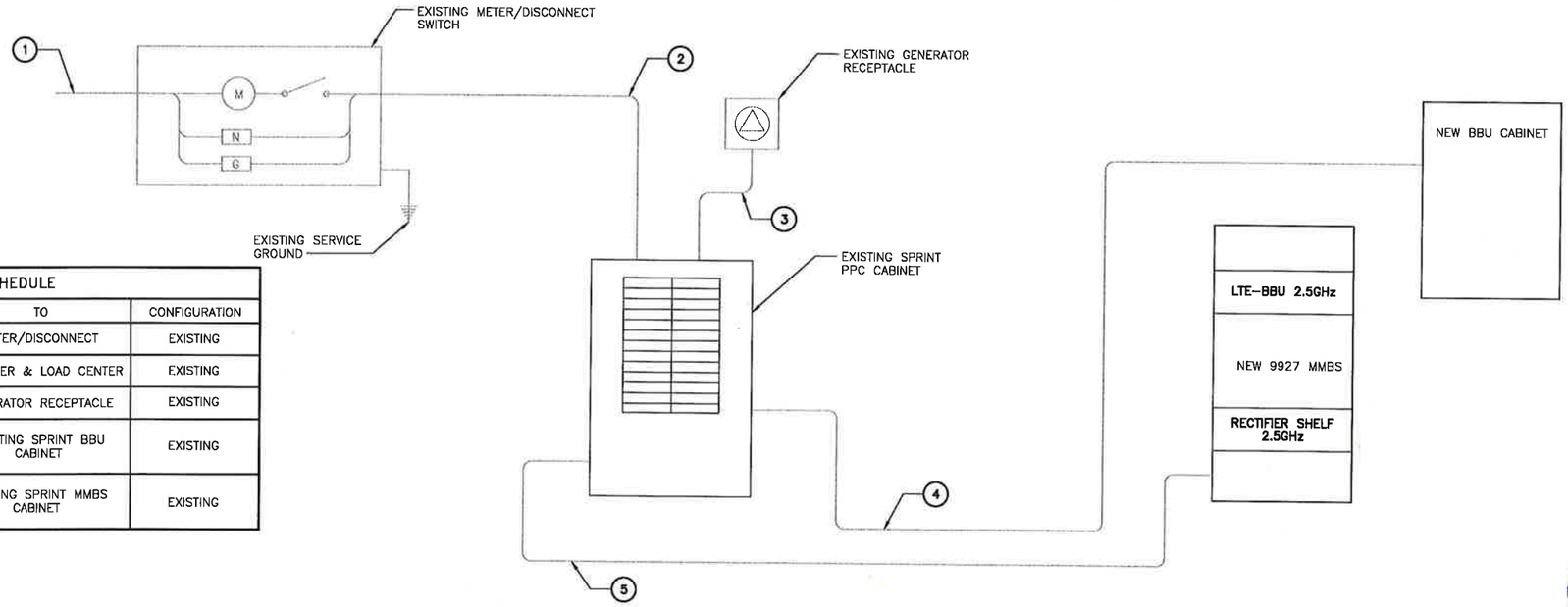
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

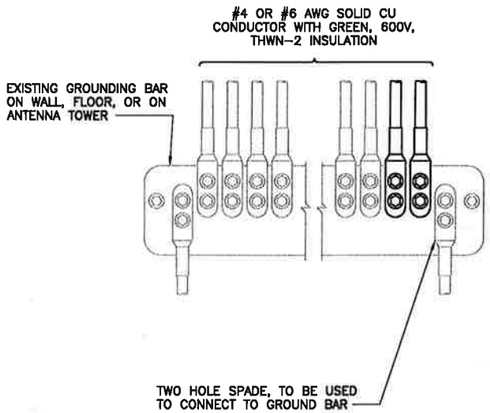
NOTES

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

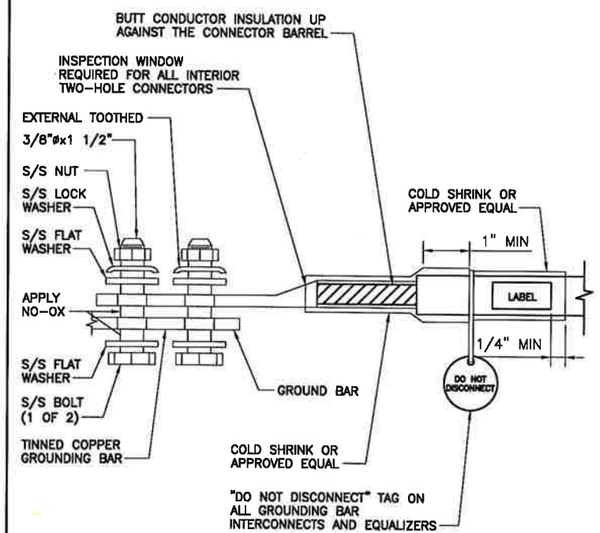
ELECTRICAL ONE–LINE DIAGRAM — NO SCALE — 1



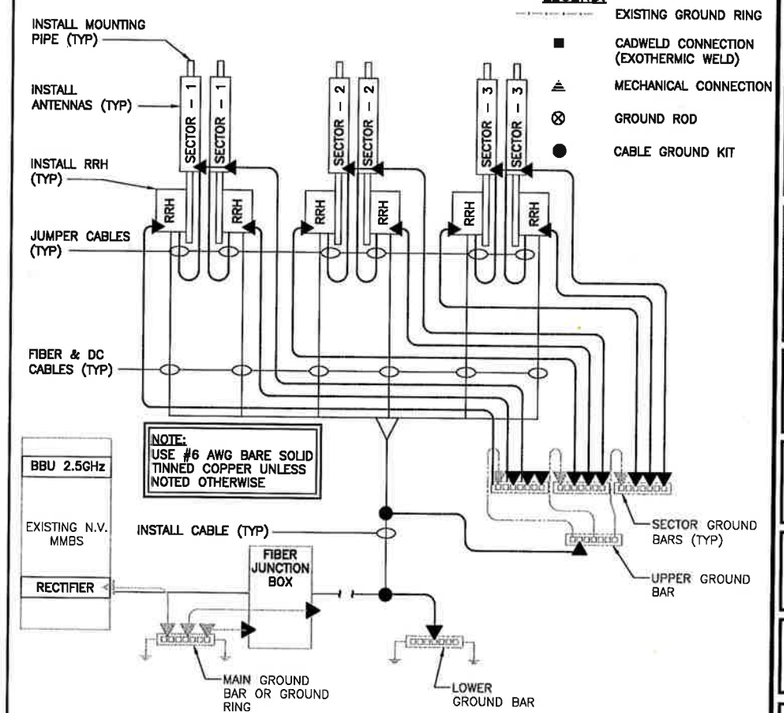
NOTES

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

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

JOB NUMBER 526-103

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#. (518) 308-3740

ENGINEERING LICENSE:

STATE OF CONNECTICUT — JOHN S. STEVENS — 24705 — LICENSED PROFESSIONAL ENGINEER

MAY 30 2018

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SITE NUMBER:

CT54XC701

SITE ADDRESS:

125 MILE CREEK ROAD
OLD LYME, CT 06070

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2