



Together with Nextel

10 Industrial Ave, Suite 3  
Mahwah, NJ 07430  
Phone: (845)499-4712  
Jennifer Notaro  
Real Estate Consultant

8/15/14

Hand Delivered

Ms. Melanie A. Bachman  
Acting Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

CC to Property Owner  
TOWN OF NEWINGTON  
131 Cedar St  
Newington, CT 06111

RE: Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 605 Willard Ave. Newington CT 06111. Known to Sprint Spectrum L.P. as site CT60XC018.

Dear Ms. Bachman:

In order to accommodate technological changes, implement Code Division Multiple Access (“CDMA”) and/or Long Term Evolution (“LTE”) capabilities, and enhance system performance in the state of Connecticut, Sprint Spectrum L.P. plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

CDMA employs Spread-Spectrum technology and special coding scheme to allow multiple users to be multiplexed over the same physical channel.

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modification as defined Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for the R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more CDMA transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons Sprint Spectrum L.P. respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (845)-499-4712 or email [JNotaro@Transcendwireless.com](mailto:JNotaro@Transcendwireless.com) with questions concerning this matter.  
Thank you for your consideration.

Sincerely,

Jennifer Notaro  
Real Estate Consultant

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

Sprint Existing Facility

Site ID: CT60XC018

Marcus Group Comm. Tower

605 Willard Avenue  
Newington, CT 06111

**August 13, 2014**

**EBI Project Number: 62144247**

August 13, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:  
**CT60XC018 - Marcus Group Comm. Tower**

**Site Total: 52.23% - MPE% in full compliance**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 605 Willard Avenue, Newington, CT, for the purpose of determining whether the radio frequency (RF) exposure levels from the proposed Sprint equipment upgrades on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limit for the cellular band (850 MHz Band) is approximately  $567 \mu\text{W}/\text{cm}^2$ , and the general population exposure limit for the 1900 MHz and 2500 MHz bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 605 Willard Avenue, Newington, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. 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 emissions were calculated using the following assumptions:

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

- 6) The antennas used in this modeling are the RFS APXVSPP18-C-A20, RFS APXV9ERR18-C-A20 and the RFS APXVTM14-C-I20. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. The RFS APXV9ERR18-C-A20 has a 14.9 dBd gain value at its main lobe at 1900 MHz and 11.9 dBd at its main lobe for 850 MHz. The RFS APXVTM14-C-I20 has a 15.9 dBd gain value at its main lobe at 2500 MHz. 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.
- 7) The antenna mounting height centerline for the proposed antennas is **140 feet** above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Site ID	CT60XC018 - Marcus Group Comm. Tower
Site Address	605 Willard Avenue, Newington, CT, 06111
Site Type	Monopole

**Sector 1**

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
1a	RFS	APXV9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	4.9	140	134	1/2 "	0.5	0	165.25	0.33%
1a	RFS	APXV9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.9	140	134	1/2 "	0.5	0	27.61	0.10%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.49%
Sector total Power Density Value:																0.92%

**Sector 2**

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
2a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	140	134	1/2 "	0.5	0	208.04	0.42%
2a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	140	134	1/2 "	0.5	0	39.00	0.14%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.49%
Sector total Power Density Value:																1.04%

**Sector 3**

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
3a	RFS	APXVSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	140	134	1/2 "	0.5	0	208.04	0.42%
3a	RFS	APXVSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	140	134	1/2 "	0.5	0	39.00	0.14%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	140	134	1/2 "	0.5	0	138.69	0.49%
Sector total Power Density Value:																1.04%

Site Composite MPE %	
Carrier	MPE %
Sprint	3.01%
Nextel	3.96%
Town of Newington	0.27%
Verizon Wireless	31.92%
Clearwire	0.73%
MetroPCS	0.12%
AT&T	12.22%
<b>Total Site MPE %</b>	<b>52.23%</b>

## Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **3.01% (0.92% from sector 1, 1.04% from sector 2 and 1.04% from sector 3)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **52.23%** of the allowable FCC established general public limit sampled at 6 feet above ground level. This total composite site value is based upon MPE values listed in the Connecticut Siting Council database for existing carrier emissions.

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



**Scott Heffernan**  
RF Engineering Director

**EBI Consulting**  
21 B Street  
Burlington, MA 01803





**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 179 ft Monopole  
**ATC Site Name** : Newington CT, CT  
**ATC Site Number** : 370627  
**Engineering Number** : 58882223  
**Proposed Carrier** : Sprint Nextel  
**Carrier Site Name** : Newington CT  
**Carrier Site Number** : CT60XC018  
**Site Location** : 605 Willard Ave.  
Newington, CT 06111-0000  
41.698372,-72.737147  
**County** : Hartford  
**Date** : July 17, 2014  
**Max Usage** : 75%  
**Result** : Pass

Joseph R. King, E.I.



Jul 17 2014 2:11 PM



**Table of Contents**

Introduction .....	1
Supporting Documents .....	1
Analysis .....	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
Proposed Equipment .....	2
Structure Usages .....	3
Foundations .....	3
Deflection, Twist, and Sway.....	3
Standard Conditions .....	4
Calculations .....	Attached



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 179 ft monopole to reflect the change in loading by Sprint Nextel.

## Supporting Documents

<b>Tower Drawings</b>	PiRod Engineering File #A-118092, dated August 10, 2001
<b>Foundation Drawing</b>	PiRod Engineering File #A-118092, dated August 10, 2001
<b>Geotechnical Report</b>	Clarence Welti, dated August 1, 2001

## 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/EIA-222.

<b>Basic Wind Speed:</b>	80 mph (Fastest Mile)
<b>Basic Wind Speed w/ Ice:</b>	69 mph (Fastest Mile)w/ 1/2" radial ice concurrent
<b>Code:</b>	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

## 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](mailto: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 <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
180.0	190.0	1	20' Dipole	Low Profile Platform	(3) 7/8" Coax	Town Of Newington
	180.0	1	8' Yagi			
170.0	170.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(12) 1 5/8" Coax (1) 1" Hybrid	Metro PCS
		3	Ericsson AIR 21, 1.3M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
160.0	160.0	3	RCU	Side Arms	(3) 0.28" Fiber (3) 5/8" Coax (2) 2" Conduit (3) 1/2" Coax (1) 0.32" Cable	Clearwire
		3	DragonWave Horizon Compact			
		3	Samsung U-RAS Premium-F FRH			
		3	DragonWave A-ANT-18G-2-C			
		3	Argus LLPX310R			
154.0	154.0	6	Powerwave LGP21401	T-Arms	(6) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 1/2" Coax (1) 3" Conduit	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12)			
		3	Powerwave 7770.00			
		1	KMW AM-X-CD-16-65-00T-RET			
		1	Andrew SBNH-1D6565C			
		1	Powerwave P65-17-XLH-RR			
140.0	140.0	3	Alcatel-Lucent 2X50W RRH w/ Filter	Low Profile Platform	(3) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
108.0	110.0	6	RFS FD9R6004/2C-3L	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x40-AWS			
		3	Antel BXA-171063/8CF			
		3	Antel BXA-171063/12CF			
		3	Antel BXA-80063/4CF ___ 5°			
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063-6CF-EDIN-X			

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Alcatel-Lucent TD-RRH8x20	Low Profile Platform	(1) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	RFS APXVTM14-C-I20			

<sup>1</sup>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	69%	Pass
Shaft	75%	Pass
Base Plate	17%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,601.2	3,496.0	76%
Shear (Kips)	37.2	28.5	77%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

**Deflection and Sway\***

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
140.0	2.291	2.067

\*Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.



## **Standard Conditions**

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

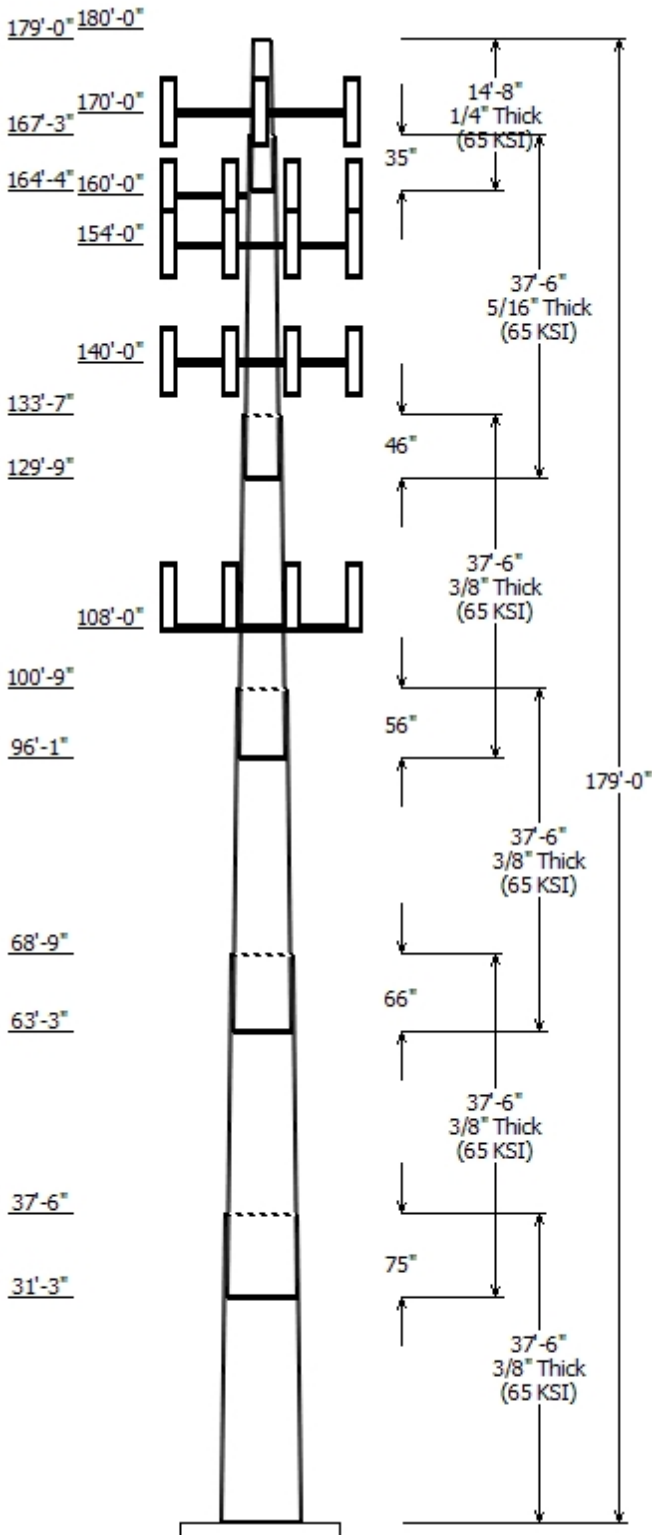
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

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

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

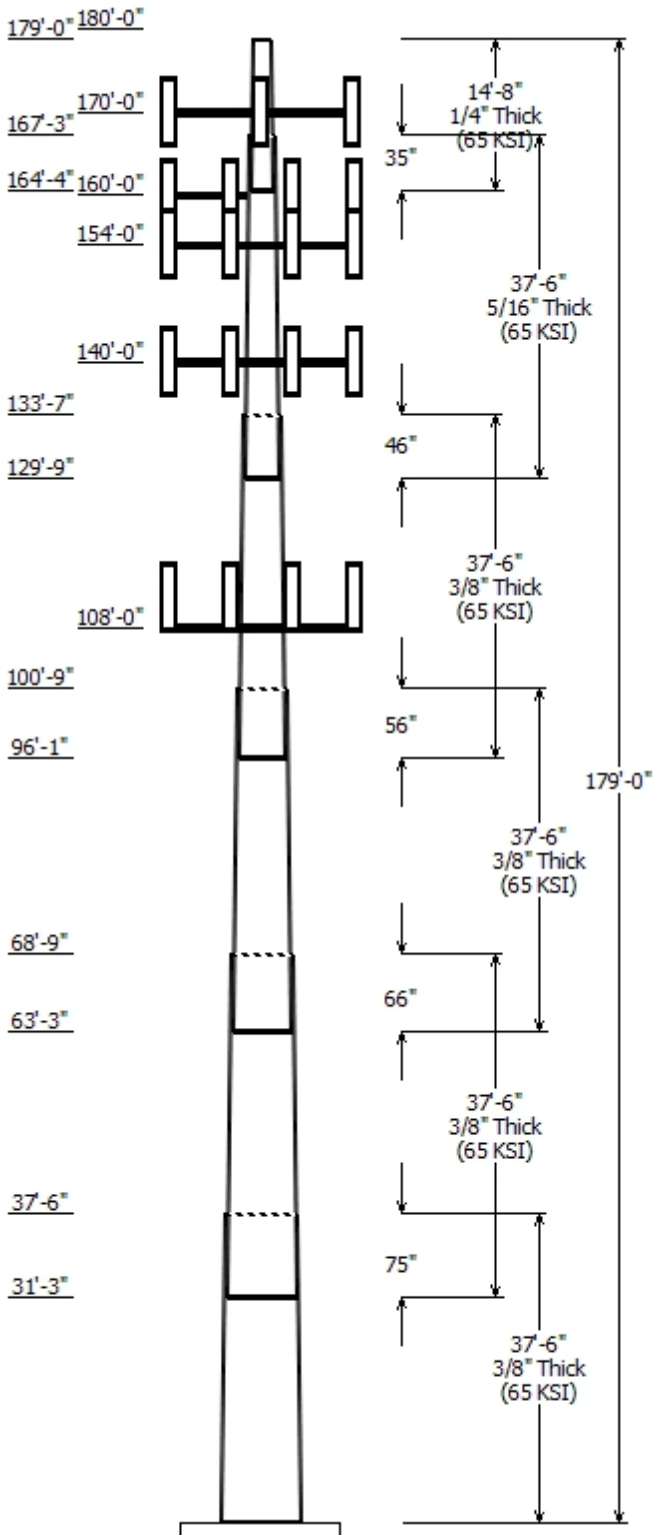
Job Information	
Pole : 370627	Code: TIA/EIA-222 Rev F
Description :	
Client : Metro PCS	
Location : Newington CT, CT	
Shape : 18 Sides	
Height : 179.00 (ft)	
Base Elev (ft): 0.00	
Taper: 0.29923(in/ft)	



Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap		Steel Grade (ksi)
		Across Top	Across Bottom			Length (in)	Taper (in/ft)	
1	37.500	51.71	62.93	0.375		0.000	0.299232	65
2	37.500	43.11	54.33	0.375	Slip Joint	75.000	0.299232	65
3	37.500	34.29	45.51	0.375	Slip Joint	66.000	0.299232	65
4	37.500	25.21	36.43	0.375	Slip Joint	56.000	0.299232	65
5	37.500	15.76	26.98	0.313	Slip Joint	46.000	0.299232	65
6	14.667	12.75	17.13	0.250	Slip Joint	35.000	0.299232	65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
180.000	190.000	1	20' Dipole	
180.000	180.000	1	8' Yagi	
180.000	180.000	1	Round Low Profile Platform	
170.000	170.000	3	Ericsson AIR 21, 1.3M, B4A B2P	
170.000	170.000	3	Ericsson AIR 21, 1.3M, B2A B4P	
170.000	170.000	3	Ericsson KRY 112 144/1	
170.000	170.000	1	Flat Low Profile Platform	
160.000	160.000	3	Argus LLPX310R	
160.000	160.000	3	Samsung U-RAS Premium-F	
160.000	160.000	3	DragonWave A-ANT-18G-2-C	
160.000	160.000	3	DragonWave Horizon Compact	
160.000	160.000	3	RCU	
160.000	160.000	1	Side Arms	
154.000	154.000	1	Powerwave P65-17-XLH-RR	
154.000	154.000	1	Andrew SBNH-1D6565C	
154.000	154.000	1	KMW AM-X-CD-16-65-00T-RET	
154.000	154.000	3	Powerwave 7770.00	
154.000	154.000	6	Ericsson RRUS 11 (Band 12)	
154.000	154.000	1	Raycap DC6-48-60-18-8F	
154.000	154.000	6	Powerwave LGP21401	
154.000	154.000	3	Round T-Arm	
140.000	140.000	3	RFS APXVTM14-C-120	
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20	
140.000	140.000	2	RFS APXVSP18-C-A20	
140.000	140.000	1	RFS APXV9ERR18-C-A20	
140.000	140.000	3	Alcatel-Lucent 1900MHz RRH	
140.000	140.000	3	Alcatel-Lucent 2X50W RRH w/ F	
140.000	140.000	1	Round Low Profile Platform	
108.000	110.000	3	Antel BXA-70063-6CF-EDIN-X	
108.000	110.000	3	Antel BXA-80063/4CF ___ 5°	
108.000	110.000	3	Antel BXA-171063/12CF	
108.000	110.000	3	Antel BXA-171063/8CF	
108.000	110.000	1	RFS DB-T1-6Z-8AB-0Z	
108.000	110.000	3	Alcatel-Lucent RRH2x40-AWS	
108.000	110.000	6	RFS FD9R6004/2C-3L	
108.000	108.000	1	Flat Low Profile Platform	

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		



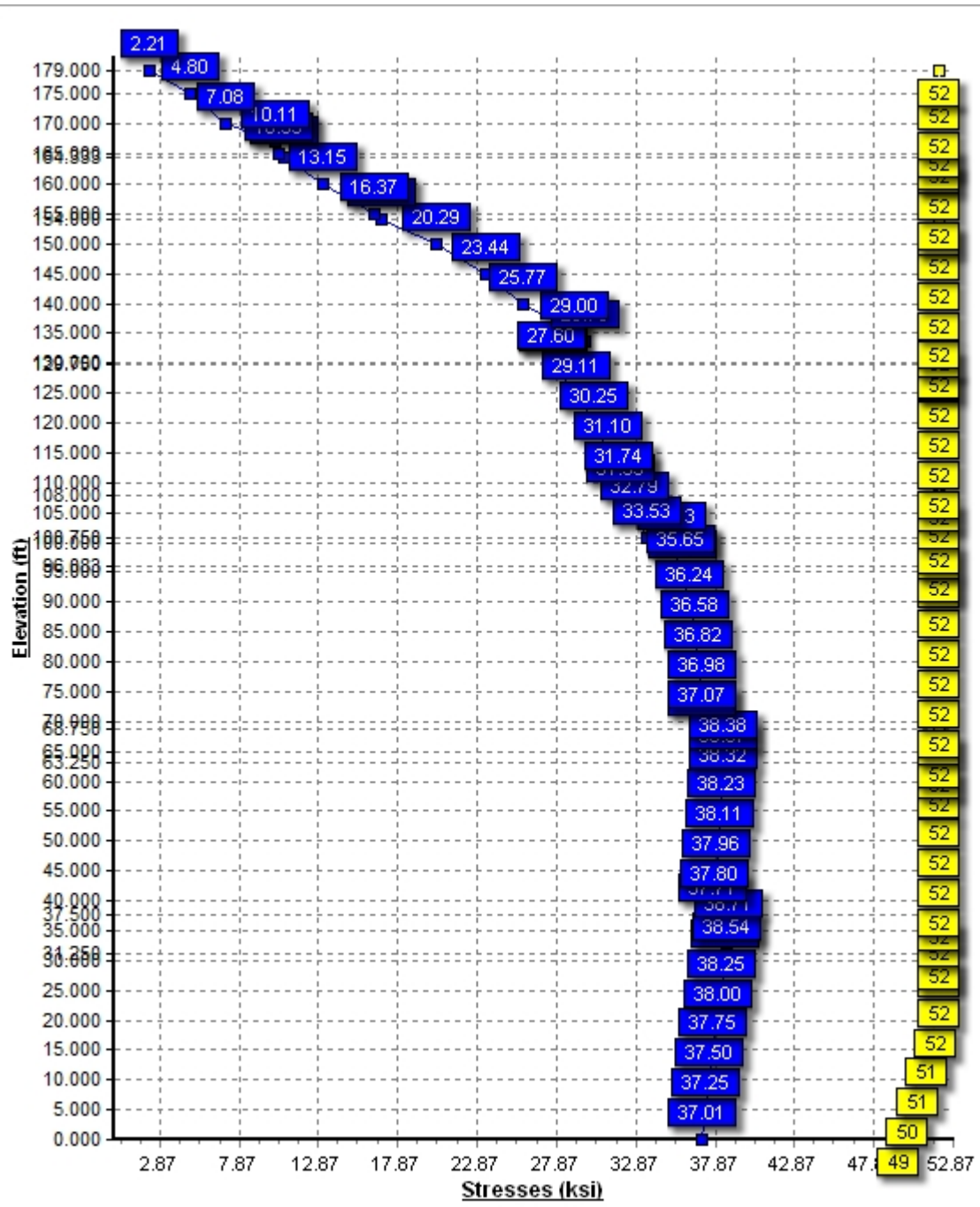
0.000	108.0	1 5/8" Coax	No
0.000	108.0	1 5/8" Hybriflex	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	154.0	0.39" Fiber Trunk	No
0.000	154.0	0.78" 8 AWG 6	No
0.000	154.0	1 5/8" Coax	No
0.000	154.0	1/2" Coax	No
0.000	154.0	3" Conduit	No
0.000	160.0	0.28" Fiber	No
0.000	160.0	0.32" Cable	No
0.000	160.0	1/2" Coax	No
0.000	160.0	2" Conduit	No
0.000	160.0	5/8" Coax	No
0.000	170.0	1 5/8" Coax	No
0.000	170.0	1" Hybrid	No
0.000	180.0	7/8" Coax	No

Load Cases	
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	3495.96	28.50	42.95
Ice	3012.16	23.71	50.19
Twist/Sway	1367.16	11.13	42.98

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



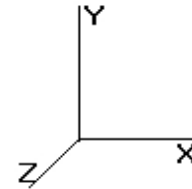


Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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Page: 1

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top							
							Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	37.500	0.3750	65		0.00	8,650	62.93	0.00	74.46	36822.9	27.83	167.83	51.71	37.50	61.11	20350.6	22.55	137.91	0.299232	
2-18	37.500	0.3750	65	Slip	75.00	7,343	54.33	31.25	64.23	23628.0	23.79	144.90	43.11	68.75	50.87	11740.5	18.51	114.97	0.299232	
3-18	37.500	0.3750	65	Slip	66.00	6,003	45.51	63.25	53.72	13827.5	19.64	121.36	34.29	100.75	40.37	5866.0	14.36	91.44	0.299232	
4-18	37.500	0.3750	65	Slip	56.00	4,625	36.43	96.08	42.92	7051.7	15.37	97.16	25.21	133.58	29.56	2304.8	10.09	67.24	0.299232	
5-18	37.500	0.3125	65	Slip	46.00	2,666	26.98	129.75	26.46	2378.4	13.46	86.36	15.76	167.25	15.33	462.5	7.13	50.45	0.299232	
6-18	14.667	0.2500	65	Slip	35.00	582	17.13	164.33	13.40	482.9	10.32	68.55	12.75	179.00	9.92	195.8	7.23	51.00	0.299232	
Shaft Weight						29,868														

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
180.00	20' Dipole	1	60.00	7.520	1.00	147.40	11.630	1.00	0.000	10.000
180.00	8' Yagi	1	30.00	12.000	1.00	127.20	21.590	1.00	0.000	0.000
180.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
170.00	Ericsson AIR 21, 1.3M, B2A	3	83.00	6.530	0.83	132.60	7.200	0.83	0.000	0.000
170.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.590	0.83	132.60	7.200	0.83	0.000	0.000
170.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	14.10	0.550	0.50	0.000	0.000
170.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
160.00	Argus LLPX310R	3	28.70	4.820	0.70	54.60	5.360	0.70	0.000	0.000
160.00	DragonWave A-ANT-18G-2-C	3	27.10	4.690	1.00	55.10	5.050	1.00	0.000	0.000
160.00	DragonWave Horizon	3	11.50	0.840	0.50	17.90	1.030	0.50	0.000	0.000
160.00	RCU	3	1.00	0.160	0.50	2.50	0.260	0.50	0.000	0.000
160.00	Samsung U-RAS Premium-F	3	33.00	1.820	0.50	45.00	2.100	0.50	0.000	0.000
160.00	Side Arms	1	560.00	8.500	1.00	680.00	10.500	1.00	0.000	0.000
154.00	Andrew SBNH-1D6565C	1	60.80	11.450	0.84	126.70	12.370	0.84	0.000	0.000
154.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.940	0.67	74.30	3.290	0.67	0.000	0.000
154.00	KMW AM-X-CD-16-65-00T-	1	48.50	8.260	0.78	95.00	9.080	0.78	0.000	0.000
154.00	Powerwave 7770.00	3	35.00	5.880	0.75	67.63	6.530	0.75	0.000	0.000
154.00	Powerwave LGP21401	6	14.10	1.290	0.50	7.70	0.340	0.50	0.000	0.000
154.00	Powerwave P65-17-XLH-RR	1	59.00	11.470	0.80	121.00	12.390	0.80	0.000	0.000
154.00	Raycap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
154.00	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
140.00	Alcatel-Lucent 1900MHz RRH	3	44.00	3.800	0.67	75.20	4.200	0.67	0.000	0.000
140.00	Alcatel-Lucent 2X50W RRH	3	64.00	2.400	0.67	71.30	2.720	0.67	0.000	0.000
140.00	Alcatel-Lucent TD-RRH8x20	3	66.10	4.300	0.67	82.70	4.430	0.67	0.000	0.000
140.00	RFS APXV9ERR18-C-A20	1	62.00	8.260	0.85	113.90	9.080	0.85	0.000	0.000
140.00	RFS APXVSP18-C-A20	2	57.00	8.260	0.82	106.50	9.080	0.82	0.000	0.000
140.00	RFS APXVTM14-C-I20	3	56.20	6.900	0.76	92.40	7.580	0.76	0.000	0.000
140.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
108.00	Alcatel-Lucent RRH2x40-AWS	3	44.00	2.510	0.67	61.40	2.870	0.67	0.000	2.000
108.00	Antel BXA-171063/12CF	3	15.00	4.790	0.88	42.40	5.460	0.88	0.000	2.000
108.00	Antel BXA-171063/8CF	3	10.50	2.900	0.90	29.80	3.370	0.90	0.000	2.000
108.00	Antel BXA-70063-6CF-EDIN-X	3	17.00	7.730	0.77	58.00	8.540	0.77	0.000	2.000
108.00	Antel BXA-80063/4CF 5°	3	9.90	5.161	0.72	37.73	5.741	0.72	0.000	2.000
108.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
108.00	RFS DB-T1-6Z-8AB-0Z	1	110.00	5.600	0.67	144.50	6.080	0.67	0.000	2.000
108.00	RFS FD9R6004/2C-3L	6	3.10	0.370	0.50	5.40	0.500	0.50	0.000	2.000
Totals		90	10234.80			13,303.47			Number of Loadings : 36	

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

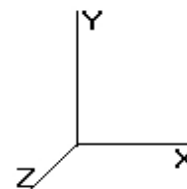
Code: TIA/EIA-222 Rev F

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Page: 2

Base Elev : 0.000 (ft)

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### Linear Appurtenance Properties

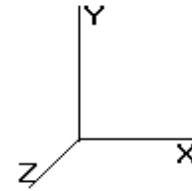
Elev From (ft)	Elev To (ft)	Description	No Ice		Ice		Exposed To Wind
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	180.00	(3) 7/8" Coax	0.33	0.00	0.00	0.00	N
0.00	170.00	(12) 1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	170.00	(1) 1" Hybrid	0.65	0.00	0.00	0.00	N
0.00	160.00	(3) 0.28" Fiber	0.03	0.00	0.00	0.00	N
0.00	160.00	(1) 0.32" Cable	0.06	0.00	0.00	0.00	N
0.00	160.00	(3) 1/2" Coax	0.15	0.00	0.00	0.00	N
0.00	160.00	(2) 2" Conduit	3.65	0.00	0.00	0.00	N
0.00	160.00	(3) 5/8" Coax	0.15	0.00	0.00	0.00	N
0.00	154.00	(1) 0.39" Fiber Trunk	0.07	0.00	0.00	0.00	N
0.00	154.00	(2) 0.78" 8 AWG6	0.59	0.00	0.00	0.00	N
0.00	154.00	(6) 1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	154.00	(1) 1/2" Coax	0.15	0.00	0.00	0.00	N
0.00	154.00	(1) 3" Conduit	7.58	0.00	0.00	0.00	N
0.00	140.00	(3) 1 1/4" Hybriflex Cab	1.00	0.00	0.00	0.00	N
0.00	140.00	(1) 1 1/4" Hybriflex Cab	1.00	0.00	0.00	0.00	N
0.00	108.00	(12) 1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	108.00	(1) 1 5/8" Hybriflex	1.30	0.00	0.00	0.00	N
<b>Total Weight</b>			<b>2,883.00 (lb)</b>		<b>0.00 (lb)</b>		

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 3

**Segment Properties** (Max Len : 5 ft)

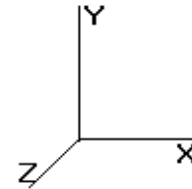
Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.3750	62.938	74.462	36,822.9	27.83	167.83	65	49	0.0
5.00		0.3750	61.441	72.682	34,243.8	27.13	163.84	65	50	1,251.7
10.00		0.3750	59.945	70.901	31,788.0	26.42	159.85	65	51	1,221.4
15.00		0.3750	58.449	69.120	29,452.5	25.72	155.86	65	51	1,191.2
20.00		0.3750	56.953	67.339	27,234.3	25.02	151.87	65	52	1,160.9
25.00		0.3750	55.457	65.559	25,130.3	24.31	147.88	65	52	1,130.6
30.00		0.3750	53.961	63.778	23,137.6	23.61	143.89	65	52	1,100.3
31.25	Bot - Section 2	0.3750	53.587	63.333	22,656.5	23.43	142.90	65	52	270.3
35.00		0.3750	52.464	61.997	21,253.2	22.91	139.91	65	52	1,610.6
37.50	Top - Section 1	0.3750	52.466	61.999	21,255.5	22.91	139.91	65	52	1,054.9
40.00		0.3750	51.718	61.109	20,352.9	22.55	137.92	65	52	523.6
45.00		0.3750	50.222	59.328	18,624.9	21.85	133.93	65	52	1,024.6
50.00		0.3750	48.726	57.548	16,997.7	21.15	129.94	65	52	994.3
55.00		0.3750	47.230	55.767	15,468.1	20.44	125.95	65	52	964.0
60.00		0.3750	45.734	53.986	14,033.1	19.74	121.96	65	52	933.7
63.25	Bot - Section 3	0.3750	44.761	52.829	13,149.7	19.28	119.36	65	52	590.6
65.00		0.3750	44.237	52.205	12,689.8	19.04	117.97	65	52	630.8
68.75	Top - Section 2	0.3750	43.865	51.762	12,369.5	18.86	116.97	65	52	1,326.7
70.00		0.3750	43.491	51.317	12,053.1	18.69	115.98	65	52	219.2
75.00		0.3750	41.995	49.537	10,841.4	17.98	111.99	65	52	858.0
80.00		0.3750	40.499	47.756	9,713.8	17.28	108.00	65	52	827.7
85.00		0.3750	39.003	45.975	8,667.1	16.58	104.01	65	52	797.4
90.00		0.3750	37.507	44.194	7,698.5	15.87	100.02	65	52	767.1
95.00		0.3750	36.010	42.414	6,804.9	15.17	96.03	65	52	736.8
96.08	Bot - Section 4	0.3750	35.686	42.028	6,620.9	15.02	95.16	65	52	155.6
100.0		0.3750	34.514	40.633	5,983.3	14.47	92.04	65	52	1,113.5
100.7	Top - Section 3	0.3750	35.040	41.258	6,263.9	14.71	93.44	65	52	209.0
105.0		0.3750	33.768	39.745	5,599.5	14.11	90.05	65	52	585.7
108.0		0.3750	32.870	38.676	5,159.9	13.69	87.65	65	52	400.3
110.0		0.3750	32.272	37.964	4,880.1	13.41	86.06	65	52	260.8
115.0		0.3750	30.776	36.183	4,225.1	12.71	82.07	65	52	630.8
120.0		0.3750	29.280	34.403	3,631.5	12.00	78.08	65	52	600.5
125.0		0.3750	27.784	32.622	3,096.2	11.30	74.09	65	52	570.2
129.7	Bot - Section 5	0.3750	26.362	30.930	2,639.1	10.63	70.30	65	52	513.6
130.0		0.3750	26.287	30.841	2,616.4	10.60	70.10	65	52	48.7
133.5	Top - Section 4	0.3125	25.840	25.319	2,084.6	12.82	82.69	65	52	683.5
135.0		0.3125	25.416	24.899	1,982.5	12.58	81.33	65	52	121.0
140.0		0.3125	23.920	23.415	1,648.7	11.73	76.54	65	52	411.0
145.0		0.3125	22.424	21.931	1,354.7	10.89	71.76	65	52	385.8
150.0		0.3125	20.928	20.447	1,097.9	10.05	66.97	65	52	360.5
154.0		0.3125	19.731	19.260	917.5	9.37	63.14	65	52	270.2
155.0		0.3125	19.432	18.963	875.8	9.20	62.18	65	52	65.0
160.0		0.3125	17.935	17.479	685.8	8.36	57.39	65	52	310.0
164.3	Bot - Section 6	0.3125	16.639	16.193	545.3	7.63	53.24	65	52	248.3
165.0		0.3125	16.439	15.995	525.6	7.51	52.61	65	52	66.7
167.2	Top - Section 5	0.2500	16.266	12.708	411.9	9.71	65.06	65	52	219.3
170.0		0.2500	15.443	12.055	351.6	9.13	61.77	65	52	115.9
175.0		0.2500	13.947	10.868	257.6	8.07	55.79	65	52	195.0
179.0		0.2500	12.750	9.918	195.8	7.23	51.00	65	52	141.5
										29,868.4

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
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Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 4

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

### Shaft Segment Forces

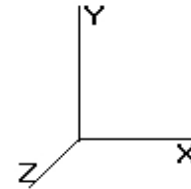
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	16.384	27.68	419.58	0.650	0.000	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	16.384	27.68	409.60	0.650	0.000	5.00	25.912	16.84	466.4	0.0	1,251.7
10.00		0.00	1.00	16.384	27.68	399.63	0.650	0.000	5.00	25.289	16.44	455.1	0.0	1,221.4
15.00		0.00	1.00	16.384	27.68	389.66	0.650	0.000	5.00	24.665	16.03	443.9	0.0	1,191.2
20.00		0.00	1.00	16.384	27.68	379.68	0.650	0.000	5.00	24.042	15.63	432.7	0.0	1,160.9
25.00		0.00	1.00	16.384	27.68	369.71	0.650	0.000	5.00	23.419	15.22	421.5	0.0	1,130.6
30.00		0.00	1.00	16.384	27.68	359.73	0.650	0.000	5.00	22.795	14.82	410.3	0.0	1,100.3
31.25	Bot - Section 2	0.00	1.00	16.384	27.68	357.24	0.650	0.000	1.25	5.602	3.64	100.8	0.0	270.3
35.00		0.00	1.01	16.662	28.15	352.71	0.650	0.000	3.75	16.805	10.92	307.6	0.0	1,610.6
37.50	Top - Section 1	0.00	1.03	16.993	28.71	351.13	0.650	0.000	2.50	11.009	7.16	205.5	0.0	1,054.9
40.00		0.00	1.05	17.310	29.25	354.39	0.650	0.000	2.50	10.852	7.05	206.4	0.0	523.6
45.00		0.00	1.09	17.902	30.25	349.98	0.650	0.000	5.00	21.238	13.80	417.6	0.0	1,024.6
50.00		0.00	1.12	18.449	31.17	344.70	0.650	0.000	5.00	20.614	13.40	417.8	0.0	994.3
55.00		0.00	1.15	18.959	32.04	338.70	0.650	0.000	5.00	19.991	12.99	416.3	0.0	964.0
60.00		0.00	1.18	19.436	32.84	332.07	0.650	0.000	5.00	19.367	12.59	413.5	0.0	933.7
63.25	Bot - Section 3	0.00	1.20	19.731	33.34	327.47	0.650	0.000	3.25	12.255	7.97	265.6	0.0	590.6
65.00		0.00	1.21	19.885	33.60	324.90	0.650	0.000	1.75	6.599	4.29	144.1	0.0	630.8
68.75	Top - Section 2	0.00	1.23	20.207	34.14	319.21	0.650	0.000	3.75	13.883	9.02	308.2	0.0	1,326.7
70.00		0.00	1.24	20.311	34.32	322.82	0.650	0.000	1.25	4.550	2.96	101.5	0.0	219.2
75.00		0.00	1.26	20.715	35.00	314.80	0.650	0.000	5.00	17.810	11.58	405.3	0.0	858.0
80.00		0.00	1.28	21.101	35.66	306.40	0.650	0.000	5.00	17.186	11.17	398.4	0.0	827.7
85.00		0.00	1.31	21.469	36.28	297.65	0.650	0.000	5.00	16.563	10.77	390.6	0.0	797.4
90.00		0.00	1.33	21.823	36.88	288.57	0.650	0.000	5.00	15.939	10.36	382.1	0.0	767.1
95.00		0.00	1.35	22.163	37.45	279.21	0.650	0.000	5.00	15.316	9.96	372.9	0.0	736.8
96.08	Bot - Section 4	0.00	1.35	22.235	37.57	277.15	0.650	0.000	1.08	3.236	2.10	79.1	0.0	155.6
100.0		0.00	1.37	22.490	38.00	269.58	0.650	0.000	3.92	11.701	7.61	289.1	0.0	1,113.5
100.7	Top - Section 3	0.00	1.37	22.538	38.08	268.11	0.650	0.000	0.75	2.197	1.43	54.4	0.0	209.0
105.0		0.00	1.39	22.806	38.54	265.59	0.650	0.000	4.25	12.185	7.92	305.2	0.0	585.7
108.0	Appertunance(s)	0.00	1.40	22.990	38.85	259.58	0.650	0.000	3.00	8.330	5.41	210.4	0.0	400.3
110.0		0.00	1.41	23.111	39.05	255.52	0.650	0.000	2.00	5.429	3.53	137.8	0.0	260.8
115.0		0.00	1.42	23.406	39.55	245.23	0.650	0.000	5.00	13.135	8.54	337.7	0.0	630.8
120.0		0.00	1.44	23.692	40.04	234.73	0.650	0.000	5.00	12.512	8.13	325.6	0.0	600.5
125.0		0.00	1.46	23.970	40.51	224.03	0.650	0.000	5.00	11.888	7.73	313.0	0.0	570.2
129.7	Bot - Section 5	0.00	1.47	24.227	40.94	213.71	0.650	0.000	4.75	10.716	6.97	285.2	0.0	513.6
130.0		0.00	1.48	24.241	40.96	213.16	0.650	0.000	0.25	0.561	0.36	14.9	0.0	48.7
133.5	Top - Section 4	0.00	1.49	24.430	41.28	205.26	0.650	0.000	3.58	7.876	5.12	211.4	0.0	683.5
135.0		0.00	1.49	24.503	41.41	207.21	0.650	0.000	1.42	3.025	1.97	81.4	0.0	121.0
140.0	Appertunance(s)	0.00	1.51	24.759	41.84	196.03	0.650	0.000	5.00	10.278	6.68	279.6	0.0	411.0
145.0		0.00	1.52	25.009	42.26	184.69	0.650	0.000	5.00	9.655	6.28	265.2	0.0	385.8
150.0		0.00	1.54	25.252	42.67	173.20	0.650	0.000	5.00	9.032	5.87	250.5	0.0	360.5
154.0	Appertunance(s)	0.00	1.55	25.443	42.99	163.91	0.650	0.000	4.00	6.776	4.40	189.4	0.0	270.2
155.0		0.00	1.55	25.490	43.07	161.58	0.650	0.000	1.00	1.632	1.06	45.7	0.0	65.0
160.0	Appertunance(s)	0.00	1.57	25.722	43.47	149.81	0.650	0.000	5.00	7.785	5.06	220.0	0.0	310.0
164.3	Bot - Section 6	0.00	1.58	25.919	43.80	139.51	0.650	0.000	4.33	6.243	4.06	177.7	0.0	248.3
165.0		0.00	1.58	25.949	43.85	137.92	0.650	0.000	0.67	0.947	0.62	27.0	0.0	66.7
167.2	Top - Section 5	0.00	1.59	26.050	44.02	132.53	0.650	0.000	2.25	3.113	2.02	89.1	0.0	219.3
170.0	Appertunance(s)	0.00	1.59	26.172	44.23	130.12	0.650	0.000	2.75	3.633	2.36	104.5	0.0	115.9
175.0		0.00	1.61	26.389	44.59	118.00	0.650	0.000	5.00	6.123	3.98	177.5	0.0	195.0
179.0	Appertunance(s)	0.00	1.62	26.560	44.88	108.22	0.650	0.000	4.00	4.449	2.89	129.8	0.0	141.5
Totals:								179.00			12,485.3	0.0	29,868.4	

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 5

**Load Case:** No Ice                      80.00 mph Wind with No Ice                      27 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

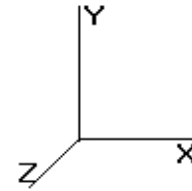
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
108.0	Flat Low Profile Pla	1	22.990	38.853	1.00	26.10	0.000	0.000	1,014.06	0.00	0.00	1,500.00
108.0	RFS FD9R6004/2C-3L	6	23.111	39.057	0.50	1.11	0.000	2.000	43.35	0.00	86.71	18.60
108.0	Alcatel-Lucent RRH2x	3	23.111	39.057	0.67	5.05	0.000	2.000	197.05	0.00	394.09	132.00
108.0	RFS DB-T1-6Z-8AB-0Z	1	23.111	39.057	0.67	3.75	0.000	2.000	146.54	0.00	293.08	110.00
108.0	Antel BXA-171063/8CF	3	23.111	39.057	0.90	7.83	0.000	2.000	305.82	0.00	611.64	31.50
108.0	Antel BXA-171063/12C	3	23.111	39.057	0.88	12.65	0.000	2.000	493.90	0.00	987.80	45.00
108.0	Antel BXA-80063/4CF	3	23.111	39.057	0.72	11.15	0.000	2.000	435.40	0.00	870.80	29.70
108.0	Antel BXA-70063-6CF-	3	23.111	39.057	0.77	17.86	0.000	2.000	697.42	0.00	1,394.83	51.00
140.0	Round Low Profile PI	1	24.759	41.843	1.00	21.70	0.000	0.000	907.99	0.00	0.00	1,500.00
140.0	Alcatel-Lucent 2X50W	3	24.759	41.843	0.67	4.82	0.000	0.000	201.85	0.00	0.00	192.00
140.0	Alcatel-Lucent 1900M	3	24.759	41.843	0.67	7.64	0.000	0.000	319.60	0.00	0.00	132.00
140.0	RFS APXV9ERR18-C-	1	24.759	41.843	0.85	7.02	0.000	0.000	293.78	0.00	0.00	62.00
140.0	RFS APXVSPP18-C-	2	24.759	41.843	0.82	13.55	0.000	0.000	566.82	0.00	0.00	114.00
140.0	Alcatel-Lucent TD-RR	3	24.759	41.843	0.67	8.64	0.000	0.000	361.65	0.00	0.00	198.30
140.0	RFS APXVTM14-C-I20	3	24.759	41.843	0.76	15.73	0.000	0.000	658.28	0.00	0.00	168.60
154.0	Round T-Arm	3	25.443	42.998	0.67	19.50	0.000	0.000	838.33	0.00	0.00	750.00
154.0	Powerwave LGP21401	6	25.443	42.998	0.50	3.87	0.000	0.000	166.40	0.00	0.00	84.60
154.0	Raycap DC6-48-60-18-	1	25.443	42.998	1.00	1.47	0.000	0.000	63.21	0.00	0.00	31.80
154.0	Ericsson RRUS 11 (Ba	6	25.443	42.998	0.67	11.82	0.000	0.000	508.19	0.00	0.00	330.00
154.0	Powerwave 7770.00	3	25.443	42.998	0.75	13.23	0.000	0.000	568.87	0.00	0.00	105.00
154.0	KMW AM-X-CD-16-65-	1	25.443	42.998	0.78	6.44	0.000	0.000	277.03	0.00	0.00	48.50
154.0	Andrew SBNH-	1	25.443	42.998	0.84	9.62	0.000	0.000	413.56	0.00	0.00	60.80
154.0	Powerwave P65-17-	1	25.443	42.998	0.80	9.18	0.000	0.000	394.55	0.00	0.00	59.00
160.0	Side Arms	1	25.722	43.470	1.00	8.50	0.000	0.000	369.50	0.00	0.00	560.00
160.0	RCU	3	25.722	43.470	0.50	0.24	0.000	0.000	10.43	0.00	0.00	3.00
160.0	DragonWave Horizon	3	25.722	43.470	0.50	1.26	0.000	0.000	54.77	0.00	0.00	34.50
160.0	DragonWave A-ANT-	3	25.722	43.470	1.00	14.07	0.000	0.000	611.63	0.00	0.00	81.30
160.0	Samsung U-RAS	3	25.722	43.470	0.50	2.73	0.000	0.000	118.67	0.00	0.00	99.00
160.0	Argus LLPX310R	3	25.722	43.470	0.70	10.12	0.000	0.000	440.01	0.00	0.00	86.10
170.0	Flat Low Profile Pla	1	26.172	44.230	1.00	26.10	0.000	0.000	1,154.40	0.00	0.00	1,500.00
170.0	Ericsson KRY 112 144	3	26.172	44.230	0.50	0.62	0.000	0.000	27.20	0.00	0.00	33.00
170.0	Ericsson AIR 21, 1.3	3	26.172	44.230	0.83	16.26	0.000	0.000	719.17	0.00	0.00	249.00
170.0	Ericsson AIR 21, 1.3	3	26.172	44.230	0.83	16.41	0.000	0.000	725.77	0.00	0.00	244.50
180.0	Round Low Profile PI	1	26.602	44.958	1.00	21.70	0.000	0.000	975.59	0.00	975.59	1,500.00
180.0	8' Yaqi	1	26.602	44.958	1.00	12.00	0.000	0.000	539.50	0.00	539.50	30.00
180.0	20' Dipole	1	27.017	45.658	1.00	7.52	0.000	10.000	343.35	0.00	3,776.84	60.00
									15,963.65			10,234.80

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 6

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

### Applied Segment Forces Summary

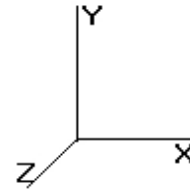
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	466.36	1,347.60	0.00	0.00
10.00	455.14	1,317.30	0.00	0.00
15.00	443.92	1,287.00	0.00	0.00
20.00	432.70	1,256.70	0.00	0.00
25.00	421.49	1,226.41	0.00	0.00
30.00	410.27	1,196.11	0.00	0.00
31.25	100.82	294.31	0.00	0.00
35.00	307.57	1,682.52	0.00	0.00
37.50	205.50	1,102.78	0.00	0.00
40.00	206.35	571.55	0.00	0.00
45.00	417.65	1,120.40	0.00	0.00
50.00	417.78	1,090.11	0.00	0.00
55.00	416.33	1,059.81	0.00	0.00
60.00	413.50	1,029.51	0.00	0.00
63.25	265.61	652.95	0.00	0.00
65.00	144.14	664.31	0.00	0.00
68.75	308.17	1,398.58	0.00	0.00
70.00	101.51	243.18	0.00	0.00
75.00	405.27	953.81	0.00	0.00
80.00	398.36	923.51	0.00	0.00
85.00	390.62	893.21	0.00	0.00
90.00	382.11	862.92	0.00	0.00
95.00	372.88	832.62	0.00	0.00
96.08	79.05	176.42	0.00	0.00
100.0	289.07	1,188.63	0.00	0.00
100.7	54.40	223.39	0.00	0.00
105.0	305.25	667.19	0.00	0.00
108.0	3,543.90	2,375.58	0.00	4,638.96
110.0	137.82	294.89	0.00	0.00
115.0	337.72	716.02	0.00	0.00
120.0	325.63	685.72	0.00	0.00
125.0	313.03	655.42	0.00	0.00
129.7	285.20	594.60	0.00	0.00
130.0	14.95	53.00	0.00	0.00
133.5	211.37	744.59	0.00	0.00
135.0	81.44	145.19	0.00	0.00
140.0	3,589.53	2,863.15	0.00	0.00
145.0	265.24	461.00	0.00	0.00
150.0	250.53	435.76	0.00	0.00
154.0	3,419.53	1,800.13	0.00	0.00
155.0	45.69	70.87	0.00	0.00
160.0	1,824.98	1,203.11	0.00	0.00
164.3	177.74	256.06	0.00	0.00
165.0	26.98	67.92	0.00	0.00
167.2	89.08	223.30	0.00	0.00
170.0	2,731.00	2,147.31	0.00	0.00
175.0	177.49	196.66	0.00	0.00
179.0	1,988.26	1,732.78	0.00	5,291.93

Pole : 370627  
Location : Newington CT, CT  
Height : 179.0 (ft)  
Base Dia : 62.93 (in)  
Top Dia : 12.75 (in)  
Shape : 18 Sides  
Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 7

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Totals:	28,448.96	42,985.87	0.00	9,930.88
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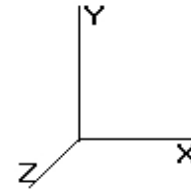


Pole : 370627  
 Location : Newington CT, CT  
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7/17/2014 9:52:13 AM

Page: 8

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Shaft Forces and Deflections**

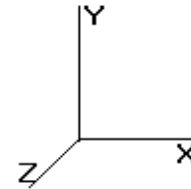
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-28.500	-42.952	0.000	0.000	0.000	-3,495.964	0.000	0.000	0.000	0.000
5.00	-28.129	-41.539	0.000	0.000	0.000	-3,353.469	-0.071	0.000	0.071	-0.132
10.00	-27.766	-40.156	0.000	0.000	0.000	-3,212.826	-0.283	0.000	0.283	-0.269
15.00	-27.412	-38.804	0.000	0.000	0.000	-3,073.997	-0.641	0.000	0.641	-0.409
20.00	-27.065	-37.481	0.000	0.000	0.000	-2,936.940	-1.147	0.000	1.147	-0.555
25.00	-26.727	-36.189	0.000	0.000	0.000	-2,801.617	-1.809	0.000	1.809	-0.704
30.00	-26.359	-34.953	0.000	0.000	0.000	-2,667.987	-2.630	0.000	2.630	-0.859
31.25	-26.303	-34.623	0.000	0.000	0.000	-2,635.037	-2.861	0.000	2.861	-0.900
35.00	-26.026	-32.900	0.000	0.000	0.000	-2,536.403	-3.617	0.000	3.617	-1.022
37.50	-25.847	-31.763	0.000	0.000	0.000	-2,471.337	-4.175	0.000	4.175	-1.106
40.00	-25.698	-31.140	0.000	0.000	0.000	-2,406.721	-4.777	0.000	4.777	-1.191
45.00	-25.342	-29.955	0.000	0.000	0.000	-2,278.236	-6.112	0.000	6.112	-1.354
50.00	-24.984	-28.801	0.000	0.000	0.000	-2,151.527	-7.621	0.000	7.621	-1.524
55.00	-24.624	-27.677	0.000	0.000	0.000	-2,026.610	-9.311	0.000	9.311	-1.698
60.00	-24.249	-26.597	0.000	0.000	0.000	-1,903.493	-11.186	0.000	11.186	-1.879
63.25	-24.004	-25.914	0.000	0.000	0.000	-1,824.684	-12.509	0.000	12.509	-2.002
65.00	-23.884	-25.210	0.000	0.000	0.000	-1,782.679	-13.255	0.000	13.255	-2.070
68.75	-23.564	-23.784	0.000	0.000	0.000	-1,693.114	-14.940	0.000	14.940	-2.216
70.00	-23.503	-23.495	0.000	0.000	0.000	-1,663.661	-15.527	0.000	15.527	-2.267
75.00	-23.135	-22.481	0.000	0.000	0.000	-1,546.147	-18.003	0.000	18.003	-2.457
80.00	-22.770	-21.498	0.000	0.000	0.000	-1,430.476	-20.680	0.000	20.680	-2.652
85.00	-22.410	-20.544	0.000	0.000	0.000	-1,316.628	-23.565	0.000	23.565	-2.853
90.00	-22.056	-19.622	0.000	0.000	0.000	-1,204.579	-26.663	0.000	26.663	-3.060
95.00	-21.680	-18.762	0.000	0.000	0.000	-1,094.300	-29.981	0.000	29.981	-3.272
96.08	-21.627	-18.548	0.000	0.000	0.000	-1,070.812	-30.729	0.000	30.729	-3.321
100.0	-21.299	-17.341	0.000	0.000	0.000	-986.108	-33.526	0.000	33.526	-3.495
100.7	-21.265	-17.079	0.000	0.000	0.000	-970.132	-34.077	0.000	34.077	-3.529
105.0	-20.964	-16.374	0.000	0.000	0.000	-879.757	-37.305	0.000	37.305	-3.720
108.0	-17.298	-14.205	0.000	0.000	0.000	-812.227	-39.683	0.000	39.683	-3.849
110.0	-17.177	-13.875	0.000	0.000	0.000	-777.631	-41.313	0.000	41.313	-3.937
115.0	-16.840	-13.121	0.000	0.000	0.000	-691.746	-45.549	0.000	45.549	-4.151
120.0	-16.512	-12.398	0.000	0.000	0.000	-607.549	-50.010	0.000	50.010	-4.370
125.0	-16.193	-11.707	0.000	0.000	0.000	-524.991	-54.703	0.000	54.703	-4.592
129.7	-15.881	-11.108	0.000	0.000	0.000	-448.074	-59.376	0.000	59.376	-4.804
130.0	-15.879	-11.032	0.000	0.000	0.000	-444.105	-59.627	0.000	59.627	-4.816
133.5	-15.625	-10.277	0.000	0.000	0.000	-387.205	-63.301	0.000	63.301	-4.978
135.0	-15.559	-10.098	0.000	0.000	0.000	-365.071	-64.787	0.000	64.787	-5.044
140.0	-11.756	-7.523	0.000	0.000	0.000	-287.279	-70.191	0.000	70.191	-5.278
145.0	-11.475	-7.045	0.000	0.000	0.000	-228.501	-75.833	0.000	75.833	-5.500
150.0	-11.204	-6.601	0.000	0.000	0.000	-171.127	-81.700	0.000	81.700	-5.710
154.0	-7.629	-5.143	0.000	0.000	0.000	-126.311	-86.546	0.000	86.546	-5.864
155.0	-7.585	-5.063	0.000	0.000	0.000	-118.682	-87.776	0.000	87.776	-5.902
160.0	-5.655	-4.043	0.000	0.000	0.000	-80.757	-94.037	0.000	94.037	-6.064
164.3	-5.455	-3.801	0.000	0.000	0.000	-56.254	-99.591	0.000	99.591	-6.187
165.0	-5.423	-3.733	0.000	0.000	0.000	-52.618	-100.454	0.000	100.454	-6.206
167.2	-5.314	-3.515	0.000	0.000	0.000	-40.415	-103.388	0.000	103.388	-6.263
170.0	-2.366	-1.677	0.000	0.000	0.000	-25.801	-107.006	0.000	107.006	-6.319
175.0	-2.170	-1.499	0.000	0.000	0.000	-13.970	-113.657	0.000	113.657	-6.400
179.0	-1.988	0.000	0.000	0.000	0.000	-5.292	-119.028	0.000	119.028	-6.442

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 9

<b>Load Case:</b> No Ice	80.00 mph Wind with No Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

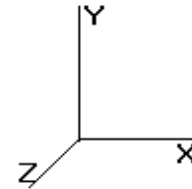
Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.58	0.77	0.00	0.00	0.00	36.40	37.01	49.4	0.0	0.749
5.00	0.57	0.78	0.00	0.00	0.00	36.66	37.25	50.0	0.0	0.745
10.00	0.57	0.79	0.00	0.00	0.00	36.91	37.50	50.6	0.0	0.741
15.00	0.56	0.80	0.00	0.00	0.00	37.17	37.75	51.2	0.0	0.737
20.00	0.56	0.81	0.00	0.00	0.00	37.42	38.00	51.8	0.0	0.734
25.00	0.55	0.82	0.00	0.00	0.00	37.67	38.25	52.0	0.0	0.736
30.00	0.55	0.83	0.00	0.00	0.00	37.91	38.48	52.0	0.0	0.740
31.25	0.55	0.84	0.00	0.00	0.00	37.97	38.54	52.0	0.0	0.742
35.00	0.53	0.85	0.00	0.00	0.00	38.15	38.71	52.0	0.0	0.745
37.50	0.51	0.84	0.00	0.00	0.00	37.17	37.71	52.0	0.0	0.725
40.00	0.51	0.85	0.00	0.00	0.00	37.26	37.80	52.0	0.0	0.727
45.00	0.50	0.86	0.00	0.00	0.00	37.43	37.96	52.0	0.0	0.730
50.00	0.50	0.87	0.00	0.00	0.00	37.58	38.11	52.0	0.0	0.733
55.00	0.50	0.89	0.00	0.00	0.00	37.70	38.23	52.0	0.0	0.735
60.00	0.49	0.91	0.00	0.00	0.00	37.79	38.32	52.0	0.0	0.737
63.25	0.49	0.92	0.00	0.00	0.00	37.84	38.37	52.0	0.0	0.738
65.00	0.48	0.92	0.00	0.00	0.00	37.86	38.38	52.0	0.0	0.738
68.75	0.46	0.92	0.00	0.00	0.00	36.58	37.07	52.0	0.0	0.713
70.00	0.46	0.92	0.00	0.00	0.00	36.57	37.07	52.0	0.0	0.713
75.00	0.45	0.94	0.00	0.00	0.00	36.49	36.98	52.0	0.0	0.711
80.00	0.45	0.96	0.00	0.00	0.00	36.34	36.82	52.0	0.0	0.708
85.00	0.45	0.98	0.00	0.00	0.00	36.10	36.58	52.0	0.0	0.704
90.00	0.44	1.01	0.00	0.00	0.00	35.75	36.24	52.0	0.0	0.697
95.00	0.44	1.03	0.00	0.00	0.00	35.28	35.77	52.0	0.0	0.688
96.08	0.44	1.04	0.00	0.00	0.00	35.16	35.65	52.0	0.0	0.686
100.00	0.43	1.06	0.00	0.00	0.00	34.66	35.13	52.0	0.0	0.676
100.75	0.41	1.04	0.00	0.00	0.00	33.06	33.53	52.0	0.0	0.645
105.00	0.41	1.06	0.00	0.00	0.00	32.32	32.79	52.0	0.0	0.631
108.00	0.37	0.90	0.00	0.00	0.00	31.52	31.93	52.0	0.0	0.614
110.00	0.37	0.91	0.00	0.00	0.00	31.33	31.74	52.0	0.0	0.611
115.00	0.36	0.94	0.00	0.00	0.00	30.70	31.10	52.0	0.0	0.598
120.00	0.36	0.97	0.00	0.00	0.00	29.84	30.25	52.0	0.0	0.582
125.00	0.36	1.00	0.00	0.00	0.00	28.70	29.11	52.0	0.0	0.560
129.75	0.36	1.03	0.00	0.00	0.00	27.27	27.69	52.0	0.0	0.533
130.00	0.36	1.04	0.00	0.00	0.00	27.19	27.60	52.0	0.0	0.531
133.58	0.41	1.24	0.00	0.00	0.00	29.24	29.73	52.0	0.0	0.572
135.00	0.41	1.26	0.00	0.00	0.00	28.52	29.00	52.0	0.0	0.558
140.00	0.32	1.01	0.00	0.00	0.00	25.39	25.77	52.0	0.0	0.496
145.00	0.32	1.05	0.00	0.00	0.00	23.04	23.44	52.0	0.0	0.451
150.00	0.32	1.10	0.00	0.00	0.00	19.87	20.29	52.0	0.0	0.390
154.00	0.27	0.80	0.00	0.00	0.00	16.55	16.87	52.0	0.0	0.325
155.00	0.27	0.81	0.00	0.00	0.00	16.04	16.37	52.0	0.0	0.315
160.00	0.23	0.65	0.00	0.00	0.00	12.87	13.15	52.0	0.0	0.253
164.33	0.23	0.68	0.00	0.00	0.00	10.46	10.76	52.0	0.0	0.207
165.00	0.23	0.68	0.00	0.00	0.00	10.03	10.33	52.0	0.0	0.199
167.25	0.28	0.84	0.00	0.00	0.00	9.72	10.11	52.0	0.0	0.194
170.00	0.14	0.40	0.00	0.00	0.00	6.90	7.08	52.0	0.0	0.136
175.00	0.14	0.40	0.00	0.00	0.00	4.61	4.80	52.0	0.0	0.092
179.00	0.00	0.40	0.00	0.00	0.00	2.10	2.21	52.0	0.0	0.043

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 10

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

### Shaft Segment Forces

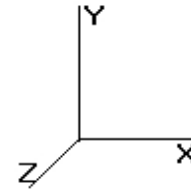
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)			
0.00		0.00	1.00	12.287	20.76	363.35	0.650	0.500	0.00	0.000	0.00	0.0	0.0			
5.00		0.00	1.00	12.287	20.76	354.72	0.650	0.500	5.00	26.329	17.11	355.4	191.1	1,442.9		
10.00		0.00	1.00	12.287	20.76	346.08	0.650	0.500	5.00	25.706	16.71	347.0	186.5	1,408.0		
15.00		0.00	1.00	12.287	20.76	337.44	0.650	0.500	5.00	25.082	16.30	338.5	181.9	1,373.1		
20.00		0.00	1.00	12.287	20.76	328.80	0.650	0.500	5.00	24.459	15.90	330.1	177.3	1,338.1		
25.00		0.00	1.00	12.287	20.76	320.17	0.650	0.500	5.00	23.835	15.49	321.7	172.7	1,303.2		
30.00		0.00	1.00	12.287	20.76	311.53	0.650	0.500	5.00	23.212	15.09	313.3	168.1	1,268.3		
31.25	Bot - Section 2	0.00	1.00	12.287	20.76	309.37	0.650	0.500	1.25	5.706	3.71	77.0	41.7	312.1		
35.00		0.00	1.01	12.496	21.11	305.45	0.650	0.500	3.75	17.117	11.13	235.0	124.3	1,734.9		
37.50	Top - Section 1	0.00	1.03	12.744	21.53	304.07	0.650	0.500	2.50	11.217	7.29	157.0	81.7	1,136.6		
40.00		0.00	1.05	12.982	21.93	306.90	0.650	0.500	2.50	11.061	7.19	157.7	80.6	604.2		
45.00		0.00	1.09	13.426	22.69	303.08	0.650	0.500	5.00	21.654	14.08	319.4	156.5	1,181.1		
50.00		0.00	1.12	13.836	23.38	298.51	0.650	0.500	5.00	21.031	13.67	319.6	151.9	1,146.2		
55.00		0.00	1.15	14.218	24.02	293.31	0.650	0.500	5.00	20.407	13.26	318.7	147.3	1,111.2		
60.00		0.00	1.18	14.576	24.63	287.57	0.650	0.500	5.00	19.784	12.86	316.8	142.7	1,076.3		
63.25	Bot - Section 3	0.00	1.20	14.797	25.00	283.59	0.650	0.500	3.25	12.526	8.14	203.6	90.8	681.4		
65.00		0.00	1.21	14.913	25.20	281.36	0.650	0.500	1.75	6.744	4.38	110.5	49.1	679.9		
68.75	Top - Section 2	0.00	1.23	15.154	25.61	276.43	0.650	0.500	3.75	14.196	9.23	236.3	102.7	1,429.4		
70.00		0.00	1.24	15.232	25.74	279.56	0.650	0.500	1.25	4.654	3.02	77.9	33.9	253.1		
75.00		0.00	1.26	15.536	26.25	272.62	0.650	0.500	5.00	18.226	11.85	311.0	131.1	989.1		
80.00		0.00	1.28	15.825	26.74	265.34	0.650	0.500	5.00	17.603	11.44	306.0	126.5	954.2		
85.00		0.00	1.31	16.101	27.21	257.76	0.650	0.500	5.00	16.980	11.04	300.3	121.9	919.3		
90.00		0.00	1.33	16.366	27.65	249.90	0.650	0.500	5.00	16.356	10.63	294.1	117.3	884.3		
95.00		0.00	1.35	16.621	28.09	241.80	0.650	0.500	5.00	15.733	10.23	287.3	112.7	849.4		
96.08	Bot - Section 4	0.00	1.35	16.675	28.18	240.01	0.650	0.500	1.08	3.327	2.16	60.9	24.2	179.8		
100.0		0.00	1.37	16.866	28.50	233.45	0.650	0.500	3.92	12.027	7.82	222.8	86.4	1,200.0		
100.7	Top - Section 3	0.00	1.37	16.902	28.56	232.18	0.650	0.500	0.75	2.260	1.47	42.0	16.5	225.5		
105.0		0.00	1.39	17.103	28.90	230.00	0.650	0.500	4.25	12.539	8.15	235.6	89.9	675.6		
108.0	Appertunance(s)	0.00	1.40	17.241	29.13	224.79	0.650	0.500	3.00	8.580	5.58	162.5	61.8	462.1		
110.0		0.00	1.41	17.332	29.29	221.28	0.650	0.500	2.00	5.595	3.64	106.5	40.5	301.2		
115.0		0.00	1.42	17.554	29.66	212.36	0.650	0.500	5.00	13.552	8.81	261.3	96.5	727.3		
120.0		0.00	1.44	17.768	30.02	203.27	0.650	0.500	5.00	12.928	8.40	252.3	91.9	692.4		
125.0		0.00	1.46	17.977	30.38	194.01	0.650	0.500	5.00	12.305	8.00	243.0	87.3	657.4		
129.7	Bot - Section 5	0.00	1.47	18.169	30.70	185.07	0.650	0.500	4.75	11.112	7.22	221.8	78.7	592.4		
130.0		0.00	1.48	18.179	30.72	184.60	0.650	0.500	0.25	0.582	0.38	11.6	4.2	53.0		
133.5	Top - Section 4	0.00	1.49	18.321	30.96	177.76	0.650	0.500	3.58	8.175	5.31	164.5	58.3	741.7		
135.0		0.00	1.49	18.376	31.05	179.44	0.650	0.500	1.42	3.143	2.04	63.5	22.7	143.7		
140.0	Appertunance(s)	0.00	1.51	18.568	31.38	169.76	0.650	0.500	5.00	10.695	6.95	218.2	75.4	486.4		
145.0		0.00	1.52	18.755	31.69	159.94	0.650	0.500	5.00	10.072	6.55	207.5	70.7	456.5		
150.0		0.00	1.54	18.938	32.00	149.99	0.650	0.500	5.00	9.448	6.14	196.6	66.1	426.6		
154.0	Appertunance(s)	0.00	1.55	19.081	32.24	141.95	0.650	0.500	4.00	7.110	4.62	149.0	49.9	320.2		
155.0		0.00	1.55	19.116	32.30	139.92	0.650	0.500	1.00	1.715	1.11	36.0	12.3	77.3		
160.0	Appertunance(s)	0.00	1.57	19.290	32.60	129.74	0.650	0.500	5.00	8.201	5.33	173.8	56.9	366.9		
164.3	Bot - Section 6	0.00	1.58	19.438	32.85	120.82	0.650	0.500	4.33	6.604	4.29	141.0	45.8	294.1		
165.0		0.00	1.58	19.461	32.88	119.44	0.650	0.500	0.67	1.002	0.65	21.4	7.2	73.9		
167.2	Top - Section 5	0.00	1.59	19.536	33.01	114.77	0.650	0.500	2.25	3.301	2.15	70.8	23.3	242.5		
170.0	Appertunance(s)	0.00	1.59	19.628	33.17	112.68	0.650	0.500	2.75	3.862	2.51	83.3	27.1	142.9		
175.0		0.00	1.61	19.791	33.44	102.19	0.650	0.500	5.00	6.540	4.25	142.2	44.6	239.6		
179.0	Appertunance(s)	0.00	1.62	19.919	33.66	93.722	0.650	0.500	4.00	4.783	3.11	104.7	32.7	174.2		
Totals:								179.00						9,627.0	4,161.0	34,029.4

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
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Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 11

**Load Case:** Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Segment Forces**

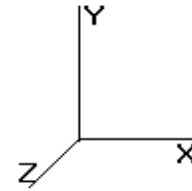
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
108.0	Flat Low Profile Pla	1	17.241	29.138	1.00	31.60	0.000	0.000	920.76	0.00	0.00	1,700.00
108.0	RFS FD9R6004/2C-3L	6	17.332	29.291	0.50	1.50	0.000	2.000	43.94	0.00	87.87	32.40
108.0	Alcatel-Lucent RRH2x	3	17.332	29.291	0.67	5.77	0.000	2.000	168.97	0.00	337.94	184.20
108.0	RFS DB-T1-6Z-8AB-0Z	1	17.332	29.291	0.67	4.07	0.000	2.000	119.32	0.00	238.64	144.50
108.0	Antel BXA-171063/8CF	3	17.332	29.291	0.90	9.10	0.000	2.000	266.52	0.00	533.04	89.40
108.0	Antel BXA-171063/12C	3	17.332	29.291	0.88	14.41	0.000	2.000	422.21	0.00	844.43	127.20
108.0	Antel BXA-80063/4CF	3	17.332	29.291	0.72	12.40	0.000	2.000	363.23	0.00	726.45	113.18
108.0	Antel BXA-70063-6CF-	3	17.332	29.291	0.77	19.73	0.000	2.000	577.83	0.00	1,155.66	174.00
140.0	Round Low Profile PI	1	18.568	31.381	1.00	27.20	0.000	0.000	853.55	0.00	0.00	1,700.00
140.0	Alcatel-Lucent 2X50W	3	18.568	31.381	0.67	5.47	0.000	0.000	171.56	0.00	0.00	213.90
140.0	Alcatel-Lucent 1900M	3	18.568	31.381	0.67	8.44	0.000	0.000	264.91	0.00	0.00	225.60
140.0	RFS APXV9ERR18-C-	1	18.568	31.381	0.85	7.72	0.000	0.000	242.20	0.00	0.00	113.90
140.0	RFS APXVSP18-C-	2	18.568	31.381	0.82	14.89	0.000	0.000	467.29	0.00	0.00	213.00
140.0	Alcatel-Lucent TD-RR	3	18.568	31.381	0.67	8.90	0.000	0.000	279.42	0.00	0.00	248.10
140.0	RFS APXVTM14-C-I20	3	18.568	31.381	0.76	17.28	0.000	0.000	542.33	0.00	0.00	277.20
154.0	Round T-Arm	3	19.081	32.247	0.67	24.32	0.000	0.000	784.28	0.00	0.00	942.00
154.0	Powerwave LGP21401	6	19.081	32.247	0.50	1.02	0.000	0.000	32.89	0.00	0.00	46.20
154.0	Raycap DC6-48-60-18-	1	19.081	32.247	1.00	1.67	0.000	0.000	53.85	0.00	0.00	49.50
154.0	Ericsson RRUS 11 (Ba	6	19.081	32.247	0.67	13.23	0.000	0.000	426.49	0.00	0.00	445.80
154.0	Powerwave 7770.00	3	19.081	32.247	0.75	14.69	0.000	0.000	473.79	0.00	0.00	202.89
154.0	KMW AM-X-CD-16-65-	1	19.081	32.247	0.78	7.08	0.000	0.000	228.39	0.00	0.00	95.00
154.0	Andrew SBNH-	1	19.081	32.247	0.84	10.39	0.000	0.000	335.07	0.00	0.00	126.70
154.0	Powerwave P65-17-	1	19.081	32.247	0.80	9.91	0.000	0.000	319.63	0.00	0.00	121.00
160.0	Side Arms	1	19.290	32.601	1.00	10.50	0.000	0.000	342.31	0.00	0.00	680.00
160.0	RCU	3	19.290	32.601	0.50	0.39	0.000	0.000	12.71	0.00	0.00	7.50
160.0	DragonWave Horizon	3	19.290	32.601	0.50	1.54	0.000	0.000	50.37	0.00	0.00	53.70
160.0	DragonWave A-ANT-	3	19.290	32.601	1.00	15.15	0.000	0.000	493.90	0.00	0.00	165.30
160.0	Samsung U-RAS	3	19.290	32.601	0.50	3.15	0.000	0.000	102.69	0.00	0.00	135.00
160.0	Argus LLPX310R	3	19.290	32.601	0.70	11.26	0.000	0.000	366.96	0.00	0.00	163.80
170.0	Flat Low Profile Pla	1	19.628	33.171	1.00	31.60	0.000	0.000	1,048.19	0.00	0.00	1,700.00
170.0	Ericsson KRY 112 144	3	19.628	33.171	0.50	0.83	0.000	0.000	27.37	0.00	0.00	42.30
170.0	Ericsson AIR 21, 1.3	3	19.628	33.171	0.83	17.93	0.000	0.000	594.68	0.00	0.00	397.80
170.0	Ericsson AIR 21, 1.3	3	19.628	33.171	0.83	17.93	0.000	0.000	594.68	0.00	0.00	397.80
180.0	Round Low Profile PI	1	19.951	33.717	1.00	27.20	0.000	0.000	917.09	0.00	917.09	1,700.00
180.0	8' Yaqi	1	19.951	33.717	1.00	21.59	0.000	0.000	727.94	0.00	727.94	127.20
180.0	20' Dipole	1	20.261	34.242	1.00	11.63	0.000	10.000	398.23	0.00	4,380.52	147.40
									14,035.56			13,303.47

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 12

**Load Case:** Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

**Applied Segment Forces Summary**

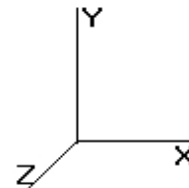
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	355.38	1,538.73	0.00	0.00
10.00	346.96	1,503.82	0.00	0.00
15.00	338.55	1,468.90	0.00	0.00
20.00	330.13	1,433.99	0.00	0.00
25.00	321.72	1,399.07	0.00	0.00
30.00	313.30	1,364.16	0.00	0.00
31.25	77.01	336.03	0.00	0.00
35.00	234.96	1,806.82	0.00	0.00
37.50	157.03	1,184.50	0.00	0.00
40.00	157.73	652.12	0.00	0.00
45.00	319.36	1,276.92	0.00	0.00
50.00	319.65	1,242.00	0.00	0.00
55.00	318.73	1,207.09	0.00	0.00
60.00	316.78	1,172.18	0.00	0.00
63.25	203.60	743.73	0.00	0.00
65.00	110.49	713.43	0.00	0.00
68.75	236.32	1,501.26	0.00	0.00
70.00	77.87	277.11	0.00	0.00
75.00	311.05	1,084.94	0.00	0.00
80.00	306.00	1,050.02	0.00	0.00
85.00	300.32	1,015.11	0.00	0.00
90.00	294.06	980.19	0.00	0.00
95.00	287.25	945.28	0.00	0.00
96.08	60.94	200.61	0.00	0.00
100.0	222.84	1,275.07	0.00	0.00
100.7	41.96	239.84	0.00	0.00
105.0	235.58	757.07	0.00	0.00
108.0	3,045.28	3,084.45	0.00	3,924.04
110.0	106.53	335.34	0.00	0.00
115.0	261.31	812.53	0.00	0.00
120.0	252.34	777.61	0.00	0.00
125.0	242.99	742.70	0.00	0.00
129.7	221.79	673.34	0.00	0.00
130.0	11.63	57.23	0.00	0.00
133.5	164.53	802.84	0.00	0.00
135.0	63.46	167.85	0.00	0.00
140.0	3,039.42	3,563.31	0.00	0.00
145.0	207.51	531.74	0.00	0.00
150.0	196.56	501.88	0.00	0.00
154.0	2,803.41	2,409.46	0.00	0.00
155.0	36.02	83.17	0.00	0.00
160.0	1,542.74	1,601.40	0.00	0.00
164.3	141.01	301.89	0.00	0.00
165.0	21.42	75.10	0.00	0.00
167.2	70.83	246.59	0.00	0.00
170.0	2,348.19	2,685.77	0.00	0.00
175.0	142.17	241.24	0.00	0.00
179.0	2,147.92	2,150.09	0.00	6,025.56

Pole : 370627  
Location : Newington CT, CT  
Height : 179.0 (ft)  
Base Dia : 62.93 (in)  
Top Dia : 12.75 (in)  
Shape : 18 Sides  
Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:13 AM

Page: 13

**Load Case:** Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

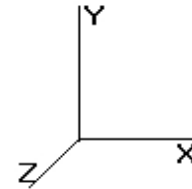
Totals: 23,662.60 50,215.50 0.00 9,949.60

Pole : 370627  
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7/17/2014 9:52:13 AM

Page: 14

**Load Case:** Ice

69.28 mph Wind with Ice

27 Iterations

Gust Response Factor : 1.69  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Shaft Forces and Deflections**

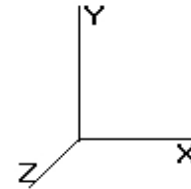
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-23.714	-50.191	0.000	0.000	0.000	-3,012.165	0.000	0.000	0.000	0.000
5.00	-23.455	-48.605	0.000	0.000	0.000	-2,893.600	-0.061	0.000	0.061	-0.114
10.00	-23.202	-47.054	0.000	0.000	0.000	-2,776.327	-0.244	0.000	0.244	-0.232
15.00	-22.954	-45.538	0.000	0.000	0.000	-2,660.320	-0.553	0.000	0.553	-0.353
20.00	-22.712	-44.056	0.000	0.000	0.000	-2,545.552	-0.990	0.000	0.990	-0.479
25.00	-22.475	-42.608	0.000	0.000	0.000	-2,431.995	-1.562	0.000	1.562	-0.609
30.00	-22.207	-41.215	0.000	0.000	0.000	-2,319.620	-2.273	0.000	2.273	-0.744
31.25	-22.176	-40.852	0.000	0.000	0.000	-2,291.861	-2.472	0.000	2.472	-0.779
35.00	-21.976	-39.015	0.000	0.000	0.000	-2,208.704	-3.127	0.000	3.127	-0.885
37.50	-21.848	-37.805	0.000	0.000	0.000	-2,153.765	-3.610	0.000	3.610	-0.958
40.00	-21.750	-37.114	0.000	0.000	0.000	-2,099.147	-4.132	0.000	4.132	-1.032
45.00	-21.497	-35.790	0.000	0.000	0.000	-1,990.401	-5.290	0.000	5.290	-1.175
50.00	-21.241	-34.499	0.000	0.000	0.000	-1,882.919	-6.601	0.000	6.601	-1.323
55.00	-20.983	-33.243	0.000	0.000	0.000	-1,776.717	-8.069	0.000	8.069	-1.476
60.00	-20.709	-32.032	0.000	0.000	0.000	-1,671.803	-9.700	0.000	9.700	-1.635
63.25	-20.529	-31.265	0.000	0.000	0.000	-1,604.499	-10.851	0.000	10.851	-1.743
65.00	-20.447	-30.521	0.000	0.000	0.000	-1,568.574	-11.501	0.000	11.501	-1.803
68.75	-20.206	-28.998	0.000	0.000	0.000	-1,491.898	-12.969	0.000	12.969	-1.932
70.00	-20.172	-28.686	0.000	0.000	0.000	-1,466.642	-13.481	0.000	13.481	-1.976
75.00	-19.904	-27.554	0.000	0.000	0.000	-1,365.783	-15.640	0.000	15.640	-2.144
80.00	-19.639	-26.457	0.000	0.000	0.000	-1,266.265	-17.977	0.000	17.977	-2.316
85.00	-19.376	-25.394	0.000	0.000	0.000	-1,168.074	-20.498	0.000	20.498	-2.494
90.00	-19.118	-24.366	0.000	0.000	0.000	-1,071.194	-23.209	0.000	23.209	-2.678
95.00	-18.832	-23.398	0.000	0.000	0.000	-975.607	-26.115	0.000	26.115	-2.867
96.08	-18.802	-23.168	0.000	0.000	0.000	-955.206	-26.770	0.000	26.770	-2.911
100.0	-18.548	-21.877	0.000	0.000	0.000	-881.568	-29.223	0.000	29.223	-3.066
100.7	-18.531	-21.606	0.000	0.000	0.000	-867.657	-29.707	0.000	29.707	-3.097
105.0	-18.306	-20.818	0.000	0.000	0.000	-788.901	-32.541	0.000	32.541	-3.268
108.0	-15.117	-17.890	0.000	0.000	0.000	-730.059	-34.631	0.000	34.631	-3.384
110.0	-15.033	-17.526	0.000	0.000	0.000	-699.826	-36.064	0.000	36.064	-3.462
115.0	-14.779	-16.680	0.000	0.000	0.000	-624.662	-39.792	0.000	39.792	-3.655
120.0	-14.531	-15.870	0.000	0.000	0.000	-550.770	-43.725	0.000	43.725	-3.853
125.0	-14.290	-15.097	0.000	0.000	0.000	-478.114	-47.867	0.000	47.867	-4.055
129.7	-14.045	-14.417	0.000	0.000	0.000	-410.237	-51.998	0.000	51.998	-4.249
130.0	-14.050	-14.341	0.000	0.000	0.000	-406.727	-52.220	0.000	52.220	-4.260
133.5	-13.849	-13.528	0.000	0.000	0.000	-356.382	-55.472	0.000	55.472	-4.408
135.0	-13.806	-13.331	0.000	0.000	0.000	-336.763	-56.789	0.000	56.789	-4.469
140.0	-10.529	-9.983	0.000	0.000	0.000	-267.732	-61.584	0.000	61.584	-4.686
145.0	-10.311	-9.434	0.000	0.000	0.000	-215.088	-66.600	0.000	66.600	-4.894
150.0	-10.099	-8.921	0.000	0.000	0.000	-163.531	-71.829	0.000	71.829	-5.093
154.0	-7.100	-6.763	0.000	0.000	0.000	-123.136	-76.156	0.000	76.156	-5.242
155.0	-7.069	-6.670	0.000	0.000	0.000	-116.036	-77.257	0.000	77.257	-5.279
160.0	-5.396	-5.207	0.000	0.000	0.000	-80.693	-82.867	0.000	82.867	-5.438
164.3	-5.232	-4.914	0.000	0.000	0.000	-57.311	-87.855	0.000	87.855	-5.562
165.0	-5.207	-4.838	0.000	0.000	0.000	-53.823	-88.632	0.000	88.632	-5.582
167.2	-5.117	-4.594	0.000	0.000	0.000	-42.107	-91.273	0.000	91.273	-5.640
170.0	-2.518	-2.150	0.000	0.000	0.000	-28.034	-94.535	0.000	94.535	-5.700
175.0	-2.355	-1.921	0.000	0.000	0.000	-15.444	-100.545	0.000	100.545	-5.787
179.0	-2.148	0.000	0.000	0.000	0.000	-6.026	-105.409	0.000	105.409	-5.835

Pole : 370627  
 Location : Newington CT, CT  
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7/17/2014 9:52:13 AM

Page: 15

<b>Load Case:</b> Ice	69.28 mph Wind with Ice	27 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.67	0.64	0.00	0.00	0.00	31.37	32.06	49.4	0.0	0.649
5.00	0.67	0.65	0.00	0.00	0.00	31.63	32.32	50.0	0.0	0.646
10.00	0.66	0.66	0.00	0.00	0.00	31.90	32.58	50.6	0.0	0.644
15.00	0.66	0.67	0.00	0.00	0.00	32.17	32.84	51.2	0.0	0.641
20.00	0.65	0.68	0.00	0.00	0.00	32.43	33.11	51.8	0.0	0.639
25.00	0.65	0.69	0.00	0.00	0.00	32.70	33.37	52.0	0.0	0.642
30.00	0.65	0.70	0.00	0.00	0.00	32.96	33.63	52.0	0.0	0.647
31.25	0.65	0.71	0.00	0.00	0.00	33.03	33.69	52.0	0.0	0.648
35.00	0.63	0.71	0.00	0.00	0.00	33.22	33.87	52.0	0.0	0.652
37.50	0.61	0.71	0.00	0.00	0.00	32.39	33.02	52.0	0.0	0.635
40.00	0.61	0.72	0.00	0.00	0.00	32.50	33.13	52.0	0.0	0.637
45.00	0.60	0.73	0.00	0.00	0.00	32.70	33.33	52.0	0.0	0.641
50.00	0.60	0.74	0.00	0.00	0.00	32.89	33.51	52.0	0.0	0.645
55.00	0.60	0.76	0.00	0.00	0.00	33.05	33.67	52.0	0.0	0.648
60.00	0.59	0.77	0.00	0.00	0.00	33.19	33.81	52.0	0.0	0.651
63.25	0.59	0.78	0.00	0.00	0.00	33.28	33.89	52.0	0.0	0.652
65.00	0.58	0.79	0.00	0.00	0.00	33.32	33.93	52.0	0.0	0.653
68.75	0.56	0.79	0.00	0.00	0.00	32.23	32.82	52.0	0.0	0.631
70.00	0.56	0.79	0.00	0.00	0.00	32.24	32.83	52.0	0.0	0.632
75.00	0.56	0.81	0.00	0.00	0.00	32.23	32.82	52.0	0.0	0.631
80.00	0.55	0.83	0.00	0.00	0.00	32.16	32.75	52.0	0.0	0.630
85.00	0.55	0.85	0.00	0.00	0.00	32.03	32.61	52.0	0.0	0.627
90.00	0.55	0.87	0.00	0.00	0.00	31.80	32.38	52.0	0.0	0.623
95.00	0.55	0.89	0.00	0.00	0.00	31.45	32.04	52.0	0.0	0.616
96.08	0.55	0.90	0.00	0.00	0.00	31.37	31.96	52.0	0.0	0.615
100.00	0.54	0.92	0.00	0.00	0.00	30.98	31.56	52.0	0.0	0.607
100.75	0.52	0.91	0.00	0.00	0.00	29.57	30.14	52.0	0.0	0.580
105.00	0.52	0.93	0.00	0.00	0.00	28.99	29.55	52.0	0.0	0.569
108.00	0.46	0.79	0.00	0.00	0.00	28.33	28.83	52.0	0.0	0.555
110.00	0.46	0.80	0.00	0.00	0.00	28.20	28.69	52.0	0.0	0.552
115.00	0.46	0.82	0.00	0.00	0.00	27.72	28.22	52.0	0.0	0.543
120.00	0.46	0.85	0.00	0.00	0.00	27.06	27.56	52.0	0.0	0.530
125.00	0.46	0.88	0.00	0.00	0.00	26.14	26.65	52.0	0.0	0.513
129.75	0.47	0.92	0.00	0.00	0.00	24.97	25.48	52.0	0.0	0.490
130.00	0.46	0.92	0.00	0.00	0.00	24.90	25.41	52.0	0.0	0.489
133.58	0.53	1.10	0.00	0.00	0.00	26.91	27.52	52.0	0.0	0.529
135.00	0.54	1.12	0.00	0.00	0.00	26.30	26.91	52.0	0.0	0.518
140.00	0.43	0.91	0.00	0.00	0.00	23.67	24.14	52.0	0.0	0.464
145.00	0.43	0.95	0.00	0.00	0.00	21.69	22.18	52.0	0.0	0.427
150.00	0.44	1.00	0.00	0.00	0.00	18.99	19.50	52.0	0.0	0.375
154.00	0.35	0.74	0.00	0.00	0.00	16.13	16.53	52.0	0.0	0.318
155.00	0.35	0.75	0.00	0.00	0.00	15.69	16.09	52.0	0.0	0.310
160.00	0.30	0.62	0.00	0.00	0.00	12.86	13.20	52.0	0.0	0.254
164.33	0.30	0.65	0.00	0.00	0.00	10.65	11.02	52.0	0.0	0.212
165.00	0.30	0.66	0.00	0.00	0.00	10.26	10.62	52.0	0.0	0.204
167.25	0.36	0.81	0.00	0.00	0.00	10.13	10.59	52.0	0.0	0.204
170.00	0.18	0.42	0.00	0.00	0.00	7.50	7.72	52.0	0.0	0.148
175.00	0.18	0.44	0.00	0.00	0.00	5.09	5.33	52.0	0.0	0.102
179.00	0.00	0.44	0.00	0.00	0.00	2.39	2.51	52.0	0.0	0.048

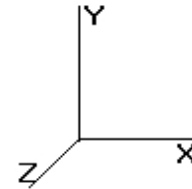


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7/17/2014 9:52:13 AM

Page: 16

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

### Shaft Segment Forces

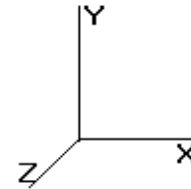
Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	6.400	10.81	262.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	6.400	10.81	256.00	0.650	0.000	5.00	25.912	16.84	182.2	0.0	1,251.7
10.00		0.00	1.00	6.400	10.81	249.77	0.650	0.000	5.00	25.289	16.44	177.8	0.0	1,221.4
15.00		0.00	1.00	6.400	10.81	243.53	0.650	0.000	5.00	24.665	16.03	173.4	0.0	1,191.2
20.00		0.00	1.00	6.400	10.81	237.30	0.650	0.000	5.00	24.042	15.63	169.0	0.0	1,160.9
25.00		0.00	1.00	6.400	10.81	231.07	0.650	0.000	5.00	23.419	15.22	164.6	0.0	1,130.6
30.00		0.00	1.00	6.400	10.81	224.83	0.650	0.000	5.00	22.795	14.82	160.3	0.0	1,100.3
31.25	Bot - Section 2	0.00	1.00	6.400	10.81	223.27	0.650	0.000	1.25	5.602	3.64	39.4	0.0	270.3
35.00		0.00	1.01	6.509	10.99	220.44	0.650	0.000	3.75	16.805	10.92	120.1	0.0	1,610.6
37.50	Top - Section 1	0.00	1.03	6.638	11.21	219.45	0.650	0.000	2.50	11.009	7.16	80.3	0.0	1,054.9
40.00		0.00	1.05	6.762	11.42	221.49	0.650	0.000	2.50	10.852	7.05	80.6	0.0	523.6
45.00		0.00	1.09	6.993	11.81	218.73	0.650	0.000	5.00	21.238	13.80	163.1	0.0	1,024.6
50.00		0.00	1.12	7.207	12.17	215.44	0.650	0.000	5.00	20.614	13.40	163.2	0.0	994.3
55.00		0.00	1.15	7.406	12.51	211.68	0.650	0.000	5.00	19.991	12.99	162.6	0.0	964.0
60.00		0.00	1.18	7.592	12.83	207.54	0.650	0.000	5.00	19.367	12.59	161.5	0.0	933.7
63.25	Bot - Section 3	0.00	1.20	7.707	13.02	204.67	0.650	0.000	3.25	12.255	7.97	103.8	0.0	590.6
65.00		0.00	1.21	7.768	13.12	203.06	0.650	0.000	1.75	6.599	4.29	56.3	0.0	630.8
68.75	Top - Section 2	0.00	1.23	7.893	13.34	199.50	0.650	0.000	3.75	13.883	9.02	120.4	0.0	1,326.7
70.00		0.00	1.24	7.934	13.40	201.76	0.650	0.000	1.25	4.550	2.96	39.7	0.0	219.2
75.00		0.00	1.26	8.092	13.67	196.75	0.650	0.000	5.00	17.810	11.58	158.3	0.0	858.0
80.00		0.00	1.28	8.242	13.93	191.50	0.650	0.000	5.00	17.186	11.17	155.6	0.0	827.7
85.00		0.00	1.31	8.387	14.17	186.03	0.650	0.000	5.00	16.563	10.77	152.6	0.0	797.4
90.00		0.00	1.33	8.525	14.40	180.36	0.650	0.000	5.00	15.939	10.36	149.3	0.0	767.1
95.00		0.00	1.35	8.657	14.63	174.50	0.650	0.000	5.00	15.316	9.96	145.7	0.0	736.8
96.08	Bot - Section 4	0.00	1.35	8.685	14.67	173.21	0.650	0.000	1.08	3.236	2.10	30.9	0.0	155.6
100.0		0.00	1.37	8.785	14.84	168.48	0.650	0.000	3.92	11.701	7.61	112.9	0.0	1,113.5
100.7	Top - Section 3	0.00	1.37	8.804	14.87	167.57	0.650	0.000	0.75	2.197	1.43	21.2	0.0	209.0
105.0		0.00	1.39	8.908	15.05	166.00	0.650	0.000	4.25	12.185	7.92	119.2	0.0	585.7
108.0	Appertunance(s)	0.00	1.40	8.980	15.17	162.23	0.650	0.000	3.00	8.330	5.41	82.2	0.0	400.3
110.0		0.00	1.41	9.028	15.25	159.70	0.650	0.000	2.00	5.429	3.53	53.8	0.0	260.8
115.0		0.00	1.42	9.143	15.45	153.26	0.650	0.000	5.00	13.135	8.54	131.9	0.0	630.8
120.0		0.00	1.44	9.255	15.64	146.70	0.650	0.000	5.00	12.512	8.13	127.2	0.0	600.5
125.0		0.00	1.46	9.363	15.82	140.02	0.650	0.000	5.00	11.888	7.73	122.3	0.0	570.2
129.7	Bot - Section 5	0.00	1.47	9.464	15.99	133.57	0.650	0.000	4.75	10.716	6.97	111.4	0.0	513.6
130.0		0.00	1.48	9.469	16.00	133.22	0.650	0.000	0.25	0.561	0.36	5.8	0.0	48.7
133.5	Top - Section 4	0.00	1.49	9.543	16.12	128.29	0.650	0.000	3.58	7.876	5.12	82.6	0.0	683.5
135.0		0.00	1.49	9.572	16.17	129.51	0.650	0.000	1.42	3.025	1.97	31.8	0.0	121.0
140.0	Appertunance(s)	0.00	1.51	9.672	16.34	122.52	0.650	0.000	5.00	10.278	6.68	109.2	0.0	411.0
145.0		0.00	1.52	9.769	16.51	115.43	0.650	0.000	5.00	9.655	6.28	103.6	0.0	385.8
150.0		0.00	1.54	9.864	16.67	108.25	0.650	0.000	5.00	9.032	5.87	97.9	0.0	360.5
154.0	Appertunance(s)	0.00	1.55	9.939	16.79	102.44	0.650	0.000	4.00	6.776	4.40	74.0	0.0	270.2
155.0		0.00	1.55	9.957	16.82	100.98	0.650	0.000	1.00	1.632	1.06	17.8	0.0	65.0
160.0	Appertunance(s)	0.00	1.57	10.048	16.98	93.636	0.650	0.000	5.00	7.785	5.06	85.9	0.0	310.0
164.3	Bot - Section 6	0.00	1.58	10.125	17.11	87.199	0.650	0.000	4.33	6.243	4.06	69.4	0.0	248.3
165.0		0.00	1.58	10.136	17.13	86.203	0.650	0.000	0.67	0.947	0.62	10.5	0.0	66.7
167.2	Top - Section 5	0.00	1.59	10.176	17.19	82.833	0.650	0.000	2.25	3.113	2.02	34.8	0.0	219.3
170.0	Appertunance(s)	0.00	1.59	10.223	17.27	81.326	0.650	0.000	2.75	3.633	2.36	40.8	0.0	115.9
175.0		0.00	1.61	10.308	17.42	73.751	0.650	0.000	5.00	6.123	3.98	69.3	0.0	195.0
179.0	Appertunance(s)	0.00	1.62	10.375	17.53	67.640	0.650	0.000	4.00	4.449	2.89	50.7	0.0	141.5
<b>Totals:</b>								179.00			4,877.1	0.0	29,868.4	

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:14 AM

Page: 17

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Discrete Appurtenance Segment Forces**

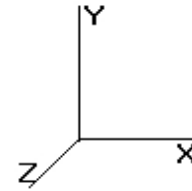
Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
108.0	Flat Low Profile Pla	1	8.980	15.177	1.00	26.10	0.000	0.000	396.12	0.00	0.00	1,500.00
108.0	RFS FD9R6004/2C-3L	6	9.028	15.257	0.50	1.11	0.000	2.000	16.93	0.00	33.87	18.60
108.0	Alcatel-Lucent RRH2x	3	9.028	15.257	0.67	5.05	0.000	2.000	76.97	0.00	153.94	132.00
108.0	RFS DB-T1-6Z-8AB-0Z	1	9.028	15.257	0.67	3.75	0.000	2.000	57.24	0.00	114.49	110.00
108.0	Antel BXA-171063/8CF	3	9.028	15.257	0.90	7.83	0.000	2.000	119.46	0.00	238.92	31.50
108.0	Antel BXA-171063/12C	3	9.028	15.257	0.88	12.65	0.000	2.000	192.93	0.00	385.86	45.00
108.0	Antel BXA-80063/4CF	3	9.028	15.257	0.72	11.15	0.000	2.000	170.08	0.00	340.16	29.70
108.0	Antel BXA-70063-6CF-	3	9.028	15.257	0.77	17.86	0.000	2.000	272.43	0.00	544.86	51.00
140.0	Round Low Profile PI	1	9.672	16.345	1.00	21.70	0.000	0.000	354.68	0.00	0.00	1,500.00
140.0	Alcatel-Lucent 2X50W	3	9.672	16.345	0.67	4.82	0.000	0.000	78.85	0.00	0.00	192.00
140.0	Alcatel-Lucent 1900M	3	9.672	16.345	0.67	7.64	0.000	0.000	124.84	0.00	0.00	132.00
140.0	RFS APXV9ERR18-C-	1	9.672	16.345	0.85	7.02	0.000	0.000	114.76	0.00	0.00	62.00
140.0	RFS APXVSP18-C-	2	9.672	16.345	0.82	13.55	0.000	0.000	221.42	0.00	0.00	114.00
140.0	Alcatel-Lucent TD-RR	3	9.672	16.345	0.67	8.64	0.000	0.000	141.27	0.00	0.00	198.30
140.0	RFS APXVTM14-C-I20	3	9.672	16.345	0.76	15.73	0.000	0.000	257.14	0.00	0.00	168.60
154.0	Round T-Arm	3	9.939	16.796	0.67	19.50	0.000	0.000	327.47	0.00	0.00	750.00
154.0	Powerwave LGP21401	6	9.939	16.796	0.50	3.87	0.000	0.000	65.00	0.00	0.00	84.60
154.0	Raycap DC6-48-60-18-	1	9.939	16.796	1.00	1.47	0.000	0.000	24.69	0.00	0.00	31.80
154.0	Ericsson RRUS 11 (Ba	6	9.939	16.796	0.67	11.82	0.000	0.000	198.51	0.00	0.00	330.00
154.0	Powerwave 7770.00	3	9.939	16.796	0.75	13.23	0.000	0.000	222.21	0.00	0.00	105.00
154.0	KMW AM-X-CD-16-65-	1	9.939	16.796	0.78	6.44	0.000	0.000	108.21	0.00	0.00	48.50
154.0	Andrew SBNH-	1	9.939	16.796	0.84	9.62	0.000	0.000	161.55	0.00	0.00	60.80
154.0	Powerwave P65-17-	1	9.939	16.796	0.80	9.18	0.000	0.000	154.12	0.00	0.00	59.00
160.0	Side Arms	1	10.048	16.981	1.00	8.50	0.000	0.000	144.34	0.00	0.00	560.00
160.0	RCU	3	10.048	16.981	0.50	0.24	0.000	0.000	4.08	0.00	0.00	3.00
160.0	DragonWave Horizon	3	10.048	16.981	0.50	1.26	0.000	0.000	21.40	0.00	0.00	34.50
160.0	DragonWave A-ANT-	3	10.048	16.981	1.00	14.07	0.000	0.000	238.92	0.00	0.00	81.30
160.0	Samsung U-RAS	3	10.048	16.981	0.50	2.73	0.000	0.000	46.36	0.00	0.00	99.00
160.0	Argus LLPX310R	3	10.048	16.981	0.70	10.12	0.000	0.000	171.88	0.00	0.00	86.10
170.0	Flat Low Profile Pla	1	10.223	17.277	1.00	26.10	0.000	0.000	450.94	0.00	0.00	1,500.00
170.0	Ericsson KRY 112 144	3	10.223	17.277	0.50	0.62	0.000	0.000	10.63	0.00	0.00	33.00
170.0	Ericsson AIR 21, 1.3	3	10.223	17.277	0.83	16.26	0.000	0.000	280.92	0.00	0.00	249.00
170.0	Ericsson AIR 21, 1.3	3	10.223	17.277	0.83	16.41	0.000	0.000	283.51	0.00	0.00	244.50
180.0	Round Low Profile PI	1	10.392	17.562	1.00	21.70	0.000	0.000	381.09	0.00	381.09	1,500.00
180.0	8' Yaqi	1	10.392	17.562	1.00	12.00	0.000	0.000	210.74	0.00	210.74	30.00
180.0	20' Dipole	1	10.553	17.835	1.00	7.52	0.000	10.000	134.12	0.00	1,475.33	60.00
									6,235.80			10,234.80

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:14 AM

Page: 18

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

### Applied Segment Forces Summary

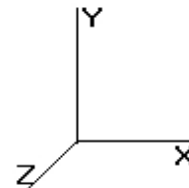
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	182.17	1,347.60	0.00	0.00
10.00	177.79	1,317.30	0.00	0.00
15.00	173.41	1,287.00	0.00	0.00
20.00	169.03	1,256.70	0.00	0.00
25.00	164.64	1,226.41	0.00	0.00
30.00	160.26	1,196.11	0.00	0.00
31.25	39.38	294.31	0.00	0.00
35.00	120.15	1,682.52	0.00	0.00
37.50	80.27	1,102.78	0.00	0.00
40.00	80.61	571.55	0.00	0.00
45.00	163.14	1,120.40	0.00	0.00
50.00	163.19	1,090.11	0.00	0.00
55.00	162.63	1,059.81	0.00	0.00
60.00	161.52	1,029.51	0.00	0.00
63.25	103.76	652.95	0.00	0.00
65.00	56.31	664.31	0.00	0.00
68.75	120.38	1,398.58	0.00	0.00
70.00	39.65	243.18	0.00	0.00
75.00	158.31	953.81	0.00	0.00
80.00	155.61	923.51	0.00	0.00
85.00	152.59	893.21	0.00	0.00
90.00	149.26	862.92	0.00	0.00
95.00	145.66	832.62	0.00	0.00
96.08	30.88	176.42	0.00	0.00
100.0	112.92	1,188.63	0.00	0.00
100.7	21.25	223.39	0.00	0.00
105.0	119.24	667.19	0.00	0.00
108.0	1,384.34	2,375.58	0.00	1,812.09
110.0	53.83	294.89	0.00	0.00
115.0	131.92	716.02	0.00	0.00
120.0	127.20	685.72	0.00	0.00
125.0	122.28	655.42	0.00	0.00
129.7	111.41	594.60	0.00	0.00
130.0	5.84	53.00	0.00	0.00
133.5	82.57	744.59	0.00	0.00
135.0	31.81	145.19	0.00	0.00
140.0	1,402.16	2,863.15	0.00	0.00
145.0	103.61	461.00	0.00	0.00
150.0	97.86	435.76	0.00	0.00
154.0	1,335.75	1,800.13	0.00	0.00
155.0	17.85	70.87	0.00	0.00
160.0	712.88	1,203.11	0.00	0.00
164.3	69.43	256.06	0.00	0.00
165.0	10.54	67.92	0.00	0.00
167.2	34.80	223.30	0.00	0.00
170.0	1,066.80	2,147.31	0.00	0.00
175.0	69.33	196.66	0.00	0.00
179.0	776.66	1,732.78	0.00	2,067.16

Pole : 370627  
Location : Newington CT, CT  
Height : 179.0 (ft)  
Base Dia : 62.93 (in)  
Top Dia : 12.75 (in)  
Shape : 18 Sides  
Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:14 AM

Page: 19

**Load Case:** Twist/Sway

50.00 mph Wind with No Ice

26 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

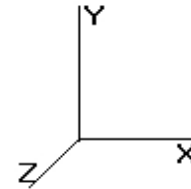
Totals:            11,112.87    42,985.87            0.00            3,879.25

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:14 AM

Page: 20

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Shaft Forces and Deflections**

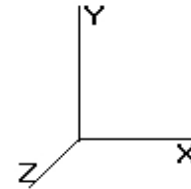
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-11.132	-42.981	0.000	0.000	0.000	-1,367.165	0.000	0.000	0.000	0.000
5.00	-10.988	-41.623	0.000	0.000	0.000	-1,311.505	-0.028	0.000	0.028	-0.052
10.00	-10.846	-40.296	0.000	0.000	0.000	-1,256.567	-0.111	0.000	0.111	-0.105
15.00	-10.708	-38.999	0.000	0.000	0.000	-1,202.338	-0.251	0.000	0.251	-0.160
20.00	-10.573	-37.732	0.000	0.000	0.000	-1,148.800	-0.449	0.000	0.449	-0.217
25.00	-10.441	-36.496	0.000	0.000	0.000	-1,095.937	-0.707	0.000	0.707	-0.276
30.00	-10.297	-35.293	0.000	0.000	0.000	-1,043.735	-1.029	0.000	1.029	-0.336
31.25	-10.276	-34.994	0.000	0.000	0.000	-1,030.863	-1.119	0.000	1.119	-0.352
35.00	-10.168	-33.305	0.000	0.000	0.000	-992.330	-1.415	0.000	1.415	-0.400
37.50	-10.098	-32.197	0.000	0.000	0.000	-966.910	-1.633	0.000	1.633	-0.432
40.00	-10.040	-31.617	0.000	0.000	0.000	-941.665	-1.868	0.000	1.868	-0.466
45.00	-9.902	-30.487	0.000	0.000	0.000	-891.465	-2.391	0.000	2.391	-0.530
50.00	-9.763	-29.387	0.000	0.000	0.000	-841.956	-2.981	0.000	2.981	-0.596
55.00	-9.623	-28.318	0.000	0.000	0.000	-793.144	-3.642	0.000	3.642	-0.664
60.00	-9.477	-27.280	0.000	0.000	0.000	-745.031	-4.376	0.000	4.376	-0.735
63.25	-9.382	-26.623	0.000	0.000	0.000	-714.232	-4.893	0.000	4.893	-0.783
65.00	-9.335	-25.953	0.000	0.000	0.000	-697.814	-5.186	0.000	5.186	-0.810
68.75	-9.211	-24.550	0.000	0.000	0.000	-662.807	-5.845	0.000	5.845	-0.867
70.00	-9.188	-24.300	0.000	0.000	0.000	-651.294	-6.075	0.000	6.075	-0.887
75.00	-9.045	-23.337	0.000	0.000	0.000	-605.357	-7.044	0.000	7.044	-0.961
80.00	-8.903	-22.404	0.000	0.000	0.000	-560.134	-8.092	0.000	8.092	-1.038
85.00	-8.764	-21.501	0.000	0.000	0.000	-515.619	-9.221	0.000	9.221	-1.116
90.00	-8.627	-20.629	0.000	0.000	0.000	-471.799	-10.434	0.000	10.434	-1.198
95.00	-8.481	-19.793	0.000	0.000	0.000	-428.666	-11.733	0.000	11.733	-1.281
96.08	-8.461	-19.610	0.000	0.000	0.000	-419.478	-12.026	0.000	12.026	-1.300
100.0	-8.333	-18.419	0.000	0.000	0.000	-386.340	-13.121	0.000	13.121	-1.368
100.7	-8.321	-18.190	0.000	0.000	0.000	-380.090	-13.337	0.000	13.337	-1.381
105.0	-8.204	-17.517	0.000	0.000	0.000	-344.727	-14.601	0.000	14.601	-1.456
108.0	-6.770	-15.173	0.000	0.000	0.000	-318.302	-15.532	0.000	15.532	-1.507
110.0	-6.724	-14.872	0.000	0.000	0.000	-304.762	-16.171	0.000	16.171	-1.541
115.0	-6.593	-14.150	0.000	0.000	0.000	-271.142	-17.830	0.000	17.830	-1.625
120.0	-6.467	-13.459	0.000	0.000	0.000	-238.175	-19.578	0.000	19.578	-1.711
125.0	-6.343	-12.798	0.000	0.000	0.000	-205.843	-21.416	0.000	21.416	-1.798
129.7	-6.222	-12.203	0.000	0.000	0.000	-175.712	-23.248	0.000	23.248	-1.881
130.0	-6.222	-12.146	0.000	0.000	0.000	-174.157	-23.346	0.000	23.346	-1.886
133.5	-6.123	-11.400	0.000	0.000	0.000	-151.862	-24.786	0.000	24.786	-1.949
135.0	-6.098	-11.250	0.000	0.000	0.000	-143.187	-25.369	0.000	25.369	-1.975
140.0	-4.609	-8.431	0.000	0.000	0.000	-112.696	-27.488	0.000	27.488	-2.067
145.0	-4.500	-7.967	0.000	0.000	0.000	-89.651	-29.700	0.000	29.700	-2.154
150.0	-4.395	-7.530	0.000	0.000	0.000	-67.148	-32.001	0.000	32.001	-2.236
154.0	-2.993	-5.782	0.000	0.000	0.000	-49.567	-33.901	0.000	33.901	-2.297
155.0	-2.976	-5.710	0.000	0.000	0.000	-46.574	-34.384	0.000	34.384	-2.312
160.0	-2.219	-4.535	0.000	0.000	0.000	-31.692	-36.840	0.000	36.840	-2.375
164.3	-2.141	-4.281	0.000	0.000	0.000	-22.075	-39.019	0.000	39.019	-2.424
165.0	-2.129	-4.213	0.000	0.000	0.000	-20.648	-39.358	0.000	39.358	-2.431
167.2	-2.086	-3.991	0.000	0.000	0.000	-15.857	-40.509	0.000	40.509	-2.453
170.0	-0.929	-1.891	0.000	0.000	0.000	-10.120	-41.929	0.000	41.929	-2.475
175.0	-0.852	-1.697	0.000	0.000	0.000	-5.475	-44.539	0.000	44.539	-2.507
179.0	-0.777	0.000	0.000	0.000	0.000	-2.067	-46.646	0.000	46.646	-2.524

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:14 AM

Page: 21

<b>Load Case:</b> Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Stresses**

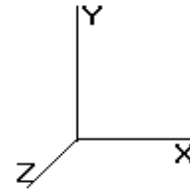
Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.58	0.30	0.00	0.00	0.00	14.24	14.82	49.4	0.0	0.300
5.00	0.57	0.30	0.00	0.00	0.00	14.34	14.92	50.0	0.0	0.298
10.00	0.57	0.31	0.00	0.00	0.00	14.44	15.01	50.6	0.0	0.297
15.00	0.56	0.31	0.00	0.00	0.00	14.54	15.11	51.2	0.0	0.295
20.00	0.56	0.32	0.00	0.00	0.00	14.64	15.21	51.8	0.0	0.294
25.00	0.56	0.32	0.00	0.00	0.00	14.73	15.30	52.0	0.0	0.294
30.00	0.55	0.33	0.00	0.00	0.00	14.83	15.39	52.0	0.0	0.296
31.25	0.55	0.33	0.00	0.00	0.00	14.85	15.42	52.0	0.0	0.297
35.00	0.54	0.33	0.00	0.00	0.00	14.92	15.47	52.0	0.0	0.298
37.50	0.52	0.33	0.00	0.00	0.00	14.54	15.07	52.0	0.0	0.290
40.00	0.52	0.33	0.00	0.00	0.00	14.58	15.11	52.0	0.0	0.291
45.00	0.51	0.34	0.00	0.00	0.00	14.65	15.17	52.0	0.0	0.292
50.00	0.51	0.34	0.00	0.00	0.00	14.70	15.23	52.0	0.0	0.293
55.00	0.51	0.35	0.00	0.00	0.00	14.75	15.27	52.0	0.0	0.294
60.00	0.51	0.35	0.00	0.00	0.00	14.79	15.31	52.0	0.0	0.295
63.25	0.50	0.36	0.00	0.00	0.00	14.81	15.33	52.0	0.0	0.295
65.00	0.50	0.36	0.00	0.00	0.00	14.82	15.33	52.0	0.0	0.295
68.75	0.47	0.36	0.00	0.00	0.00	14.32	14.81	52.0	0.0	0.285
70.00	0.47	0.36	0.00	0.00	0.00	14.32	14.80	52.0	0.0	0.285
75.00	0.47	0.37	0.00	0.00	0.00	14.29	14.77	52.0	0.0	0.284
80.00	0.47	0.38	0.00	0.00	0.00	14.23	14.71	52.0	0.0	0.283
85.00	0.47	0.38	0.00	0.00	0.00	14.14	14.62	52.0	0.0	0.281
90.00	0.47	0.39	0.00	0.00	0.00	14.00	14.49	52.0	0.0	0.279
95.00	0.47	0.40	0.00	0.00	0.00	13.82	14.30	52.0	0.0	0.275
96.08	0.47	0.41	0.00	0.00	0.00	13.78	14.26	52.0	0.0	0.274
100.00	0.45	0.41	0.00	0.00	0.00	13.58	14.05	52.0	0.0	0.270
100.75	0.44	0.41	0.00	0.00	0.00	12.95	13.41	52.0	0.0	0.258
105.00	0.44	0.42	0.00	0.00	0.00	12.67	13.13	52.0	0.0	0.253
108.00	0.39	0.35	0.00	0.00	0.00	12.35	12.76	52.0	0.0	0.245
110.00	0.39	0.36	0.00	0.00	0.00	12.28	12.69	52.0	0.0	0.244
115.00	0.39	0.37	0.00	0.00	0.00	12.03	12.44	52.0	0.0	0.239
120.00	0.39	0.38	0.00	0.00	0.00	11.70	12.11	52.0	0.0	0.233
125.00	0.39	0.39	0.00	0.00	0.00	11.25	11.67	52.0	0.0	0.224
129.75	0.39	0.41	0.00	0.00	0.00	10.69	11.11	52.0	0.0	0.214
130.00	0.39	0.41	0.00	0.00	0.00	10.66	11.08	52.0	0.0	0.213
133.58	0.45	0.49	0.00	0.00	0.00	11.47	11.95	52.0	0.0	0.230
135.00	0.45	0.49	0.00	0.00	0.00	11.18	11.67	52.0	0.0	0.224
140.00	0.36	0.40	0.00	0.00	0.00	9.96	10.34	52.0	0.0	0.199
145.00	0.36	0.41	0.00	0.00	0.00	9.04	9.43	52.0	0.0	0.181
150.00	0.37	0.43	0.00	0.00	0.00	7.80	8.20	52.0	0.0	0.158
154.00	0.30	0.31	0.00	0.00	0.00	6.49	6.82	52.0	0.0	0.131
155.00	0.30	0.32	0.00	0.00	0.00	6.30	6.62	52.0	0.0	0.127
160.00	0.26	0.26	0.00	0.00	0.00	5.05	5.33	52.0	0.0	0.102
164.33	0.26	0.27	0.00	0.00	0.00	4.10	4.39	52.0	0.0	0.085
165.00	0.26	0.27	0.00	0.00	0.00	3.93	4.22	52.0	0.0	0.081
167.25	0.31	0.33	0.00	0.00	0.00	3.82	4.17	52.0	0.0	0.080
170.00	0.16	0.16	0.00	0.00	0.00	2.71	2.88	52.0	0.0	0.055
175.00	0.16	0.16	0.00	0.00	0.00	1.81	1.98	52.0	0.0	0.038
179.00	0.00	0.16	0.00	0.00	0.00	0.82	0.86	52.0	0.0	0.017

Pole : 370627  
 Location : Newington CT, CT  
 Height : 179.0 (ft)  
 Base Dia : 62.93 (in)  
 Top Dia : 12.75 (in)  
 Shape : 18 Sides  
 Taper : 0.299232 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

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7/17/2014 9:52:14 AM

Page: 22

## Analysis Summary

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	28.5	0.00	42.95	0.00	0.00	3495.96	37.01	49.4	0.00	0.749
Ice	23.7	0.00	50.19	0.00	0.00	3012.16	33.93	52.0	65.00	0.653
Twist/Sway	11.1	0.00	42.98	0.00	0.00	1367.16	14.82	49.4	0.00	0.300

<b>Base/Flange Plate</b>	Plate Type	<b>Baseplate</b>
	Pole Diameter	62.94 in
	Pole Thickness	0.375 in
	Plate Diameter	73 in
	Plate Thickness	1.5 in
	Plate Fy	50 ksi
	Weld Length	0.3125 in
	Allowable	514.39 k-in
	Applied	85.35 k-in
	<b>#</b>	<b>45</b> <i>Show</i>
<b>Stiffeners</b>	Thickness	0.375 in
	Length	5 in
	Height	10 in
	Chamfer	0 in
	Offset Angle	0 °
	Fy	36 ksi

<b>Bolts</b>	<b>#</b>	<b>45</b>
	Bolt Circle (R)adial / (S)quare	68 in R
	Diameter	1.25 in
	Hole Diameter	1.375 in
	Type	A687
	Fy	105 ksi
	Fu	150 ksi
	Allowable	81.41 k
	Applied	55.79 k
	<b>#</b>	<b>0</b>
<b>Reinforcement</b>	<b>#</b>	<b>0</b>
<b>Extra Bolts O</b>	<b>#</b>	<b>0</b>

Code Rev. **F**  
A.S.I. **1.33**  
Moment **3496.0 k-ft**  
Axial **43.0 k**

Date **7/17/2014**  
Engineer **J. King**  
Site # **370627**  
Carrier **Sprint Nextel**

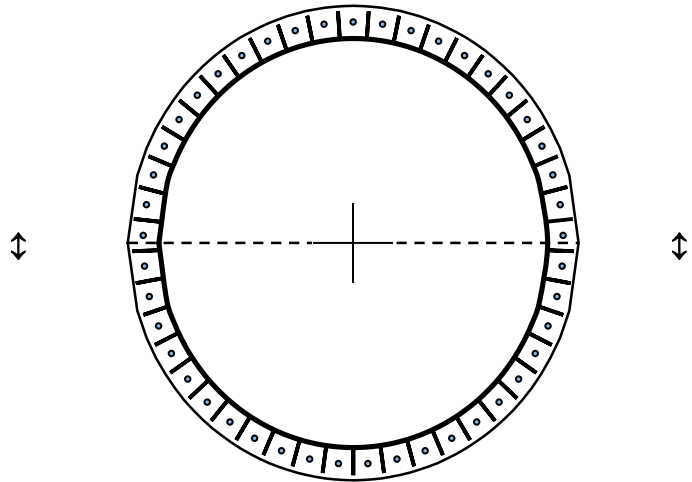


Plate Stress Ratio:  
**0.17** (Pass)

Bolt Stress Ratio:  
**0.69** (Pass)





PROJECT: 2.5 EQUIPMENT DEPLOYMENT  
 SITE NAME: MARCUS GROUP COMM. TOWER  
 SITE CASCADE: CT60XC018  
 SITE NUMBER: 370627  
 SITE ADDRESS: 605 WILLARD AVE  
 NEWINGTON, CT 06111  
 SITE TYPE: MONOPOLE TOWER  
 MARKET: NORTHERN CONNECTICUT

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

PLANS PREPARED BY:  
**INFINIGY** Design. Build. Deliver.  
 1033 Watervliet Shaker Rd  
 Albany, NY 12205  
 Office # (518) 690-0790  
 Fax # (518) 690-0793  
 JOB NUMBER 340-000

MLA PARTNER:  
**AMERICAN TOWER CORPORATION**  
 10 PRESIDENTIAL WAY  
 WOBURN, MA 01801



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REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION		6/4/14	AHS	0

SITE NAME:  
**MARCUS GROUP COMM. TOWER**

SITE CASCADE:  
**CT60XC018**

SITE ADDRESS:  
**605 WILLARD AVE  
 NEWINGTON, CT 06111**

SHEET DESCRIPTION:  
**TITLE SHEET & PROJECT DATA**

SHEET NUMBER:  
**T-1**

**SITE INFORMATION**

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

**LATITUDE (NAD83):**  
 41° 41' 54.14" N  
 41.698372°

**LONGITUDE (NAD83):**  
 72° 44' 13.73" W  
 -72.737147°

**COUNTY:**  
 NEW LONDON

**ZONING JURISDICTION:**  
 TOWN OF NEWINGTON

**ZONING DISTRICT:**  
 TBD

**POWER COMPANY:**  
 CONNECTICUT LIGHT & POWER  
 (800) 286-2000

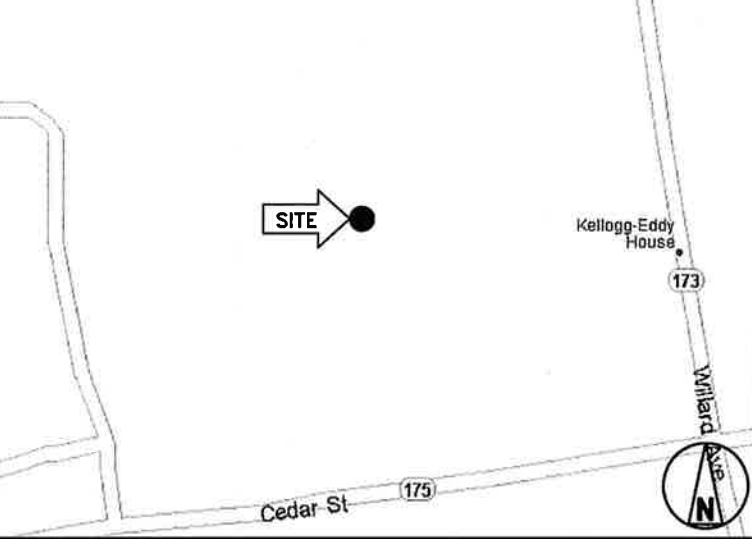
**AAV PROVIDER:**  
 AT&T  
 (888) 944-0447

**SPRINT CM:**  
 MIKE DELIA  
 (781) 316-6348  
 MICHAEL.DELIA@SPRINT.COM

**AREA MAP**



**LOCATION MAP**



**PROJECT DESCRIPTION**

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL (1) 9929 EQUIPMENT CABINET IN EXISTING LEASE SPACE
- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) RRU'S TO TOWER
- INSTALL (27) JUMPER CABLES
- INSTALL (1) FIBER CABLE

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

**APPLICABLE CODES**

- ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- INTERNATIONAL BUILDING CODE (2012 IBC)
  - TIA-EIA-222-G OR LATEST EDITION
  - NFPA 780 - LIGHTNING PROTECTION CODE
  - 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
  - ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
  - CT BUILDING CODE
  - LOCAL BUILDING CODE
  - CITY/COUNTY ORDINANCES

**DRAWING INDEX**

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



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:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF SPRINT AND MAY NOT BE REPRODUCED, DISSEMINATED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF SPRINT.

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	6/4/14	AHS	0

SITE NAME:

**MARCUS GROUP COMM. TOWER**

SITE CASCADE:

**CT60XC018**

SITE ADDRESS:

**605 WILLARD AVE  
NEWINGTON, CT 06111**

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)

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



DRAWING NOTICE:

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	6/4/14	AHS	0

SITE NAME:

**MARCUS GROUP COMM. TOWER**

SITE CASCADE:

**CT60XC018**

SITE ADDRESS:

**605 WILLARD AVE  
NEWINGTON, CT 06111**

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. SHELTER 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.

PLANS PREPARED FOR:



6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:



1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793  
JOB NUMBER 340-000

MLA PARTNER:



10 PRESIDENTIAL WAY  
WOBURN, MA 01801

ENGINEERING LICENSE:



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REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION		6/4/14	AHS	0

SITE NAME:

**MARCUS GROUP  
COMM. TOWER**

SITE CASCADE:

**CT60XC018**

SITE ADDRESS:

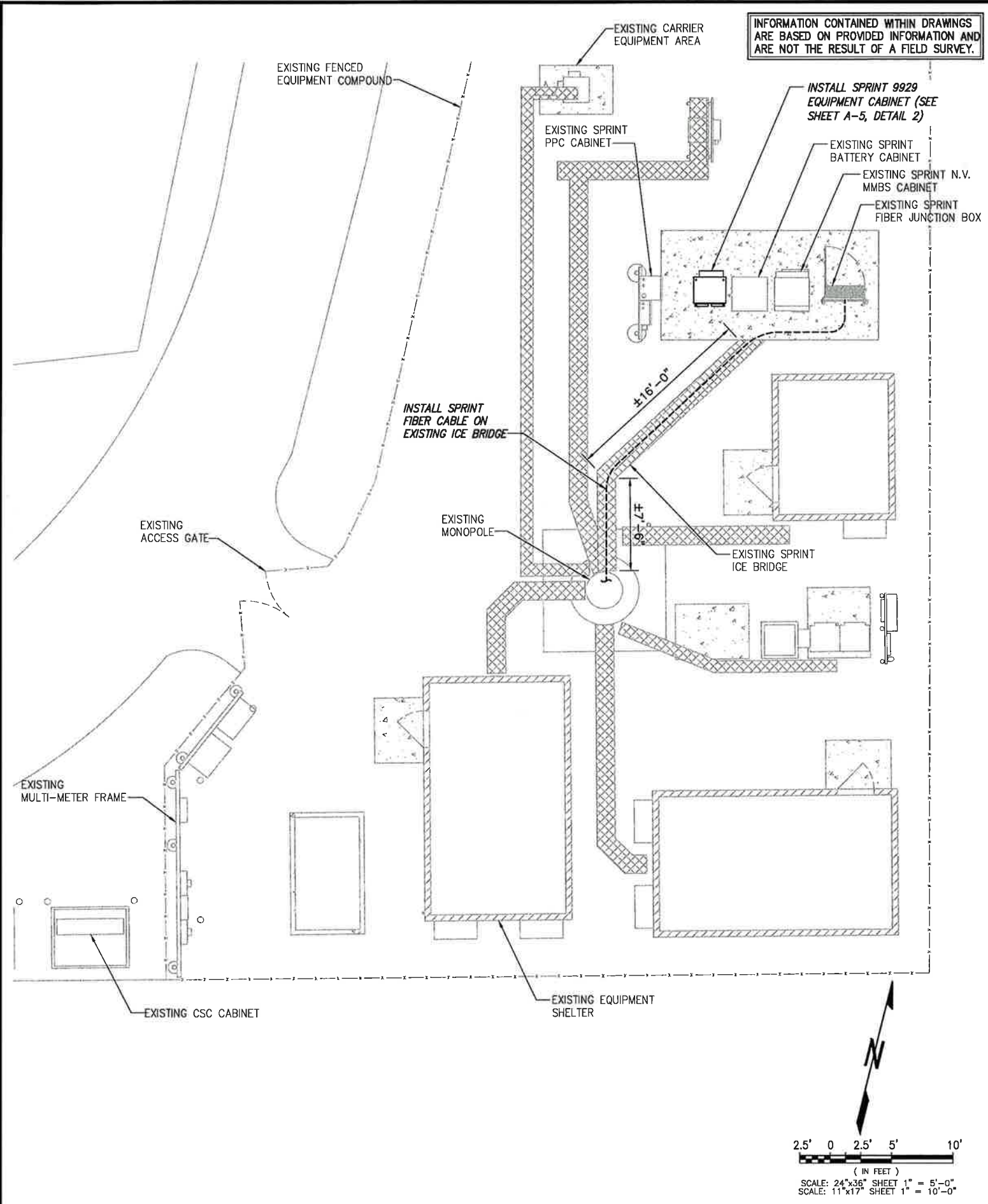
**605 WILLARD AVE  
NEWINGTON, CT 06111**

SHEET DESCRIPTION:

**SPRINT SPECIFICATIONS**

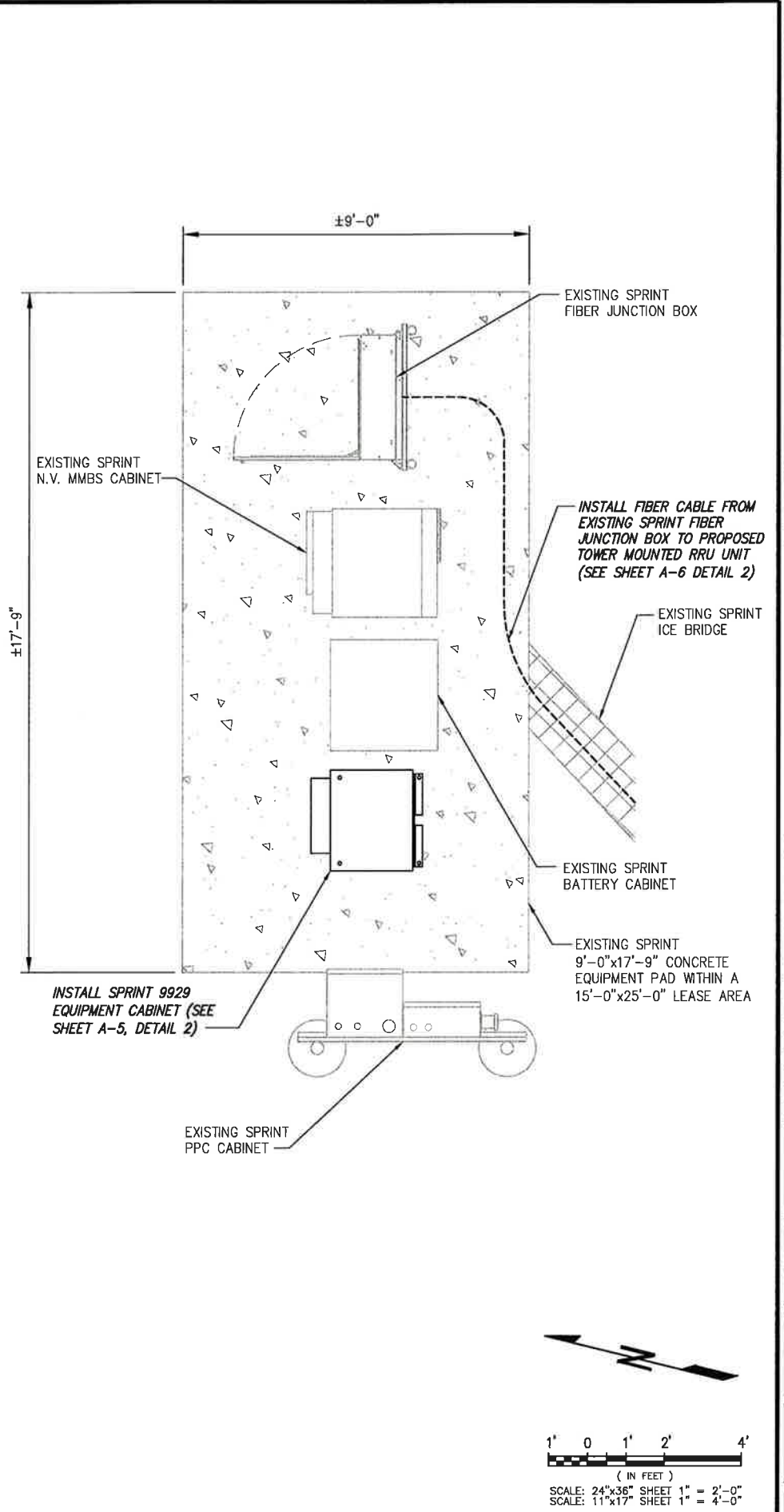
SHEET NUMBER:

**SP-3**



OVERALL SITE PLAN

SCALE: AS NOTED 1



SPRINT EQUIPMENT PLAN

SCALE: AS NOTED 2

PLANS PREPARED FOR:

6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:

1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793  
JOB NUMBER 340-000

MLA PARTNER:

10 PRESIDENTIAL WAY  
WOBURN, MA 01801

ENGINEERING LICENSE:

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REVISIONS:	DESCRIPTION	DATE	BY	REV
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SITE NAME:

**MARCUS GROUP COMM. TOWER**

SITE CASCADE:

**CT60XC018**

SITE ADDRESS:

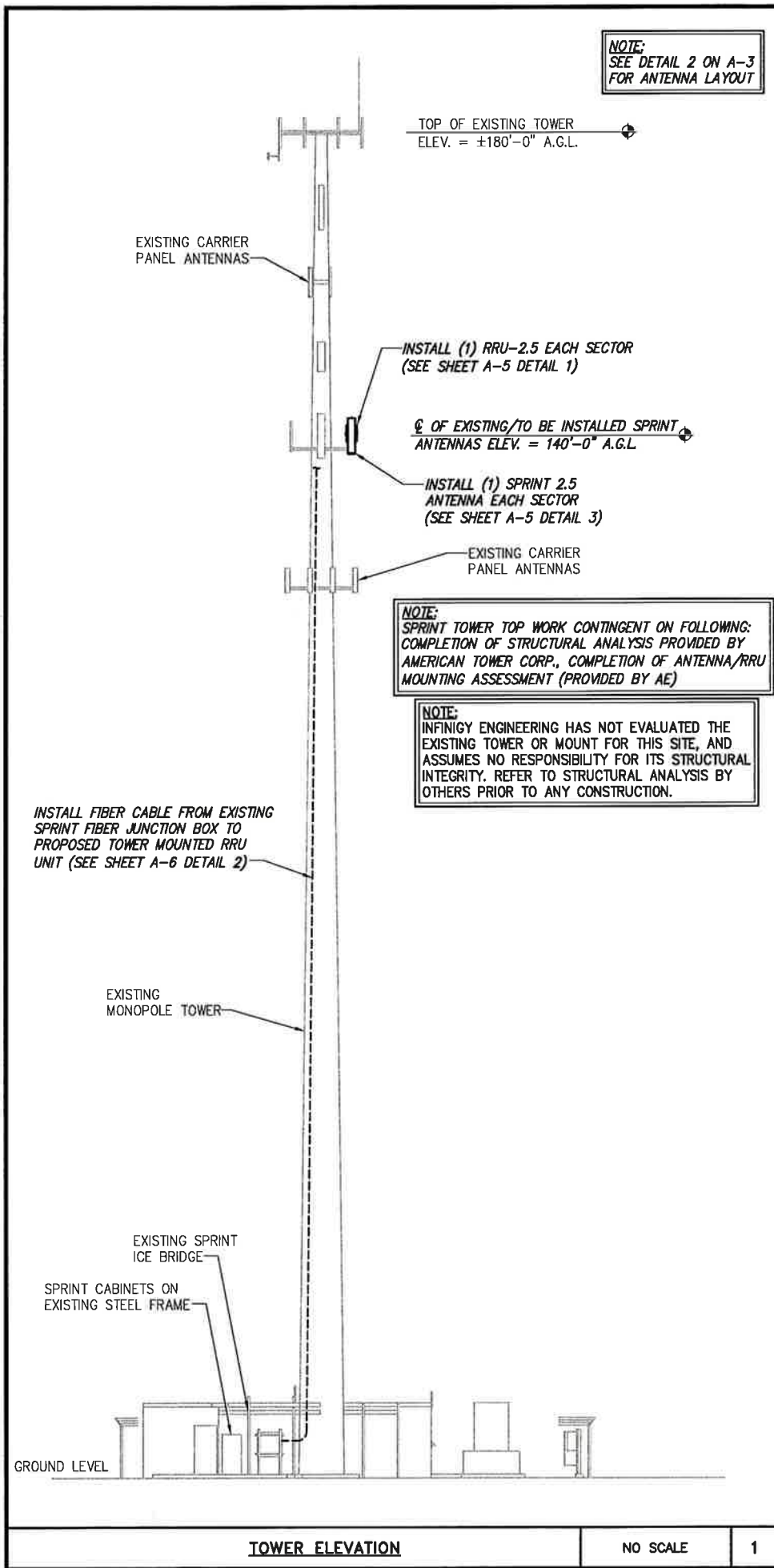
**605 WILLARD AVE  
NEWINGTON, CT 06111**

SHEET DESCRIPTION:

**SITE PLAN**

SHEET NUMBER:

**A-1**



**RFDS Sheet**

**General Site Information**

Site ID	CT60XC018	Equipment Vendor	ALU
Market	NORTHERN CT	Latitude	41.698372
Region	NEW ENGLAND	Longitude	-72.737147
MLA	ATC	LL SITE ID	370627
Structure Type	MONOPOLE		
BTS Type	MMBTS		

Solution ID	N/A	Sitera SR Equipment type	N/A
		Equipment Vendor	ALU

Incremental Power Draw needed by added Equipment	100
--	-----

**Base Equipment**

BBU Kit	ALU BBU Kit
BBU Kit Qty	0 - IN 9929
Growth Cabinet	ALU 9929 Expansion Cabinet
Growth Cabinet Qty	1
Growth Cabinet Dimensions	63.65" X 31.5" X 35.5"
Growth Cabinet Weight	1600

Top Hat	N/A
Top Hat Qty	N/A
Top Hat Dimensions	N/A
Top Hat Weight (lbs)	N/A

**RF Path Information**

RRH	TD-RRH 8X20-25
RRH Qty	3
RRH Dimensions	26.1 in X 18.6 X 6.7 in
RRH Weight. lbs.	70
RRH Mount Weight. lbs.	TBD
Power and Fiber Cable	ALU Fiber Only
Cable Qty	1
Weight per foot. Lbs.	0.12
Diameter. Inches.	7/8"
Length Ft.	205
Coax Jumper	Coax Jumper Mfg TBD
Coax Jumper Qty	27
Coax Jumper Length. Feet.	10
Coax Jumper Weight	TBD
Coax Jumper Diameter. Inches	0.5
AISG Cable	Commscope ATCB-B001-006
AISG Cable Qty	3
AISG Diameter. Inches.	0.315
AISG Cable length.	8
Weight of entire AISG cable. Lbs.	1.3

(calculated as antenna height plus 20%)

**Antenna Sector Information**

	Sector 1	Sector 2	Sector 3
Antenna make/model	RFS APXVTM14-C-120	RFS APXVTM14-C-120	RFS APXVTM14-C-120
Antenna qty	1	1	1
Antenna Dimensions. Inches	56.3 X 12.6 X 6.3	56.3 X 12.6 X 6.3	56.3 X 12.6 X 6.3
Antenna Weight. Lbs	56	56	56
Antenna Mounting Kit Weight. Lbs.	11	11	11
CL Height	140	140	140
Antenna Azimuth	30	145	225
Antenna Mechanical Downtilt	0	0	0
Antenna etilt	-2	-2	-2

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



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DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	6/4/14	AHS	0

SITE NAME:

MARCUS GROUP COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:

TOWER ELEVATION & CABLE PLAN

SHEET NUMBER:

A-2

TOWER ELEVATION

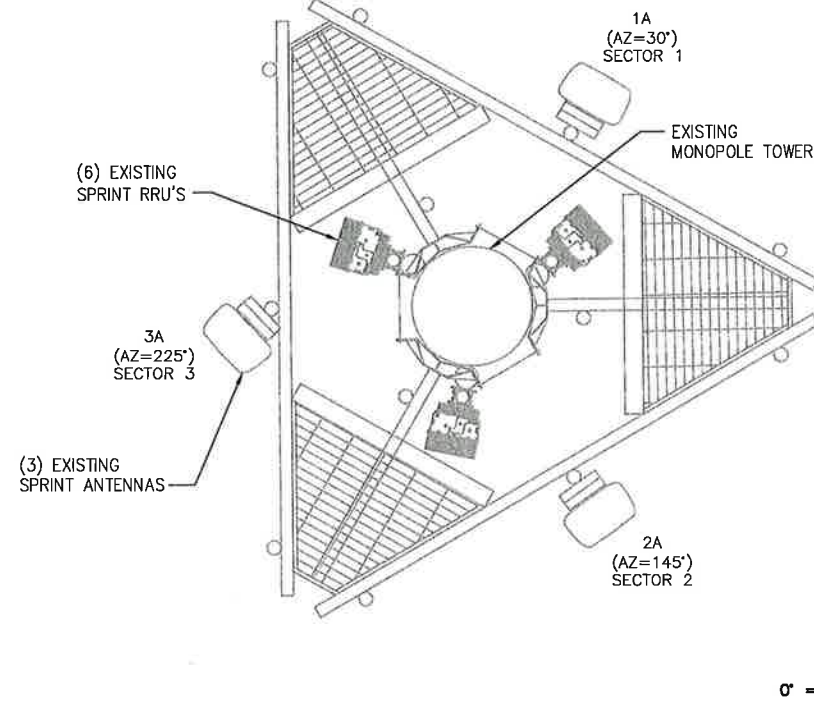
NO SCALE

1

RFDS

NO SCALE

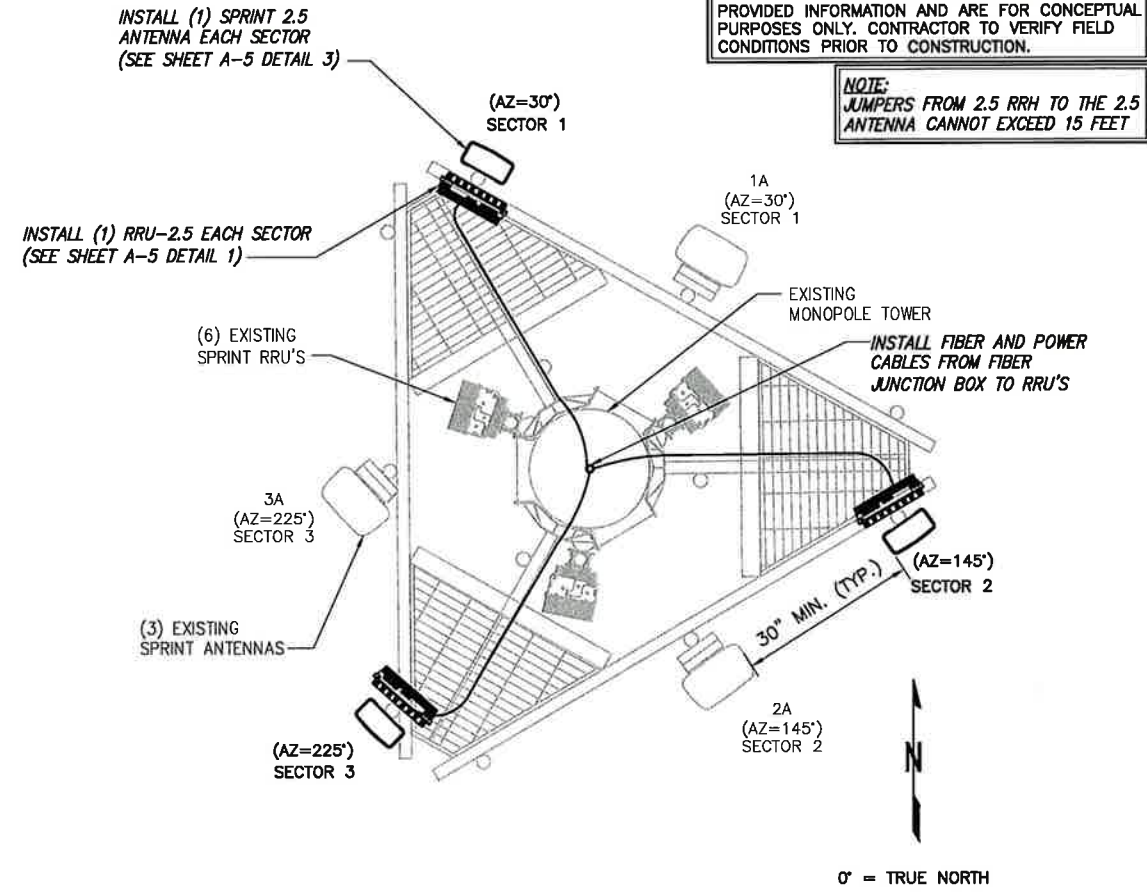
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EXISTING ANTENNA & RRU LAYOUT

NO SCALE

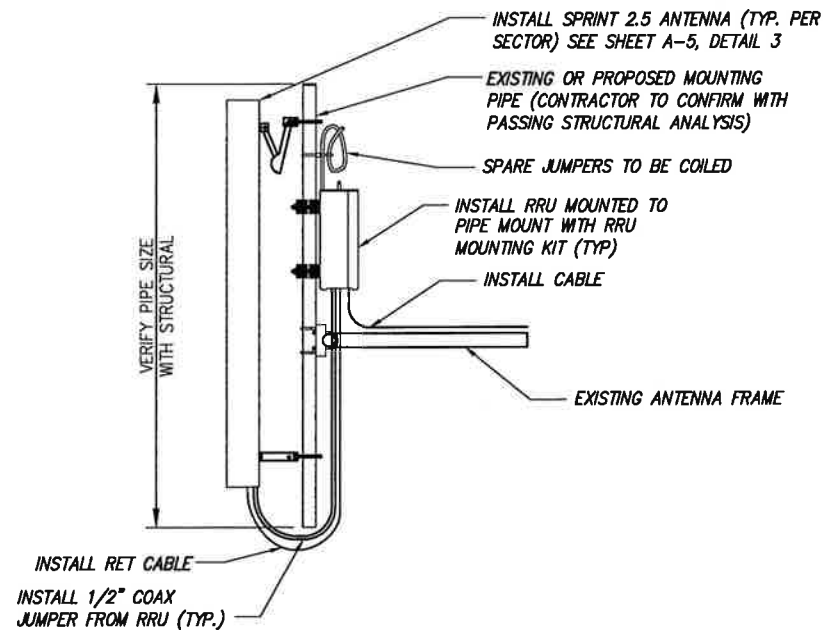
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FINAL ANTENNA LAYOUT

NO SCALE

2



TYPICAL ANTENNA & RRU MOUNTING DETAILS

NO SCALE

4

DETAIL NOT USED

NO SCALE

3

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

PLANS PREPARED FOR:



PLANS PREPARED BY:



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

JOB NUMBER 340-000

MLA PARTNER:



10 PRESIDENTIAL WAY  
WOBURN, MA 01801

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DESCRIPTION	DATE	BY	REV
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SITE NAME:

MARCUS GROUP  
COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:

ANTENNA LAYOUT  
& MOUNTING DETAILS

SHEET NUMBER:

A-3

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

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

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

NOTES:

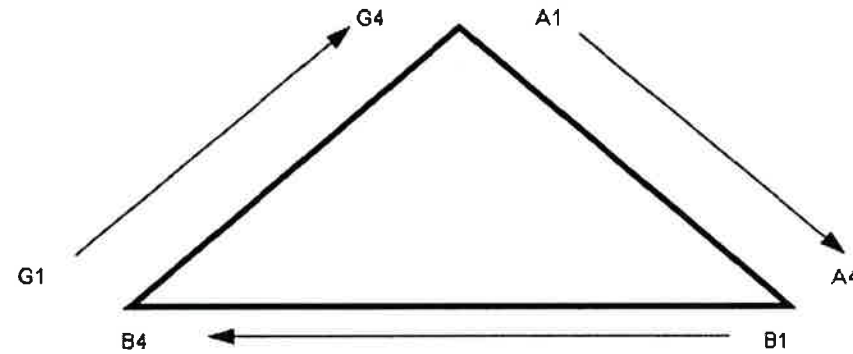
- CUT DC CONDUCTORS TO LENGTH.
- COIL FIBER CABLE AND SECURE AT SIDE OF RRU.
- DO NOT EXCEED BEND RADIUS.

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

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

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

Figure 1: Antenna Orientation



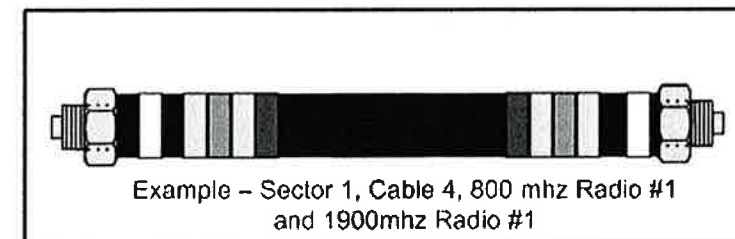
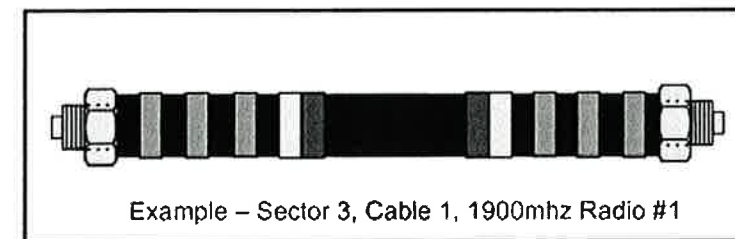
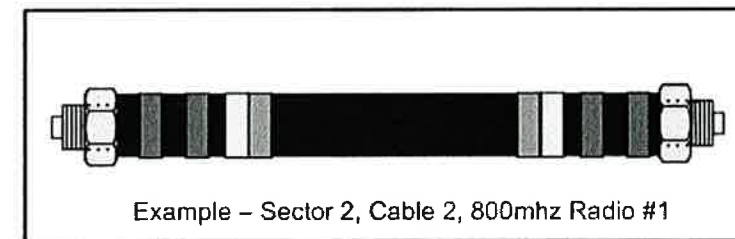
NOTES:

- ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.
- THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.
- A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
- THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.
- SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.
- HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.
- HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.
- INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

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

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

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



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REVISIONS:	DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION		5/4/14	AHS	0

SITE NAME:

MARCUS GROUP  
COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:

COLOR CODING  
AND NOTES

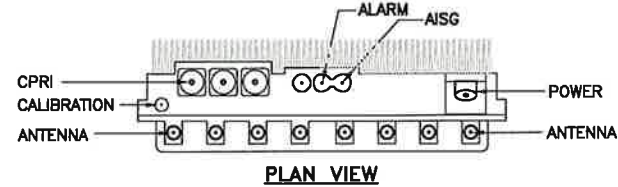
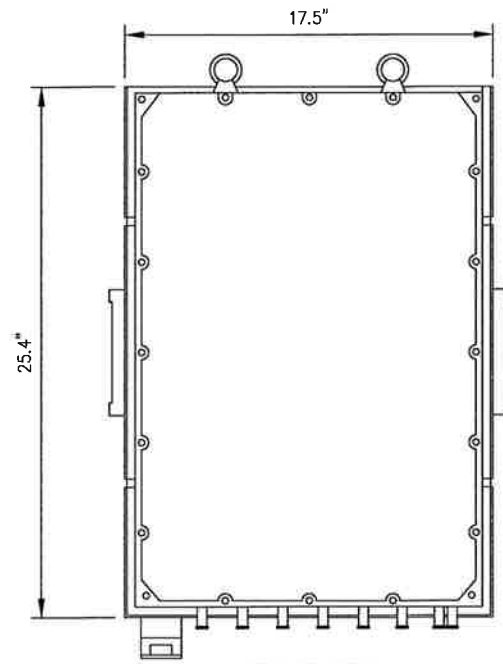
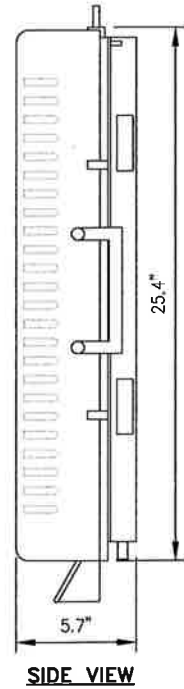
SHEET NUMBER:

A-4



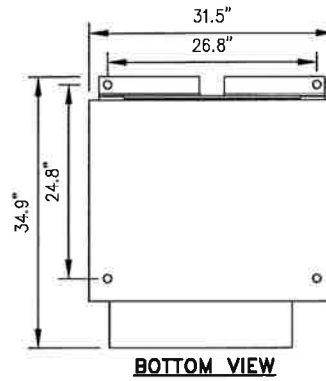
RRU: ALCATEL LUCENT TD-RRH8X20

COLOR: LIGHT GREY  
WEIGHT: 70 LBS.



**NOTES**

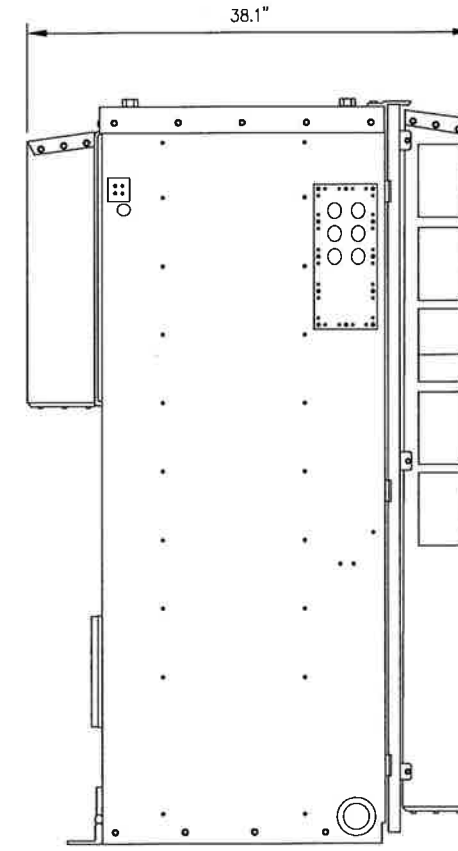
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRU'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRU PACKAGES IN THE RAIN.



**BOTTOM VIEW**

BOLT HOLE (TYP.)

1. VERIFY BOLT HOLE SPACING WITH EQUIPMENT CUT SHEETS.
2. NEW EQUIPMENT CABINET TO BE MOUNTED TO EXISTING SUPPORT SURFACE WITH BOLT-DOWN SYSTEM PER MANUFACTURER'S SPECIFICATION AND FIELD DRILL HOLES THROUGH EXISTING STEEL BEAMS AS REQUIRED.
3. MAINTAIN A MINIMUM OF 1" DISTANCE FROM CENTER OF BOLT HOLE TO EDGE OF FLANGE.



**SIDE VIEW**

PLANS PREPARED FOR:



PLANS PREPARED BY:



MLA PARTNER:



ENGINEERING LICENSE:



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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR CONSTRUCTION	6/4/14	AHS	0

SITE NAME:

MARCUS GROUP  
COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:

EQUIPMENT &  
MOUNTING DETAILS

SHEET NUMBER:

A-5

2.5 RRU

NO SCALE

1

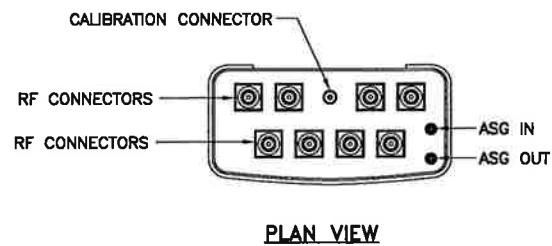
2.5 9929 GROWTH CABINET

NO SCALE

2

**ANTENNA: RFS APXVTM14-C-120**

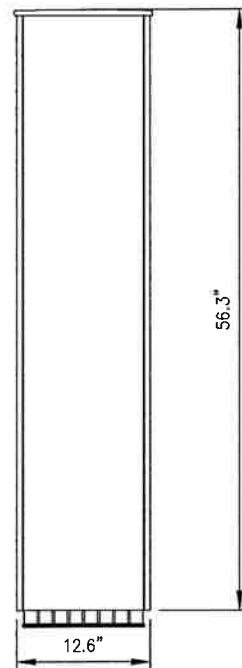
RADOME MATERIAL: ASA  
RADOME COLOR: LIGHT GREY  
DIMENSIONS, HxWxD.in(mim): 56.3"x12.6"x6.3" (1430x320x160mm)  
WEIGHT: 52.9 lbs  
CONNECTORS: (8) 4.1/9.5 DIN FEMALE  
(1) NF - CALIBRATION CONNECTOR



**PLAN VIEW**



**SIDE VIEW**



**FRONT VIEW**

2.5 ANTENNA

NO SCALE

3

DETAIL NOT USED

NO SCALE

4

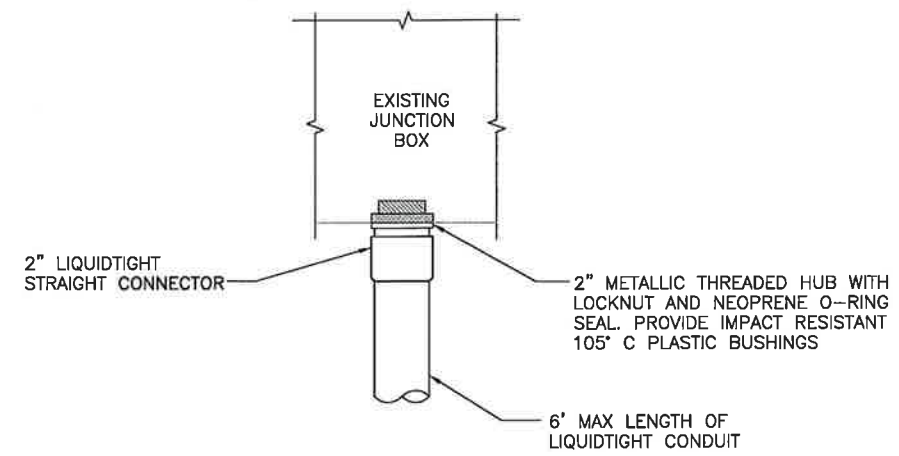
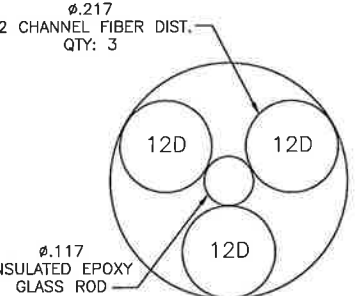
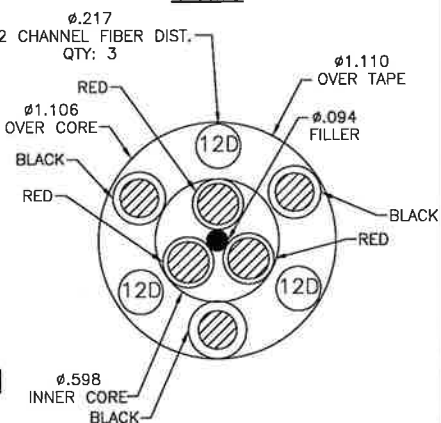
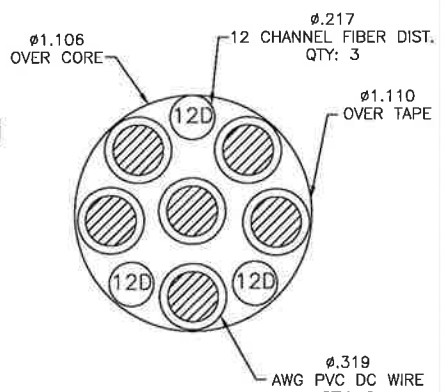
**RFS HYBRIFLEX RISER CABLE SCHEDULE**

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



**FIBER JUNCTION BOX PENETRATION**

NO SCALE 2

**2.5 CABLE CROSS SECTION DATA**

NO SCALE 1

**DETAIL NOT USED**

NO SCALE 3

PLANS PREPARED FOR:

6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:

1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793  
JOB NUMBER 340-000

MLA PARTNER:

10 PRESIDENTIAL WAY  
WOBURN, MA 01801

ENGINEERING LICENSE:

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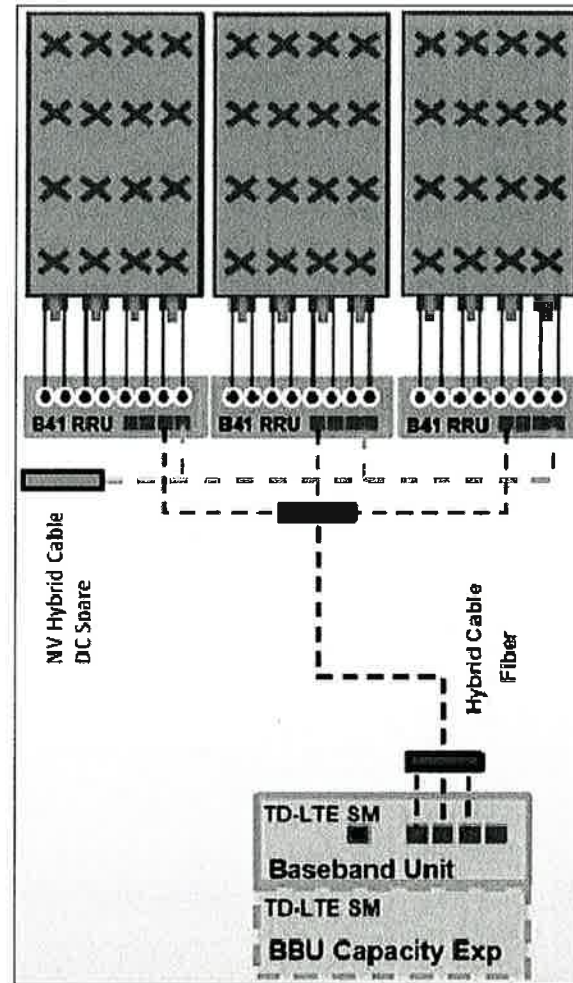
SITE NAME:  
**MARCUS GROUP COMM. TOWER**

SITE CASCADE:  
**CT60XC018**

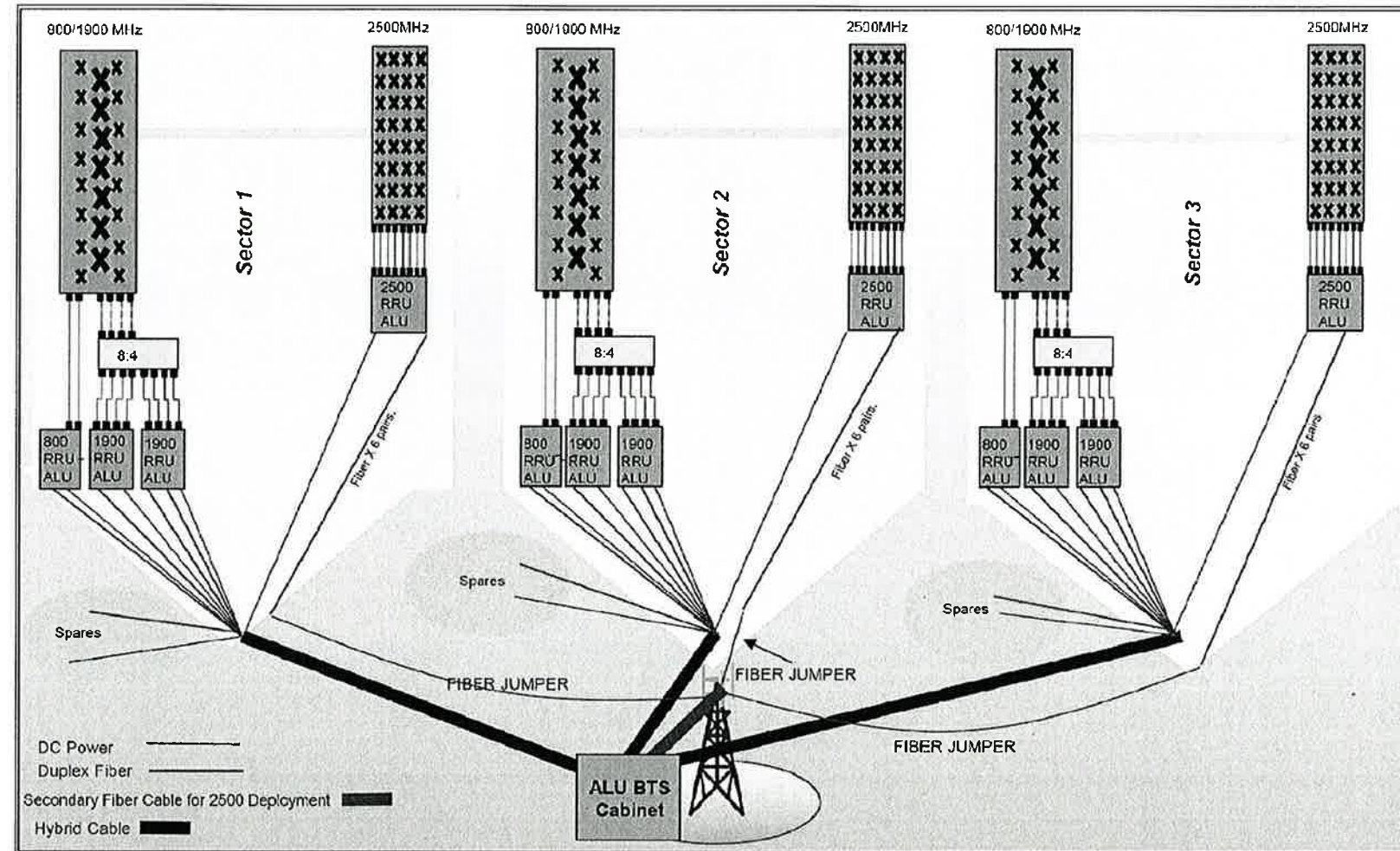
SITE ADDRESS:  
605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:  
**CIVIL DETAILS**

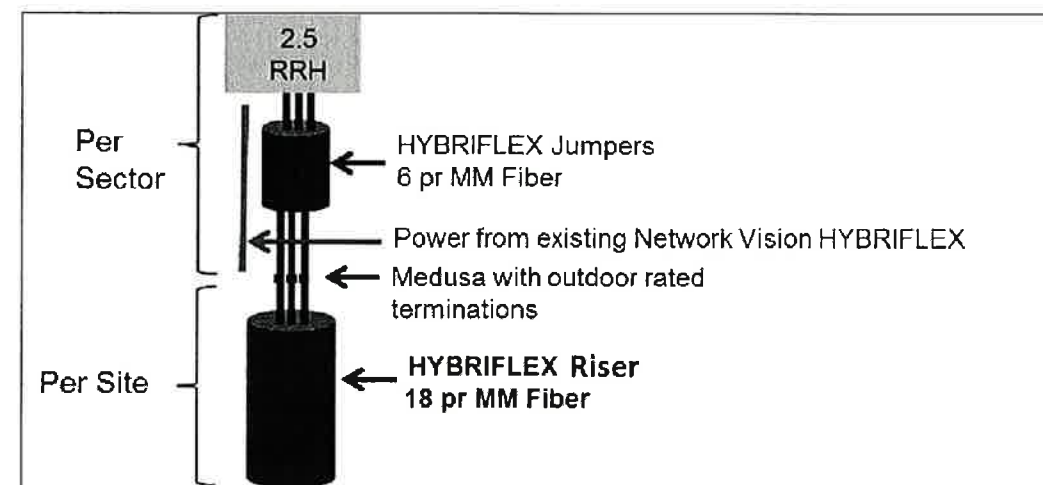
SHEET NUMBER:  
**A-6**



ALU 2.5 ALU SCENARIO 1



RAN WIRING DIAGRAM



RF 2.5 ALU SCENARIO 1

PLUMBING DIAGRAM

NO SCALE

1

PLANS PREPARED FOR:



6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:



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

JOB NUMBER 340-000

MLA PARTNER:



10 PRESIDENTIAL WAY  
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SITE NAME:

MARCUS GROUP  
COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

A-7

INSTALL SPRINT 9929 EQUIPMENT CABINET (SEE SHEET A-5, DETAIL 2)

INSTALL A/C POWER TO 40A 2 POLE BREAKER FOR POWER CABINET IN 2" FLEXIBLE METALLIC LIQUID TIGHT CONDUIT (6' MAX.). TRANSITION TO SCHEDULE 40 PVC CONDUIT UNDERGROUND

EXISTING SPRINT PPC CABINET

EXISTING SPRINT BATTERY CABINET

EXISTING SPRINT N.V. MMBS CABINET

EXISTING SPRINT FIBER JUNCTION BOX

INSTALL SPRINT FIBER CABLE ON EXISTING ICE BRIDGE

BONDED TO EXISTING GROUND RING

(1) 2" FLEXIBLE METALLIC LIQUID TIGHT CONDUITS FOR DC POWER FLOW

**LEGEND:**

- G — EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- ▲ MECHANICAL CONNECTION
- ⊗ GROUND ROD
- CABLE GROUND KIT

PLANS PREPARED FOR:



6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:



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

JOB NUMBER 340-000

MLA PARTNER:



10 PRESIDENTIAL WAY  
WOBURN, MA 01801

ENGINEERING LICENSE:



PLAN NOT USED

NO SCALE

1

**LEGEND:**

- G — EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- ▲ MECHANICAL CONNECTION
- ⊗ GROUND ROD
- CABLE GROUND KIT

BOND INSTALL ANTENNA TO SECTOR GROUND BAR PER MANUFACTURER'S SPECIFICATIONS

BOND RRU TO SECTOR BAR PER MANUFACTURER'S SPECIFICATIONS

NEW CABLE GROUNDED TO UPPER GROUND BAR (TYP.)

EXISTING SPRINT SECTOR GROUND BAR (CONTRACTOR TO VERIFY)

EXISTING SPRINT TOWER GROUND BAR (CONTRACTOR TO VERIFY)

NEW CABLE TO BE BONDED TO LOWER MAIN TOWER GROUND BAR

BONDED TO EXISTING GROUND RING

EXISTING LOWER TOWER GROUND MAIN BAR

EXISTING FIBER JUNCTION BOX

USE CONDUIT SEAL PRODUCT BY ETCO OR ROXTEC

2" LIQUIDTIGHT FLEXIBLE METAL CONDUIT IF REQUIRED (6' MAX) CONTRACTOR TO VERIFY

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

TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION)

NO SCALE

3

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SITE NAME:

MARCUS GROUP COMM. TOWER

SITE CASCADE:

CT60XC018

SITE ADDRESS:

605 WILLARD AVE  
NEWINGTON, CT 06111

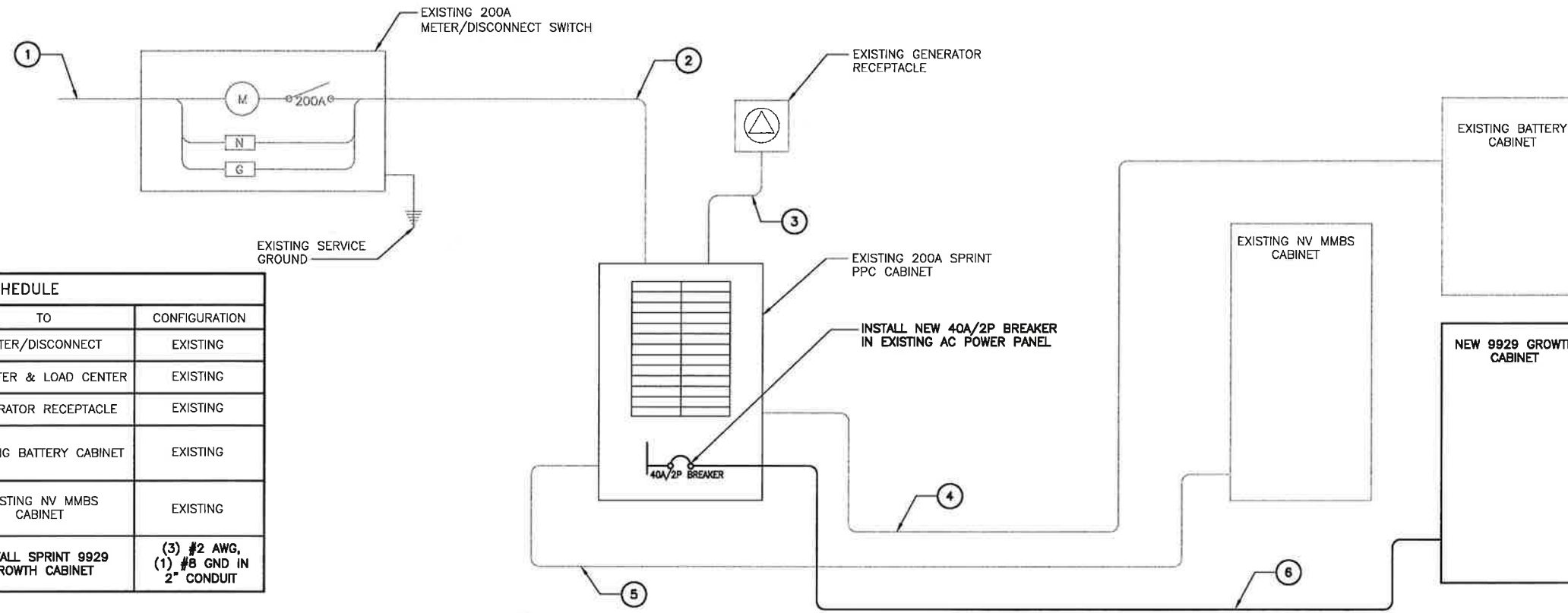
SHEET DESCRIPTION:

ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

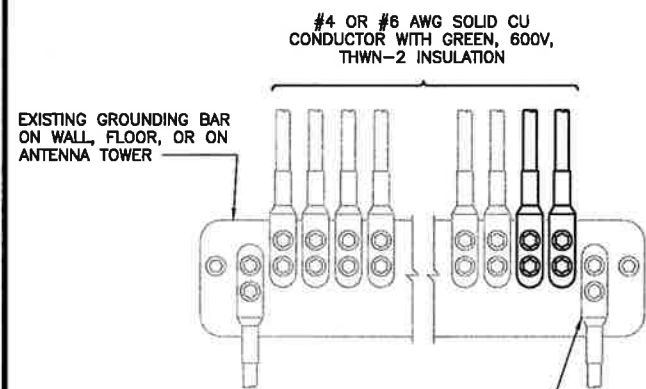
**NOTES**  
GC SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



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

**ELECTRICAL ONE-LINE DIAGRAM**

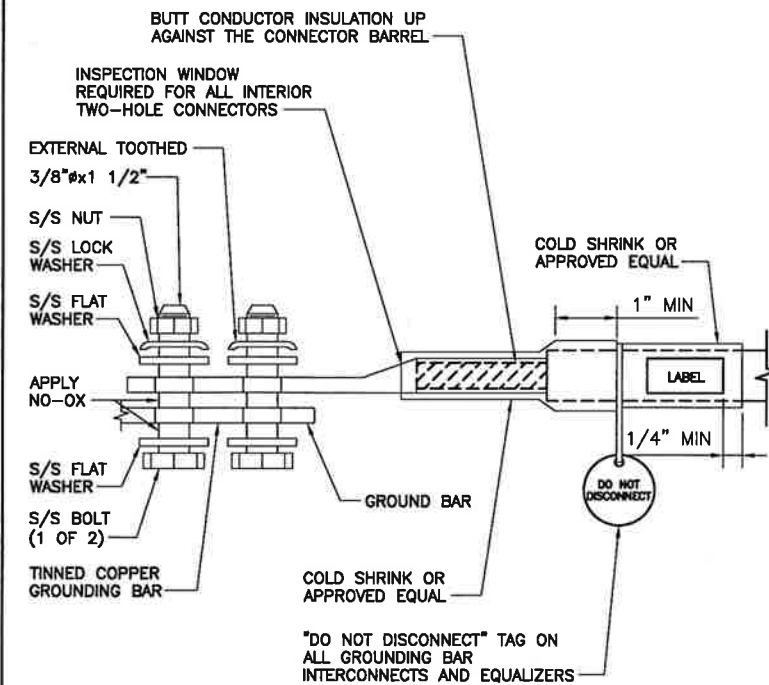
NO SCALE 1



TWO HOLE SPADE, TO BE USED TO CONNECT TO GROUND BAR

**NOTES**

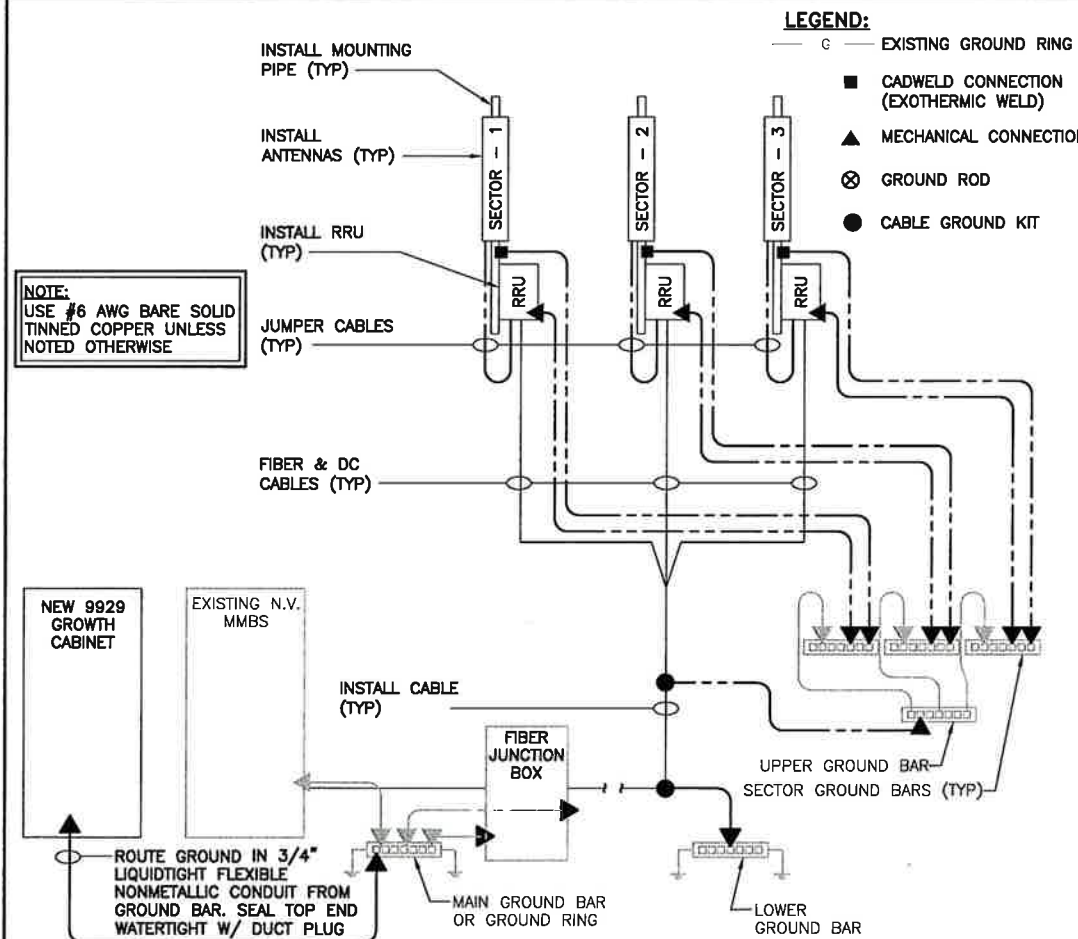
1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.



"DO NOT DISCONNECT" TAG ON ALL GROUNDING BAR INTERCONNECTS AND EQUALIZERS

**TWO HOLE LUG**

NO SCALE 3



**LEGEND:**

- G — EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- ▲ MECHANICAL CONNECTION
- ⊗ GROUND ROD
- CABLE GROUND KIT

**NOTE:**  
USE #6 AWG BARE SOLID TINNED COPPER UNLESS NOTED OTHERWISE

**GROUNDING RISER DIAGRAM**

NO SCALE 4

PLANS PREPARED FOR:

6580 Sprint Parkway  
Overland Park, Kansas 66251

PLANS PREPARED BY:

1033 Watervliet Shaker Rd  
Albany, NY 12205  
Office # (518) 690-0790  
Fax # (518) 690-0793  
JOB NUMBER 340-000

MLA PARTNER:

10 PRESIDENTIAL WAY  
WOBURN, MA 01801

ENGINEERING LICENSE:

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SITE NAME:  
**MARCUS GROUP COMM. TOWER**

SITE CASCADE:  
**CT60XC018**

SITE ADDRESS:  
605 WILLARD AVE  
NEWINGTON, CT 06111

SHEET DESCRIPTION:  
**ELECTRICAL & GROUNDING DETAILS**

SHEET NUMBER:  
**E-2**

**INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR**

NO SCALE 2