AIROSMITH DEVELOPMENT
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March 28th, 2018

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

RE: Notice of Exempt Modification – Antenna Swap for wireless facility located at 47 INWOOD ROAD, ROCKY HILL, CT 06067 – CT03XC070 (lat. 41° 38' 18.91" N, long. -72° 40' 45.44" W)

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (140-foot level) on an existing (150-foot monopole tower) at the above-referenced address. The property is owned by MERRIFIELD LLC, and the tower is owned by American Tower Corporation.

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

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to JOHN MEHR, TOWN MANAGER, and KIM RICCI, TOWN PLANNER of the Town of Rocky Hill. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the site and to the MERRIFIELD LLC who owns the land.

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

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

32 Clinton Street, Saratoga Springs, NY 12866
Office 518-306-1733 – Fax 518-306-1711
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an extension of the site boundaries.

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

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

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

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

Kind Regards,

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

Attachment

CC: JOHN MEHR, (TOWN MANAGER, ROCKY HILL CT)
JUSTINE PAUL (Manager, AMERICAN TOWER CORPORATION)
KIM RICCI (TOWN PLANNER / ROCKY HILL CT)
MERRIFIELD LLC (Land Owner)

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SARATOGA FINANCE
MAR 28 2018
0867
17
Sent To Merrifield LLC CT03XC070
Street and Apt. No., or PO Box No. 10 Talcott Place
City, State, ZIP+4® Wethersfield CT 06109
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7017 3040 0000 7659 3640

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Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70
Postmark Here
SARATOGA FINANCE
MAR 28 2018
0867
17
Sent To John Pul CT03XC070
Street and Apt. No., or PO Box No. 10 Presidential Way
City, State, ZIP+4® Woburn MA 01801
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7017 3040 0000 7659 3633

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Certified Mail Restricted Delivery $0.00
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Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70
Postmark Here
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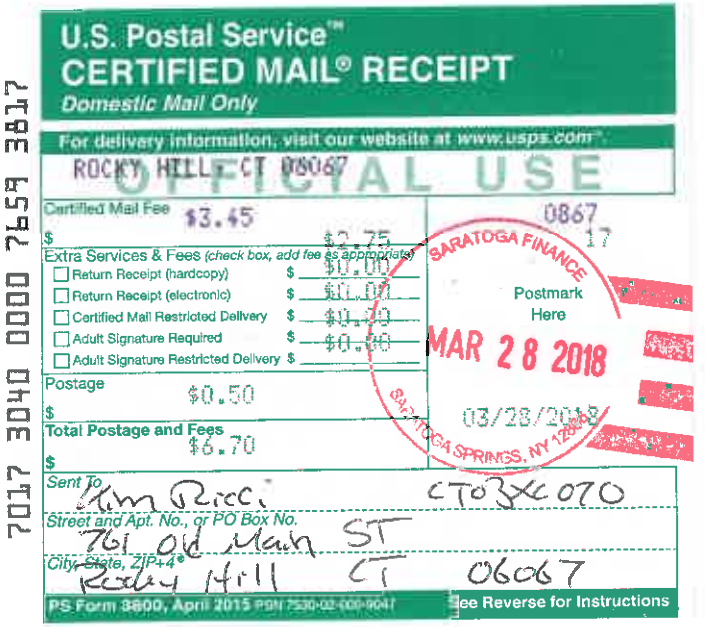
MAR 28 2018
0867
17
Sent To John Mehr CT03XC070
Street and Apt. No., or PO Box No. 761 Old Main ST
City, State, ZIP+4® Rocky Hill CT 06067
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7017 3040 0000 7659 3923



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Postage $0.50
Total Postage and Fees $6.70
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17
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Street and Apt. No., or PO Box No. 761 Old Main ST
City, State, ZIP+4® Rocky Hill CT 06067
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions
7017 3040 0000 7659 3817

Town of Rocky Hill Property Summary Report

47 INWOOD ROAD

PARCEL ID:	16-296	**ACCOUNT NUMBER:**	004208
LOCATION:	47 INWOOD ROAD		
OWNER NAME:	MERRIFIELD LLC		

16-296-001 12/09/2012

OWNER OF RECORD
MERRIFIELD LLC
10 TALCOTT PLACE
WETHERSFIELD, CT 06109

LIVING AREA:	4998	**ZONING:**	BP	**ACREAGE:**	1.00

SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
MERRIFIELD LLC	503/ 959	08-May-2006	$0.00
MERRIFIELD BEVERLY	346/ 452	24-Jun-1998	$0.00

CURRENT PARCEL VALUE

TOTAL:	$345,940.00	**IMPROVEMENTS:**	$205,940.00	**LAND:**	$140,000.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2017	$345,940.00	$205,940.00	$140,000.00
2007	$189,850.00	$84,850.00	$105,000.00
2006	$189,850.00	$0.00	$105,000.00
2016	$345,940.00	$205,940.00	$140,000.00
2014	$345,940.00	$205,940.00	$140,000.00
2013	$345,940.00	$205,940.00	$140,000.00
2012	$333,480.00	$53,480.00	$280,000.00
2011	$333,480.00	$53,480.00	$280,000.00
2010	$333,480.00	$53,480.00	$280,000.00
2009	$333,480.00	$53,480.00	$280,000.00
2008	$333,480.00	$53,480.00	$280,000.00

Town of Rocky Hill Property Summary Report

47 INWOOD ROAD

PARCEL ID:	16-296	**ACCOUNT NUMBER:**	004208
LOCATION:	47 INWOOD ROAD		
OWNER NAME:	MERRIFIELD LLC		

BUILDING # 1

YEAR BUILT	1962	**ROOF STRUCTURE**	Flat
STYLE	Warehouse	**ROOF COVER**	Tar + Gravel
MODEL	Ind/Comm	**FLOOR COVER 1**	Tile/Vinyl Cmp
GRADE	C	**FLOOR COVER 2**	
STORIES	1	**HEAT FUEL**	Oil
OCCUPANCY	Industrial 96	**HEAT TYPE**	Floor Furnace
EXT WALL 1	Concr/Cinder	**AC TYPE**	None
EXT WALL 2		**BEDROOMS**	
INT WALLS 1	Drywall/Sheetr	**FULL BATHS**	1
INT WALLS 2		**HALF BATHS**	
		TOT ROOMS	0

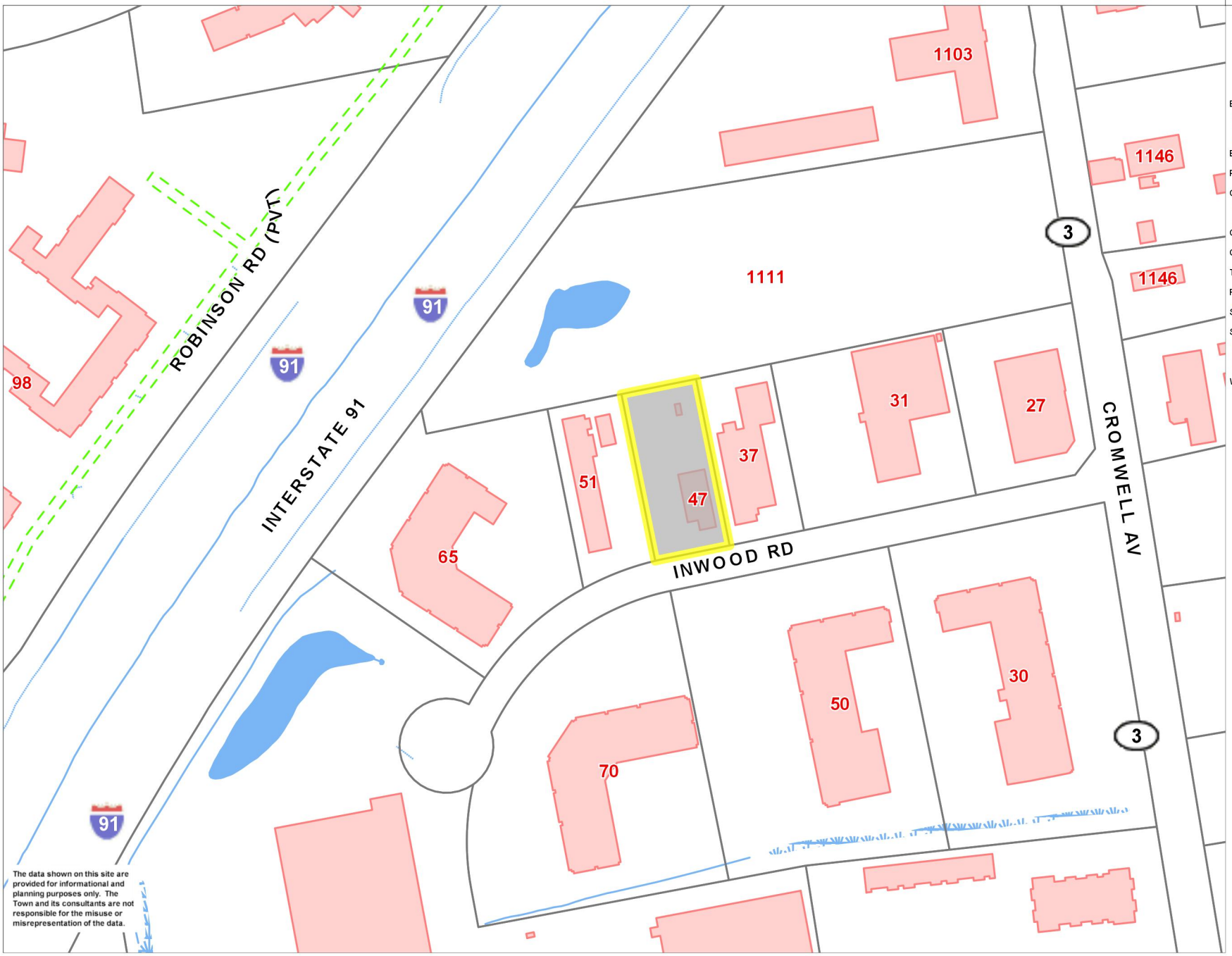
16-296-001 12/09/2012

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
OVHD 12'	OD5	2 UNITS

OUTBUILDINGS

DESCRIPTION	CODE	UNITS
Cell Site	CELL	1 UNITS
Paving Asphalt	PAV1	6300 S.F.


1103
1146
1146
1111
3
ROBINSON RD (PVT)
91
91
91
98
INTERSTATE 91
31
27
37
51
47
65
INWOOD RD
CROMWELL AV
50
30
70
3
The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.
Buildings
Building
Deck
Greenhouse
Pool
Easements
Parcels
CT Highways
Interstate
US Highway
State Highway
CT Communities
CT Communities Opaque
Town Boundary
Recreation
Streets
Streams
Culvert
Dam
Drainage Ditch
Perenial Stream
Water Bodies
0
320
640 ft
Printed on 03/28/2018 at 11:31 AM
MapsOnline by PeopleGIS

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT03XC070

Middletown CT 3 - Nextel Tower
47 Inwood Road
Rocky Hill, CT 06067

March 19, 2018

EBI Project Number: 6218002054

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	6.29 %

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

EBI Consulting
environmental | engineering | due diligence

March 19, 2018

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

Emissions Analysis for Site: **CT03XC070 – Middletown CT 3 - Nextel Tower**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **47 Inwood Road, Rocky Hill, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **47 Inwood Road, Rocky Hill, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

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

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

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

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

9) The antenna mounting height centerlines of the proposed antennas are **140 feet** above ground level (AGL) for **Sector A**, **140 feet** above ground level (AGL) for **Sector B** and **140 feet** above ground level (AGL) for Sector C.

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

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**140 feet**	Height (AGL):	**140 feet**	Height (AGL):	**140 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts	Total TX Power(W):	180 Watts
ERP (W):	6,662.27	ERP (W):	6,662.27	ERP (W):	6,662.27
Antenna A1 MPE%	**1.40 %**	Antenna B1 MPE%	**1.40 %**	Antenna C1 MPE%	**1.40 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 / 13.35 dBd	Gain:	15.05 / 13.35 dBd	Gain:	15.05 / 13.35 dBd
Height (AGL):	**140 feet**	Height (AGL):	**140 feet**	Height (AGL):	**140 feet**
Frequency Bands	2500 MHz (BRS) / 850 MHz	Frequency Bands	2500 MHz (BRS) / 850 MHz	Frequency Bands	2500 MHz (BRS) / 850 MHz
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	200 Watts	Total TX Power(W):	200 Watts	Total TX Power(W):	200 Watts
ERP (W):	5,983.32	ERP (W):	5,983.32	ERP (W):	5,983.32
Antenna A2 MPE%	**1.33 %**	Antenna B2 MPE%	**1.33 %**	Antenna C2 MPE%	**1.33 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.73 %**
Nextel	0.79 %
AT&T	2.77 %
Site Total MPE %:	**6.29 %**

SPRINT Sector A Total:	2.73 %
SPRINT Sector B Total:	2.73 %
SPRINT Sector C Total:	2.73 %
Site Total:	6.29 %

SPRINT _ Frequency Band / Technology (All Sectors)	**# Channels**	**Watts ERP (Per Channel)**	**Height (feet)**	**Total Power Density ($\mu W/cm^2$)**	**Frequency (MHz)**	**Allowable MPE ($\mu W/cm^2$)**	**Calculated % MPE**
Sprint 850 MHz CDMA	1	437.55	140	0.88	850 MHz	567	0.16%
Sprint 1900 MHz (PCS) CDMA	5	622.47	140	6.23	1900 MHz (PCS)	1000	0.62%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	140	6.23	1900 MHz (PCS)	1000	0.62%
Sprint 2500 MHz (BRS) LTE	8	639.78	140	10.25	2500 MHz (BRS)	1000	1.02%
Sprint 850 MHz LTE	2	432.54	140	1.73	850 MHz	567	0.31%
						Total:	**2.73%**

Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	2.73 %
Sector B:	2.73 %
Sector C:	2.73 %
SPRINT Maximum Total (per sector):	2.73 %
Site Total:	6.29 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.29 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**185 ft Monopole**
ATC Site Name	:	**Middletown CT 3, CT**
ATC Site Number	:	**302537**
Engineering Number	:	**OAA713643_C3_01**
Proposed Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**Middletown CT 3 – Nextel Tower**
Carrier Site Number	:	**CT03XC070**
Site Location	:	**47 Inwood Road** **Rocky Hill, CT 06067-3453** **41.638600,-72.679300**
County	:	**Hartford**
Date	:	**October 6, 2017**
Max Usage	:	**80%**
Result	:	**Pass**

Prepared By:
Charles Cages, E.I.
TEP

Charles Cages

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER

10/06/2017

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 185 ft monopole to reflect the change in loading by Sprint Nextel.

Supporting Documents

Tower Drawings	Valmont Drawing #DC1646Z, dated November 2, 1993
Foundation Drawing	H. Edmund Bergeron Civil Engineers Project #93127, dated December 21, 1993
Geotechnical Report	Materials Testing Inc File #99 GT 93, dated December 2, 1993
Modifications	ATC Project #51430332, dated December 12, 2012

Analysis

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

Basic Wind Speed:	97 mph (3-Second Gust, V_{ASD}) / 125 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
181.0	181.0	4	Decibel 844G90VTA-SX	Platform w/ Handrails	(12) 1 5/8" Coax	Sprint Nextel
		4	Decibel DB844H90E-XY			
		4	Decibel 844G65VTZASX			
168.0	168.0	6	Powerwave LGP21401	Low Profile Platform	(12) 1 5/8" Coax (4) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (1) 3" conduit	AT&T Mobility
		2	Raycap DC6-48-60-18-8F (23.5" Height)			
		3	Ericsson RRUS 11 (Band 4) (17" Width)			
		3	Ericsson RRUS 12			
		3	Ericsson RRUS-32 (77 lbs)			
		3	Powerwave 7770.00			
		3	KMW AM-X-CD-16-65-00T-RET			
		3	Quintel QS66512-2			
140.0	140.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Platform w/ Handrails	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 4x40W RRH (88 lb)			
		3	RFS APXVSPP18-C-A20			
98.0	98.0	1	GPS	Stand-Off	-	

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Alcatel-Lucent TD-RRH8x20	-	-	Sprint Nextel
		3	RFS APXVTM14-C-I20			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Alcatel-Lucent RRH2x50-08	Platform w/ Handrails	-	Sprint Nextel
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	Commscope DT465B-2XR			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	63%	Pass
Shaft	80%	Pass
Base Plate	40%	Pass
Reinforcement	59%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,821.4	5,158.9	4,367.4	85%
Shear (Kips)	32.1	43.4	38.2	88%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

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)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
140.0	Alcatel-Lucent RRH2x50-08	Sprint Nextel	1.773	1.596
	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	Commscope DT465B-2XR			

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

Standard Conditions

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

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

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

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

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

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

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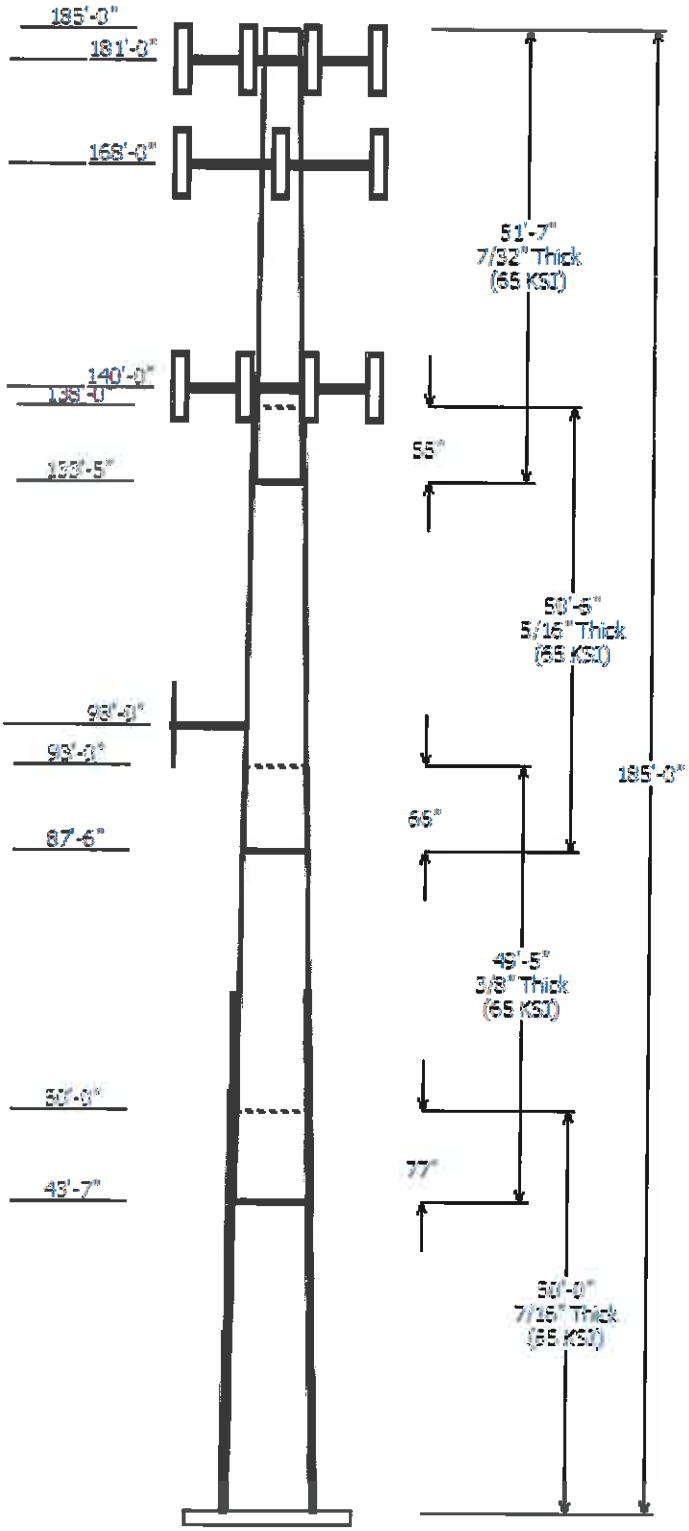


Job Information

Pole :	302537	Code:	ANSI/TIA-222-G
Description :	185 ft Valmont pole - Model verified 5/30/12		
Client :	SPRINT NEXTEL	Struct Class :	II
Location :	Middletown CT 3, CT		
Shape :	12 Sides	Exposure :	B
Height :	185.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.188013 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	50.000	42.59	52.00	0.438		0.000	0.188000	65
2	49.417	35.26	44.55	0.375	Slip Joint	77.000	0.188000	65
3	50.500	27.42	36.92	0.313	Slip Joint	66.000	0.188000	65
4	51.583	19.03	28.72	0.219	Slip Joint	55.000	0.188000	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
181.000	181.000	4	Decibel 844G65VTZASX
181.000	181.000	4	Decibel DB844H90E-XY
181.000	181.000	4	Decibel 844G90VTA-SX
181.000	181.000	1	Flat Platform w/ Handrails
168.000	168.000	2	Raycap DC6-48-60-18-8F (23.5"
168.000	168.000	3	Powerwave Allgon 7770.00
168.000	168.000	3	Quintel QS66512-2
168.000	168.000	3	Ericsson RRUS 11 (Band 4) (17"
168.000	168.000	3	Ericsson RRUS 12
168.000	168.000	3	Ericsson RRUS-32 (77 lbs)
168.000	168.000	3	KMW AM-X-CD-16-65-00T-RET
168.000	168.000	6	Powerwave Allgon LGP21401
168.000	168.000	1	Round Low Profile Platform
140.000	140.000	3	Commscope DT465B-2XR
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20-25
140.000	140.000	3	Alcatel-Lucent RRH2x50-08
140.000	140.000	1	Flat Platform w/ Handrails
140.000	140.000	3	RFS APXVSPP18-C-A20
140.000	140.000	3	Alcatel-Lucent 4x40W RRH (88 I
140.000	140.000	3	Alcatel-Lucent 800 MHz 2X50W
98.000	98.000	1	Stand-Off
98.000	98.000	1	GPS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	73.620	#20 Dywidag	Yes
0.000	140.0	1 1/4" Hybriflex	Yes
0.000	140.0	1 1/4" Hybriflex	Yes
0.000	168.0	0.39" (10mm)	No
0.000	168.0	0.78" (19.7mm) 8	No
0.000	168.0	1 5/8" Coax	Yes
0.000	168.0	3" conduit	Yes
0.000	181.0	1 5/8" Coax	No

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice

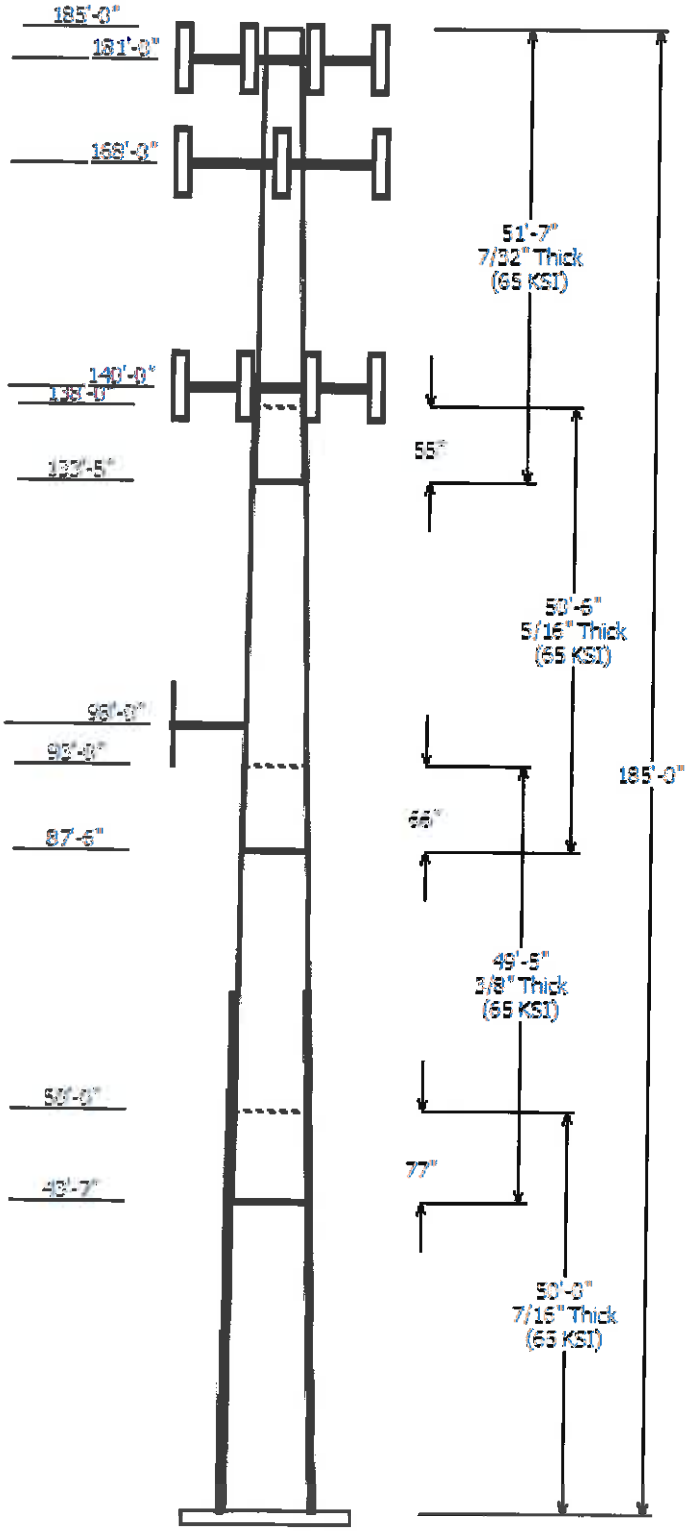
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

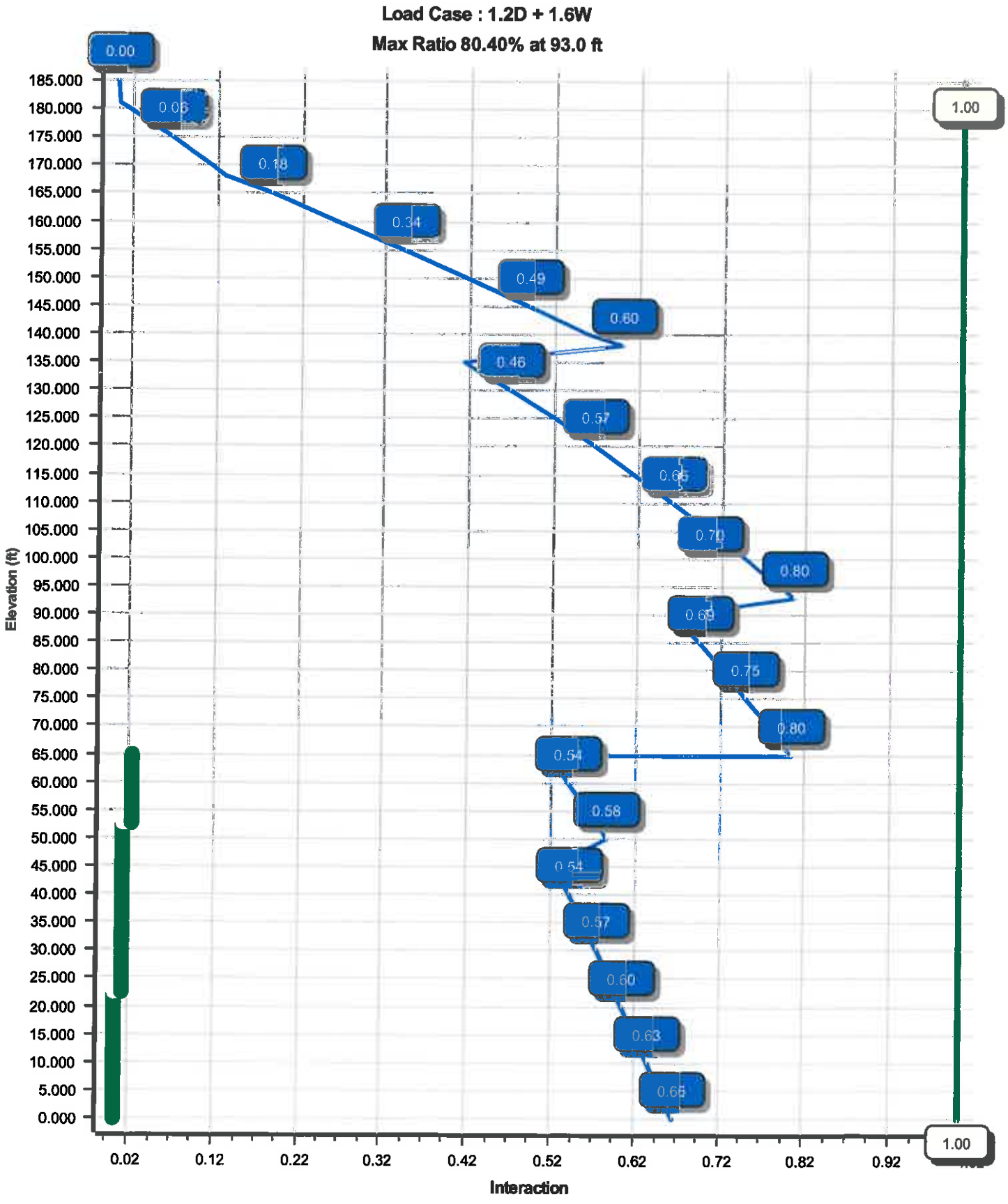
Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	4367.38	38.18	54.99
0.9D + 1.6W	4281.05	36.90	41.23
1.2D + 1.0Di + 1.0Wi	1126.33	8.71	98.79
(1.2 + 0.2Sds) * DL + E ELFM	262.51	1.79	54.69
(1.2 + 0.2Sds) * DL + E EMAM	259.22	2.12	54.69
(0.9 - 0.2Sds) * DL + E ELFM	258.14	1.79	38.03
(0.9 - 0.2Sds) * DL + E EMAM	254.62	2.12	38.03
1.0D + 1.0W	1057.90	9.06	45.88

Dish Deflections

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




Load Case : 1.2D + 1.6W
Max Ratio 80.40% at 93.0 ft
0.00
0.06
0.18
0.34
0.49
0.60
0.46
0.57
0.65
0.70
0.80
0.69
0.75
0.80
0.54
0.58
0.54
0.57
0.60
0.63
0.65
1.00
1.00
185.000
180.000
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	**302537**	**Code: ANSI/TIA-222-G**	*© 2007 - 2017 by ATC IP LLC. All rights reserved.*
Site Name:	**Middletown CT 3, CT**	**Engineering Number:OAA713643_C3_01**	**10/6/2017 11:41:06 AM**
Customer:	**SPRINT NEXTEL**		

Analysis Parameters

Location:	**HARTFORD County, CT**	**Height (ft):**	**185**
Code:	**ANSI/TIA-222-G**	**Base Diameter (in):**	**52.00**
Shape:	**12 Sides**	**Top Diameter (in):**	**19.03**
Pole Type:	**Taper**	**Taper (in/ft) :**	**0.188**
Pole Manfacturer:	**Valmont**	**Rotation (deg) :**	**0.00**

Ice & Wind Parameters

Structure Class:	**II**	**Design Wind Speed Without Ice:**	**97 mph**
Exposure Category:	**B**	**Design Wind Speed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Wind Speed:**	**60 mph**
Crest Height:	**0.0 ft**	**Design Ice Thickness:**	**1.00 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**2.75**				
T_L (sec):	**6**	**p:**	**1.3**	**C_s:**	**0.030**
S_s:	**0.181**	**S_1:**	**0.063**	**C_s Max:**	**0.030**
F_a:	**1.600**	**F_v:**	**2.400**	**C_s Min:**	**0.030**
S_{ds}:	**0.193**	**S_{d1}:**	**0.101**		

Load Cases

1.2D + 1.6W	**97 mph with No Ice**
0.9D + 1.6W	**97 mph with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi	**50 mph with 1.00 in Radial Ice**
(1.2 + 0.2Sds) * DL + E ELFM	**Seismic Equivalent Lateral Forces Method**
(1.2 + 0.2Sds) * DL + E EMAM	**Seismic Equivalent Modal Analysis Method**
(0.9 - 0.2Sds) * DL + E ELFM	**Seismic (Reduced DL) Equivalent Lateral Forces Method**
(0.9 - 0.2Sds) * DL + E EMAM	**Seismic (Reduced DL) Equivalent Modal Analysis Method**
1.0D + 1.0W	**Serviceability 60 mph**

Site Number: 302537 | Code: ANSI/TIA-222-G | © 2007 - 2017 by ATC IP LLC. All rights reserved.

Site Name: Middletown CT 3, CT | Engineering Number:OAA713643_C3_01 | 10/6/2017 11:41:06 AM

Customer: SPRINT NEXTEL

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	50.000	0.4375	65		0.00	11,232	52.00	0.00	72.64	24650.3	29.70	118.86	42.59	50.00	59.40	13476.5	23.95	97.37	0.188013
2-12	49.417	0.3750	65	Slip	77.00	8,028	44.55	43.58	53.35	13291.4	29.69	118.82	35.26	93.00	42.13	6545.8	23.05	94.04	0.188013
3-12	50.500	0.3125	65	Slip	66.00	5,510	36.92	87.50	36.84	6302.8	29.52	118.16	27.42	138.00	27.29	2560.9	21.38	87.77	0.188013
4-12	51.583	0.2188	65	Slip	55.00	2,925	28.72	133.42	20.08	2083.3	33.05	131.33	19.03	185.00	13.25	598.5	21.17	86.99	0.188013
					Shaft Weight	27,695													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
181.00	Decibel 844G65VTZASX	4	16.00	5.310	0.71	242.88	6.706	0.71	0.000	0.000
181.00	Decibel 844G90VTA-SX	4	11.50	3.610	0.74	136.18	6.150	0.74	0.000	0.000
181.00	Decibel DB844H90E-XY	4	14.00	3.610	0.74	177.90	4.271	0.74	0.000	0.000
181.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,934.25	70.943	1.00	0.000	0.000
168.00	Ericsson RRUS 11 (Band 4)	3	50.00	2.520	0.67	140.86	3.923	0.67	0.000	0.000
168.00	Ericsson RRUS 12	3	50.00	3.150	0.67	159.20	4.717	0.67	0.000	0.000
168.00	Ericsson RRUS-32 (77 lbs)	3	77.00	3.310	0.67	208.30	5.041	0.67	0.000	0.000
168.00	KMW AM-X-CD-16-65-00T-	3	48.50	8.020	0.67	267.14	11.784	0.67	0.000	0.000
168.00	Powerwave Allgon 7770.00	3	35.00	5.510	0.65	231.75	6.968	0.65	0.000	0.000
168.00	Powerwave Allgon LGP21401	6	14.10	1.100	0.50	47.78	2.060	0.50	0.000	0.000
168.00	Quintel QS66512-2	3	111.00	8.130	0.74	380.04	11.892	0.74	0.000	0.000
168.00	Raycap DC6-48-60-18-8F	2	20.00	1.110	1.00	91.09	1.893	1.00	0.000	0.000
168.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,374.71	47.620	1.00	0.000	0.000
140.00	Alcatel-Lucent 4x40W RRH	3	88.00	3.260	0.67	232.45	5.124	0.67	0.000	0.000
140.00	Alcatel-Lucent 800 MHz	3	64.00	2.060	0.67	166.16	3.331	0.67	0.000	0.000
140.00	Alcatel-Lucent RRH2x50-08	3	52.90	1.700	0.50	155.44	2.451	0.50	0.000	0.000
140.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.050	0.67	195.31	5.812	0.67	0.000	0.000
140.00	Commscope DT465B-2XR	3	58.00	9.100	0.69	379.72	10.906	0.69	0.000	0.000
140.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,884.37	70.207	1.00	0.000	0.000
140.00	RFS APXVSPP18-C-A20	3	57.00	8.020	0.69	285.72	11.717	0.69	0.000	0.000
98.00	GPS	1	10.00	1.000	1.00	47.41	1.908	1.00	0.000	0.000
98.00	Stand-Off	1	75.00	2.500	1.00	121.76	4.170	0.67	0.000	0.000
	Totals	61	8159.80			21,465.44			Number of Loadings :	22

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	181.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	SPRINT NEXTEL
0.00	168.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0.00	N	AT&T MOBILITY
0.00	168.00	4	0.78" (19.7mm) 8	0.78	0.59	N	0.00	N	AT&T MOBILITY
0.00	168.00	12	1 5/8" Coax	1.98	0.82	N	5.94	Y	AT&T MOBILITY
0.00	168.00	1	3" condult	3.50	7.58	N	0.00	Y	AT&T MOBILITY
0.00	140.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	3.08	Y	SPRINT NEXTEL
0.00	140.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	Y	SPRINT NEXTEL
0.00	73.62	4	#20 Dywidag	0.00	0.00	N	0.00	Y	--

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections Description	Spacing (in)	Len (in)	Connectors	Continuation?

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0.00	22.50	4	SOL	#20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No
22.50	52.50	4	SOL	#20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes
52.50	65.00	4	SOL	#20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

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Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.4375	52.000	72.639	24,650.3	29.70	118.86	72.3	915.8	0.0	0.0	19.64	8,518	0.0
5.00		0.4375	51.060	71.314	23,326.5	29.13	116.71	72.9	882.6	0.0	1,224.6	19.64	8,249	334.0
10.00		0.4375	50.120	69.990	22,050.9	28.55	114.56	73.6	849.9	0.0	1,202.1	19.64	7,983	334.0
15.00		0.4375	49.180	68.666	20,822.7	27.98	112.41	74.2	817.9	0.0	1,179.5	19.64	7,723	334.0
20.00		0.4375	48.240	67.341	19,641.0	27.40	110.26	74.8	786.6	0.0	1,157.0	19.64	7,466	334.0
22.50	Reinf. Top Reinf	0.4375	47.770	66.679	19,067.3	27.11	109.19	75.1	771.1	0.0	570.1	19.64	7,339	167.0
25.00		0.4375	47.300	66.017	18,504.9	26.83	108.11	75.5	755.8	0.0	564.4	19.64	7,214	167.0
30.00		0.4375	46.360	64.693	17,413.5	26.25	105.96	76.1	725.6	0.0	1,111.9	19.64	6,966	334.0
35.00		0.4375	45.420	63.368	16,365.8	25.67	103.82	76.7	696.1	0.0	1,089.4	19.64	6,722	334.0
40.00		0.4375	44.479	62.044	15,361.0	25.10	101.67	77.3	667.2	0.0	1,066.9	19.64	6,483	334.0
43.58	Bot - Section 2	0.4375	43.806	61.095	14,666.8	24.69	100.13	77.8	646.8	0.0	750.7	19.64	6,314	239.4
45.00		0.4375	43.539	60.720	14,398.2	24.52	99.52	78.0	638.9	0.0	550.0	19.64	6,435	94.6
50.00	Top - Section 1	0.3750	43.349	51.891	12,232.1	28.83	115.60	73.3	545.1	0.0	1,914.3	19.64	6,201	334.0
52.50	Reinf. Top Reinf	0.3750	42.879	51.324	11,835.1	28.50	114.34	73.6	533.2	0.0	439.0	19.64	6,086	167.0
55.00		0.3750	42.409	50.756	11,446.8	28.16	113.09	74.0	521.4	0.0	434.2	19.64	5,971	167.0
60.00		0.3750	41.469	49.621	10,695.8	27.49	110.58	74.7	498.3	0.0	853.9	19.64	5,746	334.0
65.00	Reinf. Top	0.3750	40.529	48.486	9,978.5	26.82	108.08	75.5	475.6	0.0	834.6	19.64	5,525	334.0
70.00		0.3750	39.589	47.351	9,293.9	26.14	105.57	76.2	453.5	0.0	815.3			
75.00		0.3750	38.649	46.216	8,641.4	25.47	103.06	76.9	431.9	0.0	796.0			
80.00		0.3750	37.709	45.081	8,020.2	24.80	100.56	77.7	410.9	0.0	776.7			
85.00		0.3750	36.769	43.946	7,429.5	24.13	98.05	78.4	390.3	0.0	757.3			
87.50	Bot - Section 3	0.3750	36.299	43.378	7,145.3	23.79	96.80	78.8	380.3	0.0	371.5			
90.00		0.3750	35.829	42.810	6,868.5	23.46	95.54	79.1	370.3	0.0	677.9			
93.00	Top - Section 2	0.3125	35.890	35.800	5,783.7	28.63	114.85	73.5	311.3	0.0	802.0			
95.00		0.3125	35.514	35.421	5,602.3	28.31	113.64	73.8	304.7	0.0	242.3			
98.00		0.3125	34.950	34.854	5,337.3	27.82	111.84	74.4	295.0	0.0	358.7			
100.0		0.3125	34.574	34.475	5,165.3	27.50	110.64	74.7	288.6	0.0	235.9			
105.0		0.3125	33.634	33.529	4,751.7	26.70	107.63	75.6	272.9	0.0	578.5			
110.0		0.3125	32.694	32.583	4,360.8	25.89	104.62	76.5	257.7	0.0	562.4			
115.0		0.3125	31.753	31.637	3,991.9	25.08	101.61	77.4	242.9	0.0	546.3			
120.0		0.3125	30.813	30.692	3,644.4	24.28	98.60	78.2	228.5	0.0	530.2			
125.0		0.3125	29.873	29.746	3,317.7	23.47	95.59	79.1	214.6	0.0	514.1			
130.0		0.3125	28.933	28.800	3,011.2	22.66	92.59	80.0	201.1	0.0	498.0			
133.4	Bot - Section 4	0.3125	28.291	28.153	2,812.9	22.11	90.53	80.6	192.1	0.0	331.1			
135.0		0.3125	27.993	27.854	2,724.1	21.86	89.58	80.9	188.0	0.0	258.4			
138.0	Top - Section 3	0.2188	27.867	19.474	1,900.1	31.99	127.39	69.8	131.7	0.0	482.3			
140.0		0.2188	27.491	19.210	1,823.6	31.53	125.67	70.3	128.2	0.0	131.6			
145.0		0.2188	26.551	18.547	1,641.5	30.38	121.37	71.6	119.4	0.0	321.2			
150.0		0.2188	25.610	17.885	1,471.9	29.23	117.08	72.8	111.0	0.0	309.9			
155.0		0.2188	24.670	17.223	1,314.4	28.08	112.78	74.1	102.9	0.0	298.7			
160.0		0.2188	23.730	16.561	1,168.5	26.92	108.48	75.4	95.1	0.0	287.4			
165.0		0.2188	22.790	15.899	1,033.9	25.77	104.18	76.6	87.6	0.0	276.1			
168.0		0.2188	22.226	15.502	958.3	25.08	101.61	77.4	83.3	0.0	160.3			
170.0		0.2188	21.850	15.237	910.0	24.62	99.89	77.9	80.5	0.0	104.6			
175.0		0.2188	20.910	14.575	796.5	23.47	95.59	79.1	73.6	0.0	253.6			
180.0		0.2188	19.970	13.912	692.8	22.32	91.29	80.4	67.0	0.0	242.3			
181.0		0.2188	19.782	13.780	673.2	22.09	90.43	80.6	65.7	0.0	47.1			
185.0		0.2188	19.030	13.250	598.5	21.17	86.99	81.6	60.8	0.0	184.0			
											27,694.6			4,342.0

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Load Case: 1.2D + 1.6W — 97 mph with No Ice — 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.60
Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		378.3	0.0					0.0	0.0	378.3	0.0	0.0	0.0
5.00		752.5	1,469.5					0.0	603.2	752.5	2,072.8	0.0	0.0
10.00		744.5	1,442.5					0.0	603.2	744.5	2,045.7	0.0	0.0
15.00		736.5	1,415.4					0.0	603.2	736.5	2,018.7	0.0	0.0
20.00		547.9	1,388.4					0.0	603.2	547.9	1,991.6	0.0	0.0
22.50	Reinf. Top Reinf	362.3	684.1					0.0	301.6	362.3	985.7	0.0	0.0
25.00		538.9	677.3					0.0	301.6	538.9	978.9	0.0	0.0
30.00		721.0	1,334.3					0.0	603.2	721.0	1,937.6	0.0	0.0
35.00		736.4	1,307.3					0.0	603.2	736.4	1,910.5	0.0	0.0
40.00		647.1	1,280.3					0.0	603.2	647.1	1,883.5	0.0	0.0
43.58	Bot - Section 2	384.6	900.9					0.0	432.3	384.6	1,333.2	0.0	0.0
45.00		476.1	660.0					0.0	170.9	476.1	830.9	0.0	0.0
50.00	Top - Section 1	548.3	2,297.2					120.8	603.2	669.1	2,900.5	0.0	0.0
52.50	Reinf. Top Reinf	367.4	526.8					61.3	301.6	428.7	828.4	0.0	0.0
55.00		552.8	521.0					61.9	301.6	614.7	822.7	0.0	0.0
60.00		738.1	1,024.7					125.6	603.2	863.6	1,627.9	0.0	0.0
65.00	Reinf. Top	738.1	1,001.5					127.7	603.2	865.8	1,604.8	0.0	0.0
70.00		736.4	978.3					129.7	202.4	866.1	1,180.8	0.0	0.0
75.00		733.2	955.2					131.6	202.4	864.8	1,157.6	0.0	0.0
80.00		728.7	932.0					133.4	202.4	862.1	1,134.4	0.0	0.0
85.00		543.5	908.8					135.1	202.4	678.6	1,111.3	0.0	0.0
87.50	Bot - Section 3	363.0	445.8					68.2	101.2	431.2	547.0	0.0	0.0
90.00		400.6	813.5					68.6	101.2	469.1	914.7	0.0	0.0
93.00	Top - Section 2	362.5	962.4					82.8	121.5	445.3	1,083.9	0.0	0.0
95.00		360.0	290.8					55.5	81.0	415.5	371.7	0.0	0.0
98.00	Appertunance(s)	358.4	430.4	138.5	0.0	0.0	102.0	83.7	121.5	580.6	653.9	0.0	0.0
100.00		496.6	283.1					56.1	81.0	552.7	364.1	0.0	0.0
105.00		702.5	694.2					141.3	202.4	843.8	896.7	0.0	0.0
110.00		692.0	674.9					142.6	202.4	834.7	877.3	0.0	0.0
115.00		680.7	655.6					144.0	202.4	824.7	858.0	0.0	0.0
120.00		668.7	636.3					145.3	202.4	813.9	838.7	0.0	0.0
125.00		655.9	617.0					146.5	202.4	802.4	819.4	0.0	0.0
130.00		542.6	597.6					147.7	202.4	690.3	800.1	0.0	0.0
133.42	Bot - Section 4	319.3	397.3					101.6	138.3	420.9	535.7	0.0	0.0
135.00		291.5	310.1					47.3	64.1	338.8	374.2	0.0	0.0
138.00	Top - Section 3	315.4	578.8					89.9	121.5	405.4	700.3	0.0	0.0
140.00	Appertunance(s)	433.3	157.9	3,725.1	0.0	0.0	3,803.6	60.2	81.0	4,218.5	4,042.5	0.0	0.0
145.00		608.2	385.4					83.4	178.4	691.5	563.9	0.0	0.0
150.00		592.4	371.9					83.8	178.4	676.1	550.4	0.0	0.0
155.00		576.0	358.4					84.2	178.4	660.2	536.8	0.0	0.0
160.00		559.1	344.9					84.6	178.4	643.6	523.3	0.0	0.0
165.00		436.2	331.4					84.9	178.4	521.1	509.8	0.0	0.0
168.00	Appertunance(s)	248.8	192.3	3,530.5	0.0	0.0	3,286.9	51.1	107.1	3,830.5	3,586.3	0.0	0.0
170.00		302.4	125.5					0.0	23.6	302.4	149.1	0.0	0.0
175.00		421.2	304.3					0.0	59.0	421.2	363.4	0.0	0.0
180.00		247.1	290.8					0.0	59.0	247.1	349.8	0.0	0.0
181.00	Appertunance(s)	198.8	56.5	3,288.3	0.0	0.0	2,599.2	0.0	11.8	3,487.1	2,667.5	0.0	0.0
185.00		158.4	220.7					0.0	0.0	158.4	220.7	0.0	0.0

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Load Case: 1.2D + 1.6W — 97 mph with No Ice — 28 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.60
Wind Importance Factor :1.00

Totals:	38,466.6	55,056.7	0.00	0.00

Site Number: 302537
Site Name: Middletown CT 3, CT
Customer: SPRINT NEXTEL

Code: ANSI/TIA-222-G
Engineering Number:OAA713643_C3_01

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10/6/2017 11:41:08 AM

Load Case: 1.2D + 1.6W — 97 mph with No Ice — 28 Iterations

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

Wind Importance Factor 1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.99	-38.18	0.00	-4,367.38	0.00	4,367.38	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.663
5.00	-52.80	-37.59	0.00	-4,176.49	0.00	4,176.49	4,681.88	2,340.94	9,776.84	4,828.41	0.10	-0.18	0.648
10.00	-50.64	-37.00	0.00	-3,988.53	0.00	3,988.53	4,634.49	2,317.25	9,496.63	4,690.03	0.39	-0.37	0.633
15.00	-48.51	-36.40	0.00	-3,803.53	0.00	3,803.53	4,585.61	2,292.80	9,217.11	4,551.98	0.87	-0.55	0.618
20.00	-46.44	-35.95	0.00	-3,621.51	0.00	3,621.51	4,535.23	2,267.61	8,938.46	4,414.37	1.55	-0.74	0.603
22.50	-45.40	-35.65	0.00	-3,531.65	0.00	3,531.65	4,509.47	2,254.74	8,799.52	4,345.75	1.96	-0.83	0.595
22.50	-45.40	-35.65	0.00	-3,531.65	0.00	3,531.65	4,509.47	2,254.74	8,799.52	4,345.75	1.96	-0.83	0.595
25.00	-44.34	-35.20	0.00	-3,442.54	0.00	3,442.54	4,483.35	2,241.67	8,660.87	4,277.28	2.42	-0.92	0.587
30.00	-42.31	-34.58	0.00	-3,266.54	0.00	3,266.54	4,429.97	2,214.99	8,384.50	4,140.79	3.49	-1.11	0.571
35.00	-40.30	-33.94	0.00	-3,093.63	0.00	3,093.63	4,375.10	2,187.55	8,109.53	4,004.99	4.75	-1.30	0.555
40.00	-38.34	-33.35	0.00	-2,923.95	0.00	2,923.95	4,318.73	2,159.36	7,836.14	3,869.97	6.21	-1.48	0.538
43.58	-36.97	-32.99	0.00	-2,804.44	0.00	2,804.44	4,277.41	2,138.70	7,641.28	3,773.74	7.37	-1.61	0.526
45.00	-36.08	-32.57	0.00	-2,757.71	0.00	2,757.71	4,260.86	2,130.43	7,564.50	3,735.82	7.86	-1.67	0.517
50.00	-33.13	-31.89	0.00	-2,594.89	0.00	2,594.89	3,421.90	1,710.95	6,065.62	2,995.58	9.71	-1.85	0.582
52.50	-32.26	-31.48	0.00	-2,515.17	0.00	2,515.17	3,401.39	1,700.70	5,962.76	2,944.78	10.70	-1.94	0.571
52.50	-32.26	-31.48	0.00	-2,515.17	0.00	2,515.17	3,401.39	1,700.70	5,962.76	2,944.78	10.70	-1.94	0.571
55.00	-31.38	-30.92	0.00	-2,436.46	0.00	2,436.46	3,380.51	1,690.25	5,860.04	2,894.05	11.75	-2.04	0.560
60.00	-29.69	-30.10	0.00	-2,281.85	0.00	2,281.85	3,337.62	1,668.81	5,655.16	2,792.87	13.99	-2.23	0.538
65.00	-28.02	-29.26	0.00	-2,131.37	0.00	2,131.37	3,293.24	1,646.62	5,451.16	2,692.12	16.43	-2.42	0.516
65.00	-28.02	-29.26	0.00	-2,131.37	0.00	2,131.37	3,293.24	1,646.62	5,451.16	2,692.12	16.43	-2.42	0.801
70.00	-26.76	-28.46	0.00	-1,985.07	0.00	1,985.07	3,247.36	1,623.68	5,248.22	2,591.90	19.07	-2.61	0.774
75.00	-25.51	-27.67	0.00	-1,842.79	0.00	1,842.79	3,199.99	1,599.99	5,046.50	2,492.28	21.96	-2.91	0.748
80.00	-24.28	-26.87	0.00	-1,704.46	0.00	1,704.46	3,151.11	1,575.56	4,846.18	2,393.35	25.16	-3.20	0.720
85.00	-23.11	-26.21	0.00	-1,570.12	0.00	1,570.12	3,100.74	1,550.37	4,647.45	2,295.20	28.67	-3.49	0.692
87.50	-22.53	-25.81	0.00	-1,504.57	0.00	1,504.57	3,074.99	1,537.50	4,548.71	2,246.44	30.53	-3.64	0.677
90.00	-21.58	-25.34	0.00	-1,440.06	0.00	1,440.06	3,048.88	1,524.44	4,450.47	2,197.92	32.48	-3.78	0.663
93.00	-20.46	-24.88	0.00	-1,364.03	0.00	1,364.03	2,367.81	1,183.91	3,474.51	1,715.93	34.91	-3.96	0.804
95.00	-20.05	-24.49	0.00	-1,314.29	0.00	1,314.29	2,354.00	1,177.00	3,417.42	1,687.73	36.59	-4.07	0.788
98.00	-19.38	-23.92	0.00	-1,240.82	0.00	1,240.82	2,332.83	1,166.41	3,331.94	1,645.52	39.21	-4.27	0.763
100.00	-18.96	-23.41	0.00	-1,192.98	0.00	1,192.98	2,318.41	1,159.21	3,275.08	1,617.44	41.02	-4.40	0.746
105.00	-18.01	-22.60	0.00	-1,075.92	0.00	1,075.92	2,281.33	1,140.66	3,133.47	1,547.50	45.79	-4.71	0.704
110.00	-17.10	-21.78	0.00	-962.93	0.00	962.93	2,242.75	1,121.37	2,992.76	1,478.01	50.89	-5.02	0.660
115.00	-16.21	-20.97	0.00	-854.01	0.00	854.01	2,202.67	1,101.33	2,853.13	1,409.06	56.29	-5.31	0.614
120.00	-15.36	-20.15	0.00	-749.18	0.00	749.18	2,161.09	1,080.55	2,714.76	1,340.72	62.00	-5.60	0.566
125.00	-14.53	-19.34	0.00	-648.42	0.00	648.42	2,118.02	1,059.01	2,577.82	1,273.09	68.00	-5.87	0.517
130.00	-13.74	-18.62	0.00	-551.73	0.00	551.73	2,073.45	1,036.73	2,442.48	1,206.25	74.28	-6.13	0.464
133.42	-13.21	-18.17	0.00	-488.11	0.00	488.11	2,042.13	1,021.07	2,351.01	1,161.07	78.72	-6.30	0.427
135.00	-12.85	-17.82	0.00	-459.35	0.00	459.35	2,027.39	1,013.69	2,308.93	1,140.29	80.81	-6.37	0.409
138.00	-12.16	-17.36	0.00	-405.89	0.00	405.89	1,223.81	611.90	1,396.77	689.81	84.85	-6.51	0.599
140.00	-8.59	-12.73	0.00	-371.18	0.00	371.18	1,215.85	607.93	1,368.67	675.93	87.59	-6.59	0.557
145.00	-8.06	-12.02	0.00	-307.51	0.00	307.51	1,194.91	597.45	1,298.35	641.21	94.63	-6.86	0.487
150.00	-7.55	-11.31	0.00	-247.43	0.00	247.43	1,172.46	586.23	1,228.11	606.52	101.92	-7.10	0.415
155.00	-7.06	-10.61	0.00	-190.89	0.00	190.89	1,148.52	574.26	1,158.12	571.95	109.45	-7.31	0.340
160.00	-6.60	-9.92	0.00	-137.84	0.00	137.84	1,123.08	561.54	1,088.54	537.59	117.19	-7.49	0.263
165.00	-6.15	-9.35	0.00	-88.23	0.00	88.23	1,096.15	548.08	1,019.57	503.53	125.09	-7.63	0.181
168.00	-3.10	-5.08	0.00	-60.19	0.00	60.19	1,079.27	539.64	978.54	483.26	129.88	-7.69	0.127
170.00	-2.99	-4.76	0.00	-50.03	0.00	50.03	1,067.72	533.86	951.36	469.84	133.10	-7.72	0.109
175.00	-2.68	-4.30	0.00	-26.23	0.00	26.23	1,037.79	518.90	884.11	436.63	141.20	-7.78	0.063
180.00	-2.37	-4.00	0.00	-4.75	0.00	4.75	1,006.37	503.18	817.98	403.97	149.34	-7.81	0.014
181.00	-0.20	-0.19	0.00	-0.75	0.00	0.75	999.90	499.95	804.90	397.51	150.97	-7.81	0.002
185.00	0.00	-0.16	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	157.49	-7.81	0.000

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Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

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

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		313.3	0.0					0.0	0.0	313.3	0.0	0.0	0.0
5.00		620.9	1,102.1					0.0	452.4	620.9	1,554.6	0.0	0.0
10.00		609.5	1,081.9					0.0	452.4	609.5	1,534.3	0.0	0.0
15.00		598.1	1,061.6					0.0	452.4	598.1	1,514.0	0.0	0.0
20.00		442.1	1,041.3					0.0	452.4	442.1	1,493.7	0.0	0.0
22.50	Reinf. Top Reinf	290.5	513.0					0.0	226.2	290.5	739.3	0.0	0.0
25.00		429.3	508.0					0.0	226.2	429.3	734.2	0.0	0.0
30.00		570.5	1,000.7					0.0	452.4	570.5	1,453.2	0.0	0.0
35.00		577.3	980.5					0.0	452.4	577.3	1,432.9	0.0	0.0
40.00		503.2	960.2					0.0	452.4	503.2	1,412.6	0.0	0.0
43.58	Bot - Section 2	297.3	675.7					0.0	324.2	297.3	999.9	0.0	0.0
45.00		450.5	495.0					0.0	128.2	450.5	623.2	0.0	0.0
50.00	Top - Section 1	548.3	1,722.9					120.8	452.4	669.1	2,175.3	0.0	0.0
52.50	Reinf. Top Reinf	367.4	395.1					61.3	226.2	428.7	621.3	0.0	0.0
55.00		552.8	390.8					61.9	226.2	614.7	617.0	0.0	0.0
60.00		738.1	768.5					125.6	452.4	863.6	1,220.9	0.0	0.0
65.00	Reinf. Top	738.1	751.1					127.7	452.4	865.8	1,203.6	0.0	0.0
70.00		736.4	733.8					129.7	151.8	866.1	885.6	0.0	0.0
75.00		733.2	716.4					131.6	151.8	864.8	868.2	0.0	0.0
80.00		728.7	699.0					133.4	151.8	862.1	850.8	0.0	0.0
85.00		543.5	681.6					135.1	151.8	678.6	833.4	0.0	0.0
87.50	Bot - Section 3	363.0	334.3					68.2	75.9	431.2	410.3	0.0	0.0
90.00		400.6	610.1					68.6	75.9	469.1	686.0	0.0	0.0
93.00	Top - Section 2	362.5	721.8					82.8	91.1	445.3	812.9	0.0	0.0
95.00		360.0	218.1					55.5	60.7	415.5	278.8	0.0	0.0
98.00	Appertunance(s)	358.4	322.8	138.5	0.0	0.0	76.5	83.7	91.1	580.6	490.4	0.0	0.0
100.00		496.6	212.3					56.1	60.7	552.7	273.1	0.0	0.0
105.00		702.5	520.7					141.3	151.8	843.8	672.5	0.0	0.0
110.00		692.0	506.2					142.6	151.8	834.7	658.0	0.0	0.0
115.00		680.7	491.7					144.0	151.8	824.7	643.5	0.0	0.0
120.00		668.7	477.2					145.3	151.8	813.9	629.0	0.0	0.0
125.00		655.9	462.7					146.5	151.8	802.4	614.6	0.0	0.0
130.00		542.6	448.2					147.7	151.8	690.3	600.1	0.0	0.0
133.42	Bot - Section 4	319.3	298.0					101.6	103.8	420.9	401.8	0.0	0.0
135.00		291.5	232.6					47.3	48.1	338.8	280.7	0.0	0.0
138.00	Top - Section 3	315.4	434.1					89.9	91.1	405.4	525.2	0.0	0.0
140.00	Appertunance(s)	433.3	118.5	3,725.1	0.0	0.0	2,852.7	60.2	60.7	4,218.5	3,031.9	0.0	0.0
145.00		608.2	289.1					83.4	133.8	691.5	422.9	0.0	0.0
150.00		592.4	278.9					83.8	133.8	676.1	412.8	0.0	0.0
155.00		576.0	268.8					84.2	133.8	660.2	402.6	0.0	0.0
160.00		559.1	258.7					84.6	133.8	643.6	392.5	0.0	0.0
165.00		436.2	248.5					84.9	133.8	521.1	382.4	0.0	0.0
168.00	Appertunance(s)	248.8	144.2	3,530.5	0.0	0.0	2,465.2	51.1	80.3	3,830.5	2,689.7	0.0	0.0
170.00		302.4	94.1					0.0	17.7	302.4	111.8	0.0	0.0
175.00		421.2	228.2					0.0	44.3	421.2	272.5	0.0	0.0
180.00		247.1	218.1					0.0	44.3	247.1	262.4	0.0	0.0
181.00	Appertunance(s)	198.8	42.4	3,288.3	0.0	0.0	1,949.4	0.0	8.9	3,487.1	2,000.7	0.0	0.0
185.00		158.4	165.6					0.0	0.0	158.4	165.6	0.0	0.0

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Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

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

Wind Importance Factor :1.00

Totals:	37,143.0	41,292.5	0.00	0.00

Site Number: 302537 Code: ANSI/TIA-222-G © 2007 - 2017 by ATC IP LLC. All rights reserved.

Site Name: Middletown CT 3, CT Engineering Number:OAA713643_C3_01 10/6/2017 11:41:10 AM

Customer: SPRINT NEXTEL

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.23	-36.90	0.00	-4,281.05	0.00	4,281.05	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.648
5.00	-39.57	-36.40	0.00	-4,096.57	0.00	4,096.57	4,681.88	2,340.94	9,776.84	4,828.41	0.10	-0.18	0.634
10.00	-37.92	-35.90	0.00	-3,914.60	0.00	3,914.60	4,634.49	2,317.25	9,496.63	4,690.03	0.38	-0.36	0.619
15.00	-36.30	-35.40	0.00	-3,735.10	0.00	3,735.10	4,585.61	2,292.80	9,217.11	4,551.98	0.86	-0.54	0.605
20.00	-34.73	-35.03	0.00	-3,558.08	0.00	3,558.08	4,535.23	2,267.61	8,938.46	4,414.37	1.52	-0.72	0.590
22.50	-33.94	-34.78	0.00	-3,470.51	0.00	3,470.51	4,509.47	2,254.74	8,799.52	4,345.75	1.93	-0.82	0.583
22.50	-33.94	-34.78	0.00	-3,470.51	0.00	3,470.51	4,509.47	2,254.74	8,799.52	4,345.75	1.93	-0.82	0.583
25.00	-33.13	-34.42	0.00	-3,383.56	0.00	3,383.56	4,483.35	2,241.67	8,660.87	4,277.28	2.38	-0.91	0.575
30.00	-31.57	-33.93	0.00	-3,211.45	0.00	3,211.45	4,429.97	2,214.99	8,384.50	4,140.79	3.43	-1.09	0.560
35.00	-30.05	-33.42	0.00	-3,041.82	0.00	3,041.82	4,375.10	2,187.55	8,109.53	4,004.99	4.67	-1.27	0.544
40.00	-28.56	-32.96	0.00	-2,874.74	0.00	2,874.74	4,318.73	2,159.36	7,836.14	3,869.97	6.10	-1.45	0.528
43.58	-27.51	-32.68	0.00	-2,756.64	0.00	2,756.64	4,277.41	2,138.70	7,641.28	3,773.74	7.24	-1.59	0.516
45.00	-26.84	-32.26	0.00	-2,710.34	0.00	2,710.34	4,260.86	2,130.43	7,564.50	3,735.82	7.72	-1.64	0.506
50.00	-24.61	-31.59	0.00	-2,549.02	0.00	2,549.02	3,421.90	1,710.95	6,065.62	2,995.58	9.53	-1.82	0.570
52.50	-23.95	-31.18	0.00	-2,470.05	0.00	2,470.05	3,401.39	1,700.70	5,962.76	2,944.78	10.51	-1.91	0.559
52.50	-23.95	-31.18	0.00	-2,470.05	0.00	2,470.05	3,401.39	1,700.70	5,962.76	2,944.78	10.51	-1.91	0.559
55.00	-23.28	-30.60	0.00	-2,392.11	0.00	2,392.11	3,380.51	1,690.25	5,860.04	2,894.05	11.53	-2.01	0.548
60.00	-21.99	-29.77	0.00	-2,239.10	0.00	2,239.10	3,337.62	1,668.81	5,655.16	2,792.87	13.74	-2.19	0.527
65.00	-20.73	-28.92	0.00	-2,090.27	0.00	2,090.27	3,293.24	1,646.62	5,451.16	2,692.12	16.13	-2.38	0.505
65.00	-20.73	-28.92	0.00	-2,090.27	0.00	2,090.27	3,293.24	1,646.62	5,451.16	2,692.12	16.13	-2.38	0.783
70.00	-19.77	-28.10	0.00	-1,945.67	0.00	1,945.67	3,247.36	1,623.68	5,248.22	2,591.90	18.73	-2.57	0.757
75.00	-18.81	-27.29	0.00	-1,805.17	0.00	1,805.17	3,199.99	1,599.99	5,046.50	2,492.28	21.57	-2.85	0.730
80.00	-17.87	-26.47	0.00	-1,668.73	0.00	1,668.73	3,151.11	1,575.56	4,846.18	2,393.35	24.71	-3.14	0.703
85.00	-16.98	-25.81	0.00	-1,536.37	0.00	1,536.37	3,100.74	1,550.37	4,647.45	2,295.20	28.15	-3.42	0.675
87.50	-16.53	-25.40	0.00	-1,471.84	0.00	1,471.84	3,074.99	1,537.50	4,548.71	2,246.44	29.98	-3.57	0.661
90.00	-15.81	-24.93	0.00	-1,408.36	0.00	1,408.36	3,048.88	1,524.44	4,450.47	2,197.92	31.89	-3.71	0.646
93.00	-14.97	-24.47	0.00	-1,333.57	0.00	1,333.57	2,367.81	1,183.91	3,474.51	1,715.93	34.27	-3.88	0.784
95.00	-14.66	-24.07	0.00	-1,284.64	0.00	1,284.64	2,354.00	1,177.00	3,417.42	1,687.73	35.92	-4.00	0.768
98.00	-14.14	-23.50	0.00	-1,212.43	0.00	1,212.43	2,332.83	1,166.41	3,331.94	1,645.52	38.49	-4.19	0.743
100.00	-13.82	-22.98	0.00	-1,165.43	0.00	1,165.43	2,318.41	1,159.21	3,275.08	1,617.44	40.27	-4.31	0.727
105.00	-13.10	-22.15	0.00	-1,050.54	0.00	1,050.54	2,281.33	1,140.66	3,133.47	1,547.50	44.95	-4.62	0.685
110.00	-12.41	-21.33	0.00	-939.77	0.00	939.77	2,242.75	1,121.37	2,992.76	1,478.01	49.94	-4.92	0.642
115.00	-11.74	-20.51	0.00	-833.11	0.00	833.11	2,202.67	1,101.33	2,853.13	1,409.06	55.24	-5.20	0.597
120.00	-11.09	-19.70	0.00	-730.55	0.00	730.55	2,161.09	1,080.55	2,714.76	1,340.72	60.83	-5.48	0.550
125.00	-10.48	-18.88	0.00	-632.07	0.00	632.07	2,118.02	1,059.01	2,577.82	1,273.09	66.71	-5.75	0.502
130.00	-9.88	-18.17	0.00	-537.65	0.00	537.65	2,073.45	1,036.73	2,442.48	1,206.25	72.86	-6.00	0.451
133.42	-9.49	-17.73	0.00	-475.55	0.00	475.55	2,042.13	1,021.07	2,351.01	1,161.07	77.20	-6.16	0.415
135.00	-9.22	-17.38	0.00	-447.49	0.00	447.49	2,027.39	1,013.69	2,308.93	1,140.29	79.26	-6.24	0.397
138.00	-8.71	-16.94	0.00	-395.34	0.00	395.34	1,223.81	611.90	1,396.77	689.81	83.21	-6.37	0.581
140.00	-6.13	-12.42	0.00	-361.47	0.00	361.47	1,215.85	607.93	1,368.67	675.93	85.89	-6.45	0.540
145.00	-5.74	-11.71	0.00	-299.36	0.00	299.36	1,194.91	597.45	1,298.35	641.21	92.78	-6.71	0.472
150.00	-5.37	-11.01	0.00	-240.79	0.00	240.79	1,172.46	586.23	1,228.11	606.52	99.92	-6.95	0.402
155.00	-5.02	-10.33	0.00	-185.72	0.00	185.72	1,148.52	574.26	1,158.12	571.95	107.29	-7.15	0.329
160.00	-4.68	-9.65	0.00	-134.09	0.00	134.09	1,123.08	561.54	1,088.54	537.59	114.85	-7.32	0.254
165.00	-4.35	-9.09	0.00	-85.84	0.00	85.84	1,096.15	548.08	1,019.57	503.53	122.58	-7.46	0.175
168.00	-2.18	-4.94	0.00	-58.57	0.00	58.57	1,079.27	539.64	978.54	483.26	127.27	-7.52	0.123
170.00	-2.11	-4.63	0.00	-48.68	0.00	48.68	1,067.72	533.86	951.36	469.84	130.42	-7.55	0.106
175.00	-1.89	-4.18	0.00	-25.52	0.00	25.52	1,037.79	518.90	884.11	436.63	138.34	-7.61	0.060
180.00	-1.66	-3.90	0.00	-4.62	0.00	4.62	1,006.37	503.18	817.98	403.97	146.30	-7.63	0.013
181.00	-0.14	-0.18	0.00	-0.72	0.00	0.72	999.90	499.95	804.90	397.51	147.90	-7.64	0.002
185.00	0.00	-0.16	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	154.27	-7.64	0.000

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Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 27 Iterations

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

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		66.1	0.0					0.0	0.0	66.1	0.0	0.0	0.0
5.00		131.4	1,995.9					0.0	905.7	131.4	2,901.5	0.0	0.0
10.00		129.7	2,021.4					0.0	946.9	129.7	2,968.3	0.0	0.0
15.00		127.8	2,014.6					0.0	968.4	127.8	2,983.1	0.0	0.0
20.00		94.7	1,997.4					0.0	983.5	94.7	2,980.9	0.0	0.0
22.50	Reinf. Top Reinf	62.4	991.8					0.0	496.3	62.4	1,488.1	0.0	0.0
25.00		92.4	985.7					0.0	498.9	92.4	1,484.6	0.0	0.0
30.00		123.1	1,948.6					0.0	1,005.0	123.1	2,953.6	0.0	0.0
35.00		124.9	1,920.2					0.0	1,013.3	124.9	2,933.5	0.0	0.0
40.00		109.1	1,890.0					0.0	1,020.6	109.1	2,910.5	0.0	0.0
43.58	Bot - Section 2	64.5	1,336.4					0.0	735.4	64.5	2,071.8	0.0	0.0
45.00		84.7	835.1					0.0	291.6	84.7	1,126.7	0.0	0.0
50.00	Top - Section 1	99.5	2,907.0					46.3	1,032.9	145.7	3,939.9	0.0	0.0
52.50	Reinf. Top Reinf	66.8	831.0					23.7	518.5	90.5	1,349.4	0.0	0.0
55.00		100.7	823.5					24.1	519.8	124.8	1,343.3	0.0	0.0
60.00		134.7	1,621.0					49.3	1,043.2	184.0	2,664.2	0.0	0.0
65.00	Reinf. Top	135.1	1,590.0					50.7	1,047.8	185.8	2,637.9	0.0	0.0
70.00		135.2	1,558.5					52.0	651.3	187.2	2,209.9	0.0	0.0
75.00		135.0	1,526.5					53.3	647.5	188.3	2,174.0	0.0	0.0
80.00		134.6	1,494.1					54.5	630.2	189.1	2,124.3	0.0	0.0
85.00		100.6	1,461.3					55.6	633.4	156.2	2,094.7	0.0	0.0
87.50	Bot - Section 3	67.3	720.0					28.2	317.9	95.5	1,037.9	0.0	0.0
90.00		74.3	1,089.6					28.5	318.6	102.8	1,408.1	0.0	0.0
93.00	Top - Section 2	67.4	1,290.0					34.6	383.3	101.9	1,673.3	0.0	0.0
95.00		67.0	507.6					23.2	256.1	90.3	763.6	0.0	0.0
98.00	Appertunance(s)	66.8	751.7	30.9	0.0	0.0	103.2	35.2	385.0	132.9	1,239.9	0.0	0.0
100.00		92.9	495.7					23.7	257.2	116.5	752.9	0.0	0.0
105.00		131.7	1,214.0					59.8	644.9	191.6	1,858.9	0.0	0.0
110.00		130.2	1,183.6					60.8	647.4	191.0	1,831.0	0.0	0.0
115.00		128.6	1,153.0					61.7	649.9	190.4	1,802.9	0.0	0.0
120.00		126.9	1,122.1					62.6	652.3	189.5	1,774.4	0.0	0.0
125.00		125.0	1,091.1					63.5	654.6	188.5	1,745.6	0.0	0.0
130.00		103.8	1,059.8					64.4	656.8	168.2	1,716.6	0.0	0.0
133.42	Bot - Section 4	61.3	707.8					44.5	450.1	105.7	1,157.8	0.0	0.0
135.00		56.0	454.9					20.7	208.8	76.8	663.7	0.0	0.0
138.00	Top - Section 3	60.7	848.6					39.5	396.4	100.3	1,245.0	0.0	0.0
140.00	Appertunance(s)	83.8	335.9	943.0	0.0	0.0	7,922.7	26.5	264.6	1,053.2	8,523.1	0.0	0.0
145.00		118.0	817.4					38.7	514.1	156.7	1,331.5	0.0	0.0
150.00		115.6	791.3					39.1	515.4	154.7	1,306.7	0.0	0.0
155.00		113.1	765.1					39.5	516.6	152.7	1,281.8	0.0	0.0
160.00		110.5	738.8					39.9	517.9	150.5	1,256.7	0.0	0.0
165.00		86.7	712.3					40.4	519.1	127.1	1,231.4	0.0	0.0
168.00	Appertunance(s)	53.3	416.4	985.2	0.0	0.0	6,758.2	24.4	312.0	1,062.9	7,486.5	0.0	0.0
170.00		73.0	272.8					0.0	23.6	73.0	296.4	0.0	0.0
175.00		102.3	659.0					0.0	59.0	102.3	718.1	0.0	0.0
180.00		60.3	632.2					0.0	59.0	60.3	691.2	0.0	0.0
181.00	Appertunance(s)	48.9	124.4	848.5	0.0	0.0	6,040.1	0.0	11.8	897.4	6,176.2	0.0	0.0
185.00		39.0	483.2					0.0	0.0	39.0	483.2	0.0	0.0

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Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 27 Iterations

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

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00
Ice Importance Factor :1.00

Totals:	8,734.21	98,794.8	0.00	0.00

Site Number: 302537 | Code: ANSI/TIA-222-G | © 2007 - 2017 by ATC IP LLC. All rights reserved.

Site Name: Middletown CT 3, CT | Engineering Number:OAA713643_C3_01 | 10/6/2017 11:41:12 AM

Customer: SPRINT NEXTEL

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 27 Iterations

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

Dead Load Factor :1.20 | Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-98.79	-8.71	0.00	-1,126.33	0.00	1,126.33	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.185
5.00	-95.88	-8.66	0.00	-1,082.79	0.00	1,082.79	4,681.88	2,340.94	9,776.84	4,828.41	0.03	-0.05	0.182
10.00	-92.91	-8.60	0.00	-1,039.50	0.00	1,039.50	4,634.49	2,317.25	9,496.63	4,690.03	0.10	-0.10	0.178
15.00	-89.92	-8.54	0.00	-996.50	0.00	996.50	4,585.61	2,292.80	9,217.11	4,551.98	0.23	-0.14	0.175
20.00	-86.93	-8.49	0.00	-953.79	0.00	953.79	4,535.23	2,267.61	8,938.46	4,414.37	0.40	-0.19	0.171
22.50	-85.44	-8.46	0.00	-932.55	0.00	932.55	4,509.47	2,254.74	8,799.52	4,345.75	0.51	-0.22	0.170
22.50	-85.44	-8.46	0.00	-932.55	0.00	932.55	4,509.47	2,254.74	8,799.52	4,345.75	0.51	-0.22	0.170
25.00	-83.95	-8.42	0.00	-911.39	0.00	911.39	4,483.35	2,241.67	8,660.87	4,277.28	0.63	-0.24	0.168
30.00	-80.99	-8.35	0.00	-869.29	0.00	869.29	4,429.97	2,214.99	8,384.50	4,140.79	0.91	-0.29	0.164
35.00	-78.05	-8.28	0.00	-827.53	0.00	827.53	4,375.10	2,187.55	8,109.53	4,004.99	1.24	-0.34	0.160
40.00	-75.13	-8.21	0.00	-786.13	0.00	786.13	4,318.73	2,159.36	7,836.14	3,869.97	1.62	-0.39	0.156
43.58	-73.06	-8.16	0.00	-756.72	0.00	756.72	4,277.41	2,138.70	7,641.28	3,773.74	1.93	-0.43	0.153
45.00	-71.93	-8.11	0.00	-745.16	0.00	745.16	4,260.86	2,130.43	7,564.50	3,735.82	2.06	-0.44	0.151
50.00	-67.98	-7.97	0.00	-704.62	0.00	704.62	3,421.90	1,710.95	6,065.62	2,995.58	2.55	-0.49	0.171
52.50	-66.63	-7.90	0.00	-684.69	0.00	684.69	3,401.39	1,700.70	5,962.76	2,944.78	2.81	-0.52	0.168
52.50	-66.63	-7.90	0.00	-684.69	0.00	684.69	3,401.39	1,700.70	5,962.76	2,944.78	2.81	-0.52	0.168
55.00	-65.29	-7.81	0.00	-664.93	0.00	664.93	3,380.51	1,690.25	5,860.04	2,894.05	3.09	-0.54	0.165
60.00	-62.62	-7.66	0.00	-625.88	0.00	625.88	3,337.62	1,668.81	5,655.16	2,792.87	3.68	-0.59	0.159
65.00	-59.97	-7.50	0.00	-587.59	0.00	587.59	3,293.24	1,646.62	5,451.16	2,692.12	4.33	-0.65	0.153
65.00	-59.97	-7.50	0.00	-587.59	0.00	587.59	3,293.24	1,646.62	5,451.16	2,692.12	4.33	-0.65	0.236
70.00	-57.76	-7.35	0.00	-550.11	0.00	550.11	3,247.36	1,623.68	5,248.22	2,591.90	5.04	-0.70	0.230
75.00	-55.58	-7.22	0.00	-513.35	0.00	513.35	3,199.99	1,599.99	5,046.50	2,492.28	5.82	-0.78	0.223
80.00	-53.44	-7.07	0.00	-477.27	0.00	477.27	3,151.11	1,575.56	4,846.18	2,393.35	6.68	-0.86	0.216
85.00	-51.34	-6.94	0.00	-441.91	0.00	441.91	3,100.74	1,550.37	4,647.45	2,295.20	7.62	-0.94	0.209
87.50	-50.30	-6.86	0.00	-424.57	0.00	424.57	3,074.99	1,537.50	4,548.71	2,246.44	8.13	-0.99	0.205
90.00	-48.89	-6.77	0.00	-407.42	0.00	407.42	3,048.88	1,524.44	4,450.47	2,197.92	8.66	-1.03	0.201
93.00	-47.22	-6.67	0.00	-387.10	0.00	387.10	2,367.81	1,183.91	3,474.51	1,715.93	9.32	-1.08	0.246
95.00	-46.45	-6.60	0.00	-373.76	0.00	373.76	2,354.00	1,177.00	3,417.42	1,687.73	9.78	-1.11	0.241
98.00	-45.21	-6.48	0.00	-353.95	0.00	353.95	2,332.83	1,166.41	3,331.94	1,645.52	10.49	-1.16	0.235
100.00	-44.45	-6.40	0.00	-340.98	0.00	340.98	2,318.41	1,159.21	3,275.08	1,617.44	10.99	-1.20	0.230
105.00	-42.59	-6.23	0.00	-308.98	0.00	308.98	2,281.33	1,140.66	3,133.47	1,547.50	12.29	-1.29	0.218
110.00	-40.75	-6.06	0.00	-277.81	0.00	277.81	2,242.75	1,121.37	2,992.76	1,478.01	13.69	-1.38	0.206
115.00	-38.94	-5.89	0.00	-247.50	0.00	247.50	2,202.67	1,101.33	2,853.13	1,409.06	15.18	-1.46	0.193
120.00	-37.17	-5.70	0.00	-218.07	0.00	218.07	2,161.09	1,080.55	2,714.76	1,340.72	16.76	-1.55	0.180
125.00	-35.42	-5.51	0.00	-189.57	0.00	189.57	2,118.02	1,059.01	2,577.82	1,273.09	18.42	-1.63	0.166
130.00	-33.70	-5.33	0.00	-162.00	0.00	162.00	2,073.45	1,036.73	2,442.48	1,206.25	20.17	-1.70	0.151
133.42	-32.55	-5.21	0.00	-143.79	0.00	143.79	2,042.13	1,021.07	2,351.01	1,161.07	21.41	-1.75	0.140
135.00	-31.88	-5.13	0.00	-135.54	0.00	135.54	2,027.39	1,013.69	2,308.93	1,140.29	21.99	-1.77	0.135
138.00	-30.64	-5.01	0.00	-120.15	0.00	120.15	1,223.81	611.90	1,396.77	689.81	23.12	-1.81	0.199
140.00	-22.15	-3.71	0.00	-110.13	0.00	110.13	1,215.85	607.93	1,368.67	675.93	23.88	-1.84	0.181
145.00	-20.82	-3.53	0.00	-91.60	0.00	91.60	1,194.91	597.45	1,298.35	641.21	25.85	-1.92	0.160
150.00	-19.52	-3.36	0.00	-73.94	0.00	73.94	1,172.46	586.23	1,228.11	606.52	27.90	-1.99	0.139
155.00	-18.24	-3.18	0.00	-57.16	0.00	57.16	1,148.52	574.26	1,158.12	571.95	30.02	-2.05	0.116
160.00	-16.98	-2.99	0.00	-41.28	0.00	41.28	1,123.08	561.54	1,088.54	537.59	32.20	-2.11	0.092
165.00	-15.76	-2.83	0.00	-26.31	0.00	26.31	1,096.15	548.08	1,019.57	503.53	34.43	-2.15	0.067
168.00	-8.31	-1.49	0.00	-17.82	0.00	17.82	1,079.27	539.64	978.54	483.26	35.78	-2.17	0.045
170.00	-8.02	-1.41	0.00	-14.84	0.00	14.84	1,067.72	533.86	951.36	469.84	36.69	-2.18	0.039
175.00	-7.31	-1.28	0.00	-7.81	0.00	7.81	1,037.79	518.90	884.11	436.63	38.98	-2.19	0.025
180.00	-6.62	-1.19	0.00	-1.42	0.00	1.42	1,006.37	503.18	817.98	403.97	41.28	-2.20	0.010
181.00	-0.48	-0.06	0.00	-0.23	0.00	0.23	999.90	499.95	804.90	397.51	41.75	-2.20	0.001
185.00	0.00	-0.04	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	43.59	-2.20	0.000

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Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

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

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		74.9	0.0					0.0	0.0	74.9	0.0	0.0	0.0
5.00		148.5	1,224.6					0.0	502.7	148.5	1,727.3	0.0	0.0
10.00		145.8	1,202.1					0.0	502.7	145.8	1,704.8	0.0	0.0
15.00		143.0	1,179.5					0.0	502.7	143.0	1,682.2	0.0	0.0
20.00		105.7	1,157.0					0.0	502.7	105.7	1,659.7	0.0	0.0
22.50	Reinf. Top Reinf	69.5	570.1					0.0	251.3	69.5	821.4	0.0	0.0
25.00		102.6	564.4					0.0	251.3	102.6	815.8	0.0	0.0
30.00		136.4	1,111.9					0.0	502.7	136.4	1,614.6	0.0	0.0
35.00		138.0	1,089.4					0.0	502.7	138.0	1,592.1	0.0	0.0
40.00		120.3	1,066.9					0.0	502.7	120.3	1,569.6	0.0	0.0
43.58	Bot - Section 2	71.1	750.7					0.0	360.3	71.1	1,111.0	0.0	0.0
45.00		107.7	550.0					0.0	142.4	107.7	692.4	0.0	0.0
50.00	Top - Section 1	131.1	1,914.3					34.7	502.7	165.8	2,417.0	0.0	0.0
52.50	Reinf. Top Reinf	87.9	439.0					17.7	251.3	105.6	690.4	0.0	0.0
55.00		132.2	434.2					18.0	251.3	150.2	685.5	0.0	0.0
60.00		176.5	853.9					36.6	502.7	213.1	1,356.6	0.0	0.0
65.00	Reinf. Top	176.5	834.6					37.5	502.7	214.0	1,337.3	0.0	0.0
70.00		176.1	815.3					38.4	168.7	214.5	984.0	0.0	0.0
75.00		175.3	796.0					39.2	168.7	214.5	964.7	0.0	0.0
80.00		174.3	776.7					39.9	168.7	214.2	945.4	0.0	0.0
85.00		130.0	757.3					40.6	168.7	170.6	926.0	0.0	0.0
87.50	Bot - Section 3	86.8	371.5					20.6	84.4	107.4	455.8	0.0	0.0
90.00		95.8	677.9					20.7	84.3	116.5	762.2	0.0	0.0
93.00	Top - Section 2	86.7	802.0					25.1	101.2	111.8	903.2	0.0	0.0
95.00		86.1	242.3					16.9	67.5	103.0	309.8	0.0	0.0
98.00	Appertunance(s)	85.7	358.7	33.1	0.0	0.0	85.0	25.5	101.2	144.3	544.9	0.0	0.0
100.00		118.8	235.9					17.1	67.5	135.9	303.4	0.0	0.0
105.00		168.0	578.5					43.2	168.7	211.2	747.2	0.0	0.0
110.00		165.5	562.4					43.8	168.7	209.3	731.1	0.0	0.0
115.00		162.8	546.3					44.4	168.7	207.2	715.0	0.0	0.0
120.00		159.9	530.2					44.9	168.7	204.8	698.9	0.0	0.0
125.00		156.8	514.1					45.5	168.7	202.3	682.8	0.0	0.0
130.00		129.7	498.0					46.0	168.7	175.8	666.7	0.0	0.0
133.42	Bot - Section 4	76.4	331.1					31.7	115.3	108.1	446.4	0.0	0.0
135.00		69.7	258.4					14.8	53.4	84.5	311.9	0.0	0.0
138.00	Top - Section 3	75.4	482.3					28.2	101.2	103.6	583.6	0.0	0.0
140.00	Appertunance(s)	103.6	131.6	890.8	0.0	0.0	3,169.7	18.9	67.5	1,013.2	3,368.8	0.0	0.0
145.00		145.4	321.2					31.3	148.7	176.7	469.9	0.0	0.0
150.00		141.7	309.9					31.6	148.7	173.2	458.6	0.0	0.0
155.00		137.7	298.7					31.9	148.7	169.6	447.4	0.0	0.0
160.00		133.7	287.4					32.2	148.7	165.9	436.1	0.0	0.0
165.00		104.3	276.1					32.5	148.7	136.8	424.8	0.0	0.0
168.00	Appertunance(s)	59.5	160.3	844.3	0.0	0.0	2,739.1	19.6	89.2	923.4	2,988.6	0.0	0.0
170.00		72.3	104.6					0.0	19.7	72.3	124.3	0.0	0.0
175.00		100.7	253.6					0.0	49.2	100.7	302.8	0.0	0.0
180.00		59.1	242.3					0.0	49.2	59.1	291.5	0.0	0.0
181.00	Appertunance(s)	47.5	47.1	786.3	0.0	0.0	2,166.0	0.0	9.8	833.9	2,223.0	0.0	0.0
185.00		37.9	184.0					0.0	0.0	37.9	184.0	0.0	0.0

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Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

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

Totals:	9,114.49	45,880.6	0.00	0.00

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Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.88	-9.06	0.00	-1,057.90	0.00	1,057.90	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.166
5.00	-44.14	-8.94	0.00	-1,012.62	0.00	1,012.62	4,681.88	2,340.94	9,776.84	4,828.41	0.02	-0.04	0.162
10.00	-42.43	-8.83	0.00	-967.91	0.00	967.91	4,634.49	2,317.25	9,496.63	4,690.03	0.09	-0.09	0.159
15.00	-40.74	-8.71	0.00	-923.77	0.00	923.77	4,585.61	2,292.80	9,217.11	4,551.98	0.21	-0.13	0.155
20.00	-39.08	-8.63	0.00	-880.21	0.00	880.21	4,535.23	2,267.61	8,938.46	4,414.37	0.38	-0.18	0.151
22.50	-38.25	-8.57	0.00	-858.65	0.00	858.65	4,509.47	2,254.74	8,799.52	4,345.75	0.48	-0.20	0.149
22.50	-38.25	-8.57	0.00	-858.65	0.00	858.65	4,509.47	2,254.74	8,799.52	4,345.75	0.48	-0.20	0.149
25.00	-37.43	-8.49	0.00	-837.22	0.00	837.22	4,483.35	2,241.67	8,660.87	4,277.28	0.59	-0.22	0.147
30.00	-35.81	-8.37	0.00	-794.80	0.00	794.80	4,429.97	2,214.99	8,384.50	4,140.79	0.85	-0.27	0.143
35.00	-34.21	-8.25	0.00	-752.95	0.00	752.95	4,375.10	2,187.55	8,109.53	4,004.99	1.15	-0.31	0.139
40.00	-32.64	-8.14	0.00	-711.69	0.00	711.69	4,318.73	2,159.36	7,836.14	3,869.97	1.51	-0.36	0.135
43.58	-31.53	-8.08	0.00	-682.51	0.00	682.51	4,277.41	2,138.70	7,641.28	3,773.74	1.79	-0.39	0.132
45.00	-30.83	-7.98	0.00	-671.07	0.00	671.07	4,260.86	2,130.43	7,564.50	3,735.82	1.91	-0.41	0.130
50.00	-28.41	-7.81	0.00	-631.16	0.00	631.16	3,421.90	1,710.95	6,065.62	2,995.58	2.36	-0.45	0.146
52.50	-27.72	-7.71	0.00	-611.63	0.00	611.63	3,401.39	1,700.70	5,962.76	2,944.78	2.60	-0.47	0.143
52.50	-27.72	-7.71	0.00	-611.63	0.00	611.63	3,401.39	1,700.70	5,962.76	2,944.78	2.60	-0.47	0.143
55.00	-27.03	-7.57	0.00	-592.35	0.00	592.35	3,380.51	1,690.25	5,860.04	2,894.05	2.85	-0.50	0.140
60.00	-25.67	-7.37	0.00	-554.48	0.00	554.48	3,337.62	1,668.81	5,655.16	2,792.87	3.40	-0.54	0.135
65.00	-24.33	-7.16	0.00	-517.63	0.00	517.63	3,293.24	1,646.62	5,451.16	2,692.12	3.99	-0.59	0.129
65.00	-24.33	-7.16	0.00	-517.63	0.00	517.63	3,293.24	1,646.62	5,451.16	2,692.12	3.99	-0.59	0.200
70.00	-23.34	-6.96	0.00	-481.82	0.00	481.82	3,247.36	1,623.68	5,248.22	2,591.90	4.63	-0.64	0.193
75.00	-22.37	-6.76	0.00	-447.02	0.00	447.02	3,199.99	1,599.99	5,046.50	2,492.28	5.34	-0.71	0.186
80.00	-21.42	-6.56	0.00	-413.20	0.00	413.20	3,151.11	1,575.56	4,846.18	2,393.35	6.12	-0.78	0.179
85.00	-20.49	-6.40	0.00	-380.39	0.00	380.39	3,100.74	1,550.37	4,647.45	2,295.20	6.97	-0.85	0.172
87.50	-20.03	-6.30	0.00	-364.39	0.00	364.39	3,074.99	1,537.50	4,548.71	2,246.44	7.42	-0.88	0.169
90.00	-19.27	-6.18	0.00	-348.65	0.00	348.65	3,048.88	1,524.44	4,450.47	2,197.92	7.89	-0.92	0.165
93.00	-18.36	-6.07	0.00	-330.11	0.00	330.11	2,367.81	1,183.91	3,474.51	1,715.93	8.48	-0.96	0.200
95.00	-18.05	-5.97	0.00	-317.98	0.00	317.98	2,354.00	1,177.00	3,417.42	1,687.73	8.89	-0.99	0.196
98.00	-17.50	-5.83	0.00	-300.07	0.00	300.07	2,332.83	1,166.41	3,331.94	1,645.52	9.53	-1.04	0.190
100.00	-17.20	-5.70	0.00	-288.42	0.00	288.42	2,318.41	1,159.21	3,275.08	1,617.44	9.97	-1.07	0.186
105.00	-16.45	-5.50	0.00	-259.91	0.00	259.91	2,281.33	1,140.66	3,133.47	1,547.50	11.13	-1.14	0.175
110.00	-15.71	-5.29	0.00	-232.42	0.00	232.42	2,242.75	1,121.37	2,992.76	1,478.01	12.36	-1.22	0.164
115.00	-15.00	-5.09	0.00	-205.96	0.00	205.96	2,202.67	1,101.33	2,853.13	1,409.06	13.68	-1.29	0.153
120.00	-14.30	-4.88	0.00	-180.51	0.00	180.51	2,161.09	1,080.55	2,714.76	1,340.72	15.06	-1.36	0.141
125.00	-13.61	-4.68	0.00	-156.09	0.00	156.09	2,118.02	1,059.01	2,577.82	1,273.09	16.52	-1.42	0.129
130.00	-12.95	-4.50	0.00	-132.68	0.00	132.68	2,073.45	1,036.73	2,442.48	1,206.25	18.04	-1.48	0.116
133.42	-12.50	-4.39	0.00	-117.31	0.00	117.31	2,042.13	1,021.07	2,351.01	1,161.07	19.12	-1.52	0.107
135.00	-12.19	-4.30	0.00	-110.36	0.00	110.36	2,027.39	1,013.69	2,308.93	1,140.29	19.63	-1.54	0.103
138.00	-11.61	-4.19	0.00	-97.46	0.00	97.46	1,223.81	611.90	1,396.77	689.81	20.61	-1.58	0.151
140.00	-8.27	-3.09	0.00	-89.09	0.00	89.09	1,215.85	607.93	1,368.67	675.93	21.28	-1.60	0.139
145.00	-7.80	-2.90	0.00	-73.67	0.00	73.67	1,194.91	597.45	1,298.35	641.21	22.98	-1.66	0.121
150.00	-7.34	-2.72	0.00	-59.15	0.00	59.15	1,172.46	586.23	1,228.11	606.52	24.75	-1.72	0.104
155.00	-6.90	-2.55	0.00	-45.53	0.00	45.53	1,148.52	574.26	1,158.12	571.95	26.58	-1.77	0.086
160.00	-6.47	-2.37	0.00	-32.80	0.00	32.80	1,123.08	561.54	1,088.54	537.59	28.45	-1.81	0.067
165.00	-6.05	-2.22	0.00	-20.94	0.00	20.94	1,096.15	548.08	1,019.57	503.53	30.37	-1.84	0.047
168.00	-3.09	-1.20	0.00	-14.27	0.00	14.27	1,079.27	539.64	978.54	483.26	31.53	-1.86	0.032
170.00	-2.97	-1.13	0.00	-11.86	0.00	11.86	1,067.72	533.86	951.36	469.84	32.31	-1.87	0.028
175.00	-2.67	-1.02	0.00	-6.22	0.00	6.22	1,037.79	518.90	884.11	436.63	34.27	-1.88	0.017
180.00	-2.38	-0.95	0.00	-1.13	0.00	1.13	1,006.37	503.18	817.98	403.97	36.24	-1.89	0.005
181.00	-0.18	-0.04	0.00	-0.18	0.00	0.18	999.90	499.95	804.90	397.51	36.64	-1.89	0.001
185.00	0.00	-0.04	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	38.22	-1.89	0.000

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Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.75
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	45.88 k
Seismic Base Shear (E):	1.79 k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	183.00	184	6,160	0.013	24	228
46	180.50	57	1,856	0.004	7	71
45	177.50	292	9,185	0.020	36	361
44	172.50	303	9,010	0.020	35	375
43	169.00	124	3,549	0.008	14	154
42	166.50	249	6,916	0.015	27	309
41	162.50	425	11,218	0.024	43	526
40	157.50	436	10,818	0.023	42	540
39	152.50	447	10,404	0.023	40	554
38	147.50	459	9,978	0.022	39	568
37	142.50	470	9,542	0.021	37	582
36	139.00	199	3,846	0.008	15	247
35	136.50	584	10,873	0.024	42	723
34	134.21	312	5,617	0.012	22	386
33	131.71	446	7,744	0.017	30	553
32	127.50	667	10,839	0.023	42	826
31	122.50	683	10,247	0.022	40	846
30	117.50	699	9,650	0.021	37	866
29	112.50	715	9,050	0.020	35	886
28	107.50	731	8,449	0.018	33	906
27	102.50	747	7,850	0.017	30	926
26	99.00	303	2,974	0.006	12	376
25	96.50	460	4,283	0.009	17	570

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24	94.00	310	2,737	0.006	11	384
23	91.50	903	7,562	0.016	29	1,119
22	88.75	762	6,004	0.013	23	944
21	86.25	456	3,391	0.007	13	565
20	82.50	926	6,303	0.014	24	1,147
19	77.50	945	5,678	0.012	22	1,171
18	72.50	965	5,071	0.011	20	1,195
17	67.50	984	4,483	0.010	17	1,219
16	62.50	1,337	5,224	0.011	20	1,656
15	57.50	1,357	4,485	0.010	17	1,680
14	53.75	686	1,981	0.004	8	849
13	51.25	690	1,813	0.004	7	855
12	47.50	2,417	5,453	0.012	21	2,994
11	44.29	692	1,358	0.003	5	858
10	41.79	1,111	1,940	0.004	8	1,376
9	37.50	1,570	2,207	0.005	9	1,944
8	32.50	1,592	1,682	0.004	7	1,972
7	27.50	1,615	1,221	0.003	5	2,000
6	23.75	816	460	0.001	2	1,010
5	21.25	821	371	0.001	1	1,017
4	17.50	1,660	508	0.001	2	2,056
3	12.50	1,682	263	0.001	1	2,084
2	7.50	1,705	96	0.000	0	2,112
1	2.50	1,727	11	0.000	0	2,139
Decibel 844G90VTA-SX	181.00	46	1,507	0.003	6	57
Decibel DB844H90E-XY	181.00	56	1,835	0.004	7	69
Decibel 844G65VTZASX	181.00	64	2,097	0.005	8	79
Flat Platform w/ Han	181.00	2,000	65,522	0.142	254	2,477
Powerwave Allgon LGP	168.00	85	2,388	0.005	9	105
Raycap DC6-48-60-18-	168.00	40	1,129	0.002	4	50
Ericsson RRUS 11 (Ba	168.00	150	4,234	0.009	16	186
Ericsson RRUS 12	168.00	150	4,234	0.009	16	186
Ericsson RRUS-32 (77	168.00	231	6,520	0.014	25	286
Powerwave Allgon 777	168.00	105	2,964	0.006	11	130
KMW AM-X-CD-16-65-00	168.00	146	4,107	0.009	16	180
Quintel QS66512-2	168.00	333	9,399	0.020	36	412
Round Low Profile Pl	168.00	1,500	42,336	0.092	164	1,858
Alcatel-Lucent RRH2x	140.00	159	3,111	0.007	12	197
Alcatel-Lucent 800 M	140.00	192	3,763	0.008	15	238
Alcatel-Lucent 4x40W	140.00	264	5,174	0.011	20	327
Alcatel-Lucent TD-RR	140.00	210	4,116	0.009	16	260
RFS APXVSPP18-C-A20	140.00	171	3,352	0.007	13	212
Commscope DT465B-2XR	140.00	174	3,410	0.007	13	216
Flat Platform w/ Han	140.00	2,000	39,200	0.085	152	2,477
GPS	98.00	10	96	0.000	0	12
Stand-Off	98.00	75	720	0.002	3	93
		45,881	461,572	1.000	1,789	56,828

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	183.00	184	6,160	0.013	24	158
46	180.50	57	1,856	0.004	7	49
45	177.50	292	9,185	0.020	36	251
44	172.50	303	9,010	0.020	35	261
43	169.00	124	3,549	0.008	14	107
42	166.50	249	6,916	0.015	27	215
41	162.50	425	11,218	0.024	43	366
40	157.50	436	10,818	0.023	42	376

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39	152.50	447	10,404	0.023	40	385
38	147.50	459	9,978	0.022	39	395
37	142.50	470	9,542	0.021	37	405
36	139.00	199	3,846	0.008	15	171
35	136.50	584	10,873	0.024	42	503
34	134.21	312	5,617	0.012	22	269
33	131.71	446	7,744	0.017	30	385
32	127.50	667	10,839	0.023	42	574
31	122.50	683	10,247	0.022	40	588
30	117.50	699	9,650	0.021	37	602
29	112.50	715	9,050	0.020	35	616
28	107.50	731	8,449	0.018	33	630
27	102.50	747	7,850	0.017	30	644
26	99.00	303	2,974	0.006	12	261
25	96.50	460	4,283	0.009	17	396
24	94.00	310	2,737	0.006	11	267
23	91.50	903	7,562	0.016	29	778
22	88.75	762	6,004	0.013	23	657
21	86.25	456	3,391	0.007	13	393
20	82.50	926	6,303	0.014	24	798
19	77.50	945	5,678	0.012	22	814
18	72.50	965	5,071	0.011	20	831
17	67.50	984	4,483	0.010	17	848
16	62.50	1,337	5,224	0.011	20	1,152
15	57.50	1,357	4,485	0.010	17	1,169
14	53.75	686	1,981	0.004	8	591
13	51.25	690	1,813	0.004	7	595
12	47.50	2,417	5,453	0.012	21	2,082
11	44.29	692	1,358	0.003	5	596
10	41.79	1,111	1,940	0.004	8	957
9	37.50	1,570	2,207	0.005	9	1,352
8	32.50	1,592	1,682	0.004	7	1,371
7	27.50	1,615	1,221	0.003	5	1,391
6	23.75	816	460	0.001	2	703
5	21.25	821	371	0.001	1	708
4	17.50	1,660	508	0.001	2	1,430
3	12.50	1,682	263	0.001	1	1,449
2	7.50	1,705	96	0.000	0	1,468
1	2.50	1,727	11	0.000	0	1,488
Decibel 844G90VTA-SX	181.00	46	1,507	0.003	6	40
Decibel DB844H90E-XY	181.00	56	1,835	0.004	7	48
Decibel 844G65VTZASX	181.00	64	2,097	0.005	8	55
Flat Platform w/ Han	181.00	2,000	65,522	0.142	254	1,723
Powerwave Allgon LGP	168.00	85	2,388	0.005	9	73
Raycap DC6-48-60-18-	168.00	40	1,129	0.002	4	34
Ericsson RRUS 11 (Ba	168.00	150	4,234	0.009	16	129
Ericsson RRUS 12	168.00	150	4,234	0.009	16	129
Ericsson RRUS-32 (77	168.00	231	6,520	0.014	25	199
Powerwave Allgon 777	168.00	105	2,964	0.006	11	90
KMW AM-X-CD-16-65-00	168.00	146	4,107	0.009	16	125
Quintel QS66512-2	168.00	333	9,399	0.020	36	287
Round Low Profile Pl	168.00	1,500	42,336	0.092	164	1,292
Alcatel-Lucent RRH2x	140.00	159	3,111	0.007	12	137
Alcatel-Lucent 800 M	140.00	192	3,763	0.008	15	165
Alcatel-Lucent 4x40W	140.00	264	5,174	0.011	20	227
Alcatel-Lucent TD-RR	140.00	210	4,116	0.009	16	181
RFS APXVSPP18-C-A20	140.00	171	3,352	0.007	13	147
Commscope DT465B-2XR	140.00	174	3,410	0.007	13	150
Flat Platform w/ Han	140.00	2,000	39,200	0.085	152	1,723
GPS	98.00	10	96	0.000	0	9
Stand-Off	98.00	75	720	0.002	3	65
		45,881	461,572	1.000	1,789	39,521

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.69	-1.79	0.00	-262.51	0.00	262.51	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.048
5.00	-52.58	-1.80	0.00	-253.54	0.00	253.54	4,681.88	2,340.94	9,776.84	4,828.41	0.01	-0.01	0.048
10.00	-50.49	-1.81	0.00	-244.52	0.00	244.52	4,634.49	2,317.25	9,496.63	4,690.03	0.02	-0.02	0.047
15.00	-48.44	-1.82	0.00	-235.46	0.00	235.46	4,585.61	2,292.80	9,217.11	4,551.98	0.05	-0.03	0.046
20.00	-47.42	-1.82	0.00	-226.37	0.00	226.37	4,535.23	2,267.61	8,938.46	4,414.37	0.09	-0.05	0.045
22.50	-46.41	-1.83	0.00	-221.81	0.00	221.81	4,509.47	2,254.74	8,799.52	4,345.75	0.12	-0.05	0.045
22.50	-46.41	-1.83	0.00	-221.81	0.00	221.81	4,509.47	2,254.74	8,799.52	4,345.75	0.12	-0.05	0.045
25.00	-44.41	-1.83	0.00	-217.24	0.00	217.24	4,483.35	2,241.67	8,660.87	4,277.28	0.15	-0.06	0.044
30.00	-42.44	-1.83	0.00	-208.11	0.00	208.11	4,429.97	2,214.99	8,384.50	4,140.79	0.21	-0.07	0.043
35.00	-40.49	-1.82	0.00	-198.98	0.00	198.98	4,375.10	2,187.55	8,109.53	4,004.99	0.29	-0.08	0.042
40.00	-39.11	-1.82	0.00	-189.86	0.00	189.86	4,318.73	2,159.36	7,836.14	3,869.97	0.38	-0.09	0.041
43.58	-38.26	-1.82	0.00	-183.34	0.00	183.34	4,277.41	2,138.70	7,641.28	3,773.74	0.46	-0.10	0.041
45.00	-35.26	-1.80	0.00	-180.76	0.00	180.76	4,260.86	2,130.43	7,564.50	3,735.82	0.49	-0.10	0.040
50.00	-34.41	-1.79	0.00	-171.78	0.00	171.78	3,421.90	1,710.95	6,065.62	2,995.58	0.60	-0.12	0.045
52.50	-33.56	-1.79	0.00	-167.30	0.00	167.30	3,401.39	1,700.70	5,962.76	2,944.78	0.67	-0.12	0.045
52.50	-33.56	-1.79	0.00	-167.30	0.00	167.30	3,401.39	1,700.70	5,962.76	2,944.78	0.67	-0.12	0.045
55.00	-31.88	-1.77	0.00	-162.83	0.00	162.83	3,380.51	1,690.25	5,860.04	2,894.05	0.73	-0.13	0.044
60.00	-30.22	-1.75	0.00	-153.97	0.00	153.97	3,337.62	1,668.81	5,655.16	2,792.87	0.87	-0.14	0.042
65.00	-29.00	-1.74	0.00	-145.20	0.00	145.20	3,293.24	1,646.62	5,451.16	2,692.12	1.03	-0.16	0.041
65.00	-29.00	-1.74	0.00	-145.20	0.00	145.20	3,293.24	1,646.62	5,451.16	2,692.12	1.03	-0.16	0.063
70.00	-27.81	-1.73	0.00	-136.50	0.00	136.50	3,247.36	1,623.68	5,248.22	2,591.90	1.20	-0.17	0.061
75.00	-26.64	-1.71	0.00	-127.87	0.00	127.87	3,199.99	1,599.99	5,046.50	2,492.28	1.39	-0.19	0.060
80.00	-25.49	-1.69	0.00	-119.32	0.00	119.32	3,151.11	1,575.56	4,846.18	2,393.35	1.60	-0.21	0.058
85.00	-24.92	-1.68	0.00	-110.87	0.00	110.87	3,100.74	1,550.37	4,647.45	2,295.20	1.83	-0.23	0.056
87.50	-23.98	-1.66	0.00	-106.67	0.00	106.67	3,074.99	1,537.50	4,548.71	2,246.44	1.95	-0.24	0.055
90.00	-22.86	-1.63	0.00	-102.52	0.00	102.52	3,048.88	1,524.44	4,450.47	2,197.92	2.08	-0.25	0.054
93.00	-22.48	-1.62	0.00	-97.63	0.00	97.63	2,367.81	1,183.91	3,474.51	1,715.93	2.24	-0.26	0.066
95.00	-21.91	-1.61	0.00	-94.39	0.00	94.39	2,354.00	1,177.00	3,417.42	1,687.73	2.35	-0.27	0.065
98.00	-21.42	-1.59	0.00	-89.58	0.00	89.58	2,332.83	1,166.41	3,331.94	1,645.52	2.52	-0.28	0.064
100.00	-20.50	-1.56	0.00	-86.39	0.00	86.39	2,318.41	1,159.21	3,275.08	1,617.44	2.65	-0.29	0.062
105.00	-19.59	-1.53	0.00	-78.57	0.00	78.57	2,281.33	1,140.66	3,133.47	1,547.50	2.97	-0.32	0.059
110.00	-18.71	-1.50	0.00	-70.90	0.00	70.90	2,242.75	1,121.37	2,992.76	1,478.01	3.31	-0.34	0.056
115.00	-17.84	-1.47	0.00	-63.39	0.00	63.39	2,202.67	1,101.33	2,853.13	1,409.06	3.68	-0.36	0.053
120.00	-16.99	-1.43	0.00	-56.07	0.00	56.07	2,161.09	1,080.55	2,714.76	1,340.72	4.07	-0.38	0.050
125.00	-16.17	-1.38	0.00	-48.94	0.00	48.94	2,118.02	1,059.01	2,577.82	1,273.09	4.48	-0.40	0.046
130.00	-15.62	-1.35	0.00	-42.02	0.00	42.02	2,073.45	1,036.73	2,442.48	1,206.25	4.91	-0.42	0.042
133.42	-15.23	-1.33	0.00	-37.39	0.00	37.39	2,042.13	1,021.07	2,351.01	1,161.07	5.22	-0.44	0.040
135.00	-14.51	-1.29	0.00	-35.28	0.00	35.28	2,027.39	1,013.69	2,308.93	1,140.29	5.36	-0.44	0.038
138.00	-14.26	-1.27	0.00	-31.42	0.00	31.42	1,223.81	611.90	1,396.77	689.81	5.64	-0.45	0.057
140.00	-9.75	-0.96	0.00	-28.87	0.00	28.87	1,215.85	607.93	1,368.67	675.93	5.84	-0.46	0.051
145.00	-9.19	-0.92	0.00	-24.07	0.00	24.07	1,194.91	597.45	1,298.35	641.21	6.33	-0.48	0.045
150.00	-8.63	-0.88	0.00	-19.47	0.00	19.47	1,172.46	586.23	1,228.11	606.52	6.84	-0.50	0.039
155.00	-8.09	-0.83	0.00	-15.07	0.00	15.07	1,148.52	574.26	1,158.12	571.95	7.37	-0.51	0.033
160.00	-7.57	-0.79	0.00	-10.90	0.00	10.90	1,123.08	561.54	1,088.54	537.59	7.92	-0.53	0.027
165.00	-7.26	-0.76	0.00	-6.97	0.00	6.97	1,096.15	548.08	1,019.57	503.53	8.48	-0.54	0.020
168.00	-3.71	-0.41	0.00	-4.69	0.00	4.69	1,079.27	539.64	978.54	483.26	8.82	-0.54	0.013
170.00	-3.34	-0.37	0.00	-3.87	0.00	3.87	1,067.72	533.86	951.36	469.84	9.05	-0.55	0.011
175.00	-2.98	-0.33	0.00	-2.00	0.00	2.00	1,037.79	518.90	884.11	436.63	9.62	-0.55	0.007
180.00	-2.91	-0.33	0.00	-0.33	0.00	0.33	1,006.37	503.18	817.98	403.97	10.20	-0.55	0.004
181.00	0.00	0.00	0.00	0.00	0.00	0.00	999.90	499.95	804.90	397.51	10.32	-0.55	0.000
185.00	0.00	0.00	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	10.78	-0.55	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.03	-1.79	0.00	-258.14	0.00	258.14	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.045
5.00	-36.56	-1.80	0.00	-249.18	0.00	249.18	4,681.88	2,340.94	9,776.84	4,828.41	0.01	-0.01	0.044
10.00	-35.11	-1.80	0.00	-240.19	0.00	240.19	4,634.49	2,317.25	9,496.63	4,690.03	0.02	-0.02	0.044
15.00	-33.68	-1.81	0.00	-231.17	0.00	231.17	4,585.61	2,292.80	9,217.11	4,551.98	0.05	-0.03	0.043
20.00	-32.98	-1.81	0.00	-222.13	0.00	222.13	4,535.23	2,267.61	8,938.46	4,414.37	0.09	-0.04	0.042
22.50	-32.27	-1.81	0.00	-217.60	0.00	217.60	4,509.47	2,254.74	8,799.52	4,345.75	0.12	-0.05	0.042
22.50	-32.27	-1.81	0.00	-217.60	0.00	217.60	4,509.47	2,254.74	8,799.52	4,345.75	0.12	-0.05	0.042
25.00	-30.88	-1.81	0.00	-213.07	0.00	213.07	4,483.35	2,241.67	8,660.87	4,277.28	0.15	-0.06	0.041
30.00	-29.51	-1.81	0.00	-204.02	0.00	204.02	4,429.97	2,214.99	8,384.50	4,140.79	0.21	-0.07	0.040
35.00	-28.16	-1.80	0.00	-194.97	0.00	194.97	4,375.10	2,187.55	8,109.53	4,004.99	0.29	-0.08	0.039
40.00	-27.20	-1.80	0.00	-185.95	0.00	185.95	4,318.73	2,159.36	7,836.14	3,869.97	0.38	-0.09	0.039
43.58	-26.60	-1.80	0.00	-179.50	0.00	179.50	4,277.41	2,138.70	7,641.28	3,773.74	0.45	-0.10	0.038
45.00	-24.52	-1.77	0.00	-176.96	0.00	176.96	4,260.86	2,130.43	7,564.50	3,735.82	0.48	-0.10	0.037
50.00	-23.93	-1.77	0.00	-168.08	0.00	168.08	3,421.90	1,710.95	6,065.62	2,995.58	0.59	-0.11	0.042
52.50	-23.34	-1.76	0.00	-163.66	0.00	163.66	3,401.39	1,700.70	5,962.76	2,944.78	0.65	-0.12	0.042
52.50	-23.34	-1.76	0.00	-163.66	0.00	163.66	3,401.39	1,700.70	5,962.76	2,944.78	0.65	-0.12	0.042
55.00	-22.17	-1.75	0.00	-159.25	0.00	159.25	3,380.51	1,690.25	5,860.04	2,894.05	0.72	-0.13	0.041
60.00	-21.02	-1.73	0.00	-150.51	0.00	150.51	3,337.62	1,668.81	5,655.16	2,792.87	0.86	-0.14	0.040
65.00	-20.17	-1.71	0.00	-141.86	0.00	141.86	3,293.24	1,646.62	5,451.16	2,692.12	1.01	-0.15	0.038
65.00	-20.17	-1.71	0.00	-141.86	0.00	141.86	3,293.24	1,646.62	5,451.16	2,692.12	1.01	-0.15	0.059
70.00	-19.34	-1.70	0.00	-133.29	0.00	133.29	3,247.36	1,623.68	5,248.22	2,591.90	1.18	-0.16	0.057
75.00	-18.52	-1.68	0.00	-124.80	0.00	124.80	3,199.99	1,599.99	5,046.50	2,492.28	1.36	-0.18	0.056
80.00	-17.72	-1.66	0.00	-116.40	0.00	116.40	3,151.11	1,575.56	4,846.18	2,393.35	1.56	-0.20	0.054
85.00	-17.33	-1.65	0.00	-108.10	0.00	108.10	3,100.74	1,550.37	4,647.45	2,295.20	1.79	-0.22	0.053
87.50	-16.67	-1.63	0.00	-103.98	0.00	103.98	3,074.99	1,537.50	4,548.71	2,246.44	1.91	-0.23	0.052
90.00	-15.90	-1.60	0.00	-99.92	0.00	99.92	3,048.88	1,524.44	4,450.47	2,197.92	2.04	-0.24	0.051
93.00	-15.63	-1.59	0.00	-95.13	0.00	95.13	2,367.81	1,183.91	3,474.51	1,715.93	2.19	-0.26	0.062
95.00	-15.23	-1.57	0.00	-91.95	0.00	91.95	2,354.00	1,177.00	3,417.42	1,687.73	2.30	-0.26	0.061
98.00	-14.90	-1.56	0.00	-87.24	0.00	87.24	2,332.83	1,166.41	3,331.94	1,645.52	2.47	-0.28	0.059
100.00	-14.25	-1.53	0.00	-84.12	0.00	84.12	2,318.41	1,159.21	3,275.08	1,617.44	2.59	-0.29	0.058
105.00	-13.62	-1.50	0.00	-76.47	0.00	76.47	2,281.33	1,140.66	3,133.47	1,547.50	2.91	-0.31	0.055
110.00	-13.01	-1.46	0.00	-68.98	0.00	68.98	2,242.75	1,121.37	2,992.76	1,478.01	3.24	-0.33	0.052
115.00	-12.40	-1.43	0.00	-61.66	0.00	61.66	2,202.67	1,101.33	2,853.13	1,409.06	3.60	-0.35	0.049
120.00	-11.82	-1.39	0.00	-54.52	0.00	54.52	2,161.09	1,080.55	2,714.76	1,340.72	3.98	-0.37	0.046
125.00	-11.24	-1.35	0.00	-47.58	0.00	47.58	2,118.02	1,059.01	2,577.82	1,273.09	4.38	-0.39	0.043
130.00	-10.86	-1.32	0.00	-40.84	0.00	40.84	2,073.45	1,036.73	2,442.48	1,206.25	4.81	-0.41	0.039
133.42	-10.59	-1.30	0.00	-36.34	0.00	36.34	2,042.13	1,021.07	2,351.01	1,161.07	5.11	-0.42	0.036
135.00	-10.09	-1.25	0.00	-34.29	0.00	34.29	2,027.39	1,013.69	2,308.93	1,140.29	5.25	-0.43	0.035
138.00	-9.91	-1.24	0.00	-30.54	0.00	30.54	1,223.81	611.90	1,396.77	689.81	5.52	-0.44	0.052
140.00	-6.78	-0.94	0.00	-28.07	0.00	28.07	1,215.85	607.93	1,368.67	675.93	5.71	-0.45	0.047
145.00	-6.39	-0.90	0.00	-23.39	0.00	23.39	1,194.91	597.45	1,298.35	641.21	6.19	-0.47	0.042
150.00	-6.00	-0.85	0.00	-18.92	0.00	18.92	1,172.46	586.23	1,228.11	606.52	6.69	-0.49	0.036
155.00	-5.63	-0.81	0.00	-14.65	0.00	14.65	1,148.52	574.26	1,158.12	571.95	7.20	-0.50	0.031
160.00	-5.26	-0.76	0.00	-10.60	0.00	10.60	1,123.08	561.54	1,088.54	537.59	7.74	-0.52	0.024
165.00	-5.05	-0.74	0.00	-6.77	0.00	6.77	1,096.15	548.08	1,019.57	503.53	8.28	-0.53	0.018
168.00	-2.58	-0.40	0.00	-4.56	0.00	4.56	1,079.27	539.64	978.54	483.26	8.62	-0.53	0.012
170.00	-2.32	-0.36	0.00	-3.76	0.00	3.76	1,067.72	533.86	951.36	469.84	8.84	-0.53	0.010
175.00	-2.07	-0.33	0.00	-1.95	0.00	1.95	1,037.79	518.90	884.11	436.63	9.40	-0.54	0.006
180.00	-2.02	-0.32	0.00	-0.32	0.00	0.32	1,006.37	503.18	817.98	403.97	9.96	-0.54	0.003
181.00	0.00	0.00	0.00	0.00	0.00	0.00	999.90	499.95	804.90	397.51	10.08	-0.54	0.000
185.00	0.00	0.00	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	10.53	-0.54	0.000

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Equivalent Modal Forces Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.75
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	183.00	184	1.849	1.772	1.065	0.338	54	228
46	180.50	57	1.799	1.535	0.976	0.307	15	71
45	177.50	292	1.740	1.279	0.877	0.271	68	361
44	172.50	303	1.643	0.919	0.730	0.216	57	375
43	169.00	124	1.577	0.710	0.640	0.180	19	154
42	166.50	249	1.531	0.580	0.580	0.156	34	309
41	162.50	425	1.458	0.403	0.494	0.121	44	526
40	157.50	436	1.370	0.229	0.401	0.081	31	540
39	152.50	447	1.284	0.099	0.322	0.047	18	554
38	147.50	459	1.201	0.006	0.256	0.018	7	568
37	142.50	470	1.121	-0.057	0.200	-0.007	-3	582
36	139.00	199	1.067	-0.087	0.167	-0.021	-4	247
35	136.50	584	1.029	-0.102	0.146	-0.029	-15	723
34	134.21	312	0.995	-0.111	0.129	-0.036	-10	386
33	131.71	446	0.958	-0.118	0.112	-0.042	-16	553
32	127.50	667	0.898	-0.122	0.086	-0.049	-28	826
31	122.50	683	0.829	-0.117	0.062	-0.053	-32	846
30	117.50	699	0.762	-0.104	0.044	-0.052	-32	866
29	112.50	715	0.699	-0.087	0.030	-0.046	-29	886
28	107.50	731	0.638	-0.067	0.019	-0.036	-23	906
27	102.50	747	0.580	-0.046	0.012	-0.022	-14	926
26	99.00	303	0.541	-0.031	0.009	-0.011	-3	376
25	96.50	460	0.514	-0.021	0.008	-0.003	-1	570
24	94.00	310	0.488	-0.012	0.007	0.005	1	384
23	91.50	903	0.462	-0.003	0.006	0.013	10	1,119
22	88.75	762	0.435	0.007	0.006	0.021	14	944
21	86.25	456	0.411	0.015	0.006	0.028	11	565
20	82.50	926	0.376	0.025	0.007	0.036	29	1,147
19	77.50	945	0.332	0.038	0.010	0.045	37	1,171
18	72.50	965	0.290	0.047	0.013	0.050	42	1,195
17	67.50	984	0.252	0.055	0.017	0.054	46	1,219
16	62.50	1,337	0.216	0.061	0.021	0.055	64	1,656
15	57.50	1,357	0.183	0.065	0.026	0.056	65	1,680
14	53.75	686	0.160	0.067	0.029	0.055	33	849

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13	51.25	690	0.145	0.068	0.031	0.055	33	855
12	47.50	2,417	0.125	0.070	0.034	0.054	114	2,994
11	44.29	692	0.108	0.071	0.036	0.054	32	858
10	41.79	1,111	0.096	0.071	0.038	0.053	51	1,376
9	37.50	1,570	0.078	0.072	0.040	0.052	71	1,944
8	32.50	1,592	0.058	0.072	0.041	0.051	70	1,972
7	27.50	1,615	0.042	0.070	0.042	0.050	70	2,000
6	23.75	816	0.031	0.068	0.041	0.048	34	1,010
5	21.25	821	0.025	0.066	0.039	0.047	34	1,017
4	17.50	1,660	0.017	0.062	0.037	0.045	65	2,056
3	12.50	1,682	0.009	0.053	0.030	0.040	58	2,084
2	7.50	1,705	0.003	0.038	0.021	0.031	45	2,112
1	2.50	1,727	0.000	0.015	0.008	0.014	21	2,139
Decibel 844G90VTA-SX	181.00	46	1.809	1.580	0.993	0.313	12	57
Decibel DB844H90E-XY	181.00	56	1.809	1.580	0.993	0.313	15	69
Decibel 844G65VTZASX	181.00	64	1.809	1.580	0.993	0.313	17	79
Flat Platform w/ Han	181.00	2,000	1.809	1.580	0.993	0.313	543	2,477
Powerwave Allgon LGP	168.00	85	1.559	0.656	0.615	0.170	12	105
Raycap DC6-48-60-18-	168.00	40	1.559	0.656	0.615	0.170	6	50
Ericsson RRUS 11 (Ba	168.00	150	1.559	0.656	0.615	0.170	22	186
Ericsson RRUS 12	168.00	150	1.559	0.656	0.615	0.170	22	186
Ericsson RRUS-32 (77	168.00	231	1.559	0.656	0.615	0.170	34	286
Powerwave Allgon 777	168.00	105	1.559	0.656	0.615	0.170	16	130
KMW AM-X-CD-16-65-00	168.00	146	1.559	0.656	0.615	0.170	21	180
Quintel QS66512-2	168.00	333	1.559	0.656	0.615	0.170	49	412
Round Low Profile Pl	168.00	1,500	1.559	0.656	0.615	0.170	221	1,858
Alcatel-Lucent RRH2x	140.00	159	1.082	-0.079	0.176	-0.017	-2	197
Alcatel-Lucent 800 M	140.00	192	1.082	-0.079	0.176	-0.017	-3	238
Alcatel-Lucent 4x40W	140.00	264	1.082	-0.079	0.176	-0.017	-4	327
Alcatel-Lucent TD-RR	140.00	210	1.082	-0.079	0.176	-0.017	-3	260
RFS APXVSPP18-C-A20	140.00	171	1.082	-0.079	0.176	-0.017	-3	212
Commscope DT465B-	140.00	174	1.082	-0.079	0.176	-0.017	-3	216
Flat Platform w/ Han	140.00	2,000	1.082	-0.079	0.176	-0.017	-29	2,477
GPS	98.00	10	0.530	-0.027	0.009	-0.007	0	12
Stand-Off	98.00	75	0.530	-0.027	0.009	-0.007	0	93
		45,881	60.327	19.241	18.713	4.994	2,135	56,828

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	183.00	184	1.849	1.772	1.065	0.338	54	158
46	180.50	57	1.799	1.535	0.976	0.307	15	49
45	177.50	292	1.740	1.279	0.877	0.271	68	251
44	172.50	303	1.643	0.919	0.730	0.216	57	261
43	169.00	124	1.577	0.710	0.640	0.180	19	107
42	166.50	249	1.531	0.580	0.580	0.156	34	215
41	162.50	425	1.458	0.403	0.494	0.121	44	366
40	157.50	436	1.370	0.229	0.401	0.081	31	376
39	152.50	447	1.284	0.099	0.322	0.047	18	385
38	147.50	459	1.201	0.006	0.256	0.018	7	395
37	142.50	470	1.121	-0.057	0.200	-0.007	-3	405
36	139.00	199	1.067	-0.087	0.167	-0.021	-4	171
35	136.50	584	1.029	-0.102	0.146	-0.029	-15	503
34	134.21	312	0.995	-0.111	0.129	-0.036	-10	269
33	131.71	446	0.958	-0.118	0.112	-0.042	-16	385
32	127.50	667	0.898	-0.122	0.086	-0.049	-28	574
31	122.50	683	0.829	-0.117	0.062	-0.053	-32	588
30	117.50	699	0.762	-0.104	0.044	-0.052	-32	602

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29	112.50	715	0.699	-0.087	0.030	-0.046	-29	616
28	107.50	731	0.638	-0.067	0.019	-0.036	-23	630
27	102.50	747	0.580	-0.046	0.012	-0.022	-14	644
26	99.00	303	0.541	-0.031	0.009	-0.011	-3	261
25	96.50	460	0.514	-0.021	0.008	-0.003	-1	396
24	94.00	310	0.488	-0.012	0.007	0.005	1	267
23	91.50	903	0.462	-0.003	0.006	0.013	10	778
22	88.75	762	0.435	0.007	0.006	0.021	14	657
21	86.25	456	0.411	0.015	0.006	0.028	11	393
20	82.50	926	0.376	0.025	0.007	0.036	29	798
19	77.50	945	0.332	0.038	0.010	0.045	37	814
18	72.50	965	0.290	0.047	0.013	0.050	42	831
17	67.50	984	0.252	0.055	0.017	0.054	46	848
16	62.50	1,337	0.216	0.061	0.021	0.055	64	1,152
15	57.50	1,357	0.183	0.065	0.026	0.056	65	1,169
14	53.75	686	0.160	0.067	0.029	0.055	33	591
13	51.25	690	0.145	0.068	0.031	0.055	33	595
12	47.50	2,417	0.125	0.070	0.034	0.054	114	2,082
11	44.29	692	0.108	0.071	0.036	0.054	32	596
10	41.79	1,111	0.096	0.071	0.038	0.053	51	957
9	37.50	1,570	0.078	0.072	0.040	0.052	71	1,352
8	32.50	1,592	0.058	0.072	0.041	0.051	70	1,371
7	27.50	1,615	0.042	0.070	0.042	0.050	70	1,391
6	23.75	816	0.031	0.068	0.041	0.048	34	703
5	21.25	821	0.025	0.066	0.039	0.047	34	708
4	17.50	1,660	0.017	0.062	0.037	0.045	65	1,430
3	12.50	1,682	0.009	0.053	0.030	0.040	58	1,449
2	7.50	1,705	0.003	0.038	0.021	0.031	45	1,468
1	2.50	1,727	0.000	0.015	0.008	0.014	21	1,488
Decibel 844G90VTA-SX	181.00	46	1.809	1.580	0.993	0.313	12	40
Decibel DB844H90E-XY	181.00	56	1.809	1.580	0.993	0.313	15	48
Decibel 844G65VTZASX	181.00	64	1.809	1.580	0.993	0.313	17	55
Flat Platform w/ Han	181.00	2,000	1.809	1.580	0.993	0.313	543	1,723
Powerwave Allgon LGP	168.00	85	1.559	0.656	0.615	0.170	12	73
Raycap DC6-48-60-18-	168.00	40	1.559	0.656	0.615	0.170	6	34
Ericsson RRUS 11 (Ba	168.00	150	1.559	0.656	0.615	0.170	22	129
Ericsson RRUS 12	168.00	150	1.559	0.656	0.615	0.170	22	129
Ericsson RRUS-32 (77	168.00	231	1.559	0.656	0.615	0.170	34	199
Powerwave Allgon 777	168.00	105	1.559	0.656	0.615	0.170	16	90
KMW AM-X-CD-16-65-00	168.00	146	1.559	0.656	0.615	0.170	21	125
Quintel QS66512-2	168.00	333	1.559	0.656	0.615	0.170	49	287
Round Low Profile Pl	168.00	1,500	1.559	0.656	0.615	0.170	221	1,292
Alcatel-Lucent RRH2x	140.00	159	1.082	-0.079	0.176	-0.017	-2	137
Alcatel-Lucent 800 M	140.00	192	1.082	-0.079	0.176	-0.017	-3	165
Alcatel-Lucent 4x40W	140.00	264	1.082	-0.079	0.176	-0.017	-4	227
Alcatel-Lucent TD-RR	140.00	210	1.082	-0.079	0.176	-0.017	-3	181
RFS APXVSPP18-C-A20	140.00	171	1.082	-0.079	0.176	-0.017	-3	147
Commscope DT465B-	140.00	174	1.082	-0.079	0.176	-0.017	-3	150
Flat Platform w/ Han	140.00	2,000	1.082	-0.079	0.176	-0.017	-29	1,723
GPS	98.00	10	0.530	-0.027	0.009	-0.007	0	9
Stand-Off	98.00	75	0.530	-0.027	0.009	-0.007	0	65
		45,881	60.327	19.241	18.713	4.994	2,135	39,521

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.69	-2.12	0.00	-259.22	0.00	259.22	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.048
5.00	-52.58	-2.08	0.00	-248.63	0.00	248.63	4,681.88	2,340.94	9,776.84	4,828.41	0.01	-0.01	0.047
10.00	-50.49	-2.03	0.00	-238.21	0.00	238.21	4,634.49	2,317.25	9,496.63	4,690.03	0.02	-0.02	0.046
15.00	-48.44	-1.98	0.00	-228.04	0.00	228.04	4,585.61	2,292.80	9,217.11	4,551.98	0.05	-0.03	0.045
20.00	-47.42	-1.95	0.00	-218.15	0.00	218.15	4,535.23	2,267.61	8,938.46	4,414.37	0.09	-0.04	0.044
22.50	-46.41	-1.92	0.00	-213.27	0.00	213.27	4,509.47	2,254.74	8,799.52	4,345.75	0.12	-0.05	0.043
22.50	-46.41	-1.92	0.00	-213.27	0.00	213.27	4,509.47	2,254.74	8,799.52	4,345.75	0.12	-0.05	0.043
25.00	-44.41	-1.86	0.00	-208.47	0.00	208.47	4,483.35	2,241.67	8,660.87	4,277.28	0.14	-0.06	0.043
30.00	-42.44	-1.79	0.00	-199.19	0.00	199.19	4,429.97	2,214.99	8,384.50	4,140.79	0.21	-0.07	0.042
35.00	-40.49	-1.73	0.00	-190.24	0.00	190.24	4,375.10	2,187.55	8,109.53	4,004.99	0.28	-0.08	0.041
40.00	-39.12	-1.68	0.00	-181.61	0.00	181.61	4,318.73	2,159.36	7,836.14	3,869.97	0.37	-0.09	0.040
43.58	-38.26	-1.65	0.00	-175.59	0.00	175.59	4,277.41	2,138.70	7,641.28	3,773.74	0.44	-0.10	0.039
45.00	-35.26	-1.54	0.00	-173.25	0.00	173.25	4,260.86	2,130.43	7,564.50	3,735.82	0.47	-0.10	0.038
50.00	-34.41	-1.51	0.00	-165.57	0.00	165.57	3,421.90	1,710.95	6,065.62	2,995.58	0.58	-0.11	0.044
52.50	-33.56	-1.48	0.00	-161.80	0.00	161.80	3,401.39	1,700.70	5,962.76	2,944.78	0.64	-0.12	0.043
52.50	-33.56	-1.48	0.00	-161.80	0.00	161.80	3,401.39	1,700.70	5,962.76	2,944.78	0.64	-0.12	0.043
55.00	-31.88	-1.41	0.00	-158.12	0.00	158.12	3,380.51	1,690.25	5,860.04	2,894.05	0.71	-0.12	0.043
60.00	-30.22	-1.35	0.00	-151.05	0.00	151.05	3,337.62	1,668.81	5,655.16	2,792.87	0.85	-0.14	0.042
65.00	-29.00	-1.31	0.00	-144.30	0.00	144.30	3,293.24	1,646.62	5,451.16	2,692.12	1.00	-0.15	0.041
65.00	-29.00	-1.31	0.00	-144.30	0.00	144.30	3,293.24	1,646.62	5,451.16	2,692.12	1.00	-0.15	0.062
70.00	-27.81	-1.27	0.00	-137.76	0.00	137.76	3,247.36	1,623.68	5,248.22	2,591.90	1.16	-0.16	0.062
75.00	-26.64	-1.24	0.00	-131.40	0.00	131.40	3,199.99	1,599.99	5,046.50	2,492.28	1.34	-0.18	0.061
80.00	-25.49	-1.22	0.00	-125.20	0.00	125.20	3,151.11	1,575.56	4,846.18	2,393.35	1.55	-0.21	0.060
85.00	-24.92	-1.21	0.00	-119.11	0.00	119.11	3,100.74	1,550.37	4,647.45	2,295.20	1.77	-0.23	0.060
87.50	-23.98	-1.20	0.00	-116.08	0.00	116.08	3,074.99	1,537.50	4,548.71	2,246.44	1.90	-0.24	0.059
90.00	-22.86	-1.19	0.00	-113.08	0.00	113.08	3,048.88	1,524.44	4,450.47	2,197.92	2.02	-0.25	0.059
93.00	-22.48	-1.19	0.00	-109.52	0.00	109.52	2,367.81	1,183.91	3,474.51	1,715.93	2.18	-0.26	0.073
95.00	-21.91	-1.19	0.00	-107.14	0.00	107.14	2,354.00	1,177.00	3,417.42	1,687.73	2.30	-0.27	0.073
98.00	-21.43	-1.20	0.00	-103.56	0.00	103.56	2,332.83	1,166.41	3,331.94	1,645.52	2.47	-0.29	0.072
100.00	-20.50	-1.22	0.00	-101.16	0.00	101.16	2,318.41	1,159.21	3,275.08	1,617.44	2.60	-0.30	0.071
105.00	-19.59	-1.24	0.00	-95.09	0.00	95.09	2,281.33	1,140.66	3,133.47	1,547.50	2.92	-0.33	0.070
110.00	-18.71	-1.27	0.00	-88.87	0.00	88.87	2,242.75	1,121.37	2,992.76	1,478.01	3.28	-0.35	0.068
115.00	-17.84	-1.31	0.00	-82.50	0.00	82.50	2,202.67	1,101.33	2,853.13	1,409.06	3.67	-0.38	0.067
120.00	-16.99	-1.34	0.00	-75.95	0.00	75.95	2,161.09	1,080.55	2,714.76	1,340.72	4.08	-0.41	0.065
125.00	-16.17	-1.37	0.00	-69.23	0.00	69.23	2,118.02	1,059.01	2,577.82	1,273.09	4.53	-0.44	0.062
130.00	-15.61	-1.39	0.00	-62.36	0.00	62.36	2,073.45	1,036.73	2,442.48	1,206.25	5.00	-0.47	0.059
133.42	-15.23	-1.40	0.00	-57.60	0.00	57.60	2,042.13	1,021.07	2,351.01	1,161.07	5.34	-0.49	0.057
135.00	-14.50	-1.41	0.00	-55.38	0.00	55.38	2,027.39	1,013.69	2,308.93	1,140.29	5.51	-0.50	0.056
138.00	-14.26	-1.42	0.00	-51.14	0.00	51.14	1,223.81	611.90	1,396.77	689.81	5.82	-0.51	0.086
140.00	-9.75	-1.43	0.00	-48.30	0.00	48.30	1,215.85	607.93	1,368.67	675.93	6.04	-0.52	0.079
145.00	-9.18	-1.42	0.00	-41.14	0.00	41.14	1,194.91	597.45	1,298.35	641.21	6.61	-0.56	0.072
150.00	-8.62	-1.41	0.00	-34.02	0.00	34.02	1,172.46	586.23	1,228.11	606.52	7.21	-0.59	0.063
155.00	-8.08	-1.37	0.00	-26.99	0.00	26.99	1,148.52	574.26	1,158.12	571.95	7.84	-0.62	0.054
160.00	-7.56	-1.33	0.00	-20.12	0.00	20.12	1,123.08	561.54	1,088.54	537.59	8.51	-0.65	0.044
165.00	-7.25	-1.29	0.00	-13.49	0.00	13.49	1,096.15	548.08	1,019.57	503.53	9.19	-0.67	0.033
168.00	-3.71	-0.83	0.00	-9.62	0.00	9.62	1,079.27	539.64	978.54	483.26	9.62	-0.68	0.023
170.00	-3.33	-0.77	0.00	-7.97	0.00	7.97	1,067.72	533.86	951.36	469.84	9.90	-0.68	0.020
175.00	-2.97	-0.69	0.00	-4.14	0.00	4.14	1,037.79	518.90	884.11	436.63	10.62	-0.69	0.012
180.00	-2.90	-0.68	0.00	-0.68	0.00	0.68	1,006.37	503.18	817.98	403.97	11.34	-0.69	0.005
181.00	0.00	0.00	0.00	0.00	0.00	0.00	999.90	499.95	804.90	397.51	11.49	-0.69	0.000
185.00	0.00	0.00	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	12.07	-0.69	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.03	-2.12	0.00	-254.62	0.00	254.62	4,727.77	2,363.89	10,057.5	4,967.06	0.00	0.00	0.044
5.00	-36.56	-2.08	0.00	-244.04	0.00	244.04	4,681.88	2,340.94	9,776.84	4,828.41	0.01	-0.01	0.043
10.00	-35.11	-2.03	0.00	-233.64	0.00	233.64	4,634.49	2,317.25	9,496.63	4,690.03	0.02	-0.02	0.042
15.00	-33.68	-1.97	0.00	-223.51	0.00	223.51	4,585.61	2,292.80	9,217.11	4,551.98	0.05	-0.03	0.042
20.00	-32.98	-1.94	0.00	-213.67	0.00	213.67	4,535.23	2,267.61	8,938.46	4,414.37	0.09	-0.04	0.041
22.50	-32.27	-1.91	0.00	-208.82	0.00	208.82	4,509.47	2,254.74	8,799.52	4,345.75	0.11	-0.05	0.040
22.50	-32.27	-1.91	0.00	-208.82	0.00	208.82	4,509.47	2,254.74	8,799.52	4,345.75	0.11	-0.05	0.040
25.00	-30.88	-1.84	0.00	-204.05	0.00	204.05	4,483.35	2,241.67	8,660.87	4,277.28	0.14	-0.05	0.040
30.00	-29.51	-1.77	0.00	-194.85	0.00	194.85	4,429.97	2,214.99	8,384.50	4,140.79	0.20	-0.07	0.039
35.00	-28.16	-1.71	0.00	-185.98	0.00	185.98	4,375.10	2,187.55	8,109.53	4,004.99	0.28	-0.08	0.038
40.00	-27.20	-1.66	0.00	-177.45	0.00	177.45	4,318.73	2,159.36	7,836.14	3,869.97	0.37	-0.09	0.037
43.58	-26.61	-1.63	0.00	-171.50	0.00	171.50	4,277.41	2,138.70	7,641.28	3,773.74	0.43	-0.10	0.036
45.00	-24.52	-1.51	0.00	-169.19	0.00	169.19	4,260.86	2,130.43	7,564.50	3,735.82	0.46	-0.10	0.036
50.00	-23.93	-1.48	0.00	-161.62	0.00	161.62	3,421.90	1,710.95	6,065.62	2,995.58	0.57	-0.11	0.041
52.50	-23.34	-1.45	0.00	-157.91	0.00	157.91	3,401.39	1,700.70	5,962.76	2,944.78	0.63	-0.12	0.040
52.50	-23.34	-1.45	0.00	-157.91	0.00	157.91	3,401.39	1,700.70	5,962.76	2,944.78	0.63	-0.12	0.040
55.00	-22.17	-1.39	0.00	-154.27	0.00	154.27	3,380.51	1,690.25	5,860.04	2,894.05	0.69	-0.12	0.040
60.00	-21.02	-1.33	0.00	-147.33	0.00	147.33	3,337.62	1,668.81	5,655.16	2,792.87	0.83	-0.13	0.039
65.00	-20.17	-1.28	0.00	-140.70	0.00	140.70	3,293.24	1,646.62	5,451.16	2,692.12	0.98	-0.15	0.038
65.00	-20.17	-1.28	0.00	-140.70	0.00	140.70	3,293.24	1,646.62	5,451.16	2,692.12	0.98	-0.15	0.058
70.00	-19.34	-1.24	0.00	-134.28	0.00	134.28	3,247.36	1,623.68	5,248.22	2,591.90	1.14	-0.16	0.058
75.00	-18.52	-1.21	0.00	-128.06	0.00	128.06	3,199.99	1,599.99	5,046.50	2,492.28	1.32	-0.18	0.057
80.00	-17.73	-1.19	0.00	-122.00	0.00	122.00	3,151.11	1,575.56	4,846.18	2,393.35	1.51	-0.20	0.057
85.00	-17.33	-1.18	0.00	-116.06	0.00	116.06	3,100.74	1,550.37	4,647.45	2,295.20	1.74	-0.22	0.056
87.50	-16.68	-1.17	0.00	-113.12	0.00	113.12	3,074.99	1,537.50	4,548.71	2,246.44	1.85	-0.23	0.056
90.00	-15.90	-1.16	0.00	-110.20	0.00	110.20	3,048.88	1,524.44	4,450.47	2,197.92	1.98	-0.24	0.055
93.00	-15.63	-1.16	0.00	-106.73	0.00	106.73	2,367.81	1,183.91	3,474.51	1,715.93	2.14	-0.26	0.069
95.00	-15.23	-1.16	0.00	-104.42	0.00	104.42	2,354.00	1,177.00	3,417.42	1,687.73	2.25	-0.27	0.068
98.00	-14.90	-1.16	0.00	-100.95	0.00	100.95	2,332.83	1,166.41	3,331.94	1,645.52	2.42	-0.28	0.068
100.00	-14.26	-1.18	0.00	-98.62	0.00	98.62	2,318.41	1,159.21	3,275.08	1,617.44	2.54	-0.29	0.067
105.00	-13.62	-1.21	0.00	-92.72	0.00	92.72	2,281.33	1,140.66	3,133.47	1,547.50	2.86	-0.32	0.066
110.00	-13.01	-1.24	0.00	-86.70	0.00	86.70	2,242.75	1,121.37	2,992.76	1,478.01	3.21	-0.35	0.064
115.00	-12.41	-1.27	0.00	-80.52	0.00	80.52	2,202.67	1,101.33	2,853.13	1,409.06	3.58	-0.37	0.063
120.00	-11.82	-1.30	0.00	-74.16	0.00	74.16	2,161.09	1,080.55	2,714.76	1,340.72	3.99	-0.40	0.061
125.00	-11.24	-1.33	0.00	-67.65	0.00	67.65	2,118.02	1,059.01	2,577.82	1,273.09	4.42	-0.43	0.058
130.00	-10.86	-1.35	0.00	-60.98	0.00	60.98	2,073.45	1,036.73	2,442.48	1,206.25	4.89	-0.46	0.056
133.42	-10.59	-1.36	0.00	-56.37	0.00	56.37	2,042.13	1,021.07	2,351.01	1,161.07	5.22	-0.47	0.054
135.00	-10.08	-1.37	0.00	-54.21	0.00	54.21	2,027.39	1,013.69	2,308.93	1,140.29	5.38	-0.48	0.053
138.00	-9.91	-1.38	0.00	-50.09	0.00	50.09	1,223.81	611.90	1,396.77	689.81	5.69	-0.50	0.081
140.00	-6.78	-1.40	0.00	-47.33	0.00	47.33	1,215.85	607.93	1,368.67	675.93	5.90	-0.51	0.076
145.00	-6.38	-1.40	0.00	-40.32	0.00	40.32	1,194.91	597.45	1,298.35	641.21	6.45	-0.54	0.068
150.00	-5.99	-1.38	0.00	-33.35	0.00	33.35	1,172.46	586.23	1,228.11	606.52	7.04	-0.58	0.060
155.00	-5.62	-1.34	0.00	-26.46	0.00	26.46	1,148.52	574.26	1,158.12	571.95	7.66	-0.61	0.051
160.00	-5.25	-1.30	0.00	-19.74	0.00	19.74	1,123.08	561.54	1,088.54	537.59	8.31	-0.63	0.041
165.00	-5.04	-1.26	0.00	-13.25	0.00	13.25	1,096.15	548.08	1,019.57	503.53	8.98	-0.65	0.031
168.00	-2.58	-0.81	0.00	-9.46	0.00	9.46	1,079.27	539.64	978.54	483.26	9.39	-0.66	0.022
170.00	-2.32	-0.75	0.00	-7.83	0.00	7.83	1,067.72	533.86	951.36	469.84	9.67	-0.67	0.019
175.00	-2.07	-0.68	0.00	-4.07	0.00	4.07	1,037.79	518.90	884.11	436.63	10.37	-0.67	0.011
180.00	-2.02	-0.67	0.00	-0.67	0.00	0.67	1,006.37	503.18	817.98	403.97	11.08	-0.68	0.004
181.00	0.00	0.00	0.00	0.00	0.00	0.00	999.90	499.95	804.90	397.51	11.23	-0.68	0.000
185.00	0.00	0.00	0.00	0.00	0.00	0.00	973.45	486.72	753.15	371.95	11.79	-0.68	0.000

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Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	38.18	0.00	54.99	0.00	0.00	4367.38	93.00	0.80
0.9D + 1.6W	36.90	0.00	41.23	0.00	0.00	4281.05	93.00	0.78
1.2D + 1.0Di + 1.0Wi	8.71	0.00	98.79	0.00	0.00	1126.33	93.00	0.25
(1.2 + 0.2Sds) * DL + E ELFM	1.79	0.00	54.69	0.00	0.00	262.51	93.00	0.07
(1.2 + 0.2Sds) * DL + E EMAM	2.12	0.00	54.69	0.00	0.00	259.22	138.00	0.09
(0.9 - 0.2Sds) * DL + E ELFM	1.79	0.00	38.03	0.00	0.00	258.14	93.00	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.12	0.00	38.03	0.00	0.00	254.62	138.00	0.08
1.0D + 1.0W	9.06	0.00	45.88	0.00	0.00	1057.90	93.00	0.20

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	22.5	(4) SOL-#20 All Thre	181.1	5.4	16.8	0.0	12.0	0	0	0.0	12.0	0	0	231.3	330.5	0.700
22.5	52.5	(4) SOL-#20 All Thre	214.6	6.4	16.8	0.0	12.0	0	0	0.0	12.0	0	0	217.9	330.5	0.659
52.5	65.0	(4) SOL-#20 All Thre	219.7	6.6	16.8	192.0	12.0	17	24	0.0	12.0	0	0	208.0	330.5	0.629

Base/Flange Plate	Plate Type	***Baseplate***
	Pole Diameter	52 in
	Pole Thickness	0.4375 in
	Plate Diameter	66.34 in
	Plate Thickness	2.75 in
	Plate Fy	60 ksi
	Weld Length	0.3125 in
	ϕ_s Resistance	1042.40 k-in
	Applied	414.40 k-in
Stiffeners	#	

Bolts	#	***16***
	Bolt Circle	60.34 in
	(R)adial / (S)quare	R
	Diameter	2.25 in
	Hole Diameter	2.625 in
	Type	A615-75
	Fy	75 ksi
	Fu	100 ksi
	ϕ_s Resistance	259.82 k
	Applied	162.83 k
Reinforcement ●	#	***4***
	DYW. Circle	58.875 in
	Offset Angle	11 °
	Type	#20
	Diameter	2.5 in
	Fu	100 ksi
	ϕ_s Resistance	392.70 k
	Applied	231.81 k
Extra Bolts O	#	***0***

Code Rev. ***G***

Moment 4367.4 k-ft
Axial 55.0 k

Date	10/6/2017
Engineer	Charles.Cages
Site #	302537
Carrier	SPRINT NEXTEL

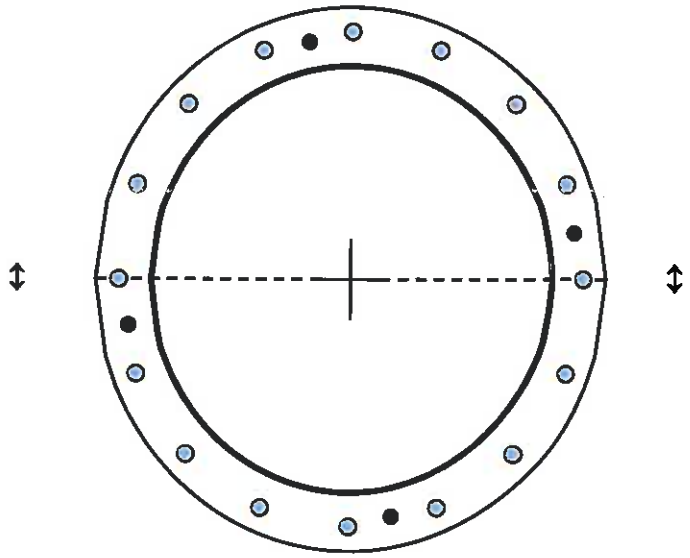


Plate Stress Ratio:
0.40 (Pass)

Bolt Stress Ratio:
0.63 (Pass)

Reinforcement Stress Ratio:
0.59 (Pass)

Town of Halfmoon
2 Halfmoon Town Plaza
Halfmoon, NY 12065
371-7410 ext. 2260
Fax: 371-0304
Building Department

BUILDING PERMIT Application

Permit #: _____

Application Date: _____

Fee: _____

Permit Type:

☐ Single Family Home.....	☐ Commercial Building.....	☐ Addition.....
☐ Mobile Home.....	☐ Modular Home.....	☐ Deck.....
☐ Townhouse.....	☐ Duplex.....	☐ Electrical.....
☐ Finished Basement.....	☐ Accessory Structure.....	☐ Shed.....
☐ Pool/Spa	☐ Lawn Sprinkler.....	☐ Sign.....
☐ Bilco Door/Egress Window...	☐ Tenant Setup.....	☒ Other Telecom Tower

Address/Location: 7 Vosburgh Road **Development** Change to Existing Config

Property Owner:

Name (PRINT): American Tower Co

Address: 10 Presidentail Way, Woburn, MA 01801

Telephone #: (781) 926-4952 **E-MAIL:** craig.corbet@americantower.com **D.O.B.:** _____ **(Property Owner)**

Contractor/Builder:

Name (Print): Tilson Technologies

Address: 4944 Verplank Road, Clay, NY 13041

Telephone #: (617) 285-1762 **Fax #:** (508) 473-1991 **Email:** mmastracco@tilsontech.com

Insurance Carrier: National Union Fire Ins Co Pittsburgh, PA

Workers' Comp (C105.2 Form) Date: _____ **Liability (Accord 25 Form) Date:** 02/08/2018

Site Plan Submitted: ☒ **Building Plans Submitted:** ☒

Applicant Signature: Raymond A. Perry **Date:** 03/29/2018

(For Department Use Only)

Action: Approved ☐ **Disapproved:** ☐ **Reason for Disapproval:** _____

Signature: _____ **Date:** _____

Title: _____

Sprint

PROJECT: DO MACRO UPGRADE

SITE NAME: MIDDLETOWN CT 3 - NEXTEL TOWER

SITE CASCADE: CT03XC070

SITE ADDRESS: 47 INWOOD ROAD
ROCKY HILL, CT 06067

SITE TYPE: MONOPOLE TOWER

MARKET: NORTHERN CONNECTICUT

SITE INFORMATION

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

LATITUDE (NAD83):
41° 38' 18.91" N
41.63858611°

LONGITUDE (NAD83):
72° 40' 45.44" W
-72.67928888°

COUNTY:
HARTFORD COUNTY

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

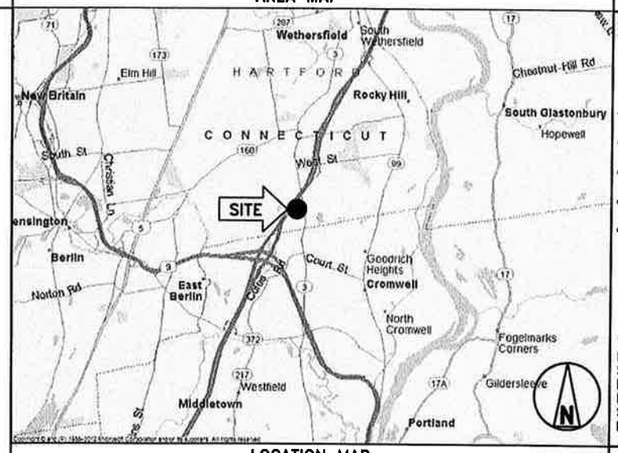
ZONING DISTRICT:
TBD

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

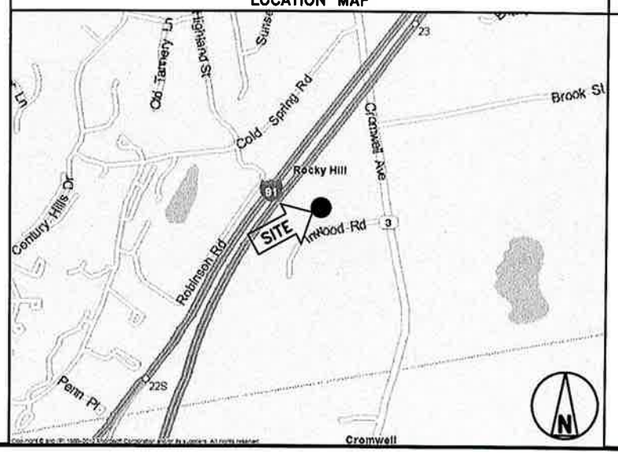
AAV PROVIDER:
AT&T
PHONE: (800) 331-0500

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

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL (3) PANEL ANTENNAS
- INSTALL (3) 800 MHz RRH'S BEHIND ANTENNAS
- INSTALL (3) 2.5 GHz RRH'S BEHIND ANTENNAS
- INSTALL (36) JUMPER CABLES
- INSTALL (1) HYBRID CABLE
- INSTALL 2.5 EQUIPMENT INSIDE EXISTING N.V. MMBS CABINET

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

APPLICABLE CODES

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

1. INTERNATIONAL BUILDING CODE (2015 IBC)
2. TIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

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

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	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	EQUIPMENT & MOUNTING DETAILS	0
A-5	CIVIL DETAILS	0
A-6	PLUMBING DIAGRAM	0
E-1	ELECTRICAL & GROUNDING PLAN	0
E-2	ELECTRICAL & GROUNDING DETAILS	0

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-104

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

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24708
LICENSED PROFESSIONAL ENGINEER

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 PERMIT	01/18/18	SKB	0

SITE NAME:
MIDDLETOWN CT 3 - NEXTEL TOWER

SITE NUMBER:
CT03XC070

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

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

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

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

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

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

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

1.5 DEFINITIONS:

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

B. COMPANY: SPRINT CORPORATION

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

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

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

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

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

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

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

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

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

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

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

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

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

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

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

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

3.2 DELIVERABLES:

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

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

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

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 NOTICE TO PROCEED

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

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

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

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

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

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ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24765
LICENSED PROFESSIONAL ENGINEER

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	01/18/18	SKB	0

SITE NAME:
MIDDLETOWN CT 3 - NEXTEL TOWER

SITE NUMBER:
CT03XC070

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-1

CONTINUE FROM SP-1

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

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

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

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

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

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

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

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

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

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

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

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 SUBMITTALS:

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

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

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

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

1.4 TESTS AND INSPECTIONS:

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

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

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

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

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

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

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

3.2 REQUIRED TESTS:

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

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

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

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

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

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DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	01/18/18	SKB	0

SITE NAME:
MIDDLETOWN CT 3 - NEXTEL TOWER

SITE NUMBER:
CT03XC070

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
SPRINT SPECIFICATIONS

SHEET NUMBER:
SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.
10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
11. ALL AVAILABLE JURISDICTIONAL INFORMATION
12. PDF SCAN OF REDLINES PRODUCED IN FIELD

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

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

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

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

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
2. STRUCTURAL BACKFILL COMPACTION REPORTS.
3. SITE RESISTANCE TO EARTH TEST.
4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

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

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

3.2 PROJECT CONFERENCE CALLS:

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

3.3 PROJECT TRACKING IN SMS:

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

3.4 ADDITIONAL REPORTING:

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

3.5 PROJECT PHOTOGRAPHS:

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

1. 1SHELTER AND TOWER OVERVIEW.
2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
5. PHOTOS OF TOWER SECTION STACKING.
6. CONCRETE TESTING / SAMPLES.
7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.
10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
11. COAX CABLE ENTRY INTO SHELTER.
12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).
25. ALL BTS GROUND CONNECTIONS.
26. ALL GROUND TEST WELLS.
27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
30. GPS ANTENNAS.
31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
32. DOGHOUSE/CABLE EXIT FROM ROOF.
33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
34. MASTER BUS BAR.
35. TELCO BOARD AND NIU.
36. ELECTRICAL DISTRIBUTION WALL.
37. CABLE ENTRY WITH SURGE SUPPRESSION.
38. ENTRANCE TO EQUIPMENT ROOM.
39. COAX WEATHERPROOFING--TOP AND BOTTOM OF TOWER.
40. COAX GROUNDING --TOP AND BOTTOM OF TOWER.
41. ANTENNA AND MAST GROUNDING.
42. LANDSCAPING – WHERE APPLICABLE.

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

PLANS PREPARED FOR:

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	01/18/18	SKB	0

SITE NAME:

MIDDLETOWN CT 3 - NEXTEL TOWER

SITE NUMBER:

CT03XC070

SITE ADDRESS:

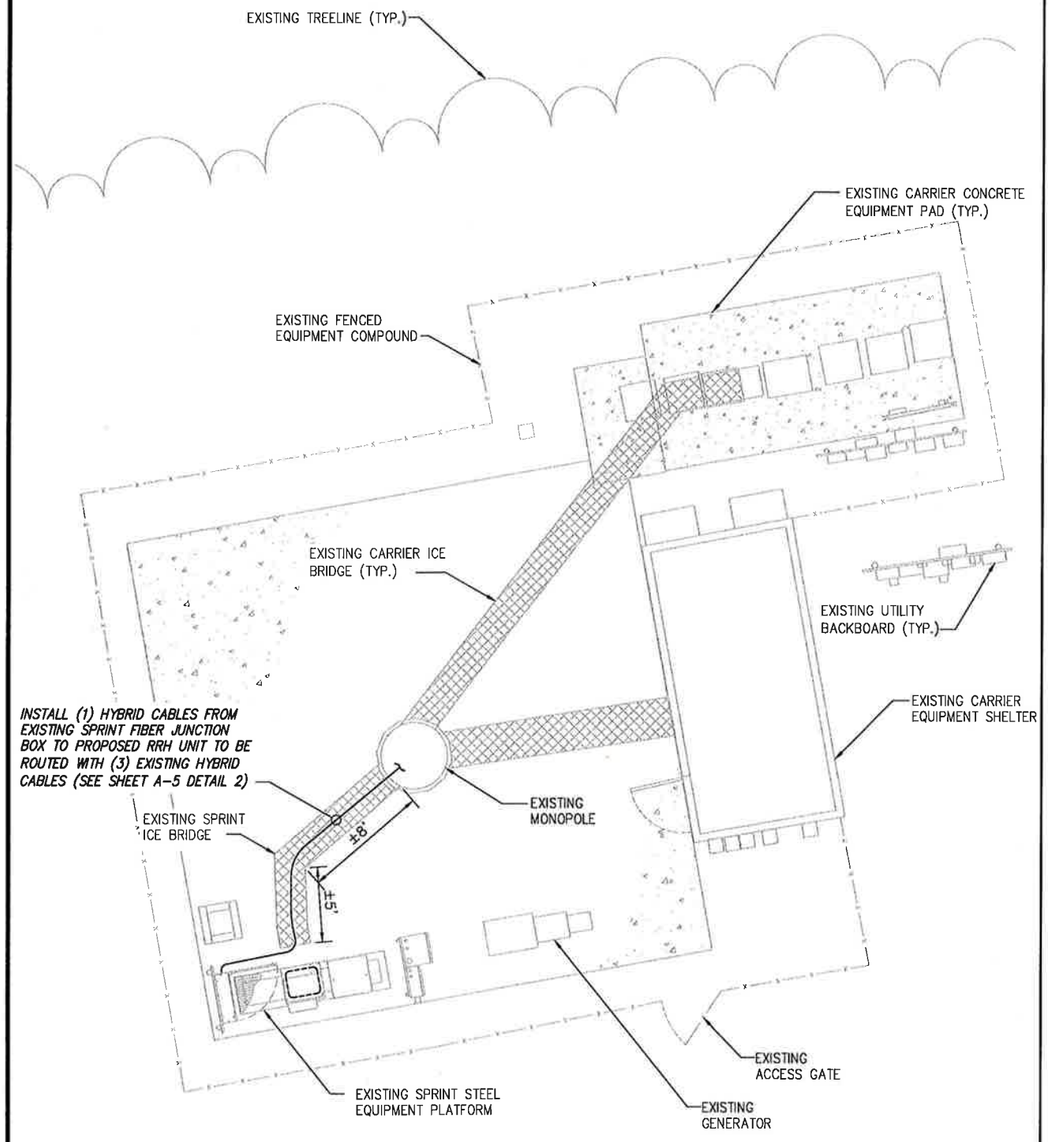
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-3

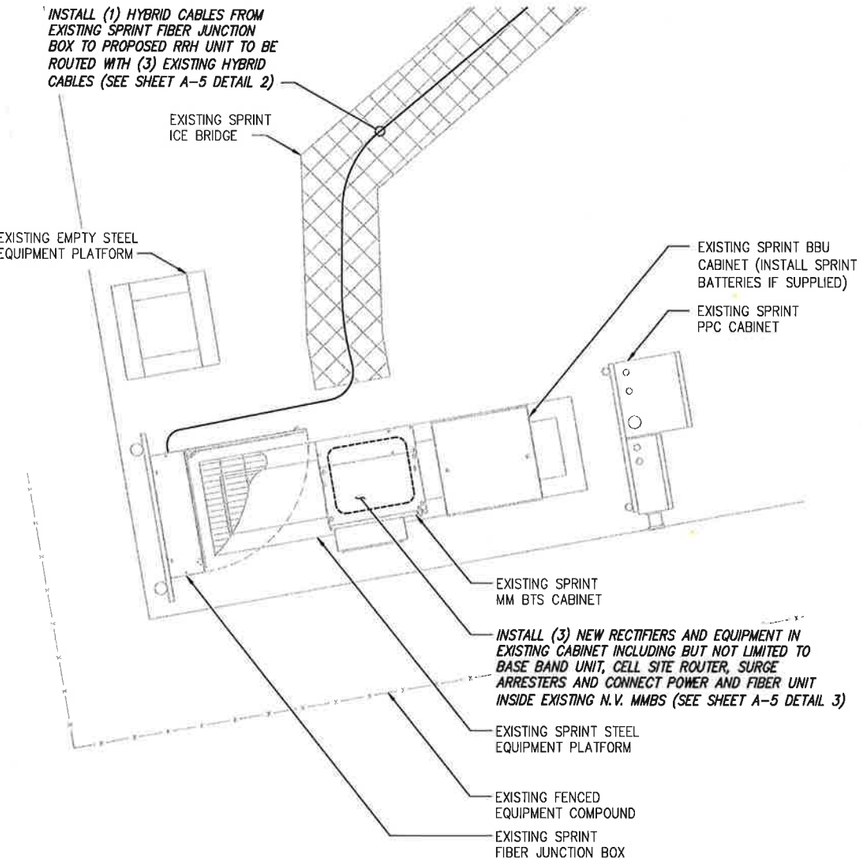


INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

N

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

OVERALL SITE PLAN | SCALE: AS NOTED | 1



EXISTING SPRINT FIBER JUNCTION BOX

N

GRAPHIC SCALE:
6' 3' 0 3' 6'
SCALE (11x17): 1" = 6'-0"
SCALE (22x34): 1" = 3'-0"

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

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PROJECT MANAGER:
AIROSMITH DEVELOPMENT
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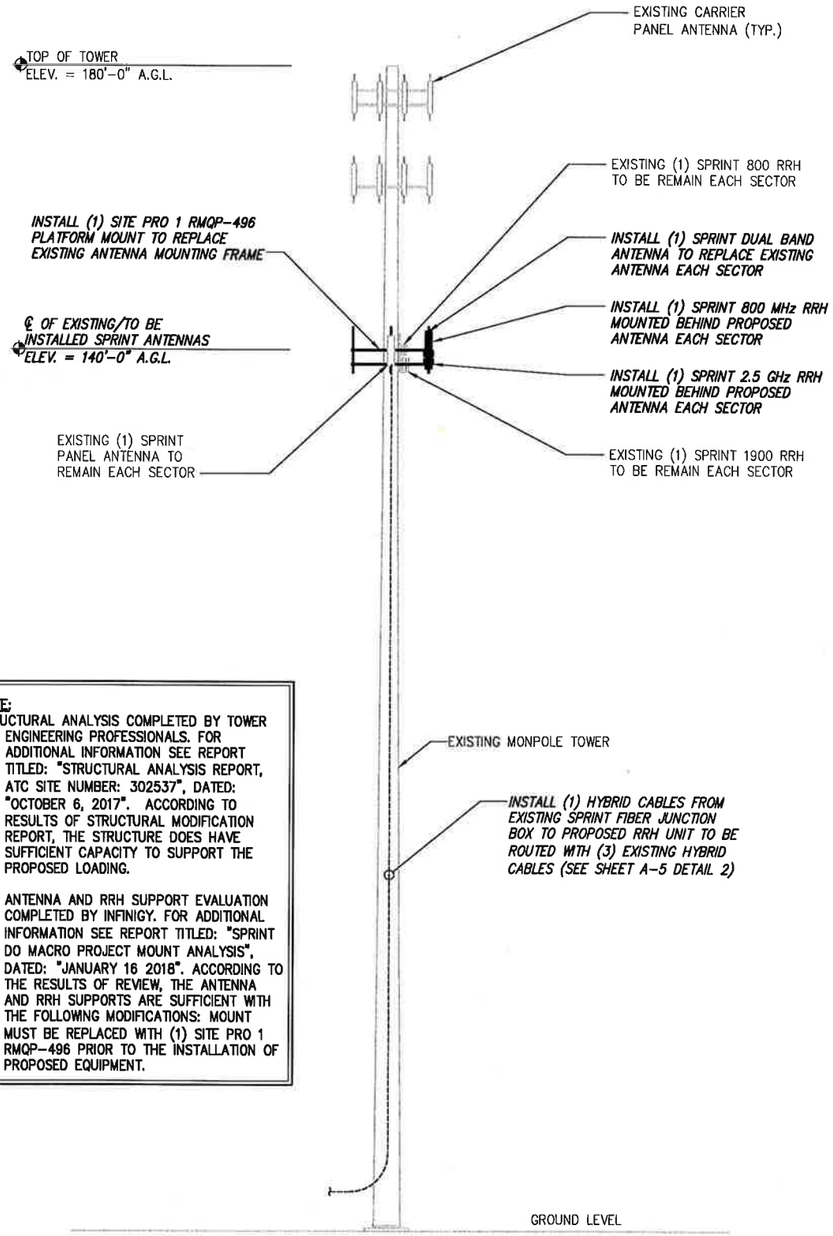
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
SITE PLAN

SHEET NUMBER:
A-1

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



NOTE:
STRUCTURAL ANALYSIS COMPLETED BY TOWER ENGINEERING PROFESSIONALS. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, ATC SITE NUMBER: 302537", DATED: "OCTOBER 6, 2017". ACCORDING TO RESULTS OF STRUCTURAL MODIFICATION REPORT, THE STRUCTURE DOES HAVE SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.

- ANTENNA AND RRH SUPPORT EVALUATION COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "SPRINT DO MACRO PROJECT MOUNT ANALYSIS", DATED: "JANUARY 16 2018". ACCORDING TO THE RESULTS OF REVIEW, THE ANTENNA AND RRH SUPPORTS ARE SUFFICIENT WITH THE FOLLOWING MODIFICATIONS: MOUNT MUST BE REPLACED WITH (1) SITE PRO 1 RMQP-496 PRIOR TO THE INSTALLATION OF PROPOSED EQUIPMENT.

TOWER ELEVATION | NO SCALE | 1

SITE LOADING CHART

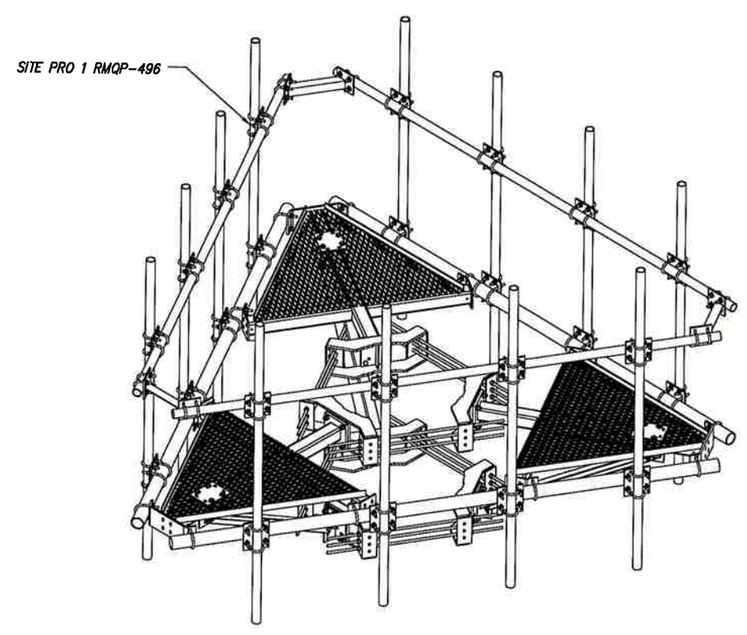
SECTOR	EXISTING/ PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/ REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	PROPOSED	DT465B-2XR	COMMSCOPE	0°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1	±184'*	±140' AGL
	EXISTING	APXVSPP18-C-A20	RFS	0°	1	REMAIN	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	EXISTING COAX		
	–	–	–	–	–	–	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
BETA	PROPOSED	DT465B-2XR	COMMSCOPE	120°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1		±140' AGL
	EXISTING	APXVSPP18-C-A20	RFS	120°	1	REMAIN	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	EXISTING COAX		
	–	–	–	–	–	–	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
GAMMA	PROPOSED	DT465B-2XR	COMMSCOPE	260°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1		±140' AGL
	EXISTING	APXVSPP18-C-A20	RFS	260°	1	REMAIN	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	EXISTING COAX		
	–	–	–	–	–	–	(1) 1900 MHz 4X45 RRH	EXISTING COAX		

PROJECT SCOPE:

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

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

SITE LOADING CHART | NO SCALE | 2



DETAIL NOT USED | NO SCALE | 3

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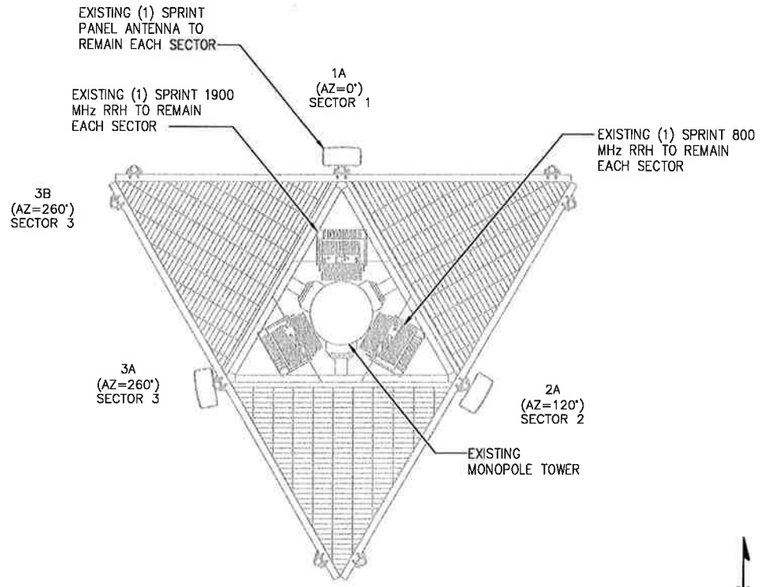
SITE NUMBER:
CT03XC070

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

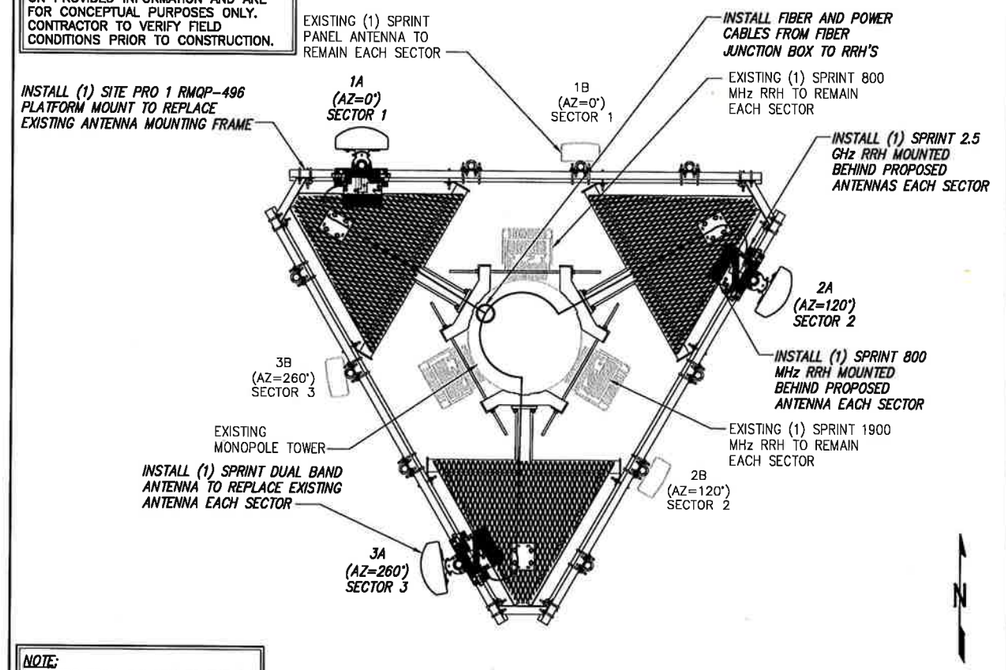
SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



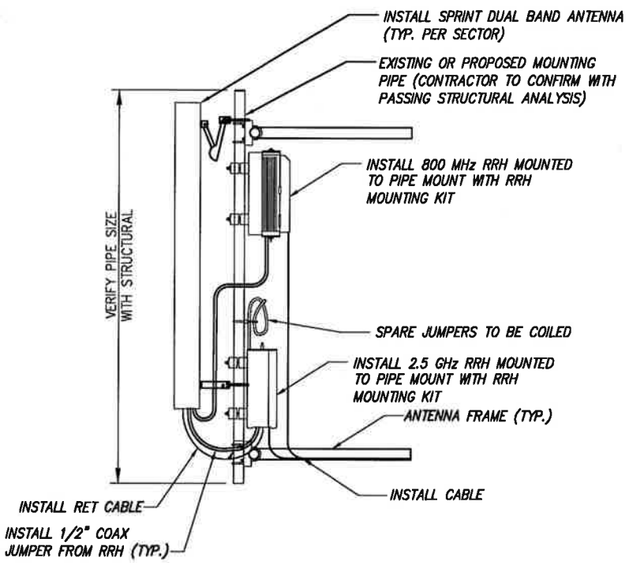
EXISTING ANTENNA & RRH LAYOUT | NO SCALE | 1

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



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

FINAL ANTENNA LAYOUT | NO SCALE | 2



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

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

NOTES:

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

TYPICAL ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 3

DETAIL NOT USED | NO SCALE | 4

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SITE NUMBER:
CT03XC070

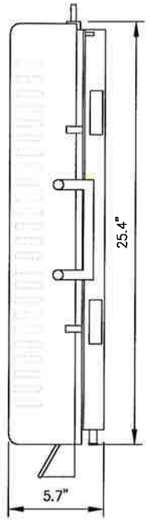
SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

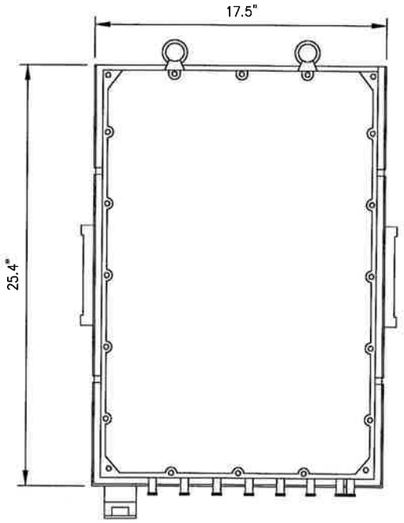
SHEET NUMBER:
A-3

RRH: ALCATEL LUCENT TD-RRH8X20

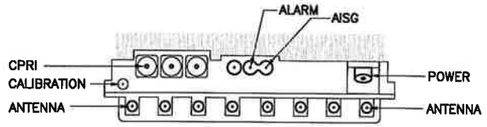
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW



PLAN VIEW

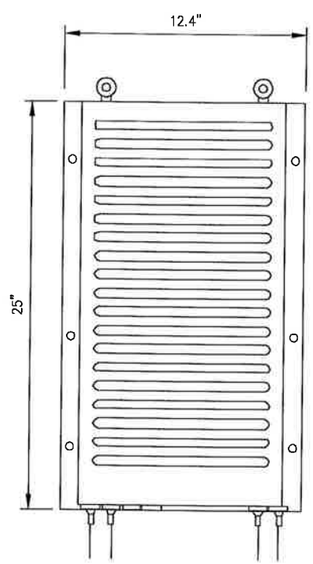
NOTES

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

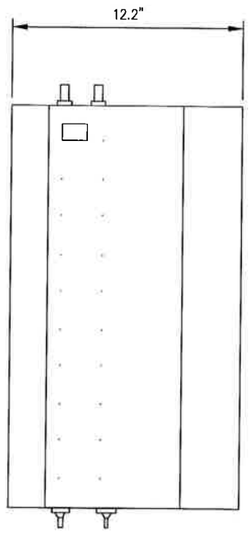
2.5 GHz RRH'S | NO SCALE | 1

RRH: ALCATEL LUCENT 1900 MHz

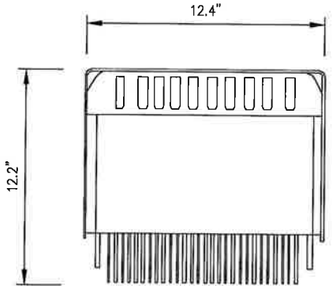
COLOR: LIGHT GREY
WEIGHT: 70 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)



FRONT VIEW



SIDE VIEW

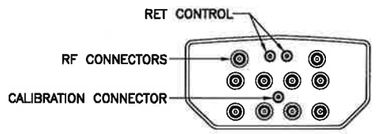


TOP VIEW

EXISTING 1900 MHz RRH | NO SCALE | 2

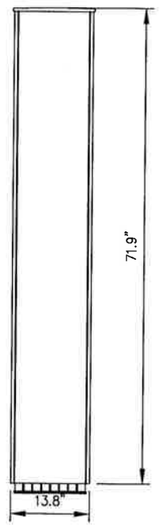
ANTENNA COMMSCOPE DT465B-2XR

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



PLAN VIEW

SIDE VIEW



FRONT VIEW

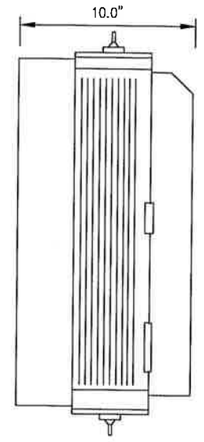
DUAL BAND ANTENNA | NO SCALE | 3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

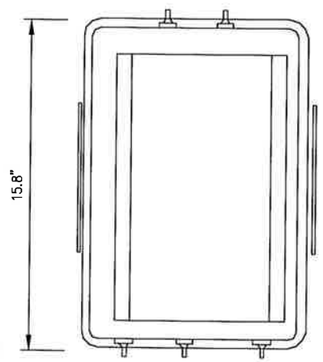
COLOR: LIGHT GREY
WEIGHT: 53 LBS.

NOTES

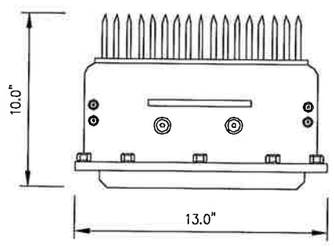
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.



SIDE VIEW



FRONT VIEW



PLAN VIEW

800 MHz RRH | NO SCALE | 4

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CT03XC070

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-4

RFS HYBRIFLEX RISER CABLE SCHEDULE

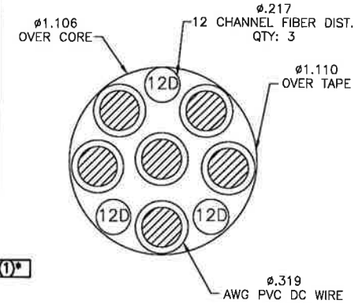
Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F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

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

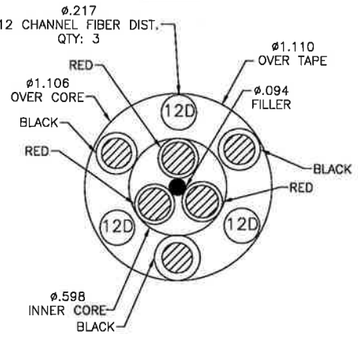
Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1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

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

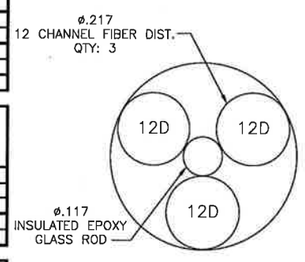
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG



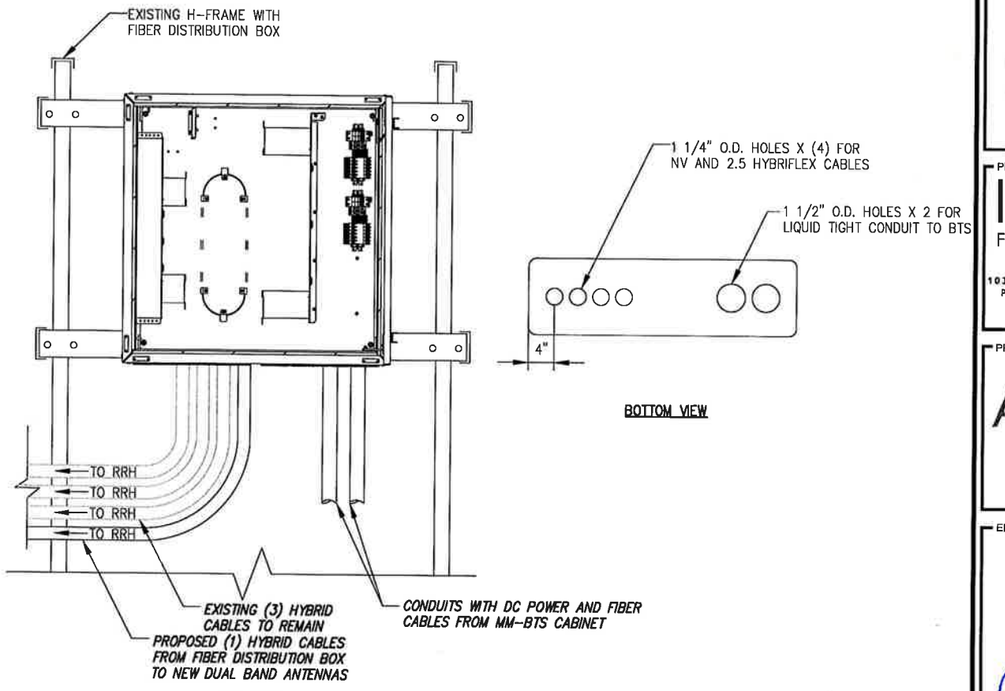
8 & 6 AWG



FIBER ONLY

2.5 CABLE CROSS SECTION DATA

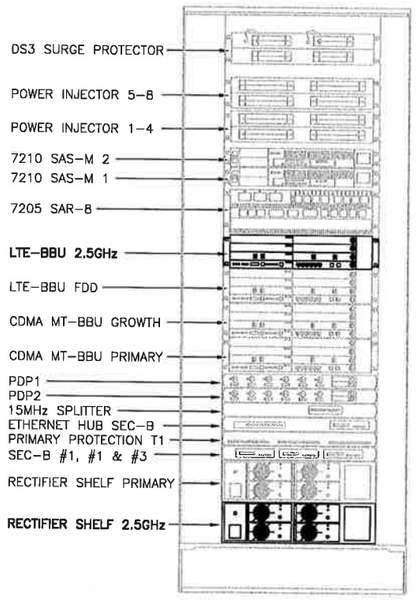
NO SCALE | 1



FRONT VIEW

FIBER JUNCTION BOX PENETRATION

NO SCALE | 2



FRONT VIEW

NEW EQUIPMENT IN EXISTING CABINET

NO SCALE | 3

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

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	01/18/18	SKB	0

SITE NAME:
MIDDLETOWN CT 3 - NEXTEL TOWER

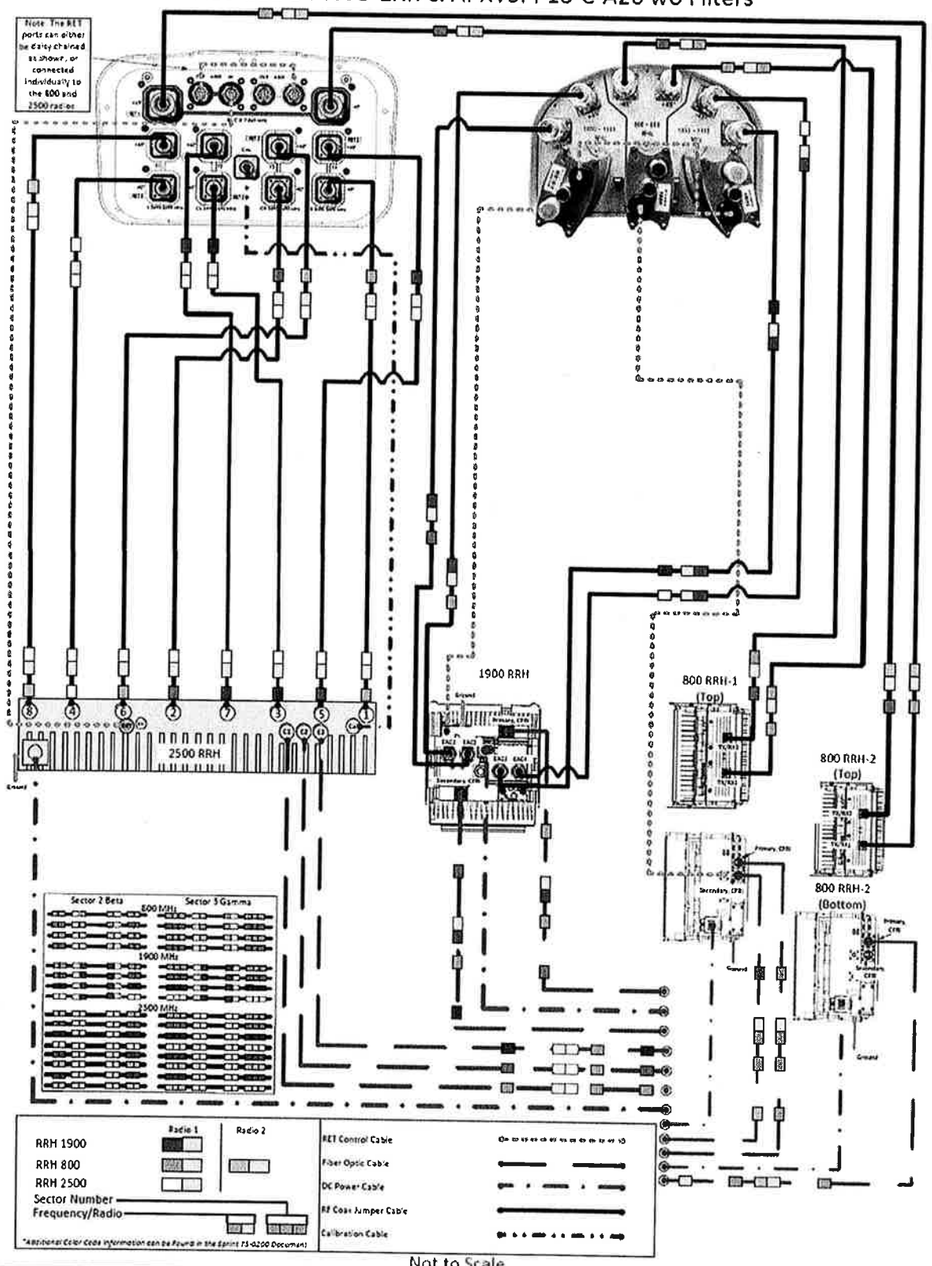
SITE NUMBER:
CT03XC070

SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-5

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



Not to Scale

PLUMBING DIAGRAM | NO SCALE | 1

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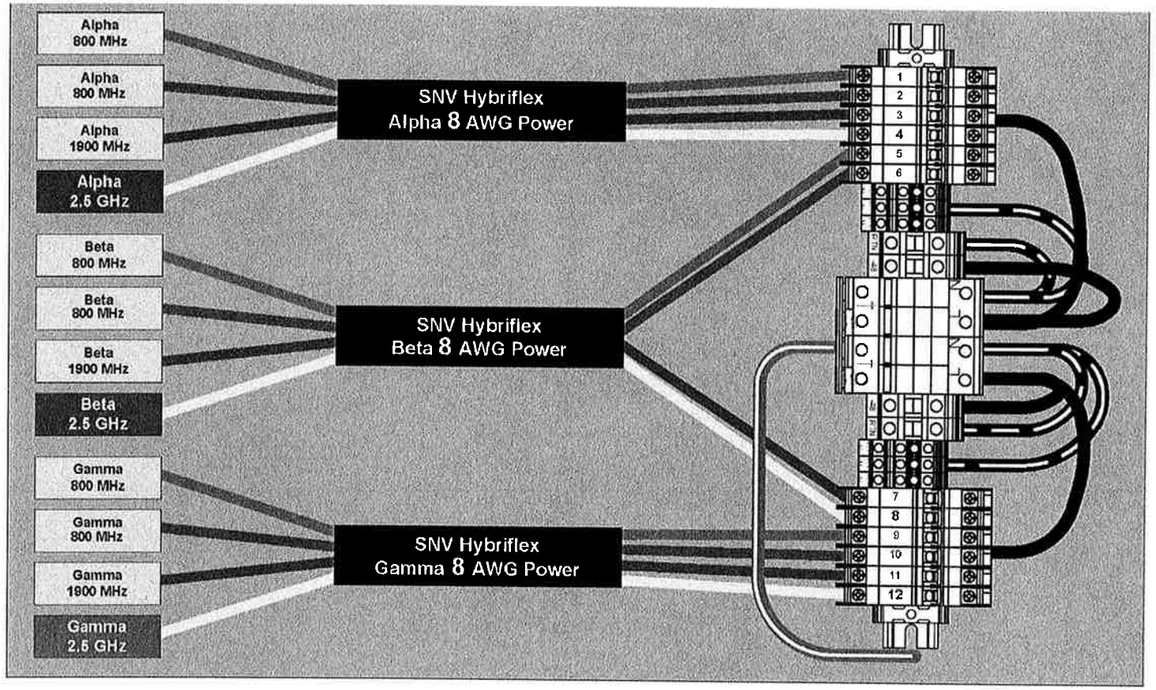
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

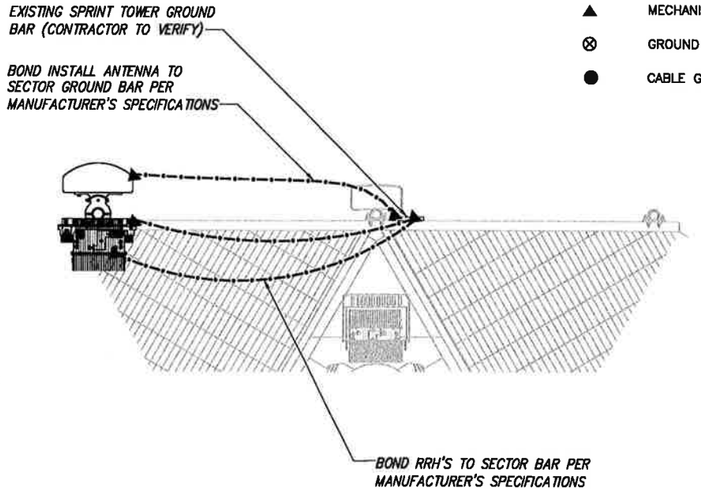
A-6



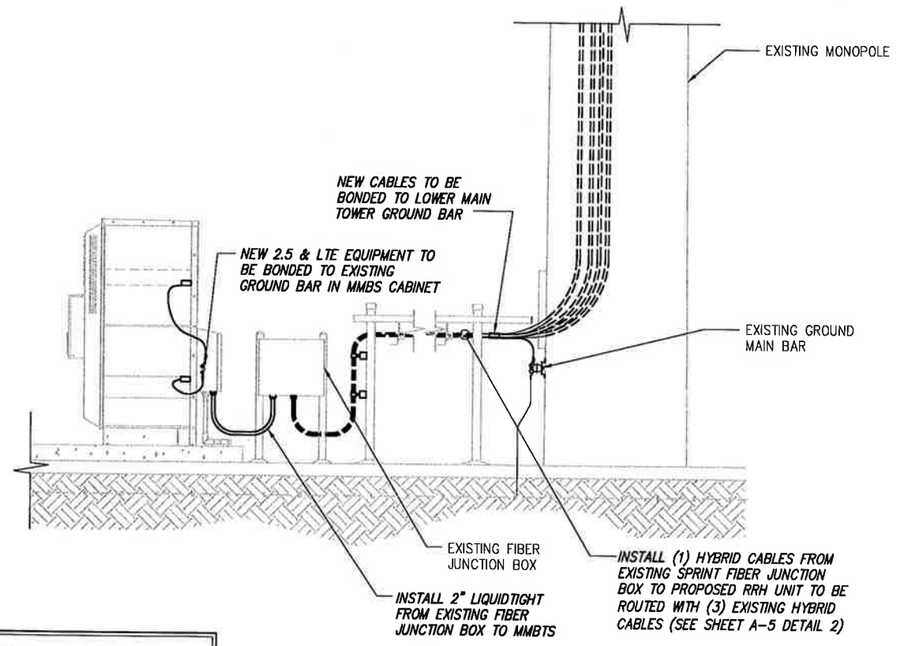
RRH TO DISTRIBUTION BOX POWER CONNECTIVITY | NO SCALE | 1

LEGEND:

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2



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

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

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SITE NUMBER:
CT03XC070

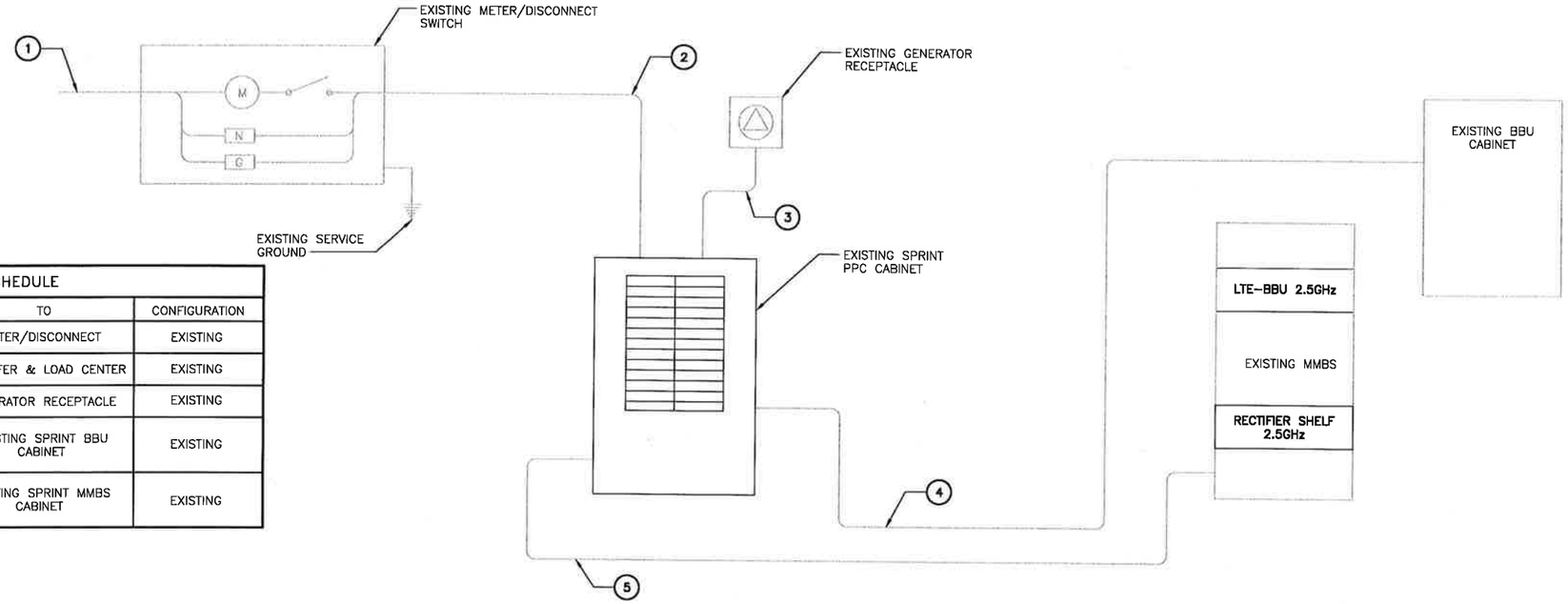
SITE ADDRESS:
47 INWOOD ROAD
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:
E-1

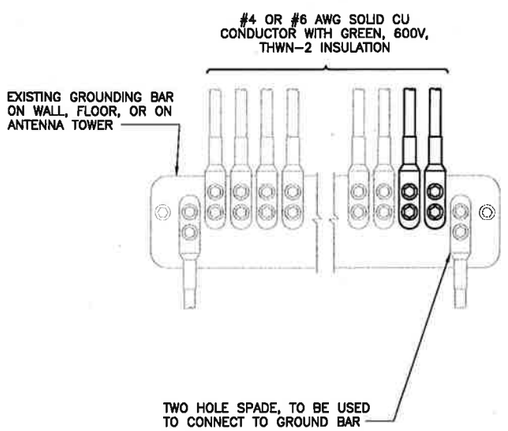
NOTES

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



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

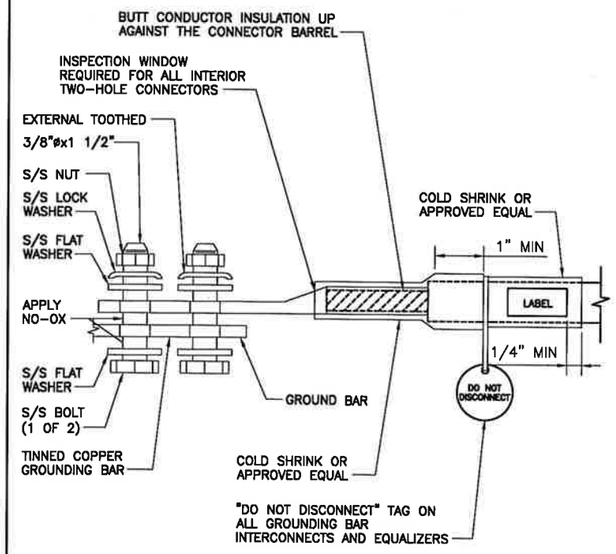
ELECTRICAL ONE–LINE DIAGRAM — NO SCALE — 1



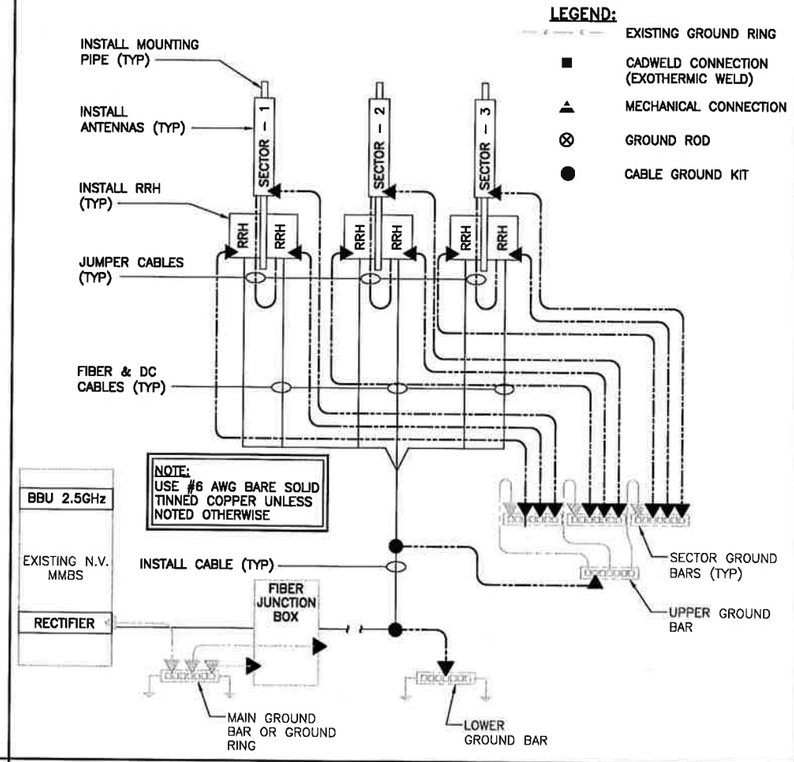
NOTES

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

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



TWO HOLE LUG — NO SCALE — 3



GROUNDING RISER DIAGRAM — NO SCALE — 4

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ROCKY HILL, CT 06067

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-2