



September 4<sup>th</sup>, 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 123 PALMER ROAD, CHAPLIN, CONNECTICUT – CT33XC583 (lat. 41° 47' 4.3008" N, long. -72° 8' 8.4984" W)**

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (137-foot level) on an existing (146-foot monopole tower) at the above-referenced address. The property is owned by BESSETTE JANET L REVOCABLE LIVING TRUST and the tower is owned by American Tower Corporation.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace six (6) antennas, relocate three (3) RRHs from ground level to the tower and add nine (9) new RRHs onto the tower. All the proposed work is contained within the existing fenced area. Please refer to the attached drawings for site plans prepared by Infinigy Engineering.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to William Rose IV, First Selectman and James Gugliotti, Zoning Officer of the Town of CHAPLIN. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the site, and BESSETTE JANET L REVOCABLE LIVING TRUST 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 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](mailto:aperkowski@airosmithdevelopment.com)

Kind Regards,

A handwritten signature in black ink, appearing to read 'Arthur Perkowski', is written over a large, light-colored oval shape.

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

Attachment

CC: William Rose IV (First Selectman / Chaplin, CT)  
JUSTINE PAUL (Manager, AMERICAN TOWER CORPORATION)  
James Gigliotti (Zoning Officer / Chaplin, CT)  
BESSETTE JANET L REVOCABLE LIVING TRUST (Land Owner)

7018 0680 0002 1201 3858

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09/04/2018

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Chaplin CT 06235

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City, State, ZIP+4®  
Willimantic CT 06226

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Chaplin CT 06235

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.50	
Total Postage and Fees	\$6.70	

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09/04/2018

Sent To  
Justin Paul CT 33XC583  
Street and Apt. No., or PO Box No.  
10 Residential Way  
City, State, ZIP+4®  
Woburn MA 0184

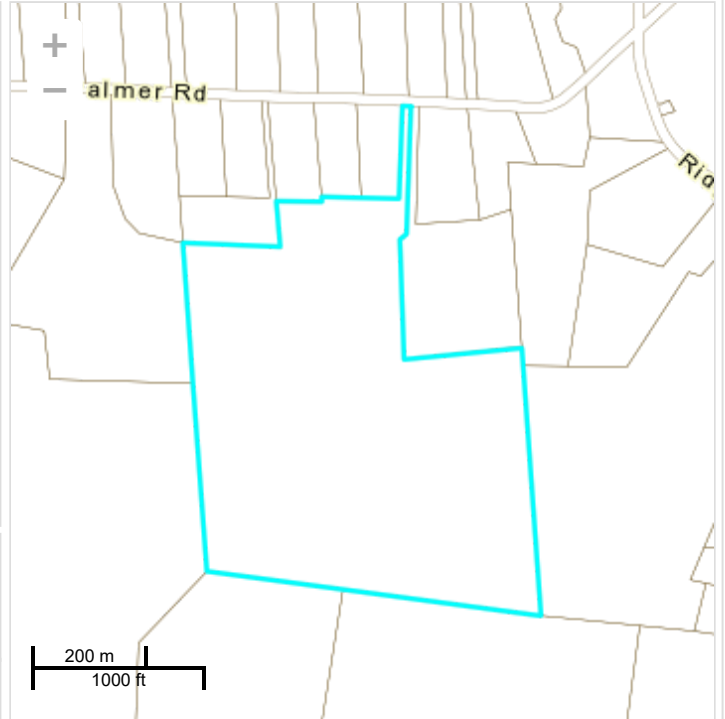
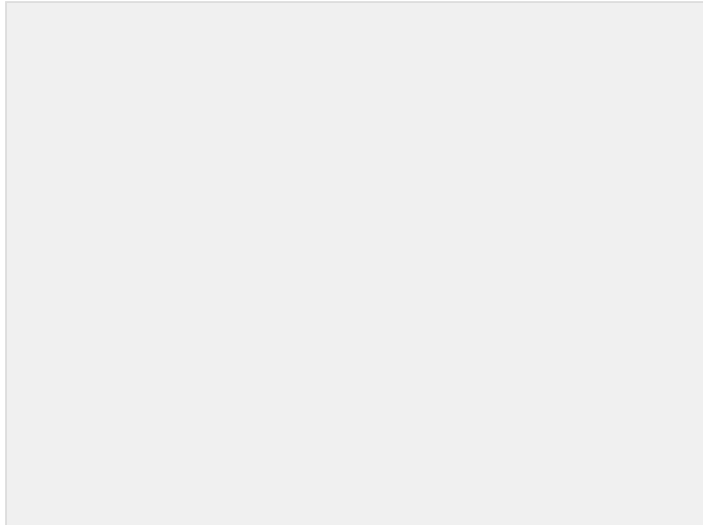
PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



Town of Chaplin, Connecticut  
Property Record Card

123 PALMER RD

ID: 55-54 Account #: B000626



Owner: BESSETTE JANET L REVOCABLE LIVING TRUST  
Co-Owner:  
Address: 5 VICTORY LN  
WILLIMANTIC CT 06226

**Important Revaluation Notice**

Assessment: Total: 17700, Assessed Value: 25300  
Building: 0 Land: 17700 Yard: 0

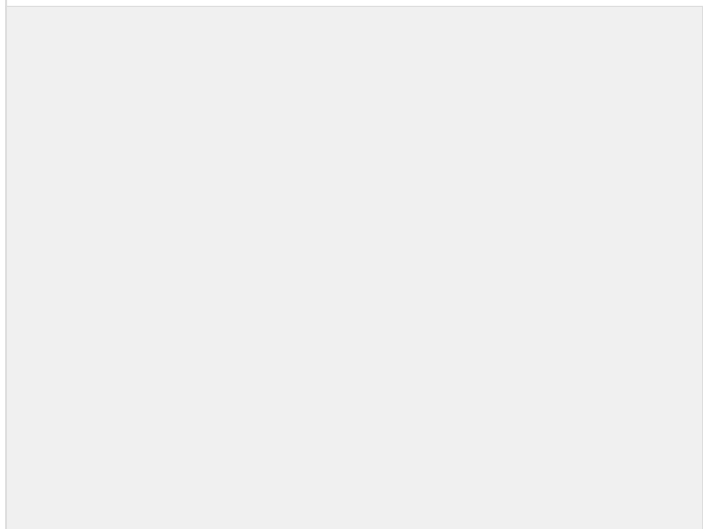
**Sales History**

Grantor	Book / Page	Sale Date	Sale Price
BESSETTE JANET L REVOCABLE LIVING TRUST	102/ 971	2016-10-03	0
BESSETTE JANET L	87/ 976	2007-01-09	0
	60/ 633	1996-01-25	0



**Land Information**

Land Area: 10.23 AC Zoning:  
Land Use: 100 - Resid Vacant  
Neighborhood:



**Building Information**

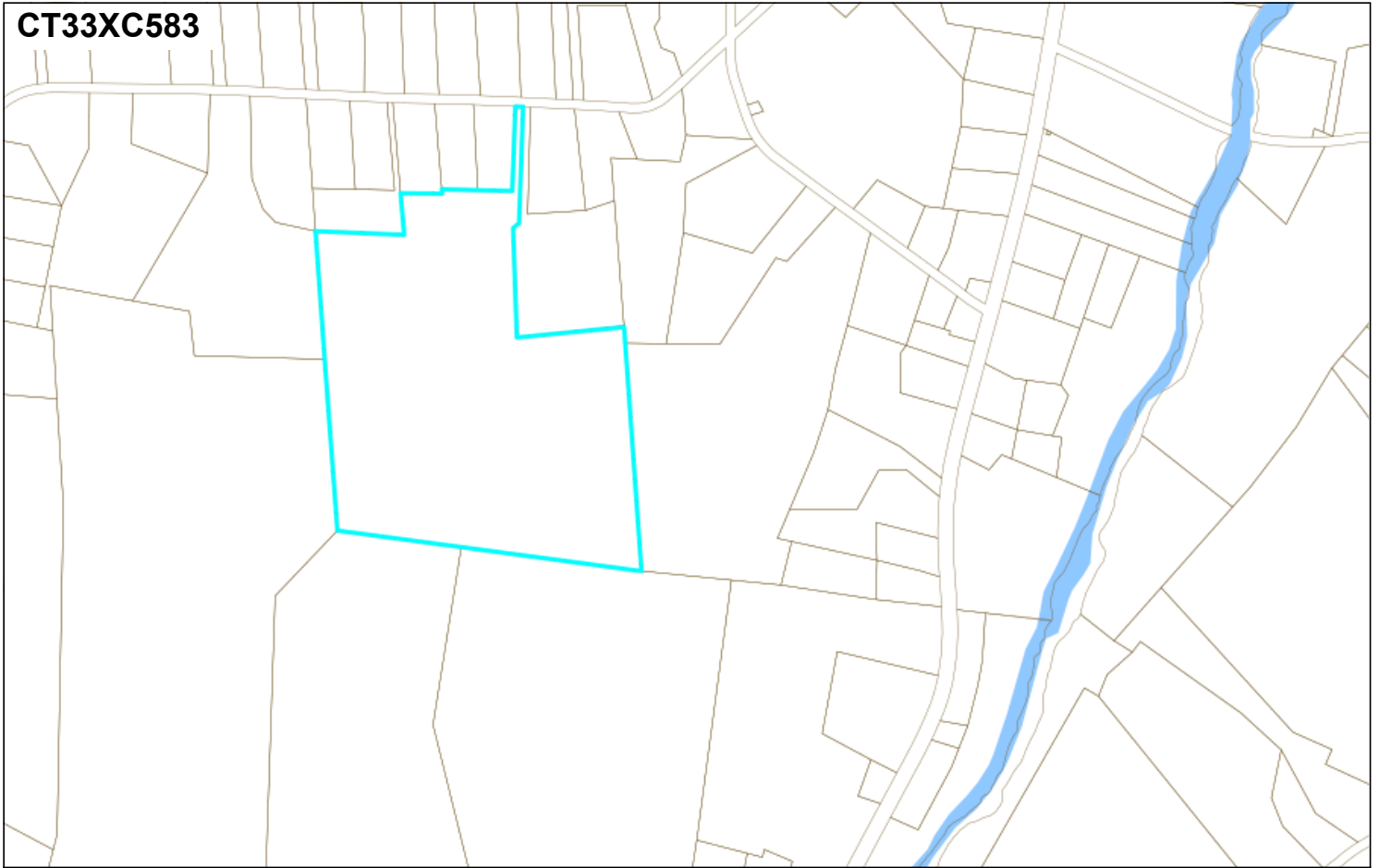
Style:  
Year Built:  
Rooms: Bedrooms:  
Baths: Half Baths:  
Living Area:  
Gross Area:

Stories:  
Heat Fuel:  
Heat Type:  
AC Type:  
Roof Structure:  
Roof Covering:

**Extra Features**

Description	Area / Units	Assessment
<b>Sub Areas</b>		
Description	Living Area	Gross Area

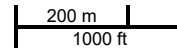
CT33XC583



## Town of Chaplin, Connecticut

**Selected Parcel: 123 PALMER RD ID: 55-54**

Printed 9/4/2018 from <http://www.mainstreetmaps.com/ct/chaplin/public.asp>



This map is for informational purposes only. It is not for appraisal of, description of, or conveyance of land. The Town of Chaplin, Connecticut and MainStreetGIS, LLC assume no legal responsibility for the information contained herein.



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

SPRINT Existing Facility

Site ID: CT33XC583

Chaplin 2/VZ  
123 Palmer Road  
Chaplin, CT 06235

**August 20, 2018**

**EBI Project Number: 6218005666**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>13.70 %</b>



August 20, 2018

SPRINT

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

## Emissions Analysis for Site: **CT33XC583 – Chaplin 2/VZ**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **123 Palmer Road, Chaplin, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 850 MHz Band is approximately  $567 \mu\text{W}/\text{cm}^2$ . The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **123 Palmer Road, Chaplin, 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 for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.
- 2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.
- 3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.





- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **Commscope NNVV-65B-R4 and the RFS APXVTM14-ALU-I20** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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 panel antennas are **137.5 feet** above ground level (AGL) for **Sector A**, **137.5 feet** above ground level (AGL) for **Sector B** and **137.5 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 #:	<b>1</b>	Antenna #:	<b>1</b>	Antenna #:	<b>1</b>
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	<b>137.5 feet</b>	Height (AGL):	<b>137.5 feet</b>	Height (AGL):	<b>137.5 feet</b>
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	<b>1.90 %</b>	Antenna B1 MPE%	<b>1.90 %</b>	Antenna C1 MPE%	<b>1.90 %</b>
Antenna #:	<b>2</b>	Antenna #:	<b>2</b>	Antenna #:	<b>2</b>
Make / Model:	RFS APXVTM14-ALU- I20	Make / Model:	RFS APXVTM14-ALU- I20	Make / Model:	RFS APXVTM14-ALU- I20
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	<b>137.5 feet</b>	Height (AGL):	<b>137.5 feet</b>	Height (AGL):	<b>137.5 feet</b>
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	<b>1.29 %</b>	Antenna B2 MPE%	<b>1.29 %</b>	Antenna C2 MPE%	<b>1.29 %</b>

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	<b>3.19 %</b>
Verizon Wireless	4.16 %
AT&T	2.39 %
T-Mobile	3.96 %
<b>Site Total MPE %:</b>	<b>13.70 %</b>

SPRINT Sector A Total:	3.19 %
SPRINT Sector B Total:	3.19 %
SPRINT Sector C Total:	3.19 %
<b>Site Total:</b>	<b>13.70 %</b>

SPRINT _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	137.5	0.78	850 MHz	567	0.15%
Sprint 850 MHz LTE	2	941.82	137.5	3.92	850 MHz	567	0.69%
Sprint 1900 MHz (PCS) CDMA	5	511.82	137.5	5.32	1900 MHz (PCS)	1000	0.53%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	137.5	5.32	1900 MHz (PCS)	1000	0.53%
Sprint 2500 MHz (BRS) LTE	8	778.09	137.5	12.94	2500 MHz (BRS)	1000	1.29%
						<b>Total:</b>	<b>3.19%</b>



## Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	3.19 %
Sector B:	3.19 %
Sector C:	3.19 %
SPRINT Maximum MPE % (per sector):	3.19 %
Site Total:	13.70 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **13.70 %** 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.

# INFINIGY

FROM ZERO TO INFINIGY  
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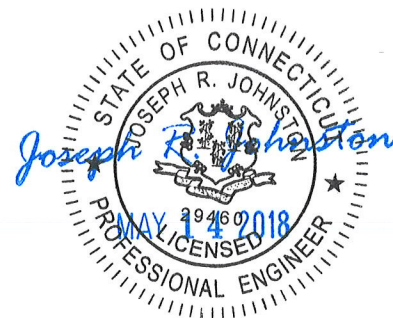
1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

## Mount Analysis Report

May 12, 2018

Site Name	CT33XC583
Infinigy Job Number	526-104
Client	Airosmith
Proposed Carrier	Sprint
Site Location	123 Palmer Road Chaplin, CT 06235 41.78450° N NAD83 72.13570° W NAD83
Mount Centerline El.	137.5 ft
Mount Classification	Platform w/ Handrails
Failing Structural Usage	>200.0%
Passing Structural Usage	49.1%
Overall Result	<b>Contingent Pass- See Required Modification Below.</b>
Note	<b>Replace existing mount with (1) SitePro1 RMQP-496-HK prior to installation of proposed appurtenances</b>

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



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

AZ CA CO FL GA MD NC NH NJ NY TX WA

INFINIGY

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**Introduction**

Infinigy Engineering has been requested to perform a mount analysis on the existing Sprint mounts. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 16.0.3 analysis software.

**Supporting Documentation**

<b>Structural Analysis</b>	ATC Eng #OAA719249_C3_02, dated March 20, 2018
----------------------------	--

**Analysis Code Requirements**

Wind Speed	101 mph (3-Second Gust,Vasd) / 130 mph (3-Second Gust,Vult)
Wind Speed w/ ice	50 mph (3-Second Gust,Vasd) w/ 3/4" Ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2012 IBC
Jurisdictional Code	2016 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	5
Calculated Crest Height	105 ft.

**Conclusion**

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

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

Nathaniel R Ober E.I.T.  
 Northeast Structural Region Lead | Infinigy  
 1033 Watervliet Shaker Road, Albany, NY 12205  
 (O) (518) 690-0790 | (M) (303) 704-0322  
[nober@infinigy.com](mailto:nober@infinigy.com) | [www.infinigy.com](http://www.infinigy.com)

**Final Configuration Loading**

Mount CL (ft)	Rad. HT (ft)	Vert. O/S (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
137.5	137.5	0.0	0.0	3	Commscope NNVV-65B-R4	Sprint
			12.0	3	RFS APXVTM14-ALU-I20	
			12.0	3	Alcatel Lucent 1900 MHz RRH	
			0.0, 12.0	6	Alcatel Lucent RRH2x50-08	
			0.0	3	Alcatel Lucent TD-RRH8x20-25	

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

**Structure Usages**

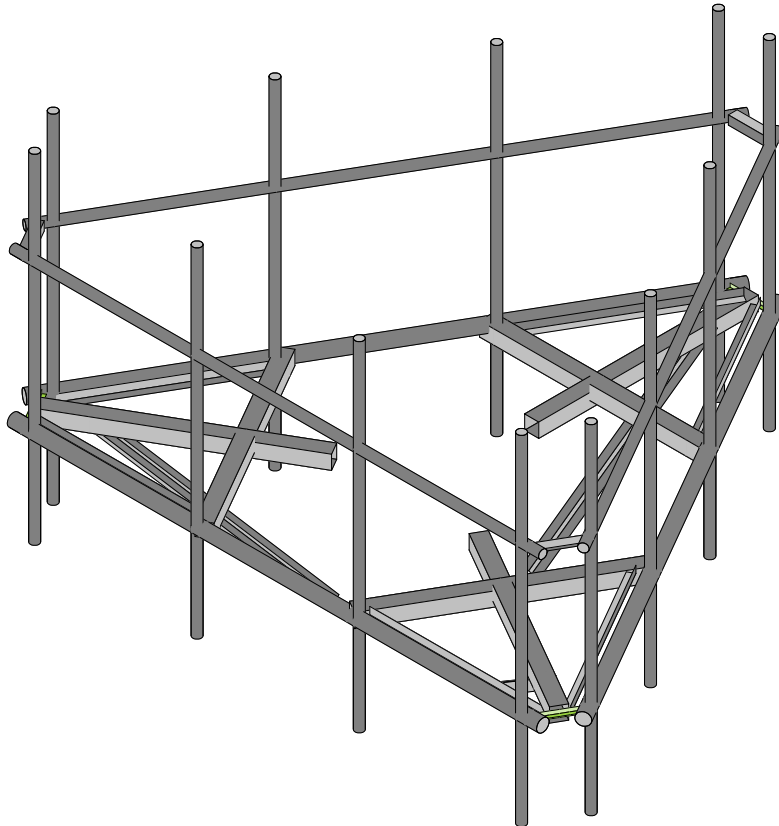
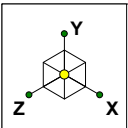
Stand off	15.3	Pass
Horizontal	49.1	Pass
Mount Pipe	40.2	Pass
<b>RATING =</b>	<b>93.2</b>	<b>Pass</b>

**Assumptions and Limitations**

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

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

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



Envelope Only Solution

Infinigy	RMQP-496-HK	
NRO		May 12, 2018 at 3:38 PM
526-104		RMQP-4-96-HK.r3d





## Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			HSS 4"x4"x1/4	Beam	None	A53 Gr.B	Typical
2	M2	N3	N4			RIGID	None	None	RIGID	Typical
3	M3	N5	N8			HSS 4"x4"x1/4	Beam	None	A53 Gr.B	Typical
4	M4	N9	N10			RIGID	None	None	RIGID	Typical
5	M5	N6	N11			HSS 4"x4"x1/4	Beam	None	A53 Gr.B	Typical
6	M6	N12	N13			RIGID	None	None	RIGID	Typical
7	M7	N16	N15			3" STD Pipe	Beam	None	A53 Gr.B	Typical
8	M8	N19	N18			3" STD Pipe	Beam	None	A53 Gr.B	Typical
9	M9	N22	N21			3" STD Pipe	Beam	None	A53 Gr.B	Typical
10	M10	N26	N27			HSS 4"x4"x1/4	Beam	None	A53 Gr.B	Typical
11	M11	N28	N29			HSS 4"x4"x1/4	Beam	None	A53 Gr.B	Typical
12	M12	N30	N31			HSS 4"x4"x1/4	Beam	None	A53 Gr.B	Typical
13	M13	N33	N34			L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
14	M14	N32	N35		270	L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
15	M15	N37	N38			L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
16	M16	N36	N39		270	L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
17	M17	N41	N42			L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
18	M18	N40	N43		270	L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
19	M31	N86	N85			2" STD Pipe	Beam	None	A53 Gr.B	Typical
20	M32	N88	N87			2" STD Pipe	Beam	None	A53 Gr.B	Typical
21	M33	N90	N89			2" STD Pipe	Beam	None	A53 Gr.B	Typical
22	M37	N110A	N109A		180	L2.5"2.5"x3/16"	Beam	None	A36 Gr.36	Typical
23	M38	N113A	N114A		90	L2.5"2.5"x3/16"	Beam	None	A36 Gr.36	Typical
24	M39	N111A	N112A		90	L2.5"2.5"x3/16"	Beam	None	A36 Gr.36	Typical
25	MP4	N73A	N69			2" STD Pipe	Beam	None	A53 Gr.B	Typical
26	MP3	N74A	N70A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
27	MP2	N75A	N71A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
28	MP1	N76	N72A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
29	MP12	N82	N78			2" STD Pipe	Beam	None	A53 Gr.B	Typical
30	MP11	N83	N79			2" STD Pipe	Beam	None	A53 Gr.B	Typical
31	MP10	N84	N80			2" STD Pipe	Beam	None	A53 Gr.B	Typical
32	MP9	N85A	N81			2" STD Pipe	Beam	None	A53 Gr.B	Typical
33	MP8	N91	N87A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
34	MP7	N92	N88A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
35	MP6	N93	N89A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
36	MP5	N94	N90A			2" STD Pipe	Beam	None	A53 Gr.B	Typical
37	M37A	N106A	N110B			LL2.5"x2.5"x3"...	Beam	None	A36 Gr.36	Typical
38	M38A	N108A	N112B			LL2.5"x2.5"x3"...	Beam	None	A36 Gr.36	Typical
39	M39A	N107A	N111B			LL2.5"x2.5"x3"...	Beam	None	A36 Gr.36	Typical

## Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		3	36	0
3	Total General		3	36	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2x2x2	6	303.1	0
7	A36 Gr.36	L2.5x2.5x3	3	36	0
8	A36 Gr.36	LL2.5x2.5x4x3	3	185.4	.1
9	A53 Gr.B	HSS4x4x4	6	374.3	.4
10	A53 Gr.B	PIPE 2.0	15	1602	.5
11	A53 Gr.B	PIPE 3.0	3	450	.3
12	Total HR Steel		36	2950.9	1.3

## Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut..	Area(M...	Surface...
1	Self Weight	DL		-1			36		3	
2	Wind Load AZI 000	WLZ					36		1	
3	Wind Load AZI 090	WLX					36		1	
4	Ice Weight	OL1					36	39	3	
5	Wind + Ice Load AZI 000	OL2					36		1	
6	Wind + Ice Load AZI 090	OL3					36		1	
7	Service Live 1	LL					6			
8	BLC 1 Transient Area Loads	None						45		
9	BLC 2 Transient Area Loads	None						38		
10	BLC 3 Transient Area Loads	None						32		
11	BLC 4 Transient Area Loads	None						45		
12	BLC 5 Transient Area Loads	None						38		
13	BLC 6 Transient Area Loads	None						32		

## Load Combinations

	Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.4D	Yes	Y		DL	1.4									
2	1.2D + 1.6W AZI 000	Yes	Y		DL	1.2	W...	1.6							
3	1.2D + 1.6W AZI 030	Yes	Y		DL	1.2	W...	1.3...	W...	.8					
4	1.2D + 1.6W AZI 060	Yes	Y		DL	1.2	W...	.8	W...	1.3...					
5	1.2D + 1.6W AZI 090	Yes	Y		DL	1.2			W...	1.6					
6	1.2D + 1.6W AZI 120	Yes	Y		DL	1.2	W...	-.8	W...	1.3...					
7	1.2D + 1.6W AZI 150	Yes	Y		DL	1.2	W...	-1.3...	W...	.8					
8	1.2D + 1.6W AZI 180	Yes	Y		DL	1.2	W...	-1.6							
9	1.2D + 1.6W AZI 210	Yes	Y		DL	1.2	W...	-1.3...	W...	-.8					
10	1.2D + 1.6W AZI 240	Yes	Y		DL	1.2	W...	-.8	W...	-1.3...					
11	1.2D + 1.6W AZI 270	Yes	Y		DL	1.2			W...	-1.6					
12	1.2D + 1.6W AZI 300	Yes	Y		DL	1.2	W...	.8	W...	-1.3...					
13	1.2D + 1.6W AZI 330	Yes	Y		DL	1.2	W...	1.3...	W...	-.8					
14	0.9D + 1.6W AZI 000	Yes	Y		DL	.9	W...	1.6							
15	0.9D + 1.6W AZI 030	Yes	Y		DL	.9	W...	1.3...	W...	.8					
16	0.9D + 1.6W AZI 060	Yes	Y		DL	.9	W...	.8	W...	1.3...					
17	0.9D + 1.6W AZI 090	Yes	Y		DL	.9			W...	1.6					
18	0.9D + 1.6W AZI 120	Yes	Y		DL	.9	W...	-.8	W...	1.3...					
19	0.9D + 1.6W AZI 150	Yes	Y		DL	.9	W...	-1.3...	W...	.8					
20	0.9D + 1.6W AZI 180	Yes	Y		DL	.9	W...	-1.6							
21	0.9D + 1.6W AZI 210	Yes	Y		DL	.9	W...	-1.3...	W...	-.8					
22	0.9D + 1.6W AZI 240	Yes	Y		DL	.9	W...	-.8	W...	-1.3...					
23	0.9D + 1.6W AZI 270	Yes	Y		DL	.9			W...	-1.6					
24	0.9D + 1.6W AZI 300	Yes	Y		DL	.9	W...	.8	W...	-1.3...					
25	0.9D + 1.6W AZI 330	Yes	Y		DL	.9	W...	1.3...	W...	-.8					
26	1.2D + 1.0Di	Yes	Y		DL	1.2	OL1	1							
27	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	1					
28	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	.5			
29	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	.866			
30	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1			OL3	1			
31	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	.866			
32	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	.5			
33	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-1					
34	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	-.5			
35	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	-.866			
36	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1			OL3	-1			
37	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	-.866			
38	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	-.5			

## Load Combinations (Continued)

Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
39	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	.111					
40	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	.096	W...	.056			
41	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	.056	W...	.096			
42	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5			W...	.111			
43	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	-.056	W...	.096			
44	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	-.096	W...	.056			
45	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	-.111					
46	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	-.096	W...	-.056			
47	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	-.056	W...	-.096			
48	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5				W...	-.111		
49	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	.056	W...	-.096			
50	1.2D + 1.5L + 1.0WL (...)	Yes	Y	DL	1.2	LL	1.5	W...	.096	W...	-.056			

## Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
1	N6	max	1159.993	5	637.847	33	4482.243	2	582.73	28	1435.96	24	652.239	23
2		min	-1157.808	23	99.446	39	-3244.569	20	95.239	46	-1439.215	6	-813.589	5
3	N5	max	2808.827	16	498.325	29	1668.385	16	531.237	25	170.766	10	594.622	13
4		min	-3522.736	10	35.802	47	-2083.013	10	-630.722	7	-167.496	16	-167.603	19
5	N1	max	3674.468	6	433.112	37	2030.672	25	519.6	15	1218.981	2	143.28	21
6		min	-2456.014	24	19.382	43	-2736.959	7	-617.03	9	-1217.282	20	-524.098	3
7	N110B	max	193.143	24	2592.716	31	1757.782	31	1.055	3	.763	21	.532	21
8		min	-3045.336	31	-160.958	24	-109.317	24	-.922	21	-.873	3	-.609	3
9	N111B	max	2298.846	35	1975.467	35	1326.505	35	1.318	13	1.091	13	.761	13
10		min	-446.533	16	-370.634	16	-255.674	16	-1.227	19	-1.015	19	-.709	19
11	N112B	max	27.155	17	2404.551	27	359.603	20	0	1	.892	5	1.14	23
12		min	-27.156	23	-261.962	20	-3251.856	27	0	1	-.816	23	-1.245	5
13	Totals:	max	4982.483	17	7707.658	27	5115.003	2						
14		min	-4982.483	11	2362.183	20	-5115.003	20						

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

Member	Shape	Code Check	Lo.....	Shear C...	Loc[in]...	LC	phi*Pnc...	phi*Pnt...	phi*...	phi*...	Eqn	
1	M37 L2.5x2....	.491	0	.146	0	y	9	27789....	29192.4	872....	1971....	H2-1
2	M38 L2.5x2....	.464	12	.149	0	z	11	27789....	29192.4	872....	1971....	H2-1
3	M39 L2.5x2....	.415	0	.129	0	z	7	27789....	29192.4	872....	1971....	H2-1
4	MP6 PIPE 2.0	.402	69	.070	69		6	14916....	32130	1871....	1871....	H1-...
5	MP7 PIPE 2.0	.387	69	.056	69		2	14916....	32130	1871....	1871....	H1-...
6	MP10 PIPE 2.0	.383	69	.054	69		2	14916....	32130	1871....	1871....	H1-...
7	MP11 PIPE 2.0	.369	69	.058	69		4	14916....	32130	1871....	1871....	H1-...
8	M33 PIPE 2.0	.356	14	.337	145		11	6295.422	32130	1871....	1871....	H3-6
9	MP2 PIPE 2.0	.336	69	.052	69		4	14916....	32130	1871....	1871....	H1-...
10	M32 PIPE 2.0	.335	4.6	.9	.327	4.688	8	6295.422	32130	1871....	1871....	H3-6
11	MP3 PIPE 2.0	.326	69	.046	69		6	14916....	32130	1871....	1871....	H1-...
12	M31 PIPE 2.0	.325	14	.325	4.687		5	6295.422	32130	1871....	1871....	H3-6
13	MP5 PIPE 2.0	.286	69	.104	69		4	14916....	32130	1871....	1871....	H1-...
14	MP8 PIPE 2.0	.274	69	.100	27		4	14916....	32130	1871....	1871....	H1-...
15	MP9 PIPE 2.0	.264	69	.089	27		11	14916....	32130	1871....	1871....	H1-...
16	MP4 PIPE 2.0	.261	27	.091	27		3	14916....	32130	1871....	1871....	H1-...
17	MP1 PIPE 2.0	.251	27	.081	27		13	14916....	32130	1871....	1871....	H1-...
18	MP12 PIPE 2.0	.249	69	.096	27		12	14916....	32130	1871....	1871....	H1-...
19	M5 HSS4x...	.153	0	.118	0	z	5	97436....	106155	1231....	1231....	H1-...
20	M16 L2x2x2	.147	0	.014	50.52	z	35	6508.508	15908.4	402....	844....	H2-1
21	M18 L2x2x2	.145	0	.014	50.52	z	27	6508.508	15908.4	402....	844....	H2-1
22	M17 L2x2x2	.140	50	.014	50.52	y	35	6508.508	15908.4	402....	858....	H2-1

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

Member	Shape	Code Check	Lo	Shear C	Loc[in]	LC	phi*Pnc	phi*Pnt	phi*	phi*	Eqn	
23	M14	L2x2x2	0	.014	50.52	z	31	6508.508	15908.4	402	844	H2-1
24	M15	L2x2x2	50	.014	50.52	y	31	6508.508	15908.4	402	854	H2-1
25	M7	PIPE_3.0	6.25	.087	53.1		5	28250	65205	5748	5748	H1
26	M1	HSS4x	0	.099	0	z	3	97437.38	106155	1231	1231	H1
27	M13	L2x2x2	0	.014	50.52	y	27	6508.508	15908.4	402	856.79	H2-1
28	M9	PIPE_3.0	14	.104	145		12	28250	65205	5748	5748	H1
29	M8	PIPE_3.0	6.25	.103	145		8	28250	65205	5748	5748	H1
30	M10	HSS4x	31	.066	3.907	z	10	97364.86	106155	1231	1231	H1
31	M3	HSS4x	49	.084	0	z	13	97436	106155	1231	1231	H1
32	M11	HSS4x	31	.064	58.6	z	10	97364.86	106155	1231	1231	H1
33	M37A	LL2.5x2	61	.005	61.8	z	3	54507	77112	5320	3332	H1
34	M12	HSS4x	30	.062	58.6	z	2	97364.86	106155	1231	1231	H1
35	M38A	LL2.5x2	61	.005	61.8	z	5	54507	77112	5320	3332	1 H1
36	M39A	LL2.5x2	61	.006	61.8	z	13	54507	77112	5320	3332	H1



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 146 ft Monopole  
**ATC Site Name** : CT Chaplin South CT, CT  
**ATC Site Number** : 411216  
**Engineering Number** : OAA719249\_C3\_03  
**Proposed Carrier** : Sprint Nextel  
**Carrier Site Name** : Chaplin 2 /VZ  
**Carrier Site Number** : CT33XC583  
**Site Location** : 123 Palmer Road  
Chaplin, CT 06235-2416  
41.784500,-72.135700  
**County** : Windham  
**Date** : May 30, 2018  
**Max Usage** : 81%  
**Result** : Pass

Prepared By:  
Trevor Ridilla, E.I.  
Structural Engineer I

Reviewed By:

**COA: PEC.0001553**



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 146 ft monopole to reflect the change in loading by Sprint Nextel.

## Supporting Documents

<b>Tower Drawings</b>	EEI Project #12120 Rev. 2, dated November 21, 2003
<b>Foundation Drawing</b>	EEI Project #12120 Rev. 3, dated December 18, 2003
<b>Geotechnical Report</b>	GEOServices Project #31-151287M, dated September 8, 2015

## 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.

<b>Basic Wind Speed:</b>	101 mph (3-Second Gust, Vasd) / 130 mph (3-Second Gust, Vult)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.17, S_1 = 0.06$
<b>Site Class:</b>	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](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.





**Existing and Reserved Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
146.0	148.0	3	Nokia B5 RRH4x40-850	Low Profile Platform	(18) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent AWS4 (B66) 4x45 RRH			
		2	Raycap RC3DC-3315-PF-48			
		4	Antel LPA-80080/4CF			
		2	Antel LPA-80063/4CF			
		6	Andrew SBNHH-1D65B			
		3	Antel QUAD656C0000X			
137.5	137.5	1	GPS	Flush	(7) 1 5/8" Coax	Sprint Nextel
126.0	126.0	6	Powerwave LGP21901	Low Profile Platform	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.40" Fiber	AT&T Mobility
		3	6" x 6" Junction Box			
		6	Powerwave LGP21401			
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS-11 1900MHz			
		6	Allgon 7770.00			
		3	KMW AM-X-CD-17-65-00T-RET (96" Height)			
116.0	116.0	3	RFS 1900 PCS	Platform w/ Handrails	(12) 1 5/8" Coax	T-Mobile
		3	RFS APXV18-206517			
		3	Commscope LNX-6515DS-VTM			
63.0	63.0	1	GPS	Stand-Off	(1) 1/2" Coax	AT&T Mobility

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
137.5	137.5	12	60" x 6" Panel	-	(6) 1 5/8" Coax	Sprint Nextel

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
137.5	137.5	6	Alcatel-Lucent RRH2x50-08	Site Pro RMQP-496-HK	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz 4X45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-ALU-I20			
		3	Commscope NNVV-65B-R4			

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

Install proposed coax inside the pole shaft.



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	53%	Pass
Shaft	63%	Pass
Base Plate	81%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,157.8	4,263.0	2,861.0	67%
Shear (Kips)	30.5	41.2	25.9	63%

\* 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) (°)
137.5	Alcatel-Lucent RRH2x50-08	Sprint Nextel	1.346	1.075
	Alcatel-Lucent 1900 MHz 4X45 RRH			
	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	RFS APXVTM14-ALU-I20			
	Commscope NNVV-65B-R4			

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



## Standard Conditions

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

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

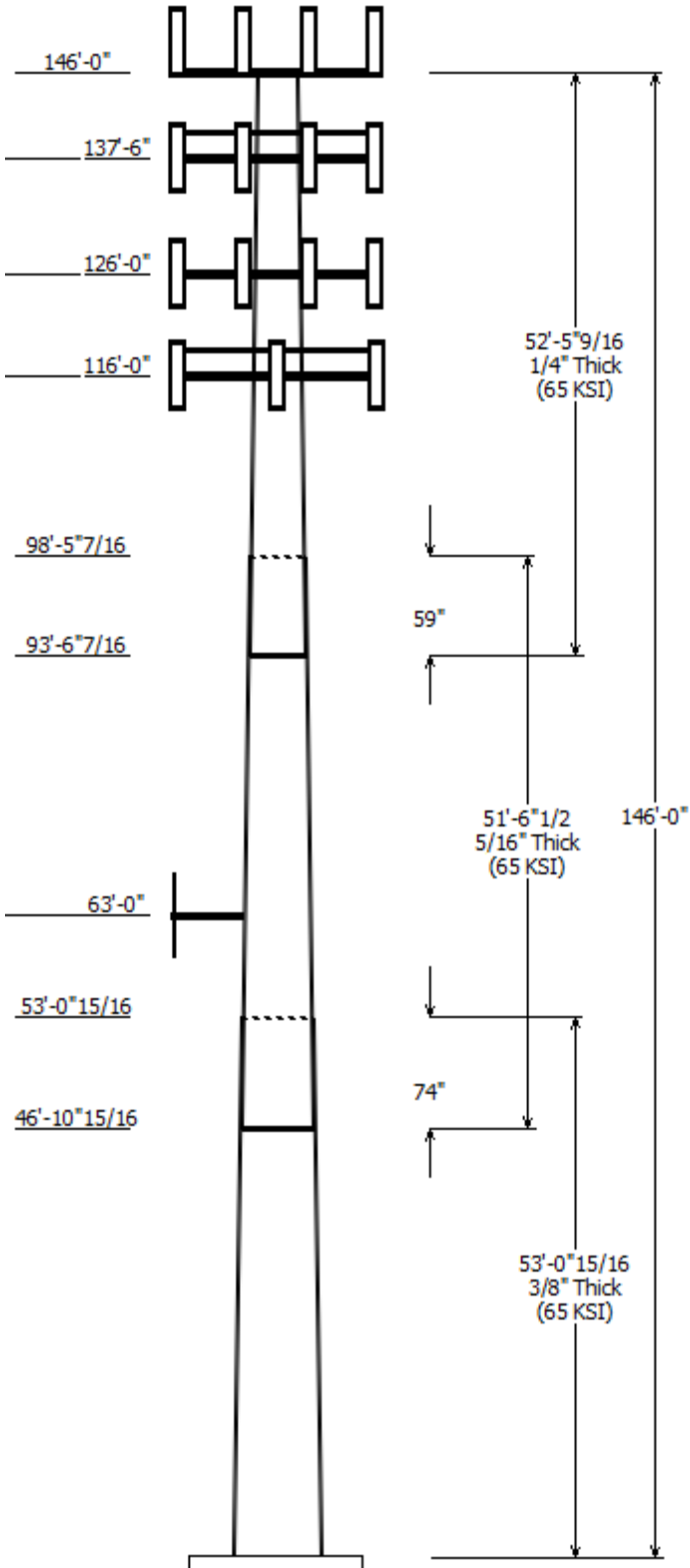
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

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Job Information	
Pole : 411216	Code: ANSI/TIA-222-G
Location : CT Chaplin South CT, CT	
Description : 146 ft EEI Monopole	
Client : SPRINT NEXTEL	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 146.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.220039in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Top	Bottom				
1	53.080	42.82	54.50	0.375		0.000	18 Sides 65
2	51.540	33.46	44.80	0.313	Slip Joint	74.000	18 Sides 65
3	52.463	23.49	35.04	0.250	Slip Joint	59.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
146.000	146.000	1	Flat Low Profile Platform
146.000	148.000	3	Amphenol Antel
146.000	148.000	6	Andrew SBNHH-1D65B
146.000	148.000	2	Antel LPA-80063/4CF
146.000	148.000	4	Antel LPA-80080/4CF
146.000	148.000	2	Raycap RC3DC-3315-PF-48
146.000	148.000	3	Alcatel-Lucent AWS4 (B66)
146.000	148.000	3	Alcatel-Lucent RRH2x60 700
146.000	148.000	3	Nokia B5 RRH4x40-850
137.500	137.500	1	Site Pro RMQP-496-HK
137.500	137.500	3	RFS APXVTM14-ALU-I20
137.500	137.500	3	Commscope NNVV-65B-R4
137.500	137.500	1	GPS
137.500	137.500	3	Alcatel-Lucent TD-RRH8x20-25
137.500	137.500	3	Alcatel-Lucent 1900 MHz 4X45
137.500	137.500	6	Alcatel-Lucent RRH2x50-08
126.000	126.000	1	Flat Low Profile Platform
126.000	126.000	3	KMW AM-X-CD-17-65-00T-RET
126.000	126.000	6	Allgon 7770.00
126.000	126.000	6	Ericsson RRUS-11 1900 MHz
126.000	126.000	1	Raycap DC6-48-60-18-8F
126.000	126.000	6	Powerwave Allgon LGP21401
126.000	126.000	3	6" x 6" Junction Box
126.000	126.000	6	Powerwave Allgon LGP21901
116.000	116.000	1	Round Platform w/ Handrails
116.000	116.000	3	Commscope LNX-6515DS-VTM
116.000	116.000	3	RFS APXV18-206517
116.000	116.000	3	RFS 1900 PCS
63.000	63.000	1	Stand-Off
63.000	63.000	1	GPS

Linear Appurtenance			
From Elev (ft)	To Elev (ft)	Description	Exposed To Wind
0.000	63.000	1/2" Coax	Yes
0.000	116.0	1 5/8" Coax	No
0.000	116.0	1 5/8" Coax	Yes
0.000	126.0	0.40" Fiber	No
0.000	126.0	0.78" 8 AWG 6	No
0.000	126.0	1 5/8" Coax	No
0.000	137.5	1 1/4" Hybriflex	No
0.000	137.5	1 5/8" Coax	No

0.000	137.5	1 5/8" Coax	No
0.000	146.0	1 5/8" Coax	No
0.000	146.0	1 5/8" Hybriflex	Yes

### Load Cases

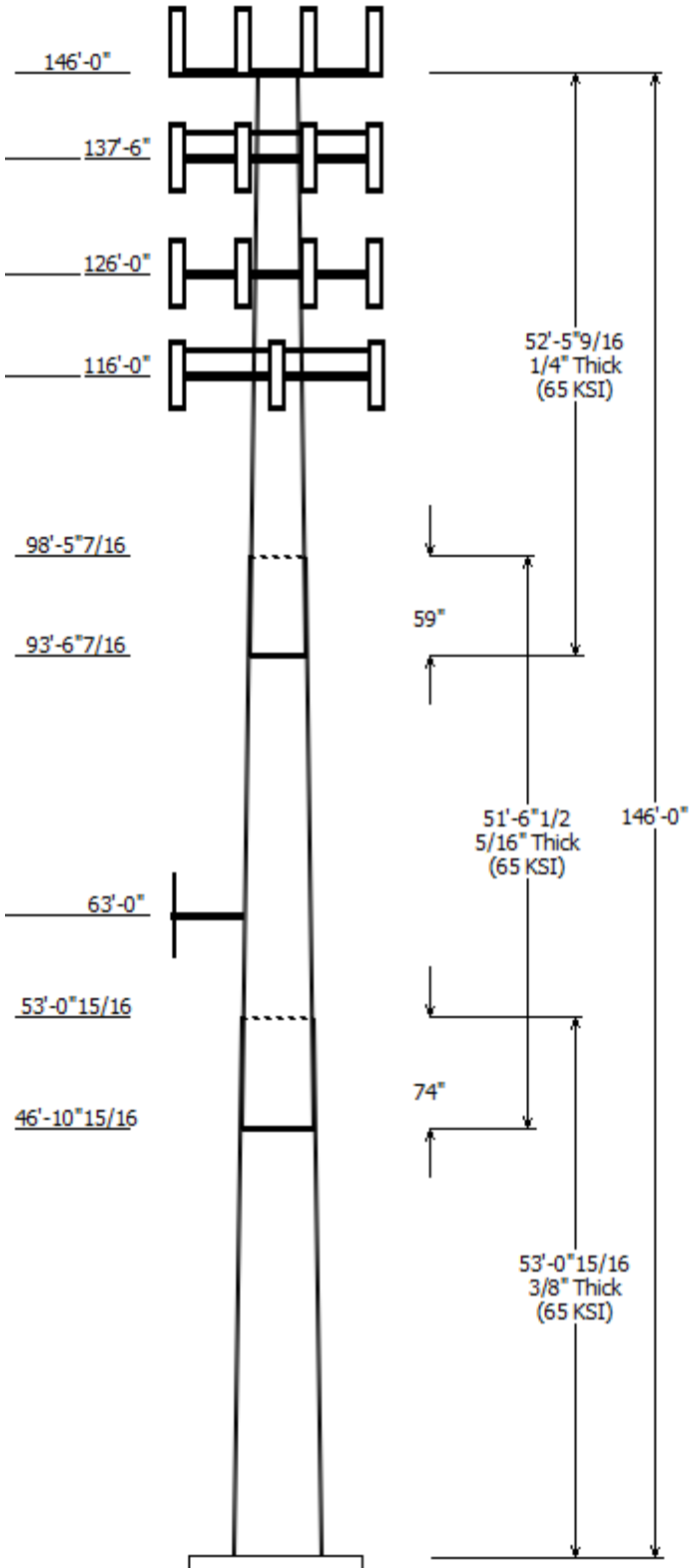
1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

### Reactions

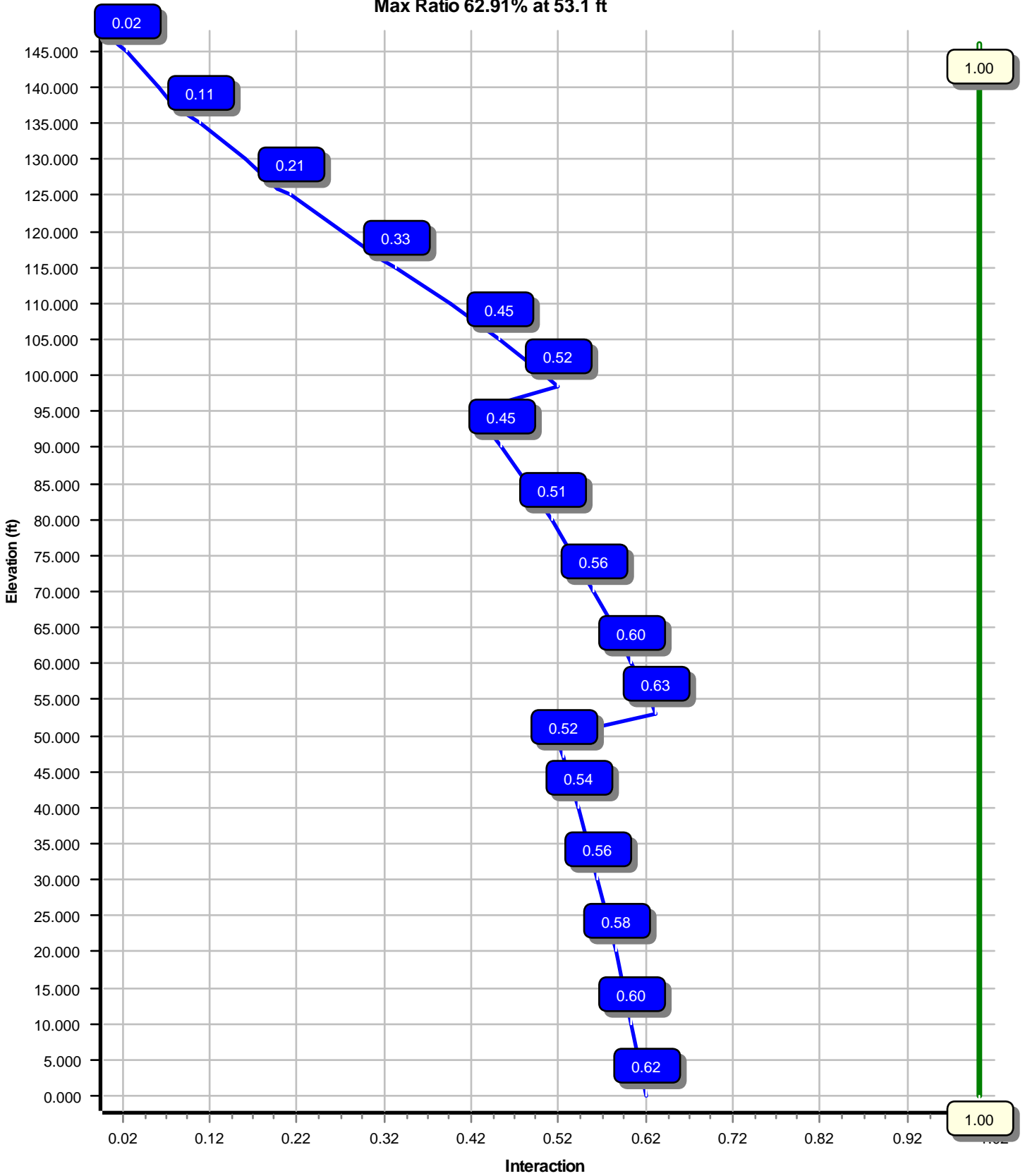
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2860.97	25.86	46.22
0.9D + 1.6W	2826.58	25.84	34.66
1.2D + 1.0Di + 1.0Wi	744.73	6.76	75.08
(1.2 + 0.2Sds) * DL + E ELFM	186.18	1.51	46.05
(1.2 + 0.2Sds) * DL + E EMAM	317.94	2.59	46.05
(0.9 - 0.2Sds) * DL + E ELFM	183.47	1.51	32.13
(0.9 - 0.2Sds) * DL + E EMAM	313.01	2.59	32.13
1.0D + 1.0W	626.51	5.70	38.55

### 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 62.91% at 53.1 ft



Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

Analysis Parameters

Location :	WINDHAM County, CT	Height (ft) :	146
Code :	ANSI/TIA-222-G	Base Diameter (in) :	54.50
Shape :	18 Sides	Top Diameter (in) :	23.50
Pole Type :	Taper	Taper (in/ft) :	0.220
Pole Manufacturer :	EEL	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	101 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.38		
T <sub>L</sub> (sec):	6	p:	1.3
S <sub>s</sub> :	0.173	S <sub>1</sub> :	0.062
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.185	S <sub>d1</sub> :	0.099
		C <sub>s</sub> :	0.030
		C <sub>s</sub> Max:	0.030
		C <sub>s</sub> Min:	0.030

Load Cases

1.2D + 1.6W	101 mph with No Ice
0.9D + 1.6W	101 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.080	0.3750	65		0.00	10,380	54.50	0.00	64.42	23843.5	24.22	145.33	42.82	53.08	50.52	11499.1	18.72	114.19	0.220039
2-18	51.540	0.3125	65	Slip	74.00	6,753	44.80	46.91	44.13	11035.0	23.87	143.37	33.46	98.45	32.88	4564.6	17.47	107.08	0.220039
3-18	52.463	0.2500	65	Slip	59.00	4,111	35.04	93.54	27.61	4222.5	23.31	140.17	23.49	146.00	18.45	1259.8	15.16	94.00	0.220039
Shaft Weight						21,244													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
146.00	Alcatel-Lucent AWS4 (B66) 4x45	3	0.000	2.000	64.00	2.660	0.67
146.00	Alcatel-Lucent RRH2x60 700	3	0.000	2.000	56.70	2.150	0.67
146.00	Amphenol Antel	3	0.000	2.000	54.00	13.240	0.62
146.00	Andrew SBNHH-1D65B	6	0.000	2.000	50.70	8.170	0.69
146.00	Antel LPA-80063/4CF	2	0.000	2.000	20.00	6.140	0.76
146.00	Antel LPA-80080/4CF	4	0.000	2.000	12.00	5.400	0.64
146.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
146.00	Nokia B5 RRH4x40-850	3	0.000	2.000	48.50	1.320	0.50
146.00	Raycap RC3DC-3315-PF-48	2	0.000	2.000	32.00	3.780	0.67
137.50	Alcatel-Lucent 1900 MHz 4X45 R	3	0.000	0.000	60.00	2.320	0.67
137.50	Alcatel-Lucent RRH2x50-08	6	0.000	0.000	52.90	1.700	0.50
137.50	Alcatel-Lucent TD-RRH8x20-25 w	3	0.000	0.000	70.00	4.050	0.67
137.50	Commscope NNVV-65B-R4	3	0.000	0.000	77.40	12.270	0.64
137.50	GPS	1	0.000	0.000	10.00	1.000	1.00
137.50	RFS APXVTM14-ALU-I20	3	0.000	0.000	56.20	6.340	0.66
137.50	Site Pro RMQP-496-HK	1	0.000	0.000	2448.72	27.200	1.00
126.00	6" x 6" Junction Box	3	0.000	0.000	10.00	0.350	0.50
126.00	Allgon 7770.00	6	0.000	0.000	35.00	5.510	0.65
126.00	Ericsson RRUS-11 1900 MHz	6	0.000	0.000	44.00	2.520	0.67
126.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
126.00	KMW AM-X-CD-17-65-00T-RET	3	0.000	0.000	59.50	11.310	0.68
126.00	Powerwave Allgon LGP21401	6	0.000	0.000	14.10	1.100	0.50
126.00	Powerwave Allgon LGP21901	6	0.000	0.000	5.50	0.230	0.50
126.00	Raycap DC6-48-60-18-8F	1	0.000	0.000	20.00	1.110	1.00
116.00	Commscope LNX-6515DS-VTM	3	0.000	0.000	50.30	11.450	0.70
116.00	RFS 1900 PCS	3	0.000	0.000	19.00	0.960	0.50
116.00	RFS APXV18-206517	3	0.000	0.000	26.40	5.050	0.68
116.00	Round Platform w/ Handrails	1	0.000	0.000	2000.00	27.200	1.00
63.00	GPS	1	0.000	0.000	10.00	1.000	1.00
63.00	Stand-Off	1	0.000	0.000	75.00	2.500	1.00
Totals	Num Loadings:30	91			10884.92		

**Linear Appurtenance Properties**

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Width (in)	Exposed To Wind	Carrier
0.00	146.00	18	1 5/8" Coax	1.98	0.82	N	0.00	Verizon
0.00	146.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	Verizon
0.00	137.50	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	Sprint Nextel
0.00	137.50	6	1 5/8" Coax	1.98	0.82	N	0.00	Sprint Nextel
0.00	137.50	1	1 5/8" Coax	1.98	0.82	N	0.00	Sprint Nextel
0.00	126.00	1	0.40" Fiber	0.40	0.09	N	0.00	AT&T MOBILITY
0.00	126.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	AT&T Mobility



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Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

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0.00	126.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	116.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	116.00	6	1 5/8" Coax	1.98	0.82	N	1.98	Y	T-Mobile
0.00	63.00	1	1/2" Coax	0.63	0.15	N	0.63	Y	AT&T Mobility

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3750	54.500	64.420	23,843.5	24.22	145.33	72.9	861.7	0.0	0.0
5.00		0.3750	53.400	63.110	22,418.8	23.70	142.40	73.5	826.9	0.0	1,084.9
10.00		0.3750	52.300	61.801	21,052.1	23.18	139.47	74.1	792.8	0.0	1,062.6
15.00		0.3750	51.199	60.492	19,742.1	22.66	136.53	74.7	759.5	0.0	1,040.3
20.00		0.3750	50.099	59.182	18,487.6	22.15	133.60	75.4	726.8	0.0	1,018.1
25.00		0.3750	48.999	57.873	17,287.3	21.63	130.66	76.0	694.9	0.0	995.8
30.00		0.3750	47.899	56.563	16,140.2	21.11	127.73	76.6	663.7	0.0	973.5
35.00		0.3750	46.799	55.254	15,045.0	20.59	124.80	77.2	633.2	0.0	951.2
40.00		0.3750	45.698	53.944	14,000.5	20.08	121.86	77.8	603.4	0.0	928.9
45.00		0.3750	44.598	52.635	13,005.5	19.56	118.93	78.4	574.4	0.0	906.7
46.91	Bot - Section 2	0.3750	44.177	52.134	12,637.6	19.36	117.81	78.6	563.4	0.0	341.1
50.00		0.3750	43.498	51.325	12,058.8	19.04	115.99	79.0	546.0	0.0	1,003.3
53.08	Top - Section 1	0.3125	43.445	42.781	10,055.8	23.10	139.03	74.2	455.9	0.0	985.6
55.00		0.3125	43.023	42.362	9,763.2	22.86	137.67	74.5	447.0	0.0	278.1
60.00		0.3125	41.923	41.271	9,028.0	22.24	134.15	75.2	424.2	0.0	711.5
63.00		0.3125	41.263	40.616	8,605.1	21.87	132.04	75.7	410.8	0.0	418.0
65.00		0.3125	40.822	40.179	8,330.7	21.62	130.63	76.0	401.9	0.0	274.9
70.00		0.3125	39.722	39.088	7,670.2	21.00	127.11	76.7	380.3	0.0	674.3
75.00		0.3125	38.622	37.997	7,045.6	20.38	123.59	77.4	359.3	0.0	655.8
80.00		0.3125	37.522	36.906	6,455.8	19.76	120.07	78.2	338.9	0.0	637.2
85.00		0.3125	36.422	35.815	5,899.9	19.14	116.55	78.9	319.1	0.0	618.6
90.00		0.3125	35.321	34.723	5,376.9	18.52	113.03	79.6	299.8	0.0	600.1
93.54	Bot - Section 3	0.3125	34.543	33.951	5,026.3	18.08	110.54	80.1	286.6	0.0	413.2
95.00		0.3125	34.221	33.632	4,885.8	17.90	109.51	80.3	281.2	0.0	305.1
98.45	Top - Section 2	0.2500	33.961	26.749	3,840.7	22.54	135.85	74.9	222.7	0.0	708.6
100.0		0.2500	33.621	26.479	3,725.6	22.30	134.48	75.2	218.3	0.0	140.1
105.0		0.2500	32.521	25.606	3,369.1	21.53	130.08	76.1	204.0	0.0	443.1
110.0		0.2500	31.421	24.733	3,036.2	20.75	125.68	77.0	190.3	0.0	428.2
115.0		0.2500	30.321	23.860	2,725.9	19.97	121.28	77.9	177.1	0.0	413.4
116.0		0.2500	30.100	23.685	2,666.5	19.82	120.40	78.1	174.5	0.0	80.9
120.0		0.2500	29.220	22.987	2,437.5	19.20	116.88	78.8	164.3	0.0	317.6
125.0		0.2500	28.120	22.114	2,170.2	18.42	112.48	79.7	152.0	0.0	383.7
126.0		0.2500	27.900	21.940	2,119.2	18.27	111.60	79.9	149.6	0.0	75.0
130.0		0.2500	27.020	21.241	1,923.2	17.65	108.08	80.6	140.2	0.0	293.9
135.0		0.2500	25.920	20.368	1,695.7	16.87	103.68	81.6	128.9	0.0	354.0
137.5		0.2500	25.370	19.932	1,589.0	16.48	101.48	82.0	123.4	0.0	171.4
140.0		0.2500	24.820	19.495	1,486.9	16.09	99.28	82.5	118.0	0.0	167.7
145.0		0.2500	23.719	18.622	1,295.9	15.32	94.88	82.6	107.6	0.0	324.3
146.0		0.2500	23.499	18.448	1,259.8	15.16	94.00	82.6	105.6	0.0	63.1
21,243.5											

<b>Load Case: 1.2D + 1.6W</b>	<b>101 mph with No Ice</b>	<b>24 Iterations</b>
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces					
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)	
0.00		226.7	0.0					0.0	0.0	226.7	0.0	0.0	0.0	
5.00		448.9	1,301.9					0.0	289.2	448.9	1,591.1	0.0	0.0	
10.00		439.6	1,275.1					0.0	289.2	439.6	1,564.3	0.0	0.0	
15.00		430.4	1,248.4					0.0	289.2	430.4	1,537.6	0.0	0.0	
20.00		421.1	1,221.7					0.0	289.2	421.1	1,510.9	0.0	0.0	
25.00		411.9	1,194.9					0.0	289.2	411.9	1,484.1	0.0	0.0	
30.00		407.4	1,168.2					0.0	289.2	407.4	1,457.4	0.0	0.0	
35.00		411.1	1,141.5					0.0	289.2	411.1	1,430.7	0.0	0.0	
40.00		417.1	1,114.7					0.0	289.2	417.1	1,403.9	0.0	0.0	
45.00		290.5	1,088.0					0.0	289.2	290.5	1,377.2	0.0	0.0	
46.91	Bot - Section 2	213.1	409.3					0.0	110.7	213.1	519.9	0.0	0.0	
50.00		264.8	1,203.9					0.0	178.5	264.8	1,382.4	0.0	0.0	
53.08	Top - Section 1	215.0	1,182.7					0.0	178.1	215.0	1,360.8	0.0	0.0	
55.00		297.8	333.8					0.0	111.1	297.8	444.8	0.0	0.0	
60.00		344.0	853.7					0.0	289.2	344.0	1,142.9	0.0	0.0	
63.00	Appurtenance(s)	214.6	501.6	132.3	0.0	0.0	102.0	0.0	173.5	347.0	777.1	0.0	0.0	
65.00		299.3	329.9					0.0	115.3	299.3	445.2	0.0	0.0	
70.00		425.6	809.2					0.0	288.3	425.6	1,097.5	0.0	0.0	
75.00		422.0	786.9					0.0	288.3	422.0	1,075.2	0.0	0.0	
80.00		417.7	764.6					0.0	288.3	417.7	1,052.9	0.0	0.0	
85.00		412.5	742.4					0.0	288.3	412.5	1,030.7	0.0	0.0	
90.00		347.9	720.1					0.0	288.3	347.9	1,008.4	0.0	0.0	
93.54	Bot - Section 3	202.6	495.9					0.0	203.9	202.6	699.8	0.0	0.0	
95.00		199.0	366.1					0.0	84.4	199.0	450.5	0.0	0.0	
98.45	Top - Section 2	201.3	850.4					0.0	199.1	201.3	1,049.5	0.0	0.0	
100.00		259.5	168.1					0.0	89.2	259.5	257.3	0.0	0.0	
105.00		391.3	531.7					0.0	288.3	391.3	820.0	0.0	0.0	
110.00		383.1	513.9					0.0	288.3	383.1	802.2	0.0	0.0	
115.00		226.8	496.1					0.0	288.3	226.8	784.4	0.0	0.0	
116.00	Appurtenance(s)	185.0	97.1	2,432.8	0.0	0.0	2,744.5	0.0	57.7	2,617.8	2,899.3	0.0	0.0	
120.00		327.9	381.2					0.0	183.4	327.9	564.6	0.0	0.0	
125.00		215.7	460.4					0.0	229.3	215.7	689.7	0.0	0.0	
126.00	Appurtenance(s)	175.3	89.9	3,427.3	0.0	0.0	2,784.1	0.0	45.9	3,602.7	2,919.9	0.0	0.0	
130.00		310.1	352.6					0.0	130.1	310.1	482.7	0.0	0.0	
135.00		253.3	424.8					0.0	162.6	253.3	587.4	0.0	0.0	
137.50	Appurtenance(s)	164.9	205.7	3,235.5	0.0	0.0	4,280.3	0.0	81.3	3,400.3	4,567.3	0.0	0.0	
140.00		241.1	201.2					0.0	52.1	241.1	253.3	0.0	0.0	
145.00		190.5	389.1					0.0	104.2	190.5	493.3	0.0	0.0	
146.00	Appurtenance(s)	31.2	75.7	5,051.1	0.0	7,592.5	3,151.0	0.0	20.8	5,082.3	3,247.5	0.0	0.0	
<b>Totals:</b>											<b>26,016.5</b>	<b>46,263.6</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:57:54 PM

Customer: SPRINT NEXTEL

Load Case: 1.2D + 1.6W

101 mph with No Ice

24 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.22	-25.86	0.00	-2,860.97	0.00	2,860.97	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.618
5.00	-44.56	-25.54	0.00	-2,731.68	0.00	2,731.68	4,176.31	2,088.16	9,106.46	4,560.00	0.09	-0.17	0.610
10.00	-42.92	-25.22	0.00	-2,603.99	0.00	2,603.99	4,123.50	2,061.75	8,803.44	4,408.26	0.36	-0.34	0.601
15.00	-41.31	-24.90	0.00	-2,477.90	0.00	2,477.90	4,069.26	2,034.63	8,502.24	4,257.44	0.80	-0.51	0.592
20.00	-39.73	-24.59	0.00	-2,353.39	0.00	2,353.39	4,013.58	2,006.79	8,203.04	4,107.62	1.43	-0.68	0.583
25.00	-38.18	-24.27	0.00	-2,230.45	0.00	2,230.45	3,956.46	1,978.23	7,906.06	3,958.90	2.23	-0.86	0.573
30.00	-36.65	-23.96	0.00	-2,109.09	0.00	2,109.09	3,897.92	1,948.96	7,611.48	3,811.39	3.23	-1.04	0.563
35.00	-35.16	-23.63	0.00	-1,989.30	0.00	1,989.30	3,837.94	1,918.97	7,319.49	3,665.19	4.41	-1.22	0.552
40.00	-33.69	-23.29	0.00	-1,871.16	0.00	1,871.16	3,776.52	1,888.26	7,030.31	3,520.38	5.78	-1.40	0.541
45.00	-32.27	-23.03	0.00	-1,754.72	0.00	1,754.72	3,713.67	1,856.84	6,744.12	3,377.07	7.35	-1.58	0.528
46.91	-31.72	-22.86	0.00	-1,710.65	0.00	1,710.65	3,689.24	1,844.62	6,635.43	3,322.65	8.00	-1.66	0.524
50.00	-30.30	-22.61	0.00	-1,640.09	0.00	1,640.09	3,649.39	1,824.69	6,461.11	3,235.36	9.11	-1.77	0.515
53.08	-28.91	-22.40	0.00	-1,570.44	0.00	1,570.44	2,857.95	1,428.97	5,068.34	2,537.94	10.29	-1.89	0.629
55.00	-28.41	-22.16	0.00	-1,527.42	0.00	1,527.42	2,840.65	1,420.32	4,987.96	2,497.68	11.07	-1.96	0.622
60.00	-27.22	-21.86	0.00	-1,416.61	0.00	1,416.61	2,794.59	1,397.30	4,779.77	2,393.44	13.24	-2.18	0.602
63.00	-26.42	-21.53	0.00	-1,351.03	0.00	1,351.03	2,766.27	1,383.14	4,655.71	2,331.31	14.65	-2.31	0.589
65.00	-25.93	-21.29	0.00	-1,307.96	0.00	1,307.96	2,747.10	1,373.55	4,573.39	2,290.09	15.63	-2.40	0.581
70.00	-24.77	-20.90	0.00	-1,201.54	0.00	1,201.54	2,698.18	1,349.09	4,369.01	2,187.75	18.26	-2.61	0.559
75.00	-23.64	-20.52	0.00	-1,097.02	0.00	1,097.02	2,647.83	1,323.91	4,166.84	2,086.52	21.11	-2.82	0.535
80.00	-22.54	-20.13	0.00	-994.43	0.00	994.43	2,596.04	1,298.02	3,967.06	1,986.48	24.18	-3.03	0.510
85.00	-21.46	-19.74	0.00	-893.77	0.00	893.77	2,542.81	1,271.41	3,769.88	1,887.74	27.47	-3.24	0.482
90.00	-20.42	-19.40	0.00	-795.07	0.00	795.07	2,488.15	1,244.08	3,575.49	1,790.40	30.97	-3.45	0.453
93.54	-19.70	-19.18	0.00	-726.48	0.00	726.48	2,448.63	1,224.31	3,439.78	1,722.45	33.58	-3.59	0.430
95.00	-19.23	-18.99	0.00	-698.41	0.00	698.41	2,432.06	1,216.03	3,384.08	1,694.56	34.69	-3.65	0.420
98.45	-18.16	-18.75	0.00	-632.83	0.00	632.83	1,802.83	901.41	2,498.39	1,251.05	37.38	-3.78	0.516
100.00	-17.88	-18.52	0.00	-603.83	0.00	603.83	1,791.36	895.68	2,457.25	1,230.45	38.61	-3.84	0.501
105.00	-17.02	-18.13	0.00	-511.24	0.00	511.24	1,753.33	876.67	2,325.21	1,164.33	42.75	-4.05	0.449
110.00	-16.19	-17.75	0.00	-420.57	0.00	420.57	1,713.87	856.94	2,194.79	1,099.03	47.10	-4.25	0.393
115.00	-15.40	-17.49	0.00	-331.84	0.00	331.84	1,672.98	836.49	2,066.21	1,034.64	51.64	-4.43	0.330
116.00	-12.69	-14.67	0.00	-314.36	0.00	314.36	1,664.63	832.31	2,040.72	1,021.88	52.57	-4.46	0.316
120.00	-12.12	-14.33	0.00	-255.67	0.00	255.67	1,630.65	815.32	1,939.64	971.26	56.36	-4.58	0.271
125.00	-11.43	-14.07	0.00	-184.05	0.00	184.05	1,586.89	793.44	1,815.29	908.99	61.23	-4.71	0.210
126.00	-8.81	-10.25	0.00	-169.98	0.00	169.98	1,577.96	788.98	1,790.70	896.68	62.22	-4.73	0.195
130.00	-8.34	-9.91	0.00	-128.99	0.00	128.99	1,541.69	770.85	1,693.35	847.93	66.22	-4.81	0.158
135.00	-7.77	-9.61	0.00	-79.44	0.00	79.44	1,495.06	747.53	1,574.02	788.18	71.30	-4.89	0.106
137.50	-3.51	-5.84	0.00	-55.41	0.00	55.41	1,471.21	735.60	1,515.39	758.82	73.86	-4.92	0.075
140.00	-3.27	-5.58	0.00	-40.82	0.00	40.82	1,447.00	723.50	1,457.49	729.83	76.44	-4.94	0.058
145.00	-2.80	-5.34	0.00	-12.94	0.00	12.94	1,383.54	691.77	1,330.54	666.26	81.63	-4.97	0.021
146.00	0.00	-5.08	0.00	-7.59	0.00	7.59	1,370.57	685.28	1,305.58	653.76	82.67	-4.97	0.012

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:57:54 PM

Customer: SPRINT NEXTEL

**Load Case:** 0.9D + 1.6W

101 mph with No Ice (Reduced DL)

24 Iterations

Gust Response Factor : 1.10

Wind Importance Factor : 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

### Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		226.7	0.0					0.0	0.0	226.7	0.0	0.0	0.0
5.00		448.9	976.4					0.0	216.9	448.9	1,193.3	0.0	0.0
10.00		439.6	956.4					0.0	216.9	439.6	1,173.3	0.0	0.0
15.00		430.4	936.3					0.0	216.9	430.4	1,153.2	0.0	0.0
20.00		421.1	916.3					0.0	216.9	421.1	1,133.2	0.0	0.0
25.00		411.9	896.2					0.0	216.9	411.9	1,113.1	0.0	0.0
30.00		407.4	876.1					0.0	216.9	407.4	1,093.0	0.0	0.0
35.00		411.1	856.1					0.0	216.9	411.1	1,073.0	0.0	0.0
40.00		417.1	836.0					0.0	216.9	417.1	1,052.9	0.0	0.0
45.00		290.5	816.0					0.0	216.9	290.5	1,032.9	0.0	0.0
46.91	Bot - Section 2	213.1	307.0					0.0	83.0	213.1	390.0	0.0	0.0
50.00		264.8	902.9					0.0	133.9	264.8	1,036.8	0.0	0.0
53.08	Top - Section 1	215.0	887.0					0.0	133.6	215.0	1,020.6	0.0	0.0
55.00		297.8	250.3					0.0	83.3	297.8	333.6	0.0	0.0
60.00		344.0	640.3					0.0	216.9	344.0	857.2	0.0	0.0
63.00	Appurtenance(s)	214.6	376.2	132.3	0.0	0.0	76.5	0.0	130.1	347.0	582.8	0.0	0.0
65.00		299.3	247.4					0.0	86.5	299.3	333.9	0.0	0.0
70.00		425.6	606.9					0.0	216.2	425.6	823.1	0.0	0.0
75.00		422.0	590.2					0.0	216.2	422.0	806.4	0.0	0.0
80.00		417.7	573.5					0.0	216.2	417.7	789.7	0.0	0.0
85.00		412.5	556.8					0.0	216.2	412.5	773.0	0.0	0.0
90.00		347.9	540.1					0.0	216.2	347.9	756.3	0.0	0.0
93.54	Bot - Section 3	202.6	371.9					0.0	152.9	202.6	524.9	0.0	0.0
95.00		199.0	274.6					0.0	63.3	199.0	337.9	0.0	0.0
98.45	Top - Section 2	201.3	637.8					0.0	149.3	201.3	787.1	0.0	0.0
100.00		259.5	126.1					0.0	66.9	259.5	192.9	0.0	0.0
105.00		391.3	398.8					0.0	216.2	391.3	615.0	0.0	0.0
110.00		383.1	385.4					0.0	216.2	383.1	601.6	0.0	0.0
115.00		226.8	372.0					0.0	216.2	226.8	588.3	0.0	0.0
116.00	Appurtenance(s)	185.0	72.8	2,432.8	0.0	0.0	2,058.4	0.0	43.2	2,617.8	2,174.4	0.0	0.0
120.00		327.9	285.9					0.0	137.6	327.9	423.4	0.0	0.0
125.00		215.7	345.3					0.0	171.9	215.7	517.3	0.0	0.0
126.00	Appurtenance(s)	175.3	67.5	3,427.3	0.0	0.0	2,088.1	0.0	34.4	3,602.7	2,189.9	0.0	0.0
130.00		310.1	264.5					0.0	97.6	310.1	362.0	0.0	0.0
135.00		253.3	318.6					0.0	121.9	253.3	440.5	0.0	0.0
137.50	Appurtenance(s)	164.9	154.3	3,235.5	0.0	0.0	3,210.2	0.0	61.0	3,400.3	3,425.5	0.0	0.0
140.00		241.1	150.9					0.0	39.1	241.1	190.0	0.0	0.0
145.00		190.5	291.8					0.0	78.1	190.5	370.0	0.0	0.0
146.00	Appurtenance(s)	31.2	56.8	5,051.1	0.0	7,592.5	2,363.2	0.0	15.6	5,082.3	2,435.6	0.0	0.0
<b>Totals:</b>										26,016.5	34,697.7	0.00	0.00

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:57:59 PM

Customer: SPRINT NEXTEL

Load Case: 0.9D + 1.6W

101 mph with No Ice (Reduced DL)

24 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	-34.66	-25.84	0.00	-2,826.58	0.00	2,826.58	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.608
5.00	-33.39	-25.49	0.00	-2,697.38	0.00	2,697.38	4,176.31	2,088.16	9,106.46	4,560.00	0.09	-0.16	0.600
10.00	-32.15	-25.14	0.00	-2,569.95	0.00	2,569.95	4,123.50	2,061.75	8,803.44	4,408.26	0.35	-0.33	0.591
15.00	-30.92	-24.79	0.00	-2,444.27	0.00	2,444.27	4,069.26	2,034.63	8,502.24	4,257.44	0.79	-0.50	0.582
20.00	-29.72	-24.45	0.00	-2,320.32	0.00	2,320.32	4,013.58	2,006.79	8,203.04	4,107.62	1.41	-0.67	0.572
25.00	-28.54	-24.11	0.00	-2,198.09	0.00	2,198.09	3,956.46	1,978.23	7,906.06	3,958.90	2.21	-0.85	0.563
30.00	-27.38	-23.77	0.00	-2,077.55	0.00	2,077.55	3,897.92	1,948.96	7,611.48	3,811.39	3.19	-1.02	0.552
35.00	-26.24	-23.42	0.00	-1,958.72	0.00	1,958.72	3,837.94	1,918.97	7,319.49	3,665.19	4.35	-1.20	0.541
40.00	-25.13	-23.06	0.00	-1,841.63	0.00	1,841.63	3,776.52	1,888.26	7,030.31	3,520.38	5.71	-1.38	0.530
45.00	-24.05	-22.79	0.00	-1,726.36	0.00	1,726.36	3,713.67	1,856.84	6,744.12	3,377.07	7.25	-1.56	0.518
46.91	-23.63	-22.61	0.00	-1,682.75	0.00	1,682.75	3,689.24	1,844.62	6,635.43	3,322.65	7.89	-1.63	0.513
50.00	-22.56	-22.36	0.00	-1,612.97	0.00	1,612.97	3,649.39	1,824.69	6,461.11	3,235.36	8.98	-1.75	0.505
53.08	-21.51	-22.14	0.00	-1,544.12	0.00	1,544.12	2,857.95	1,428.97	5,068.34	2,537.94	10.15	-1.86	0.616
55.00	-21.13	-21.89	0.00	-1,501.60	0.00	1,501.60	2,840.65	1,420.32	4,987.96	2,497.68	10.91	-1.93	0.609
60.00	-20.22	-21.57	0.00	-1,392.16	0.00	1,392.16	2,794.59	1,397.30	4,779.77	2,393.44	13.05	-2.15	0.589
63.00	-19.62	-21.24	0.00	-1,327.44	0.00	1,327.44	2,766.27	1,383.14	4,655.71	2,331.31	14.44	-2.27	0.577
65.00	-19.24	-20.98	0.00	-1,284.96	0.00	1,284.96	2,747.10	1,373.55	4,573.39	2,290.09	15.41	-2.36	0.568
70.00	-18.36	-20.59	0.00	-1,180.07	0.00	1,180.07	2,698.18	1,349.09	4,369.01	2,187.75	18.00	-2.57	0.546
75.00	-17.50	-20.19	0.00	-1,077.15	0.00	1,077.15	2,647.83	1,323.91	4,166.84	2,086.52	20.80	-2.78	0.523
80.00	-16.66	-19.79	0.00	-976.20	0.00	976.20	2,596.04	1,298.02	3,967.06	1,986.48	23.82	-2.99	0.498
85.00	-15.84	-19.40	0.00	-877.23	0.00	877.23	2,542.81	1,271.41	3,769.88	1,887.74	27.06	-3.19	0.471
90.00	-15.05	-19.05	0.00	-780.26	0.00	780.26	2,488.15	1,244.08	3,575.49	1,790.40	30.51	-3.39	0.442
93.54	-14.51	-18.84	0.00	-712.89	0.00	712.89	2,448.63	1,224.31	3,439.78	1,722.45	33.08	-3.53	0.420
95.00	-14.15	-18.64	0.00	-685.32	0.00	685.32	2,432.06	1,216.03	3,384.08	1,694.56	34.17	-3.59	0.410
98.45	-13.35	-18.42	0.00	-620.93	0.00	620.93	1,802.83	901.41	2,498.39	1,251.05	36.81	-3.72	0.504
100.00	-13.13	-18.17	0.00	-592.45	0.00	592.45	1,791.36	895.68	2,457.25	1,230.45	38.03	-3.78	0.489
105.00	-12.48	-17.79	0.00	-501.58	0.00	501.58	1,753.33	876.67	2,325.21	1,164.33	42.09	-3.99	0.438
110.00	-11.85	-17.40	0.00	-412.65	0.00	412.65	1,713.87	856.94	2,194.79	1,099.03	46.37	-4.18	0.383
115.00	-11.25	-17.15	0.00	-325.65	0.00	325.65	1,672.98	836.49	2,066.21	1,034.64	50.84	-4.35	0.322
116.00	-9.27	-14.39	0.00	-308.50	0.00	308.50	1,664.63	832.31	2,040.72	1,021.88	51.76	-4.39	0.308
120.00	-8.84	-14.05	0.00	-250.96	0.00	250.96	1,630.65	815.32	1,939.64	971.26	55.48	-4.51	0.264
125.00	-8.32	-13.80	0.00	-180.73	0.00	180.73	1,586.89	793.44	1,815.29	908.99	60.27	-4.63	0.204
126.00	-6.42	-10.04	0.00	-166.93	0.00	166.93	1,577.96	788.98	1,790.70	896.68	61.24	-4.65	0.190
130.00	-6.07	-9.71	0.00	-126.78	0.00	126.78	1,541.69	770.85	1,693.35	847.93	65.17	-4.73	0.154
135.00	-5.65	-9.42	0.00	-78.25	0.00	78.25	1,495.06	747.53	1,574.02	788.18	70.17	-4.81	0.103
137.50	-2.52	-5.75	0.00	-54.69	0.00	54.69	1,471.21	735.60	1,515.39	758.82	72.69	-4.84	0.074
140.00	-2.35	-5.49	0.00	-40.32	0.00	40.32	1,447.00	723.50	1,457.49	729.83	75.23	-4.86	0.057
145.00	-1.99	-5.27	0.00	-12.86	0.00	12.86	1,383.54	691.77	1,330.54	666.26	80.33	-4.88	0.021
146.00	0.00	-5.08	0.00	-7.59	0.00	7.59	1,370.57	685.28	1,305.58	653.76	81.35	-4.89	0.012

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:57:59 PM

Customer: SPRINT NEXTEL

**Load Case:** 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 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		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)		
0.00		66.8	0.0					0.0	0.0	66.8	0.0	0.0	0.0
5.00		132.7	1,698.0					0.0	401.3	132.7	2,099.3	0.0	0.0
10.00		130.5	1,709.4					0.0	416.0	130.5	2,125.3	0.0	0.0
15.00		128.2	1,696.6					0.0	423.6	128.2	2,120.2	0.0	0.0
20.00		125.8	1,675.9					0.0	428.9	125.8	2,104.8	0.0	0.0
25.00		123.3	1,651.1					0.0	433.1	123.3	2,084.2	0.0	0.0
30.00		122.2	1,623.7					0.0	436.5	122.2	2,060.3	0.0	0.0
35.00		123.6	1,594.5					0.0	439.5	123.6	2,034.0	0.0	0.0
40.00		125.7	1,564.1					0.0	442.1	125.7	2,006.1	0.0	0.0
45.00		87.7	1,532.6					0.0	444.4	87.7	1,976.9	0.0	0.0
46.91	Bot - Section 2	64.4	579.2					0.0	170.6	64.4	749.8	0.0	0.0
50.00		80.1	1,479.2					0.0	275.8	80.1	1,755.1	0.0	0.0
53.08	Top - Section 1	65.1	1,455.1					0.0	276.0	65.1	1,731.0	0.0	0.0
55.00		90.4	502.8					0.0	172.4	90.4	675.2	0.0	0.0
60.00		104.5	1,285.8					0.0	450.1	104.5	1,735.9	0.0	0.0
63.00	Appurtenance(s)	65.3	758.7	33.3	0.0	0.0	243.7	0.0	270.8	98.6	1,273.2	0.0	0.0
65.00		91.3	500.3					0.0	172.6	91.3	672.9	0.0	0.0
70.00		130.0	1,226.3					0.0	432.4	130.0	1,658.7	0.0	0.0
75.00		129.3	1,195.9					0.0	433.5	129.3	1,629.5	0.0	0.0
80.00		128.3	1,165.2					0.0	434.6	128.3	1,599.9	0.0	0.0
85.00		127.0	1,134.2					0.0	435.7	127.0	1,569.9	0.0	0.0
90.00		107.4	1,103.0					0.0	436.7	107.4	1,539.6	0.0	0.0
93.54	Bot - Section 3	62.7	762.3					0.0	309.4	62.7	1,071.8	0.0	0.0
95.00		61.6	477.2					0.0	128.2	61.6	605.4	0.0	0.0
98.45	Top - Section 2	62.4	1,107.8					0.0	302.8	62.4	1,410.6	0.0	0.0
100.00		80.7	282.6					0.0	135.7	80.7	418.3	0.0	0.0
105.00		121.9	891.5					0.0	439.4	121.9	1,330.9	0.0	0.0
110.00		119.8	863.8					0.0	440.2	119.8	1,304.0	0.0	0.0
115.00		71.1	836.0					0.0	441.0	71.1	1,277.0	0.0	0.0
116.00	Appurtenance(s)	58.2	164.8	600.8	0.0	0.0	4,336.4	0.0	88.3	659.0	4,589.4	0.0	0.0
120.00		103.4	645.1					0.0	221.2	103.4	866.3	0.0	0.0
125.00		68.2	779.8					0.0	276.7	68.2	1,056.6	0.0	0.0
126.00	Appurtenance(s)	55.7	153.5	765.1	0.0	0.0	4,938.8	0.0	55.4	820.8	5,147.7	0.0	0.0
130.00		98.7	599.9					0.0	168.3	98.7	768.2	0.0	0.0
135.00		80.9	723.1					0.0	210.6	80.9	933.6	0.0	0.0
137.50	Appurtenance(s)	52.9	352.3	767.3	0.0	0.0	9,066.2	0.0	105.4	820.2	9,523.9	0.0	0.0
140.00		77.7	345.2					0.0	76.2	77.7	421.4	0.0	0.0
145.00		61.5	665.8					0.0	152.6	61.5	818.4	0.0	0.0
146.00	Appurtenance(s)	10.1	130.7	1,037.9	0.0	1,410.5	8,179.9	0.0	30.5	1,048.0	8,341.1	0.0	0.0
								<b>Totals:</b>		<b>6,801.56</b>	<b>75,086.2</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:58:04 PM

Customer: SPRINT NEXTEL

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 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	-75.08	-6.76	0.00	-744.73	0.00	744.73	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.176
5.00	-72.98	-6.69	0.00	-710.91	0.00	710.91	4,176.31	2,088.16	9,106.46	4,560.00	0.02	-0.04	0.173
10.00	-70.85	-6.61	0.00	-677.48	0.00	677.48	4,123.50	2,061.75	8,803.44	4,408.26	0.09	-0.09	0.171
15.00	-68.72	-6.53	0.00	-644.45	0.00	644.45	4,069.26	2,034.63	8,502.24	4,257.44	0.21	-0.13	0.168
20.00	-66.61	-6.45	0.00	-611.80	0.00	611.80	4,013.58	2,006.79	8,203.04	4,107.62	0.37	-0.18	0.166
25.00	-64.53	-6.37	0.00	-579.55	0.00	579.55	3,956.46	1,978.23	7,906.06	3,958.90	0.58	-0.22	0.163
30.00	-62.46	-6.29	0.00	-547.69	0.00	547.69	3,897.92	1,948.96	7,611.48	3,811.39	0.84	-0.27	0.160
35.00	-60.42	-6.21	0.00	-516.23	0.00	516.23	3,837.94	1,918.97	7,319.49	3,665.19	1.15	-0.32	0.157
40.00	-58.41	-6.12	0.00	-485.20	0.00	485.20	3,776.52	1,888.26	7,030.31	3,520.38	1.50	-0.36	0.153
45.00	-56.43	-6.05	0.00	-454.61	0.00	454.61	3,713.67	1,856.84	6,744.12	3,377.07	1.91	-0.41	0.150
46.91	-55.68	-6.00	0.00	-443.03	0.00	443.03	3,689.24	1,844.62	6,635.43	3,322.65	2.08	-0.43	0.148
50.00	-53.92	-5.94	0.00	-424.50	0.00	424.50	3,649.39	1,824.69	6,461.11	3,235.36	2.37	-0.46	0.146
53.08	-52.19	-5.88	0.00	-406.21	0.00	406.21	2,857.95	1,428.97	5,068.34	2,537.94	2.68	-0.49	0.178
55.00	-51.51	-5.82	0.00	-394.92	0.00	394.92	2,840.65	1,420.32	4,987.96	2,497.68	2.88	-0.51	0.176
60.00	-49.77	-5.74	0.00	-365.83	0.00	365.83	2,794.59	1,397.30	4,779.77	2,393.44	3.44	-0.57	0.171
63.00	-48.50	-5.65	0.00	-348.62	0.00	348.62	2,766.27	1,383.14	4,655.71	2,331.31	3.81	-0.60	0.167
65.00	-47.82	-5.58	0.00	-337.32	0.00	337.32	2,747.10	1,373.55	4,573.39	2,290.09	4.06	-0.62	0.165
70.00	-46.16	-5.48	0.00	-309.41	0.00	309.41	2,698.18	1,349.09	4,369.01	2,187.75	4.74	-0.68	0.159
75.00	-44.53	-5.37	0.00	-282.02	0.00	282.02	2,647.83	1,323.91	4,166.84	2,086.52	5.48	-0.73	0.152
80.00	-42.92	-5.26	0.00	-255.16	0.00	255.16	2,596.04	1,298.02	3,967.06	1,986.48	6.28	-0.79	0.145
85.00	-41.35	-5.15	0.00	-228.85	0.00	228.85	2,542.81	1,271.41	3,769.88	1,887.74	7.13	-0.84	0.138
90.00	-39.81	-5.05	0.00	-203.09	0.00	203.09	2,488.15	1,244.08	3,575.49	1,790.40	8.04	-0.89	0.129
93.54	-38.74	-4.99	0.00	-185.23	0.00	185.23	2,448.63	1,224.31	3,439.78	1,722.45	8.71	-0.93	0.123
95.00	-38.13	-4.93	0.00	-177.93	0.00	177.93	2,432.06	1,216.03	3,384.08	1,694.56	9.00	-0.94	0.121
98.45	-36.72	-4.86	0.00	-160.89	0.00	160.89	1,802.83	901.41	2,498.39	1,251.05	9.69	-0.98	0.149
100.00	-36.30	-4.80	0.00	-153.37	0.00	153.37	1,791.36	895.68	2,457.25	1,230.45	10.01	-0.99	0.145
105.00	-34.97	-4.68	0.00	-129.38	0.00	129.38	1,753.33	876.67	2,325.21	1,164.33	11.08	-1.05	0.131
110.00	-33.66	-4.57	0.00	-105.96	0.00	105.96	1,713.87	856.94	2,194.79	1,099.03	12.20	-1.10	0.116
115.00	-32.38	-4.49	0.00	-83.12	0.00	83.12	1,672.98	836.49	2,066.21	1,034.64	13.37	-1.14	0.100
116.00	-27.81	-3.75	0.00	-78.64	0.00	78.64	1,664.63	832.31	2,040.72	1,021.88	13.61	-1.15	0.094
120.00	-26.94	-3.64	0.00	-63.66	0.00	63.66	1,630.65	815.32	1,939.64	971.26	14.59	-1.18	0.082
125.00	-25.88	-3.56	0.00	-45.46	0.00	45.46	1,586.89	793.44	1,815.29	908.99	15.84	-1.21	0.066
126.00	-20.75	-2.63	0.00	-41.91	0.00	41.91	1,577.96	788.98	1,790.70	896.68	16.10	-1.22	0.060
130.00	-19.99	-2.52	0.00	-31.38	0.00	31.38	1,541.69	770.85	1,693.35	847.93	17.12	-1.24	0.050
135.00	-19.06	-2.43	0.00	-18.76	0.00	18.76	1,495.06	747.53	1,574.02	788.18	18.43	-1.25	0.037
137.50	-9.55	-1.40	0.00	-12.70	0.00	12.70	1,471.21	735.60	1,515.39	758.82	19.09	-1.26	0.023
140.00	-9.13	-1.31	0.00	-9.20	0.00	9.20	1,447.00	723.50	1,457.49	729.83	19.75	-1.27	0.019
145.00	-8.32	-1.23	0.00	-2.64	0.00	2.64	1,383.54	691.77	1,330.54	666.26	21.08	-1.27	0.010
146.00	0.00	-1.05	0.00	-1.41	0.00	1.41	1,370.57	685.28	1,305.58	653.76	21.35	-1.27	0.002



Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:58:04 PM

Customer: SPRINT NEXTEL

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 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		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		50.0	0.0					0.0	0.0	50.0	0.0	0.0	0.0
5.00		99.0	1,084.9					0.0	241.0	99.0	1,325.9	0.0	0.0
10.00		97.0	1,062.6					0.0	241.0	97.0	1,303.6	0.0	0.0
15.00		94.9	1,040.3					0.0	241.0	94.9	1,281.3	0.0	0.0
20.00		92.9	1,018.1					0.0	241.0	92.9	1,259.1	0.0	0.0
25.00		90.8	995.8					0.0	241.0	90.8	1,236.8	0.0	0.0
30.00		89.9	973.5					0.0	241.0	89.9	1,214.5	0.0	0.0
35.00		90.7	951.2					0.0	241.0	90.7	1,192.2	0.0	0.0
40.00		92.0	928.9					0.0	241.0	92.0	1,169.9	0.0	0.0
45.00		64.1	906.7					0.0	241.0	64.1	1,147.7	0.0	0.0
46.91	Bot - Section 2	47.0	341.1					0.0	92.2	47.0	433.3	0.0	0.0
50.00		58.4	1,003.3					0.0	148.8	58.4	1,152.0	0.0	0.0
53.08	Top - Section 1	47.4	985.6					0.0	148.5	47.4	1,134.0	0.0	0.0
55.00		65.7	278.1					0.0	92.5	65.7	370.7	0.0	0.0
60.00		75.9	711.5					0.0	241.0	75.9	952.5	0.0	0.0
63.00	Appurtenance(s)	47.3	418.0	29.2	0.0	0.0	85.0	0.0	144.6	76.5	647.6	0.0	0.0
65.00		66.0	274.9					0.0	96.1	66.0	371.0	0.0	0.0
70.00		93.9	674.3					0.0	240.3	93.9	914.6	0.0	0.0
75.00		93.1	655.8					0.0	240.3	93.1	896.0	0.0	0.0
80.00		92.1	637.2					0.0	240.3	92.1	877.4	0.0	0.0
85.00		91.0	618.6					0.0	240.3	91.0	858.9	0.0	0.0
90.00		76.7	600.1					0.0	240.3	76.7	840.3	0.0	0.0
93.54	Bot - Section 3	44.7	413.2					0.0	169.9	44.7	583.2	0.0	0.0
95.00		43.9	305.1					0.0	70.3	43.9	375.4	0.0	0.0
98.45	Top - Section 2	44.4	708.6					0.0	165.9	44.4	874.6	0.0	0.0
100.00		57.2	140.1					0.0	74.3	57.2	214.4	0.0	0.0
105.00		86.3	443.1					0.0	240.3	86.3	683.3	0.0	0.0
110.00		84.5	428.2					0.0	240.3	84.5	668.5	0.0	0.0
115.00		50.0	413.4					0.0	240.3	50.0	653.6	0.0	0.0
116.00	Appurtenance(s)	40.8	80.9	536.6	0.0	0.0	2,287.1	0.0	48.1	577.4	2,416.0	0.0	0.0
120.00		72.3	317.6					0.0	152.8	72.3	470.5	0.0	0.0
125.00		47.6	383.7					0.0	191.1	47.6	574.7	0.0	0.0
126.00	Appurtenance(s)	38.7	75.0	756.0	0.0	0.0	2,320.1	0.0	38.2	794.6	2,433.3	0.0	0.0
130.00		68.4	293.9					0.0	108.4	68.4	402.3	0.0	0.0
135.00		55.9	354.0					0.0	135.5	55.9	489.5	0.0	0.0
137.50	Appurtenance(s)	36.4	171.4	713.6	0.0	0.0	3,566.9	0.0	67.8	750.0	3,806.1	0.0	0.0
140.00		53.2	167.7					0.0	43.4	53.2	211.1	0.0	0.0
145.00		42.0	324.3					0.0	86.8	42.0	411.1	0.0	0.0
146.00	Appurtenance(s)	6.9	63.1	1,114.1	0.0	1,674.7	2,625.8	0.0	17.4	1,121.0	2,706.2	0.0	0.0
Totals:										5,738.38	38,553.0	0.00	0.00

Site Number: 411216

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 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	-38.55	-5.70	0.00	-626.51	0.00	626.51	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.142
5.00	-37.22	-5.62	0.00	-598.01	0.00	598.01	4,176.31	2,088.16	9,106.46	4,560.00	0.02	-0.04	0.140
10.00	-35.91	-5.55	0.00	-569.89	0.00	569.89	4,123.50	2,061.75	8,803.44	4,408.26	0.08	-0.07	0.138
15.00	-34.63	-5.48	0.00	-542.15	0.00	542.15	4,069.26	2,034.63	8,502.24	4,257.44	0.18	-0.11	0.136
20.00	-33.37	-5.40	0.00	-514.77	0.00	514.77	4,013.58	2,006.79	8,203.04	4,107.62	0.31	-0.15	0.134
25.00	-32.13	-5.33	0.00	-487.76	0.00	487.76	3,956.46	1,978.23	7,906.06	3,958.90	0.49	-0.19	0.131
30.00	-30.91	-5.26	0.00	-461.12	0.00	461.12	3,897.92	1,948.96	7,611.48	3,811.39	0.71	-0.23	0.129
35.00	-29.71	-5.18	0.00	-434.84	0.00	434.84	3,837.94	1,918.97	7,319.49	3,665.19	0.97	-0.27	0.126
40.00	-28.54	-5.10	0.00	-408.93	0.00	408.93	3,776.52	1,888.26	7,030.31	3,520.38	1.27	-0.31	0.124
45.00	-27.39	-5.05	0.00	-383.42	0.00	383.42	3,713.67	1,856.84	6,744.12	3,377.07	1.61	-0.35	0.121
46.91	-26.96	-5.01	0.00	-373.76	0.00	373.76	3,689.24	1,844.62	6,635.43	3,322.65	1.75	-0.36	0.120
50.00	-25.80	-4.95	0.00	-358.31	0.00	358.31	3,649.39	1,824.69	6,461.11	3,235.36	1.99	-0.39	0.118
53.08	-24.67	-4.90	0.00	-343.06	0.00	343.06	2,857.95	1,428.97	5,068.34	2,537.94	2.25	-0.41	0.144
55.00	-24.29	-4.85	0.00	-333.64	0.00	333.64	2,840.65	1,420.32	4,987.96	2,497.68	2.42	-0.43	0.142
60.00	-23.34	-4.78	0.00	-309.39	0.00	309.39	2,794.59	1,397.30	4,779.77	2,393.44	2.90	-0.48	0.138
63.00	-22.69	-4.71	0.00	-295.05	0.00	295.05	2,766.27	1,383.14	4,655.71	2,331.31	3.20	-0.50	0.135
65.00	-22.32	-4.65	0.00	-285.63	0.00	285.63	2,747.10	1,373.55	4,573.39	2,290.09	3.42	-0.52	0.133
70.00	-21.40	-4.57	0.00	-262.37	0.00	262.37	2,698.18	1,349.09	4,369.01	2,187.75	3.99	-0.57	0.128
75.00	-20.50	-4.48	0.00	-239.53	0.00	239.53	2,647.83	1,323.91	4,166.84	2,086.52	4.62	-0.62	0.123
80.00	-19.62	-4.40	0.00	-217.12	0.00	217.12	2,596.04	1,298.02	3,967.06	1,986.48	5.29	-0.66	0.117
85.00	-18.76	-4.31	0.00	-195.14	0.00	195.14	2,542.81	1,271.41	3,769.88	1,887.74	6.01	-0.71	0.111
90.00	-17.92	-4.23	0.00	-173.60	0.00	173.60	2,488.15	1,244.08	3,575.49	1,790.40	6.77	-0.75	0.104
93.54	-17.33	-4.19	0.00	-158.62	0.00	158.62	2,448.63	1,224.31	3,439.78	1,722.45	7.34	-0.78	0.099
95.00	-16.96	-4.14	0.00	-152.50	0.00	152.50	2,432.06	1,216.03	3,384.08	1,694.56	7.59	-0.80	0.097
98.45	-16.08	-4.09	0.00	-138.18	0.00	138.18	1,802.83	901.41	2,498.39	1,251.05	8.17	-0.83	0.119
100.00	-15.87	-4.04	0.00	-131.85	0.00	131.85	1,791.36	895.68	2,457.25	1,230.45	8.44	-0.84	0.116
105.00	-15.18	-3.96	0.00	-111.64	0.00	111.64	1,753.33	876.67	2,325.21	1,164.33	9.35	-0.89	0.105
110.00	-14.51	-3.87	0.00	-91.85	0.00	91.85	1,713.87	856.94	2,194.79	1,099.03	10.30	-0.93	0.092
115.00	-13.86	-3.82	0.00	-72.49	0.00	72.49	1,672.98	836.49	2,066.21	1,034.64	11.29	-0.97	0.078
116.00	-11.45	-3.20	0.00	-68.67	0.00	68.67	1,664.63	832.31	2,040.72	1,021.88	11.50	-0.97	0.074
120.00	-10.98	-3.13	0.00	-55.86	0.00	55.86	1,630.65	815.32	1,939.64	971.26	12.33	-1.00	0.064
125.00	-10.41	-3.07	0.00	-40.23	0.00	40.23	1,586.89	793.44	1,815.29	908.99	13.39	-1.03	0.051
126.00	-7.99	-2.24	0.00	-37.15	0.00	37.15	1,577.96	788.98	1,790.70	896.68	13.61	-1.03	0.047
130.00	-7.59	-2.16	0.00	-28.21	0.00	28.21	1,541.69	770.85	1,693.35	847.93	14.48	-1.05	0.038
135.00	-7.10	-2.10	0.00	-17.40	0.00	17.40	1,495.06	747.53	1,574.02	788.18	15.59	-1.07	0.027
137.50	-3.30	-1.28	0.00	-12.15	0.00	12.15	1,471.21	735.60	1,515.39	758.82	16.16	-1.08	0.018
140.00	-3.09	-1.22	0.00	-8.95	0.00	8.95	1,447.00	723.50	1,457.49	729.83	16.72	-1.08	0.014
145.00	-2.68	-1.17	0.00	-2.85	0.00	2.85	1,383.54	691.77	1,330.54	666.26	17.85	-1.09	0.006
146.00	0.00	-1.12	0.00	-1.67	0.00	1.67	1,370.57	685.28	1,305.58	653.76	18.08	-1.09	0.003

Site Number: 411216

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Site Name: CT Chaplin South CT, CT

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Customer: SPRINT NEXTEL

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.17
Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.06
Long-Period Transition Period ( $T_L$ ):	6
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 ( $S_{ds}$ ):	0.18
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):	2.38
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.94
Total Unfactored Dead Load:	38.55 k
Seismic Base Shear (E):	1.50 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)
38	145.50	80	1,262	0.005	8	99
37	142.50	411	6,193	0.025	37	508
36	138.75	211	3,020	0.012	18	261
35	136.25	239	3,303	0.013	20	296
34	132.50	489	6,404	0.026	38	605
33	128.00	402	4,922	0.020	30	498
32	125.50	113	1,333	0.005	8	140
31	122.50	575	6,458	0.026	39	711
30	118.00	470	4,916	0.020	29	582
29	115.50	129	1,293	0.005	8	159
28	112.50	654	6,226	0.025	37	808
27	107.50	668	5,830	0.023	35	827
26	102.50	683	5,434	0.022	33	845
25	99.23	214	1,601	0.006	10	265
24	96.73	875	6,215	0.025	37	1,082
23	94.27	375	2,538	0.010	15	464
22	91.77	583	3,742	0.015	22	721
21	87.50	840	4,916	0.020	29	1,039
20	82.50	859	4,482	0.018	27	1,062
19	77.50	877	4,056	0.016	24	1,085
18	72.50	896	3,640	0.015	22	1,108
17	67.50	915	3,234	0.013	19	1,131
16	64.00	371	1,183	0.005	7	459

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Customer: SPRINT NEXTEL

15	61.50	563	1,661	0.007	10	696
14	57.50	952	2,468	0.010	15	1,178
13	54.04	371	851	0.003	5	458
12	51.54	1,134	2,376	0.009	14	1,403
11	48.46	1,152	2,142	0.009	13	1,425
10	45.96	433	727	0.003	4	536
9	42.50	1,148	1,654	0.007	10	1,420
8	37.50	1,170	1,323	0.005	8	1,447
7	32.50	1,192	1,021	0.004	6	1,475
6	27.50	1,214	752	0.003	5	1,502
5	22.50	1,237	519	0.002	3	1,530
4	17.50	1,259	325	0.001	2	1,557
3	12.50	1,281	172	0.001	1	1,585
2	7.50	1,304	65	0.000	0	1,612
1	2.50	1,326	8	0.000	0	1,640
Nokia B5 RRH4x40-850	146.00	146	2,298	0.009	14	180
Alcatel-Lucent RRH2x	146.00	170	2,686	0.011	16	210
Alcatel-Lucent AWS4	146.00	192	3,032	0.012	18	237
Raycap RC3DC-3315-PF	146.00	64	1,011	0.004	6	79
Antel LPA-80080/4CF	146.00	48	758	0.003	5	59
Antel LPA-80063/4CF	146.00	40	632	0.003	4	49
Andrew SBNHH-1D65B	146.00	304	4,804	0.019	29	376
Amphenol Antel QUAD6	146.00	162	2,558	0.010	15	200
Flat Low Profile Pla	146.00	1,500	23,690	0.094	142	1,855
GPS	137.50	10	141	0.001	1	12
Alcatel-Lucent RRH2x	137.50	317	4,462	0.018	27	393
Alcatel-Lucent 1900	137.50	180	2,530	0.010	15	223
Alcatel-Lucent TD-RR	137.50	210	2,952	0.012	18	260
RFS APXVTM14-ALU-I20	137.50	169	2,370	0.009	14	209
Commscope NNVV-65B-R	137.50	232	3,264	0.013	20	287
Site Pro RMQP-496-HK	137.50	2,449	34,425	0.137	206	3,029
Powerwave Allgon LGP	126.00	33	392	0.002	2	41
6" x 6" Junction Box	126.00	30	356	0.001	2	37
Powerwave Allgon LGP	126.00	85	1,004	0.004	6	105
Raycap DC6-48-60-18-	126.00	20	237	0.001	1	25
Ericsson RRUS-11 190	126.00	264	3,133	0.012	19	327
Allgon 7770.00	126.00	210	2,492	0.010	15	260
KMW AM-X-CD-17-65-00	126.00	178	2,118	0.008	13	221
Flat Low Profile Pla	126.00	1,500	17,801	0.071	107	1,855
RFS 1900 PCS	116.00	57	576	0.002	3	71
RFS APXV18-206517	116.00	79	801	0.003	5	98
Commscope LNX-6515DS	116.00	151	1,525	0.006	9	187
Round Platform w/ Ha	116.00	2,000	20,217	0.081	121	2,474
GPS	63.00	10	31	0.000	0	12
Stand-Off	63.00	75	232	0.001	1	93
		38,553	250,792	1.000	1,504	47,686

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)
38	145.50	80	1,262	0.005	8	69
37	142.50	411	6,193	0.025	37	355
36	138.75	211	3,020	0.012	18	182
35	136.25	239	3,303	0.013	20	206
34	132.50	489	6,404	0.026	38	422
33	128.00	402	4,922	0.020	30	347
32	125.50	113	1,333	0.005	8	98
31	122.50	575	6,458	0.026	39	496
30	118.00	470	4,916	0.020	29	406

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29	115.50	129	1,293	0.005	8	111
28	112.50	654	6,226	0.025	37	564
27	107.50	668	5,830	0.023	35	577
26	102.50	683	5,434	0.022	33	590
25	99.23	214	1,601	0.006	10	185
24	96.73	875	6,215	0.025	37	755
23	94.27	375	2,538	0.010	15	324
22	91.77	583	3,742	0.015	22	503
21	87.50	840	4,916	0.020	29	725
20	82.50	859	4,482	0.018	27	741
19	77.50	877	4,056	0.016	24	757
18	72.50	896	3,640	0.015	22	773
17	67.50	915	3,234	0.013	19	789
16	64.00	371	1,183	0.005	7	320
15	61.50	563	1,661	0.007	10	486
14	57.50	952	2,468	0.010	15	822
13	54.04	371	851	0.003	5	320
12	51.54	1,134	2,376	0.009	14	979
11	48.46	1,152	2,142	0.009	13	994
10	45.96	433	727	0.003	4	374
9	42.50	1,148	1,654	0.007	10	991
8	37.50	1,170	1,323	0.005	8	1,010
7	32.50	1,192	1,021	0.004	6	1,029
6	27.50	1,214	752	0.003	5	1,048
5	22.50	1,237	519	0.002	3	1,067
4	17.50	1,259	325	0.001	2	1,087
3	12.50	1,281	172	0.001	1	1,106
2	7.50	1,304	65	0.000	0	1,125
1	2.50	1,326	8	0.000	0	1,144
Nokia B5 RRH4x40-850	146.00	146	2,298	0.009	14	126
Alcatel-Lucent RRH2x	146.00	170	2,686	0.011	16	147
Alcatel-Lucent AWS4	146.00	192	3,032	0.012	18	166
Raycap RC3DC-3315-PF	146.00	64	1,011	0.004	6	55
Antel LPA-80080/4CF	146.00	48	758	0.003	5	41
Antel LPA-80063/4CF	146.00	40	632	0.003	4	35
Andrew SBNHH-1D65B	146.00	304	4,804	0.019	29	263
Amphenol Antel QUAD6	146.00	162	2,558	0.010	15	140
Flat Low Profile Pla	146.00	1,500	23,690	0.094	142	1,295
GPS	137.50	10	141	0.001	1	9
Alcatel-Lucent RRH2x	137.50	317	4,462	0.018	27	274
Alcatel-Lucent 1900	137.50	180	2,530	0.010	15	155
Alcatel-Lucent TD-RR	137.50	210	2,952	0.012	18	181
RFS APXVTM14-ALU-I20	137.50	169	2,370	0.009	14	146
Commscope NNVV-65B-R	137.50	232	3,264	0.013	20	200
Site Pro RMQP-496-HK	137.50	2,449	34,425	0.137	206	2,113
Powerwave Allgon LGP	126.00	33	392	0.002	2	28
6" x 6" Junction Box	126.00	30	356	0.001	2	26
Powerwave Allgon LGP	126.00	85	1,004	0.004	6	73
Raycap DC6-48-60-18-	126.00	20	237	0.001	1	17
Ericsson RRUS-11 190	126.00	264	3,133	0.012	19	228
Allgon 7770.00	126.00	210	2,492	0.010	15	181
KMW AM-X-CD-17-65-00	126.00	178	2,118	0.008	13	154
Flat Low Profile Pla	126.00	1,500	17,801	0.071	107	1,295
RFS 1900 PCS	116.00	57	576	0.002	3	49
RFS APXV18-206517	116.00	79	801	0.003	5	68
Commscope LNX-6515DS	116.00	151	1,525	0.006	9	130
Round Platform w/ Ha	116.00	2,000	20,217	0.081	121	1,726
GPS	63.00	10	31	0.000	0	9
Stand-Off	63.00	75	232	0.001	1	65
		38,553	250,792	1.000	1,504	33,275

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Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

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	-46.05	-1.51	0.00	-186.18	0.00	186.18	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.050
5.00	-44.43	-1.51	0.00	-178.64	0.00	178.64	4,176.31	2,088.16	9,106.46	4,560.00	0.01	-0.01	0.050
10.00	-42.85	-1.52	0.00	-171.07	0.00	171.07	4,123.50	2,061.75	8,803.44	4,408.26	0.02	-0.02	0.049
15.00	-41.29	-1.53	0.00	-163.46	0.00	163.46	4,069.26	2,034.63	8,502.24	4,257.44	0.05	-0.03	0.049
20.00	-39.76	-1.53	0.00	-155.83	0.00	155.83	4,013.58	2,006.79	8,203.04	4,107.62	0.09	-0.04	0.048
25.00	-38.26	-1.53	0.00	-148.17	0.00	148.17	3,956.46	1,978.23	7,906.06	3,958.90	0.15	-0.06	0.047
30.00	-36.78	-1.53	0.00	-140.50	0.00	140.50	3,897.92	1,948.96	7,611.48	3,811.39	0.21	-0.07	0.046
35.00	-35.34	-1.53	0.00	-132.84	0.00	132.84	3,837.94	1,918.97	7,319.49	3,665.19	0.29	-0.08	0.045
40.00	-33.92	-1.53	0.00	-125.19	0.00	125.19	3,776.52	1,888.26	7,030.31	3,520.38	0.38	-0.09	0.045
45.00	-33.38	-1.53	0.00	-117.56	0.00	117.56	3,713.67	1,856.84	6,744.12	3,377.07	0.48	-0.10	0.044
46.91	-31.95	-1.51	0.00	-114.64	0.00	114.64	3,689.24	1,844.62	6,635.43	3,322.65	0.53	-0.11	0.043
50.00	-30.55	-1.50	0.00	-109.96	0.00	109.96	3,649.39	1,824.69	6,461.11	3,235.36	0.60	-0.12	0.042
53.08	-30.09	-1.50	0.00	-105.34	0.00	105.34	2,857.95	1,428.97	5,068.34	2,537.94	0.68	-0.13	0.052
55.00	-28.91	-1.49	0.00	-102.47	0.00	102.47	2,840.65	1,420.32	4,987.96	2,497.68	0.73	-0.13	0.051
60.00	-28.22	-1.48	0.00	-95.04	0.00	95.04	2,794.59	1,397.30	4,779.77	2,393.44	0.88	-0.14	0.050
63.00	-27.65	-1.47	0.00	-90.60	0.00	90.60	2,766.27	1,383.14	4,655.71	2,331.31	0.97	-0.15	0.049
65.00	-26.52	-1.46	0.00	-87.65	0.00	87.65	2,747.10	1,373.55	4,573.39	2,290.09	1.03	-0.16	0.048
70.00	-25.41	-1.44	0.00	-80.38	0.00	80.38	2,698.18	1,349.09	4,369.01	2,187.75	1.21	-0.17	0.046
75.00	-24.33	-1.42	0.00	-73.19	0.00	73.19	2,647.83	1,323.91	4,166.84	2,086.52	1.40	-0.19	0.044
80.00	-23.27	-1.39	0.00	-66.12	0.00	66.12	2,596.04	1,298.02	3,967.06	1,986.48	1.60	-0.20	0.042
85.00	-22.23	-1.36	0.00	-59.17	0.00	59.17	2,542.81	1,271.41	3,769.88	1,887.74	1.82	-0.22	0.040
90.00	-21.51	-1.34	0.00	-52.36	0.00	52.36	2,488.15	1,244.08	3,575.49	1,790.40	2.06	-0.23	0.038
93.54	-21.04	-1.33	0.00	-47.61	0.00	47.61	2,448.63	1,224.31	3,439.78	1,722.45	2.23	-0.24	0.036
95.00	-19.96	-1.29	0.00	-45.67	0.00	45.67	2,432.06	1,216.03	3,384.08	1,694.56	2.30	-0.24	0.035
98.45	-19.69	-1.28	0.00	-41.23	0.00	41.23	1,802.83	901.41	2,498.39	1,251.05	2.48	-0.25	0.044
100.00	-18.85	-1.25	0.00	-39.25	0.00	39.25	1,791.36	895.68	2,457.25	1,230.45	2.56	-0.26	0.042
105.00	-18.02	-1.21	0.00	-33.02	0.00	33.02	1,753.33	876.67	2,325.21	1,164.33	2.84	-0.27	0.039
110.00	-17.21	-1.17	0.00	-26.97	0.00	26.97	1,713.87	856.94	2,194.79	1,099.03	3.13	-0.28	0.035
115.00	-17.05	-1.17	0.00	-21.10	0.00	21.10	1,672.98	836.49	2,066.21	1,034.64	3.43	-0.29	0.031
116.00	-13.64	-0.98	0.00	-19.94	0.00	19.94	1,664.63	832.31	2,040.72	1,021.88	3.49	-0.30	0.028
120.00	-12.93	-0.94	0.00	-16.01	0.00	16.01	1,630.65	815.32	1,939.64	971.26	3.74	-0.30	0.024
125.00	-12.79	-0.93	0.00	-11.30	0.00	11.30	1,586.89	793.44	1,815.29	908.99	4.06	-0.31	0.020
126.00	-9.43	-0.72	0.00	-10.37	0.00	10.37	1,577.96	788.98	1,790.70	896.68	4.13	-0.31	0.018
130.00	-8.82	-0.68	0.00	-7.48	0.00	7.48	1,541.69	770.85	1,693.35	847.93	4.39	-0.32	0.015
135.00	-8.53	-0.66	0.00	-4.08	0.00	4.08	1,495.06	747.53	1,574.02	788.18	4.73	-0.32	0.011
137.50	-3.85	-0.31	0.00	-2.43	0.00	2.43	1,471.21	735.60	1,515.39	758.82	4.89	-0.32	0.006
140.00	-3.35	-0.27	0.00	-1.64	0.00	1.64	1,447.00	723.50	1,457.49	729.83	5.06	-0.32	0.005
145.00	-3.25	-0.27	0.00	-0.27	0.00	0.27	1,383.54	691.77	1,330.54	666.26	5.40	-0.32	0.003
146.00	0.00	-0.25	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	5.47	-0.32	0.000

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Customer: SPRINT NEXTEL

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	-32.13	-1.51	0.00	-183.47	0.00	183.47	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.047
5.00	-31.00	-1.51	0.00	-175.94	0.00	175.94	4,176.31	2,088.16	9,106.46	4,560.00	0.01	-0.01	0.046
10.00	-29.90	-1.52	0.00	-168.39	0.00	168.39	4,123.50	2,061.75	8,803.44	4,408.26	0.02	-0.02	0.045
15.00	-28.81	-1.52	0.00	-160.81	0.00	160.81	4,069.26	2,034.63	8,502.24	4,257.44	0.05	-0.03	0.045
20.00	-27.74	-1.52	0.00	-153.22	0.00	153.22	4,013.58	2,006.79	8,203.04	4,107.62	0.09	-0.04	0.044
25.00	-26.70	-1.52	0.00	-145.62	0.00	145.62	3,956.46	1,978.23	7,906.06	3,958.90	0.14	-0.06	0.044
30.00	-25.67	-1.52	0.00	-138.02	0.00	138.02	3,897.92	1,948.96	7,611.48	3,811.39	0.21	-0.07	0.043
35.00	-24.66	-1.51	0.00	-130.43	0.00	130.43	3,837.94	1,918.97	7,319.49	3,665.19	0.29	-0.08	0.042
40.00	-23.67	-1.51	0.00	-122.86	0.00	122.86	3,776.52	1,888.26	7,030.31	3,520.38	0.37	-0.09	0.041
45.00	-23.29	-1.51	0.00	-115.32	0.00	115.32	3,713.67	1,856.84	6,744.12	3,377.07	0.48	-0.10	0.040
46.91	-22.30	-1.49	0.00	-112.44	0.00	112.44	3,689.24	1,844.62	6,635.43	3,322.65	0.52	-0.11	0.040
50.00	-21.32	-1.48	0.00	-107.82	0.00	107.82	3,649.39	1,824.69	6,461.11	3,235.36	0.59	-0.12	0.039
53.08	-21.00	-1.48	0.00	-103.26	0.00	103.26	2,857.95	1,428.97	5,068.34	2,537.94	0.67	-0.12	0.048
55.00	-20.18	-1.46	0.00	-100.43	0.00	100.43	2,840.65	1,420.32	4,987.96	2,497.68	0.72	-0.13	0.047
60.00	-19.69	-1.46	0.00	-93.11	0.00	93.11	2,794.59	1,397.30	4,779.77	2,393.44	0.86	-0.14	0.046
63.00	-19.30	-1.45	0.00	-88.74	0.00	88.74	2,766.27	1,383.14	4,655.71	2,331.31	0.95	-0.15	0.045
65.00	-18.51	-1.43	0.00	-85.84	0.00	85.84	2,747.10	1,373.55	4,573.39	2,290.09	1.02	-0.16	0.044
70.00	-17.73	-1.41	0.00	-78.68	0.00	78.68	2,698.18	1,349.09	4,369.01	2,187.75	1.19	-0.17	0.043
75.00	-16.97	-1.39	0.00	-71.63	0.00	71.63	2,647.83	1,323.91	4,166.84	2,086.52	1.37	-0.18	0.041
80.00	-16.23	-1.36	0.00	-64.68	0.00	64.68	2,596.04	1,298.02	3,967.06	1,986.48	1.58	-0.20	0.039
85.00	-15.51	-1.34	0.00	-57.86	0.00	57.86	2,542.81	1,271.41	3,769.88	1,887.74	1.79	-0.21	0.037
90.00	-15.00	-1.31	0.00	-51.19	0.00	51.19	2,488.15	1,244.08	3,575.49	1,790.40	2.02	-0.22	0.035
93.54	-14.68	-1.30	0.00	-46.54	0.00	46.54	2,448.63	1,224.31	3,439.78	1,722.45	2.19	-0.23	0.033
95.00	-13.93	-1.26	0.00	-44.64	0.00	44.64	2,432.06	1,216.03	3,384.08	1,694.56	2.26	-0.24	0.032
98.45	-13.74	-1.25	0.00	-40.29	0.00	40.29	1,802.83	901.41	2,498.39	1,251.05	2.44	-0.25	0.040
100.00	-13.15	-1.22	0.00	-38.36	0.00	38.36	1,791.36	895.68	2,457.25	1,230.45	2.52	-0.25	0.039
105.00	-12.57	-1.18	0.00	-32.27	0.00	32.27	1,753.33	876.67	2,325.21	1,164.33	2.79	-0.26	0.035
110.00	-12.01	-1.15	0.00	-26.35	0.00	26.35	1,713.87	856.94	2,194.79	1,099.03	3.07	-0.28	0.031
115.00	-11.90	-1.14	0.00	-20.62	0.00	20.62	1,672.98	836.49	2,066.21	1,034.64	3.37	-0.29	0.027
116.00	-9.52	-0.96	0.00	-19.48	0.00	19.48	1,664.63	832.31	2,040.72	1,021.88	3.43	-0.29	0.025
120.00	-9.02	-0.92	0.00	-15.64	0.00	15.64	1,630.65	815.32	1,939.64	971.26	3.67	-0.30	0.022
125.00	-8.93	-0.91	0.00	-11.05	0.00	11.05	1,586.89	793.44	1,815.29	908.99	3.99	-0.30	0.018
126.00	-6.58	-0.71	0.00	-10.13	0.00	10.13	1,577.96	788.98	1,790.70	896.68	4.05	-0.31	0.015
130.00	-6.15	-0.67	0.00	-7.31	0.00	7.31	1,541.69	770.85	1,693.35	847.93	4.31	-0.31	0.013
135.00	-5.95	-0.64	0.00	-3.99	0.00	3.99	1,495.06	747.53	1,574.02	788.18	4.64	-0.31	0.009
137.50	-2.69	-0.31	0.00	-2.38	0.00	2.38	1,471.21	735.60	1,515.39	758.82	4.80	-0.32	0.005
140.00	-2.33	-0.27	0.00	-1.61	0.00	1.61	1,447.00	723.50	1,457.49	729.83	4.97	-0.32	0.004
145.00	-2.26	-0.26	0.00	-0.26	0.00	0.26	1,383.54	691.77	1,330.54	666.26	5.30	-0.32	0.002
146.00	0.00	-0.25	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	5.37	-0.32	0.000



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Customer: SPRINT NEXTEL

### 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 ( $S_s$ ):	0.17
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 ( $S_{ds}$ ):	0.18
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.38
Redundancy Factor ( $\rho$ ):	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)
38	145.50	80	1.877	1.913	1.116	0.343	24	99
37	142.50	411	1.800	1.541	0.978	0.297	106	508
36	138.75	211	1.707	1.149	0.825	0.244	45	261
35	136.25	239	1.646	0.928	0.734	0.211	44	296
34	132.50	489	1.557	0.650	0.613	0.165	70	605
33	128.00	402	1.453	0.391	0.488	0.117	41	498
32	125.50	113	1.397	0.277	0.428	0.093	9	140
31	122.50	575	1.331	0.165	0.364	0.067	33	711
30	118.00	470	1.235	0.040	0.281	0.033	13	582
29	115.50	129	1.183	-0.011	0.242	0.017	2	159
28	112.50	654	1.122	-0.057	0.201	0.000	0	808
27	107.50	668	1.025	-0.103	0.144	-0.021	-12	827
26	102.50	683	0.932	-0.121	0.100	-0.035	-21	845
25	99.23	214	0.873	-0.121	0.077	-0.039	-7	265
24	96.73	875	0.830	-0.117	0.063	-0.041	-31	1,082
23	94.27	375	0.788	-0.110	0.050	-0.040	-13	464
22	91.77	583	0.747	-0.100	0.040	-0.038	-19	721
21	87.50	840	0.679	-0.080	0.026	-0.030	-22	1,039
20	82.50	859	0.603	-0.054	0.015	-0.017	-13	1,062
19	77.50	877	0.533	-0.028	0.009	-0.001	-1	1,085
18	72.50	896	0.466	-0.004	0.006	0.015	12	1,108
17	67.50	915	0.404	0.017	0.006	0.029	23	1,131
16	64.00	371	0.363	0.029	0.008	0.036	12	459
15	61.50	563	0.335	0.037	0.010	0.040	20	696
14	57.50	952	0.293	0.047	0.013	0.045	37	1,178
13	54.04	371	0.259	0.054	0.016	0.048	15	458
12	51.54	1,134	0.236	0.058	0.019	0.049	48	1,403
11	48.46	1,152	0.208	0.062	0.022	0.049	49	1,425
10	45.96	433	0.187	0.064	0.025	0.049	19	536
9	42.50	1,148	0.160	0.067	0.029	0.049	49	1,420
8	37.50	1,170	0.125	0.070	0.034	0.048	49	1,447
7	32.50	1,192	0.094	0.071	0.038	0.047	49	1,475
6	27.50	1,214	0.067	0.072	0.041	0.046	48	1,502
5	22.50	1,237	0.045	0.071	0.042	0.044	47	1,530

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4	17.50	1,259	0.027	0.067	0.040	0.042	46	1,557
3	12.50	1,281	0.014	0.059	0.035	0.038	42	1,585
2	7.50	1,304	0.005	0.045	0.025	0.030	34	1,612
1	2.50	1,326	0.001	0.019	0.010	0.014	16	1,640
Nokia B5 RRH4x40-850	146.00	146	1.890	1.980	1.140	0.351	44	180
Alcatel-Lucent RRH2x	146.00	170	1.890	1.980	1.140	0.351	52	210
Alcatel-Lucent AWS4	146.00	192	1.890	1.980	1.140	0.351	58	237
Raycap RC3DC-3315-PF	146.00	64	1.890	1.980	1.140	0.351	19	79
Antel LPA-80080/4CF	146.00	48	1.890	1.980	1.140	0.351	15	59
Antel LPA-80063/4CF	146.00	40	1.890	1.980	1.140	0.351	12	49
Andrew SBNHH-1D65B	146.00	304	1.890	1.980	1.140	0.351	93	376
Amphenol Antel QUAD6	146.00	162	1.890	1.980	1.140	0.351	49	200
Flat Low Profile Pla	146.00	1,500	1.890	1.980	1.140	0.351	456	1,855
GPS	137.50	10	1.676	1.035	0.779	0.227	2	12
Alcatel-Lucent RRH2x	137.50	317	1.676	1.035	0.779	0.227	62	393
Alcatel-Lucent 1900	137.50	180	1.676	1.035	0.779	0.227	35	223
Alcatel-Lucent TD-RR	137.50	210	1.676	1.035	0.779	0.227	41	260
RFS APXVTM14-ALU-I20	137.50	169	1.676	1.035	0.779	0.227	33	209
Commscope NNVV-	137.50	232	1.676	1.035	0.779	0.227	46	287
Site Pro RMQP-496-HK	137.50	2,449	1.676	1.035	0.779	0.227	482	3,029
Powerwave Allgon LGP	126.00	33	1.408	0.298	0.440	0.098	3	41
6" x 6" Junction Box	126.00	30	1.408	0.298	0.440	0.098	3	37
Powerwave Allgon LGP	126.00	85	1.408	0.298	0.440	0.098	7	105
Raycap DC6-48-60-18-	126.00	20	1.408	0.298	0.440	0.098	2	25
Ericsson RRUS-11 190	126.00	264	1.408	0.298	0.440	0.098	22	327
Allgon 7770.00	126.00	210	1.408	0.298	0.440	0.098	18	260
KMW AM-X-CD-17-65-00	126.00	178	1.408	0.298	0.440	0.098	15	221
Flat Low Profile Pla	126.00	1,500	1.408	0.298	0.440	0.098	127	1,855
RFS 1900 PCS	116.00	57	1.193	-0.002	0.250	0.020	1	71
RFS APXV18-206517	116.00	79	1.193	-0.002	0.250	0.020	1	98
Commscope LNX-	116.00	151	1.193	-0.002	0.250	0.020	3	187
Round Platform w/ Ha	116.00	2,000	1.193	-0.002	0.250	0.020	35	2,474
GPS	63.00	10	0.352	0.032	0.009	0.038	0	12
Stand-Off	63.00	75	0.352	0.032	0.009	0.038	2	93
		38,553	72.085	34.564	27.457	7.728	2,601	47,686

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)
38	145.50	80	1.877	1.913	1.116	0.343	24	69
37	142.50	411	1.800	1.541	0.978	0.297	106	355
36	138.75	211	1.707	1.149	0.825	0.244	45	182
35	136.25	239	1.646	0.928	0.734	0.211	44	206
34	132.50	489	1.557	0.650	0.613	0.165	70	422
33	128.00	402	1.453	0.391	0.488	0.117	41	347
32	125.50	113	1.397	0.277	0.428	0.093	9	98
31	122.50	575	1.331	0.165	0.364	0.067	33	496
30	118.00	470	1.235	0.040	0.281	0.033	13	406
29	115.50	129	1.183	-0.011	0.242	0.017	2	111
28	112.50	654	1.122	-0.057	0.201	0.000	0	564
27	107.50	668	1.025	-0.103	0.144	-0.021	-12	577
26	102.50	683	0.932	-0.121	0.100	-0.035	-21	590
25	99.23	214	0.873	-0.121	0.077	-0.039	-7	185
24	96.73	875	0.830	-0.117	0.063	-0.041	-31	755
23	94.27	375	0.788	-0.110	0.050	-0.040	-13	324
22	91.77	583	0.747	-0.100	0.040	-0.038	-19	503
21	87.50	840	0.679	-0.080	0.026	-0.030	-22	725
20	82.50	859	0.603	-0.054	0.015	-0.017	-13	741

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

19	77.50	877	0.533	-0.028	0.009	-0.001	-1	757
18	72.50	896	0.466	-0.004	0.006	0.015	12	773
17	67.50	915	0.404	0.017	0.006	0.029	23	789
16	64.00	371	0.363	0.029	0.008	0.036	12	320
15	61.50	563	0.335	0.037	0.010	0.040	20	486
14	57.50	952	0.293	0.047	0.013	0.045	37	822
13	54.04	371	0.259	0.054	0.016	0.048	15	320
12	51.54	1,134	0.236	0.058	0.019	0.049	48	979
11	48.46	1,152	0.208	0.062	0.022	0.049	49	994
10	45.96	433	0.187	0.064	0.025	0.049	19	374
9	42.50	1,148	0.160	0.067	0.029	0.049	49	991
8	37.50	1,170	0.125	0.070	0.034	0.048	49	1,010
7	32.50	1,192	0.094	0.071	0.038	0.047	49	1,029
6	27.50	1,214	0.067	0.072	0.041	0.046	48	1,048
5	22.50	1,237	0.045	0.071	0.042	0.044	47	1,067
4	17.50	1,259	0.027	0.067	0.040	0.042	46	1,087
3	12.50	1,281	0.014	0.059	0.035	0.038	42	1,106
2	7.50	1,304	0.005	0.045	0.025	0.030	34	1,125
1	2.50	1,326	0.001	0.019	0.010	0.014	16	1,144
Nokia B5 RRH4x40-850	146.00	146	1.890	1.980	1.140	0.351	44	126
Alcatel-Lucent RRH2x	146.00	170	1.890	1.980	1.140	0.351	52	147
Alcatel-Lucent AWS4	146.00	192	1.890	1.980	1.140	0.351	58	166
Raycap RC3DC-3315-PF	146.00	64	1.890	1.980	1.140	0.351	19	55
Antel LPA-80080/4CF	146.00	48	1.890	1.980	1.140	0.351	15	41
Antel LPA-80063/4CF	146.00	40	1.890	1.980	1.140	0.351	12	35
Andrew SBNHH-1D65B	146.00	304	1.890	1.980	1.140	0.351	93	263
Amphenol Antel QUAD6	146.00	162	1.890	1.980	1.140	0.351	49	140
Flat Low Profile Pla	146.00	1,500	1.890	1.980	1.140	0.351	456	1,295
GPS	137.50	10	1.676	1.035	0.779	0.227	2	9
Alcatel-Lucent RRH2x	137.50	317	1.676	1.035	0.779	0.227	62	274
Alcatel-Lucent 1900	137.50	180	1.676	1.035	0.779	0.227	35	155
Alcatel-Lucent TD-RR	137.50	210	1.676	1.035	0.779	0.227	41	181
RFS APXVTM14-ALU-I20	137.50	169	1.676	1.035	0.779	0.227	33	146
Commscope NNVV-	137.50	232	1.676	1.035	0.779	0.227	46	200
Site Pro RMQP-496-HK	137.50	2,449	1.676	1.035	0.779	0.227	482	2,113
Powerwave Allgon LGP	126.00	33	1.408	0.298	0.440	0.098	3	28
6" x 6" Junction Box	126.00	30	1.408	0.298	0.440	0.098	3	26
Powerwave Allgon LGP	126.00	85	1.408	0.298	0.440	0.098	7	73
Raycap DC6-48-60-18-	126.00	20	1.408	0.298	0.440	0.098	2	17
Ericsson RRUS-11 190	126.00	264	1.408	0.298	0.440	0.098	22	228
Allgon 7770.00	126.00	210	1.408	0.298	0.440	0.098	18	181
KMW AM-X-CD-17-65-00	126.00	178	1.408	0.298	0.440	0.098	15	154
Flat Low Profile Pla	126.00	1,500	1.408	0.298	0.440	0.098	127	1,295
RFS 1900 PCS	116.00	57	1.193	-0.002	0.250	0.020	1	49
RFS APXV18-206517	116.00	79	1.193	-0.002	0.250	0.020	1	68
Commscope LNX-	116.00	151	1.193	-0.002	0.250	0.020	3	130
Round Platform w/ Ha	116.00	2,000	1.193	-0.002	0.250	0.020	35	1,726
GPS	63.00	10	0.352	0.032	0.009	0.038	0	9
Stand-Off	63.00	75	0.352	0.032	0.009	0.038	2	65
		38,553	72.085	34.564	27.457	7.728	2,601	33,275

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

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	-46.05	-2.59	0.00	-317.94	0.00	317.94	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.078
5.00	-44.43	-2.57	0.00	-304.98	0.00	304.98	4,176.31	2,088.16	9,106.46	4,560.00	0.01	-0.02	0.078
10.00	-42.85	-2.54	0.00	-292.11	0.00	292.11	4,123.50	2,061.75	8,803.44	4,408.26	0.04	-0.04	0.077
15.00	-41.29	-2.51	0.00	-279.39	0.00	279.39	4,069.26	2,034.63	8,502.24	4,257.44	0.09	-0.06	0.076
20.00	-39.76	-2.48	0.00	-266.84	0.00	266.84	4,013.58	2,006.79	8,203.04	4,107.62	0.16	-0.08	0.075
25.00	-38.26	-2.44	0.00	-254.46	0.00	254.46	3,956.46	1,978.23	7,906.06	3,958.90	0.25	-0.10	0.074
30.00	-36.78	-2.40	0.00	-242.27	0.00	242.27	3,897.92	1,948.96	7,611.48	3,811.39	0.36	-0.12	0.073
35.00	-35.33	-2.36	0.00	-230.27	0.00	230.27	3,837.94	1,918.97	7,319.49	3,665.19	0.50	-0.14	0.072
40.00	-33.91	-2.32	0.00	-218.46	0.00	218.46	3,776.52	1,888.26	7,030.31	3,520.38	0.65	-0.16	0.071
45.00	-33.38	-2.31	0.00	-206.85	0.00	206.85	3,713.67	1,856.84	6,744.12	3,377.07	0.83	-0.18	0.070
46.91	-31.95	-2.26	0.00	-202.43	0.00	202.43	3,689.24	1,844.62	6,635.43	3,322.65	0.90	-0.19	0.070
50.00	-30.55	-2.22	0.00	-195.45	0.00	195.45	3,649.39	1,824.69	6,461.11	3,235.36	1.03	-0.20	0.069
53.08	-30.09	-2.21	0.00	-188.62	0.00	188.62	2,857.95	1,428.97	5,068.34	2,537.94	1.17	-0.22	0.085
55.00	-28.91	-2.17	0.00	-184.38	0.00	184.38	2,840.65	1,420.32	4,987.96	2,497.68	1.26	-0.23	0.084
60.00	-28.21	-2.16	0.00	-173.52	0.00	173.52	2,794.59	1,397.30	4,779.77	2,393.44	1.51	-0.25	0.083
63.00	-27.65	-2.15	0.00	-167.03	0.00	167.03	2,766.27	1,383.14	4,655.71	2,331.31	1.67	-0.27	0.082
65.00	-26.52	-2.13	0.00	-162.73	0.00	162.73	2,747.10	1,373.55	4,573.39	2,290.09	1.78	-0.28	0.081
70.00	-25.41	-2.13	0.00	-152.08	0.00	152.08	2,698.18	1,349.09	4,369.01	2,187.75	2.09	-0.31	0.079
75.00	-24.32	-2.13	0.00	-141.45	0.00	141.45	2,647.83	1,323.91	4,166.84	2,086.52	2.43	-0.33	0.077
80.00	-23.26	-2.15	0.00	-130.79	0.00	130.79	2,596.04	1,298.02	3,967.06	1,986.48	2.79	-0.36	0.075
85.00	-22.22	-2.18	0.00	-120.04	0.00	120.04	2,542.81	1,271.41	3,769.88	1,887.74	3.18	-0.39	0.072
90.00	-21.49	-2.20	0.00	-109.17	0.00	109.17	2,488.15	1,244.08	3,575.49	1,790.40	3.60	-0.42	0.070
93.54	-21.03	-2.21	0.00	-101.39	0.00	101.39	2,448.63	1,224.31	3,439.78	1,722.45	3.92	-0.44	0.067
95.00	-19.95	-2.24	0.00	-98.16	0.00	98.16	2,432.06	1,216.03	3,384.08	1,694.56	4.05	-0.44	0.066
98.45	-19.68	-2.25	0.00	-90.42	0.00	90.42	1,802.83	901.41	2,498.39	1,251.05	4.38	-0.46	0.083
100.00	-18.84	-2.27	0.00	-86.94	0.00	86.94	1,791.36	895.68	2,457.25	1,230.45	4.53	-0.47	0.081
105.00	-18.01	-2.29	0.00	-75.59	0.00	75.59	1,753.33	876.67	2,325.21	1,164.33	5.04	-0.50	0.075
110.00	-17.20	-2.29	0.00	-64.16	0.00	64.16	1,713.87	856.94	2,194.79	1,099.03	5.59	-0.53	0.068
115.00	-17.04	-2.29	0.00	-52.73	0.00	52.73	1,672.98	836.49	2,066.21	1,034.64	6.16	-0.56	0.061
116.00	-13.63	-2.20	0.00	-50.44	0.00	50.44	1,664.63	832.31	2,040.72	1,021.88	6.28	-0.56	0.058
120.00	-12.92	-2.17	0.00	-41.63	0.00	41.63	1,630.65	815.32	1,939.64	971.26	6.76	-0.58	0.051
125.00	-12.78	-2.16	0.00	-30.78	0.00	30.78	1,586.89	793.44	1,815.29	908.99	7.38	-0.61	0.042
126.00	-9.41	-1.89	0.00	-28.62	0.00	28.62	1,577.96	788.98	1,790.70	896.68	7.51	-0.61	0.038
130.00	-8.81	-1.82	0.00	-21.07	0.00	21.07	1,541.69	770.85	1,693.35	847.93	8.02	-0.62	0.031
135.00	-8.51	-1.77	0.00	-11.99	0.00	11.99	1,495.06	747.53	1,574.02	788.18	8.68	-0.63	0.021
137.50	-3.85	-0.97	0.00	-7.57	0.00	7.57	1,471.21	735.60	1,515.39	758.82	9.02	-0.64	0.013
140.00	-3.34	-0.86	0.00	-5.14	0.00	5.14	1,447.00	723.50	1,457.49	729.83	9.35	-0.64	0.009
145.00	-3.24	-0.84	0.00	-0.84	0.00	0.84	1,383.54	691.77	1,330.54	666.26	10.03	-0.64	0.004
146.00	0.00	-0.80	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	10.16	-0.64	0.000

Site Number: 411216

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

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Customer: SPRINT NEXTEL

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	-32.13	-2.59	0.00	-313.01	0.00	313.01	4,227.69	2,113.85	9,411.11	4,712.55	0.00	0.00	0.074
5.00	-31.00	-2.57	0.00	-300.06	0.00	300.06	4,176.31	2,088.16	9,106.46	4,560.00	0.01	-0.02	0.073
10.00	-29.90	-2.53	0.00	-287.24	0.00	287.24	4,123.50	2,061.75	8,803.44	4,408.26	0.04	-0.04	0.072
15.00	-28.81	-2.50	0.00	-274.57	0.00	274.57	4,069.26	2,034.63	8,502.24	4,257.44	0.09	-0.06	0.072
20.00	-27.74	-2.46	0.00	-262.09	0.00	262.09	4,013.58	2,006.79	8,203.04	4,107.62	0.16	-0.08	0.071
25.00	-26.69	-2.42	0.00	-249.81	0.00	249.81	3,956.46	1,978.23	7,906.06	3,958.90	0.25	-0.09	0.070
30.00	-25.66	-2.37	0.00	-237.73	0.00	237.73	3,897.92	1,948.96	7,611.48	3,811.39	0.36	-0.11	0.069
35.00	-24.65	-2.33	0.00	-225.85	0.00	225.85	3,837.94	1,918.97	7,319.49	3,665.19	0.49	-0.14	0.068
40.00	-23.66	-2.29	0.00	-214.19	0.00	214.19	3,776.52	1,888.26	7,030.31	3,520.38	0.64	-0.16	0.067
45.00	-23.29	-2.28	0.00	-202.74	0.00	202.74	3,713.67	1,856.84	6,744.12	3,377.07	0.82	-0.18	0.066
46.91	-22.29	-2.23	0.00	-198.38	0.00	198.38	3,689.24	1,844.62	6,635.43	3,322.65	0.89	-0.19	0.066
50.00	-21.31	-2.18	0.00	-191.51	0.00	191.51	3,649.39	1,824.69	6,461.11	3,235.36	1.01	-0.20	0.065
53.08	-20.99	-2.17	0.00	-184.79	0.00	184.79	2,857.95	1,428.97	5,068.34	2,537.94	1.15	-0.21	0.080
55.00	-20.17	-2.14	0.00	-180.62	0.00	180.62	2,840.65	1,420.32	4,987.96	2,497.68	1.23	-0.22	0.079
60.00	-19.68	-2.12	0.00	-169.94	0.00	169.94	2,794.59	1,397.30	4,779.77	2,393.44	1.48	-0.25	0.078
63.00	-19.29	-2.11	0.00	-163.58	0.00	163.58	2,766.27	1,383.14	4,655.71	2,331.31	1.64	-0.26	0.077
65.00	-18.50	-2.09	0.00	-159.36	0.00	159.36	2,747.10	1,373.55	4,573.39	2,290.09	1.75	-0.27	0.076
70.00	-17.73	-2.08	0.00	-148.92	0.00	148.92	2,698.18	1,349.09	4,369.01	2,187.75	2.05	-0.30	0.075
75.00	-16.97	-2.09	0.00	-138.52	0.00	138.52	2,647.83	1,323.91	4,166.84	2,086.52	2.38	-0.33	0.073
80.00	-16.23	-2.10	0.00	-128.09	0.00	128.09	2,596.04	1,298.02	3,967.06	1,986.48	2.74	-0.35	0.071
85.00	-15.50	-2.13	0.00	-117.58	0.00	117.58	2,542.81	1,271.41	3,769.88	1,887.74	3.12	-0.38	0.068
90.00	-14.99	-2.15	0.00	-106.96	0.00	106.96	2,488.15	1,244.08	3,575.49	1,790.40	3.54	-0.41	0.066
93.54	-14.67	-2.16	0.00	-99.36	0.00	99.36	2,448.63	1,224.31	3,439.78	1,722.45	3.85	-0.43	0.064
95.00	-13.91	-2.19	0.00	-96.20	0.00	96.20	2,432.06	1,216.03	3,384.08	1,694.56	3.98	-0.44	0.062
98.45	-13.73	-2.20	0.00	-88.63	0.00	88.63	1,802.83	901.41	2,498.39	1,251.05	4.30	-0.45	0.078
100.00	-13.14	-2.22	0.00	-85.23	0.00	85.23	1,791.36	895.68	2,457.25	1,230.45	4.45	-0.46	0.077
105.00	-12.56	-2.23	0.00	-74.13	0.00	74.13	1,753.33	876.67	2,325.21	1,164.33	4.95	-0.49	0.071
110.00	-11.99	-2.23	0.00	-62.96	0.00	62.96	1,713.87	856.94	2,194.79	1,099.03	5.48	-0.52	0.064
115.00	-11.88	-2.23	0.00	-51.79	0.00	51.79	1,672.98	836.49	2,066.21	1,034.64	6.04	-0.55	0.057
116.00	-9.50	-2.16	0.00	-49.56	0.00	49.56	1,664.63	832.31	2,040.72	1,021.88	6.16	-0.55	0.054
120.00	-9.01	-2.13	0.00	-40.91	0.00	40.91	1,630.65	815.32	1,939.64	971.26	6.63	-0.57	0.048
125.00	-8.91	-2.12	0.00	-30.28	0.00	30.28	1,586.89	793.44	1,815.29	908.99	7.24	-0.59	0.039
126.00	-6.56	-1.86	0.00	-28.16	0.00	28.16	1,577.96	788.98	1,790.70	896.68	7.37	-0.60	0.036
130.00	-6.14	-1.78	0.00	-20.73	0.00	20.73	1,541.69	770.85	1,693.35	847.93	7.87	-0.61	0.028
135.00	-5.93	-1.74	0.00	-11.81	0.00	11.81	1,495.06	747.53	1,574.02	788.18	8.52	-0.62	0.019
137.50	-2.68	-0.96	0.00	-7.46	0.00	7.46	1,471.21	735.60	1,515.39	758.82	8.85	-0.63	0.012
140.00	-2.33	-0.85	0.00	-5.07	0.00	5.07	1,447.00	723.50	1,457.49	729.83	9.18	-0.63	0.009
145.00	-2.26	-0.82	0.00	-0.82	0.00	0.82	1,383.54	691.77	1,330.54	666.26	9.84	-0.63	0.003
146.00	0.00	-0.80	0.00	0.00	0.00	0.00	1,370.57	685.28	1,305.58	653.76	9.97	-0.63	0.000

Site Number: 411216

Code: ANSI/TIA-222-G

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Site Name: CT Chaplin South CT, CT

Engineering Number: OAA719249\_C3\_03

5/30/2018 2:58:10 PM

Customer: SPRINT NEXTEL

### Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	25.86	0.00	46.22	0.00	0.00	2860.97	53.08	0.63
0.9D + 1.6W	25.84	0.00	34.66	0.00	0.00	2826.58	53.08	0.62
1.2D + 1.0Di + 1.0Wi	6.76	0.00	75.08	0.00	0.00	744.73	53.08	0.18
(1.2 + 0.2Sds) * DL + E ELFM	1.51	0.00	46.05	0.00	0.00	186.18	53.08	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.59	0.00	46.05	0.00	0.00	317.94	53.08	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.51	0.00	32.13	0.00	0.00	183.47	53.08	0.05
(0.9 - 0.2Sds) * DL + E EMAM	2.59	0.00	32.13	0.00	0.00	313.01	53.08	0.08
1.0D + 1.0W	5.70	0.00	38.55	0.00	0.00	626.51	53.08	0.14



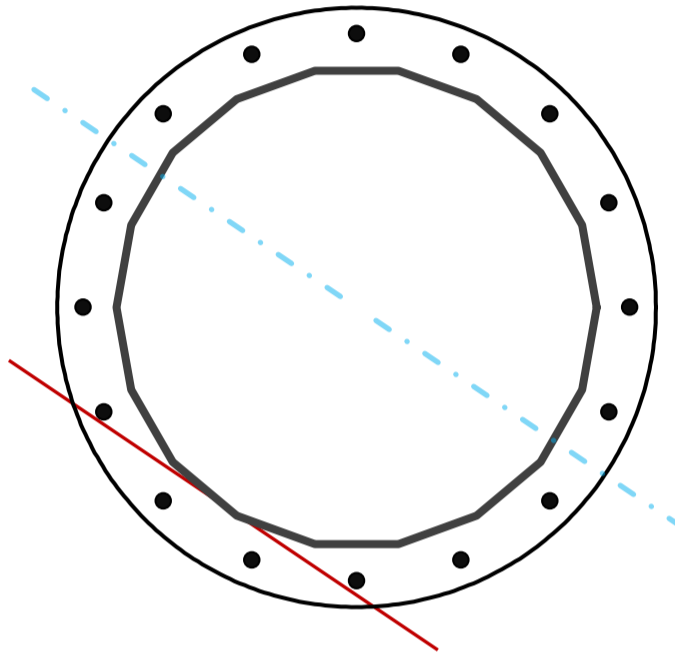
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	54.50	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2861.0	k-ft
Axial, Pu	46.2	k
Shear, Vu	25.9	k
Neutral Axis	146	°

Report Capacities		
Component	Capacity	Result
Base Plate	81%	Pass
Anchor Rods	53%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, $\phi$	69	in
Thickness	1 3/4	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	994.5	k
Bending Stress, $\phi Mn$	1231.5	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	63	in
Grade	A615-75	-
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.4	in
Orientation Offset	0	°
Applied Force, Pu	136.6	k
Anchor Rods, $\phi Pn$	259.8	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	25.9	2861.0	1.00
Anchor Rod Forces	25.9	2861.0	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	63.4413	3.5245	0.1658		23234.51
Bolt	3.9761	3.2477	0.8393	4.5	25793.59
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	69	in
Thickness, t	1.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	42.317	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	63	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	136.6	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.526	OK
Interaction Capacity	0.526	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k

External Base Plate		
Chord Length AA	36.332	in
Additional AA	3.500	in
Section Modulus, Z	30.496	in <sup>3</sup>
Applied Moment, Mu	994.5	k-ft
Bending Capacity, φMn	1646.8	k-ft
Capacity, Mu/φMn	0.604	OK

Additional Bolt Group 1		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	0.0	k
Compressive Capacity, φPn		
Interaction Capacity		

Vertical Weld		
Vert.-to-Stiffener a=e <sub>x</sub> /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, φPn	#DIV/0!	k
Vert.-to-Plate a=e <sub>x</sub> /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, φVn	#DIV/0!	k
P <sub>u</sub> /φ <sub>p</sub> P <sub>n</sub> + V <sub>u</sub> /φ <sub>v</sub> V <sub>n</sub>		

Chord Length AB	35.038	in
Additional AB	3.500	in
Section Modulus, Z	29.506	in <sup>3</sup>
Applied Moment, Mu	879.8	k-ft
Bending Capacity, φMn	1593.3	k-ft
Capacity, Mu/φMn	0.552	OK

Additional Bolt Group 2		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, φPn	0.0	k
Compressive Capacity, φPn		
Interaction Capacity		

Horizontal Weld		
Horz.-to-Stiffener a=e <sub>x</sub> /l	0.000	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, φPn	#DIV/0!	k
Horz.-to-Pole a=e <sub>x</sub> /l	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, φVn	#DIV/0!	k
P <sub>u</sub> /φ <sub>p</sub> P <sub>n</sub> + V <sub>u</sub> /φ <sub>v</sub> V <sub>n</sub>		

Bend Line Length	29.787	in
Additional Bend Line	0.000	in
Section Modulus, Z	22.805	in <sup>3</sup>
Applied Moment, Mu	994.5	k-ft
Bending Capacity, φMn	1231.5	k-ft
Capacity, Mu/φMn	0.808	OK

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	61.38	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, φPn	0.0	k
Capacity, Pu/φPn		

Plate Tension		
Gross Cross Section	0.000	in <sup>2</sup>
Net Cross Section	0.000	in <sup>2</sup>
Tensile Capacity, φTn	0.0	k
Capacity, Tu/φTn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

Plate Compression		
Radius of Gyration	#DIV/0!	in <sup>3</sup>
kl/r	#DIV/0!	-
4.71 √(E/Fy)	0.00	-
Buckling Stress(F <sub>e</sub> )	0.0	-
Crit. Buckling Stress(F <sub>cr</sub> )	0.0	ksi
Compressive Capacity, φPn	0.0	k
Capacity, Pu/φPn		



# Sprint



PROJECT: DO MACRO UPGRADE  
 SITE NAME: CHAPLIN 2 /VZ  
 SITE CASCADE: CT33XC583  
 SITE ADDRESS: 123 PALMER ROAD  
 CHAPLIN, CT 06235  
 SITE TYPE: MONOPOLE TOWER  
 MARKET: NORTHERN CONNECTICUT

PLANS PREPARED FOR:

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) 308-3740

ENGINEERING LICENSE:

DRAWING NOTICE:  
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REVISIONS:	DESCRIPTION	DATE	BY	REV.

ISSUED FOR PERMIT: 06/28/18 MAP 0

SITE NAME:  
**CHAPLIN 2 /VZ**

SITE NUMBER:  
**CT33XC583**

SITE ADDRESS:  
**123 PALMER ROAD  
 CHAPLIN, CT 06235**

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

SHEET NUMBER:  
**T-1**

**SITE INFORMATION**

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

**LATITUDE (NAD83):**  
 41° 47' 4.3008" N  
 41.784528

**LONGITUDE (NAD83):**  
 -72° 8' 8.4984" W  
 -72.135694

**COUNTY:**  
 WINDHAM COUNTY

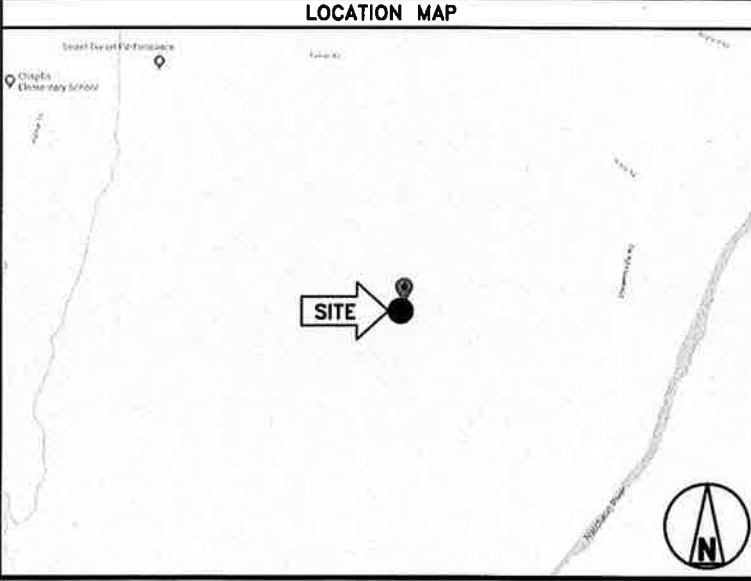
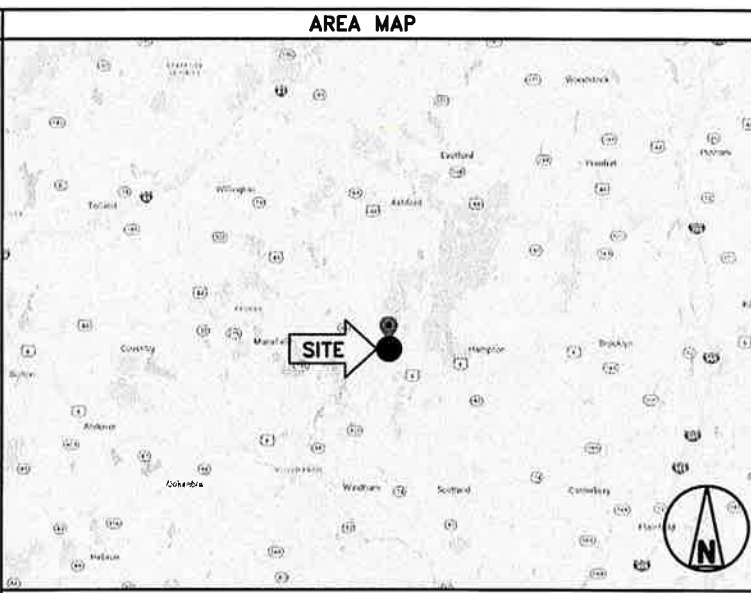
**ZONING JURISDICTION:**  
 CONNECTICUT SITING COUNCIL

**ZONING DISTRICT:**  
 TBD

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

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

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



**PROJECT DESCRIPTION**

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE (6) EXISTING ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- RELOCATE (3) 1900 MHz RRHS BEHIND ANTENNAS
- INSTALL (3) 2.5 GHz & (6) 800 MHz RRH'S BEHIND ANTENNAS
- INSTALL (48) JUMPER CABLES
- INSTALL (4) HYBRID CABLE
- REPLACE EXISTING MMBTS CABINET
- REPLACE EXISTING BBU 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



**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	EQUIPMENT & MOUNTING DETAILS	0
A-6	CIVIL DETAILS	0
A-7	PLUMBING DIAGRAM	0
E-1	ELECTRICAL & GROUNDING PLAN	0
E-2	ELECTRICAL & GROUNDING DETAILS	0

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

**SECTION 01 100 – SCOPE OF WORK**

**PART 1 – GENERAL**

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.
- 1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.
- 1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:
  - A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
    - 1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
    - 5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
    - 3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY -GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
    - 4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE - "NEC") AND NFPA 101 (LIFE SAFETY CODE).
    - 5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
    - 6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
    - 7. AMERICAN CONCRETE INSTITUTE (ACI)
    - 8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
    - 9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
    - 10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
    - 11. PORTLAND CEMENT ASSOCIATION (PCA)
    - 12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
    - 13. BRICK INDUSTRY ASSOCIATION (BIA)
    - 14. AMERICAN WELDING SOCIETY (AWS)
    - 15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
    - 16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
    - 17. DOOR AND HARDWARE INSTITUTE (DHI)
    - 18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
    - 19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.
- 1.5 DEFINITIONS:
  - A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
  - B. COMPANY: SPRINT CORPORATION
  - C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
  - D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
  - E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
  - F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.
  - G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

- 1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.
- 1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.
- 1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.
- 1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
  - A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.
  - B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.
  - C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.
- 1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.
- 1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED.
- 1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.
- 1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

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

**1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:**

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION**

- 3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.
- 3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.
- 3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HERewith, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.
- 3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

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

**SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT**

**PART 1 – GENERAL**

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION**

- 3.1 RECEIPT OF MATERIAL AND EQUIPMENT:
  - A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.
  - B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
    - 1. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
    - 2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
    - 3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
    - 4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
    - 5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
    - 6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.
- 3.2 DELIVERABLES:
  - A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.
  - B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.
  - C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

**SECTION 01 300 – CELL SITE CONSTRUCTION CO.**

**PART 1 – GENERAL**


- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.
- 1.3 NOTICE TO PROCEED
  - A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.
  - B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION**

- 3.1 FUNCTIONAL REQUIREMENTS:
  - A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.
  - B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.
  - C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES
  - D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:



PLANS PREPARED BY:




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Phone: 518-690-0790 | Fax: 518-690-0793  
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JOB NUMBER 526-104

PROJECT MANAGER:



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

ENGINEERING LICENSE:



DRAWING NOTICE:  
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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	06/28/18	MAP	0

SITE NAME:  
**CHAPLIN 2 /VZ**

SITE NUMBER:  
**CT33XC583**

SITE ADDRESS:  
**123 PALMER ROAD  
CHAPLIN, CT 06235**

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 ANTENNA 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 - ANTENNA ALIGNMENT TOOL (AAT)

PLANS PREPARED FOR:



PLANS PREPARED BY:

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JOB NUMBER 526-104

PROJECT MANAGER:



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SARATOGA SPRINGS, NY 12866  
OFFICE# (518) 308-3740

ENGINEERING LICENSE:



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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	06/28/18	MAP	0

SITE NAME:

CHAPLIN 2 /VZ

SITE NUMBER:

CT33XC583

SITE ADDRESS:

123 PALMER ROAD  
CHAPLIN, CT 06235

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
  8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
  9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.
  10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
  11. ALL AVAILABLE JURISDICTIONAL INFORMATION
  12. PDF SCAN OF REDLINES PRODUCED IN FIELD
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.
- 3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.
- A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.
1. CONCRETE MIX AND CYLINDER BREAK REPORTS.
  2. STRUCTURAL BACKFILL COMPACTION REPORTS.
  3. SITE RESISTANCE TO EARTH TEST.
  4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION
  5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.
  6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".
- B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;
1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.
  2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;
  3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS - PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.
  4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING - TOP AND BOTTOM; PHOTOS OF COAX GROUNDING---TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
  5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;
  6. SITE LAYOUT - PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.
  7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.
  8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.
  9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
  - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
  - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

- 3.1 WEEKLY REPORTS:
  - A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.
  - B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.
- 3.2 PROJECT CONFERENCE CALLS:
  - A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.
- 3.3 PROJECT TRACKING IN SMS:
  - A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.
- 3.4 ADDITIONAL REPORTING:
  - A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.
- 3.5 PROJECT PHOTOGRAPHS:
  - A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:
    1. SHELTER AND TOWER OVERVIEW.
    2. TOWER FOUNDATION(S) - FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).
    3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).
    4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).
    5. PHOTOS OF TOWER SECTION STACKING.
    6. CONCRETE TESTING / SAMPLES.
    7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.
    8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.
    9. SHELTER FOUNDATION---FORMS AND STEEL BEFORE POURING.
    10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.
    11. COAX CABLE ENTRY INTO SHELTER.
    12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.
    13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.
    14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.
    15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.
    16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.
    17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.
    18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.
    19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
    20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.
    21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.
    22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
    23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).

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



PLANS PREPARED BY:



PROJECT MANAGER:



ENGINEERING LICENSE:



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REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT		06/28/18	MAP	0

SITE NAME:

CHAPLIN 2 /VZ

SITE NUMBER:

CT33XC583

SITE ADDRESS:

123 PALMER ROAD  
CHAPLIN, CT 06235

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-3

PLANS PREPARED FOR:



PLANS PREPARED BY:

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JOB NUMBER 526-104

PROJECT MANAGER:

**AIRSMITH**  
DEVELOPMENT  
32 CLINTON ST.  
SARATOGA SPRINGS, NY 12866  
OFFICE: (518) 306-3740

ENGINEERING LICENSE:



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DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	06/28/18	MAP	0

SITE NAME:

CHAPLIN 2 /VZ

SITE NUMBER:

CT33XC583

SITE ADDRESS:

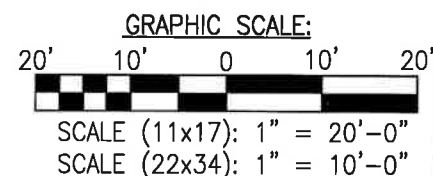
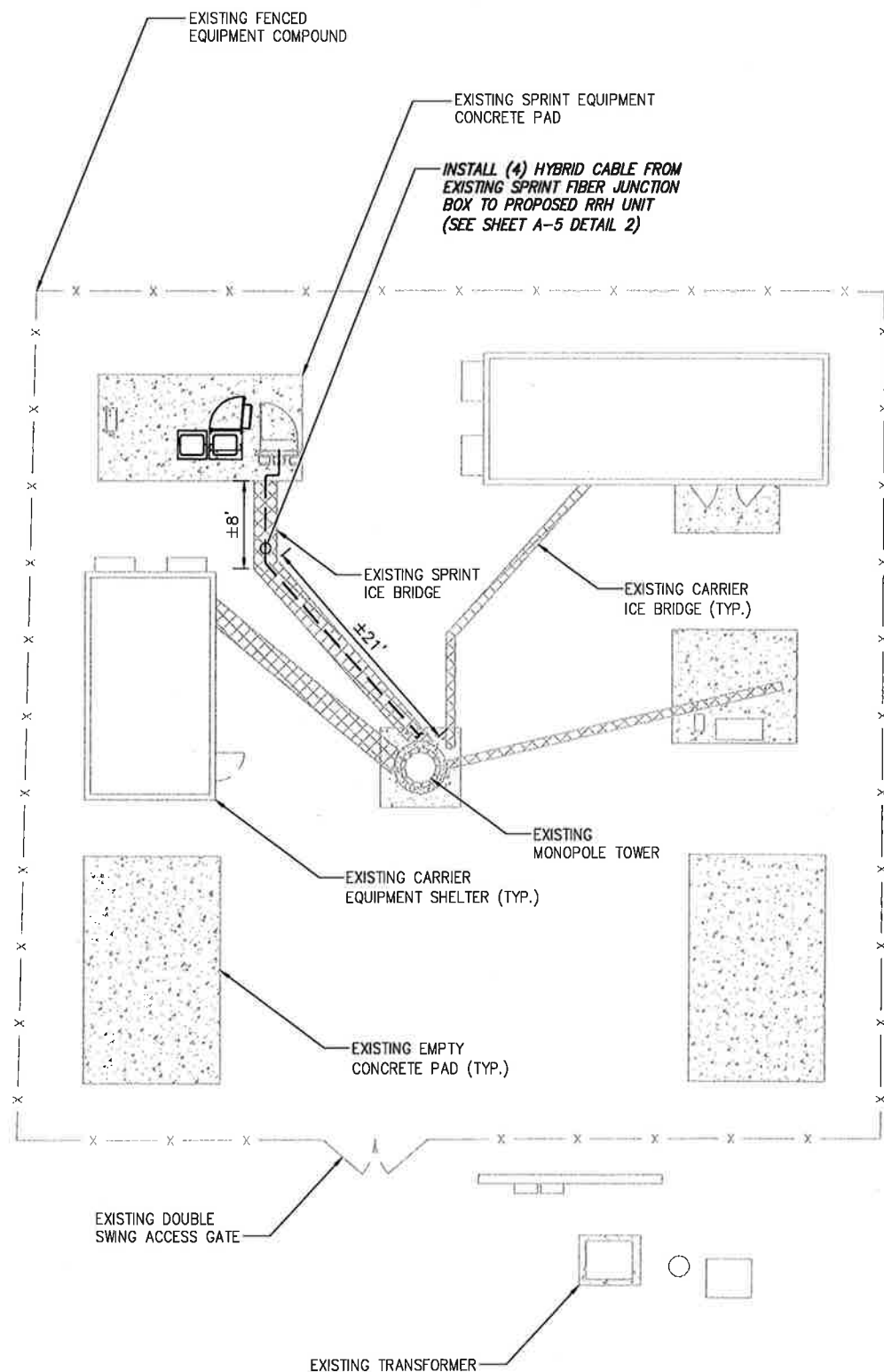
123 PALMER ROAD  
CHAPLIN, CT 06235

SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

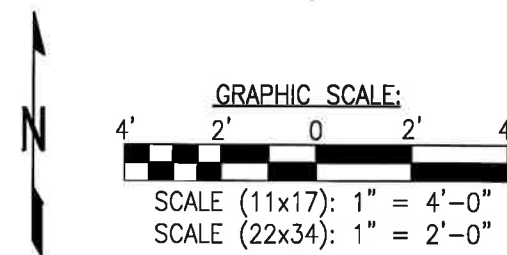
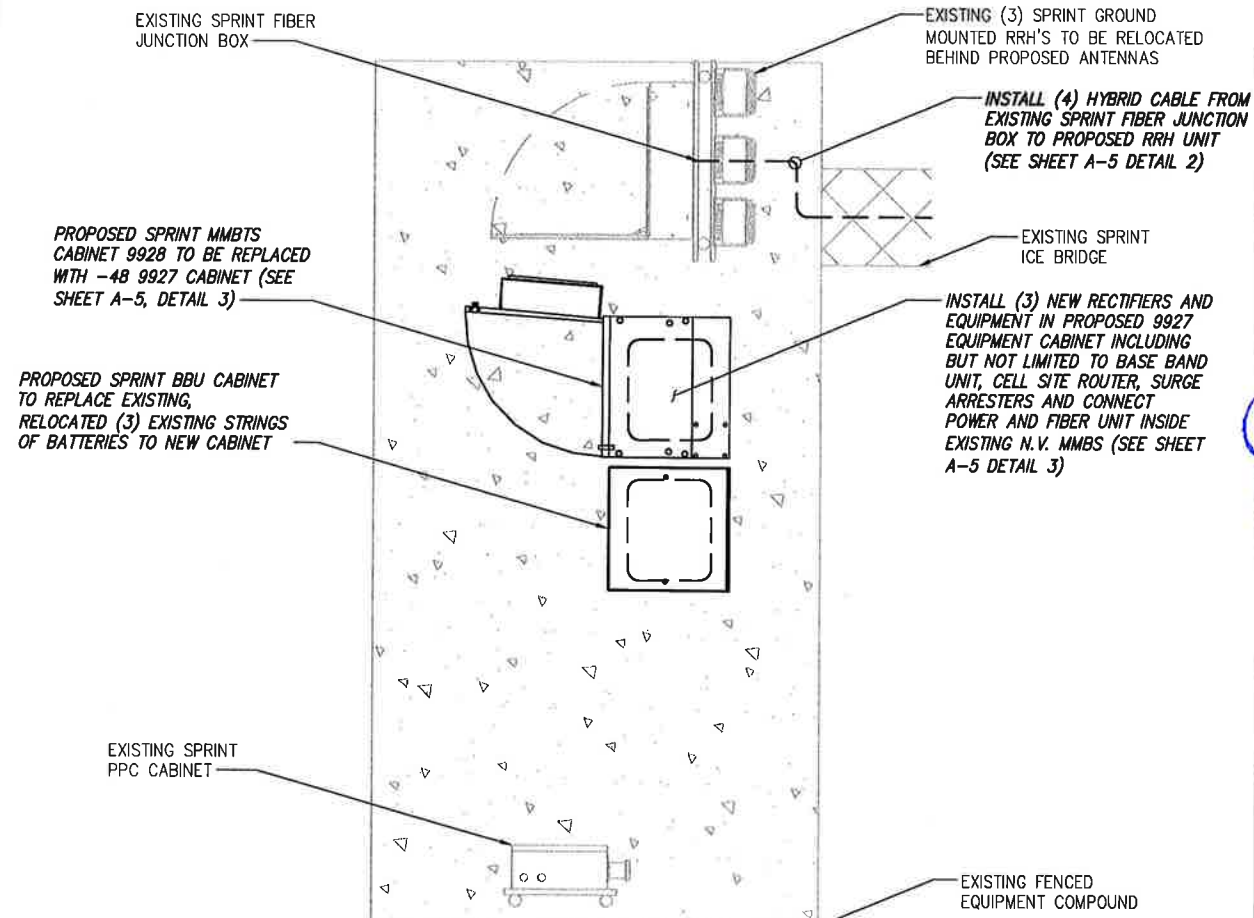
A-1



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

OVERALL SITE PLAN

SCALE: AS NOTED 1

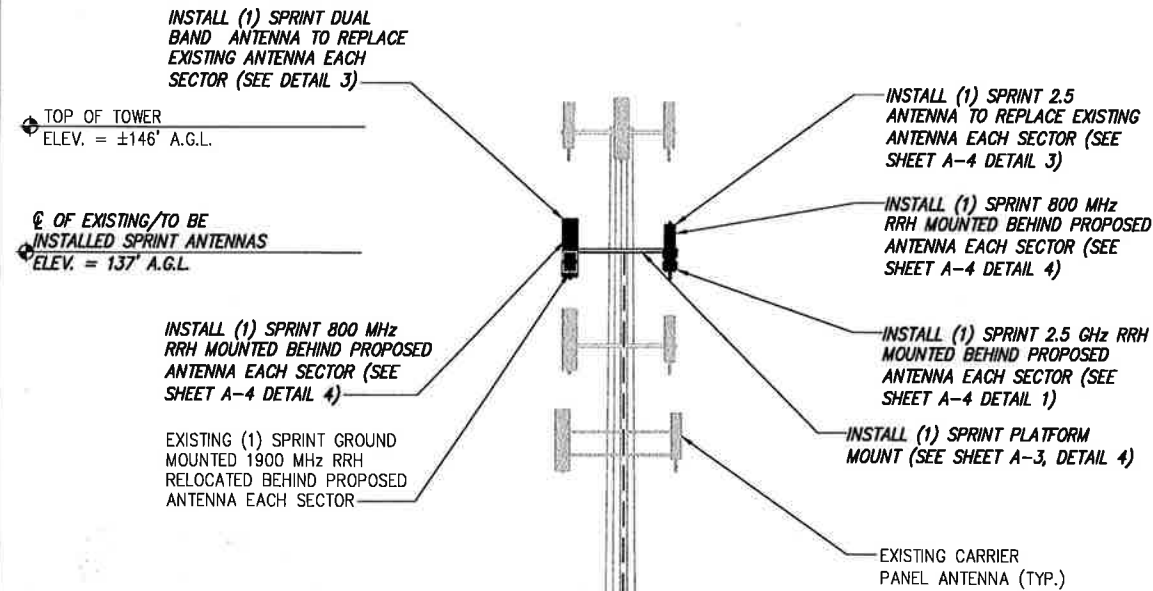


SPRINT EQUIPMENT PLAN

SCALE: AS NOTED 2

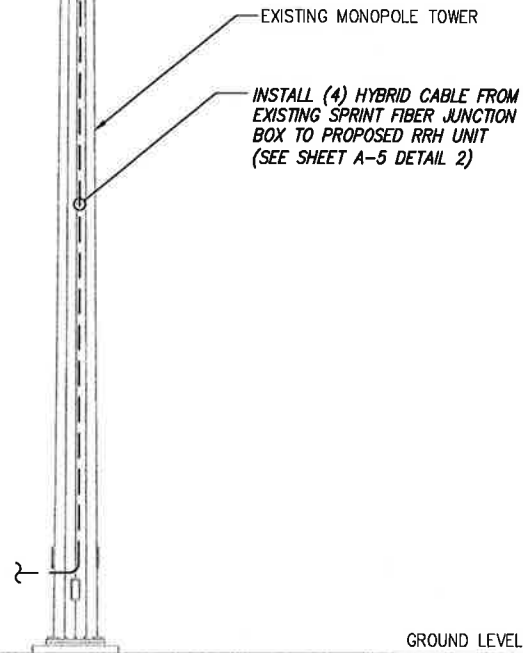
**NOTE:**  
 INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

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



**NOTE:**

- STRUCTURAL ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "STRUCTURAL ANALYSIS REPORT, CUSTOMER SITE NUMBER: "CT33XC583", DATED: "MAY 30, 2018". ACCORDING TO RESULTS OF STRUCTURAL MODIFICATION REPORT, THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.
- MOUNT ANALYSIS COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "MOUNT ANALYSIS REPORT" DATED: "MAY 12, 2018". ACCORDING TO THE RESULTS OF THE MOUNT ANALYSIS REPORT CONTINGENCIES ARE REQUIRED TO PASS:
- \*\* REPLACE EXISTING MOUNT WITH (1) SITEPRO1 RMQP-496-HK PRIOR TO INSTALLATION OF PROPOSED APPURTENANCES



TOWER ELEVATION

NO SCALE

1

SITE LOADING CHART

SECTOR	EXISTING/PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	PROPOSED	APXVTM14-ALU-120	RFS	30°	1	-	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1	±137' AGL	
	PROPOSED	NNVV-65B-R4	COMMSCOPE	30°	1	-	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1		
	EXISTING	60"x6" PANEL	GENERIC	30°	2	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
BETA	PROPOSED	APXVTM14-ALU-120	RFS	120°	1	-	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1	±187*	±137' AGL
	PROPOSED	NNVV-65B-R4	COMMSCOPE	120°	1	-	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1		
	EXISTING	60"x6" PANEL	GENERIC	120°	2	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
GAMMA	PROPOSED	APXVTM14-ALU-120	RFS	210°	1	-	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1	±137' AGL	
	PROPOSED	NNVV-65B-R4	COMMSCOPE	210°	1	-	(1) TD-RRH8X20-25 W/ SOLAR SHIELD	SEE SHEET A-5 DETAIL 1		
	EXISTING	60"x6" PANEL	GENERIC	210°	2	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		

PROJECT SCOPE:

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

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

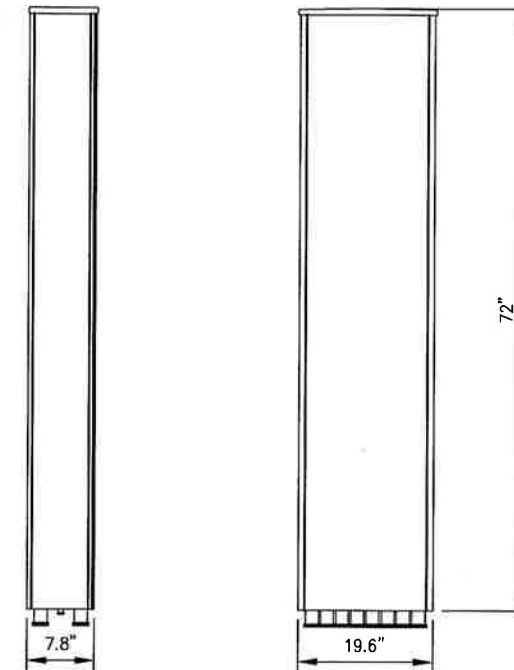
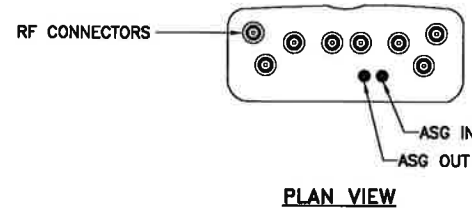
SITE LOADING CHART

NO SCALE

2

ANTENNA COMMSCOPE NNVV-65B-R4

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



SIDE VIEW

FRONT VIEW

DUAL BAND ANTENNA DETAIL

NO SCALE

3

PLANS PREPARED FOR:



PLANS PREPARED BY:

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 JOB NUMBER 526-104

PROJECT MANAGER:

**AIRSMITH**  
 DEVELOPMENT

32 CLINTON ST.  
 SARATOGA SPRINGS, NY 12866  
 OFFICER, (518) 308-3740

ENGINEERING LICENSE:



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REVISIONS:	DESCRIPTION	DATE	BY	REV.

ISSUED FOR PERMIT

06/28/18 MAP 0

SITE NAME:

CHAPLIN 2 /VZ

SITE NUMBER:

CT33XC583

SITE ADDRESS:

123 PALMER ROAD  
 CHAPLIN, CT 06235

SHEET DESCRIPTION:

TOWER ELEVATION

SHEET NUMBER:

A-2



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REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT		06/28/18	MAP	0

SITE NAME:  
**CHAPLIN 2 /VZ**

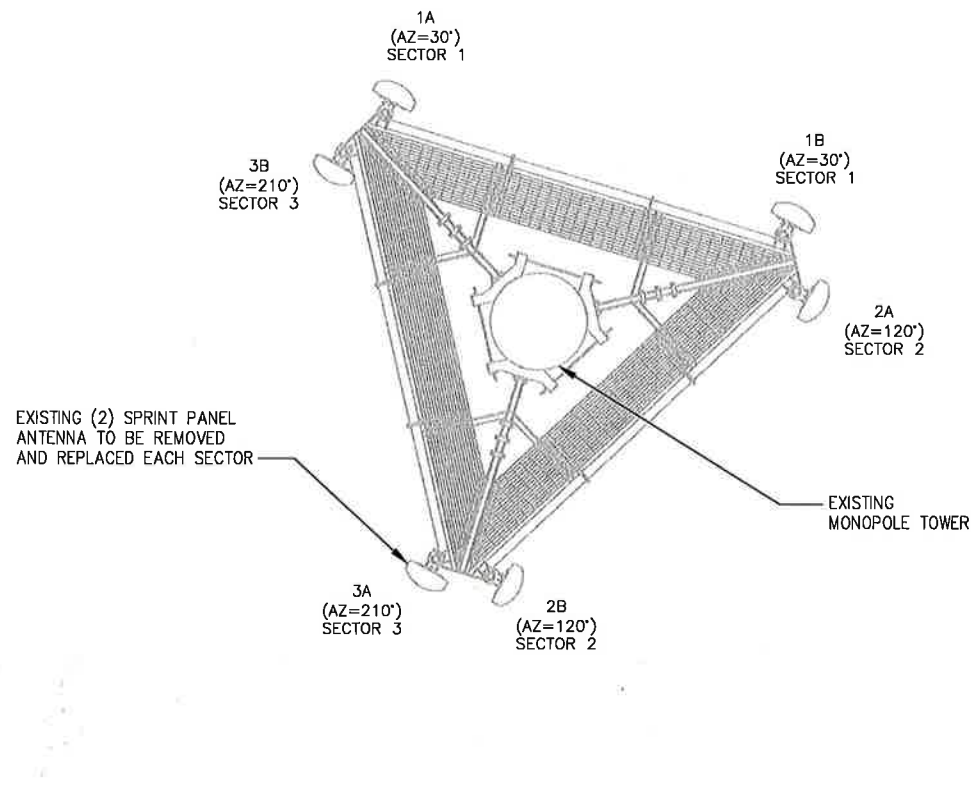
SITE NUMBER:  
**CT33XC583**

SITE ADDRESS:  
**123 PALMER ROAD  
CHAPLIN, CT 06235**

SHEET DESCRIPTION:  
**ANTENNA LAYOUT  
& MOUNTING DETAILS**

SHEET NUMBER:  
**A-3**

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

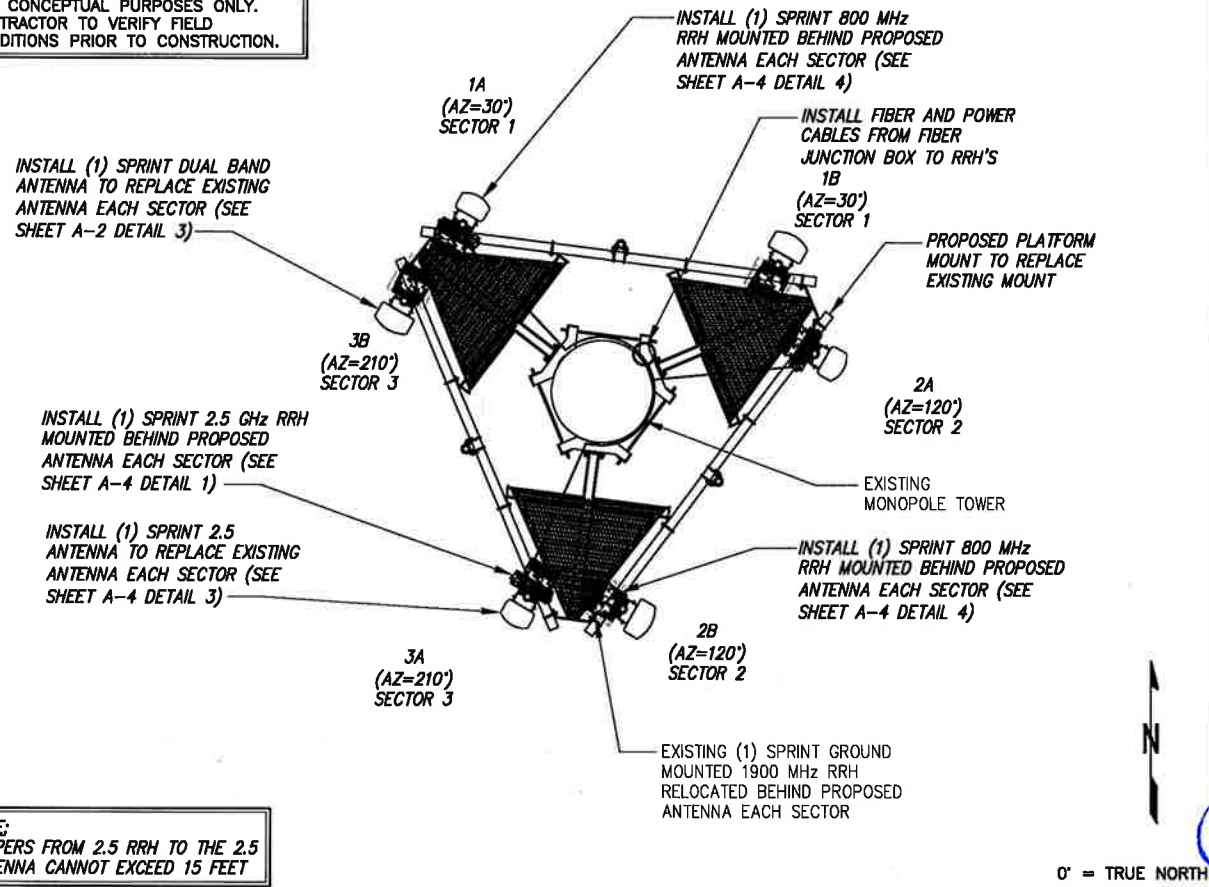


EXISTING ANTENNA LAYOUT

NO SCALE

1

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



FINAL ANTENNA AND RRH LAYOUT

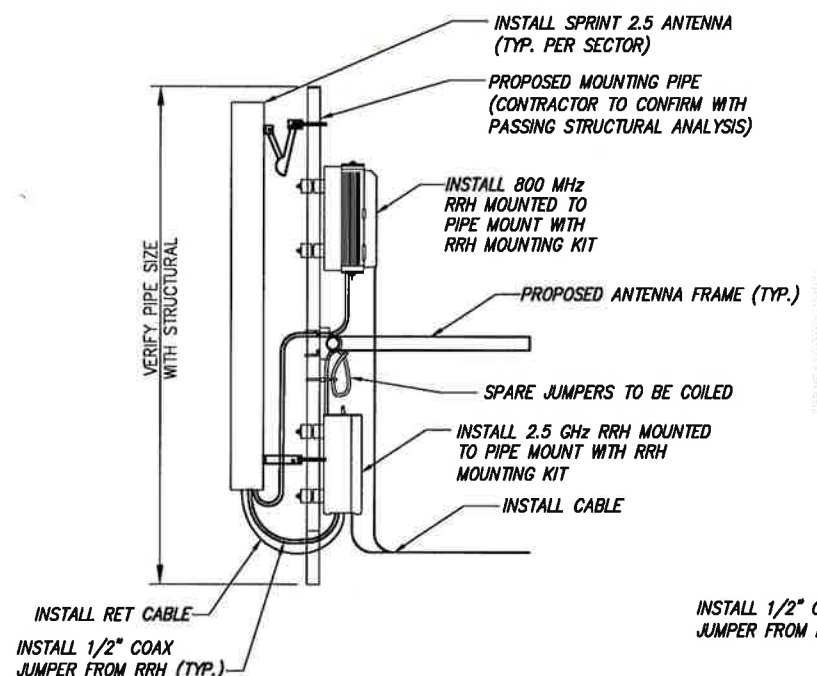
NO SCALE

2

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

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

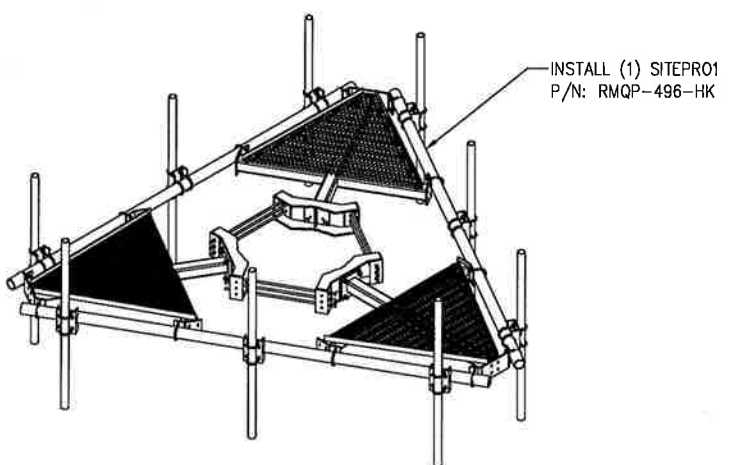
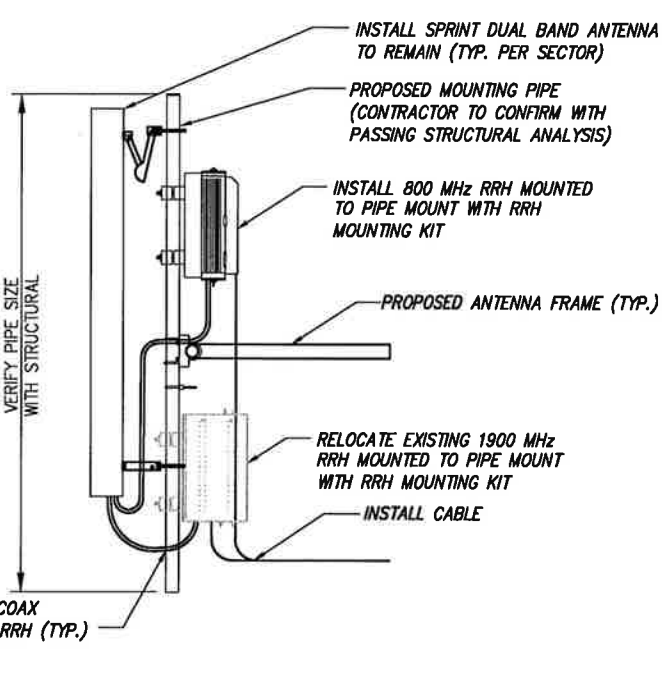
- NOTES:
- CUT DC CONDUCTORS TO LENGTH.
  - COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
  - DO NOT EXCEED BEND RADIUS.



TYPICAL ANTENNA & RRH MOUNTING DETAILS

NO SCALE

3



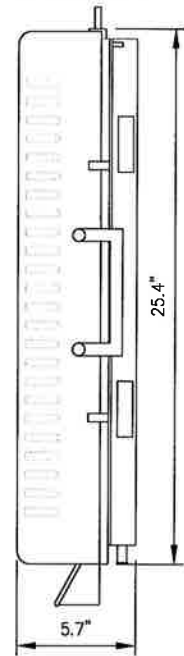
PLATFORM MOUNT DETAIL

NO SCALE

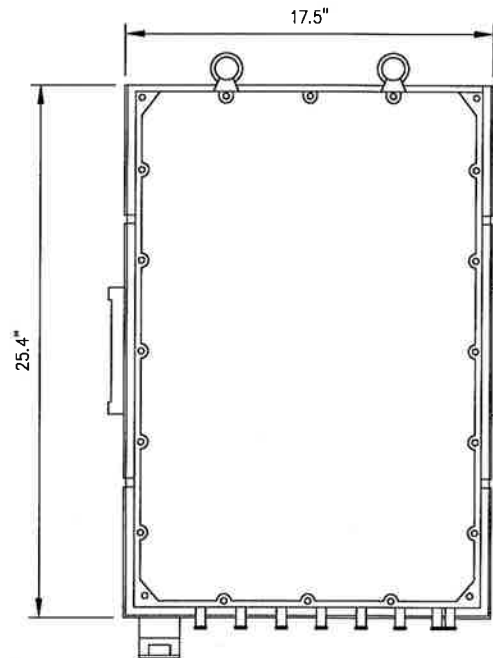
4

RRH: ALCATEL LUCENT TD-RRH8X20

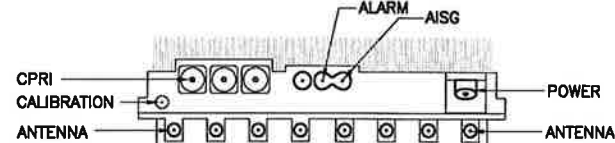
COLOR: LIGHT GREY  
WEIGHT: 70 LBS.



SIDE VIEW



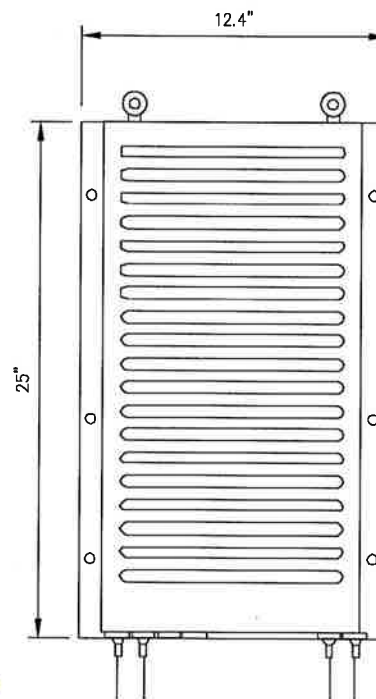
FRONT VIEW



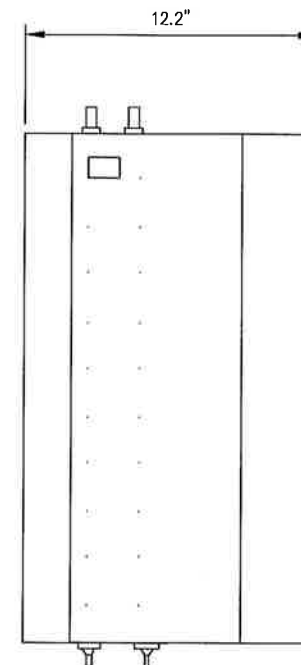
PLAN VIEW

**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.

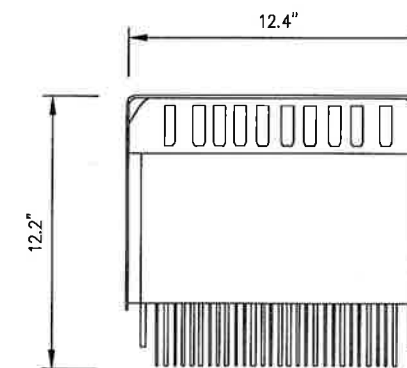
RRH: ALCATEL LUCENT 1900 MHz  
COLOR: LIGHT GREY  
WEIGHT: 70 LBS.  
(INCLUDING OPTIONAL SOLAR SHIELD)



FRONT VIEW



SIDE VIEW



TOP VIEW

2.5 RRH'S

NO SCALE

1

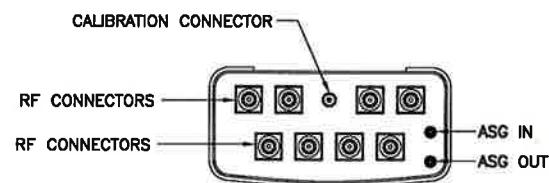
1900 MHz RRH

NO SCALE

2

ANTENNA RFS APXVTM14-ALU-120

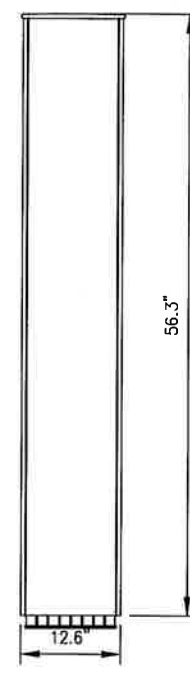
RADOME MATERIAL: ASA  
RADOME COLOR: LIGHT GREY  
DIMENSIONS, HxWxD.in(mim): 56.3"x12.6"x6.3" (1549x439x300mm)  
WEIGHT: 56.2 lbs  
CONNECTORS: (8) 4.1/9.5 DIN FEMALE  
(1) NF - CALIBRATION CONNECTOR



PLAN VIEW

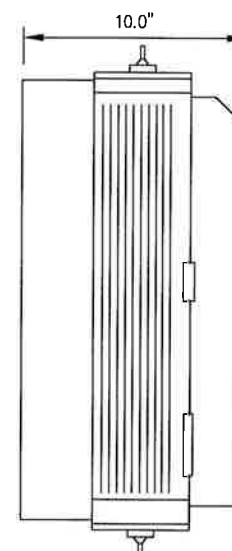


SIDE VIEW

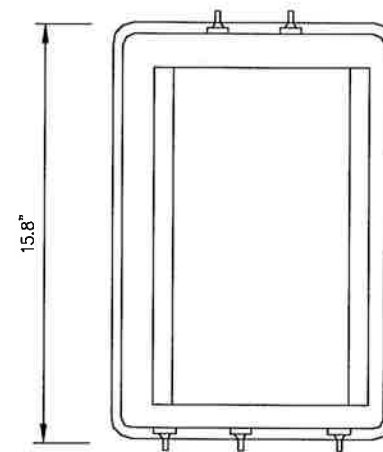


FRONT VIEW

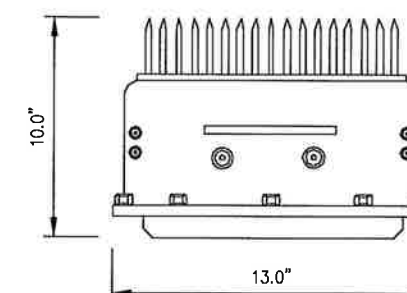
RRH: ALCATEL LUCENT RRH 800 MHz 2x50W  
COLOR: LIGHT GREY  
WEIGHT: 53 LBS.



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 ANTENNA DETAIL

NO SCALE

3

800 MHz RRH

NO SCALE

4

PLANS PREPARED FOR:



PLANS PREPARED BY:

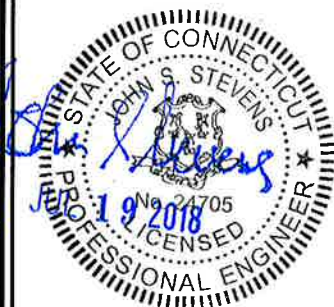
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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	06/28/18	MAP	0

SITE NAME:

CHAPLIN 2 /VZ

SITE NUMBER:

CT33XC583

SITE ADDRESS:

123 PALMER ROAD  
CHAPLIN, CT 06235

SHEET DESCRIPTION:

EQUIPMENT &  
MOUNTING DETAILS

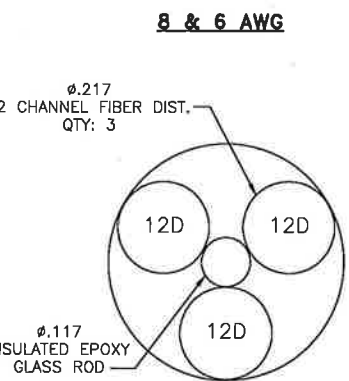
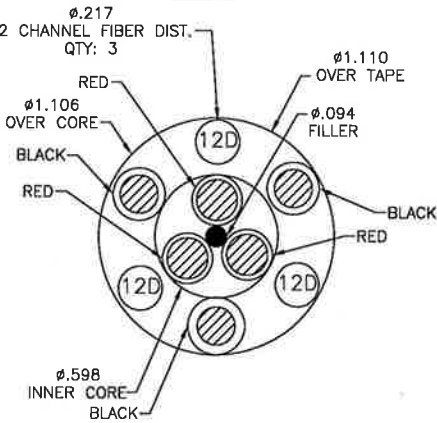
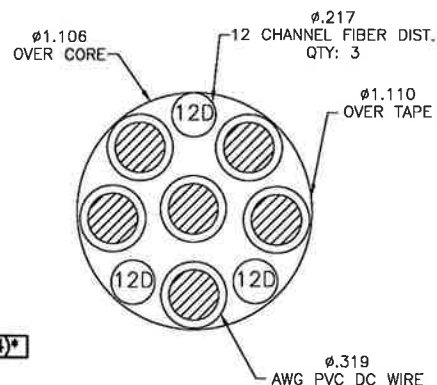
SHEET NUMBER:

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	
6 AWG Power	Hybrid cable MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	Hybrid cable MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft



**RFS HYBRIFLEX JUMPER CABLE SCHEDULE**

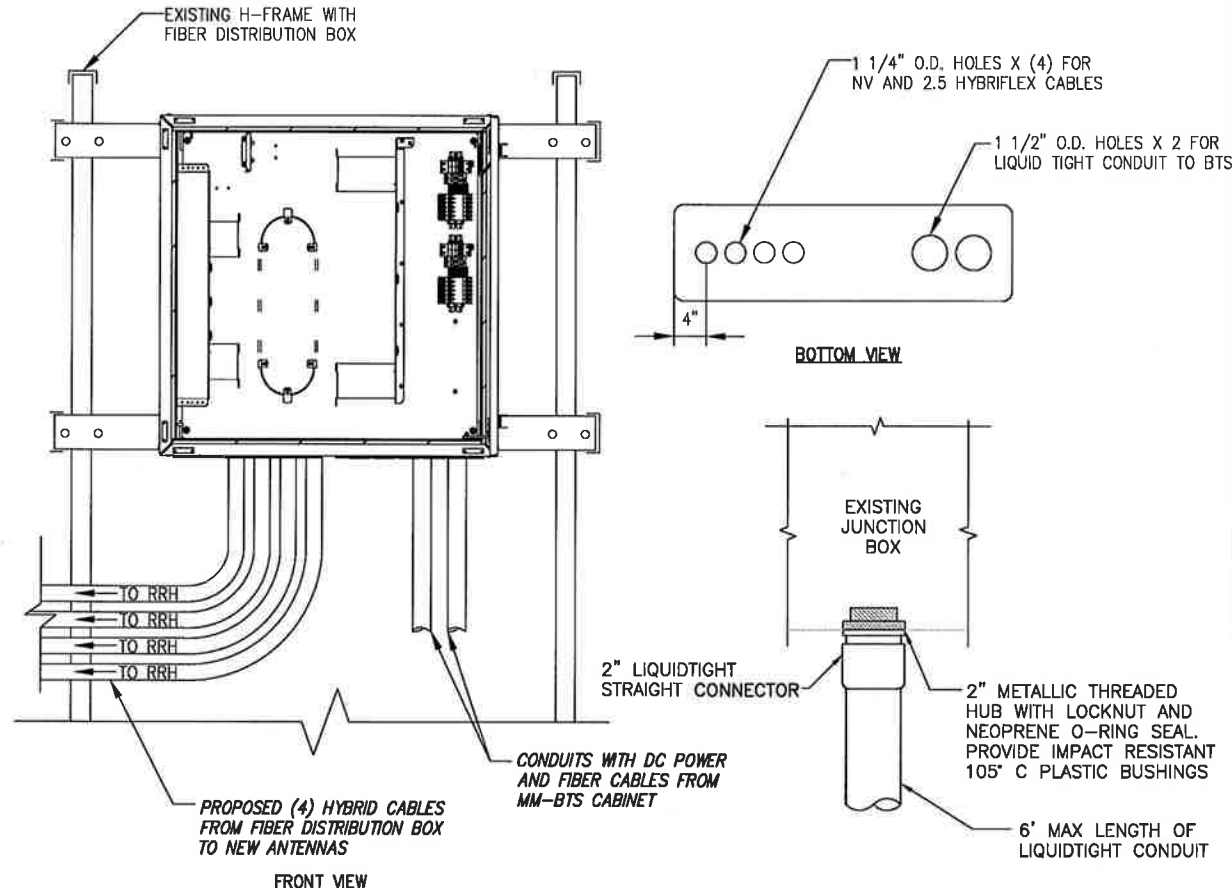
Fiber Only	Hybrid Jumper cable MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	Hybrid Jumper cable MN: HBF058-08U1M3-5F1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

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

\* 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.

**800/1900/2500 CABLE CROSS SECTION DATA**

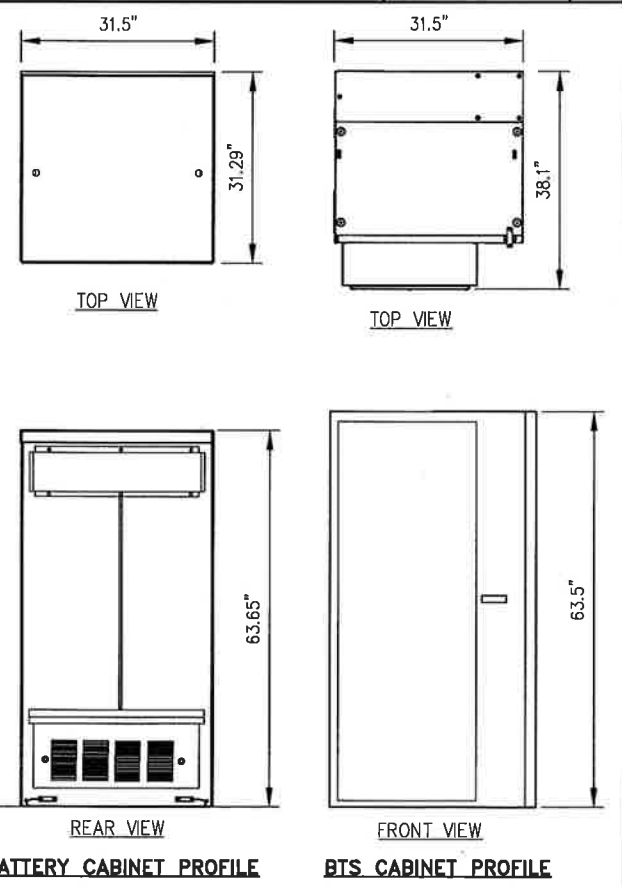
NO SCALE 1



**FIBER JUNCTION BOX & PENETRATION**

NO SCALE 2

**DESIGN CRITERIA:**  
2015 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION  
WIND SPEED (ASCE-7-10) 115 MPH  
EXPOSURE B  
IMPORTANCE FACTOR 1.0  
SEISMIC SITE CLASS D  
S<sub>s</sub>=0.20 S<sub>w</sub>=0.07  
SEISMIC IMPORTANCE FACTOR 1.0  
SEISMIC DESIGN CATEGORY B  
9927 MM BTS CABINET WEIGHT: 594 LBS.  
EMERSON BATTERY CABINET SPECIFICATIONS:  
(31.29"x31.5"x63.65")  
WEIGHTS:  
SHIPPING WEIGHT: 600 LBS.  
LIFT WEIGHT: 540 LBS.  
TOTAL WEIGHT: 2640 LBS (WITH BATTERIES)  
INDIVIDUAL BATTERY WEIGHT: 105 LBS  
(DO NOT LIFT WITH BATTERIES IN CABINET)  
**MATERIAL SPECIFICATIONS**  
C-, M-, AND ANGLE SHAPES: ASTM A36  
HIGH-STRENGTH BOLTS: ASTM A325SC OR (A325N)  
STRUCTURAL WF SHAPES: ASTM A572-GR50  
TUBE STEEL & PIPE COLUMNS: ASTM A500, GRADE B  
WELDING ELECTRODES: E70XX  
W - SHAPES: ASTM A992, GRADE 50  
U-BOLTS: ASTM A36



**BATTERY CABINET PROFILE BTS CABINET PROFILE**

NO SCALE 3

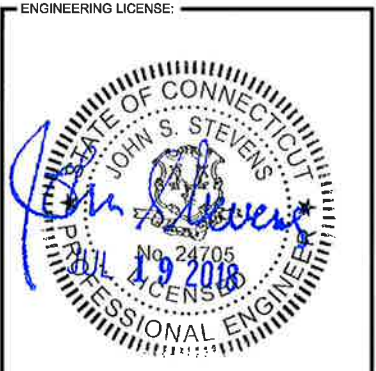
**NEW EQUIPMENT IN EXISTING CABINET**

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PLANS PREPARED BY:  
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www.infinigy.com  
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DEVELOPMENT  
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REVISIONS:	DESCRIPTION	DATE	BY	REV.
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SITE NAME:  
**CHAPLIN 2 /VZ**

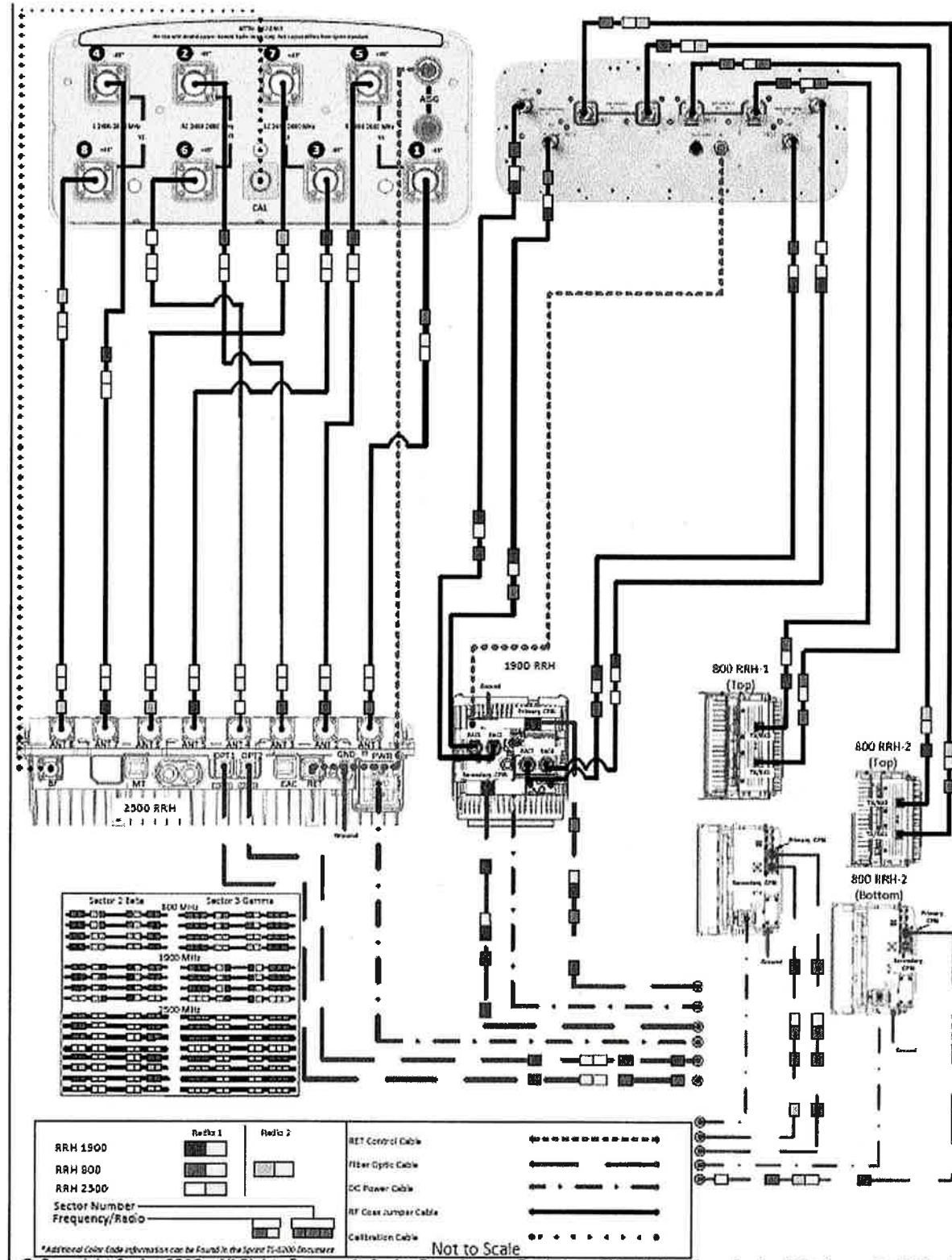
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**CT33XC583**

SITE ADDRESS:  
**123 PALMER ROAD  
CHAPLIN, CT 06235**

SHEET DESCRIPTION:  
**CIVIL DETAILS**

SHEET NUMBER:  
**A-5**

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



PLUMBING DIAGRAM

NO SCALE

1

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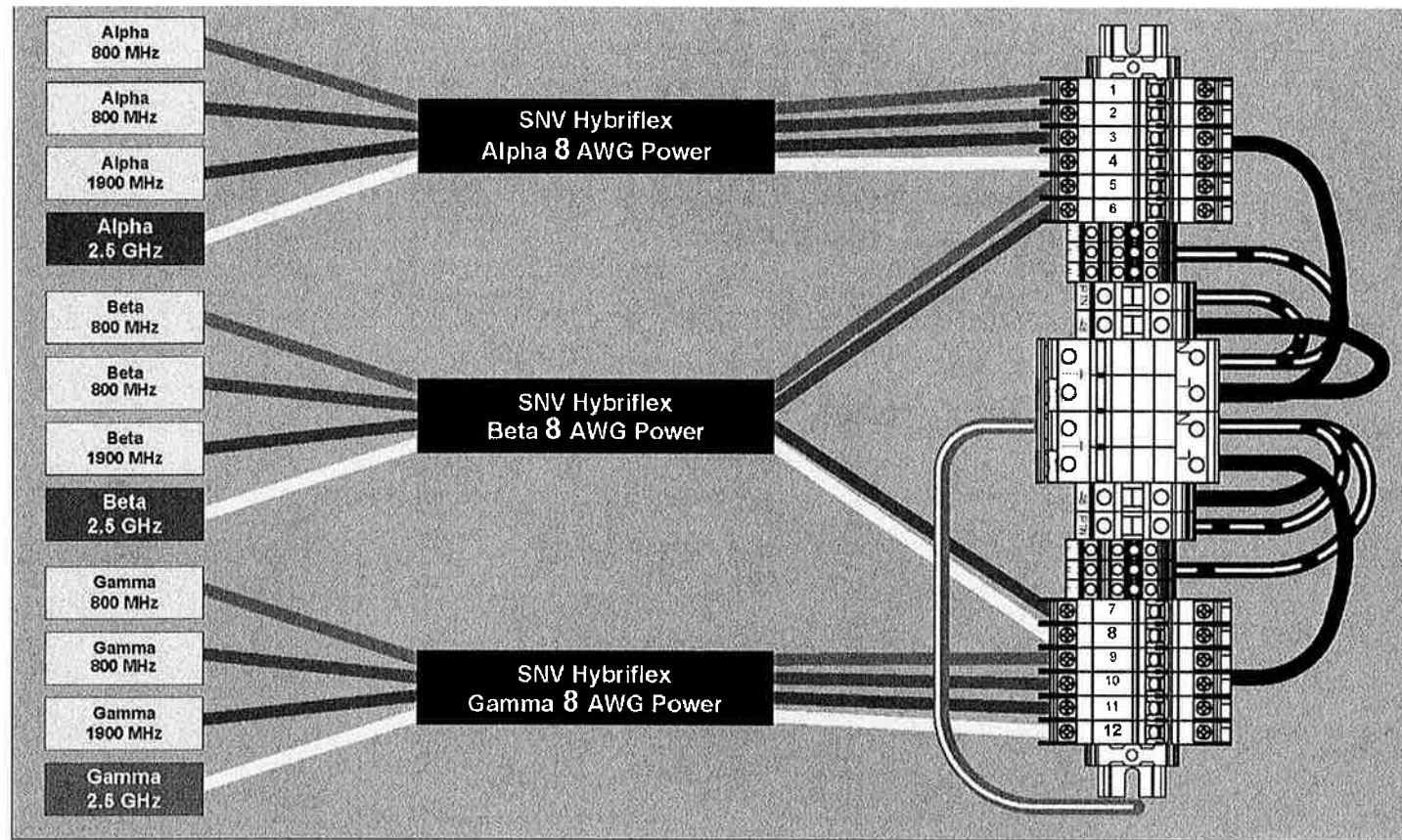
123 PALMER ROAD  
CHAPLIN, CT 06235

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

A-6



RRH TO DISTRIBUTION BOX POWER CONNECTIVITY

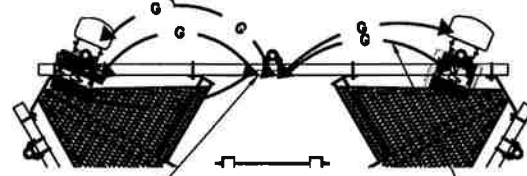
NO SCALE

1

**LEGEND:**

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

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



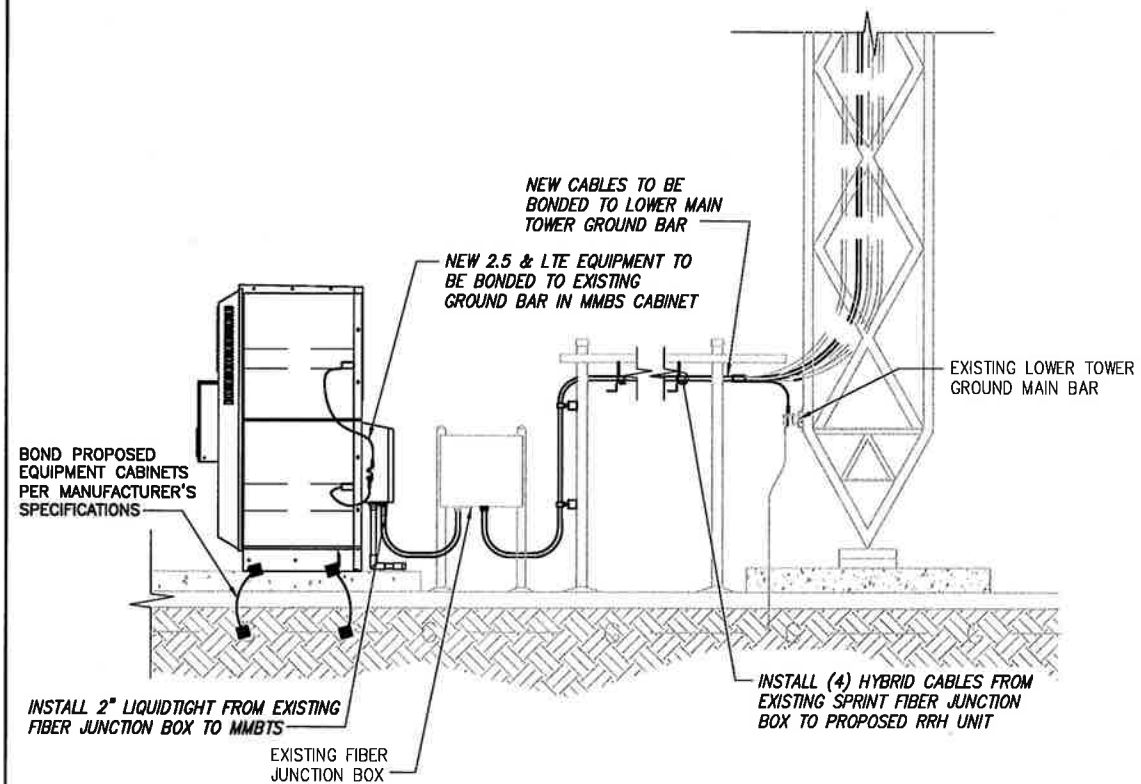
EXISTING SPRINT TOWER GROUND BAR (CONTRACTOR TO VERIFY)

BOND RRH TO SECTOR BAR PER MANUFACTURER'S SPECIFICATIONS

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 NAME:

CHAPLIN 2 /VZ

SITE NUMBER:

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SITE ADDRESS:

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CHAPLIN, CT 06235

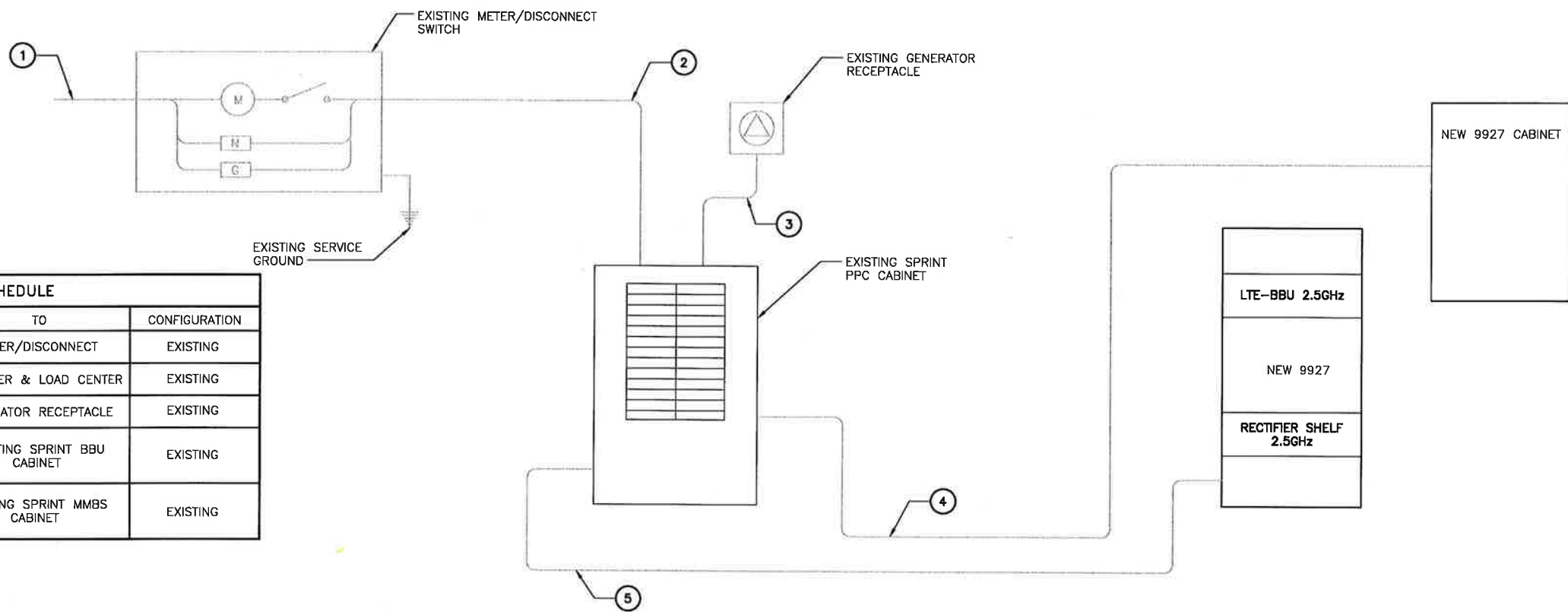
SHEET DESCRIPTION:

ELECTRICAL &  
GROUNDING PLAN

SHEET NUMBER:

E-1

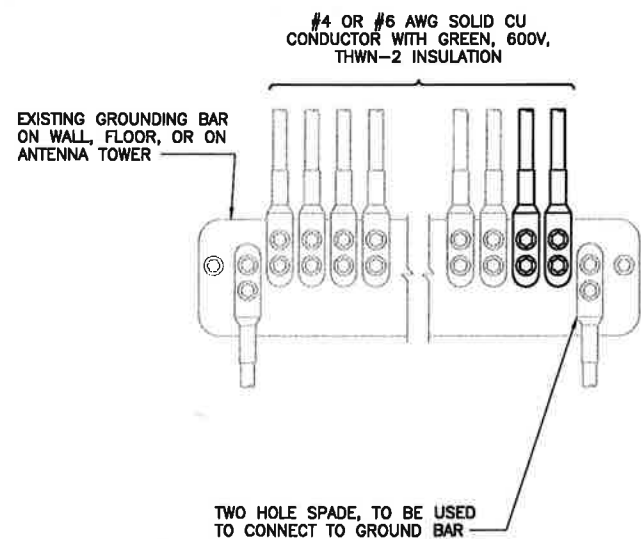
**NOTES**  
CG SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.



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

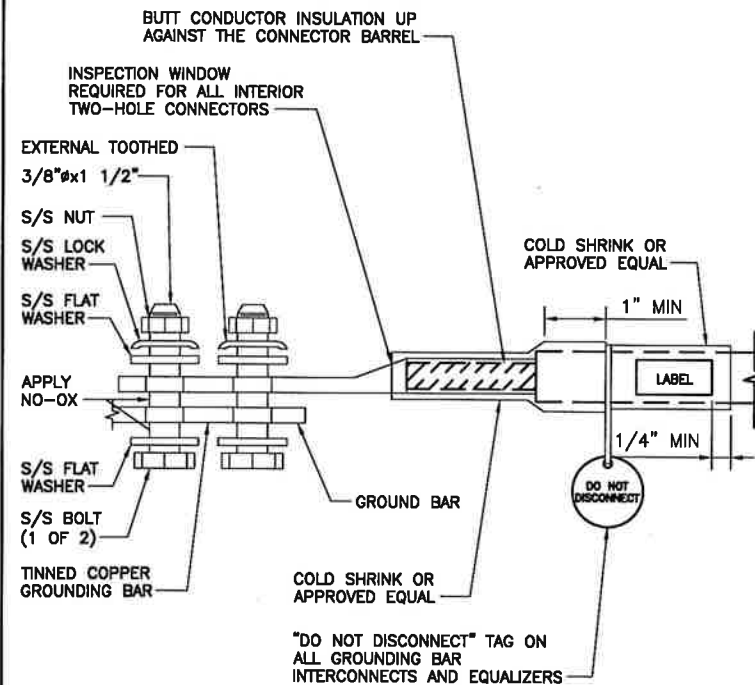
**ELECTRICAL ONE-LINE DIAGRAM**

NO SCALE 1



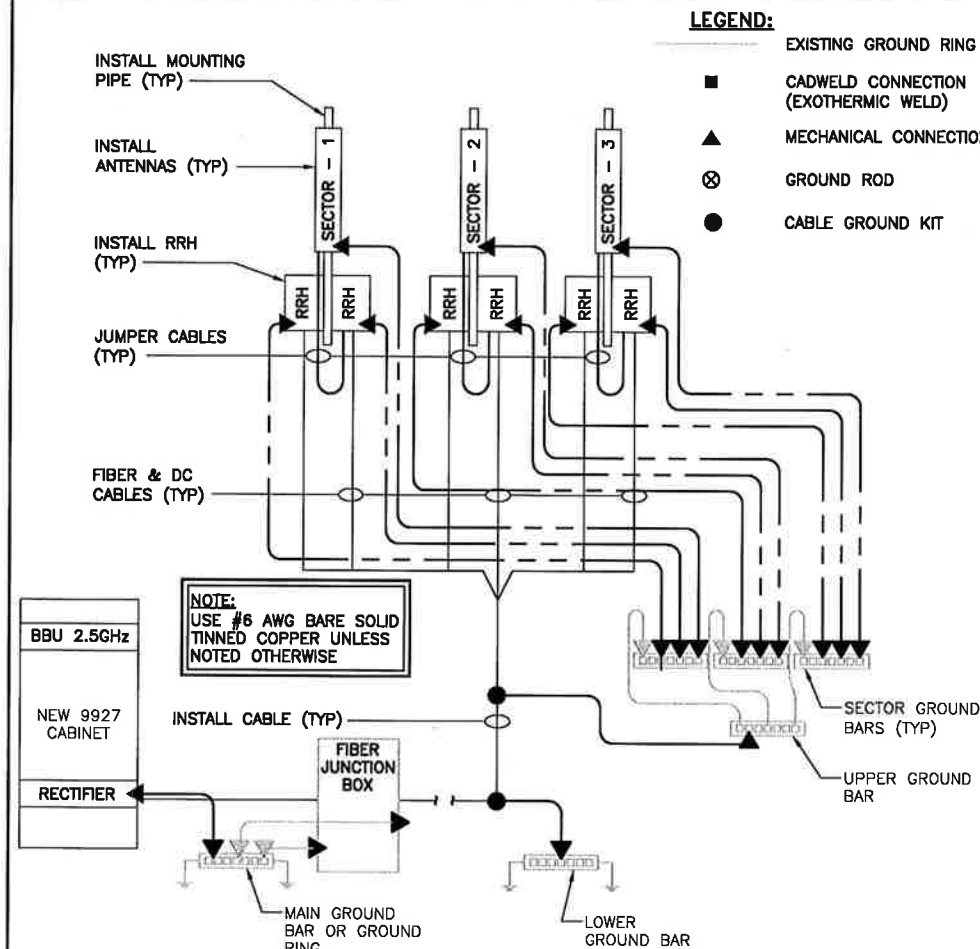
**NOTES**

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.



**TWO HOLE LUG**

NO SCALE 3



**GROUNDING RISER DIAGRAM**

NO SCALE 4

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SITE NUMBER:

CT33XC583

SITE ADDRESS:

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CHAPLIN, CT 06235

SHEET DESCRIPTION:

ELECTRICAL &  
GROUNDING DETAILS

SHEET NUMBER:

E-2

**INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR**

NO SCALE

2