EM-SPRINT-126-180816

ORIGINAL

AIROSMITH DEVELOPMENT
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August 15th, 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 14 OXFORD DRIVE, SHELTON, CONNECTICUT – CT03XC366 (lat. 41° 16' 48.741" N, long. -73° 11' 07.441" W)

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the 155'-foot level) on an existing (200'-foot ~~Self Support~~ Tower) at the above-referenced address. The property and the tower are owned by AMERICAN TOWER CORPORATION.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace three (3) antennas, add an additional three (3) antennas, and add three (3) 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 MARK LAURETTI, MAYOR and RICK SHULTZ, PLANNING AND ZONING ADMINISTRATOR of the Town of SHELTON. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the tower and owns the land.

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

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

32 Clinton Street, Saratoga Springs, NY 12866
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an extension of the site boundaries.

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

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

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

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

Kind Regards,

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

Attachment

CC: Mark Lauretti (MAYOR, Shelton, CT)
Justine Paul (American Tower Corporation)
Rick Shultz (Planning and Zoning Administrator, Shelton, CT)

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Sent To Mark Lauretti

Street and Apt. No., or PO Box No. 54 Hill St

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

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Total Postage and Fees $6.70

Sent To Justin Paul

Street and Apt. No., or PO Box No. 10 Presidential Way

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Sent To Rich Shatz

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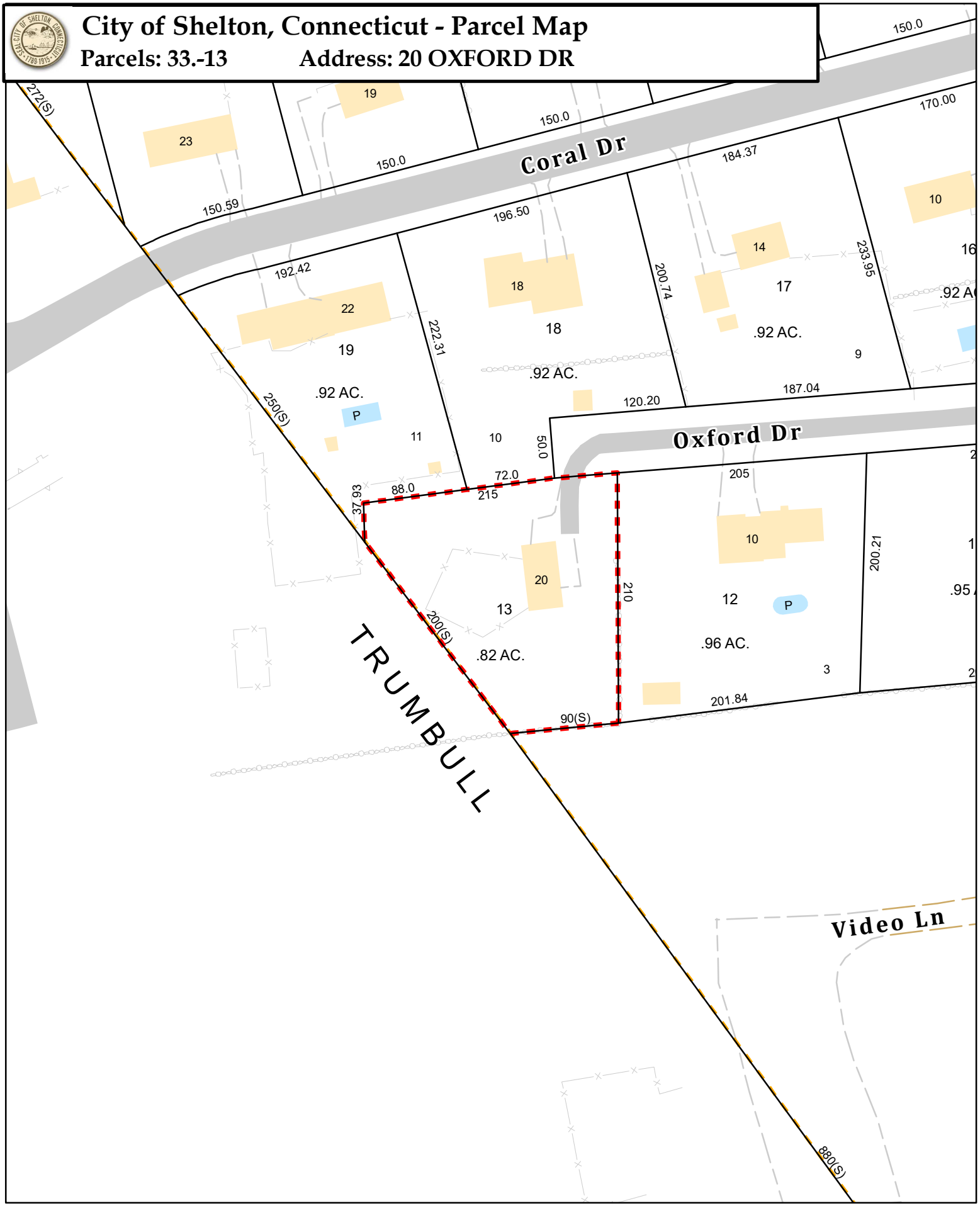
CT03XC366

7018 0680 0002 1201 5203

City of Shelton, Connecticut - Parcel Map

Parcels: 33.-13 **Address: 20 OXFORD DR**



N

Approximate Scale: 1:1,200

50 0 50 100 Feet

Map Produced
April 2017

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The City of Shelton and its mapping contractors assume no legal responsibility for the information contained herein.

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

SPRINT Existing Facility

Site ID: CT03XC366

Booth Hill
14 Oxford Drive
Shelton, CT 06484

August 5, 2018

EBI Project Number: 6218005335

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.24 %

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

EBI Consulting
environmental | engineering | due diligence

August 5, 2018

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

Emissions Analysis for Site: **CT03XC366 – Booth Hill**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **14 Oxford Drive, Shelton, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **14 Oxford Drive, Shelton, 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 Nokia AAHC** 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 **155 feet** above ground level (AGL) for **Sector A**, **155 feet** above ground level (AGL) for **Sector B** and **155 feet** above ground level (AGL) for Sector C.

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

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	**155 feet**	Height (AGL):	**155 feet**	Height (AGL):	**155 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	**1.47 %**	Antenna B1 MPE%	**1.47 %**	Antenna C1 MPE%	**1.47 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Nokia AAHC	Make / Model:	Nokia AAHC	Make / Model:	Nokia AAHC
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**155 feet**	Height (AGL):	**155 feet**	Height (AGL):	**155 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**0.83 %**	Antenna B2 MPE%	**0.83 %**	Antenna C2 MPE%	**0.83 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.30 %**
AT&T	3.02 %
Clearwire	0.11 %
Dept. Pub. Safety	0.14 %
PageNet	0.13 %
Nextel	0.56 %
Dept. Homeland Security	0.73 %
Light Squared, Inc	0.25 %
Site Total MPE %:	**7.24 %**

SPRINT Sector A Total:	2.30 %
SPRINT Sector B Total:	2.30 %
SPRINT Sector C Total:	2.30 %
Site Total:	7.24 %

SPRINT _ Frequency Band / Technology (Per Sector)	**# Channels**	**Watts ERP (Per Channel)**	**Height (feet)**	**Total Power Density ($\mu W/cm^2$)**	**Frequency (MHz)**	**Allowable MPE ($\mu W/cm^2$)**	**Calculated % MPE**
Sprint 850 MHz CDMA	1	376.73	155	0.61	850 MHz	567	0.11%
Sprint 850 MHz LTE	2	941.82	155	3.05	850 MHz	567	0.54%
Sprint 1900 MHz (PCS) CDMA	5	511.82	155	4.14	1900 MHz (PCS)	1000	0.41%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	155	4.14	1900 MHz (PCS)	1000	0.41%
Sprint 2500 MHz (BRS) LTE	8	639.78	155	8.29	2500 MHz (BRS)	1000	0.83%
						Total:	**2.30%**

Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	2.30 %
Sector B:	2.30 %
Sector C:	2.30 %
SPRINT Maximum MPE % (per sector):	2.30 %
Site Total:	7.24 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.24 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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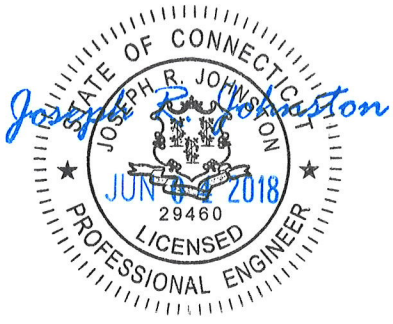
1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Mount Analysis Report

June 2, 2018

Site Number	CT03XC366
Infinigy Job Number	526-104
Client	Airosmith
Carrier	Sprint
Site Location	14 Oxford Drive / Booth Hill Rd Shelton , CT 06484 41.28016° N NAD83 73.18546° W NAD83
Mount Centerline EL.	155.0 ft
Mount Classification	Pipe Mount
Usage	**44.7%**
Overall Result	**Pass**
Notes	**Install 2.875" OD Sch 40 mount pipe to existing brackets. Bottom of panel to be no greater than 12" from nearest tower bracket.**

Upon reviewing the results of this analysis, it is our opinion that the mount meets the specified TIA code requirements. The mounts and connections 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

Contents

Introduction

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

Supporting Documentation

Colo App	ATC Project # OAA715175, dated April 13, 2018

Analysis Code Requirements

Wind Speed	97 mph (3-Second Gust, V_{ASD}) / 125 mph (3-Second Gust, V_{ULT})
Wind Speed w/ ice	50 mph (3-Second Gust, V_{ASD}) w/ 3/4" ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2012 IBC
Structure Class	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the mount meets the specified TIA code requirements. The mounts and connections 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 | www.infinigy.com

Final Configuration Loading

Mount CL (ft)	Rad. HT (ft)	Vert. O/S (ft)	Horiz. O/S (ft)[1]	Qty	Appurtenance[2],[3]	Carrier
155.0	155.0	0.0	N/A	3	RFS APXVSPP18-C-A20	Sprint
				3	Nokia AAHC	
				6	Alcatel-Lucent 800 MHz 2x50 RRH	
				3	Alcatel-Lucent TD-RRH 8x20	

(1)Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower.
(2)Radios are mounted behind antennas at respective locations see appended documents for vertical locations.

Structure Usages

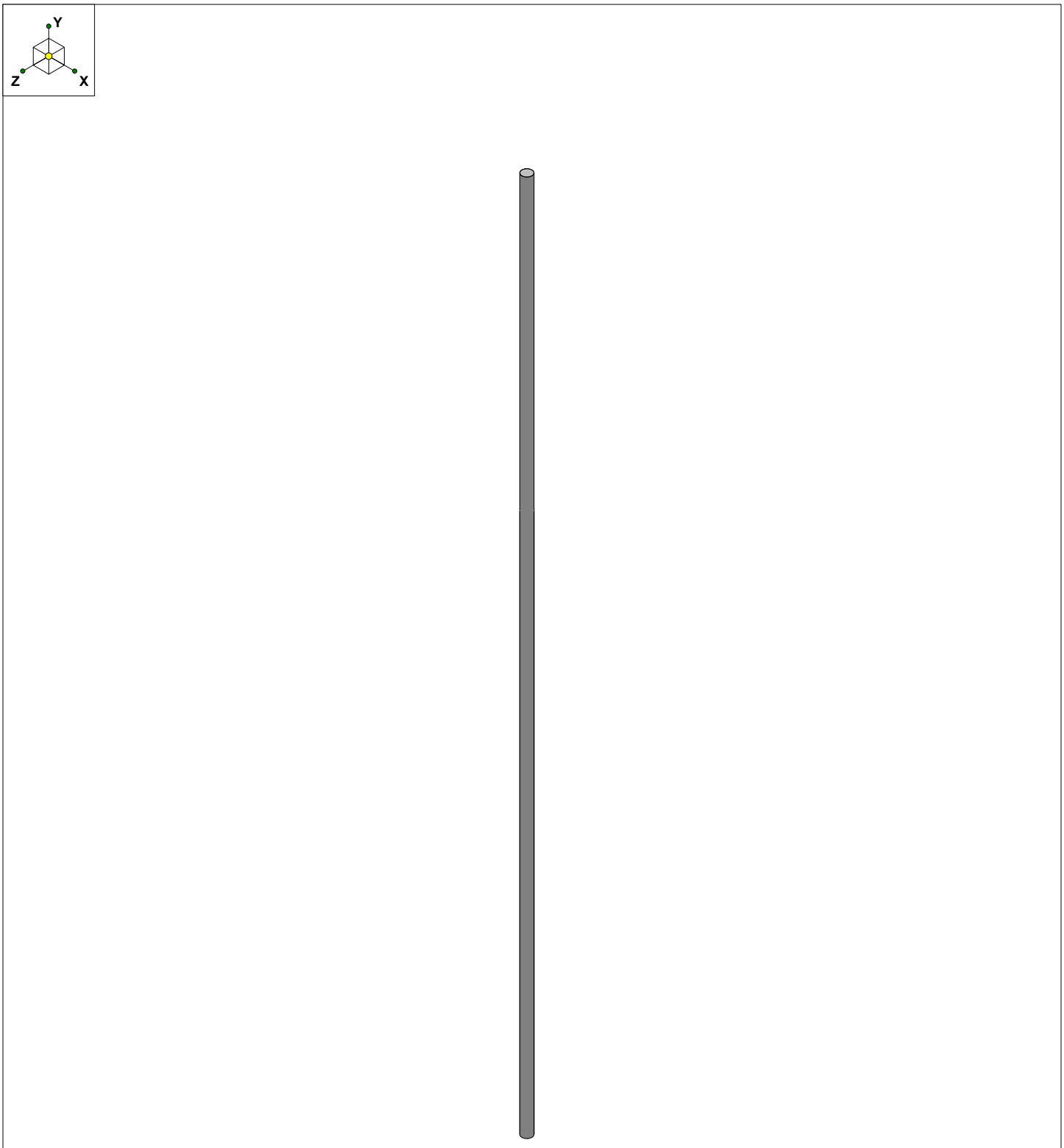
Mount Pipe	44.7	Pass
Results	**44.7**	**Pass**

Assumptions and Limitations

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

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

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



Envelope Only Solution

Infingy Engineering	CT03XC366	
NRO		June 2, 2018 at 8:51 PM
526-104		CT03XC366.r3d

Site Name:	CT03XC366
Client:	Airosmith
Carrier:	Sprint
Engineer:	NRO
Date:	6/2/2018

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INFINIGY WIND LOAD CALCULATOR 3.0

Site Information Inputs:

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

Rooftop Inputs:

Rooftop Wind Speed-Up?:	No

Wind Loading Inputs:

Design Wind Velocity:	97	mph (nominal 3-second gust)
Wind Centerline 1 (z_1):	155.0	ft
Side Face Angle (θ):	60	degrees
Exposure Category:	B	
Topographic Category:	1	

Wind with No Ice		
q_z (psf)	Gh	F_{ST} (psf)
25.63	1.00	**30.76**

Wind with Ice		
q_z (psf)	Gh	F_{ST} (psf)
6.81	1.00	**21.19**

Ice Loading Inputs:

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

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	Ka	Front Shape	Side Shape	q_z (psf)	EPA (ft^2)	Fz (lbs)	Fx (lbs)	Fz(60) (lbs)	Fx(30) (lbs)
RFS APXVSPP18-C-A20	155.0	3	1.00	Flat	Flat	25.63	8.02	205.67	135.41	152.97	188.10
Nokia AAHC	155.0	3	1.00	Flat	Flat	25.63	4.20	107.71	52.81	66.54	93.99
Alcatel-Lucent TD-RRH8x20-25	155.0	3	1.00	Flat	Flat	25.63	4.05	103.69	39.28	55.38	87.58
Alcatel-Lucent 800 MHz RRH	155.0	3	1.00	Flat	Flat	25.63	2.13	54.70	45.44	47.76	52.38
tel-Lucent 800 MHz 2x50 RRH w/ F	155.0	3	1.00	Flat	Flat	25.63	2.06	52.75	49.51	50.32	51.94

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	MP1	N1	N2			HR1	Beam	None	A53 GR B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	Hot Rolled Steel				
2	A53 GR B	PIPE_2.5	1	240	109.6
3	Total HR Steel		1	240	109.6

Basic Load Cases

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

Load Combinations

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

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
29	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	.866														
30	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1			OL3	1														
31	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	.866														
32	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	.5														
33	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-1																
34	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	-.5														
35	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	-.866														
36	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1			OL3	-1														
37	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	-.866														
38	1.2D + 1.0Di + 1.0Wi A...	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	-.5														
39	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.111																
40	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.096	W...	.056														
41	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.056	W...	.096														
42	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5			W...	.111														
43	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.056	W...	.096														
44	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.096	W...	.056														
45	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.111																
46	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.096	W...	-.056														
47	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	-.056	W...	-.096														
48	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5			W...	-.111														
49	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.056	W...	-.096														
50	1.2D + 1.5L + 1.0WL (...	Yes	Y		DL	1.2	LL	1.5	W...	.096	W...	-.056														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N4	max	578.823	5	664.744	26	824.929	2	0	1	0	1	0	1
2		min	-578.823	11	224.036	14	-824.929	8	0	1	0	1	0	1
3	N1	max	16.379	17	110.349	26	9.856	27	0	1	NC	NC	0	1
4		min	-16.379	23	55.297	14	-9.856	33	0	1	NC	NC	0	1
5	Totals:	max	594.973	17	775.093	26	815.597	2						
6		min	-594.973	23	279.333	14	-815.597	8						

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	MP1	PIPE_2.5	.447	15...	2	.027	157.5		2	5687.028	50715	3596...	3596...	1	H1-...

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Structural Analysis Report

Structure	:	**200 ft Self Supported Tower**
ATC Site Name	:	**Shelton-Trumbull, CT**
ATC Site Number	:	**88017**
Engineering Number	:	**OAA715175_C3_03**
Proposed Carrier	:	**Sprint Nextel**
Carrier Site Name	:	**Booth Hill**
Carrier Site Number	:	**CT03XC366**
Site Location	:	**14 Oxford Drive-Booth Hill RD** **Shelton, CT 06484-3455** **41.280200,-73.185500**
County	:	**Fairfield**
Date	:	**March 21, 2018**
Max Usage	:	**95%**
Result	:	**Pass**

Prepared By:
Charles Dalton Wally, E.I.
Structural Engineer I

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 200 ft self supported tower to reflect the change in loading by Sprint Nextel.

Supporting Documents

Tower Drawings	TEP Job #070851, dated May 30, 2007
Foundation Drawing	Radio Relay Drawing #MS 10478, dated January 27, 1965
Geotechnical Report	Radio Relay Drawing #MS 10478, dated January 27, 1965
Modifications	ATC Project #40480232, dated July 13, 2007

Analysis

The tower was analyzed using Power Lines Systems, Inc.'s tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1/2" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft

Conclusion

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

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

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
200.0	212.0	2	5' Yagi	Platform w/ Handrails	(2) EW65 (3) 1 5/8" Coax (1) 1/2" Coax	Other
	213.0	1	20' Omni			State Of CT
	210.0	1	Telewave ANT900D6-9			
	206.0	2	RFS PA6-65AC w/ Radome			
	205.0	1	Sinclair SC442D-HF1LDF			
182.0	190.0	6	Sinclair SC479-HF1LDF	Side Arm	(10) 1 5/8" Coax (5) 0.63" LDF4-50A	
	185.0	5	TTA			
		2	Kathrein AP14-850/105			
	180.0	1	5' Dipole			
	177.0	1	TX RX Systems 101-83B-09-0-03			
169.0	169.0	12	Decibel DB844H90E-A	Sector Frame	(12) 1 5/8" Coax	Sprint Nextel
158.0	158.0	4	DragonWave Horizon Compact	Side Arm	(6) 5/16" Coax (4) 1/2" Coax	Clearwire
		1	DragonWave A-ANT-11G-2-C			
		1	Andrew PX2F-52			
		2	DragonWave A-ANT-11G-3-C			
	156.0	3	NextNet BTS-2500			
		3	Argus LLPX310R			
155.0	155.0	3	Alcatel-Lucent 1900MHz 4X45 RRH	Sector Frames	(3) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 800MHz RRH w/ Notch Filter			
		3	RFS APXVSPP18-C-A20			
150.0	150.0	1	18" x 12" Junction Box	Leg	(2) 2" conduit	Clearwire
145.0	144.0	6	Powerwave 7020.00 Dual Band RET	Sector Frames	(6) 1 5/8" Coax (2) 0.78" 8 AWG 6 (2) 0.74" 8 AWG 7 (2) 3" conduit (1) 0.28" RG-6 (1) 0.39" Fiber Trunk	AT&T Mobility
		6	Powerwave LGP21401			
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 32 B66			
		3	Powerwave 7770.00			
		3	Quintel QS66512-6			
		3	CCI HPA-65R-BUU-H6			
124.0	124.0	1	RFS PA6-65AC w/ Radome	Leg	(1) EW65	State Of CT
101.0	111.0	1	Andrew DB616E-BC	Leg	(1) 7/8" Coax	US Dept Of Homeland Security
82.0	86.0	1	Kathrein 750 10074	Stand-Off	(1) 1 5/8" Coax	Ligado Networks

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
155.0	155.0	6	Andrew DB980H90E-M	-	(6) 1 5/8" Coax	Sprint Nextel

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
155.0	155.0	3	Alcatel-Lucent RRH2x50-08	Sector Frames w/ New Pipes	(1) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	Commscope DT465B-2XR			
56.0	56.0	1	GPS	Side Arm	(1) 1/2" Coax	

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

Install proposed coax stacked on top of existing Sprint Nextel coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	63%	Pass
Diagonals	94%	Pass
Truss Diagonals	95%	Pass
Horizontals	88%	Pass
Truss Horizontals	47%	Pass
Anchor Bolts	44%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	185.9	53%
Axial (Kips)	292.8	10%

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

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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

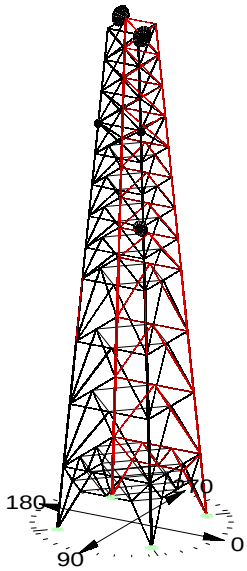
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

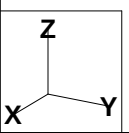
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

American Tower Corp., Project: "2018.03.12 - Sprint Nextel - OAA715175"
Tower Version 15.00, 4:58:19 PM Wednesday, March 21, 2018
Undeformed geometry displayed





Project Name : 88017 - Shelton/Trumbull
Project Notes:
Project File : N:\L2 - ATC\88017\2018.03.12 - Sprint Nextel - OAA715175\2018.03.12 - Sprint Nextel - OAA715175.tow
Date run : 4:56:08 PM Wednesday, March 21, 2018
by : Tower Version 15.00
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: n:\l2 - atc\88017\2018.03.12 - sprint nextel - oaa715175\2018.03.12 - sprint nextel - oaa715175.eia

*** Analysis Results:

Maximum element usage is 94.96% for Angle "LD 3X" in load case "W -90"

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	0P	-27.66	-16.00	-215.02	31.95	-1.38	-5.25	5.43	-1.55	0.00
W 0	0X	-25.50	15.62	-199.19	29.90	-0.46	-4.70	4.73	1.48	0.00
W 0	0XY	-27.02	-8.84	109.58	28.43	0.39	-6.08	6.10	1.60	0.00
W 0	0Y	-29.57	8.93	114.64	30.88	-0.30	-6.78	6.78	-1.52	0.00
W 180	0P	29.77	8.68	113.27	31.00	-0.26	6.89	6.89	1.53	0.00
W 180	0X	27.25	-8.37	103.59	28.51	0.42	6.35	6.36	-1.62	0.00
W 180	0XY	25.53	15.43	-195.02	29.83	-0.51	4.93	4.96	-1.50	0.00
W 180	0Y	27.59	-15.58	-211.84	31.68	-1.43	5.35	5.54	1.57	0.00
W 45	0P	-29.72	-29.79	-292.82	42.08	3.91	-3.85	5.49	0.00	0.00
W 45	0X	-12.27	-11.57	-42.00	16.86	5.40	-3.33	6.34	2.29	0.00
W 45	0XY	-28.00	-27.84	185.90	39.49	4.30	-4.35	6.11	-0.00	0.00
W 45	0Y	-11.47	-12.13	-41.08	16.69	3.29	-5.34	6.27	-2.29	0.00
W -45	0P	-13.60	11.76	-51.80	17.98	-5.78	-3.68	6.85	-2.29	0.00
W -45	0X	-28.00	29.26	-278.66	40.50	-4.25	-3.47	5.49	-0.00	0.00
W -45	0XY	-9.82	12.14	-43.46	15.61	-3.22	-4.87	5.83	2.31	0.00
W -45	0Y	-29.15	27.39	183.91	40.00	-4.22	-4.78	6.38	0.02	0.00
W 90	0P	-15.97	-27.88	-217.33	32.13	5.26	1.47	5.47	1.56	0.00
W 90	0X	9.11	-29.91	117.61	31.26	6.80	0.27	6.80	1.52	0.00
W 90	0XY	-8.91	-26.99	109.50	28.43	6.08	-0.42	6.09	-1.61	0.00
W 90	0Y	15.76	-25.52	-199.78	30.00	4.70	0.53	4.73	-1.48	0.00
W -90	0P	8.80	30.02	115.64	31.28	-6.89	0.23	6.90	-1.53	0.00
W -90	0X	-15.50	27.74	-213.51	31.78	-5.36	1.51	5.57	-1.57	0.00
W -90	0XY	15.57	25.51	-195.66	29.89	-4.89	0.58	4.93	1.50	0.00
W -90	0Y	-8.47	27.11	103.52	28.40	-6.30	-0.46	6.32	1.62	0.00
W 0 Ice	0P	-11.56	-8.92	-107.37	14.60	-1.31	0.09	1.32	-0.32	0.00
W 0 Ice	0X	-10.77	8.80	-100.31	13.91	1.02	0.25	1.05	0.30	0.00
W 0 Ice	0XY	-0.56	2.70	-28.93	2.75	1.11	-2.16	2.42	0.33	0.00
W 0 Ice	0Y	-0.87	-2.63	-32.50	2.77	-1.25	-2.38	2.69	-0.31	0.00
W 180 Ice	0P	0.88	-3.21	-37.18	3.33	-1.20	2.52	2.80	0.33	0.00
W 180 Ice	0X	0.84	3.13	-34.95	3.24	1.15	2.44	2.70	-0.35	0.00
W 180 Ice	0XY	10.73	8.49	-94.52	13.68	0.97	0.00	0.97	-0.32	0.00
W 180 Ice	0Y	11.39	-8.38	-102.46	14.14	-1.35	0.05	1.35	0.34	0.00
W 45 Ice	0P	-12.09	-12.11	-124.85	17.12	-0.36	0.38	0.53	0.00	0.00
W 45 Ice	0X	-7.74	2.91	-66.43	8.27	2.09	0.53	2.16	0.47	0.00
W 45 Ice	0XY	-0.95	-0.95	-11.93	1.35	1.81	-1.82	2.57	-0.00	0.00
W 45 Ice	0Y	2.92	-7.68	-65.91	8.22	-0.53	-2.07	2.14	-0.47	0.00
W -45 Ice	0P	-8.52	-2.89	-72.41	9.00	-2.29	0.41	2.32	-0.48	0.00
W -45 Ice	0X	-11.38	11.86	-118.04	16.44	0.19	0.52	0.55	-0.01	0.00
W -45 Ice	0XY	3.09	7.77	-61.87	8.36	0.37	-1.89	1.92	0.49	0.00
W -45 Ice	0Y	-0.90	0.96	-16.79	1.32	-1.98	-1.95	2.78	0.02	0.00
W 90 Ice	0P	-8.90	-11.61	-107.84	14.63	-0.08	1.34	1.34	0.32	0.00
W 90 Ice	0X	-2.61	-0.92	-32.29	2.77	2.39	1.25	2.69	0.31	0.00
W 90 Ice	0XY	2.69	-0.57	-28.93	2.75	2.16	-1.11	2.43	-0.33	0.00
W 90 Ice	0Y	8.81	-10.76	-100.06	13.91	-0.25	-1.00	1.03	-0.30	0.00
W -90 Ice	0P	-3.18	0.92	-36.67	3.31	-2.52	1.20	2.79	-0.33	0.00
W -90 Ice	0X	-8.37	11.43	-103.03	14.16	-0.04	1.37	1.37	-0.34	0.00
W -90 Ice	0XY	8.52	10.71	-94.63	13.69	0.01	-0.96	0.96	0.32	0.00
W -90 Ice	0Y	3.10	0.81	-34.78	3.21	-2.43	-1.16	2.69	0.35	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Origin Joint	Joint	Leg Member	Force In Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
W 0	0P	1P	L 1P	217.024	12.510	12.545	12.516	0.860	-27.66	-16.00	-215.02
W 0	0X	1X	L 1X	201.090	11.542	11.578	11.468	-1.592	-25.50	15.62	-199.19
W 0	0XY	1XY	L 1XY	-111.552	19.285	19.338	19.306	1.119	-27.02	-8.84	109.58
W 0	0Y	1Y	L 1Y	-116.769	21.453	21.510	21.494	-0.852	-29.57	8.93	114.64
W 180	0P	1P	L 1P	-115.408	21.742	21.799	-21.788	-0.701	29.77	8.68	113.27
W 180	0X	1X	L 1X	-105.578	19.931	19.986	-19.956	1.079	27.25	-8.37	103.59
W 180	0XY	1XY	L 1XY	196.928	11.882	11.919	-11.799	-1.691	25.53	15.43	-195.02
W 180	0Y	1Y	L 1Y	213.826	12.650	12.685	-12.668	0.662	27.59	-15.58	-211.84
W 45	0P	1P	L 1P	295.550	12.853	12.916	9.094	9.173	-29.72	-29.79	-292.82
W 45	0X	1X	L 1X	41.840	17.250	17.254	9.315	14.524	-12.27	-11.57	-42.00
W 45	0XY	1XY	L 1XY	-188.902	20.871	20.974	14.910	14.752	-28.00	-27.84	185.90
W 45	0Y	1Y	L 1Y	40.927	17.074	17.078	14.365	9.236	-11.47	-12.13	-41.08
W -45	0P	1P	L 1P	51.670	18.342	18.346	9.955	-15.410	-13.60	11.76	-51.80
W -45	0X	1X	L 1X	281.296	12.705	12.768	8.379	-9.634	-28.00	29.26	-278.66
W -45	0XY	1XY	L 1XY	43.409	15.756	15.758	12.882	-9.077	-9.82	12.14	-43.46
W -45	0Y	1Y	L 1Y	-186.971	21.596	21.703	16.201	-14.441	-29.15	27.39	183.91
W 90	0P	1P	L 1P	219.330	12.558	12.593	0.661	12.575	-15.97	-27.88	-217.33
W 90	0X	1X	L 1X	-119.768	21.584	21.641	-0.826	21.625	9.11	-29.91	117.61
W 90	0XY	1XY	L 1XY	-111.475	19.265	19.318	1.201	19.281	-8.91	-26.99	109.50
W 90	0Y	1Y	L 1Y	201.693	11.543	11.579	-1.694	11.455	15.76	-25.52	-199.78
W -90	0P	1P	L 1P	-117.794	21.826	21.883	-0.651	-21.873	8.80	30.02	115.64
W -90	0X	1X	L 1X	215.484	12.680	12.714	0.460	-12.705	-15.50	27.74	-213.51
W -90	0XY	1XY	L 1XY	197.574	11.826	11.864	-1.795	-11.728	15.57	25.51	-195.66
W -90	0Y	1Y	L 1Y	-105.506	19.795	19.850	1.180	-19.815	-8.47	27.11	103.52
W 0 Ice	0P	1P	L 1P	108.280	4.206	4.222	3.997	1.361	-11.56	-8.92	-107.37
W 0 Ice	0X	1X	L 1X	101.190	4.077	4.095	3.708	-1.736	-10.77	8.80	-100.31
W 0 Ice	0XY	1XY	L 1XY	28.937	2.674	2.677	2.595	-0.659	-0.56	2.70	-28.93
W 0 Ice	0Y	1Y	L 1Y	32.468	3.173	3.179	3.161	0.338	-0.87	-2.63	-32.50
W 180 Ice	0P	1P	L 1P	37.163	3.542	3.547	-3.497	0.595	0.88	-3.21	-37.18
W 180 Ice	0X	1X	L 1X	34.937	3.365	3.370	-3.302	-0.670	0.84	3.13	-34.95
W 180 Ice	0XY	1XY	L 1XY	95.406	4.443	4.463	-4.069	-1.832	10.73	8.49	-94.52
W 180 Ice	0Y	1Y	L 1Y	103.344	4.313	4.330	-4.170	1.166	11.39	-8.38	-102.46
W 45 Ice	0P	1P	L 1P	125.927	4.658	4.681	3.298	3.323	-12.09	-12.11	-124.85
W 45 Ice	0X	1X	L 1X	66.847	3.532	3.533	3.059	1.768	-7.74	2.91	-66.43
W 45 Ice	0XY	1XY	L 1XY	11.742	2.522	2.534	1.795	1.789	-0.95	-0.95	-11.93
W 45 Ice	0Y	1Y	L 1Y	66.330	3.492	3.493	1.720	3.041	2.92	-7.68	-65.91
W -45 Ice	0P	1P	L 1P	72.856	4.070	4.071	3.420	-2.208	-8.52	-2.89	-72.41
W -45 Ice	0X	1X	L 1X	119.089	4.665	4.688	3.065	-3.547	-11.38	11.86	-118.04
W -45 Ice	0XY	1XY	L 1XY	62.330	3.632	3.635	1.265	-3.408	3.09	7.77	-61.87
W -45 Ice	0Y	1Y	L 1Y	16.578	2.978	2.992	2.085	-2.147	-0.90	0.96	-16.79
W 90 Ice	0P	1P	L 1P	108.744	4.204	4.221	1.302	4.015	-8.90	-11.61	-107.84
W 90 Ice	0X	1X	L 1X	32.251	3.208	3.215	0.337	3.197	-2.61	-0.92	-32.29
W 90 Ice	0XY	1XY	L 1XY	28.938	2.682	2.685	-0.657	2.603	2.69	-0.57	-28.93
W 90 Ice	0Y	1Y	L 1Y	100.937	4.093	4.111	-1.767	3.713	8.81	-10.76	-100.06
W -90 Ice	0P	1P	L 1P	36.652	3.543	3.549	0.598	-3.498	-3.18	0.92	-36.67
W -90 Ice	0X	1X	L 1X	103.913	4.300	4.316	1.114	-4.170	-8.37	11.43	-103.03
W -90 Ice	0XY	1XY	L 1XY	95.512	4.436	4.455	-1.859	-4.049	8.52	10.71	-94.63
W -90 Ice	0Y	1Y	L 1Y	34.772	3.322	3.327	-0.651	-3.263	3.10	0.81	-34.78

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	223.612	-13247.348	87.868	13249.235	0.294	109.744	189.999
W 180	148.267	12942.276	-85.246	12943.125	-0.149	-110.136	189.999
W 45	9914.577	-9952.513	-9.855	14048.180	81.334	81.462	189.999
W -45	-9425.357	-9771.250	133.248	13576.255	-80.552	80.579	189.999
W 90	13367.586	-195.649	-101.123	13369.017	110.305	0.007	189.999
W -90	-13037.826	-118.804	101.672	13038.368	-110.372	-0.403	189.999
W 0 Ice	220.724	-3034.720	18.876	3042.736	0.053	23.761	269.119
W 180 Ice	211.077	2590.779	-18.393	2599.364	-0.025	-23.832	269.119
W 45 Ice	2332.173	-2353.622	-2.027	3313.392	17.836	17.860	269.119
W -45 Ice	-1882.250	-2319.613	28.544	2987.218	-17.698	17.707	269.119
W 90 Ice	3043.472	-231.159	-21.600	3052.238	23.857	0.000	269.119
W -90 Ice	-2618.802	-213.601	21.730	2627.499	-23.868	-0.073	269.119

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Af Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
187.5-200.0	200.000	187.500	8	20	13.33	15.09	177.63	1.1270	1.1270	1.352
175.0-187.5	187.500	175.000	8	16	15.09	16.85	199.64	1.1800	1.1800	1.416
162.5-175.0	175.000	162.500	8	16	16.85	18.61	221.64	1.2080	1.2080	1.449
150.0-162.5	162.500	150.000	12	24	18.61	20.37	243.65	1.2150	1.2150	1.458
137.5-150.0	150.000	137.500	16	24	20.37	22.13	265.66	1.2180	1.2180	1.462

125.0-137.5	137.500	125.000	16	24	22.13	23.89	287.67	1.2240	1.2240	1.469
112.5-125.0	125.000	112.500	16	24	23.89	25.65	309.68	1.2390	1.2390	1.487
100.0-112.5	112.500	100.000	16	24	25.65	27.42	331.68	1.2450	1.2450	1.494
75.00-100.0	100.000	75.000	16	24	27.42	30.94	729.39	1.2770	1.2770	1.532
50.00-75.00	75.000	50.000	16	24	30.94	34.46	817.42	1.2930	1.2930	1.551
25.00-50.00	50.000	25.000	20	32	34.46	37.98	905.45	1.3350	1.3350	1.602
0.000-25.00	25.000	0.000	28	56	37.98	41.50	993.48	1.2150	1.2150	1.458

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage
which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Cont-rol	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/r Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r Comp. Member (ft)	Length	Curve No.	No. Of Bolts Comp.
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	63.30	Comp	63.30	L 1P	-257.468	W 45	406.720	0.000	0.000	0.333	0.333	0.333	64.41	64.41	25.124	1	0
Leg S2	L 8" x 8" x 1"	SAE	8X8X1	33.0	60.88	Comp	60.88	L 2P	-222.017	W 45	364.663	0.000	0.000	0.333	0.333	0.333	64.41	64.41	25.124	1	0
Leg S3	L 8" x 8" x 0.875"	SAE	8X8X0.88	33.0	57.09	Comp	57.09	L 3P	-184.084	W 45	322.451	0.000	0.000	0.333	0.333	0.333	64.00	64.00	25.124	1	0
Leg S4	L 8" x 8" x 0.75"	SAE	8X8X0.75	33.0	51.67	Comp	51.67	L 4P	-144.439	W 45	279.520	0.000	0.000	0.333	0.333	0.333	63.60	63.60	25.124	1	0
Leg S5	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	52.67	Comp	52.67	L 5P	-124.573	W 45	236.535	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S6	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	43.64	Comp	43.64	L 6P	-103.217	W 45	236.535	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S7	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	41.41	Comp	41.41	L 7P	-84.962	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	32.17	Comp	32.17	L 8P	-66.001	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	31.03	Comp	31.03	L 9P	-63.664	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	21.72	Comp	21.72	L 10P	-44.557	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S11	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	18.76	Comp	18.76	L 11P	-26.312	W 45	140.255	0.000	0.000	0.500	0.500	0.500	63.87	63.87	12.562	1	0
Leg S12	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	8.10	Comp	8.10	L 12P	-11.367	W 45	140.255	0.000	0.000	0.500	0.500	0.500	63.87	63.87	12.562	1	0
Diag S1	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	72.64	Comp	72.64	D 2X	-28.511	W -90	39.249	0.000	0.000	0.310	0.790	0.310	131.47	127.05	19.277	6	0
Diag S2	B/B L2.5"x3"x0.3125"	DAS	3X2.5X0.31	33.0	85.88	Comp	85.88	D 3X	-30.004	W -90	34.937	0.000	0.000	0.310	0.620	0.310	160.23	144.74	31.444	6	0
Diag S3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	94.35	Comp	94.35	D 5X	-29.942	W -90	31.734	0.000	0.000	0.310	0.620	0.310	156.05	142.17	30.413	6	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	87.13	Comp	87.13	D 7X	-28.743	W -90	32.989	0.000	0.000	0.310	0.620	0.310	151.11	139.14	29.451	6	0
Diag S5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	89.39	Comp	89.39	D 9X	-18.456	W -90	20.646	0.000	0.000	0.500	1.000	0.500	187.28	161.38	18.572	6	0
Diag S6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	78.99	Comp	78.99	D 11X	-17.141	W -90	21.700	0.000	0.000	0.500	1.000	0.500	180.83	157.41	17.932	6	0
Diag S7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	73.46	Comp	73.46	D 13X	-16.747	W -90	22.798	0.000	0.000	0.500	1.000	0.500	174.59	153.57	17.313	6	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	71.29	Comp	71.29	D 15X	-17.064	W -90	23.935	0.000	0.000	0.500	1.000	0.500	168.59	149.88	16.718	6	0
Diag S9	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	41.94	Tens	0.00	D 18Y	0.000		0.000	0.000	0.000	100.000	100.000	100.000	42714.51	32577.05	23.173	5	0
Diag S10	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	34.41	Tens	0.00	D 20Y	0.000		0.000	0.000	0.000	100.000	100.000	100.000	40023.07	30526.18	21.713	5	0
Diag S11	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	25.74	Tens	0.00	D 22Y	0.000		0.001	0.000	0.000	100.000	100.000	100.000	35101.11	26775.65	20.300	5	0
Diag S12	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	15.25	Tens	0.00	D 24Y	0.000		0.001	0.000	0.000	100.000	100.000	100.000	32759.97	24991.70	18.946	5	0
Horiz 1	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	88.12	Comp	88.12	H 1P	-37.075	W -90	43.092	0.000	0.000	0.950	0.950	0.950	156.53	142.47	12.660	6	0
Horiz 2	B/B L3.5"x2.5"x0.3125"	DAL	3.5X2.5X0.31	33.0	52.46	Comp	52.46	H 3P	-16.072	W -90	30.639	0.000	0.000	1.000	1.000	1.000	187.95	161.79	17.229	6	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	70.41	Comp	70.41	H 5P	-15.001	W -90	21.304	0.000	0.000	1.000	1.000	1.000	196.42	167.00	15.468	6	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	54.07	Comp	54.07	H 7P	-13.680	W -90	25.299	0.000	0.000	1.000	1.000	1.000	174.06	153.25	13.708	6	0
Horiz 5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	66.49	Comp	66.49	H 9P	-12.473	W -90	18.758	0.000	0.000	1.000	1.000	1.000	200.16	169.30	12.827	6	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	53.76	Comp	53.76	H 12P	-11.171	W 180	20.781	0.000	0.000	1.000	1.000	1.000	186.43	160.85	11.947	6	0
Horiz 7	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	31.07	Comp	31.07	H 13P	-10.384	W -90	33.425	0.000	0.000	1.000	1.000	1.000	140.53	132.62	11.067	6	0
Horiz 8	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	52.61	Comp	52.61	H 15P	-19.160	W -90	36.417	0.000	0.000	1.000	1.000	1.000	129.35	125.75	10.186	6	0
Horiz 9	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	76.53	Comp	76.53	H 17P	-16.159	W -90	21.113	0.000	0.000	0.500	1.000	0.500	197.65	167.75	18.612	6	0
Horiz 10	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	27.98	Comp	27.98	H 19P	-12.581	W -90	44.957	0.000	0.000	0.500	0.500	0.500	106.99	106.99	16.851	1	0
Horiz 11	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	34.89	Comp	34.89	H 21P	-8.961	W -90	25.680	0.000	0.000	0.500	0.500	0.500	139.94	135.24	15.091	5	0
Horiz 12	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	45.86	Comp	45.86	H 23P	-4.598	W -90	10.028	0.000	0.000	1.000	0.500	1.000	247.23	216.99	13.330	5	0
LD 1	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	48.54	Tens	1.08	LD 1X	-0.229	W -90	21.135	0.000	0.000	0.970	0.970	0.970	170.22	150.89	11.465	6	0
LD 2	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	94.96	Comp	94.96	LD 3X	-27.524	W -90	28.984	0.000	0.000	0.970	0.970	0.970	145.88	135.92	9.638	6	0
LD 3	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	67.69	Comp	67.69	LD 5P	-26.626	W -90	39.335	0.000	0.000	0.970	0.970	0.970	131.18	126.88	10.481	6	0
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	47.01	Tens	0.00	LH 2Y	0.000		0.003	0.000	0.000	100.000	100.000	100.000	17377.90	13270.56	11.136	5	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 5XY	-1.096	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.63	2.63	21.875	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Cont-rol	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts Tens.	No. Of Holes	Hole Diameter (in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	63.30	Comp	26.54	L 1XY	131.877	W 45	496.880	0.000	0.000	0.000	25.124	0	0.000	0
Leg S2	L 8" x 8" x 1"	SAE	8X8X1	33.0	60.88	Comp	30.62	L 2XY	136.403	W 45	445.499	0.000	0.000	0.000	25.124	0	0.000	0
Leg S3	L 8" x 8" x 0.875"	SAE	8X8X0.88	33.0	57.09	Comp	27.77	L 3XY	109.101	W 45	392.930	0.000	0.000	0.000	25.124	0	0.000	0
Leg S4	L 8" x 8" x 0.75"	SAE	8X8X0.75	33.0	51.67	Comp	23.78	L 4XY	80.794	W 45	339.767	0.000	0.000	0.000	25.124	0	0.000	0
Leg S5	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	52.67	Comp	23.29	L 5XY	67.292	W 45	288.981	0.000	0.000	0.000	12.562	0	0.000	0
Leg S6	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	43.64	Comp	18.55	L 6XY	53.602	W 45	288.981	0.000	0.000	0.000	12.562	0	0.000	0
Leg S7	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	41.41	Comp	15.97	L 7XY	40.036	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	32.17	Comp	10.72	L 8XY	26.875	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	31.03	Comp	5.97	L 9XY	14.970	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	21.72	Comp	2.01	L 10XY	5.033	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S11	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	18.76	Comp	0.00	L 11Y	0.000		170.775	0.000	0.000	0.000	12.562	0	0.000	0
Leg S12	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	8.10	Comp	0.00	L 12Y	0.000		170.775	0.000	0.000	0.000	12.562	0	0.000	0
Diag S1	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	72.64	Comp	55.69	D 2P	47.638	W -90	85.536	0.000	0.000	0.000	19.277	0	0.000	0
Diag S2	B/B L2.5"x3"x0.3125"	DAS	3X2.5X0.31	33.0	85.88	Comp	28.27	D 3P	27.205	W -90	96.228	0.000	0.000	0.000	31.444	0	0.000	0
Diag S3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	94.35	Comp	35.03	D 5P	27.361	W -90	78.111	0.000	0.000	0.000	30.413	0	0.000	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	87.13	Comp	34.54	D 7P	26.981	W -90	78.111	0.000	0.000	0.000	29.451	0	0.000	0
Diag S5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	89.39	Comp	23.99	D 9P	16.961	W -90	70.686	0.000	0.000	0.000	18.572	0	0.000	0
Diag S6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	78.99	Comp	22.34	D 11P	15.790	W -90	70.686	0.000	0.000	0.000	17.932	0	0.000	0
Diag S7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	73.46	Comp	21.95	D 13P	15.514	W -90	70.686	0.000	0.000	0.000	17.313	0	0.000	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	71.29	Comp	22.31	D 15P	15.767	W -90	70.686	0.000	0.000	0.000	16.718	0	0.000	0
Diag S9	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	41.94	Tens	41.94	D 18P	21.051	W -90	50.193	0.000	0.000	0.000	23.173	0	0.000	0
Diag S10	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	34.41	Tens	34.41	D 20P	17.270	W -90	50.193	0.000	0.000	0.000	21.713	0	0.000	0
Diag S11	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	25.74	Tens	25.74	D 22P	12.921	W -90	50.193	0.000	0.000	0.000	20.300	0	0.000	0
Diag S12	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	15.25	Tens	15.25	D 24P	7.657	W -90	50.193	0.000	0.000	0.000	18.946	0	0.000	0
Horiz 1	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	88.12	Comp	16.22	H 1X	17.098	W -90	105.435	0.000	0.000	0.000	12.660	0	0.000	0
Horiz 2	B/B L3.5"x2.5"x0.3125"	DAL	3.5X2.5X0.31	33.0	52.46	Comp	15.77	H 3P	16.624	W 90	105.435	0.000	0.000	0.000	17.229	0	0.000	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	70.41	Comp	19.23	H 5X	15.021	W -90	78.111	0.000	0.000	0.000	15.468	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	54.07	Comp	18.21	H 7P	14.222	W 90	78.111	0.000	0.000	0.000	13.708	0	0.000	0
Horiz 5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	66.49	Comp	17.83	H 9P	12.605	W 90	70.686	0.000	0.000	0.000	12.827	0	0.000	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	53.76	Comp	16.43	H 11P	11.615	W 90	70.686	0.000	0.000	0.000	11.947	0	0.000	0
Horiz 7	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	31.07	Comp	14.06	H 13X	10.986	W -90	78.111	0.000	0.000	0.000	11.067	0	0.000	0
Horiz 8	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	52.61	Comp	2.44	H 16P	1.909	W 0	78.111	0.000	0.000	0.000	10.186	0	0.000	0
Horiz 9	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	76.53	Comp	0.00	H 18X	0.000		78.111	0.000	0.000	0.000	18.612	0	0.000	0
Horiz 10	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	27.98	Comp	0.00	H 20X	0.000		78.111	0.000	0.000	0.000	16.851	0	0.000	0
Horiz 11	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	34.89	Comp	0.00	H 22X	0.000		62.073	0.000	0.000	0.000	15.091	0	0.000	0
Horiz 12	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	45.86	Comp	0.00	H 24X	0.000		62.073	0.000	0.000	0.000	13.330	0	0.000	0
LD 1	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	48.54	Tens	48.54	LD 1P	30.709	W -90	63.261	0.000	0.000	0.000	11.465	0	0.000	0
LD 2	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	94.96	Comp	31.79	LD 3P	22.468	W -90	70.686	0.000	0.000	0.000	9.638	0	0.000	0
LD 3	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	67.69	Comp	32.15	LD 5X	27.501	W -90	85.536	0.000	0.000	0.000	10.481	0	0.000	0
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	47.01	Tens	47.01	LH 1P	33.229	W -90	70.686	0.000	0.000	0.000	11.136	0	0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 5X	0.816	W -45	0.324	0.000	0.000	0.000	21.875	0	0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	93.53	LD 4P	Angle
W 180	94.65	LD 4Y	Angle
W 45	68.73	LD 3P	Angle
W -45	72.88	LD 4P	Angle
W 90	94.02	LD 3P	Angle
W -90	94.96	LD 3X	Angle
W 0 Ice	29.22	LD 4P	Angle
W 180 Ice	30.52	LD 4Y	Angle
W 45 Ice	27.35	L 1P	Angle
W -45 Ice	25.82	LD 3X	Angle
W 90 Ice	29.36	LD 3P	Angle
W -90 Ice	30.52	LD 3X	Angle

*** Weight of structure (lbs):

Weight of Angles*Section DLF:	91885.3
Weight of Equipment:	1444.0
Total:	93329.3

*** End of Report

Site #:	88017	Engineer:	CDW
Name:	Shelton/Trumbull, CT	Date:	03/21/18

Windspeed:	No Ice: 97 mph	Ice:	50 mph
Carrier	Sprint Nextel		

Taper:	-0.14085	Taper Change:	200 ft
FW @ Base:	41.50 ft	FW @ Top:	13.33 ft

Spreadsheet Version Last Updated: 11/12/2014

Joint Label	Symmetry Code	X Coord. *(ft)*	Y Coord. *(ft)*	Z Coord. *(ft)*	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.
0	XY-Symmetry	20.75	20.75	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
1	XY-Symmetry	18.989375	18.989375	25	Free	Free	Free	Free	Free	Free
2	XY-Symmetry	17.22875	17.22875	50	Free	Free	Free	Free	Free	Free
3	XY-Symmetry	15.468125	15.468125	75	Free	Free	Free	Free	Free	Free
4	XY-Symmetry	13.7075	13.7075	100	Free	Free	Free	Free	Free	Free
5	XY-Symmetry	12.8271875	12.8271875	112.5	Free	Free	Free	Free	Free	Free
6	XY-Symmetry	11.946875	11.946875	125	Free	Free	Free	Free	Free	Free
7	XY-Symmetry	11.0665625	11.0665625	137.5	Free	Free	Free	Free	Free	Free
8	XY-Symmetry	10.18625	10.18625	150	Free	Free	Free	Free	Free	Free
9	XY-Symmetry	9.3059375	9.3059375	162.5	Free	Free	Free	Free	Free	Free
10	XY-Symmetry	8.425625	8.425625	175	Free	Free	Free	Free	Free	Free
11	XY-Symmetry	7.5453125	7.5453125	187.5	Free	Free	Free	Free	Free	Free
12	XY-Symmetry	6.665	6.665	200	Free	Free	Free	Free	Free	Free
A1	XY-Symmetry	18.989375	6.329791667	25	Free	Free	Free	Free	Free	Free
A2	XY-Symmetry	6.329791667	18.989375	25	Free	Free	Free	Free	Free	Free
A3	Y-Symmetry	17.22875	0	50	Free	Free	Free	Free	Free	Free
A4	X-Symmetry	0	17.22875	50	Free	Free	Free	Free	Free	Free
A5	Y-Symmetry	15.468125	0	75	Free	Free	Free	Free	Free	Free
A6	X-Symmetry	0	15.468125	75	Free	Free	Free	Free	Free	Free
A7	Y-Symmetry	13.7075	0	100	Free	Free	Free	Free	Free	Free
A8	X-Symmetry	0	13.7075	100	Free	Free	Free	Free	Free	Free
A9	Y-Symmetry	12.8271875	0	112.5	Free	Free	Free	Free	Free	Free
A10	X-Symmetry	0	12.8271875	112.5	Free	Free	Free	Free	Free	Free
A11	Y-Symmetry	11.946875	0	125	Free	Free	Free	Free	Free	Free
A12	X-Symmetry	0	11.946875	125	Free	Free	Free	Free	Free	Free
A13	Y-Symmetry	11.0665625	0	137.5	Free	Free	Free	Free	Free	Free
A14	X-Symmetry	0	11.0665625	137.5	Free	Free	Free	Free	Free	Free
A15	Y-Symmetry	10.18625	0	150	Free	Free	Free	Free	Free	Free
A16	X-Symmetry	0	10.18625	150	Free	Free	Free	Free	Free	Free
H1	XY-Symmetry	19.57622653	11.13633551	16.667	Free	Free	Free	Free	Free	Free
H2	XY-Symmetry	11.13633551	19.57622653	16.667	Free	Free	Free	Free	Free	Free
H3	Y-Symmetry	19.57622653	0	16.667	Free	Free	Free	Free	Free	Free
H4	X-Symmetry	0	19.57622653	16.667	Free	Free	Free	Free	Free	Free

Drop Sub-Brace *(Y or Blank)*	# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
		8.333	25	2	1	0	41.5	3
			25	A	2	25	37.97875	2
			25	A	3	50	34.4575	2
			25	A	4	75	30.93625	2
			12.5	A	5	100	27.415	1
			12.5	A	6	112.5	25.654375	1
			12.5	A	7	125	23.89375	1
			12.5	A	8	137.5	22.133125	1
	1		12.5	X	9	150	20.3725	1
	1		12.5	X	10	162.5	18.611875	1
	1		12.5	X	11	175	16.85125	1
			12.5	X	12	187.5	15.090625	1
					13	200	13.33	

NOTES	
Types:	
1:	Built up Horizs. w/ A
2:	Built up Horizs. w/ M
A:	Typical A brace
X:	Typical X brace
Drop:	Use only for types 1 & 2

# Sections:	12

Legs

Site No.:	88017
Engineer:	CDW
Date:	03/21/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter or Length *(in)*	Thickness [2] *(in)*	F_Y *(ksi)*
1	0.000-25.00	L	8	1.125	33
2	25.00-50.00	L	8	1	33
3	50.00-75.00	L	8	0.875	33
4	75.00-100.0	L	8	0.75	33
5	100.0-112.5	L	6	0.875	33
6	112.5-125.0	L	6	0.875	33
7	125.0-137.5	L	6	0.75	33
8	137.5-150.0	L	6	0.75	33
9	150.0-162.5	L	6	0.75	33
10	162.5-175.0	L	6	0.75	33
11	175.0-187.5	L	6	0.5	33
12	187.5-200.0	L	6	0.5	33

Notes:

[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88017
Engineer:	CDW
Date:	03/21/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	3	0.25	33	
2	25.00-50.00	2L		2.5	3	0.3125	33	
3	50.00-75.00	2L		2.5	3	0.25	33	
4	75.00-100.0	2L		2.5	3	0.25	33	
5	100.0-112.5	2L		2.5	2.5	0.25	33	
6	112.5-125.0	2L		2.5	2.5	0.25	33	
7	125.0-137.5	2L		2.5	2.5	0.25	33	
8	137.5-150.0	2L		2.5	2.5	0.25	33	
9	150.0-162.5	L		3	4	0.25	33	Y
10	162.5-175.0	L		3	4	0.25	33	Y
11	175.0-187.5	L		3.5	3.5	0.25	33	Y
12	187.5-200.0	L		3.5	3.5	0.25	33	Y

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88017
Engineer:	CDW
Date:	03/21/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	
1	0.000-25.00	2L		3	3	0.3125	33	
2	25.00-50.00	2L		3.5	2.5	0.3125	33	
3	50.00-75.00	2L		3	2.5	0.25	33	
4	75.00-100.0	2L		3	2.5	0.25	33	
5	100.0-112.5	2L		2.5	2.5	0.25	33	
6	112.5-125.0	2L		2.5	2.5	0.25	33	
7	125.0-137.5	2L		3	2.5	0.25	33	
8	137.5-150.0	2L		3	2.5	0.25	33	
9	150.0-162.5	2L		3	2.5	0.25	33	
10	162.5-175.0	2L		3	2.5	0.25	33	
11	175.0-187.5	L		4	3	0.3125	33	
12	187.5-200.0	L		4	3	0.3125	33	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88017
Engineer:	CDW
Date:	03/21/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*
1	0.000-25.00	2L		2.5	2	0.25	33
2	0.000-25.00	2L		2.5	2.5	0.25	33
3	0.000-25.00	2L		3	3	0.25	33

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88017
Engineer:	CDW
Date:	03/21/2018
Carrier:	Sprint Nextel

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	Is Horiz. Tension Only? *(Y/N)*
1	0.000-25.00	2L		2.5	2.5	0.25	33	Y

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Coax (p. 1 of 2)

Orig by MED, Improved by ABL. Last update 6/25/13 MED

Site No.:	88017
Engineer:	CDW
Date:	03/21/18
Carrier:	Sprint Nextel

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	200	1	Flat	2	8.0	6	Yes	Yes
2 OTHER	10	200	1	Round	0.63	2.0	0.15	Yes	Yes
3 STATE OF CT	10	200	1	Round	1.98	6.2	0.82	Yes	Yes
4 STATE OF CT	10	200	1	Round	1.98	6.2	0.82	Yes	Yes
5 STATE OF CT	10	200	2	Round	2.01	6.3	0.57	Yes	Yes
6 STATE OF CT	10	182	1	Flat	4.8375	25.8	4.1	Yes	Yes
7 STATE OF CT	10	182	1	Flat	2.30625	12.3	0.75	Yes	Yes
8 STATE OF CT	10	182	1	Flat	3.72	19.8	3.28	Yes	Yes
9 SPRINT NEXTEL	10	169	1	Flat	12.66	43.7	9.84	Yes	Yes
10 CLEARWIRE	10	158	1	Round	2.52	5.8	0.6	No	No
11 CLEARWIRE	10	158	1	Round	1.86	4.1	0.3	No	No
12 SPRINT NEXTEL	10	155	3	Round	1.54	4.8	1	Yes	Yes
13 SPRINT NEXTEL	10	155	1	Round	1.54	4.8	1	No	No
14 CLEARWIRE	10	150	1	Round	2.38	14.3	7.3	Yes	Yes
15 AT&T MOBILITY	10	145	6	Round	1.98	6.2	0.82	Yes	Yes
16 AT&T MOBILITY	10	145	2	Round	0.78	2.5	0.59	Yes	Yes
17 AT&T MOBILITY	10	145	1	Round	1.11	3.8	0.98	No	No
18 AT&T MOBILITY	10	145	2	Round	3.5	11.0	7.58	Yes	Yes
19 AT&T MOBILITY	10	145	1	Round	0.28	0.9	0.03	No	No
20 AT&T MOBILITY	10	145	1	Round	0.39	1.2	0.17	Yes	Yes
21 STATE OF CT	10	127	2	Round	2.01	6.3	0.57	Yes	Yes
22 US DEPT OF HS	10	101	1	Round	1.09	4.4	0.33	Yes	Yes
23 LIGADO	10	82	1	Round	1.98	7.9	0.82	Yes	Yes
24 SPRINT NEXTEL	10	56	1	Round	0.63	2.0	0.15	Yes	Yes
35 Waveguide	10	176	1	Flat	2	8.0	6	Yes	Yes
36 Waveguide	10	165	1	Flat	2	8.0	6	Yes	Yes
37 Waveguide	10	155	1	Flat	2	8.0	6	Yes	Yes
38 Waveguide	10	143	1	Flat	2	8.0	6	Yes	Yes

Coax (p. 2 of 2)

Site No.:	88017
Engineer:	CDW
Date:	03/21/18
Carrier:	Sprint Nextel

Exposure: B

Tia Code: TIA-222-G   Topo Cat: 1

f

α 7 $k_{z\,max}$ 2.01

z_g 1200 $k_{z\,min}$ 0.7

K_e 0.9 K_t

Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
Ladder	0	200	1	A	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
OTHER	10	200	1	B	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
STATE OF CT	10	200	1	B	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
STATE OF CT	10	200	1	B	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
STATE OF CT	10	200	2	B	2.01	Ind	100	1	Round	2	1	6.3	0.57	Yes	Yes
STATE OF CT	10	182	5	B	1.98	Block	50	1	Flat	3	2	25.8	4.1	Yes	Yes
STATE OF CT	10	182	5	B	0.63	Block	50	1	Flat	3	2	12.3	0.75	Yes	Yes
STATE OF CT	10	182	4	B	1.98	Block	50	1	Flat	2	2	19.8	3.28	Yes	Yes
SPRINT NEXTEL	10	169	12	3	1.98	Block	50	1	Flat	6	2	43.7	9.84	Yes	Yes
CLEARWIRE	10	158	4	2	0.63	Ind	0	1	Round	1	4	5.8	0.6	No	No
CLEARWIRE	10	158	6	2	0.31	Ind	0	1	Round	1	6	4.1	0.3	No	No
SPRINT NEXTEL	10	155	3	3	1.54	Ind	100	1	Round	3	1	4.8	1	Yes	Yes
SPRINT NEXTEL	10	155	1	3	1.54	Ind	0	1	Round	1	1	4.8	1	No	No
CLEARWIRE	10	150	2	2	2.38	Ind	100	1	Round	2	1	7.5	3.65	Yes	Yes
AT&T MOBILITY	10	145	6	C	1.98	Ind	100	1	Round	6	1	6.2	0.82	Yes	Yes
AT&T MOBILITY	10	145	2	C	0.78	Ind	100	1	Round	2	1	2.5	0.59	Yes	Yes
AT&T MOBILITY	10	145	2	C	0.74	Ind	0	1	Round	1	2	3.8	0.98	No	No
AT&T MOBILITY	10	145	2	C	3.50	Ind	100	1	Round	2	1	11.0	7.58	Yes	Yes
AT&T MOBILITY	10	145	1	C	0.28	Ind	0	1	Round	1	1	0.9	0.03	No	No
AT&T MOBILITY	10	145	1	C	0.39	Ind	100	1	Round	1	1	1.2	0.17	Yes	Yes
STATE OF CT	10	127	2	B	2.01	Ind	100	1	Round	2	1	6.3	0.57	Yes	Yes
US DEPT OF HS	10	101	1	4	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
LIGADO	10	82	1	2	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
SPRINT NEXTEL	10	56	1	3	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
Waveguide	10	176	1	A	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
Waveguide	10	165	1	2	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
Waveguide	10	155	1	2	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
Waveguide	10	143	1	D	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
								1						No	No
								1						No	No
								1						No	No
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								1						No	No
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								1						No	No
								1						No	No
								1						No	No
								1						No	No

Dishes

Site No.:	88017
Engineer:	CDW
Date:	03/21/18
Carrier:	Sprint Nextel

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Staus
1	200	8	68	R	XY	
2	200	8	240	R	P	
3	158	2	343.6664	H	XY	
4	158	2	126.6024	S	XY	
5	158	3	212.6351	H	P	
6	158	3	212.6351	H	X	
7	127	6	182	R	P	
8						
9						
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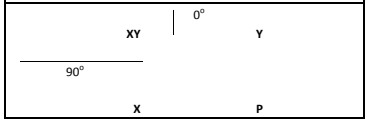
Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle *(deg)*
8' RAD 1 @ 200'	12XY	8 ft RAD Dish	68
8' RAD 2 @ 200'	12P	8 ft RAD Dish	240
2' HP 3 @ 158'	9XY	2 ft HP Dish	343.6664
2' STD 4 @ 158'	9XY	2 ft STD Dish	126.6024
3' HP 5 @ 158'	9P	3 ft HP Dish	212.6351
3' HP 6 @ 158'	9X	3 ft HP Dish	212.6351
6' RAD 7 @ 127'	6P	6 ft RAD Dish	182

Joint Orientation



Task:	Determine Point Loads	
Tower Height:	200	ft
Gh:	0.85	
Wind Speed:	97	mph, Vasd
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	S	

Ice Thick:	0.5	in
Topographic Category (1-4):	1	
Exposure Category (B-D):	B	
Structure Class (1-3):	2	
Height of Crest (H) if Topo Cat. >1:	0	ft
Load Factor; Wind:	1.6	
Load Factor; Dead:	1.2	

Site No.:	88017
Engineer:	CDW
Date:	03/21/2018
Carrier:	Sprint Nextel

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths		Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C_AA_C (ft^2)	Weight (k)	Ka
1		200	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		200	1	4			Platform w/ HR						1.000	80.00	9.00	1
2		200	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		200	4	4			Mounting Frames						1.000	20.00	0.20	1
3		187.5	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		187.5	1	4			Access Platform						1.000	45.00	5.00	1
4		175	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		175	1	4			Catwalk						1.000	70.00	8.00	1
5		112.5	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		112.5	1	3			Catwalk						1.000	70.00	8.00	1
6		100	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		100	1	1			Rest Platform						1.000	15.00	0.50	1
7		75	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		75	1	3			Catwalk						1.000	70.00	8.00	1
8		50	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		50	1	1			Rest Platform						1.000	15.00	0.50	1
9	STATE OF CT	200	1	1		Generic	20' Omni	240	3	3	55	R	1.000			1
	STATE OF CT	213	1	1			-						0.001	0.00	0.00	1
10	OTHER	212	1	1		Generic	-	0.001	0.001	0.001	0.001	F	1.000			1
	OTHER	212	1	1			5' Yagi						1.000	7.29	0.02	1
11	OTHER	210	1	1		Generic	-	0.001	0.001	0.001	0.001	F	1.000			1
	OTHER	210	1	1			5' Yagi						1.000	7.29	0.02	1
12	STATE OF CT	210	1	1		Telewave	-	0.001	0.001	0.001	0.001	F	1.000			1
	STATE OF CT	210	1	1			ANT900D6-9						1.000	0.98	0.01	1
13	STATE OF CT	205	1	1		Sinclair	SC442D-HF1LDF(DXX-I30-G9-NUFP)	251.5	5	5	79	R	1.000			1
	STATE OF CT	200	1	1			-						0.001	0.00	0.00	1
14	STATE OF CT	190	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	182	2	2			Side Arm						1.000	6.30	0.15	1
15	STATE OF CT	189	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	182	1	1			Flat Sector Frames						1.000	17.90	0.40	1
16	STATE OF CT	187	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
17	STATE OF CT	185	1	1		Generic	TTA	12	12	6	10	F	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
18	STATE OF CT	185	2	2		Kathrein Scala	AP14-850/105	101.5	10	4	26.8	F	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
19	STATE OF CT	182	2	2		Generic	TTA	12	12	6	10	F	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
20	STATE OF CT	180	2	2		Generic	TTA	12	12	6	10	F	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
21	STATE OF CT	180	1	1		Generic	-	0.001	0.001	0.001	0.001	R	1.000			1
	STATE OF CT	180	1	1			5' Dipole						1.000	1.75	0.02	1
22	STATE OF CT	180	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
23	STATE OF CT	177	1	1		TX RX Systems	101-83B-09-0-03	120	3.6	3.6	45	R	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
24	STATE OF CT	175	2	2		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
25	SPRINT NEXTEL	169	12	3		Decibel	DB844H90E-A	48	6	8.5	10	F	0.861			0.8
	SPRINT NEXTEL	169	3	3			Flat Sector Frames						0.750	17.90	0.40	0.75
26	CLEARWIRE CORPORATION	158	4	3		DragonWave	Horizon Compact	4.7	9.3	9.3	10.6	F	0.929			0.8
	CLEARWIRE CORPORATION	158	3	3			Flat Sector Frames						0.750	17.90	0.40	0.75
27	CLEARWIRE CORPORATION	156	3	3		NextNet	BTS-2500	19.3	11.3	5.1	35	F	0.763			0.8
	CLEARWIRE CORPORATION	156	1	1			-						0.001	0.00	0.00	1
28	CLEARWIRE CORPORATION	156	3	3		Argus	LLPX310R	42	11.8	4.5	28.6	F	0.726			0.8
	CLEARWIRE CORPORATION	156	1	1			-						0.001	0.00	0.00	1
29	SPRINT NEXTEL	155	3	3	Proposed	Alcatel-Lucent	RRH2x50-08	15.7	13	9.8	52.9	F	0.940			0.8
	SPRINT NEXTEL	155	3	3			Flat Sector Frames						0.750	17.90	0.40	0.75
30	SPRINT NEXTEL	155	3	3		Alcatel-Lucent	1900 MHz 4X45 RRH	25.1	11.1	10.7	60	F	0.945			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
31	SPRINT NEXTEL	155	3	3		Alcatel-Lucent	800 MHz RRH w/ Notch Filter	19.7	13	15.2	61.8	F	0.867			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
32	SPRINT NEXTEL	155	3	3	Proposed	Alcatel-Lucent	TD-RRH8x20-25 w/ Solar Shield	26.1	18.6	6.7	70	F	0.710			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
33	SPRINT NEXTEL	155	3	3		RFS	APXVSPP18-C-A20	72	11.8	7	57	F	0.829			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
34	SPRINT NEXTEL	155	3	3	Proposed	Commscope	DT465B-2XR	71.9	13.8	8.2	58	F	0.828			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
35	CLEARWIRE CORPORATION	150	1	1		Generic	18" x 12" Junction Box	18	12	8	15	F	1.000			1
	CLEARWIRE CORPORATION	150	1	1			-						0.001	0.00	0.00	1
36	AT&T MOBILITY	144	6	3		Powerwave Allgon	7020.00 Dual Band RET	4.9	8.3	2.4	2.2	F	0.669			0.8
	AT&T MOBILITY	144	1	1			Round Sector Frames						0.750	14.40	0.30	0.75
37	AT&T MOBILITY	144	6	3		Powerwave Allgon	LGP21401	14.4	9.2	2.6	14.1	F	0.665			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
38	AT&T MOBILITY	144	2	2		Raycap	DC6-48-60-18-8F ("Squid")	24	11	11	31.8	R	1.000			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
39	AT&T MOBILITY	144	3	3		Ericsson	RRUS 11 (Band 12) (55 lb)	17.8	17	7.2	55	F	0.747			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
40	AT&T MOBILITY	144	3	3		Ericsson	RRUS 32 (50.8 lbs)	26.7	12.1	6.7	50.8	F	0.823			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
41	AT&T MOBILITY	144	3	3		Ericsson	RRUS 32 B2	27.2	12.1	7	53	F	0.837			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
42	AT&T MOBILITY	144	3	3		Ericsson	RRUS 32 B66	27.2	12.1	7	53	F	0.837			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
43	AT&T MOBILITY	144	3	3		Powerwave Allgon	7770.00	55	11	5	35	F	0.766			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
44	AT&T MOBILITY	144	3	3		Quintel	QS66512-6	72	12	9.6	111	F	0.918			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
45	AT&T MOBILITY	144	3	3		CCI	HPA-65R-BUU-H6	72	14.8	9	51	F	0.834			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
46	US DEPT OF HOMELAND SECURITY	111	1	1		Andrew	DB616E-BC	231	3.5	3.5	51	R	1.000			1
	US DEPT OF HOMELAND SECURITY	101	1	1			-						0.001	0.00	0.00	1
47	LIGADO NETWORKS LLC	86	1	1		Kathrein Scala	750 10074	104.3	2	2	17.6	R	1.000			1
	LIGADO NETWORKS LLC	82	1	1			Side Arm						1.000	6.30	0.15	1
48	SPRINT NEXTEL	56	1	1	Proposed	Generic	GPS	12	9	6	10	F	1.000			1
	SPRINT NEXTEL	56	1	1			Stand-Off						1.000	2.50	0.08	1
49																1
																1
50																1
																1

No.	Elevation	C_AA_C	C_AA_C (Ice)	Force	Force (Ice)	Weight	Weight (Ice)	60 Azi	Force	F (Ice)	Height	Sum of Forces (No I	
	(ft)	*(ft^2)*	*(ft^2)*	*(lb)*	*(lb)*	*(lb)*	*(lb)*	Mult.	mean	mean	Flag	60 Azi.	180 Azi.
1	200	0.00	0.01	0.000	0.054	0	0	**1.00**	**0.00**	**0.03**			
	200	80.00	108.00	2683.480	601.601	10800	14040	**1.00**	**1475.91**	**330.88**	0.0000010	2683.480129	
2	200	0.00	0.01	0.000	0.054	0	0	**1.00**	**0.00**	**0.03**	0.0000020		
	200	80.00	108.00	2683.480	601.601	960	1248	**1.00**	**1475.91**	**330.88**	1.5050000	5366.960258	
3	187.5	0.00	0.01	0.000	0.053	0	0	**1.00**	**0.00**	**0.03**	1.5050010		
	187.5	45.00	60.75	1481.879	332.218	6000	7800	**1.00**	**815.03**	**182.72**	1.5053333	1481.878864	
4	175	0.00	0.01	0.000	0.052	0	0	**1.00**	**0.00**	**0.03**	1.5053343		
	175	70.00	94.50	2260.150	506.696	9600	12480	**1.00**	**1243.08**	**278.68**	1.5057143	2260.150239	
5	112.5	0.00	0.01	0.000	0.046	0	0	**1.00**	**0.00**	**0.03**	1.5057153		
	112.5	70.00	94.50	1992.108	446.605	9600	12480	**1.00**	**1095.66**	**245.63**	1.5088889	1992.10797	
6	100	0.00	0.01	0.000	0.045	0	0	**1.00**	**0.00**	**0.02**	1.5088899		
	100	15.00	20.25	412.754	92.534	600	780	**1.00**	**227.01**	**50.89**	1.5100000	412.7538053	
7	75	0.00	0.01	0.000	0.041	0	0	**1.00**	**0.00**	**0.02**	1.5100010		
	75	70.00	94.50	1774.194	397.751	9600	12480	**1.00**	**975.81**	**218.76**	1.5133333	1774.193912	
8	50	0.00	0.01	0.000	0.037	0	0	**1.00**	**0.00**	**0.02**	1.5133343		
	50	15.00	20.25	338.597	75.909	600	780	**1.00**	**186.23**	**41.75**	1.5200000	338.5965398	
9	200	6.00	8.03	201.261	44.749	66	270	**1.00**	**110.69**	**24.61**	1.5200010		
	213	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5046948	201.2610438	
10	212	0.00	0.01	0.000	0.055	0	0	**1.00**	**0.00**	**0.03**	1.5046958		
	212	7.29	9.84	248.637	55.741	24	31	**1.00**	**136.75**	**30.66**	1.5047170	248.637238	
11	210	0.00	0.01	0.000	0.055	0	0	**1.00**	**0.00**	**0.03**	1.5047180		
	210	7.29	9.84	247.965	55.590	24	31	**1.00**	**136.38**	**30.57**	1.5047180	247.9647865	
12	210	0.00	0.01	0.000	0.055	0	0	**1.00**	**0.00**	**0.03**	1.5047190		
	210	0.98	1.32	33.334	7.473	13	17	**1.00**	**18.33**	**4.11**	1.5047619	281.2988733	
13	205	10.48	12.63	353.997	70.824	95	419	**1.00**	**194.70**	**38.95**	1.5047629		
	200	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5050000	353.9966458	
14	190	5.03	6.51	166.310	35.715	41	203	**1.00**	**91.47**	**19.64**	1.5050010		
	182	12.60	17.01	411.412	92.233	360	468	**1.00**	**226.28**	**50.73**	1.5054945	577.7220298	
15	189	5.03	6.51	166.060	35.661	41	203	**1.00**	**91.33**	**19.61**	1.5054955		
	182	17.90	24.17	584.466	131.030	480	624	**1.00**	**321.46**	**72.07**	1.5054945	1328.247563	
16	187	5.03	6.51	165.556	35.553	41	203	**1.00**	**91.06**	**19.55**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	1493.80353	
17	185	1.20	1.64	39.366	8.951	12	40	**1.00**	**21.65**	**4.92**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	1533.16907	
18	185	21.22	23.13	695.993	126.025	64	253	**1.00**	**382.80**	**69.31**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	2229.161751	
19	182	2.40	3.29	78.364	17.818	24	54	**1.00**	**43.10**	**9.80**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	2307.525888	
20	180	2.40	3.29	78.117	17.762	24	54	**1.00**	**42.96**	**9.77**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	2385.643013	
21	180	0.00	0.01	0.000	0.030	0	0	**1.00**	**0.00**	**0.02**	1.5054955		
	180	1.75	2.36	56.960	12.770	18	23	**1.00**	**31.33**	**7.02**	1.5055556	56.96038001	
22	180	5.03	6.51	163.761	35.168	41	202	**1.00**	**90.07**	**19.34**	1.5055566		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	163.7611247	
23	177	3.60	4.64	116.614	24.951	54	174	**1.00**	**64.14**	**13.72**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	280.3754633	
24	175	10.06	13.01	324.897	69.771	82	251	**1.00**	**178.69**	**38.37**	1.5054955		
	182	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5054945	605.2720928	
25	169	32.80	37.42	1048.538	198.664	144	253	**1.00**	**576.70**	**109.27**	1.5054955		
	169	40.28	54.37	965.622	216.480	1440	1872	**1.00**	**531.09**	**119.06**	1.5059172	2014.159901	
26	158	1.26	1.70	39.598	8.832	51	71	**1.00**	**21.78**	**4.86**	1.5059182		
	158	40.28	54.37	947.231	212.357	1440	1872	**1.00**	**520.98**	**116.80**	1.5063291	986.8285523	
27	156	3.33	4.45	104.022	23.073	126	189	**1.00**	**57.21**	**12.69**	1.5063301		
	156	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064103	104.0219096	
28	156	7.48	9.32	233.647	48.375	103	206	**1.00**	**128.51**	**26.61**	1.5064113		
	156	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064103	337.6691067	
29	155	3.84	5.13	119.636	26.551	190	268	**1.00**	**65.80**	**14.60**	1.5064113		
	155	40.28	54.37	942.057	211.197	1440	1872	**1.00**	**518.13**	**116.16**	1.5064516	1061.693097	
30	155	5.92	6.96	184.612	36.050	216	319	**1.00**	**101.54**	**19.83**	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064516	1246.304829	
31	155	6.05	6.78	188.824	35.116	222	326	**1.00**	**103.85**	**19.31**	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064516	1435.12843	
32	155	6.89	8.80	215.030	45.582	252	380	**1.00**	**118.27**	**25.07**	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064516	1650.158352	
33	155	15.97	18.08	498.043	93.633	205	399	**1.00**	**273.92**	**51.50**	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064516	2148.201679	
34	155	18.09	20.85	564.062	107.992	209	427	**1.00**	**310.23**	**59.40**	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5064516	2712.264082	
35	150	1.80	2.40	55.614	12.321	18	61	**1.00**	**30.59**	**6.78**	1.5064526		
	150	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5066667	55.61402928	
36	144	1.09	1.71	33.220	8.683	16	26	**1.00**	**18.27**	**4.78**	1.5066677		
	144	10.80	14.58	247.361	55.455	360	468	**1.00**	**136.05**	**30.50**	1.5069444	280.5806944	
37	144	3.52	4.87	107.593	24.716	102	144	**1.00**	**59.18**	**13.59**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	388.1736092	
38	144	2.35	2.67	71.663	13.524	76	148	**1.00**	**39.41**	**7.44**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	459.8370807	
39	144	4.52	5.90	138.070	29.915	198	287	**1.00**	**75.94**	**16.45**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	597.9073169	
40	144	5.32	6.97	162.396	35.339	183	276	**1.00**	**89.32**	**19.44**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	760.3029142	
41	144	5.51	7.22	168.344	36.609	191	287	**1.00**	**92.59**	**20.13**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	928.6468824	
42	144	5.51	7.22	168.344	36.609	191	287	**1.00**	**92.59**	**20.13**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	1096.990851	
43	144	10.12	12.01	309.173	60.895	126	254	**1.00**	**170.05**	**33.49**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	1406.163886	
44	144	17.92	20.33	547.248	103.092	400	648	**1.00**	**300.99**	**56.70**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	1953.412011	
45	144	19.33	22.44	590.287	113.817	184	409	**1.00**	**324.66**	**62.60**	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5069444	2543.698919	
46	111	6.74	8.70	191.006	40.959	61	267	**1.00**	**105.05**	**22.53**	1.5069454		
	101	0.00	0.00	0.000	0.000	1	2	**1.00**	**0.00**	**0.00**	1.5099010	191.0064751	
47	86	1.74	2.63	45.816	11.522	21	80	**1.00**	**25.20**	**6.34**	1.5099020		
	82	6.30	8.51	163.801	36.722	180	234	**1.00**	**90.09**	**20.20**	1.5121951	209.6168074	
48	56	0.90	1.26	20.984	4.894	12	33	**1.00**	**11.54**	**2.69**	1.5121961		
	56	2.50	3.38	58.290	13.068	90	117	**1.00**	**32.06**	**7.19**	1.5178571	79.27430907	
49					#VALUE!			**1.00**	**#VALUE!**	**#VALUE!**	1.5178581		
								1.00	**#VALUE!**	**#VALUE!**	1.5178581	#VALUE!	
50					#VALUE!			**1.00**	**#VALUE!**	**#VALUE!**	1.5178591		
								1.00	**#VALUE!**	**#VALUE!**	1.5178591	#VALUE!	

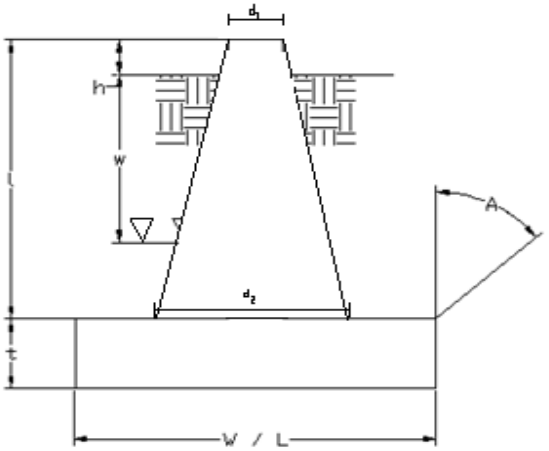
Foundation

Site No.:	88017
Engineer:	CDW
Date:	03/21/18
Carrier:	Sprint Nextel

Design Loads (Factored)

Compression/Leg:	292.82	k
Uplift/Leg:	185.90	k
Shear/Leg	42.08	k

Face Width @ Top of Pier (d_1):	3.50	ft
Face Width @ Bottom of Pier (d_2):	7.00	ft
Total Length of Pier (l):	7.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	16.00	ft
Length of Pad (L):	16.00	ft
Thickness of Pad (t):	2.50	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	120.0	pcf
Unit Weight of Soil (Below Water Table):	57.6	pcf
Friction Angle of Uplift (A):	30	°
Ultimate Compressive Bearing Pressure:	16000	psf
Ultimate Skin Friction:	500	psf



Volume Pier (Total):	200.08	ft³
Volume Pad (Total):	640.00	ft³
Volume Soil (Total):	2346.93	ft³
Volume Pier (Buoyant):	0.00	ft³
Volume Pad (Buoyant):	0.00	ft³
Volume Soil (Buoyant):	0.00	ft³
Weight Pier:	30.01	k
Weight Pad:	96.00	k
Weight Soil:	281.63	k
Uplift Skin Friction:	60.00	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
350.73	0.53	**OK**

Axial Check

ϕs Axial Resistance (k)	Ratio	Result
3072.00	0.10	**OK**

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	4
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.44	**OK**

Sprint

PROJECT:	DO MACRO UPGRADE
SITE NAME:	BOOTH HILL
SITE CASCADE:	CT03XC366
SITE ADDRESS:	14 OXFORD DRIVE SHELTON, CT 06484
SITE TYPE:	SELF SUPPORT TOWER
MARKET:	NORTHERN CONNECTICUT

SITE INFORMATION

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

LATITUDE (NAD83):
41° 16' 48.741" N
41.28020583

LONGITUDE (NAD83):
73° 11' 07.441" W
-73.18540027

COUNTY:
FAIRFIELD

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

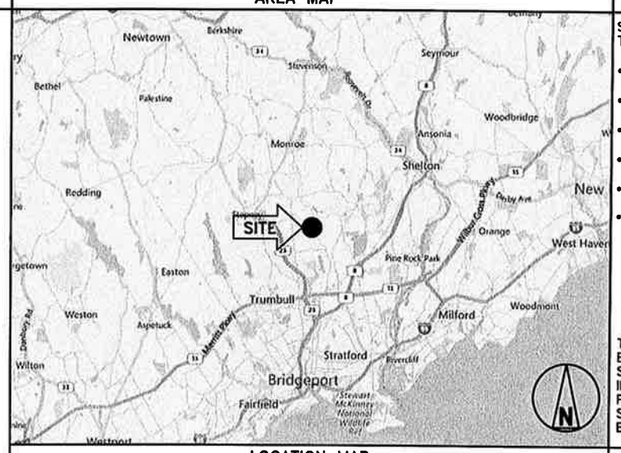
ZONING DISTRICT:
R-1 RESIDENTIAL

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

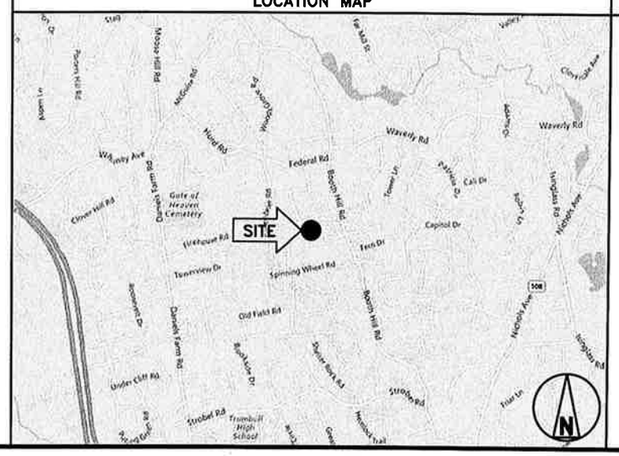
AAV PROVIDER:
AT&T
PHONE: (800) 288-2020

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

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE (3) PANEL ANTENNAS
- INSTALL (6) PANEL ANTENNAS
- INSTALL (3) 800 MHz RRH'S BELOW ANTENNAS
- INSTALL (30) JUMPER CABLES
- INSTALL (2) 1.689" HYBRID CABLES
- INSTALL 2.5 EQUIPMENT INSIDE EXISTING N.V. MMBS CABINET

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

APPLICABLE CODES

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

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

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

DRAWING INDEX

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

PLANS PREPARED FOR:
Sprint

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

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

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN G. STEVENS
JUL 25 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:
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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/18/18	ETC	0

SITE NAME:
BOOTH HILL

SITE NUMBER:
CT03XC366

SITE ADDRESS:
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

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

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

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

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

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

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

1.5 DEFINITIONS:

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

B. COMPANY: SPRINT CORPORATION

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

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

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

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

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

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

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

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

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

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

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

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

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

3.2 DELIVERABLES:

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

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

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

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 NOTICE TO PROCEED

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

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

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

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

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

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

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

PROJECT MANAGER:

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

ENGINEERING LICENSE:

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/18/18	ETC	0

SITE NAME:

BOOTH HILL

SITE NUMBER:

CT03XC366

SITE ADDRESS:

14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

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

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

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

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

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

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

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

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

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

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

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

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 SUBMITTALS:

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

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

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

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

1.4 TESTS AND INSPECTIONS:

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

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

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

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

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

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

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

3.2 REQUIRED TESTS:

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

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

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

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

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

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www.infinigy.com
JOB NUMBER 526-104

PROJECT MANAGER:

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

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24
LICENSED
PROFESSIONAL ENGINEER
JUL 25 2018

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/18/18	ETC	0

SITE NAME:

BOOTH HILL

SITE NUMBER:

CT03XC366

SITE ADDRESS:

14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

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

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

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

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

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

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

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

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

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

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

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

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

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

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

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

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

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

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

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

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

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

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

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

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

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

3.2 PROJECT CONFERENCE CALLS:

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

3.3 PROJECT TRACKING IN SMS:

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

3.4 ADDITIONAL REPORTING:

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

3.5 PROJECT PHOTOGRAPHS:

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

1. 1SHELTER AND TOWER OVERVIEW.

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

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

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

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

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

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

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

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

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

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

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

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

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

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

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

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

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

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

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

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

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING – WHERE APPLICABLE.

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

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JOB NUMBER 526-104

PROJECT MANAGER:

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

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
LICENSED PROFESSIONAL ENGINEER
JUL 23 2018

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/18/18	ETC	0

SITE NAME:

BOOTH HILL

SITE NUMBER:

CT03XC366

SITE ADDRESS:

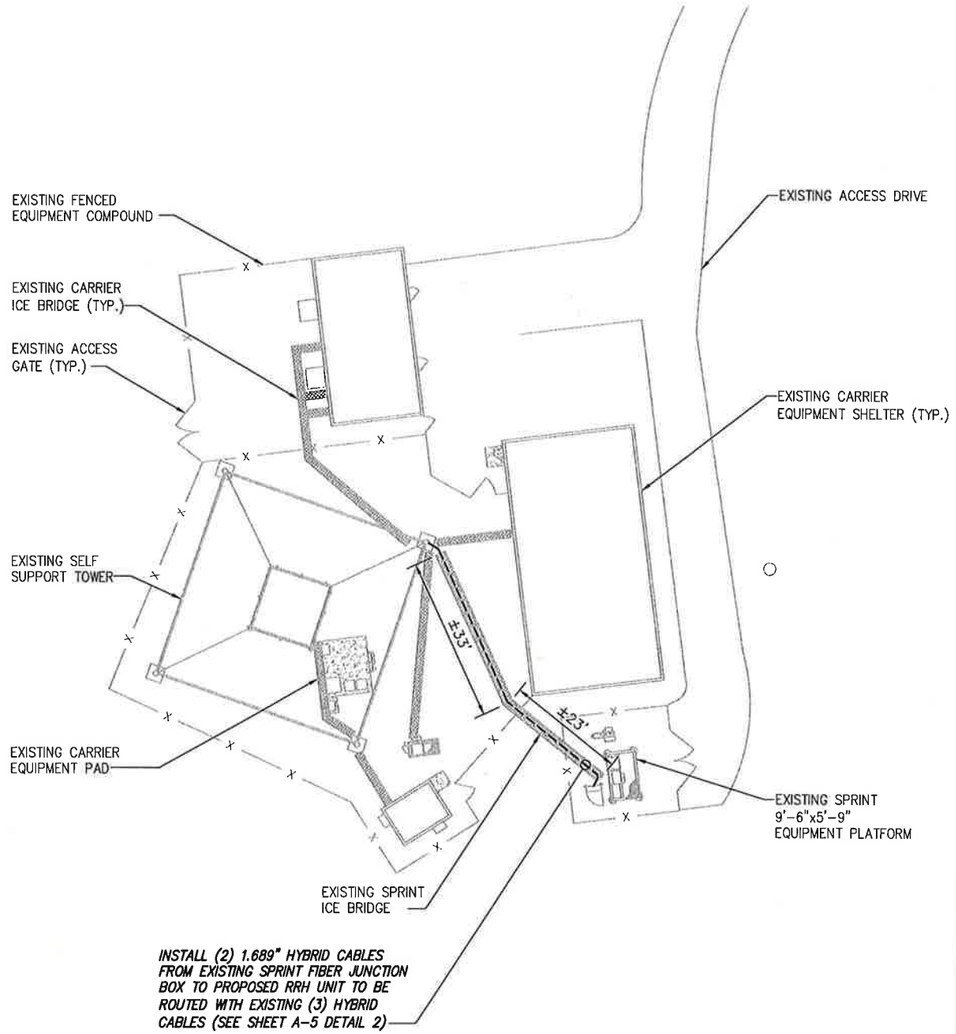
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-3



N

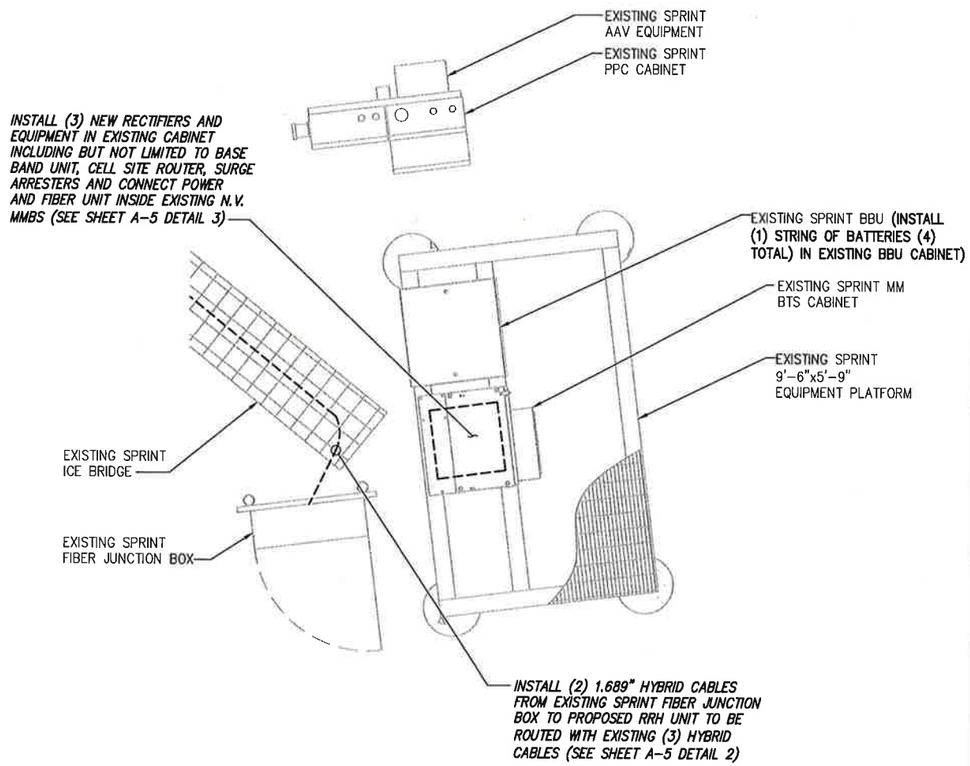
GRAPHIC SCALE:

30' 15' 0 15' 30'

SCALE (11x17): 1" = 30'-0"
SCALE (22x34): 1" = 15'-0"

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



N

GRAPHIC SCALE:

4' 2' 0 2' 4'

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

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

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OFFICE: (518) 306-3740

ENGINEERING LICENSE:

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SITE NAME:

BOOTH HILL

SITE NUMBER:

CT03XC366

SITE ADDRESS:

14 OXFORD DRIVE
SHELTON, CT 06484

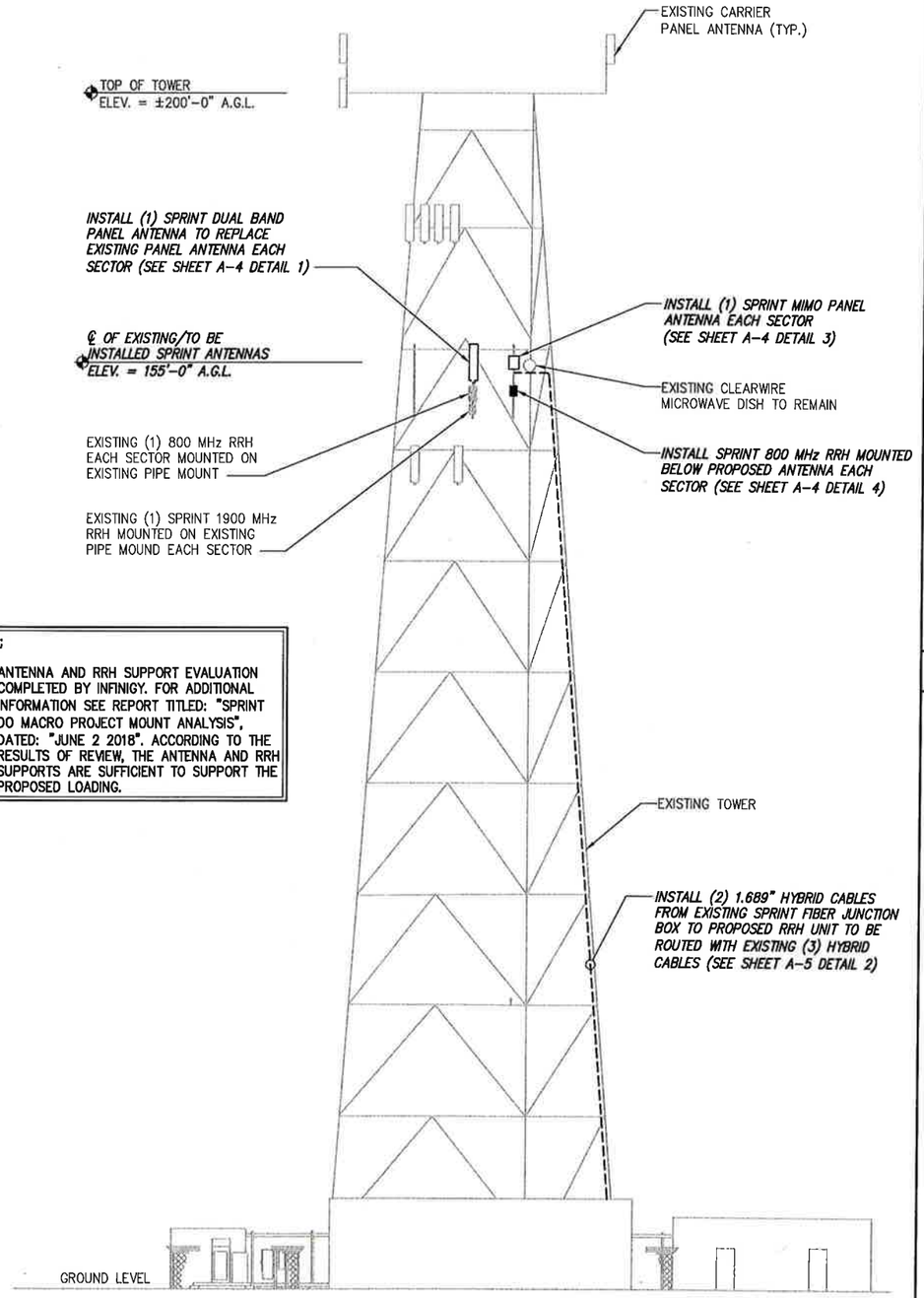
SHEET DESCRIPTION:

SITE PLAN

SHEET NUMBER:

A-1

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



NOTE:

- ANTENNA AND RRH SUPPORT EVALUATION COMPLETED BY INFINIGY. FOR ADDITIONAL INFORMATION SEE REPORT TITLED: "SPRINT DO MACRO PROJECT MOUNT ANALYSIS", DATED: "JUNE 2 2018". ACCORDING TO THE RESULTS OF REVIEW, THE ANTENNA AND RRH SUPPORTS ARE SUFFICIENT TO SUPPORT THE PROPOSED LOADING.

TOWER ELEVATION | NO SCALE | 1

SITE LOADING CHART

SECTOR	EXISTING/ PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/ REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	PROPOSED	AAHC	NOKIA	0°	1	–	(2) 800 MHZ 2X50W RRH (1) 1900 MHz 4X45 RRH	SEE SHEET A-5 DETAIL 1	±235'*	±155' AGL
	EXISTING	APXVSPP18-C-A20	RFS	0°	1	REMOVE		EXISTING HYBRID		
	PROPOSED	NNVV-65B-R4	COMMSCOPE	0°	1	–		EXISTING HYBRID		
BETA	PROPOSED	AAHC	NOKIA	140°	1	–	(2) 800 MHZ 2X50W RRH (1) 1900 MHz 4X45 RRH	SEE SHEET A-5 DETAIL 1		±155' AGL
	EXISTING	APXVSPP18-C-A20	RFS	140°	1	REMOVE		EXISTING HYBRID		
	PROPOSED	NNVV-65B-R4	COMMSCOPE	140°	1	–		EXISTING HYBRID		
GAMMA	PROPOSED	AAHC	NOKIA	220°	1	–	(2) 800 MHZ 2X50W RRH (1) 1900 MHz 4X45 RRH	SEE SHEET A-5 DETAIL 1		±155' AGL
	EXISTING	APXVSPP18-C-A20	RFS	220°	1	REMOVE		EXISTING HYBRID		
	PROPOSED	NNVV-65B-R4	COMMSCOPE	220°	1	–		EXISTING HYBRID		

PROJECT SCOPE:

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

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

SITE LOADING CHART | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

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OFFICE#. (518) 306-3740

ENGINEERING LICENSE:
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JOHN S. STEVENS
No. 24705
PROFESSIONAL ENGINEER
JUL 25 2018

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DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	07/18/18	ETC	0

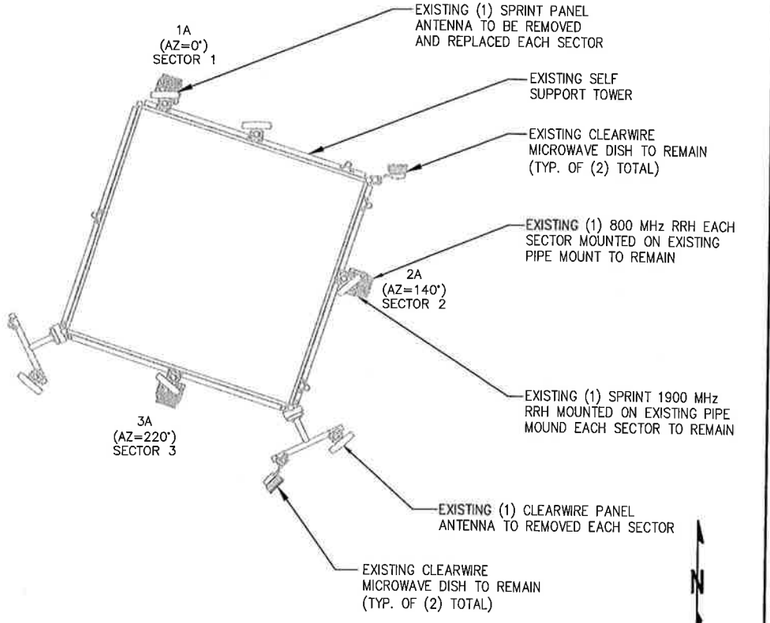
SITE NAME:
BOOTH HILL

SITE NUMBER:
CT03XC366

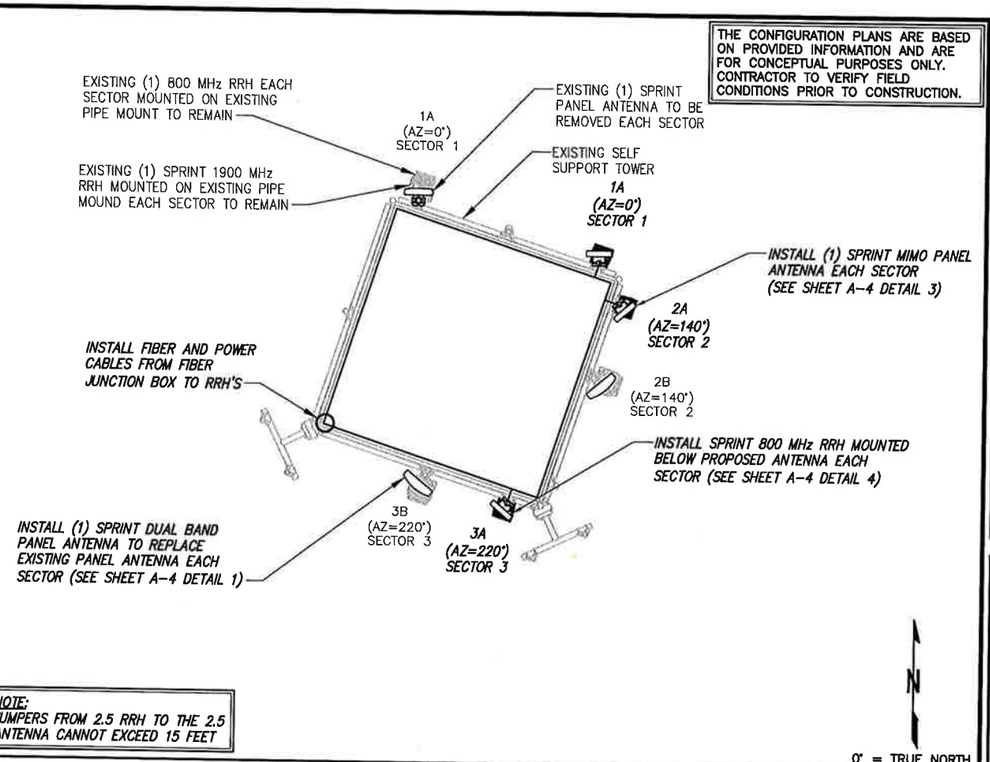
SITE ADDRESS:
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



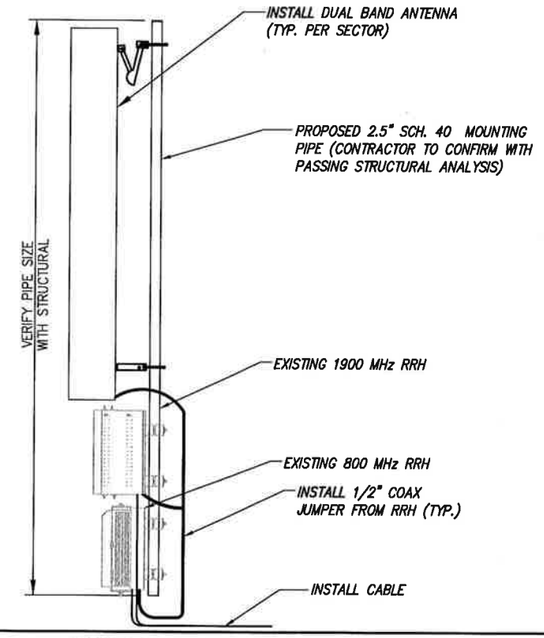
EXISTING ANTENNA LAYOUT | NO SCALE | 1



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

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

FINAL ANTENNA & RRH LAYOUT | NO SCALE | 2



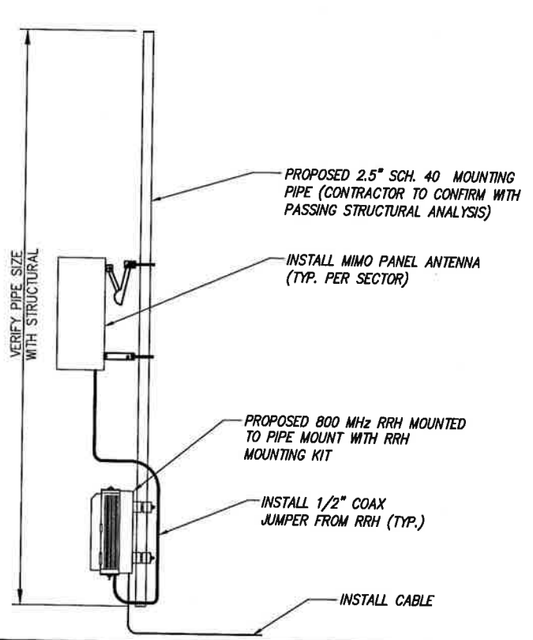
NOTE:
CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

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

NOTES:

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

TYPICAL DUAL BAND ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 3



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

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2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.

TYPICAL MIMO ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 4

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REVISIONS:

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ISSUED FOR PERMIT	07/18/18	ETC	0

SITE NAME:
BOOTH HILL

SITE NUMBER:
CT03XC366

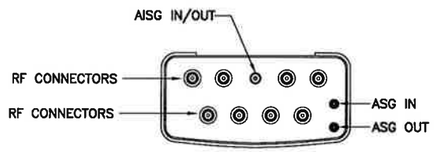
SITE ADDRESS:
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:
A-3

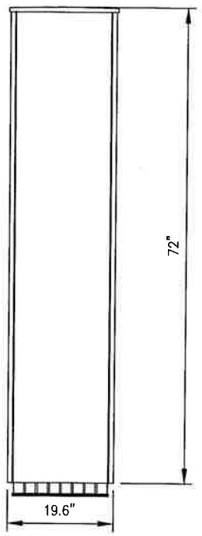
ANTENNA COMMSCOPE: NNVV-65B-R4

RADOME MATERIAL:	FIBER GLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.In(mim):	72"x19.6"x7.8" (1828x498x197mm)
WEIGHT:	77.4 lbs
CONNECTORS:	(8) 4.3-10 FEMALE (2) AISG CONNECTORS



PLAN VIEW

SIDE VIEW

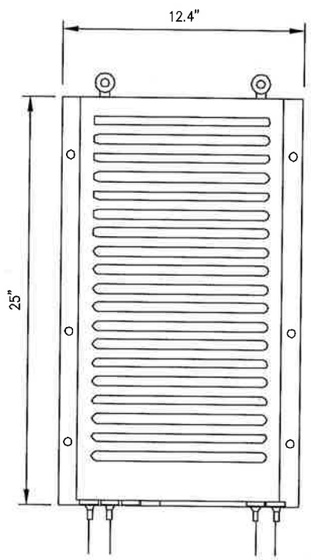


FRONT VIEW

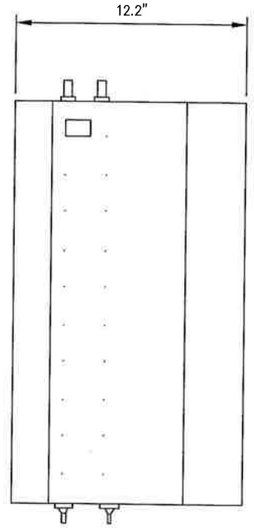
DUAL BAND ANTENNA DETAIL | NO SCALE | 1

RRH: ALCATEL LUCENT 1900 MHz

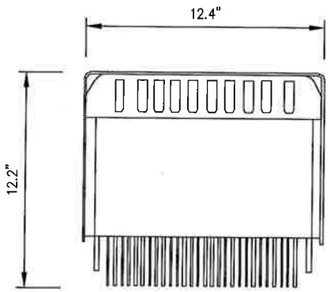
COLOR: LIGHT GREY
WEIGHT: 70 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)



FRONT VIEW



SIDE VIEW

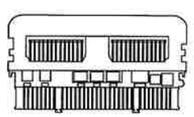


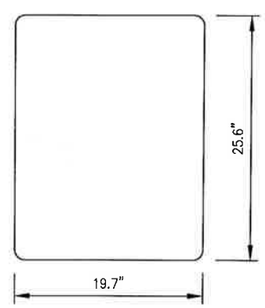
TOP VIEW

EXISTING 1900 MHz RRH | NO SCALE | 2

ANTENNA NOPIKA AAHC

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.In(mim):	25.6"x19.7"x9.9" (651x501x245mm)
WEIGHT:	99.2 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE (8) 4.1/9.5 DIN FEMALE





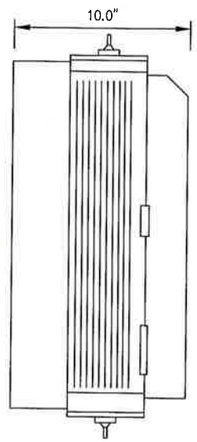
2.5 ANTENNA DETAIL | NO SCALE | 3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

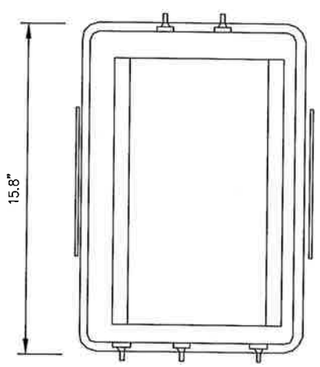
COLOR: LIGHT GREY
WEIGHT: 53 LBS.

NOTES

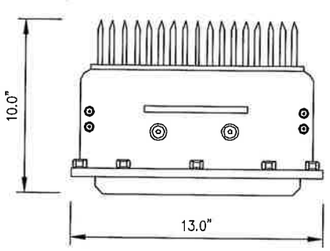
COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.



SIDE VIEW



FRONT VIEW



PLAN VIEW

800 MHz RRH | NO SCALE | 4

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www.infinigy.com
JOB NUMBER 526-104

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

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24709
LICENSED
PROFESSIONAL ENGINEER
JUL 25 2018

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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	07/18/18	ETC	0

SITE NAME:
BOOTH HILL

SITE NUMBER:
CT03XC366

SITE ADDRESS:
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-4

RFS HYBRIFLEX RISER CABLE SCHEDULE

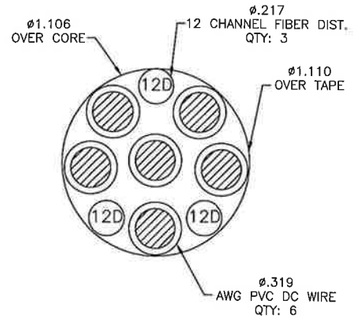
Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F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

RFS HYBRIFLEX JUMPER CABLE SCHEDULE

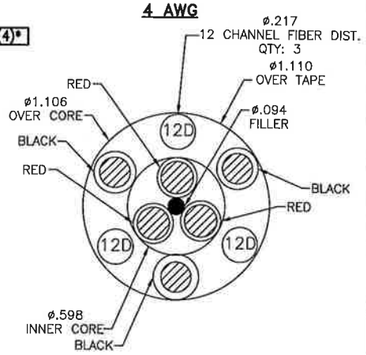
Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1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

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

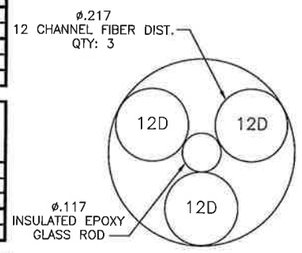
* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.



4 AWG

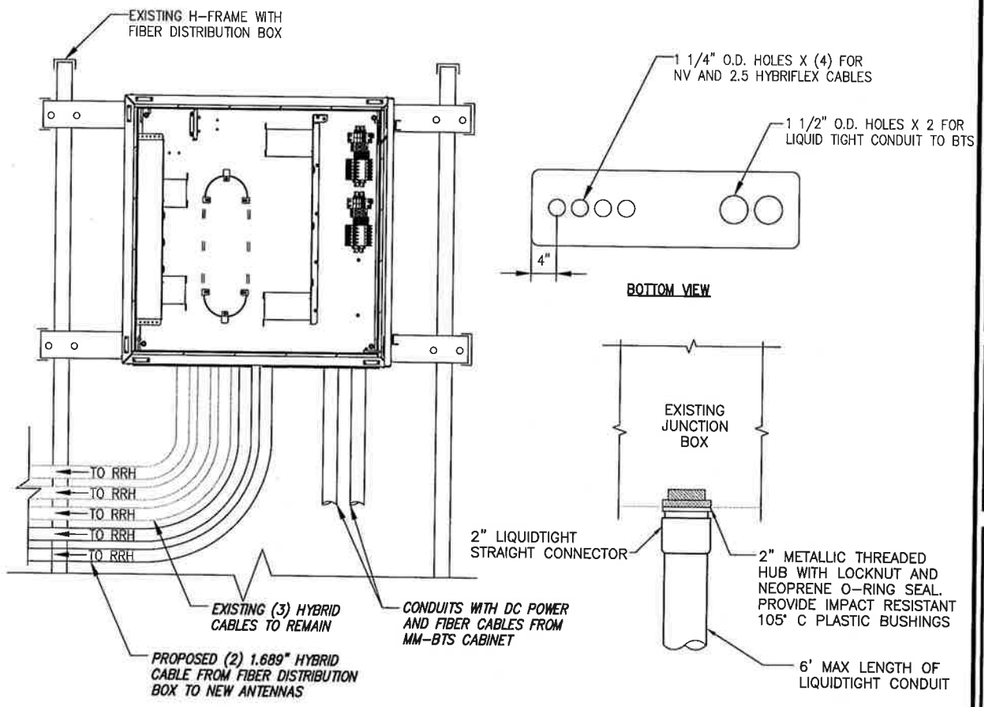


8 & 6 AWG



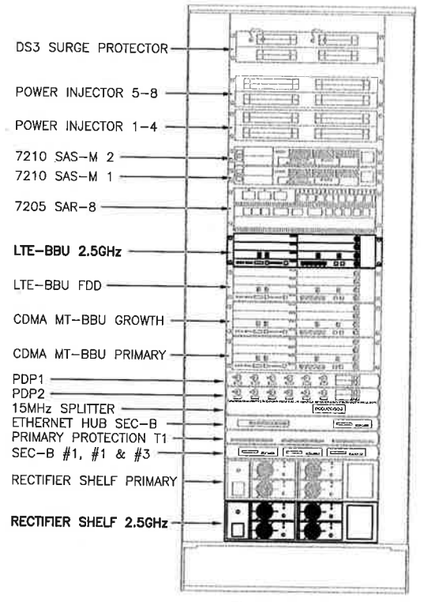
FIBER ONLY

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



FRONT VIEW

FIBER JUNCTION BOX & PENETRATION | NO SCALE | 2



FRONT VIEW

NEW EQUIPMENT IN EXISTING CABINET | NO SCALE | 3

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PROJECT MANAGER:

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
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SITE NAME:
BOOTH HILL

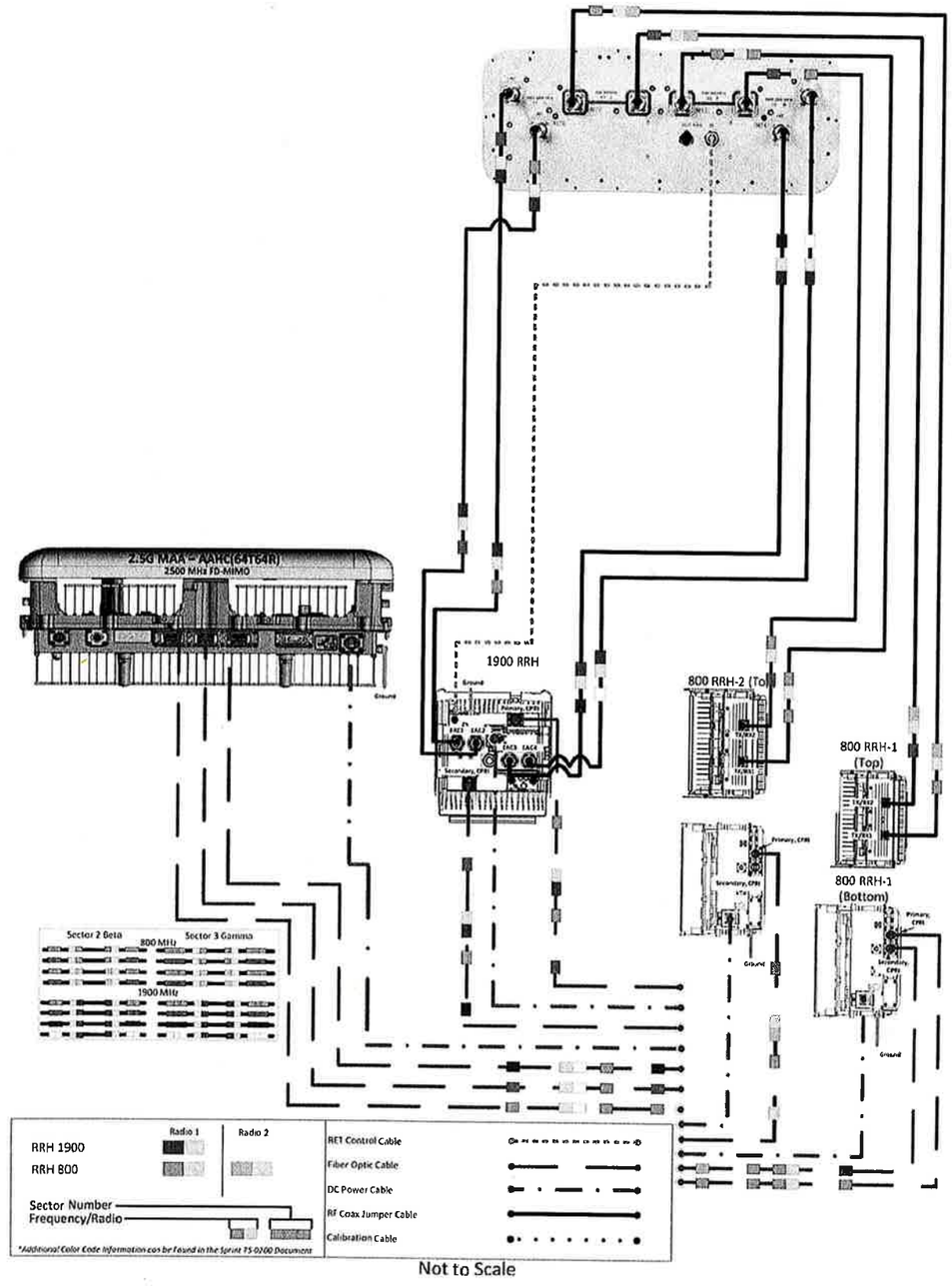
SITE NUMBER:
CT03XC366

SITE ADDRESS:
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-5

ALU 21-MIMO NNVV-65B-R4 wo Filters



Not to Scale

PLUMBING DIAGRAM | NO SCALE | 1

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LICENSED
PROFESSIONAL ENGINEER
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SITE NUMBER:

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SITE ADDRESS:

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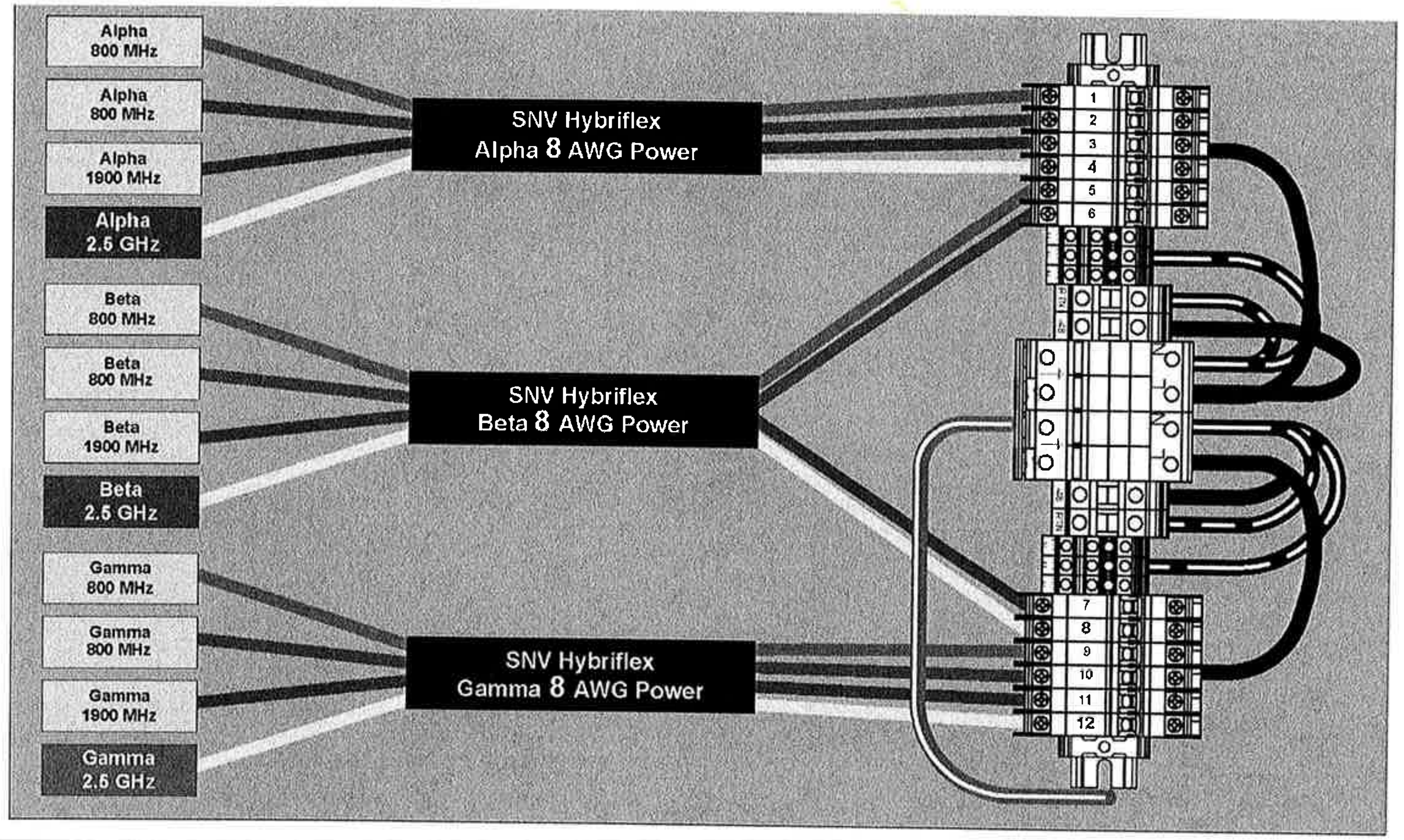
SHELTON, CT 06484

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

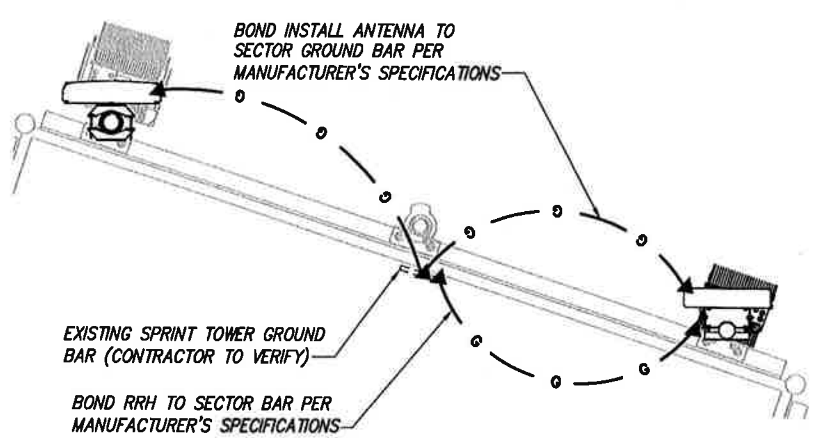
A-6



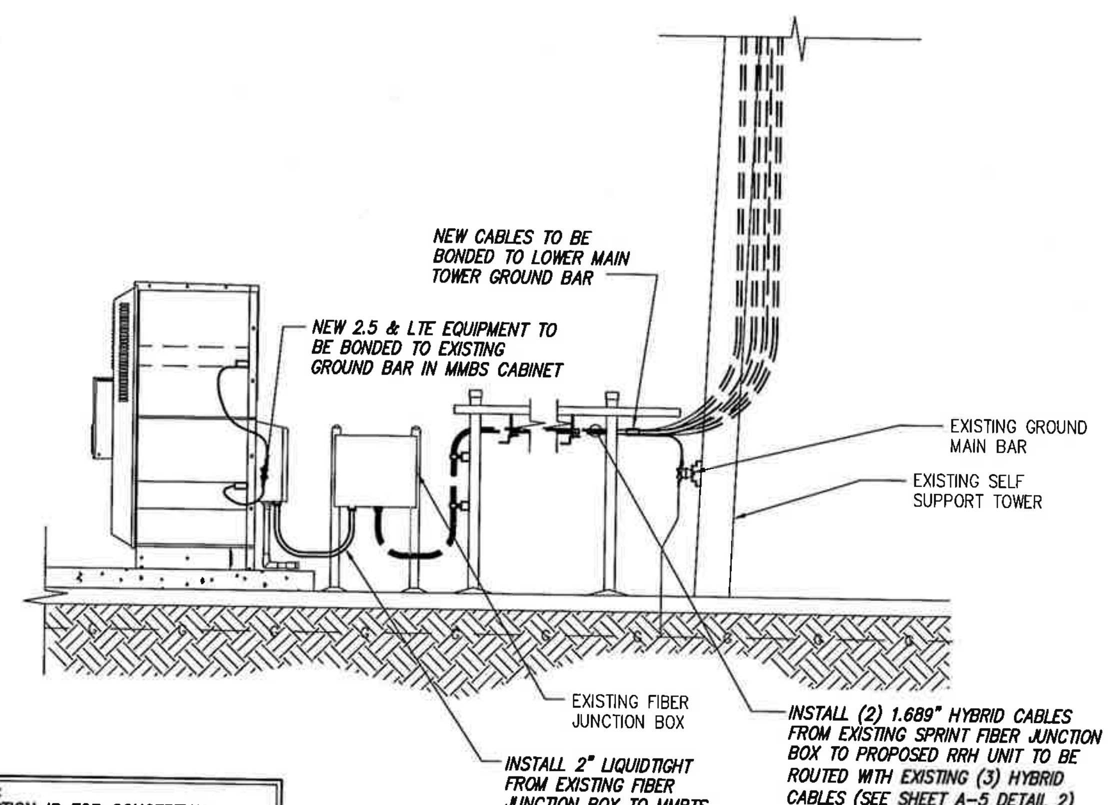
RRH TO DISTRIBUTION BOX POWER CONNECTIVITY | NO SCALE | 1

LEGEND:

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2



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

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

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SITE NUMBER:
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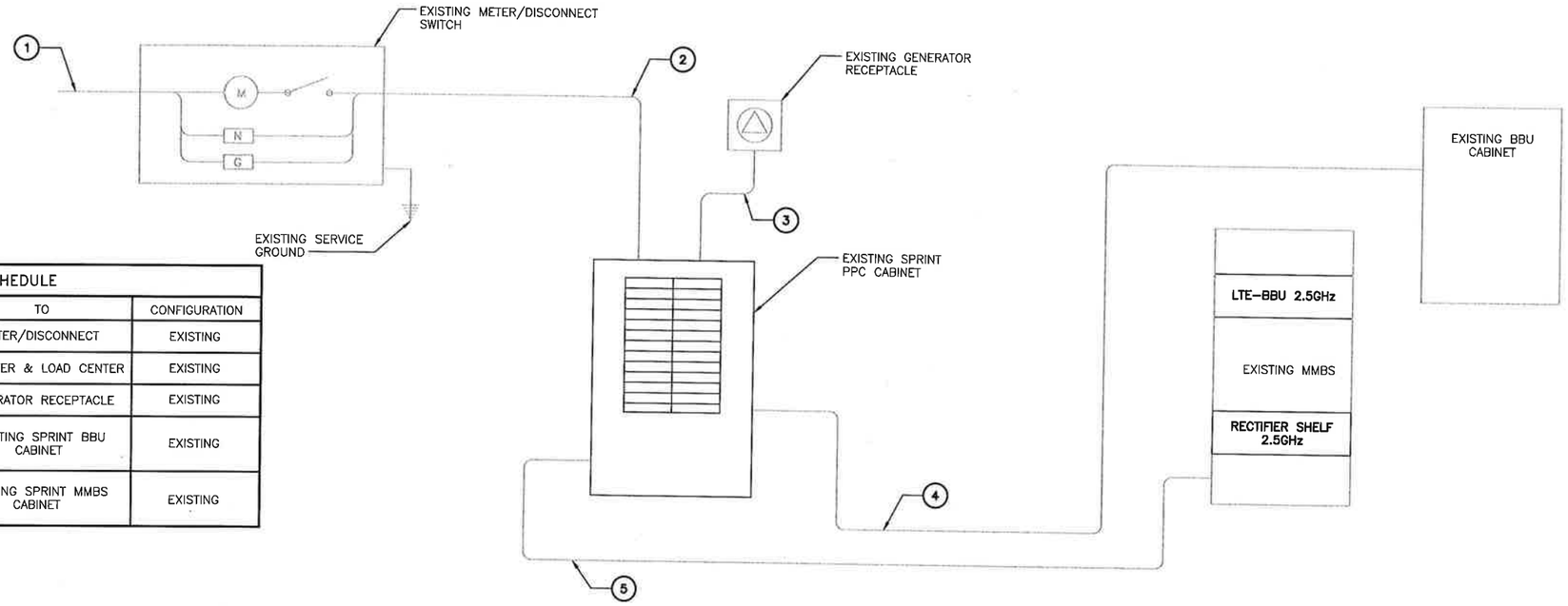
SITE ADDRESS:
14 OXFORD DRIVE
SHELTON, CT 06484

SHEET DESCRIPTION:
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:
E-1

NOTES

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

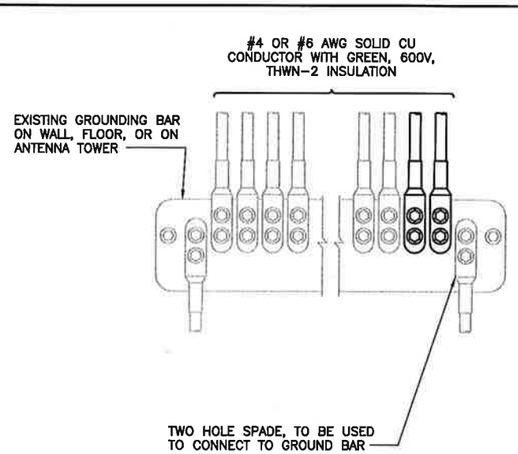


CIRCUIT SCHEDULE

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

ELECTRICAL ONE–LINE DIAGRAM

NO SCALE | 1

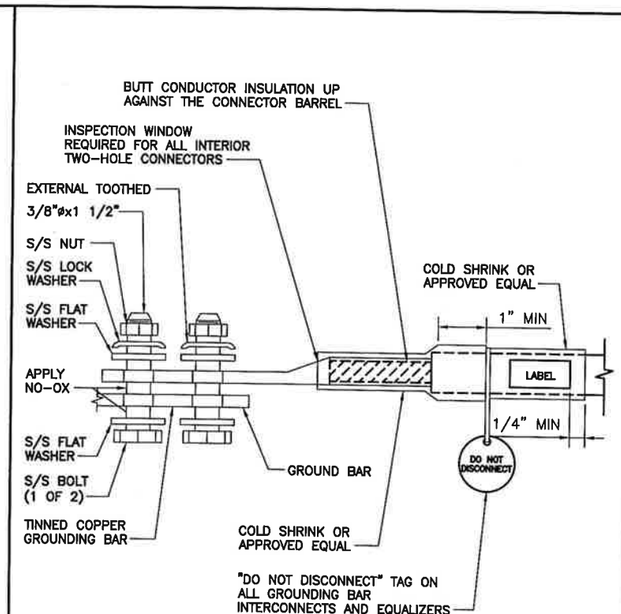


NOTES

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

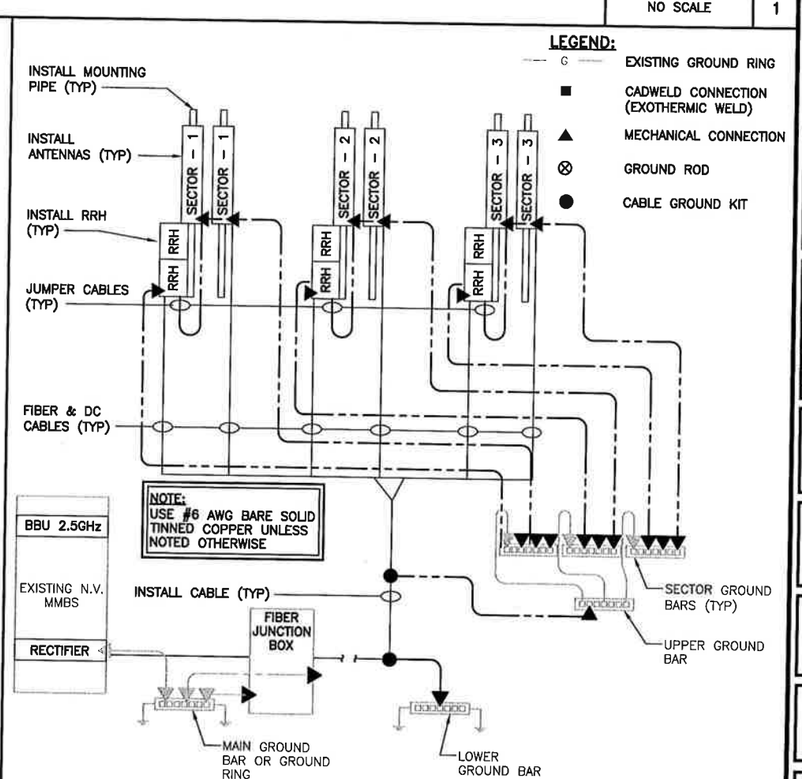
INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR

NO SCALE | 2



TWO HOLE LUG

NO SCALE | 3



GROUNDING RISER DIAGRAM

NO SCALE | 4

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SITE NUMBER: CT03XC366

SITE ADDRESS: 14 OXFORD DRIVE SHELTON, CT 06484

SHEET DESCRIPTION: ELECTRICAL & GROUNDING PLAN

SHEET NUMBER: E-2