



Filed by:
Kri Pelletier, Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3804 - kpelletier@sbsite.com

January 30, 2018

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

Notice of Exempt Modification
10 Ashpohtag Rd, Norfolk, CT 06058
42 0 9.7 N
-73 13 17 W
Sprint #: CT33XC590_DOMU

Dear Ms. Bachman:

Sprint currently maintains antennas at the 145-foot of the existing 148-foot Monopole Tower at 10 Ashpohtag Rd., Norfolk, CT. The tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Stop Sign Realty, LLC. Sprint now intends to replace (2) existing cell antennas with (2) newer technology cell antennas at the 145-foot level of the tower. Sprint's proposed full scope of work is as follows:

Remove: None

Remove and Replace:

- Remove (2) APXVSP18-C-A20 Panel Antennas / Replace with (2) ETCR-654L12H6 Panel Antennas
*Ground level: *No change to compound size or area / replacements on existing pad*
- Remove (1) 9928 equipment cabinet and replace with (1) 9927 equipment cabinet on existing pad
- Remove (1) BBU cabinet and replace with (1) BBU cabinet on existing pad

Install:

- (1) RFS ACU-A20-N RETs
- (1) ALU 1900 Mhz RRUs
- (3) ALU 800 Mhz RRUs
- (2) ALU TD-RRH8x20-25 RRUs
- (1) ALU 800 Mhz Filter
- (2) 1-1/4" lines

Existing Equipment to Remain (Including entitlements):

- (1) ALU 1900 Mhz RRUs
- (1) ALU 800 Mhz RRUs
- (1) ALU 800 Mhz Filter
- (3) RFS ACU-A20-N RETs
- (2) 1-1/4" lines
- (3) T-Arms
- (6) site Prop STK-U, (1) HRK-14, and (1) PRK-SFS (added to T-Arms)



This facility was approved by the Council under Docket #287 on July 13, 2004. Approval was given for a monopole tower not to exceed 150 feet above ground level, with space for public and private antennas. Municipal space was to be made available at no cost. Initial construction of the tower was not to happen during the Coopers Hawk nesting season. There were no conditions placed on the tower beyond the aforementioned. It is SBA's opinion that this modification is in full compliance.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Norfolk's First Selectman, Susan M. Dyer, Michael Halloran, Zoning & Wetlands Enforcement Officer, as well as to the property owner. Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Sprint respectfully submits that the proposed modifications to the above-referenced telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kri Pelletier
Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3804 + T
508.366.2610 + F
203.446.7700 + C
kpelletier@sbasite.com
Attachments

cc: Susan M. Dyer, First Selectman / with attachments
Town of Norfolk, Town Hall, 19 Maple Avenue, Norfolk, CT 06058
Michael Halloran, Zoning & Wetlands Enforcement Officer / with attachments
Town of Norfolk, Town Hall, 19 Maple Avenue, Norfolk, CT 06058
Stop Sign Realty, LLC / with attachments
330 West Lake Street, Winsted, CT 06098



POWER DENSITY

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	KMW ETCR-654L12H6	Make / Model:	KMW ETCR-654L12H6	Make / Model:	KMW ETCR-654L12H6
Gain:	13.35 / 15.25 / 15.05 dBd	Gain:	13.35 / 15.25 / 15.05 dBd	Gain:	13.35 / 15.25 / 15.05 dBd
Height (AGL):	145 feet	Height (AGL):	145 feet	Height (AGL):	145 feet
Frequency Bands	850 MHz / 1900 MHz (PCS) / 2500 MHz (BRS)	Frequency Bands	850 MHz / 1900 MHz (PCS) / 2500 MHz (BRS)	Frequency Bands	850 MHz / 1900 MHz (PCS) / 2500 MHz (BRS)
Channel Count	18	Channel Count	18	Channel Count	18
Total TX Power(W):	380 Watts	Total TX Power(W):	380 Watts	Total TX Power(W):	380 Watts
ERP (W):	11,775.31	ERP (W):	11,775.31	ERP (W):	11,775.31
Antenna A1 MPE%	2.38 %	Antenna B1 MPE%	2.38 %	Antenna C1 MPE%	2.38 %

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	2.38 %
AT&T	1.87 %
Verizon Wireless	3.64 %
Site Total MPE %:	7.89 %

SPRINT Sector A Total:	2.38 %
SPRINT Sector B Total:	2.38 %
SPRINT Sector C Total:	2.38 %
Site Total:	7.89 %

SPRINT_ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	432.54	145	0.80	850 MHz	567	0.15%
Sprint 850 MHz LTE	2	432.54	145	1.61	850 MHz	567	0.28%
Sprint 1900 MHz (PCS) CDMA	5	535.94	145	4.99	1900 MHz (PCS)	1000	0.50%
Sprint 1900 MHz (PCS) LTE	2	1,339.86	145	4.99	1900 MHz (PCS)	1000	0.50%
Sprint 2500 MHz (BRS) LTE	8	639.78	145	9.52	2500 MHz (BRS)	1000	0.95%
Total:							2.38%

ORIGIN ID:BBFA (508) 614-0389
RICK WOODS
SBA NETWORK SERVICES INC
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH MA 01581
UNITED STATES US

SHIP DATE: 30JAN18
ACT'WG: 1.00 LB
CAD: 105843304INET3980

BILL SENDER

TO SUSAN DYER, FIRST SELECTMAN

TOWN OF NORFOLK

TOWN HALL

19 MAPLE AVE.

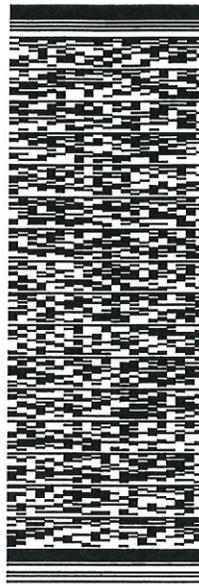
NORFOLK CT 06058

(508) 251-0720 X 3804

REF: 10-56-92009-6089

INV:

DEPT:



J181110012081uv

TRK# 7713 5801 1140

WED - 31 JAN 10:30A
PRIORITY OVERNIGHT

EB HFDA

06058
CT-US BDL



552J11122D/DC45

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RICK WOODS
SBA NETWORK SERVICES INC
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH MA 01581
UNITED STATES US

SHIP DATE: 30JAN18
ACTWGT: 1.00 LB
CAD: 105843304INLET3980
BILL SENDER

TO MICHAEL HALLORAN, ZONING OFFICER

TOWN OF NORFOLK

TOWN HALL

19 MAPLE AVE.

NORFOLK CT 06058

(508) 251-0720 X 3804

REF: 10-56-92009-6089

INV:

DEPT:



J011110012001uv

TRK# 7713 5804 5619
0201

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PRIORITY OVERNIGHT

EB HFDA

06058
CT-US BDL



552J11122DCA5

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RICK WOODS
SBA NETWORK SERVICES INC
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH MA 01581
UNITED STATES US

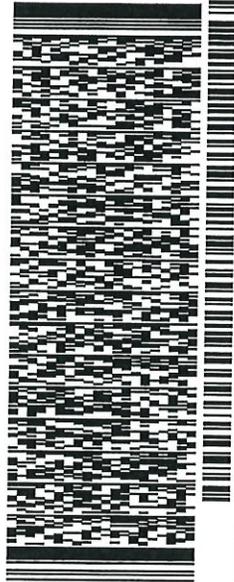
SHIP DATE: 30 JAN 18
ACTWGT: 1.00 LB
CAD: 105843304/MNET3980

BILL SENDER

TO **PRESIDENT OR MANAGER**
STOP SIGN REALTY, LLC
330 WEST LAKE STREET

WINSTED CT 06098
(508) 251-0720 X.3804 REF: 10-56-92009-6088
INVT. DEPT:

552J1122D/DCA5



TRK# 7713 5806 2427
0201

WED - 31 JAN 10:30A
PRIORITY OVERNIGHT

EB HFDA

06098
CT-US BDL



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Town of Norfolk

"Icebox" of Connecticut

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Owner and Parcel Information

Owner Name	STOP SIGN REALTY LLC	Today's Date	November 10, 2017
Mailing Address	330 WEST LAKE ST	Parcel ID	1140 (Account #: 8-14/034-0)
	WINSTED, CT 06098	Fire District	
Location Address	10 ASHPOHTAG RD	Census Tract	3081
Map/Lot	8-14/34	Acreage	13.01
Use Class / Description	1-1 RESIDENTIAL LOT	Utilities	
Assessing Neighborhood	3A		

Current Appraised Value Information

Building Value	XF Value	OB Value	Land Value	Special Land Value	Total Appraised Value	Net Appraised Value	Current Assessment
\$ 72,260	\$ 3,250	\$ 936,800	\$ 141,660		\$ 1,153,970	\$ 1,153,970	\$ 807,780

Assessment History

Year	Building	OB/Misc	Land	Total Assessment
Current	\$ 50,580	\$ 655,760	\$ 99,160	\$ 807,780
2016	\$ 50,580	\$ 655,760	\$ 99,160	\$ 807,780
2015	\$ 50,580	\$ 655,760	\$ 99,160	\$ 807,780

Land Information

Use	Class	Zoning	Area	Value
RESIDENTIAL LOT	R	RU	2 AC	\$ 80,000
EXCESS LAND	R	RU	11.01 AC	\$ 61,660

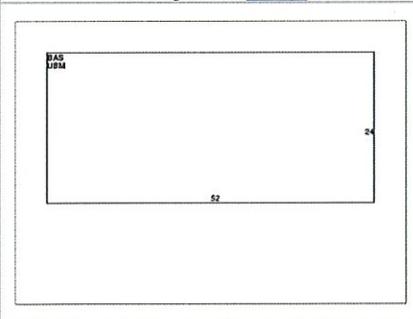
Residential Building Information

Style	Year Built	Eff Year Built	Living Area	Stories	Grade	Exterior Wall	Interior Wall
Ranch	1988	1993	1,248	1 Story	C	Vinyl Siding	Drywall/Sheet
Roof Cover	Roof Structure	Floor Type	Heat Type	Heat Fuel	AC	Bedrooms/Full Baths/Half Baths/Total Rooms	Basement
Asphalt	Gable/Hip	Hardwood	Oil	Forced Air-Duc	None	3 / 2 / 0 / 6	1248 sq ft

Building Sub Areas

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	1,248	1,248	
UBM	Basement, Unfinished	0	1,248	
	Totals	1,248	2,496	1,498

Building Sketch [Enlarge](#)



Building Photo [Enlarge](#)



Out Buildings / Extra Features

Description	Sub Description	Area	Year Built	Value
FIREPLACE C		1 UNITS	1993	\$ 1,250
BASEMENT GAR		2 UNITS	1993	\$ 2,000
EX FRAME		360 S.F.	2007	\$ 32,400
8' FENCE		400 L.F.	2008	\$ 4,400
CELL TOWER C		1 UNITS	2007	\$ 900,000

Sale Information

Sale Date	Sale Price	Deed Book/Page	Sale Qualification	Reason	Vacant or Improved	Owner
09/29/2016	\$ 42,000	120/ 638	Unqualified	Unqualified Sale - Nonspecific	Improved	STOP SIGN REALTY LLC
08/29/2014	\$ 55,000	118/ 115	Unqualified	Unqualified Sale - Nonspecific	Improved	ASHNER HELEN
08/05/2014		118/ 4	Unqualified	No Consideration Sale	Improved	FEDERAL NATIONAL MORTGAGE ASSOC
08/05/2014		118/ 1	Unqualified	Foreclosure	Improved	ONE WEST BANK FSB
10/23/2012		115/ 573	Unqualified	Foreclosure	Improved	FEDERAL NATIONAL MORTGAGE ASSOC
10/23/2012		115/ 570	Unqualified	Foreclosure	Improved	ONEWEST BANK FSB
09/13/2006		105/ 178	Unqualified	Family Sale	Improved	CAMMILLETTI LOUIS
05/22/2006		104/ 228	Unqualified	Partial Sale	Vacant	CAMMILLETTI LOUIS ET AL
12/29/2004		100/ 195	Unqualified	1N	Vacant	CAMMILLETTI LOUIS
12/19/2001		91/ 457	Unqualified	1N	Vacant	CAMMILLETTI LOUIS
12/19/2001		91/ 455	Unqualified		Vacant	GRISWOLD SANDRA M

08/20/2001		90/ 616	Qualified	1A	Vacant	CAMMILLETTI LOUIS
02/18/1982		61/ 657	Unqualified			CAMMILLETTI LOUIS + NORMA AVIS

Permit Information								
Permit ID	Issue Date	Type	Description	Amount	Inspection Date	% Complete	Date Complete	Comments
532 E	10/04/2013	EL	Electric	\$ 5,000		0		
278 E	09/02/2013	EL	Electric	\$ 12,000		0		Install 6 new antennas
278-E	09/25/2012	RE	Remodel	\$ 12,000		0	09/25/2012	ANTENNAS
	08/02/2007		BLDG/ANTENNAS	\$ 170,000		0		12X30 SHELTER
7614-B	09/13/2004	NC	CELL TOWER	\$ 126,400		0		

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

SPRINT Existing Facility

Site ID: CT33XC590

West Norfolk
10 Ashpohtag Road
Norfolk, CT 06058

December 1, 2017

EBI Project Number: 6217005377

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	7.89 %



December 1, 2017

SPRINT

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

Emissions Analysis for Site: **CT33XC590 – West Norfolk**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **10 Ashpohtag Road, Norfolk, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.

CALCULATIONS

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

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

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



- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **KMW ETCR-654L12H6** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antenna mounting height centerlines of the proposed antennas are **145 feet** above ground level (AGL) for **Sector A**, **145 feet** above ground level (AGL) for **Sector B** and **145 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 public threshold limits.



SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	KMW ETCR-654L12H6	Make / Model:	KMW ETCR-654L12H6	Make / Model:	KMW ETCR-654L12H6
Gain:	13.35 / 15.25 / 15.05 dBd	Gain:	13.35 / 15.25 / 15.05 dBd	Gain:	13.35 / 15.25 / 15.05 dBd
Height (AGL):	145 feet	Height (AGL):	145 feet	Height (AGL):	145 feet
Frequency Bands	850 MHz / 1900 MHz (PCS) / 2500 MHz (BRS)	Frequency Bands	850 MHz / 1900 MHz (PCS) / 2500 MHz (BRS)	Frequency Bands	850 MHz / 1900 MHz (PCS) / 2500 MHz (BRS)
Channel Count	18	Channel Count	18	Channel Count	18
Total TX Power(W):	380 Watts	Total TX Power(W):	380 Watts	Total TX Power(W):	380 Watts
ERP (W):	11,775.31	ERP (W):	11,775.31	ERP (W):	11,775.31
Antenna A1 MPE%	2.38 %	Antenna B1 MPE%	2.38 %	Antenna C1 MPE%	2.38 %

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	2.38 %
AT&T	1.87 %
Verizon Wireless	3.64 %
Site Total MPE %:	7.89 %

SPRINT Sector A Total:	2.38 %
SPRINT Sector B Total:	2.38 %
SPRINT Sector C Total:	2.38 %
Site Total:	7.89 %

SPRINT _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	432.54	145	0.80	850 MHz	567	0.15%
Sprint 850 MHz LTE	2	432.54	145	1.61	850 MHz	567	0.28%
Sprint 1900 MHz (PCS) CDMA	5	535.94	145	4.99	1900 MHz (PCS)	1000	0.50%
Sprint 1900 MHz (PCS) LTE	2	1,339.86	145	4.99	1900 MHz (PCS)	1000	0.50%
Sprint 2500 MHz (BRS) LTE	8	639.78	145	9.52	2500 MHz (BRS)	1000	0.95%
						Total:	2.38%

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public 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 public exposure to RF Emissions are shown here:

SPRINT Sector	Power Density Value (%)
Sector A:	2.38 %
Sector B:	2.38 %
Sector C:	2.38 %
SPRINT Maximum Total (per sector):	2.38 %
Site Total:	7.89 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **7.89 %** of the allowable FCC established general public 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.



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 148 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46144-A

Customer Site Name: Cammilletti Property

Carrier Name: Sprint Nextel

Carrier Site ID / Name: CT33XC590 / West Norfolk

Site Location: 10 Ashpohtag Rd

Norfolk, Connecticut

Litchfield County

Latitude: 42.002694

Longitude: -73.221388

Analysis Result:

Max Structural Usage: 57.4% [Pass]

Max Foundation Usage: 36.0% [Pass]

Report Prepared by: Matthew Baker



Introduction

The purpose of this report is to summarize the analysis results on the 148 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	EEI Project #12865, dated 08/30/04
Foundation Drawing	EEI Project #12865, dated 08/30/04
Geotechnical Report	Dr. Clarence Welti, PE Geotechnical Report for Proposed Sprint Site CT33XC590, dated 08/17/04
Modification Drawings	Vertical Solutions Project #121779, dated 10/02/12

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-G. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 115.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 89.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.175$, $S_1 = 0.065$

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	145.0	2	RFS - APXVSP18-C-A20 - Panel	(3) T-Arm	(2) 1-1/4"	Sprint Nextel
-		1	ALU - 1900 Mhz - RRH			
-		1	ALU - 800 Mhz - RRH			
-		1	ALU - 800 Mhz Filter			
-		3	RFS - ACU-A20-N - RET			
7	137.0	3	Powerwave - 7770 - Panel	Low Profile Platform	(12) 1 5/8" (2) 3/4" DC Power (1) 7/16" Fiber	AT&T
8		6	KMW - AM-X-CD-16-65-00T-RET - Panel			
9		1	Raycap - DC6-48-60-18-8F - SP			
10		6	Powerwave - 7020.00 - RET			
11		6	Powerwave - LGP 21401 - TMA			
12		6	Powerwave - LGP-13519 - Diplexer			
13	127.0	6	Ericsson - RRUS-11 - RRU	Low Profile Platform	(12) 1 5/8"	Verizon
14		3	Antel - BXA-171085-12BF - Panel			
15		6	Antel - LPA 80080/6CF - Panel			
16		2	Antel - BXA-70040-6CF - Panel			
17		1	Antel - BXA-70063-6CF - Panel			
18		6	RFS - FD9R6004/2C-3L - Diplexer			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	145.0	2	KMW - ETCR-654L12H6 - Panel	(3) T-Arm w/ (6) Site Pro STK-U, (1) HRK-14, and (1) PRK-SFS	(4) 1-1/4" Fiber	Sprint Nextel
2		4	RFS - ACU-A20-N - RET			
3		2	ALU - 1900 Mhz - RRU			
4		4	ALU - 800 Mhz - RRU			
5		2	ALU - TD-RRH8x20-25 - RRU			
6		2	ALU - 800 Mhz Filter			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	46.8%	36.5%	57.4%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	1705.3	15.8	32.9

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.2477 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-G Standard under the design basic wind speed as specified in the Analysis Criteria.

Antenna Mount Note:

The new proposed mount contributes **1.4%** of additional stress to the tower structure.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 46.84% at 110.0ft

Structure: CT46144-A-SBA
Site Name: Cammilletti Property
Height: 148.34 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-G
Exposure: B
Gh: 1.1

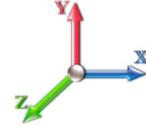
10/30/2017



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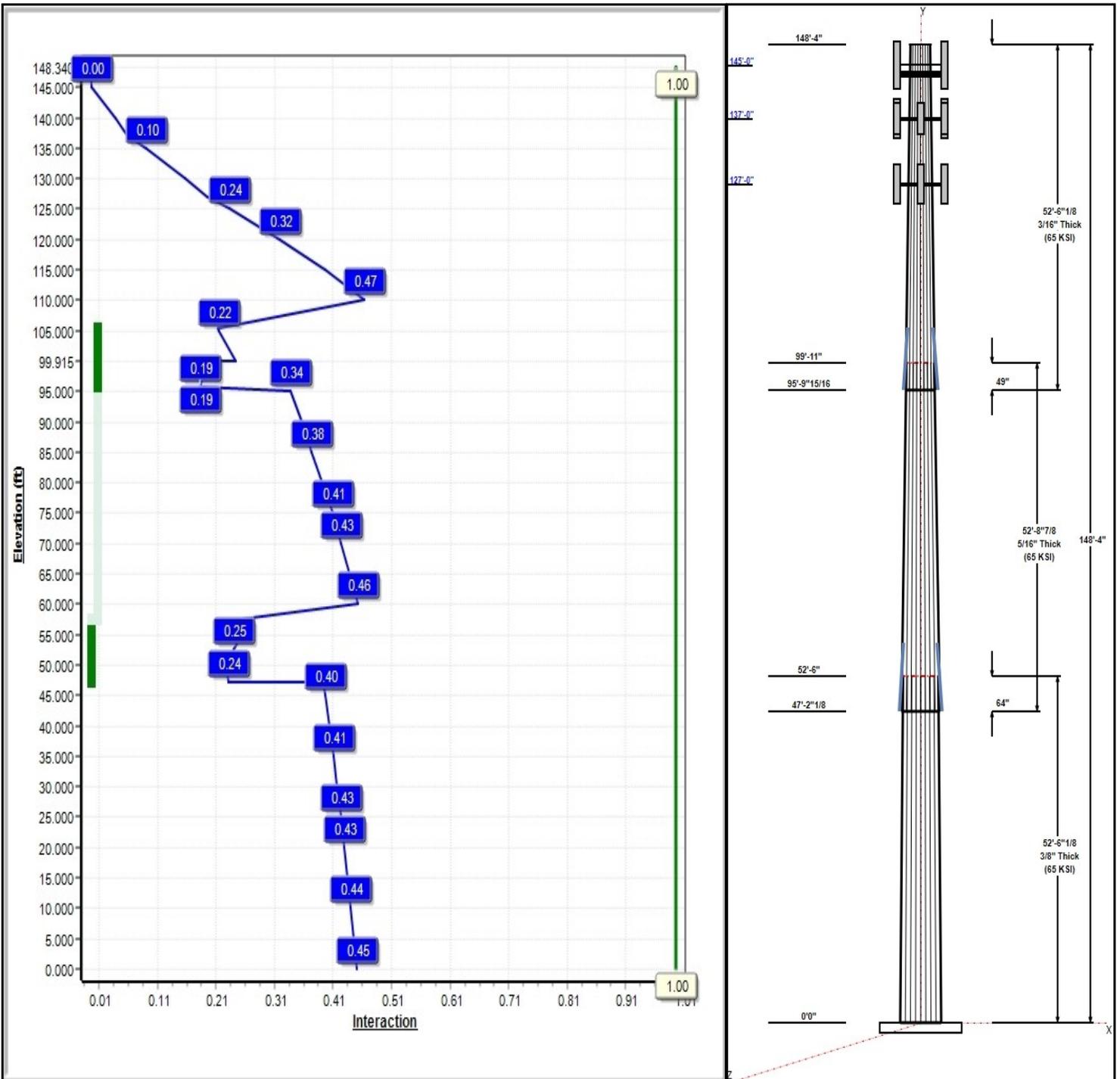
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 89 mph Wind



Iterations: 25

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Structure: CT46144-A-SBA

Type: Tapered
Site Name: Cammilletti Property
Height: 148.34 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20898

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.51	37.03	48.00	0.375		0.20898	65
2	52.74	27.74	38.77	0.313	Slip	0.20898	65
3	52.51	18.00	28.97	0.188	Slip	0.20898	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
145.00	145.00	2	KMW - ETCR-654L12H6	Sprint Nextel
145.00	145.00	4	RFS - ACU-A20-N - RET	Sprint Nextel
145.00	145.00	2	ALU - 1900 Mhz - RRU	Sprint Nextel
145.00	145.00	4	ALU - 800 Mhz - RRU	Sprint Nextel
145.00	145.00	2	ALU - TD-RRH8x20-25 -	Sprint Nextel
145.00	145.00	2	ALU - 800 Mhz Filter	Sprint Nextel
145.00	145.00	3	T-Arm w/ Mods	Sprint Nextel
137.00	137.00	1	Low Profile	AT&T
137.00	137.00	3	Powerwave - 7770	AT&T
137.00	137.00	6	KMW -	AT&T
137.00	137.00	1	Raycap -	AT&T
137.00	137.00	6	Powerwave - 7020.00 -	AT&T
137.00	137.00	6	Powerwave - LGP 21401 -	AT&T
137.00	137.00	6	Powerwave - LGP-13519 -	AT&T
137.00	137.00	6	Ericsson - RRUS-11 -	AT&T
127.00	127.00	1	Low Profile	Verizon
127.00	127.00	3	Antel - BXA-171085-12BF	Verizon
127.00	127.00	6	Antel - LPA 80080/6CF	Verizon
127.00	127.00	2	Antel - BXA-70040-6CF	Verizon
127.00	127.00	1	Antel - BXA-70063-6CF	Verizon
127.00	127.00	6	RFS - FD9R6004/2C-3L -	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	145.00	Inside	1-1/4" Fiber	Sprint Nextel
0.00	137.00	Inside	1 5/8" Coax	AT&T
0.00	137.00	Inside	3/4" DC Power	AT&T
0.00	137.00	Inside	7/16" Fiber	AT&T
0.00	127.00	Inside	1 5/8" Coax	Verizon
95.80	105.30	Outside	1.5" Reinforcing plate	
47.20	57.50	Outside	1.5" Reinforcing plate	

Anchor Bolts

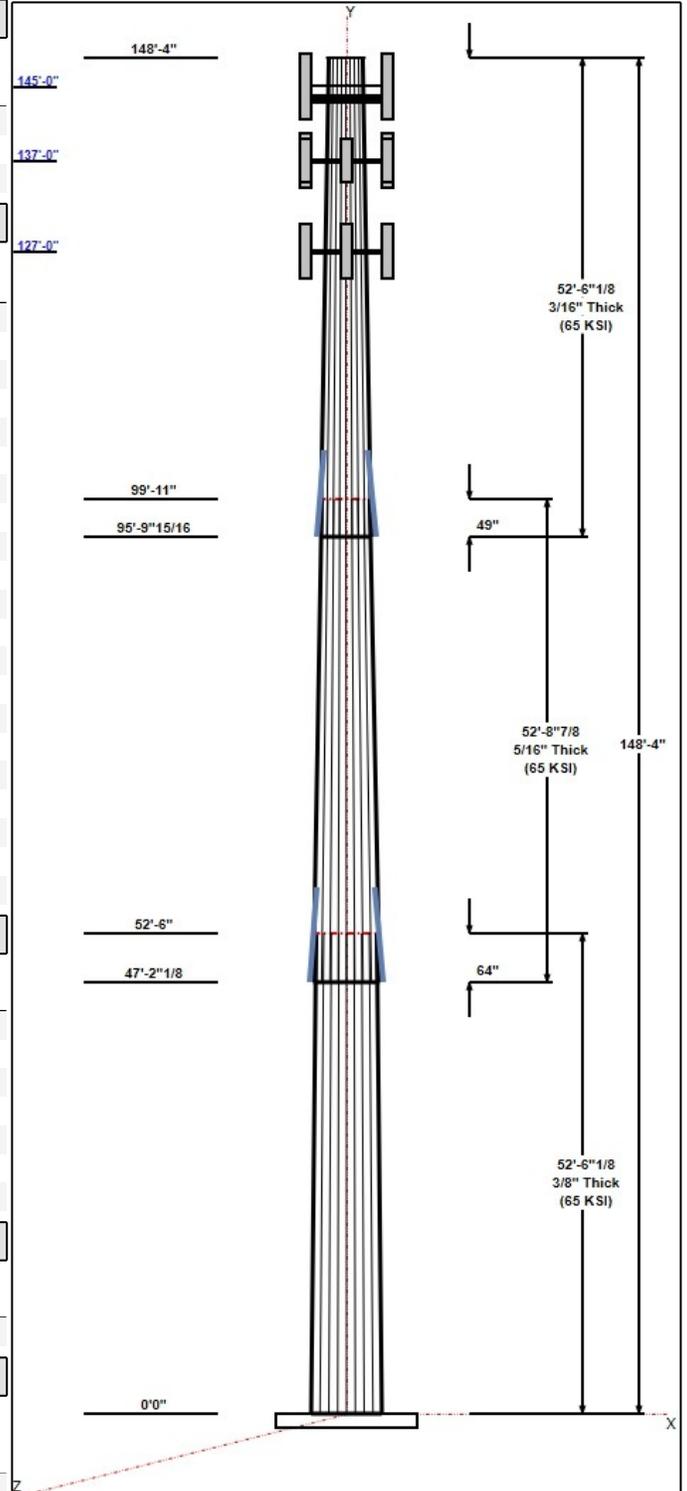
Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	63.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 89 mph Wind	1705.3	15.8	32.9



Structure: CT46144-A-SBA

Type: Tapered
Site Name: Cammilletti Property
Height: 148.34 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20898

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0.9D + 1.6W 89 mph Wind	1686.3	15.8	24.7
1.2D + 1.0Di + 1.0Wi 40 mph Wind	367.6	3.5	49.9
1.2D + 1.0E	154.0	1.3	32.9
0.9D + 1.0E	152.2	1.3	24.7
1.0D + 1.0W 60 mph Wind	481.1	4.5	27.4

Structure: CT46144-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Cammilletti Property
Height: 148.34 (ft)

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Shaft Properties

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	52.510	0.3750	65		0.00	8,961
2	18	52.740	0.3125	65	Slip	64.02	5,864
3	18	52.512	0.1875	65	Slip	49.05	2,478
Total Shaft Weight:							17,303

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	48.00	0.00	56.68	16243.54	21.16	128.00	37.03	52.51	43.62	7403.73	16.00	98.74	0.208979
2	38.77	47.18	38.14	7125.48	20.46	124.05	27.74	99.92	27.21	2586.91	14.24	88.78	0.208979
3	28.97	95.83	17.13	1793.54	25.84	154.53	18.00	148.34	10.60	424.93	15.52	96.00	0.208979

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors		Termination Connectors			
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
47.20	57.50	3	PLT 6"x1.5"(31mm hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00	11	10
95.80	105.3	3	PLT 4.5x1.5(31mm Hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00	8	6

Load Summary

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	145.00	KMW - ETCR-654L12H6	2	99.00	15.71	0.69	454.75	17.382	0.71	0.00	0.00
2	145.00	RFS - ACU-A20-N - RET	4	1.00	0.14	0.50	5.28	0.436	0.50	0.00	0.00
3	145.00	ALU - 1900 Mhz - RRU	2	44.00	3.80	0.67	152.79	5.185	0.67	0.00	0.00
4	145.00	ALU - 800 Mhz - RRU	4	53.00	2.49	0.67	126.71	3.630	0.67	0.00	0.00
5	145.00	ALU - TD-RRH8x20-25 - RRU	2	70.00	4.05	0.67	167.40	5.459	0.67	0.00	0.00
6	145.00	ALU - 800 Mhz Filter	2	10.00	0.42	0.50	24.87	0.566	0.50	0.00	0.00
7	145.00	T-Arm w/ Mods	3	450.00	14.00	0.75	800.64	21.013	0.75	0.00	0.00
8	137.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2797.10	39.502	1.00	0.00	0.00
9	137.00	Powerwave - 7770	3	35.00	5.50	0.77	168.77	6.546	0.80	0.00	0.00
10	137.00	KMW - AM-X-CD-16-65-00T-RET	6	48.50	8.02	0.79	209.31	10.789	0.81	0.00	0.00
11	137.00	Raycap - DC6-48-60-18-8F - SP	1	31.80	0.92	1.00	93.07	1.354	1.00	0.00	0.00
12	137.00	Powerwave - 7020.00 - RET	6	2.20	0.40	0.50	12.34	0.879	0.50	0.00	0.00
13	137.00	Powerwave - LGP 21401 - TMA	6	14.10	1.29	0.50	38.88	2.118	0.50	0.00	0.00
14	137.00	Powerwave - LGP-13519 - Diplexer	6	5.30	0.34	0.50	14.71	0.790	0.50	0.00	0.00
15	137.00	Ericsson - RRUS-11 - RRU	6	51.00	2.52	0.67	122.62	3.148	0.67	0.00	0.00
16	127.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2787.31	39.370	1.00	0.00	0.00
17	127.00	Antel - BXA-171085-12BF	3	15.00	4.74	0.88	108.37	7.051	0.90	0.00	0.00
18	127.00	Antel - LPA 80080/6CF	6	21.00	4.33	1.50	79.82	5.498	1.40	0.00	0.00
19	127.00	Antel - BXA-70040-6CF	2	38.00	14.40	0.70	322.09	17.188	0.72	0.00	0.00
20	127.00	Antel - BXA-70063-6CF	1	17.00	7.57	0.78	162.85	10.288	0.80	0.00	0.00
21	127.00	RFS - FD9R6004/2C-3L - Diplexer	6	3.10	0.37	0.50	10.99	0.818	0.50	0.00	0.00
Totals:			73	6,158.00			14,777.54				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	145.00	(4) 1-1/4" Fiber	0.00	Inside
0.00	137.00	(12) 1 5/8" Coax	0.00	Inside
0.00	137.00	(2) 3/4" DC Power	0.00	Inside
0.00	137.00	(1) 7/16" Fiber	0.00	Inside
0.00	127.00	(12) 1 5/8" Coax	0.00	Inside
95.80	105.30	(3) 1.5" Reinforcing plate	2.00	Outside
47.20	57.50	(3) 1.5" Reinforcing plate	2.00	Outside

Shaft Section Properties

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.3750	48.000	56.684	16243.5	21.16	128.00	65	77	0.0				
5.00		0.3750	46.955	55.440	15197.7	20.67	125.21	65	77	953.8				
10.00		0.3750	45.910	54.196	14197.7	20.18	122.43	65	78	932.7				
15.00		0.3750	44.865	52.953	13242.6	19.69	119.64	65	78	911.5				
20.00		0.3750	43.820	51.709	12331.3	19.19	116.85	65	79	890.4				
25.00		0.3750	42.776	50.465	11462.8	18.70	114.07	65	79	869.2				
30.00		0.3750	41.731	49.222	10636.0	18.21	111.28	65	80	848.0				
35.00		0.3750	40.686	47.978	9850.0	17.72	108.50	65	81	826.9				
40.00		0.3750	39.641	46.734	9103.7	17.23	105.71	65	81	805.7				
45.00		0.3750	38.596	45.491	8396.1	16.74	102.92	65	82	784.6				
47.18	Bot - Section 2	0.3750	38.141	44.950	8100.1	16.52	101.71	65	82	334.7				
47.20	RB1	0.3750	38.136	44.944	8096.8	16.52	101.70	65	82	7.0	27.00	5513.8	5513.8	2.3
50.00		0.3750	37.551	44.247	7726.2	16.25	100.14	65	82	785.5	27.00	5355.9	5355.9	257.2
52.51	Top - Section 1	0.3125	37.651	37.034	6523.5	19.83	120.48	65	78	693.8	27.00	5216.4	5216.4	230.6
55.00		0.3125	37.131	36.518	6254.6	19.54	118.82	65	78	311.6	27.00	5079.8	5079.8	228.8
57.50	RT1	0.3125	36.609	36.000	5992.1	19.25	117.15	65	79	308.5	27.00	4944.4	4944.4	229.7
60.00		0.3125	36.086	35.482	5737.0	18.95	115.48	65	79	304.0				
65.00		0.3125	35.041	34.445	5248.9	18.36	112.13	65	80	594.9				
70.00		0.3125	33.996	33.409	4789.2	17.77	108.79	65	80	577.2				
75.00		0.3125	32.952	32.373	4357.2	17.18	105.44	65	81	559.6				
80.00		0.3125	31.907	31.336	3952.0	16.59	102.10	65	82	542.0				
85.00		0.3125	30.862	30.300	3572.7	16.00	98.76	65	83	524.3				
90.00		0.3125	29.817	29.264	3218.5	15.41	95.41	65	83	506.7				
95.00		0.3125	28.772	28.227	2888.5	14.82	92.07	65	83	489.1				
95.80	RB2	0.3125	28.605	28.061	2837.9	14.73	91.54	65	83	76.6	20.25	2313.1	2313.1	55.1
95.83	Bot - Section 3	0.3125	28.599	28.056	2836.2	14.73	91.52	65	83	2.6	20.25	2312.2	2312.2	1.9
99.92	Top - Section 2	0.1875	28.120	16.623	1638.6	25.03	149.97	65	72	619.1	20.25	2239.7	2239.7	281.7
100.00		0.1875	28.102	16.612	1635.5	25.02	149.88	65	72	4.8	20.25	2237.1	2237.1	5.8
105.00		0.1875	27.057	15.990	1458.6	24.03	144.30	65	73	277.3	20.25	2083.2	2083.2	344.5
105.30	RT2	0.1875	26.994	15.953	1448.4	23.98	143.97	65	73	16.3	20.25	2074.2	2074.2	20.7
110.00		0.1875	26.012	15.368	1295.0	23.05	138.73	65	74	250.5				
115.00		0.1875	24.967	14.747	1144.0	22.07	133.16	65	75	256.2				
120.00		0.1875	23.922	14.125	1005.3	21.09	127.59	65	77	245.6				
125.00		0.1875	22.878	13.503	878.3	20.10	122.01	65	78	235.0				
127.00		0.1875	22.460	13.254	830.7	19.71	119.78	65	78	91.0				
130.00		0.1875	21.833	12.881	762.5	19.12	116.44	65	79	133.4				
135.00		0.1875	20.788	12.259	657.3	18.14	110.87	65	80	213.9				
137.00		0.1875	20.370	12.011	618.1	17.75	108.64	65	81	82.6				
140.00		0.1875	19.743	11.637	562.3	17.16	105.30	65	81	120.7				
145.00		0.1875	18.698	11.016	476.9	16.17	99.72	65	82	192.7				
148.34		0.1875	18.000	10.600	424.9	15.52	96.00	65	83	122.8				
Total Weight										17302.8				
											1658.3			

Wind Loading - Shaft

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	13.485	14.83	302.45	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	13.485	14.83	295.86	0.650	0.000	5.00	20.087	13.06	309.9	0.0	1144.6
10.00		1.00	0.70	13.485	14.83	289.28	0.650	0.000	5.00	19.645	12.77	303.1	0.0	1119.2
15.00		1.00	0.70	13.485	14.83	282.69	0.650	0.000	5.00	19.203	12.48	296.2	0.0	1093.8
20.00		1.00	0.70	13.485	14.83	276.11	0.650	0.000	5.00	18.761	12.19	289.4	0.0	1068.4
25.00		1.00	0.70	13.485	14.83	269.53	0.650	0.000	5.00	18.319	11.91	282.6	0.0	1043.0
30.00		1.00	0.70	13.496	14.85	263.05	0.650	0.000	5.00	17.877	11.62	276.0	0.0	1017.6
35.00		1.00	0.73	14.104	15.51	262.18	0.650	0.000	5.00	17.435	11.33	281.3	0.0	992.2
40.00		1.00	0.76	14.652	16.12	260.36	0.650	0.000	5.00	16.993	11.05	284.8	0.0	966.9
45.00		1.00	0.79	15.154	16.67	257.80	0.650	0.000	5.00	16.551	10.76	286.9	0.0	941.5
47.18	Bot - Section 2	1.00	0.80	15.360	16.90	256.49	0.650	0.000	2.18	7.062	4.59	124.1	0.0	401.6
47.20	RB1	1.00	0.80	15.362	16.90	256.47	0.650	0.000	0.02	0.081	0.05	1.4	0.0	8.4
50.00		1.00	0.81	15.617	17.18	254.63	0.650	0.000	2.80	9.114	5.92	162.8	0.0	942.6
52.51	Top - Section 1	1.00	0.82	15.837	17.42	252.83	0.650	0.000	2.51	8.053	5.23	145.9	0.0	832.5
55.00		1.00	0.83	16.048	17.65	255.23	0.650	0.000	2.49	7.878	5.12	144.6	0.0	373.9
57.50	RT1	1.00	0.84	16.253	17.88	253.24	0.650	0.000	2.50	7.800	5.07	145.0	0.0	370.1
60.00		1.00	0.85	16.452	18.10	251.15	0.650	0.000	2.50	7.689	5.00	144.7	0.0	364.9
65.00		1.00	0.87	16.833	18.52	246.68	0.650	0.000	5.00	15.047	9.78	289.7	0.0	713.8
70.00		1.00	0.89	17.193	18.91	241.88	0.650	0.000	5.00	14.605	9.49	287.3	0.0	692.7
75.00		1.00	0.91	17.535	19.29	236.76	0.650	0.000	5.00	14.163	9.21	284.1	0.0	671.5
80.00		1.00	0.93	17.861	19.65	231.38	0.650	0.000	5.00	13.721	8.92	280.4	0.0	650.4
85.00		1.00	0.94	18.173	19.99	225.75	0.650	0.000	5.00	13.278	8.63	276.1	0.0	629.2
90.00		1.00	0.96	18.473	20.32	219.89	0.650	0.000	5.00	12.836	8.34	271.3	0.0	608.0
95.00		1.00	0.97	18.760	20.64	213.83	0.650	0.000	5.00	12.394	8.06	266.0	0.0	586.9
95.80	RB2	1.00	0.98	18.805	20.69	212.84	0.650	0.000	0.80	1.942	1.26	41.8	0.0	91.9
95.83	Bot - Section 3	1.00	0.98	18.807	20.69	212.81	0.650	0.000	0.03	0.067	0.04	1.4	0.0	3.2
99.92	Top - Section 2	1.00	0.99	19.033	20.94	207.69	0.650	0.000	4.09	9.874	6.42	215.0	0.0	742.9
100.00		1.00	0.99	19.037	20.94	210.39	0.650	0.000	0.08	0.202	0.13	4.4	0.0	5.8
105.00		1.00	1.00	19.304	21.23	203.98	0.650	0.000	5.00	11.669	7.58	257.7	0.0	332.8
105.30	RT2	1.00	1.00	19.320	21.25	203.59	0.650	0.000	0.30	0.686	0.45	15.2	0.0	19.6
110.00		1.00	1.02	19.563	21.52	197.41	0.650	0.000	4.70	10.541	6.85	235.9	0.0	300.6
115.00		1.00	1.03	19.813	21.79	190.69	0.650	0.000	5.00	10.785	7.01	244.4	0.0	307.4
120.00		1.00	1.04	20.055	22.06	183.82	0.650	0.000	5.00	10.343	6.72	237.3	0.0	294.7
125.00		1.00	1.05	20.290	22.32	176.82	0.650	0.000	5.00	9.900	6.44	229.8	0.0	282.0
127.00	Appurtenance(s)	1.00	1.06	20.383	22.42	173.99	0.650	0.000	2.00	3.836	2.49	89.5	0.0	109.3
130.00		1.00	1.07	20.519	22.57	169.70	0.650	0.000	3.00	5.622	3.65	132.0	0.0	160.1
135.00		1.00	1.08	20.742	22.82	162.45	0.650	0.000	5.00	9.016	5.86	213.9	0.0	256.6
137.00	Appurtenance(s)	1.00	1.08	20.829	22.91	159.52	0.650	0.000	2.00	3.483	2.26	83.0	0.0	99.1
140.00		1.00	1.09	20.958	23.05	155.09	0.650	0.000	3.00	5.091	3.31	122.1	0.0	144.8
145.00	Appurtenance(s)	1.00	1.10	21.169	23.29	147.62	0.650	0.000	5.00	8.132	5.29	196.9	0.0	231.3
148.34		1.00	1.11	21.308	23.44	142.57	0.650	0.000	3.34	5.186	3.37	126.4	0.0	147.4
Totals:								148.34			7,880.4	20,763.3		

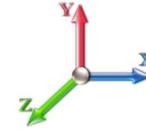
Discrete Appurtenance Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	145.00	T-Arm w/ Mods	3	21.169	23.286	0.56	0.75	23.63	1620.00	0.000	0.000	880.22	0.00	0.00
2	145.00	ALU - 800 Mhz Filter	2	21.169	23.286	0.40	0.80	0.34	24.00	0.000	0.000	12.52	0.00	0.00
3	145.00	ALU - TD-RRH8x20-25 -	2	21.169	23.286	0.54	0.80	4.34	168.00	0.000	0.000	161.76	0.00	0.00
4	145.00	ALU - 800 Mhz - RRU	4	21.169	23.286	0.54	0.80	5.34	254.40	0.000	0.000	198.90	0.00	0.00
5	145.00	ALU - 1900 Mhz - RRU	2	21.169	23.286	0.54	0.80	4.07	105.60	0.000	0.000	151.77	0.00	0.00
6	145.00	RFS - ACU-A20-N - RET	4	21.169	23.286	0.40	0.80	0.22	4.80	0.000	0.000	8.35	0.00	0.00
7	145.00	KMW - ETCR-654L12H6	2	21.169	23.286	0.55	0.80	17.37	237.60	0.000	0.000	647.13	0.00	0.00
8	137.00	Ericsson - RRUS-11 -	6	20.829	22.912	0.54	0.80	8.10	367.20	0.000	0.000	297.09	0.00	0.00
9	137.00	Powerwave - LGP-13519 -	6	20.829	22.912	0.40	0.80	0.82	38.16	0.000	0.000	29.91	0.00	0.00
10	137.00	Powerwave - LGP 21401 -	6	20.829	22.912	0.40	0.80	3.10	101.52	0.000	0.000	113.50	0.00	0.00
11	137.00	Powerwave - 7020.00 -	6	20.829	22.912	0.40	0.80	0.96	15.84	0.000	0.000	35.19	0.00	0.00
12	137.00	Raycap -	1	20.829	22.912	0.80	0.80	0.74	38.16	0.000	0.000	26.98	0.00	0.00
13	137.00	KMW -	6	20.829	22.912	0.63	0.80	30.37	349.20	0.000	0.000	1113.45	0.00	0.00
14	137.00	Powerwave - 7770	3	20.829	22.912	0.61	0.80	10.11	126.00	0.000	0.000	370.66	0.00	0.00
15	137.00	Low Profile	1	20.829	22.912	1.00	1.00	22.00	1800.00	0.000	0.000	806.49	0.00	0.00
16	127.00	RFS - FD9R6004/2C-3L -	6	20.383	22.421	0.40	0.80	0.89	22.32	0.000	0.000	31.86	0.00	0.00
17	127.00	Antel - BXA-70063-6CF	1	20.383	22.421	0.62	0.80	4.69	20.40	0.000	0.000	168.37	0.00	0.00
18	127.00	Antel - BXA-70040-6CF	2	20.383	22.421	0.56	0.80	16.10	91.20	0.000	0.000	577.74	0.00	0.00
19	127.00	Antel - LPA 80080/6CF	6	20.383	22.421	1.20	0.80	31.13	151.20	0.000	0.000	1116.90	0.00	0.00
20	127.00	Antel - BXA-171085-12BF	3	20.383	22.421	0.70	0.80	9.98	54.00	0.000	0.000	357.90	0.00	0.00
21	127.00	Low Profile	1	20.383	22.421	1.00	1.00	22.00	1800.00	0.000	0.000	789.22	0.00	0.00
Totals:									7,389.60			7,895.92		

Total Applied Force Summary

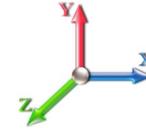
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		309.88	1323.01	0.00	0.00
10.00		303.06	1297.62	0.00	0.00
15.00		296.24	1272.23	0.00	0.00
20.00		289.42	1246.84	0.00	0.00
25.00		282.60	1221.45	0.00	0.00
30.00		276.01	1196.06	0.00	0.00
35.00		281.31	1170.66	0.00	0.00
40.00		284.84	1145.27	0.00	0.00
45.00		286.92	1119.88	0.00	0.00
47.18		124.09	479.26	0.00	0.00
47.20		1.43	9.31	0.00	0.00
50.00		162.84	1042.48	0.00	0.00
52.51		145.89	922.10	0.00	0.00
55.00		144.64	462.77	0.00	0.00
57.50		145.02	459.35	0.00	0.00
60.00		144.72	454.06	0.00	0.00
65.00		289.75	892.26	0.00	0.00
70.00		287.25	871.10	0.00	0.00
75.00		284.10	849.94	0.00	0.00
80.00		280.36	828.78	0.00	0.00
85.00		276.06	807.62	0.00	0.00
90.00		271.27	786.46	0.00	0.00
95.00		266.00	765.30	0.00	0.00
95.80		41.78	120.48	0.00	0.00
95.83		1.44	4.16	0.00	0.00
99.92		214.98	888.74	0.00	0.00
100.00		4.39	8.78	0.00	0.00
105.00		257.70	511.23	0.00	0.00
105.30		15.16	30.27	0.00	0.00
110.00		235.90	468.27	0.00	0.00
115.00		244.44	485.84	0.00	0.00
120.00		237.29	473.14	0.00	0.00
125.00		229.81	460.45	0.00	0.00
127.00	(19) attachments	3131.44	2319.74	0.00	0.00
130.00		131.97	222.20	0.00	0.00
135.00		213.94	360.18	0.00	0.00
137.00	(35) attachments	2876.27	2976.60	0.00	0.00
140.00		122.07	158.58	0.00	0.00
145.00	(19) attachments	2257.60	2668.55	0.00	0.00
148.34		126.41	147.40	0.00	0.00
	Totals:	15,776.30	32,928.42	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

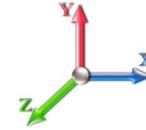


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Load Case: 1.2D + 1.6W 89 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1.5" Reinforcing plate	Yes	2.80	0.000	1.50	0.35	0.00	0.039	0.000	15.617	0.00	0.00
52.51	1.5" Reinforcing plate	Yes	2.51	0.000	1.50	0.31	0.00	0.040	0.000	15.837	0.00	0.00
55.00	1.5" Reinforcing plate	Yes	2.49	0.000	1.50	0.31	0.00	0.040	0.000	16.048	0.00	0.00
57.50	1.5" Reinforcing plate	Yes	2.50	0.000	1.50	0.31	0.00	0.040	0.000	16.253	0.00	0.00
95.83	1.5" Reinforcing plate	Yes	0.03	0.000	1.50	0.00	0.00	0.052	0.000	18.807	0.00	0.00
99.92	1.5" Reinforcing plate	Yes	4.09	0.000	1.50	0.51	0.00	0.052	0.000	19.033	0.00	0.00
100.00	1.5" Reinforcing plate	Yes	0.08	0.000	1.50	0.01	0.00	0.053	0.000	19.037	0.00	0.00
105.00	1.5" Reinforcing plate	Yes	5.00	0.000	1.50	0.63	0.00	0.054	0.000	19.304	0.00	0.00
105.30	1.5" Reinforcing plate	Yes	0.30	0.000	1.50	0.04	0.00	0.055	0.000	19.320	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 89 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.91	-15.82	0.00	-1705.3	0.00	1705.30	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.454
5.00	-31.55	-15.59	0.00	-1626.2	0.00	1626.21	3846.55	1923.28	7360.85	3685.90	0.08	-0.146	0.000	0.449
10.00	-30.21	-15.36	0.00	-1548.2	0.00	1548.27	3788.45	1894.23	7085.75	3548.14	0.31	-0.294	0.000	0.444
15.00	-28.90	-15.13	0.00	-1471.4	0.00	1471.48	3729.06	1864.53	6813.30	3411.72	0.70	-0.446	0.000	0.439
20.00	-27.61	-14.91	0.00	-1395.8	0.00	1395.82	3668.37	1834.19	6543.69	3276.71	1.25	-0.600	0.000	0.434
25.00	-26.36	-14.68	0.00	-1321.3	0.00	1321.30	3606.39	1803.19	6277.08	3143.21	1.96	-0.756	0.000	0.428
30.00	-25.12	-14.46	0.00	-1247.8	0.00	1247.89	3543.11	1771.56	6013.64	3011.29	2.84	-0.916	0.000	0.422
35.00	-23.92	-14.22	0.00	-1175.6	0.00	1175.60	3478.55	1739.27	5753.54	2881.05	3.88	-1.078	0.000	0.415
40.00	-22.74	-13.98	0.00	-1104.4	0.00	1104.48	3412.68	1706.34	5496.94	2752.56	5.10	-1.243	0.000	0.408
45.00	-21.60	-13.72	0.00	-1034.5	0.00	1034.57	3345.53	1672.76	5244.01	2625.90	6.49	-1.410	0.000	0.401
47.18	-21.11	-13.59	0.00	-1004.7	0.00	1004.73	3315.91	1657.95	5135.17	2571.40	7.15	-1.485	0.000	0.397
47.20	-21.09	-13.60	0.00	-1004.4	0.00	1004.40	3315.57	1657.78	5133.93	2570.78	7.16	-1.486	0.000	0.236
50.00	-20.04	-13.43	0.00	-966.31	0.00	966.31	3277.08	1638.54	4994.93	2501.18	8.05	-1.543	0.000	0.232
52.51	-19.11	-13.28	0.00	-932.60	0.00	932.60	2602.21	1301.11	3990.47	1998.20	8.87	-1.595	0.000	0.245
55.00	-18.64	-13.14	0.00	-899.54	0.00	899.54	2577.30	1288.65	3896.73	1951.26	9.72	-1.647	0.000	0.259
57.50	-18.18	-13.00	0.00	-866.70	0.00	866.70	2551.96	1275.98	3803.21	1904.43	10.60	-1.702	0.000	0.254
57.50	-18.18	-13.00	0.00	-866.70	0.00	866.70	2551.96	1275.98	3803.21	1904.43	10.60	-1.702	0.000	0.254
60.00	-17.70	-12.88	0.00	-834.21	0.00	834.21	2526.30	1263.15	3710.31	1857.91	11.50	-1.757	0.000	0.456
65.00	-16.77	-12.62	0.00	-769.82	0.00	769.82	2474.01	1237.00	3526.46	1765.85	13.45	-1.956	0.000	0.443
70.00	-15.87	-12.35	0.00	-706.74	0.00	706.74	2420.42	1210.21	3345.35	1675.16	15.61	-2.156	0.000	0.429
75.00	-14.99	-12.09	0.00	-644.96	0.00	644.96	2365.54	1182.77	3167.14	1585.93	17.97	-2.357	0.000	0.413
80.00	-14.13	-11.82	0.00	-584.51	0.00	584.51	2309.37	1154.68	2992.01	1498.23	20.55	-2.558	0.000	0.396
85.00	-13.30	-11.56	0.00	-525.40	0.00	525.40	2251.13	1125.57	2819.16	1411.68	23.33	-2.758	0.000	0.378
90.00	-12.49	-11.29	0.00	-467.61	0.00	467.61	2174.14	1087.07	2628.67	1316.29	26.33	-2.955	0.000	0.361
95.00	-11.71	-11.01	0.00	-411.17	0.00	411.17	2097.14	1048.57	2444.84	1224.23	29.52	-3.149	0.000	0.342
95.80	-11.59	-10.96	0.00	-402.36	0.00	402.36	2084.82	1042.41	2416.04	1209.82	30.05	-3.181	0.000	0.187
95.83	-11.58	-10.97	0.00	-402.06	0.00	402.06	2084.39	1042.20	2415.05	1209.32	30.07	-3.182	0.000	0.186
99.92	-10.70	-10.71	0.00	-357.23	0.00	357.23	1076.50	538.25	1236.95	619.40	32.83	-3.268	0.000	0.200
100.00	-10.68	-10.72	0.00	-356.32	0.00	356.32	1076.11	538.05	1235.71	618.78	32.89	-3.270	0.000	0.248
105.00	-10.17	-10.44	0.00	-302.73	0.00	302.73	1052.46	526.23	1163.02	582.37	36.38	-3.391	0.000	0.219
105.30	-10.13	-10.44	0.00	-299.59	0.00	299.59	1051.00	525.50	1158.68	580.20	36.59	-3.398	0.000	0.217
105.30	-10.13	-10.44	0.00	-299.59	0.00	299.59	1051.00	525.50	1158.68	580.20	36.59	-3.398	0.000	0.217
110.00	-9.65	-10.20	0.00	-250.55	0.00	250.55	1027.52	513.76	1090.99	546.31	39.99	-3.502	0.000	0.468
115.00	-9.14	-9.96	0.00	-199.54	0.00	199.54	1001.28	500.64	1019.81	510.66	43.79	-3.750	0.000	0.400
120.00	-8.65	-9.73	0.00	-149.71	0.00	149.71	973.75	486.88	949.64	475.53	47.84	-3.967	0.000	0.324
125.00	-8.18	-9.48	0.00	-101.08	0.00	101.08	944.93	472.47	880.64	440.98	52.09	-4.144	0.000	0.238
127.00	-6.09	-6.20	0.00	-82.12	0.00	82.12	933.04	466.52	853.41	427.34	53.84	-4.203	0.000	0.199
130.00	-5.87	-6.06	0.00	-63.53	0.00	63.53	914.81	457.41	812.99	407.10	56.50	-4.278	0.000	0.163
135.00	-5.52	-5.82	0.00	-33.25	0.00	33.25	883.40	441.70	746.85	373.98	61.03	-4.369	0.000	0.095
137.00	-2.77	-2.73	0.00	-21.61	0.00	21.61	870.48	435.24	720.86	360.97	62.87	-4.392	0.000	0.063
140.00	-2.62	-2.59	0.00	-13.43	0.00	13.43	850.70	425.35	682.40	341.71	65.63	-4.417	0.000	0.042
145.00	-0.14	-0.14	0.00	-0.46	0.00	0.46	816.70	408.35	619.79	310.35	70.27	-4.434	0.000	0.002
148.34	0.00	-0.13	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	73.36	-4.435	0.000	0.000

Wind Loading - Shaft

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	13.485	14.83	302.45	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	13.485	14.83	295.86	0.650	0.000	5.00	20.087	13.06	309.9	0.0	858.4
10.00		1.00	0.70	13.485	14.83	289.28	0.650	0.000	5.00	19.645	12.77	303.1	0.0	839.4
15.00		1.00	0.70	13.485	14.83	282.69	0.650	0.000	5.00	19.203	12.48	296.2	0.0	820.4
20.00		1.00	0.70	13.485	14.83	276.11	0.650	0.000	5.00	18.761	12.19	289.4	0.0	801.3
25.00		1.00	0.70	13.485	14.83	269.53	0.650	0.000	5.00	18.319	11.91	282.6	0.0	782.3
30.00		1.00	0.70	13.496	14.85	263.05	0.650	0.000	5.00	17.877	11.62	276.0	0.0	763.2
35.00		1.00	0.73	14.104	15.51	262.18	0.650	0.000	5.00	17.435	11.33	281.3	0.0	744.2
40.00		1.00	0.76	14.652	16.12	260.36	0.650	0.000	5.00	16.993	11.05	284.8	0.0	725.1
45.00		1.00	0.79	15.154	16.67	257.80	0.650	0.000	5.00	16.551	10.76	286.9	0.0	706.1
47.18 Bot - Section 2		1.00	0.80	15.360	16.90	256.49	0.650	0.000	2.18	7.062	4.59	124.1	0.0	301.2
47.20 RB1		1.00	0.80	15.362	16.90	256.47	0.650	0.000	0.02	0.081	0.05	1.4	0.0	6.3
50.00		1.00	0.81	15.617	17.18	254.63	0.650	0.000	2.80	9.114	5.92	162.8	0.0	706.9
52.51 Top - Section 1		1.00	0.82	15.837	17.42	252.83	0.650	0.000	2.51	8.053	5.23	145.9	0.0	624.4
55.00		1.00	0.83	16.048	17.65	255.23	0.650	0.000	2.49	7.878	5.12	144.6	0.0	280.4
57.50 RT1		1.00	0.84	16.253	17.88	253.24	0.650	0.000	2.50	7.800	5.07	145.0	0.0	277.6
60.00		1.00	0.85	16.452	18.10	251.15	0.650	0.000	2.50	7.689	5.00	144.7	0.0	273.6
65.00		1.00	0.87	16.833	18.52	246.68	0.650	0.000	5.00	15.047	9.78	289.7	0.0	535.4
70.00		1.00	0.89	17.193	18.91	241.88	0.650	0.000	5.00	14.605	9.49	287.3	0.0	519.5
75.00		1.00	0.91	17.535	19.29	236.76	0.650	0.000	5.00	14.163	9.21	284.1	0.0	503.6
80.00		1.00	0.93	17.861	19.65	231.38	0.650	0.000	5.00	13.721	8.92	280.4	0.0	487.8
85.00		1.00	0.94	18.173	19.99	225.75	0.650	0.000	5.00	13.278	8.63	276.1	0.0	471.9
90.00		1.00	0.96	18.473	20.32	219.89	0.650	0.000	5.00	12.836	8.34	271.3	0.0	456.0
95.00		1.00	0.97	18.760	20.64	213.83	0.650	0.000	5.00	12.394	8.06	266.0	0.0	440.2
95.80 RB2		1.00	0.98	18.805	20.69	212.84	0.650	0.000	0.80	1.942	1.26	41.8	0.0	69.0
95.83 Bot - Section 3		1.00	0.98	18.807	20.69	212.81	0.650	0.000	0.03	0.067	0.04	1.4	0.0	2.4
99.92 Top - Section 2		1.00	0.99	19.033	20.94	207.69	0.650	0.000	4.09	9.874	6.42	215.0	0.0	557.2
100.00		1.00	0.99	19.037	20.94	210.39	0.650	0.000	0.08	0.202	0.13	4.4	0.0	4.3
105.00		1.00	1.00	19.304	21.23	203.98	0.650	0.000	5.00	11.669	7.58	257.7	0.0	249.6
105.30 RT2		1.00	1.00	19.320	21.25	203.59	0.650	0.000	0.30	0.686	0.45	15.2	0.0	14.7
110.00		1.00	1.02	19.563	21.52	197.41	0.650	0.000	4.70	10.541	6.85	235.9	0.0	225.4
115.00		1.00	1.03	19.813	21.79	190.69	0.650	0.000	5.00	10.785	7.01	244.4	0.0	230.6
120.00		1.00	1.04	20.055	22.06	183.82	0.650	0.000	5.00	10.343	6.72	237.3	0.0	221.0
125.00		1.00	1.05	20.290	22.32	176.82	0.650	0.000	5.00	9.900	6.44	229.8	0.0	211.5
127.00 Appurtenance(s)		1.00	1.06	20.383	22.42	173.99	0.650	0.000	2.00	3.836	2.49	89.5	0.0	81.9
130.00		1.00	1.07	20.519	22.57	169.70	0.650	0.000	3.00	5.622	3.65	132.0	0.0	120.1
135.00		1.00	1.08	20.742	22.82	162.45	0.650	0.000	5.00	9.016	5.86	213.9	0.0	192.5
137.00 Appurtenance(s)		1.00	1.08	20.829	22.91	159.52	0.650	0.000	2.00	3.483	2.26	83.0	0.0	74.3
140.00		1.00	1.09	20.958	23.05	155.09	0.650	0.000	3.00	5.091	3.31	122.1	0.0	108.6
145.00 Appurtenance(s)		1.00	1.10	21.169	23.29	147.62	0.650	0.000	5.00	8.132	5.29	196.9	0.0	173.4
148.34		1.00	1.11	21.308	23.44	142.57	0.650	0.000	3.34	5.186	3.37	126.4	0.0	110.6
Totals:								148.34			7,880.4	15,572.5		

Discrete Appurtenance Forces

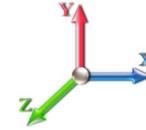
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	145.00	T-Arm w/ Mods	3	21.169	23.286	0.56	0.75	23.63	1215.00	0.000	0.000	880.22	0.00	0.00	
2	145.00	ALU - 800 Mhz Filter	2	21.169	23.286	0.40	0.80	0.34	18.00	0.000	0.000	12.52	0.00	0.00	
3	145.00	ALU - TD-RRH8x20-25 -	2	21.169	23.286	0.54	0.80	4.34	126.00	0.000	0.000	161.76	0.00	0.00	
4	145.00	ALU - 800 Mhz - RRU	4	21.169	23.286	0.54	0.80	5.34	190.80	0.000	0.000	198.90	0.00	0.00	
5	145.00	ALU - 1900 Mhz - RRU	2	21.169	23.286	0.54	0.80	4.07	79.20	0.000	0.000	151.77	0.00	0.00	
6	145.00	RFS - ACU-A20-N - RET	4	21.169	23.286	0.40	0.80	0.22	3.60	0.000	0.000	8.35	0.00	0.00	
7	145.00	KMW - ETCR-654L12H6	2	21.169	23.286	0.55	0.80	17.37	178.20	0.000	0.000	647.13	0.00	0.00	
8	137.00	Ericsson - RRUS-11 -	6	20.829	22.912	0.54	0.80	8.10	275.40	0.000	0.000	297.09	0.00	0.00	
9	137.00	Powerwave - LGP-13519 -	6	20.829	22.912	0.40	0.80	0.82	28.62	0.000	0.000	29.91	0.00	0.00	
10	137.00	Powerwave - LGP 21401 -	6	20.829	22.912	0.40	0.80	3.10	76.14	0.000	0.000	113.50	0.00	0.00	
11	137.00	Powerwave - 7020.00 -	6	20.829	22.912	0.40	0.80	0.96	11.88	0.000	0.000	35.19	0.00	0.00	
12	137.00	Raycap -	1	20.829	22.912	0.80	0.80	0.74	28.62	0.000	0.000	26.98	0.00	0.00	
13	137.00	KMW -	6	20.829	22.912	0.63	0.80	30.37	261.90	0.000	0.000	1113.45	0.00	0.00	
14	137.00	Powerwave - 7770	3	20.829	22.912	0.61	0.80	10.11	94.50	0.000	0.000	370.66	0.00	0.00	
15	137.00	Low Profile	1	20.829	22.912	1.00	1.00	22.00	1350.00	0.000	0.000	806.49	0.00	0.00	
16	127.00	RFS - FD9R6004/2C-3L -	6	20.383	22.421	0.40	0.80	0.89	16.74	0.000	0.000	31.86	0.00	0.00	
17	127.00	Antel - BXA-70063-6CF	1	20.383	22.421	0.62	0.80	4.69	15.30	0.000	0.000	168.37	0.00	0.00	
18	127.00	Antel - BXA-70040-6CF	2	20.383	22.421	0.56	0.80	16.10	68.40	0.000	0.000	577.74	0.00	0.00	
19	127.00	Antel - LPA 80080/6CF	6	20.383	22.421	1.20	0.80	31.13	113.40	0.000	0.000	1116.90	0.00	0.00	
20	127.00	Antel - BXA-171085-12BF	3	20.383	22.421	0.70	0.80	9.98	40.50	0.000	0.000	357.90	0.00	0.00	
21	127.00	Low Profile	1	20.383	22.421	1.00	1.00	22.00	1350.00	0.000	0.000	789.22	0.00	0.00	
Totals:									5,542.20						7,895.92

Total Applied Force Summary

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		309.88	992.26	0.00	0.00
10.00		303.06	973.21	0.00	0.00
15.00		296.24	954.17	0.00	0.00
20.00		289.42	935.13	0.00	0.00
25.00		282.60	916.09	0.00	0.00
30.00		276.01	897.04	0.00	0.00
35.00		281.31	878.00	0.00	0.00
40.00		284.84	858.96	0.00	0.00
45.00		286.92	839.91	0.00	0.00
47.18		124.09	359.45	0.00	0.00
47.20		1.43	6.98	0.00	0.00
50.00		162.84	781.86	0.00	0.00
52.51		145.89	691.57	0.00	0.00
55.00		144.64	347.08	0.00	0.00
57.50		145.02	344.51	0.00	0.00
60.00		144.72	340.55	0.00	0.00
65.00		289.75	669.19	0.00	0.00
70.00		287.25	653.32	0.00	0.00
75.00		284.10	637.45	0.00	0.00
80.00		280.36	621.58	0.00	0.00
85.00		276.06	605.71	0.00	0.00
90.00		271.27	589.85	0.00	0.00
95.00		266.00	573.98	0.00	0.00
95.80		41.78	90.36	0.00	0.00
95.83		1.44	3.12	0.00	0.00
99.92		214.98	666.55	0.00	0.00
100.00		4.39	6.59	0.00	0.00
105.00		257.70	383.42	0.00	0.00
105.30		15.16	22.70	0.00	0.00
110.00		235.90	351.20	0.00	0.00
115.00		244.44	364.38	0.00	0.00
120.00		237.29	354.86	0.00	0.00
125.00		229.81	345.34	0.00	0.00
127.00	(19) attachments	3131.44	1739.81	0.00	0.00
130.00		131.97	166.65	0.00	0.00
135.00		213.94	270.13	0.00	0.00
137.00	(35) attachments	2876.27	2232.45	0.00	0.00
140.00		122.07	118.94	0.00	0.00
145.00	(19) attachments	2257.60	2001.41	0.00	0.00
148.34		126.41	110.55	0.00	0.00
Totals:		15,776.30	24,696.32	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

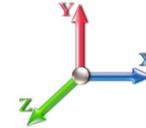


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Load Case: 0.9D + 1.6W 89 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1.5" Reinforcing plate	Yes	2.80	0.000	1.50	0.35	0.00	0.039	0.000	15.617	0.00	0.00
52.51	1.5" Reinforcing plate	Yes	2.51	0.000	1.50	0.31	0.00	0.040	0.000	15.837	0.00	0.00
55.00	1.5" Reinforcing plate	Yes	2.49	0.000	1.50	0.31	0.00	0.040	0.000	16.048	0.00	0.00
57.50	1.5" Reinforcing plate	Yes	2.50	0.000	1.50	0.31	0.00	0.040	0.000	16.253	0.00	0.00
95.83	1.5" Reinforcing plate	Yes	0.03	0.000	1.50	0.00	0.00	0.052	0.000	18.807	0.00	0.00
99.92	1.5" Reinforcing plate	Yes	4.09	0.000	1.50	0.51	0.00	0.052	0.000	19.033	0.00	0.00
100.00	1.5" Reinforcing plate	Yes	0.08	0.000	1.50	0.01	0.00	0.053	0.000	19.037	0.00	0.00
105.00	1.5" Reinforcing plate	Yes	5.00	0.000	1.50	0.63	0.00	0.054	0.000	19.304	0.00	0.00
105.30	1.5" Reinforcing plate	Yes	0.30	0.000	1.50	0.04	0.00	0.055	0.000	19.320	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 89 mph Wind

Iterations 25

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.68	-15.81	0.00	-1686.3	0.00	1686.32	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.447
5.00	-23.64	-15.56	0.00	-1607.2	0.00	1607.29	3846.55	1923.28	7360.85	3685.90	0.08	-0.144	0.000	0.442
10.00	-22.63	-15.31	0.00	-1529.5	0.00	1529.51	3788.45	1894.23	7085.75	3548.14	0.31	-0.291	0.000	0.437
15.00	-21.64	-15.06	0.00	-1452.9	0.00	1452.97	3729.06	1864.53	6813.30	3411.72	0.69	-0.440	0.000	0.432
20.00	-20.67	-14.82	0.00	-1377.6	0.00	1377.66	3668.37	1834.19	6543.69	3276.71	1.23	-0.592	0.000	0.426
25.00	-19.72	-14.58	0.00	-1303.5	0.00	1303.56	3606.39	1803.19	6277.08	3143.21	1.94	-0.747	0.000	0.420
30.00	-18.78	-14.34	0.00	-1230.6	0.00	1230.66	3543.11	1771.56	6013.64	3011.29	2.80	-0.904	0.000	0.414
35.00	-17.87	-14.10	0.00	-1158.9	0.00	1158.94	3478.55	1739.27	5753.54	2881.05	3.84	-1.064	0.000	0.407
40.00	-16.98	-13.84	0.00	-1088.4	0.00	1088.45	3412.68	1706.34	5496.94	2752.56	5.04	-1.226	0.000	0.400
45.00	-16.12	-13.57	0.00	-1019.2	0.00	1019.23	3345.53	1672.76	5244.01	2625.90	6.41	-1.391	0.000	0.393
47.18	-15.75	-13.45	0.00	-989.71	0.00	989.71	3315.91	1657.95	5135.17	2571.40	7.06	-1.465	0.000	0.390
47.20	-15.74	-13.45	0.00	-989.38	0.00	989.38	3315.57	1657.78	5133.93	2570.78	7.07	-1.466	0.000	0.232
50.00	-14.95	-13.29	0.00	-951.70	0.00	951.70	3277.08	1638.54	4994.93	2501.18	7.95	-1.523	0.000	0.228
52.51	-14.25	-13.13	0.00	-918.36	0.00	918.36	2602.21	1301.11	3990.47	1998.20	8.76	-1.574	0.000	0.241
55.00	-13.90	-12.99	0.00	-885.65	0.00	885.65	2577.30	1288.65	3896.73	1951.26	9.60	-1.624	0.000	0.254
57.50	-13.54	-12.85	0.00	-853.17	0.00	853.17	2551.96	1275.98	3803.21	1904.43	10.46	-1.679	0.000	0.249
57.50	-13.54	-12.85	0.00	-853.17	0.00	853.17	2551.96	1275.98	3803.21	1904.43	10.46	-1.679	0.000	0.249
60.00	-13.18	-12.72	0.00	-821.05	0.00	821.05	2526.30	1263.15	3710.31	1857.91	11.35	-1.733	0.000	0.447
65.00	-12.48	-12.46	0.00	-757.42	0.00	757.42	2474.01	1237.00	3526.46	1765.85	13.27	-1.929	0.000	0.434
70.00	-11.79	-12.19	0.00	-695.14	0.00	695.14	2420.42	1210.21	3345.35	1675.16	15.40	-2.126	0.000	0.420
75.00	-11.13	-11.92	0.00	-634.21	0.00	634.21	2365.54	1182.77	3167.14	1585.93	17.73	-2.323	0.000	0.405
80.00	-10.48	-11.65	0.00	-574.62	0.00	574.62	2309.37	1154.68	2992.01	1498.23	20.27	-2.521	0.000	0.388
85.00	-9.84	-11.38	0.00	-516.39	0.00	516.39	2251.13	1125.57	2819.16	1411.68	23.02	-2.717	0.000	0.370
90.00	-9.23	-11.11	0.00	-459.51	0.00	459.51	2174.14	1087.07	2628.67	1316.29	25.97	-2.911	0.000	0.353
95.00	-8.65	-10.83	0.00	-403.97	0.00	403.97	2097.14	1048.57	2444.84	1224.23	29.12	-3.102	0.000	0.334
95.80	-8.56	-10.78	0.00	-395.30	0.00	395.30	2084.82	1042.41	2416.04	1209.82	29.64	-3.134	0.000	0.183
95.83	-8.55	-10.79	0.00	-395.00	0.00	395.00	2084.39	1042.20	2415.05	1209.32	29.66	-3.134	0.000	0.182
99.92	-7.89	-10.54	0.00	-350.90	0.00	350.90	1076.50	538.25	1236.95	619.40	32.38	-3.219	0.000	0.195
100.00	-7.87	-10.55	0.00	-350.01	0.00	350.01	1076.11	538.05	1235.71	618.78	32.43	-3.220	0.000	0.243
105.00	-7.49	-10.28	0.00	-297.27	0.00	297.27	1052.46	526.23	1163.02	582.37	35.87	-3.339	0.000	0.214
105.30	-7.46	-10.27	0.00	-294.19	0.00	294.19	1051.00	525.50	1158.68	580.20	36.08	-3.346	0.000	0.212
105.30	-7.46	-10.27	0.00	-294.19	0.00	294.19	1051.00	525.50	1158.68	580.20	36.08	-3.346	0.000	0.212
110.00	-7.09	-10.03	0.00	-245.93	0.00	245.93	1027.52	513.76	1090.99	546.31	39.42	-3.449	0.000	0.457
115.00	-6.70	-9.79	0.00	-195.77	0.00	195.77	1001.28	500.64	1019.81	510.66	43.17	-3.691	0.000	0.390
120.00	-6.33	-9.55	0.00	-146.81	0.00	146.81	973.75	486.88	949.64	475.53	47.15	-3.904	0.000	0.316
125.00	-5.99	-9.31	0.00	-99.04	0.00	99.04	944.93	472.47	880.64	440.98	51.34	-4.078	0.000	0.231
127.00	-4.47	-6.07	0.00	-80.41	0.00	80.41	933.04	466.52	853.41	427.34	53.06	-4.136	0.000	0.193
130.00	-4.30	-5.93	0.00	-62.20	0.00	62.20	914.81	457.41	812.99	407.10	55.68	-4.210	0.000	0.158
135.00	-4.05	-5.70	0.00	-32.54	0.00	32.54	883.40	441.70	746.85	373.98	60.14	-4.298	0.000	0.092
137.00	-2.04	-2.67	0.00	-21.14	0.00	21.14	870.48	435.24	720.86	360.97	61.94	-4.321	0.000	0.061
140.00	-1.92	-2.54	0.00	-13.14	0.00	13.14	850.70	425.35	682.40	341.71	64.66	-4.345	0.000	0.041
145.00	-0.10	-0.13	0.00	-0.45	0.00	0.45	816.70	408.35	619.79	310.35	69.22	-4.362	0.000	0.002
148.34	0.00	-0.13	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	72.27	-4.363	0.000	0.000

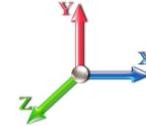
Wind Loading - Shaft

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	2.724	3.00	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	2.724	3.00	0.00	1.200	1.242	5.00	21.123	25.35	75.9	375.0	1519.6
10.00		1.00	0.70	2.724	3.00	0.00	1.200	1.331	5.00	20.755	24.91	74.6	393.9	1513.1
15.00		1.00	0.70	2.724	3.00	0.00	1.200	1.386	5.00	20.359	24.43	73.2	401.6	1495.4
20.00		1.00	0.70	2.724	3.00	0.00	1.200	1.427	5.00	19.950	23.94	71.7	404.4	1472.8
25.00		1.00	0.70	2.724	3.00	0.00	1.200	1.459	5.00	19.535	23.44	70.2	404.2	1447.2
30.00		1.00	0.70	2.726	3.00	0.00	1.200	1.486	5.00	19.115	22.94	68.8	402.2	1419.8
35.00		1.00	0.73	2.849	3.13	0.00	1.200	1.509	5.00	18.692	22.43	70.3	398.8	1391.0
40.00		1.00	0.76	2.960	3.26	0.00	1.200	1.529	5.00	18.267	21.92	71.4	394.3	1361.1
45.00		1.00	0.79	3.061	3.37	0.00	1.200	1.547	5.00	17.840	21.41	72.1	389.0	1330.5
47.18	Bot - Section 2	1.00	0.80	3.103	3.41	0.00	1.200	1.555	2.18	7.626	9.15	31.2	168.1	569.8
47.20	RB1	1.00	0.80	3.103	3.41	0.00	1.200	1.555	0.02	0.088	0.11	0.4	1.9	10.4
50.00		1.00	0.81	3.155	3.47	0.00	1.200	1.564	2.80	9.844	11.81	41.0	217.9	1160.5
52.51	Top - Section 1	1.00	0.82	3.199	3.52	0.00	1.200	1.571	2.51	8.710	10.45	36.8	193.8	1026.3
55.00		1.00	0.83	3.242	3.57	0.00	1.200	1.579	2.49	8.534	10.24	36.5	190.6	564.5
57.50	RT1	1.00	0.84	3.283	3.61	0.00	1.200	1.586	2.50	8.460	10.15	36.7	189.6	559.8
60.00		1.00	0.85	3.323	3.66	0.00	1.200	1.592	2.50	8.353	10.02	36.6	187.9	552.7
65.00		1.00	0.87	3.400	3.74	0.00	1.200	1.605	5.00	16.385	19.66	73.5	368.4	1082.2
70.00		1.00	0.89	3.473	3.82	0.00	1.200	1.617	5.00	15.952	19.14	73.1	360.7	1053.3
75.00		1.00	0.91	3.542	3.90	0.00	1.200	1.628	5.00	15.520	18.62	72.6	352.6	1024.1
80.00		1.00	0.93	3.608	3.97	0.00	1.200	1.639	5.00	15.086	18.10	71.8	344.3	994.6
85.00		1.00	0.94	3.671	4.04	0.00	1.200	1.649	5.00	14.653	17.58	71.0	335.7	964.9
90.00		1.00	0.96	3.731	4.10	0.00	1.200	1.658	5.00	14.218	17.06	70.0	326.8	934.9
95.00		1.00	0.97	3.789	4.17	0.00	1.200	1.667	5.00	13.784	16.54	68.9	317.8	904.7
95.80	RB2	1.00	0.98	3.799	4.18	0.00	1.200	1.669	0.80	2.165	2.60	10.9	50.6	142.5
95.83	Bot - Section 3	1.00	0.98	3.799	4.18	0.00	1.200	1.669	0.03	0.075	0.09	0.4	1.7	4.9
99.92	Top - Section 2	1.00	0.99	3.844	4.23	0.00	1.200	1.676	4.09	11.015	13.22	55.9	255.6	998.4
100.00		1.00	0.99	3.845	4.23	0.00	1.200	1.676	0.08	0.225	0.27	1.1	5.3	11.1
105.00		1.00	1.00	3.899	4.29	0.00	1.200	1.684	5.00	13.072	15.69	67.3	303.0	635.9
105.30	RT2	1.00	1.00	3.903	4.29	0.00	1.200	1.685	0.30	0.770	0.92	4.0	18.1	37.7
110.00		1.00	1.02	3.952	4.35	0.00	1.200	1.692	4.70	11.866	14.24	61.9	275.9	576.4
115.00		1.00	1.03	4.002	4.40	0.00	1.200	1.699	5.00	12.201	14.64	64.5	283.7	591.1
120.00		1.00	1.04	4.051	4.46	0.00	1.200	1.707	5.00	11.765	14.12	62.9	273.8	568.6
125.00		1.00	1.05	4.099	4.51	0.00	1.200	1.714	5.00	11.328	13.59	61.3	263.8	545.8
127.00	Appurtenance(s)	1.00	1.06	4.117	4.53	0.00	1.200	1.716	2.00	4.409	5.29	24.0	103.9	213.2
130.00		1.00	1.07	4.145	4.56	0.00	1.200	1.720	3.00	6.482	7.78	35.5	152.2	312.3
135.00		1.00	1.08	4.190	4.61	0.00	1.200	1.727	5.00	10.455	12.55	57.8	243.4	500.0
137.00	Appurtenance(s)	1.00	1.08	4.207	4.63	0.00	1.200	1.729	2.00	4.059	4.87	22.5	95.7	194.8
140.00		1.00	1.09	4.233	4.66	0.00	1.200	1.733	3.00	5.958	7.15	33.3	139.8	284.6
145.00	Appurtenance(s)	1.00	1.10	4.276	4.70	0.00	1.200	1.739	5.00	9.581	11.50	54.1	222.5	453.7
148.34		1.00	1.11	4.304	4.73	0.00	1.200	1.743	3.34	6.156	7.39	35.0	143.9	291.3
Totals:								148.34			2,020.7	30,715.7		

Discrete Appurtenance Forces

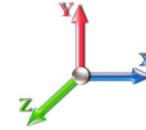
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	145.00	T-Arm w/ Mods	3	4.276	4.704	0.56	0.75	35.46	2371.93	0.000	0.000	166.79	0.00	0.00
2	145.00	ALU - 800 Mhz Filter	2	4.276	4.704	0.40	0.80	0.45	46.74	0.000	0.000	2.13	0.00	0.00
3	145.00	ALU - TD-RRH8x20-25 -	2	4.276	4.704	0.54	0.80	5.85	318.80	0.000	0.000	27.53	0.00	0.00
4	145.00	ALU - 800 Mhz - RRU	4	4.276	4.704	0.54	0.80	7.78	464.84	0.000	0.000	36.61	0.00	0.00
5	145.00	ALU - 1900 Mhz - RRU	2	4.276	4.704	0.54	0.80	5.56	260.79	0.000	0.000	26.15	0.00	0.00
6	145.00	RFS - ACU-A20-N - RET	4	4.276	4.704	0.40	0.80	0.70	16.73	0.000	0.000	3.28	0.00	0.00
7	145.00	KMW - ETCR-654L12H6	2	4.276	4.704	0.57	0.80	19.80	794.50	0.000	0.000	93.14	0.00	0.00
8	137.00	Ericsson - RRUS-11 -	6	4.207	4.628	0.54	0.80	10.12	700.92	0.000	0.000	46.85	0.00	0.00
9	137.00	Powerwave - LGP-13519 -	6	4.207	4.628	0.40	0.80	1.90	78.43	0.000	0.000	8.77	0.00	0.00
10	137.00	Powerwave - LGP 21401 -	6	4.207	4.628	0.40	0.80	5.08	207.57	0.000	0.000	23.53	0.00	0.00
11	137.00	Powerwave - 7020.00 -	6	4.207	4.628	0.40	0.80	2.11	59.30	0.000	0.000	9.77	0.00	0.00
12	137.00	Raycap -	1	4.207	4.628	0.80	0.80	1.08	81.73	0.000	0.000	5.01	0.00	0.00
13	137.00	KMW -	6	4.207	4.628	0.65	0.80	42.15	1035.08	0.000	0.000	195.09	0.00	0.00
14	137.00	Powerwave - 7770	3	4.207	4.628	0.64	0.80	12.51	632.32	0.000	0.000	57.88	0.00	0.00
15	137.00	Low Profile	1	4.207	4.628	1.00	1.00	39.50	2797.10	0.000	0.000	182.82	0.00	0.00
16	127.00	RFS - FD9R6004/2C-3L -	6	4.117	4.529	0.40	0.80	1.96	55.88	0.000	0.000	8.89	0.00	0.00
17	127.00	Antel - BXA-70063-6CF	1	4.117	4.529	0.64	0.80	6.60	123.75	0.000	0.000	29.89	0.00	0.00
18	127.00	Antel - BXA-70040-6CF	2	4.117	4.529	0.57	0.80	19.75	493.77	0.000	0.000	89.43	0.00	0.00
19	127.00	Antel - LPA 80080/6CF	6	4.117	4.529	1.12	0.80	37.03	630.15	0.000	0.000	167.70	0.00	0.00
20	127.00	Antel - BXA-171085-12BF	3	4.117	4.529	0.72	0.80	15.16	252.50	0.000	0.000	68.67	0.00	0.00
21	127.00	Low Profile	1	4.117	4.529	1.00	1.00	39.37	2787.31	0.000	0.000	178.30	0.00	0.00
Totals:								14,210.13				1,428.21		

Total Applied Force Summary

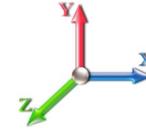
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		75.95	1698.00	0.00	0.00
10.00		74.62	1691.54	0.00	0.00
15.00		73.20	1673.85	0.00	0.00
20.00		71.73	1651.19	0.00	0.00
25.00		70.24	1625.66	0.00	0.00
30.00		68.79	1598.22	0.00	0.00
35.00		70.29	1569.42	0.00	0.00
40.00		71.37	1539.56	0.00	0.00
45.00		72.08	1508.89	0.00	0.00
47.18		31.23	647.39	0.00	0.00
47.20		0.36	11.26	0.00	0.00
50.00		40.99	1285.68	0.00	0.00
52.51		36.78	1138.65	0.00	0.00
55.00		36.51	676.10	0.00	0.00
57.50		36.66	671.96	0.00	0.00
60.00		36.64	641.94	0.00	0.00
65.00		73.54	1260.65	0.00	0.00
70.00		73.13	1231.76	0.00	0.00
75.00		72.56	1202.55	0.00	0.00
80.00		71.85	1173.05	0.00	0.00
85.00		71.00	1143.29	0.00	0.00
90.00		70.03	1113.29	0.00	0.00
95.00		68.95	1083.08	0.00	0.00
95.80		10.85	171.09	0.00	0.00
95.83		0.37	6.18	0.00	0.00
99.92		55.90	1184.60	0.00	0.00
100.00		1.14	14.92	0.00	0.00
105.00		67.28	863.89	0.00	0.00
105.30		3.97	51.40	0.00	0.00
110.00		61.89	744.12	0.00	0.00
115.00		64.45	769.56	0.00	0.00
120.00		62.91	746.98	0.00	0.00
125.00		61.29	724.26	0.00	0.00
127.00	(19) attachments	566.84	4627.89	0.00	0.00
130.00		35.46	374.39	0.00	0.00
135.00		57.82	603.55	0.00	0.00
137.00	(35) attachments	552.26	5828.66	0.00	0.00
140.00		33.29	298.37	0.00	0.00
145.00	(19) attachments	409.70	4750.94	0.00	0.00
148.34		34.98	291.29	0.00	0.00
Totals:		3,448.91	49,889.07	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

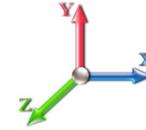
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1.5" Reinforcing plate	Yes	2.80	0.000	1.50	1.08	0.00	0.039	0.000	3.155	0.00	25.26
52.51	1.5" Reinforcing plate	Yes	2.51	0.000	1.50	0.97	0.00	0.040	0.000	3.199	0.00	22.79
55.00	1.5" Reinforcing plate	Yes	2.49	0.000	1.50	0.97	0.00	0.040	0.000	3.242	0.00	22.74
57.50	1.5" Reinforcing plate	Yes	2.50	0.000	1.50	0.97	0.00	0.040	0.000	3.283	0.00	22.96
95.83	1.5" Reinforcing plate	Yes	0.03	0.000	1.50	0.01	0.00	0.052	0.000	3.799	0.00	0.27
99.92	1.5" Reinforcing plate	Yes	4.09	0.000	1.50	1.65	0.00	0.052	0.000	3.844	0.00	40.30
100.00	1.5" Reinforcing plate	Yes	0.08	0.000	1.50	0.03	0.00	0.053	0.000	3.845	0.00	0.84
105.00	1.5" Reinforcing plate	Yes	5.00	0.000	1.50	2.03	0.00	0.054	0.000	3.899	0.00	49.61
105.30	1.5" Reinforcing plate	Yes	0.30	0.000	1.50	0.12	0.00	0.055	0.000	3.903	0.00	2.98
Totals:											0.0	187.8

Calculated Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

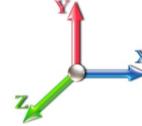


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-49.89	-3.46	0.00	-367.64	0.00	367.64	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.109
5.00	-48.19	-3.41	0.00	-350.33	0.00	350.33	3846.55	1923.28	7360.85	3685.90	0.02	-0.031	0.000	0.108
10.00	-46.49	-3.36	0.00	-333.27	0.00	333.27	3788.45	1894.23	7085.75	3548.14	0.07	-0.063	0.000	0.106
15.00	-44.82	-3.31	0.00	-316.46	0.00	316.46	3729.06	1864.53	6813.30	3411.72	0.15	-0.096	0.000	0.105
20.00	-43.17	-3.26	0.00	-299.89	0.00	299.89	3668.37	1834.19	6543.69	3276.71	0.27	-0.129	0.000	0.103
25.00	-41.54	-3.21	0.00	-283.58	0.00	283.58	3606.39	1803.19	6277.08	3143.21	0.42	-0.163	0.000	0.102
30.00	-39.94	-3.16	0.00	-267.51	0.00	267.51	3543.11	1771.56	6013.64	3011.29	0.61	-0.197	0.000	0.100
35.00	-38.37	-3.11	0.00	-251.70	0.00	251.70	3478.55	1739.27	5753.54	2881.05	0.84	-0.232	0.000	0.098
40.00	-36.83	-3.06	0.00	-236.15	0.00	236.15	3412.68	1706.34	5496.94	2752.56	1.10	-0.267	0.000	0.097
45.00	-35.32	-2.99	0.00	-220.87	0.00	220.87	3345.53	1672.76	5244.01	2625.90	1.40	-0.303	0.000	0.095
47.18	-34.67	-2.96	0.00	-214.36	0.00	214.36	3315.91	1657.95	5135.17	2571.40	1.54	-0.319	0.000	0.094
47.20	-34.66	-2.97	0.00	-214.29	0.00	214.29	3315.57	1657.78	5133.93	2570.78	1.54	-0.319	0.000	0.056
50.00	-33.37	-2.92	0.00	-205.99	0.00	205.99	3277.08	1638.54	4994.93	2501.18	1.73	-0.331	0.000	0.055
52.51	-32.23	-2.89	0.00	-198.65	0.00	198.65	2602.21	1301.11	3990.47	1998.20	1.91	-0.342	0.000	0.058
55.00	-31.56	-2.85	0.00	-191.46	0.00	191.46	2577.30	1288.65	3896.73	1951.26	2.09	-0.353	0.000	0.061
57.50	-30.88	-2.82	0.00	-184.33	0.00	184.33	2551.96	1275.98	3803.21	1904.43	2.28	-0.365	0.000	0.060
57.50	-30.88	-2.82	0.00	-184.33	0.00	184.33	2551.96	1275.98	3803.21	1904.43	2.28	-0.365	0.000	0.060
60.00	-30.24	-2.79	0.00	-177.29	0.00	177.29	2526.30	1263.15	3710.31	1857.91	2.47	-0.377	0.000	0.107
65.00	-28.98	-2.73	0.00	-163.34	0.00	163.34	2474.01	1237.00	3526.46	1765.85	2.89	-0.419	0.000	0.104
70.00	-27.75	-2.67	0.00	-149.69	0.00	149.69	2420.42	1210.21	3345.35	1675.16	3.35	-0.461	0.000	0.101
75.00	-26.54	-2.61	0.00	-136.35	0.00	136.35	2365.54	1182.77	3167.14	1585.93	3.86	-0.504	0.000	0.097
80.00	-25.37	-2.54	0.00	-123.32	0.00	123.32	2309.37	1154.68	2992.01	1498.23	4.41	-0.546	0.000	0.093
85.00	-24.22	-2.48	0.00	-110.62	0.00	110.62	2251.13	1125.57	2819.16	1411.68	5.00	-0.588	0.000	0.089
90.00	-23.11	-2.41	0.00	-98.23	0.00	98.23	2174.14	1087.07	2628.67	1316.29	5.64	-0.630	0.000	0.085
95.00	-22.03	-2.34	0.00	-86.18	0.00	86.18	2097.14	1048.57	2444.84	1224.23	6.32	-0.671	0.000	0.081
95.80	-21.85	-2.33	0.00	-84.30	0.00	84.30	2084.82	1042.41	2416.04	1209.82	6.43	-0.677	0.000	0.044
95.83	-21.85	-2.33	0.00	-84.24	0.00	84.24	2084.39	1042.20	2415.05	1209.32	6.44	-0.677	0.000	0.044
99.92	-20.66	-2.26	0.00	-74.71	0.00	74.71	1076.50	538.25	1236.95	619.40	7.03	-0.695	0.000	0.048
100.00	-20.65	-2.27	0.00	-74.52	0.00	74.52	1076.11	538.05	1235.71	618.78	7.04	-0.696	0.000	0.060
105.00	-19.79	-2.19	0.00	-63.19	0.00	63.19	1052.46	526.23	1163.02	582.37	7.78	-0.721	0.000	0.053
105.30	-19.73	-2.19	0.00	-62.53	0.00	62.53	1051.00	525.50	1158.68	580.20	7.83	-0.723	0.000	0.053
105.30	-19.73	-2.19	0.00	-62.53	0.00	62.53	1051.00	525.50	1158.68	580.20	7.83	-0.723	0.000	0.053
110.00	-18.99	-2.13	0.00	-52.22	0.00	52.22	1027.52	513.76	1090.99	546.31	8.55	-0.744	0.000	0.114
115.00	-18.22	-2.08	0.00	-41.55	0.00	41.55	1001.28	500.64	1019.81	510.66	9.36	-0.796	0.000	0.100
120.00	-17.47	-2.01	0.00	-31.17	0.00	31.17	973.75	486.88	949.64	475.53	10.21	-0.841	0.000	0.084
125.00	-16.75	-1.95	0.00	-21.10	0.00	21.10	944.93	472.47	880.64	440.98	11.12	-0.878	0.000	0.066
127.00	-12.13	-1.31	0.00	-17.20	0.00	17.20	933.04	466.52	853.41	427.34	11.49	-0.890	0.000	0.053
130.00	-11.75	-1.28	0.00	-13.26	0.00	13.26	914.81	457.41	812.99	407.10	12.05	-0.906	0.000	0.045
135.00	-11.15	-1.21	0.00	-6.88	0.00	6.88	883.40	441.70	746.85	373.98	13.01	-0.925	0.000	0.031
137.00	-5.33	-0.56	0.00	-4.46	0.00	4.46	870.48	435.24	720.86	360.97	13.40	-0.930	0.000	0.018
140.00	-5.03	-0.53	0.00	-2.77	0.00	2.77	850.70	425.35	682.40	341.71	13.99	-0.935	0.000	0.014
145.00	-0.29	-0.04	0.00	-0.13	0.00	0.13	816.70	408.35	619.79	310.35	14.97	-0.938	0.000	0.001
148.34	0.00	-0.03	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	15.63	-0.939	0.000	0.000

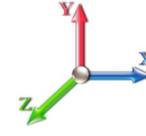
Seismic Segment Forces (Factored)

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E					Iterations 23
Gust Response Factor	1.10			Sds	0.19
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.35	SA	0.04
				Seismic Importance Factor	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		953.83	0.00	0.03	0.02	16.51	
10.00		932.67	0.01	0.05	0.03	23.54	
15.00		911.51	0.02	0.06	0.04	26.59	
20.00		890.35	0.03	0.07	0.04	27.78	
25.00		869.19	0.05	0.07	0.04	28.14	
30.00		848.03	0.08	0.07	0.04	28.21	
35.00		826.87	0.11	0.07	0.04	28.20	
40.00		805.71	0.14	0.07	0.03	28.10	
45.00		784.56	0.17	0.07	0.03	27.77	
47.18	Bot - Section 2	334.70	0.19	0.06	0.02	11.87	
47.20	RB1	7.02	0.19	0.06	0.02	0.25	
50.00		785.47	0.21	0.06	0.02	27.71	
52.51	Top - Section 1	693.78	0.24	0.06	0.02	24.15	
55.00		311.60	0.26	0.05	0.02	10.58	
57.50	RT1	308.45	0.28	0.05	0.01	10.06	
60.00		304.05	0.31	0.04	0.01	9.35	
65.00		594.87	0.36	0.03	0.01	14.85	
70.00		577.23	0.42	0.01	0.01	9.37	
75.00		559.60	0.48	-0.01	0.01	2.73	
80.00		541.97	0.55	-0.03	0.01	-4.20	
85.00		524.34	0.62	-0.06	0.02	-10.26	
90.00		506.70	0.70	-0.09	0.03	-14.43	
95.00		489.07	0.78	-0.11	0.05	-16.19	
95.80	RB2	76.62	0.79	-0.11	0.05	-2.56	
95.83	Bot - Section 3	2.64	0.79	-0.11	0.05	-0.09	
99.92	Top - Section 2	619.07	0.86	-0.12	0.07	-20.31	
100.00		4.80	0.86	-0.12	0.07	-0.16	
105.00		277.35	0.95	-0.12	0.11	-7.57	
105.30	RT2	16.30	0.95	-0.12	0.11	-0.44	
110.00		250.46	1.04	-0.10	0.15	-4.19	
115.00		256.19	1.14	-0.05	0.21	-0.28	
120.00		245.61	1.24	0.04	0.28	4.81	
125.00		235.03	1.34	0.18	0.37	10.65	
127.00	Appurtenance(s)	1873.6	1.39	0.26	0.42	106.90	
130.00		133.40	1.45	0.39	0.49	10.17	
135.00		213.87	1.57	0.68	0.62	24.03	
137.00	Appurtenance(s)	2445.9	1.61	0.82	0.69	313.80	
140.00		120.70	1.68	1.06	0.79	18.57	
145.00	Appurtenance(s)	2204.7	1.81	1.57	0.99	442.65	
148.34		122.84	1.89	1.98	1.14	28.90	
Totals:		23,460.8				1,235.6	Total Wind: 15,776.3

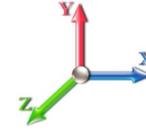
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E						Iterations 23
Gust Response Factor	1.10		Sds	0.19		Ss 0.17
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.35	SA	0.04	Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.93	-1.32	0.00	-154.03	0.00	154.03	3903.36	1951.68	7638.46	3824.91	0.00	0.00	0.00	0.049
5.00	-31.60	-1.31	0.00	-147.43	0.00	147.43	3846.55	1923.28	7360.85	3685.90	0.01	-0.01	0.048	
10.00	-30.31	-1.29	0.00	-140.88	0.00	140.88	3788.45	1894.23	7085.75	3548.14	0.03	-0.03	0.048	
15.00	-29.03	-1.27	0.00	-134.42	0.00	134.42	3729.06	1864.53	6813.30	3411.72	0.06	-0.04	0.047	
20.00	-27.79	-1.25	0.00	-128.05	0.00	128.05	3668.37	1834.19	6543.69	3276.71	0.11	-0.05	0.047	
25.00	-26.57	-1.23	0.00	-121.80	0.00	121.80	3606.39	1803.19	6277.08	3143.21	0.18	-0.07	0.046	
30.00	-25.37	-1.21	0.00	-115.66	0.00	115.66	3543.11	1771.56	6013.64	3011.29	0.26	-0.08	0.046	
35.00	-24.20	-1.18	0.00	-109.63	0.00	109.63	3478.55	1739.27	5753.54	2881.05	0.35	-0.10	0.045	
40.00	-23.05	-1.16	0.00	-103.73	0.00	103.73	3412.68	1706.34	5496.94	2752.56	0.47	-0.11	0.044	
45.00	-21.93	-1.13	0.00	-97.94	0.00	97.94	3345.53	1672.76	5244.01	2625.90	0.59	-0.13	0.044	
47.18	-21.45	-1.12	0.00	-95.48	0.00	95.48	3315.91	1657.95	5135.17	2571.40	0.65	-0.14	0.044	
47.20	-21.44	-1.12	0.00	-95.45	0.00	95.45	3315.57	1657.78	5133.93	2570.78	0.66	-0.14	0.026	
50.00	-20.40	-1.09	0.00	-92.31	0.00	92.31	3277.08	1638.54	4994.93	2501.18	0.74	-0.14	0.026	
52.51	-19.48	-1.07	0.00	-89.57	0.00	89.57	2602.21	1301.11	3990.47	1998.20	0.81	-0.15	0.027	
55.00	-19.02	-1.06	0.00	-86.91	0.00	86.91	2577.30	1288.65	3896.73	1951.26	0.89	-0.15	0.029	
57.50	-18.56	-1.05	0.00	-84.27	0.00	84.27	2551.96	1275.98	3803.21	1904.43	0.97	-0.16	0.028	
57.50	-18.56	-1.05	0.00	-84.27	0.00	84.27	2551.96	1275.98	3803.21	1904.43	0.97	-0.16	0.028	
60.00	-18.10	-1.04	0.00	-81.65	0.00	81.65	2526.30	1263.15	3710.31	1857.91	1.06	-0.16	0.051	
65.00	-17.21	-1.03	0.00	-76.44	0.00	76.44	2474.01	1237.00	3526.46	1765.85	1.24	-0.18	0.050	
70.00	-16.34	-1.02	0.00	-71.29	0.00	71.29	2420.42	1210.21	3345.35	1675.16	1.44	-0.20	0.049	
75.00	-15.49	-1.02	0.00	-66.17	0.00	66.17	2365.54	1182.77	3167.14	1585.93	1.66	-0.22	0.048	
80.00	-14.66	-1.02	0.00	-61.06	0.00	61.06	2309.37	1154.68	2992.01	1498.23	1.91	-0.24	0.047	
85.00	-13.85	-1.03	0.00	-55.93	0.00	55.93	2251.13	1125.57	2819.16	1411.68	2.18	-0.27	0.046	
90.00	-13.06	-1.03	0.00	-50.80	0.00	50.80	2174.14	1087.07	2628.67	1316.29	2.47	-0.29	0.045	
95.00	-12.30	-1.03	0.00	-45.66	0.00	45.66	2097.14	1048.57	2444.84	1224.23	2.78	-0.31	0.043	
95.80	-12.18	-1.03	0.00	-44.84	0.00	44.84	2084.82	1042.41	2416.04	1209.82	2.83	-0.31	0.024	
95.83	-12.17	-1.03	0.00	-44.81	0.00	44.81	2084.39	1042.20	2415.05	1209.32	2.83	-0.31	0.024	
99.92	-11.29	-1.02	0.00	-40.62	0.00	40.62	1076.50	538.25	1236.95	619.40	3.10	-0.32	0.026	
100.00	-11.28	-1.02	0.00	-40.53	0.00	40.53	1076.11	538.05	1235.71	618.78	3.11	-0.32	0.032	
105.00	-10.77	-1.02	0.00	-35.41	0.00	35.41	1052.46	526.23	1163.02	582.37	3.45	-0.34	0.030	
105.30	-10.73	-1.02	0.00	-35.10	0.00	35.10	1051.00	525.50	1158.68	580.20	3.47	-0.34	0.029	
105.30	-10.73	-1.02	0.00	-35.10	0.00	35.10	1051.00	525.50	1158.68	580.20	3.47	-0.34	0.029	
110.00	-10.27	-1.03	0.00	-30.29	0.00	30.29	1027.52	513.76	1090.99	546.31	3.81	-0.35	0.065	
115.00	-9.78	-1.03	0.00	-25.16	0.00	25.16	1001.28	500.64	1019.81	510.66	4.19	-0.38	0.059	
120.00	-9.31	-1.02	0.00	-20.02	0.00	20.02	973.75	486.88	949.64	475.53	4.60	-0.41	0.052	
125.00	-8.85	-1.01	0.00	-14.91	0.00	14.91	944.93	472.47	880.64	440.98	5.04	-0.43	0.043	
127.00	-6.53	-0.89	0.00	-12.88	0.00	12.88	933.04	466.52	853.41	427.34	5.23	-0.44	0.037	
130.00	-6.30	-0.88	0.00	-10.22	0.00	10.22	914.81	457.41	812.99	407.10	5.51	-0.45	0.032	
135.00	-5.94	-0.85	0.00	-5.82	0.00	5.82	883.40	441.70	746.85	373.98	5.99	-0.47	0.022	
137.00	-2.97	-0.51	0.00	-4.12	0.00	4.12	870.48	435.24	720.86	360.97	6.19	-0.47	0.015	
140.00	-2.81	-0.49	0.00	-2.58	0.00	2.58	850.70	425.35	682.40	341.71	6.49	-0.48	0.011	
145.00	-0.15	-0.03	0.00	-0.10	0.00	0.10	816.70	408.35	619.79	310.35	6.99	-0.48	0.001	
148.34	0.00	-0.03	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	7.32	-0.48	0.000	

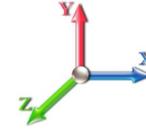
Seismic Segment Forces (Factored)

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E					Iterations 23
Gust Response Factor	1.10	Sds	0.19	Ss	0.17
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.35	SA	0.04
					Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		953.83	0.00	0.03	0.02	16.51	
10.00		932.67	0.01	0.05	0.03	23.54	
15.00		911.51	0.02	0.06	0.04	26.59	
20.00		890.35	0.03	0.07	0.04	27.78	
25.00		869.19	0.05	0.07	0.04	28.14	
30.00		848.03	0.08	0.07	0.04	28.21	
35.00		826.87	0.11	0.07	0.04	28.20	
40.00		805.71	0.14	0.07	0.03	28.10	
45.00		784.56	0.17	0.07	0.03	27.77	
47.18	Bot - Section 2	334.70	0.19	0.06	0.02	11.87	
47.20	RB1	7.02	0.19	0.06	0.02	0.25	
50.00		785.47	0.21	0.06	0.02	27.71	
52.51	Top - Section 1	693.78	0.24	0.06	0.02	24.15	
55.00		311.60	0.26	0.05	0.02	10.58	
57.50	RT1	308.45	0.28	0.05	0.01	10.06	
60.00		304.05	0.31	0.04	0.01	9.35	
65.00		594.87	0.36	0.03	0.01	14.85	
70.00		577.23	0.42	0.01	0.01	9.37	
75.00		559.60	0.48	-0.01	0.01	2.73	
80.00		541.97	0.55	-0.03	0.01	-4.20	
85.00		524.34	0.62	-0.06	0.02	-10.26	
90.00		506.70	0.70	-0.09	0.03	-14.43	
95.00		489.07	0.78	-0.11	0.05	-16.19	
95.80	RB2	76.62	0.79	-0.11	0.05	-2.56	
95.83	Bot - Section 3	2.64	0.79	-0.11	0.05	-0.09	
99.92	Top - Section 2	619.07	0.86	-0.12	0.07	-20.31	
100.00		4.80	0.86	-0.12	0.07	-0.16	
105.00		277.35	0.95	-0.12	0.11	-7.57	
105.30	RT2	16.30	0.95	-0.12	0.11	-0.44	
110.00		250.46	1.04	-0.10	0.15	-4.19	
115.00		256.19	1.14	-0.05	0.21	-0.28	
120.00		245.61	1.24	0.04	0.28	4.81	
125.00		235.03	1.34	0.18	0.37	10.65	
127.00	Appurtenance(s)	1873.6	1.39	0.26	0.42	106.90	
130.00		133.40	1.45	0.39	0.49	10.17	
135.00		213.87	1.57	0.68	0.62	24.03	
137.00	Appurtenance(s)	2445.9	1.61	0.82	0.69	313.80	
140.00		120.70	1.68	1.06	0.79	18.57	
145.00	Appurtenance(s)	2204.7	1.81	1.57	0.99	442.65	
148.34		122.84	1.89	1.98	1.14	28.90	
Totals:		23,460.8				1,235.6	Total Wind: 15,776.3

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

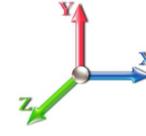
Calculated Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations 23
Gust Response Factor	1.10			Sds	0.19	Ss 0.17
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.35	SA	0.04	Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.70	-1.32	0.00	-152.19	0.00	152.19	3903.36	1951.68	7638.46	3824.91	0.00	0.00	0.00	0.046
5.00	-23.70	-1.31	0.00	-145.60	0.00	145.60	3846.55	1923.28	7360.85	3685.90	0.01	-0.01	0.046	
10.00	-22.73	-1.29	0.00	-139.07	0.00	139.07	3788.45	1894.23	7085.75	3548.14	0.03	-0.03	0.045	
15.00	-21.78	-1.27	0.00	-132.62	0.00	132.62	3729.06	1864.53	6813.30	3411.72	0.06	-0.04	0.045	
20.00	-20.84	-1.24	0.00	-126.29	0.00	126.29	3668.37	1834.19	6543.69	3276.71	0.11	-0.05	0.044	
25.00	-19.92	-1.22	0.00	-120.07	0.00	120.07	3606.39	1803.19	6277.08	3143.21	0.18	-0.07	0.044	
30.00	-19.03	-1.19	0.00	-113.98	0.00	113.98	3543.11	1771.56	6013.64	3011.29	0.26	-0.08	0.043	
35.00	-18.15	-1.17	0.00	-108.01	0.00	108.01	3478.55	1739.27	5753.54	2881.05	0.35	-0.10	0.043	
40.00	-17.29	-1.14	0.00	-102.16	0.00	102.16	3412.68	1706.34	5496.94	2752.56	0.46	-0.11	0.042	
45.00	-16.45	-1.12	0.00	-96.43	0.00	96.43	3345.53	1672.76	5244.01	2625.90	0.59	-0.13	0.042	
47.18	-16.09	-1.11	0.00	-94.00	0.00	94.00	3315.91	1657.95	5135.17	2571.40	0.65	-0.14	0.041	
47.20	-16.08	-1.11	0.00	-93.97	0.00	93.97	3315.57	1657.78	5133.93	2570.78	0.65	-0.14	0.025	
50.00	-15.30	-1.08	0.00	-90.87	0.00	90.87	3277.08	1638.54	4994.93	2501.18	0.73	-0.14	0.024	
52.51	-14.61	-1.05	0.00	-88.16	0.00	88.16	2602.21	1301.11	3990.47	1998.20	0.80	-0.15	0.026	
55.00	-14.26	-1.04	0.00	-85.54	0.00	85.54	2577.30	1288.65	3896.73	1951.26	0.88	-0.15	0.027	
57.50	-13.92	-1.03	0.00	-82.93	0.00	82.93	2551.96	1275.98	3803.21	1904.43	0.96	-0.16	0.027	
57.50	-13.92	-1.03	0.00	-82.93	0.00	82.93	2551.96	1275.98	3803.21	1904.43	0.96	-0.16	0.027	
60.00	-13.58	-1.03	0.00	-80.34	0.00	80.34	2526.30	1263.15	3710.31	1857.91	1.04	-0.16	0.049	
65.00	-12.91	-1.01	0.00	-75.21	0.00	75.21	2474.01	1237.00	3526.46	1765.85	1.22	-0.18	0.048	
70.00	-12.25	-1.01	0.00	-70.13	0.00	70.13	2420.42	1210.21	3345.35	1675.16	1.42	-0.20	0.047	
75.00	-11.62	-1.01	0.00	-65.10	0.00	65.10	2365.54	1182.77	3167.14	1585.93	1.64	-0.22	0.046	
80.00	-10.99	-1.01	0.00	-60.06	0.00	60.06	2309.37	1154.68	2992.01	1498.23	1.88	-0.24	0.045	
85.00	-10.39	-1.01	0.00	-55.02	0.00	55.02	2251.13	1125.57	2819.16	1411.68	2.15	-0.26	0.044	
90.00	-9.80	-1.01	0.00	-49.98	0.00	49.98	2174.14	1087.07	2628.67	1316.29	2.43	-0.28	0.042	
95.00	-9.22	-1.01	0.00	-44.93	0.00	44.93	2097.14	1048.57	2444.84	1224.23	2.74	-0.30	0.041	
95.80	-9.13	-1.01	0.00	-44.12	0.00	44.12	2084.82	1042.41	2416.04	1209.82	2.79	-0.31	0.023	
95.83	-9.13	-1.01	0.00	-44.09	0.00	44.09	2084.39	1042.20	2415.05	1209.32	2.79	-0.31	0.023	
99.92	-8.46	-1.01	0.00	-39.97	0.00	39.97	1076.50	538.25	1236.95	619.40	3.06	-0.32	0.025	
100.00	-8.46	-1.01	0.00	-39.88	0.00	39.88	1076.11	538.05	1235.71	618.78	3.06	-0.32	0.031	
105.00	-8.07	-1.01	0.00	-34.84	0.00	34.84	1052.46	526.23	1163.02	582.37	3.40	-0.33	0.028	
105.30	-8.05	-1.01	0.00	-34.54	0.00	34.54	1051.00	525.50	1158.68	580.20	3.42	-0.33	0.028	
105.30	-8.05	-1.01	0.00	-34.54	0.00	34.54	1051.00	525.50	1158.68	580.20	3.42	-0.33	0.028	
110.00	-7.70	-1.01	0.00	-29.81	0.00	29.81	1027.52	513.76	1090.99	546.31	3.75	-0.34	0.062	
115.00	-7.33	-1.01	0.00	-24.77	0.00	24.77	1001.28	500.64	1019.81	510.66	4.13	-0.37	0.056	
120.00	-6.98	-1.01	0.00	-19.72	0.00	19.72	973.75	486.88	949.64	475.53	4.54	-0.40	0.049	
125.00	-6.63	-0.99	0.00	-14.69	0.00	14.69	944.93	472.47	880.64	440.98	4.97	-0.43	0.040	
127.00	-4.89	-0.88	0.00	-12.70	0.00	12.70	933.04	466.52	853.41	427.34	5.15	-0.43	0.035	
130.00	-4.73	-0.87	0.00	-10.07	0.00	10.07	914.81	457.41	812.99	407.10	5.43	-0.45	0.030	
135.00	-4.46	-0.84	0.00	-5.75	0.00	5.75	883.40	441.70	746.85	373.98	5.90	-0.46	0.020	
137.00	-2.23	-0.51	0.00	-4.07	0.00	4.07	870.48	435.24	720.86	360.97	6.10	-0.46	0.014	
140.00	-2.11	-0.49	0.00	-2.54	0.00	2.54	850.70	425.35	682.40	341.71	6.39	-0.47	0.010	
145.00	-0.11	-0.03	0.00	-0.10	0.00	0.10	816.70	408.35	619.79	310.35	6.88	-0.47	0.000	
148.34	0.00	-0.03	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	7.21	-0.47	0.000	

Wind Loading - Shaft

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	203.90	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	199.46	0.650	0.000	5.00	20.087	13.06	88.0	0.0	953.8
10.00		1.00	0.70	6.129	6.74	195.02	0.650	0.000	5.00	19.645	12.77	86.1	0.0	932.7
15.00		1.00	0.70	6.129	6.74	190.58	0.650	0.000	5.00	19.203	12.48	84.1	0.0	911.5
20.00		1.00	0.70	6.129	6.74	186.14	0.650	0.000	5.00	18.761	12.19	82.2	0.0	890.4
25.00		1.00	0.70	6.129	6.74	181.70	0.650	0.000	5.00	18.319	11.91	80.3	0.0	869.2
30.00		1.00	0.70	6.134	6.75	177.34	0.650	0.000	5.00	17.877	11.62	78.4	0.0	848.0
35.00		1.00	0.73	6.410	7.05	176.75	0.650	0.000	5.00	17.435	11.33	79.9	0.0	826.9
40.00		1.00	0.76	6.659	7.33	175.53	0.650	0.000	5.00	16.993	11.05	80.9	0.0	805.7
45.00		1.00	0.79	6.887	7.58	173.80	0.650	0.000	5.00	16.551	10.76	81.5	0.0	784.6
47.18 Bot - Section 2		1.00	0.80	6.981	7.68	172.91	0.650	0.000	2.18	7.062	4.59	35.2	0.0	334.7
47.20 RB1		1.00	0.80	6.982	7.68	172.90	0.650	0.000	0.02	0.081	0.05	0.4	0.0	7.0
50.00		1.00	0.81	7.098	7.81	171.66	0.650	0.000	2.80	9.114	5.92	46.3	0.0	785.5
52.51 Top - Section 1		1.00	0.82	7.198	7.92	170.45	0.650	0.000	2.51	8.053	5.23	41.4	0.0	693.8
55.00		1.00	0.83	7.294	8.02	172.07	0.650	0.000	2.49	7.878	5.12	41.1	0.0	311.6
57.50 RT1		1.00	0.84	7.387	8.13	170.73	0.650	0.000	2.50	7.800	5.07	41.2	0.0	308.5
60.00		1.00	0.85	7.477	8.22	169.32	0.650	0.000	2.50	7.689	5.00	41.1	0.0	304.0
65.00		1.00	0.87	7.650	8.42	166.30	0.650	0.000	5.00	15.047	9.78	82.3	0.0	594.9
70.00		1.00	0.89	7.814	8.60	163.06	0.650	0.000	5.00	14.605	9.49	81.6	0.0	577.2
75.00		1.00	0.91	7.969	8.77	159.62	0.650	0.000	5.00	14.163	9.21	80.7	0.0	559.6
80.00		1.00	0.93	8.118	8.93	155.99	0.650	0.000	5.00	13.721	8.92	79.6	0.0	542.0
85.00		1.00	0.94	8.260	9.09	152.19	0.650	0.000	5.00	13.278	8.63	78.4	0.0	524.3
90.00		1.00	0.96	8.396	9.24	148.24	0.650	0.000	5.00	12.836	8.34	77.1	0.0	506.7
95.00		1.00	0.97	8.526	9.38	144.16	0.650	0.000	5.00	12.394	8.06	75.6	0.0	489.1
95.80 RB2		1.00	0.98	8.547	9.40	143.49	0.650	0.000	0.80	1.942	1.26	11.9	0.0	76.6
95.83 Bot - Section 3		1.00	0.98	8.547	9.40	143.47	0.650	0.000	0.03	0.067	0.04	0.4	0.0	2.6
99.92 Top - Section 2		1.00	0.99	8.650	9.52	140.02	0.650	0.000	4.09	9.874	6.42	61.1	0.0	619.1
100.00		1.00	0.99	8.652	9.52	141.84	0.650	0.000	0.08	0.202	0.13	1.2	0.0	4.8
105.00		1.00	1.00	8.774	9.65	137.52	0.650	0.000	5.00	11.669	7.58	73.2	0.0	277.3
105.30 RT2		1.00	1.00	8.781	9.66	137.25	0.650	0.000	0.30	0.686	0.45	4.3	0.0	16.3
110.00		1.00	1.02	8.891	9.78	133.09	0.650	0.000	4.70	10.541	6.85	67.0	0.0	250.5
115.00		1.00	1.03	9.005	9.91	128.56	0.650	0.000	5.00	10.785	7.01	69.4	0.0	256.2
120.00		1.00	1.04	9.115	10.03	123.93	0.650	0.000	5.00	10.343	6.72	67.4	0.0	245.6
125.00		1.00	1.05	9.222	10.14	119.21	0.650	0.000	5.00	9.900	6.44	65.3	0.0	235.0
127.00 Appurtenance(s)		1.00	1.06	9.264	10.19	117.29	0.650	0.000	2.00	3.836	2.49	25.4	0.0	91.0
130.00		1.00	1.07	9.326	10.26	114.40	0.650	0.000	3.00	5.622	3.65	37.5	0.0	133.4
135.00		1.00	1.08	9.427	10.37	109.52	0.650	0.000	5.00	9.016	5.86	60.8	0.0	213.9
137.00 Appurtenance(s)		1.00	1.08	9.466	10.41	107.54	0.650	0.000	2.00	3.483	2.26	23.6	0.0	82.6
140.00		1.00	1.09	9.525	10.48	104.55	0.650	0.000	3.00	5.091	3.31	34.7	0.0	120.7
145.00 Appurtenance(s)		1.00	1.10	9.621	10.58	99.52	0.650	0.000	5.00	8.132	5.29	55.9	0.0	192.7
148.34		1.00	1.11	9.684	10.65	96.11	0.650	0.000	3.34	5.186	3.37	35.9	0.0	122.8
Totals:									148.34			2,238.5		17,302.8

Discrete Appurtenance Forces

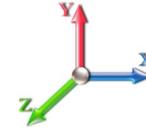
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	145.00	T-Arm w/ Mods	3	9.621	10.583	0.56	0.75	23.63	1350.00	0.000	0.000	250.03	0.00	0.00
2	145.00	ALU - 800 Mhz Filter	2	9.621	10.583	0.40	0.80	0.34	20.00	0.000	0.000	3.56	0.00	0.00
3	145.00	ALU - TD-RRH8x20-25 -	2	9.621	10.583	0.54	0.80	4.34	140.00	0.000	0.000	45.95	0.00	0.00
4	145.00	ALU - 800 Mhz - RRU	4	9.621	10.583	0.54	0.80	5.34	212.00	0.000	0.000	56.50	0.00	0.00
5	145.00	ALU - 1900 Mhz - RRU	2	9.621	10.583	0.54	0.80	4.07	88.00	0.000	0.000	43.11	0.00	0.00
6	145.00	RFS - ACU-A20-N - RET	4	9.621	10.583	0.40	0.80	0.22	4.00	0.000	0.000	2.37	0.00	0.00
7	145.00	KMW - ETCR-654L12H6	2	9.621	10.583	0.55	0.80	17.37	198.00	0.000	0.000	183.82	0.00	0.00
8	137.00	Ericsson - RRUS-11 -	6	9.466	10.413	0.54	0.80	8.10	306.00	0.000	0.000	84.39	0.00	0.00
9	137.00	Powerwave - LGP-13519 -	6	9.466	10.413	0.40	0.80	0.82	31.80	0.000	0.000	8.50	0.00	0.00
10	137.00	Powerwave - LGP 21401 -	6	9.466	10.413	0.40	0.80	3.10	84.60	0.000	0.000	32.24	0.00	0.00
11	137.00	Powerwave - 7020.00 -	6	9.466	10.413	0.40	0.80	0.96	13.20	0.000	0.000	10.00	0.00	0.00
12	137.00	Raycap -	1	9.466	10.413	0.80	0.80	0.74	31.80	0.000	0.000	7.66	0.00	0.00
13	137.00	KMW -	6	9.466	10.413	0.63	0.80	30.37	291.00	0.000	0.000	316.28	0.00	0.00
14	137.00	Powerwave - 7770	3	9.466	10.413	0.61	0.80	10.11	105.00	0.000	0.000	105.29	0.00	0.00
15	137.00	Low Profile	1	9.466	10.413	1.00	1.00	22.00	1500.00	0.000	0.000	229.09	0.00	0.00
16	127.00	RFS - FD9R6004/2C-3L -	6	9.264	10.190	0.40	0.80	0.89	18.60	0.000	0.000	9.05	0.00	0.00
17	127.00	Antel - BXA-70063-6CF	1	9.264	10.190	0.62	0.80	4.69	17.00	0.000	0.000	47.83	0.00	0.00
18	127.00	Antel - BXA-70040-6CF	2	9.264	10.190	0.56	0.80	16.10	76.00	0.000	0.000	164.11	0.00	0.00
19	127.00	Antel - LPA 80080/6CF	6	9.264	10.190	1.20	0.80	31.13	126.00	0.000	0.000	317.26	0.00	0.00
20	127.00	Antel - BXA-171085-12BF	3	9.264	10.190	0.70	0.80	9.98	45.00	0.000	0.000	101.66	0.00	0.00
21	127.00	Low Profile	1	9.264	10.190	1.00	1.00	22.00	1500.00	0.000	0.000	224.18	0.00	0.00
Totals:									6,158.00			2,242.88		

Total Applied Force Summary

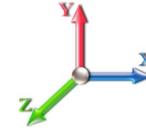
Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		88.02	1102.51	0.00	0.00
10.00		86.09	1081.35	0.00	0.00
15.00		84.15	1060.19	0.00	0.00
20.00		82.21	1039.03	0.00	0.00
25.00		80.27	1017.87	0.00	0.00
30.00		78.40	996.71	0.00	0.00
35.00		79.91	975.55	0.00	0.00
40.00		80.91	954.39	0.00	0.00
45.00		81.50	933.24	0.00	0.00
47.18		35.25	399.38	0.00	0.00
47.20		0.41	7.76	0.00	0.00
50.00		46.25	868.73	0.00	0.00
52.51		41.44	768.42	0.00	0.00
55.00		41.09	385.64	0.00	0.00
57.50		41.19	382.79	0.00	0.00
60.00		41.11	378.39	0.00	0.00
65.00		82.30	743.55	0.00	0.00
70.00		81.60	725.91	0.00	0.00
75.00		80.70	708.28	0.00	0.00
80.00		79.64	690.65	0.00	0.00
85.00		78.42	673.02	0.00	0.00
90.00		77.05	655.38	0.00	0.00
95.00		75.56	637.75	0.00	0.00
95.80		11.87	100.40	0.00	0.00
95.83		0.41	3.46	0.00	0.00
99.92		61.07	740.61	0.00	0.00
100.00		1.25	7.32	0.00	0.00
105.00		73.20	426.03	0.00	0.00
105.30		4.31	25.23	0.00	0.00
110.00		67.01	390.22	0.00	0.00
115.00		69.43	404.87	0.00	0.00
120.00		67.40	394.29	0.00	0.00
125.00		65.28	383.71	0.00	0.00
127.00	(19) attachments	889.50	1933.12	0.00	0.00
130.00		37.49	185.17	0.00	0.00
135.00		60.77	300.15	0.00	0.00
137.00	(35) attachments	817.02	2480.50	0.00	0.00
140.00		34.68	132.15	0.00	0.00
145.00	(19) attachments	641.28	2223.79	0.00	0.00
148.34		35.91	122.84	0.00	0.00
	Totals:	4,481.34	27,440.35	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

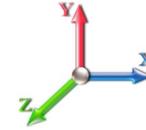


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1.5" Reinforcing plate	Yes	2.80	0.000	1.50	0.35	0.00	0.039	0.000	7.098	0.00	0.00
52.51	1.5" Reinforcing plate	Yes	2.51	0.000	1.50	0.31	0.00	0.040	0.000	7.198	0.00	0.00
55.00	1.5" Reinforcing plate	Yes	2.49	0.000	1.50	0.31	0.00	0.040	0.000	7.294	0.00	0.00
57.50	1.5" Reinforcing plate	Yes	2.50	0.000	1.50	0.31	0.00	0.040	0.000	7.387	0.00	0.00
95.83	1.5" Reinforcing plate	Yes	0.03	0.000	1.50	0.00	0.00	0.052	0.000	8.547	0.00	0.00
99.92	1.5" Reinforcing plate	Yes	4.09	0.000	1.50	0.51	0.00	0.052	0.000	8.650	0.00	0.00
100.00	1.5" Reinforcing plate	Yes	0.08	0.000	1.50	0.01	0.00	0.053	0.000	8.652	0.00	0.00
105.00	1.5" Reinforcing plate	Yes	5.00	0.000	1.50	0.63	0.00	0.054	0.000	8.774	0.00	0.00
105.30	1.5" Reinforcing plate	Yes	0.30	0.000	1.50	0.04	0.00	0.055	0.000	8.781	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

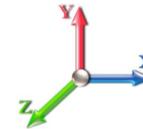


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 24

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-27.44	-4.49	0.00	-481.09	0.00	481.09	3903.36	1951.68	7638.46	3824.91	0.00	0.000	0.000	0.133
5.00	-26.33	-4.42	0.00	-458.64	0.00	458.64	3846.55	1923.28	7360.85	3685.90	0.02	-0.041	0.000	0.131
10.00	-25.25	-4.35	0.00	-436.54	0.00	436.54	3788.45	1894.23	7085.75	3548.14	0.09	-0.083	0.000	0.130
15.00	-24.19	-4.28	0.00	-414.77	0.00	414.77	3729.06	1864.53	6813.30	3411.72	0.20	-0.126	0.000	0.128
20.00	-23.14	-4.22	0.00	-393.35	0.00	393.35	3668.37	1834.19	6543.69	3276.71	0.35	-0.169	0.000	0.126
25.00	-22.12	-4.15	0.00	-372.26	0.00	372.26	3606.39	1803.19	6277.08	3143.21	0.55	-0.213	0.000	0.125
30.00	-21.12	-4.09	0.00	-351.51	0.00	351.51	3543.11	1771.56	6013.64	3011.29	0.80	-0.258	0.000	0.123
35.00	-20.14	-4.02	0.00	-331.08	0.00	331.08	3478.55	1739.27	5753.54	2881.05	1.10	-0.304	0.000	0.121
40.00	-19.19	-3.95	0.00	-311.00	0.00	311.00	3412.68	1706.34	5496.94	2752.56	1.44	-0.350	0.000	0.119
45.00	-18.25	-3.87	0.00	-291.27	0.00	291.27	3345.53	1672.76	5244.01	2625.90	1.83	-0.397	0.000	0.116
47.18	-17.85	-3.83	0.00	-282.85	0.00	282.85	3315.91	1657.95	5135.17	2571.40	2.02	-0.418	0.000	0.115
47.20	-17.84	-3.84	0.00	-282.76	0.00	282.76	3315.57	1657.78	5133.93	2570.78	2.02	-0.419	0.000	0.069
50.00	-16.97	-3.79	0.00	-272.02	0.00	272.02	3277.08	1638.54	4994.93	2501.18	2.27	-0.435	0.000	0.067
52.51	-16.21	-3.75	0.00	-262.51	0.00	262.51	2602.21	1301.11	3990.47	1998.20	2.50	-0.449	0.000	0.071
55.00	-15.82	-3.71	0.00	-253.18	0.00	253.18	2577.30	1288.65	3896.73	1951.26	2.74	-0.464	0.000	0.075
57.50	-15.44	-3.67	0.00	-243.92	0.00	243.92	2551.96	1275.98	3803.21	1904.43	2.99	-0.480	0.000	0.074
57.50	-15.44	-3.67	0.00	-243.92	0.00	243.92	2551.96	1275.98	3803.21	1904.43	2.99	-0.480	0.000	0.074
60.00	-15.06	-3.63	0.00	-234.76	0.00	234.76	2526.30	1263.15	3710.31	1857.91	3.24	-0.495	0.000	0.132
65.00	-14.31	-3.56	0.00	-216.61	0.00	216.61	2474.01	1237.00	3526.46	1765.85	3.79	-0.551	0.000	0.128
70.00	-13.58	-3.48	0.00	-198.83	0.00	198.83	2420.42	1210.21	3345.35	1675.16	4.40	-0.607	0.000	0.124
75.00	-12.87	-3.40	0.00	-181.43	0.00	181.43	2365.54	1182.77	3167.14	1585.93	5.06	-0.664	0.000	0.120
80.00	-12.18	-3.33	0.00	-164.41	0.00	164.41	2309.37	1154.68	2992.01	1498.23	5.79	-0.720	0.000	0.115
85.00	-11.50	-3.25	0.00	-147.78	0.00	147.78	2251.13	1125.57	2819.16	1411.68	6.57	-0.776	0.000	0.110
90.00	-10.85	-3.18	0.00	-131.52	0.00	131.52	2174.14	1087.07	2628.67	1316.29	7.42	-0.832	0.000	0.105
95.00	-10.21	-3.10	0.00	-115.64	0.00	115.64	2097.14	1048.57	2444.84	1224.23	8.32	-0.887	0.000	0.099
95.80	-10.11	-3.08	0.00	-113.16	0.00	113.16	2084.82	1042.41	2416.04	1209.82	8.47	-0.896	0.000	0.054
95.83	-10.10	-3.09	0.00	-113.07	0.00	113.07	2084.39	1042.20	2415.05	1209.32	8.47	-0.896	0.000	0.054
99.92	-9.36	-3.01	0.00	-100.46	0.00	100.46	1076.50	538.25	1236.95	619.40	9.25	-0.920	0.000	0.058
100.00	-9.35	-3.02	0.00	-100.21	0.00	100.21	1076.11	538.05	1235.71	618.78	9.27	-0.920	0.000	0.072
105.00	-8.93	-2.94	0.00	-85.13	0.00	85.13	1052.46	526.23	1163.02	582.37	10.25	-0.955	0.000	0.064
105.30	-8.90	-2.94	0.00	-84.24	0.00	84.24	1051.00	525.50	1158.68	580.20	10.31	-0.957	0.000	0.063
105.30	-8.90	-2.94	0.00	-84.24	0.00	84.24	1051.00	525.50	1158.68	580.20	10.31	-0.957	0.000	0.063
110.00	-8.51	-2.87	0.00	-70.44	0.00	70.44	1027.52	513.76	1090.99	546.31	11.27	-0.986	0.000	0.137
115.00	-8.10	-2.80	0.00	-56.09	0.00	56.09	1001.28	500.64	1019.81	510.66	12.34	-1.055	0.000	0.118
120.00	-7.71	-2.74	0.00	-42.07	0.00	42.07	973.75	486.88	949.64	475.53	13.48	-1.116	0.000	0.096
125.00	-7.32	-2.67	0.00	-28.39	0.00	28.39	944.93	472.47	880.64	440.98	14.67	-1.166	0.000	0.072
127.00	-5.41	-1.74	0.00	-23.06	0.00	23.06	933.04	466.52	853.41	427.34	15.17	-1.183	0.000	0.060
130.00	-5.22	-1.70	0.00	-17.84	0.00	17.84	914.81	457.41	812.99	407.10	15.92	-1.204	0.000	0.050
135.00	-4.93	-1.64	0.00	-9.33	0.00	9.33	883.40	441.70	746.85	373.98	17.19	-1.229	0.000	0.031
137.00	-2.46	-0.77	0.00	-6.06	0.00	6.06	870.48	435.24	720.86	360.97	17.71	-1.236	0.000	0.020
140.00	-2.33	-0.73	0.00	-3.77	0.00	3.77	850.70	425.35	682.40	341.71	18.49	-1.243	0.000	0.014
145.00	-0.12	-0.04	0.00	-0.13	0.00	0.13	816.70	408.35	619.79	310.35	19.79	-1.248	0.000	0.001
148.34	0.00	-0.04	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	20.67	-1.248	0.000	0.000

Final Analysis Summary

Structure: CT46144-A-SBA	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 89 mph Wind	15.8	0.00	32.91	0.00	0.00	1705.30
0.9D + 1.6W 89 mph Wind	15.8	0.00	24.68	0.00	0.00	1686.32
1.2D + 1.0Di + 1.0Wi 40 mph Wind	3.5	0.00	49.89	0.00	0.00	367.64
1.2D + 1.0E	1.3	0.00	32.93	0.00	0.00	154.03
0.9D + 1.0E	1.3	0.00	24.70	0.00	0.00	152.19
1.0D + 1.0W 60 mph Wind	4.5	0.00	27.44	0.00	0.00	481.09

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 89 mph Wind	-9.65	-10.20	0.00	-250.55	0.00	-250.55	1027.52	513.76	1090.99	546.31	110.00	0.468
0.9D + 1.6W 89 mph Wind	-7.09	-10.03	0.00	-245.93	0.00	-245.93	1027.52	513.76	1090.99	546.31	110.00	0.457
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-18.99	-2.13	0.00	-52.22	0.00	-52.22	1027.52	513.76	1090.99	546.31	110.00	0.114
1.2D + 1.0E	-10.27	-1.03	0.00	-30.29	0.00	-30.29	1027.52	513.76	1090.99	546.31	110.00	0.065
0.9D + 1.0E	-7.70	-1.01	0.00	-29.81	0.00	-29.81	1027.52	513.76	1090.99	546.31	110.00	0.062
1.0D + 1.0W 60 mph Wind	-8.51	-2.87	0.00	-70.44	0.00	-70.44	1027.52	513.76	1090.99	546.31	110.00	0.137

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
47.2	57.5	(3) PLT-6"x1.5"(31mm hole)	203.8	4.89	37.1	160.4	37.1	5	11	163.1	37.1	5	10	165.56	489.4	430.20	0.385
95.8	105.3	(3) PLT-4.5x1.5(31mm Hole)	-284.9	-6.84	37.1	95.2	37.1	3	8	98.1	37.1	3	6	110.31	367.1	295.20	0.374

Base Plate Summary

Structure: CT46144-A-SB	Code: EIA/TIA-222-G	10/30/2017
Site Name: Cammilletti Property	Exposure: B	
Height: 148.34 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 57.00
Moment (kip-ft): 2300.40	Width (in): 63.00	Number Bolts: 16.00
Axial (kip): 21.20	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 22.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 1705.30	Effective Len (in): 13.49	Ultimate (ksi): 100.00
Axial (kip): 49.89	Moment (kip-in): 417.92	Arrangement: Radial
Shear (kip): 15.82	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 0.00
Moment Design %: 74.13	Stress Ratio: 0.57	Compression
		Force (kip): 92.87
		Allowable (kip): 260.00
		Ratio: 0.36
		Tension
		Force (kip): 86.63
		Allowable (kip): 260.00
		Ratio: 0.34



Monopole Mat Foundation Design

Date
10/30/2017

Customer Name:	Sprint Nextel	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	148.34
Site Number:	CT46144-A-SBA	Engineer Name:	M. Baker
Engr. Number:	41966	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	32.9	Shear Force (Kips):	15.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1705.3

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	6.5	Depth of Base BG (ft.):	6.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	22.5	Width of Pad (ft.):	22.5
Final Length of pad (ft)	22.5	Final width of pad (ft):	22.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	40	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	23	Qty. of Rebar in Pad (W):	23	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

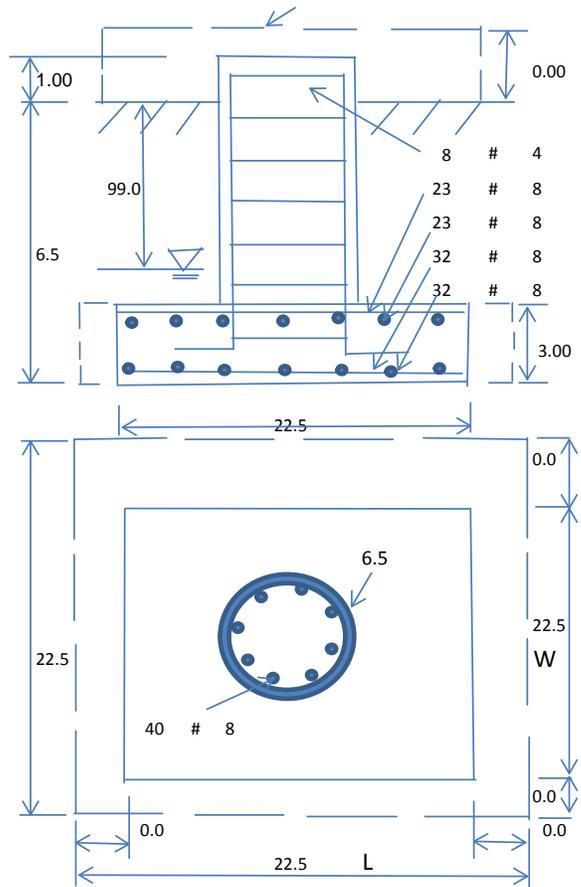
Soil Unit Weight (pcf):	135.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:		Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1655.73	Total Dry Soil Weight (Kips):	223.52
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	223.52	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1668.07	Total Dry Concrete Weight (Kips):	250.21
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	250.21	Total Vertical Load on Base (Kips):	506.65

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1774	<	Allowable Factored Soil Bearing (psf):	9000	0.20	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5166.8	>	Design Factored Momont (kips-ft):	1824	0.35	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.83					OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Load/
Capacity
Ratio

(1) Concrete Pier:

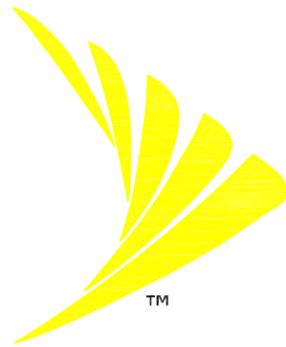
Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	4910.3	>	Design Factored Moment (Mu, Kips-Ft)	1776.4	0.36 OK!
Calculated Shear Capacity (Kips):	578.1	>	Design Factored Shear (Kips):	15.8	0.03 OK!
Calculated Tension Capacity (Tn, Kips):	1706.4	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	8392.3	>	Design Factored Axial Load (Pu Kips):	32.9	0.00 OK!
Moment & Axial Strength Combination:	0.36	OK!	Check Tie Spacing (Design/Required):	1	OK!
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	832.5	>	One-Way Factored Shear (L-D. Kips):	130.9	0.16 OK!
One-Way Design Shear Capacity (W-Direction, Kips):	832.5	>	One-Way Factored Shear (W-D., Kips)	130.9	0.16 OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	936.8	>	One-Way Factored Shear (C-C, Kips):	120.3	0.13 OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0029	OK!	Lower Steel Pad Reinf. Ratio (W-Direct	0.0029	
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3603.2	>	Moment at Bottom (L-Direct. K-Ft):	346.4	0.10 OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3603.2	>	Moment at Bottom (W-Direct. K-Ft):	346.4	0.10 OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5061.6	>	Moment at Bottom (C-C Dir. K-Ft):	489.8	0.10 OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0021	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0021	
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	2608.8	>	Moment at the top (L-Dir Kips-Ft):	130.9	0.05 OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	2608.8	>	Moment at the top (W-Dir Kips-Ft):	130.9	0.05 OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	3671.8	>	Moment at the top (C-C Direc. K-Ft):	220.2	0.06 OK!

SPECIAL CONSTRUCTION NOTE:
 SPRINT WORK IS CONTINGENT ON THE FOLLOWING:
 * COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS.
 * COMPLETION OF A MOUNT STRUCTURAL ANALYSIS.
 * GC SHALL FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED GLOBAL AND MOUNT ANALYSIS.

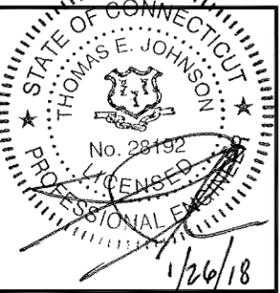
Sprint®



SITE NAME: WEST NORFOLK
SITE NUMBER: CT33XC590
AUGMENT ID: CT33XC590Q17.1
SITE ADDRESS: 10 ASHPOHTAG ROAD
 NORFOLK, CT 06058
JURISDICTION: TOWN OF NORFOLK/ CT SITING COUNCIL
SITE TYPE: EXISTING 148.5' MONOPOLE
PROGRAM: DO MACRO UPGRADE EQUIPMENT DEPLOYMENT



4 Bay Road, Building A
 Suite 200
 Hadley, MA 01035 Ph: (413) 320-4918



PROJECT INFORMATION

SITE INFORMATION
 LATITUDE: 42° 00' 09.70" N (42.00269°)
 LONGITUDE: 73° 13' 17.00" W (-73.22139°)
 GROUND ELEVATION: 988'± AMSL (PER GOOGLE EARTH)
 STRUCTURE HEIGHT: 148.5'± AGL (FROM RECORD STRUCTURAL)
 STRUCTURE TYPE: MONOPOLE
 ZONING JURISDICTION: TOWN OF NORFOLK/ CT SITING COUNCIL
 ZONING DISTRICT/ OCCUPANCY: RU (RURAL RESIDENTIAL)
 COUNTY: LITCHFIELD

APPLICANT
 SPRINT
 1 INTERNATIONAL BLVD. SUITE 800
 MAHWAH, NJ 07495

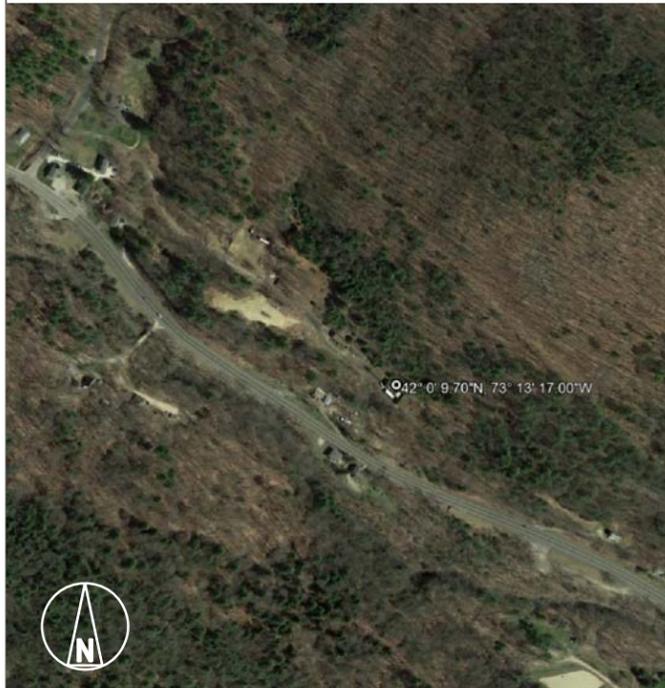
PROPERTY OWNER:
 N/F STOP SIGN REALTY LLC
 330 WEST LAKE STREET
 WINSTED, CT 06098

TOWER OWNER:
 SBA 2012 TC ASSETS, LCC
 8051 CONGRESS AVENUE
 BOCA RATON, FL 33487
 (561) 995-7670

SBA SITE ID: CT46144-A
 SBA SITE NAME: CAMMILLETTI PROPERTY

SBA CONTACT:
 STEPHEN ROTH
 (860) 539-4920
 SRoth@sbasite.com

LOCATION MAP N.T.S.



AREA MAP N.T.S.



DRAWING INDEX

SHEET NO.	SHEET DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
SP-1	OUTLINE SPECIFICATIONS	1
SP-2	OUTLINE SPECIFICATIONS	1
SP-3	OUTLINE SPECIFICATIONS	1
A-1	COMPOUND PLAN	1
A-2	ELEVATION AND ANTENNA PLANS	1
A-3	TOWER EQUIPMENT DETAILS	1
S-1	ANTENNA AND RRH MOUNTING DETAILS	1
E-1	ELECTRICAL AND GROUNDING DETAILS	1
RF-1	RF DATA SHEET	1
RF-2	PLUMBING DIAGRAM AND RAN WIRING	1

CODE COMPLIANCE

- 2016 CONNECTICUT STATE BUILDING CODE WITH AMENDMENTS.
- 2014 NATIONAL ELECTRICAL CODE WITH AMENDMENTS
- TIA-EIA-222-G

BASED ON INFORMATION PROVIDED BY SPRINT, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).

APPROVALS

TITLE	SIGNATURE	DATE
PROJECT MANAGER:		
CONSTRUCTION:		
RF ENGINEER:		
ZONING/SITE ACQ:		
OPERATIONS:		
TOWER OWNER:		

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

SCOPE OF WORK

- INSTALL NEW DOUBLE PIPE MOUNT STANDOFF KIT ON EXISTING COLLAR MOUNT FOR RRHS.
- REMOVE EXISTING (3) SPRINT COLLAR MOUNT AND PIPE MASTS AND REPLACE WITH (3) NEW SPRINT SECTOR COLLAR MOUNT WITH STANDOFF ARMS AND PIPE MASTS FOR RRHS.
- REMOVE (2) EXISTING SPRINT PANEL ANTENNAS AND REPLACE WITH (2) NEW SPRINT TRI-BAND PANEL ANTENNAS.
- INSTALL (2) NEW SPRINT 2500 MHz RRHS.
- INSTALL (2) NEW SPRINT 800 MHz RRHS.
- RELOCATE (2) EXISTING SPRINT 800 MHz RRHS.
- RELOCATE (2) EXISTING SPRINT 1900 MHz RRHS.
- INSTALL (2) NEW SPRINT HYBRID CABLES.
- REMOVE EXISTING SPRINT 9928 EQUIPMENT CABINET AND REPLACE WITH NEW 9927 EQUIPMENT CABINET
- REMOVE EXISTING BBU (BATTERY BACKUP) CABINET AND REPLACE WITH NEW -48v BBU CABINET

GENERAL NOTES

- THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
 - ADA COMPLIANCE NOT REQUIRED.
 - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
 - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
- CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.

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CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
 SITE NAME:
WEST NORFOLK
 SITE ADDRESS:
 10 ASHPOHTAG ROAD
 NORFOLK, CT 06058

SHEET TITLE
 TITLE SHEET

SHEET NUMBER
 T-1

CT33XC590 DO MACRO EQUIPMENT DEPLOYMENT

MOUNT AUGMENTATION @ 145'

MONOPOLE TOWER

NORFOLK, CT
LITCHFIELD COUNTY

Sprint

1 INTERNATIONAL BLVD., SUITE 800
MAHWAH, NJ 07495
P: 800.357.7641

SBA

134 FLANDERS RD., SUITE 125
WESTBOROUGH, MA 01581
P: 508.251.0720



GEOSTRUCTURAL

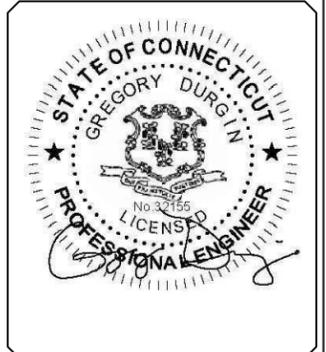
PO BOX 2621, BOISE, ID 83701
P: 530.539.4787
E: CONTACT@GEOSTRUCTURAL.COM
WWW.GEOSTRUCTURAL.COM

REVISIONS:

NO.	DATE	DESCRIPTION	BY
0	01/16/18	ISSUE FOR CONSTRUCTION	JAD

CHECKED BY: DWG

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO THE CLIENT NAMES IS STRICTLY PROHIBITED.



SITE INFORMATION:

MOUNT AUGMENTATION

CT33XC590

NORFOLK, CT

LATITUDE: 42.00269444
LONGITUDE: -73.22138889

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

S1

SITE INFORMATION

STRUCTURE TYPE: MONOPOLE
MOUNT TYPE: T-ARMS
LATITUDE: 42.00269444 (NAD 83)
LONGITUDE: -73.22138889 (NAD 83)
CITY, STATE: NORFOLK, CT
COUNTY: LITCHFIELD
SBA SITE: CT46144-A Camilletti Property
COORDINATES ARE FOR NAVIGATIONAL PURPOSES ONLY, NOT TO 1A ACCURACY.

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE LABOR & MATERIALS FOR THE DISCREPANCIES.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING CODE AND DESIGN STANDARD: 2015 IBC (2016 CT) / TIA-222-G

RIGGING PLAN REQUIRED

THIS SET OF PLANS DOES "NOT" CONSTITUTE A RIGGING PLAN.
A PROPER RIGGING PLAN SHALL BE PERFORMED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO PROCEEDING ON ANY AUGMENTATIONS SHOWN HEREIN.

GENERAL DESIGN NOTES

- THIS PLAN HAS BEEN DESIGNED UTILIZING THE CORRESPONDING MOUNT STRUCTURAL ANALYSIS.
- THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222, ASCE 7, AWS, ACI, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE-MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- ALL STRUCTURE INFORMATION OBTAINED IN THE FORM OF FROM INFORMATION PROVIDED BY THE CLIENT. CONTRACTOR SHALL OBTAIN AND BECOME FAMILIAR WITH THE REFERENCED DOCUMENTS. CONTRACTOR SHALL ISSUE A REQUEST FOR INFORMATION (RFI) IN THE EVENT ANY DISCREPANCIES ARE DISCOVERED BETWEEN THESE DOCUMENTS AND THE AS-BUILT CONDITIONS IN THE FIELD IN A SITE VISIT THAT SHALL BE PERFORMED PRIOR TO STARTING FABRICATION OR CONSTRUCTION.
- ALL MATERIALS UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS.
- ALL PRODUCT OR MATERIAL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER SUITABLE TO DETERMINE IF SUBSTITUTE IS ACCEPTABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWING(S) TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION (ONLY IF SPECIFICALLY REQUESTED BY ENGINEER).
- UNLESS NOTED OTHERWISE, ALL NEW MEMBERS AND REINFORCING SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
- ANY CONTRACTOR-CAUSED DAMAGE TO PROPERTY OF THE LAND OWNER, PROPERTY OF THE STRUCTURE OWNER, PROPERTY OF THE CUSTOMER, SITE FENCING OR GATES, ANY AND ALL UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT THE SOLE COST OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR OR SUBCONTRACTOR AS APPROVED BY THE ENGINEER OF RECORD AND LAND OWNER. DAMAGE TO EQUIPMENT OR PROPERTY OF ANY KIND BELONGING TO OTHER COMPANIES (BESIDES THE INDICATED CUSTOMER) SHALL BE ADDRESSED BY THE CONTRACTOR WITH THE COMPANIES THAT OWN THE DAMAGED ITEMS.

SHEET INDEX

SHEET	DESCRIPTION
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MOUNT AUGMENTATION CONFIGURATION



AUGMENTATION SCOPE

AUGMENT ALL SECTORS OF CARRIER'S EXISTING MOUNT INSTALLATION AS REQUIRED (UNLESS NOTED OTHERWISE)

CONTRACTOR NOTES

- PRIOR TO BEGINNING CONSTRUCTION, ALL CONTRACTORS AND SUBCONTRACTORS MUST ACKNOWLEDGE IN WRITING TO TOWER OWNER THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW STRUCTURE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND STRUCTURE/TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED AUGMENTATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGEMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR STRUCTURE OWNER ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM ANY SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE STRUCTURE OWNER.
- IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE AUGMENTATIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
- THE CONTRACTOR SHALL SOLICIT AND HIRE THE SERVICES OF A QUALIFIED AUGMENTATION INSPECTOR PRIOR TO BEGINNING CONSTRUCTION. THE AUGMENTATION INSPECTOR MAY BE AN EMPLOYEE OF THE CONTRACTOR'S FIRM, HOWEVER THE INSPECTOR'S ONLY DUTIES SHALL BE INSPECTION, TESTING, AND REPORT CREATION AS REQUIRED ON THE "AUGMENTATION INSPECTION NOTES" SHEET.
- THE CONTRACTOR SHALL NOTIFY THE TOWER OWNER OF THE PLANNED CONSTRUCTION & INSPECTION SCHEDULE, AS WELL AS ANY CHANGES TO THE SCHEDULE, WITHIN TWO BUSINESS DAYS OF THE COMPLETION OF THE SCHEDULE OR SCHEDULE REVISION BOTH PRIOR TO BEGINNING CONSTRUCTION AND DURING CONSTRUCTION AS THE SCHEDULE CHANGES. THE STRUCTURE OWNER WHEN THE WORK HAS BEEN COMPLETED WITHIN 2 BUSINESS DAYS OF THE COMPLETION OF THE WORK AND ASSOCIATED AUGMENTATION INSPECTIONS & TESTING (WHEN APPLICABLE).
- IT IS ASSUMED THAT ANY STRUCTURAL AUGMENTATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE STRUCTURE OWNER AND ENGINEER INCLUDING BUT NOT LIMITED TO TOWER CLIMBER AND RESCUE CLIMBER CERTIFICATIONS, ET CETERA.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE STRUCTURE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

STRUCTURAL ERECTION AND BRACING REQUIREMENTS

- THE STRUCTURAL DRAWINGS ILLUSTRATE THE COMPLETED STRUCTURE WITH ALL ELEMENTS IN THEIR FINAL POSITIONS, PROPERLY SUPPORTED AND BRACED.
- THE CONTRACTOR SHALL PROVIDE SHORING AND BRACING AS REQUIRED DURING CONSTRUCTION TO ENSURE STABILITY. DESIGN AND SEQUENCING OF CONSTRUCTION SHORING AND BRACING IS OUTSIDE THE SCOPE OF THIS WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, GUYING, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.

BOLTS

- ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED GALVANIZED HIGH STRENGTH ASTM A325 OR A490 BOLTS WITH THREADS EXCLUDED FROM SHEAR PLANE.
- FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES, WITH BOLT HEADS FACING DOWN WHERE APPLICABLE.
- ALL BOLTS AT EVERY CONNECTION SHALL BE INSTALLED SNUG-TIGHT UNTIL THE SECTION IS FULLY COMPACTED AND ALL PLIES ARE JOINED, AND THEN TIGHTENED FURTHER BY AISC - "TURN OF THE NUT" METHOD. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.
- BOLT LENGTHS UP TO AND INCLUDING 4 DIAMETERS SHALL BE TENSIONED 1/3 TURN BEYOND SNUG-TIGHT. BOLT LENGTHS OVER 4 DIAMETERS SHALL BE 1 1/2 TURNS BEYOND SNUG-TIGHT.
- ALL BOLTED CONNECTIONS SHALL USE LOCK WASHERS.

STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC STEEL CONSTRUCTION MANUAL AND SECTION 4 OF THE TIA CODE.
- PRE-QUALIFIED STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING MINIMUM GRADES UNLESS OTHERWISE NOTED:
 - CHANNELS & ANGLES ASTM A36, (Fy = 36 KSI)
 - PLATES ASTM A36, (Fy = 36 KSI)
 - PIPES ASTM A53 GR.B, (Fy = 35 KSI)
 - HSS ROUND ASTM A500 GR.B, (Fy = 42 KSI)
 - HSS RECTANGULAR ASTM A500 GR.B, (Fy = 46 KSI)
 - STRUCTURAL BOLTS ASTM A325
 - U-BOLTS ASTM A307 GR.A
 - NUTS FOR BOLTS ASTM A563 (THREADING TO MATCH BOLT)
 - WASHERS FOR BOLTS ASTM F436
 - SEE TABLE 5-1 OF THE TIA CODE FOR ADDITIONAL SHAPES AND STANDARDS THAT ARE NOT LISTED ABOVE.
- NON PRE-QUALIFIED STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS PER THE TIA CODE:
 - THE CARBON EQUIVALENT OF STEEL SHALL NOT EXCEED 0.65 PER SECTION 5.4.2 OF THE TIA CODE
 - ELONGATION OF STEEL SHALL NOT BE LESS THAN 18%
 - TEST REPORTS SHALL BE IN ACCORDANCE WITH ASTM A6 OR A568
 - TOLERANCES SHALL BE IN ACCORDANCE WITH ASTM A6
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH AND COLD GALVANIZED.
- ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY. WELDING ELECTRODES SHALL BE E70XX.
- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC SPECS AND CODES, LATEST EDITION.
- UPON REQUEST, THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ENGINEER OF RECORD TO REVIEW FOR COMPLIANCE WITH DESIGN INTENT PRIOR TO THE START OF FABRICATION AND/OR ERECTION.
- TORCH-CUTTING OF ANY KIND SHALL NOT BE PERMITTED.
- ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERSIZE HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (3/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
- ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN 1/2" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZINC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
- MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	CONSTRUCTION INSPECTIONS
	THIRD-PARTY CERTIFIED WELD INSPECTION (INCLUDING IBC SPECIAL INSPECTIONS)
√	GALVANIZING REPAIR MATERIAL PREPARATION, INSPECTION, & PAINT APPLICATION
√	PRIME CONTRACTOR'S AS-BUILT DOCUMENTS (SIGNED & DATED)
√	FABRICATION INSPECTION
√	MATERIAL TEST REPORT(S) / MILL CERTIFICATE(S)
√	PACKING SLIPS FOR STRUCTURAL MATERIALS

NOMINAL HOLE DIMENSIONS

BOLT Ø	STANDARD HOLE Ø
1/2"Ø	9/16"Ø
5/8"Ø	11/16"Ø
3/4"Ø	13/16"Ø
7/8"Ø	15/16"Ø
1"Ø	1 1/8"Ø

Sprint

1 INTERNATIONAL BLVD., SUITE 800
MAHWAH, NJ 07495
P: 800.357.7641



134 FLANDERS RD., SUITE 125
WESTBOROUGH, MA 01581
P: 508.251.0720



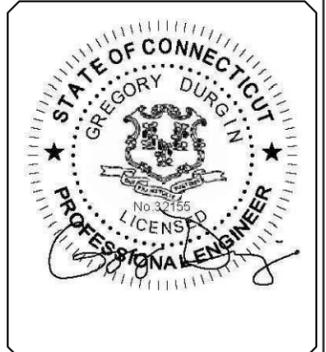
GEOSTRUCTURAL

PO BOX 2621, BOISE, ID 83701
P: 530.539.4787
E: CONTACT@GEOSTRUCTURAL.COM
WWW.GEOSTRUCTURAL.COM

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SITE INFORMATION:
MOUNT AUGMENTATION

CT33XC590

NORFOLK, CT

LATITUDE: 42.00269444
LONGITUDE: -73.22138889

SHEET TITLE:
NOTES AND SPECIFICATIONS

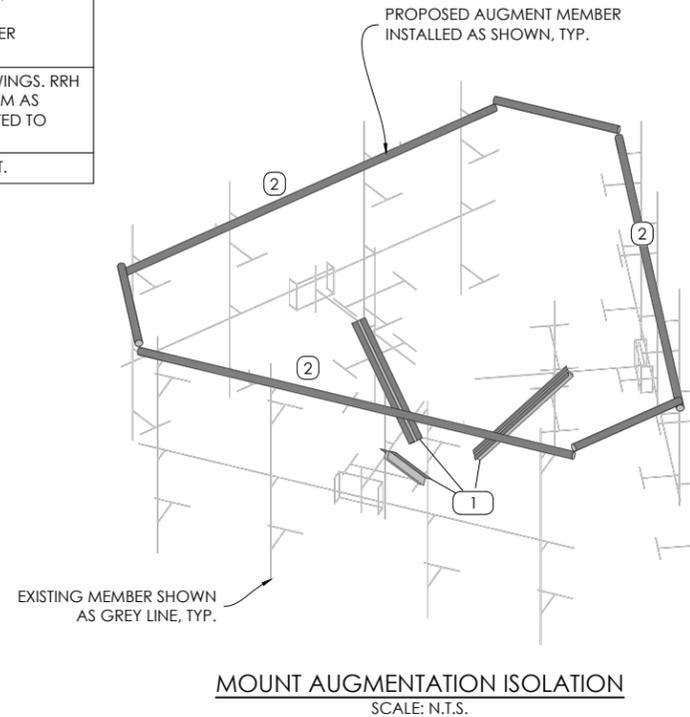
SHEET NUMBER:
S2

NEW MOUNT AUGMENTATIONS

1. PLATFORM REINFORCEMENT KIT
SITEPRO1 PART# PRK-1245. ATTACH PRK COLLAR TO MONOPOLE SHAFT ~2.5' BELOW EXISTING STANDOFF CENTERLINE AND DOUBLE ANGLE KICKER BRACKET TO STANDOFF MEMBER ~2.5' OUT FROM THE STANDOFF-TO-COLLAR INTERFACE AS SHOWN PER MANUF. SPECS. [(1) KIT TOTAL]
 2. HORIZONTAL FACE RAIL COMPONENTS
 - PIPE2.0STD X 14.5' HORIZ. RAIL, [(3) TOTAL]. ATTACH SFS-L KIT ANGLES TO NEW HORIZ. RAIL.
 - PIPE2.0STD X ~4' LONG CORNER BRACES, [(3) TOTAL]. ATTACH TO NEW HORIZ. RAIL W/ (6) SITEPRO1 PART# PUCK BRACKETS.
 - PIPE2.0STD MOUNT PIPES, [(12) TOTAL] W/ SITEPRO1 SCX x-K, [(24) TOTAL] CROSS-OVER PLATES. ATTACH ALL MOUNT PIPES TO EXISTING AND NEW HORIZ. RAILS.
 3. PANEL ANTENNAS TO BE INSTALLED IN POSITION 2 AS SHOWN IN CONSTRUCTION DRAWINGS. RRH UNITS TO BE INSTALLED ON MOUNT PIPES ON A SEPARATE COLLAR BELOW THE PLATFORM AS SHOWN IN CONSTRUCTION DRAWINGS. EXISTING RRH COLLAR WILL NEED TO BE ROTATED TO FACILITATE THE INSTALLATION OF THE PRK KIT.
- AUGMENTATIONS SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF ANY NEW EQUIPMENT.

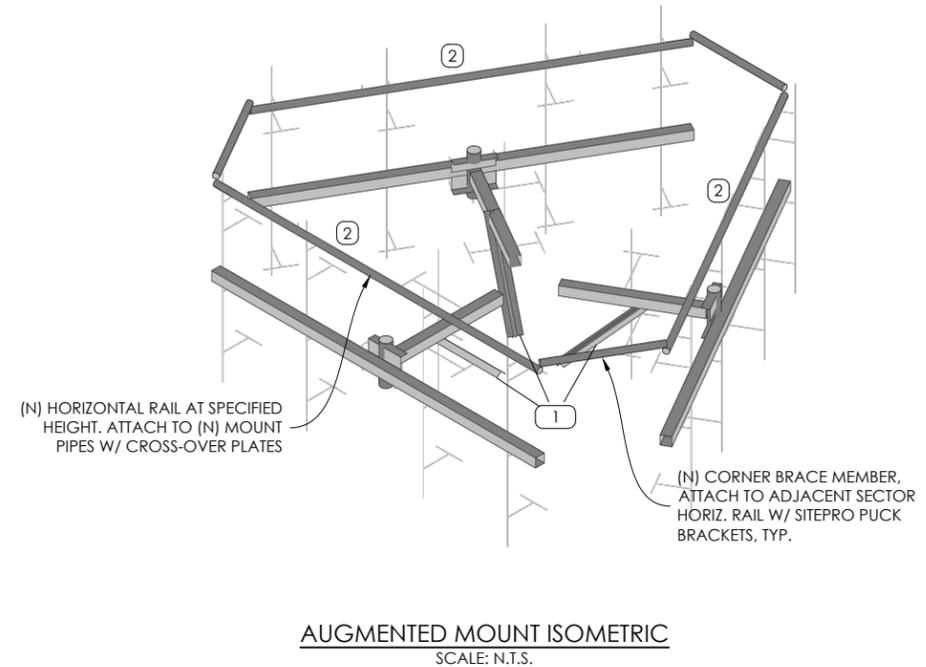


T-ARMS @ 145' AUGMENTATION



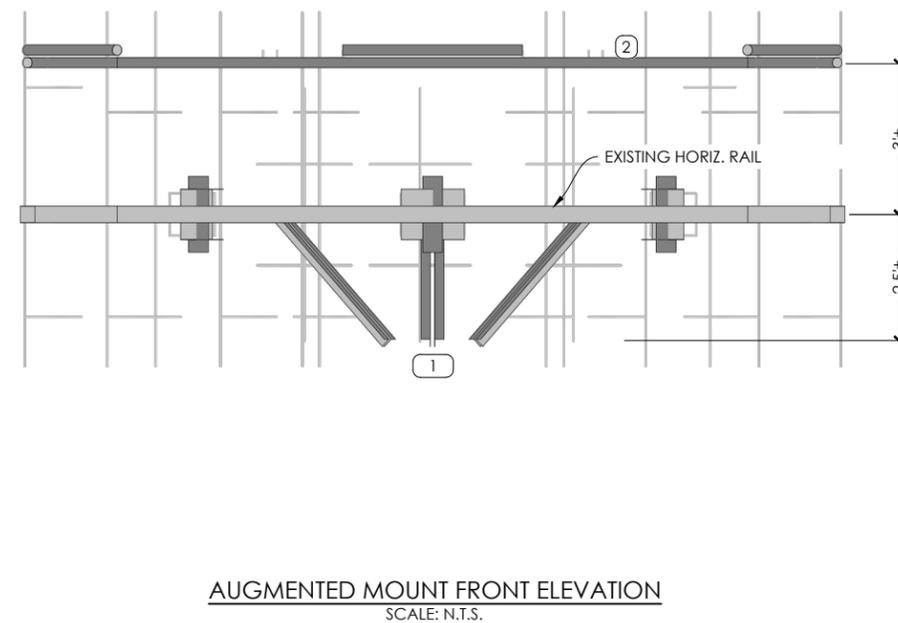
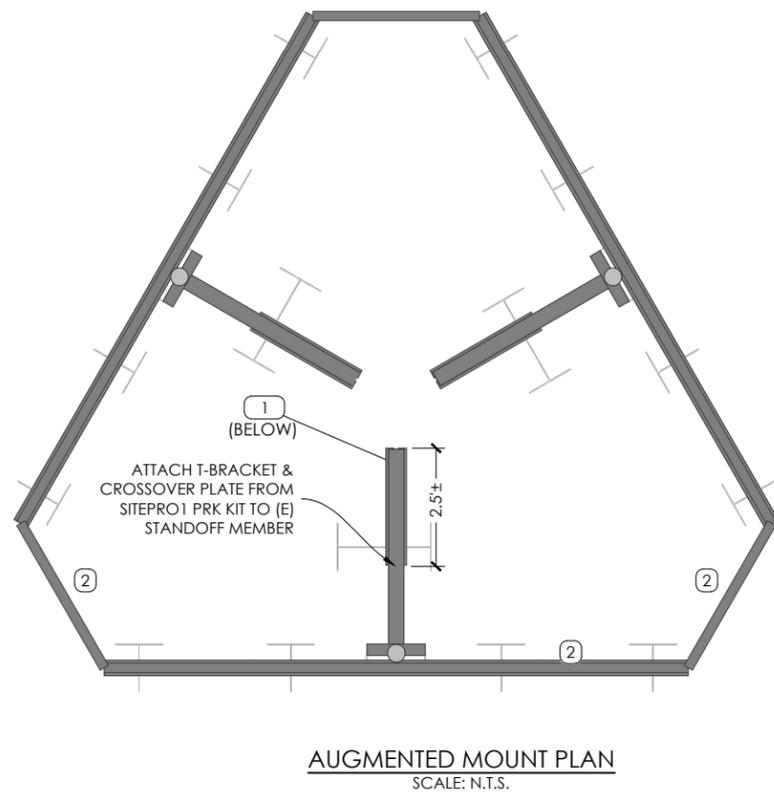
CONSTRUCTION NOTES

1. SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.
2. ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD-VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.
3. CONTRACTOR TO COORDINATE THE TEMPORARY REMOVAL/RELOCATION/REPLACEMENT OF ELEMENTS (E.G. COAX, CLIPS, T.MAs, ETC.) CONNECTED TO, OR IN THE DIRECT PATH, OF NEW AUGMENTATION MEMBERS.



INSTALLATION NOTES

1. AUGMENT MEMBER(S) MAY NEED TO BE FIELD-CUT TO LENGTH TO ACCOMMODATE THIS INSTALLATION. CONTRACTOR TO CUT AND DRILL TO SUIT AS REQUIRED AND APPLY (2) COATS OF COLD-GALV. COMPOUND TO CUT MEMBER ENDS.
2. CONTRACTOR TO CHECK ALL EXISTING MEMBER CONNECTION BOLTS, PARTICULARLY STANDOFF TO TOWER BOLTS, FOR PROPER INSTALLATION AND TIGHTNESS.
3. COORDINATE PLACEMENT OF NEW AUGMENT MEMBERS WITH EXISTING TOWER AND CLIMBING FACILITY ELEMENTS (E.G. STEP PEGS, COAX PORTS, ETC.)
4. REFER TO CONSTRUCTION DRAWINGS (BY OTHERS) AND MOUNT STRUCTURAL ANALYSIS FOR APPROVED INSTALLATION LOCATIONS AND QUANTITIES OF APPURTENANCES.

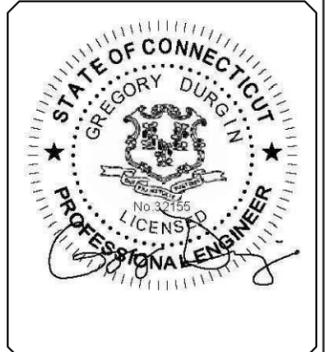


REVISIONS:

NO.	DATE	DESCRIPTION	BY
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SHEET TITLE:
AUGMENTATIONS, SECTIONS & DETAILS

SHEET NUMBER:
S3

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

- A. TOP HAT
- B. HOW TO INSTALL A NEW CABINET
- C. BASE BAND UNIT IN EXISTING UNIT
- D. INSTALLATION OF BATTERIES
- E. INSTALLATION OF HYBRID CABLE
- F. INSTALLATION OF RRH'S
- G. CABLING
- H. TS-0200 REV 4 – ANTENNA LINE ACCEPTANCE STANDARDS
- I. SPRINT CELL SITE ENGINEERING NOTICE – EN 2012-001, REV 1.
- J. COMMISSIONING MOPS
- K. SPRINT CELL SITE ENGINEERING NOTICE – EN-2013-002
- L. SPRINT ENGINEERING LETTER – EL-0504
- M. SPRINT ENGINEERING LETTER – EL-0568
- N. SPRINT TECHNICAL SPECIFICATION – TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

- A. CONTRACTOR WILL UTILIZE ITS BEST EFFORTS TO WORK WITH SPRINT ELECTRONIC PROJECT MANAGEMENT SYSTEMS. CONTRACTOR UNDERSTANDS THAT SUFFICIENT INTERNET ACCESS, EQUIVALENT TO "BROADBAND" OR BETTER, IS REQUIRED TO TIMELY AND EFFECTIVELY UTILIZE SPRINT DATA AND DOCUMENT MANAGEMENT SYSTEMS AND AGREES TO MAINTAIN APPROPRIATE CONNECTIONS FOR CONTRACTOR'S STAFF AND OFFICES THAT ARE COMPATIBLE WITH SPRINT DATA AND DOCUMENT 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. 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

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:

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

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

- A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.
- B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.
- C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
 1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
 2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.
- D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION
- E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

- A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER
- B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.
 1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
 2. PROJECT PROGRESS REPORTS.
 3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
 13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.



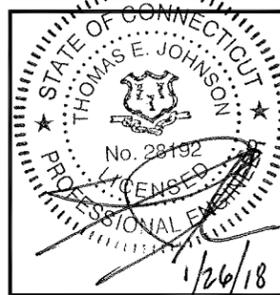
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581 TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413)320-4918



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
SITE NAME:
WEST NORFOLK

SITE ADDRESS:
10 ASHPOTAG ROAD
NORFOLK, CT 06058

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-1

CONTINUED FROM SP-1:

SECTION 01 400 - SUBMITTALS, TESTS, AND INSPECTIONS

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.
- C. 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 SPRINT TS-0200 CURRENT VERSION 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: 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.

- 1. 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.
- 2. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
- 3. 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)
 - 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
- E. 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.
- F. 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 01 500 - PROJECT REPORTING

PART 1 - GENERAL

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

1.2 RELATED DOCUMENTS:

- A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
- B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 WEEKLY REPORTS:

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

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

3.2 PROJECT CONFERENCE CALLS:

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

3.3 PROJECT TRACKING IN SMS:

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

3.4 ADDITIONAL REPORTING:

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

3.5 PROJECT PHOTOGRAPHS:

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

SECTION 07 500 - ROOF CUTTING, PATCHING AND REPAIR

SUMMARY: THIS SECTION SPECIFIES CUTTING AND PATCHING EXISTING ROOFING SYSTEMS WHERE CONDUIT OR CABLES EXIT THE BUILDING ONTO THE ROOF OR BUILDING-MOUNTED ANTENNAS, AND AS REQUIRED FOR WATERTIGHT PERFORMANCE. ROOFTOP ENTRY OPENINGS IN MEMBRANE ROOFTOPS SHALL BE CONSTRUCTED TO COMPLY WITH LANDLORD, ANY EXISTING WARRANTY, AND LOCAL JURISDICTIONAL STANDARDS.

1.4 SUBMITTALS:

- A. PRE-CONSTRUCTION ROOF PHOTOS: COMPLETE A ROOF INSPECTION PRIOR TO THE INSTALLATION OF SPRINT EQUIPMENT ON ANY ROOFTOP BUILD. AT A MINIMUM INSPECT AND PHOTOGRAPH (MINIMUM 3 EA.) ALL AREAS IMPACTED BY THE ADDITION OF THE SPRINT EQUIPMENT.
- B. PROVIDE SIMILAR PHOTOGRAPHS SHOWING ROOF CONDITIONS AFTER CONSTRUCTION (MINIMUM 3 EA.)
- C. ROOF INSPECTION PHOTOGRAPHS SHOULD BE UPLOADED WITH CLOSEOUT PHOTOGRAPHS.

SECTION 09 900 - PAINTING

QUALITY ASSURANCE:

- A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR VOLATILE ORGANIC COMPOUNDS.

CONTINUE SHEET SP-3



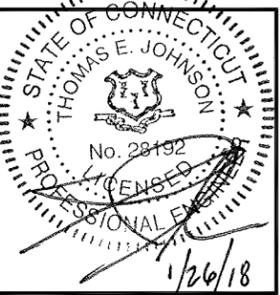
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413)320-4918



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APPROVED BY: JMM/TEJ

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
SITE NAME:
WEST NORFOLK

SITE ADDRESS:
10 ASHPOTAG ROAD
NORFOLK, CT 06058

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-2

CONTINUED FROM SP-2:

MATERIALS:

- A. MANUFACTURERS: BENJAMIN MOORE, ICI DEVOE COATINGS, PPG, SHERWIN WILLIAMS OR APPROVED EQUAL. PROVIDE PREMIUM GRADE, PROFESSIONAL-QUALITY PRODUCTS FOR COATING SYSTEMS.

PAINT SCHEDULE:

- A. EXTERIOR ANTENNAE AND ANTENNA MOUNTING HARDWARE: ONE COAT OF PRIMER AND TWO FINISH COATS. PAINT FOR ANTENNAE SHALL BE NON-METALLIC BASED AND CONTAIN NO METALLIC PARTICLES. PROVIDE COLORS AND PATTERNS AS REQUIRED TO MASK APPEARANCE OF ANTENNAE ON ADJACENT BUILDING SURFACES AND AS ACCEPTABLE TO THE OWNER. REFER TO ANTENNA MANUFACTURER'S INSTRUCTIONS WHENEVER POSSIBLE.
- B. ROOF TOP CONSTRUCTION: TOUCH UP - PREPARE SURFACES TO BE REPAIRED. FOLLOW INDUSTRY STANDARDS AND REQUIREMENTS OF OWNER TO MATCH EXISTING COATING AND FINISH.

PAINTING APPLICATION:

- INSPECT SURFACES, REPORT UNSATISFACTORY CONDITIONS IN WRITING; BEGINNING WORK MEANS ACCEPTANCE OF SUBSTRATE.
- COMPLY WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS FOR PREPARATION, PRIMING AND COATING WORK. COORDINATE WITH WORK OF OTHER SECTIONS.
- MATCH APPROVED MOCK-UPS FOR COLOR, TEXTURE, AND PATTERN. RE-COAT OR REMOVE AND REPLACE WORK WHICH DOES NOT MATCH OR SHOWS LOSS OF ADHESION.
- CLEAN UP, TOUCH UP AND PROTECT WORK.

TOUCHUP PAINTING:

- GALVANIZING DAMAGE AND ALL BOLTS AND NUTS SHALL BE TOUCHED UP AFTER TOWER ERECTION WITH "GALVANOX," "DRY GALV," OR "ZINC-IT."
- FIELD TOUCHUP PAINT SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- ALL METAL COMPONENTS SHALL BE HANDLED WITH CARE TO PREVENT DAMAGE TO THE COMPONENTS, THEIR PRESERVATIVE TREATMENT, OR THEIR PROTECTIVE COATINGS.

SECTION 11 700 - ANTENNA ASSEMBLY, REMOTE RADIO HEADS AND CABLE INSTALLATION

SUMMARY:

THIS SECTION SPECIFIES INSTALLATION OF ANTENNAS, RRRH'S, AND CABLE EQUIPMENT, INSTALLATION, AND TESTING OF COAXIAL FIBER CABLE.

ANTENNAS AND RRRH'S:

THE NUMBER AND TYPE OF ANTENNAS AND RRRH'S TO BE INSTALLED IS DETAILED ON THE CONSTRUCTION DRAWINGS.

HYBRID CABLE:

HYBRID CABLE WILL BE DC/FIBER AND FURNISHED FOR INSTALLATION AT EACH SITE. CABLE SHALL BE INSTALLED PER THE CONSTRUCTION DRAWINGS AND THE APPLICABLE MANUFACTURER'S REQUIREMENTS.

JUMPERS AND CONNECTORS:

FURNISH AND INSTALL 1/2" COAX JUMPER CABLES BETWEEN THE RRRH'S AND ANTENNAS. JUMPERS SHALL BE TYPE LDF 4, FLC 12-50, CR 540, OR FXL 540. SUPER-FLEX CABLES ARE NOT ACCEPTABLE. JUMPERS BETWEEN THE RRRH'S AND ANTENNAS OR TOWER TOP AMPLIFIERS SHALL CONSIST OF 1/2 INCH FOAM DIELECTRIC, OUTDOOR RATED COAXIAL CABLE. DO NOT USE SUPERFLEX OUTDOORS. JUMPERS SHALL BE FACTORY FABRICATED IN APPROPRIATE LENGTHS WITH A MAXIMUM OF 4 FEET EXCESS PER JUMPER AND HAVE CONNECTORS AT EACH END, MANUFACTURED BY SUPPLIER. IF JUMPERS ARE FIELD FABRICATED, FOLLOW MANUFACTURER'S REQUIREMENTS FOR INSTALLATION OF CONNECTORS

REMOTE ELECTRICAL TILT (RET) CABLES:

MISCELLANEOUS:

INSTALL SPLITTERS, COMBINERS, FILTERS PER RF DATA SHEET, FURNISHED BY SPRINT.

ANTENNA INSTALLATION:

THE CONTRACTOR SHALL ASSEMBLE ALL ANTENNAS ONSITE IN ACCORDANCE WITH THE INSTRUCTIONS SUPPLIED BY THE MANUFACTURER. ANTENNA HEIGHT, AZIMUTH, AND FEED ORIENTATION INFORMATION SHALL BE A DESIGNATED ON THE CONSTRUCTION DRAWINGS.

- A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.
- B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

- A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADIII.
- C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.
 - FASTENING MAIN HYBRID CABLES: ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.
 - FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBTS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
 - FIBER: SUPPORT FIBER BUNDLES USING 1/2" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.
 - DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.
 - FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.
 - CABLE INSTALLATION:
 - INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.
 - CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.
 - HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.

- GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
- HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED PER SPRINT TS 0200 CURRENT VERSION.
- HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE-EN 2012-001, REV 1

WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:

- A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.
- B. WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.

- COLD SHRINK: ENCOMPASS CONNECTOR IN COLD SHRINK TUBING AND PROVIDE A DOUBLE WRAP OF 2" ELECTRICAL TAPE EXTENDING 2" BEYOND TUBING. PROVIDE 3M COLD SHRINK CXS SERIES OR EQUAL.
- SELF-AMALGAMATING TAPE: CLEAN SURFACES. APPLY A DOUBLE WRAP OF SELF-AMALGAMATING TAPE 2" BEYOND CONNECTOR. APPLY A SECOND WRAP OF SELF-AMALGAMATING TAPE IN OPPOSITE DIRECTION. APPLY DOUBLE WRAP OF 2" WIDE ELECTRICAL TAPE EXTENDING 2" BEYOND THE SELF-AMALGAMATING TAPE.
- 3M SLIM LOCK CLOSURE 716: SUBSTITUTIONS WILL NOT BE ALLOWED.
- OPEN FLAME ON JOB SITE IS NOT ACCEPTABLE.

SECTION 11 800 - INSTALLATION OF MULTIMODAL BASE STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

- A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).
- B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.
- C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

- A. LABEL CIRCUIT BREAKERS ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE - EN 2012-001, REV 1.

SECTION 11 800 - INSTALLATION OF MULTIMODAL BASE TRANSCIEVER STATIONS (MMBTS) AND RELATED EQUIPMENT

SUMMARY:

- A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).
- B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.
- C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

SUPPORTING DEVICES:

- A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
 - ALLIED TUBE AND CONDUIT
 - B-LINE SYSTEM
 - UNISTRUT DIVERSIFIED PRODUCTS
 - THOMAS & BETTS
- B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
 - EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
 - POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
 - FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
 - TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
 - CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
 - MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
 - EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
 - DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
 - IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

- A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.
- B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.
- C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:
- D. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.
- E. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:

- A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.
- B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

SECTION 26 200 - ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:

- A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED - SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.
- B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.
- C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.
- D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.
- E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6- FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRE BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.
- F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

HUBS AND BOXES:

- A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.
- B. CABLE TERMINATION FITTINGS FOR CONDUIT
 - CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRC BY O-Z/GEDNEY OR EQUAL.
 - CABLE TERMINATORS FOR LFMC SHALL BE ETCO - CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.
- C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAB SERIES OR EQUAL.
- D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.
- E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE-HINDS, COOPER, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

- A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS AS INDICATED.
- B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.
- C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

EXISTING STRUCTURE:

- A. EXISTING EXPOSED WIRING AND ALL EXPOSED OUTLETS, RECEPTACLES, SWITCHES, DEVICES, BOXES, AND OTHER EQUIPMENT THAT ARE NOT TO BE UTILIZED IN THE COMPLETED PROJECT SHALL BE REMOVED OR DE-ENERGIZED AND CAPPED IN THE WALL, CEILING, OR FLOOR SO THAT THEY ARE CONCEALED AND SAFE. WALL, CEILING, OR FLOOR SHALL BE PATCHED TO MATCH THE ADJACENT CONSTRUCTION.

CONDUIT AND CONDUCTOR INSTALLATION:

- A. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
- B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.



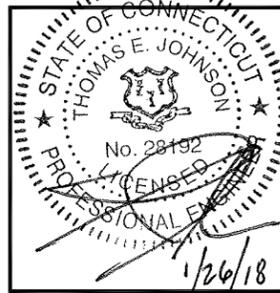
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413)320-4918



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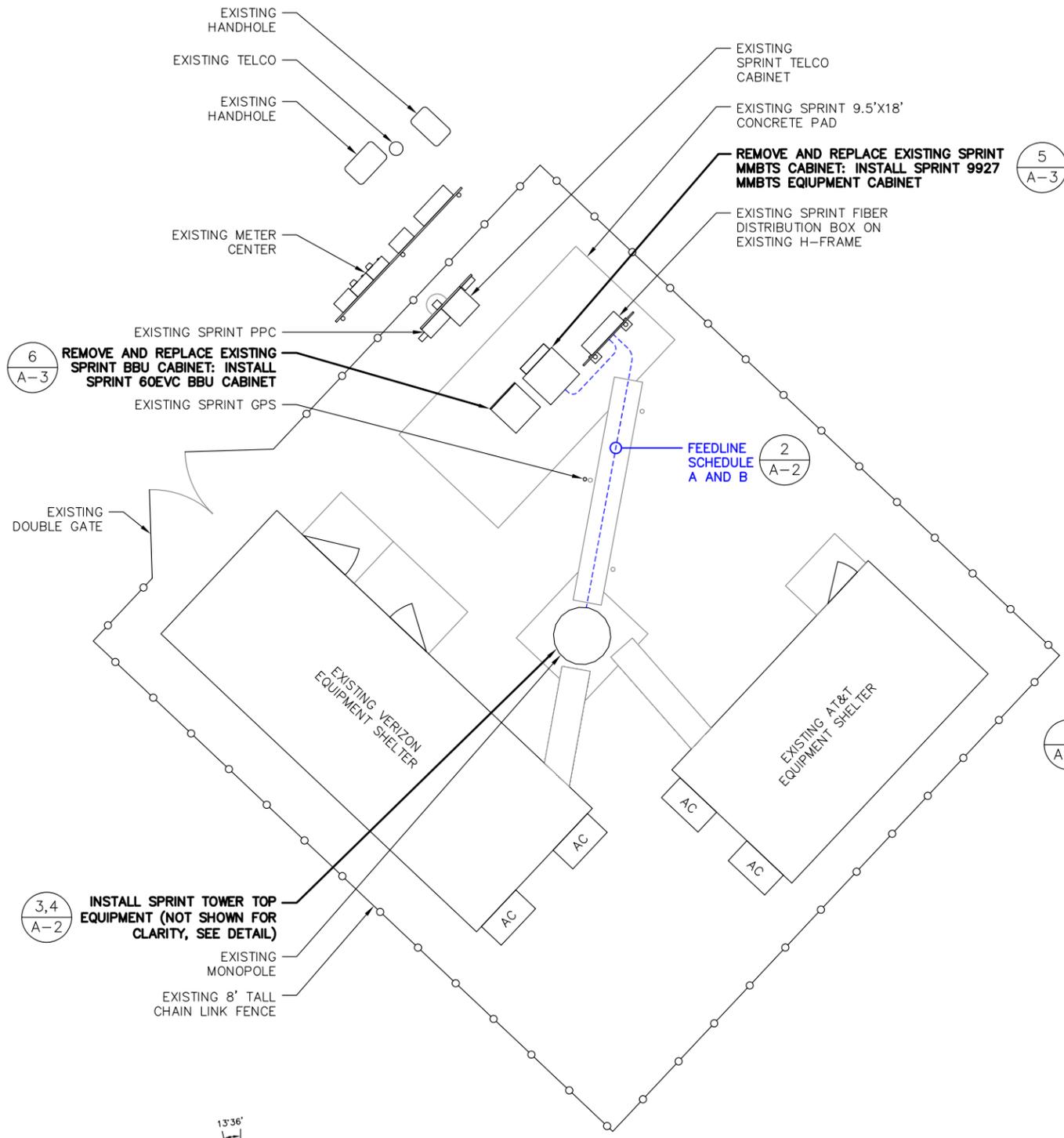
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CT33XC590
SITE NAME:
WEST NORFOLK

SITE ADDRESS:
10 ASHPOTAG ROAD
NORFOLK, CT 06058

SHEET TITLE
OUTLINE SPECIFICATIONS

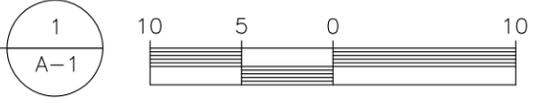
SHEET NUMBER
SP-3



3,4
A-2
INSTALL SPRINT TOWER TOP EQUIPMENT (NOT SHOWN FOR CLARITY, SEE DETAIL)



COMPOUND PLAN
SCALE: 1"=10' (11"x17")
1"=5' (22"x34")



5
A-3
REMOVE AND REPLACE EXISTING SPRINT MMBTS CABINET: INSTALL SPRINT 9927 MMBTS EQUIPMENT CABINET

6
A-3
REMOVE AND REPLACE EXISTING SPRINT BBU CABINET: INSTALL SPRINT 60EVC BBU CABINET

EXISTING SPRINT TELCO CABINET
EXISTING SPRINT PPC

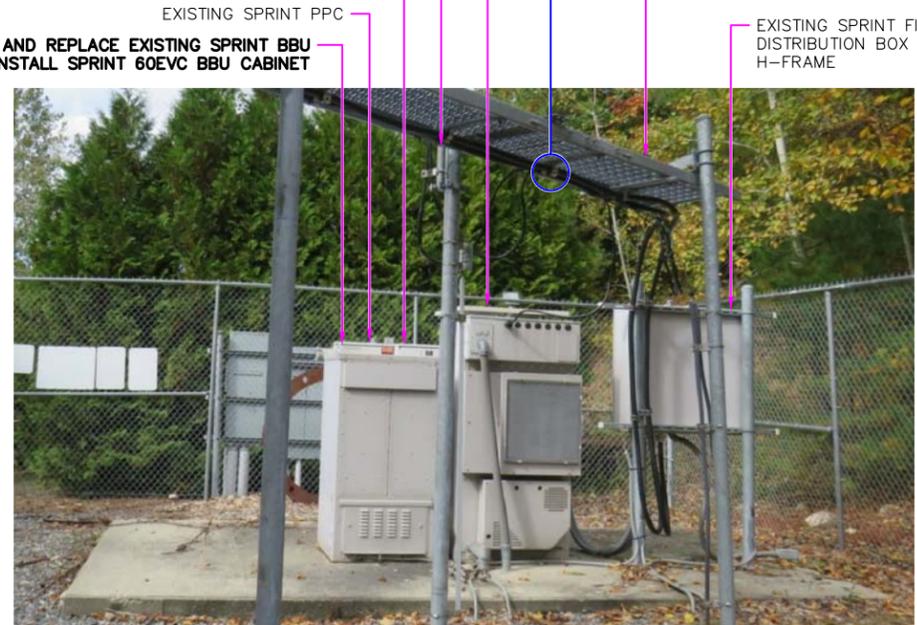


EXISTING SPRINT FIBER DISTRIBUTION BOX ON H-FRAME
EXISTING SPRINT ICE BRIDGE
EXISTING SPRINT GPS
FEEDLINE SCHEDULE A AND B

2
A-2

5
A-3
REMOVE AND REPLACE EXISTING SPRINT MMBTS CABINET: INSTALL SPRINT 9927 MMBTS EQUIPMENT CABINET

EXISTING SPRINT GPS (BEHIND ICE BRIDGE)
EXISTING SPRINT TELCO CABINET
EXISTING SPRINT PPC



FEEDLINE SCHEDULE A AND B
EXISTING SPRINT ICE BRIDGE
EXISTING SPRINT FIBER DISTRIBUTION BOX ON H-FRAME

2
A-2

6
A-3
REMOVE AND REPLACE EXISTING SPRINT BBU CABINET: INSTALL SPRINT 60EVC BBU CABINET

EQUIPMENT PLAN PHOTO DETAIL
SCALE: N.T.S.

2
A-1

Sprint
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
TEL: (508) 251-0720

ProTerra
DESIGN GROUP, LLC
4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413)320-4918

STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
PROFESSIONAL ENGINEER
1/26/18

CHECKED BY: JMM/TEJ

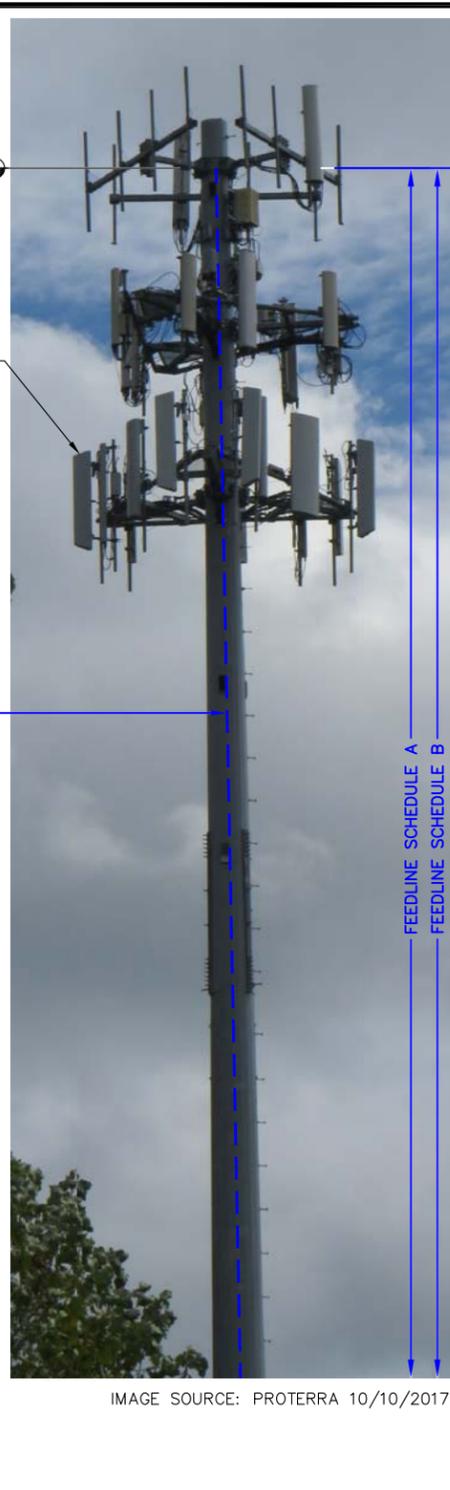
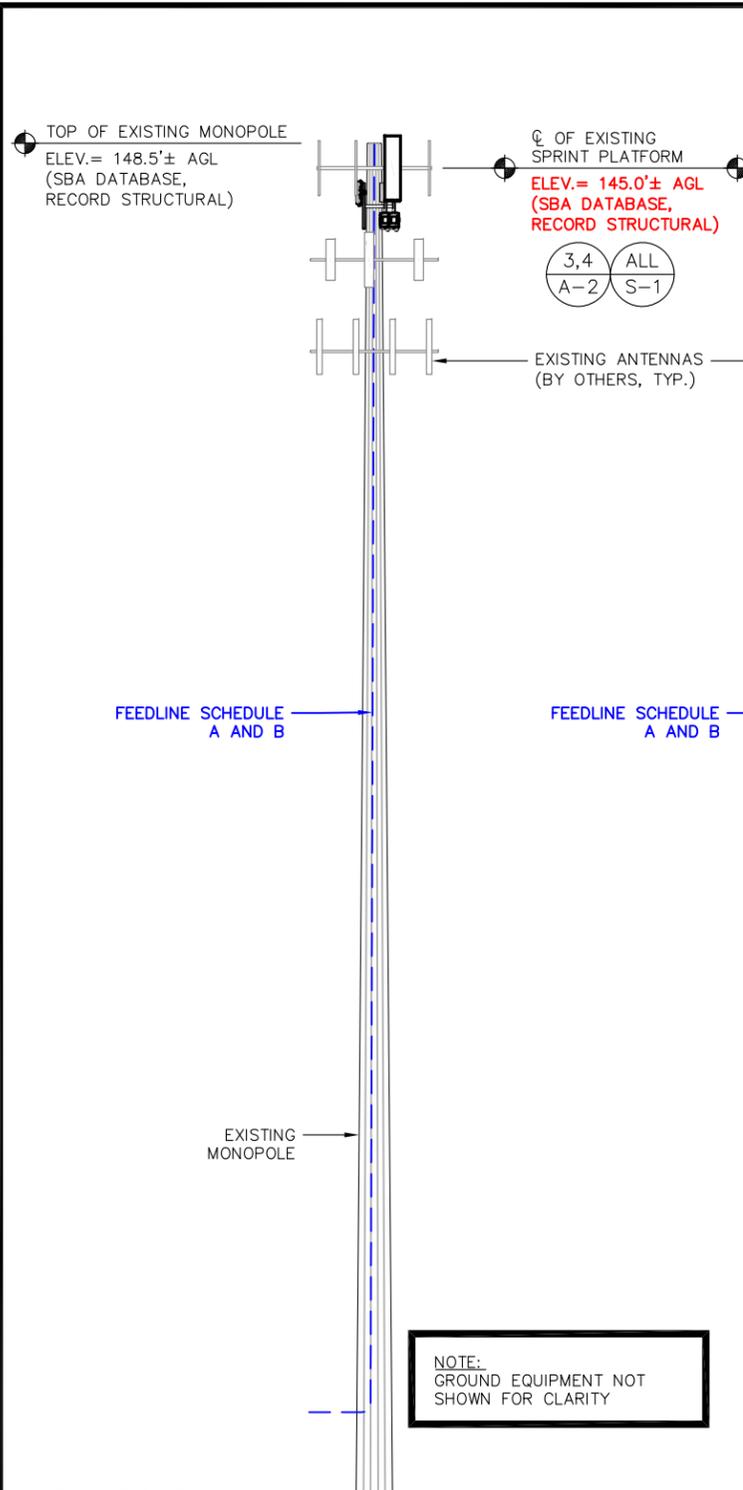
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SITE NAME:
WEST NORFOLK
SITE ADDRESS:
10 ASHPOTAG ROAD
NORFOLK, CT 06058

SHEET TITLE
COMPOUND PLAN

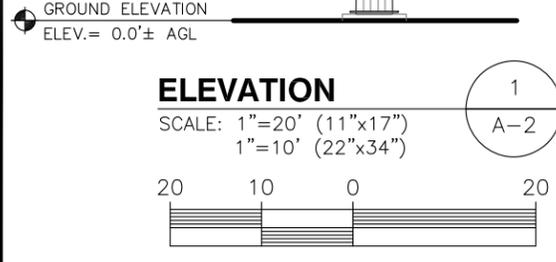
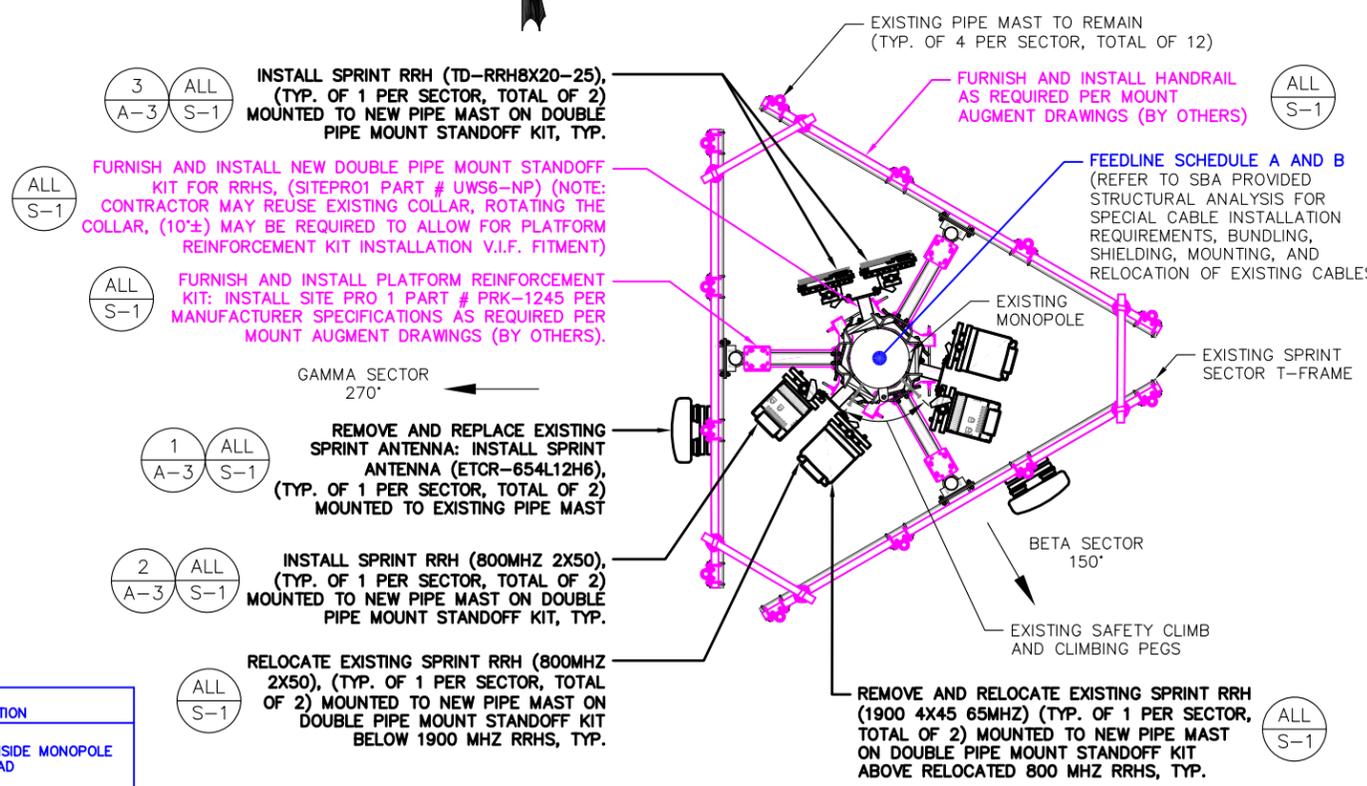
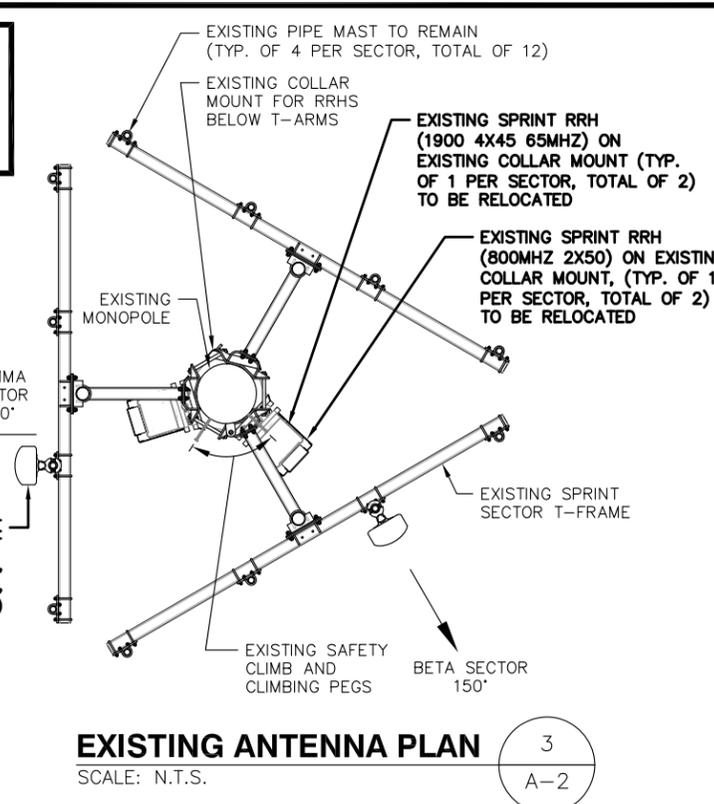
SHEET NUMBER
A-1



SPECIAL CONSTRUCTION NOTE:
 SPRINT WORK IS CONTINGENT ON THE FOLLOWING:
 * COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS.
 * COMPLETION OF AN ANTENNA/RRH MOUNT STRUCTURAL ASSESSMENT.
 * GC SHALL FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED ANALYSIS AND ASSESSMENT.

SPECIAL CONSTRUCTION NOTE (ANTENNA MOUNT STRUCTURAL AUGMENT SCHEMATIC DESIGN NOT FOR FINAL CONSTRUCTION):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS AND STRUCTURAL MODIFICATIONS AT THE SPRINT RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS). SCHEMATIC DESIGNS DEPICTED IN MAGENTA ARE PRELIMINARY ONLY AND ARE NOT FOR FINAL CONSTRUCTION.

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.



FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO BE REMAIN: (2) HYBRID TO 145.0' RAD EXISTING TO BE REMAIN: (1) 1/2" GPS CABLE TO GPS ON ICE BRIDGE	UP INSIDE MONOPOLE TO RAD
B	PROPOSED: (2) 1 1/2" HYBRID TO 145.0' RAD;	UP INSIDE MONOPOLE TO RAD

NOTE:
 EXISTING SPRINT EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER



SPECIAL INSTALLATION NOTE:
 JUMPERS FROM RRHS TO ANTENNA SHALL NOT EXCEED 15'. NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY DISCREPANCY

NOTE:
 VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

Sprint
 1 INTERNATIONAL BLVD, SUITE 800
 MAHWAH, NJ 07495
 TEL: (800) 357-7641

SBA
 SBA COMMUNICATIONS CORP.
 134 FLANDERS ROAD, SUITE 125
 WESTBOROUGH, MA 01581
 TEL: (508) 251-0720

ProTerra
 DESIGN GROUP, LLC
 4 Bay Road, Building A
 Suite 200
 Hadley, MA 01035 Ph: (413)320-4918

STATE OF CONNECTICUT
 THOMAS E. JOHNSON
 No. 28192
 LICENSED PROFESSIONAL ENGINEER
 1/26/18

CHECKED BY: JMM/TEJ
 APPROVED BY: JMM/TEJ

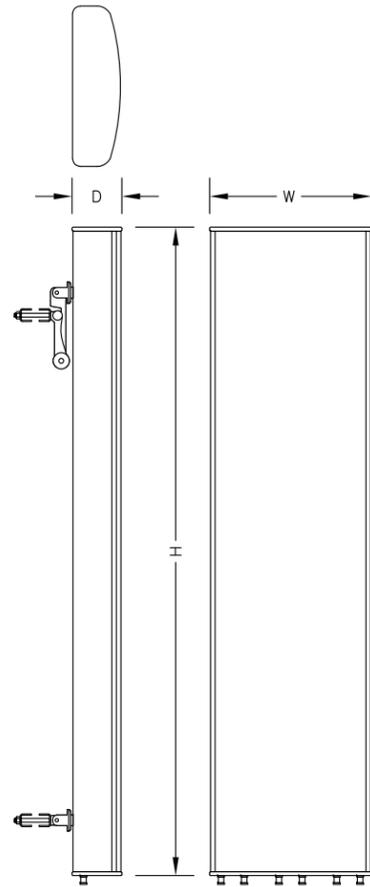
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
 SITE NAME:
WEST NORFOLK
 SITE ADDRESS:
 10 ASHPOTAG ROAD
 NORFOLK, CT 06058

SHEET TITLE
ELEVATION AND ANTENNA PLANS

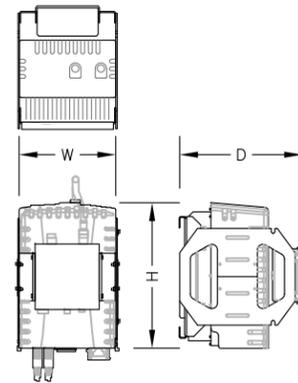
SHEET NUMBER
A-2



ANTENNA SPECIFICATIONS	
MANUF.	KMW
MODEL #	ETCR-654L12H6
HEIGHT	84.9"
WIDTH	21.0"
DEPTH	6.3"
WEIGHT	84.9± LBS.

ANTENNA DETAIL
SCALE: N.T.S.

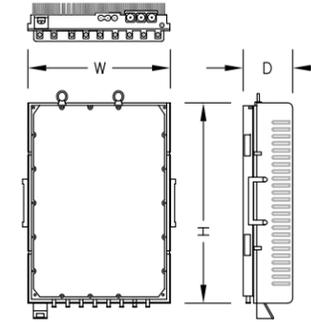
1
A-3



800 MHZ RRH SPECIFICATIONS	
MANUF.	NOKIA (ALU)
MODEL #	800MHZ 2X50W
HEIGHT	19.7"
WIDTH	13"
DEPTH	10.8"
WEIGHT	53± LBS

800 MHz RRH DETAIL
SCALE: N.T.S.

2
A-3



2.5 GHZ RRH SPECIFICATIONS	
MANUF.	NOKIA (ALU)
MODEL #	TD-RRH8X20-25
HEIGHT	26.1"
WIDTH	18.6"
DEPTH	6.7"
WEIGHT	70± LBS

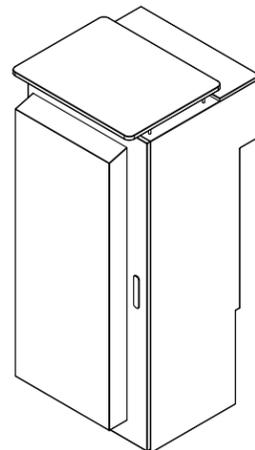
2.5 GHz RRH DETAIL
SCALE: N.T.S.

3
A-3

MAJOR RF EQUIPMENT LIST				
(GC SHALL FURNISH AND INSTALL ALL OTHER MATERIALS AND EQUIPMENT NOT SUPPLIED BY SPRINT)				
DESCRIPTION	QUANTITY	UNITS	MAKE/MODEL/MATERIAL	PROVIDED BY
ANTENNA	2	EA	KMW ETCR-654L12H6	SPRINT
2500 RRH	2	EA	NOKIA (ALU) TD-RRH8x20-25	SPRINT
800 RRH	2	EA	NOKIA (ALU) 800MHZ 2x50W	SPRINT
FIBER	2 @ 220'± FROM FIBER CABINET	LINEAR FEET LISTED [INCLUDES (2) 10' COILS]	1-1/4" HYBRIFLEX	SPRINT
MMBTS	1	EA	ALCATEL-LUCENT 9927	SPRINT
BBU	1	EA	60ECv2	SPRINT

SPRINT-PROVIDED EQUIPMENT SCHEDULE
SCALE: N.T.S.

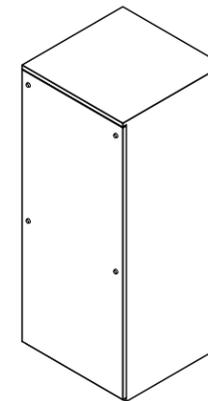
4
A-3



ALCATEL-LUCENT 9927 CABINET SPECIFICATIONS	
HEIGHT	72"
WIDTH	30"
DEPTH	26"
WEIGHT	1850 LBS.

ALCATEL-LUCENT 9927 CABINET (9927)
SCALE: N.T.S.

5
A-3



60ECv2 CABINET SPECIFICATIONS	
HEIGHT	60"
WIDTH	31"
DEPTH	30"
WEIGHT	1625 LBS.

NOTE:
EQUIPMENT SHALL BE ANCHORED PER MANUFACTURERS SPECIFICATIONS.

BATTERY BACK-UP CABINET (BBU)
SCALE: N.T.S.

6
A-3



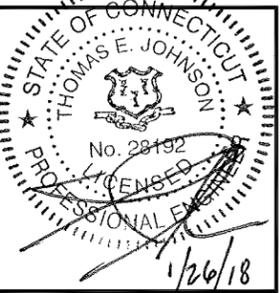
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581 TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413) 320-4918



CHECKED BY: JMM/TEJ

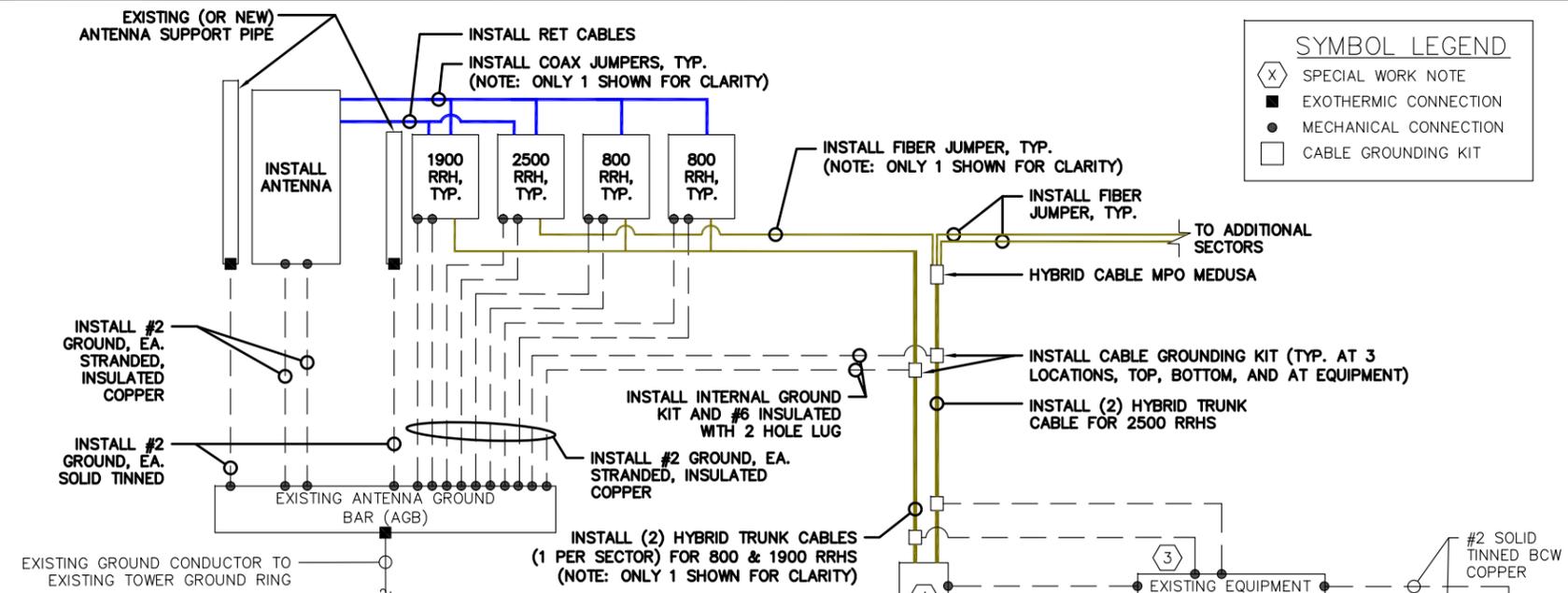
APPROVED BY: JMM/TEJ

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
SITE NAME:
WEST NORFOLK
SITE ADDRESS:
10 ASHPONTAG ROAD
NORFOLK, CT 06058

SHEET TITLE
TOWER EQUIPMENT DETAILS

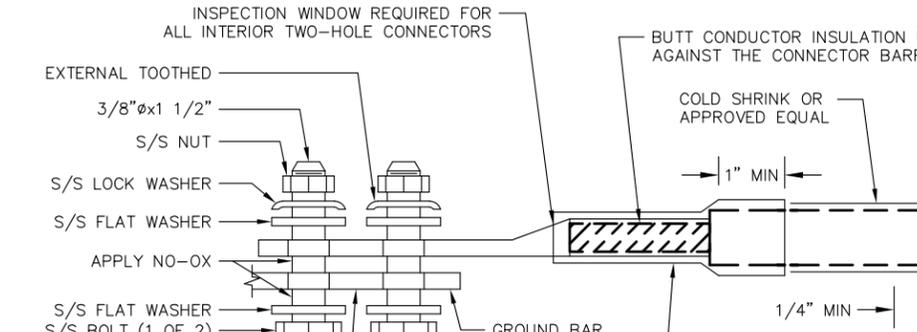
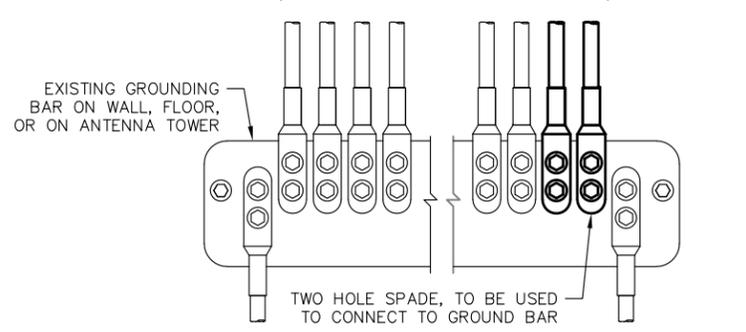
SHEET NUMBER
A-3



- SPECIAL WORK NOTE:**
- G.C. TO FURNISH AND INSTALL ALL COMPONENTS TO UPGRADE EXISTING ELECTRICAL SERVICE, CONDUIT, CONDUCTOR, PPC AND MCB IN ACCORDANCE WITH SPRINT CONSTRUCTION STANDARDS NV 2.5 ADDENDUM "ENGINEERING NOTICE 2013-002 (POWER UPGRADES) REV.0" (OR CURRENT VERSION)
 - G.C. TO FURNISH AND INSTALL UPGRADE THE EXISTING MMBTS BREAKER, CONDUCTOR, AND CONDUIT TO A MINIMUM NEC RATING.
 - FOR NEW OR REPAIRED GROUNDING EQUIPMENT, REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
 -ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12 (OR CURRENT VERSION)
 -SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12 (OR CURRENT VERSION)
 - USE SPARE DC CABLES COILED UP AT TOWER TOP NV ARRAY TO POWER UP 2.5 RRH. INSIDE EXISTING FIBER DISTRIBUTION BOX, TIE SPARE DC CONDUCTORS INTO EXISTING DC BREAKER PANEL PER APPROVED DC WIRING CONNECTIVITY OPTION (BASED ON NV HYBRIFLEX CABLE LENGTH). CONSULT WITH SPRINT CM TO DETERMINE APPROPRIATE DC CONNECTIVITY OPTION, PLUMBING DIAGRAM AND DC BREAKER SIZE.

- ELECTRICAL NOTES**
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
 - THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANIES AND SPRINT CONSTRUCTION MANAGER.
 - ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.
 - ALL METAL CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS.
 - GENERAL CONTRACTOR SHALL PROVIDE ALL DIRECT BURIED CONDUITS WITH PLASTIC WARNING TAPE IDENTIFYING CONTENTS. TAPE COLORS SHALL BE ORANGE FOR TELEPHONE AND RED FOR ELECTRIC.
 - ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
 - THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIALS DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
 - GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
 - ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
 - BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
 - ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
 - RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
 - RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
 - FIBER OPTIC CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 770-OPTICAL FIBER CABLES AND RACEWAYS.
 - COMMUNICATIONS CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 800-COMMUNICATIONS SYSTEMS.

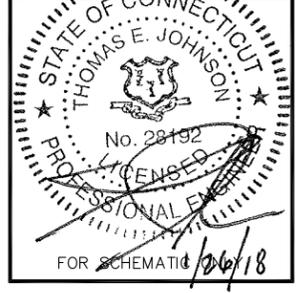
- PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES:**
- GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250-GROUNDING AND BONDING.
 - GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES" AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING".
 - PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
 - GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, REMOVE THE COATING, APPLY A NON-CORROSIVE APPROVED COMPOUND TO CLEAN SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVAMOX" OR EQUAL.
 - ALL GROUNDING WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
 - ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
 - ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
 - PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
 - GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 INSULATED TINNED STRANDED COPPER GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
 - EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
 - GROUND HYBRIFLEX SHIELD AT TOP, BOTTOM AND AT TRANSITION TO HYBRIFLEX JUMPER CABLES AT EQUIPMENT CABINET ENTRANCE USING MANUFACTURER'S GUIDELINES. WHEN HYBRIFLEX CABLE EXCEEDS 200', GROUND AT INTERVALS NOT EXCEEDING 100'.
 - THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
 - EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL OTHERWISE. THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH AN ANTI-OXIDANT (THOMAS BETTS KOPR-SHILD) BEFORE MAKING THE CRIMP CONNECTIONS THE CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDED TORQUES ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS.
 - AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANEL, AND FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING. CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE LUGS WITH STAINLESS STEEL SELF-TAPPING SCREWS.
 - THE MASTER GROUND BAR (MGB) SHALL BE MADE OF BARE 1/4"x2" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICAL INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
 - ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
 - ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH SPRINT CONSTRUCTION MANAGER.
 - FOR NEW OR REPAIRED GROUNDING EQUIPMENT. REFER TO SPRINT GROUNDING STANDARDS AND FOLLOWING (SUPPLEMENTS):
 -ANTI-THEFT UPDATE TO SPRINT GROUNDING DATED 08-24-12 (OR CURRENT VERSION)
 -SPRINT ENGINEERING LETTER EL-0504 DATED 04-20-12 (OR CURRENT VERSION)



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
 SCALE: N.T.S.

TWO HOLE LUG
 SCALE: N.T.S.



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
 SITE NAME:
WEST NORFOLK
 SITE ADDRESS:
 10 ASHPOTAG ROAD
 NORFOLK, CT 06058

SHEET TITLE
ELECTRICAL AND GROUNDING DETAILS

SHEET NUMBER
E-1



RF Design Sheet

Site Identification	
Cascade	CT33XC590
SMS Schedule ID	1224438
SMS Schedule Name	DO Macro Upgrade
PID	DOKU_CT33XC590
RRU OEM	Alcatel Lucent
Switch OEM	ALU
RFDS Issue Date	
RFDS Revision Date	2017-02-16 00:00:00
RFDS Revision	1
Filter Analysis Complete	
RFDS - Issue Date	YES
Design Status	Complete
Border Analysis Complete	YES
Project Description	DO Macro Upgrade - Add 2500 MHz

Contact Information	
Engineer Email	Bill.M.Hastings@sprint.com
Sprint Badged RF Engineer	Bill Hastings
RF Engineer Email	Bill.M.Hastings@sprint.com
RF Engineer Phone	978-590-9700
RF Manager	Jonathan Hull
RF Manager Email	Jonathan.B.Hull@sprint.com
RF Manager Phone	617-233-2620
Carrier Count	
2500 LTE	2
1900 LTE	
1900 EVDO	
1900 Voice	
800 LTE	
800 Voice	

Location Details	
Latitude	42.00269722
Longitude	-73.22139106
Market	Southern Connecticut
Region	Northeast
City	Norfolk
State	CT
Zip Code	CT06058
Courty	Litchfield
2500MHz	
1900MHz	3
800MHz	

SPRINT CONSTRUCTION STANDARDS:

GENERAL CONTRACTOR SHALL ADHERE TO THE FOLLOWING SPRINT CONSTRUCTION STANDARDS.

- CONSTRUCTION STANDARDS: INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES - CURRENT VERSION, INCLUDING EXHIBITS A-M.
 - CONSTRUCTION SPECIFICATIONS: CONSTRUCTION STANDARDS EXHIBIT A - STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES (CURRENT VERSION).
 - GROUNDING STANDARDS: EXTERIOR GROUNDING SYSTEM DESIGN. GROUNDING STANDARDS (SUPPLEMENT): ANTI-THEFT UPDATE TO SPRINT GROUNDING 082412 AND SPRINT ENGINEERING LETTER EL-0504 DATED 04.20.12.
 - WEATHER PROOFING STANDARDS: EXCERPT FROM CONSTRUCTION STANDARDS EXHIBIT A, SECTION 3.6 WEATHERPROOFING CONNECTORS AND GROUND KITS.
 - COLOR CODING: SPRINT NEXTEL ANT AND LINE COLOR CODING PER SPRINT TS-0200 CURRENT VERSION.
 - GENERAL CONTRACTOR TO FIELD VERIFY AZIMUTH AND CL HEIGHT AND MECHANICAL DOWNTILT. IF DIFFERENT THAN CALLED OUT IN RFDS, HALT ANTENNA WORK FOR ONE HOUR, CALL SPRINT RF ENGINEER (OR MANAGER IF RF ENGINEER DOES NOT ANSWER, BUT STILL LEAVE A MESSAGE TO RF ENGINEER) USING SPRINT-PROVIDED CONTACT INFORMATION FOR FURTHER INSTRUCTIONS. IF SPRINT DOES NOT RESPOND WITHIN ONE HOUR, PLACE ANTENNA AT SAME CL HEIGHT AS PLAN AND EMAIL CORRECT CL HEIGHT AND AZIMUTH TO SPRINT RF ENGINEER. UPDATE AS-BUILT DRAWING WITH CORRECT CL HEIGHT. ALSO EMAIL CORRECT ANTENNA CL HEIGHT, AZIMUTH AND MECHANICAL DOWNTILT TO RF ENGINEER.
 - AISG TESTS TO VERIFY OPERATION IS TO BE PERFORMED AFTER FINAL INSTALLATION OF ANTENNAS AND AISG CABLES HAVE BEEN CONNECTED. VERIFY OPERATION OF ALL EXISTING SPRINT AISG EQUIPMENT INCLUDING 800MHZ, 1.9GHZ AND 2.5G. TEST INCLUDE COMPLETE DOWNTILT, AZIMUTH (IF APPLICABLE) AND BEAMWIDTH SWINGS (IF APPLICABLE). DOCUMENT AISG TEST RESULTS IN COAX SWEEP TEST SPREADSHEET.
 - GENERAL CONTRACTOR MUST INSURE THAT NO OBJECT IS LOCATED IN FRONT OF ANTENNA. THIS MEANS NO OBJECT IS TO BE LOCATED 45 DEGREES LEFT AND RIGHT OF FRONT OF ANTENNA OR 7 DEGREES UP AND DOWN FROM CENTER OF ANTENNA. IF THIS IS NOT POSSIBLE, CONTACT RF ENGINEER FOR FURTHER INSTRUCTION.
 - GENERAL CONTRACT IS REQUIRED TO USE A DIGITAL ALIGNMENT TOOL TO SET AZIMUTH, ROLL AND DOWNTILT. AZIMUTH ACCURACY IS TO BE WITHIN 1 DEGREE. DOWNTILT AND ROLL (LEFT TO RIGHT TILT) IS TO BE WITHIN 0.1 DEGREES. IF FOR SOME REASON THIS ACCURACY CANNOT BE ACHIEVED, UPDATE AS-BUILT DRAWINGS AND EMAIL SPRINT RF ENGINEER WITH AS-BUILT SETTINGS. USE 3Z RF ALIGNMENT TOOL OR EQUIVALENT TOOL.
- HTTP://WWW.3ZTELECOM.COM/ANTENNA-ALIGNMENT-TOOL/.

Battery Backup Cabinet Model	
Model Number	60ECv2
Weight (Lbs.)	2830
Dimensions (In.)	60 x 31 x 30
Manufacturer	ALU
BTS #1 Model	
Model Number	9927 Cabinet
Weight (Lbs.)	864
Dimensions (In.)	67.5 x 31.5 x 38.1
Manufacturer	ALU
Number of BTS #1	1
Additional RF Notes	
Two sector Site	

NOTE:
VERIFY PROPOSED AZIMUTHS
WITH RF ENGINEER PRIOR TO
INSTALLATION

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Radio Model						
Model Number	TD-RRH8x20-25	TD-RRH8x20-25	N/A	N/A	N/A	N/A
Weight (lbs.)	76.2	76.2	N/A	N/A	N/A	N/A
Dimensions	26 x 18.6 x 6.7	26 x 18.6 x 6.7	N/A	N/A	N/A	N/A
Manufacturer	ALU	ALU	N/A	N/A	N/A	N/A
Number of RRUs needed	1	1	0	0	0	0
Trunk Cable 1						
Model Number	Hybriflex	N/A	N/A	N/A	N/A	N/A
Weight (Lbs.)	1	N/A	N/A	N/A	N/A	N/A
Dimensions (In.)	1.54	N/A	N/A	N/A	N/A	N/A
Manufacturer	ALU	N/A	N/A	N/A	N/A	N/A
Band: 800						
Radio Model						
Model Number	RRH-2x50-800	RRH-2x50-800	N/A	N/A	N/A	N/A
Weight (lbs.)	69.1	69.1	N/A	N/A	N/A	N/A
Dimensions	16 x 13 x 10	16 x 13 x 10	N/A	N/A	N/A	N/A
Manufacturer	ALU	ALU	N/A	N/A	N/A	N/A
Number of RRUs needed	2	2	0	0	0	0
Trunk Cable 1						
Model Number	1900 Hybrid_ALU	1900 Hybrid_ALU	N/A	N/A	N/A	N/A
Weight (Lbs.)	1.1	1.1	N/A	N/A	N/A	N/A
Dimensions (In.)	1.25	1.25	N/A	N/A	N/A	N/A
Manufacturer	ALU	ALU	N/A	N/A	N/A	N/A

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Antenna1						
Model Number	Antenna assigned on a different band	Antenna assigned on a different band				
Weight (lbs)	0	0	N/A	N/A	N/A	N/A
Dimensions	0 x 0 x 0	0 x 0 x 0	N/A	N/A	N/A	N/A
Manufacturer	KMW	KMW	N/A	N/A	N/A	N/A
Ant1 Top Jumper Make/Mode/Qty	2.5 Jumper	2.5 Jumper	0	0	0	0
Ant 1 RF requested Diameter	1/2"	1/2"	N/A	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	N/A	N/A	N/A	N/A
Antenna 1 Azimuth	150	270	N/A	N/A	N/A	N/A
Antenna 1 Mechanical DT	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Center Line (ft)	147.5065664	147.5065664	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT	2	2	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 2	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 3	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Twist	N/A	N/A	N/A	N/A	N/A	N/A
Band: 1900						
Antenna1						
Model Number	ETCR-654L12H6	ETCR-654L12H6				
Weight (lbs)	85	85	N/A	N/A	N/A	N/A
Dimensions	84.9 x 21 x 6.3	84.9 x 21 x 6.3	N/A	N/A	N/A	N/A
Manufacturer	KMW	KMW	N/A	N/A	N/A	N/A
Ant1 Top Jumper Make/Mode/Qty	N/A	0	N/A	0	N/A	0
Ant 1 RF requested Diameter	1/2"	1/2"	N/A	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	N/A	N/A	N/A	N/A
Antenna 1 Azimuth	150	270	N/A	N/A	N/A	N/A
Antenna 1 Mechanical DT	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Center Line (ft)	147.5065664	147.5065664	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT	3	3	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 2	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 3	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Twist	N/A	N/A	N/A	N/A	N/A	N/A
Band: 800						
Antenna1						
Model Number	Antenna assigned on a different band	Antenna assigned on a different band				
Weight (lbs)	0	0	N/A	N/A	N/A	N/A
Dimensions	0 x 0 x 0	0 x 0 x 0	N/A	N/A	N/A	N/A
Manufacturer	KMW	KMW	N/A	N/A	N/A	N/A
Ant1 Top Jumper Make/Mode/Qty	800/1900 Jumper	4	800/1900 Jumper	4	0	0
Ant 1 RF requested Diameter	1/2"	1/2"	N/A	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	N/A	N/A	N/A	N/A
Antenna 1 Azimuth	150	270	N/A	N/A	N/A	N/A
Antenna 1 Mechanical DT	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Center Line (ft)	147.5065664	147.5065664	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT	5	5	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 2	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Electrical DT 3	N/A	N/A	N/A	N/A	N/A	N/A
Antenna 1 Twist	N/A	N/A	N/A	N/A	N/A	N/A



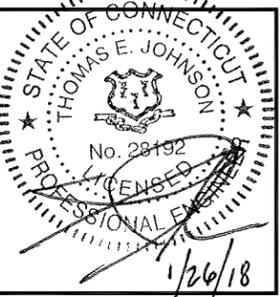
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641



SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035
Ph: (413) 320-4918



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:

CT33XC590

SITE NAME:

WEST NORFOLK

SITE ADDRESS:

10 ASHPOHTAG ROAD
NORFOLK, CT 06058

SHEET TITLE

RF DATA SHEET

SHEET NUMBER

RF-1

RF DATA SHEET

SCALE: N.T.S.

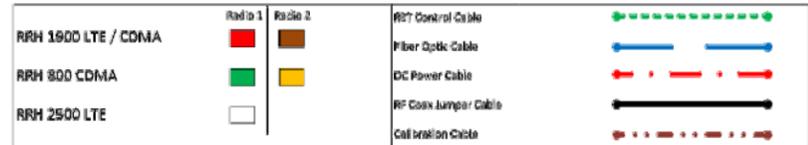
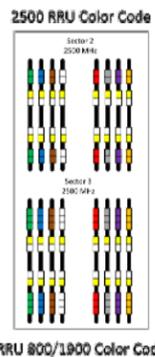
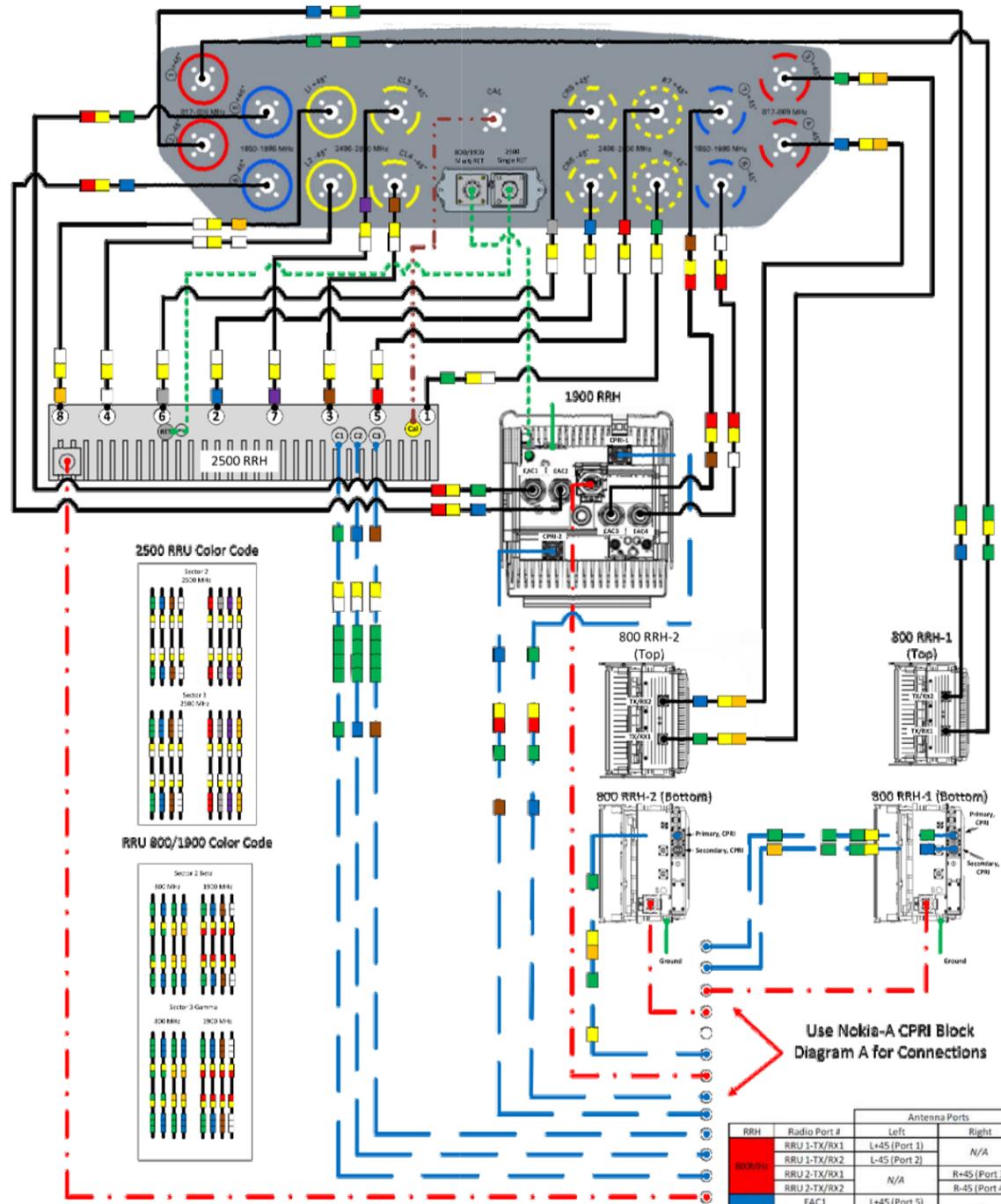
NOTE: RFDS PROVIDED BY SPRINT DATED 03/20/2017. EXCERPTS TAKEN DEPICT RELEVANT RF DESIGN INFORMATION.
A&E VENDOR SCOPE OF WORK LIMITED TO DESIGN OF MECHANICAL/STRUCTURAL EQUIPMENT ATTACHMENTS.

Prepared By
Mark Elliott
Approved By
TBD

Creation Date
September 12, 2016
Revision Number
R-4
Approval Date
TBD



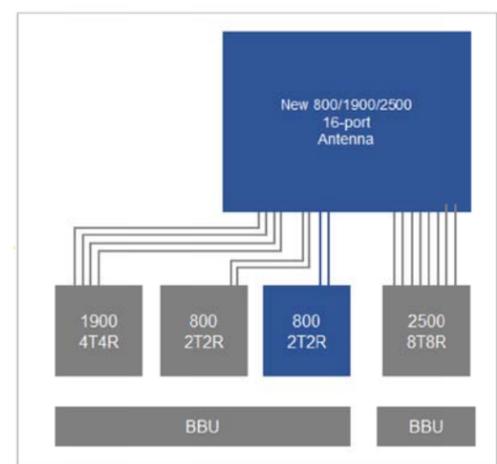
KMW 16 Port Nokia-A RRH 800, 1900, and 2500 (Sprint Scenario 4)



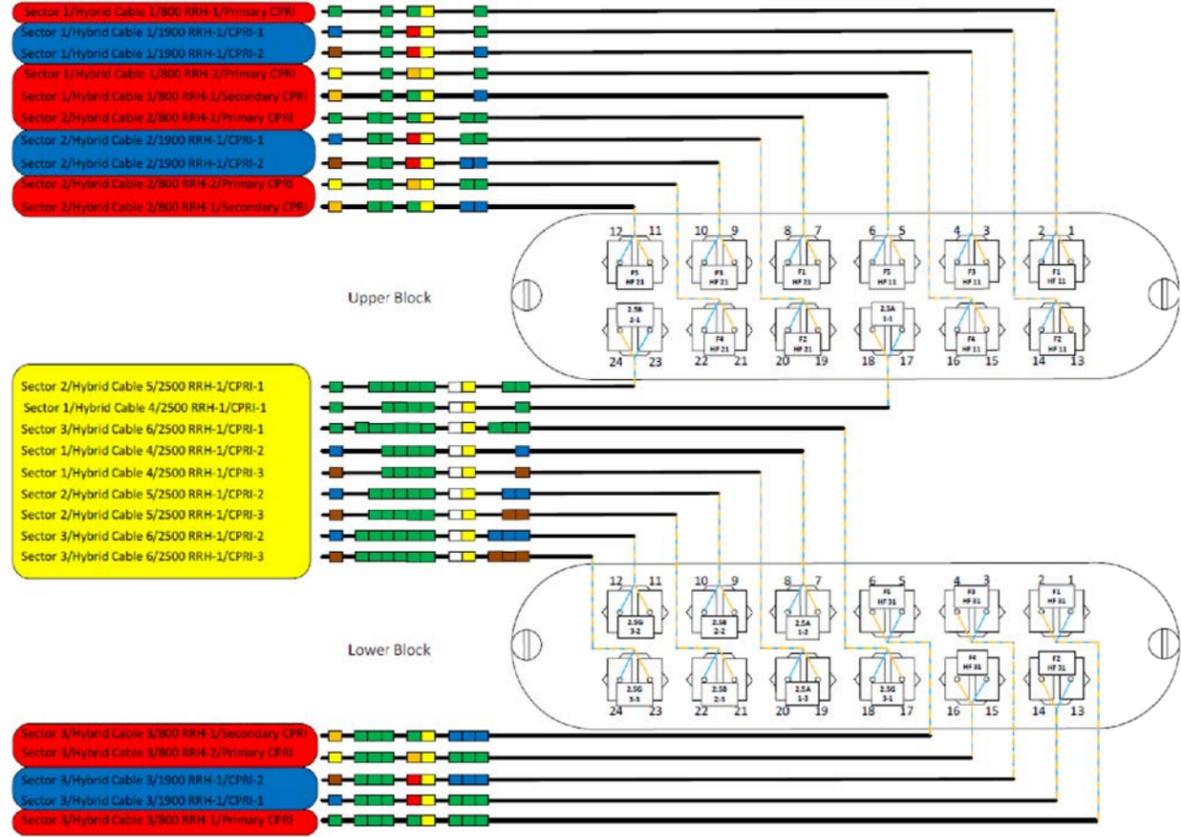
Not to Scale

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

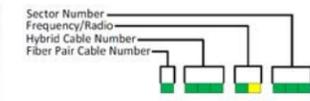
Future



CPRI Block Connections for Sprint Scenario 4



Frequency / Radio	Indicator	ID
800 #1	Yellow	Green
800 #2	Yellow	Orange
1900 #1	Yellow	Red
1900 #2	Yellow	Brown
1900 #3	Yellow	Blue
1900 #4	Yellow	Grey
2500 #1	Yellow	White
2500 #2	Yellow	Purple



RRH	Radio Port #	Antenna Ports	
		Left	Right
800MHz	RRU 1-TX/RX1	L-45 (Port 1)	N/A
	RRU 1-TX/RX2	L-45 (Port 2)	N/A
	RRU 2-TX/RX1	N/A	R-45 (Port 3)
	RRU 2-TX/RX2	N/A	R-45 (Port 4)
1900MHz	EAC1	L-45 (Port 5)	N/A
	EAC2	L-45 (Port 6)	N/A
	EAC3	N/A	R-45 (Port 7)
	EAC4	N/A	R-45 (Port 8)
2500MHz	1	N/A	R8-45
	2	N/A	CR6-45
	3	CL4-45	N/A
	4	L2-45	N/A
	5	N/A	R7-45
	6	N/A	CR5-45
	7	CL3-45	N/A
	8	L1-45	N/A

Sprint
1 INTERNATIONAL BLVD, SUITE 800
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SBA
SBA COMMUNICATIONS CORP.
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WESTBOROUGH, MA 01581
TEL: (508) 251-0720

ProTerra
DESIGN GROUP, LLC
4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413) 320-4918

STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
LICENSED PROFESSIONAL ENGINEER
1/26/18

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	11/02/17	ISSUED FOR REVIEW	JEB/EN

SITE NUMBER:
CT33XC590
SITE NAME:
WEST NORFOLK
SITE ADDRESS:
10 ASHPOTAG ROAD
NORFOLK, CT 06058

SHEET TITLE
PLUMBING DIAGRAM AND RAN WIRING

SHEET NUMBER
RF-2