



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

July 11, 2018

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

Notice of Exempt Modification
267 Norwich Westerly Road
North Stonington, CT 06359
Sprint Site #: CT03XC109_DO Macro Upgrade
N 41 26 13.44
W -71 52 53.36

Dear Ms. Bachman:

Sprint currently maintains antennas at the 117-foot level of the existing 150-foot Monopole Tower at 267 Norwich Westerly Road, North Stonington, CT. The tower is owned by SBA Properties, LLC. The property is owned by the North Stonington Volunteer Fire Company. Sprint now intends to replace (6) existing cell antennas with (6) newer technology cell antennas at the 117-foot level of the tower. The proposed full scope of work is as follows:

Remove:

- (6) 1-5/8" lines

Remove and Replace:

- Remove:
 - (6) Decibel DB980H90E-M – Panel Antennas
- Replace with :
 - (3) Commscope NNVV-65B-R4 – Panel Antennas (120' center)
 - (3) RFS APXBVTM14-C-130 Panel Antennas

Install:

- (3) ALU 1900 MHz RRUs
- (6) ALU 800 MHz RRUs
- (3) ALU TD-RRH8x20-25 RRUs
- (4) 1-1/4" fiber
- (1) Sitepro RMQP-496-HK Handrail

Existing Equipment to Remain (Including entitlements):

- (1) Low Profile Platform



This facility was approved prior to the Council's jurisdiction, on May 6, 1999, at a Special Meeting of the North Stonington Planning & Zoning Commission. Special Permit 99-031 allowed for a 150' multi-tenant monopole and related equipment on land at the intersection of Route 2 / Rocky Hollow Rd at 267 Norwich-Westerly Rd, aka Route 2. The tower was to hold no more than four antenna support platforms, each holding no more than twelve panel antennas. This modification complies with all conditions.

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 North Stonington's First Selectman, Shawn P. Murphy, Planning Official, Juliet Hodge, and to the property owner, North Stonington Volunteer Fire Co. (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@sbsite.com

Attachments

- cc: Shawn P. Murphy, First Selectman / with attachments
Old Town Hall, 40 Main Street, North Stonington, CT 06359
Juliet Hodge, Planning Official / with attachments
Old Town Hall, 40 Main Street, North Stonington, CT 06359
North Stonington Volunteer Fire Co. / with attachments
P.O. Box 279 North Stonington CT 06359-027



POWER DENSITY

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	2.51 %	Antenna B1 MPE%	2.51 %	Antenna C1 MPE%	2.51 %
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVTM14-ALU- I20	Make / Model:	RFS APXVTM14-ALU- I20	Make / Model:	RFS APXVTM14-ALU- I20
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	1.82 %	Antenna B2 MPE%	1.82 %	Antenna C2 MPE%	1.82 %

Site Composite MPE%	
Carrier	MPE%
SPRINT - Max per sector	4.33 %
AT&T	3.37 %
T-Mobile	2.45 %
Verizon Wireless	2.23 %
Site Total MPE %:	12.38 %

SPRINT Sector A Total:	4.33 %
SPRINT Sector B Total:	4.33 %
SPRINT Sector C Total:	4.33 %
Site Total:	12.38 %

SPRINT Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	120	1.04	850 MHz	567	0.17%
Sprint 850 MHz LTE	2	941.82	120	5.21	850 MHz	567	0.92%
Sprint 1900 MHz (PCS) CDMA	5	511.82	120	7.08	1900 MHz (PCS)	1000	0.71%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	120	7.08	1900 MHz (PCS)	1000	0.71%
Sprint 2500 MHz (BRS) LTE	8	778.09	117	18.16	2500 MHz (BRS)	1000	1.82%
						Total:	4.33%

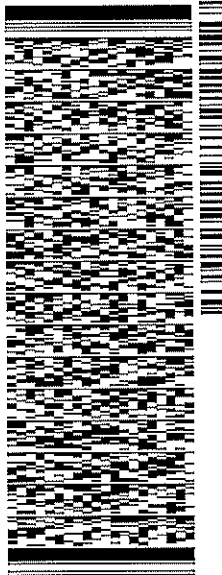
ORIGIN ID:BBFA (508) 251-0720
KRIPEL LETTER
SBA COMMUNICATIONS CORPORATION
134 FLEMING'S RD
SUITE 120
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 11 JUL 18
ACTWGT: 1.00 LB
CAD: 105843304/NET3980
BILL SENDER

TO **SHAWN MURPHY, FIRST SELECTMAN**
OLD TOWN HALL
40 MAIN ST.

NORTH STONINGTON CT 06359
(508) 251-0720 REF: 10-55-92009-6099
INV: DEPT:

552J2B532/DC/5



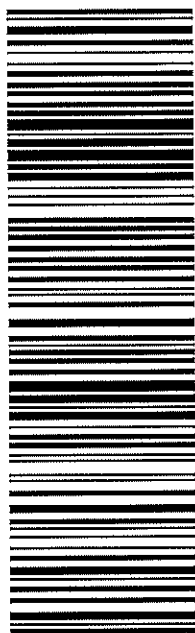
J181118012601uv

TRK# 7726 7633 2805
0201

THU - 12 JUL 12:00P
PRIORITY OVERNIGHT

EB GONA

CT-US BDL
06359



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ORIGIN ID:BBFA (508) 251-0720
KRIPEL LETTER
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 123
WESTBOROUGH, MA 01581
UNITED STATES US

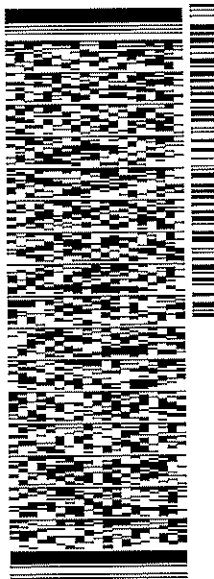
SHIP DATE: 11 JUL 18
ACTWGT: 1.00 LB
CAD: 105843304/NET3980

BILL SENDER

TO JULIET HODGE
OLD TOWN HALL
40 MAIN ST.

NORTH STONINGTON CT 06359
PO: (508) 251-0720
NAV: REF: 10-56-92009-6089
DEPT:

552J28532/DCA5



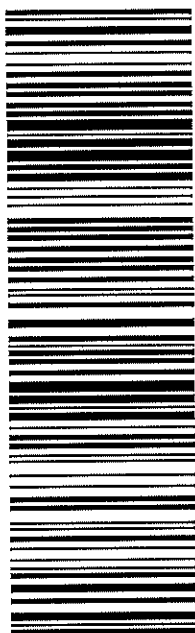
J01118012601uv

TRK# 7726 7635 7810
0201

THU - 12 JUL 12:00P
PRIORITY OVERNIGHT

EB GONA

CT-US BDL
06359



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KRIPELLETER
SBA COMMUNICATIONS CORPORATION
194 FLETCHERS RD
SUITE 123
WESTBOROUGH, MA 01581
UNITED STATES US

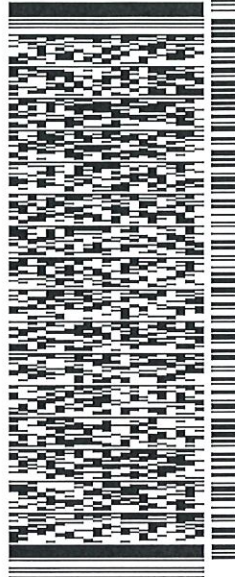
SHIP DATE: 11 JUL 18
ACT/WT: 1.00 LB
CAD: 105843304/MNET3980

BILL SENDER

TO **ATTN: PRESIDENT OR MANAGER**
NORTH STONINGTON VOLUNTEER FIRE CO.
267 NORWICH-WESTERLY RD

NORTH STONINGTON CT 06359
(508) 251-0720
INV. REF: 1056920995089
P.O. DEPT.

552J2/B532/DCA5



TRK# 7726 7908 4722
THU - 12 JUL 12:00P
PRIORITY OVERNIGHT

EB GONA
06359
CT-US BDL



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» SUMMARY PARCEL INFORMATION & MAP DOCUMENTS

Parcel No
109-3238

Unique ID
935

Account
I0182600

Owner
NO STONINGTON VOL
FIRE CO INC

Location
267 NRWH WSTLY RD

MAILING ADDRESS
P O BOX 279
NORTH STONINGTON CT
06359-0279



GIS PARCEL MAPS UPDATED

October 1st

PROPERTY INFO DATA UPDATED

Daily

CURRENT PARCEL COUNT

3,000 +/-

Click on the Google logo to go to Google Maps

Parcel Documents

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PDF documents open in new window

Full Size Maps

[View Assessors Map](#)

Interactive GIS Map of Property

[GO TO VIRTUAL EARTH BIRDS EYE!](#)

[GO TO INTERACTIVE MAP](#)

PARCEL VALUATIONS

	Appraised Value	Assessed Value
Buildings	305000	213500
Outbuildings	14200	9940
Extra Features	0	0
Land	100200	70140
TOTAL:	419400	293580

PROPERTY INFORMATION

Land Acres	2.57
Land Use	MUN FIRE
Land Class	E
Zoning	R40
Census Tract	7071
Neighborhood	0400
Lot Description	Level
Lot Setting	Rural
Lot Utilities	Well,Septic
Street Description	Paved
Year Built	1964
Year Improved	1984

SALE INFORMATION

Sale Date	10/8/1996
Sale Price	0
Book / Page	111/ 760

BUILDING AREA

Gross Building Area	5749
Total Living Area	4849

CONSTRUCTION DETAILS

Building Style	COMMERCIAL
Building Use	Ind/Comm
Building Condition	Below Average
Number of Rooms	
Number of Bedrooms	

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Roof Cover	T&G/Rubber
Primary Exterior Wall Type	Concr/Cinder
Secondary Exterior Wall Type	Brick Veneer
Primary Interior Wall Type	Minim/Masonry
Secondary Interior Wall Type	Plywood Panel
Primary Floor Type	Concr-Finished
Secondary Floor Type	Hardwood
Heating Type	Hot Water
Heating Fuel	Oil/Gas
Air Conditioning Type	None

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❖ SUMMARY PARCEL INFORMATION & MAP DOCUMENTS

Parcel No

109-3237

Unique ID

100665

Account

I0182601

No Photo Available

Owner

NO STONINGTON VOL
FIRE CO INC

Location

267 NRWH WSTLY RD

MAILING ADDRESS

8051 CONGRESS AVE
BOCA RATON FL 33487 1307

GIS PARCEL MAPS UPDATED

October 1st

PROPERTY INFO DATA UPDATED

Daily

CURRENT PARCEL COUNT

3,000 +/-

Click on the Google logo to go to Google Maps

Parcel Documents

[Create Parcel Map](#)

[Property Summary Card](#)

PDF documents open in new window

Full Size Maps

[View Assessors Map](#)

Interactive GIS Map of Property

[GO TO VIRTUAL EARTH BIRDS EYE!](#)

[GO TO INTERACTIVE MAP](#)

PARCEL VALUATIONS

	Appraised Value	Assessed Value
Buildings	0	0
Outbuildings	41700	29190
Extra Features	0	0
Land	115000	80500
TOTAL:	156700	109690

PROPERTY INFORMATION

Land Acres	0.08
Land Use	TELE. TEL. TW.
Land Class	I
Zoning	R40
County	7071
Neighborhood	
Lot Description	Level
Lot Setting	Rural
Lot Utilities	
Street Description	Paved
Year Built	0
Year Improved	

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SALE INFORMATION

Sale Date	10/8/1996
Sale Price	0
Book / Page	111/ 760

BUILDING AREA

Gross Building Area	
Total Living Area	0

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

SPRINT Existing Facility

Site ID: CT03XC109

North Stonington
267 Norwich Westerley Road
North Stonington, CT 06379

June 28, 2018

EBI Project Number: 6218004711

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	12.38 %



June 28, 2018

SPRINT

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

Emissions Analysis for Site: **CT03XC109 – North Stonington**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **267 Norwich Westerley Road, North Stonington, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **267 Norwich Westerley Road, North Stonington, 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 50 Watts per Channel.
- 3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.
- 4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.



- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **Commscope NNVV-65B-R4 and the RFS APXVTM14-ALU-I20** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, 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 **120 feet and 117 feet** above ground level (AGL) for **Sector A**, **120 feet and 117 feet** above ground level (AGL) for **Sector B** and **120 feet and 117 feet** above ground level (AGL) for Sector C.
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4	Make / Model:	Commscope NNVV-65B-R4
Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd	Gain:	12.75 / 15.05 dBd
Height (AGL):	120 feet	Height (AGL):	120 feet	Height (AGL):	120 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	7,378.61	ERP (W):	7,378.61	ERP (W):	7,378.61
Antenna A1 MPE%	2.51 %	Antenna B1 MPE%	2.51 %	Antenna C1 MPE%	2.51 %
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVTM14-ALU- I20	Make / Model:	RFS APXVTM14-ALU- I20	Make / Model:	RFS APXVTM14-ALU- I20
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	117 feet	Height (AGL):	117 feet	Height (AGL):	117 feet
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A2 MPE%	1.82 %	Antenna B2 MPE%	1.82 %	Antenna C2 MPE%	1.82 %

Site Composite MPE%	
Carrier	MPE%
SPRINT – Max per sector	4.33 %
AT&T	3.37 %
T-Mobile	2.45 %
Verizon Wireless	2.23 %
Site Total MPE %:	12.38 %

SPRINT Sector A Total:	4.33 %
SPRINT Sector B Total:	4.33 %
SPRINT Sector C Total:	4.33 %
Site Total:	12.38 %

SPRINT _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μ W/cm ²)	Frequency (MHz)	Allowable MPE (μ W/cm ²)	Calculated % MPE
Sprint 850 MHz CDMA	1	376.73	120	1.04	850 MHz	567	0.17%
Sprint 850 MHz LTE	2	941.82	120	5.21	850 MHz	567	0.92%
Sprint 1900 MHz (PCS) CDMA	5	511.82	120	7.08	1900 MHz (PCS)	1000	0.71%
Sprint 1900 MHz (PCS) LTE	2	1,279.56	120	7.08	1900 MHz (PCS)	1000	0.71%
Sprint 2500 MHz (BRS) LTE	8	778.09	117	18.16	2500 MHz (BRS)	1000	1.82%
						Total:	4.33%



Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	4.33 %
Sector B:	4.33 %
Sector C:	4.33 %
SPRINT Maximum Total (per sector):	4.33 %
Site Total:	12.38 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **12.38 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



Tower Engineering Solutions

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

Structural Analysis Report

Existing 150 ft Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01210-S

Customer Site Name: North Stonington

Carrier Name: Sprint Nextel

Carrier Site ID / Name: CT03XC109 / N. Stonington

Site Location: 267 Norwich Westerly Road

N. Stonington, Connecticut

New London County

Latitude: 41.437066

Longitude: -71.881488

Analysis Result:

Max Structural Usage: 80.5% [Pass]

Max Foundation Usage: 95.8% [Pass]

Additional Usage Caused by New Mount: +2.9%

Report Prepared By : Manoj Kandel



Introduction

The purpose of this report is to summarize the analysis results on the 150 ft Valmont 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	Monopole original structural design report prepared by Valmont. Dated 08-31-1999. Order No 18771-99. Monopole previous structural report prepared by FDH Engineering, Inc. Dated 03-05-2015. Project No 15BFHB1400.
Foundation Drawing	N/A
Geotechnical Report	Monopole geotechnical report prepared by Jaworski Geotech, Inc. Dated 06-08-1999. Project No 99128G.
Modification Drawings	N/A

Analysis Criteria

The feasibility analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA-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: (Based on IBC 2012)	Ultimate Design Wind Speed $V_{ult} = 135.0$ mph (3-Sec. Gust) Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA-222-G, 2012 IBC & 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	$S_S = 0.162$, $S_1 = 0.058$

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

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
1	147.0	3	Ericsson AIR 21 B2A/B4P - Panel	Low Profile Platform w/ Hand Rail Kit (Commscope MT-195-14) & Tie-Back Kit (Commscope VSR-MS-B)	(12) 1 5/8" (1) 1 5/8" Hybrid	T-Mobile
2		3	Ericsson AIR 21 B4A/B2P - Panel			
3		3	Commscope LNX-6515DS-A1M - Panel			
4		3	Ericsson KRY 112 144/1 TMA's			
5		3	Ericsson S11B12			
6	137.0	3	Antel BXA-70063/6CF - Panel	Low Profile Platform	(12) 1 5/8"	Verizon
7		6	Antel LPA-80080/4CF - Panel			
8		3	Ryma MGD5-800T2 - Panel			
9		6	RFS FD9R6004/2C-3L Diplexers			
10		2	Cleargain 850/1900 TMA's			
11	127.0	-	-	Low Profile Platform	-	-
-	117.0	6	Decibel DB980H90E-M - Panel	Low Profile Platform	(6) 1 5/8"	Sprint Nextel
17	107.0	6	Powerwave 7770 - Panel	Low Profile Platform	(12) 1 5/8" (1) 1/2" Fiber cable (2) 3/4" DC power cable	AT&T
18		3	Powerwave P65-17-XLH-RR - Panel			
19		6	Powerwave LGP21903			
20		6	Diplexers			
21		1	Raycap DC6-48-60-18-8F			
22	92.0	1	Jampro JLEP (56")	(1) Standoff	(1) 7/8"	EMF
23	55.0	1	Skyware Global Type 183	(1) Flush Mount	(1) RG6	Broadcasting

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
12	120.0	3	Commscope NNVV-65B-R4 - Panel	Platform w/ Handrail (Sitepro RMQP-496-HK)	(4) 1 1/4" Fiber	Sprint Nextel
13	117.0	3	RFS APXVTM14-C-I20 - Panel			
14		3	ALU 1900 Mhz			
15		6	ALU 800 Mhz			
16		3	ALU TD-RRH8x20-25			

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:	80.5%	73.4%	57.6%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	3715.0	33.1
Analysis Reactions	4433.2	42.9
Factored Reactions*	5015.3	44.8
% of Design Reactions	88.4%	95.8%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

No foundation drawing is available for the analysis of the existing foundation. Since the reactions calculated from the current analysis are less than those indicated on the original structural design drawing, the foundations are assumed to be adequate to resist the reactions from the current analysis.

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 1.1675 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.

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 80.52% at 99.7ft

Structure: CT01210-S-SBA
Site Name: North Stonington
Height: 150.00 (ft)
Base Elev: 0.000 (ft)

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

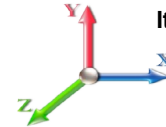
6/4/2018



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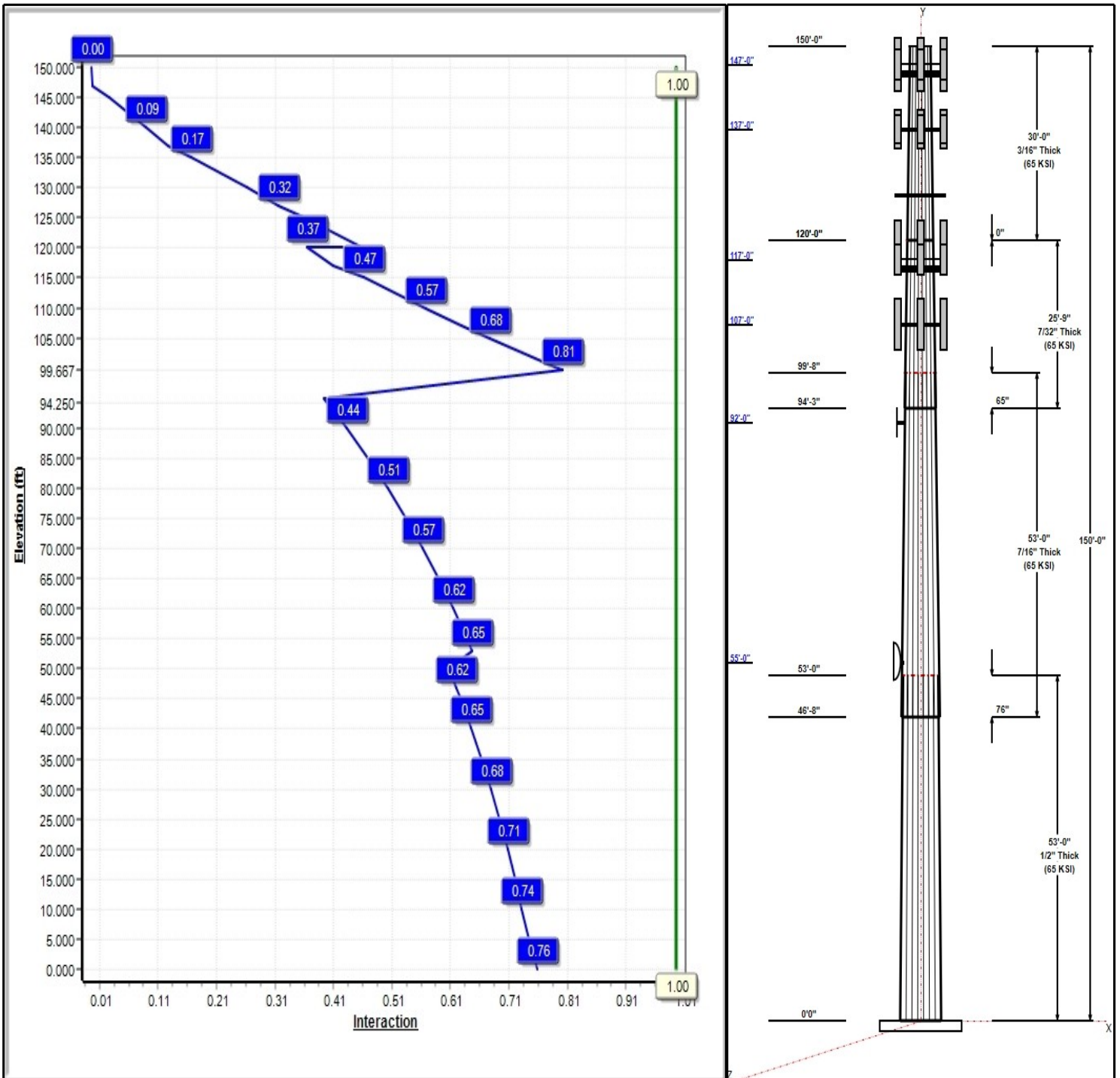
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 24

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Structure: CT01210-S-SBA

Type: Tapered
Site Name: North Stonington
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.18000

6/4/2018

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	40.46	50.00	0.500		0.18000	65
2	53.00	32.93	42.47	0.438	Slip	0.18000	65
3	25.75	29.71	34.35	0.219	Slip	0.18000	65
4	30.00	24.31	29.71	0.188	Butt	0.18000	65

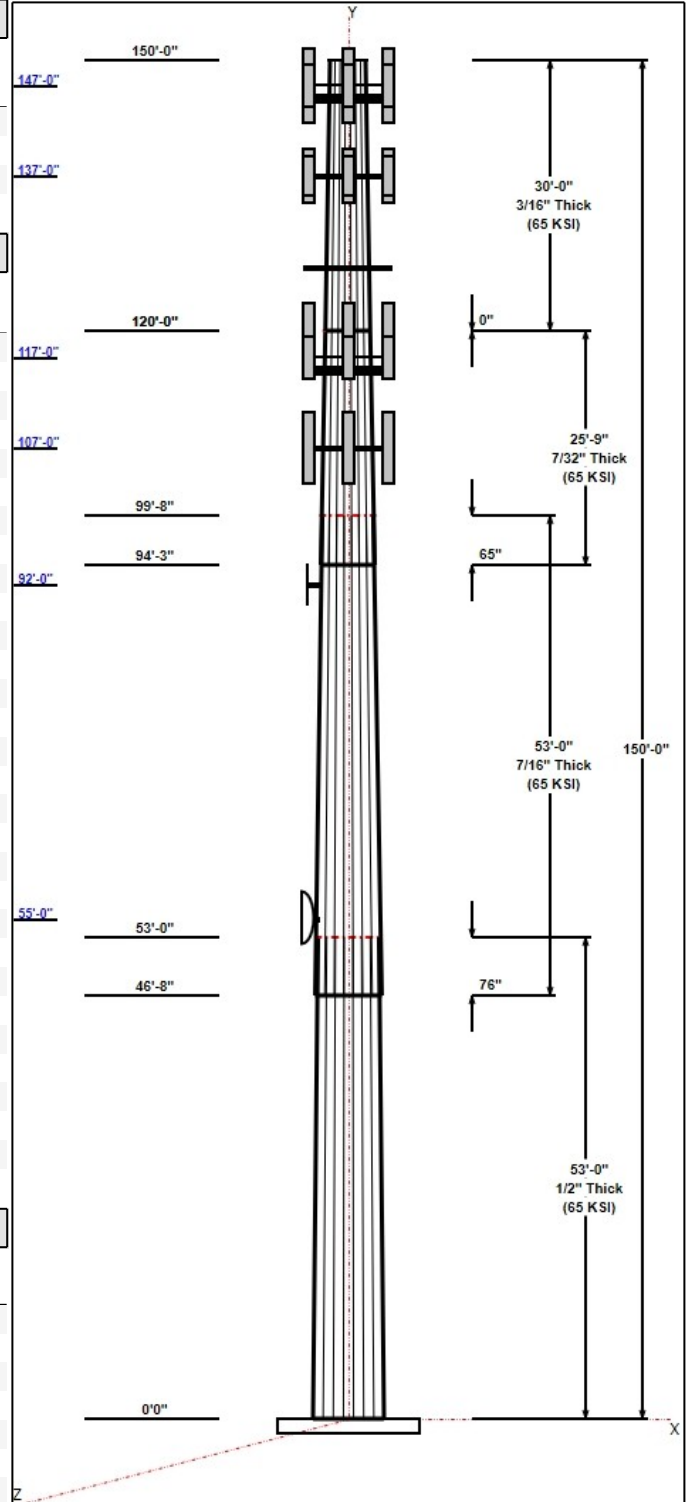
Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	153.50	1	Lightning Rod	---
147.00	147.00	3	Ericsson AIR 21 B2A/B4P	T-Mobile
147.00	147.00	3	Ericsson AIR 21 B4A/B2P	T-Mobile
147.00	147.00	3	Commscope	T-Mobile
147.00	147.00	3	Ericsson KRY 112 144/1	T-Mobile
147.00	147.00	3	Ericsson S11B12	T-Mobile
147.00	147.00	1	Platform w/ Hand Rails	T-Mobile
137.00	137.00	3	Antel BXA-70063/6CF	Verizon
137.00	137.00	6	Antel LPA-80080/4CF	Verizon
137.00	137.00	3	Rymsa MGD5-800T2	Verizon
137.00	137.00	6	RFS FD9R6004/2C-3L	Verizon
137.00	137.00	2	Cleargain 850/1900 TMA's	Verizon
137.00	137.00	1	Low Profile Platform	Verizon
127.00	127.00	1	Low Profile Platform	---
117.00	117.00	3	RFS APXVTM14-C-I20	Sprint Nextel
117.00	120.00	3	Commscope	Sprint Nextel
117.00	117.00	3	ALU 1900 Mhz	Sprint Nextel
117.00	117.00	6	ALU 800 Mhz	Sprint Nextel
117.00	117.00	3	ALU TD-RRH8x20-25	Sprint Nextel
117.00	117.00	1	Sitepro RMQP-496-HK	Sprint Nextel
107.00	107.00	6	Powerwave 7770	AT&T
107.00	107.00	6	Powerwave/LGP21903	AT&T
107.00	107.00	6	Diplexers	AT&T
107.00	107.00	1	Low Profile Platform	AT&T
107.00	107.00	3	Powerwave/P65-17-XLH-R	AT&T
107.00	107.00	1	Raycap/DC6-48-60-18-8F	AT&T
92.00	92.00	1	Jampro JLEP (56")	EMF Broadcasting
92.00	92.00	1	Standoff	EMF Broadcasting
55.00	55.00	1	Flush Mount	EMF Broadcasting
55.00	55.00	1	Skyware Global Type 183	EMF Broadcasting

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
3.00	147.00	Inside	1 5/8" Coax	T-Mobile
3.00	147.00	Inside	1 5/8" Hybrid	T-Mobile
3.00	137.00	Inside	1 5/8" Coax	Verizon
3.00	117.00	Inside	1-1/4" Fiber	Sprint Nextel
3.00	107.00	Inside	1 5/8" Coax	AT&T
3.00	107.00	Inside	1/2" Fiber cable	AT&T
3.00	107.00	Inside	3/4" DC power cable	AT&T
3.00	92.00	Inside	7/8" Coax	EMF Broadcasting
3.00	55.00	Inside	RG6	EMF Broadcasting

Anchor Bolts



Structure: CT01210-S-SBA

Type: Tapered
Site Name: North Stonington
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.18000

6/4/2018

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Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	64.3	60.0	Polygon

Reactions

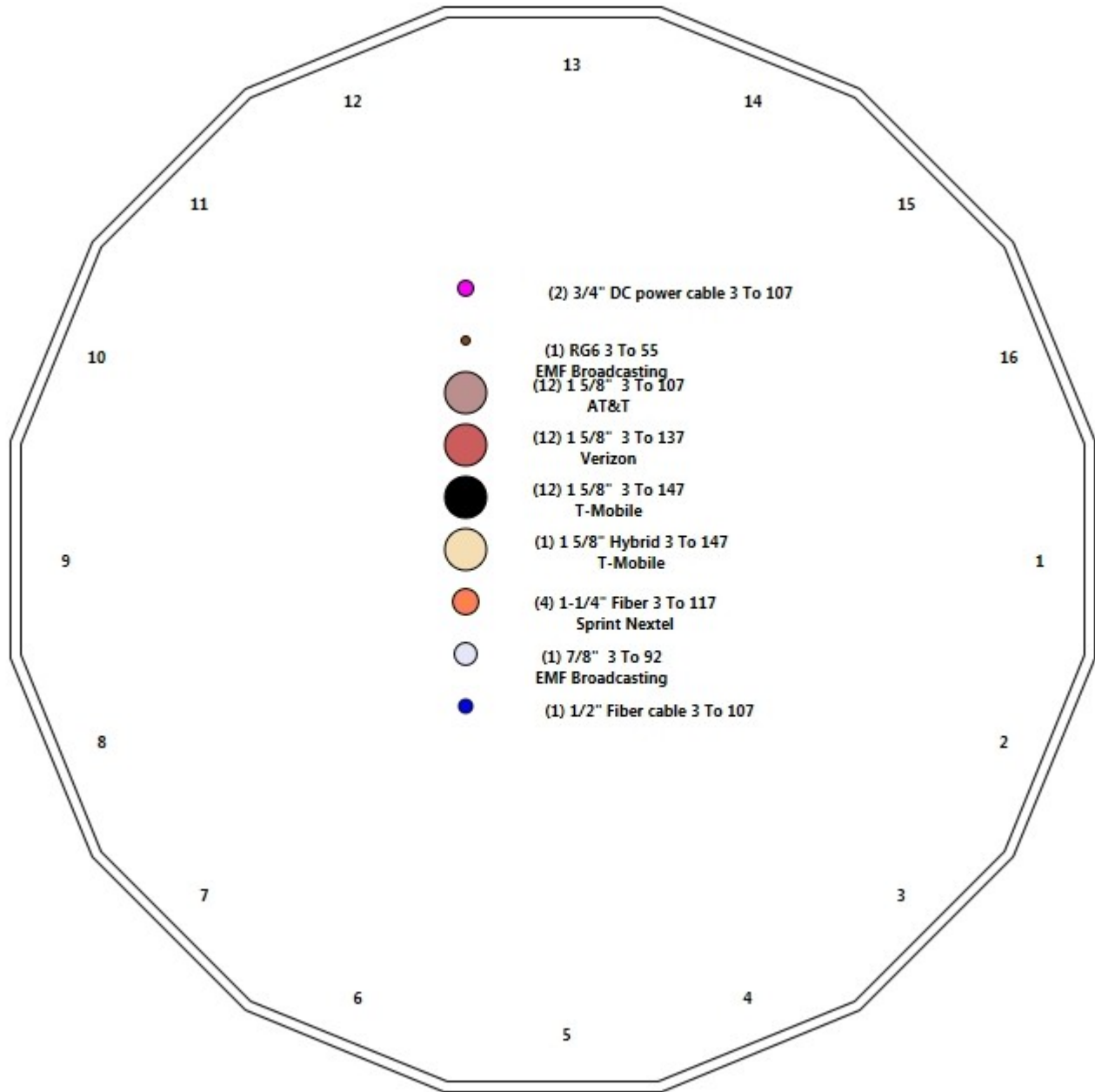
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	4433.2	42.9	51.7
0.9D + 1.6W 105 mph Wind	4387.6	42.8	38.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1028.2	9.7	76.2
1.2D + 1.0E	96.6	0.9	51.8
0.9D + 1.0E	95.5	0.9	38.8
1.0D + 1.0W 60 mph Wind	900.0	8.7	43.1

Structure: CT01210-S-SBA - Coax Line Placement

Type: Monopole
Site Name: North Stonington
Height: 150.00 (ft)

6/4/2018

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Shaft Properties

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
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	16	53.000	0.5000	65		0.00	12,867
2	16	53.000	0.4375	65	Slip	76.00	9,380
3	16	25.750	0.2188	65	Slip	65.00	1,945
4	16	30.000	0.1875	65	Flange	0.00	1,638
Total Shaft Weight:							25,830

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	50.00	0.00	78.95	24439.41	18.30	100.00	40.46	53.00	63.74	12857.1	14.50	80.92	0.180003
2	42.47	46.67	58.67	13097.52	17.72	97.09	32.93	99.67	45.35	6050.90	13.38	75.28	0.180003
3	34.35	94.25	23.82	3504.31	29.64	157.02	29.71	120.00	20.58	2261.65	25.43	135.8	0.180003
4	29.71	120.0	17.66	1944.73	29.93	158.46	24.31	150.00	14.43	1060.92	24.20	129.6	0.180003

Load Summary

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
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	150.00	Lightning Rod	1	35.00	1.05	1.00	66.41	3.424	1.00	0.00	3.50
2	147.00	Ericsson AIR 21 B2A/B4P	3	91.50	6.04	0.85	258.15	7.126	0.85	0.00	0.00
3	147.00	Ericsson AIR 21 B4A/B2P	3	90.30	6.04	0.85	256.95	7.126	0.85	0.00	0.00
4	147.00	Commscope LNX-6515DS-A1M	3	50.30	11.45	0.84	281.69	14.705	0.84	0.00	0.00
5	147.00	Ericsson KRY 112 144/1 TMA's	3	11.00	0.35	0.67	21.76	0.755	0.67	0.00	0.00
6	147.00	Ericsson S11B12	3	51.00	2.83	0.67	120.46	3.500	0.67	0.00	0.00
7	147.00	Platform w/ Hand Rails (MT-195-14)	1	1600.00	36.00	1.00	3695.61	67.350	1.00	0.00	0.00
8	137.00	Antel BXA-70063/6CF	3	14.90	7.58	0.72	160.19	10.322	0.72	0.00	0.00
9	137.00	Antel LPA-80080/4CF	6	12.00	5.40	0.74	145.25	6.388	0.74	0.00	0.00
10	137.00	Rymsa MGD5-800T2	3	15.40	3.36	0.78	83.32	5.141	0.78	0.00	0.00
11	137.00	RFS FD9R6004/2C-3L	6	3.10	0.36	0.67	11.05	0.799	0.67	0.00	0.00
12	137.00	Cleargain 850/1900 TMA's	2	5.50	0.52	0.67	17.04	1.045	0.67	0.00	0.00
13	137.00	Low Profile Platform	1	1500.00	22.00	1.00	2797.10	39.502	1.00	0.00	0.00
14	127.00	Low Profile Platform (Abandon)	1	1500.00	22.00	1.00	2787.31	39.370	1.00	0.00	0.00
15	117.00	RFS APXVTM14-C-I20	3	56.20	6.34	0.77	211.90	7.424	0.77	0.00	0.00
16	117.00	Commscope NNVV-65B-R4	3	77.40	12.27	0.80	355.95	13.690	0.80	0.00	3.00
17	117.00	ALU 1900 Mhz	3	60.00	2.77	0.67	141.39	4.007	0.67	0.00	0.00
18	117.00	ALU 800 Mhz	6	53.00	2.49	0.67	125.15	3.606	0.67	0.00	0.00
19	117.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.67	177.20	4.842	0.67	0.00	0.00
20	117.00	Sitepro RMQP-496-HK	1	2449.00	48.00	1.00	4950.49	80.686	1.00	0.00	0.00
21	107.00	Powerwave 7770	6	35.00	5.50	0.73	164.70	6.527	0.73	0.00	0.00
22	107.00	Powerwave/LGP21903	6	5.50	0.27	0.67	13.65	0.654	0.67	0.00	0.00
23	107.00	Diplexers	6	5.50	0.27	0.67	13.63	0.654	0.67	0.00	0.00
24	107.00	Low Profile Platform	1	1500.00	22.00	1.00	2765.43	39.075	1.00	0.00	0.00
25	107.00	Powerwave/P65-17-XLH-RR	3	59.00	11.44	0.75	268.41	14.567	0.75	0.00	0.00
26	107.00	Raycap/DC6-48-60-18-8F	1	31.80	0.92	1.00	91.57	1.343	1.00	0.00	0.00
27	92.00	Jampro JLEP (56")	1	51.10	1.40	1.00	139.86	4.684	1.00	0.00	0.00
28	92.00	Standoff	1	40.00	2.50	1.00	116.45	7.903	1.00	0.00	0.00
29	55.00	Flush Mount	1	350.00	2.50	1.00	615.21	4.079	1.00	0.00	0.00
30	55.00	Skyware Global Type 183	1	114.00	45.75	1.00	530.58	49.852	1.00	0.00	0.00
Totals:			85	11,807.50			28,442.74				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
3.00	147.00	(12) 1 5/8" Coax	0.00	Inside
3.00	147.00	(1) 1 5/8" Hybrid	0.00	Inside
3.00	137.00	(12) 1 5/8" Coax	0.00	Inside
3.00	117.00	(4) 1-1/4" Fiber	0.00	Inside
3.00	107.00	(12) 1 5/8" Coax	0.00	Inside
3.00	107.00	(1) 1/2" Fiber cable	0.00	Inside
3.00	107.00	(2) 3/4" DC power cable	0.00	Inside
3.00	92.00	(1) 7/8" Coax	0.00	Inside
3.00	55.00	(1) RG6	0.00	Inside

Shaft Section Properties

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.5000	50.000	78.953	24439.4	18.30	100.00	81.9	958.8	0.0
5.00		0.5000	49.100	77.517	23130.4	17.94	98.20	82.3	924.1	1331.1
10.00		0.5000	48.200	76.081	21869.0	17.58	96.40	82.5	890.0	1306.7
15.00		0.5000	47.300	74.646	20654.3	17.23	94.60	82.5	856.6	1282.2
20.00		0.5000	46.400	73.210	19485.5	16.87	92.80	82.5	823.8	1257.8
25.00		0.5000	45.500	71.775	18361.6	16.51	91.00	82.5	791.6	1233.4
30.00		0.5000	44.600	70.339	17281.8	16.15	89.20	82.5	760.1	1209.0
35.00		0.5000	43.700	68.904	16245.1	15.79	87.40	82.5	729.2	1184.5
40.00		0.5000	42.800	67.468	15250.8	15.44	85.60	82.5	699.0	1160.1
45.00		0.5000	41.900	66.033	14297.9	15.08	83.80	82.5	669.4	1135.7
46.67	Bot - Section 2	0.5000	41.600	65.554	13989.3	14.96	83.20	82.5	659.6	373.1
50.00		0.5000	41.000	64.597	13385.5	14.72	82.00	82.5	640.4	1398.8
53.00	Top - Section 1	0.4375	41.335	57.077	12060.6	17.20	94.48	0.0	0.0	1241.5
55.00		0.4375	40.975	56.575	11744.9	17.04	93.66	82.5	562.3	386.7
60.00		0.4375	40.075	55.319	10979.8	16.63	91.60	82.5	537.4	951.9
65.00		0.4375	39.175	54.063	10248.7	16.22	89.54	82.5	513.2	930.5
70.00		0.4375	38.275	52.807	9550.9	15.81	87.49	82.5	489.5	909.1
75.00		0.4375	37.375	51.551	8885.4	15.40	85.43	82.5	466.3	887.8
80.00		0.4375	36.475	50.294	8251.6	14.99	83.37	82.5	443.8	866.4
85.00		0.4375	35.575	49.038	7648.7	14.58	81.31	82.5	421.7	845.0
90.00		0.4375	34.675	47.782	7075.8	14.17	79.26	82.5	400.3	823.6
92.00		0.4375	34.315	47.280	6855.0	14.01	78.43	82.5	391.9	323.5
94.25	Bot - Section 3	0.4375	33.910	46.715	6612.0	13.83	77.51	82.5	382.5	359.8
95.00		0.4375	33.775	46.526	6532.4	13.76	77.20	82.5	379.4	179.6
99.67	Top - Section 2	0.2188	33.372	23.135	3212.5	28.75	152.56	0.0	0.0	1101.5
100.00		0.2188	33.312	23.093	3195.1	28.70	152.28	70.1	188.1	26.2
105.00		0.2188	32.412	22.465	2941.4	27.88	148.17	71.0	178.0	387.6
107.00		0.2188	32.052	22.214	2843.8	27.55	146.52	71.4	174.0	152.0
110.00		0.2188	31.512	21.837	2701.5	27.06	144.06	71.9	168.2	224.8
115.00		0.2188	30.612	21.209	2475.1	26.24	139.94	72.9	158.6	366.2
117.00		0.2188	30.252	20.958	2388.2	25.92	138.30	73.2	154.9	143.5
120.00	Top - Section 3	0.2188	29.712	20.581	2261.7	25.43	135.83	73.8	149.3	212.0
120.00	Bot - Section 4	0.1875	29.712	17.659	1944.7	29.66	158.46	68.7	128.4	
125.00		0.1875	28.812	17.121	1772.2	28.97	153.66	69.8	120.7	295.9
127.00		0.1875	28.452	16.906	1706.2	28.59	151.74	70.2	117.6	115.8
130.00		0.1875	27.912	16.583	1610.3	28.02	148.86	70.9	113.2	170.9
135.00		0.1875	27.012	16.044	1458.5	27.06	144.06	71.9	105.9	277.6
137.00		0.1875	26.652	15.829	1400.6	26.68	142.14	72.4	103.1	108.5
140.00		0.1875	26.112	15.506	1316.6	26.11	139.26	73.0	98.9	159.9
145.00		0.1875	25.212	14.968	1184.1	25.16	134.46	74.1	92.1	259.2
147.00		0.1875	24.852	14.752	1133.8	24.77	132.54	74.5	89.5	101.1
150.00		0.1875	24.312	14.429	1060.9	24.20	129.66	75.2	85.6	148.9

25829.7

Wind Loading - Shaft

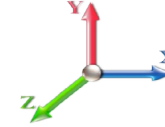
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



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	0.85	22.791	25.07	411.26	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	403.85	0.750	0.000	5.00	21.050	15.79	633.3	0.0	1597.3
10.00		1.00	0.85	22.791	25.07	396.45	0.750	0.000	5.00	20.668	15.50	621.8	0.0	1568.0
15.00		1.00	0.85	22.791	25.07	389.05	0.750	0.000	5.00	20.286	15.21	610.3	0.0	1538.7
20.00		1.00	0.90	24.182	26.60	393.12	0.750	0.000	5.00	19.903	14.93	635.3	0.0	1509.4
25.00		1.00	0.95	25.345	27.88	394.66	0.750	0.000	5.00	19.521	14.64	653.1	0.0	1480.1
30.00		1.00	0.98	26.337	28.97	394.35	0.750	0.000	5.00	19.139	14.35	665.3	0.0	1450.7
35.00		1.00	1.01	27.206	29.93	392.71	0.750	0.000	5.00	18.756	14.07	673.6	0.0	1421.4
40.00		1.00	1.04	27.981	30.78	390.07	0.750	0.000	5.00	18.374	13.78	678.6	0.0	1392.1
45.00		1.00	1.07	28.684	31.55	386.63	0.750	0.000	5.00	17.991	13.49	681.2	0.0	1362.8
46.67	Bot - Section 2	1.00	1.08	28.904	31.79	385.33	0.750	0.000	1.67	5.912	4.43	225.6	0.0	447.8
50.00		1.00	1.09	29.327	32.26	382.54	0.750	0.000	3.33	11.945	8.96	462.4	0.0	1678.6
53.00	Top - Section 1	1.00	1.11	29.689	32.66	379.83	0.750	0.000	3.00	10.605	7.95	415.6	0.0	1489.9
55.00	Appurtenance(s)	1.00	1.12	29.922	32.91	386.16	0.750	0.000	2.00	6.994	5.25	276.2	0.0	464.1
60.00		1.00	1.14	30.475	33.52	381.16	0.750	0.000	5.00	17.216	12.91	692.5	0.0	1142.2
65.00		1.00	1.16	30.993	34.09	375.75	0.750	0.000	5.00	16.834	12.63	688.7	0.0	1116.6
70.00		1.00	1.17	31.480	34.63	369.99	0.750	0.000	5.00	16.451	12.34	683.6	0.0	1091.0
75.00		1.00	1.19	31.941	35.13	363.93	0.750	0.000	5.00	16.069	12.05	677.5	0.0	1065.3
80.00		1.00	1.21	32.377	35.62	357.58	0.750	0.000	5.00	15.687	11.77	670.4	0.0	1039.7
85.00		1.00	1.22	32.793	36.07	350.99	0.750	0.000	5.00	15.304	11.48	662.5	0.0	1014.0
90.00		1.00	1.24	33.190	36.51	344.18	0.750	0.000	5.00	14.922	11.19	653.8	0.0	988.4
92.00	Appurtenance(s)	1.00	1.24	33.344	36.68	341.39	0.750	0.000	2.00	5.862	4.40	258.0	0.0	388.2
94.25	Bot - Section 3	1.00	1.25	33.514	36.87	338.22	0.750	0.000	2.25	6.521	4.89	288.5	0.0	431.8
95.00		1.00	1.25	33.570	36.93	337.16	0.750	0.000	0.75	2.184	1.64	96.8	0.0	215.6
99.67	Top - Section 2	1.00	1.26	33.911	37.30	330.44	0.750	0.000	4.67	13.399	10.05	599.8	0.0	1321.8
100.00		1.00	1.27	33.935	37.33	334.34	0.750	0.000	0.33	0.944	0.71	42.3	0.0	31.5
105.00		1.00	1.28	34.285	37.71	326.98	0.750	0.000	5.00	13.961	10.47	631.8	0.0	465.1
107.00	Appurtenance(s)	1.00	1.28	34.422	37.86	323.99	0.750	0.000	2.00	5.477	4.11	248.9	0.0	182.4
110.00		1.00	1.29	34.623	38.08	319.46	0.750	0.000	3.00	8.101	6.08	370.2	0.0	269.8
115.00		1.00	1.30	34.948	38.44	311.79	0.750	0.000	5.00	13.196	9.90	608.8	0.0	439.4
117.00	Appurtenance(s)	1.00	1.31	35.075	38.58	308.69	0.750	0.000	2.00	5.171	3.88	239.4	0.0	172.2
120.00	Top - Section 3	1.00	1.32	35.263	38.79	303.99	0.750	0.000	3.00	7.642	5.73	355.7	0.0	254.4
125.00		1.00	1.33	35.567	39.12	296.05	0.750	0.000	5.00	12.431	9.32	583.6	0.0	355.1
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	292.84	0.750	0.000	2.00	4.866	3.65	229.2	0.0	138.9
130.00		1.00	1.34	35.862	39.45	287.99	0.750	0.000	3.00	7.184	5.39	340.1	0.0	205.1
135.00		1.00	1.35	36.148	39.76	279.81	0.750	0.000	5.00	11.667	8.75	556.7	0.0	333.1
137.00	Appurtenance(s)	1.00	1.35	36.260	39.89	276.51	0.750	0.000	2.00	4.560	3.42	218.2	0.0	130.2
140.00		1.00	1.36	36.426	40.07	271.52	0.750	0.000	3.00	6.725	5.04	323.3	0.0	191.9
145.00		1.00	1.37	36.696	40.37	263.14	0.750	0.000	5.00	10.902	8.18	528.1	0.0	311.1
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	259.75	0.750	0.000	2.00	4.254	3.19	206.6	0.0	121.4
150.00	Appurtenance(s)	1.00	1.38	36.959	40.65	254.65	0.750	0.000	3.00	6.266	4.70	305.7	0.0	178.7
Totals:									150.00			18,993.0		30,995.6

Discrete Appurtenance Forces

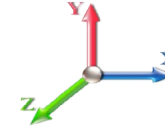
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



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	150.00	Lightning Rod	1	37.139	40.852	1.00	1.00	1.05	42.00	0.000	3.500	68.63	0.00	240.21
2	147.00	Platform w/ Hand Rails	1	36.802	40.482	1.00	1.00	36.00	1920.00	0.000	0.000	2331.77	0.00	0.00
3	147.00	Ericsson S11B12	3	36.802	40.482	0.50	0.75	4.27	183.60	0.000	0.000	276.33	0.00	0.00
4	147.00	Ericsson KRY 112 144/1	3	36.802	40.482	0.50	0.75	0.53	39.60	0.000	0.000	34.17	0.00	0.00
5	147.00	Commscope	3	36.802	40.482	0.63	0.75	21.64	181.08	0.000	0.000	1401.68	0.00	0.00
6	147.00	Ericsson AIR 21 B4A/B2P	3	36.802	40.482	0.64	0.75	11.55	325.08	0.000	0.000	748.21	0.00	0.00
7	147.00	Ericsson AIR 21 B2A/B4P	3	36.802	40.482	0.64	0.75	11.55	329.40	0.000	0.000	748.21	0.00	0.00
8	137.00	Rymsa MGD5-800T2	3	36.260	39.886	0.62	0.80	6.29	55.44	0.000	0.000	401.41	0.00	0.00
9	137.00	Antel BXA-70063/6CF	3	36.260	39.886	0.58	0.80	13.10	53.64	0.000	0.000	835.90	0.00	0.00
10	137.00	Antel LPA-80080/4CF	6	36.260	39.886	0.59	0.80	19.18	86.40	0.000	0.000	1224.07	0.00	0.00
11	137.00	Low Profile Platform	1	36.260	39.886	1.00	1.00	22.00	1800.00	0.000	0.000	1403.99	0.00	0.00
12	137.00	RFS FD9R6004/2C-3L	6	36.260	39.886	0.54	0.80	1.16	22.32	0.000	0.000	73.89	0.00	0.00
13	137.00	Cleargain 850/1900 TMA's	2	36.260	39.886	0.54	0.80	0.56	13.20	0.000	0.000	35.57	0.00	0.00
14	127.00	Low Profile Platform	1	35.686	39.255	1.00	1.00	22.00	1800.00	0.000	0.000	1381.76	0.00	0.00
15	117.00	Sitepro RMQP-496-HK	1	35.075	38.583	1.00	1.00	48.00	2938.80	0.000	0.000	2963.15	0.00	0.00
16	117.00	ALU TD-RRH8x20-25	3	35.075	38.583	0.50	0.75	6.11	252.00	0.000	0.000	376.90	0.00	0.00
17	117.00	ALU 1900 Mhz	3	35.075	38.583	0.50	0.75	4.18	216.00	0.000	0.000	257.78	0.00	0.00
18	117.00	Commscope	3	35.263	38.789	0.60	0.75	22.09	278.64	0.000	3.000	1370.71	0.00	4112.12
19	117.00	RFS APXVTM14-C-I20	3	35.075	38.583	0.58	0.75	10.98	202.32	0.000	0.000	678.07	0.00	0.00
20	117.00	ALU 800 Mhz	6	35.075	38.583	0.50	0.75	7.51	381.60	0.000	0.000	463.45	0.00	0.00
21	107.00	Powerwave 7770	6	34.422	37.864	0.58	0.80	19.27	252.00	0.000	0.000	1167.54	0.00	0.00
22	107.00	Powerwave/P65-17-XLH-R	3	34.422	37.864	0.60	0.80	20.59	212.40	0.000	0.000	1247.51	0.00	0.00
23	107.00	Raycap/DC6-48-60-18-8F	1	34.422	37.864	1.00	1.00	0.92	38.16	0.000	0.000	55.74	0.00	0.00
24	107.00	Powerwave/LGP21903	6	34.422	37.864	0.54	0.80	0.87	39.60	0.000	0.000	52.60	0.00	0.00
25	107.00	Diplexers	6	34.422	37.864	0.54	0.80	0.87	39.60	0.000	0.000	52.60	0.00	0.00
26	107.00	Low Profile Platform	1	34.422	37.864	1.00	1.00	22.00	1800.00	0.000	0.000	1332.80	0.00	0.00
27	92.00	Standoff	1	33.344	36.679	1.00	1.00	2.50	48.00	0.000	0.000	146.71	0.00	0.00
28	92.00	Jampro JLEP (56")	1	33.344	36.679	1.00	1.00	1.40	61.32	0.000	0.000	82.16	0.00	0.00
29	55.00	Skyware Global Type 183	1	29.922	32.914	1.00	1.00	45.75	136.80	0.000	0.000	2409.29	0.00	0.00
30	55.00	Flush Mount	1	29.922	32.914	1.00	1.00	2.50	420.00	0.000	0.000	131.65	0.00	0.00

Totals: 14,169.00

23,754.25

Total Applied Force Summary

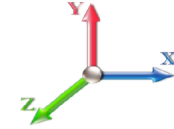
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



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		633.28	1702.69	0.00	0.00
10.00		621.77	1831.48	0.00	0.00
15.00		610.27	1802.17	0.00	0.00
20.00		635.32	1772.86	0.00	0.00
25.00		653.08	1743.55	0.00	0.00
30.00		665.35	1714.25	0.00	0.00
35.00		673.56	1684.94	0.00	0.00
40.00		678.64	1655.63	0.00	0.00
45.00		681.21	1626.32	0.00	0.00
46.67		225.57	535.59	0.00	0.00
50.00		462.40	1854.26	0.00	0.00
53.00		415.61	1647.95	0.00	0.00
55.00	(2) attachments	2817.16	1126.28	0.00	0.00
60.00		692.55	1405.26	0.00	0.00
65.00		688.67	1379.62	0.00	0.00
70.00		683.62	1353.97	0.00	0.00
75.00		677.50	1328.33	0.00	0.00
80.00		670.42	1302.68	0.00	0.00
85.00		662.48	1277.04	0.00	0.00
90.00		653.75	1251.39	0.00	0.00
92.00	(2) attachments	486.88	602.70	0.00	0.00
94.25		288.50	548.74	0.00	0.00
95.00		96.80	254.55	0.00	0.00
99.67		599.77	1564.42	0.00	0.00
100.00		42.30	48.79	0.00	0.00
105.00		631.82	724.97	0.00	0.00
107.00	(23) attachments	4157.66	2668.16	0.00	0.00
110.00		370.24	377.36	0.00	0.00
115.00		608.76	618.68	0.00	0.00
117.00	(19) attachments	6349.49	4513.24	0.00	4112.12
120.00		355.73	348.24	0.00	0.00
125.00		583.63	511.41	0.00	0.00
127.00	(1) attachments	1610.96	2001.49	0.00	0.00
130.00		340.05	298.93	0.00	0.00
135.00		556.68	489.43	0.00	0.00
137.00	(21) attachments	4193.07	2223.69	0.00	0.00
140.00		323.34	240.82	0.00	0.00
145.00		528.08	392.57	0.00	0.00
147.00	(16) attachments	5747.00	3132.71	0.00	0.00
150.00	(1) attachments	374.32	220.74	0.00	240.21
Totals:		42,747.27	51,777.90	0.00	4,352.33

Calculated Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

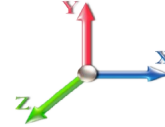


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Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 24

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	-51.68	-42.86	0.00	-4433.2	0.00	4433.23	5817.07	2908.54	11858.0	5886.84	0.00	0.000	0.000	0.762
5.00	-49.79	-42.45	0.00	-4218.9	0.00	4218.92	5739.57	2869.78	11485.2	5701.74	0.14	-0.252	0.000	0.749
10.00	-47.78	-42.02	0.00	-4006.7	0.00	4006.70	5652.47	2826.24	11099.3	5510.17	0.53	-0.505	0.000	0.736
15.00	-45.80	-41.60	0.00	-3796.5	0.00	3796.59	5545.82	2772.91	10682.2	5303.14	1.20	-0.759	0.000	0.724
20.00	-43.86	-41.13	0.00	-3588.6	0.00	3588.61	5439.17	2719.58	10273.2	5100.07	2.13	-1.013	0.000	0.712
25.00	-41.95	-40.63	0.00	-3382.9	0.00	3382.97	5332.51	2666.26	9872.18	4900.97	3.33	-1.267	0.000	0.698
30.00	-40.07	-40.10	0.00	-3179.8	0.00	3179.83	5225.86	2612.93	9479.11	4705.83	4.79	-1.522	0.000	0.684
35.00	-38.23	-39.55	0.00	-2979.3	0.00	2979.34	5119.21	2559.60	9094.03	4514.66	6.52	-1.775	0.000	0.668
40.00	-36.43	-38.97	0.00	-2781.6	0.00	2781.61	5012.56	2506.28	8716.92	4327.45	8.52	-2.027	0.000	0.650
45.00	-34.72	-38.33	0.00	-2586.7	0.00	2586.75	4905.90	2452.95	8347.81	4144.20	10.77	-2.278	0.000	0.632
46.67	-34.11	-38.16	0.00	-2522.8	0.00	2522.86	4870.35	2435.18	8226.55	4084.00	11.58	-2.362	0.000	0.625
50.00	-32.17	-37.71	0.00	-2395.6	0.00	2395.66	4799.25	2399.63	7986.68	3964.92	13.29	-2.529	0.000	0.611
53.00	-30.46	-37.28	0.00	-2282.5	0.00	2282.54	4240.56	2120.28	7137.82	3543.51	14.93	-2.678	0.000	0.652
55.00	-29.37	-34.51	0.00	-2207.9	0.00	2207.97	4203.23	2101.62	7012.05	3481.07	16.07	-2.778	0.000	0.642
60.00	-27.85	-33.87	0.00	-2035.4	0.00	2035.43	4109.91	2054.96	6702.51	3327.41	19.12	-3.035	0.000	0.619
65.00	-26.36	-33.22	0.00	-1866.0	0.00	1866.08	4016.59	2008.29	6399.97	3177.21	22.43	-3.287	0.000	0.594
70.00	-24.91	-32.57	0.00	-1699.9	0.00	1699.98	3923.27	1961.63	6104.41	3030.48	26.01	-3.535	0.000	0.568
75.00	-23.50	-31.90	0.00	-1537.1	0.00	1537.16	3829.95	1914.97	5815.84	2887.23	29.84	-3.776	0.000	0.539
80.00	-22.12	-31.23	0.00	-1377.6	0.00	1377.65	3736.63	1868.31	5534.25	2747.44	33.91	-4.009	0.000	0.508
85.00	-20.78	-30.56	0.00	-1221.4	0.00	1221.49	3643.31	1821.65	5259.66	2611.12	38.23	-4.233	0.000	0.474
90.00	-19.50	-29.86	0.00	-1068.6	0.00	1068.69	3549.99	1774.99	4992.05	2478.26	42.78	-4.446	0.000	0.437
92.00	-18.90	-29.36	0.00	-1008.9	0.00	1008.97	3512.66	1756.33	4886.96	2426.09	44.66	-4.530	0.000	0.422
94.25	-18.34	-29.05	0.00	-942.91	0.00	942.91	3470.66	1735.33	4770.08	2368.07	46.81	-4.621	0.000	0.404
95.00	-18.04	-28.96	0.00	-921.12	0.00	921.12	3456.66	1728.33	4731.43	2348.88	47.54	-4.651	0.000	0.398
99.67	-16.49	-28.26	0.00	-785.96	0.00	785.96	1458.24	729.12	1997.89	991.83	52.17	-4.824	0.000	0.805
100.00	-16.36	-28.26	0.00	-776.54	0.00	776.54	1456.89	728.44	1992.39	989.11	52.51	-4.837	0.000	0.798
105.00	-15.59	-27.63	0.00	-635.22	0.00	635.22	1435.99	717.99	1910.05	948.23	57.74	-5.151	0.000	0.682
107.00	-13.25	-23.28	0.00	-579.96	0.00	579.96	1427.33	713.67	1877.17	931.90	59.92	-5.268	0.000	0.633
110.00	-12.83	-22.92	0.00	-510.13	0.00	510.13	1414.04	707.02	1827.92	907.46	63.28	-5.432	0.000	0.572
115.00	-12.21	-22.29	0.00	-395.52	0.00	395.52	1391.05	695.52	1746.12	866.85	69.09	-5.670	0.000	0.466
117.00	-8.33	-15.54	0.00	-346.83	0.00	346.83	1381.56	690.78	1713.52	850.66	71.49	-5.756	0.000	0.414
120.00	-7.98	-15.17	0.00	-300.22	0.00	300.22	1367.01	683.50	1664.77	826.46	75.13	-5.872	0.000	0.370
120.00	-7.98	-15.17	0.00	-300.22	0.00	300.22	1091.99	545.99	1332.66	661.59	75.13	-5.872	0.000	0.462
125.00	-7.50	-14.55	0.00	-224.38	0.00	224.38	1075.35	537.67	1272.10	631.52	81.37	-6.037	0.000	0.363
127.00	-5.67	-12.74	0.00	-195.29	0.00	195.29	1068.40	534.20	1247.88	619.50	83.91	-6.104	0.000	0.321
130.00	-5.38	-12.38	0.00	-157.06	0.00	157.06	1057.66	528.83	1211.58	601.48	87.76	-6.192	0.000	0.267
135.00	-4.94	-11.78	0.00	-95.15	0.00	95.15	1038.92	519.46	1151.22	571.51	94.30	-6.304	0.000	0.172
137.00	-3.19	-7.37	0.00	-71.58	0.00	71.58	1031.13	515.57	1127.15	559.57	96.95	-6.336	0.000	0.131
140.00	-2.98	-7.03	0.00	-49.47	0.00	49.47	1019.14	509.57	1091.15	541.69	100.93	-6.373	0.000	0.094
145.00	-2.65	-6.46	0.00	-14.34	0.00	14.34	998.31	499.16	1031.47	512.07	107.62	-6.408	0.000	0.031
147.00	-0.18	-0.40	0.00	-1.43	0.00	1.43	989.69	494.84	1007.74	500.29	110.30	-6.411	0.000	0.003
150.00	0.00	-0.37	0.00	-0.24	0.00	0.24	976.44	488.22	972.32	482.70	114.32	-6.412	0.000	0.000

Wind Loading - Shaft

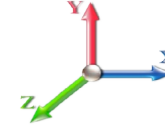
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



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	0.85	22.791	25.07	411.26	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	403.85	0.750	0.000	5.00	21.050	15.79	633.3	0.0	1198.0
10.00		1.00	0.85	22.791	25.07	396.45	0.750	0.000	5.00	20.668	15.50	621.8	0.0	1176.0
15.00		1.00	0.85	22.791	25.07	389.05	0.750	0.000	5.00	20.286	15.21	610.3	0.0	1154.0
20.00		1.00	0.90	24.182	26.60	393.12	0.750	0.000	5.00	19.903	14.93	635.3	0.0	1132.0
25.00		1.00	0.95	25.345	27.88	394.66	0.750	0.000	5.00	19.521	14.64	653.1	0.0	1110.0
30.00		1.00	0.98	26.337	28.97	394.35	0.750	0.000	5.00	19.139	14.35	665.3	0.0	1088.1
35.00		1.00	1.01	27.206	29.93	392.71	0.750	0.000	5.00	18.756	14.07	673.6	0.0	1066.1
40.00		1.00	1.04	27.981	30.78	390.07	0.750	0.000	5.00	18.374	13.78	678.6	0.0	1044.1
45.00		1.00	1.07	28.684	31.55	386.63	0.750	0.000	5.00	17.991	13.49	681.2	0.0	1022.1
46.67	Bot - Section 2	1.00	1.08	28.904	31.79	385.33	0.750	0.000	1.67	5.912	4.43	225.6	0.0	335.8
50.00		1.00	1.09	29.327	32.26	382.54	0.750	0.000	3.33	11.945	8.96	462.4	0.0	1258.9
53.00	Top - Section 1	1.00	1.11	29.689	32.66	379.83	0.750	0.000	3.00	10.605	7.95	415.6	0.0	1117.4
55.00	Appurtenance(s)	1.00	1.12	29.922	32.91	386.16	0.750	0.000	2.00	6.994	5.25	276.2	0.0	348.1
60.00		1.00	1.14	30.475	33.52	381.16	0.750	0.000	5.00	17.216	12.91	692.5	0.0	856.7
65.00		1.00	1.16	30.993	34.09	375.75	0.750	0.000	5.00	16.834	12.63	688.7	0.0	837.5
70.00		1.00	1.17	31.480	34.63	369.99	0.750	0.000	5.00	16.451	12.34	683.6	0.0	818.2
75.00		1.00	1.19	31.941	35.13	363.93	0.750	0.000	5.00	16.069	12.05	677.5	0.0	799.0
80.00		1.00	1.21	32.377	35.62	357.58	0.750	0.000	5.00	15.687	11.77	670.4	0.0	779.8
85.00		1.00	1.22	32.793	36.07	350.99	0.750	0.000	5.00	15.304	11.48	662.5	0.0	760.5
90.00		1.00	1.24	33.190	36.51	344.18	0.750	0.000	5.00	14.922	11.19	653.8	0.0	741.3
92.00	Appurtenance(s)	1.00	1.24	33.344	36.68	341.39	0.750	0.000	2.00	5.862	4.40	258.0	0.0	291.1
94.25	Bot - Section 3	1.00	1.25	33.514	36.87	338.22	0.750	0.000	2.25	6.521	4.89	288.5	0.0	323.8
95.00		1.00	1.25	33.570	36.93	337.16	0.750	0.000	0.75	2.184	1.64	96.8	0.0	161.7
99.67	Top - Section 2	1.00	1.26	33.911	37.30	330.44	0.750	0.000	4.67	13.399	10.05	599.8	0.0	991.4
100.00		1.00	1.27	33.935	37.33	334.34	0.750	0.000	0.33	0.944	0.71	42.3	0.0	23.6
105.00		1.00	1.28	34.285	37.71	326.98	0.750	0.000	5.00	13.961	10.47	631.8	0.0	348.8
107.00	Appurtenance(s)	1.00	1.28	34.422	37.86	323.99	0.750	0.000	2.00	5.477	4.11	248.9	0.0	136.8
110.00		1.00	1.29	34.623	38.08	319.46	0.750	0.000	3.00	8.101	6.08	370.2	0.0	202.4
115.00		1.00	1.30	34.948	38.44	311.79	0.750	0.000	5.00	13.196	9.90	608.8	0.0	329.6
117.00	Appurtenance(s)	1.00	1.31	35.075	38.58	308.69	0.750	0.000	2.00	5.171	3.88	239.4	0.0	129.1
120.00	Top - Section 3	1.00	1.32	35.263	38.79	303.99	0.750	0.000	3.00	7.642	5.73	355.7	0.0	190.8
125.00		1.00	1.33	35.567	39.12	296.05	0.750	0.000	5.00	12.431	9.32	583.6	0.0	266.3
127.00	Appurtenance(s)	1.00	1.33	35.686	39.25	292.84	0.750	0.000	2.00	4.866	3.65	229.2	0.0	104.2
130.00		1.00	1.34	35.862	39.45	287.99	0.750	0.000	3.00	7.184	5.39	340.1	0.0	153.8
135.00		1.00	1.35	36.148	39.76	279.81	0.750	0.000	5.00	11.667	8.75	556.7	0.0	249.8
137.00	Appurtenance(s)	1.00	1.35	36.260	39.89	276.51	0.750	0.000	2.00	4.560	3.42	218.2	0.0	97.6
140.00		1.00	1.36	36.426	40.07	271.52	0.750	0.000	3.00	6.725	5.04	323.3	0.0	143.9
145.00		1.00	1.37	36.696	40.37	263.14	0.750	0.000	5.00	10.902	8.18	528.1	0.0	233.3
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	259.75	0.750	0.000	2.00	4.254	3.19	206.6	0.0	91.0
150.00	Appurtenance(s)	1.00	1.38	36.959	40.65	254.65	0.750	0.000	3.00	6.266	4.70	305.7	0.0	134.1
Totals:									150.00			18,993.0		23,246.7

Discrete Appurtenance Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

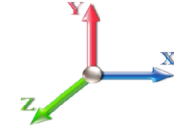


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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



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	150.00	Lightning Rod	1	37.139	40.852	1.00	1.00	1.05	31.50	0.000	3.500	68.63	0.00	240.21
2	147.00	Platform w/ Hand Rails	1	36.802	40.482	1.00	1.00	36.00	1440.00	0.000	0.000	2331.77	0.00	0.00
3	147.00	Ericsson S11B12	3	36.802	40.482	0.50	0.75	4.27	137.70	0.000	0.000	276.33	0.00	0.00
4	147.00	Ericsson KRY 112 144/1	3	36.802	40.482	0.50	0.75	0.53	29.70	0.000	0.000	34.17	0.00	0.00
5	147.00	Commscope	3	36.802	40.482	0.63	0.75	21.64	135.81	0.000	0.000	1401.68	0.00	0.00
6	147.00	Ericsson AIR 21 B4A/B2P	3	36.802	40.482	0.64	0.75	11.55	243.81	0.000	0.000	748.21	0.00	0.00
7	147.00	Ericsson AIR 21 B2A/B4P	3	36.802	40.482	0.64	0.75	11.55	247.05	0.000	0.000	748.21	0.00	0.00
8	137.00	Rymsa MGD5-800T2	3	36.260	39.886	0.62	0.80	6.29	41.58	0.000	0.000	401.41	0.00	0.00
9	137.00	Antel BXA-70063/6CF	3	36.260	39.886	0.58	0.80	13.10	40.23	0.000	0.000	835.90	0.00	0.00
10	137.00	Antel LPA-80080/4CF	6	36.260	39.886	0.59	0.80	19.18	64.80	0.000	0.000	1224.07	0.00	0.00
11	137.00	Low Profile Platform	1	36.260	39.886	1.00	1.00	22.00	1350.00	0.000	0.000	1403.99	0.00	0.00
12	137.00	RFS FD9R6004/2C-3L	6	36.260	39.886	0.54	0.80	1.16	16.74	0.000	0.000	73.89	0.00	0.00
13	137.00	Cleargain 850/1900 TMA's	2	36.260	39.886	0.54	0.80	0.56	9.90	0.000	0.000	35.57	0.00	0.00
14	127.00	Low Profile Platform	1	35.686	39.255	1.00	1.00	22.00	1350.00	0.000	0.000	1381.76	0.00	0.00
15	117.00	Sitepro RMQP-496-HK	1	35.075	38.583	1.00	1.00	48.00	2204.10	0.000	0.000	2963.15	0.00	0.00
16	117.00	ALU TD-RRH8x20-25	3	35.075	38.583	0.50	0.75	6.11	189.00	0.000	0.000	376.90	0.00	0.00
17	117.00	ALU 1900 Mhz	3	35.075	38.583	0.50	0.75	4.18	162.00	0.000	0.000	257.78	0.00	0.00
18	117.00	Commscope	3	35.263	38.789	0.60	0.75	22.09	208.98	0.000	3.000	1370.71	0.00	4112.12
19	117.00	RFS APXVTM14-C-I20	3	35.075	38.583	0.58	0.75	10.98	151.74	0.000	0.000	678.07	0.00	0.00
20	117.00	ALU 800 Mhz	6	35.075	38.583	0.50	0.75	7.51	286.20	0.000	0.000	463.45	0.00	0.00
21	107.00	Powerwave 7770	6	34.422	37.864	0.58	0.80	19.27	189.00	0.000	0.000	1167.54	0.00	0.00
22	107.00	Powerwave/P65-17-XLH-R	3	34.422	37.864	0.60	0.80	20.59	159.30	0.000	0.000	1247.51	0.00	0.00
23	107.00	Raycap/DC6-48-60-18-8F	1	34.422	37.864	1.00	1.00	0.92	28.62	0.000	0.000	55.74	0.00	0.00
24	107.00	Powerwave/LGP21903	6	34.422	37.864	0.54	0.80	0.87	29.70	0.000	0.000	52.60	0.00	0.00
25	107.00	Diplexers	6	34.422	37.864	0.54	0.80	0.87	29.70	0.000	0.000	52.60	0.00	0.00
26	107.00	Low Profile Platform	1	34.422	37.864	1.00	1.00	22.00	1350.00	0.000	0.000	1332.80	0.00	0.00
27	92.00	Standoff	1	33.344	36.679	1.00	1.00	2.50	36.00	0.000	0.000	146.71	0.00	0.00
28	92.00	Jampro JLEP (56")	1	33.344	36.679	1.00	1.00	1.40	45.99	0.000	0.000	82.16	0.00	0.00
29	55.00	Skyware Global Type 183	1	29.922	32.914	1.00	1.00	45.75	102.60	0.000	0.000	2409.29	0.00	0.00
30	55.00	Flush Mount	1	29.922	32.914	1.00	1.00	2.50	315.00	0.000	0.000	131.65	0.00	0.00

Totals: 10,626.75

23,754.25

Total Applied Force Summary

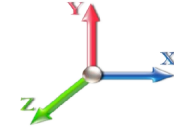
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



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		633.28	1277.02	0.00	0.00
10.00		621.77	1373.61	0.00	0.00
15.00		610.27	1351.63	0.00	0.00
20.00		635.32	1329.65	0.00	0.00
25.00		653.08	1307.67	0.00	0.00
30.00		665.35	1285.68	0.00	0.00
35.00		673.56	1263.70	0.00	0.00
40.00		678.64	1241.72	0.00	0.00
45.00		681.21	1219.74	0.00	0.00
46.67		225.57	401.70	0.00	0.00
50.00		462.40	1390.69	0.00	0.00
53.00		415.61	1235.96	0.00	0.00
55.00	(2) attachments	2817.16	844.71	0.00	0.00
60.00		692.55	1053.95	0.00	0.00
65.00		688.67	1034.71	0.00	0.00
70.00		683.62	1015.48	0.00	0.00
75.00		677.50	996.25	0.00	0.00
80.00		670.42	977.01	0.00	0.00
85.00		662.48	957.78	0.00	0.00
90.00		653.75	938.55	0.00	0.00
92.00	(2) attachments	486.88	452.02	0.00	0.00
94.25		288.50	411.56	0.00	0.00
95.00		96.80	190.91	0.00	0.00
99.67		599.77	1173.31	0.00	0.00
100.00		42.30	36.59	0.00	0.00
105.00		631.82	543.73	0.00	0.00
107.00	(23) attachments	4157.66	2001.12	0.00	0.00
110.00		370.24	283.02	0.00	0.00
115.00		608.76	464.01	0.00	0.00
117.00	(19) attachments	6349.49	3384.93	0.00	4112.12
120.00		355.73	261.18	0.00	0.00
125.00		583.63	383.56	0.00	0.00
127.00	(1) attachments	1610.96	1501.12	0.00	0.00
130.00		340.05	224.20	0.00	0.00
135.00		556.68	367.07	0.00	0.00
137.00	(21) attachments	4193.07	1667.77	0.00	0.00
140.00		323.34	180.61	0.00	0.00
145.00		528.08	294.43	0.00	0.00
147.00	(16) attachments	5747.00	2349.53	0.00	0.00
150.00	(1) attachments	374.32	165.55	0.00	240.21
	Totals:	42,747.27	38,833.42	0.00	4,352.33

Calculated Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

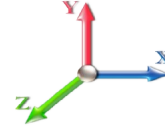


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Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 24

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	-38.74	-42.83	0.00	-4387.6	0.00	4387.64	5817.07	2908.54	11858.0	5886.84	0.00	0.000	0.000	0.752
5.00	-37.28	-42.36	0.00	-4173.4	0.00	4173.48	5739.57	2869.78	11485.2	5701.74	0.13	-0.249	0.000	0.739
10.00	-35.73	-41.89	0.00	-3961.6	0.00	3961.68	5652.47	2826.24	11099.3	5510.17	0.53	-0.499	0.000	0.726
15.00	-34.20	-41.41	0.00	-3752.2	0.00	3752.26	5545.82	2772.91	10682.2	5303.14	1.19	-0.750	0.000	0.714
20.00	-32.70	-40.90	0.00	-3545.2	0.00	3545.21	5439.17	2719.58	10273.2	5100.07	2.11	-1.001	0.000	0.701
25.00	-31.23	-40.36	0.00	-3340.7	0.00	3340.72	5332.51	2666.26	9872.18	4900.97	3.29	-1.253	0.000	0.688
30.00	-29.79	-39.79	0.00	-3138.9	0.00	3138.93	5225.86	2612.93	9479.11	4705.83	4.74	-1.504	0.000	0.673
35.00	-28.37	-39.21	0.00	-2939.9	0.00	2939.97	5119.21	2559.60	9094.03	4514.66	6.45	-1.754	0.000	0.657
40.00	-26.99	-38.60	0.00	-2743.9	0.00	2743.94	5012.56	2506.28	8716.92	4327.45	8.42	-2.003	0.000	0.640
45.00	-25.68	-37.95	0.00	-2550.9	0.00	2550.92	4905.90	2452.95	8347.81	4144.20	10.65	-2.250	0.000	0.621
46.67	-25.21	-37.77	0.00	-2487.6	0.00	2487.67	4870.35	2435.18	8226.55	4084.00	11.45	-2.333	0.000	0.615
50.00	-23.74	-37.31	0.00	-2361.7	0.00	2361.78	4799.25	2399.63	7986.68	3964.92	13.14	-2.498	0.000	0.601
53.00	-22.44	-36.89	0.00	-2249.8	0.00	2249.85	4240.56	2120.28	7137.82	3543.51	14.75	-2.645	0.000	0.641
55.00	-21.63	-34.10	0.00	-2176.0	0.00	2176.08	4203.23	2101.62	7012.05	3481.07	15.88	-2.743	0.000	0.631
60.00	-20.46	-33.45	0.00	-2005.5	0.00	2005.58	4109.91	2054.96	6702.51	3327.41	18.89	-2.996	0.000	0.608
65.00	-19.33	-32.79	0.00	-1838.3	0.00	1838.35	4016.59	2008.29	6399.97	3177.21	22.16	-3.245	0.000	0.584
70.00	-18.22	-32.12	0.00	-1674.4	0.00	1674.43	3923.27	1961.63	6104.41	3030.48	25.69	-3.489	0.000	0.557
75.00	-17.14	-31.45	0.00	-1513.8	0.00	1513.83	3829.95	1914.97	5815.84	2887.23	29.47	-3.726	0.000	0.529
80.00	-16.09	-30.78	0.00	-1356.5	0.00	1356.58	3736.63	1868.31	5534.25	2747.44	33.49	-3.956	0.000	0.498
85.00	-15.07	-30.11	0.00	-1202.6	0.00	1202.68	3643.31	1821.65	5259.66	2611.12	37.75	-4.177	0.000	0.465
90.00	-14.11	-29.42	0.00	-1052.1	0.00	1052.13	3549.99	1774.99	4992.05	2478.26	42.24	-4.386	0.000	0.429
92.00	-13.65	-28.92	0.00	-993.29	0.00	993.29	3512.66	1756.33	4886.96	2426.09	44.09	-4.468	0.000	0.414
94.25	-13.23	-28.62	0.00	-928.22	0.00	928.22	3470.66	1735.33	4770.08	2368.07	46.22	-4.558	0.000	0.396
95.00	-13.00	-28.53	0.00	-906.76	0.00	906.76	3456.66	1728.33	4731.43	2348.88	46.93	-4.588	0.000	0.390
99.67	-11.83	-27.85	0.00	-773.63	0.00	773.63	1458.24	729.12	1997.89	991.83	51.50	-4.759	0.000	0.790
100.00	-11.72	-27.84	0.00	-764.35	0.00	764.35	1456.89	728.44	1992.39	989.11	51.83	-4.771	0.000	0.782
105.00	-11.13	-27.21	0.00	-625.14	0.00	625.14	1435.99	717.99	1910.05	948.23	56.99	-5.080	0.000	0.668
107.00	-9.46	-22.91	0.00	-570.73	0.00	570.73	1427.33	713.67	1877.17	931.90	59.15	-5.196	0.000	0.620
110.00	-9.13	-22.55	0.00	-502.00	0.00	502.00	1414.04	707.02	1827.92	907.46	62.46	-5.357	0.000	0.561
115.00	-8.67	-21.92	0.00	-389.27	0.00	389.27	1391.05	695.52	1746.12	866.85	68.19	-5.591	0.000	0.456
117.00	-5.90	-15.28	0.00	-341.32	0.00	341.32	1381.56	690.78	1713.52	850.66	70.55	-5.676	0.000	0.406
120.00	-5.64	-14.91	0.00	-295.49	0.00	295.49	1367.01	683.50	1664.77	826.46	74.15	-5.789	0.000	0.362
120.00	-5.64	-14.91	0.00	-295.49	0.00	295.49	1091.99	545.99	1332.66	661.59	74.15	-5.789	0.000	0.453
125.00	-5.29	-14.30	0.00	-220.93	0.00	220.93	1075.35	537.67	1272.10	631.52	80.29	-5.952	0.000	0.355
127.00	-3.95	-12.55	0.00	-192.32	0.00	192.32	1068.40	534.20	1247.88	619.50	82.80	-6.018	0.000	0.315
130.00	-3.74	-12.19	0.00	-154.67	0.00	154.67	1057.66	528.83	1211.58	601.48	86.60	-6.105	0.000	0.261
135.00	-3.42	-11.61	0.00	-93.70	0.00	93.70	1038.92	519.46	1151.22	571.51	93.05	-6.215	0.000	0.168
137.00	-2.21	-7.26	0.00	-70.49	0.00	70.49	1031.13	515.57	1127.15	559.57	95.65	-6.247	0.000	0.128
140.00	-2.06	-6.92	0.00	-48.72	0.00	48.72	1019.14	509.57	1091.15	541.69	99.58	-6.283	0.000	0.092
145.00	-1.83	-6.36	0.00	-14.13	0.00	14.13	998.31	499.16	1031.47	512.07	106.17	-6.317	0.000	0.030
147.00	-0.12	-0.39	0.00	-1.41	0.00	1.41	989.69	494.84	1007.74	500.29	108.82	-6.321	0.000	0.003
150.00	0.00	-0.37	0.00	-0.24	0.00	0.24	976.44	488.22	972.32	482.70	112.78	-6.321	0.000	0.000

Wind Loading - Shaft

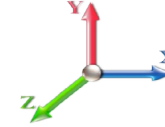
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 23

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	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	22.085	26.50	150.7	395.3	1992.5
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	21.777	26.13	148.6	416.8	1984.8
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	21.441	25.73	146.3	426.6	1965.3
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	21.092	25.31	152.7	431.3	1940.7
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	20.737	24.88	157.3	433.0	1913.1
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	20.377	24.45	160.6	432.8	1883.5
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	20.014	24.02	163.0	431.1	1852.6
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	19.648	23.58	164.6	428.4	1820.5
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	19.281	23.14	165.5	424.9	1787.7
46.67	Bot - Section 2	1.00	1.08	6.554	7.21	0.00	1.200	1.553	1.67	6.344	7.61	54.9	141.2	588.9
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	3.33	12.813	15.38	112.5	286.2	1964.8
53.00	Top - Section 1	1.00	1.11	6.732	7.41	0.00	1.200	1.573	3.00	11.391	13.67	101.2	255.9	1745.7
55.00	Appurtenance(s)	1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.00	7.520	9.02	67.3	169.8	633.9
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	18.543	22.25	169.1	419.3	1561.6
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	18.171	21.81	168.6	413.7	1530.3
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	17.799	21.36	167.7	407.7	1498.6
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	17.426	20.91	166.6	401.3	1466.6
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	17.052	20.46	165.3	394.7	1434.4
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	16.678	20.01	163.7	387.8	1401.9
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	16.304	19.56	162.0	380.7	1369.1
92.00	Appurtenance(s)	1.00	1.24	7.561	8.32	0.00	1.200	1.662	2.00	6.416	7.70	64.0	151.1	539.3
94.25	Bot - Section 3	1.00	1.25	7.600	8.36	0.00	1.200	1.666	2.25	7.146	8.58	71.7	168.5	600.3
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	0.75	2.393	2.87	24.0	56.7	272.3
99.67	Top - Section 2	1.00	1.26	7.690	8.46	0.00	1.200	1.675	4.67	14.702	17.64	149.2	346.3	1668.1
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	0.33	1.037	1.24	10.5	24.7	56.2
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	15.364	18.44	157.7	362.8	827.9
107.00	Appurtenance(s)	1.00	1.28	7.805	8.59	0.00	1.200	1.687	2.00	6.040	7.25	62.2	143.9	326.3
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	3.00	8.947	10.74	92.7	213.0	482.8
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	14.612	17.53	152.9	346.9	786.4
117.00	Appurtenance(s)	1.00	1.31	7.954	8.75	0.00	1.200	1.702	2.00	5.739	6.89	60.3	137.5	309.7
120.00	Top - Section 3	1.00	1.32	7.996	8.80	0.00	1.200	1.707	3.00	8.496	10.19	89.7	203.3	457.7
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	13.859	16.63	147.5	330.5	685.5
127.00	Appurtenance(s)	1.00	1.33	8.092	8.90	0.00	1.200	1.716	2.00	5.438	6.53	58.1	130.8	269.8
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	3.00	8.044	9.65	86.3	193.2	398.3
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.106	15.73	141.8	313.5	646.6
137.00	Appurtenance(s)	1.00	1.35	8.222	9.04	0.00	1.200	1.729	2.00	5.136	6.16	55.7	124.0	254.2
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	3.00	7.591	9.11	82.8	182.9	374.8
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.351	14.82	135.7	296.1	607.2
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	4.834	5.80	53.3	117.0	238.4
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	1.745	3.00	7.139	8.57	79.0	172.3	351.1
Totals:									150.00			4,683.2		42,489.1

Discrete Appurtenance Forces

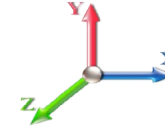
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 23

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	150.00	Lightning Rod	1	8.421	9.264	1.00	1.00	3.42	64.41	0.000	3.500	31.71	0.00	111.00
2	147.00	Platform w/ Hand Rails	1	8.345	9.180	1.00	1.00	67.35	3415.60	0.000	0.000	618.25	0.00	0.00
3	147.00	Ericsson S11B12	3	8.345	9.180	0.50	0.75	5.28	343.69	0.000	0.000	48.44	0.00	0.00
4	147.00	Ericsson KRY 112 144/1	3	8.345	9.180	0.50	0.75	1.14	62.58	0.000	0.000	10.44	0.00	0.00
5	147.00	Commscope	3	8.345	9.180	0.63	0.75	27.79	679.34	0.000	0.000	255.12	0.00	0.00
6	147.00	Ericsson AIR 21 B4A/B2P	3	8.345	9.180	0.64	0.75	13.63	825.03	0.000	0.000	125.11	0.00	0.00
7	147.00	Ericsson AIR 21 B2A/B4P	3	8.345	9.180	0.64	0.75	13.63	829.35	0.000	0.000	125.11	0.00	0.00
8	137.00	Rymosa MGD5-800T2	3	8.222	9.044	0.62	0.80	9.62	200.09	0.000	0.000	87.03	0.00	0.00
9	137.00	Antel BXA-70063/6CF	3	8.222	9.044	0.58	0.80	17.84	363.50	0.000	0.000	161.33	0.00	0.00
10	137.00	Antel LPA-80080/4CF	6	8.222	9.044	0.59	0.80	22.69	885.93	0.000	0.000	205.23	0.00	0.00
11	137.00	Low Profile Platform	1	8.222	9.044	1.00	1.00	39.50	2797.10	0.000	0.000	357.28	0.00	0.00
12	137.00	RFS FD9R6004/2C-3L	6	8.222	9.044	0.54	0.80	2.57	56.24	0.000	0.000	23.25	0.00	0.00
13	137.00	Cleargain 850/1900 TMA's	2	8.222	9.044	0.54	0.80	1.12	29.67	0.000	0.000	10.13	0.00	0.00
14	127.00	Low Profile Platform	1	8.092	8.901	1.00	1.00	39.37	2787.31	0.000	0.000	350.44	0.00	0.00
15	117.00	Sitepro RMQP-496-HK	1	7.954	8.749	1.00	1.00	80.69	4650.29	0.000	0.000	705.91	0.00	0.00
16	117.00	ALU TD-RRH8x20-25	3	7.954	8.749	0.50	0.75	7.30	573.60	0.000	0.000	63.86	0.00	0.00
17	117.00	ALU 1900 Mhz	3	7.954	8.749	0.50	0.75	6.04	388.46	0.000	0.000	52.85	0.00	0.00
18	117.00	Commscope	3	7.996	8.796	0.60	0.75	24.64	916.89	0.000	3.000	216.75	0.00	650.25
19	117.00	RFS APXVTM14-C-I20	3	7.954	8.749	0.58	0.75	12.86	669.42	0.000	0.000	112.53	0.00	0.00
20	117.00	ALU 800 Mhz	6	7.954	8.749	0.50	0.75	10.87	687.87	0.000	0.000	95.11	0.00	0.00
21	107.00	Powerwave 7770	6	7.805	8.586	0.58	0.80	22.87	1030.18	0.000	0.000	196.38	0.00	0.00
22	107.00	Powerwave/P65-17-XLH-R	3	7.805	8.586	0.60	0.80	26.22	654.62	0.000	0.000	225.13	0.00	0.00
23	107.00	Raycap/DC6-48-60-18-8F	1	7.805	8.586	1.00	1.00	1.34	80.23	0.000	0.000	11.53	0.00	0.00
24	107.00	Powerwave/LGP21903	6	7.805	8.586	0.54	0.80	2.10	74.09	0.000	0.000	18.07	0.00	0.00
25	107.00	Diplexers	6	7.805	8.586	0.54	0.80	2.10	74.00	0.000	0.000	18.07	0.00	0.00
26	107.00	Low Profile Platform	1	7.805	8.586	1.00	1.00	39.07	2765.43	0.000	0.000	335.49	0.00	0.00
27	92.00	Standoff	1	7.561	8.317	1.00	1.00	7.90	101.45	0.000	0.000	65.73	0.00	0.00
28	92.00	Jampro JLEP (56")	1	7.561	8.317	1.00	1.00	4.68	123.38	0.000	0.000	38.96	0.00	0.00
29	55.00	Skyware Global Type 183	1	6.785	7.463	1.00	1.00	49.85	421.48	0.000	0.000	372.07	0.00	0.00
30	55.00	Flush Mount	1	6.785	7.463	1.00	1.00	4.08	585.21	0.000	0.000	30.44	0.00	0.00

Totals: 27,136.44

4,967.78

Total Applied Force Summary

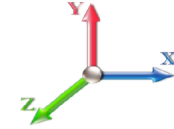
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 23

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		150.66	2097.94	0.00	0.00
10.00		148.56	2248.26	0.00	0.00
15.00		146.26	2228.78	0.00	0.00
20.00		152.67	2204.16	0.00	0.00
25.00		157.31	2176.57	0.00	0.00
30.00		160.63	2147.02	0.00	0.00
35.00		162.97	2116.06	0.00	0.00
40.00		164.56	2084.04	0.00	0.00
45.00		165.54	2051.17	0.00	0.00
46.67		54.88	676.76	0.00	0.00
50.00		112.48	2140.44	0.00	0.00
53.00		101.23	1903.85	0.00	0.00
55.00	(2) attachments	469.86	1745.98	0.00	0.00
60.00		169.14	1824.58	0.00	0.00
65.00		168.57	1793.30	0.00	0.00
70.00		167.71	1761.64	0.00	0.00
75.00		166.60	1729.67	0.00	0.00
80.00		165.26	1697.40	0.00	0.00
85.00		163.71	1664.87	0.00	0.00
90.00		161.97	1632.11	0.00	0.00
92.00	(2) attachments	168.72	869.33	0.00	0.00
94.25		71.69	717.26	0.00	0.00
95.00		24.04	311.25	0.00	0.00
99.67		149.23	1910.67	0.00	0.00
100.00		10.54	73.49	0.00	0.00
105.00		157.67	1087.76	0.00	0.00
107.00	(23) attachments	866.91	5108.82	0.00	0.00
110.00		92.72	590.33	0.00	0.00
115.00		152.85	965.61	0.00	0.00
117.00	(19) attachments	1307.27	8267.89	0.00	650.25
120.00		89.67	551.50	0.00	0.00
125.00		147.55	841.89	0.00	0.00
127.00	(1) attachments	408.53	3119.64	0.00	0.00
130.00		86.34	492.17	0.00	0.00
135.00		141.80	802.94	0.00	0.00
137.00	(21) attachments	899.99	4649.25	0.00	0.00
140.00		82.77	423.73	0.00	0.00
145.00		135.67	688.66	0.00	0.00
147.00	(16) attachments	1235.73	6426.57	0.00	0.00
150.00	(1) attachments	110.68	415.49	0.00	111.00
Totals:		9,650.96	76,238.83	0.00	761.25

Calculated Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

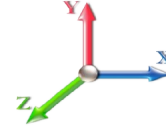


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 23

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	-76.23	-9.69	0.00	-1028.2	0.00	1028.23	5817.07	2908.54	11858.0	5886.84	0.00	0.000	0.000	0.188
5.00	-74.13	-9.61	0.00	-979.79	0.00	979.79	5739.57	2869.78	11485.2	5701.74	0.03	-0.058	0.000	0.185
10.00	-71.87	-9.54	0.00	-931.72	0.00	931.72	5652.47	2826.24	11099.3	5510.17	0.12	-0.117	0.000	0.182
15.00	-69.63	-9.46	0.00	-884.04	0.00	884.04	5545.82	2772.91	10682.2	5303.14	0.28	-0.176	0.000	0.179
20.00	-67.42	-9.37	0.00	-836.76	0.00	836.76	5439.17	2719.58	10273.2	5100.07	0.49	-0.236	0.000	0.176
25.00	-65.23	-9.27	0.00	-789.94	0.00	789.94	5332.51	2666.26	9872.18	4900.97	0.77	-0.295	0.000	0.173
30.00	-63.08	-9.16	0.00	-743.61	0.00	743.61	5225.86	2612.93	9479.11	4705.83	1.11	-0.354	0.000	0.170
35.00	-60.95	-9.04	0.00	-697.83	0.00	697.83	5119.21	2559.60	9094.03	4514.66	1.52	-0.414	0.000	0.166
40.00	-58.86	-8.92	0.00	-652.61	0.00	652.61	5012.56	2506.28	8716.92	4327.45	1.98	-0.473	0.000	0.163
45.00	-56.80	-8.78	0.00	-607.99	0.00	607.99	4905.90	2452.95	8347.81	4144.20	2.51	-0.532	0.000	0.158
46.67	-56.12	-8.75	0.00	-593.36	0.00	593.36	4870.35	2435.18	8226.55	4084.00	2.70	-0.551	0.000	0.157
50.00	-53.98	-8.65	0.00	-564.21	0.00	564.21	4799.25	2399.63	7986.68	3964.92	3.10	-0.591	0.000	0.154
53.00	-52.07	-8.55	0.00	-538.27	0.00	538.27	4240.56	2120.28	7137.82	3543.51	3.48	-0.626	0.000	0.164
55.00	-50.33	-8.10	0.00	-521.16	0.00	521.16	4203.23	2101.62	7012.05	3481.07	3.75	-0.649	0.000	0.162
60.00	-48.49	-7.96	0.00	-480.66	0.00	480.66	4109.91	2054.96	6702.51	3327.41	4.46	-0.710	0.000	0.156
65.00	-46.70	-7.82	0.00	-440.85	0.00	440.85	4016.59	2008.29	6399.97	3177.21	5.24	-0.770	0.000	0.150
70.00	-44.93	-7.67	0.00	-401.77	0.00	401.77	3923.27	1961.63	6104.41	3030.48	6.07	-0.828	0.000	0.144
75.00	-43.19	-7.52	0.00	-363.42	0.00	363.42	3829.95	1914.97	5815.84	2887.23	6.97	-0.885	0.000	0.137
80.00	-41.49	-7.37	0.00	-325.82	0.00	325.82	3736.63	1868.31	5534.25	2747.44	7.93	-0.940	0.000	0.130
85.00	-39.82	-7.21	0.00	-288.98	0.00	288.98	3643.31	1821.65	5259.66	2611.12	8.94	-0.993	0.000	0.122
90.00	-38.19	-7.04	0.00	-252.93	0.00	252.93	3549.99	1774.99	4992.05	2478.26	10.01	-1.044	0.000	0.113
92.00	-37.32	-6.87	0.00	-238.84	0.00	238.84	3512.66	1756.33	4886.96	2426.09	10.45	-1.063	0.000	0.109
94.25	-36.61	-6.80	0.00	-223.38	0.00	223.38	3470.66	1735.33	4770.08	2368.07	10.96	-1.085	0.000	0.105
95.00	-36.29	-6.78	0.00	-218.28	0.00	218.28	3456.66	1728.33	4731.43	2348.88	11.13	-1.092	0.000	0.103
99.67	-34.38	-6.61	0.00	-186.63	0.00	186.63	1458.24	729.12	1997.89	991.83	12.22	-1.133	0.000	0.212
100.00	-34.30	-6.62	0.00	-184.43	0.00	184.43	1456.89	728.44	1992.39	989.11	12.30	-1.136	0.000	0.210
105.00	-33.21	-6.47	0.00	-151.33	0.00	151.33	1435.99	717.99	1910.05	948.23	13.53	-1.211	0.000	0.183
107.00	-28.12	-5.51	0.00	-138.39	0.00	138.39	1427.33	713.67	1877.17	931.90	14.04	-1.239	0.000	0.168
110.00	-27.53	-5.43	0.00	-121.85	0.00	121.85	1414.04	707.02	1827.92	907.46	14.83	-1.278	0.000	0.154
115.00	-26.56	-5.27	0.00	-94.71	0.00	94.71	1391.05	695.52	1746.12	866.85	16.20	-1.335	0.000	0.128
117.00	-18.33	-3.78	0.00	-83.52	0.00	83.52	1381.56	690.78	1713.52	850.66	16.77	-1.356	0.000	0.111
120.00	-17.78	-3.69	0.00	-72.19	0.00	72.19	1367.01	683.50	1664.77	826.46	17.63	-1.383	0.000	0.100
120.00	-17.78	-3.69	0.00	-72.19	0.00	72.19	1091.99	545.99	1332.66	661.59	17.63	-1.383	0.000	0.125
125.00	-16.94	-3.53	0.00	-53.76	0.00	53.76	1075.35	537.67	1272.10	631.52	19.10	-1.423	0.000	0.101
127.00	-13.83	-3.04	0.00	-46.71	0.00	46.71	1068.40	534.20	1247.88	619.50	19.70	-1.439	0.000	0.088
130.00	-13.34	-2.95	0.00	-37.58	0.00	37.58	1057.66	528.83	1211.58	601.48	20.61	-1.460	0.000	0.075
135.00	-12.54	-2.79	0.00	-22.83	0.00	22.83	1038.92	519.46	1151.22	571.51	22.16	-1.487	0.000	0.052
137.00	-7.91	-1.77	0.00	-17.24	0.00	17.24	1031.13	515.57	1127.15	559.57	22.78	-1.495	0.000	0.039
140.00	-7.49	-1.68	0.00	-11.93	0.00	11.93	1019.14	509.57	1091.15	541.69	23.72	-1.504	0.000	0.029
145.00	-6.80	-1.53	0.00	-3.53	0.00	3.53	998.31	499.16	1031.47	512.07	25.30	-1.512	0.000	0.014
147.00	-0.41	-0.12	0.00	-0.48	0.00	0.48	989.69	494.84	1007.74	500.29	25.94	-1.513	0.000	0.001
150.00	0.00	-0.11	0.00	-0.11	0.00	0.11	976.44	488.22	972.32	482.70	26.89	-1.513	0.000	0.000

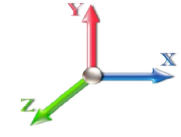
Seismic Segment Forces (Factored)

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E					Iterations 21
Gust Response Factor	1.10			Sds	0.11
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.04
Wind Load Factor	0.00	Structure Frequency	0.33	SA	0.01
				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		1331.0	0.00	0.03	0.02	17.59	
10.00		1306.6	0.01	0.05	0.03	23.61	
15.00		1282.2	0.02	0.06	0.04	26.03	
20.00		1257.8	0.03	0.07	0.04	26.92	
25.00		1233.3	0.05	0.07	0.04	27.20	
30.00		1208.9	0.08	0.07	0.04	27.32	
35.00		1184.5	0.10	0.07	0.04	27.46	
40.00		1160.1	0.13	0.07	0.03	27.63	
45.00		1135.6	0.17	0.07	0.03	27.68	
46.67	Bot - Section 2	373.13	0.18	0.06	0.03	9.14	
50.00		1398.8	0.21	0.06	0.02	34.41	
53.00	Top - Section 1	1241.5	0.24	0.06	0.02	30.28	
55.00	Appurtenance(s)	850.73	0.25	0.05	0.02	20.44	
60.00		951.87	0.30	0.04	0.01	20.93	
65.00		930.50	0.35	0.03	0.01	16.40	
70.00		909.13	0.41	0.01	0.01	9.30	
75.00		887.76	0.47	-0.01	0.01	0.07	
80.00		866.39	0.54	-0.03	0.01	-9.41	
85.00		845.02	0.61	-0.06	0.02	-16.89	
90.00		823.65	0.68	-0.08	0.03	-21.27	
92.00	Appurtenance(s)	414.58	0.71	-0.09	0.03	-11.26	
94.25	Bot - Section 3	359.82	0.75	-0.10	0.04	-10.07	
95.00		179.64	0.76	-0.10	0.04	-5.05	
99.67	Top - Section 2	1101.5	0.83	-0.12	0.06	-30.15	
100.00		26.22	0.84	-0.12	0.07	-0.71	
105.00		387.56	0.93	-0.12	0.10	-9.07	
107.00	Appurtenance(s)	2136.8	0.96	-0.12	0.11	-45.10	
110.00		224.84	1.02	-0.11	0.14	-3.79	
115.00		366.19	1.11	-0.06	0.19	-2.81	
117.00	Appurtenance(s)	3701.2	1.15	-0.04	0.22	-12.06	
120.00	Top - Section 3	212.02	1.21	0.01	0.26	0.88	
125.00		295.88	1.31	0.14	0.35	5.53	
127.00	Appurtenance(s)	1615.7	1.35	0.20	0.39	40.85	
130.00		170.93	1.42	0.32	0.45	6.15	
135.00		277.56	1.53	0.58	0.58	15.58	
137.00	Appurtenance(s)	1800.9	1.58	0.71	0.64	117.08	
140.00		159.94	1.65	0.93	0.73	12.67	
145.00		259.24	1.77	1.39	0.92	27.29	
147.00	Appurtenance(s)	2583.4	1.82	1.61	1.00	301.16	
150.00	Appurtenance(s)	183.95	1.89	1.98	1.14	24.73	
Totals:		37,637.2				746.7	Total Wind: 42,747.3

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

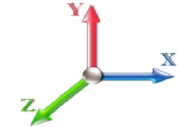
Calculated Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E										Iterations 21	
Gust Response Factor	1.10					Sds	0.11			Ss	0.16
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.04					S1	0.06
Wind Load Factor	0.00	Structure Frequency	0.33	SA	0.01	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	-51.78	-0.93	0.00	-96.60	0.00	96.60	5817.07	2908.54	11858.0	5886.84	0.00	0.00	0.00	0.025
5.00	-50.08	-0.91	0.00	-91.97	0.00	91.97	5739.57	2869.78	11485.2	5701.74	0.00	0.00	-0.01	0.025
10.00	-48.24	-0.89	0.00	-87.40	0.00	87.40	5652.47	2826.24	11099.3	5510.17	0.01	0.01	-0.01	0.024
15.00	-46.44	-0.87	0.00	-82.93	0.00	82.93	5545.82	2772.91	10682.2	5303.14	0.03	0.03	-0.02	0.024
20.00	-44.67	-0.85	0.00	-78.57	0.00	78.57	5439.17	2719.58	10273.2	5100.07	0.05	0.05	-0.02	0.024
25.00	-42.92	-0.83	0.00	-74.33	0.00	74.33	5332.51	2666.26	9872.18	4900.97	0.07	0.07	-0.03	0.023
30.00	-41.21	-0.80	0.00	-70.20	0.00	70.20	5225.86	2612.93	9479.11	4705.83	0.10	0.10	-0.03	0.023
35.00	-39.53	-0.78	0.00	-66.20	0.00	66.20	5119.21	2559.60	9094.03	4514.66	0.14	0.14	-0.04	0.022
40.00	-37.87	-0.75	0.00	-62.32	0.00	62.32	5012.56	2506.28	8716.92	4327.45	0.19	0.19	-0.04	0.022
45.00	-36.24	-0.72	0.00	-58.56	0.00	58.56	4905.90	2452.95	8347.81	4144.20	0.24	0.24	-0.05	0.022
46.67	-35.71	-0.72	0.00	-57.35	0.00	57.35	4870.35	2435.18	8226.55	4084.00	0.25	0.25	-0.05	0.021
50.00	-33.85	-0.68	0.00	-54.96	0.00	54.96	4799.25	2399.63	7986.68	3964.92	0.29	0.29	-0.06	0.021
53.00	-32.21	-0.65	0.00	-52.92	0.00	52.92	4240.56	2120.28	7137.82	3543.51	0.33	0.33	-0.06	0.023
55.00	-31.08	-0.63	0.00	-51.61	0.00	51.61	4203.23	2101.62	7012.05	3481.07	0.35	0.35	-0.06	0.022
60.00	-29.67	-0.61	0.00	-48.45	0.00	48.45	4109.91	2054.96	6702.51	3327.41	0.42	0.42	-0.07	0.022
65.00	-28.29	-0.60	0.00	-45.38	0.00	45.38	4016.59	2008.29	6399.97	3177.21	0.50	0.50	-0.07	0.021
70.00	-26.94	-0.59	0.00	-42.39	0.00	42.39	3923.27	1961.63	6104.41	3030.48	0.58	0.58	-0.08	0.021
75.00	-25.61	-0.59	0.00	-39.43	0.00	39.43	3829.95	1914.97	5815.84	2887.23	0.66	0.66	-0.09	0.020
80.00	-24.31	-0.59	0.00	-36.48	0.00	36.48	3736.63	1868.31	5534.25	2747.44	0.76	0.76	-0.09	0.020
85.00	-23.03	-0.59	0.00	-33.52	0.00	33.52	3643.31	1821.65	5259.66	2611.12	0.86	0.86	-0.10	0.019
90.00	-21.78	-0.59	0.00	-30.56	0.00	30.56	3549.99	1774.99	4992.05	2478.26	0.96	0.96	-0.10	0.018
92.00	-21.18	-0.59	0.00	-29.38	0.00	29.38	3512.66	1756.33	4886.96	2426.09	1.01	1.01	-0.11	0.018
94.25	-20.63	-0.59	0.00	-28.05	0.00	28.05	3470.66	1735.33	4770.08	2368.07	1.06	1.06	-0.11	0.018
95.00	-20.37	-0.59	0.00	-27.61	0.00	27.61	3456.66	1728.33	4731.43	2348.88	1.07	1.07	-0.11	0.018
99.67	-18.81	-0.59	0.00	-24.85	0.00	24.85	1458.24	729.12	1997.89	991.83	1.18	1.18	-0.12	0.038
100.00	-18.76	-0.59	0.00	-24.65	0.00	24.65	1456.89	728.44	1992.39	989.11	1.19	1.19	-0.12	0.038
105.00	-18.04	-0.59	0.00	-21.69	0.00	21.69	1435.99	717.99	1910.05	948.23	1.32	1.32	-0.13	0.035
107.00	-15.37	-0.59	0.00	-20.51	0.00	20.51	1427.33	713.67	1877.17	931.90	1.37	1.37	-0.13	0.033
110.00	-14.99	-0.59	0.00	-18.75	0.00	18.75	1414.04	707.02	1827.92	907.46	1.46	1.46	-0.14	0.031
115.00	-14.37	-0.59	0.00	-15.81	0.00	15.81	1391.05	695.52	1746.12	866.85	1.60	1.60	-0.15	0.029
117.00	-9.86	-0.58	0.00	-14.63	0.00	14.63	1381.56	690.78	1713.52	850.66	1.67	1.67	-0.15	0.024
120.00	-9.51	-0.58	0.00	-12.90	0.00	12.90	1367.01	683.50	1664.77	826.46	1.76	1.76	-0.15	0.023
120.00	-9.51	-0.58	0.00	-12.90	0.00	12.90	1091.99	545.99	1332.66	661.59	1.76	1.76	-0.15	0.028
125.00	-9.00	-0.57	0.00	-10.01	0.00	10.01	1075.35	537.67	1272.10	631.52	1.92	1.92	-0.16	0.024
127.00	-7.00	-0.52	0.00	-8.87	0.00	8.87	1068.40	534.20	1247.88	619.50	1.99	1.99	-0.16	0.021
130.00	-6.70	-0.52	0.00	-7.30	0.00	7.30	1057.66	528.83	1211.58	601.48	2.10	2.10	-0.17	0.018
135.00	-6.21	-0.50	0.00	-4.71	0.00	4.71	1038.92	519.46	1151.22	571.51	2.28	2.28	-0.17	0.014
137.00	-3.99	-0.38	0.00	-3.71	0.00	3.71	1031.13	515.57	1127.15	559.57	2.35	2.35	-0.17	0.010
140.00	-3.74	-0.36	0.00	-2.57	0.00	2.57	1019.14	509.57	1091.15	541.69	2.46	2.46	-0.18	0.008
145.00	-3.35	-0.34	0.00	-0.75	0.00	0.75	998.31	499.16	1031.47	512.07	2.65	2.65	-0.18	0.005
147.00	-0.22	-0.03	0.00	-0.08	0.00	0.08	989.69	494.84	1007.74	500.29	2.72	2.72	-0.18	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	976.44	488.22	972.32	482.70	2.83	2.83	-0.18	0.000

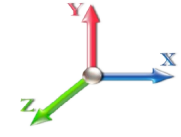
Seismic Segment Forces (Factored)

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E				Iterations 21
Gust Response Factor	1.10	Sds	0.11	Ss 0.16
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.33	SA 0.01
				Seismic Importance Factor 1.00



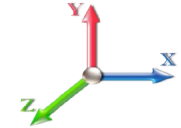
Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1331.0	0.00	0.03	0.02	17.59	
10.00		1306.6	0.01	0.05	0.03	23.61	
15.00		1282.2	0.02	0.06	0.04	26.03	
20.00		1257.8	0.03	0.07	0.04	26.92	
25.00		1233.3	0.05	0.07	0.04	27.20	
30.00		1208.9	0.08	0.07	0.04	27.32	
35.00		1184.5	0.10	0.07	0.04	27.46	
40.00		1160.1	0.13	0.07	0.03	27.63	
45.00		1135.6	0.17	0.07	0.03	27.68	
46.67	Bot - Section 2	373.13	0.18	0.06	0.03	9.14	
50.00		1398.8	0.21	0.06	0.02	34.41	
53.00	Top - Section 1	1241.5	0.24	0.06	0.02	30.28	
55.00	Appurtenance(s)	850.73	0.25	0.05	0.02	20.44	
60.00		951.87	0.30	0.04	0.01	20.93	
65.00		930.50	0.35	0.03	0.01	16.40	
70.00		909.13	0.41	0.01	0.01	9.30	
75.00		887.76	0.47	-0.01	0.01	0.07	
80.00		866.39	0.54	-0.03	0.01	-9.41	
85.00		845.02	0.61	-0.06	0.02	-16.89	
90.00		823.65	0.68	-0.08	0.03	-21.27	
92.00	Appurtenance(s)	414.58	0.71	-0.09	0.03	-11.26	
94.25	Bot - Section 3	359.82	0.75	-0.10	0.04	-10.07	
95.00		179.64	0.76	-0.10	0.04	-5.05	
99.67	Top - Section 2	1101.5	0.83	-0.12	0.06	-30.15	
100.00		26.22	0.84	-0.12	0.07	-0.71	
105.00		387.56	0.93	-0.12	0.10	-9.07	
107.00	Appurtenance(s)	2136.8	0.96	-0.12	0.11	-45.10	
110.00		224.84	1.02	-0.11	0.14	-3.79	
115.00		366.19	1.11	-0.06	0.19	-2.81	
117.00	Appurtenance(s)	3701.2	1.15	-0.04	0.22	-12.06	
120.00	Top - Section 3	212.02	1.21	0.01	0.26	0.88	
125.00		295.88	1.31	0.14	0.35	5.53	
127.00	Appurtenance(s)	1615.7	1.35	0.20	0.39	40.85	
130.00		170.93	1.42	0.32	0.45	6.15	
135.00		277.56	1.53	0.58	0.58	15.58	
137.00	Appurtenance(s)	1800.9	1.58	0.71	0.64	117.08	
140.00		159.94	1.65	0.93	0.73	12.67	
145.00		259.24	1.77	1.39	0.92	27.29	
147.00	Appurtenance(s)	2583.4	1.82	1.61	1.00	301.16	
150.00	Appurtenance(s)	183.95	1.89	1.98	1.14	24.73	
Totals:		37,637.2				746.7	Total Wind: 42,747.3

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

Calculated Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E							Iterations 21
Gust Response Factor	1.10			Sds	0.11	Ss	0.16
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.04	S1	0.06
Wind Load Factor	0.00	Structure Frequency	0.33	SA	0.01	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	-38.83	-0.93	0.00	-95.53	0.00	95.53	5817.07	2908.54	11858.0	5886.84	0.00	0.00	0.00	0.023
5.00	-37.56	-0.91	0.00	-90.90	0.00	90.90	5739.57	2869.78	11485.2	5701.74	0.00	-0.01	-0.01	0.022
10.00	-36.18	-0.89	0.00	-86.35	0.00	86.35	5652.47	2826.24	11099.3	5510.17	0.01	-0.01	-0.01	0.022
15.00	-34.83	-0.87	0.00	-81.89	0.00	81.89	5545.82	2772.91	10682.2	5303.14	0.03	-0.02	-0.02	0.022
20.00	-33.50	-0.84	0.00	-77.55	0.00	77.55	5439.17	2719.58	10273.2	5100.07	0.05	-0.02	-0.02	0.021
25.00	-32.19	-0.82	0.00	-73.33	0.00	73.33	5332.51	2666.26	9872.18	4900.97	0.07	-0.03	-0.03	0.021
30.00	-30.91	-0.79	0.00	-69.24	0.00	69.24	5225.86	2612.93	9479.11	4705.83	0.10	-0.03	-0.03	0.021
35.00	-29.64	-0.77	0.00	-65.26	0.00	65.26	5119.21	2559.60	9094.03	4514.66	0.14	-0.04	-0.04	0.020
40.00	-28.40	-0.74	0.00	-61.42	0.00	61.42	5012.56	2506.28	8716.92	4327.45	0.18	-0.04	-0.04	0.020
45.00	-27.18	-0.72	0.00	-57.70	0.00	57.70	4905.90	2452.95	8347.81	4144.20	0.23	-0.05	-0.05	0.019
46.67	-26.78	-0.71	0.00	-56.51	0.00	56.51	4870.35	2435.18	8226.55	4084.00	0.25	-0.05	-0.05	0.019
50.00	-25.39	-0.67	0.00	-54.15	0.00	54.15	4799.25	2399.63	7986.68	3964.92	0.29	-0.06	-0.06	0.019
53.00	-24.15	-0.64	0.00	-52.13	0.00	52.13	4240.56	2120.28	7137.82	3543.51	0.32	-0.06	-0.06	0.020
55.00	-23.31	-0.62	0.00	-50.84	0.00	50.84	4203.23	2101.62	7012.05	3481.07	0.35	-0.06	-0.06	0.020
60.00	-22.26	-0.60	0.00	-47.72	0.00	47.72	4109.91	2054.96	6702.51	3327.41	0.42	-0.07	-0.07	0.020
65.00	-21.22	-0.59	0.00	-44.70	0.00	44.70	4016.59	2008.29	6399.97	3177.21	0.49	-0.07	-0.07	0.019
70.00	-20.20	-0.58	0.00	-41.76	0.00	41.76	3923.27	1961.63	6104.41	3030.48	0.57	-0.08	-0.08	0.019
75.00	-19.21	-0.58	0.00	-38.86	0.00	38.86	3829.95	1914.97	5815.84	2887.23	0.65	-0.08	-0.08	0.018
80.00	-18.23	-0.58	0.00	-35.95	0.00	35.95	3736.63	1868.31	5534.25	2747.44	0.75	-0.09	-0.09	0.018
85.00	-17.27	-0.58	0.00	-33.05	0.00	33.05	3643.31	1821.65	5259.66	2611.12	0.84	-0.10	-0.10	0.017
90.00	-16.34	-0.58	0.00	-30.14	0.00	30.14	3549.99	1774.99	4992.05	2478.26	0.95	-0.10	-0.10	0.017
92.00	-15.88	-0.58	0.00	-28.98	0.00	28.98	3512.66	1756.33	4886.96	2426.09	0.99	-0.10	-0.10	0.016
94.25	-15.47	-0.58	0.00	-27.67	0.00	27.67	3470.66	1735.33	4770.08	2368.07	1.04	-0.11	-0.11	0.016
95.00	-15.28	-0.58	0.00	-27.24	0.00	27.24	3456.66	1728.33	4731.43	2348.88	1.06	-0.11	-0.11	0.016
99.67	-14.11	-0.58	0.00	-24.53	0.00	24.53	1458.24	729.12	1997.89	991.83	1.17	-0.11	-0.11	0.034
100.00	-14.07	-0.58	0.00	-24.33	0.00	24.33	1456.89	728.44	1992.39	989.11	1.18	-0.11	-0.11	0.034
105.00	-13.53	-0.58	0.00	-21.43	0.00	21.43	1435.99	717.99	1910.05	948.23	1.30	-0.12	-0.12	0.032
107.00	-11.53	-0.58	0.00	-20.27	0.00	20.27	1427.33	713.67	1877.17	931.90	1.35	-0.13	-0.13	0.030
110.00	-11.24	-0.58	0.00	-18.53	0.00	18.53	1414.04	707.02	1827.92	907.46	1.44	-0.13	-0.13	0.028
115.00	-10.78	-0.58	0.00	-15.64	0.00	15.64	1391.05	695.52	1746.12	866.85	1.58	-0.14	-0.14	0.026
117.00	-7.39	-0.57	0.00	-14.48	0.00	14.48	1381.56	690.78	1713.52	850.66	1.64	-0.15	-0.15	0.022
120.00	-7.13	-0.57	0.00	-12.77	0.00	12.77	1367.01	683.50	1664.77	826.46	1.74	-0.15	-0.15	0.021
120.00	-7.13	-0.57	0.00	-12.77	0.00	12.77	1091.99	545.99	1332.66	661.59	1.74	-0.15	-0.15	0.026
125.00	-6.75	-0.56	0.00	-9.92	0.00	9.92	1075.35	537.67	1272.10	631.52	1.90	-0.16	-0.16	0.022
127.00	-5.25	-0.52	0.00	-8.79	0.00	8.79	1068.40	534.20	1247.88	619.50	1.97	-0.16	-0.16	0.019
130.00	-5.02	-0.51	0.00	-7.23	0.00	7.23	1057.66	528.83	1211.58	601.48	2.07	-0.17	-0.17	0.017
135.00	-4.66	-0.50	0.00	-4.67	0.00	4.67	1038.92	519.46	1151.22	571.51	2.25	-0.17	-0.17	0.013
137.00	-2.99	-0.37	0.00	-3.68	0.00	3.68	1031.13	515.57	1127.15	559.57	2.32	-0.17	-0.17	0.009
140.00	-2.81	-0.36	0.00	-2.55	0.00	2.55	1019.14	509.57	1091.15	541.69	2.43	-0.17	-0.17	0.007
145.00	-2.51	-0.33	0.00	-0.74	0.00	0.74	998.31	499.16	1031.47	512.07	2.61	-0.18	-0.18	0.004
147.00	-0.17	-0.03	0.00	-0.08	0.00	0.08	989.69	494.84	1007.74	500.29	2.68	-0.18	-0.18	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	976.44	488.22	972.32	482.70	2.80	-0.18	-0.18	0.000

Wind Loading - Shaft

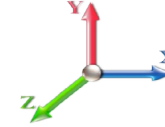
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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	0.85	7.442	8.19	235.00	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	230.77	0.750	0.000	5.00	21.050	15.79	129.2	0.0	1331.1
10.00		1.00	0.85	7.442	8.19	226.54	0.750	0.000	5.00	20.668	15.50	126.9	0.0	1306.7
15.00		1.00	0.85	7.442	8.19	222.31	0.750	0.000	5.00	20.286	15.21	124.5	0.0	1282.2
20.00		1.00	0.90	7.896	8.69	224.64	0.750	0.000	5.00	19.903	14.93	129.7	0.0	1257.8
25.00		1.00	0.95	8.276	9.10	225.52	0.750	0.000	5.00	19.521	14.64	133.3	0.0	1233.4
30.00		1.00	0.98	8.600	9.46	225.34	0.750	0.000	5.00	19.139	14.35	135.8	0.0	1209.0
35.00		1.00	1.01	8.883	9.77	224.41	0.750	0.000	5.00	18.756	14.07	137.5	0.0	1184.5
40.00		1.00	1.04	9.137	10.05	222.90	0.750	0.000	5.00	18.374	13.78	138.5	0.0	1160.1
45.00		1.00	1.07	9.366	10.30	220.93	0.750	0.000	5.00	17.991	13.49	139.0	0.0	1135.7
46.67	Bot - Section 2	1.00	1.08	9.438	10.38	220.19	0.750	0.000	1.67	5.912	4.43	46.0	0.0	373.1
50.00		1.00	1.09	9.576	10.53	218.60	0.750	0.000	3.33	11.945	8.96	94.4	0.0	1398.8
53.00	Top - Section 1	1.00	1.11	9.694	10.66	217.04	0.750	0.000	3.00	10.605	7.95	84.8	0.0	1241.5
55.00	Appurtenance(s)	1.00	1.12	9.770	10.75	220.67	0.750	0.000	2.00	6.994	5.25	56.4	0.0	386.7
60.00		1.00	1.14	9.951	10.95	217.80	0.750	0.000	5.00	17.216	12.91	141.3	0.0	951.9
65.00		1.00	1.16	10.120	11.13	214.71	0.750	0.000	5.00	16.834	12.63	140.5	0.0	930.5
70.00		1.00	1.17	10.279	11.31	211.42	0.750	0.000	5.00	16.451	12.34	139.5	0.0	909.1
75.00		1.00	1.19	10.430	11.47	207.96	0.750	0.000	5.00	16.069	12.05	138.3	0.0	887.8
80.00		1.00	1.21	10.572	11.63	204.33	0.750	0.000	5.00	15.687	11.77	136.8	0.0	866.4
85.00		1.00	1.22	10.708	11.78	200.57	0.750	0.000	5.00	15.304	11.48	135.2	0.0	845.0
90.00		1.00	1.24	10.838	11.92	196.67	0.750	0.000	5.00	14.922	11.19	133.4	0.0	823.6
92.00	Appurtenance(s)	1.00	1.24	10.888	11.98	195.08	0.750	0.000	2.00	5.862	4.40	52.7	0.0	323.5
94.25	Bot - Section 3	1.00	1.25	10.943	12.04	193.27	0.750	0.000	2.25	6.521	4.89	58.9	0.0	359.8
95.00		1.00	1.25	10.962	12.06	192.66	0.750	0.000	0.75	2.184	1.64	19.8	0.0	179.6
99.67	Top - Section 2	1.00	1.26	11.073	12.18	188.82	0.750	0.000	4.67	13.399	10.05	122.4	0.0	1101.5
100.00		1.00	1.27	11.081	12.19	191.05	0.750	0.000	0.33	0.944	0.71	8.6	0.0	26.2
105.00		1.00	1.28	11.195	12.31	186.85	0.750	0.000	5.00	13.961	10.47	128.9	0.0	387.6
107.00	Appurtenance(s)	1.00	1.28	11.240	12.36	185.14	0.750	0.000	2.00	5.477	4.11	50.8	0.0	152.0
110.00		1.00	1.29	11.305	12.44	182.55	0.750	0.000	3.00	8.101	6.08	75.6	0.0	224.8
115.00		1.00	1.30	11.412	12.55	178.17	0.750	0.000	5.00	13.196	9.90	124.2	0.0	366.2
117.00	Appurtenance(s)	1.00	1.31	11.453	12.60	176.39	0.750	0.000	2.00	5.171	3.88	48.9	0.0	143.5
120.00	Top - Section 3	1.00	1.32	11.514	12.67	173.71	0.750	0.000	3.00	7.642	5.73	72.6	0.0	212.0
125.00		1.00	1.33	11.614	12.78	169.17	0.750	0.000	5.00	12.431	9.32	119.1	0.0	295.9
127.00	Appurtenance(s)	1.00	1.33	11.653	12.82	167.34	0.750	0.000	2.00	4.866	3.65	46.8	0.0	115.8
130.00		1.00	1.34	11.710	12.88	164.56	0.750	0.000	3.00	7.184	5.39	69.4	0.0	170.9
135.00		1.00	1.35	11.803	12.98	159.89	0.750	0.000	5.00	11.667	8.75	113.6	0.0	277.6
137.00	Appurtenance(s)	1.00	1.35	11.840	13.02	158.00	0.750	0.000	2.00	4.560	3.42	44.5	0.0	108.5
140.00		1.00	1.36	11.894	13.08	155.16	0.750	0.000	3.00	6.725	5.04	66.0	0.0	159.9
145.00		1.00	1.37	11.982	13.18	150.36	0.750	0.000	5.00	10.902	8.18	107.8	0.0	259.2
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	148.43	0.750	0.000	2.00	4.254	3.19	42.2	0.0	101.1
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	145.51	0.750	0.000	3.00	6.266	4.70	62.4	0.0	148.9
Totals:								150.00			3,876.1	25,829.7		

Discrete Appurtenance Forces

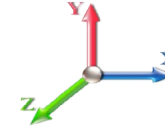
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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	150.00	Lightning Rod	1	12.127	13.340	1.00	1.00	1.05	35.00	0.000	3.500	14.01	0.00	49.02
2	147.00	Platform w/ Hand Rails	1	12.017	13.219	1.00	1.00	36.00	1600.00	0.000	0.000	475.87	0.00	0.00
3	147.00	Ericsson S11B12	3	12.017	13.219	0.50	0.75	4.27	153.00	0.000	0.000	56.39	0.00	0.00
4	147.00	Ericsson KRY 112 144/1	3	12.017	13.219	0.50	0.75	0.53	33.00	0.000	0.000	6.97	0.00	0.00
5	147.00	Commscope	3	12.017	13.219	0.63	0.75	21.64	150.90	0.000	0.000	286.06	0.00	0.00
6	147.00	Ericsson AIR 21 B4A/B2P	3	12.017	13.219	0.64	0.75	11.55	270.90	0.000	0.000	152.69	0.00	0.00
7	147.00	Ericsson AIR 21 B2A/B4P	3	12.017	13.219	0.64	0.75	11.55	274.50	0.000	0.000	152.69	0.00	0.00
8	137.00	Rymsa MGD5-800T2	3	11.840	13.024	0.62	0.80	6.29	46.20	0.000	0.000	81.92	0.00	0.00
9	137.00	Antel BXA-70063/6CF	3	11.840	13.024	0.58	0.80	13.10	44.70	0.000	0.000	170.59	0.00	0.00
10	137.00	Antel LPA-80080/4CF	6	11.840	13.024	0.59	0.80	19.18	72.00	0.000	0.000	249.81	0.00	0.00
11	137.00	Low Profile Platform	1	11.840	13.024	1.00	1.00	22.00	1500.00	0.000	0.000	286.53	0.00	0.00
12	137.00	RFS FD9R6004/2C-3L	6	11.840	13.024	0.54	0.80	1.16	18.60	0.000	0.000	15.08	0.00	0.00
13	137.00	Cleargain 850/1900 TMA's	2	11.840	13.024	0.54	0.80	0.56	11.00	0.000	0.000	7.26	0.00	0.00
14	127.00	Low Profile Platform	1	11.653	12.818	1.00	1.00	22.00	1500.00	0.000	0.000	281.99	0.00	0.00
15	117.00	Sitepro RMQP-496-HK	1	11.453	12.598	1.00	1.00	48.00	2449.00	0.000	0.000	604.72	0.00	0.00
16	117.00	ALU TD-RRH8x20-25	3	11.453	12.598	0.50	0.75	6.11	210.00	0.000	0.000	76.92	0.00	0.00
17	117.00	ALU 1900 Mhz	3	11.453	12.598	0.50	0.75	4.18	180.00	0.000	0.000	52.61	0.00	0.00
18	117.00	Commscope	3	11.514	12.666	0.60	0.75	22.09	232.20	0.000	3.000	279.74	0.00	839.21
19	117.00	RFS APXVTM14-C-I20	3	11.453	12.598	0.58	0.75	10.98	168.60	0.000	0.000	138.38	0.00	0.00
20	117.00	ALU 800 Mhz	6	11.453	12.598	0.50	0.75	7.51	318.00	0.000	0.000	94.58	0.00	0.00
21	107.00	Powerwave 7770	6	11.240	12.364	0.58	0.80	19.27	210.00	0.000	0.000	238.27	0.00	0.00
22	107.00	Powerwave/P65-17-XLH-R	3	11.240	12.364	0.60	0.80	20.59	177.00	0.000	0.000	254.59	0.00	0.00
23	107.00	Raycap/DC6-48-60-18-8F	1	11.240	12.364	1.00	1.00	0.92	31.80	0.000	0.000	11.37	0.00	0.00
24	107.00	Powerwave/LGP21903	6	11.240	12.364	0.54	0.80	0.87	33.00	0.000	0.000	10.74	0.00	0.00
25	107.00	Diplexers	6	11.240	12.364	0.54	0.80	0.87	33.00	0.000	0.000	10.74	0.00	0.00
26	107.00	Low Profile Platform	1	11.240	12.364	1.00	1.00	22.00	1500.00	0.000	0.000	272.00	0.00	0.00
27	92.00	Standoff	1	10.888	11.977	1.00	1.00	2.50	40.00	0.000	0.000	29.94	0.00	0.00
28	92.00	Jampro JLEP (56")	1	10.888	11.977	1.00	1.00	1.40	51.10	0.000	0.000	16.77	0.00	0.00
29	55.00	Skyware Global Type 183	1	9.770	10.747	1.00	1.00	45.75	114.00	0.000	0.000	491.69	0.00	0.00
30	55.00	Flush Mount	1	9.770	10.747	1.00	1.00	2.50	350.00	0.000	0.000	26.87	0.00	0.00

Totals: 11,807.50

4,847.81

Total Applied Force Summary

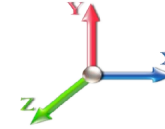
Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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		129.24	1418.91	0.00	0.00
10.00		126.89	1526.23	0.00	0.00
15.00		124.55	1501.81	0.00	0.00
20.00		129.66	1477.39	0.00	0.00
25.00		133.28	1452.96	0.00	0.00
30.00		135.79	1428.54	0.00	0.00
35.00		137.46	1404.11	0.00	0.00
40.00		138.50	1379.69	0.00	0.00
45.00		139.02	1355.27	0.00	0.00
46.67		46.04	446.33	0.00	0.00
50.00		94.37	1545.22	0.00	0.00
53.00		84.82	1373.29	0.00	0.00
55.00	(2) attachments	574.93	938.57	0.00	0.00
60.00		141.34	1171.05	0.00	0.00
65.00		140.55	1149.68	0.00	0.00
70.00		139.51	1128.31	0.00	0.00
75.00		138.26	1106.94	0.00	0.00
80.00		136.82	1085.57	0.00	0.00
85.00		135.20	1064.20	0.00	0.00
90.00		133.42	1042.83	0.00	0.00
92.00	(2) attachments	99.36	502.25	0.00	0.00
94.25		58.88	457.28	0.00	0.00
95.00		19.75	212.12	0.00	0.00
99.67		122.40	1303.68	0.00	0.00
100.00		8.63	40.66	0.00	0.00
105.00		128.94	604.14	0.00	0.00
107.00	(23) attachments	848.50	2223.46	0.00	0.00
110.00		75.56	314.47	0.00	0.00
115.00		124.24	515.57	0.00	0.00
117.00	(19) attachments	1295.81	3761.04	0.00	839.21
120.00		72.60	290.20	0.00	0.00
125.00		119.11	426.18	0.00	0.00
127.00	(1) attachments	328.77	1667.91	0.00	0.00
130.00		69.40	249.11	0.00	0.00
135.00		113.61	407.86	0.00	0.00
137.00	(21) attachments	855.73	1853.08	0.00	0.00
140.00		65.99	200.68	0.00	0.00
145.00		107.77	327.14	0.00	0.00
147.00	(16) attachments	1172.86	2610.59	0.00	0.00
150.00	(1) attachments	76.39	183.95	0.00	49.02
Totals:		8,723.93	43,148.25	0.00	888.23

Calculated Forces

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
Gh: 1.1	Topography: 1	Struct Class: II

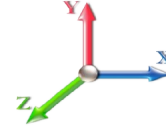


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

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	-43.14	-8.74	0.00	-900.01	0.00	900.01	5817.07	2908.54	11858.0	5886.84	0.00	0.000	0.000	0.160
5.00	-41.72	-8.65	0.00	-856.29	0.00	856.29	5739.57	2869.78	11485.2	5701.74	0.03	-0.051	0.000	0.157
10.00	-40.18	-8.56	0.00	-813.04	0.00	813.04	5652.47	2826.24	11099.3	5510.17	0.11	-0.102	0.000	0.155
15.00	-38.67	-8.46	0.00	-770.26	0.00	770.26	5545.82	2772.91	10682.2	5303.14	0.24	-0.154	0.000	0.152
20.00	-37.19	-8.36	0.00	-727.93	0.00	727.93	5439.17	2719.58	10273.2	5100.07	0.43	-0.206	0.000	0.150
25.00	-35.73	-8.26	0.00	-686.12	0.00	686.12	5332.51	2666.26	9872.18	4900.97	0.68	-0.257	0.000	0.147
30.00	-34.30	-8.14	0.00	-644.83	0.00	644.83	5225.86	2612.93	9479.11	4705.83	0.97	-0.309	0.000	0.144
35.00	-32.88	-8.03	0.00	-604.11	0.00	604.11	5119.21	2559.60	9094.03	4514.66	1.32	-0.360	0.000	0.140
40.00	-31.50	-7.91	0.00	-563.97	0.00	563.97	5012.56	2506.28	8716.92	4327.45	1.73	-0.411	0.000	0.137
45.00	-30.14	-7.78	0.00	-524.43	0.00	524.43	4905.90	2452.95	8347.81	4144.20	2.19	-0.462	0.000	0.133
46.67	-29.69	-7.74	0.00	-511.46	0.00	511.46	4870.35	2435.18	8226.55	4084.00	2.35	-0.479	0.000	0.131
50.00	-28.14	-7.65	0.00	-485.66	0.00	485.66	4799.25	2399.63	7986.68	3964.92	2.70	-0.513	0.000	0.128
53.00	-26.77	-7.56	0.00	-462.72	0.00	462.72	4240.56	2120.28	7137.82	3543.51	3.03	-0.543	0.000	0.137
55.00	-25.83	-7.00	0.00	-447.59	0.00	447.59	4203.23	2101.62	7012.05	3481.07	3.26	-0.563	0.000	0.135
60.00	-24.65	-6.86	0.00	-412.62	0.00	412.62	4109.91	2054.96	6702.51	3327.41	3.88	-0.615	0.000	0.130
65.00	-23.50	-6.73	0.00	-378.30	0.00	378.30	4016.59	2008.29	6399.97	3177.21	4.55	-0.667	0.000	0.125
70.00	-22.37	-6.60	0.00	-344.64	0.00	344.64	3923.27	1961.63	6104.41	3030.48	5.28	-0.717	0.000	0.119
75.00	-21.26	-6.46	0.00	-311.65	0.00	311.65	3829.95	1914.97	5815.84	2887.23	6.05	-0.766	0.000	0.114
80.00	-20.17	-6.33	0.00	-279.34	0.00	279.34	3736.63	1868.31	5534.25	2747.44	6.88	-0.813	0.000	0.107
85.00	-19.10	-6.19	0.00	-247.70	0.00	247.70	3643.31	1821.65	5259.66	2611.12	7.76	-0.858	0.000	0.100
90.00	-18.06	-6.05	0.00	-216.74	0.00	216.74	3549.99	1774.99	4992.05	2478.26	8.68	-0.902	0.000	0.093
92.00	-17.56	-5.95	0.00	-204.64	0.00	204.64	3512.66	1756.33	4886.96	2426.09	9.06	-0.919	0.000	0.089
94.25	-17.10	-5.89	0.00	-191.25	0.00	191.25	3470.66	1735.33	4770.08	2368.07	9.50	-0.937	0.000	0.086
95.00	-16.88	-5.87	0.00	-186.84	0.00	186.84	3456.66	1728.33	4731.43	2348.88	9.65	-0.943	0.000	0.084
99.67	-15.58	-5.73	0.00	-159.44	0.00	159.44	1458.24	729.12	1997.89	991.83	10.59	-0.978	0.000	0.172
100.00	-15.54	-5.73	0.00	-157.53	0.00	157.53	1456.89	728.44	1992.39	989.11	10.66	-0.981	0.000	0.170
105.00	-14.93	-5.60	0.00	-128.88	0.00	128.88	1435.99	717.99	1910.05	948.23	11.72	-1.045	0.000	0.146
107.00	-12.72	-4.72	0.00	-117.67	0.00	117.67	1427.33	713.67	1877.17	931.90	12.16	-1.068	0.000	0.135
110.00	-12.40	-4.65	0.00	-103.51	0.00	103.51	1414.04	707.02	1827.92	907.46	12.84	-1.102	0.000	0.123
115.00	-11.89	-4.52	0.00	-80.28	0.00	80.28	1391.05	695.52	1746.12	866.85	14.02	-1.150	0.000	0.101
117.00	-8.15	-3.15	0.00	-70.40	0.00	70.40	1381.56	690.78	1713.52	850.66	14.51	-1.167	0.000	0.089
120.00	-7.86	-3.08	0.00	-60.95	0.00	60.95	1367.01	683.50	1664.77	826.46	15.25	-1.191	0.000	0.080
120.00	-7.86	-3.08	0.00	-60.95	0.00	60.95	1091.99	545.99	1332.66	661.59	15.25	-1.191	0.000	0.099
125.00	-7.44	-2.95	0.00	-45.57	0.00	45.57	1075.35	537.67	1272.10	631.52	16.52	-1.224	0.000	0.079
127.00	-5.78	-2.59	0.00	-39.67	0.00	39.67	1068.40	534.20	1247.88	619.50	17.03	-1.238	0.000	0.069
130.00	-5.53	-2.52	0.00	-31.91	0.00	31.91	1057.66	528.83	1211.58	601.48	17.82	-1.256	0.000	0.058
135.00	-5.12	-2.39	0.00	-19.33	0.00	19.33	1038.92	519.46	1151.22	571.51	19.15	-1.279	0.000	0.039
137.00	-3.29	-1.50	0.00	-14.54	0.00	14.54	1031.13	515.57	1127.15	559.57	19.68	-1.285	0.000	0.029
140.00	-3.09	-1.43	0.00	-10.05	0.00	10.05	1019.14	509.57	1091.15	541.69	20.49	-1.293	0.000	0.022
145.00	-2.77	-1.31	0.00	-2.92	0.00	2.92	998.31	499.16	1031.47	512.07	21.85	-1.300	0.000	0.008
147.00	-0.18	-0.08	0.00	-0.29	0.00	0.29	989.69	494.84	1007.74	500.29	22.40	-1.301	0.000	0.001
150.00	0.00	-0.08	0.00	-0.05	0.00	0.05	976.44	488.22	972.32	482.70	23.21	-1.301	0.000	0.000

Final Analysis Summary

Structure: CT01210-S-SBA	Code: EIA/TIA-222-G	6/4/2018
Site Name: North Stonington	Exposure: C	
Height: 150.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: B - Competent Rock	
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 105 mph Wind	42.9	0.00	51.68	0.00	0.00	4433.23
0.9D + 1.6W 105 mph Wind	42.8	0.00	38.74	0.00	0.00	4387.64
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.7	0.00	76.23	0.00	0.00	1028.23
1.2D + 1.0E	0.9	0.00	51.78	0.00	0.00	96.60
0.9D + 1.0E	0.9	0.00	38.83	0.00	0.00	95.53
1.0D + 1.0W 60 mph Wind	8.7	0.00	43.14	0.00	0.00	900.01

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 105 mph Wind	-16.49	-28.26	0.00	-785.96	0.00	-785.96	1458.24	729.12	1997.89	991.83	99.67	0.805
0.9D + 1.6W 105 mph Wind	-11.83	-27.85	0.00	-773.63	0.00	-773.63	1458.24	729.12	1997.89	991.83	99.67	0.790
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-34.38	-6.61	0.00	-186.63	0.00	-186.63	1458.24	729.12	1997.89	991.83	99.67	0.212
1.2D + 1.0E	-18.81	-0.59	0.00	-24.85	0.00	-24.85	1458.24	729.12	1997.89	991.83	99.67	0.038
0.9D + 1.0E	-14.11	-0.58	0.00	-24.53	0.00	-24.53	1458.24	729.12	1997.89	991.83	99.67	0.034
1.0D + 1.0W 60 mph Wind	-15.58	-5.73	0.00	-159.44	0.00	-159.44	1458.24	729.12	1997.89	991.83	99.67	0.172

Antenna Mount Structural Analysis



SBA Site: CT01210-S North Stonington
Sprint Site Number: CT03XC109
Project: Sprint D0 Macro Upgrade

Prepared For: Sprint

Mount Description: Replacement Sitepro1 RMQP-HK

Site Location: 267 Norwich Westerly Road, N.
Stonington, CT
New London County
41.437066°, -71.881488°

Design Codes: ANSI/TIA-222-G
IBC 2012 w/ 2016 CT State Amend.

Analysis Load Case: Sprint Final Configuration
Analysis Result: Adequate @ 78% - **Once Replaced**
See Conclusion



Revision 0
June 4, 2018

CT03XC109-PASSING-MOUNT-STRUCTURAL-ANALYSIS-06-04-18

1.0 Introduction

An antenna mount structural analysis has been performed on Sprint's replacement mount assembly located at the CT01210-S North Stonington communications site in New London County, CT considering the final equipment loading configuration listed in Section 3.0.

2.0 Analysis Criteria

An elastic three-dimensional model of the mount structure has been analyzed pursuant to the following criteria:

- IBC 2012 - International Building Code.
- ANSI/TIA-222-G - Structural Standard for Antenna Supporting Structures and Antennas.
- AISC - Steel Construction Manual.
- ANSI/AWS D1.1 - Structural Welding Code.

Wind w/o ice = 135 mph (3-sec gust Ultimate Wind Speed)	
Wind w/o ice = 105 mph (3-sec gust Equivalent per TIA-222-G Tower Code)	
Wind with ice = 50 mph (3-sec gust, 3/4" Ice)	Topographic Category 1
Exposure Category C	Structure Class II

The following documents were provided:

<ul style="list-style-type: none"> • <u>Construction Drawings</u> Infinigy, 3/19/18. • <u>Mount and Tower Record Documents</u> SBA • <u>Tower Structural Analysis</u> TES, 12/8/17. • <u>RF Design</u> Sprint DOMU Project, RFDS ID: 111230.
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The results of the analysis are illustrated in Section 4.0. If any of the existing or proposed conditions reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

3.0 Appurtenance Information

Table 3.1 – Sprint Final Configuration¹

COR	(Quantity) Appurtenance Make/Model	Mount Description
117.0'±	(3) RFS APXVTM14-ALU-I20	Replacement Sitepro1 RMQP-HK
	(3) COMMSCOPE NNVV-65B-R4	
	(6) ALU 800MHz RRH	
	(3) ALU 1900MHz RRH	
	(3) ALU 2500MHz RRH	

1. Refer to antenna installation Construction Drawings (by others, when applicable) for additional information regarding final antenna and equipment orientations.
2. Panel antennas to be installed in Positions 2 and 3. RRH units to be installed behind each panel antenna (maximum of two RRH per panel mount pipe).

4.0 Analysis Results

Table 4.1 – Replacement Mount Capacity

Load Case	Governing Mount Component ¹	% Capacity ²	Result
Final Sprint Configuration	Mount Pipe	78%	Adequate Once Replaced³

1. Refer to the Calculations & Software Output portion of this report for mount component and structural information.
2. Listed results are expressed as a percentage of available mount member capacity based upon the assumed material strengths listed in Table 4.3. 105% is an acceptable allowable stress percentage for mount components.
3. Refer to Conclusion & Recommendations Section for more information regarding mount replacement.

Table 4.3 – Structural Component Material Strengths

Structural Component	Nominal Strength/Material ¹
Pipe	F _y = 35 ksi (A53, Gr. B)
Tube	F _y = 46 ksi (A500, Gr. B)
Structural Shapes (L, C, W, etc.), Plate / Bar	F _y = 36 ksi (A36)
Uni-Strut	F _y = 33 ksi (A570, Gr. 33)
Connection Bolts	A325
Stainless Steel Bolts	18-8 Stainless, Grade 316/304 F _y = 74 ksi (Yield) & F _u = 29 ksi (Tension)
U-Bolts / Threaded Rod	SAE J429 Grade 2 (Substitution: ASTM A449) F _y = 57 ksi (Yield) & F _u = 74 ksi (Tension)
Welds	E70XX Electrodes

1. Strengths listed were assumed for this analysis and are based upon ASTM, AISC, RCSC, AWS and ACI preferred specification values. Values and materials are consistent with industry standards. Material strengths were taken from original design documents when available.

5.0 Conclusion & Recommendations

Based on Sprint's final equipment loading configuration, the existing mount assembly does not have sufficient capacity to support the loading considered in this analysis pursuant to the listed standards. Due to lack of physical room on the mount structure to support the proposed final loading, a mount replacement will be required. Please see below for more information.

- Install Replacement Platform Assembly; attach to monopole shaft per manufacturer's specifications.
 - Sitepro1 RMQP-496-HK, (1) total.
 - Sitepro1 RMQP + PRK1245 + HRK12.
 - 12' Low Pro-Platform with Reinforcement and Handrail.

Once the recommended replacement is successfully implemented, the **replacement** mount assembly has sufficient capacity to support the loading considered in this analysis pursuant to the listed standards.

Installation Requirements:

- **Antennas and equipment shall be installed centered vertically on the mount front face rails. If this assumption is incorrect, the results of this analysis will be affected.**

This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If any of the existing or proposed conditions (appurtenance loading, member sizes, etc.) reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

Prepared by:

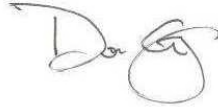


Jesse Drennen, PE, MLE

208.761.7986

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Reviewed and Approved by:



Don George, PE, SE, MLSE

208.602.6569

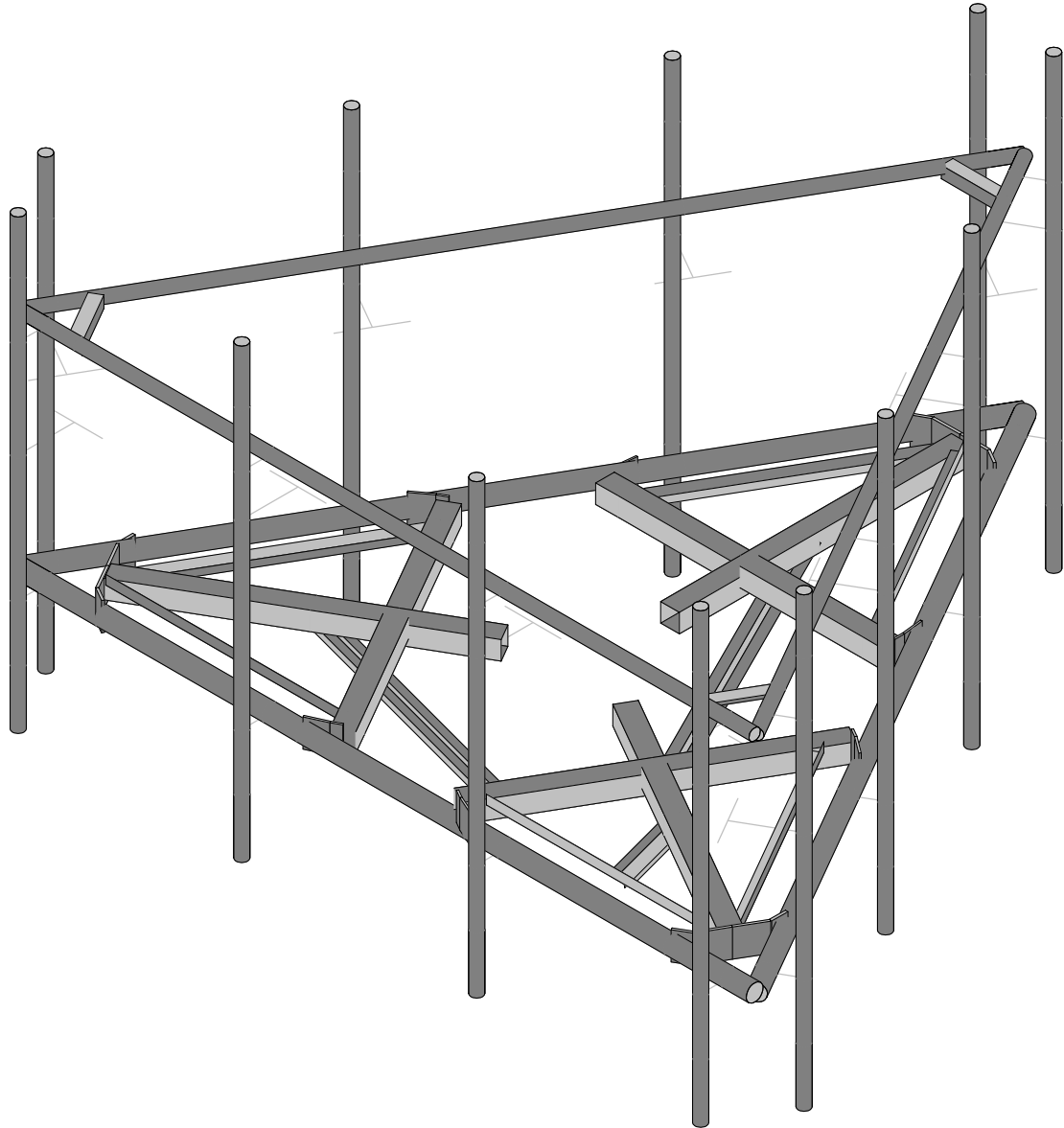
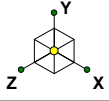
don.george@geostructural.com

6.0 Standard Conditions

- All data required to complete our structural analysis was furnished by our client and provided record data. GeoStructural has not conducted a site visit or independent study to verify existing conditions and the results of this analysis are based solely on the information provided. It has been assumed that the tower, antenna support structure and foundation have been constructed according to the provided existing drawings, previous structural analysis reports, mapping documents, etc.
- The default Structure Classification is Class II in accordance with ANSI/TIA-222-G §A.2.2 & §A.15.3 and has been assumed for this analysis. The owner shall verify this classification conforms with original or desired reliability criteria.
- This analysis assumes that the structure has been properly installed and maintained in accordance with ANSI/TIA-222-G §15.5 and that no physical deterioration has occurred in any of the components of the structure. Damaged, missing, or rusted members were not considered.
- This analysis verifies the adequacy of the main components of the structure. Not all connections, welds, bolts, plates, etc. were individually detailed and analyzed. Where not specifically analyzed, the existing connection plates, welds, bolts, etc. were assumed adequate to develop the full capacity of the main structural members.
- No consideration has been made for unusual or extreme wind events, rime/in-cloud ice loadings, harmonic or nodal vibration, vortex shedding or other similar conditions.
- It is the owner's responsibility to determine the appropriate design wind speed and amount of ice accumulation beyond code minimum values that should be considered in the analysis.
- This analysis report does not constitute a maintenance and condition assessment. No certifications regarding maintenance and condition are expressed or implied. If desired, GeoStructural can provide these services under a subsequent contract.
- This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If desired, GeoStructural can provide these services under a subsequent contract.

7.0 Calculations & Software Output

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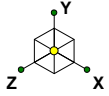
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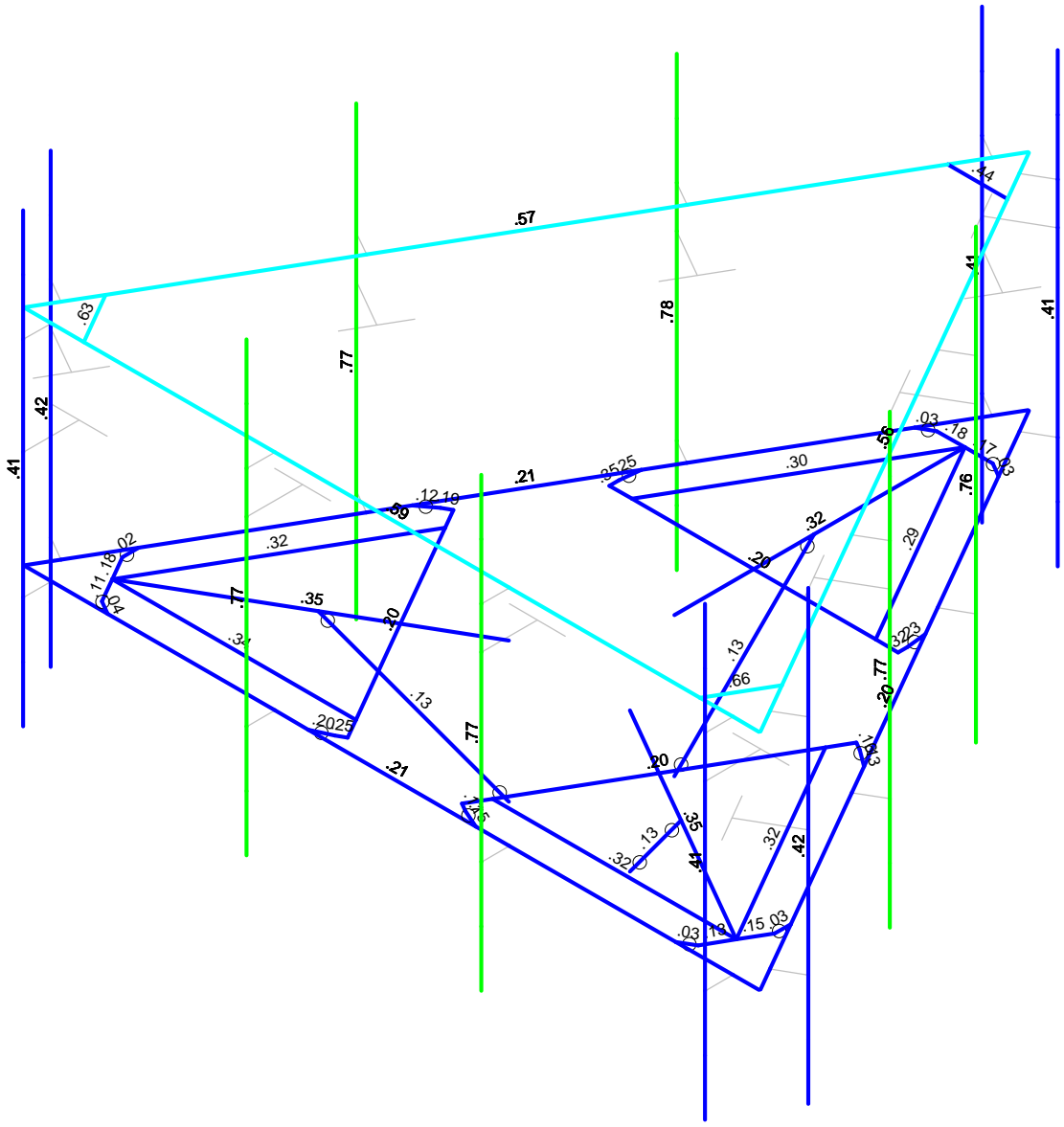
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Code Check
(Env)

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- .75-.90
- .50-.75
- 0-.50

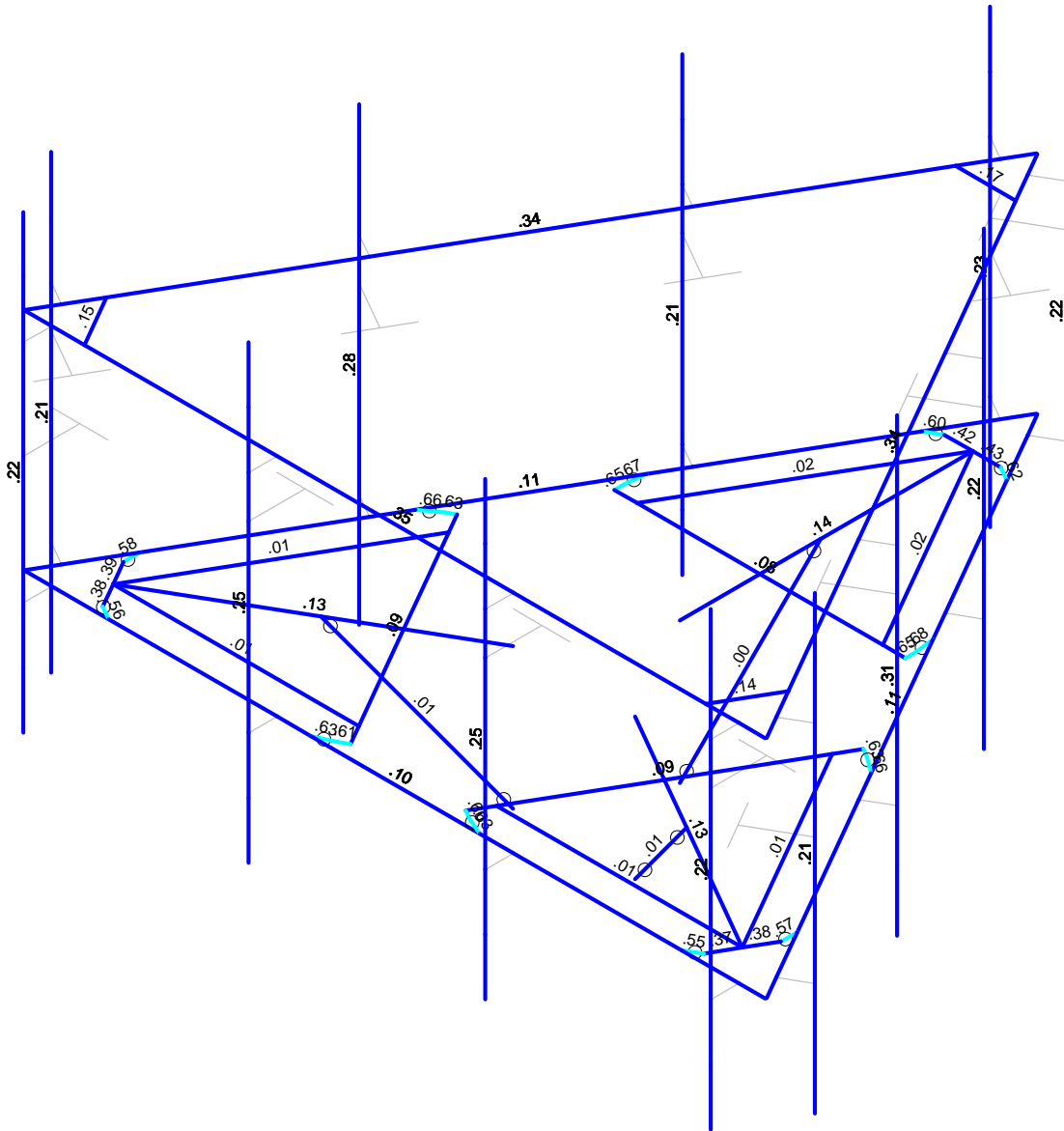
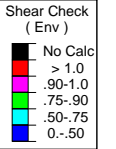
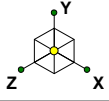


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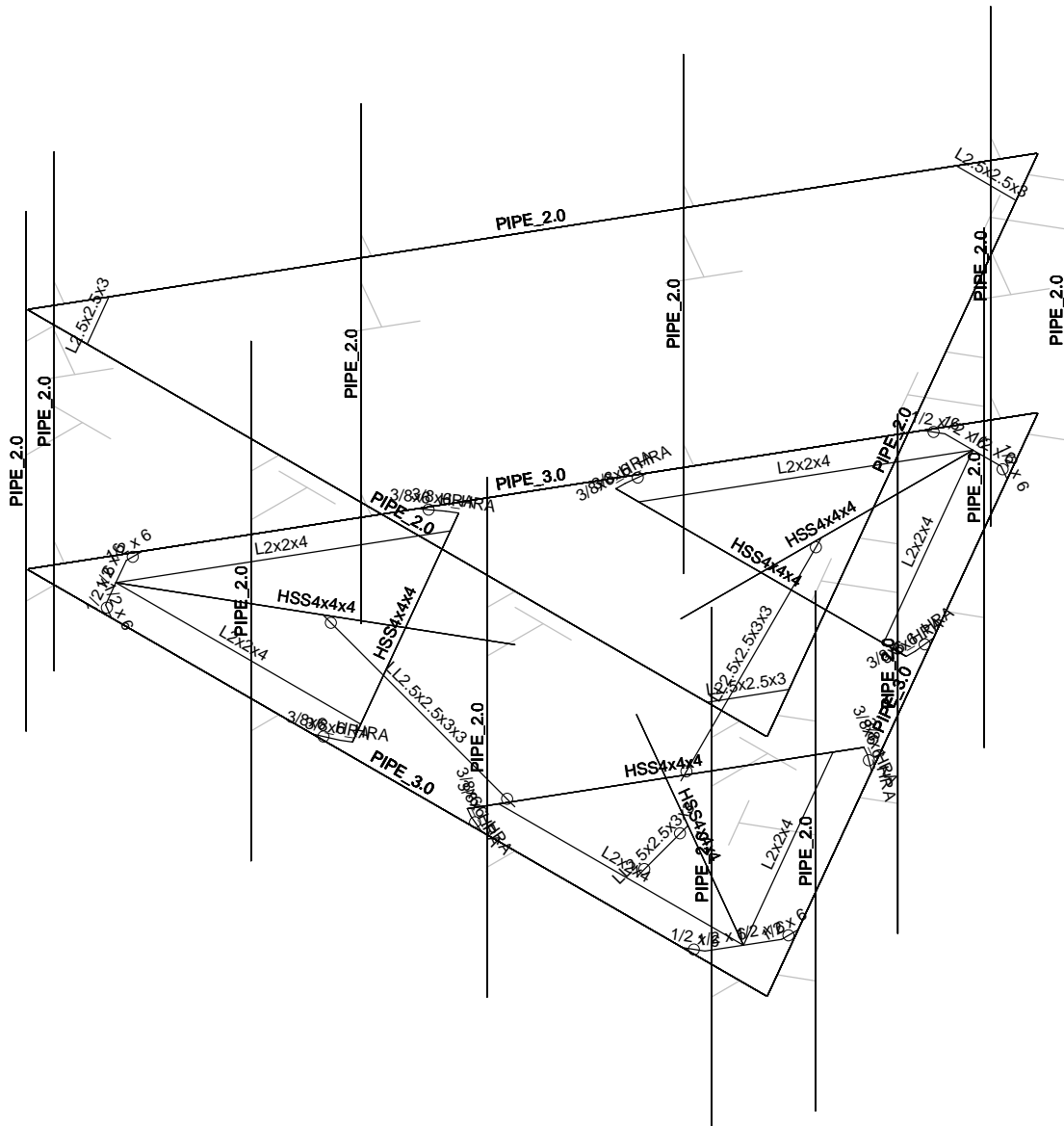
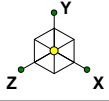
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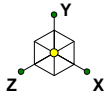


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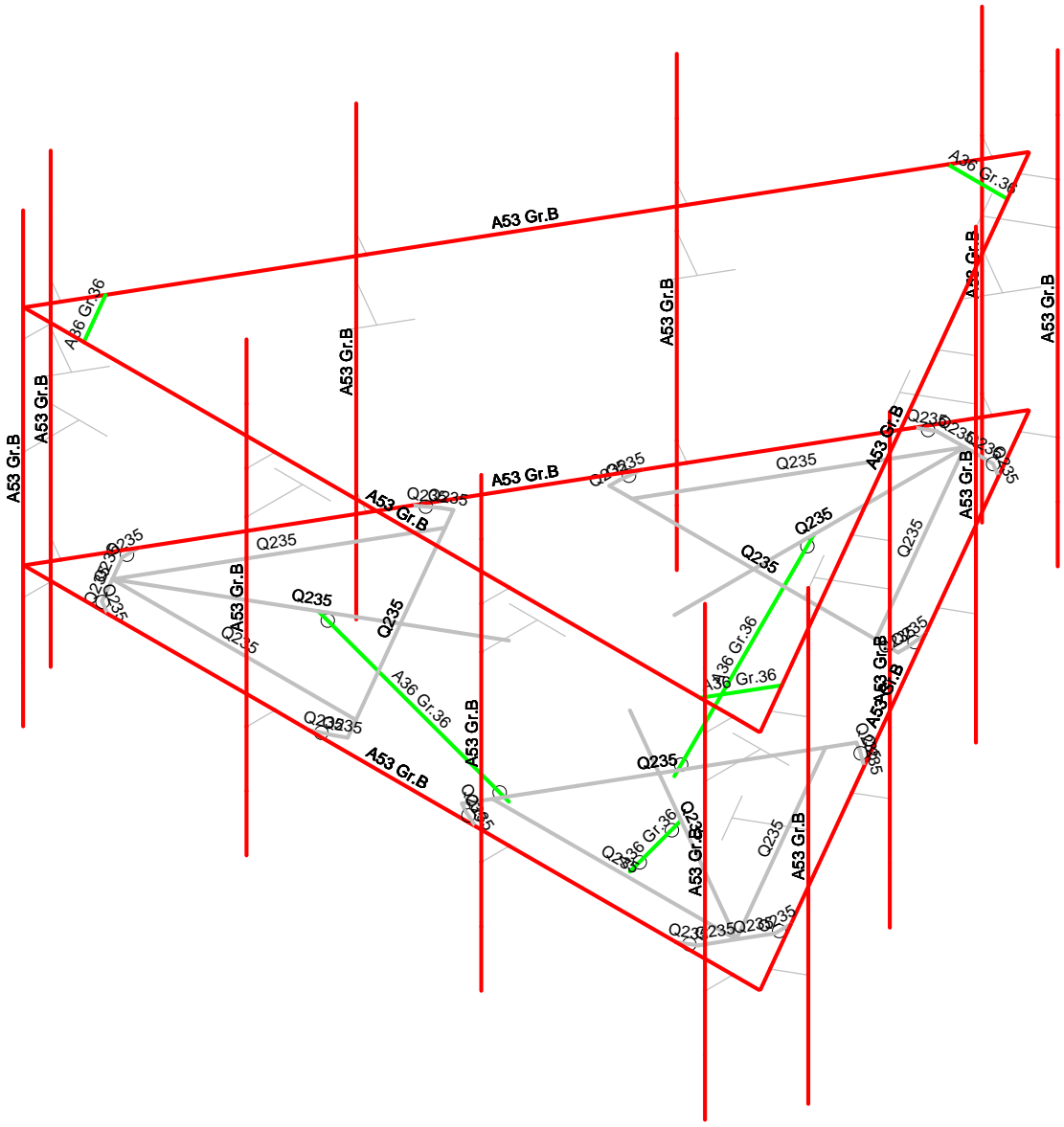
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CT03XC109

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Material Sets	
Blue square	RIGID
Green square	A36 Gr.36
Red square	A53 Gr.B
Grey square	Q235

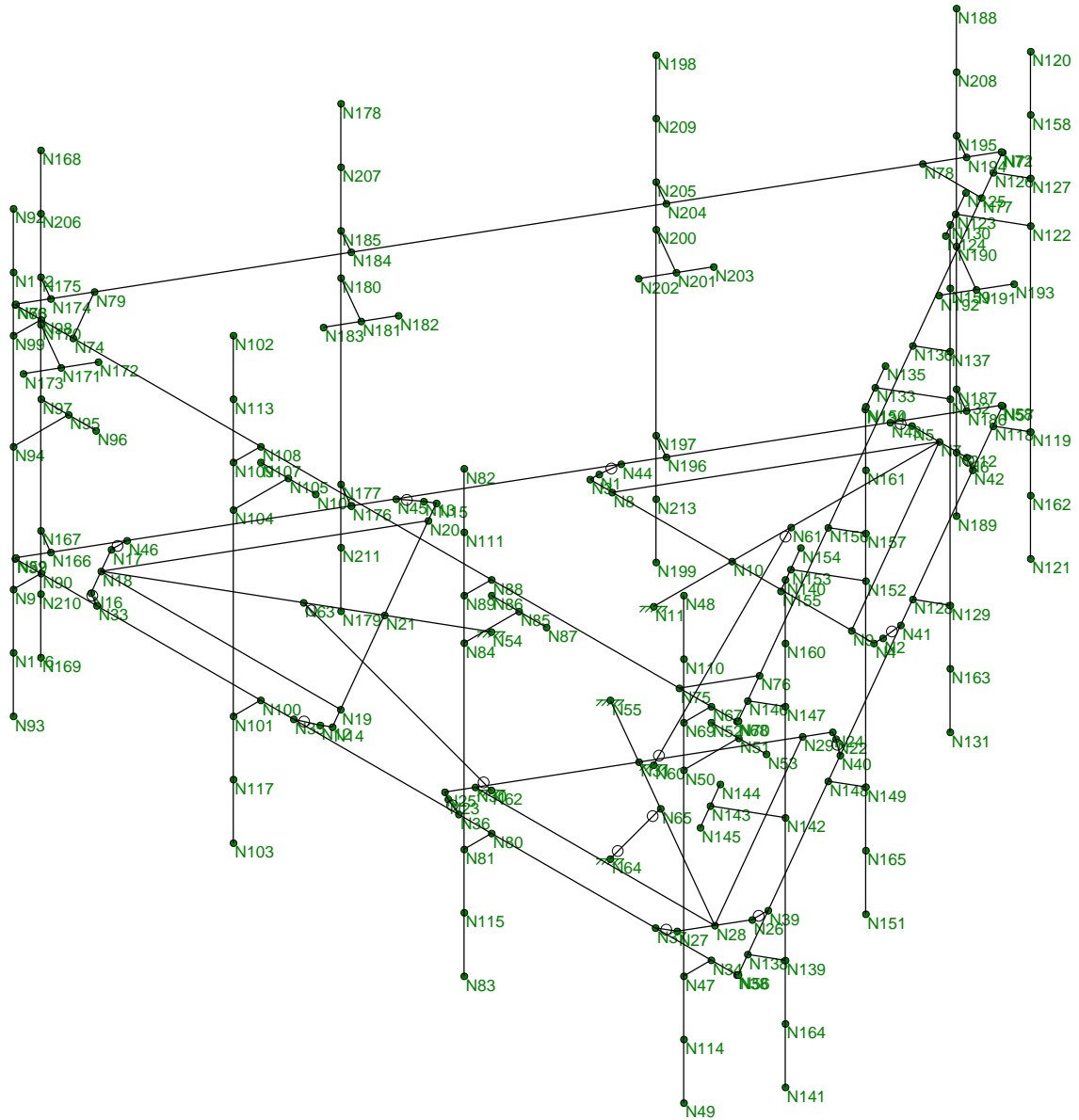
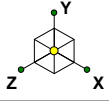


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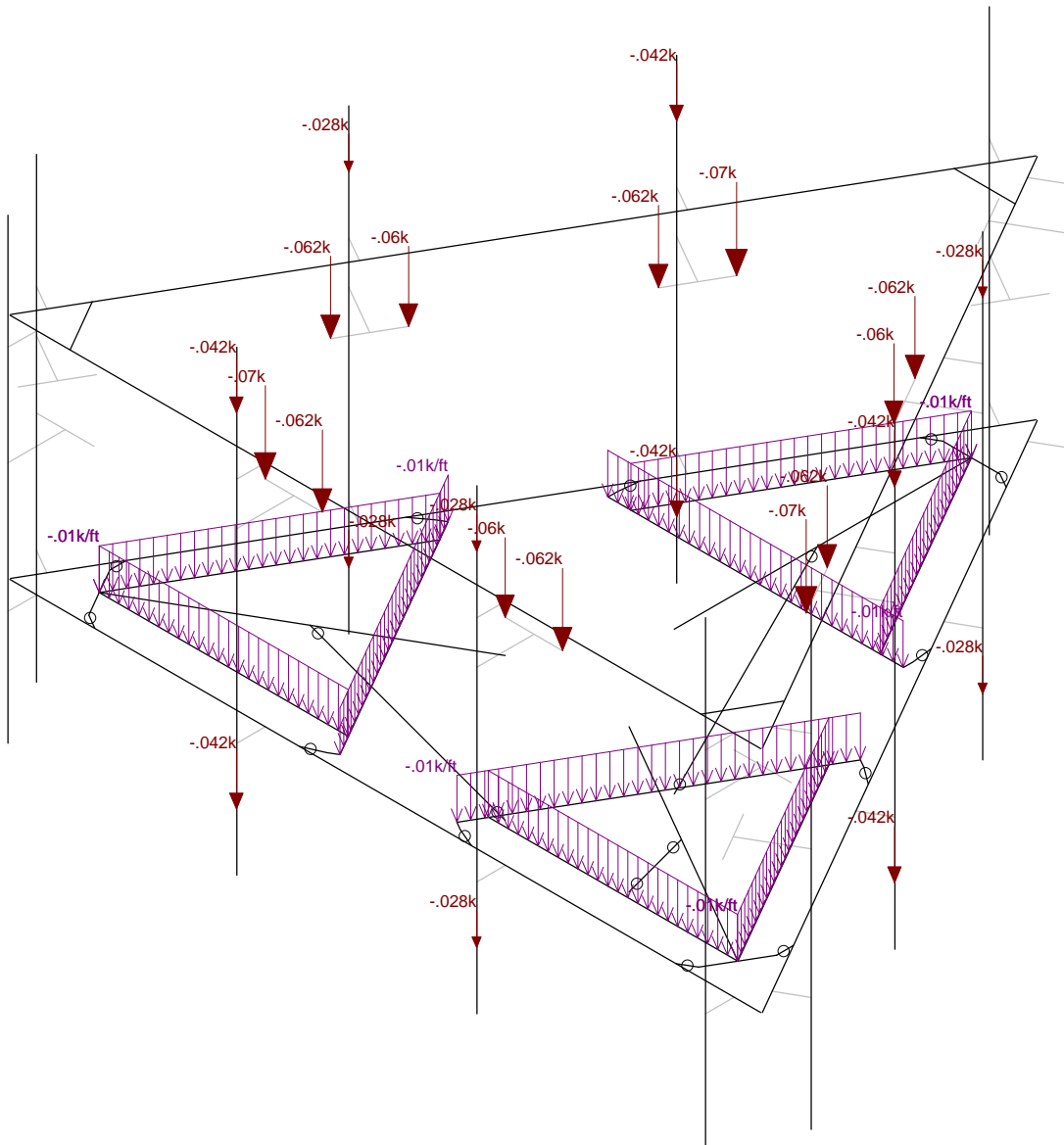
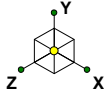
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Loads: BLC 1, D

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CT03XC109

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Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	D	DL		-1		25		9	
2	Di	SL				25		63	
3	Lm [500]	LL				1			
4	Lv [250]	LL				2			
5	Woz	WL				25		60	
6	Wox	WL				25		60	
7	Wiz	WL				25		60	
8	Wix	WL				25		60	
9	Ez	EL				25			
10	Ex	EL				25			

Load Combination Design

	Description	ASIF	CD	Service	Hot Rol...	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	1) 1.4D				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	2) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
20	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
21	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
22	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
25	3) 0.9D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
26	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
27	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
28	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
29	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
30	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
31	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
32	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
33	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
34	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
35	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
36	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
37	4) 1.2D+1.0...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
38	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
39	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
40	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
41	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	ASIF	CD	Service	Hot Rol...	Cold Form...	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
42	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
43	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
44	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
45	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
46	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
47	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
48	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
49	5) 1.2D+1.5L...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50	6) 1.2D+1.5Lv				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
51	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
52	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
53	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
54	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
55	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
56	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
57	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
58	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
59	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
60	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
61	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
62	7) (1.2+0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
63	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
64	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
65	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
66	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
67	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
68	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
69	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
70	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
71	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
72	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
73	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
74	8) (0.9-0.2Sd...				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
75	Dead Only				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A500 Gr.B RND_1	29000	11154	.3	.65	.527	42	1.4	58	1.3
8	A500 Gr.B Rect_1	29000	11154	.3	.65	.527	46	1.4	58	1.3
9	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
10	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
11	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
12	Q235	29000	11154	.3	.65	.49	34	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	PIPE 1.5	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical	.749	.293	.293	.586
2	PIPE 2.0	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	PIPE 2.5	PIPE 2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	PIPE 3.0	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
5	PIPE 3.5	PIPE 3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
6	PIPE 4.0	PIPE 4.0	Beam	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
7	PIPE 5.0	PIPE 5.0	Beam	Pipe	A53 Gr.B	Typical	4.01	14.3	14.3	28.6
8	HSS2x2x3	HSS2x2x3	Beam	Tube	A500 Gr.B R...	Typical	1.19	.641	.641	1.09
9	HSS3x3x3	HSS3x3x3	Beam	Tube	A500 Gr.B R...	Typical	1.89	2.46	2.46	4.03
10	HSS4x4x3	HSS4x4x3	Beam	Tube	A500 Gr.B R...	Typical	2.58	6.21	6.21	10
11	HSS4x4x4	HSS4x4x4	Beam	Tube	A500 Gr.B R...	Typical	3.37	7.8	7.8	12.8
12	HSS5x5x4	HSS5x5x4	Beam	Tube	A500 Gr.B R...	Typical	4.3	16	16	25.8
13	C3x3.5	C3x3.5	Beam	Channel	A36 Gr.36	Typical	1.09	.169	1.57	.023
14	C4x4.5	C4x4.5	Beam	Channel	A36 Gr.36	Typical	1.38	.289	3.65	.032
15	C5x6.7	C5x6.7	Beam	Channel	A36 Gr.36	Typical	1.97	.47	7.48	.055
16	L2.5x2.5x3	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
17	L2.5x2.5x4	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026
18	L3x3x3	L3x3x3	Beam	Single Angle	A36 Gr.36	Typical	1.09	.948	.948	.014
19	L3x3x4	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
20	L3x3x6	L3x3x6	Beam	Single Angle	A36 Gr.36	Typical	2.11	1.75	1.75	.101
21	L3.5x3.5x4	L3.5x3.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.7	2	2	.039
22	L4x4x4	L4x4x4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	.044
23	LL2.5x2.5x3x3	LL2.5x2.5x3x3	Beam	Double Angle (3/8...	A36 Gr.36	Typical	1.8	2.46	1.07	.023

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N7	N5		90	1/2 x 6	Beam	None	Q235	Typical_APP
2	M2	N7	N6		90	1/2 x 6	Beam	None	Q235	Typical_APP
3	M3	N3	N1		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
4	M4	N1	N44		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
5	M5	N4	N2		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
6	M6	N2	N41		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
7	M7	N7	N9			L2x2x4	Beam	Single Angle	Q235	Typical_APP
8	M8	N7	N8		270	L2x2x4	Beam	Single Angle	Q235	Typical_APP
9	M9	N5	N43		90	1/2 x 6	Beam	None	Q235	Typical_APP
10	M10	N6	N42		90	1/2 x 6	Beam	None	Q235	Typical_APP
11	M11	N18	N16		90	1/2 x 6	Beam	None	Q235	Typical_APP
12	M12	N18	N17		90	1/2 x 6	Beam	None	Q235	Typical_APP
13	M13	N14	N12		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
14	M14	N12	N35		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
15	M15	N15	N13		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
16	M16	N13	N45		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
17	M17	N18	N20			L2x2x4	Beam	Single Angle	Q235	Typical_APP
18	M18	N18	N19		270	L2x2x4	Beam	Single Angle	Q235	Typical_APP
19	M19	N15	N14			HSS4x4x4	Beam	Tube	Q235	Typical_APP
20	M20	N16	N33		90	1/2 x 6	Beam	None	Q235	Typical_APP
21	M21	N17	N46		90	1/2 x 6	Beam	None	Q235	Typical_APP
22	M22	N28	N26		90	1/2 x 6	Beam	None	Q235	Typical_APP
23	M23	N28	N27		90	1/2 x 6	Beam	None	Q235	Typical_APP
24	M24	N24	N22		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
25	M25	N22	N40		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
26	M26	N25	N23		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
27	M27	N23	N36		90	3/8x6 HRA	Beam	None	Q235	Typical_APP
28	M28	N28	N30			L2x2x4	Beam	Single Angle	Q235	Typical_APP
29	M29	N28	N29		270	L2x2x4	Beam	Single Angle	Q235	Typical_APP

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
30	M30	N26	N39		90	1/2 x 6	Beam	None	Q235	Typical_APP
31	M31	N27	N37		90	1/2 x 6	Beam	None	Q235	Typical_APP
32	M32	N32	N38			PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical_APP
33	M33	N34	N47			RIGID	None	None	RIGID	Typical
34	M34	N50	N51			RIGID	None	None	RIGID	Typical
35	M35	N52	N53			RIGID	None	None	RIGID	Typical
36	M36	N49	N48			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
37	M37	N18	N54			HSS4x4x4	Beam	Tube	Q235	Typical_APP
38	M38	N56	N57			PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical_APP
39	M39	N58	N59			PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical_APP
40	M40	N25	N24			HSS4x4x4	Beam	Tube	Q235	Typical_APP
41	M41	N4	N3			HSS4x4x4	Beam	Tube	Q235	Typical_APP
42	M42	N28	N55			HSS4x4x4	Beam	Tube	Q235	Typical_APP
43	M43	N7	N11			HSS4x4x4	Beam	Tube	Q235	Typical_APP
44	M44	N61	N60			LL2.5x2.5x3x3	Beam	Double Angle (...)	A36 Gr.36	Typical
45	M45	N63	N62			LL2.5x2.5x3x3	Beam	Double Angle (...)	A36 Gr.36	Typical
46	M46	N65	N64			LL2.5x2.5x3x3	Beam	Double Angle (...)	A36 Gr.36	Typical
47	M47	N66	N68			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
48	M48	N67	N69			RIGID	None	None	RIGID	Typical
49	M49	N70	N71			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
50	M50	N72	N73			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
51	M51	N75	N76		90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
52	M52	N77	N78		90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
53	M53	N79	N74		90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
54	M54	N80	N81			RIGID	None	None	RIGID	Typical
55	M55	N84	N85			RIGID	None	None	RIGID	Typical
56	M56	N86	N87			RIGID	None	None	RIGID	Typical
57	M57	N83	N82			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
58	M58	N88	N89			RIGID	None	None	RIGID	Typical
59	M59	N90	N91			RIGID	None	None	RIGID	Typical
60	M60	N94	N95			RIGID	None	None	RIGID	Typical
61	M61	N96	N97			RIGID	None	None	RIGID	Typical
62	M62	N93	N92			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
63	M63	N98	N99			RIGID	None	None	RIGID	Typical
64	M64	N100	N101			RIGID	None	None	RIGID	Typical
65	M65	N104	N105			RIGID	None	None	RIGID	Typical
66	M66	N106	N107			RIGID	None	None	RIGID	Typical
67	M67	N103	N102			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
68	M68	N108	N109			RIGID	None	None	RIGID	Typical
69	M69	N118	N119			RIGID	None	None	RIGID	Typical
70	M70	N122	N123			RIGID	None	None	RIGID	Typical
71	M71	N124	N125			RIGID	None	None	RIGID	Typical
72	M72	N121	N120			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
73	M73	N126	N127			RIGID	None	None	RIGID	Typical
74	M74	N128	N129			RIGID	None	None	RIGID	Typical
75	M75	N132	N133			RIGID	None	None	RIGID	Typical
76	M76	N134	N135			RIGID	None	None	RIGID	Typical
77	M77	N131	N130			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
78	M78	N136	N137			RIGID	None	None	RIGID	Typical
79	M79	N138	N139			RIGID	None	None	RIGID	Typical
80	M80	N142	N143			RIGID	None	None	RIGID	Typical
81	M81	N144	N145			RIGID	None	None	RIGID	Typical
82	M82	N141	N140			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
83	M83	N146	N147			RIGID	None	None	RIGID	Typical
84	M84	N148	N149			RIGID	None	None	RIGID	Typical
85	M85	N152	N153			RIGID	None	None	RIGID	Typical
86	M86	N154	N155			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
87	M87	N151	N150			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
88	M88	N156	N157			RIGID	None	None	RIGID	Typical
89	M89	N166	N167			RIGID	None	None	RIGID	Typical
90	M90	N170	N171			RIGID	None	None	RIGID	Typical
91	M91	N172	N173			RIGID	None	None	RIGID	Typical
92	M92	N169	N168			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
93	M93	N174	N175			RIGID	None	None	RIGID	Typical
94	M94	N176	N177			RIGID	None	None	RIGID	Typical
95	M95	N180	N181			RIGID	None	None	RIGID	Typical
96	M96	N182	N183			RIGID	None	None	RIGID	Typical
97	M97	N179	N178			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
98	M98	N184	N185			RIGID	None	None	RIGID	Typical
99	M99	N186	N187			RIGID	None	None	RIGID	Typical
100	M100	N190	N191			RIGID	None	None	RIGID	Typical
101	M101	N192	N193			RIGID	None	None	RIGID	Typical
102	M102	N189	N188			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
103	M103	N194	N195			RIGID	None	None	RIGID	Typical
104	M104	N196	N197			RIGID	None	None	RIGID	Typical
105	M105	N200	N201			RIGID	None	None	RIGID	Typical
106	M106	N202	N203			RIGID	None	None	RIGID	Typical
107	M107	N199	N198			PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical
108	M108	N204	N205			RIGID	None	None	RIGID	Typical

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N11	max	1.583	17	1.258	20	7.249	2	.781	8	2.06	23	.848	23
2		min	-1.581	23	-1.335	2	-5.122	20	-.621	14	-2.064	17	-.883	5
3	N54	max	6.952	6	1.361	24	3.355	25	.709	16	1.22	25	.685	19
4		min	-5.12	24	-1.435	6	-4.427	7	-.816	10	-1.218	19	-.807	13
5	N55	max	5.241	16	1.356	16	3.14	16	.759	24	.856	21	.788	3
6		min	-7.075	10	-1.43	10	-4.21	10	-.807	6	-.861	15	-.632	21
7	N60	max	.042	17	3.971	2	1.788	20	0	1	0	5	0	23
8		min	-.042	23	-1.839	20	-3.9	2	0	1	0	23	0	5
9	N62	max	1.726	24	4.186	6	2.057	6	0	16	0	10	0	10
10		min	-3.551	6	-2.057	24	-.998	24	0	10	0	16	0	16
11	N64	max	3.547	10	4.182	10	2.054	10	0	12	0	12	0	12
12		min	-1.723	16	-2.053	16	-.996	16	0	18	0	18	0	18
13	Totals:	max	8.075	5	8.278	35	7.551	2						
14		min	-8.075	11	2.112	66	-7.551	20						

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

Member	Shape	Code Check	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M107	PIPE 2.0	.781	2	12	.214	5.25	8	14.916	32.13	1.872	1.872	1...	H1-1b
2	M97	PIPE 2.0	.774	2	13	.280	5.25	12	14.916	32.13	1.872	1.872	1...	H1-1b
3	M67	PIPE 2.0	.768	2	11	.251	5.25	13	14.916	32.13	1.872	1.872	1...	H1-1b
4	M57	PIPE 2.0	.767	2	5	.250	5.25	4	14.916	32.13	1.872	1.872	1...	H1-1b
5	M87	PIPE 2.0	.767	2	3	.315	5.25	4	14.916	32.13	1.872	1.872	1...	H1-1b
6	M77	PIPE 2.0	.757	2	4	.216	5.25	8	14.916	32.13	1.872	1.872	1...	H1-1b
7	M51	L2.5x2.5x3	.660	0	5	.141	0	z	7	27.66	29.192	.873	1.972	1... H2-1
8	M53	L2.5x2.5x3	.628	0	13	.146	0	z	3	27.66	29.192	.873	1.972	1... H2-1
9	M47	PIPE 2.0	.588	4.378	2	.351	1.095	2	5.702	32.13	1.872	1.872	2...	H3-6
10	M50	PIPE 2.0	.571	4.378	17	.335	1.095	10	5.702	32.13	1.872	1.872	2...	H3-6
11	M49	PIPE 2.0	.562	4.378	24	.341	1.095	6	5.702	32.13	1.872	1.872	2...	H3-6
12	M52	L2.5x2.5x3	.435	0	9	.169	0	z	11	27.66	29.192	.873	1.972	1... H2-1

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

Member	Shape	Code Check	Loc[ft]	LC	Shear...	Loc[ft]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn	
13	M92	PIPE 2.0	.417	2	13	.208	2	9	14.916	32.13	1.872	1.872	1...	H1-1b	
14	M82	PIPE 2.0	.416	2	9	.208	2	7	14.916	32.13	1.872	1.872	1...	H1-1b	
15	M102	PIPE 2.0	.414	2	7	.230	2	11	14.916	32.13	1.872	1.872	1...	H1-1b	
16	M72	PIPE 2.0	.410	2	9	.224	2	5	14.916	32.13	1.872	1.872	1...	H1-1b	
17	M36	PIPE 2.0	.407	2	5	.216	2	13	14.916	32.13	1.872	1.872	1...	H1-1b	
18	M62	PIPE 2.0	.407	2	11	.225	2	3	14.916	32.13	1.872	1.872	1...	H1-1b	
19	M37	HSS4x4x4	.353	2.707	6	.127	2.707	y	4	94.854	103.122	11.96	11.96	1...	H1-1b
20	M42	HSS4x4x4	.353	2.707	10	.129	2.707	y	11	94.854	103.122	11.96	11.96	1...	H1-1b
21	M3	3/8x6_HRA	.351	0	5	.645	0	y	10	67.691	68.85	8.606	.538	1...	H1-1b
22	M18	L2x2x4	.340	4.359	7	.015	0	y	2	11.646	28.886	.653	1.386	1...	H2-1
23	M43	HSS4x4x4	.323	2.707	2	.143	5.198	z	5	94.854	103.122	11.96	11.96	1...	H1-1b
24	M28	L2x2x4	.322	0	10	.014	0	z	2	11.646	28.886	.653	1.45	1...	H2-1
25	M5	3/8x6_HRA	.320	0	11	.652	0	y	6	67.691	68.85	8.606	.538	1...	H1-1b
26	M29	L2x2x4	.319	0	10	.014	0	z	6	11.646	28.886	.653	1.463	1...	H2-1
27	M17	L2x2x4	.318	0	6	.014	0	y	10	11.646	28.886	.653	1.47	1...	H2-1
28	M8	L2x2x4	.297	4.359	3	.015	0	z	10	11.646	28.886	.653	1.408	1...	H2-1
29	M7	L2x2x4	.293	4.359	13	.015	0	y	6	11.646	28.886	.653	1.41	1...	H2-1
30	M4	3/8x6_HRA	.253	0	5	.672	0	y	4	63.5	68.85	8.606	.538	1...	H1-1b
31	M13	3/8x6_HRA	.245	0	8	.607	0	y	2	67.691	68.85	8.606	.538	1...	H1-1b
32	M6	3/8x6_HRA	.230	0	11	.682	0	y	12	63.5	68.85	8.606	.538	1...	H1-1b
33	M32	PIPE 3.0	.212	4.515	11	.101	8.756	8	25.897	65.205	5.749	5.749	3...	H1-1b	
34	M39	PIPE 3.0	.205	4.515	7	.114	5.062	5	25.897	65.205	5.749	5.749	3...	H1-1b	
35	M38	PIPE 3.0	.203	4.515	3	.115	1.505	11	25.897	65.205	5.749	5.749	3...	H1-1b	
36	M40	HSS4x4x4	.203	2.583	35	.092	4.79	z	11	94.949	103.122	11.96	11.96	1...	H1-1b
37	M19	HSS4x4x4	.202	2.583	29	.091	4.79	z	7	94.949	103.122	11.96	11.96	1...	H1-1b
38	M14	3/8x6_HRA	.201	0	8	.633	0	y	8	63.501	68.85	8.606	.538	1...	H1-1b
39	M41	HSS4x4x4	.197	2.583	26	.079	2.583	y	26	94.949	103.122	11.96	11.96	1...	H1-1b
40	M15	3/8x6_HRA	.187	0	8	.632	.167	y	10	67.691	68.85	8.606	.538	1...	H1-1b
41	M1	1/2 x 6	.178	0	6	.415	0	y	11	84.3	91.8	11.475	.956	1...	H1-1b
42	M12	1/2 x 6	.175	0	6	.387	0	y	10	84.3	91.8	11.475	.956	1...	H1-1b
43	M26	3/8x6_HRA	.170	0	8	.603	0	y	2	67.691	68.85	8.606	.538	1...	H1-1b
44	M2	1/2 x 6	.165	0	10	.426	0	y	5	84.3	91.8	11.475	.956	1...	H1-1b
45	M24	3/8x6_HRA	.164	0	13	.630	.167	y	6	67.691	68.85	8.606	.538	1...	H1-1b
46	M22	1/2 x 6	.154	0	10	.384	0	y	6	84.3	91.8	11.475	.956	1...	H1-1b
47	M27	3/8x6_HRA	.147	0	8	.633	0	y	8	63.501	68.85	8.606	.538	1...	H1-1b
48	M45	LL2.5x2.5x...	.135	0	6	.008	0	z	10	44.396	58.32	3.954	2.55	1...	H1-1b*
49	M46	LL2.5x2.5x...	.134	0	10	.009	3.536	z	12	44.396	58.32	3.954	2.55	1...	H1-1b*
50	M25	3/8x6_HRA	.133	0	12	.660	0	y	12	63.501	68.85	8.606	.538	1...	H1-1b
51	M23	1/2 x 6	.127	0	10	.371	0	y	13	84.3	91.8	11.475	.956	1...	H1-1b
52	M44	LL2.5x2.5x...	.127	0	2	.004	3.536	z	5	44.396	58.32	3.954	2.55	1	H1-1b*
53	M16	3/8x6_HRA	.123	0	3	.663	0	y	4	63.501	68.85	8.606	.538	1...	H1-1b
54	M11	1/2 x 6	.113	0	5	.375	.5	y	2	84.3	91.8	11.475	.956	1...	H1-1b
55	M20	1/2 x 6	.037	0	6	.555	.289	y	8	89.215	91.8	11.475	.956	1...	H1-1b
56	M31	1/2 x 6	.034	0	46	.546	.289	y	8	89.215	91.8	11.475	.956	1...	H1-1b
57	M9	1/2 x 6	.030	0	3	.605	.289	y	4	89.215	91.8	11.475	.956	1...	H1-1b
58	M10	1/2 x 6	.030	0	12	.615	.289	y	12	89.215	91.8	11.475	.956	1...	H1-1b
59	M30	1/2 x 6	.029	0	10	.574	.289	y	12	89.215	91.8	11.475	.956	1...	H1-1b
60	M21	1/2 x 6	.025	0	5	.577	.289	y	4	89.215	91.8	11.475	.956	1...	H1-1b

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.

PROJECT: DO MACRO UPGRADE
 EQUIPMENT DEPLOYMENT

SITE NUMBER: CT03XC109

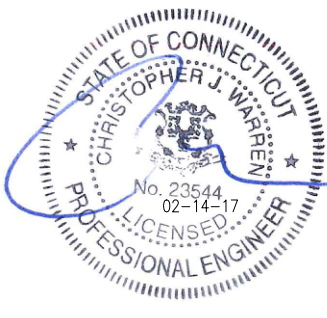
SITE ADDRESS: 267 NORWICH WESTERLEY ROAD
 NORTH STONINGTON, CT 06379

SITE TYPE: MONOPOLE

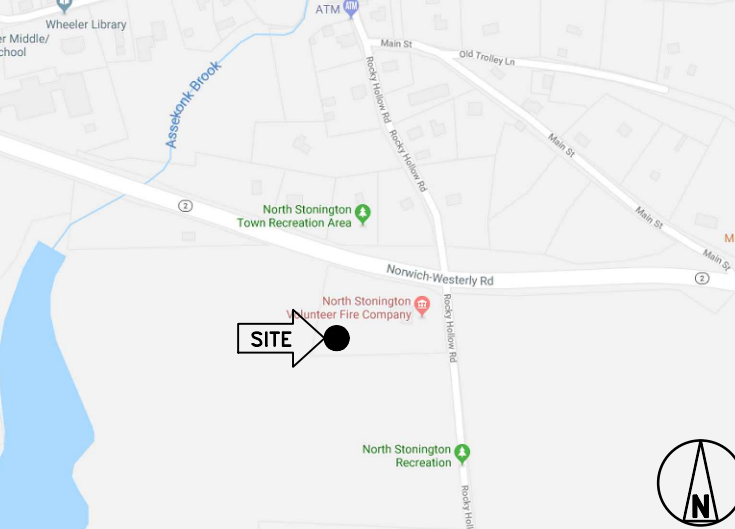

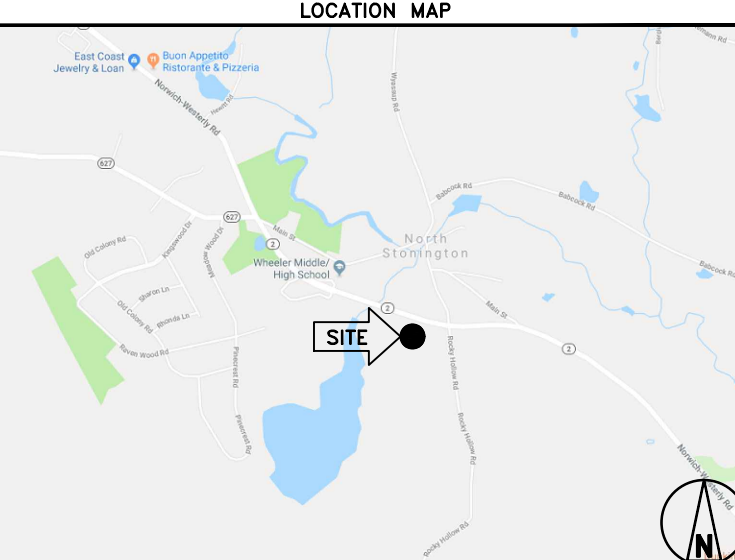
PLANS PREPARED FOR:
Sprint
 INTERNATIONAL BLVD, SUITE 800
 MAHWAH, NJ 07495
 TEL: (800) 357-7641

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

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

ENGINEERING LICENSE:




PROJECT INFORMATION	AREA MAP	SCOPE OF WORK	DRAWING INDEX																																							
<p>SITE INFORMATION: LATITUDE (NAD83): 41° 26' 13.6" N 41.43711388°</p> <p>LONGITUDE (NAD83): 71° 52' 53.3" W -71.88146670°</p> <p>STRUCTURE HEIGHT: 150'± STRUCTURE TYPE: MONOPOLE</p> <p>APPLICANT: SPRINT 1 INTERNATIONAL BLVD, SUITE 800 MAHWAH, NJ 07495</p> <p>TOWER OWNER: SBA PROPERTIES LLC 8501 CONGRESS AVE BOCA RATON, FL 33487</p> <p>SBA SITE ID: CT01210-S SBA SITE NAME: NORTH STONINGTON SBA CONTACT: STEPHEN ROTH (860) 539-4920 sroth@sbasite.com</p>	<p>AREA MAP</p> 	<p>SCOPE OF WORK</p> <p>SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.</p> <ul style="list-style-type: none"> REMOVE (3) PANEL ANTENNAS RELOCATE (3) EXISTING PANEL ANTENNAS INSTALL (6) PANEL ANTENNAS INSTALL (3) 2.5 GHz RRH'S ON PROPOSED PIPE MOUNT INSTALL (6) 800 MHz RRH'S ON PROPOSED PIPE MOUNT RELOCATE (3) 1900 MHz RRH'S ON PROPOSED PIPE MOUNT INSTALL STRUCTURAL AUGMENTS INSTALL (4) HYBRID CABLES INSTALL RAN EQUIPMENT INSIDE EXISTING MMBTS CABINET <p>THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.</p>	<p>DRAWING INDEX</p> <table border="1"> <thead> <tr> <th>SHEET NO.</th> <th>SHEET TITLE</th> <th>REV.</th> </tr> </thead> <tbody> <tr> <td>T-1</td> <td>TITLE SHEET & PROJECT DATA</td> <td>0</td> </tr> <tr> <td>SP-1</td> <td>OUTLINE SPECIFICATIONS</td> <td>0</td> </tr> <tr> <td>SP-2</td> <td>OUTLINE SPECIFICATIONS</td> <td>0</td> </tr> <tr> <td>SP-3</td> <td>OUTLINE SPECIFICATIONS</td> <td>0</td> </tr> <tr> <td>A-1</td> <td>SITE PLAN</td> <td>0</td> </tr> <tr> <td>A-2</td> <td>TOWER ELEVATION</td> <td>0</td> </tr> <tr> <td>A-3</td> <td>ANTENNA LAYOUT & MOUNTING DETAILS</td> <td>0</td> </tr> <tr> <td>A-4</td> <td>EQUIPMENT & MOUNTING DETAILS</td> <td>0</td> </tr> <tr> <td>A-5</td> <td>DETAILS</td> <td>0</td> </tr> <tr> <td>E-1</td> <td>ELECTRICAL & GROUNDING DETAILS</td> <td>0</td> </tr> <tr> <td>RF-1</td> <td>RF DATA SHEET</td> <td>0</td> </tr> <tr> <td>RF-2</td> <td>PLUMBING DIAGRAM</td> <td>0</td> </tr> </tbody> </table>	SHEET NO.	SHEET TITLE	REV.	T-1	TITLE SHEET & PROJECT DATA	0	SP-1	OUTLINE SPECIFICATIONS	0	SP-2	OUTLINE SPECIFICATIONS	0	SP-3	OUTLINE SPECIFICATIONS	0	A-1	SITE PLAN	0	A-2	TOWER ELEVATION	0	A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0	A-4	EQUIPMENT & MOUNTING DETAILS	0	A-5	DETAILS	0	E-1	ELECTRICAL & GROUNDING DETAILS	0	RF-1	RF DATA SHEET	0	RF-2	PLUMBING DIAGRAM	0
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<p>CALL CONNECTICUT ONE CALL (800) 922-4455 CALL 3 WORKING DAYS BEFORE YOU DIG!</p>  <p>Know what's below. Call before you dig. www.call811.com</p>	<p>LOCATION MAP</p> 	<p>APPLICABLE CODES</p> <p>ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.</p> <ol style="list-style-type: none"> INTERNATIONAL BUILDING CODE (2012 IBC) TIA-222-G OR LATEST EDITION NFPA 780 - LIGHTNING PROTECTION CODE 2014 NATIONAL ELECTRIC CODE OR LATEST EDITION ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS CT BUILDING CODE LOCAL BUILDING CODE CITY/COUNTY ORDINANCES 	<p>APPROVALS</p> <table border="1"> <thead> <tr> <th>TITLE</th> <th>SIGNATURE</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>PROJECT MANAGER:</td> <td></td> <td></td> </tr> <tr> <td>CONSTRUCTION:</td> <td></td> <td></td> </tr> <tr> <td>RF ENGINEER:</td> <td></td> <td></td> </tr> <tr> <td>ZONING/SITE ACQ:</td> <td></td> <td></td> </tr> <tr> <td>OPERATIONS:</td> <td></td> <td></td> </tr> <tr> <td>TOWER OWNER:</td> <td></td> <td></td> </tr> </tbody> </table> <p>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.</p>	TITLE	SIGNATURE	DATE	PROJECT MANAGER:			CONSTRUCTION:			RF ENGINEER:			ZONING/SITE ACQ:			OPERATIONS:			TOWER OWNER:																				
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		<p>GENERAL NOTES</p> <ol style="list-style-type: none"> THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION. <ul style="list-style-type: none"> 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. 																																								
			<p>CHECKED BY:</p> <p>APPROVED BY:</p> <p>REVISIONS:</p> <table border="1"> <thead> <tr> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> <th>REV.</th> </tr> </thead> <tbody> <tr> <td>ISSUED FOR CONSTRUCTION</td> <td>03/19/18</td> <td>RCD</td> <td>0</td> </tr> </tbody> </table>	DESCRIPTION	DATE	BY	REV.	ISSUED FOR CONSTRUCTION	03/19/18	RCD	0																															
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THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

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

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

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

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

PLANS PREPARED FOR:




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PROJECT MANAGER:



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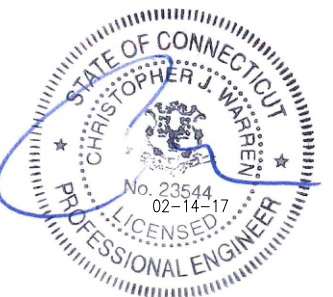
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ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

SITE NUMBER:

CT03XC109

SITE ADDRESS:

267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

SHEET DESCRIPTION:

OUTLINE SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

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

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

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

3.3 DELIVERABLES:

- A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER
- B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.
 1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
 2. PROJECT PROGRESS REPORTS.
 3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
 4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).

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

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

- 1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.
- 1.2 RELATED DOCUMENTS:
 - A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.
 - B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HERewith.
- 1.3 SUBMITTALS:
 - A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.
 - B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.
 1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
 2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
 3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
 4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
 5. CHEMICAL GROUNDING DESIGN
 - D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
 2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.
- C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:
 1. AZIMUTH, DOWNTILT, AGL - UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
 2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
 3. ALL AVAILABLE JURISDICTIONAL INFORMATION
 4. PDF SCAN OF REDLINES PRODUCED IN FIELD

5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
 6. LIEN WAIVERS
 7. FINAL PAYMENT APPLICATION
 8. REQUIRED FINAL CONSTRUCTION PHOTOS
 9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
 10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).
- 1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs
- 1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 REQUIREMENTS FOR TESTING:

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

3.2 REQUIRED TESTS:

- A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
 2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
 3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
 4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
 5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
 6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
 7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
 8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
 9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

- A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.
- B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
 2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
 3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
 4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
 5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
 6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS - ANTENNALIGN ALIGNMENT TOOL (AAT)

PLANS PREPARED FOR:



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PROJECT MANAGER:



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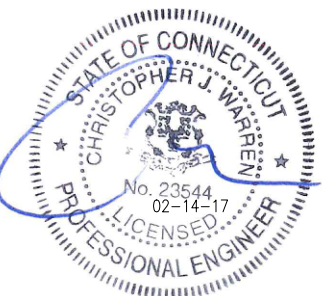
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ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

SITE NUMBER:
CT03XC109

SITE ADDRESS:
267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

SHEET DESCRIPTION:
OUTLINE SPECIFICATIONS

SHEET NUMBER:
SP-2

CONTINUE FROM SP-2

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

SECTION 01 400 - SUBMITTALS & TESTS

PART 1 - GENERAL

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

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

- 24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADI).
- 25. ALL BTS GROUND CONNECTIONS.
- 26. ALL GROUND TEST WELLS.
- 27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.
- 28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.
- 29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.
- 30. GPS ANTENNAS.
- 31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.
- 32. DOGHOUSE/CABLE EXIT FROM ROOF.
- 33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.
- 34. MASTER BUS BAR.
- 35. TELCO BOARD AND NIU.
- 36. ELECTRICAL DISTRIBUTION WALL.
- 37. CABLE ENTRY WITH SURGE SUPPRESSION.
- 38. ENTRANCE TO EQUIPMENT ROOM.
- 39. COAX WEATHERPROOFING--TOP AND BOTTOM OF TOWER.
- 40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.
- 41. ANTENNA AND MAST GROUNDING.
- 42. LANDSCAPING - WHERE APPLICABLE.

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

PLANS PREPARED FOR:



PROJECT MANAGER:

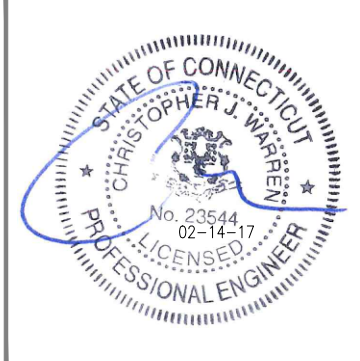


SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
TEL: (508) 251-0720

PLANS PREPARED BY:



ENGINEERING LICENSE:



CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

SITE NUMBER:

CT03XC109

SITE ADDRESS:

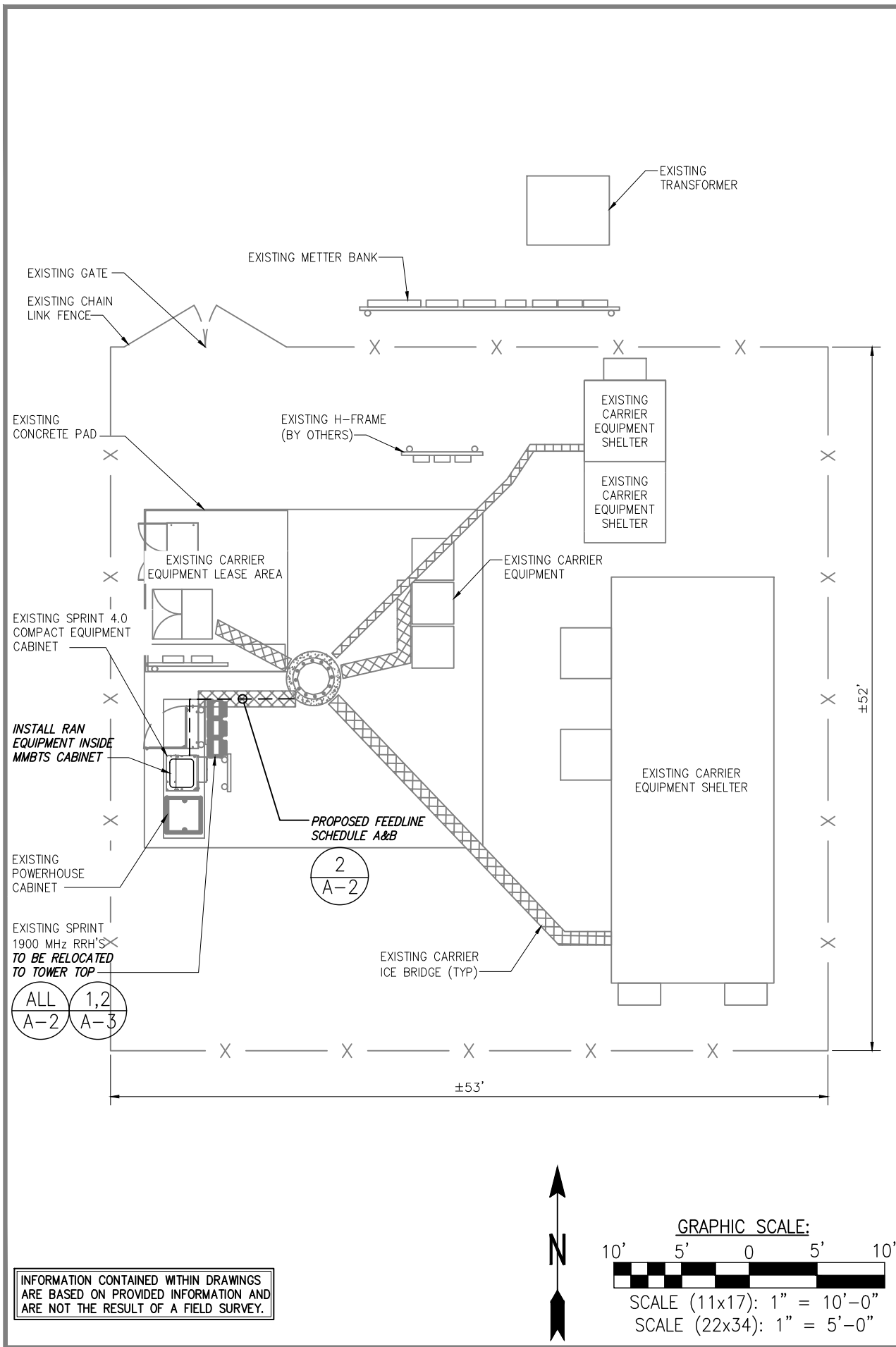
267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

SHEET DESCRIPTION:

OUTLINE SPECIFICATIONS

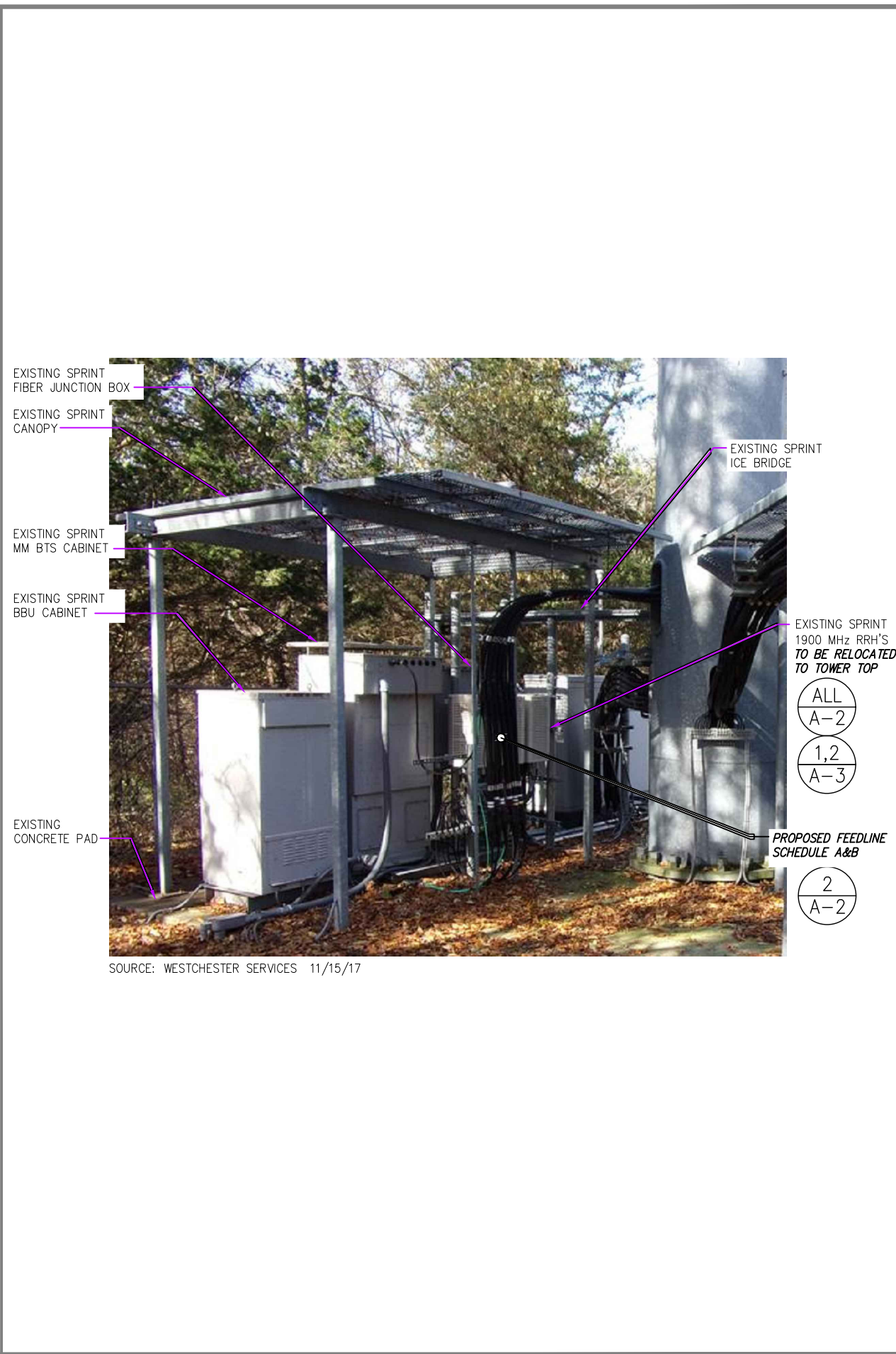
SHEET NUMBER:

SP-3



OVERALL SITE PLAN

SCALE: AS NOTED 1



SPRINT EQUIPMENT PHOTO DETAIL

SCALE: AS NOTED 2

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

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

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

ENGINEERING LICENSE:

 STATE OF CONNECTICUT
 CHRISTOPHER J. WARREN
 No. 23544
 02-14-17
 LICENSED PROFESSIONAL ENGINEER

CHECKED BY:

APPROVED BY:

REVISIONS:	DESCRIPTION	DATE	BY	REV.
2	A-2			
1,2	A-3			
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

SITE NUMBER:
CT03XC109

SITE ADDRESS:
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 N. STONINGTON, CT 06539

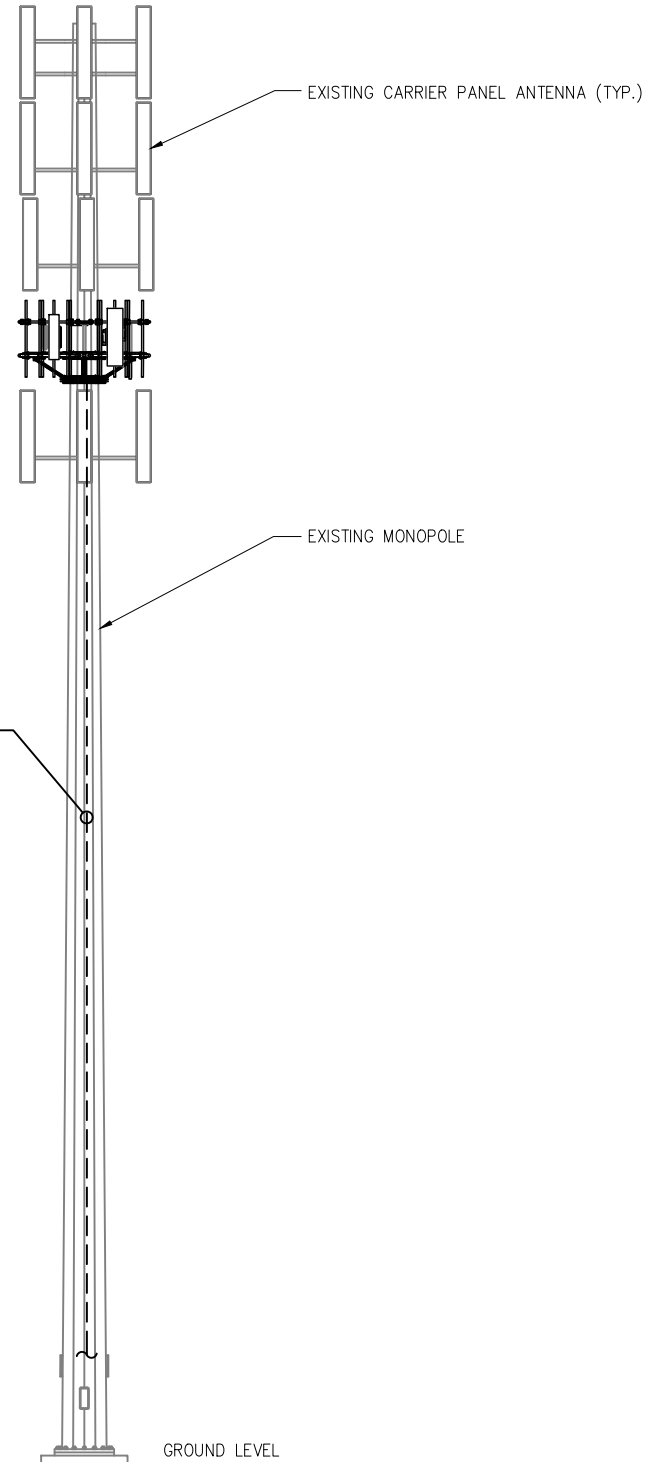
SHEET DESCRIPTION:
SITE PLAN

SHEET NUMBER:
A-1

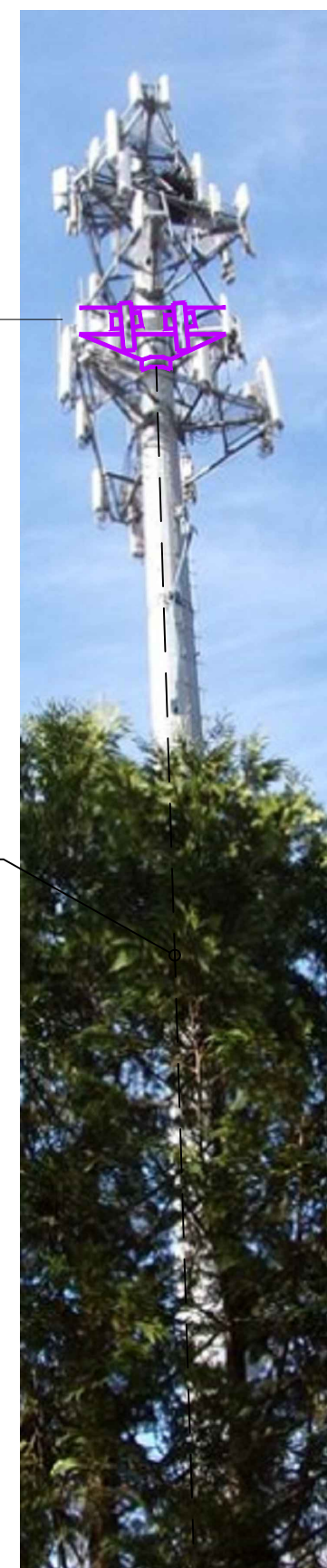
THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED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

TOP OF MONOPOLE
ELEV. = ±150'-0" A.G.L.

Q OF EXISTING/TO BE
INSTALLED SPRINT ANTENNAS
ELEV. = 117'-0" A.G.L.



Q OF EXISTING/TO BE
INSTALLED SPRINT ANTENNAS
ELEV. = 117'-0" A.G.L.



FEEDLINE SCHEDULE A
FEEDLINE SCHEDULE B

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF
ENGINEER PRIOR TO INSTALLATION

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

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO BE REMOVED: (6) 1 5/8" COAX	UP INSIDE MONOPOLE TO RAD
B	PROPOSED: (4) HYBRID TO 117' RAD	UP INSIDE MONOPOLE TO RAD

NOTE:
EXISTING SPRINT EQUIPMENT FEEDLINE INVENTORY BASED ON
COLOCATION APPLICATION AND SBA RECORD, NOT FIELD
OBSERVATIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS
MAY DIFFER.

PLANS PREPARED FOR:

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

PROJECT MANAGER:

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

PLANS PREPARED BY:

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

ENGINEERING LICENSE:

CHECKED BY:

APPROVED BY:

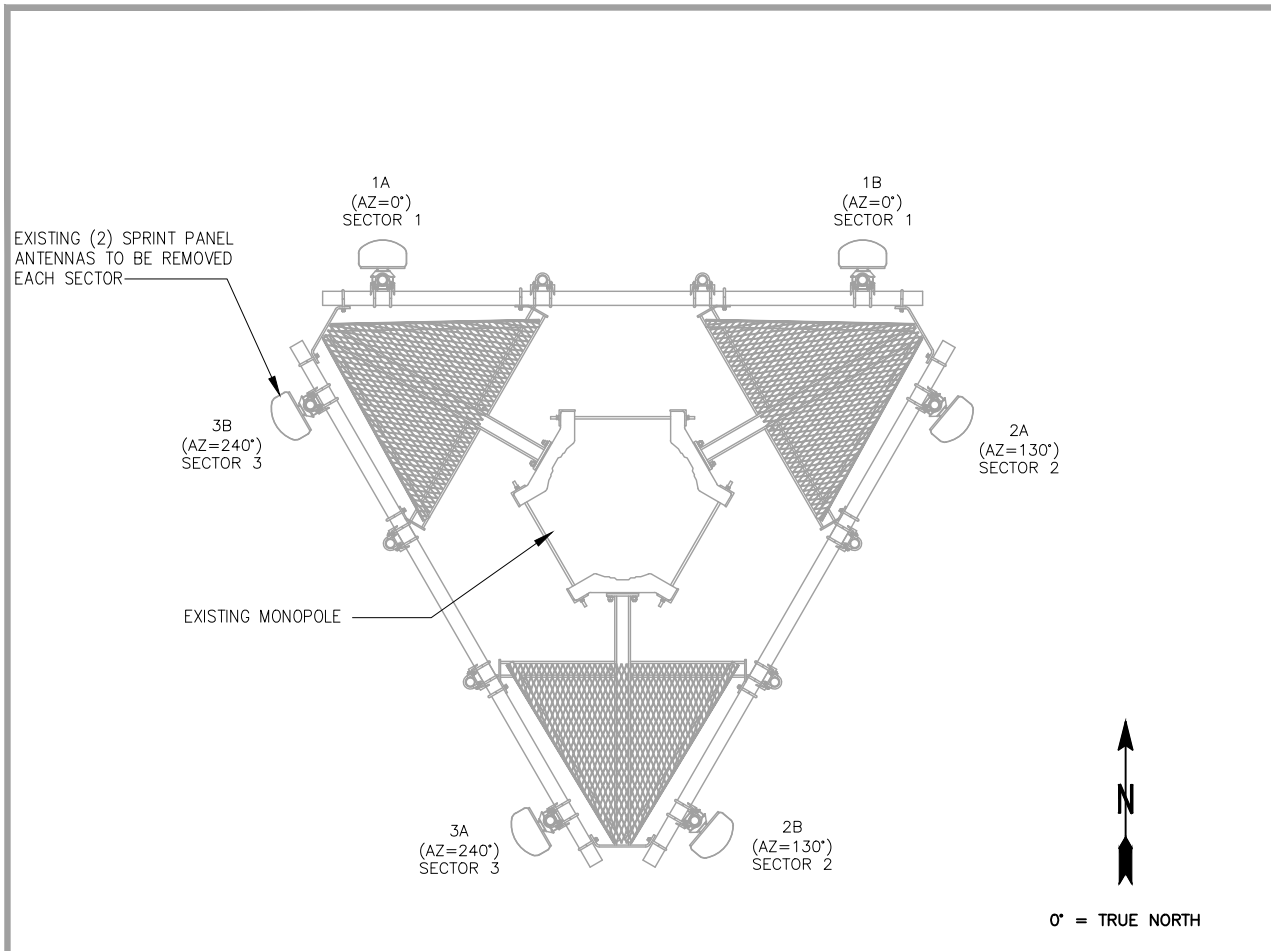
REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

SITE NUMBER:
CT03XC109

SITE ADDRESS:
267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

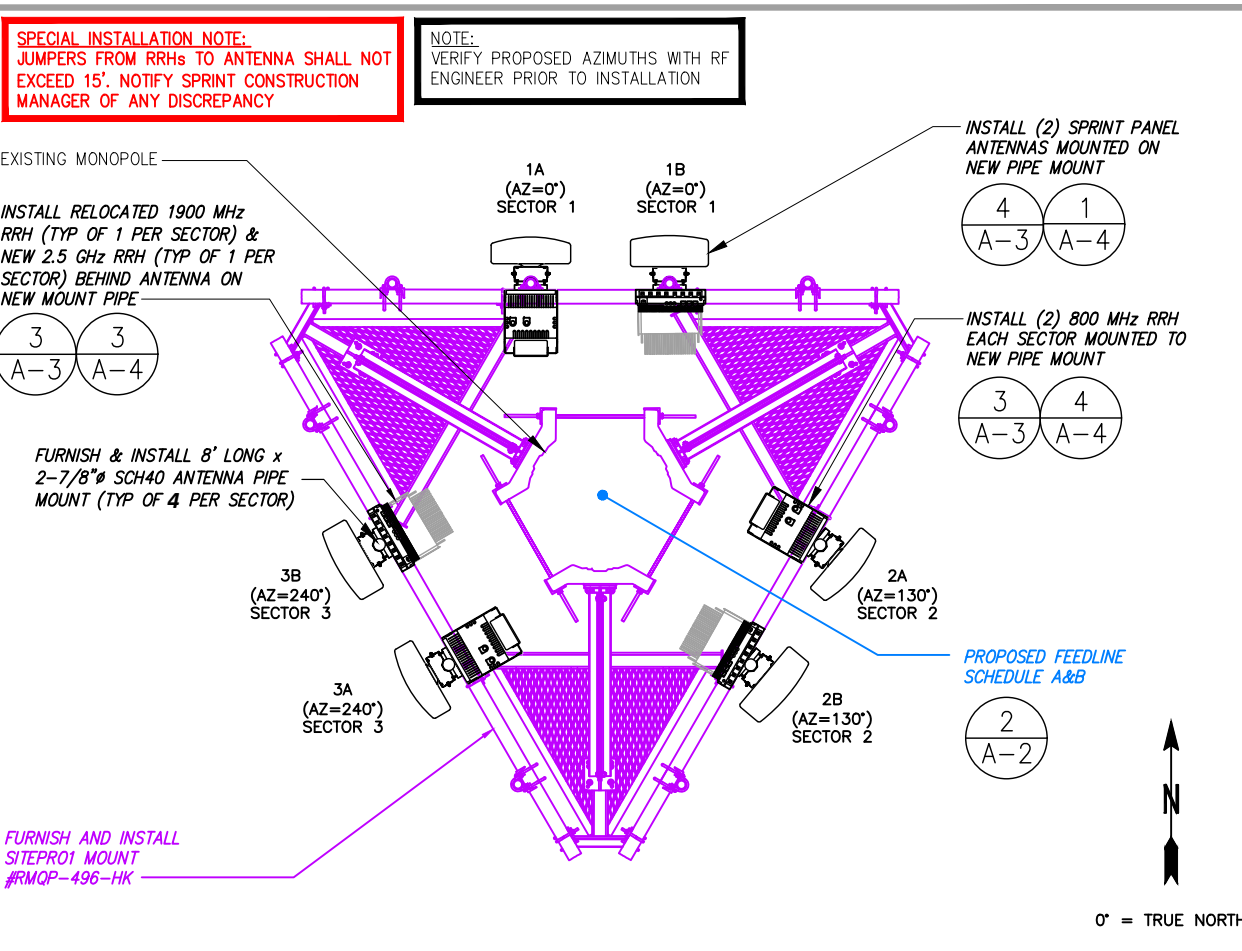
SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



EXISTING ANTENNA & RRH LAYOUT

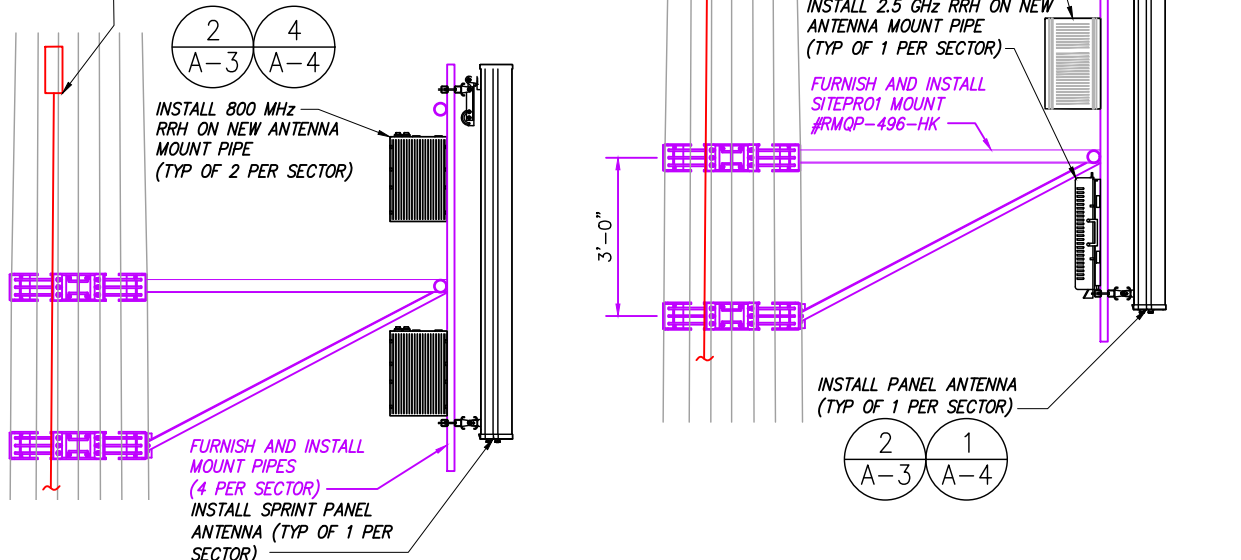
NO SCALE 1



FINAL ANTENNA LAYOUT

NO SCALE 2

SPECIAL TOWER TOP EQUIPMENT INSTALLATION WORK NOTE (SAFETY-CLIMB ALIGNMENT REQUIREMENTS):
 GENERAL CONTRACTOR SHALL ORIENT PROPOSED SPRINT COLLAR-MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH EXISTING OR PROPOSED COLLAR-MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FOLE WELDED BY A CERTIFIED WELDING TECHNICIAN.



TYPICAL ANTENNA & RRH MOUNTING DETAILS

NO SCALE 3



DETAIL NOT USED

NO SCALE 4

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

PLANS PREPARED FOR:

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

PROJECT MANAGER:

SBA COMMUNICATIONS CORP.
 134 FLANDERS ROAD, SUITE 125
 WESTBOROUGH, MA 01581
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PLANS PREPARED BY:

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ENGINEERING LICENSE:

CHECKED BY:

APPROVED BY:

REVISIONS:

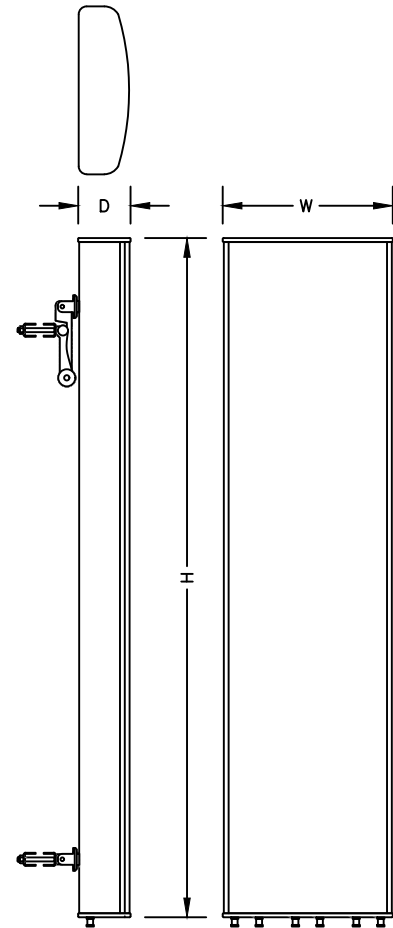
DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION	03/19/18	RCD	0

SITE NUMBER:
CT03XC109

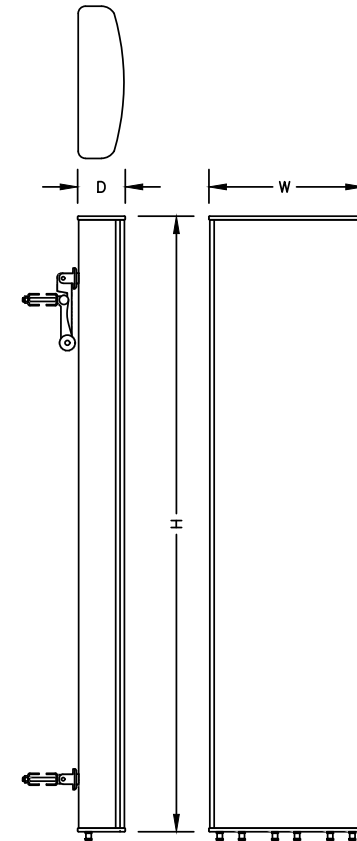
SITE ADDRESS:
 267 NORWICH WESTERLY ROAD
 N. STONINGTON, CT 06539

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:
A-3



ANTENNA SPECIFICATIONS	
MANUF.	COMMSCOPE
MODEL #	NNVV-65B-R4
HEIGHT	72"
WIDTH	19.6"
DEPTH	7.8"
WEIGHT	84.7± LBS.



ANTENNA SPECIFICATIONS	
MANUF.	RFS
MODEL #	APXVTM14-ALU-I20
HEIGHT	56.3"
WIDTH	12.6"
DEPTH	6.3"
WEIGHT	56.2± LBS.

ANTENNA DETAIL

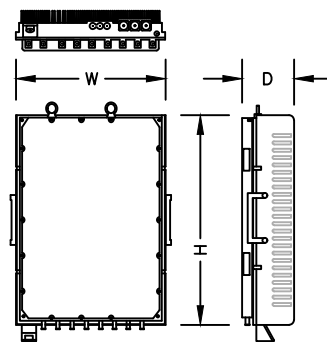
NO SCALE

1

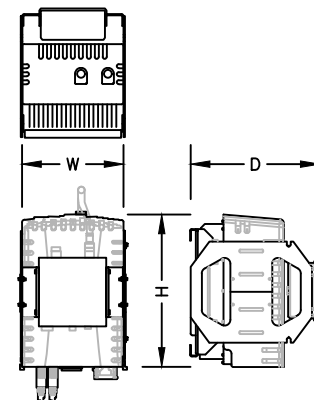
ANTENNA DETAIL

NO SCALE

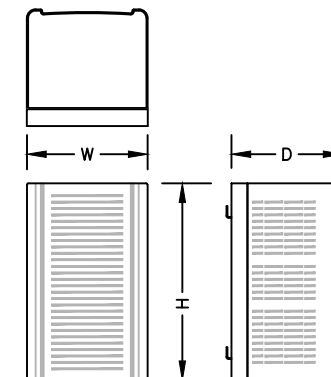
2



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



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



1900 MHZ RRH SPECIFICATIONS	
MANUF.	NOKIA (ALU)
MODEL #	1900 4X45 65MHZ
HEIGHT	25"
WIDTH	11.1"
DEPTH	11.4"
WEIGHT	60± LBS

2.5 RRH

NO SCALE

3

800 MHZ RRH

NO SCALE

4

1900 MHZ RRH (EXISTING TO BE RELOCATED)

NO SCALE

5

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

PROJECT MANAGER:
SBA
 SBA COMMUNICATIONS CORP.
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CHECKED BY:

APPROVED BY:

REVISIONS:				
DESCRIPTION	DATE	BY	REV.	
ISSUED FOR CONSTRUCTION	03/19/18	RCD	0	

SITE NUMBER:

CT03XC109

SITE ADDRESS:

267 NORWICH WESTERLY ROAD
 N. STONINGTON, CT 06539

SHEET DESCRIPTION:

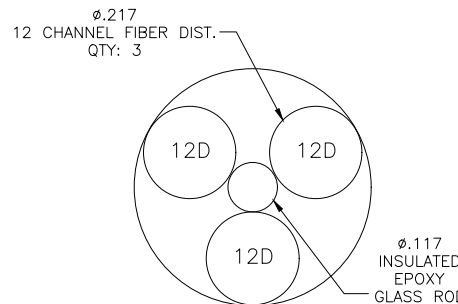
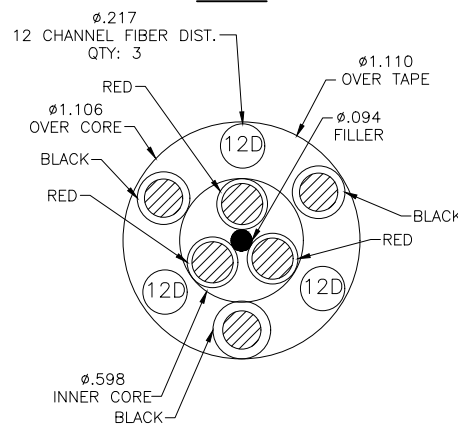
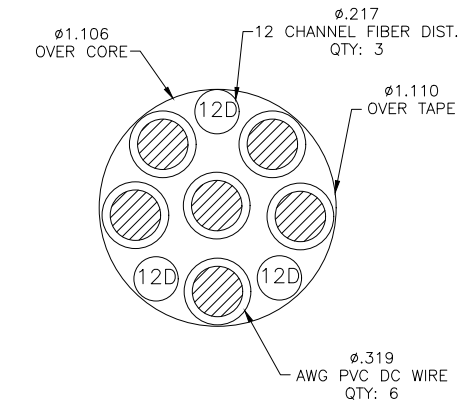
EQUIPMENT &
 MOUNTING DETAILS

SHEET NUMBER:

A-4

RFS HYBRIFLEX RISER CABLE SCHEDULE

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



RFS HYBRIFLEX JUMPER CABLE SCHEDULE

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

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

- * PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.
- * SPRINT CM TO CONFIRM HYBRID RISER CABLE AND HYBRID JUMPER CABLE MODEL NUMBERS BEFORE PREPARING BOM.

PLANS PREPARED FOR:

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

PROJECT MANAGER:

SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
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Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com
JOB NUMBER 526-104

ENGINEERING LICENSE:

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APPROVED BY:

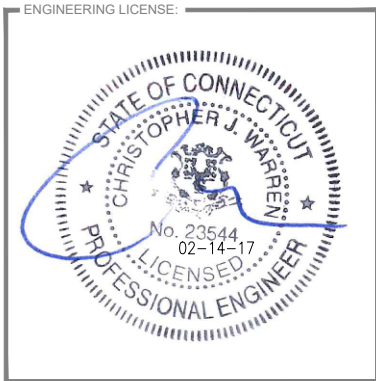
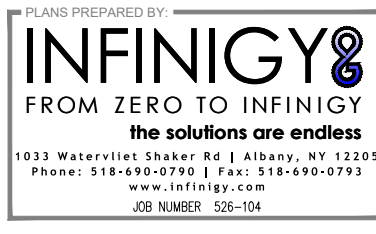
REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

SITE NUMBER:
CT03XC109

SITE ADDRESS:
267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

SHEET DESCRIPTION:
DETAILS

SHEET NUMBER:
A-5



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REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

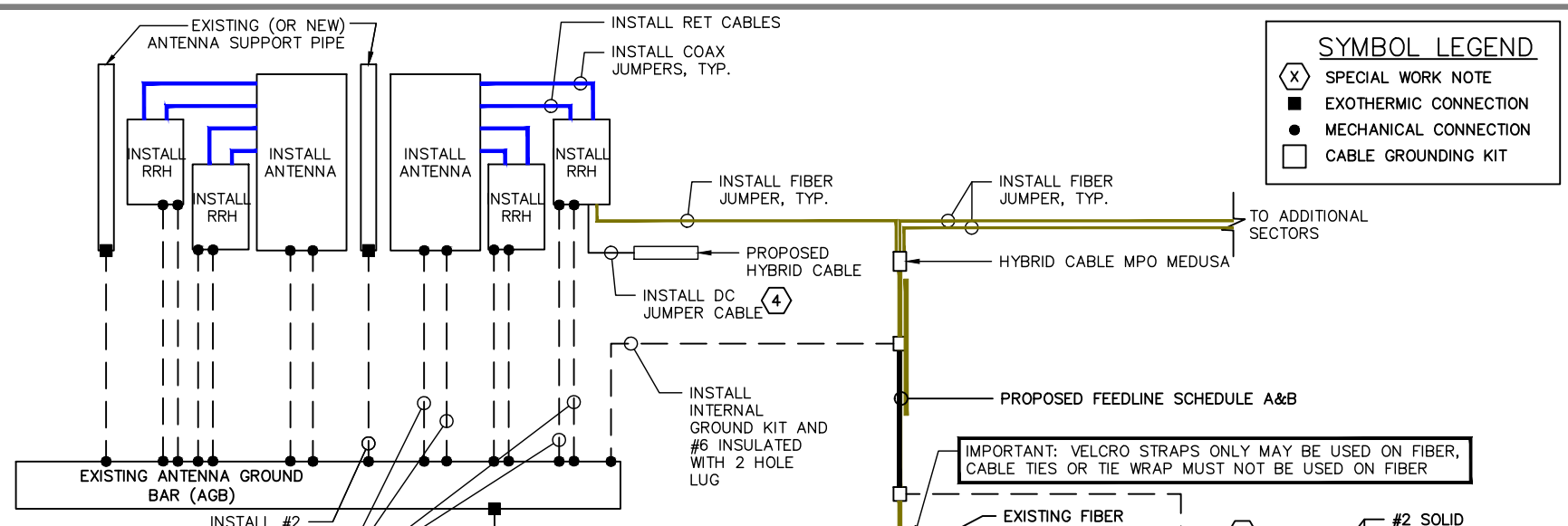
SITE NUMBER:
CT03XC109

SITE ADDRESS:
267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

SHEET DESCRIPTION:
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-1

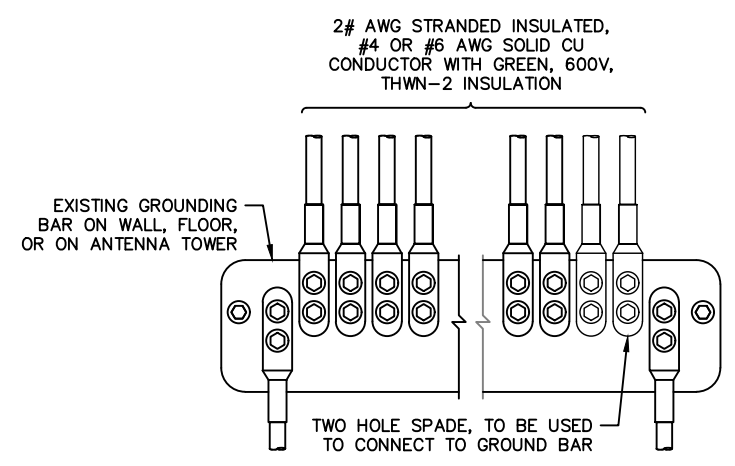


SYMBOL LEGEND

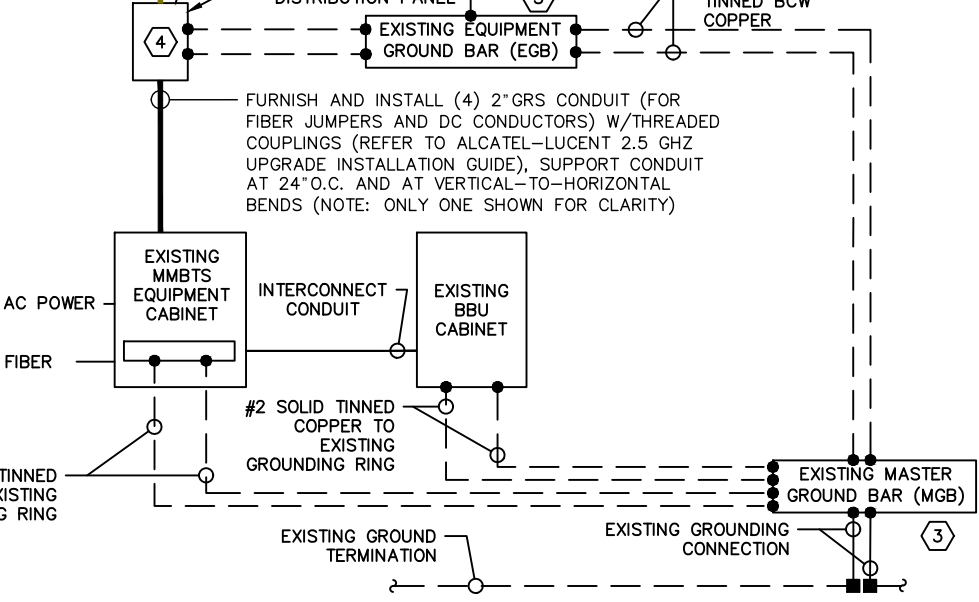
- (X) SPECIAL WORK NOTE
- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- CABLE GROUNDING KIT

- ELECTRICAL NOTES**
- 1) ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
 - 2) THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH LOCAL UTILITY COMPANIES AND SPRINT CONSTRUCTION MANAGER.
 - 3) ALL CONDUITS ROUTED BELOW GRADE SHALL TRANSITION TO RIGID GALVANIZED ELBOWS WITH RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE.
 - 4) ALL METAL CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS.
 - 5) 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.
 - 6) ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
 - 7) THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIALS DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
 - 8) GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
 - 9) 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.
 - 10) BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
 - 11) ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
 - 12) 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.
 - 13) 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.
 - 14) FIBER OPTIC CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 770—OPTICAL FIBER CABLES AND RACEWAYS.
 - 15) COMMUNICATIONS CIRCUITS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 800—COMMUNICATIONS SYSTEMS.

- SPECIAL WORK NOTE:**
1. 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." (OR CURRENT VERSION)
 2. G.C. TO FURNISH AND INSTALL UPGRADE THE EXISTING MMBTS BREAKER, CONDUCTOR, AND CONDUIT TO A MINIMUM NEC RATING.
 3. 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)
 4. 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.



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.

- PROTECTIVE GROUNDING SYSTEMS GENERAL NOTES:**
1. GROUNDING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250—GROUNDING AND BONDING.
 2. 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".
 3. PROVIDE GROUND CONNECTIONS FOR ALL METALLIC STRUCTURES, ENCLOSURES, RACEWAYS AND OTHER CONDUCTIVE ITEMS ASSOCIATED WITH THE INSTALLATION OF CARRIER'S EQUIPMENT.
 4. 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.
 5. 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.
 6. 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.
 7. ALL GROUND WIRES SHALL BE #2 SOLID TINNED BCW UNLESS NOTED OTHERWISE.
 8. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE.
 9. 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.
 10. EACH EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MGB) WITH #2 SOLID TINNED BCW EQUIPMENT CABINETS WALL HAVE (2) CONNECTIONS.
 11. 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'.
 12. THE CONTRACTOR SHALL VERIFY THAT THE EXISTING GROUND BARS HAVE ENOUGH SPACE/HOLES FOR ADDITIONAL TWO HOLE LUGS.
 13. 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.
 14. 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.
 15. 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.
 16. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
 17. 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.
 18. 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)

REVISIONS:	DESCRIPTION	DATE	BY	REV.
ISSUED FOR CONSTRUCTION		03/19/18	RCD	0

Site Identification	
Cascade	CT03XC109
SMS Schedule ID	12323082
SMS Schedule Name	DO Macro Upgrade
PID	
RRU OEM	ALU
Switch OEM	Alcatel Lucent
RFDS Issue Date	2017-08-15 00:00:00.0
RFDS Revision Date	2017-10-20 11:00:11.0
RFDS Revision	3

Filter Analysis Complete	YES
RFDS - Issue Date	08/15/2017
Design Status	Complete

Project Description	DO Macro Upgrade - Add 800MHz (3G + 4G) and 2500 MHz
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Contact Information	
Engineer Email	Bill.M.Hastings@sprint.com
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RF Engineer Phone	978-590-9700
RF Manager	Jonathan Hull
RF Manager Email	Jonathan.B.Hull@sprint.com
RF Manager Phone	617-233-2920

Carrier Count	
2500 LTE	3
1900 LTE	1
1900 EVDO	
1900 Voice	1
800 LTE	1
800 Voice	1

Location Details	
Latitude	41.4375
Longitude	-71.88083
Market	Northern Connecticut
Region	Northeast
City	North Stonington
State	CT
Zip Code	CT/06359
County	New London

2500MHz	3
1900MHz	3
800MHz	3

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Radio Model						
Model Number	TD-RRH8x20-25	TD-RRH8x20-25	TD-RRH8x20-25	N/A	N/A	N/A
Weight (lbs)	76.2	76.2	76.2	N/A	N/A	N/A
Dimensions	26 x 18.6 x 6.7	26 x 18.6 x 6.7	26 x 18.6 x 6.7	N/A	N/A	N/A
Manufacturer	ALU	ALU	ALU	N/A	N/A	N/A
Number of RRUs needed	1	1	1	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

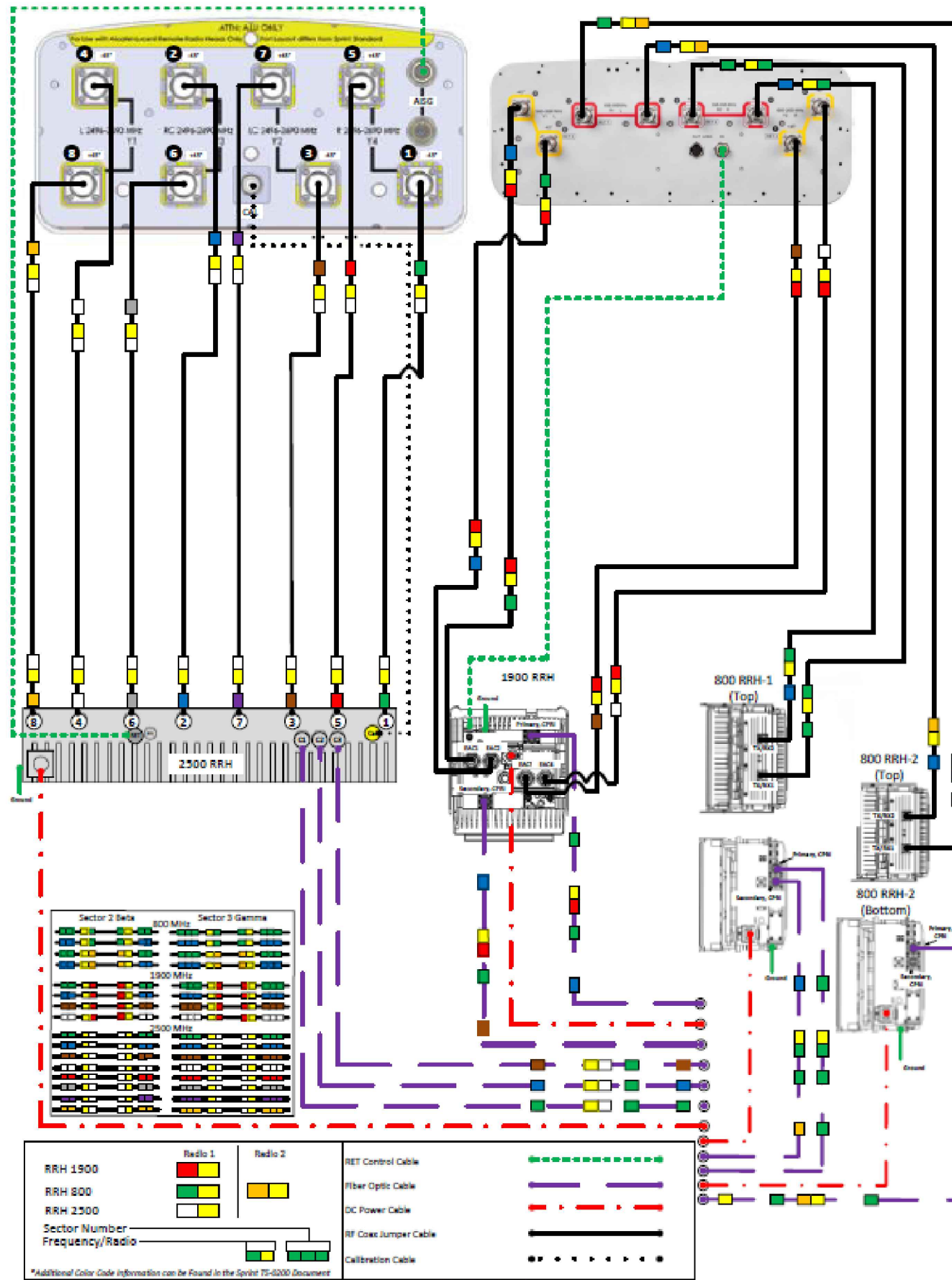
Band: 800	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Radio Model						
Model Number	RRH-2x50-800	RRH-2x50-800	RRH-2x50-800	N/A	N/A	N/A
Weight (lbs)	69.1	69.1	69.1	N/A	N/A	N/A
Dimensions	16 x 13 x 10	16 x 13 x 10	16 x 13 x 10	N/A	N/A	N/A
Manufacturer	ALU	ALU	ALU	N/A	N/A	N/A
Number of RRUs needed	2	2	2	0	0	0

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Antenna1						
Model Number	APXVTM14-ALU-I20	APXVTM14-ALU-I20	APXVTM14-ALU-I20			
Weight (lbs)	56.2	56.2	56.2	N/A	N/A	N/A
Dimensions	56.3 x 12.6 x 6.3	56.3 x 12.6 x 6.3	56.3 x 12.6 x 6.3	N/A	N/A	N/A
Manufacturer	RFS	RFS	RFS	N/A	N/A	N/A
Ant1 Top Jumper Make/Model/Qty	2.5 Jumper 8	2.5 Jumper 8	2.5 Jumper 8	N/A 0	N/A 0	N/A 0
Ant 1 RF requested Diameter	1/2"	1/2"	1/2"	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	8	N/A	N/A	N/A
Antenna 1 Azimuth	0	130	240	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)	119.9803188	119.9803188	119.9803188	N/A	N/A	N/A
Antenna 1 Electrical DT	2	2	2	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	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Antenna1						
Model Number	NNVV-65B-R4	NNVV-65B-R4	NNVV-65B-R4			
Weight (lbs)	84.7	84.7	84.7	N/A	N/A	N/A
Dimensions	72 x 19.6 x 7.8	72 x 19.6 x 7.8	72 x 19.6 x 7.8	N/A	N/A	N/A
Manufacturer	CommScope	CommScope	CommScope	N/A	N/A	N/A
Ant1 Top Jumper Make/Model/Qty	800/1900 Jumper 4	800/1900 Jumper 4	800/1900 Jumper 4	N/A 0	N/A 0	N/A 0
Ant 1 RF requested Diameter	1/2"	1/2"	1/2"	N/A	N/A	N/A
Ant 1 RF requested Top Jumper Length(ft)	8	8	8	N/A	N/A	N/A
Antenna 1 Azimuth	0	130	240	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)	119.9803188	119.9803188	119.9803188	N/A	N/A	N/A
Antenna 1 Electrical DT	3	3	3	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

Additional RF Notes Special Construction Requirements
10/10/2017 (WR): RFDS revised to modify RRU location to "GM to Standard".

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



Sector	Frequency	Radio
Sector 2 Beta	800 MHz	Radio 1
	1900 MHz	Radio 2
Sector 3 Gamma	800 MHz	Radio 1
	1900 MHz	Radio 2

RRH 1900	Radio 1	RET Control Cable	Green dashed line
RRH 800	Radio 2	Fiber Optic Cable	Purple solid line
RRH 2500	Radio 1	DC Power Cable	Red dashed line
Sector Number	Radio	RF Coax Jumper Cable	Black solid line
Frequency/Radio	Radio	Calibration Cable	Black dotted line

Not to Scale

PLUMBING DIAGRAM

PLANS PREPARED FOR:

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MAHWAH, NJ 07495
TEL: (800) 357-7641

PROJECT MANAGER:

SBA COMMUNICATIONS CORP.
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TEL: (508) 251-0720

PLANS PREPARED BY:

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REVISIONS:	DESCRIPTION	DATE	BY	REV.
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SITE NUMBER:
CT03XC109

SITE ADDRESS:
267 NORWICH WESTERLY ROAD
N. STONINGTON, CT 06539

SHEET DESCRIPTION:
PLUMBING DIAGRAM

SHEET NUMBER:
RF-2