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

January 31, 2018

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

Notice of Exempt Modification
206 Everett Road, Easton, CT 06612
41 17 25.2 N / -73 16 57.6 W
Sprint #: CT03XC362_DOMU

Dear Ms. Bachman:

Sprint currently maintains antennas at the 149' and 158' levels of the existing 158-foot Monopole Tower at 206 Everett Rd., Easton, CT. The tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Joan & David Barney, Dorothy Barney Life Estate. Sprint now intends to add (3) antennas at the 158' level of the tower. Sprint's proposed full scope of work is as follows:

Remove (at 158'):
(6) RETs

Remove and Replace (at 158'):
- Remove and replace (6) pipe masts

Install (at 158'):
(3) DT465B-2XR Panel Antennas
(3) TD-RRH8x20-25 RRHs
(3) 800 MHz 2x50 RRHs
(1) 1-1/4" lines
(1) Platform Reinforcement Kit / Handrail Kit

Existing Equipment to Remain (Including entitlements)
At 158':
(3) APXVSPP18-C-A20 Panel Antennas
(3) 800MHz 2x50 RRHs
(3) 1900 4x45 65MHz RRHs
(6) 1-5/8" lines
(3) RFS-ACU-A20-N-RETs
(3) 800 Filters
(3) 1-1/4" lines
At 149':
(12) Decibel - DB844H90E-XY – Panel Antennas
(12) 1-1/4" lines

[redacted]

This facility was approved by the Town of Easton in 1999 before the Council had jurisdiction over the site. Council's Staff Report and Petition 627 dated June 19, 2003, shows the tower originally approved at 120-feet with an approved 40-foot extension of 38-feet making for a 158-foot tower. Per the Staff Report, the Town's Land Use Director confirmed the original site approval and extension approval. This modification complies with all tower 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 Easton's First Selectmen, Adam Dunsby, and Zoning Enforcement Officer, Phillip Doremus, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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

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

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

Sincerely,

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

Attachments

cc: Adam Dunsby, First Selectman / with attachments
Town of Easton, 225 Center Road, Easton, CT 06612
Phillip Doremus, Zoning Enforcement Officer / with attachments
Town of Easton, 225 Center Road, Easton, CT 06612
Joan & David Barney, Dorothy Barney Life Estate / with attachments
108 Hiram Hill Rd., Monroe, CT 06468

[redacted]

SBA

POWER DENSITY

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	
Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 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):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	7,537.38	ERP (W):	7,537.38	ERP (W):	7,537.38
Antenna A1 MPE%	**1.32 %**	Antenna B1 MPE%	**1.32 %**	Antenna C1 MPE%	**1.32 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**0.79 %**	Antenna B2 MPE%	**0.79 %**	Antenna C2 MPE%	**0.79 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.11 %**
T-Mobile	1.31 %
AT&T	1.91 %
Verizon Wireless	3.87 %
Nextel	0.28 %
Site Total MPE %:	**9.48 %**

SPRINT Sector A Total: 2.11 %
SPRINT Sector B Total: 2.11 %
SPRINT Sector C Total: 2.11 %

Site Total: 9.48 %

SPRINT Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	437.55	158.5	0.68	850 MHz	567	0.12%
Sprint 850 MHz LTE	2	437.55	158.5	1.35	850 MHz	567	0.24%
Sprint 1900 MHz (PCS) CDMA	5	622.47	158.5	4.81	1900 MHz (PCS)	1000	0.48%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	158.5	4.81	1900 MHz (PCS)	1000	0.48%
Sprint 2500 MHz (BRS) LTE	8	639.78	158.5	7.91	2500 MHz (BRS)	1000	0.79%
						Total:	**2.11%**

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The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2016.

Easton, CT

Information on the Property Records for the Municipality of Easton was last updated on 1/31/2018.

Property Summary Information

Parcel Data And Values | Building | Outbuildings | Sales | Permits | Google Map

Parcel Information

Location:	206 EVERETT ROAD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	00010600	Map Block Lot:	9610 9611 1	Acres:	37.30
490 Acres:	34.19	Zone:	R3	Volume / Page:	0674/1188
Developers Map / Lot:		Census:	1052		

Value Information

	Appraised Value	70% Assessed Value
Land	536,687	375,680
Buildings	173,802	121,660
Detached Outbuildings	98,882	69,220
Total	809,371	566,560

Owner's Information

Owner's Data
BARNEY JOAN 1/2 INT & BARNEY DAVID 1/2 BARNEY DOROTHY M LIFE ESTATE 108 HIRAM HILL ROAD MONROE CT 06468

Back To Search (JavaScript:window.history.back(1);)

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Information Published With Permission From The Assessor

EBI Consulting
environmental | engineering | due diligence

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

SPRINT Existing Facility

Site ID: CT03XC362

Easton-Everetts Rd
206 Everett Road
Easton, CT 06612

November 28, 2017

EBI Project Number: 6217005370

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	9.48 %

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

November 28, 2017

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

Emissions Analysis for Site: **CT03XC362 – Easton-Everetts Rd**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **206 Everett Road, Easton, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed SPRINT Wireless antenna facility located at **206 Everett Road, Easton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

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

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

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

8) The antennas used in this modeling are the **RFS APXVSPP18-C-A20 and the Commscope DT465B-2XR** for transmission in the 700 MHz, 850 MHz 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 **158.5 feet** above ground level (AGL) for **Sector A**, **158.5 feet** above ground level (AGL) for **Sector B** and **158.5 feet** above ground level (AGL) for Sector C.

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

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

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	
Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 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):	220 Watts	Total TX Power(W):	220 Watts	Total TX Power(W):	220 Watts
ERP (W):	7,537.38	ERP (W):	7,537.38	ERP (W):	7,537.38
Antenna A1 MPE%	**1.32 %**	Antenna B1 MPE%	**1.32 %**	Antenna C1 MPE%	**1.32 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 feet**	Height (AGL):	**158.5 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**0.79 %**	Antenna B2 MPE%	**0.79 %**	Antenna C2 MPE%	**0.79 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**2.11 %**
T-Mobile	1.31 %
AT&T	1.91 %
Verizon Wireless	3.87 %
Nextel	0.28 %
Site Total MPE %:	**9.48 %**

SPRINT Sector A Total:	2.11 %
SPRINT Sector B Total:	2.11 %
SPRINT Sector C Total:	2.11 %
Site Total:	9.48 %

SPRINT _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Sprint 850 MHz CDMA	1	437.55	158.5	0.68	850 MHz	567	0.12%
Sprint 850 MHz LTE	2	437.55	158.5	1.35	850 MHz	567	0.24%
Sprint 1900 MHz (PCS) CDMA	5	622.47	158.5	4.81	1900 MHz (PCS)	1000	0.48%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	158.5	4.81	1900 MHz (PCS)	1000	0.48%
Sprint 2500 MHz (BRS) LTE	8	639.78	158.5	7.91	2500 MHz (BRS)	1000	0.79%
						Total:	**2.11%**

Summary

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

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

SPRINT Sector	Power Density Value (%)
Sector A:	2.11 %
Sector B:	2.11 %
Sector C:	2.11 %
SPRINT Maximum Total (per sector):	2.11 %
Site Total:	9.48 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.48 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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

Structural Analysis Report

Existing 158 ft PennSummit Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46131-A

Customer Site Name: Easton-Everetts Rd

Carrier Name: Sprint Nextel

Carrier Site ID / Name: CT03XC362 / Easton-Everetts Rd

Site Location: 206 Everett Road

Easton, Connecticut

Fairfield County

Latitude: 41.290333

Longitude: -73.282666

Analysis Result:

Max Structural Usage: 90.7% [Pass]

Max Foundation Usage: 84.0% [Pass]

Report Prepared by: Matthew Baker

10/25/17

Introduction

The purpose of this report is to summarize the analysis results on the 158 ft PennSummit 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	Paul J. Ford for PennSummit Tubular, Job #29202-0378, Design #5951, Dated 12/19/02
Foundation Drawing	Paul J. Ford for PennSummit Tubular, Job #29202-0378, Design #5951, Dated 12/19/02
Geotechnical Report	Tectonic Engineering Consultants W.O. #1170.C912, Dated 03/30/00
Modification Drawings	Vertical Solutions Project #131141.01 As-Builts, Dated 11/06/2013

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 130.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 101.0 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/EIA 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 = 0.212, S_1 = 0.066

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
-	158.5	6	Decibel - DB980F90E-M - Panel	Low Profile Platform	(3) 1 1/4" (6) 1 5/8"	Sprint
-		3	RFS - APXVSPP18-C-A20 - Panel			
-	156.5	3	ALU - 1900MHz RRH - RRU	Collar Mount		
-		3	ALU - 800MHz Notch Filter – RRH Filter			
-		6	ALU - 1900MHz - RET			
-		3	ALU - 800MHz RET			
7	149.0	12	Decibel - DB844H90E-XY - Panel	Low Profile Platform	(12) 1 1/4"	
8	138.0	6	RFS - APX16DWV-16DWVS-E-A20 - Panel	Low Profile Platform w/ Handrail and V-Brace tie-back	(12) 1 1/4"	T-Mobile
9		3	RFS - APXV18-206516S-A20 - Panel			
10		3	Commscope - LNX-6515DS-A1M - Panel			
11		3	Ericsson - KRY 112 144/1 - TMA			
12		3	Kathrein - 782 11056 - Bias T			
13	128.0	2	Swedcom - SLCP 2X6014 - Panel	Low Profile Platform	(12) 1 5/8"	Verizon
14		6	Decibel - DB846F65ZAXY - Panel			
15		3	Antel - BXA-70063-6BF - Panel			
16		1	Antel - BXA-171063-12BF - Panel			
17		6	RFS - FD9R6004-2C-3L - Diplexer			
18	118.0	3	Powerwave - P65-16-XLH-RR - Panel	Low Profile Platform	(12) 1 1/4" (1) 3/8" RET (2) 5/8" DC inside (1) 3" Innerduct	AT&T
19		6	Powerwave - 7770 - Panel			
20		6	Powerwave - LGP21401 - TMA			
21		3	Powerwave - TT19-08BP111-001 - TMA			
22		6	Ericsson - RRUS-11 - RRU			
23		1	Raycap - DC6-48-60-18 - SP			
24	75.0	1	GPS	Pipe Mount	(1) 1/2”	Sprint

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	158.5	3	KMW - ETCR-654L12H6 - Panel	Low Profile Platform w/ Collar Mount	(4) 1 1/4" Fiber	Sprint Nextel
2		3	RFS - ACU-A20-N - RET			
3		3	ALU - 1900 MHz - RRU			
4		6	ALU - 800 MHz - RRU			
5		3	ALU - TD-RRH8x20-25 - RRU			
6		3	Alu - 800 Filters			

See the attached coax layout for the line placement considered in the analysis.

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:	**90.7%**	**73.7%**	**84.3%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4684.1	40.5	88.1

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.4604 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 87.47% at 39.0ft

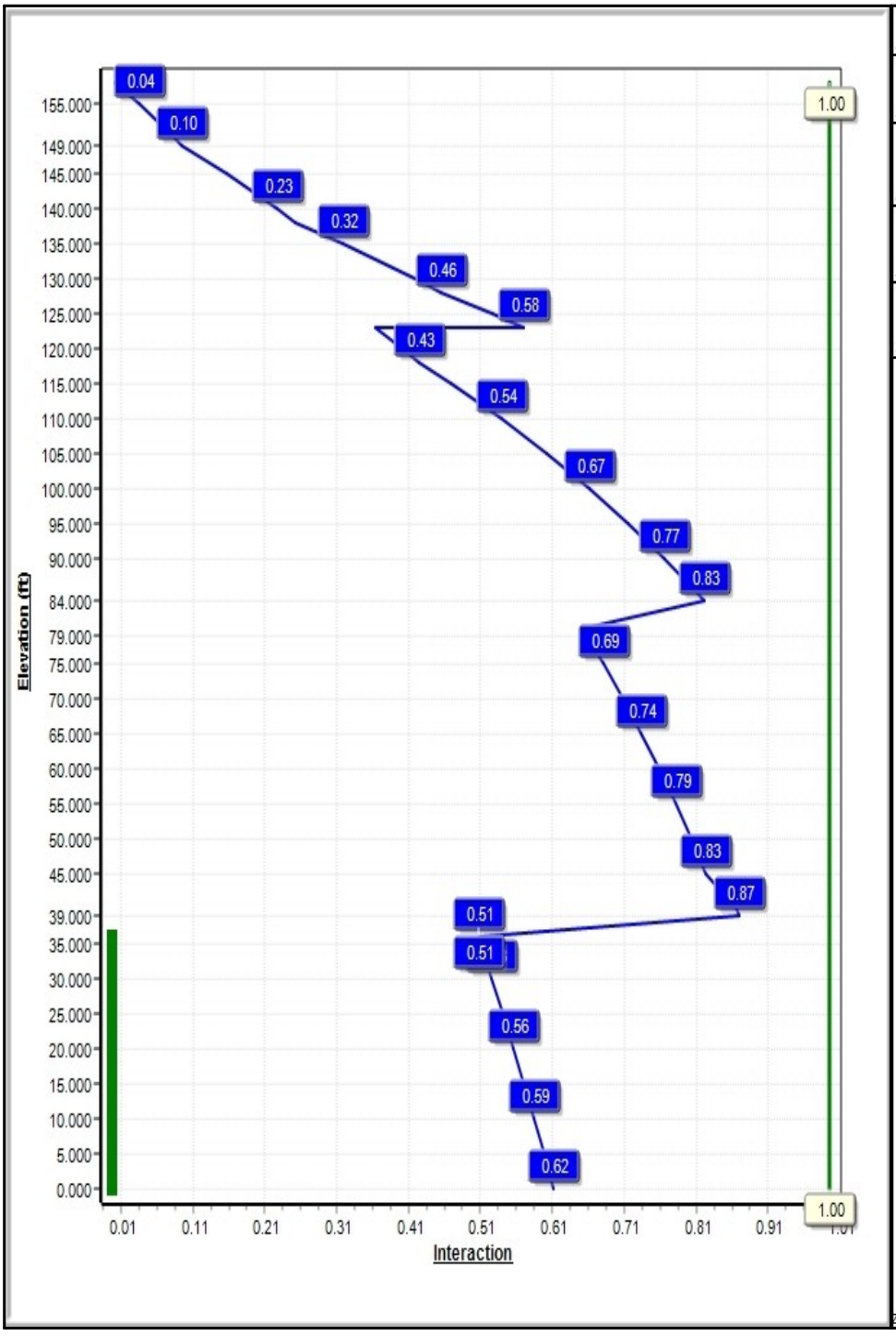
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017
Site Name:	Easton-Everetts Rd	**Exposure:**	C	
Height:	158.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

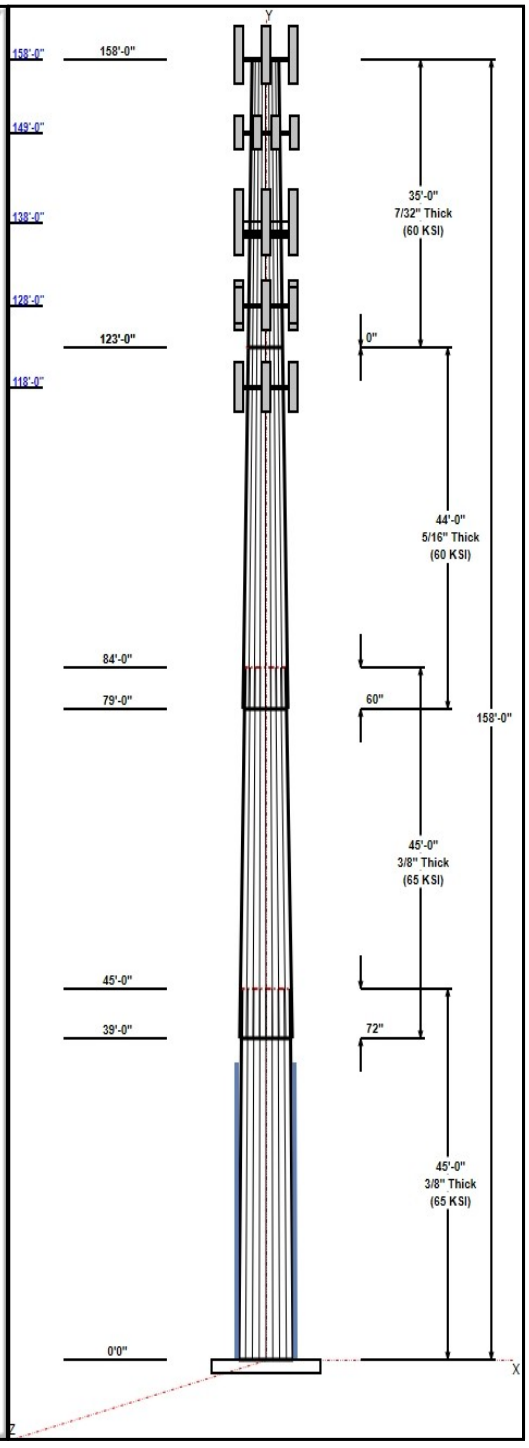
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 101 mph Wind

Iterations: 24





Structure: CT46131-A-SBA

Type: Tapered
Site Name: Easton-Everetts Rd
Height: 158.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20320

10/25/2017

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	45.59	54.73	0.375		0.20320	65
2	45.00	38.41	47.56	0.375	Slip	0.20320	65
3	44.00	31.11	40.05	0.313	Slip	0.20320	60
4	35.00	24.00	31.11	0.219	Butt	0.20320	60

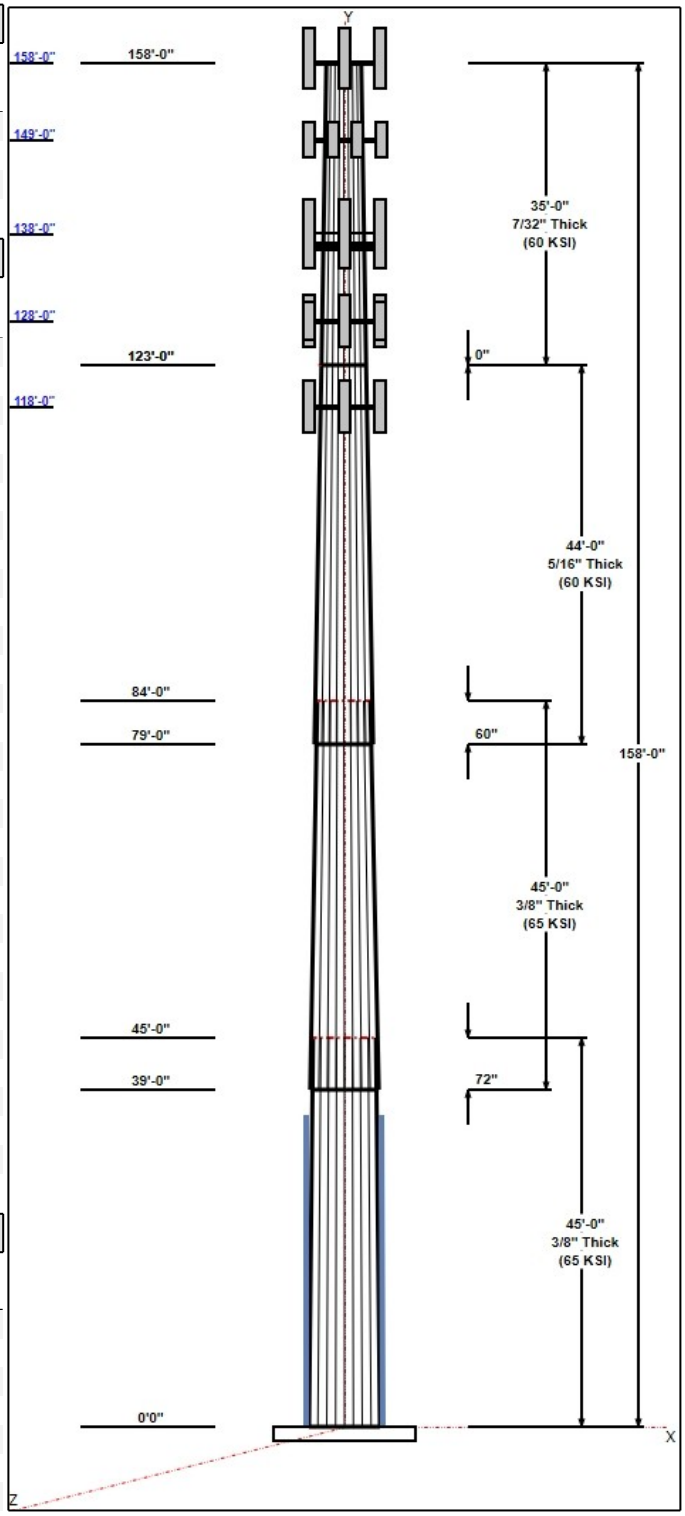
Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
158.00	158.00	1	Collar Mount	Sprint Nextel
158.00	158.50	1	Low Profile Platform	Sprint Nextel
158.00	158.00	3	RFS - ACU-A20-N - RET	Sprint Nextel
158.00	158.50	3	ALU - 1900 MHz - RRU	Sprint Nextel
158.00	158.50	3	Alu - 800 Filters	Sprint Nextel
158.00	158.50	3	KMW - ETCR-654L12H6	Sprint Nextel
158.00	158.50	6	ALU - 800 MHz - RRU	Sprint Nextel
158.00	158.50	3	ALU - TD-RRH8x20-25 -	Sprint Nextel
149.00	149.00	1	Low Profile Platform	Sprint Nextel
149.00	149.00	12	DB844H90E-XY	Sprint Nextel
138.00	138.00	1	Platform w/ HR & V-Brace	T-Mobile
138.00	138.00	6	APX16DWV-16DWVS-E-A	T-Mobile
138.00	138.00	3	APXV18-206516S-A20	T-Mobile
138.00	138.00	3	LNX-6515DS-A1M	T-Mobile
138.00	138.00	3	KRY 112 144/1	T-Mobile
138.00	138.00	3	Bias T	T-Mobile
128.00	128.00	1	Low Profile Platform	Verizon
128.00	128.00	2	SLCP 2x6014	Verizon
128.00	128.00	6	DB846F65ZAXY	Verizon
128.00	128.00	3	BXA-70063-6BF	Verizon
128.00	128.00	1	BXA-171063-12BF	Verizon
128.00	128.00	6	FD9R6004-2C-3L	Verizon
118.00	118.00	1	Low Profile Platform	AT&T
118.00	118.00	3	P65-16-XLH-RR	AT&T
118.00	118.00	6	7770	AT&T
118.00	118.00	6	LGP21401	AT&T
118.00	118.00	3	TT19-08BP111-001	AT&T
118.00	118.00	6	RRUS-11	AT&T
118.00	118.00	1	DC6-48-60-18	AT&T
75.00	75.00	1	GPS	Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	158.00	Inside	1 1/4" Coax	Sprint
0.00	149.00	Inside	1 1/4" Coax	Sprint
0.00	138.00	Inside	1 1/4" Coax	T-Mobile
0.00	128.00	Outside	1 5/8" Coax	Verizon
0.00	118.00	Inside	1 1/4" Coax	AT&T
0.00	118.00	Inside	3" Innerduct	AT&T
0.00	118.00	Inside	3/8" RET	AT&T
0.00	118.00	Inside	5/8" DC	AT&T
0.00	75.00	Inside	1/2" Coax	Sprint Nextel
0.00	39.00	Outside	1.25" Reinforcing plate	

Anchor Bolts



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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	60.0	50.0	Clipped

Reactions

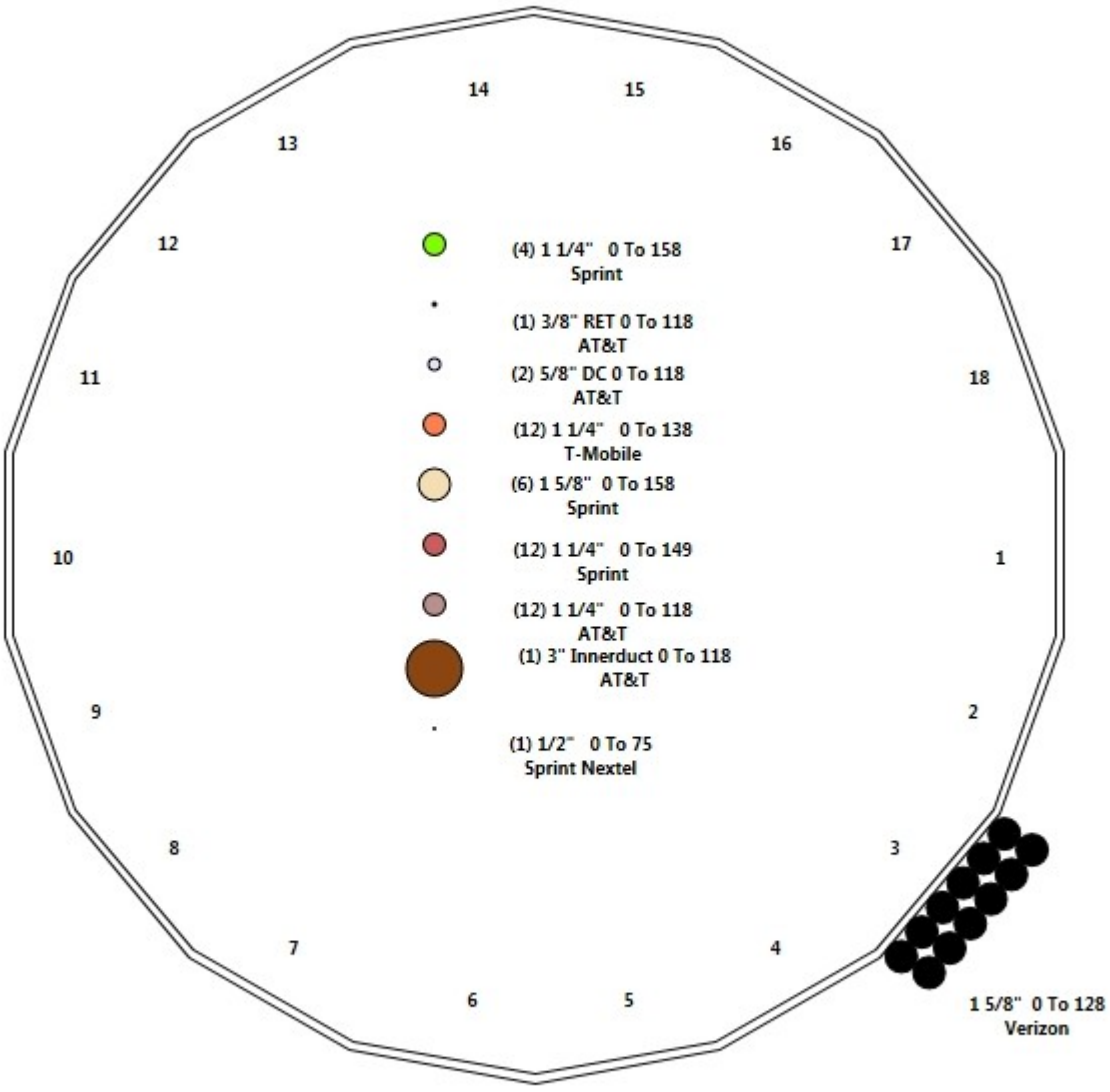
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	4684.1	40.5	55.8
0.9D + 1.6W 101 mph Wind	4639.1	40.4	41.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1226.0	10.6	88.1
1.2D + 1.0E	263.8	2.1	55.9
0.9D + 1.0E	261.1	2.1	41.9
1.0D + 1.0W 60 mph Wind	1028.3	8.9	46.5

Structure: CT46131-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Easton-Everetts Rd
Height: 158.00 (ft)

10/25/2017

Tower Engineering Solutions



Shaft Properties

Structure:	CT46131-A-SBA		**Code:**	EIA/TIA-222-G	10/25/2017
Site Name:	Easton-Everetts Rd		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.3750	65		0.00	9,073
2	18	45.000	0.3750	65	Slip	72.00	7,765
3	18	44.000	0.3125	60	Slip	60.00	5,238
4	18	35.000	0.2188	60	Flange	0.00	2,261
					Total Shaft Weight:		**24,337**

	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	54.73	0.00	64.69	24148.72	24.32	145.95	45.59	45.00	53.81	13896.7	20.02	121.5	0.203196
2	47.56	39.00	56.15	15792.80	20.95	126.81	38.41	84.00	45.27	8275.19	16.65	102.4	0.203196
3	40.05	79.00	39.42	7864.62	21.19	128.17	31.11	123.00	30.55	3661.17	16.14	99.56	0.203196
4	31.11	123.0	21.45	2586.87	23.66	142.19	24.00	158.00	16.51	1180.03	17.93	109.6	0.203196

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	36.00	4	PLT 7.625x1.5(31mm Hole	50	65	0.00	AJM20&sleeve	15.00	AJM20&sleeve	3.00	15	12

Load Summary

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	158.00	Collar Mount	1	350.00	5.00	1.00	644.72	8.509	1.00	0.00	0.00
2	158.00	Low Profile Platform	1	1200.00	25.00	1.00	2252.58	46.052	1.00	0.00	0.50
3	158.00	RFS - ACU-A20-N - RET	3	1.00	0.14	0.50	5.32	0.438	0.50	0.00	0.00
4	158.00	ALU - 1900 MHz - RRU	3	44.00	3.80	0.67	153.73	5.197	0.67	0.00	0.50
5	158.00	Alu - 800 Filters	3	8.80	0.78	0.69	26.54	1.430	0.76	0.00	0.50
6	158.00	KMW - ETCR-654L12H6	3	99.00	15.71	0.69	458.09	17.408	0.71	0.00	0.50
7	158.00	ALU - 800 MHz - RRU	6	53.00	2.49	0.67	127.35	3.640	0.67	0.00	0.50
8	158.00	ALU - TD-RRH8x20-25 - RRU	3	70.00	4.05	0.67	181.16	4.868	0.67	0.00	0.50
9	149.00	Low Profile Platform	1	1200.00	25.00	1.00	2246.43	45.929	1.00	0.00	0.00
10	149.00	DB844H90E-XY	12	14.00	3.05	1.10	116.72	3.908	1.08	0.00	0.00
11	138.00	Platform w/ HR & V-Brace	1	2246.00	51.70	1.00	5355.76	89.639	1.00	0.00	0.00
12	138.00	APX16DWV-16DWVS-E-A20	6	40.70	6.46	0.67	189.75	7.565	0.70	0.00	0.00
13	138.00	APXV18-206516S-A20	3	18.70	3.61	0.78	88.19	5.452	0.82	0.00	0.00
14	138.00	LNX-6515DS-A1M	3	49.80	11.47	0.84	277.45	14.710	0.85	0.00	0.00
15	138.00	KRY 112 144/1	3	11.00	0.41	0.67	21.69	0.881	0.67	0.00	0.00
16	138.00	Bias T	3	3.30	0.09	0.67	6.57	0.323	0.67	0.00	0.00
17	128.00	Low Profile Platform	1	1500.00	22.00	1.00	2788.32	39.384	1.00	0.00	0.00
18	128.00	SLCP 2x6014	2	20.00	6.49	0.91	193.47	8.532	0.92	0.00	0.00
19	128.00	DB846F65ZAXY	6	21.00	7.05	0.94	207.89	8.280	0.95	0.00	0.00
20	128.00	BXA-70063-6BF	3	15.00	4.76	0.88	108.81	7.079	0.90	0.00	0.00
21	128.00	BXA-171063-12BF	1	22.00	0.00	0.67	147.69	7.181	0.67	0.00	0.00
22	128.00	FD9R6004-2C-3L	6	3.10	0.36	0.67	11.00	0.796	0.67	0.00	0.00
23	118.00	Low Profile Platform	1	1500.00	22.00	1.00	2777.88	39.243	1.00	0.00	0.00
24	118.00	P65-16-XLH-RR	3	53.00	8.16	0.79	214.14	10.896	0.81	0.00	0.00
25	118.00	7770	6	35.00	5.50	0.77	166.67	6.527	0.80	0.00	0.00
26	118.00	LGP21401	6	14.10	1.29	0.67	38.51	2.106	0.67	0.00	0.00
27	118.00	TT19-08BP111-001	3	16.00	0.64	0.67	35.76	1.219	0.67	0.00	0.00
28	118.00	RRUS-11	6	51.00	2.52	0.50	121.56	3.138	0.50	0.00	0.00
29	118.00	DC6-48-60-18	1	31.80	0.92	1.00	92.16	1.348	1.00	0.00	0.00
30	75.00	GPS	1	3.70	0.01	1.00	3.70	0.010	1.00	0.00	0.00
		Totals:	**101**	**10,737.70**			**28,005.44**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	158.00	(4) 1 1/4" Coax	0.00	Inside
0.00	149.00	(12) 1 1/4" Coax	0.00	Inside
0.00	138.00	(12) 1 1/4" Coax	0.00	Inside
0.00	128.00	(12) 1 5/8" Coax	4.00	Outside
0.00	118.00	(12) 1 1/4" Coax	0.00	Inside
0.00	118.00	(1) 3" Innerduct	0.00	Inside
0.00	118.00	(1) 3/8" RET	0.00	Inside
0.00	118.00	(2) 5/8" DC	0.00	Inside
0.00	75.00	(1) 1/2" Coax	0.00	Inside
0.00	39.00	(4) 1.25" Reinforcing plate	3.00	Outside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Shaft Section Properties

Structure: CT46131-A-SBA **Code:** EIA/TIA-222-G 10/25/2017
Site Name: Easton-Everetts Rd **Exposure:** C
Height: 158.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 8

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1	0.3750	54.730	64.694	24148.7	24.32	145.95	65	73	0.0	45.75	21320.2	15073.2	
5.00		0.3750	53.714	63.484	22819.7	23.85	143.24	65	73	1090.4	45.75	20560.3	14538.2	778.4
10.00		0.3750	52.698	62.275	21540.4	23.37	140.53	65	74	1069.8	45.75	19814.2	14012.8	778.4
15.00		0.3750	51.682	61.066	20309.9	22.89	137.82	65	74	1049.3	45.75	19082.0	13497.3	778.4
20.00		0.3750	50.666	59.857	19127.1	22.41	135.11	65	75	1028.7	45.75	18363.6	12991.5	778.4
25.00		0.3750	49.650	58.648	17991.1	21.94	132.40	65	76	1008.1	45.75	17659.1	12495.4	778.4
30.00		0.3750	48.634	57.438	16901.0	21.46	129.69	65	76	987.5	45.75	16968.4	12009.2	778.4
35.00		0.3750	47.618	56.229	15855.9	20.98	126.98	65	77	967.0	45.75	16291.6	11532.6	778.4
36.00	RT1	0.3750	47.415	55.987	15652.2	20.88	126.44	65	77	190.9	45.75	16157.9	11438.5	155.7
39.00	Bot - Section 2	0.3750	46.805	55.262	15051.6	20.60	124.81	65	77	567.8				
40.00		0.3750	46.602	55.020	14854.8	20.50	124.27	65	77	378.3				
45.00	Top - Section 1	0.3750	46.336	54.703	14599.9	20.38	123.56	65	77	1866.8				
50.00		0.3750	45.320	53.494	13652.9	19.90	120.85	65	78	920.4				
55.00		0.3750	44.304	52.285	12747.8	19.42	118.14	65	79	899.9				
60.00		0.3750	43.288	51.076	11883.6	18.94	115.44	65	79	879.3				
65.00		0.3750	42.272	49.866	11059.4	18.47	112.73	65	80	858.7				
70.00		0.3750	41.256	48.657	10274.2	17.99	110.02	65	80	838.1				
75.00		0.3750	40.240	47.448	9527.1	17.51	107.31	65	81	817.6				
79.00	Bot - Section 3	0.3750	39.428	46.481	8956.2	17.13	105.14	65	81	639.2				
80.00		0.3750	39.224	46.239	8817.1	17.03	104.60	65	81	291.5				
84.00	Top - Section 2	0.3125	39.037	38.408	7276.7	20.62	124.92	60	72	1151.0				
85.00		0.3125	38.833	38.206	7162.8	20.50	124.27	60	72	130.4				
90.00		0.3125	37.817	37.199	6610.8	19.93	121.02	60	73	641.5				
95.00		0.3125	36.801	36.191	6088.0	19.35	117.76	60	73	624.3				
100.00		0.3125	35.785	35.183	5593.5	18.78	114.51	60	74	607.2				
105.00		0.3125	34.769	34.176	5126.5	18.21	111.26	60	75	590.0				
110.00		0.3125	33.753	33.168	4686.3	17.63	108.01	60	75	572.9				
115.00		0.3125	32.737	32.160	4272.0	17.06	104.76	60	76	555.7				
118.00		0.3125	32.128	31.556	4035.6	16.72	102.81	60	76	325.2				
120.00		0.3125	31.721	31.153	3882.9	16.49	101.51	60	76	213.4				
123.00	Top - Section 3	0.3125	31.112	30.548	3661.2	16.14	99.56	60	76	314.9				
123.00	Bot - Section 4	0.2188	31.112	21.454	2586.9	23.06	142.19	60	69					
125.00		0.2188	30.705	21.171	2486.1	23.33	140.34	60	69	145.0				
128.00		0.2188	30.096	20.748	2339.9	22.84	137.55	60	70	214.0				
130.00		0.2188	29.689	20.466	2245.8	22.52	135.69	60	70	140.2				
135.00		0.2188	28.674	19.760	2021.4	21.70	131.05	60	71	342.2				
138.00		0.2188	28.064	19.337	1894.3	21.21	128.26	60	71	199.6				
140.00		0.2188	27.658	19.055	1812.5	20.88	126.41	60	72	130.6				
145.00		0.2188	26.642	18.349	1618.5	20.06	121.76	60	73	318.2				
149.00		0.2188	25.829	17.785	1473.7	19.40	118.05	60	73	245.9				
150.00		0.2188	25.626	17.644	1438.9	19.24	117.12	60	74	60.3				
155.00		0.2188	24.610	16.938	1273.1	18.42	112.48	60	74	294.2				
158.00		0.2188	24.000	16.515	1180.0	17.93	109.69	60	75	170.7				
									Total Weight	**24336.9**				**5604.5**

Wind Loading - Shaft

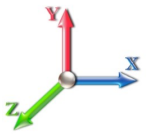
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 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	RB1	1.00	0.85	21.088	23.20	431.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	423.24	0.702 *	0.000	5.00	22.941	16.09	597.3	0.0	1308.5
10.00		1.00	0.85	21.088	23.20	415.23	0.706 *	0.000	5.00	22.511	15.90	590.0	0.0	1283.8
15.00		1.00	0.85	21.088	23.20	407.23	0.711 *	0.000	5.00	22.081	15.70	582.8	0.0	1259.1
20.00		1.00	0.90	22.375	24.61	411.23	0.716 *	0.000	5.00	21.651	15.51	610.6	0.0	1234.4
25.00		1.00	0.95	23.451	25.80	412.56	0.721 *	0.000	5.00	21.222	15.31	631.9	0.0	1209.7
30.00		1.00	0.98	24.369	26.81	411.95	0.727 *	0.000	5.00	20.792	15.12	648.3	0.0	1185.0
35.00		1.00	1.01	25.172	27.69	409.94	0.733 *	0.000	5.00	20.362	14.92	661.0	0.0	1160.4
36.00	RT1	1.00	1.02	25.322	27.85	409.40	0.736 *	0.000	1.00	4.021	2.96	131.9	0.0	229.1
39.00	Bot - Section 2	1.00	1.04	25.752	28.33	407.56	0.739 *	0.000	3.00	11.959	8.83	400.4	0.0	681.4
40.00		1.00	1.04	25.890	28.48	406.87	0.650	0.000	1.00	4.015	2.61	118.9	0.0	454.0
45.00	Top - Section 1	1.00	1.07	26.540	29.19	402.97	0.650	0.000	5.00	19.820	12.88	601.8	0.0	2240.2
50.00		1.00	1.09	27.135	29.85	405.08	0.650	0.000	5.00	19.390	12.60	601.9	0.0	1104.5
55.00		1.00	1.12	27.685	30.45	400.00	0.650	0.000	5.00	18.960	12.32	600.5	0.0	1079.8
60.00		1.00	1.14	28.197	31.02	394.42	0.650	0.000	5.00	18.530	12.04	597.7	0.0	1055.1
65.00		1.00	1.16	28.676	31.54	388.42	0.650	0.000	5.00	18.100	11.77	593.8	0.0	1030.4
70.00		1.00	1.17	29.127	32.04	382.05	0.650	0.000	5.00	17.670	11.49	588.8	0.0	1005.8
75.00	Appurtenance(s)	1.00	1.19	29.553	32.51	375.36	0.650	0.000	5.00	17.240	11.21	582.9	0.0	981.1
79.00	Bot - Section 3	1.00	1.20	29.878	32.87	369.80	0.650	0.000	4.00	13.483	8.76	460.9	0.0	767.1
80.00		1.00	1.21	29.958	32.95	368.38	0.650	0.000	1.00	3.381	2.20	115.9	0.0	349.8
84.00	Top - Section 2	1.00	1.22	30.267	33.29	362.60	0.651 *	0.000	4.00	13.350	8.69	462.9	0.0	1381.2
85.00		1.00	1.22	30.342	33.38	367.04	0.650 *	0.000	1.00	3.295	2.14	114.4	0.0	156.4
90.00		1.00	1.24	30.710	33.78	359.60	0.653 *	0.000	5.00	16.215	10.60	572.7	0.0	769.8
95.00		1.00	1.25	31.061	34.17	351.93	0.659 *	0.000	5.00	15.785	10.40	568.5	0.0	749.2
100.00		1.00	1.27	31.399	34.54	344.07	0.665 *	0.000	5.00	15.356	10.20	563.9	0.0	728.6
105.00		1.00	1.28	31.723	34.89	336.02	0.671 *	0.000	5.00	14.926	10.01	558.8	0.0	708.0
110.00		1.00	1.29	32.035	35.24	327.80	0.677 *	0.000	5.00	14.496	9.81	553.3	0.0	687.5
115.00		1.00	1.30	32.336	35.57	319.43	0.684 *	0.000	5.00	14.066	9.62	547.3	0.0	666.9
118.00	Appurtenance(s)	1.00	1.31	32.512	35.76	314.33	0.689 *	0.000	3.00	8.233	5.68	324.8	0.0	390.3
120.00		1.00	1.32	32.627	35.89	310.91	0.693 *	0.000	2.00	5.403	3.75	215.1	0.0	256.1
123.00	Top - Section 3	1.00	1.32	32.797	36.08	305.72	0.697 *	0.000	3.00	7.975	5.56	320.9	0.0	377.9
125.00		1.00	1.33	32.909	36.20	302.24	0.701 *	0.000	2.00	5.231	3.67	212.4	0.0	174.1
128.00	Appurtenance(s)	1.00	1.33	33.073	36.38	296.98	0.705 *	0.000	3.00	7.717	5.44	316.8	0.0	256.8
130.00		1.00	1.34	33.182	36.50	293.45	0.650	0.000	2.00	5.059	3.29	192.0	0.0	168.3
135.00		1.00	1.35	33.446	36.79	284.54	0.650	0.000	5.00	12.347	8.03	472.4	0.0	410.6
138.00	Appurtenance(s)	1.00	1.35	33.601	36.96	279.13	0.650	0.000	3.00	7.202	4.68	276.8	0.0	239.5
140.00		1.00	1.36	33.703	37.07	275.51	0.650	0.000	2.00	4.715	3.06	181.8	0.0	156.8
145.00		1.00	1.37	33.953	37.35	266.37	0.650	0.000	5.00	11.487	7.47	446.2	0.0	381.8
149.00	Appurtenance(s)	1.00	1.38	34.148	37.56	258.98	0.650	0.000	4.00	8.880	5.77	346.9	0.0	295.1
150.00		1.00	1.38	34.196	37.62	257.13	0.650	0.000	1.00	2.177	1.42	85.2	0.0	72.3
155.00		1.00	1.39	34.433	37.88	247.79	0.650	0.000	5.00	10.627	6.91	418.6	0.0	353.0
158.00	Appurtenance(s)	1.00	1.39	34.573	38.03	242.14	0.650	0.000	3.00	6.170	4.01	244.0	0.0	204.9
								Totals:	**158.00**			**17,713.0**		**29,204.3**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

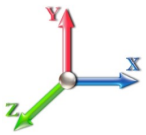
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 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	158.00	ALU - 1900 MHz - RRU	3	34.596	38.055	0.67	1.00	7.64	158.40	0.000	0.500	465.06	0.00	232.53
2	158.00	Collar Mount	1	34.573	38.030	1.00	1.00	5.00	420.00	0.000	0.000	304.24	0.00	0.00
3	158.00	Low Profile Platform	1	34.596	38.055	1.00	1.00	25.00	1440.00	0.000	0.500	1522.21	0.00	761.10
4	158.00	RFS - ACU-A20-N - RET	3	34.573	38.030	0.50	1.00	0.21	3.60	0.000	0.000	12.78	0.00	0.00
5	158.00	ALU - TD-RRH8x20-25 -	3	34.596	38.055	0.67	1.00	8.14	252.00	0.000	0.500	495.66	0.00	247.83
6	158.00	Alu - 800 Filters	3	34.596	38.055	0.69	1.00	1.61	31.68	0.000	0.500	98.31	0.00	49.16
7	158.00	KMW - ETCR-654L12H6	3	34.596	38.055	0.69	1.00	32.52	356.40	0.000	0.500	1980.07	0.00	990.03
8	158.00	ALU - 800 MHz - RRU	6	34.596	38.055	0.67	1.00	10.01	381.60	0.000	0.500	609.48	0.00	304.74
9	149.00	DB844H90E-XY	12	34.148	37.563	0.88	0.80	32.21	201.60	0.000	0.000	1935.74	0.00	0.00
10	149.00	Low Profile Platform	1	34.148	37.563	1.00	1.00	25.00	1440.00	0.000	0.000	1502.53	0.00	0.00
11	138.00	Bias T	3	33.601	36.962	0.50	0.75	0.14	11.88	0.000	0.000	8.02	0.00	0.00
12	138.00	KRY 112 144/1	3	33.601	36.962	0.50	0.75	0.62	39.60	0.000	0.000	36.55	0.00	0.00
13	138.00	LNX-6515DS-A1M	3	33.601	36.962	0.63	0.75	21.68	179.28	0.000	0.000	1282.02	0.00	0.00
14	138.00	APXV18-206516S-A20	3	33.601	36.962	0.58	0.75	6.34	67.32	0.000	0.000	374.67	0.00	0.00
15	138.00	APX16DWV-16DWVS-E-	6	33.601	36.962	0.50	0.75	19.48	293.04	0.000	0.000	1151.83	0.00	0.00
16	138.00	Platform w/ HR & V-Brace	1	33.601	36.962	1.00	1.00	51.70	2695.20	0.000	0.000	3057.46	0.00	0.00
17	128.00	BXA-171063-12BF	1	33.073	36.381	0.54	0.80	0.00	26.40	0.000	0.000	0.00	0.00	0.00
18	128.00	BXA-70063-6BF	3	33.073	36.381	0.70	0.80	10.05	54.00	0.000	0.000	585.19	0.00	0.00
19	128.00	DB846F65ZAXY	6	33.073	36.381	0.75	0.80	31.81	151.20	0.000	0.000	1851.61	0.00	0.00
20	128.00	SLCP 2x6014	2	33.073	36.381	0.73	0.80	9.45	48.00	0.000	0.000	550.05	0.00	0.00
21	128.00	Low Profile Platform	1	33.073	36.381	0.80	0.80	17.60	1800.00	0.000	0.000	1024.48	0.00	0.00
22	128.00	FD9R6004-2C-3L	6	33.073	36.381	0.54	0.80	1.16	22.32	0.000	0.000	67.39	0.00	0.00
23	118.00	7770	6	32.512	35.763	0.62	0.80	20.33	252.00	0.000	0.000	1163.19	0.00	0.00
24	118.00	Low Profile Platform	1	32.512	35.763	0.80	0.80	17.60	1800.00	0.000	0.000	1007.09	0.00	0.00
25	118.00	P65-16-XLH-RR	3	32.512	35.763	0.63	0.80	15.47	190.80	0.000	0.000	885.29	0.00	0.00
26	118.00	DC6-48-60-18	1	32.512	35.763	0.80	0.80	0.74	38.16	0.000	0.000	42.11	0.00	0.00
27	118.00	LGP21401	6	32.512	35.763	0.54	0.80	4.15	101.52	0.000	0.000	237.39	0.00	0.00
28	118.00	TT19-08BP111-001	3	32.512	35.763	0.54	0.80	1.03	57.60	0.000	0.000	58.89	0.00	0.00
29	118.00	RRUS-11	6	32.512	35.763	0.40	0.80	6.05	367.20	0.000	0.000	346.07	0.00	0.00
30	75.00	GPS	1	29.553	32.509	1.00	1.00	0.01	4.44	0.000	0.000	0.52	0.00	0.00
							Totals:		**12,885.24**			**22,655.90**		

Total Applied Force Summary

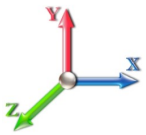
Structure:	CT46131-A-SBA		**Code:**	EIA/TIA-222-G	10/25/2017
Site Name:	Easton-Everetts Rd		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 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		597.28	2485.51	0.00	0.00
10.00		590.02	2460.82	0.00	0.00
15.00		582.76	2436.13	0.00	0.00
20.00		610.64	2411.44	0.00	0.00
25.00		631.93	2386.75	0.00	0.00
30.00		648.27	2362.06	0.00	0.00
35.00		660.99	2337.38	0.00	0.00
36.00		131.94	464.51	0.00	0.00
39.00		400.41	1387.61	0.00	0.00
40.00		118.93	502.55	0.00	0.00
45.00		601.76	2483.12	0.00	0.00
50.00		601.91	1347.46	0.00	0.00
55.00		600.49	1322.77	0.00	0.00
60.00		597.73	1298.08	0.00	0.00
65.00		593.78	1273.39	0.00	0.00
70.00		588.80	1248.70	0.00	0.00
75.00	(1) attachments	583.40	1228.45	0.00	0.00
79.00		460.85	960.67	0.00	0.00
80.00		115.86	398.23	0.00	0.00
84.00		462.91	1574.83	0.00	0.00
85.00		114.42	204.82	0.00	0.00
90.00		572.67	1011.74	0.00	0.00
95.00		568.54	991.17	0.00	0.00
100.00		563.90	970.59	0.00	0.00
105.00		558.80	950.02	0.00	0.00
110.00		553.28	929.45	0.00	0.00
115.00		547.35	908.87	0.00	0.00
118.00	(26) attachments	4064.85	3342.73	0.00	0.00
120.00		215.07	330.36	0.00	0.00
123.00		320.90	489.37	0.00	0.00
125.00		212.39	248.36	0.00	0.00
128.00	(19) attachments	4395.49	2470.13	0.00	0.00
130.00		192.04	212.64	0.00	0.00
135.00		472.41	521.52	0.00	0.00
138.00	(19) attachments	6187.39	3592.32	0.00	0.00
140.00		181.80	182.11	0.00	0.00
145.00		446.18	445.19	0.00	0.00
149.00	(13) attachments	3785.16	1987.38	0.00	0.00
150.00		85.17	75.50	0.00	0.00
155.00		418.62	368.86	0.00	0.00
158.00	(23) attachments	5731.83	3258.08	0.00	2585.39
	Totals:	**40,368.93**	**55,861.68**	**0.00**	**2,585.39**

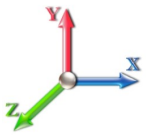
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.126	1.079	21.088	0.00	74.88
5.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	21.088	0.00	934.08
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.129	1.086	21.088	0.00	74.88
10.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.129	1.086	21.088	0.00	934.08
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.131	1.094	21.088	0.00	74.88
15.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.131	1.094	21.088	0.00	934.08
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.134	1.102	22.375	0.00	74.88
20.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	22.375	0.00	934.08
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.137	1.110	23.451	0.00	74.88
25.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.137	1.110	23.451	0.00	934.08
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.139	1.118	24.369	0.00	74.88
30.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.139	1.118	24.369	0.00	934.08
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.142	1.127	25.172	0.00	74.88
35.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.142	1.127	25.172	0.00	934.08
36.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.144	1.133	25.322	0.00	14.98
36.00	1.25" Reinforcing	Yes	1.00	0.000	3.00	0.25	0.00	0.144	1.133	25.322	0.00	186.82
39.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.145	1.136	25.752	0.00	44.93
39.00	1.25" Reinforcing	Yes	3.00	0.000	3.00	0.75	0.00	0.145	1.136	25.752	0.00	560.45
40.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.084	0.000	25.890	0.00	14.98
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.085	0.000	26.540	0.00	74.88
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.085	0.000	27.135	0.00	74.88
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.087	0.000	27.685	0.00	74.88
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.089	0.000	28.197	0.00	74.88
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	28.676	0.00	74.88
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.093	0.000	29.127	0.00	74.88
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.096	0.000	29.553	0.00	74.88
79.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.098	0.000	29.878	0.00	59.90
80.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.099	0.000	29.958	0.00	14.98
84.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.100	1.001	30.267	0.00	59.90
85.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.100	1.000	30.342	0.00	14.98
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.102	1.005	30.710	0.00	74.88
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.105	1.014	31.061	0.00	74.88
100.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.107	1.022	31.399	0.00	74.88
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.111	1.032	31.723	0.00	74.88
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.114	1.041	32.035	0.00	74.88
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.117	1.052	32.336	0.00	74.88
118.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.120	1.061	32.512	0.00	44.93
120.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.122	1.066	32.627	0.00	29.95
123.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.124	1.072	32.797	0.00	44.93
125.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.126	1.079	32.909	0.00	29.95
128.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.128	1.085	33.073	0.00	44.93
										Totals:	**0.0**	**9,202.8**

Calculated Forces

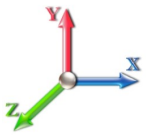
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

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	-55.80	-40.45	0.00	-4684.1	0.00	4684.14	4238.25	2119.12	9474.98	4744.53	0.00	0.000	0.000	0.616
5.00	-53.20	-40.01	0.00	-4481.8	0.00	4481.88	4191.13	2095.57	9193.31	4603.49	0.09	-0.166	0.000	0.602
10.00	-50.63	-39.55	0.00	-4281.8	0.00	4281.86	4142.79	2071.40	8912.98	4463.11	0.35	-0.333	0.000	0.589
15.00	-48.08	-39.09	0.00	-4084.1	0.00	4084.10	4093.23	2046.62	8634.14	4323.49	0.79	-0.500	0.000	0.575
20.00	-45.56	-38.59	0.00	-3888.6	0.00	3888.64	4042.45	2021.22	8356.93	4184.68	1.41	-0.668	0.000	0.560
25.00	-43.07	-38.05	0.00	-3695.6	0.00	3695.69	3990.44	1995.22	8081.53	4046.77	2.20	-0.836	0.000	0.545
30.00	-40.61	-37.49	0.00	-3505.4	0.00	3505.42	3937.21	1968.60	7808.07	3909.84	3.16	-1.004	0.000	0.530
35.00	-38.22	-36.85	0.00	-3317.9	0.00	3317.99	3882.75	1941.38	7536.73	3773.96	4.30	-1.172	0.000	0.515
36.00	-37.72	-36.75	0.00	-3281.1	0.00	3281.14	3871.71	1935.86	7482.72	3746.92	4.55	-1.206	0.000	0.512
36.00	-37.72	-36.75	0.00	-3281.1	0.00	3281.14	3871.71	1935.86	7482.72	3746.92	4.55	-1.206	0.000	0.512
39.00	-36.29	-36.37	0.00	-3170.8	0.00	3170.89	3838.31	1919.15	7321.27	3666.08	5.34	-1.308	0.000	0.875
40.00	-35.68	-36.35	0.00	-3134.5	0.00	3134.52	3827.07	1913.54	7267.64	3639.22	5.62	-1.368	0.000	0.871
45.00	-33.03	-35.85	0.00	-2952.7	0.00	2952.76	3812.30	1906.15	7197.58	3604.14	7.21	-1.659	0.000	0.828
50.00	-31.52	-35.37	0.00	-2773.4	0.00	2773.49	3755.07	1877.54	6931.57	3470.94	9.11	-1.952	0.000	0.808
55.00	-30.05	-34.87	0.00	-2596.6	0.00	2596.65	3696.63	1848.32	6668.16	3339.04	11.30	-2.232	0.000	0.786
60.00	-28.61	-34.36	0.00	-2422.3	0.00	2422.32	3636.96	1818.48	6407.52	3208.52	13.79	-2.512	0.000	0.763
65.00	-27.21	-33.84	0.00	-2250.5	0.00	2250.55	3576.08	1788.04	6149.79	3079.47	16.57	-2.792	0.000	0.739
70.00	-25.83	-33.31	0.00	-2081.3	0.00	2081.36	3513.96	1756.98	5895.14	2951.95	19.64	-3.070	0.000	0.713
75.00	-24.49	-32.77	0.00	-1914.8	0.00	1914.81	3450.63	1725.31	5643.71	2826.05	23.00	-3.347	0.000	0.685
79.00	-23.48	-32.30	0.00	-1783.7	0.00	1783.75	3399.08	1699.54	5445.00	2726.55	25.90	-3.568	0.000	0.661
80.00	-23.02	-32.22	0.00	-1751.4	0.00	1751.45	3386.07	1693.03	5395.67	2701.84	26.66	-3.624	0.000	0.655
84.00	-21.40	-31.71	0.00	-1622.5	0.00	1622.57	2492.17	1246.08	3964.65	1985.27	29.78	-3.842	0.000	0.827
85.00	-21.10	-31.64	0.00	-1590.8	0.00	1590.87	2483.20	1241.60	3929.49	1967.67	30.59	-3.897	0.000	0.818
90.00	-19.97	-31.10	0.00	-1432.6	0.00	1432.65	2437.73	1218.86	3754.97	1880.28	34.83	-4.197	0.000	0.771
95.00	-18.88	-30.56	0.00	-1277.1	0.00	1277.13	2391.17	1195.58	3582.65	1793.99	39.38	-4.489	0.000	0.720
100.00	-17.81	-30.00	0.00	-1124.3	0.00	1124.35	2343.52	1171.76	3412.67	1708.87	44.23	-4.769	0.000	0.666
105.00	-16.78	-29.44	0.00	-974.34	0.00	974.34	2294.79	1147.40	3245.17	1624.99	49.37	-5.036	0.000	0.608
110.00	-15.78	-28.87	0.00	-827.14	0.00	827.14	2244.98	1122.49	3080.27	1542.43	54.77	-5.286	0.000	0.544
115.00	-14.84	-28.29	0.00	-682.78	0.00	682.78	2194.08	1097.04	2918.13	1461.23	60.43	-5.515	0.000	0.475
118.00	-11.87	-23.94	0.00	-597.92	0.00	597.92	2163.02	1081.51	2822.22	1413.21	63.93	-5.643	0.000	0.429
120.00	-11.52	-23.71	0.00	-550.04	0.00	550.04	2136.45	1068.22	2751.59	1377.84	66.31	-5.724	0.000	0.405
123.00	-11.03	-23.36	0.00	-478.91	0.00	478.91	2094.98	1047.49	2645.31	1324.62	69.94	-5.837	0.000	0.367
123.00	-11.03	-23.36	0.00	-478.91	0.00	478.91	1330.70	665.35	1690.49	846.50	69.94	-5.837	0.000	0.575
125.00	-10.76	-23.14	0.00	-432.19	0.00	432.19	1319.70	659.85	1654.32	828.39	72.39	-5.908	0.000	0.531
128.00	-8.73	-18.53	0.00	-362.76	0.00	362.76	1302.88	651.44	1600.34	801.36	76.14	-6.044	0.000	0.460
130.00	-8.49	-18.34	0.00	-325.70	0.00	325.70	1291.45	645.73	1564.57	783.45	78.69	-6.128	0.000	0.423
135.00	-7.99	-17.83	0.00	-234.02	0.00	234.02	1262.12	631.06	1475.93	739.06	85.20	-6.305	0.000	0.324
138.00	-5.09	-11.29	0.00	-180.53	0.00	180.53	1244.00	622.00	1423.34	712.73	89.18	-6.393	0.000	0.258
140.00	-4.91	-11.09	0.00	-157.96	0.00	157.96	1231.70	615.85	1388.54	695.30	91.87	-6.444	0.000	0.231
145.00	-4.50	-10.61	0.00	-102.49	0.00	102.49	1200.20	600.10	1302.53	652.23	98.66	-6.546	0.000	0.161
149.00	-2.96	-6.62	0.00	-60.06	0.00	60.06	1174.22	587.11	1234.81	618.32	104.16	-6.603	0.000	0.100
150.00	-2.89	-6.53	0.00	-53.44	0.00	53.44	1167.61	583.81	1218.04	609.93	105.54	-6.614	0.000	0.090
155.00	-2.57	-6.07	0.00	-20.80	0.00	20.80	1133.94	566.97	1135.21	568.45	112.47	-6.651	0.000	0.039
158.00	0.00	-5.73	0.00	-2.59	0.00	2.59	1113.22	556.61	1086.36	543.99	116.65	-6.658	0.000	0.005

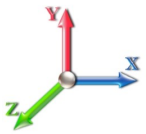
Wind Loading - Shaft

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 101 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	RB1	1.00	0.85	21.088	23.20	431.24	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	423.24	0.702 *	0.000	5.00	22.941	16.09	597.3	0.0	981.4
10.00		1.00	0.85	21.088	23.20	415.23	0.706 *	0.000	5.00	22.511	15.90	590.0	0.0	962.8
15.00		1.00	0.85	21.088	23.20	407.23	0.711 *	0.000	5.00	22.081	15.70	582.8	0.0	944.3
20.00		1.00	0.90	22.375	24.61	411.23	0.716 *	0.000	5.00	21.651	15.51	610.6	0.0	925.8
25.00		1.00	0.95	23.451	25.80	412.56	0.721 *	0.000	5.00	21.222	15.31	631.9	0.0	907.3
30.00		1.00	0.98	24.369	26.81	411.95	0.727 *	0.000	5.00	20.792	15.12	648.3	0.0	888.8
35.00		1.00	1.01	25.172	27.69	409.94	0.733 *	0.000	5.00	20.362	14.92	661.0	0.0	870.3
36.00	RT1	1.00	1.02	25.322	27.85	409.40	0.736 *	0.000	1.00	4.021	2.96	131.9	0.0	171.8
39.00	Bot - Section 2	1.00	1.04	25.752	28.33	407.56	0.739 *	0.000	3.00	11.959	8.83	400.4	0.0	511.1
40.00		1.00	1.04	25.890	28.48	406.87	0.650	0.000	1.00	4.015	2.61	118.9	0.0	340.5
45.00	Top - Section 1	1.00	1.07	26.540	29.19	402.97	0.650	0.000	5.00	19.820	12.88	601.8	0.0	1680.1
50.00		1.00	1.09	27.135	29.85	405.08	0.650	0.000	5.00	19.390	12.60	601.9	0.0	828.4
55.00		1.00	1.12	27.685	30.45	400.00	0.650	0.000	5.00	18.960	12.32	600.5	0.0	809.9
60.00		1.00	1.14	28.197	31.02	394.42	0.650	0.000	5.00	18.530	12.04	597.7	0.0	791.4
65.00		1.00	1.16	28.676	31.54	388.42	0.650	0.000	5.00	18.100	11.77	593.8	0.0	772.8
70.00		1.00	1.17	29.127	32.04	382.05	0.650	0.000	5.00	17.670	11.49	588.8	0.0	754.3
75.00	Appurtenance(s)	1.00	1.19	29.553	32.51	375.36	0.650	0.000	5.00	17.240	11.21	582.9	0.0	735.8
79.00	Bot - Section 3	1.00	1.20	29.878	32.87	369.80	0.650	0.000	4.00	13.483	8.76	460.9	0.0	575.3
80.00		1.00	1.21	29.958	32.95	368.38	0.650	0.000	1.00	3.381	2.20	115.9	0.0	262.4
84.00	Top - Section 2	1.00	1.22	30.267	33.29	362.60	0.651 *	0.000	4.00	13.350	8.69	462.9	0.0	1035.9
85.00		1.00	1.22	30.342	33.38	367.04	0.650 *	0.000	1.00	3.295	2.14	114.4	0.0	117.3
90.00		1.00	1.24	30.710	33.78	359.60	0.653 *	0.000	5.00	16.215	10.60	572.7	0.0	577.3
95.00		1.00	1.25	31.061	34.17	351.93	0.659 *	0.000	5.00	15.785	10.40	568.5	0.0	561.9
100.00		1.00	1.27	31.399	34.54	344.07	0.665 *	0.000	5.00	15.356	10.20	563.9	0.0	546.5
105.00		1.00	1.28	31.723	34.89	336.02	0.671 *	0.000	5.00	14.926	10.01	558.8	0.0	531.0
110.00		1.00	1.29	32.035	35.24	327.80	0.677 *	0.000	5.00	14.496	9.81	553.3	0.0	515.6
115.00		1.00	1.30	32.336	35.57	319.43	0.684 *	0.000	5.00	14.066	9.62	547.3	0.0	500.2
118.00	Appurtenance(s)	1.00	1.31	32.512	35.76	314.33	0.689 *	0.000	3.00	8.233	5.68	324.8	0.0	292.7
120.00		1.00	1.32	32.627	35.89	310.91	0.693 *	0.000	2.00	5.403	3.75	215.1	0.0	192.0
123.00	Top - Section 3	1.00	1.32	32.797	36.08	305.72	0.697 *	0.000	3.00	7.975	5.56	320.9	0.0	283.4
125.00		1.00	1.33	32.909	36.20	302.24	0.701 *	0.000	2.00	5.231	3.67	212.4	0.0	130.5
128.00	Appurtenance(s)	1.00	1.33	33.073	36.38	296.98	0.705 *	0.000	3.00	7.717	5.44	316.8	0.0	192.6
130.00		1.00	1.34	33.182	36.50	293.45	0.650	0.000	2.00	5.059	3.29	192.0	0.0	126.2
135.00		1.00	1.35	33.446	36.79	284.54	0.650	0.000	5.00	12.347	8.03	472.4	0.0	308.0
138.00	Appurtenance(s)	1.00	1.35	33.601	36.96	279.13	0.650	0.000	3.00	7.202	4.68	276.8	0.0	179.6
140.00		1.00	1.36	33.703	37.07	275.51	0.650	0.000	2.00	4.715	3.06	181.8	0.0	117.6
145.00		1.00	1.37	33.953	37.35	266.37	0.650	0.000	5.00	11.487	7.47	446.2	0.0	286.4
149.00	Appurtenance(s)	1.00	1.38	34.148	37.56	258.98	0.650	0.000	4.00	8.880	5.77	346.9	0.0	221.3
150.00		1.00	1.38	34.196	37.62	257.13	0.650	0.000	1.00	2.177	1.42	85.2	0.0	54.2
155.00		1.00	1.39	34.433	37.88	247.79	0.650	0.000	5.00	10.627	6.91	418.6	0.0	264.8
158.00	Appurtenance(s)	1.00	1.39	34.573	38.03	242.14	0.650	0.000	3.00	6.170	4.01	244.0	0.0	153.7
								Totals:	**158.00**			**17,713.0**		**21,903.2**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

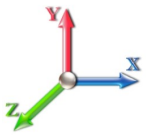
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 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	158.00	ALU - 1900 MHz - RRU	3	34.596	38.055	0.67	1.00	7.64	118.80	0.000	0.500	465.06	0.00	232.53
2	158.00	Collar Mount	1	34.573	38.030	1.00	1.00	5.00	315.00	0.000	0.000	304.24	0.00	0.00
3	158.00	Low Profile Platform	1	34.596	38.055	1.00	1.00	25.00	1080.00	0.000	0.500	1522.21	0.00	761.10
4	158.00	RFS - ACU-A20-N - RET	3	34.573	38.030	0.50	1.00	0.21	2.70	0.000	0.000	12.78	0.00	0.00
5	158.00	ALU - TD-RRH8x20-25 -	3	34.596	38.055	0.67	1.00	8.14	189.00	0.000	0.500	495.66	0.00	247.83
6	158.00	Alu - 800 Filters	3	34.596	38.055	0.69	1.00	1.61	23.76	0.000	0.500	98.31	0.00	49.16
7	158.00	KMW - ETCR-654L12H6	3	34.596	38.055	0.69	1.00	32.52	267.30	0.000	0.500	1980.07	0.00	990.03
8	158.00	ALU - 800 MHz - RRU	6	34.596	38.055	0.67	1.00	10.01	286.20	0.000	0.500	609.48	0.00	304.74
9	149.00	DB844H90E-XY	12	34.148	37.563	0.88	0.80	32.21	151.20	0.000	0.000	1935.74	0.00	0.00
10	149.00	Low Profile Platform	1	34.148	37.563	1.00	1.00	25.00	1080.00	0.000	0.000	1502.53	0.00	0.00
11	138.00	Bias T	3	33.601	36.962	0.50	0.75	0.14	8.91	0.000	0.000	8.02	0.00	0.00
12	138.00	KRY 112 144/1	3	33.601	36.962	0.50	0.75	0.62	29.70	0.000	0.000	36.55	0.00	0.00
13	138.00	LNX-6515DS-A1M	3	33.601	36.962	0.63	0.75	21.68	134.46	0.000	0.000	1282.02	0.00	0.00
14	138.00	APXV18-206516S-A20	3	33.601	36.962	0.58	0.75	6.34	50.49	0.000	0.000	374.67	0.00	0.00
15	138.00	APX16DWV-16DWVS-E-	6	33.601	36.962	0.50	0.75	19.48	219.78	0.000	0.000	1151.83	0.00	0.00
16	138.00	Platform w/ HR & V-Brace	1	33.601	36.962	1.00	1.00	51.70	2021.40	0.000	0.000	3057.46	0.00	0.00
17	128.00	BXA-171063-12BF	1	33.073	36.381	0.54	0.80	0.00	19.80	0.000	0.000	0.00	0.00	0.00
18	128.00	BXA-70063-6BF	3	33.073	36.381	0.70	0.80	10.05	40.50	0.000	0.000	585.19	0.00	0.00
19	128.00	DB846F65ZAXY	6	33.073	36.381	0.75	0.80	31.81	113.40	0.000	0.000	1851.61	0.00	0.00
20	128.00	SLCP 2x6014	2	33.073	36.381	0.73	0.80	9.45	36.00	0.000	0.000	550.05	0.00	0.00
21	128.00	Low Profile Platform	1	33.073	36.381	0.80	0.80	17.60	1350.00	0.000	0.000	1024.48	0.00	0.00
22	128.00	FD9R6004-2C-3L	6	33.073	36.381	0.54	0.80	1.16	16.74	0.000	0.000	67.39	0.00	0.00
23	118.00	7770	6	32.512	35.763	0.62	0.80	20.33	189.00	0.000	0.000	1163.19	0.00	0.00
24	118.00	Low Profile Platform	1	32.512	35.763	0.80	0.80	17.60	1350.00	0.000	0.000	1007.09	0.00	0.00
25	118.00	P65-16-XLH-RR	3	32.512	35.763	0.63	0.80	15.47	143.10	0.000	0.000	885.29	0.00	0.00
26	118.00	DC6-48-60-18	1	32.512	35.763	0.80	0.80	0.74	28.62	0.000	0.000	42.11	0.00	0.00
27	118.00	LGP21401	6	32.512	35.763	0.54	0.80	4.15	76.14	0.000	0.000	237.39	0.00	0.00
28	118.00	TT19-08BP111-001	3	32.512	35.763	0.54	0.80	1.03	43.20	0.000	0.000	58.89	0.00	0.00
29	118.00	RRUS-11	6	32.512	35.763	0.40	0.80	6.05	275.40	0.000	0.000	346.07	0.00	0.00
30	75.00	GPS	1	29.553	32.509	1.00	1.00	0.01	3.33	0.000	0.000	0.52	0.00	0.00
							Totals:		**9,663.93**			**22,655.90**		

Total Applied Force Summary

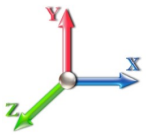
Structure:	CT46131-A-SBA		**Code:**	EIA/TIA-222-G	10/25/2017
Site Name:	Easton-Everetts Rd		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 16

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 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		597.28	1864.13	0.00	0.00
10.00		590.02	1845.61	0.00	0.00
15.00		582.76	1827.10	0.00	0.00
20.00		610.64	1808.58	0.00	0.00
25.00		631.93	1790.06	0.00	0.00
30.00		648.27	1771.55	0.00	0.00
35.00		660.99	1753.03	0.00	0.00
36.00		131.94	348.38	0.00	0.00
39.00		400.41	1040.71	0.00	0.00
40.00		118.93	376.91	0.00	0.00
45.00		601.76	1862.34	0.00	0.00
50.00		601.91	1010.59	0.00	0.00
55.00		600.49	992.08	0.00	0.00
60.00		597.73	973.56	0.00	0.00
65.00		593.78	955.04	0.00	0.00
70.00		588.80	936.53	0.00	0.00
75.00	(1) attachments	583.40	921.34	0.00	0.00
79.00		460.85	720.50	0.00	0.00
80.00		115.86	298.68	0.00	0.00
84.00		462.91	1181.12	0.00	0.00
85.00		114.42	153.61	0.00	0.00
90.00		572.67	758.81	0.00	0.00
95.00		568.54	743.38	0.00	0.00
100.00		563.90	727.95	0.00	0.00
105.00		558.80	712.52	0.00	0.00
110.00		553.28	697.09	0.00	0.00
115.00		547.35	681.66	0.00	0.00
118.00	(26) attachments	4064.85	2507.05	0.00	0.00
120.00		215.07	247.77	0.00	0.00
123.00		320.90	367.03	0.00	0.00
125.00		212.39	186.27	0.00	0.00
128.00	(19) attachments	4395.49	1852.60	0.00	0.00
130.00		192.04	159.48	0.00	0.00
135.00		472.41	391.14	0.00	0.00
138.00	(19) attachments	6187.39	2694.24	0.00	0.00
140.00		181.80	136.58	0.00	0.00
145.00		446.18	333.89	0.00	0.00
149.00	(13) attachments	3785.16	1490.54	0.00	0.00
150.00		85.17	56.63	0.00	0.00
155.00		418.62	276.65	0.00	0.00
158.00	(23) attachments	5731.83	2443.56	0.00	2585.39
	Totals:	**40,368.93**	**41,896.26**	**0.00**	**2,585.39**

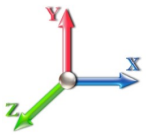
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.126	1.079	21.088	0.00	56.16
5.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	21.088	0.00	700.56
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.129	1.086	21.088	0.00	56.16
10.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.129	1.086	21.088	0.00	700.56
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.131	1.094	21.088	0.00	56.16
15.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.131	1.094	21.088	0.00	700.56
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.134	1.102	22.375	0.00	56.16
20.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	22.375	0.00	700.56
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.137	1.110	23.451	0.00	56.16
25.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.137	1.110	23.451	0.00	700.56
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.139	1.118	24.369	0.00	56.16
30.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.139	1.118	24.369	0.00	700.56
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.142	1.127	25.172	0.00	56.16
35.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.142	1.127	25.172	0.00	700.56
36.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.144	1.133	25.322	0.00	11.23
36.00	1.25" Reinforcing	Yes	1.00	0.000	3.00	0.25	0.00	0.144	1.133	25.322	0.00	140.11
39.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.145	1.136	25.752	0.00	33.70
39.00	1.25" Reinforcing	Yes	3.00	0.000	3.00	0.75	0.00	0.145	1.136	25.752	0.00	420.34
40.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.084	0.000	25.890	0.00	11.23
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.085	0.000	26.540	0.00	56.16
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.085	0.000	27.135	0.00	56.16
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.087	0.000	27.685	0.00	56.16
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.089	0.000	28.197	0.00	56.16
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	28.676	0.00	56.16
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.093	0.000	29.127	0.00	56.16
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.096	0.000	29.553	0.00	56.16
79.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.098	0.000	29.878	0.00	44.93
80.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.099	0.000	29.958	0.00	11.23
84.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.100	1.001	30.267	0.00	44.93
85.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.100	1.000	30.342	0.00	11.23
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.102	1.005	30.710	0.00	56.16
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.105	1.014	31.061	0.00	56.16
100.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.107	1.022	31.399	0.00	56.16
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.111	1.032	31.723	0.00	56.16
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.114	1.041	32.035	0.00	56.16
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.117	1.052	32.336	0.00	56.16
118.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.120	1.061	32.512	0.00	33.70
120.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.122	1.066	32.627	0.00	22.46
123.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.124	1.072	32.797	0.00	33.70
125.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.126	1.079	32.909	0.00	22.46
128.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.128	1.085	33.073	0.00	33.70
										Totals:	**0.0**	**6,902.1**

Calculated Forces

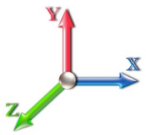
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

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	-41.84	-40.43	0.00	-4639.1	0.00	4639.14	4238.25	2119.12	9474.98	4744.53	0.00	0.000	0.000	0.608
5.00	-39.86	-39.94	0.00	-4436.9	0.00	4436.99	4191.13	2095.57	9193.31	4603.49	0.09	-0.165	0.000	0.595
10.00	-37.90	-39.46	0.00	-4237.2	0.00	4237.27	4142.79	2071.40	8912.98	4463.11	0.35	-0.330	0.000	0.581
15.00	-35.97	-38.96	0.00	-4039.9	0.00	4039.99	4093.23	2046.62	8634.14	4323.49	0.78	-0.495	0.000	0.567
20.00	-34.05	-38.43	0.00	-3845.1	0.00	3845.17	4042.45	2021.22	8356.93	4184.68	1.39	-0.661	0.000	0.552
25.00	-32.16	-37.87	0.00	-3653.0	0.00	3653.00	3990.44	1995.22	8081.53	4046.77	2.17	-0.827	0.000	0.538
30.00	-30.29	-37.28	0.00	-3463.6	0.00	3463.64	3937.21	1968.60	7808.07	3909.84	3.13	-0.993	0.000	0.523
35.00	-28.49	-36.64	0.00	-3277.2	0.00	3277.22	3882.75	1941.38	7536.73	3773.96	4.26	-1.159	0.000	0.507
36.00	-28.10	-36.53	0.00	-3240.5	0.00	3240.58	3871.71	1935.86	7482.72	3746.92	4.50	-1.193	0.000	0.504
36.00	-28.10	-36.53	0.00	-3240.5	0.00	3240.58	3871.71	1935.86	7482.72	3746.92	4.50	-1.193	0.000	0.504
39.00	-27.02	-36.15	0.00	-3130.9	0.00	3130.98	3838.31	1919.15	7321.27	3666.08	5.29	-1.293	0.000	0.861
40.00	-26.53	-36.10	0.00	-3094.8	0.00	3094.83	3827.07	1913.54	7267.64	3639.22	5.56	-1.352	0.000	0.858
45.00	-24.51	-35.58	0.00	-2914.3	0.00	2914.33	3812.30	1906.15	7197.58	3604.14	7.13	-1.640	0.000	0.815
50.00	-23.35	-35.06	0.00	-2736.4	0.00	2736.45	3755.07	1877.54	6931.57	3470.94	9.01	-1.929	0.000	0.795
55.00	-22.21	-34.53	0.00	-2561.1	0.00	2561.16	3696.63	1848.32	6668.16	3339.04	11.18	-2.205	0.000	0.773
60.00	-21.10	-33.99	0.00	-2388.5	0.00	2388.51	3636.96	1818.48	6407.52	3208.52	13.63	-2.481	0.000	0.751
65.00	-20.01	-33.45	0.00	-2218.5	0.00	2218.54	3576.08	1788.04	6149.79	3079.47	16.38	-2.757	0.000	0.726
70.00	-18.95	-32.91	0.00	-2051.2	0.00	2051.27	3513.96	1756.98	5895.14	2951.95	19.41	-3.032	0.000	0.701
75.00	-17.92	-32.35	0.00	-1886.7	0.00	1886.73	3450.63	1725.31	5643.71	2826.05	22.73	-3.304	0.000	0.673
79.00	-17.16	-31.89	0.00	-1757.3	0.00	1757.32	3399.08	1699.54	5445.00	2726.55	25.60	-3.522	0.000	0.650
80.00	-16.79	-31.80	0.00	-1725.4	0.00	1725.43	3386.07	1693.03	5395.67	2701.84	26.34	-3.577	0.000	0.644
84.00	-15.57	-31.29	0.00	-1598.2	0.00	1598.24	2492.17	1246.08	3964.65	1985.27	29.43	-3.792	0.000	0.812
85.00	-15.32	-31.22	0.00	-1566.9	0.00	1566.95	2483.20	1241.60	3929.49	1967.67	30.23	-3.846	0.000	0.803
90.00	-14.45	-30.67	0.00	-1410.8	0.00	1410.86	2437.73	1218.86	3754.97	1880.28	34.41	-4.142	0.000	0.757
95.00	-13.61	-30.11	0.00	-1257.5	0.00	1257.52	2391.17	1195.58	3582.65	1793.99	38.90	-4.429	0.000	0.707
100.00	-12.79	-29.55	0.00	-1106.9	0.00	1106.96	2343.52	1171.76	3412.67	1708.87	43.69	-4.705	0.000	0.654
105.00	-11.99	-28.99	0.00	-959.19	0.00	959.19	2294.79	1147.40	3245.17	1624.99	48.75	-4.968	0.000	0.596
110.00	-11.23	-28.42	0.00	-814.24	0.00	814.24	2244.98	1122.49	3080.27	1542.43	54.08	-5.214	0.000	0.534
115.00	-10.52	-27.85	0.00	-672.13	0.00	672.13	2194.08	1097.04	2918.13	1461.23	59.66	-5.440	0.000	0.465
118.00	-8.37	-23.58	0.00	-588.59	0.00	588.59	2163.02	1081.51	2822.22	1413.21	63.11	-5.565	0.000	0.421
120.00	-8.11	-23.35	0.00	-541.44	0.00	541.44	2136.45	1068.22	2751.59	1377.84	65.46	-5.645	0.000	0.397
123.00	-7.74	-23.01	0.00	-471.39	0.00	471.39	2094.98	1047.49	2645.31	1324.62	69.04	-5.756	0.000	0.360
123.00	-7.74	-23.01	0.00	-471.39	0.00	471.39	1330.70	665.35	1690.49	846.50	69.04	-5.756	0.000	0.564
125.00	-7.53	-22.79	0.00	-425.37	0.00	425.37	1319.70	659.85	1654.32	828.39	71.46	-5.826	0.000	0.520
128.00	-6.11	-18.24	0.00	-357.00	0.00	357.00	1302.88	651.44	1600.34	801.36	75.16	-5.960	0.000	0.451
130.00	-5.93	-18.05	0.00	-320.52	0.00	320.52	1291.45	645.73	1564.57	783.45	77.67	-6.043	0.000	0.414
135.00	-5.55	-17.55	0.00	-230.30	0.00	230.30	1262.12	631.06	1475.93	739.06	84.09	-6.217	0.000	0.317
138.00	-3.53	-11.11	0.00	-177.66	0.00	177.66	1244.00	622.00	1423.34	712.73	88.02	-6.303	0.000	0.252
140.00	-3.40	-10.92	0.00	-155.45	0.00	155.45	1231.70	615.85	1388.54	695.30	90.66	-6.353	0.000	0.227
145.00	-3.11	-10.44	0.00	-100.87	0.00	100.87	1200.20	600.10	1302.53	652.23	97.36	-6.454	0.000	0.158
149.00	-2.05	-6.51	0.00	-59.12	0.00	59.12	1174.22	587.11	1234.81	618.32	102.78	-6.510	0.000	0.097
150.00	-2.00	-6.42	0.00	-52.61	0.00	52.61	1167.61	583.81	1218.04	609.93	104.15	-6.521	0.000	0.088
155.00	-1.77	-5.97	0.00	-20.51	0.00	20.51	1133.94	566.97	1135.21	568.45	110.98	-6.557	0.000	0.038
158.00	0.00	-5.73	0.00	-2.59	0.00	2.59	1113.22	556.61	1086.36	543.99	115.10	-6.565	0.000	0.005

Wind Loading - Shaft

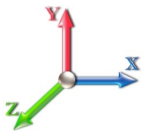
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

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	RB1	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	1.295 *	1.242	5.00	23.976	31.05	176.5	427.6	1736.1
10.00		1.00	0.85	5.168	5.68	0.00	1.304 *	1.331	5.00	23.620	30.80	175.1	450.5	1734.3
15.00		1.00	0.85	5.168	5.68	0.00	1.313 *	1.386	5.00	23.237	30.50	173.4	460.8	1719.9
20.00		1.00	0.90	5.483	6.03	0.00	1.322 *	1.427	5.00	22.840	30.20	182.2	465.6	1700.0
25.00		1.00	0.95	5.747	6.32	0.00	1.332 *	1.459	5.00	22.437	29.89	188.9	467.1	1676.8
30.00		1.00	0.98	5.972	6.57	0.00	1.342 *	1.486	5.00	22.030	29.57	194.2	466.4	1651.5
35.00		1.00	1.01	6.169	6.79	0.00	1.353 *	1.509	5.00	21.619	29.24	198.5	464.3	1624.7
36.00	RT1	1.00	1.02	6.206	6.83	0.00	1.359 *	1.513	1.00	4.273	5.81	39.6	92.7	321.9
39.00	Bot - Section 2	1.00	1.04	6.311	6.94	0.00	1.364 *	1.525	3.00	12.722	17.35	120.4	277.0	958.4
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	1.00	4.270	5.12	35.8	93.6	547.6
45.00	Top - Section 1	1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	21.109	25.33	181.2	464.1	2704.2
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	20.693	24.83	181.6	459.2	1563.7
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	20.275	24.33	181.6	453.7	1533.5
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	19.857	23.83	181.1	447.6	1502.8
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	19.438	23.33	180.3	441.1	1471.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	19.018	22.82	179.2	434.2	1440.0
75.00	Appurtenance(s)	1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	18.597	22.32	177.8	427.0	1408.1
79.00	Bot - Section 3	1.00	1.20	7.322	8.05	0.00	1.200	1.637	4.00	14.574	17.49	140.9	336.8	1103.8
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	1.00	3.654	4.38	35.4	85.2	435.0
84.00	Top - Section 2	1.00	1.22	7.418	8.16	0.00	1.202 *	1.647	4.00	14.448	17.36	141.7	335.7	1716.9
85.00		1.00	1.22	7.436	8.18	0.00	1.201 *	1.649	1.00	3.569	4.29	35.1	83.6	240.0
90.00		1.00	1.24	7.526	8.28	0.00	1.206 *	1.658	5.00	17.597	21.23	175.7	410.0	1179.7
95.00		1.00	1.25	7.612	8.37	0.00	1.216 *	1.667	5.00	17.175	20.89	174.9	401.7	1150.9
100.00		1.00	1.27	7.695	8.46	0.00	1.227 *	1.676	5.00	16.752	20.55	174.0	393.2	1121.8
105.00		1.00	1.28	7.774	8.55	0.00	1.238 *	1.684	5.00	16.329	20.21	172.9	384.4	1092.5
110.00		1.00	1.29	7.851	8.64	0.00	1.250 *	1.692	5.00	15.906	19.88	171.7	375.5	1063.0
115.00		1.00	1.30	7.925	8.72	0.00	1.262 *	1.699	5.00	15.482	19.54	170.4	366.5	1033.4
118.00	Appurtenance(s)	1.00	1.31	7.968	8.76	0.00	1.273 *	1.704	3.00	9.085	11.56	101.4	216.6	606.8
120.00		1.00	1.32	7.996	8.80	0.00	1.280 *	1.707	2.00	5.972	7.64	67.2	142.9	399.0
123.00	Top - Section 3	1.00	1.32	8.038	8.84	0.00	1.287 *	1.711	3.00	8.831	11.36	100.5	211.0	588.9
125.00		1.00	1.33	8.065	8.87	0.00	1.294 *	1.714	2.00	5.802	7.51	66.6	139.1	313.2
128.00	Appurtenance(s)	1.00	1.33	8.105	8.92	0.00	1.302 *	1.718	3.00	8.576	11.16	99.5	205.3	462.1
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	2.00	5.632	6.76	60.5	135.3	303.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.786	16.54	149.2	328.7	739.4
138.00	Appurtenance(s)	1.00	1.35	8.235	9.06	0.00	1.200	1.731	3.00	8.067	9.68	87.7	193.7	433.2
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	2.00	5.293	6.35	57.7	127.6	284.3
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.936	15.52	142.1	309.1	690.9
149.00	Appurtenance(s)	1.00	1.38	8.369	9.21	0.00	1.200	1.744	4.00	10.043	12.05	110.9	240.9	535.9
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	1.00	2.468	2.96	27.3	59.8	132.1
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	12.086	14.50	134.6	289.0	642.0
158.00	Appurtenance(s)	1.00	1.39	8.473	9.32	0.00	1.200	1.754	3.00	7.047	8.46	78.8	169.7	374.6
								Totals:	**158.00**			**5,424.1**		**41,938.1**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

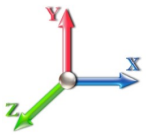
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

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	158.00	ALU - 1900 MHz - RRU	3	8.478	9.326	0.67	1.00	10.45	394.00	0.000	0.500	97.43	0.00	48.71
2	158.00	Collar Mount	1	8.473	9.320	1.00	1.00	8.51	614.72	0.000	0.000	79.30	0.00	0.00
3	158.00	Low Profile Platform	1	8.478	9.326	1.00	1.00	46.05	2192.58	0.000	0.500	429.49	0.00	214.75
4	158.00	RFS - ACU-A20-N - RET	3	8.473	9.320	0.50	1.00	0.66	12.66	0.000	0.000	6.13	0.00	0.00
5	158.00	ALU - TD-RRH8x20-25 -	3	8.478	9.326	0.67	1.00	9.78	585.48	0.000	0.500	91.25	0.00	45.63
6	158.00	Alu - 800 Filters	3	8.478	9.326	0.76	1.00	3.26	69.89	0.000	0.500	30.41	0.00	15.21
7	158.00	KMW - ETCR-654L12H6	3	8.478	9.326	0.71	1.00	37.08	1201.78	0.000	0.500	345.81	0.00	172.90
8	158.00	ALU - 800 MHz - RRU	6	8.478	9.326	0.67	1.00	14.63	701.07	0.000	0.500	136.46	0.00	68.23
9	149.00	DB844H90E-XY	12	8.369	9.206	0.86	0.80	40.51	1602.19	0.000	0.000	372.95	0.00	0.00
10	149.00	Low Profile Platform	1	8.369	9.206	1.00	1.00	45.93	2186.43	0.000	0.000	422.81	0.00	0.00
11	138.00	Bias T	3	8.235	9.058	0.50	0.75	0.49	18.69	0.000	0.000	4.40	0.00	0.00
12	138.00	KRY 112 144/1	3	8.235	9.058	0.50	0.75	1.33	62.38	0.000	0.000	12.03	0.00	0.00
13	138.00	LNX-6515DS-A1M	3	8.235	9.058	0.64	0.75	28.13	664.82	0.000	0.000	254.83	0.00	0.00
14	138.00	APXV18-206516S-A20	3	8.235	9.058	0.61	0.75	10.06	215.80	0.000	0.000	91.12	0.00	0.00
15	138.00	APX16DWV-16DWVS-E-	6	8.235	9.058	0.52	0.75	23.83	1431.55	0.000	0.000	215.85	0.00	0.00
16	138.00	Platform w/ HR & V-Brace	1	8.235	9.058	1.00	1.00	89.64	4800.96	0.000	0.000	811.98	0.00	0.00
17	128.00	BXA-171063-12BF	1	8.105	8.916	0.54	0.80	3.85	152.09	0.000	0.000	34.32	0.00	0.00
18	128.00	BXA-70063-6BF	3	8.105	8.916	0.72	0.80	15.29	253.53	0.000	0.000	136.33	0.00	0.00
19	128.00	DB846F65ZAXY	6	8.105	8.916	0.76	0.80	37.76	1398.52	0.000	0.000	336.66	0.00	0.00
20	128.00	SLCP 2x6014	2	8.105	8.916	0.74	0.80	12.56	294.13	0.000	0.000	111.98	0.00	0.00
21	128.00	Low Profile Platform	1	8.105	8.916	0.80	0.80	31.51	2788.32	0.000	0.000	280.92	0.00	0.00
22	128.00	FD9R6004-2C-3L	6	8.105	8.916	0.54	0.80	2.56	55.92	0.000	0.000	22.83	0.00	0.00
23	118.00	7770	6	7.968	8.765	0.64	0.80	25.06	1252.04	0.000	0.000	219.68	0.00	0.00
24	118.00	Low Profile Platform	1	7.968	8.765	0.80	0.80	31.39	2777.88	0.000	0.000	275.16	0.00	0.00
25	118.00	P65-16-XLH-RR	3	7.968	8.765	0.65	0.80	21.18	532.61	0.000	0.000	185.65	0.00	0.00
26	118.00	DC6-48-60-18	1	7.968	8.765	0.80	0.80	1.08	80.82	0.000	0.000	9.45	0.00	0.00
27	118.00	LGP21401	6	7.968	8.765	0.54	0.80	6.77	205.37	0.000	0.000	59.36	0.00	0.00
28	118.00	TT19-08BP111-001	3	7.968	8.765	0.54	0.80	1.96	99.48	0.000	0.000	17.18	0.00	0.00
29	118.00	RRUS-11	6	7.968	8.765	0.40	0.80	7.53	694.56	0.000	0.000	66.01	0.00	0.00
30	75.00	GPS	1	7.243	7.967	1.00	1.00	0.01	8.14	0.000	0.000	0.08	0.00	0.00
							Totals:		**27,348.38**			**5,157.84**		

Total Applied Force Summary

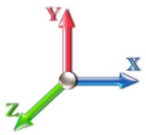
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

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		176.52	3099.09	0.00	0.00
10.00		175.07	3110.46	0.00	0.00
15.00		173.41	3104.27	0.00	0.00
20.00		182.16	3090.38	0.00	0.00
25.00		188.93	3072.06	0.00	0.00
30.00		194.23	3050.82	0.00	0.00
35.00		198.46	3027.50	0.00	0.00
36.00		39.65	602.55	0.00	0.00
39.00		120.45	1801.66	0.00	0.00
40.00		35.77	631.23	0.00	0.00
45.00		181.23	3124.40	0.00	0.00
50.00		181.64	1985.67	0.00	0.00
55.00		181.59	1957.15	0.00	0.00
60.00		181.13	1927.96	0.00	0.00
65.00		180.32	1898.21	0.00	0.00
70.00		179.20	1867.97	0.00	0.00
75.00	(1) attachments	177.88	1845.43	0.00	0.00
79.00		140.87	1447.23	0.00	0.00
80.00		35.41	520.90	0.00	0.00
84.00		141.67	2061.22	0.00	0.00
85.00		35.05	326.14	0.00	0.00
90.00		175.74	1611.37	0.00	0.00
95.00		174.92	1583.51	0.00	0.00
100.00		173.96	1555.39	0.00	0.00
105.00		172.87	1527.02	0.00	0.00
110.00		171.67	1498.44	0.00	0.00
115.00		170.36	1469.65	0.00	0.00
118.00	(26) attachments	933.84	6511.65	0.00	0.00
120.00		67.22	551.31	0.00	0.00
123.00		100.48	817.72	0.00	0.00
125.00		66.62	465.87	0.00	0.00
128.00	(19) attachments	1022.58	5633.85	0.00	0.00
130.00		60.46	347.98	0.00	0.00
135.00		149.16	850.23	0.00	0.00
138.00	(19) attachments	1477.90	7693.91	0.00	0.00
140.00		57.71	309.69	0.00	0.00
145.00		142.09	754.24	0.00	0.00
149.00	(13) attachments	906.70	4375.25	0.00	0.00
150.00		27.30	135.31	0.00	0.00
155.00		134.63	657.81	0.00	0.00
158.00	(23) attachments	1295.09	6156.28	0.00	565.42
	Totals:	**10,581.92**	**88,058.77**	**0.00**	**565.42**

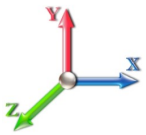
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.69	0.00	0.126	1.079	5.168	0.00	218.70
5.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.29	0.00	0.126	1.079	5.168	0.00	976.24
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.76	0.00	0.129	1.086	5.168	0.00	228.34
10.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.36	0.00	0.129	1.086	5.168	0.00	979.72
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.81	0.00	0.131	1.094	5.168	0.00	234.34
15.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.41	0.00	0.131	1.094	5.168	0.00	981.92
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.84	0.00	0.134	1.102	5.483	0.00	238.78
20.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.44	0.00	0.134	1.102	5.483	0.00	983.56
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.87	0.00	0.137	1.110	5.747	0.00	242.32
25.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.47	0.00	0.137	1.110	5.747	0.00	984.88
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.89	0.00	0.139	1.118	5.972	0.00	245.28
30.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.49	0.00	0.139	1.118	5.972	0.00	985.99
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.91	0.00	0.142	1.127	6.169	0.00	247.84
35.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	2.51	0.00	0.142	1.127	6.169	0.00	986.95
36.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.58	0.00	0.144	1.133	6.206	0.00	49.66
36.00	1.25" Reinforcing	Yes	1.00	0.000	3.00	0.50	0.00	0.144	1.133	6.206	0.00	197.43
39.00	1 5/8" Coax	Yes	3.00	0.000	3.96	1.75	0.00	0.145	1.136	6.311	0.00	149.79
39.00	1.25" Reinforcing	Yes	3.00	0.000	3.00	1.51	0.00	0.145	1.136	6.311	0.00	592.58
40.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.58	0.00	0.084	0.000	6.345	0.00	50.02
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.94	0.00	0.085	0.000	6.504	0.00	252.10
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.95	0.00	0.085	0.000	6.650	0.00	253.93
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.97	0.00	0.087	0.000	6.785	0.00	255.60
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.98	0.00	0.089	0.000	6.910	0.00	257.14
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.99	0.00	0.091	0.000	7.028	0.00	258.57
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.00	0.00	0.093	0.000	7.138	0.00	259.91
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.01	0.00	0.096	0.000	7.243	0.00	261.17
79.00	1 5/8" Coax	Yes	4.00	0.000	3.96	2.41	0.00	0.098	0.000	7.322	0.00	209.70
80.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.60	0.00	0.099	0.000	7.342	0.00	52.47
84.00	1 5/8" Coax	Yes	4.00	0.000	3.96	2.42	0.00	0.100	1.001	7.418	0.00	210.60
85.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.60	0.00	0.100	1.000	7.436	0.00	52.69
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.03	0.00	0.102	1.005	7.526	0.00	264.54
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.04	0.00	0.105	1.014	7.612	0.00	265.55
100.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.05	0.00	0.107	1.022	7.695	0.00	266.52
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.05	0.00	0.111	1.032	7.774	0.00	267.44
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.06	0.00	0.114	1.041	7.851	0.00	268.33
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.07	0.00	0.117	1.052	7.925	0.00	269.18
118.00	1 5/8" Coax	Yes	3.00	0.000	3.96	1.84	0.00	0.120	1.061	7.968	0.00	161.81
120.00	1 5/8" Coax	Yes	2.00	0.000	3.96	1.23	0.00	0.122	1.066	7.996	0.00	108.00
123.00	1 5/8" Coax	Yes	3.00	0.000	3.96	1.85	0.00	0.124	1.072	8.038	0.00	162.29
125.00	1 5/8" Coax	Yes	2.00	0.000	3.96	1.23	0.00	0.126	1.079	8.065	0.00	108.32
128.00	1 5/8" Coax	Yes	3.00	0.000	3.96	1.85	0.00	0.128	1.085	8.105	0.00	162.75
										Totals:	**0.0**	**14,202.9**

Calculated Forces

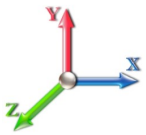
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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	-88.05	-10.62	0.00	-1225.9	0.00	1225.99	4238.25	2119.12	9474.98	4744.53	0.00	0.000	0.000	0.171
5.00	-84.95	-10.50	0.00	-1172.9	0.00	1172.91	4191.13	2095.57	9193.31	4603.49	0.02	-0.044	0.000	0.167
10.00	-81.83	-10.39	0.00	-1120.4	0.00	1120.40	4142.79	2071.40	8912.98	4463.11	0.09	-0.087	0.000	0.164
15.00	-78.72	-10.27	0.00	-1068.4	0.00	1068.47	4093.23	2046.62	8634.14	4323.49	0.21	-0.131	0.000	0.159
20.00	-75.62	-10.13	0.00	-1017.1	0.00	1017.14	4042.45	2021.22	8356.93	4184.68	0.37	-0.175	0.000	0.155
25.00	-72.54	-9.99	0.00	-966.46	0.00	966.46	3990.44	1995.22	8081.53	4046.77	0.57	-0.219	0.000	0.151
30.00	-69.48	-9.84	0.00	-916.51	0.00	916.51	3937.21	1968.60	7808.07	3909.84	0.83	-0.263	0.000	0.147
35.00	-66.45	-9.65	0.00	-867.33	0.00	867.33	3882.75	1941.38	7536.73	3773.96	1.13	-0.307	0.000	0.143
36.00	-65.85	-9.63	0.00	-857.68	0.00	857.68	3871.71	1935.86	7482.72	3746.92	1.19	-0.316	0.000	0.142
36.00	-65.85	-9.63	0.00	-857.68	0.00	857.68	3871.71	1935.86	7482.72	3746.92	1.19	-0.316	0.000	0.142
39.00	-64.04	-9.52	0.00	-828.78	0.00	828.78	3838.31	1919.15	7321.27	3666.08	1.40	-0.342	0.000	0.243
40.00	-63.40	-9.54	0.00	-819.26	0.00	819.26	3827.07	1913.54	7267.64	3639.22	1.47	-0.358	0.000	0.242
45.00	-60.27	-9.41	0.00	-771.58	0.00	771.58	3812.30	1906.15	7197.58	3604.14	1.89	-0.434	0.000	0.230
50.00	-58.27	-9.29	0.00	-724.51	0.00	724.51	3755.07	1877.54	6931.57	3470.94	2.38	-0.510	0.000	0.224
55.00	-56.31	-9.16	0.00	-678.06	0.00	678.06	3696.63	1848.32	6668.16	3339.04	2.96	-0.583	0.000	0.218
60.00	-54.37	-9.03	0.00	-632.25	0.00	632.25	3636.96	1818.48	6407.52	3208.52	3.61	-0.657	0.000	0.212
65.00	-52.46	-8.89	0.00	-587.09	0.00	587.09	3576.08	1788.04	6149.79	3079.47	4.33	-0.730	0.000	0.205
70.00	-50.58	-8.75	0.00	-542.63	0.00	542.63	3513.96	1756.98	5895.14	2951.95	5.14	-0.802	0.000	0.198
75.00	-48.73	-8.60	0.00	-498.86	0.00	498.86	3450.63	1725.31	5643.71	2826.05	6.02	-0.874	0.000	0.191
79.00	-47.28	-8.47	0.00	-464.45	0.00	464.45	3399.08	1699.54	5445.00	2726.55	6.77	-0.932	0.000	0.184
80.00	-46.76	-8.45	0.00	-455.98	0.00	455.98	3386.07	1693.03	5395.67	2701.84	6.97	-0.946	0.000	0.183
84.00	-44.69	-8.31	0.00	-422.16	0.00	422.16	2492.17	1246.08	3964.65	1985.27	7.79	-1.003	0.000	0.231
85.00	-44.36	-8.30	0.00	-413.85	0.00	413.85	2483.20	1241.60	3929.49	1967.67	8.00	-1.018	0.000	0.228
90.00	-42.74	-8.15	0.00	-372.35	0.00	372.35	2437.73	1218.86	3754.97	1880.28	9.11	-1.096	0.000	0.216
95.00	-41.15	-8.00	0.00	-331.59	0.00	331.59	2391.17	1195.58	3582.65	1793.99	10.30	-1.171	0.000	0.202
100.00	-39.59	-7.84	0.00	-291.59	0.00	291.59	2343.52	1171.76	3412.67	1708.87	11.56	-1.244	0.000	0.188
105.00	-38.06	-7.68	0.00	-252.37	0.00	252.37	2294.79	1147.40	3245.17	1624.99	12.90	-1.313	0.000	0.172
110.00	-36.56	-7.51	0.00	-213.97	0.00	213.97	2244.98	1122.49	3080.27	1542.43	14.31	-1.378	0.000	0.155
115.00	-35.09	-7.33	0.00	-176.41	0.00	176.41	2194.08	1097.04	2918.13	1461.23	15.79	-1.437	0.000	0.137
118.00	-28.60	-6.25	0.00	-154.41	0.00	154.41	2163.02	1081.51	2822.22	1413.21	16.70	-1.470	0.000	0.123
120.00	-28.05	-6.18	0.00	-141.91	0.00	141.91	2136.45	1068.22	2751.59	1377.84	17.32	-1.491	0.000	0.116
123.00	-27.23	-6.07	0.00	-123.37	0.00	123.37	2094.98	1047.49	2645.31	1324.62	18.27	-1.520	0.000	0.106
123.00	-27.23	-6.07	0.00	-123.37	0.00	123.37	1330.70	665.35	1690.49	846.50	18.27	-1.520	0.000	0.166
125.00	-26.76	-6.00	0.00	-111.23	0.00	111.23	1319.70	659.85	1654.32	828.39	18.91	-1.539	0.000	0.155
128.00	-21.15	-4.84	0.00	-93.22	0.00	93.22	1302.88	651.44	1600.34	801.36	19.89	-1.574	0.000	0.133
130.00	-20.81	-4.78	0.00	-83.55	0.00	83.55	1291.45	645.73	1564.57	783.45	20.55	-1.595	0.000	0.123
135.00	-19.96	-4.62	0.00	-59.65	0.00	59.65	1262.12	631.06	1475.93	739.06	22.25	-1.641	0.000	0.097
138.00	-12.31	-2.92	0.00	-45.79	0.00	45.79	1244.00	622.00	1423.34	712.73	23.29	-1.663	0.000	0.074
140.00	-12.00	-2.86	0.00	-39.94	0.00	39.94	1231.70	615.85	1388.54	695.30	23.99	-1.676	0.000	0.067
145.00	-11.25	-2.70	0.00	-25.64	0.00	25.64	1200.20	600.10	1302.53	652.23	25.76	-1.701	0.000	0.049
149.00	-6.90	-1.66	0.00	-14.84	0.00	14.84	1174.22	587.11	1234.81	618.32	27.19	-1.716	0.000	0.030
150.00	-6.77	-1.63	0.00	-13.18	0.00	13.18	1167.61	583.81	1218.04	609.93	27.55	-1.718	0.000	0.027
155.00	-6.11	-1.48	0.00	-5.01	0.00	5.01	1133.94	566.97	1135.21	568.45	29.35	-1.727	0.000	0.014
158.00	0.00	-1.30	0.00	-0.57	0.00	0.57	1113.22	556.61	1086.36	543.99	30.44	-1.729	0.000	0.001

Seismic Segment Forces (Factored)

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	21
Gust Response Factor	1.10				**Sds**	0.23		**Ss**	0.21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.11		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency**	0.31		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
5.00		1090.4	0.00	0.03	0.02	26.39	
10.00		1069.8	0.01	0.05	0.03	36.77	
15.00		1049.2	0.02	0.06	0.04	41.27	
20.00		1028.6	0.03	0.07	0.04	43.08	
25.00		1008.1	0.05	0.07	0.04	43.70	
30.00		987.54	0.07	0.07	0.04	43.86	
35.00		966.96	0.09	0.07	0.04	43.95	
36.00	RT1	190.92	0.10	0.07	0.04	8.72	
39.00	Bot - Section 2	567.83	0.12	0.07	0.04	26.30	
40.00		378.30	0.12	0.07	0.03	17.60	
45.00	Top - Section 1	1866.8	0.15	0.07	0.03	88.73	
50.00		920.43	0.19	0.06	0.02	44.27	
55.00		899.86	0.23	0.06	0.02	42.89	
60.00		879.28	0.27	0.05	0.01	39.90	
65.00		858.71	0.32	0.04	0.01	34.50	
70.00		838.13	0.37	0.03	0.01	25.94	
75.00	Appurtenance(s)	821.26	0.43	0.01	0.01	14.07	
79.00	Bot - Section 3	639.24	0.47	-0.01	0.01	2.10	
80.00		291.53	0.48	-0.01	0.01	-0.12	
84.00	Top - Section 2	1151.0	0.53	-0.03	0.01	-17.73	
85.00		130.35	0.55	-0.03	0.01	-2.48	
90.00		641.47	0.61	-0.06	0.02	-22.64	
95.00		624.32	0.68	-0.08	0.03	-29.12	
100.00		607.18	0.76	-0.10	0.04	-31.64	
105.00		590.03	0.83	-0.12	0.06	-30.49	
110.00		572.89	0.92	-0.12	0.09	-26.14	
115.00		555.74	1.00	-0.11	0.13	-19.03	
118.00	Appurtenance(s)	2664.6	1.05	-0.09	0.16	-66.35	
120.00		213.38	1.09	-0.08	0.18	-3.77	
123.00	Top - Section 3	314.93	1.15	-0.04	0.22	-1.65	
125.00		145.04	1.18	-0.01	0.24	0.59	
128.00	Appurtenance(s)	1965.5	1.24	0.05	0.29	38.53	
130.00		140.24	1.28	0.09	0.32	4.35	
135.00		342.20	1.38	0.25	0.41	21.62	
138.00	Appurtenance(s)	2938.1	1.44	0.37	0.48	249.89	
140.00		130.64	1.48	0.46	0.52	13.16	
145.00		318.19	1.59	0.75	0.66	45.75	
149.00	Appurtenance(s)	1613.9	1.68	1.05	0.79	294.23	
150.00		60.28	1.70	1.14	0.82	11.60	
155.00		294.18	1.82	1.63	1.01	72.67	
158.00	Appurtenance(s)	2707.1	1.89	1.98	1.14	764.91	
	Totals:	**35,074.6**				**1,890.2**	**Total Wind:** **40,368.9**

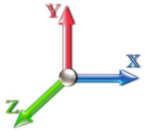
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.23			**Iterations**	21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.11			**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency**	0.31	**SA**	0.03			**S1**	0.07
								Seismic Importance Factor	1.00

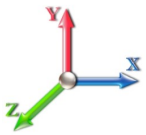
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-55.86	-2.14	0.00	-263.85	0.00	263.85	4238.25	2119.12	9474.98	4744.53		0.00	0.00	0.042
5.00	-53.38	-2.13	0.00	-253.12	0.00	253.12	4191.13	2095.57	9193.31	4603.49		0.01	-0.01	0.041
10.00	-50.91	-2.10	0.00	-242.49	0.00	242.49	4142.79	2071.40	8912.98	4463.11		0.02	-0.02	0.040
15.00	-48.48	-2.06	0.00	-232.00	0.00	232.00	4093.23	2046.62	8634.14	4323.49		0.04	-0.03	0.039
20.00	-46.07	-2.03	0.00	-221.69	0.00	221.69	4042.45	2021.22	8356.93	4184.68		0.08	-0.04	0.038
25.00	-43.68	-1.99	0.00	-211.55	0.00	211.55	3990.44	1995.22	8081.53	4046.77		0.12	-0.05	0.037
30.00	-41.32	-1.95	0.00	-201.61	0.00	201.61	3937.21	1968.60	7808.07	3909.84		0.18	-0.06	0.036
35.00	-38.98	-1.91	0.00	-191.86	0.00	191.86	3882.75	1941.38	7536.73	3773.96		0.24	-0.07	0.035
36.00	-38.51	-1.90	0.00	-189.96	0.00	189.96	3871.71	1935.86	7482.72	3746.92		0.26	-0.07	0.035
36.00	-38.51	-1.90	0.00	-189.96	0.00	189.96	3871.71	1935.86	7482.72	3746.92		0.26	-0.07	0.035
39.00	-37.13	-1.88	0.00	-184.25	0.00	184.25	3838.31	1919.15	7321.27	3666.08		0.30	-0.07	0.060
40.00	-36.62	-1.86	0.00	-182.38	0.00	182.38	3827.07	1913.54	7267.64	3639.22		0.32	-0.08	0.060
45.00	-34.14	-1.78	0.00	-173.06	0.00	173.06	3812.30	1906.15	7197.58	3604.14		0.41	-0.10	0.057
50.00	-32.79	-1.74	0.00	-164.15	0.00	164.15	3755.07	1877.54	6931.57	3470.94		0.52	-0.11	0.056
55.00	-31.47	-1.71	0.00	-155.43	0.00	155.43	3696.63	1848.32	6668.16	3339.04		0.65	-0.13	0.055
60.00	-30.17	-1.67	0.00	-146.89	0.00	146.89	3636.96	1818.48	6407.52	3208.52		0.79	-0.15	0.054
65.00	-28.90	-1.64	0.00	-138.52	0.00	138.52	3576.08	1788.04	6149.79	3079.47		0.95	-0.16	0.053
70.00	-27.65	-1.62	0.00	-130.30	0.00	130.30	3513.96	1756.98	5895.14	2951.95		1.13	-0.18	0.052
75.00	-26.42	-1.61	0.00	-122.18	0.00	122.18	3450.63	1725.31	5643.71	2826.05		1.33	-0.20	0.051
79.00	-25.46	-1.61	0.00	-115.73	0.00	115.73	3399.08	1699.54	5445.00	2726.55		1.50	-0.21	0.050
80.00	-25.06	-1.61	0.00	-114.12	0.00	114.12	3386.07	1693.03	5395.67	2701.84		1.55	-0.22	0.050
84.00	-23.48	-1.61	0.00	-107.67	0.00	107.67	2492.17	1246.08	3964.65	1985.27		1.73	-0.23	0.064
85.00	-23.28	-1.62	0.00	-106.06	0.00	106.06	2483.20	1241.60	3929.49	1967.67		1.78	-0.23	0.063
90.00	-22.27	-1.62	0.00	-97.98	0.00	97.98	2437.73	1218.86	3754.97	1880.28		2.04	-0.25	0.061
95.00	-21.28	-1.62	0.00	-89.89	0.00	89.89	2391.17	1195.58	3582.65	1793.99		2.31	-0.27	0.059
100.00	-20.30	-1.62	0.00	-81.78	0.00	81.78	2343.52	1171.76	3412.67	1708.87		2.61	-0.29	0.057
105.00	-19.35	-1.63	0.00	-73.66	0.00	73.66	2294.79	1147.40	3245.17	1624.99		2.93	-0.31	0.054
110.00	-18.42	-1.63	0.00	-65.53	0.00	65.53	2244.98	1122.49	3080.27	1542.43		3.27	-0.33	0.051
115.00	-17.51	-1.63	0.00	-57.40	0.00	57.40	2194.08	1097.04	2918.13	1461.23		3.63	-0.35	0.047
118.00	-14.17	-1.61	0.00	-52.52	0.00	52.52	2163.02	1081.51	2822.22	1413.21		3.85	-0.36	0.044
120.00	-13.84	-1.61	0.00	-49.31	0.00	49.31	2136.45	1068.22	2751.59	1377.84		4.01	-0.37	0.042
123.00	-13.35	-1.61	0.00	-44.49	0.00	44.49	2094.98	1047.49	2645.31	1324.62		4.24	-0.38	0.040
123.00	-13.35	-1.61	0.00	-44.49	0.00	44.49	1330.70	665.35	1690.49	846.50		4.24	-0.38	0.063
125.00	-13.10	-1.61	0.00	-41.28	0.00	41.28	1319.70	659.85	1654.32	828.39		4.40	-0.39	0.060
128.00	-10.63	-1.55	0.00	-36.46	0.00	36.46	1302.88	651.44	1600.34	801.36		4.65	-0.40	0.054
130.00	-10.42	-1.55	0.00	-33.35	0.00	33.35	1291.45	645.73	1564.57	783.45		4.82	-0.41	0.051
135.00	-9.90	-1.53	0.00	-25.61	0.00	25.61	1262.12	631.06	1475.93	739.06		5.26	-0.43	0.042
138.00	-6.31	-1.25	0.00	-21.03	0.00	21.03	1244.00	622.00	1423.34	712.73		5.53	-0.44	0.035
140.00	-6.13	-1.24	0.00	-18.53	0.00	18.53	1231.70	615.85	1388.54	695.30		5.72	-0.44	0.032
145.00	-5.68	-1.19	0.00	-12.34	0.00	12.34	1200.20	600.10	1302.53	652.23		6.19	-0.46	0.024
149.00	-3.70	-0.88	0.00	-7.59	0.00	7.59	1174.22	587.11	1234.81	618.32		6.57	-0.46	0.015
150.00	-3.62	-0.87	0.00	-6.71	0.00	6.71	1167.61	583.81	1218.04	609.93		6.67	-0.46	0.014
155.00	-3.25	-0.79	0.00	-2.37	0.00	2.37	1133.94	566.97	1135.21	568.45		7.16	-0.47	0.007
158.00	0.00	-0.76	0.00	0.00	0.00	0.00	1113.22	556.61	1086.36	543.99		7.45	-0.47	0.000

Seismic Segment Forces (Factored)

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.23	**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.11	**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency**	0.31	**SA**	0.03	**S1**	0.07
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1	0.00	0.00	0.00	0.00	0.00	
5.00		1090.4	0.00	0.03	0.02	26.39	
10.00		1069.8	0.01	0.05	0.03	36.77	
15.00		1049.2	0.02	0.06	0.04	41.27	
20.00		1028.6	0.03	0.07	0.04	43.08	
25.00		1008.1	0.05	0.07	0.04	43.70	
30.00		987.54	0.07	0.07	0.04	43.86	
35.00		966.96	0.09	0.07	0.04	43.95	
36.00	RT1	190.92	0.10	0.07	0.04	8.72	
39.00	Bot - Section 2	567.83	0.12	0.07	0.04	26.30	
40.00		378.30	0.12	0.07	0.03	17.60	
45.00	Top - Section 1	1866.8	0.15	0.07	0.03	88.73	
50.00		920.43	0.19	0.06	0.02	44.27	
55.00		899.86	0.23	0.06	0.02	42.89	
60.00		879.28	0.27	0.05	0.01	39.90	
65.00		858.71	0.32	0.04	0.01	34.50	
70.00		838.13	0.37	0.03	0.01	25.94	
75.00	Appurtenance(s)	821.26	0.43	0.01	0.01	14.07	
79.00	Bot - Section 3	639.24	0.47	-0.01	0.01	2.10	
80.00		291.53	0.48	-0.01	0.01	-0.12	
84.00	Top - Section 2	1151.0	0.53	-0.03	0.01	-17.73	
85.00		130.35	0.55	-0.03	0.01	-2.48	
90.00		641.47	0.61	-0.06	0.02	-22.64	
95.00		624.32	0.68	-0.08	0.03	-29.12	
100.00		607.18	0.76	-0.10	0.04	-31.64	
105.00		590.03	0.83	-0.12	0.06	-30.49	
110.00		572.89	0.92	-0.12	0.09	-26.14	
115.00		555.74	1.00	-0.11	0.13	-19.03	
118.00	Appurtenance(s)	2664.6	1.05	-0.09	0.16	-66.35	
120.00		213.38	1.09	-0.08	0.18	-3.77	
123.00	Top - Section 3	314.93	1.15	-0.04	0.22	-1.65	
125.00		145.04	1.18	-0.01	0.24	0.59	
128.00	Appurtenance(s)	1965.5	1.24	0.05	0.29	38.53	
130.00		140.24	1.28	0.09	0.32	4.35	
135.00		342.20	1.38	0.25	0.41	21.62	
138.00	Appurtenance(s)	2938.1	1.44	0.37	0.48	249.89	
140.00		130.64	1.48	0.46	0.52	13.16	
145.00		318.19	1.59	0.75	0.66	45.75	
149.00	Appurtenance(s)	1613.9	1.68	1.05	0.79	294.23	
150.00		60.28	1.70	1.14	0.82	11.60	
155.00		294.18	1.82	1.63	1.01	72.67	
158.00	Appurtenance(s)	2707.1	1.89	1.98	1.14	764.91	
	Totals:	**35,074.6**				**1,890.2**	**Total Wind:** **40,368.9**

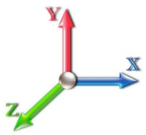
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.23			**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.11			**Ss**	0.21
Wind Load Factor	0.00	**Structure Frequency**	0.31	**SA**	0.03			**S1**	0.07
								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	-41.90	-2.14	0.00	-261.09	0.00	261.09	4238.25	2119.12	9474.98	4744.53		0.00	0.00	0.040
5.00	-40.03	-2.12	0.00	-250.37	0.00	250.37	4191.13	2095.57	9193.31	4603.49		0.00	-0.01	0.039
10.00	-38.19	-2.09	0.00	-239.75	0.00	239.75	4142.79	2071.40	8912.98	4463.11		0.02	-0.02	0.038
15.00	-36.36	-2.06	0.00	-229.29	0.00	229.29	4093.23	2046.62	8634.14	4323.49		0.04	-0.03	0.037
20.00	-34.55	-2.02	0.00	-219.01	0.00	219.01	4042.45	2021.22	8356.93	4184.68		0.08	-0.04	0.036
25.00	-32.76	-1.98	0.00	-208.92	0.00	208.92	3990.44	1995.22	8081.53	4046.77		0.12	-0.05	0.035
30.00	-30.99	-1.94	0.00	-199.03	0.00	199.03	3937.21	1968.60	7808.07	3909.84		0.18	-0.06	0.034
35.00	-29.23	-1.90	0.00	-189.34	0.00	189.34	3882.75	1941.38	7536.73	3773.96		0.24	-0.07	0.033
36.00	-28.89	-1.89	0.00	-187.44	0.00	187.44	3871.71	1935.86	7482.72	3746.92		0.26	-0.07	0.033
36.00	-28.89	-1.89	0.00	-187.44	0.00	187.44	3871.71	1935.86	7482.72	3746.92		0.26	-0.07	0.033
39.00	-27.84	-1.86	0.00	-181.78	0.00	181.78	3838.31	1919.15	7321.27	3666.08		0.30	-0.07	0.057
40.00	-27.47	-1.85	0.00	-179.92	0.00	179.92	3827.07	1913.54	7267.64	3639.22		0.32	-0.08	0.057
45.00	-25.60	-1.77	0.00	-170.67	0.00	170.67	3812.30	1906.15	7197.58	3604.14		0.41	-0.09	0.054
50.00	-24.59	-1.73	0.00	-161.84	0.00	161.84	3755.07	1877.54	6931.57	3470.94		0.51	-0.11	0.053
55.00	-23.60	-1.69	0.00	-153.21	0.00	153.21	3696.63	1848.32	6668.16	3339.04		0.64	-0.13	0.052
60.00	-22.63	-1.65	0.00	-144.77	0.00	144.77	3636.96	1818.48	6407.52	3208.52		0.78	-0.14	0.051
65.00	-21.67	-1.62	0.00	-136.50	0.00	136.50	3576.08	1788.04	6149.79	3079.47		0.94	-0.16	0.050
70.00	-20.73	-1.60	0.00	-128.39	0.00	128.39	3513.96	1756.98	5895.14	2951.95		1.12	-0.18	0.049
75.00	-19.81	-1.59	0.00	-120.39	0.00	120.39	3450.63	1725.31	5643.71	2826.05		1.31	-0.20	0.048
79.00	-19.09	-1.59	0.00	-114.04	0.00	114.04	3399.08	1699.54	5445.00	2726.55		1.48	-0.21	0.047
80.00	-18.79	-1.59	0.00	-112.45	0.00	112.45	3386.07	1693.03	5395.67	2701.84		1.53	-0.21	0.047
84.00	-17.61	-1.59	0.00	-106.10	0.00	106.10	2492.17	1246.08	3964.65	1985.27		1.71	-0.23	0.061
85.00	-17.46	-1.59	0.00	-104.52	0.00	104.52	2483.20	1241.60	3929.49	1967.67		1.76	-0.23	0.060
90.00	-16.70	-1.59	0.00	-96.57	0.00	96.57	2437.73	1218.86	3754.97	1880.28		2.01	-0.25	0.058
95.00	-15.96	-1.59	0.00	-88.61	0.00	88.61	2391.17	1195.58	3582.65	1793.99		2.28	-0.27	0.056
100.00	-15.23	-1.60	0.00	-80.64	0.00	80.64	2343.52	1171.76	3412.67	1708.87		2.58	-0.29	0.054
105.00	-14.51	-1.60	0.00	-72.66	0.00	72.66	2294.79	1147.40	3245.17	1624.99		2.89	-0.31	0.051
110.00	-13.82	-1.60	0.00	-64.67	0.00	64.67	2244.98	1122.49	3080.27	1542.43		3.23	-0.33	0.048
115.00	-13.13	-1.60	0.00	-56.68	0.00	56.68	2194.08	1097.04	2918.13	1461.23		3.58	-0.35	0.045
118.00	-10.63	-1.58	0.00	-51.89	0.00	51.89	2163.02	1081.51	2822.22	1413.21		3.80	-0.36	0.042
120.00	-10.38	-1.58	0.00	-48.72	0.00	48.72	2136.45	1068.22	2751.59	1377.84		3.95	-0.36	0.040
123.00	-10.01	-1.58	0.00	-43.97	0.00	43.97	2094.98	1047.49	2645.31	1324.62		4.19	-0.38	0.038
123.00	-10.01	-1.58	0.00	-43.97	0.00	43.97	1330.70	665.35	1690.49	846.50		4.19	-0.38	0.059
125.00	-9.82	-1.58	0.00	-40.81	0.00	40.81	1319.70	659.85	1654.32	828.39		4.35	-0.38	0.057
128.00	-7.97	-1.53	0.00	-36.06	0.00	36.06	1302.88	651.44	1600.34	801.36		4.59	-0.39	0.051
130.00	-7.81	-1.53	0.00	-32.99	0.00	32.99	1291.45	645.73	1564.57	783.45		4.76	-0.40	0.048
135.00	-7.42	-1.51	0.00	-25.35	0.00	25.35	1262.12	631.06	1475.93	739.06		5.19	-0.42	0.040
138.00	-4.73	-1.24	0.00	-20.83	0.00	20.83	1244.00	622.00	1423.34	712.73		5.46	-0.43	0.033
140.00	-4.59	-1.22	0.00	-18.35	0.00	18.35	1231.70	615.85	1388.54	695.30		5.64	-0.44	0.030
145.00	-4.26	-1.18	0.00	-12.23	0.00	12.23	1200.20	600.10	1302.53	652.23		6.11	-0.45	0.022
149.00	-2.77	-0.87	0.00	-7.52	0.00	7.52	1174.22	587.11	1234.81	618.32		6.49	-0.46	0.015
150.00	-2.71	-0.86	0.00	-6.65	0.00	6.65	1167.61	583.81	1218.04	609.93		6.58	-0.46	0.013
155.00	-2.44	-0.78	0.00	-2.35	0.00	2.35	1133.94	566.97	1135.21	568.45		7.06	-0.46	0.006
158.00	0.00	-0.76	0.00	0.00	0.00	0.00	1113.22	556.61	1086.36	543.99		7.35	-0.46	0.000

Wind Loading - Shaft

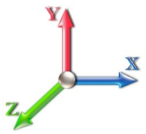
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

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	RB1	1.00	0.85	7.442	8.19	256.18	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	251.43	0.702 *	0.000	5.00	22.941	16.09	131.7	0.0	1090.4
10.00		1.00	0.85	7.442	8.19	246.67	0.706 *	0.000	5.00	22.511	15.90	130.1	0.0	1069.8
15.00		1.00	0.85	7.442	8.19	241.92	0.711 *	0.000	5.00	22.081	15.70	128.5	0.0	1049.3
20.00		1.00	0.90	7.896	8.69	244.29	0.716 *	0.000	5.00	21.651	15.51	134.7	0.0	1028.7
25.00		1.00	0.95	8.276	9.10	245.08	0.721 *	0.000	5.00	21.222	15.31	139.4	0.0	1008.1
30.00		1.00	0.98	8.600	9.46	244.72	0.727 *	0.000	5.00	20.792	15.12	143.0	0.0	987.5
35.00		1.00	1.01	8.883	9.77	243.53	0.733 *	0.000	5.00	20.362	14.92	145.8	0.0	967.0
36.00	RT1	1.00	1.02	8.936	9.83	243.21	0.736 *	0.000	1.00	4.021	2.96	29.1	0.0	190.9
39.00	Bot - Section 2	1.00	1.04	9.088	10.00	242.11	0.739 *	0.000	3.00	11.959	8.83	88.3	0.0	567.8
40.00		1.00	1.04	9.137	10.05	241.71	0.650	0.000	1.00	4.015	2.61	26.2	0.0	378.3
45.00	Top - Section 1	1.00	1.07	9.366	10.30	239.39	0.650	0.000	5.00	19.820	12.88	132.7	0.0	1866.8
50.00		1.00	1.09	9.576	10.53	240.64	0.650	0.000	5.00	19.390	12.60	132.8	0.0	920.4
55.00		1.00	1.12	9.770	10.75	237.62	0.650	0.000	5.00	18.960	12.32	132.4	0.0	899.9
60.00		1.00	1.14	9.951	10.95	234.31	0.650	0.000	5.00	18.530	12.04	131.8	0.0	879.3
65.00		1.00	1.16	10.120	11.13	230.74	0.650	0.000	5.00	18.100	11.77	131.0	0.0	858.7
70.00		1.00	1.17	10.279	11.31	226.96	0.650	0.000	5.00	17.670	11.49	129.9	0.0	838.1
75.00	Appurtenance(s)	1.00	1.19	10.430	11.47	222.99	0.650	0.000	5.00	17.240	11.21	128.6	0.0	817.6
79.00	Bot - Section 3	1.00	1.20	10.544	11.60	219.68	0.650	0.000	4.00	13.483	8.76	101.6	0.0	639.2
80.00		1.00	1.21	10.572	11.63	218.84	0.650	0.000	1.00	3.381	2.20	25.6	0.0	291.5
84.00	Top - Section 2	1.00	1.22	10.681	11.75	215.41	0.651 *	0.000	4.00	13.350	8.69	102.1	0.0	1151.0
85.00		1.00	1.22	10.708	11.78	218.04	0.650 *	0.000	1.00	3.295	2.14	25.2	0.0	130.4
90.00		1.00	1.24	10.838	11.92	213.62	0.653 *	0.000	5.00	16.215	10.60	126.3	0.0	641.5
95.00		1.00	1.25	10.962	12.06	209.07	0.659 *	0.000	5.00	15.785	10.40	125.4	0.0	624.3
100.00		1.00	1.27	11.081	12.19	204.40	0.665 *	0.000	5.00	15.356	10.20	124.4	0.0	607.2
105.00		1.00	1.28	11.195	12.31	199.62	0.671 *	0.000	5.00	14.926	10.01	123.3	0.0	590.0
110.00		1.00	1.29	11.305	12.44	194.74	0.677 *	0.000	5.00	14.496	9.81	122.0	0.0	572.9
115.00		1.00	1.30	11.412	12.55	189.76	0.684 *	0.000	5.00	14.066	9.62	120.7	0.0	555.7
118.00	Appurtenance(s)	1.00	1.31	11.474	12.62	186.73	0.689 *	0.000	3.00	8.233	5.68	71.6	0.0	325.2
120.00		1.00	1.32	11.514	12.67	184.70	0.693 *	0.000	2.00	5.403	3.75	47.4	0.0	213.4
123.00	Top - Section 3	1.00	1.32	11.574	12.73	181.62	0.697 *	0.000	3.00	7.975	5.56	70.8	0.0	314.9
125.00		1.00	1.33	11.614	12.78	179.55	0.701 *	0.000	2.00	5.231	3.67	46.8	0.0	145.0
128.00	Appurtenance(s)	1.00	1.33	11.672	12.84	176.43	0.705 *	0.000	3.00	7.717	5.44	69.9	0.0	214.0
130.00		1.00	1.34	11.710	12.88	174.33	0.650	0.000	2.00	5.059	3.29	42.4	0.0	140.2
135.00		1.00	1.35	11.803	12.98	169.03	0.650	0.000	5.00	12.347	8.03	104.2	0.0	342.2
138.00	Appurtenance(s)	1.00	1.35	11.858	13.04	165.82	0.650	0.000	3.00	7.202	4.68	61.1	0.0	199.6
140.00		1.00	1.36	11.894	13.08	163.67	0.650	0.000	2.00	4.715	3.06	40.1	0.0	130.6
145.00		1.00	1.37	11.982	13.18	158.24	0.650	0.000	5.00	11.487	7.47	98.4	0.0	318.2
149.00	Appurtenance(s)	1.00	1.38	12.051	13.26	153.85	0.650	0.000	4.00	8.880	5.77	76.5	0.0	245.9
150.00		1.00	1.38	12.068	13.27	152.75	0.650	0.000	1.00	2.177	1.42	18.8	0.0	60.3
155.00		1.00	1.39	12.152	13.37	147.20	0.650	0.000	5.00	10.627	6.91	92.3	0.0	294.2
158.00	Appurtenance(s)	1.00	1.39	12.201	13.42	143.84	0.650	0.000	3.00	6.170	4.01	53.8	0.0	170.7
								Totals:	**158.00**			**3,906.9**		**24,336.9**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

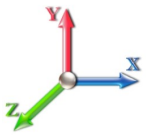
Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

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	158.00	ALU - 1900 MHz - RRU	3	12.209	13.430	0.67	1.00	7.64	132.00	0.000	0.500	102.58	0.00	51.29
2	158.00	Collar Mount	1	12.201	13.421	1.00	1.00	5.00	350.00	0.000	0.000	67.10	0.00	0.00
3	158.00	Low Profile Platform	1	12.209	13.430	1.00	1.00	25.00	1200.00	0.000	0.500	335.75	0.00	167.87
4	158.00	RFS - ACU-A20-N - RET	3	12.201	13.421	0.50	1.00	0.21	3.00	0.000	0.000	2.82	0.00	0.00
5	158.00	ALU - TD-RRH8x20-25 -	3	12.209	13.430	0.67	1.00	8.14	210.00	0.000	0.500	109.33	0.00	54.66
6	158.00	Alu - 800 Filters	3	12.209	13.430	0.69	1.00	1.61	26.40	0.000	0.500	21.68	0.00	10.84
7	158.00	KMW - ETCR-654L12H6	3	12.209	13.430	0.69	1.00	32.52	297.00	0.000	0.500	436.74	0.00	218.37
8	158.00	ALU - 800 MHz - RRU	6	12.209	13.430	0.67	1.00	10.01	318.00	0.000	0.500	134.43	0.00	67.22
9	149.00	DB844H90E-XY	12	12.051	13.256	0.88	0.80	32.21	168.00	0.000	0.000	426.96	0.00	0.00
10	149.00	Low Profile Platform	1	12.051	13.256	1.00	1.00	25.00	1200.00	0.000	0.000	331.41	0.00	0.00
11	138.00	Bias T	3	11.858	13.044	0.50	0.75	0.14	9.90	0.000	0.000	1.77	0.00	0.00
12	138.00	KRY 112 144/1	3	11.858	13.044	0.50	0.75	0.62	33.00	0.000	0.000	8.06	0.00	0.00
13	138.00	LNX-6515DS-A1M	3	11.858	13.044	0.63	0.75	21.68	149.40	0.000	0.000	282.77	0.00	0.00
14	138.00	APXV18-206516S-A20	3	11.858	13.044	0.58	0.75	6.34	56.10	0.000	0.000	82.64	0.00	0.00
15	138.00	APX16DWV-16DWVS-E-	6	11.858	13.044	0.50	0.75	19.48	244.20	0.000	0.000	254.06	0.00	0.00
16	138.00	Platform w/ HR & V-Brace	1	11.858	13.044	1.00	1.00	51.70	2246.00	0.000	0.000	674.37	0.00	0.00
17	128.00	BXA-171063-12BF	1	11.672	12.839	0.54	0.80	0.00	22.00	0.000	0.000	0.00	0.00	0.00
18	128.00	BXA-70063-6BF	3	11.672	12.839	0.70	0.80	10.05	45.00	0.000	0.000	129.07	0.00	0.00
19	128.00	DB846F65ZAXY	6	11.672	12.839	0.75	0.80	31.81	126.00	0.000	0.000	408.40	0.00	0.00
20	128.00	SLCP 2x6014	2	11.672	12.839	0.73	0.80	9.45	40.00	0.000	0.000	121.32	0.00	0.00
21	128.00	Low Profile Platform	1	11.672	12.839	0.80	0.80	17.60	1500.00	0.000	0.000	225.97	0.00	0.00
22	128.00	FD9R6004-2C-3L	6	11.672	12.839	0.54	0.80	1.16	18.60	0.000	0.000	14.86	0.00	0.00
23	118.00	7770	6	11.474	12.621	0.62	0.80	20.33	210.00	0.000	0.000	256.56	0.00	0.00
24	118.00	Low Profile Platform	1	11.474	12.621	0.80	0.80	17.60	1500.00	0.000	0.000	222.13	0.00	0.00
25	118.00	P65-16-XLH-RR	3	11.474	12.621	0.63	0.80	15.47	159.00	0.000	0.000	195.26	0.00	0.00
26	118.00	DC6-48-60-18	1	11.474	12.621	0.80	0.80	0.74	31.80	0.000	0.000	9.29	0.00	0.00
27	118.00	LGP21401	6	11.474	12.621	0.54	0.80	4.15	84.60	0.000	0.000	52.36	0.00	0.00
28	118.00	TT19-08BP111-001	3	11.474	12.621	0.54	0.80	1.03	48.00	0.000	0.000	12.99	0.00	0.00
29	118.00	RRUS-11	6	11.474	12.621	0.40	0.80	6.05	306.00	0.000	0.000	76.33	0.00	0.00
30	75.00	GPS	1	10.430	11.473	1.00	1.00	0.01	3.70	0.000	0.000	0.11	0.00	0.00
							Totals:		**10,737.70**			**4,997.13**		

Total Applied Force Summary

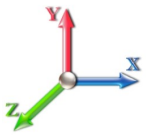
Structure:	CT46131-A-SBA		**Code:**	EIA/TIA-222-G	10/25/2017
Site Name:	Easton-Everetts Rd		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Tower Engineering Solutions

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		131.74	2071.25	0.00	0.00
10.00		130.14	2050.68	0.00	0.00
15.00		128.54	2030.11	0.00	0.00
20.00		134.69	2009.53	0.00	0.00
25.00		139.38	1988.96	0.00	0.00
30.00		142.99	1968.39	0.00	0.00
35.00		145.79	1947.81	0.00	0.00
36.00		29.10	387.09	0.00	0.00
39.00		88.32	1156.34	0.00	0.00
40.00		26.23	418.79	0.00	0.00
45.00		132.73	2069.27	0.00	0.00
50.00		132.76	1122.88	0.00	0.00
55.00		132.45	1102.31	0.00	0.00
60.00		131.84	1081.73	0.00	0.00
65.00		130.97	1061.16	0.00	0.00
70.00		129.87	1040.58	0.00	0.00
75.00	(1) attachments	128.68	1023.71	0.00	0.00
79.00		101.65	800.56	0.00	0.00
80.00		25.55	331.86	0.00	0.00
84.00		102.10	1312.36	0.00	0.00
85.00		25.24	170.68	0.00	0.00
90.00		126.31	843.12	0.00	0.00
95.00		125.40	825.97	0.00	0.00
100.00		124.38	808.83	0.00	0.00
105.00		123.25	791.68	0.00	0.00
110.00		122.03	774.54	0.00	0.00
115.00		120.73	757.39	0.00	0.00
118.00	(26) attachments	896.57	2785.61	0.00	0.00
120.00		47.44	275.30	0.00	0.00
123.00		70.78	407.81	0.00	0.00
125.00		46.85	206.96	0.00	0.00
128.00	(19) attachments	969.50	2058.44	0.00	0.00
130.00		42.36	177.20	0.00	0.00
135.00		104.20	434.60	0.00	0.00
138.00	(19) attachments	1364.73	2993.60	0.00	0.00
140.00		40.10	151.76	0.00	0.00
145.00		98.41	370.99	0.00	0.00
149.00	(13) attachments	834.88	1656.15	0.00	0.00
150.00		18.78	62.92	0.00	0.00
155.00		92.33	307.38	0.00	0.00
158.00	(23) attachments	1264.25	2715.07	0.00	570.25
	Totals:	**8,904.04**	**46,551.40**	**0.00**	**570.25**

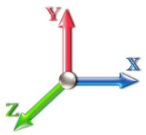
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.126	1.079	7.442	0.00	62.40
5.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.126	1.079	7.442	0.00	778.40
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.129	1.086	7.442	0.00	62.40
10.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.129	1.086	7.442	0.00	778.40
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.131	1.094	7.442	0.00	62.40
15.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.131	1.094	7.442	0.00	778.40
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.134	1.102	7.896	0.00	62.40
20.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.134	1.102	7.896	0.00	778.40
25.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.137	1.110	8.276	0.00	62.40
25.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.137	1.110	8.276	0.00	778.40
30.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.139	1.118	8.600	0.00	62.40
30.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.139	1.118	8.600	0.00	778.40
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.142	1.127	8.883	0.00	62.40
35.00	1.25" Reinforcing	Yes	5.00	0.000	3.00	1.25	0.00	0.142	1.127	8.883	0.00	778.40
36.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.144	1.133	8.936	0.00	12.48
36.00	1.25" Reinforcing	Yes	1.00	0.000	3.00	0.25	0.00	0.144	1.133	8.936	0.00	155.68
39.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.145	1.136	9.088	0.00	37.44
39.00	1.25" Reinforcing	Yes	3.00	0.000	3.00	0.75	0.00	0.145	1.136	9.088	0.00	467.04
40.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.084	0.000	9.137	0.00	12.48
45.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.085	0.000	9.366	0.00	62.40
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.085	0.000	9.576	0.00	62.40
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.087	0.000	9.770	0.00	62.40
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.089	0.000	9.951	0.00	62.40
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	10.120	0.00	62.40
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.093	0.000	10.279	0.00	62.40
75.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.096	0.000	10.430	0.00	62.40
79.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.098	0.000	10.544	0.00	49.92
80.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.099	0.000	10.572	0.00	12.48
84.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.100	1.001	10.681	0.00	49.92
85.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.100	1.000	10.708	0.00	12.48
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.102	1.005	10.838	0.00	62.40
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.105	1.014	10.962	0.00	62.40
100.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.107	1.022	11.081	0.00	62.40
105.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.111	1.032	11.195	0.00	62.40
110.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.114	1.041	11.305	0.00	62.40
115.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.117	1.052	11.412	0.00	62.40
118.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.120	1.061	11.474	0.00	37.44
120.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.122	1.066	11.514	0.00	24.96
123.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.124	1.072	11.574	0.00	37.44
125.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.126	1.079	11.614	0.00	24.96
128.00	1 5/8" Coax	Yes	3.00	0.000	3.96	0.99	0.00	0.128	1.085	11.672	0.00	37.44
										Totals:	**0.0**	**7,669.0**

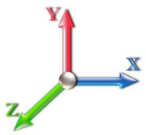
Calculated Forces

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

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	-46.55	-8.92	0.00	-1028.3	0.00	1028.33	4238.25	2119.12	9474.98	4744.53	0.00	0.000	0.000	0.140
5.00	-44.47	-8.81	0.00	-983.74	0.00	983.74	4191.13	2095.57	9193.31	4603.49	0.02	-0.036	0.000	0.137
10.00	-42.42	-8.71	0.00	-939.67	0.00	939.67	4142.79	2071.40	8912.98	4463.11	0.08	-0.073	0.000	0.133
15.00	-40.38	-8.60	0.00	-896.12	0.00	896.12	4093.23	2046.62	8634.14	4323.49	0.17	-0.110	0.000	0.130
20.00	-38.37	-8.49	0.00	-853.10	0.00	853.10	4042.45	2021.22	8356.93	4184.68	0.31	-0.147	0.000	0.127
25.00	-36.37	-8.37	0.00	-810.65	0.00	810.65	3990.44	1995.22	8081.53	4046.77	0.48	-0.183	0.000	0.123
30.00	-34.40	-8.24	0.00	-768.82	0.00	768.82	3937.21	1968.60	7808.07	3909.84	0.69	-0.220	0.000	0.120
35.00	-32.45	-8.10	0.00	-727.62	0.00	727.62	3882.75	1941.38	7536.73	3773.96	0.94	-0.257	0.000	0.116
36.00	-32.06	-8.08	0.00	-719.52	0.00	719.52	3871.71	1935.86	7482.72	3746.92	1.00	-0.265	0.000	0.116
36.00	-32.06	-8.08	0.00	-719.52	0.00	719.52	3871.71	1935.86	7482.72	3746.92	1.00	-0.265	0.000	0.116
39.00	-30.90	-7.99	0.00	-695.29	0.00	695.29	3838.31	1919.15	7321.27	3666.08	1.17	-0.287	0.000	0.198
40.00	-30.48	-7.98	0.00	-687.30	0.00	687.30	3827.07	1913.54	7267.64	3639.22	1.23	-0.300	0.000	0.197
45.00	-28.40	-7.87	0.00	-647.38	0.00	647.38	3812.30	1906.15	7197.58	3604.14	1.58	-0.364	0.000	0.187
50.00	-27.27	-7.76	0.00	-608.03	0.00	608.03	3755.07	1877.54	6931.57	3470.94	2.00	-0.428	0.000	0.182
55.00	-26.16	-7.65	0.00	-569.23	0.00	569.23	3696.63	1848.32	6668.16	3339.04	2.48	-0.490	0.000	0.178
60.00	-25.07	-7.53	0.00	-530.99	0.00	530.99	3636.96	1818.48	6407.52	3208.52	3.03	-0.551	0.000	0.172
65.00	-24.00	-7.42	0.00	-493.33	0.00	493.33	3576.08	1788.04	6149.79	3079.47	3.64	-0.612	0.000	0.167
70.00	-22.96	-7.30	0.00	-456.25	0.00	456.25	3513.96	1756.98	5895.14	2951.95	4.31	-0.673	0.000	0.161
75.00	-21.93	-7.18	0.00	-419.76	0.00	419.76	3450.63	1725.31	5643.71	2826.05	5.05	-0.734	0.000	0.155
79.00	-21.12	-7.08	0.00	-391.05	0.00	391.05	3399.08	1699.54	5445.00	2726.55	5.68	-0.782	0.000	0.150
80.00	-20.79	-7.06	0.00	-383.97	0.00	383.97	3386.07	1693.03	5395.67	2701.84	5.85	-0.795	0.000	0.148
84.00	-19.48	-6.95	0.00	-355.74	0.00	355.74	2492.17	1246.08	3964.65	1985.27	6.53	-0.842	0.000	0.187
85.00	-19.30	-6.93	0.00	-348.79	0.00	348.79	2483.20	1241.60	3929.49	1967.67	6.71	-0.854	0.000	0.185
90.00	-18.45	-6.81	0.00	-314.12	0.00	314.12	2437.73	1218.86	3754.97	1880.28	7.64	-0.920	0.000	0.175
95.00	-17.62	-6.69	0.00	-280.05	0.00	280.05	2391.17	1195.58	3582.65	1793.99	8.64	-0.984	0.000	0.164
100.00	-16.81	-6.57	0.00	-246.58	0.00	246.58	2343.52	1171.76	3412.67	1708.87	9.71	-1.046	0.000	0.151
105.00	-16.01	-6.45	0.00	-213.71	0.00	213.71	2294.79	1147.40	3245.17	1624.99	10.83	-1.104	0.000	0.139
110.00	-15.23	-6.33	0.00	-181.45	0.00	181.45	2244.98	1122.49	3080.27	1542.43	12.02	-1.159	0.000	0.124
115.00	-14.47	-6.20	0.00	-149.81	0.00	149.81	2194.08	1097.04	2918.13	1461.23	13.26	-1.209	0.000	0.109
118.00	-11.71	-5.25	0.00	-131.21	0.00	131.21	2163.02	1081.51	2822.22	1413.21	14.03	-1.237	0.000	0.098
120.00	-11.43	-5.20	0.00	-120.71	0.00	120.71	2136.45	1068.22	2751.59	1377.84	14.55	-1.255	0.000	0.093
123.00	-11.02	-5.13	0.00	-105.10	0.00	105.10	2094.98	1047.49	2645.31	1324.62	15.35	-1.280	0.000	0.085
123.00	-11.02	-5.13	0.00	-105.10	0.00	105.10	1330.70	665.35	1690.49	846.50	15.35	-1.280	0.000	0.133
125.00	-10.81	-5.08	0.00	-94.85	0.00	94.85	1319.70	659.85	1654.32	828.39	15.89	-1.296	0.000	0.123
128.00	-8.78	-4.07	0.00	-79.62	0.00	79.62	1302.88	651.44	1600.34	801.36	16.71	-1.326	0.000	0.106
130.00	-8.60	-4.02	0.00	-71.49	0.00	71.49	1291.45	645.73	1564.57	783.45	17.27	-1.344	0.000	0.098
135.00	-8.17	-3.91	0.00	-51.37	0.00	51.37	1262.12	631.06	1475.93	739.06	18.70	-1.383	0.000	0.076
138.00	-5.20	-2.48	0.00	-39.63	0.00	39.63	1244.00	622.00	1423.34	712.73	19.58	-1.402	0.000	0.060
140.00	-5.05	-2.44	0.00	-34.68	0.00	34.68	1231.70	615.85	1388.54	695.30	20.17	-1.413	0.000	0.054
145.00	-4.68	-2.33	0.00	-22.50	0.00	22.50	1200.20	600.10	1302.53	652.23	21.66	-1.436	0.000	0.038
149.00	-3.05	-1.45	0.00	-13.19	0.00	13.19	1174.22	587.11	1234.81	618.32	22.87	-1.448	0.000	0.024
150.00	-2.99	-1.43	0.00	-11.73	0.00	11.73	1167.61	583.81	1218.04	609.93	23.17	-1.451	0.000	0.022
155.00	-2.68	-1.33	0.00	-4.57	0.00	4.57	1133.94	566.97	1135.21	568.45	24.70	-1.459	0.000	0.010
158.00	0.00	-1.26	0.00	-0.57	0.00	0.57	1113.22	556.61	1086.36	543.99	25.61	-1.460	0.000	0.001

Final Analysis Summary

Structure:	CT46131-A-SBA	**Code:**	EIA/TIA-222-G	10/25/2017	
Site Name:	Easton-Everetts Rd	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

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 101 mph Wind	40.5	0.00	55.80	0.00	0.00	4684.14
0.9D + 1.6W 101 mph Wind	40.4	0.00	41.84	0.00	0.00	4639.14
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.6	0.00	88.05	0.00	0.00	1225.99
1.2D + 1.0E	2.1	0.00	55.86	0.00	0.00	263.85
0.9D + 1.0E	2.1	0.00	41.90	0.00	0.00	261.09
1.0D + 1.0W 60 mph Wind	8.9	0.00	46.55	0.00	0.00	1028.33

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 101 mph Wind	-36.29	-36.37	0.00	-3170.8	0.00	-3170.8	3838.31	1919.1	7321.27	3666.08	39.00	0.875
0.9D + 1.6W 101 mph Wind	-27.02	-36.15	0.00	-3130.9	0.00	-3130.9	3838.31	1919.1	7321.27	3666.08	39.00	0.861
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-64.04	-9.52	0.00	-828.78	0.00	-828.78	3838.31	1919.1	7321.27	3666.08	39.00	0.243
1.2D + 1.0E	-23.48	-1.61	0.00	-107.67	0.00	-107.67	2492.17	1246.0	3964.65	1985.27	84.00	0.064
0.9D + 1.0E	-17.61	-1.59	0.00	-106.10	0.00	-106.10	2492.17	1246.0	3964.65	1985.27	84.00	0.061
1.0D + 1.0W 60 mph Wind	-30.90	-7.99	0.00	-695.29	0.00	-695.29	3838.31	1919.1	7321.27	3666.08	39.00	0.198

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	36.0	(4) PLT-7.625x1.5(31mm Hol	347.6	5.21	37.1	424.9	37.1	12	15	372.4	37.1	11	12	424.89	503.5	468.37	0.907

Base Plate Summary

Structure:	CT46131-A-SB		**Code:**	EIA/TIA-222-G	10/25/2017
Site Name:	Easton-Everetts Rd		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 34

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	2888.00
Axial (kip):	26.60
Shear (kip):	30.40

Analysis

Moment (kip-ft):	4684.14
Axial (kip):	88.05
Shear (kip):	40.45
Moment Design %:	162.19

Base Plate

Yield (ksi):	50.00
Width (in):	60.00
Style:	Clipped
Polygon Sides:	4.00
Clip Length (in):	10.00
Effective Len (in):	8.42
Moment (kip-in):	843.88
Allow Stress (ksi):	67.50
Applied Stress (ksi):	0.00
Stress Ratio:	0.84

Anchor Bolts

Bolt Circle:	62.00
Number Bolts:	16.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	186.47
Allowable (kip):	260.00
Ratio:	0.74

Tension

Force (kip):	175.46
Allowable (kip):	260.00
Ratio:	0.69

Pier Foundation Design For Monopole

				Date
				10/25/2017
	Customer Name:	**Sprint Nextel**	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	158
	Site Number:	CT46131-A-SBA	**Engineer Name:**	M. Baker
	Engr. Number:	42077	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	55.8	Shear Force (Kips):	40.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4684.1

Foundation Geometries:

Mods required -Yes/No ?:	No			ft.
Diameter of Pier (ft.):	7.0	Depth of Base B. G. S. :	22.0	ft.
Pier Height A. G. (ft.):	0.50			

Material Properties and Reabr Info:

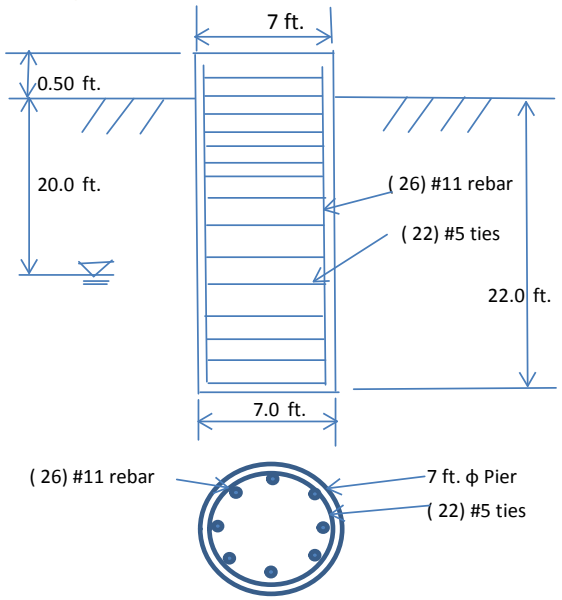
Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	26	Tie Spacing:	18.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	20.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)

Skin Frictions are to be obtained from: Soil Report

Acceptable overstress (5.0%



Monopole Pier Foundation

8000

Depth of Layers (ft) Top	Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types					
0.0	4.0	115	0			0	Sand					
4.0	20.0	125	38		150	0	Sand					
20.0	25.0	125	38		550	4000	Sand					
25.0	30.0											

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75	
Total Dry Soil Volume from Conical Failure (cu. Ft.):	6742	Dry Soil Weight from Conical Failure:	829	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	28	Buoyant Soil Weight from Conical Failure (Ki	0	Kips
Total Dry Concrete Volume (cu. Ft.):	789	Total Dry Concrete Weight:	118.3	Kips
Total Buoyant Concrete Volume (cu. Ft.):	77.0	Total Buoyant Concrete Weight:	6.74	Kips
Total Effective Concrete Weight (Kips):	125.1	Total Effective Soil Weight:	829.5	Kips
Total Effective Vertical Load on Base (Kips):	85.5			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	6331.6	>	Design Factored Momont (kips-ft):	5309	0.84	OK!
Factor of Safety of Passive Soil Resistance against Moment:	1.19	OK!				

Check the capacities of Reinforceing Concrete:

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

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	6590.1	>	Design Factored Moment (Mu, K-Ft):	4892.4	0.74	OK!
Calculated Shear Capacity (Kips):	970.0	>	Design Factored Shear (Kips):	532.5	0.55	OK!
Calculated Tension Capacity (Tn, Kips):	2190.2	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7295	>	Design Factored Axial Load (Pu Kips):	55.8	0.01	OK!
Moment & Axial Strength Combination:	0.74	OK!	Max. Allowable Tie/Stirrup Spacing:	8.86	in.	
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI				

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

Sprint®

SITE NAME: EASTON-EVERETTS RD

SITE NUMBER: CT03XC362

AUGMENT ID: CT03XC362Q17.1

SITE ADDRESS: 206 EVERETT ROAD
EASTON, CT 06612

JURISDICTION: TOWN OF EASTON

SITE TYPE: EXISTING 158' MONOPOLE

PROGRAM: DO MACRO UPGRADE EQUIPMENT DEPLOYMENT

PROJECT INFORMATION

SITE INFORMATION

LATTITUDE: (PER SBA RECORD)	41° 17' 25.20" N (41.29033°)
LONGITUDE: (PER SBA RECORD)	73° 16' 57.60" W (-73.28267°)
GROUND ELEVATION:	435'± AMSL (PER GOOGLE EARTH)
STRUCTURE HEIGHT:	158'± AGL (FROM RECORD STRUCTURAL)
STRUCTURE TYPE:	MONOPOLE
ZONING JURISDICTION	TOWN OF EASTON/CT SITING COUNCIL
ZONING DISTRICT/ OCCUPANCY:	RESIDENCE B DISTRICT (RURAL RESIDENTIAL)
COUNTY:	FAIRFIELD

APPLICANT

SPRINT
1 INTERNATIONAL BLVD. SUITE 800
MAHWAH, NJ 07495

PROPERTY OWNER:

N/F THE ESTATE OF ALFRED BARNEY
108 HIRAM HILL ROAD
MONROE, CT 06468

TOWER OWNER:

SBA 2012 TC ASSETS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
(561) 995-7670

SBA SITE ID: CT46131-A

SBA SITE NAME: EASTON-EVERETTS RD

SBA CONTACT:

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

CALL CONNECTICUT ONE CALL
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CALL 3 WORKING DAYS
BEFORE YOU DIG!

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LOCATION MAP N.T.S.

AREA MAP N.T.S.

SCOPE OF WORK

1. REMOVE AND REPLACE (6) EXISTING SPRINT ANTENNA MOUNTING PIPES MASTS.
2. RELOCATE (3) EXISTING SPRINT PANEL ANTENNAS.
3. INSTALL (3) NEW SPRINT PANEL ANTENNAS.
4. INSTALL (3) NEW SPRINT 2500 MHZ RRHS.
5. INSTALL (3) NEW SPRINT 800 MHZ RRHS.

GENERAL NOTES

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. 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.

DRAWING INDEX

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A-3	TOWER EQUIPMENT DETAILS	1
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CODE COMPLIANCE

1. 2016 CONNECTICUT STATE BUILDING CODE WITH AMENDMENTS.
2. 2014 NATIONAL ELECTRICAL CODE WITH AMENDMENTS
3. TIA-EIA-222-G

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

APPROVALS

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

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

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Suite 200
Hadley, MA 01035 Ph: (413)320-4918

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

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

SECTION 01 100 - SCOPE OF WORK

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

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

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

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

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

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
B. COMPANY: SPRINT CORPORATION
C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.
F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.
G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

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

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

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

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

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS–BUILT" DRAWINGS.
B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.
C . DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

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

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

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

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

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

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

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

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

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

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

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

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

SECTION 01 200 - COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

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

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

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

3.2 DELIVERABLES:

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

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

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

SECTION 01 300 - CELL SITE CONSTRUCTION

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 NOTICE TO PROCEED:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

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

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

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

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

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

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

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

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

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

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

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

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

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

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

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

CONTINUE SHEET SP-2

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP–1

CONTINUED FROM SP-1:

SECTION 01 400 - SUBMITTALS, TESTS, AND INSPECTIONS

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

1.3 SUBMITTALS:

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

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

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

1.4 TESTS AND INSPECTIONS:

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

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. COAX SWEEPS AND FIBER TESTS PER SPRINT TS–0200 CURRENT VERSION ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE–FOR–THE–PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

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

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPS

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

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

3.2 REQUIRED TESTS:

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

3.3 REQUIRED INSPECTIONS:

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE– AND POST–CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)
7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.
8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.
9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.
10. SCAN–ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
11. ALL AVAILABLE JURISDICTIONAL INFORMATION
12. PDF SCAN OF REDLINES PRODUCED IN FIELD

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

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

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

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

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

SECTION 01 500 - PROJECT REPORTING

PART 1 – GENERAL

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

1.2 RELATED DOCUMENTS:

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

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

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

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

3.2 PROJECT CONFERENCE CALLS:

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

3.3 PROJECT TRACKING IN SMS:

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

3.4 ADDITIONAL REPORTING:

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

3.5 PROJECT PHOTOGRAPHS:

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

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

SECTION 07 500 - ROOF CUTTING, PATCHING AND REPAIR

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

1.4 SUBMITTALS:

A. PRE–CONSTRUCTION ROOF PHOTOS: COMPLETE A ROOF INSPECTION PRIOR TO THE INSTALLATION OF SPRINT EQUIPMENT ON ANY ROOFTOP BUILD. AT A MINIMUM INSPECT AND PHOTOGRAPH (MINIMUM 3 EA.) ALL AREAS IMPACTED BY THE ADDITION OF THE SPRINT EQUIPMENT.

B. PROVIDE SIMILAR PHOTOGRAPHS SHOWING ROOF CONDITIONS AFTER CONSTRUCTION (MINIMUM 3 EA.)

C. ROOF INSPECTION PHOTOGRAPHS SHOULD BE UPLOADED WITH CLOSEOUT PHOTOGRAPHS.

SECTION 09 900 - PAINTING

QUALITY ASSURANCE:

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

B. COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR VOLATILE ORGANIC COMPOUNDS.

CONTINUE SHEET SP-3

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

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

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

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP–2

CONTINUED FROM SP-2:

MATERIALS:

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

PAINT SCHEDULE:

A. EXTERIOR ANTENNAE AND ANTENNA MOUNTING HARDWARE: ONE COAT OF PRIMER AND TWO FINISH COATS. PAINT FOR ANTENNAE SHALL BE NON-METALLIC BASED AND CONTAIN NO METALLIC PARTICLES. PROVIDE COLORS AND PATTERNS AS REQUIRED TO MASK APPEARANCE OF ANTENNAE ON ADJACENT BUILDING SURFACES AND AS ACCEPTABLE TO THE OWNER. REFER TO ANTENNA MANUFACTURER'S INSTRUCTIONS WHENEVER POSSIBLE.

B. ROOF TOP CONSTRUCTION: TOUCH UP – PREPARE SURFACES TO BE REPAIRED. FOLLOW INDUSTRY STANDARDS AND REQUIREMENTS OF OWNER TO MATCH EXISTING COATING AND FINISH.

PAINTING APPLICATION:

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

TOUCHUP PAINTING:

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

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

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

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

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

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

REMOTE ELECTRICAL TILT (RET) CABLES:

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

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

A. THE CONTRACTOR SHALL POSITION THE ANTENNA ON TOWER PIPE MOUNTS SO THAT THE BOTTOM STRUT IS LEVEL. THE PIPE MOUNTS SHALL BE PLUMB TO WITHIN 1 DEGREE.

B. ANTENNA MOUNTING REQUIREMENTS: PROVIDE ANTENNA MOUNTING HARDWARE AS INDICATED ON THE DRAWINGS.

HYBRID CABLES INSTALLATION:

A. THE CONTRACTOR SHALL ROUTE, TEST, AND INSTALL ALL CABLES AS INDICATED ON THE CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

B. THE INSTALLED RADIUS OF THE CABLES SHALL NOT BE LESS THAN THE MANUFACTURER'S SPECIFICATIONS FOR BENDING RADII.

C. EXTREME CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE CABLES DURING HANDLING AND INSTALLATION.

1. FASTENING MAIN HYBRID CABLES: ALL CABLES SHALL BE PERMANENTLY FASTENED TO THE COAX LADDER AT 4'-0" OC USING NON-MAGNETIC STAINLESS STEEL CLIPS.
2. FASTENING INDIVIDUAL FIBER AND DC CABLES ABOVE BREAKOUT ENCLOSURE (MEDUSA), WITHIN THE MMBTS CABINET AND ANY INTERMEDIATE DISTRIBUTION BOXES:
   a. FIBER: SUPPORT FIBER BUNDLES USING ½" VELCRO STRAPS OF THE REQUIRED LENGTH @ 18" OC. STRAPS SHALL BE UV, OIL AND WATER RESISTANT AND SUITABLE FOR INDUSTRIAL INSTALLATIONS AS MANUFACTURED BY TEXTOL OR APPROVED EQUAL.
   b. DC: SUPPORT DC BUNDLES WITH ZIP TIES OF THE ADEQUATE LENGTH. ZIP TIES TO BE UV STABILIZED, BLACK NYLON, WITH TENSILE STRENGTH AT 12,000 PSI AS MANUFACTURED BY NELCO PRODUCTS OR EQUAL.
3. FASTENING JUMPERS: SECURE JUMPERS TO THE SIDE ARMS OR HEAD FRAMES USING STAINLESS STEEL TIE WRAPS OR STAINLESS STEEL BUTTERFLY CLIPS.
4. CABLE INSTALLATION:
   a. INSPECT CABLE PRIOR TO USE FOR SHIPPING DAMAGE, NOTIFY THE CONSTRUCTION MANAGER.
   b. CABLE ROUTING: CABLE INSTALLATION SHALL BE PLANNED TO ENSURE THAT THE LINES WILL BE PROPERLY ROUTED IN THE CABLE ENVELOP AS INDICATED ON THE DRAWINGS. AVOID TWISTING AND CROSSOVERS.
   c. HOIST CABLE USING PROPER HOISTING GRIPS. DO NOT EXCEED MANUFACTURES RECOMMENDED MAXIMUM BEND RADIUS.
5. GROUNDING OF TRANSMISSION LINES: ALL TRANSMISSION LINES SHALL BE GROUNDED AS INDICATED ON DRAWINGS.
6. HYBRID CABLE COLOR CODING: ALL COLOR CODING SHALL BE AS REQUIRED PER SPRINT TS 0200 CURRENT VERSION.
7. HYBRID CABLE LABELING: INDIVIDUAL HYBRID AND DC BUNDLES SHALL BE LABELED ALPHA-NUMERICALLY ACCORDING TO SPRINT CELL SITE ENGINEERING NOTICE-EN 2012-001, REV 1

WEATHERPROOFING EXTERIOR CONNECTORS AND HYBRID CABLE GROUND KITS:

A. ALL FIBER & COAX CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED.

B. WEATHERPROOFED USING ONE OF THE FOLLOWING METHODS. ALL INSTALLATIONS MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INDUSTRY BEST PRACTICES.

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

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

SUMMARY:

A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

DC CIRCUIT BREAKER LABELING

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

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

SUMMARY:

A. THIS SECTION SPECIFIES MMBTS CABINETS, POWER CABINETS, AND INTERNAL EQUIPMENT INCLUDING BY NOT LIMITED TO RECTIFIERS, POWER DISTRIBUTION UNITS, BASE BAND UNITS, SURGE ARRESTORS, BATTERIES, AND SIMILAR EQUIPMENT FURNISHED BY THE COMPANY FOR INSTALLATION BY THE CONTRACTOR (OFCI).

B. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS MATERIALS AND PROVIDE ALL LABOR REQUIRED FOR INSTALLATION EQUIPMENT IN EXISTING CABINET OR NEW CABINET AS SHOWN ON DRAWINGS AND AS REQUIRE BY THE APPLICABLE INSTALLATION MOPS.

C. COMPLY WITH MANUFACTURERS INSTALLATION AND START-UP REQUIREMENTS

SUPPORTING DEVICES:

A. MANUFACTURED STRUCTURAL SUPPORT MATERIALS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
1. ALLIED TUBE AND CONDUIT
2. B-LINE SYSTEM
3. UNISTRUT DIVERSIFIED PRODUCTS
4. THOMAS & BETTS

B. FASTENERS: TYPES, MATERIALS, AND CONSTRUCTION FEATURES AS FOLLOWS:
1. EXPANSION ANCHORS: CARBON STEEL WEDGE OR SLEEVE TYPE.
2. POWER-DRIVEN THREADED STUDS: HEAT-TREATED STEEL, DESIGNED SPECIFICALLY FOR THE INTENDED SERVICE.
3. FASTEN BY MEANS OF WOOD SCREWS ON WOOD.
4. TOGGLE BOLTS ON HOLLOW MASONRY UNITS.
5. CONCRETE INSERTS OR EXPANSION BOLTS ON CONCRETE OR SOLID MASONRY.
6. MACHINE SCREWS, WELDED THREADED STUDS, OR SPRING-TENSION CLAMPS ON STEEL.
7. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE SHALL NOT BE PERMITTED.
8. DO NOT WELD CONDUIT, PIPE STRAPS, OR ITEMS OTHER THAN THREADED STUDS TO STEEL STRUCTURES.
9. IN PARTITIONS OF LIGHT STEEL CONSTRUCTION, USE SHEET METAL SCREWS.

SUPPORTING DEVICES:

A. INSTALL SUPPORTING DEVICES TO FASTEN ELECTRICAL COMPONENTS SECURELY AND PERMANENTLY IN ACCORDANCE WITH NEC.

B. COORDINATE WITH THE BUILDING STRUCTURAL SYSTEM AND WITH OTHER TRADES.

C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTING HARDWARE SECURELY TO THE STRUCTURE IN ACCORDANCE WITH THE FOLLOWING:

D. ENSURE THAT THE LOAD APPLIED BY ANY FASTENER DOES NOT EXCEED 25 PERCENT OF THE PROOF TEST LOAD.

E. USE VIBRATION AND SHOCK-RESISTANT FASTENERS FOR ATTACHMENTS TO CONCRETE SLABS.

ELECTRICAL IDENTIFICATION:

A. UPDATE AND PROVIDE TYPED CIRCUIT BREAKER SCHEDULES IN THE MOUNTING BRACKET, INSIDE DOORS OF AC PANEL BOARDS WITH ANY CHANGES MADE TO THE AC SYSTEM.

B. BRANCH CIRCUITS FEEDING AVIATION OBSTRUCTION LIGHTING EQUIPMENT SHALL BE CLEARLY IDENTIFIED AS SUCH AT THE BRANCH CIRCUIT PANELBOARD.

SECTION 26 200 - ELECTRICAL MATERIALS AND EQUIPMENT

CONDUIT:

A. RIGID GALVANIZED STEEL (RGS) CONDUIT SHALL BE USED FOR EXTERIOR LOCATIONS ABOVE GROUND AND IN UNFINISHED INTERIOR LOCATIONS AND FOR ENCASED RUNS IN CONCRETE. RIGID CONDUIT AND FITTINGS SHALL BE STEEL, COATED WITH ZINC EXTERIOR AND INTERIOR BY THE HOT DIP GALVANIZING PROCESS. CONDUIT SHALL BE PRODUCED TO ANSI SPECIFICATIONS C80.1, FEDERAL SPECIFICATION WW-C-581 AND SHALL BE LISTED WITH THE UNDERWRITERS' LABORATORIES. FITTINGS SHALL BE THREADED – SET SCREW OR COMPRESSION FITTINGS WILL NOT BE ACCEPTABLE. RGS CONDUITS SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND.

B. UNDERGROUND CONDUIT IN CONCRETE SHALL BE POLYVINYLCHLORIDE (PVC) SUITABLE FOR DIRECT BURIAL AS APPLICABLE. JOINTS SHALL BE BELLED, AND FLUSH SOLVENT WELDED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE CARLON ELECTRICAL PRODUCTS OR APPROVED EQUAL.

C. TRANSITIONS BETWEEN PVC AND RIGID (RGS) SHALL BE MADE WITH PVC COATED METALLIC LONG SWEEP RADIUS ELBOWS.

D. EMT OR RIGID GALVANIZED STEEL CONDUIT MAY BE USED IN FINISHED SPACES CONCEALED IN WALLS AND CEILINGS. EMT SHALL BE MILD STEEL, ELECTRICALLY WELDED, ELECTRO-GALVANIZED OR HOT-DIPPED GALVANIZED AND PRODUCED TO ANSI SPECIFICATION C80.3, FEDERAL SPECIFICATION WW-C-563, AND SHALL BE UL LISTED. EMT SHALL BE MANUFACTURED BY ALLIED, REPUBLIC OR WHEATLAND, OR APPROVED EQUAL. FITTINGS SHALL BE METALLIC COMPRESSION. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE.

E. LIQUID TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED FOR FINAL CONNECTION TO EQUIPMENT. FITTINGS SHALL BE METALLIC GLAND TYPE COMPRESSION FITTINGS, MAINTAINING THE INTEGRITY OF CONDUIT SYSTEM. SET SCREW CONNECTIONS SHALL NOT BE ACCEPTABLE. MAXIMUM LENGTH OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6-FEET. LFMC SHALL BE PROTECTED AND SUPPORTED AS REQUIRE BY NEC. MANUFACTURERS OF FLEXIBLE CONDUITS SHALL BE CAROL, ANACONDA METAL HOSE OR UNIVERSAL METAL HOSE, OR APPROVED EQUAL.

F. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH (21MM).

HUBS AND BOXES:

A. AT ENTRANCES TO CABINETS OR OTHER EQUIPMENT NOT HAVING INTEGRAL THREADED HUBS PROVIDE METALLIC THREADED HUBS OF THE SIZE AND CONFIGURATION REQUIRED. HUB SHALL INCLUDE LOCKNUT AND NEOPRENE O-RING SEAL. PROVIDE IMPACT RESISTANT 105 DEGREE C PLASTIC BUSHINGS TO PROTECT CABLE INSULATION.

B. CABLE TERMINATION FITTINGS FOR CONDUIT
1. CABLE TERMINATORS FOR RGS CONDUITS SHALL BE TYPE CRC BY O-Z/GEDNEY OR EQUAL.
2. CABLE TERMINATORS FOR LFMC SHALL BE ETCO – CL2075; OR MADE FOR THE PURPOSE PRODUCTS BY ROXTEC.

C. EXTERIOR PULL BOXES AND PULL BOXES IN INTERIOR INDUSTRIAL AREAS SHALL BE PLATED CAST ALLOY, HEAVY DUTY, WEATHERPROOF, DUST PROOF, WITH GASKET, PLATED IRON ALLOY COVER AND STAINLESS STEEL COVER SCREWS, CROUSE-HINDS WAB SERIES OR EQUAL.

D. CONDUIT OUTLET BODIES SHALL BE PLATED CAST ALLOY WITH SIMILAR GASKETED COVERS. OUTLET BODIES SHALL BE OF THE CONFIGURATION AND SIZE SUITABLE FOR THE APPLICATION. PROVIDE CROUSE-HINDS FORM 8 OR EQUAL.

E. MANUFACTURER FOR BOXES AND COVERS SHALL BE HOFFMAN, SQUARE "D", CROUSE-HINDS, COOPER, ADALET, APPLETON, O-Z GEDNEY, RACO, OR APPROVED EQUAL.

SUPPLEMENTAL GROUNDING SYSTEM

A. FURNISH AND INSTALL A SUPPLEMENTAL GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS. SUPPORT SYSTEM WITH NON-MAGNETIC STAINLESS STEEL CLIPS WITH RUBBER GROMMETS. GROUNDING CONNECTORS SHALL BE TINNED COPPER WIRE, SIZES AS INDICATED ON THE DRAWINGS. PROVIDE STRANDED OR SOLID BARE OR INSULATED CONDUCTORS AS INDICATED.

B. SUPPLEMENTAL GROUNDING SYSTEM: ALL CONNECTIONS TO BE MADE WITH CAD WELDS, EXCEPT AT EQUIPMENT USE LUGS OR OTHER AVAILABLE GROUNDING MEANS AS REQUIRED BY MANUFACTURER; AT GROUND BARS USE TWO HOLE SPADES WITH NO OX.

C. STOLEN GROUND-BARS: IN THE EVENT OF STOLEN GROUND BARS, CONTACT SPRINT CM FOR REPLACEMENT INSTRUCTION USING THREADED ROD KITS.

EXISTING STRUCTURE:

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

CONDUIT AND CONDUCTOR INSTALLATION:

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

B. CONDUCTORS SHALL BE PULLED IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE.

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Hadley, MA 01035 Ph: (413)320-4918

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

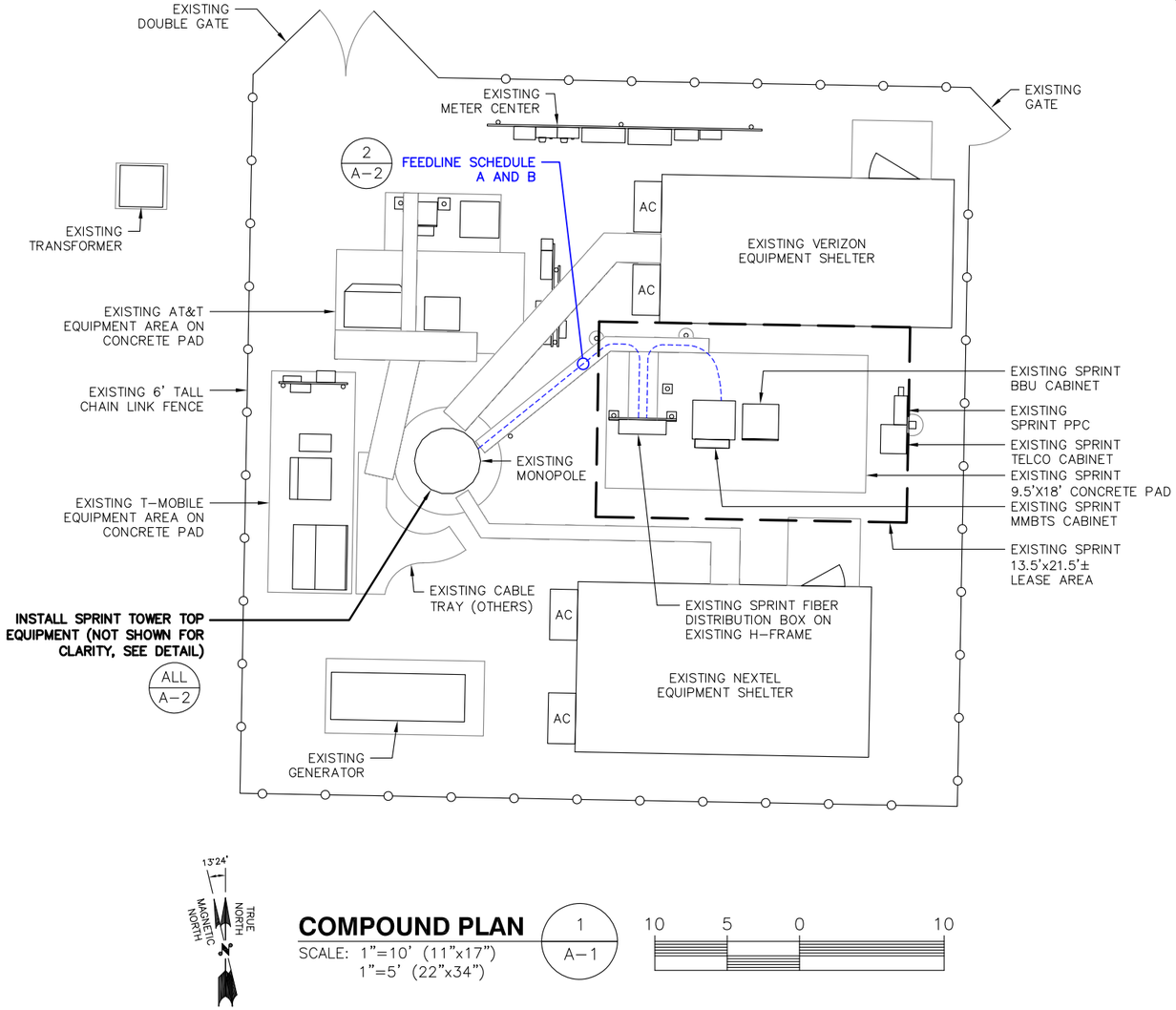
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
OUTLINE SPECIFICATIONS

SHEET NUMBER
SP-3



COMPOUND PLAN

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

1
A-1

10 5 0 10

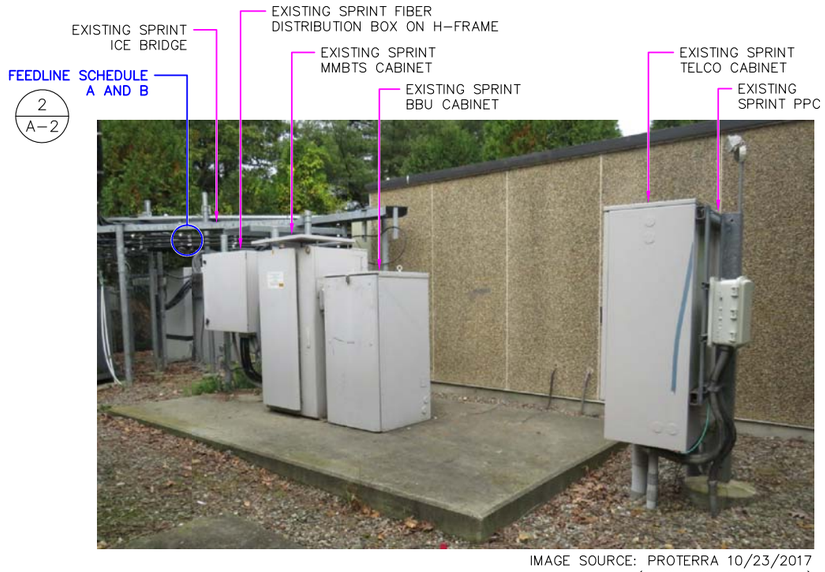


IMAGE SOURCE: PROTERRA 10/23/2017
(VIEW FROM SOUTHEAST)

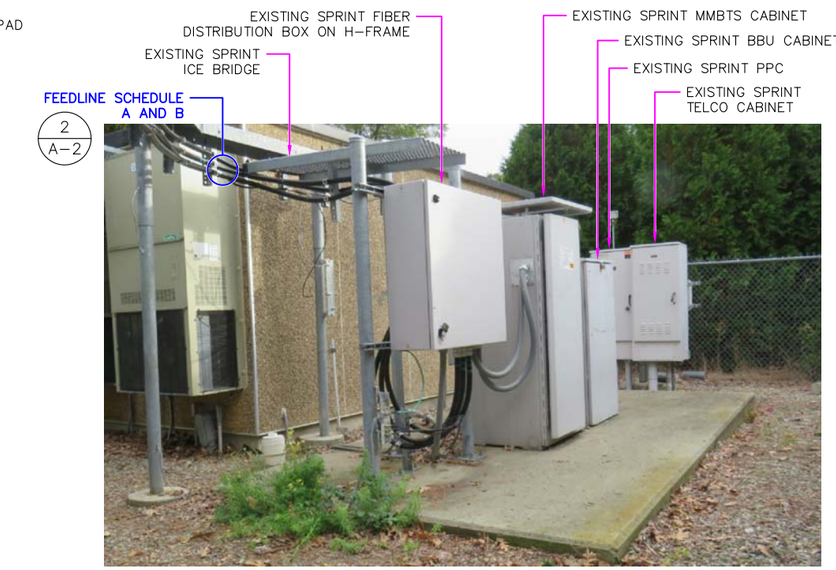


IMAGE SOURCE: PROTERRA 10/23/2017
(VIEW FROM SOUTHWEST)

EQUIPMENT PLAN PHOTO DETAIL

SCALE: N.T.S.

2
A-1

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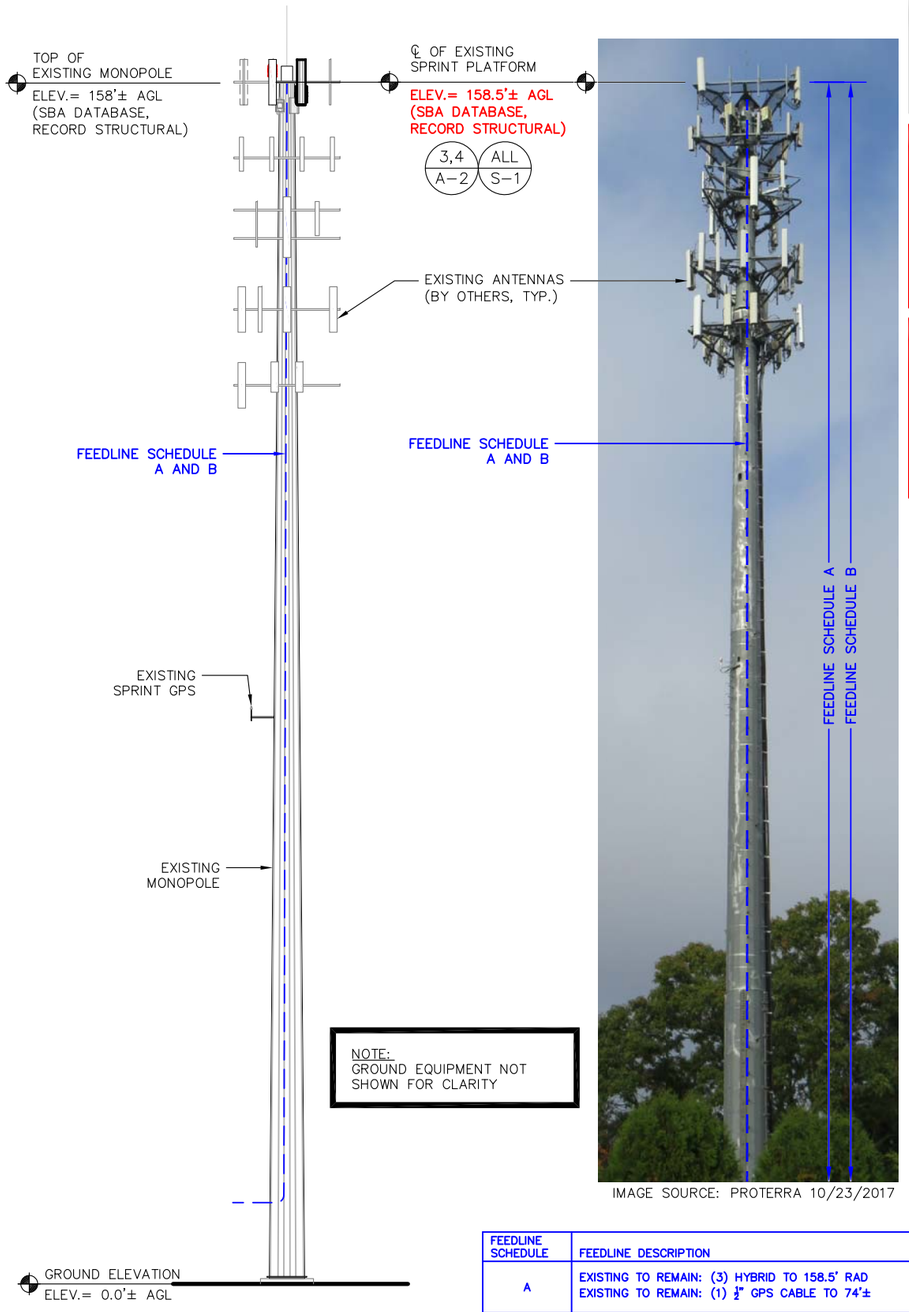
SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1



NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

IMAGE SOURCE: PROTERRA 10/23/2017

ELEVATION

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

1 / A-2

20 10 0 20

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO REMAIN: (3) HYBRID TO 158.5' RAD EXISTING TO REMAIN: (1) ½" GPS CABLE TO 74'±	UP INSIDE MONOPOLE TO RAD
B	PROPOSED: (1) HYBRID TO 158.5' RAD;	UP INSIDE MONOPOLE TO RAD

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

TOWER ELEVATION PHOTO DETAIL

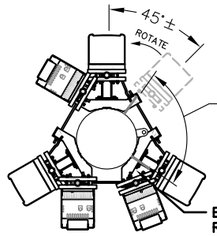
SCALE: N.T.S.

2 / A-2

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

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

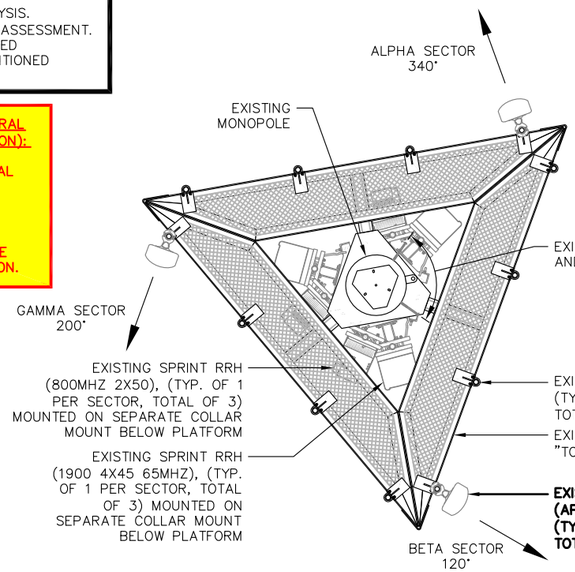
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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



RRH COLLAR MOUNT ROTATION

EXISTING SAFETY CLIMB AND CLIMBING PEGS

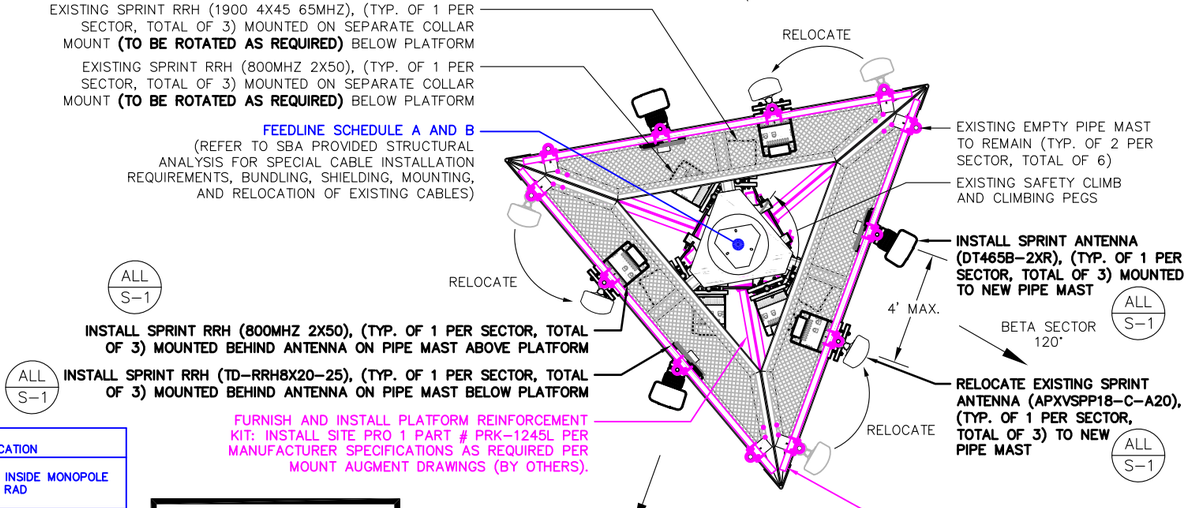
EXISTING COLLAR MOUNT FOR RRHS TO BE ROTATED APPROX. 45° AND ELEVATED APPROX. 6" AS REQUIRED TO ALLOW FOR INSTALLATION OF THE PLATFORM REINFORCEMENT KIT



EXISTING ANTENNA PLAN

SCALE: N.T.S.

3 / A-2



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

PROPOSED ANTENNA PLAN

SCALE: N.T.S.

4 / A-2

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1 INTERNATIONAL BLVD, SUITE 800
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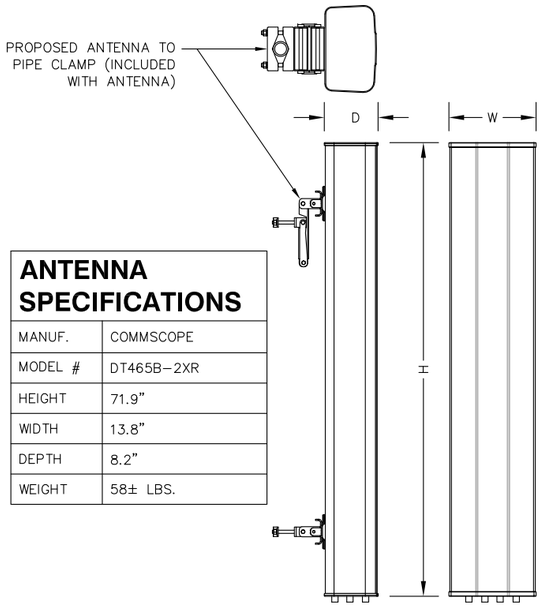
EASTON, CT 06612

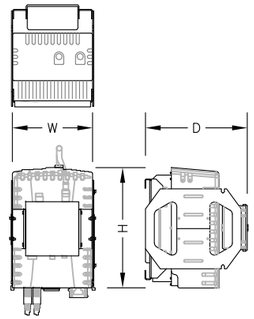
SHEET TITLE
ELEVATION AND ANTENNA PLANS

SHEET NUMBER
A-2



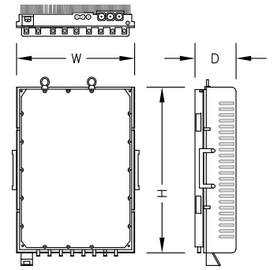
ANTENNA SPECIFICATIONS	
MANUF.	COMMSCOPE
MODEL #	DT465B-2XR
HEIGHT	71.9"
WIDTH	13.8"
DEPTH	8.2"
WEIGHT	58± LBS.

ANTENNA DETAIL 1 / A-3
SCALE: N.T.S.



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

800 MHz RRH DETAIL 2 / A-3
SCALE: N.T.S.



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

2.5 GHz RRH DETAIL 3 / A-3
SCALE: N.T.S.

MAJOR RF EQUIPMENT LIST

(GC SHALL FURNISH AND INSTALL ALL OTHER MATERIALS AND EQUIPMENT NOT SUPPLIED BY SPRINT)

DESCRIPTION	QUANTITY	UNITS	MAKE/MODEL/MATERIAL	PROVIDED BY
ANTENNA	3	EA	COMMSCOPE DT465B-2XR	SPRINT
2500 RRH	3	EA	NOKIA (ALU) TD-RRH8x20-25	SPRINT
800 RRH	3	EA	NOKIA (ALU) 800MHz 2x50W	SPRINT
FIBER	1 @ 230'± FROM FIBER CABINET	LINEAR FEET LISTED [INCLUDES (2) 10' COILS]	1-1/4" HYBRIFLEX	SPRINT

SPRINT-PROVIDED EQUIPMENT SCHEDULE 4 / A-3
SCALE: N.T.S.

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206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
TOWER EQUIPMENT DETAILS

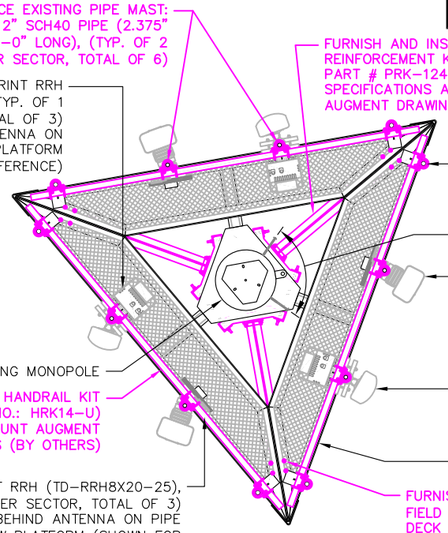
SHEET NUMBER
A-3

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

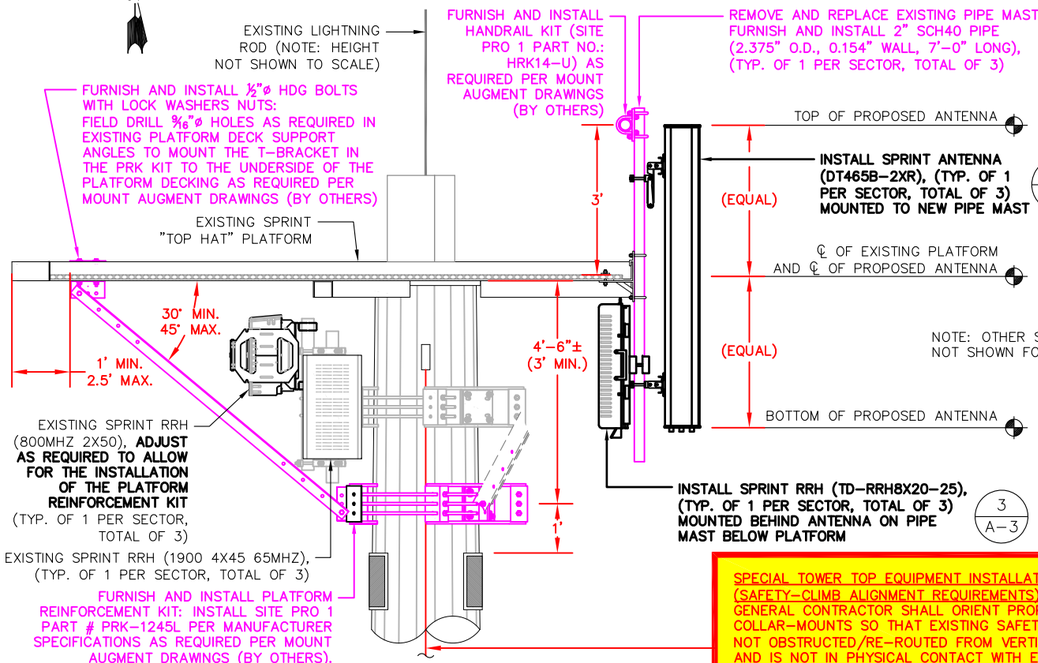
SPECIAL CONSTRUCTION NOTE:
SPRINT WORK IS CONTINGENT ON THE FOLLOWING:
* COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS.
* COMPLETION OF AN ANTENNA/RRH MOUNT STRUCTURAL ASSESSMENT.
* GC SHALL FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED ANALYSIS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

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

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



SECTOR FRAME PLAN DETAIL 1 S-1
SCALE: N.T.S.



PROPOSED ANTENNA AND 2.5 GHZ RRH MOUNTING DETAIL 2 S-1
SCALE: N.T.S.

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 FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

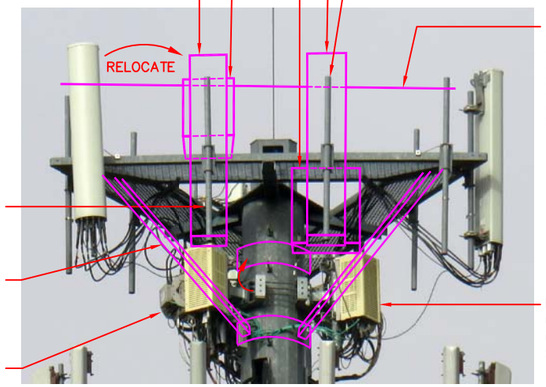
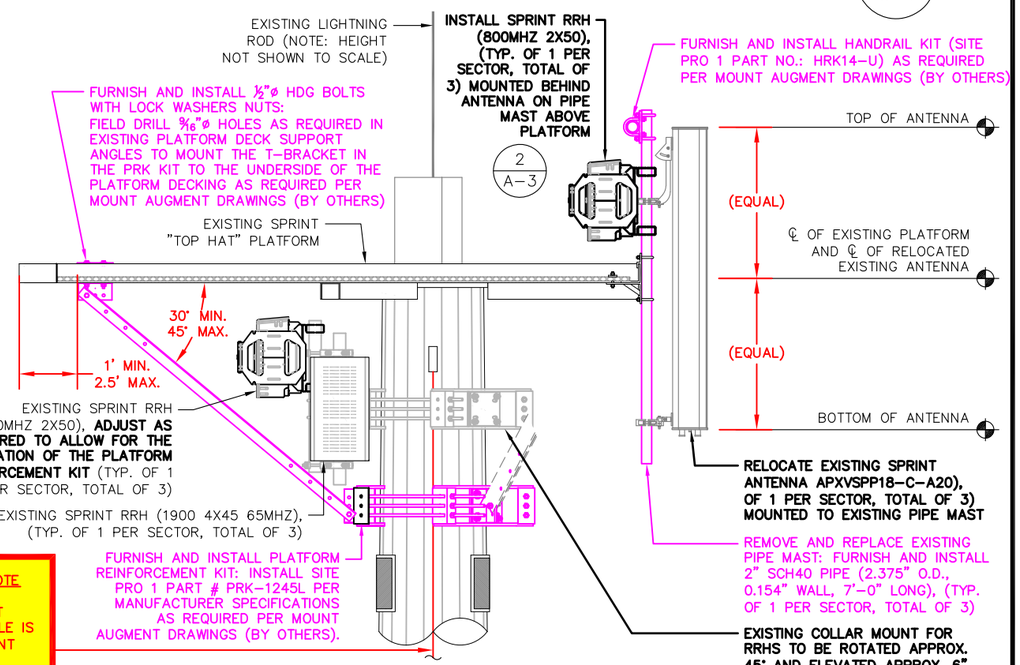


IMAGE SOURCE: PROTERRA 10/23/2017

ANTENNA AND RRH MOUNT PHOTO DETAIL 4 S-1
SCALE: N.T.S.



RELOCATED EXISTING ANTENNA AND 800 MHZ RRH MOUNTING DETAIL 3 S-1
SCALE: N.T.S.

Sprint
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
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Hadley, MA 01035 Ph:(413)320-4918

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

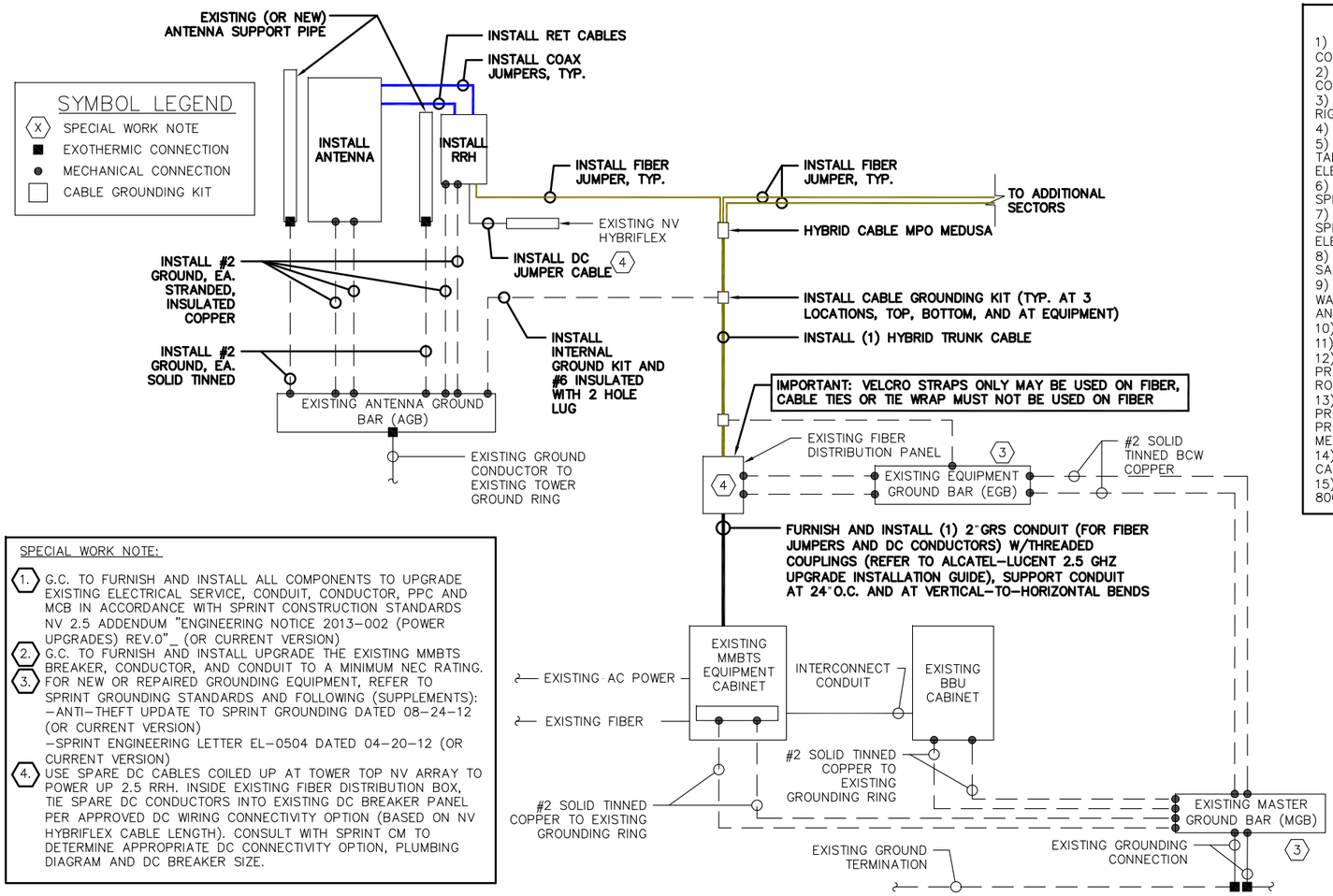
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
ANTENNA AND RRH MOUNTING DETAILS

SHEET NUMBER
S-1



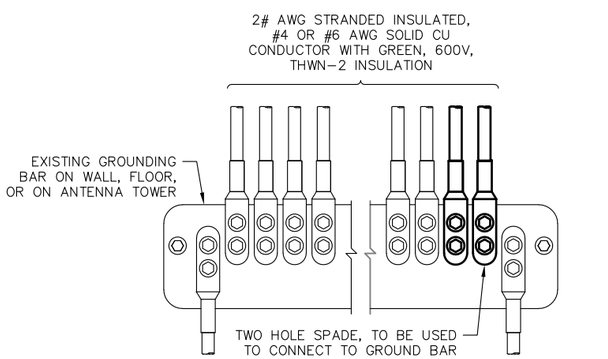
TYPICAL POWER AND GROUNDING ONE LINE DIAGRAMS

1 / E-1

SCALE: N.T.S.

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.0"_ (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.

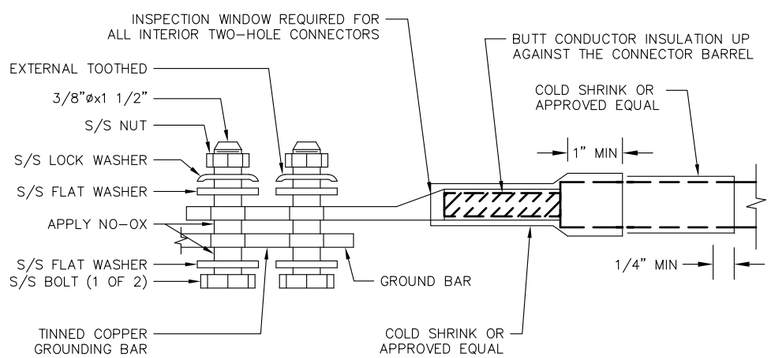


1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR

2 / E-1

SCALE: N.T.S.



TWO HOLE LUG

3 / E-1

SCALE: N.T.S.

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.

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)

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Hadley, MA 01035 Ph:(413)320-4918

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
ELECTRICAL AND GROUNDING DETAILS

SHEET NUMBER
E-1

Augment ID: CT03XC362Q17.1
RFDS ID: 45776

NOTE: RFDS PROVIDED BY SPRINT LAST REVISED DATED 07/31/2017. EXCERPTS TAKEN DEPICT RELEVANT RF DESIGN INFORMATION. A&E VENDOR SCOPE OF WORK LIMITED TO DESIGN OF MECHANICAL/STRUCUTRAL EQUIPMENT ATTACHMENTS.

SprintVision **RF Design Sheet**

Site Identification	
Cascade	CT03XC362
SMS Schedule ID	12323132
SMS Schedule Name	DO Macro Upgade
PID	DOKU_CT03XC362
RRU OEM	Alcatel Lucent
Switch OEM	ALU
RFDS Issue Date	
RFDS Revision Date	2017-04-11 00:00:00.0
RFDS Revision	1

Contact Information	
Engineer Email	Bill.M.Hastings@sprint.com
Sprint Badged RF Engineer	Bill Hastings
RF Engineer Email	Bill.M.Hastings@sprint.com
RF Engineer Phone	978-590-9700
RF Manager	Jonathan Hull
RF Manager Email	Jonathan.B.Hull@Sprint.com
RF Manager Phone	617-233-2920

Location Details	
Latitude	41.29033888
Longitude	-73.282675
Market	Southern Connecticut
Region	Northeast
City	Easton
State	CT
Zip Code	CT,06612
County	Fairfield

Filter Analysis Complete	YES
RFDS - Issue Date	
Design Status	Complete
Border Analysis Complete	YES
Project Description	DO Macro Upgade - Add 2500 MHz

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

2500MHz	3
1900MHz	
800MHz	

Battery Backup Cabinet Model	
Model Number	60ECv2
Weight (Lbs.)	2830
Dimensions (In.)	60 x 31 x 30
Manufacturer	ALU

BTS #1 Model	
Model Number	9927 Cabinet
Weight (Lbs.)	864
Dimensions (In.)	67.5 x 31.5 x 38.1
Manufacturer	ALU
Number of BTS #1	1

Additional RF Notes

07/31/2017 - RFDS revised to use the existing NV Antenna for 800/1900 and add dual band antenna (DT465B-2XR) for 800/2500.

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	1	1	1	0	0	0
Trunk Cable 1						
Model Number	1900 Hybrid_ALU	1900 Hybrid_ALU	N/A	N/A	N/A	N/A
Weight (Lbs.)	1.1	1.1	N/A	N/A	N/A	N/A
Dimensions (In.)	1.25	1.25	N/A	N/A	N/A	N/A
Manufacturer	ALU	ALU	N/A	N/A	N/A	N/A

Band: 2500	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Antenna1						
Model Number	DT465B-2XR	DT465B-2XR	DT465B-2XR			
Weight (lbs)	58	58	58	N/A	N/A	N/A
Dimensions	72 x 14 x 8	72 x 14 i 8	72 x 14 x 8	N/A	N/A	N/A
Manufacturer	CommScope	CommScope	CommScope	N/A	N/A	N/A
Ant1 Top Jumper Make/Mode/Qtyl	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	340	120	200	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)	158.0052544	158.0052544	158.0052544	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: 800	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Antenna1						
Model Number	Antenna assigned on a different band	Antenna assigned on a different band	Antenna assigned on a different band			
Weight (lbs)	0	0	0	N/A	N/A	N/A
Dimensions	0 x 0 x 0	0 x 0 x 0	0 x 0 x 0	N/A	N/A	N/A
Manufacturer	-	-	-	N/A	N/A	N/A
Ant1 Top Jumper Make/Mode/Qtyl	800/1900 Jumper 4	800/1900 Jumper 4	800/1900 Jumper 2	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	340	120	200	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)	158.0052544	158.0052544	158.0052544	N/A	N/A	N/A
Antenna 1 Electrical DT	5	5	5	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

RF DATA SHEET
SCALE: N.T.S.

1
RF–1

SPRINT CONSTRUCTION STANDARDS:

GENERAL CONTRACTOR SHALL ADHERE TO THE FOLLOWING SPRINT CONSTRUCTION STANDARDS.

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

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

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1 INTERNATIONAL BLVD, SUITE 800
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Hadley, MA 01035 Ph:(413)320–4918

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

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	01/26/18	ISSUED FOR CONSTRUCTION	PN
0	10/31/17	ISSUED FOR REVIEW	JEB

SITE NUMBER:
CT03XC362
SITE NAME:
EASTON-EVERETTS RD
SITE ADDRESS:
206 EVERETT ROAD
EASTON, CT 06612

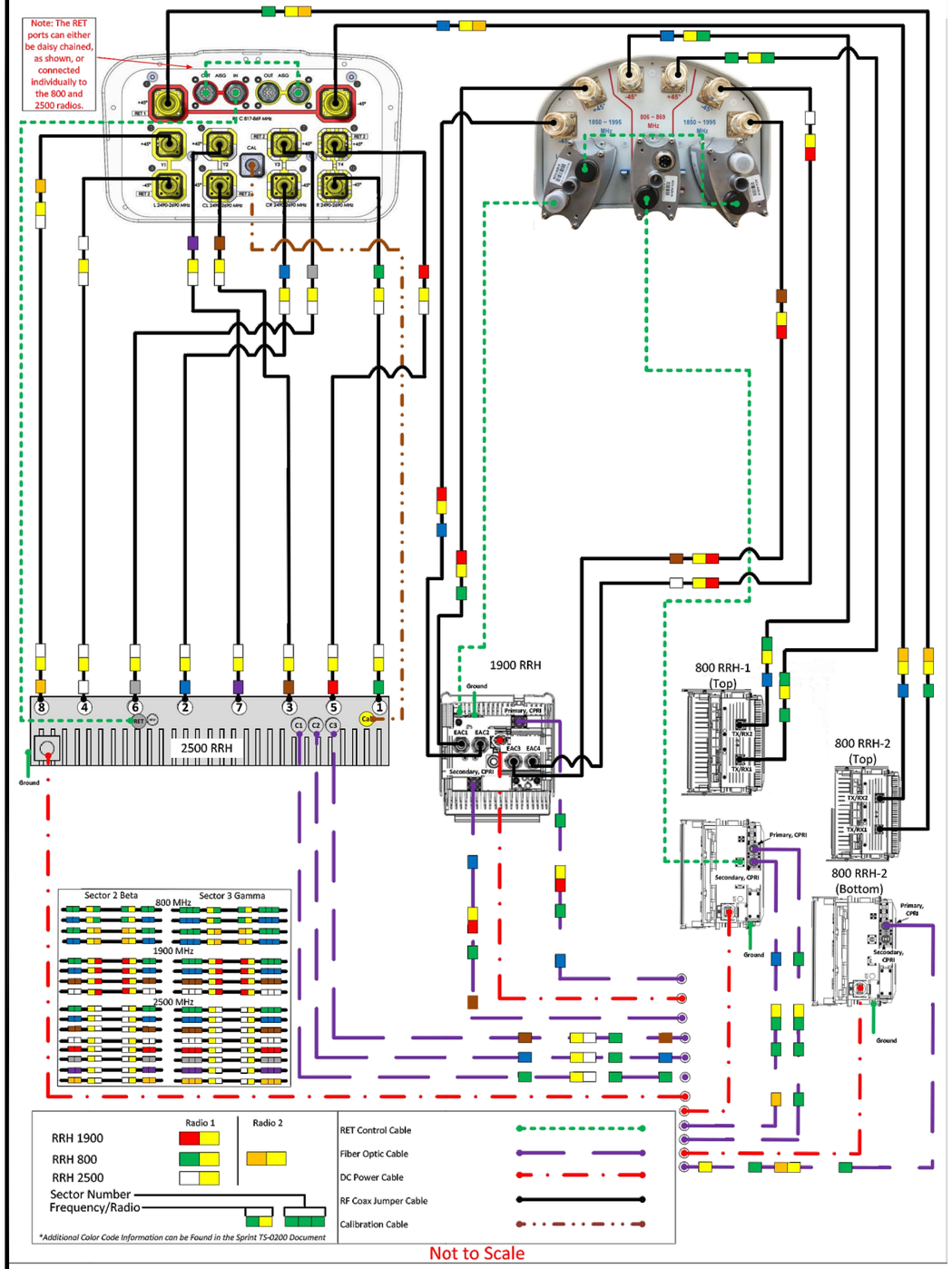
SHEET TITLE
RF DATA SHEET

SHEET NUMBER
RF–1

Prepared By	Revision Date	Revision Number
Mark Elliott	August 23, 2017	R4
Approved By	**Approval Date**	
RAN Hardware & Antenna Teams	DRAFT-Macro Generated	

Sprint

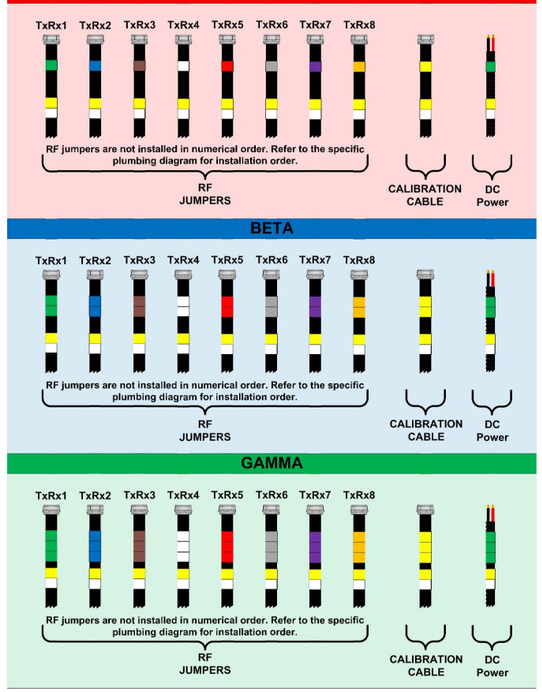
ALU 211 DT465B-2XR & APXVSPP18-C-A20 wo Filters



Not to Scale

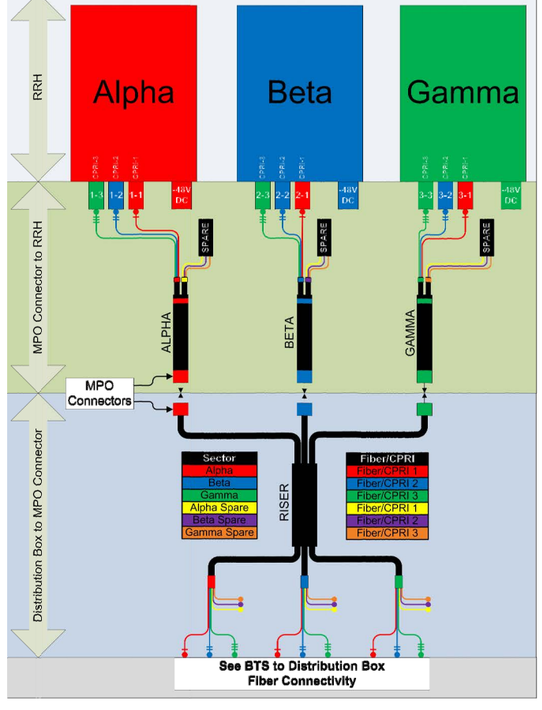
RF / POWER COLOR CODE

Alcatel-Lucent | 3/10/2014 | V5.0



RRH to Distribution Box Fiber Connectivity

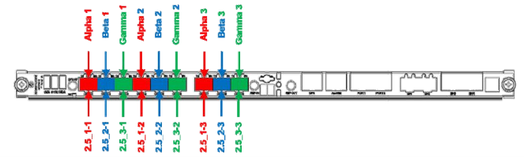
Alcatel-Lucent | 3/10/2014 | V5.0



BTS to Distribution Box Fiber Connectivity

Alcatel-Lucent | 3/10/2014 | V5.0

eCCM2-HR



Distribution Box Fiber Panel

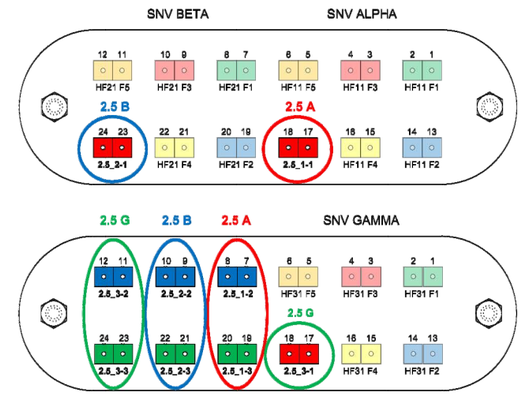
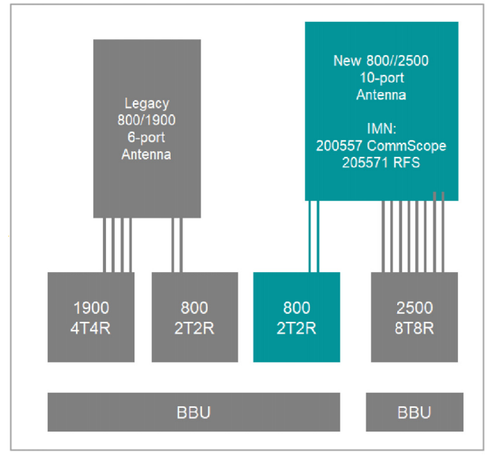


Image depicts right side of the fiber bulkhead.
Left side connections will use the same position designations.

Future



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1 INTERNATIONAL BLVD, SUITE 800
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SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581 TEL: (508) 251-0720

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

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

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

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
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EASTON-EVERETTS RD
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206 EVERETT ROAD
EASTON, CT 06612

SHEET TITLE
PLUMBING DIAGRAM AND RAN WIRING

SHEET NUMBER
RF-2

CT03XC362
DO MACRO EQUIPMENT DEPLOYMENT

MOUNT AUGMENTATION @ 158.5'

MONOPOLE TOWER

EASTON, CT
FAIRFIELD COUNTY

SITE INFORMATION

STRUCTURE TYPE:	MONOPOLE
MOUNT TYPE:	PLATFORM
LATITUDE:	41.29033333 (NAD 83)
LONGITUDE:	-73.28266667 (NAD 83)
CITY, STATE:	EASTON, CT
COUNTY:	FAIRFIELD
SBA SITE:	CT46131-A Easton-Everetts Rd

COORDINATES ARE FOR NAVIGATIONAL PURPOSES ONLY, NOT TO 1A ACCURACY.

DO NOT SCALE DRAWINGS

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

CODE COMPLIANCE

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

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

RIGGING PLAN REQUIRED

THIS SET OF PLANS DOES "NOT" CONSTITUTE A RIGGING PLAN.

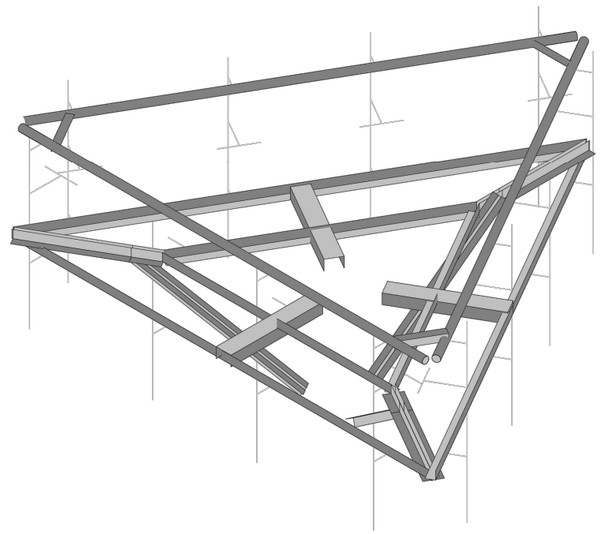
A PROPER RIGGING PLAN SHALL BE PERFORMED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO PROCEEDING ON ANY AUGMENTATIONS SHOWN HEREIN.

GENERAL DESIGN NOTES

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

SHEET INDEX

MOUNT AUGMENTATION CONFIGURATION



AUGMENTATION SCOPE

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

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P: 530.539.4787
E: CONTACT@GEOSTRUCTURAL.COM
WWW.GEOSTRUCTURAL.COM

REVISIONS:

0	01/16/18	ISSUE FOR CONSTRUCTION	JAD

CHECKED BY: DWG

STATE OF CONNECTICUT
GREGORY DURGIN
No. 32156
LICENSED
PROFESSIONAL ENGINEER

SITE INFORMATION:

MOUNT AUGMENTATION

CT03XC362

EASTON, CT

LATITUDE: 41.29033333
LONGITUDE: -73.28266667

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

S1

CONTRACTOR NOTES

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

STRUCTURAL ERECTION AND BRACING REQUIREMENTS

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

BOLTS

1. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED GALVANIZED HIGH STRENGTH ASTM A325 OR A490 BOLTS WITH THREADS EXCLUDED FROM SHEAR PLANE.
2. FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES, WITH BOLT HEADS FACING DOWN WHERE APPLICABLE.
3. ALL BOLTS AT EVERY CONNECTION SHALL BE INSTALLED SNUG-TIGHT UNTIL THE SECTION IS FULLY COMPACTED AND ALL PLIES ARE JOINED, AND THEN TIGHTENED FURTHER BY AISC - "TURN OF THE NUT" METHOD. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.
4. BOLT LENGTHS UP TO AND INCLUDING 4 DIAMETERS SHALL BE TENSIONED 1/3 TURN BEYOND SNUG-TIGHT. BOLT LENGTHS OVER 4 DIAMETERS SHALL BE 1½ TURNS BEYOND SNUG-TIGHT.
5. ALL BOLTED CONNECTIONS SHALL USE LOCK WASHERS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC STEEL CONSTRUCTION MANUAL AND SECTION 4 OF THE TIA CODE.
2. PRE-QUALIFIED STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING MINIMUM GRADES UNLESS OTHERWISE NOTED:
   - CHANNELS & ANGLES ..... ASTM A36, (Fy = 36 KSI)
   - PLATES ..... ASTM A36, (Fy = 36 KSI)
   - PIPES ..... ASTM A53 GR.B, (Fy = 35 KSI)
   - HSS ROUND ..... ASTM A500 GR.B, (Fy = 42 KSI)
   - HSS RECTANGULAR ..... ASTM A500 GR.B, (Fy = 46 KSI)
   - STRUCTURAL BOLTS ..... ASTM A325
   - U-BOLTS ..... ASTM A307 GR.A
   - NUTS FOR BOLTS ..... ASTM A563 (THREADING TO MATCH BOLT)
   - WASHERS FOR BOLTS ..... ASTM F436
   - SEE TABLE 5-1 OF THE TIA CODE FOR ADDITIONAL SHAPES AND STANDARDS THAT ARE NOT LISTED ABOVE.
3. NON PRE-QUALIFIED STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS PER THE TIA CODE:
   - THE CARBON EQUIVALENT OF STEEL SHALL NOT EXCEED 0.65 PER SECTION 5.4.2 OF THE TIA CODE
   - ELONGATION OF STEEL SHALL NOT BE LESS THAN 18%
   - TEST REPORTS SHALL BE IN ACCORDANCE WITH ASTM A6 OR A568
   - TOLERANCES SHALL BE IN ACCORDANCE WITH ASTM A6
4. FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH AND COLD GALVANIZED.
5. ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY. WELDING ELECTRODES SHALL BE E70XX.
6. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC SPECS AND CODES, LATEST EDITION.
7. UPON REQUEST, THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE ENGINEER OF RECORD TO REVIEW FOR COMPLIANCE WITH DESIGN INTENT PRIOR TO THE START OF FABRICATION AND/OR ERECTION.
8. TORCH-CUTTING OF ANY KIND SHALL NOT BE PERMITTED.
9. ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERSIZE HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (3/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
10. ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN ½" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZINC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
11. MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

CONSTRUCTION INSPECTION CHECKLIST

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

NOMINAL HOLE DIMENSIONS

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

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REVISIONS:

0	01/16/18	ISSUE FOR CONSTRUCTION	JAD

CHECKED BY: DWG

STATE OF CONNECTICUT
GREGORY DURGIN
No. 32155
LICENSED
PROFESSIONAL ENGINEER

SITE INFORMATION:

MOUNT AUGMENTATION

CT03XC362

EASTON, CT

LATITUDE: 41.29033333
LONGITUDE: -73.28266667

SHEET TITLE:

NOTES AND SPECIFICATIONS

SHEET NUMBER:

S2

PLATFORM @ 158.5' AUGMENTATION

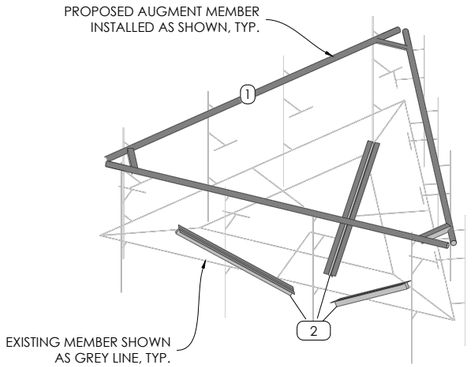
NEW MOUNT AUGMENTATIONS

1	HANDRAIL KIT SITEPRO1 PART# HRK14-U. ATTACH HANDRAIL KIT TO MOUNT PIPES ~3.0' ABOVE EXISTING BOTTOM RAIL CENTERLINE. • PIPE2.0STD MOUNT PIPES, [(12) TOTAL] W/ SITEPRO1 SCX-**X**-K, [(12) TOTAL] CROSS-OVER PLATES. ATTACH ALL MOUNT PIPES TO EXISTING AND NEW HORIZ. RAILS.
2	PLATFORM REINFORCEMENT KIT (LONG KIT VERSION HAS 7' LONG DOUBLE ANGLE) SITEPRO1 PART# PRK-1245L ASSEMBLY INSTALLED TO (E) STANDOFF PER MANUF. SPECS. [(1) TOTAL]
3	PANEL ANTENNAS AND RRH UNITS TO BE INSTALLED IN POSITIONS 2 AND 3 AS SHOWN IN CONSTRUCTION DRAWINGS, WITH A HORIZ. SEPARATION NOT TO EXCEED 4'.

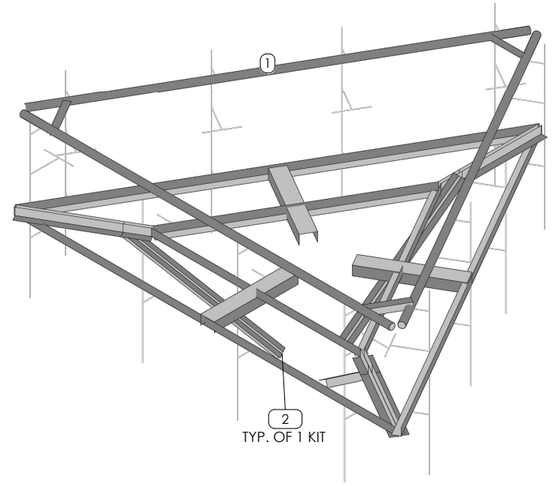
AUGMENTATIONS SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF ANY NEW EQUIPMENT.

CONSTRUCTION NOTES

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



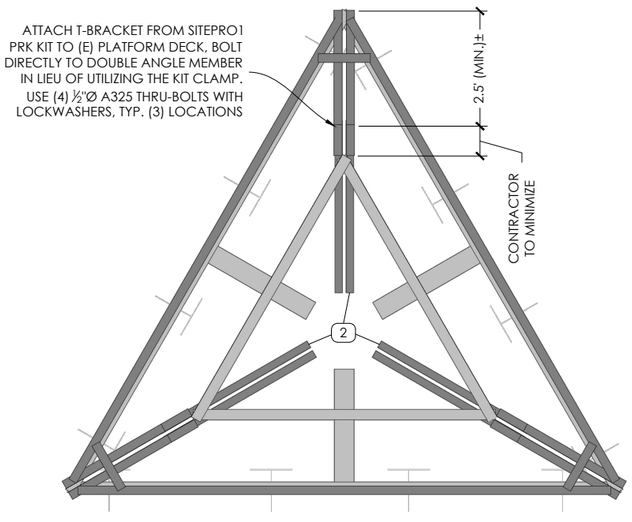
MOUNT AUGMENTATION ISOLATION
SCALE: N.T.S.



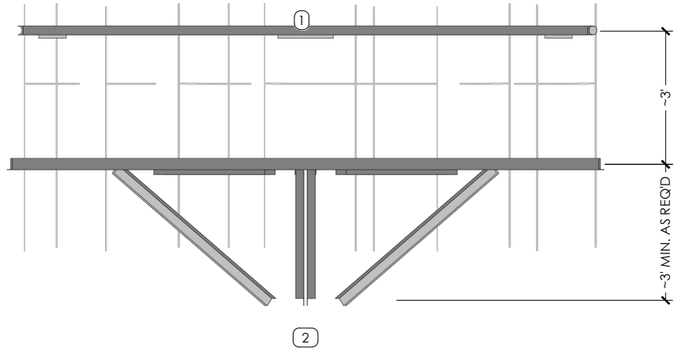
AUGMENTED MOUNT ISOMETRIC
SCALE: N.T.S.

INSTALLATION NOTES

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



AUGMENTED MOUNT PLAN
SCALE: N.T.S.



AUGMENTED MOUNT FRONT ELEVATION
SCALE: N.T.S.

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CHECKED BY: DWG

SITE INFORMATION:

MOUNT AUGMENTATION

CT03XC362

EASTON, CT

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LONGITUDE: -73.28266667

SHEET TITLE:

AUGMENTATIONS, SECTIONS & DETAILS

SHEET NUMBER:

S3